Technical Memorandum
Groundwater Quality Sampling, March 2015 Event

Date: May 26, 2015

By: Amy Blain, P.E., City of Longview

Subject: Groundwater Quality Sampling Results, March 2015 Monitoring Event

This memorandum summarizes the results of the groundwater monitoring and sampling event conducted in March 2015 for the Mint Farm Regional Water Treatment Plant well field (Mint Farm). Groundwater sampling continues to be sampled semi-annually to confirm consistent groundwater quality and monitor potential water quality changes. Groundwater samples are collected from deep sentinel wells DW-1, DW-2, DW-5, DW-6, DW-7, and DW-9 during each semi-annual sampling event. These wells were selected based on their locations relative to nearby industrial sites and the ability to detect potential contaminant migration from those industries. Due to ongoing water quality concerns within the community, raw groundwater samples were also collected from all four production wells PW-1, PW-2, PW-3 and PW-4. However, due to mechanical failures, PW-4 was temporarily off-line and samples from that well could not be collected until May 13, 2015. Analytical results for PW-4 as well as radionuclides for all of the wells are still pending as of the date of this memorandum.

ACTIVITIES CONDUCTED DURING THE MARCH 2014 MONITORING EVENT

Activities completed during this groundwater monitoring event were conducted in accordance with *Technical Memorandum 2, Water Quality Sampling Protocol* (Kennedy/Jenks, 28 April 2009). Activities included:

- Collecting groundwater samples from sentinel wells DW-1, DW-2, DW-5, DW-6, DW-7, and DW-9 on March 9 and 10, 2015. Groundwater samples were collected following well purging to stabilize pH, temperature, conductivity and dissolved oxygen levels.

- Collecting raw (untreated) groundwater samples from production wells PW-1, PW-2, PW-3 and PW-4 on March 17 and May 13, 2015. Groundwater samples were collected following well purging to stabilize pH, temperature, conductivity and dissolved oxygen levels.

- Submitting groundwater samples to ALS Environmental (ALS), an EPA-certified laboratory, to analyze for constituents identified based on current drinking water regulations, unregulated contaminants of emerging concern, and historical and industrial activity in or near the area.

- Reviewing the analytical data and preparation of this summary memorandum.

DATA QUALITY

Based on review of the laboratory reports, it is my opinion the analytical data received to date are of acceptable quality for their intended use. Laboratory case narratives prepared by ALS are included as part of the lab reports in Attachment A.

RESULTS OF GROUNDWATER MONITORING

The certified laboratory reports for the groundwater samples collected during the March 2015 sampling event are included on compact disc in Attachment A. The analytical results were reviewed for conformance with the screening level established for each constituent.

Screening levels for regulated contaminants are equivalent to the Maximum Contaminent Level (MCL) and Secondary Maximum Contaminant Level (SMCL) established by the Washington State Department of Health (DOH) and EPA's National Primary Drinking Water Regulations. Screening levels for unregulated contaminants are established by the methods described in the March 2010 Mint Farm Regional Water Treatment Plant Preliminary Design Report and referred to in the Wellhead Protection Program described in Chapter 5 of the City's 2012 Comprehensive Water System Plan.

Iron, manganese and color were detected in the groundwater samples at levels exceeding their respective screening level established by DOH as secondary water quality standards. Although these contaminants are not regulated as a health concern they are regulated in drinking water due to objectionable aesthetic concerns. All three parameters are removed during the water treatment process below their respective SMCL's.

Bis(2-ethylhexyl) phthalate (DEHP) was detected in DW-6 at 0.62 micrograms per litre (µg/L), and in PW-2 at 0.65 ug/L. Both detections are an order of magnitude below the MCL (6.0 µg/L) and do not constitute an exceedance of the health based screening level. DEHP is used in the production of vinyl chloride resins and is often detected in newer PVC installations and is easily introduced during sample collection and transport. The matrix spike recovery for DEHP in the DW-6 sample was outside control criteria but acceptable recovery in the lab control sample was indicates the analytical batch was in control. These detections are attributed to field error.

No other analytes were detected in groundwater samples at concentrations above their respective screening levels.

FUTURE SAMPLING ACTIVITIES

Groundwater monitoring will continue on a semi-annual basis to confirm consistent raw water quality. However, because this sampling event was conducted using the extended test panel including special interest analytes, the October 2015 sampling event will be limited to the standard test panel.

REFERENCES

Kennedy/Jenks Consultants, 2009. *Technical Memorandum 2, Water Quality Sampling Protocol.* Kennedy/Jenks Consultants, 28 April 2009.

Kennedy/Jenks Consultants, 2010. *Preliminary Design Report (PDR Part 2) for the City of Longview (City) Mint Farm Regional Water Treatment Plant and Well Field, Part 2A: Hydrogeologic Characterization of the Mint Farm Area.* Kennedy/Jenks Consultants, March 2010.

ALS Environmental
ALS Group USA, Corp
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Kelso, WA 98626
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www.alsglobal.com

April 14, 2015

Analytical Report for Service Request No: K1502369

Jeff Coleman
Longview, City of
W/S Operation Center
P.O. Box 128
Longview, WA 98632

RE: Sentinel Wells

Dear Jeff,

Enclosed are the results of the sample(s) submitted to our laboratory March 10, 2015
For your reference, these analyses have been assigned our service request number **K1502369.**

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 3275. You may also contact me via email at Chris.Leaf@ALSGlobal.com.

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental

Chris Leaf
Project Manager

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 DEC UST	http://dec.alaska.gov/applications/eh/ehllabreports/USTLabs.aspx	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	L14-51
Florida DOH	http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm	E87412
Hawaii DOH	Not available	-
Idaho DHW	http://www.healthandwelfare.idaho.gov/Health/Labs/CertificationDrinkingWaterLabs/tabid/1833/Default.aspx	-
ISO 17025	http://www.pjlabs.com/	L14-50
Louisiana DEQ	http://www.deq.louisiana.gov/portal/DIVISIONS/PublicParticipationandPermitSupport/LouisianaLaboratoryAccreditationProgram.aspx	03016
Maine DHS	Not available	WA01276
Michigan DEQ	http://www.michigan.gov/deq/0,1607,7-135-3307_4131_4156---,00.html	9949
Minnesota DOH	http://www.health.state.mn.us/accreditation	053-999-457
Montana DPHHS	http://www.dphhs.mt.gov/publichealth/	CERT0047
Nevada DEP	http://ndep.nv.gov/bsdw/labservice.htm	WA01276
New Jersey DEP	http://www.nj.gov/dep/oqa/	WA005
North Carolina DWQ	http://www.dwqlab.org/	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/envserv/	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
Wisconsin DNR	http://dnr.wi.gov/	998386840
Wyoming (EPA Region 8)	http://www.epa.gov/region8/water/dwhome/wyomingdi.html	-
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/anlayte is offered by that state.

Case Narrative

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

ALS ENVIRONMENTAL

Client:	Longview, City of	**Service Request No.:**	K1502369
Project:	Sentinel Wells	**Date Received:**	03/09/15-03/10/15
Sample Matrix:	Drinking Water		

Case Narrative

All analyses were performed consistent with the quality assurance program of ALS Environmental. This report contains analytical results for samples designated for Tier II data deliverables. When appropriate to the method, method blank results have been reported with each analytical test. Surrogate recoveries have been reported for all applicable organic analyses. Additional quality control analyses reported herein include: Laboratory Duplicate (DUP), Matrix Spike (MS), Matrix/Duplicate Matrix Spike (MS/DMS), Laboratory Control Sample (LCS), and Laboratory/Duplicate Laboratory Control Sample (LCS/DLCS).

Sample Receipt

Two water samples were received for analysis at ALS Environmental between 03/09/15 and 03/10/15. The samples were received in good condition and consistent with the accompanying chain of custody form, except where noted on the cooler receipt and preservation form included in this report. The samples were stored in a refrigerator at 4ºC upon receipt at the laboratory.

General Chemistry Parameters

Chloride by EPA Method 300.0:
The matrix spike recoveries for sample Batch QC were outside control criteria because of suspected matrix interference. Recovery in the Laboratory Control Sample (LCS) was acceptable, which indicated the analytical batch was in control. No further corrective action was taken.

No other anomalies associated with the analysis of these samples were observed.

Total Metals

No anomalies associated with the analysis of these samples were observed.

EDB and DBCP by EPA Method 504.1

No anomalies associated with the analysis of these samples were observed.

Pesticides and Polychlorinated Biphenyls by EPA Method 508.1

Matrix Spike Recovery Exceptions:
The duplicate matrix spike recovery of Endrin for sample Batch QC was outside control criteria. Recovery in the Laboratory Control Sample (LCS) and Matrix Spike was acceptable, which indicated the analytical batch was in control. The matrix spike outlier suggested a potential low bias in this matrix. No further corrective action was appropriate.

No other anomalies associated with the analysis of these samples were observed.

Approved by_____

Chlorinated Acids by EPA Method 515.4

Second Source Exceptions:
The analysis of Chlorinated Herbicides in Drinking Water by EPA 515.4 requires the use of dual column confirmation. The Initial Calibration Verification (ICV) evaluation criteria were not met on the confirmation column for 2,4,5-TP (Silvex) in CAL13913. The ICV criteria were met on the alternate column. The data quality was not affected. No further corrective action was necessary.

Calibration Verification Exceptions:
The analysis of Chlorinated Herbicides in Drinking Water by EPA 515.4 requires the use of dual column confirmation. When the Continuing Calibration Verification (CCV) criterion is met for both columns, the lower of the two sample results is generally reported. The primary evaluation criteria were not met on the confirmation column for Dichloroprop, 2,4-Dichlorophenylacetic Acid, and 2,4-D for CCV 03230032. The results were reported from the column with an acceptable CCV. The data quality was not affected. No further corrective action was necessary.

The analysis of Chlorinated Herbicides in Drinking Water by EPA 515.4 requires the use of dual column confirmation. When the Continuing Calibration Verification (CCV) criterion is met for both columns, the lower of the two sample results is generally reported. The primary evaluation criteria were not met on the confirmation column for Dichloroprop, and 2,4-D for CCV 03230045. The results were reported from the column with an acceptable CCV. The data quality was not affected. No further corrective action was necessary.

No other anomalies associated with the analysis of these samples were observed.

Volatile Organic Compounds by EPA Method 524.2

No anomalies associated with the analysis of these samples were observed.

Semivolatile Organic Compounds by EPA Method 525.2

Lab Control Sample Exceptions:
The upper control criterion was exceeded for Hexachlorocyclopentadiene in Laboratory Control Sample (LCS) KWG1502393-3. The analyte in question was not detected in the associated field samples. The error associated with elevated recovery indicated a high bias. The sample data was not significantly affected. No further corrective action was appropriate.

Matrix Spike Recovery Exceptions:
The matrix spike recovery of Bis(2-ethylhexyl) Phthalate for sample Batch QC was outside control criteria. Recovery in the Laboratory Control Sample (LCS) was acceptable, which indicated the analytical batch was in control. The matrix spike outlier suggested a potential low bias in this matrix. No further corrective action was appropriate.

The upper control criterion was exceeded for the following analyte in Matrix Spike (MS) KWG1502393-1 and Matrix Spike Duplicate (MSD) KWG1502393-2: Hexachlorocyclopentadiene. The analyte in question was not detected in the associated field samples. The error associated with elevated recovery indicated a high bias. The sample data was not significantly affected. No further corrective action was appropriate.

No other anomalies associated with the analysis of these samples were observed.

Endothall by EPA Method 548.1

No anomalies associated with the analysis of these samples were observed.

Approved by____ _____ ___ _____

Diquat by High Performance Liquid Chromatography

Matrix Spike Recovery Exceptions:
The matrix spike recovery of Diquat for samples KWG1502015-1, and KWG1502015-2 was outside control criteria because of matrix interference. The chromatogram indicated the presence of non-target background components that prevented adequate resolution of the target analyte. As a result, accurate quantitation was not possible. No further corrective action was required.

No other anomalies associated with the analysis of these samples were observed.

Chlorinated Phenols by EPA Method 1653
No anomalies associated with the analysis of these samples were observed.

Glyphosate and Carbamates

These analyses were performed at ALS Environmental, Middletown, PA. The data for these analyses are included in the corresponding section of this report.

Sulfur

This analysis was performed at ALS Environmental, Simi Valley, CA. The data for this analysis is included in the corresponding section of this report.

Approved by_____ _____

Chain of Custody

ALS Environmental—Kelso Laboratory
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Phone (360)577-7222 Fax (360)636-1068
www.alsglobal.com

ALS Environmental

CHAIN OF CUSTODY

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001, 005

SR# N130287

COC Set_____of_____

COC#_____

1317 South 13th Ave, Kelso, WA 98626 Phone (360) 577-7222 / 800-695-7222 / FAX (360) 636-1068
www.alsglobal.com

Project Name: Sentinel Wells
Project Number:
Project Manager: Jeff Coleman
Company: City of Longview
Address: PO Box 128 Longview WA 98632
Phone #:
email:
Sampler Signature: T Daly
Sampler Printed Name: T Daly

CLIENT SAMPLE ID	LABID	SAMPLING Date	SAMPLING Time	Matrix	NUMBER OF CONTAINERS	6H: SM 9223 B / Coli L (+/-)	48H: 180.1 / Turbidity	48H: 300.0 / NO2	48H: 300.0 / NO3	48H: SM 2120 B / Color	48H: SM 4500-P E / O Phos	7D: 548.1 / ENDO	7D: 549.2 / DIQ_PARAQ	7D: SM 2540 C / TDS	14D: 335.4 / CN T	14D: 504.1 / EDB DBCP 123TCP	14D: 508.1 / PEST_CL	14D: 515.4 / CL_ACID_HERB	14D: 524.2 / VOC	14D: 525.2 / SVO	14D: 547 / GLYPH	14D: SM 2320 B / Alkalinity Titr	14D: Sulfur Liq / Sulfur	28D: 300.0 / Br	28D: 300.0 / F	28D: 314.0 / ClO4	28D: 531.1 / CARBAM	28D: SM 4500-NH3 G / Ammonia	Remarks
1. DW-1		3/9/15	1200		28																								
2.																													
3.																													
4.																													
5.																													
6.																													
7.																													
8.																													
9.																													
10.																													

Report Requirements

___ I. Routine Report: Method Blank, Surrogate, as required

___ II. Report Dup., MS, MSD as required

___ III. CLP Like Summary (no raw data)

___ IV. Data Validation Report

___ V. EDD

Invoice Information

P.O.# 36-4550

Bill To: City of Longview
PO Box 128
Longview WA 98632

Turnaround Requirements

____ 24 hr. ____48 hr.
____ 5 Day
____ Standard

Requested Report Date

Circle which metals are to be analyzed

Total Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

Dissolved Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

Special Instructions/Comments:

*Indicate State Hydrocarbon Procedure: AK CA WI Northwest Other_____(Circle One)

Relinquished By:	Received By:	Relinquished By:	Received By:	Relinquished By:	Received By:
Signature: T Daly	Signature: [illegible]	Signature	Signature	Signature	Signature
Printed Name: Cole	Printed Name: ALS	Printed Name	Printed Name	Printed Name	Printed Name
Firm: 3/9/15 1507	Firm: 3/9/15 1510	Firm	Firm	Firm	Firm
Date/Time	Date/Time	Date/Time	Date/Time	Date/Time	Date/Time

ALS Environmental

CHAIN OF CUSTODY

57723

001, 005

SR# K1502369

COC Set_____of_____

COC#_____

1317 South 13th Ave, Kelso, WA 98626 Phone (360) 577-7222 / 800-695-7222 / FAX (360) 636-1068
www.alsglobal.com

Project Name: Sentinel Wells
Project Number:
Project Manager: Jeff Coleman
Company: City of Longview
Address: PO Box 128 Longview WA 98632
Phone #:
email:
Sampler Signature: T Daly
Sampler Printed Name: T Daly

CLIENT SAMPLE ID	LABID	SAMPLING Date	SAMPLING Time	Matrix	NUMBER OF CONTAINERS	28D: 245.1 / Hg T	28D: 300.0 / Chloride	28D: 300.0 / SO4	28D: SM 2510 B / Conductivity	30D: 1653A / CHLOR_PHEN	180D: 1630 / Methyl Hg T	180D: 200.7 / Metals T	180D: 200.8 / Metals T	999D: Calculation / NO2 NO3 Calc	999D: SM 2340 B / Hardness Calc	1	2	3	4	5	Remarks
1. DW-1		3/9/15	1200		28																
2.																					
3.																					
4.																					
5.																					
6.																					
7.																					
8.																					
9.																					
10.																					

Report Requirements

___ I. Routine Report: Method Blank, Surrogate, as required

___ II. Report Dup., MS, MSD as required

___ III. CLP Like Summary (no raw data)

___ IV. Data Validation Report

___ V. EDD

Invoice Information

P.O.# 360-4530

Bill To: City of Longview
PO Box 128
Longview WA 98632

Turnaround Requirements

___ 24 hr. ___ 48 hr.
___ 5 Day
___ Standard

Requested Report Date

Circle which metals are to be analyzed

Total Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

Dissolved Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

Special Instructions/Comments:

*Indicate State Hydrocarbon Procedure: AK CA WI Northwest Other_____(Circle One)

Relinquished By:	Received By:	Relinquished By:	Received By:	Relinquished By:	Received By:
Signature: T Daly	Signature: [illegible]	Signature	Signature	Signature	Signature
Printed Name: Daly	Printed Name: [illegible]	Printed Name	Printed Name	Printed Name	Printed Name
Firm: Cal 2	Firm: ALS	Firm	Firm	Firm	Firm
Date/Time: 3/9/15 1507	Date/Time: 3/9/15 1510	Date/Time	Date/Time	Date/Time	Date/Time

PC CV

Cooler Receipt and Preservation Form

Client / Project: City of LV Service Request *K15* 02369

Received: 3/9/15 Opened: 3/9/15 By: TD Unloaded: 3/9/15 By: TD

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

   If present, were custody seals intact? Y N If present, were they signed and dated? Y N

Raw Cooler Temp	Corrected. Cooler Temp	Raw Temp Blank	Corrected Temp Blank	Corr. Factor	Thermometer ID	Cooler/COC ID NA	Tracking Number NA	Filed
5.0	5.1	11.8	11.9	+0.1	355			
3.0	2.8	8.9	8.7	-0.2	336			
0.4	0.3	5.2	5.1	-0.1	298			
2.4	2.5	7.7	7.8	+0.1	360			

4. Packing material: *Inserts* *Baggies* *Bubble Wrap* *Gel Packs* *Wet Ice* *Dry Ice* *Sleeves* _____
5. Were custody papers properly filled out (ink, signed, etc.)? NA Y N
6. Did all bottles arrive in good condition (unbroken)? *Indicate in the table below.* 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.* NA Y N
9. 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

SHORT HOLD TIME

Notes, Discrepancies, & Resolutions: _____

Page ____ *of* ____

PC CV

Cooler Receipt and Preservation Form

Client / Project: City of LV Service Request *K15* 04569

Received: 3/9/15 Opened: 3/9/15 By: [illegible] Unloaded: 3/9/15 By: [illegible]

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

   If present, were custody seals intact? Y N If present, were they signed and dated? Y N

Raw Cooler Temp	Corrected. Cooler Temp	Raw Temp Blank	Corrected Temp Blank	Corr. Factor	Thermometer ID	Cooler/COC ID NA	Tracking Number NA	Filed
3.1	3.1			0	353			
5.3	5.3	5.6	5.6	0	322			
5.2	5.3	5.4	5.5	+0.1	361			
10.9	10.8	13.1	13.0	-0.1	351			
6.8	6.8	5.2	5.2	0	356			

4. Packing material: *Inserts* *Baggies* *Bubble Wrap* *Gel Packs* *Wet Ice* *Dry Ice* *Sleeves* _____
5. Were custody papers properly filled out (ink, signed, etc.)? NA Y N
6. Did all bottles arrive in good condition (unbroken)? *Indicate in the table below.* 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.* NA Y N
9. 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: _____

Page ____ *of* ____

General Chemistry

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

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client:	Longview, City of	**Service Request:**	K1502369
Project:	Sentinel Wells	**Date Collected:**	03/9/15
Sample Matrix:	Drinking Water	**Date Received:**	03/9/15
Analysis Method:	180.1	**Units:**	NTU
Prep Method:	None	**Basis:**	NA

Turbidity

Sample Name	Lab Code	Result	MRL	Dil.	Date Analyzed	Q
DW-1	K1502369-001	**8.75**	0.20	1	03/10/15 14:08	
Method Blank	K1502369-MB1	ND U	0.20	1	03/10/15 14:08	

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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502369
Project	Sentinel Wells	**Date Collected:**	NA
Sample Matrix:	Drinking Water	**Date Received:**	NA
		Date Analyzed:	03/10/15

Replicate Sample Summary
General Chemistry Parameters

Sample Name:	Batch QC	**Units:**	NTU
Lab Code:	K1502365-001	**Basis:**	NA

Analyte Name	Analysis Method	MRL	Sample Result	Duplicate Sample K1502365-001DUP1 Result	Average	RPD	RPD Limit
Turbidity	180.1	0.20	4.56	4.64	4.60	2	20

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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502369
Project:	Sentinel Wells	**Date Analyzed:**	03/10/15
Sample Matrix:	Drinking Water	**Date Extracted:**	NA

Lab Control Sample Summary
Turbidity

Analysis Method:	180.1	**Units:**	NTU
Prep Method:	None	**Basis:**	NA
		Analysis Lot:	435823

Sample Name	Lab Code	Result	Spike Amount	% Rec	% Rec Limits
Lab Control Sample	K1502369-LCS1	6.29	6.37	99	90-110

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Analytical Report

Client:	Longview, City of	**Service Request:**	K1502369
Project:	Sentinel Wells	**Date Collected:**	03/9/15
Sample Matrix:	Drinking Water	**Date Received:**	03/9/15
Analysis Method:	300.0	**Units:**	mg/L
Prep Method:	Method	**Basis:**	NA

Bromide

Sample Name	Lab Code	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
DW-1	K1502369-001	ND U	0.20	2	03/10/15 11:24	3/10/15	
Method Blank	K1502369-MB1	ND U	0.10	1	03/10/15 09:39	3/10/15	

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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502369
Project	Sentinel Wells	**Date Collected:**	NA
Sample Matrix:	Drinking Water	**Date Received:**	NA
		Date Analyzed:	03/10/15

Replicate Sample Summary
General Chemistry Parameters

Sample Name:	Batch QC	**Units:**	mg/L
Lab Code:	KQ1502285-03	**Basis:**	NA

Analyte Name	Analysis Method	MRL	Sample Result	Duplicate Sample KQ1502285-03DUP Result	Average	RPD	RPD Limit
Bromide	300.0	0.20	ND U	ND U	NC	NC	20

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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502369
Project:	Sentinel Wells	**Date Collected:**	N/A
Sample Matrix:	Drinking Water	**Date Received:**	N/A
		Date Analyzed:	03/10/15
		Date Extracted:	03/10/15

Duplicate Matrix Spike Summary
Bromide

Sample Name:	Batch QC	**Units:**	mg/L
Lab Code:	KQ1502285-03	**Basis:**	NA
Analysis Method:	300.0		
Prep Method:	Method		

		Matrix Spike KQ1502285-03MS			Duplicate Matrix Spike KQ1502285-03DMS					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Bromide	ND U	9.44	10.0	94	9.58	10.0	96	90-110	2	20

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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502369
Project:	Sentinel Wells	**Date Analyzed:**	03/10/15
Sample Matrix:	Drinking Water	**Date Extracted:**	03/10/15

Lab Control Sample Summary
Bromide

Analysis Method:	300.0	**Units:**	mg/L
Prep Method:	Method	**Basis:**	NA
		Analysis Lot:	435845

Sample Name	Lab Code	Result	Spike Amount	% Rec	% Rec Limits
Lab Control Sample	K1502369-LCS1	2.30	2.50	92	90-110

ALS Group USA, Corp.
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Analytical Report

Client:	Longview, City of	**Service Request:**	K1502369
Project:	Sentinel Wells	**Date Collected:**	03/9/15
Sample Matrix:	Drinking Water	**Date Received:**	03/9/15
Analysis Method:	300.0	**Units:**	mg/L
Prep Method:	Method	**Basis:**	NA

Chloride

Sample Name	Lab Code	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
DW-1	K1502369-001	**4.87**	0.40	2	03/10/15 11:24	3/10/15	
Method Blank	K1502369-MB1	ND U	0.20	1	03/10/15 09:39	3/10/15	

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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502369
Project	Sentinel Wells	**Date Collected:**	NA
Sample Matrix:	Drinking Water	**Date Received:**	NA
		Date Analyzed:	03/10/15

Replicate Sample Summary
General Chemistry Parameters

Sample Name:	Batch QC	**Units:**	mg/L
Lab Code:	KQ1502285-03	**Basis:**	NA

Analyte Name	Analysis Method	MRL	Sample Result	Duplicate Sample KQ1502285-03DUP Result	Average	RPD	RPD Limit
Chloride	300.0	0.40	13.5	13.6	13.5	<1	20

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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502369
Project:	Sentinel Wells	**Date Collected:**	N/A
Sample Matrix:	Drinking Water	**Date Received:**	N/A
		Date Analyzed:	03/10/15
		Date Extracted:	03/10/15

Duplicate Matrix Spike Summary
Chloride

Sample Name:	Batch QC	**Units:**	mg/L
Lab Code:	KQ1502285-03	**Basis:**	NA
Analysis Method:	300.0		
Prep Method:	Method		

		Matrix Spike KQ1502285-03MS			**Duplicate Matrix Spike** KQ1502285-03DMS					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Chloride	13.5	22.3	10.0	88 *	22.2	10.0	87 *	90-110	<1	20

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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502369
Project:	Sentinel Wells	**Date Analyzed:**	03/10/15
Sample Matrix:	Drinking Water	**Date Extracted:**	03/10/15

Lab Control Sample Summary
Chloride

Analysis Method:	300.0	**Units:**	mg/L
Prep Method:	Method	**Basis:**	NA
		Analysis Lot:	435845

Sample Name	Lab Code	Result	Spike Amount	% Rec	% Rec Limits
Lab Control Sample	K1502369-LCS1	4.72	5.00	94	90-110

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Analytical Report

Client:	Longview, City of	**Service Request:**	K1502369
Project:	Sentinel Wells	**Date Collected:**	03/9/15
Sample Matrix:	Drinking Water	**Date Received:**	03/9/15
Analysis Method:	300.0	**Units:**	mg/L
Prep Method:	Method	**Basis:**	NA

Fluoride

Sample Name	Lab Code	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
DW-1	K1502369-001	ND U	0.20	2	03/10/15 11:24	3/10/15	
Method Blank	K1502369-MB1	ND U	0.10	1	03/10/15 09:39	3/10/15	

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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502369
Project	Sentinel Wells	**Date Collected:**	NA
Sample Matrix:	Drinking Water	**Date Received:**	NA
		Date Analyzed:	03/10/15

Replicate Sample Summary
General Chemistry Parameters

Sample Name:	Batch QC	**Units:**	mg/L
Lab Code:	KQ1502285-03	**Basis:**	NA

Analyte Name	Analysis Method	MRL	Sample Result	Duplicate Sample KQ1502285-03DUP Result	Average	RPD	RPD Limit
Fluoride	300.0	0.20	0.22	ND U	NC	NC	20

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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502369
Project:	Sentinel Wells	**Date Collected:**	N/A
Sample Matrix:	Drinking Water	**Date Received:**	N/A
		Date Analyzed:	03/10/15
		Date Extracted:	03/10/15

Duplicate Matrix Spike Summary
Fluoride

Sample Name:	Batch QC	**Units:**	mg/L
Lab Code:	KQ1502285-03	**Basis:**	NA
Analysis Method:	300.0		
Prep Method:	Method		

		Matrix Spike KQ1502285-03MS			**Duplicate Matrix Spike** KQ1502285-03DMS					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Fluoride	0.22	10.0	10.0	98	10.2	10.0	100	90-110	1	20

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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502369
Project:	Sentinel Wells	**Date Analyzed:**	03/10/15
Sample Matrix:	Drinking Water	**Date Extracted:**	03/10/15

Lab Control Sample Summary
Fluoride

Analysis Method:	300.0	**Units:**	mg/L
Prep Method:	Method	**Basis:**	NA
		Analysis Lot:	435845

Sample Name	Lab Code	Result	Spike Amount	% Rec	% Rec Limits
Lab Control Sample	K1502369-LCS1	5.12	5.00	102	90-110

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Analytical Report

Client:	Longview, City of	**Service Request:**	K1502369
Project:	Sentinel Wells	**Date Collected:**	03/9/15
Sample Matrix:	Drinking Water	**Date Received:**	03/9/15
Analysis Method:	300.0	**Units:**	mg/L
Prep Method:	Method	**Basis:**	NA

Nitrite as Nitrogen

Sample Name	Lab Code	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
DW-1	K1502369-001	ND U	0.10	2	03/10/15 11:24	3/10/15	
Method Blank	K1502369-MB1	ND U	0.050	1	03/10/15 09:39	3/10/15	

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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502369
Project	Sentinel Wells	**Date Collected:**	NA
Sample Matrix:	Drinking Water	**Date Received:**	NA
		Date Analyzed:	03/10/15

Replicate Sample Summary
General Chemistry Parameters

Sample Name:	Batch QC	**Units:**	mg/L
Lab Code:	KQ1502284-03	**Basis:**	NA

Analyte Name	Analysis Method	MRL	Sample Result	Duplicate Sample KQ1502284-03DUP Result	Average	RPD	RPD Limit
Nitrite as Nitrogen	300.0	0.10	ND U	ND U	NC	NC	20

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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502369
Project:	Sentinel Wells	**Date Collected:**	N/A
Sample Matrix:	Drinking Water	**Date Received:**	N/A
		Date Analyzed:	03/10/15
		Date Extracted:	03/10/15

Duplicate Matrix Spike Summary
Nitrite as Nitrogen

Sample Name:	Batch QC	**Units:**	mg/L
Lab Code:	KQ1502284-03	**Basis:**	NA
Analysis Method:	300.0		
Prep Method:	Method		

		Matrix Spike KQ1502284-03MS			Duplicate Matrix Spike KQ1502284-03DMS					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Nitrite as Nitrogen	ND U	10.1	10.0	101	10.2	10.0	102	90-110	<1	20

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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502369
Project:	Sentinel Wells	**Date Analyzed:**	03/10/15
Sample Matrix:	Drinking Water	**Date Extracted:**	03/10/15

Lab Control Sample Summary
Nitrite as Nitrogen

Analysis Method:	300.0	**Units:**	mg/L
Prep Method:	Method	**Basis:**	NA
		Analysis Lot:	435845

Sample Name	Lab Code	Result	Spike Amount	% Rec	% Rec Limits
Lab Control Sample	K1502369-LCS1	2.42	2.50	97	90-110

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Analytical Report

Client:	Longview, City of	**Service Request:**	K1502369
Project:	Sentinel Wells	**Date Collected:**	03/9/15
Sample Matrix:	Drinking Water	**Date Received:**	03/9/15
Analysis Method:	300.0	**Units:**	mg/L
Prep Method:	Method	**Basis:**	NA

Nitrate as Nitrogen

Sample Name	Lab Code	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
DW-1	K1502369-001	ND U	0.10	2	03/10/15 11:24	3/10/15	
Method Blank	K1502369-MB1	ND U	0.050	1	03/10/15 09:39	3/10/15	

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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502369
Project	Sentinel Wells	**Date Collected:**	NA
Sample Matrix:	Drinking Water	**Date Received:**	NA
		Date Analyzed:	03/10/15

Replicate Sample Summary
General Chemistry Parameters

Sample Name:	Batch QC	**Units:**	mg/L
Lab Code:	KQ1502284-03	**Basis:**	NA

Analyte Name	Analysis Method	MRL	Sample Result	Duplicate Sample KQ1502284-03DUP Result	Average	RPD	RPD Limit
Nitrate as Nitrogen	300.0	0.10	ND U	ND U	NC	NC	20

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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502369
Project:	Sentinel Wells	**Date Collected:**	N/A
Sample Matrix:	Drinking Water	**Date Received:**	N/A
		Date Analyzed:	03/10/15
		Date Extracted:	03/10/15

Duplicate Matrix Spike Summary
Nitrate as Nitrogen

Sample Name:	Batch QC	**Units:**	mg/L
Lab Code:	KQ1502284-03	**Basis:**	NA
Analysis Method:	300.0		
Prep Method:	Method		

		Matrix Spike KQ1502284-03MS				Duplicate Matrix Spike KQ1502284-03DMS					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Nitrate as Nitrogen	ND U	9.16	10.0	92	9.32	10.0	93	90-110	2	20

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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502369
Project:	Sentinel Wells	**Date Analyzed:**	03/10/15
Sample Matrix:	Drinking Water	**Date Extracted:**	03/10/15

Lab Control Sample Summary
Nitrate as Nitrogen

Analysis Method:	300.0	**Units:**	mg/L
Prep Method:	Method	**Basis:**	NA
		Analysis Lot:	435845

Sample Name	Lab Code	Result	Spike Amount	% Rec	% Rec Limits
Lab Control Sample	K1502369-LCS1	2.33	2.50	93	90-110

ALS Group USA, Corp.
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Analytical Report

Client:	Longview, City of	**Service Request:**	K1502369
Project:	Sentinel Wells	**Date Collected:**	03/9/15
Sample Matrix:	Drinking Water	**Date Received:**	03/9/15
Analysis Method:	300.0	**Units:**	mg/L
Prep Method:	Method	**Basis:**	NA

Sulfate

Sample Name	Lab Code	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
DW-1	K1502369-001	**2.39**	0.20	2	03/10/15 11:24	3/10/15	
Method Blank	K1502369-MB1	ND U	0.10	1	03/10/15 09:39	3/10/15	

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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502369
Project	Sentinel Wells	**Date Collected:**	NA
Sample Matrix:	Drinking Water	**Date Received:**	NA
		Date Analyzed:	03/10/15

Replicate Sample Summary
General Chemistry Parameters

Sample Name:	Batch QC	**Units:**	mg/L
Lab Code:	KQ1502285-03	**Basis:**	NA

Analyte Name	Analysis Method	MRL	Sample Result	Duplicate Sample KQ1502285-03DUP Result	Average	RPD	RPD Limit
Sulfate	300.0	0.20	2.76	2.75	2.75	<1	20

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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502369
Project:	Sentinel Wells	**Date Collected:**	N/A
Sample Matrix:	Drinking Water	**Date Received:**	N/A
		Date Analyzed:	03/10/15
		Date Extracted:	03/10/15

Duplicate Matrix Spike Summary
Sulfate

Sample Name:	Batch QC	**Units:**	mg/L
Lab Code:	KQ1502285-03	**Basis:**	NA
Analysis Method:	300.0		
Prep Method:	Method		

		Matrix Spike KQ1502285-03MS			Duplicate Matrix Spike KQ1502285-03DMS					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Sulfate	2.76	12.0	10.0	92	12.0	10.0	93	90-110	<1	20

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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502369
Project:	Sentinel Wells	**Date Analyzed:**	03/10/15
Sample Matrix:	Drinking Water	**Date Extracted:**	03/10/15

Lab Control Sample Summary
Sulfate

Analysis Method:	300.0	**Units:**	mg/L
Prep Method:	Method	**Basis:**	NA
		Analysis Lot:	435845

Sample Name	Lab Code	Result	Spike Amount	% Rec	% Rec Limits
Lab Control Sample	K1502369-LCS1	4.87	5.00	97	90-110

ALS Group USA, Corp.
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Analytical Report

Client:	Longview, City of	**Service Request:**	K1502369
Project:	Sentinel Wells	**Date Collected:**	03/9/15
Sample Matrix:	Drinking Water	**Date Received:**	03/9/15
Analysis Method:	314.0	**Units:**	ug/L
Prep Method:	None	**Basis:**	NA

Perchlorate

Sample Name	Lab Code	Result	MRL	Dil.	Date Analyzed	Q
DW-1	K1502369-001	ND U	1.0	1	03/31/15 13:14	
Method Blank	K1502369-MB1	ND U	1.0	1	03/31/15 11:44	

ALS Group USA, Corp.
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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502369
Project	Sentinel Wells	**Date Collected:**	NA
Sample Matrix:	Drinking Water	**Date Received:**	NA
		Date Analyzed:	03/31/15

Replicate Sample Summary
General Chemistry Parameters

Sample Name:	Batch QC	**Units:**	ug/L
Lab Code:	K1502415-001	**Basis:**	NA

Analyte Name	Analysis Method	MRL	Sample Result	Duplicate Sample K1502415-001DUP Result	Average	RPD	RPD Limit
Perchlorate	314.0	1.0	ND U	ND U	NC	NC	20

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dba ALS Environmental

QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502369
Project:	Sentinel Wells	**Date Collected:**	N/A
Sample Matrix:	Drinking Water	**Date Received:**	N/A
		Date Analyzed:	03/31/15
		Date Extracted:	NA

Duplicate Matrix Spike Summary
Perchlorate

Sample Name:	Batch QC	**Units:**	ug/L
Lab Code:	K1502415-001	**Basis:**	NA
Analysis Method:	314.0		
Prep Method:	None		

		Matrix Spike K1502415-001MS			Duplicate Matrix Spike K1502415-001DMS					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Perchlorate	ND U	10.7	10.0	107	9.7	10.0	97	80-120	10	20

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ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502369
Project:	Sentinel Wells	**Date Analyzed:**	03/31/15
Sample Matrix:	Drinking Water	**Date Extracted:**	NA

Lab Control Sample Summary
Perchlorate

Analysis Method:	314.0	**Units:**	ug/L
Prep Method:	None	**Basis:**	NA
		Analysis Lot:	438526

Sample Name	Lab Code	Result	Spike Amount	% Rec	% Rec Limits
Lab Control Sample	K1502369-LCS1	15.4	16.8	92	85-115

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client:	Longview, City of	**Service Request:**	K1502369
Project:	Sentinel Wells	**Date Collected:**	03/9/15
Sample Matrix:	Drinking Water	**Date Received:**	03/9/15
Analysis Method:	335.4	**Units:**	mg/L
Prep Method:	Method	**Basis:**	NA

Cyanide, Total

Sample Name	Lab Code	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
DW-1	K1502369-001	ND U	0.010	1	03/11/15 10:44	3/11/15	
Method Blank	K1502369-MB1	ND U	0.010	1	03/11/15 10:44	3/11/15	

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502369
Project	Sentinel Wells	**Date Collected:**	NA
Sample Matrix:	Drinking Water	**Date Received:**	NA
		Date Analyzed:	03/11/15

Replicate Sample Summary
General Chemistry Parameters

Sample Name:	Batch QC	**Units:**	mg/L
Lab Code:	K1502415-001	**Basis:**	NA

Analyte Name	Analysis Method	MRL	Sample Result	Duplicate Sample K1502415-001DUP Result	Average	RPD	RPD Limit
Cyanide, Total	335.4	0.010	ND U	ND U	NC	NC	20

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Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502369
Project:	Sentinel Wells	**Date Collected:**	N/A
Sample Matrix:	Drinking Water	**Date Received:**	N/A
		Date Analyzed:	03/11/15
		Date Extracted:	03/11/15

Duplicate Matrix Spike Summary
Cyanide, Total

Sample Name:	Batch QC	**Units:**	mg/L
Lab Code:	K1502415-001	**Basis:**	NA
Analysis Method:	335.4		
Prep Method:	Method		

		Matrix Spike K1502415-001MS			Duplicate Matrix Spike K1502415-001DMS					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Cyanide, Total	ND U	0.095	0.100	94	0.104	0.100	104	90-110	9	20

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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502369
Project:	Sentinel Wells	**Date Analyzed:**	03/11/15
Sample Matrix:	Drinking Water	**Date Extracted:**	03/11/15

Lab Control Sample Summary
Cyanide, Total

Analysis Method:	335.4	**Units:**	mg/L
Prep Method:	Method	**Basis:**	NA
		Analysis Lot:	436013

Sample Name	Lab Code	Result	Spike Amount	% Rec	% Rec Limits
Lab Control Sample	K1502369-LCS1	0.147	0.150	98	90-110

ALS Group USA, Corp.
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Analytical Report

Client:	Longview, City of	**Service Request:**	K1502369
Project:	Sentinel Wells	**Date Collected:**	03/9/15
Sample Matrix:	Drinking Water	**Date Received:**	03/9/15
Analysis Method:	Calculation	**Units:**	mg/L
Prep Method:	None	**Basis:**	NA

Nitrate+Nitrite as Nitrogen

Sample Name	Lab Code	Result	MRL	Dil.	Date Analyzed	Q
DW-1	K1502369-001	ND U	0.20	1	03/10/15 11:24	

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Analytical Report

Client:	Longview, City of	**Service Request:**	K1502369
Project:	Sentinel Wells	**Date Collected:**	03/9/15
Sample Matrix:	Drinking Water	**Date Received:**	03/9/15
Analysis Method:	SM 2120 B	**Units:**	ColorUnits
Prep Method:	None	**Basis:**	NA

Color

Sample Name	Lab Code	Result	MRL	Dil.	Date Analyzed	Q
DW-1	K1502369-001	**30.0**	5.0	1	03/10/15 09:39	
Method Blank	K1502369-MB1	ND U	5.0	1	03/10/15 09:30	

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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502369
Project	Sentinel Wells	**Date Collected:**	NA
Sample Matrix:	Drinking Water	**Date Received:**	NA
Analysis Method:	SM 2120 B	**Units:**	ColorUnits
Prep Method:	None	**Basis:**	NA

Replicate Sample Summary
Color

Sample Name:	Lab Code:	MRL	Sample Result	Duplicate Result	Average	RPD	RPD Limit	Date Analyzed
Batch QC	K1502365-001DUP1	5.0	30.0	30.0	30.0	<1	20	03/10/15
Batch QC	K1502365-001DUP2	5.0	30.0	30.0	30.0	<1	20	03/10/15

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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502369
Project:	Sentinel Wells	**Date Analyzed:**	03/10/15
Sample Matrix:	Drinking Water	**Date Extracted:**	NA

Lab Control Sample Summary
Color

Analysis Method:	SM 2120 B	**Units:**	ColorUnits
Prep Method:	None	**Basis:**	NA
		Analysis Lot:	435586

Sample Name	Lab Code	Result	Spike Amount	% Rec	% Rec Limits
Lab Control Sample	K1502369-LCS1	50.0	50.0	100	85-115

ALS Group USA, Corp.
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Analytical Report

Client:	Longview, City of	**Service Request:**	K1502369
Project:	Sentinel Wells	**Date Collected:**	03/9/15
Sample Matrix:	Drinking Water	**Date Received:**	03/9/15
Analysis Method:	SM 2320 B	**Units:**	mg/L
Prep Method:	None	**Basis:**	NA

Alkalinity as CaCO3, Total

Sample Name	Lab Code	Result	MRL	Dil.	Date Analyzed	Q
DW-1	K1502369-001	**82.5**	2.0	1	03/14/15 14:15	
Method Blank	K1502369-MB1	ND U	2.0	1	03/14/15 14:15	

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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502369
Project	Sentinel Wells	**Date Collected:**	NA
Sample Matrix:	Drinking Water	**Date Received:**	NA
Analysis Method:	SM 2320 B	**Units:**	mg/L
Prep Method:	None	**Basis:**	NA

Replicate Sample Summary
Alkalinity as CaCO3, Total

Sample Name:	Lab Code:	MRL	Sample Result	Duplicate Result	Average	RPD	RPD Limit	Date Analyzed
Batch QC	K1502190-001DUP	2.0	66.0	66.0	66.0	<1	20	03/14/15
Batch QC	K1502416-001DUP	2.0	145	145	145	<1	20	03/14/15

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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502369
Project:	Sentinel Wells	**Date Analyzed:**	03/14/15
Sample Matrix:	Drinking Water	**Date Extracted:**	NA

Lab Control Sample Summary
Alkalinity as CaCO3, Total

Analysis Method:	SM 2320 B	**Units:**	mg/L
Prep Method:	None	**Basis:**	NA
		Analysis Lot:	436281

Sample Name	Lab Code	Result	Spike Amount	% Rec	% Rec Limits
Lab Control Sample	K1502369-LCS1	34.6	34.4	101	90-110

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Analytical Report

Client:	Longview, City of	**Service Request:**	K1502369
Project:	Sentinel Wells	**Date Collected:**	03/9/15
Sample Matrix:	Drinking Water	**Date Received:**	03/9/15
Analysis Method:	SM 2510 B	**Units:**	uMHOS/cm
Prep Method:	None	**Basis:**	NA

Conductivity at 25 Degrees Celsius

Sample Name	Lab Code	Result	MRL	Dil.	Date Analyzed	Q
DW-1	K1502369-001	**201**	2.0	1	03/17/15 09:23	
Method Blank	K1502369-MB1	ND U	2.0	1	03/17/15 09:23	
Method Blank	K1502369-MB2	ND U	2.0	1	03/17/15 09:23	

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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502369
Project	Sentinel Wells	**Date Collected:**	NA
Sample Matrix:	Drinking Water	**Date Received:**	NA
		Date Analyzed:	03/17/15

Replicate Sample Summary
General Chemistry Parameters

Sample Name:	Batch QC	**Units:**	uMHOS/cm
Lab Code:	K1502368-001	**Basis:**	NA

Analyte Name	Analysis Method	MRL	Sample Result	Duplicate Sample K1502368-001DUP Result	Average	RPD	RPD Limit
Conductivity at 25 Degrees Celsius	SM 2510 B	2.0	212	212	212	<1	20

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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502369
Project:	Sentinel Wells	**Date Analyzed:**	03/17/15
Sample Matrix:	Drinking Water	**Date Extracted:**	NA

Lab Control Sample Summary
Conductivity at 25 Degrees Celsius

Analysis Method:	SM 2510 B	**Units:**	uMHOS/cm
Prep Method:	None	**Basis:**	NA
		Analysis Lot:	436633

Sample Name	Lab Code	Result	Spike Amount	% Rec	% Rec Limits
Lab Control Sample	K1502369-LCS1	317	289	110	86-113

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Analytical Report

Client:	Longview, City of	**Service Request:**	K1502369
Project:	Sentinel Wells	**Date Collected:**	03/9/15
Sample Matrix:	Drinking Water	**Date Received:**	03/9/15
Analysis Method:	SM 2540 C	**Units:**	mg/L
Prep Method:	None	**Basis:**	NA

Solids, Total Dissolved

Sample Name	Lab Code	Result	MRL	Dil.	Date Analyzed	Q
DW-1	K1502369-001	**141**	10	1	03/11/15 13:02	
Method Blank	K1502369-MB1	ND U	5.0	1	03/11/15 13:02	
Method Blank	K1502369-MB2	ND U	5.0	1	03/11/15 13:02	

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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502369
Project	Sentinel Wells	**Date Collected:**	NA
Sample Matrix:	Drinking Water	**Date Received:**	NA
Analysis Method:	SM 2540 C	**Units:**	mg/L
Prep Method:	None	**Basis:**	NA

Replicate Sample Summary
Solids, Total Dissolved

Sample Name:	Lab Code:	MRL	Sample Result	Duplicate Result	Average	RPD	RPD Limit	Date Analyzed
Batch QC	K1502365-001DUP1	10	170	160	165	6	10	03/11/15
Batch QC	K1502415-001DUP	10	474	468	471	1	10	03/11/15

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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502369
Project:	Sentinel Wells	**Date Analyzed:**	03/11/15
Sample Matrix:	Drinking Water	**Date Extracted:**	NA

Lab Control Sample Summary
Solids, Total Dissolved

Analysis Method:	SM 2540 C	**Units:**	mg/L
Prep Method:	None	**Basis:**	NA
		Analysis Lot:	435923

Sample Name	Lab Code	Result	Spike Amount	% Rec	% Rec Limits
Lab Control Sample	K1502369-LCS1	1260	1300	97	85-115

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client:	Longview, City of	**Service Request:**	K1502369
Project:	Sentinel Wells	**Date Collected:**	03/9/15
Sample Matrix:	Drinking Water	**Date Received:**	03/9/15
Analysis Method:	SM 4500-NH3 G	**Units:**	mg/L
Prep Method:	Method	**Basis:**	NA

Ammonia as Nitrogen

Sample Name	Lab Code	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
DW-1	K1502369-001	**0.346**	0.050	1	03/10/15 11:47	3/10/15	
Method Blank	K1502369-MB1	ND U	0.050	1	03/10/15 11:47	3/10/15	

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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502369
Project	Sentinel Wells	**Date Collected:**	NA
Sample Matrix:	Drinking Water	**Date Received:**	NA
Analysis Method:	SM 4500-NH3 G	**Units:**	mg/L
Prep Method:	Method	**Basis:**	NA

Replicate Sample Summary
Ammonia as Nitrogen

Sample Name:	Lab Code:	MRL	Sample Result	Duplicate Result	Average	RPD	RPD Limit	Date Analyzed
Batch QC	K1502184-001DUP	0.050	0.050 J	0.055	0.0522	10	20	03/10/15
Batch QC	K1502326-001DUP	0.50	26.3	26.0	26.1	1	20	03/10/15

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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502369
Project:	Sentinel Wells	**Date Collected:**	N/A
Sample Matrix:	Drinking Water	**Date Received:**	N/A
		Date Analyzed:	03/10/15
		Date Extracted:	03/10/15

Duplicate Matrix Spike Summary
Ammonia as Nitrogen

Sample Name:	Batch QC	**Units:**	mg/L
Lab Code:	K1502184-001	**Basis:**	NA
Analysis Method:	SM 4500-NH3 G		
Prep Method:	Method		

		Matrix Spike K1502184-001MS			**Duplicate Matrix Spike** K1502184-001DMS					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Ammonia as Nitrogen	0.050 J	2.12	2.00	104	2.07	2.00	101	90-110	3	20

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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502369
Project:	Sentinel Wells	**Date Collected:**	N/A
Sample Matrix:	Drinking Water	**Date Received:**	N/A
		Date Analyzed:	03/10/15
		Date Extracted:	03/10/15

Duplicate Matrix Spike Summary
Ammonia as Nitrogen

Sample Name:	Batch QC	**Units:**	mg/L
Lab Code:	K1502326-001	**Basis:**	NA
Analysis Method:	SM 4500-NH3 G		
Prep Method:	Method		

		Matrix Spike K1502326-001MS			**Duplicate Matrix Spike** K1502326-001DMS					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Ammonia as Nitrogen	26.3	46.6	20.0	101	47.0	20.0	104	90-110	3	20

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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502369
Project:	Sentinel Wells	**Date Analyzed:**	03/10/15
Sample Matrix:	Drinking Water	**Date Extracted:**	03/10/15

Lab Control Sample Summary
Ammonia as Nitrogen

Analysis Method:	SM 4500-NH3 G	**Units:**	mg/L
Prep Method:	Method	**Basis:**	NA
		Analysis Lot:	435737

Sample Name	Lab Code	Result	Spike Amount	% Rec	% Rec Limits
Lab Control Sample	K1502369-LCS1	15.3	15.1	102	90-110

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Analytical Report

Client:	Longview, City of	**Service Request:**	K1502369
Project:	Sentinel Wells	**Date Collected:**	03/9/15
Sample Matrix:	Drinking Water	**Date Received:**	03/9/15
Analysis Method:	SM 4500-P E	**Units:**	mg/L
Prep Method:	None	**Basis:**	NA

Orthophosphate as Phosphorus

Sample Name	Lab Code	Result	MRL	Dil.	Date Analyzed	Q
DW-1	K1502369-001	**0.60**	0.25	5	03/10/15 15:18	
Method Blank	K1502369-MB1	ND U	0.050	1	03/10/15 15:18	

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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502369
Project	Sentinel Wells	**Date Collected:**	NA
Sample Matrix:	Drinking Water	**Date Received:**	NA
		Date Analyzed:	03/10/15

Replicate Sample Summary
General Chemistry Parameters

Sample Name:	Batch QC	**Units:**	mg/L
Lab Code:	K1502365-001	**Basis:**	NA

Analyte Name	Analysis Method	MRL	Sample Result	Duplicate Sample K1502365-001DUP1 Result	Average	RPD	RPD Limit
Orthophosphate as Phosphorus	SM 4500-P E	0.25	0.52	0.53	0.524	1	20

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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502369
Project:	Sentinel Wells	**Date Collected:**	N/A
Sample Matrix:	Drinking Water	**Date Received:**	N/A
		Date Analyzed:	03/10/15
		Date Extracted:	NA

Duplicate Matrix Spike Summary
Orthophosphate as Phosphorus

Sample Name:	Batch QC	**Units:**	mg/L
Lab Code:	K1502365-001	**Basis:**	NA
Analysis Method:	SM 4500-P E		
Prep Method:	None		

		Matrix Spike K1502365-001MS			**Duplicate Matrix Spike** K1502365-001DMS					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Orthophosphate as Phosphorus	0.52	0.98	0.40	115	1.01	0.40	121	75-125	5	20

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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502369
Project:	Sentinel Wells	**Date Analyzed:**	03/10/15
Sample Matrix:	Drinking Water	**Date Extracted:**	NA

Lab Control Sample Summary
Orthophosphate as Phosphorus

Analysis Method:	SM 4500-P E	**Units:**	mg/L
Prep Method:	None	**Basis:**	NA
		Analysis Lot:	435715

Sample Name	Lab Code	Result	Spike Amount	% Rec	% Rec Limits
Lab Control Sample	K1502369-LCS1	6.29	6.1	103	85-115
Lab Control Sample	K1502369-LCS2	6.31	6.1	104	85-115
Lab Control Sample	K1502369-LCS3	6.27	6.1	103	85-115
Lab Control Sample	K1502369-LCS4	6.36	6.1	105	85-115

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Analytical Report

Client:	Longview, City of	**Service Request:**	K1502369
Project:	Sentinel Wells	**Date Collected:**	3/9/2015
Sample Matrix:	Drinking water	**Date Received:**	3/9/2015

Colilert, E. Coli

Prep Method: NONE
Analysis Method: SM 9223B Basis: NA
Test Notes:

Sample Name	Lab Code	MRL	Date Analyzed	Time Test Started		Result	Result Notes
DW-1	K1502369-001	1	3/9/2015	17:19	hrs	Absent	

SM *Standard Methods for the Examination of Water and Wastewater* , 20th Ed., 1998.

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Analytical Report

Client:	Longview, City of	**Service Request:**	K1502369
Project:	Sentinel Wells	**Date Collected:**	3/9/2015
Sample Matrix:	Drinking water	**Date Received:**	3/9/2015

Colilert, T. Coli

Prep Method: NONE
Analysis Method: SM 9223B Basis: NA
Test Notes:

Sample Name	Lab Code	MRL	Date Analyzed	Time Test Started		Result	Result Notes
DW-1	K1502369-001	1	3/9/2015	17:19	hrs	Absent	

SM *Standard Methods for the Examination of Water and Wastewater* , 20th Ed., 1998.

Metals

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www.alsglobal.com

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client:	Longview, City of	**Service Request:**	K1502369
Project:	Sentinel Wells	**Date Collected:**	03/09/15
Sample Matrix:	Drinking water	**Date Received:**	03/09/15

Hardness as CaCO3

Prep Method:	CLAA	Units:	mg/L (ppm)
Analysis Method:	200.7/SM 2340B	Basis:	NA
Test Notes:			

Sample Name	Lab Code	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
DW-1	K1502369-001	0.07	1	03/13/15	03/16/15	71.3	
Method Blank	K1502369-MB	0.07	1	03/13/15	03/16/15	ND	

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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502369
Project:	Sentinel Wells	**Date Collected:**	NA
Sample Matrix:	Drinking water	**Date Received:**	NA
		Date Extracted:	03/13/15
		Date Analyzed:	03/16/15

Duplicate Summary
Metals

Sample Name:	Batch QC	Units:	mg/L (ppm)
Lab Code:	K1502330-001D	Basis:	NA
Test Notes:			

Analyte	Prep Method	Analysis Method	MRL	Sample Result	Duplicate Sample Result	Average	Relative Percent Difference	Result Notes
Hardness as CaCO3	CLAA	200.7/SM 2340B	0.07	99.8	101	100	1	

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dba ALS Environmental

Analytical Report

Client:	Longview, City of	**Service Request:**	K1502369
Project:	Sentinel Wells	**Date Collected:**	03/09/15
Sample Matrix:	Drinking water	**Date Received:**	03/09/15

Methyl Mercury

Prep Method:	Method	Units:	ng/L
Analysis Method:	1630	Basis:	NA
Test Notes:			

Sample Name	Lab Code	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
DW-1	K1502369-001	0.1	1	03/16/15	03/17/15	ND	
Method Blank 1	K1502369-MB1	0.1	1	03/16/15	03/17/15	ND	
Method Blank 2	K1502369-MB2	0.1	1	03/16/15	03/17/15	ND	
Method Blank 3	K1502369-MB3	0.1	1	03/16/15	03/17/15	ND	

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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502369
Project:	Sentinel Wells	**Date Collected:**	NA
Sample Matrix:	Drinking water	**Date Received:**	NA
		Date Extracted:	03/16/15
		Date Analyzed:	03/17/15

Matrix Spike/Duplicate Matrix Spike Summary
Metals

Sample Name:	Batch QC		Units:	ng/L
Lab Code:	K1502365-001MS,	K1502365-001MS	Basis:	NA
Test Notes:				

				Spike Level		Sample	Spike Result		Percent Recovery				
Analyte	**Prep Method**	**Analysis Method**	**MRL**	**MS**	**DMS**	**Result**	**MS**	**DMS**	**MS**	**DMS**	**CAS Acceptance Limits**	**Relative Percent Difference**	**Result Notes**
Mercury, Methyl	Method	1630	0.1	2.22	2.22	ND	2.50	2.43	113	109	65-135	3	

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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502369
Project:	Sentinel Wells	**Date Collected:**	NA
LCS Matrix:	Water	**Date Received:**	NA
		Date Extracted:	03/16/15
		Date Analyzed:	03/17/15

Ongoing Precision and Recovery (OPR) Sample Summary
Metals

Sample Name: Ongoing Precision and Recovery (Initial)

Units: ng/L
Basis: NA

Test Notes:

Analyte	Prep Method	Analysis Method	True Value	Result	Percent Recovery	CAS Percent Recovery Acceptance Limits	Result Notes
Mercury, Methyl	Method	1630	2.22	2.56	115	67-133	

ALS Group USA, Corp.
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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502369
Project:	Sentinel Wells	**Date Collected:**	NA
LCS Matrix:	Water	**Date Received:**	NA
		Date Extracted:	03/16/15
		Date Analyzed:	03/17/15

Ongoing Precision and Recovery (OPR) Sample Summary
Metals

Sample Name: Ongoing Precision and Recovery (Final)

Units: ng/L
Basis: NA

Test Notes:

Analyte	Prep Method	Analysis Method	True Value	Result	Percent Recovery	CAS Percent Recovery Acceptance Limits	Result Notes
Mercury, Methyl	Method	1630	2.22	2.19	99	67-133	

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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502369
Project:	Sentinel Wells	**Date Collected:**	NA
LCS Matrix:	Water	**Date Received:**	NA
		Date Extracted:	03/16/15
		Date Analyzed:	03/17/15

Quality Control Sample (QCS) Summary
Metals

Sample Name: Quality Control Sample

Units: pg
Basis: NA

Test Notes:

Analyte	Prep Method	Analysis Method	True Value	Result	Percent Recovery	CAS Percent Recovery Acceptance Limits	Result Notes
Mercury, Methyl	Method	1630	100	109	109	67-133	

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Analytical Report

Client :	Longview, City of	**Service Request :**	K1502369
Project Name :	Sentinel Wells	**Date Collected :**	03/09/15
Project No. :	NA	**Date Received :**	03/09/15
Matrix :	Drinking Water	**Date Extracted :**	03/10-13/15

Total Metals

Sample Name :	DW-1	**Units :**	mg/L (ppm)
Lab Code :	K1502369-001	**Basis :**	NA

Analyte	Analysis Method	MRL	Date Analyzed	Sample Result	Result Notes
Antimony	200.8	0.00005	03/12/15	ND	
Arsenic	200.8	0.0005	03/12/15	0.0034	
Barium	200.7	0.004	03/16/15	0.009	
Beryllium	200.8	0.00002	03/12/15	ND	
Cadmium	200.8	0.00002	03/12/15	ND	
Chromium	200.8	0.0002	03/12/15	ND	
Copper	200.7	0.004	03/16/15	ND	
Iron	200.7	0.02	03/16/15	2.24	
Lead	200.8	0.00002	03/12/15	ND	
Manganese	200.7	0.001	03/16/15	0.554	
Mercury	245.1	0.0002	03/11/15	ND	
Nickel	200.8	0.0002	03/12/15	0.0002	
Selenium	200.8	0.001	03/12/15	ND	
Silver	200.8	0.00002	03/12/15	ND	
Sodium	200.7	0.2	03/16/15	8.8	
Thallium	200.8	0.00002	03/12/15	ND	
Zinc	200.7	0.004	03/16/15	ND	

Comments:

ALS Group USA, Corp.
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Analytical Report

Client :	Longview, City of	**Service Request :**	K1502369
Project Name :	Sentinel Wells	**Date Collected :**	NA
Project No. :	NA	**Date Received :**	NA
Matrix :	Drinking Water	**Date Extracted :**	03/13/15

Total Metals

Sample Name :	Method Blank	**Units :**	mg/L (ppm)
Lab Code :	KQ1502195-01	**Basis :**	NA

Analyte	Analysis Method	MRL	Date Analyzed	Sample Result	Result Notes
Barium	200.7	0.004	03/16/15	ND	
Copper	200.7	0.004	03/16/15	ND	
Iron	200.7	0.02	03/16/15	ND	
Manganese	200.7	0.001	03/16/15	ND	
Sodium	200.7	0.2	03/16/15	ND	
Zinc	200.7	0.004	03/16/15	ND	

Comments:

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Analytical Report

Client :	Longview, City of	**Service Request :**	K1502369
Project Name :	Sentinel Wells	**Date Collected :**	NA
Project No. :	NA	**Date Received :**	NA
Matrix :	Drinking Water	**Date Extracted :**	03/10/15

Total Metals

Sample Name :	Method Blank	**Units :**	mg/L (ppm)
Lab Code :	KQ1502212-03	**Basis :**	NA

Analyte	Analysis Method	MRL	Date Analyzed	Sample Result	Result Notes
Mercury	245.1	0.0002	03/11/15	ND	

Comments:

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Analytical Report

Client :	Longview, City of	**Service Request :**	K1502369
Project Name :	Sentinel Wells	**Date Collected :**	NA
Project No. :	NA	**Date Received :**	NA
Matrix :	Drinking Water	**Date Extracted :**	03/11/15

Total Metals

Sample Name :	Method Blank	**Units :**	mg/L (ppm)
Lab Code :	KQ1502271-01	**Basis :**	NA

Analyte	Analysis Method	MRL	Date Analyzed	Sample Result	Result Notes
Antimony	200.8	0.00005	03/12/15	ND	
Arsenic	200.8	0.0005	03/12/15	ND	
Beryllium	200.8	0.00002	03/12/15	ND	
Cadmium	200.8	0.00002	03/12/15	ND	
Chromium	200.8	0.0002	03/12/15	ND	
Lead	200.8	0.00002	03/12/15	ND	
Nickel	200.8	0.0002	03/12/15	ND	
Selenium	200.8	0.001	03/12/15	ND	
Silver	200.8	0.00002	03/12/15	ND	
Thallium	200.8	0.00002	03/12/15	ND	

Comments:

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QA/QC Report

Client :	Longview, City of	**Service Request :**	K1502369
Project Name :	Sentinel Wells	**Date Collected :**	NA
Project No. :	NA	**Date Received :**	NA
Matrix :	Drinking Water	**Date Extracted :**	03/10/15
		Date Analyzed :	03/11/15

Duplicate Summary
Total Metals

Sample Name :	Batch QC	**Units :**	mg/L (ppm)
Lab Code :	K1502318-001D	**Basis :**	NA

Analyte	Analysis Method	MRL	Sample Result	Duplicate Sample Result	Average	Relative Percent Difference	Result Notes
Mercury	245.1	0.0002	ND	ND	ND	-	

Comments:

ALS Group USA, Corp.
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QA/QC Report

Client :	Longview, City of	**Service Request :**	K1502369
Project Name :	Sentinel Wells	**Date Collected :**	NA
Project No. :	NA	**Date Received :**	NA
Matrix :	Drinking Water	**Date Extracted :**	03/10/15
		Date Analyzed :	03/11/15

Matrix Spike Summary
Total Metals

Sample Name :	Batch QC	**Units :**	mg/L (ppm)
Lab Code :	K1502318-001S	**Basis :**	NA

Analyte	MRL	Spike Level	Sample Result	Spiked Sample Result	Percent Recovery	ALS Percent Recovery Acceptance Limits	Result Notes
Mercury	0.0002	0.0050	ND	0.0049	98	70-130	

Comments:

ALS Group USA, Corp.
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QA/QC Report

Client :	Longview, City of	**Service Request :**	K1502369
Project Name :	Sentinel Wells	**Date Collected :**	NA
Project No. :	NA	**Date Received :**	NA
Matrix :	Drinking Water	**Date Extracted :**	03/13/15
		Date Analyzed :	03/16/15

Duplicate Summary
Total Metals

Sample Name :	Batch QC	**Units :**	mg/L (ppm)
Lab Code :	K1502330-001D	**Basis :**	NA

Analyte	Analysis Method	MRL	Sample Result	Duplicate Sample Result	Average	Relative Percent Difference	Result Notes
Barium	200.7	0.004	0.008	0.009	0.009	12	
Copper	200.7	0.004	ND	ND	ND	-	
Iron	200.7	0.02	ND	ND	ND	-	
Manganese	200.7	0.001	0.009	0.010	0.0091	11	
Sodium	200.7	0.2	8.4	8.4	8.4	<1	
Zinc	200.7	0.004	0.004	0.004	0.004	<1	

Comments:

ALS Group USA, Corp.
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QA/QC Report

Client :	Longview, City of	**Service Request :**	K1502369
Project Name :	Sentinel Wells	**Date Collected :**	NA
Project No. :	NA	**Date Received :**	NA
Matrix :	Drinking Water	**Date Extracted :**	03/13/15
		Date Analyzed :	03/16/15

Matrix Spike Summary
Total Metals

Sample Name :	Batch QC	**Units :**	mg/L (ppm)
Lab Code :	K1502330-001S	**Basis :**	NA

Analyte	MRL	Spike Level	Sample Result	Spiked Sample Result	Percent Recovery	ALS Percent Recovery Acceptance Limits	Result Notes
Barium	0.004	1.00	0.008	1.0	99	70-130	
Copper	0.004	0.25	ND	0.242	97	70-130	
Iron	0.02	1.00	ND	0.99	99	70-130	
Manganese	0.001	0.50	0.009	0.498	98	70-130	
Sodium	0.2	10.0	8.4	18.3	99	70-130	
Zinc	0.004	0.50	0.004	0.473	94	70-130	

Comments:

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QA/QC Report

Client :	Longview, City of	**Service Request :**	K1502369
Project Name :	Sentinel Wells	**Date Collected :**	NA
Project No. :	NA	**Date Received :**	NA
Matrix :	Drinking Water	**Date Extracted :**	03/11/15
		Date Analyzed :	03/12/15

Duplicate Summary
Total Metals

Sample Name :	Batch QC	**Units :**	mg/L (ppm)
Lab Code :	K1502365-001D	**Basis :**	NA

Analyte	Analysis Method	MRL	Sample Result	Duplicate Sample Result	Average	Relative Percent Difference	Result Notes
Antimony	200.8	0.00005	ND	ND	ND	-	
Arsenic	200.8	0.0005	0.0038	0.0037	0.0037	3	
Beryllium	200.8	0.00002	ND	ND	ND	-	
Cadmium	200.8	0.00002	ND	ND	ND	-	
Chromium	200.8	0.0002	ND	ND	ND	-	
Lead	200.8	0.00002	ND	ND	ND	-	
Nickel	200.8	0.0002	0.0003	0.0003	0.0003	<1	
Selenium	200.8	0.001	ND	ND	ND	-	
Silver	200.8	0.00002	ND	ND	ND	-	
Thallium	200.8	0.00002	ND	ND	ND	-	

Comments:

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QA/QC Report

Client :	Longview, City of	**Service Request :**	K1502369
Project Name :	Sentinel Wells	**Date Collected :**	NA
Project No. :	NA	**Date Received :**	NA
Matrix :	Drinking Water	**Date Extracted :**	03/11/15
		Date Analyzed :	03/12/15

Matrix Spike Summary
Total Metals

Sample Name :	Batch QC	**Units :**	mg/L (ppm)
Lab Code :	K1502365-001S	**Basis :**	NA

Analyte	MRL	Spike Level	Sample Result	Spiked Sample Result	Percent Recovery	ALS Percent Recovery Acceptance Limits	Result Notes
Antimony	0.00005	0.050	ND	0.0517	103	70-130	
Arsenic	0.0005	0.050	0.0038	0.0538	100	70-130	
Beryllium	0.00002	0.0025	ND	0.00240	96	70-130	
Cadmium	0.00002	0.025	ND	0.0251	100	70-130	
Chromium	0.0002	0.010	ND	0.0088	88	70-130	
Lead	0.00002	0.050	ND	0.0493	99	70-130	
Nickel	0.0002	0.025	0.0003	0.0222	88	70-130	
Selenium	0.001	0.050	ND	0.050	100	70-130	
Silver	0.00002	0.013	ND	0.0118	94	70-130	
Thallium	0.00002	0.050	ND	0.0501	100	70-130	

Comments:

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QA/QC Report

Client :	Longview, City of	**Service Request :**	K1502369
Project Name :	Sentinel Wells	**Date Collected :**	NA
Project No. :	NA	**Date Received :**	NA
Matrix :	Drinking Water	**Date Extracted :**	03/10,11/15
		Date Analyzed :	03/11-16/15

Laboratory Control Sample Summary
Total Metals

Sample Name :	Laboratory Control Sample	**Units :**	mg/L (ppm)
Lab Code :	K1502369-LCS	**Basis :**	NA

Analyte	Analysis Method	True Value	Result	Percent	ALS Percent Recovery Acceptance Limits	Result Notes
Antimony	200.8	0.050	0.0504	101	85-115	
Arsenic	200.8	0.050	0.0488	98	85-115	
Barium	200.7	5.00	5.08	102	85-115	
Beryllium	200.8	0.0025	0.00243	97	85-115	
Cadmium	200.8	0.025	0.0249	100	85-115	
Chromium	200.8	0.010	0.0095	95	85-115	
Copper	200.7	0.63	0.611	98	85-115	
Iron	200.7	2.50	2.54	102	85-115	
Lead	200.8	0.050	0.0487	97	85-115	
Manganese	200.7	1.25	1.28	102	85-115	
Mercury	245.1	0.0050	0.0050	100	85-115	
Nickel	200.8	0.025	0.0233	93	85-115	
Selenium	200.8	0.050	0.050	101	85-115	
Silver	200.8	0.013	0.0120	96	85-115	
Sodium	200.7	12.5	12.8	103	85-115	
Thallium	200.8	0.050	0.0495	99	85-115	
Zinc	200.7	1.25	1.21	97	85-115	

Comments:

EPA Method 504.1

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Analytical Results

Client:	Longview, City of	**Service Request:**	K1502369
Project:	Sentinel Wells	**Date Collected:**	03/09/2015
Sample Matrix:	Drinking water	**Date Received:**	03/09/2015

EPA Method 504.1

Sample Name:	DW-1	**Units:**	ug/L
Lab Code:	K1502369-001	**Basis:**	NA
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	504.1		

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
1,2-Dibromoethane (EDB)	ND	U	0.0096	1	03/16/15	03/16/15	KWG1502136	
1,2,3-Trichloropropane	ND	U	0.39	1	03/16/15	03/16/15	KWG1502136	
1,2-Dibromo-3-chloropropane (DBCP	ND	U	0.0096	1	03/16/15	03/16/15	KWG1502136	

Comments:

Analytical Results

Client:	Longview, City of	**Service Request:**	K1502369
Project:	Sentinel Wells	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA

EPA Method 504.1

Sample Name:	Method Blank	**Units:**	ug/L
Lab Code:	KWG1502136-7	**Basis:**	NA
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	504.1		

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
1,2-Dibromoethane (EDB)	ND	U	0.0099	1	03/16/15	03/16/15	KWG1502136	
1,2,3-Trichloropropane	ND	U	0.40	1	03/16/15	03/16/15	KWG1502136	
1,2-Dibromo-3-chloropropane (DBCP	ND	U	0.0099	1	03/16/15	03/16/15	KWG1502136	

Comments:

QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502369
Project:	Sentinel Wells	**Date Extracted:**	03/16/2015
Sample Matrix:	Water	**Date Analyzed:**	03/16/2015

Matrix Spike/Duplicate Matrix Spike Summary
EPA Method 504.1

Sample Name:	Batch QC	**Units:**	ug/L
Lab Code:	K1502111-002	**Basis:**	NA
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	504.1	**Extraction Lot:**	KWG1502136

		Batch QCMS KWG1502136-1 Matrix Spike			Batch QCDMS KWG1502136-2 Duplicate Matrix Spike					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**%Rec**	**Result**	**Spike Amount**	**%Rec**	**%Rec Limits**	**RPD**	**RPD Limit**
1,2-Dibromoethane (EDB)	ND	0.194	0.240	81	0.211	0.243	87	65-135	8	30
1,2,3-Trichloropropane	ND	0.178	0.240	74	0.195	0.243	80	65-135	9	30
1,2-Dibromo-3-chloropropane (DBCP)	ND	0.182	0.240	76	0.204	0.243	84	65-135	12	30

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502369
Project:	Sentinel Wells	**Date Extracted:**	03/16/2015
Sample Matrix:	Drinking water	**Date Analyzed:**	03/17/2015

Matrix Spike/Duplicate Matrix Spike Summary
EPA Method 504.1

Sample Name:	Batch QC	**Units:**	ug/L
Lab Code:	K1502415-001	**Basis:**	NA
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	504.1	**Extraction Lot:**	KWG1502136

		Batch QCMS KWG1502136-3 Matrix Spike			Batch QCDMS KWG1502136-4 Duplicate Matrix Spike					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**%Rec**	**Result**	**Spike Amount**	**%Rec**	**%Rec Limits**	**RPD**	**RPD Limit**
1,2-Dibromoethane (EDB)	ND	0.215	0.242	89	0.211	0.239	88	65-135	2	30
1,2,3-Trichloropropane	ND	0.209	0.242	87	0.208	0.239	87	65-135	1	30
1,2-Dibromo-3-chloropropane (DBCP)	ND	0.222	0.242	92	0.215	0.239	90	65-135	3	30

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Client:	Longview, City of	**Service Request:**	K1502369
Project:	Sentinel Wells	**Date Extracted:**	03/16/2015
Sample Matrix:	Water	**Date Analyzed:**	03/16/2015

Lab Control Spike Summary
EPA Method 504.1

Extraction Method:	METHOD	**Units:**	ug/L
Analysis Method:	504.1	**Basis:**	NA
		Level:	Low
		Extraction Lot:	KWG1502136

	Lab Control Sample KWG1502136-5 Lab Control Spike			
Analyte Name	**Result**	**Spike Amount**	**%Rec**	**%Rec Limits**
1,2-Dibromoethane (EDB)	0.233	0.250	93	70-130
1,2,3-Trichloropropane	0.225	0.250	90	70-130
1,2-Dibromo-3-chloropropane (DBCP)	0.237	0.250	95	70-130

Results flagged with an asterisk (*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Client:	Longview, City of	**Service Request:**	K1502369
Project:	Sentinel Wells	**Date Extracted:**	03/16/2015
Sample Matrix:	Water	**Date Analyzed:**	03/16/2015

Lab Control Spike Summary
EPA Method 504.1

Extraction Method:	METHOD	**Units:**	ug/L
Analysis Method:	504.1	**Basis:**	NA
		Level:	Low
		Extraction Lot:	KWG1502136

	Lab Control Sample KWG1502136-6 Lab Control Spike			
Analyte Name	**Result**	**Spike Amount**	**%Rec**	**%Rec Limits**
1,2-Dibromoethane (EDB)	0.231	0.250	92	70-130
1,2,3-Trichloropropane	0.220	0.250	88	70-130
1,2-Dibromo-3-chloropropane (DBCP)	0.231	0.250	92	70-130

Results flagged with an asterisk (*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Pesticides/PCBs by EPA Method 508.1

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Analytical Results

Client:	Longview, City of	**Service Request:**	K1502369
Project:	Sentinel Wells	**Date Collected:**	03/09/2015
Sample Matrix:	Drinking water	**Date Received:**	03/09/2015

Pesticides/PCBs by EPA Method 508.1

Sample Name:	DW-1	**Units:**	ug/L
Lab Code:	K1502369-001	**Basis:**	NA
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	508.1		

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
gamma-BHC (Lindane)	ND	U	0.0098	1	03/23/15	03/24/15	KWG1502390	
Heptachlor	ND	U	0.0098	1	03/23/15	03/24/15	KWG1502390	
Aldrin	ND	U	0.0098	1	03/23/15	03/24/15	KWG1502390	
Heptachlor Epoxide	ND	U	0.0098	1	03/23/15	03/24/15	KWG1502390	
Heptachlor Epoxide (Isomer A)	ND	U	0.0098	1	03/23/15	03/24/15	KWG1502390	
4,4'-DDE	ND	U	0.0098	1	03/23/15	03/24/15	KWG1502390	
Dieldrin	ND	U	0.0098	1	03/23/15	03/24/15	KWG1502390	
Endrin	ND	U	0.0098	1	03/23/15	03/24/15	KWG1502390	
4,4'-DDD	ND	U	0.0098	1	03/23/15	03/24/15	KWG1502390	
4,4'-DDT	ND	U	0.0098	1	03/23/15	03/24/15	KWG1502390	
Methoxychlor	ND	U	0.0098	1	03/23/15	03/24/15	KWG1502390	
Toxaphene	ND	U	0.098	1	03/23/15	03/24/15	KWG1502390	
Chlordane	ND	U	0.098	1	03/23/15	03/24/15	KWG1502390	
Aroclor 1016	ND	U	0.049	1	03/23/15	03/24/15	KWG1502390	
Aroclor 1221	ND	U	0.098	1	03/23/15	03/24/15	KWG1502390	
Aroclor 1232	ND	U	0.098	1	03/23/15	03/24/15	KWG1502390	
Aroclor 1242	ND	U	0.098	1	03/23/15	03/24/15	KWG1502390	
Aroclor 1248	ND	U	0.098	1	03/23/15	03/24/15	KWG1502390	
Aroclor 1254	ND	U	0.098	1	03/23/15	03/24/15	KWG1502390	
Aroclor 1260	ND	U	0.098	1	03/23/15	03/24/15	KWG1502390	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
4,4'-Dibromooctafluorobiphenyl	104	70-130	03/24/15	Acceptable

Comments:

ALS Group USA, Corp. dba ALS Environmental

Analytical Results

Client:	Longview, City of	**Service Request:**	K1502369
Project:	Sentinel Wells	**Date Collected:**	NA
Sample Matrix:	Drinking water	**Date Received:**	NA

Pesticides/PCBs by EPA Method 508.1

Sample Name:	Method Blank	**Units:**	ug/L
Lab Code:	KWG1502390-7	**Basis:**	NA
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	508.1		

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
gamma-BHC (Lindane)	ND	U	0.010	1	03/23/15	03/24/15	KWG1502390	
Heptachlor	ND	U	0.010	1	03/23/15	03/24/15	KWG1502390	
Aldrin	ND	U	0.010	1	03/23/15	03/24/15	KWG1502390	
Heptachlor Epoxide	ND	U	0.010	1	03/23/15	03/24/15	KWG1502390	
Heptachlor Epoxide (Isomer A)	ND	U	0.010	1	03/23/15	03/24/15	KWG1502390	
4,4'-DDE	ND	U	0.010	1	03/23/15	03/24/15	KWG1502390	
Dieldrin	ND	U	0.010	1	03/23/15	03/24/15	KWG1502390	
Endrin	ND	U	0.010	1	03/23/15	03/24/15	KWG1502390	
4,4'-DDD	ND	U	0.010	1	03/23/15	03/24/15	KWG1502390	
4,4'-DDT	ND	U	0.010	1	03/23/15	03/24/15	KWG1502390	
Methoxychlor	ND	U	0.010	1	03/23/15	03/24/15	KWG1502390	
Toxaphene	ND	U	0.10	1	03/23/15	03/24/15	KWG1502390	
Chlordane	ND	U	0.10	1	03/23/15	03/24/15	KWG1502390	
Aroclor 1016	ND	U	0.050	1	03/23/15	03/24/15	KWG1502390	
Aroclor 1221	ND	U	0.10	1	03/23/15	03/24/15	KWG1502390	
Aroclor 1232	ND	U	0.10	1	03/23/15	03/24/15	KWG1502390	
Aroclor 1242	ND	U	0.10	1	03/23/15	03/24/15	KWG1502390	
Aroclor 1248	ND	U	0.10	1	03/23/15	03/24/15	KWG1502390	
Aroclor 1254	ND	U	0.10	1	03/23/15	03/24/15	KWG1502390	
Aroclor 1260	ND	U	0.10	1	03/23/15	03/24/15	KWG1502390	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
4,4'-Dibromooctafluorobiphenyl	100	70-130	03/24/15	Acceptable

Comments:

Client: Longview, City of
Project: Sentinel Wells
Sample Matrix: Drinking water

Service Request: K1502369

Surrogate Recovery Summary
Pesticides/PCBs by EPA Method 508.1

Extraction Method: METHOD
Analysis Method: 508.1

Units: Percent
Level: Low

Sample Name	Lab Code	Sur1
DW-1	K1502369-001	104
Batch QC	K1502415-001	102
Method Blank	KWG1502390-7	100
Batch QCMS	KWG1502390-4	89
Batch QCDMS	KWG1502390-5	89
Lab Control Sample	KWG1502390-6	90

Surrogate Recovery Control Limits (%)

Sur1 = 4,4'-Dibromooctafluorobiphenyl 70-130

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502369
Project:	Sentinel Wells	**Date Extracted:**	03/23/2015
Sample Matrix:	Drinking water	**Date Analyzed:**	03/24/2015

Matrix Spike/Duplicate Matrix Spike Summary
Pesticides/PCBs by EPA Method 508.1

Sample Name:	Batch QC	**Units:**	ug/L
Lab Code:	K1502415-001	**Basis:**	NA
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	508.1	**Extraction Lot:**	KWG1502390

		Batch QCMS KWG1502390-4 Matrix Spike			Batch QCDMS KWG1502390-5 Duplicate Matrix Spike					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**%Rec**	**Result**	**Spike Amount**	**%Rec**	**%Rec Limits**	**RPD**	**RPD Limit**
gamma-BHC (Lindane)	ND	0.101	0.0971	104	0.101	0.0971	104	65-135	0	30
Heptachlor	ND	0.0824	0.0971	85	0.0795	0.0971	82	65-135	4	30
Aldrin	ND	0.0919	0.0971	95	0.0897	0.0971	92	65-135	2	30
Heptachlor Epoxide	ND	0.102	0.0971	105	0.0983	0.0971	101	65-135	3	30
Heptachlor Epoxide (Isomer A)	ND	0.0964	0.0971	99	0.0938	0.0971	97	65-135	3	30
4,4'-DDE	ND	0.108	0.0971	112	0.106	0.0971	109	65-135	2	30
Dieldrin	ND	0.0968	0.0971	100	0.0942	0.0971	97	65-135	3	30
Endrin	ND	0.0681	0.0971	70	0.0620	0.0971	64 *	65-135	9	30
4,4'-DDD	ND	0.114	0.0971	118	0.113	0.0971	116	65-135	1	30
4,4'-DDT	ND	0.113	0.0971	116	0.111	0.0971	115	65-135	1	30
Methoxychlor	ND	0.114	0.0971	118	0.114	0.0971	118	65-135	0	30
Aroclor 1248	ND	0.336	0.485	69	0.336	0.485	69	65-135	0	30

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Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Client:	Longview, City of	**Service Request:**	K1502369
Project:	Sentinel Wells	**Date Extracted:**	03/23/2015
Sample Matrix:	Drinking water	**Date Analyzed:**	03/24/2015

Lab Control Spike Summary
Pesticides/PCBs by EPA Method 508.1

Extraction Method:	METHOD	**Units:**	ug/L
Analysis Method:	508.1	**Basis:**	NA
		Level:	Low
		Extraction Lot:	KWG1502390

	Lab Control Sample KWG1502390-6 Lab Control Spike			
Analyte Name	**Result**	**Spike Amount**	**%Rec**	**%Rec Limits**
gamma-BHC (Lindane)	0.107	0.100	107	70-130
Heptachlor	0.0961	0.100	96	70-130
Aldrin	0.0900	0.100	90	70-130
Heptachlor Epoxide	0.103	0.100	103	70-130
Heptachlor Epoxide (Isomer A)	0.106	0.100	106	70-130
4,4'-DDE	0.107	0.100	107	70-130
Dieldrin	0.112	0.100	112	70-130
Endrin	0.113	0.100	113	70-130
4,4'-DDD	0.115	0.100	115	70-130
4,4'-DDT	0.108	0.100	108	70-130
Methoxychlor	0.112	0.100	112	70-130
Aroclor 1248	0.394	0.500	79	70-130

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Chlorinated Herbicides by EPA 515.4

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

Analytical Results

Client:	Longview, City of	**Service Request:**	K1502369
Project:	Sentinel Wells	**Date Collected:**	03/09/2015
Sample Matrix:	Drinking water	**Date Received:**	03/09/2015

Chlorinated Herbicides by EPA 515.4

Sample Name:	DW-1	**Units:**	ug/L
Lab Code:	K1502369-001	**Basis:**	NA
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	515.4		

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Dalapon	ND	U	1.0	1	03/17/15	03/24/15	KWG1502203	
3,5-Dichlorobenzoic Acid	ND	U	0.50	1	03/17/15	03/24/15	KWG1502203	
Dicamba	ND	U	0.20	1	03/17/15	03/24/15	KWG1502203	
Dichlorprop	ND	U	0.50	1	03/17/15	03/24/15	KWG1502203	
2,4-D	ND	U	0.10	1	03/17/15	03/24/15	KWG1502203	
Pentachlorophenol	ND	U	0.040	1	03/17/15	03/24/15	KWG1502203	
2,4,5-TP (Silvex)	ND	U	0.20	1	03/17/15	03/24/15	KWG1502203	
Chloramben	ND	U	0.20	1	03/17/15	03/24/15	KWG1502203	
2,4-DB	ND	U	1.0	1	03/17/15	03/24/15	KWG1502203	
Dinoseb	ND	U	0.20	1	03/17/15	03/24/15	KWG1502203	
Dacthal Diacid	ND	U	0.020	1	03/17/15	03/24/15	KWG1502203	
Picloram	ND	U	0.10	1	03/17/15	03/24/15	KWG1502203	
Acifluorfen	ND	U	2.0	1	03/17/15	03/24/15	KWG1502203	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
2,4-Dichlorophenylacetic Acid	108	70-130	03/24/15	Acceptable

Comments:

ALS Group USA, Corp. dba ALS Environmental

Analytical Results

Client:	Longview, City of	**Service Request:**	K1502369
Project:	Sentinel Wells	**Date Collected:**	NA
Sample Matrix:	Drinking water	**Date Received:**	NA

Chlorinated Herbicides by EPA 515.4

Sample Name:	Method Blank	**Units:**	ug/L
Lab Code:	KWG1502203-4	**Basis:**	NA
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	515.4		

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Dalapon	ND	U	1.0	1	03/17/15	03/24/15	KWG1502203	
3,5-Dichlorobenzoic Acid	ND	U	0.50	1	03/17/15	03/24/15	KWG1502203	
Dicamba	ND	U	0.20	1	03/17/15	03/24/15	KWG1502203	
Dichlorprop	ND	U	0.50	1	03/17/15	03/24/15	KWG1502203	
2,4-D	ND	U	0.10	1	03/17/15	03/24/15	KWG1502203	
Pentachlorophenol	ND	U	0.040	1	03/17/15	03/24/15	KWG1502203	
2,4,5-TP (Silvex)	ND	U	0.20	1	03/17/15	03/24/15	KWG1502203	
Chloramben	ND	U	0.20	1	03/17/15	03/24/15	KWG1502203	
2,4-DB	ND	U	1.0	1	03/17/15	03/24/15	KWG1502203	
Dinoseb	ND	U	0.20	1	03/17/15	03/24/15	KWG1502203	
Dacthal Diacid	ND	U	0.020	1	03/17/15	03/24/15	KWG1502203	
Picloram	ND	U	0.10	1	03/17/15	03/24/15	KWG1502203	
Acifluorfen	ND	U	2.0	1	03/17/15	03/24/15	KWG1502203	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
2,4-Dichlorophenylacetic Acid	86	70-130	03/24/15	Acceptable

Comments:

Client: Longview, City of
Project: Sentinel Wells
Sample Matrix: Drinking water

Service Request: K1502369

Surrogate Recovery Summary
Chlorinated Herbicides by EPA 515.4

Extraction Method: METHOD
Analysis Method: 515.4

Units: Percent
Level: Low

Sample Name	Lab Code	Sur1
DW-1	K1502369-001	108
Batch QC	K1502415-001	114
Method Blank	KWG1502203-4	86
Batch QCMS	KWG1502203-1	126
Batch QCDMS	KWG1502203-2	121
Lab Control Sample	KWG1502203-3	97

Surrogate Recovery Control Limits (%)

Sur1 = 2,4-Dichlorophenylacetic Acid 70-130

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502369
Project:	Sentinel Wells	**Date Extracted:**	03/17/2015
Sample Matrix:	Drinking water	**Date Analyzed:**	03/24/2015

Matrix Spike/Duplicate Matrix Spike Summary
Chlorinated Herbicides by EPA 515.4

Sample Name:	Batch QC	**Units:**	ug/L
Lab Code:	K1502415-001	**Basis:**	NA
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	515.4	**Extraction Lot:**	KWG1502203

		Batch QCMS KWG1502203-1 Matrix Spike			Batch QCDMS KWG1502203-2 Duplicate Matrix Spike					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**%Rec**	**Result**	**Spike Amount**	**%Rec**	**%Rec Limits**	**RPD**	**RPD Limit**
Dalapon	ND	4.28	4.98	86	4.31	4.97	87	70-130	1	30
3,5-Dichlorobenzoic Acid	ND	4.86	4.98	98	4.86	4.97	98	70-130	0	30
Dicamba	ND	5.19	4.98	104	5.16	4.97	104	70-130	1	30
Dichlorprop	ND	5.11	4.98	103	5.03	4.97	101	70-130	2	30
2,4-D	ND	5.13	4.98	103	5.08	4.97	102	70-130	1	30
Pentachlorophenol	ND	5.12	4.98	103	5.08	4.97	102	70-130	1	30
2,4,5-TP (Silvex)	ND	4.78	4.98	96	4.74	4.97	95	70-130	1	30
Chloramben	ND	4.82	4.98	97	4.72	4.97	95	70-130	2	30
2,4-DB	ND	4.87	4.98	98	4.80	4.97	97	70-130	1	30
Dinoseb	ND	4.99	4.98	100	5.07	4.97	102	70-130	2	30
Dacthal Diacid	ND	5.99	4.98	120	6.03	4.97	121	70-130	1	30
Picloram	ND	5.45	4.98	109	5.38	4.97	108	70-130	1	30
Acifluorfen	ND	4.78	4.98	96	4.77	4.97	96	70-130	0	30

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Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Client:	Longview, City of	**Service Request:**	K1502369
Project:	Sentinel Wells	**Date Extracted:**	03/17/2015
Sample Matrix:	Drinking water	**Date Analyzed:**	03/24/2015

Lab Control Spike Summary
Chlorinated Herbicides by EPA 515.4

Extraction Method:	METHOD	**Units:**	ug/L
Analysis Method:	515.4	**Basis:**	NA
		Level:	Low
		Extraction Lot:	KWG1502203

	Lab Control Sample KWG1502203-3 Lab Control Spike			
Analyte Name	**Result**	**Spike Amount**	**%Rec**	**%Rec Limits**
Dalapon	4.16	5.00	83	70-130
3,5-Dichlorobenzoic Acid	4.48	5.00	90	70-130
Dicamba	4.79	5.00	96	70-130
Dichlorprop	4.79	5.00	96	70-130
2,4-D	4.83	5.00	97	70-130
Pentachlorophenol	4.92	5.00	98	70-130
2,4,5-TP (Silvex)	4.64	5.00	93	70-130
Chloramben	5.14	5.00	103	70-130
2,4-DB	4.68	5.00	94	70-130
Dinoseb	4.85	5.00	97	70-130
Dacthal Diacid	4.85	5.00	97	70-130
Picloram	5.08	5.00	102	70-130
Acifluorfen	4.74	5.00	95	70-130

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Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Volatile Organic Compounds

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

Analytical Results

Client: Longview, City of
Project: Sentinel Wells
Sample Matrix: Drinking water

Service Request: K1502369
Date Collected: 03/09/2015
Date Received: 03/09/2015

Volatile Organic Compounds

Sample Name: DW-1
Lab Code: K1502369-001

Units: ug/L
Basis: NA

Extraction Method: METHOD
Analysis Method: 524.2

Level: Low

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Dichlorodifluoromethane	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Chloromethane	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Vinyl Chloride	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Bromomethane	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Chloroethane	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Trichlorofluoromethane	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Methylene Chloride	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
trans-1,2-Dichloroethene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
1,1-Dichloroethene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
cis-1,2-Dichloroethene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Methyl tert-Butyl Ether	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Chloroform	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Bromochloromethane	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Carbon Tetrachloride	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Benzene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
1,2-Dichloroethane	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Trichloroethene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
1,2-Dichloropropane	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Bromodichloromethane	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Dibromomethane	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
cis-1,3-Dichloropropene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
1,1-Dichloroethane	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Toluene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
trans-1,3-Dichloropropene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Tetrachloroethene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
2,2-Dichloropropane	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
1,3-Dichloropropane	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Dibromochloromethane	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
1,2-Dibromoethane (EDB)	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Chlorobenzene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Ethylbenzene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Styrene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
m,p-Xylenes	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
o-Xylene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	

Comments:

Analytical Results

Client:	Longview, City of	**Service Request:**	K1502369
Project:	Sentinel Wells	**Date Collected:**	03/09/2015
Sample Matrix:	Drinking water	**Date Received:**	03/09/2015

Volatile Organic Compounds

Sample Name:	DW-1	**Units:**	ug/L
Lab Code:	K1502369-001	**Basis:**	NA
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	524.2		

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
1,1,1-Trichloroethane	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Bromoform	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
1,1,2,2-Tetrachloroethane	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Isopropylbenzene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
1,1-Dichloropropene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Bromobenzene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
n-Propylbenzene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
1,3,5-Trimethylbenzene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
2-Chlorotoluene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
4-Chlorotoluene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
tert-Butylbenzene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
1,2,4-Trimethylbenzene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
sec-Butylbenzene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
p-Isopropyltoluene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
1,3-Dichlorobenzene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
1,4-Dichlorobenzene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
n-Butylbenzene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
1,2-Dichlorobenzene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
1,2-Dibromo-3-chloropropane (DBCP	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
1,2,4-Trichlorobenzene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Hexachlorobutadiene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Naphthalene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
1,1,2-Trichloroethane	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
1,1,1,2-Tetrachloroethane	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
1,2,3-Trichloropropane	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
1,2,3-Trichlorobenzene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
4-Bromofluorobenzene	91	70-130	03/17/15	Acceptable
Dibromofluoromethane	96	82-124	03/17/15	Acceptable
Toluene-d8	96	82-124	03/17/15	Acceptable

Comments:

Analytical Results

Client: Longview, City of
Project: Sentinel Wells
Sample Matrix: Drinking water

Service Request: K1502369
Date Collected: NA
Date Received: NA

Volatile Organic Compounds

Sample Name: Method Blank
Lab Code: KWG1502193-4
Extraction Method: METHOD
Analysis Method: 524.2

Units: ug/L
Basis: NA
Level: Low

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Dichlorodifluoromethane	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Chloromethane	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Vinyl Chloride	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Bromomethane	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Chloroethane	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Trichlorofluoromethane	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Methylene Chloride	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
trans-1,2-Dichloroethene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
1,1-Dichloroethene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
cis-1,2-Dichloroethene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Methyl tert-Butyl Ether	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Chloroform	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Bromochloromethane	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Carbon Tetrachloride	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Benzene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
1,2-Dichloroethane	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Trichloroethene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
1,2-Dichloropropane	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Bromodichloromethane	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Dibromomethane	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
cis-1,3-Dichloropropene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
1,1-Dichloroethane	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Toluene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
trans-1,3-Dichloropropene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Tetrachloroethene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
2,2-Dichloropropane	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
1,3-Dichloropropane	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Dibromochloromethane	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
1,2-Dibromoethane (EDB)	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Chlorobenzene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Ethylbenzene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Styrene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
m,p-Xylenes	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
o-Xylene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	

Comments:

Analytical Results

Client:	Longview, City of	**Service Request:**	K1502369
Project:	Sentinel Wells	**Date Collected:**	NA
Sample Matrix:	Drinking water	**Date Received:**	NA

Volatile Organic Compounds

Sample Name:	Method Blank	**Units:**	ug/L
Lab Code:	KWG1502193-4	**Basis:**	NA
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	524.2		

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
1,1,1-Trichloroethane	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Bromoform	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
1,1,2,2-Tetrachloroethane	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Isopropylbenzene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
1,1-Dichloropropene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Bromobenzene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
n-Propylbenzene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
1,3,5-Trimethylbenzene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
2-Chlorotoluene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
4-Chlorotoluene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
tert-Butylbenzene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
1,2,4-Trimethylbenzene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
sec-Butylbenzene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
p-Isopropyltoluene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
1,3-Dichlorobenzene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
1,4-Dichlorobenzene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
n-Butylbenzene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
1,2-Dichlorobenzene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
1,2-Dibromo-3-chloropropane (DBCP	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
1,2,4-Trichlorobenzene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Hexachlorobutadiene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Naphthalene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
1,1,2-Trichloroethane	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
1,1,1,2-Tetrachloroethane	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
1,2,3-Trichloropropane	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
1,2,3-Trichlorobenzene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
4-Bromofluorobenzene	91	70-130	03/17/15	Acceptable
Dibromofluoromethane	95	82-124	03/17/15	Acceptable
Toluene-d8	96	82-124	03/17/15	Acceptable

Comments:

QA/QC Report

Client: Longview, City of
Project: Sentinel Wells
Sample Matrix: Drinking water

Service Request: K1502369

Surrogate Recovery Summary
Volatile Organic Compounds

Extraction Method: METHOD
Analysis Method: 524.2

Units: Percent
Level: Low

Sample Name	Lab Code	Sur1	Sur2	Sur3
DW-1	K1502369-001	91	96	96
Batch QC	K1502415-001	90	94	96
Method Blank	KWG1502193-4	91	95	96
Batch QCMS	KWG1502193-1	100	97	95
Batch QCDMS	KWG1502193-2	100	96	96
Lab Control Sample	KWG1502193-3	100	96	96

Surrogate Recovery Control Limits (%)

Sur1	=	4-Bromofluorobenzene	70-130
Sur2	=	Dibromofluoromethane	82-124
Sur3	=	Toluene-d8	82-124

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Results flagged with a pound (#) indicate the control criteria is not applicable.

QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502369
Project:	Sentinel Wells	**Date Extracted:**	03/17/2015
Sample Matrix:	Drinking water	**Date Analyzed:**	03/17/2015

Matrix Spike/Duplicate Matrix Spike Summary
Volatile Organic Compounds

Sample Name:	Batch QC	**Units:**	ug/L
Lab Code:	K1502415-001	**Basis:**	NA
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	524.2	**Extraction Lot:**	KWG1502193

		Batch QCMS KWG1502193-1 Matrix Spike			Batch QCDMS KWG1502193-2 Duplicate Matrix Spike					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**%Rec**	**Result**	**Spike Amount**	**%Rec**	**%Rec Limits**	**RPD**	**RPD Limit**
Dichlorodifluoromethane	ND	6.19	5.00	124	5.50	5.00	110	70-130	12	30
Chloromethane	ND	5.94	5.00	119	5.90	5.00	118	70-130	1	30
Vinyl Chloride	ND	5.34	5.00	107	4.99	5.00	100	70-130	7	30
Bromomethane	ND	4.53	5.00	91	3.92	5.00	78	70-130	14	30
Chloroethane	ND	5.26	5.00	105	4.83	5.00	97	70-130	9	30
Trichlorofluoromethane	ND	5.51	5.00	110	5.04	5.00	101	70-130	9	30
Methylene Chloride	ND	4.64	5.00	93	4.47	5.00	89	70-130	4	30
trans-1,2-Dichloroethene	ND	4.93	5.00	99	4.56	5.00	91	70-130	8	30
cis-1,2-Dichloroethene	ND	4.66	5.00	93	4.46	5.00	89	70-130	4	30
1,1-Dichloroethene	ND	4.99	5.00	100	4.57	5.00	91	70-130	9	30
Methyl tert-Butyl Ether	ND	8.10	10.0	81	7.93	10.0	79	70-130	2	30
Chloroform	ND	4.91	5.00	98	4.69	5.00	94	70-130	5	30
Bromochloromethane	ND	4.50	5.00	90	4.41	5.00	88	70-130	2	30
Carbon Tetrachloride	ND	5.71	5.00	114	5.27	5.00	105	70-130	8	30
Benzene	ND	4.84	5.00	97	4.64	5.00	93	70-130	4	30
1,2-Dichloroethane	ND	5.11	5.00	102	4.97	5.00	99	70-130	3	30
Trichloroethene	ND	4.70	5.00	94	4.49	5.00	90	70-130	5	30
1,2-Dichloropropane	ND	4.54	5.00	91	4.29	5.00	86	70-130	6	30
Bromodichloromethane	ND	4.49	5.00	90	4.34	5.00	87	70-130	3	30
Dibromomethane	ND	4.54	5.00	91	4.33	5.00	87	70-130	5	30
cis-1,3-Dichloropropene	ND	4.22	5.00	84	4.20	5.00	84	70-130	0	30
1,1-Dichloroethane	ND	4.96	5.00	99	4.75	5.00	95	70-130	4	30
Toluene	ND	4.63	5.00	93	4.47	5.00	89	70-130	4	30
trans-1,3-Dichloropropene	ND	4.05	5.00	81	3.91	5.00	78	70-130	4	30
Tetrachloroethene	ND	4.73	5.00	95	4.42	5.00	88	70-130	7	30
2,2-Dichloropropane	ND	4.98	5.00	100	4.76	5.00	95	70-130	5	30
1,3-Dichloropropane	ND	4.72	5.00	94	4.61	5.00	92	70-130	2	30
Dibromochloromethane	ND	4.73	5.00	95	4.47	5.00	89	70-130	6	30
1,2-Dibromoethane (EDB)	ND	4.74	5.00	95	4.61	5.00	92	70-130	3	30
Chlorobenzene	ND	4.79	5.00	96	4.58	5.00	92	70-130	4	30
Ethylbenzene	ND	4.87	5.00	97	4.55	5.00	91	70-130	7	30
Styrene	ND	4.67	5.00	93	4.42	5.00	88	70-130	6	30
m,p-Xylenes	ND	9.79	10.0	98	9.27	10.0	93	70-130	5	30

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Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Client:	Longview, City of	**Service Request:**	K1502369
Project:	Sentinel Wells	**Date Extracted:**	03/17/2015
Sample Matrix:	Drinking water	**Date Analyzed:**	03/17/2015

Matrix Spike/Duplicate Matrix Spike Summary
Volatile Organic Compounds

Sample Name:	Batch QC	**Units:**	ug/L
Lab Code:	K1502415-001	**Basis:**	NA
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	524.2	**Extraction Lot:**	KWG1502193

		Batch QCMS KWG1502193-1 Matrix Spike			Batch QCDMS KWG1502193-2 Duplicate Matrix Spike					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**%Rec**	**Result**	**Spike Amount**	**%Rec**	**%Rec Limits**	**RPD**	**RPD Limit**
o-Xylene	ND	4.57	5.00	91	4.36	5.00	87	70-130	5	30
1,1,2,2-Tetrachloroethane	ND	5.34	5.00	107	5.11	5.00	102	70-130	4	30
1,1,1-Trichloroethane	ND	5.01	5.00	100	4.68	5.00	94	70-130	7	30
Bromoform	ND	4.82	5.00	96	4.75	5.00	95	70-130	1	30
Isopropylbenzene	ND	4.93	5.00	99	4.61	5.00	92	70-130	7	30
1,1-Dichloropropene	ND	5.03	5.00	101	4.69	5.00	94	70-130	7	30
Bromobenzene	ND	5.02	5.00	100	4.70	5.00	94	70-130	7	30
n-Propylbenzene	ND	5.76	5.00	115	5.40	5.00	108	70-130	6	30
1,3,5-Trimethylbenzene	ND	5.56	5.00	111	5.27	5.00	105	70-130	5	30
2-Chlorotoluene	ND	5.58	5.00	112	5.28	5.00	106	70-130	6	30
4-Chlorotoluene	ND	5.67	5.00	113	5.32	5.00	106	70-130	6	30
tert-Butylbenzene	ND	5.53	5.00	111	5.14	5.00	103	70-130	7	30
1,2,4-Trimethylbenzene	ND	5.57	5.00	111	5.29	5.00	106	70-130	5	30
sec-Butylbenzene	ND	5.67	5.00	113	5.32	5.00	106	70-130	6	30
p-Isopropyltoluene	ND	5.50	5.00	110	5.21	5.00	104	70-130	5	30
1,3-Dichlorobenzene	ND	5.16	5.00	103	4.94	5.00	99	70-130	4	30
1,4-Dichlorobenzene	ND	5.04	5.00	101	4.82	5.00	96	70-130	4	30
n-Butylbenzene	ND	5.55	5.00	111	5.21	5.00	104	70-130	6	30
1,2-Dichlorobenzene	ND	5.08	5.00	102	4.79	5.00	96	70-130	6	30
1,2-Dibromo-3-chloropropane (DBCP)	ND	5.29	5.00	106	5.38	5.00	108	70-130	2	30
1,2,4-Trichlorobenzene	ND	4.82	5.00	96	4.64	5.00	93	70-130	4	30
Hexachlorobutadiene	ND	5.15	5.00	103	4.86	5.00	97	70-130	6	30
Naphthalene	ND	4.50	5.00	90	4.37	5.00	87	70-130	3	30
1,1,2-Trichloroethane	ND	4.38	5.00	88	4.25	5.00	85	70-130	3	30
1,1,1,2-Tetrachloroethane	ND	5.13	5.00	103	5.03	5.00	101	70-130	2	30
1,2,3-Trichloropropane	ND	5.08	5.00	102	4.87	5.00	97	70-130	4	30
1,2,3-Trichlorobenzene	ND	5.03	5.00	101	4.81	5.00	96	70-130	4	30

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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502369
Project:	Sentinel Wells	**Date Extracted:**	03/17/2015
Sample Matrix:	Drinking water	**Date Analyzed:**	03/17/2015

Lab Control Spike Summary
Volatile Organic Compounds

Extraction Method:	METHOD	**Units:**	ug/L
Analysis Method:	524.2	**Basis:**	NA
		Level:	Low
		Extraction Lot:	KWG1502193

	Lab Control Sample KWG1502193-3 Lab Control Spike			
Analyte Name	**Result**	**Spike Amount**	**%Rec**	**%Rec Limits**
Dichlorodifluoromethane	6.13	5.00	123	70-130
Chloromethane	6.39	5.00	128	70-130
Vinyl Chloride	5.46	5.00	109	70-130
Bromomethane	4.74	5.00	95	70-130
Chloroethane	5.39	5.00	108	70-130
Trichlorofluoromethane	5.53	5.00	111	70-130
Methylene Chloride	5.12	5.00	102	70-130
trans-1,2-Dichloroethene	5.07	5.00	101	70-130
1,1-Dichloroethene	5.14	5.00	103	70-130
cis-1,2-Dichloroethene	4.85	5.00	97	70-130
Methyl tert-Butyl Ether	8.70	10.0	87	70-130
Chloroform	5.30	5.00	106	70-130
Bromochloromethane	4.78	5.00	96	70-130
Carbon Tetrachloride	5.84	5.00	117	70-130
Benzene	5.13	5.00	103	70-130
1,2-Dichloroethane	5.36	5.00	107	70-130
Trichloroethene	4.97	5.00	99	70-130
1,2-Dichloropropane	4.82	5.00	96	70-130
Bromodichloromethane	4.83	5.00	97	70-130
Dibromomethane	4.72	5.00	94	70-130
cis-1,3-Dichloropropene	4.56	5.00	91	70-130
Toluene	4.91	5.00	98	70-130
1,1-Dichloroethane	5.26	5.00	105	70-130
trans-1,3-Dichloropropene	4.23	5.00	85	70-130
Tetrachloroethene	5.01	5.00	100	70-130
1,3-Dichloropropane	5.05	5.00	101	70-130
2,2-Dichloropropane	5.21	5.00	104	70-130
Dibromochloromethane	5.11	5.00	102	70-130
1,2-Dibromoethane (EDB)	5.10	5.00	102	70-130
Chlorobenzene	5.10	5.00	102	70-130
Ethylbenzene	5.12	5.00	102	70-130
Styrene	4.82	5.00	96	70-130
m,p-Xylenes	10.3	10.0	103	70-130
o-Xylene	4.93	5.00	99	70-130
1,1,1-Trichloroethane	5.22	5.00	104	70-130

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Client: Longview, City of
Project: Sentinel Wells
Sample Matrix: Drinking water

Service Request: K1502369
Date Extracted: 03/17/2015
Date Analyzed: 03/17/2015

Lab Control Spike Summary
Volatile Organic Compounds

Extraction Method: METHOD
Analysis Method: 524.2

Units: ug/L
Basis: NA
Level: Low
Extraction Lot: KWG1502193

	Lab Control Sample KWG1502193-3 Lab Control Spike			
Analyte Name	**Result**	**Spike Amount**	**%Rec**	**%Rec Limits**
Bromoform	5.13	5.00	103	70-130
1,1,2,2-Tetrachloroethane	5.59	5.00	112	70-130
Isopropylbenzene	5.24	5.00	105	70-130
1,1-Dichloropropene	5.21	5.00	104	70-130
Bromobenzene	5.24	5.00	105	70-130
n-Propylbenzene	6.02	5.00	120	70-130
1,3,5-Trimethylbenzene	5.78	5.00	116	70-130
2-Chlorotoluene	5.90	5.00	118	70-130
4-Chlorotoluene	5.92	5.00	118	70-130
tert-Butylbenzene	5.68	5.00	114	70-130
1,2,4-Trimethylbenzene	5.81	5.00	116	70-130
sec-Butylbenzene	5.94	5.00	119	70-130
p-Isopropyltoluene	5.73	5.00	115	70-130
1,3-Dichlorobenzene	5.40	5.00	108	70-130
1,4-Dichlorobenzene	5.25	5.00	105	70-130
n-Butylbenzene	5.73	5.00	115	70-130
1,2-Dichlorobenzene	5.38	5.00	108	70-130
1,2-Dibromo-3-chloropropane (DBCP)	5.40	5.00	108	70-130
1,2,4-Trichlorobenzene	5.04	5.00	101	70-130
Hexachlorobutadiene	5.33	5.00	107	70-130
Naphthalene	4.83	5.00	97	70-130
1,1,2-Trichloroethane	4.76	5.00	95	70-130
1,1,1,2-Tetrachloroethane	5.54	5.00	111	70-130
1,2,3-Trichloropropane	5.13	5.00	103	70-130
1,2,3-Trichlorobenzene	5.20	5.00	104	70-130

Results flagged with an asterisk (*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Semivolatile Organics by EPA Method 525.2

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Analytical Results

Client:	Longview, City of	**Service Request:**	K1502369
Project:	Sentinel Wells	**Date Collected:**	03/09/2015
Sample Matrix:	Drinking water	**Date Received:**	03/09/2015

Semivolatile Organics by EPA Method 525.2

Sample Name:	DW-1	**Units:**	ug/L
Lab Code:	K1502369-001	**Basis:**	NA
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	525.2		

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Hexachlorocyclopentadiene	ND	U	0.098	1	03/23/15	03/25/15	KWG1502393	*
Fluorene	ND	U	0.049	1	03/23/15	03/25/15	KWG1502393	
Propachlor	ND	U	0.098	1	03/23/15	03/25/15	KWG1502393	
Hexachlorobenzene	ND	U	0.098	1	03/23/15	03/25/15	KWG1502393	
Simazine	ND	U	0.049	1	03/23/15	03/25/15	KWG1502393	
Atrazine	ND	U	0.098	1	03/23/15	03/25/15	KWG1502393	
Metribuzin	ND	U	0.20	1	03/23/15	03/25/15	KWG1502393	
Alachlor	ND	U	0.070	1	03/23/15	03/25/15	KWG1502393	
Bromacil	ND	U	0.20	1	03/23/15	03/25/15	KWG1502393	
Metolachlor	ND	U	0.088	1	03/23/15	03/25/15	KWG1502393	
Butachlor	ND	U	0.098	1	03/23/15	03/25/15	KWG1502393	
Bis(2-ethylhexyl) Adipate	ND	U	0.59	1	03/23/15	03/25/15	KWG1502393	
Bis(2-ethylhexyl) Phthalate	ND	U	0.59	1	03/23/15	03/25/15	KWG1502393	
Benzo(a)pyrene	ND	U	0.020	1	03/23/15	03/25/15	KWG1502393	

* See Case Narrative

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
1,3-Dimethyl-2-nitrobenzene	100	70-130	03/25/15	Acceptable
Triphenyl Phosphate	84	70-130	03/25/15	Acceptable
Perylene-d12	90	70-130	03/25/15	Acceptable

Comments:

ALS Group USA, Corp. dba ALS Environmental

Analytical Results

Client:	Longview, City of	**Service Request:**	K1502369
Project:	Sentinel Wells	**Date Collected:**	NA
Sample Matrix:	Drinking water	**Date Received:**	NA

Semivolatile Organics by EPA Method 525.2

Sample Name:	Method Blank	**Units:**	ug/L
Lab Code:	KWG1502393-4	**Basis:**	NA
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	525.2		

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Hexachlorocyclopentadiene	ND	U	0.10	1	03/23/15	03/25/15	KWG1502393	*
Fluorene	ND	U	0.050	1	03/23/15	03/25/15	KWG1502393	
Propachlor	ND	U	0.10	1	03/23/15	03/25/15	KWG1502393	
Hexachlorobenzene	ND	U	0.10	1	03/23/15	03/25/15	KWG1502393	
Simazine	ND	U	0.050	1	03/23/15	03/25/15	KWG1502393	
Atrazine	ND	U	0.10	1	03/23/15	03/25/15	KWG1502393	
Metribuzin	ND	U	0.20	1	03/23/15	03/25/15	KWG1502393	
Alachlor	ND	U	0.072	1	03/23/15	03/25/15	KWG1502393	
Bromacil	ND	U	0.20	1	03/23/15	03/25/15	KWG1502393	
Metolachlor	ND	U	0.090	1	03/23/15	03/25/15	KWG1502393	
Butachlor	ND	U	0.10	1	03/23/15	03/25/15	KWG1502393	
Bis(2-ethylhexyl) Adipate	ND	U	0.60	1	03/23/15	03/25/15	KWG1502393	
Bis(2-ethylhexyl) Phthalate	ND	U	0.60	1	03/23/15	03/25/15	KWG1502393	
Benzo(a)pyrene	ND	U	0.020	1	03/23/15	03/25/15	KWG1502393	

* See Case Narrative

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
1,3-Dimethyl-2-nitrobenzene	97	70-130	03/25/15	Acceptable
Triphenyl Phosphate	83	70-130	03/25/15	Acceptable
Perylene-d12	86	70-130	03/25/15	Acceptable

Comments:

Client: Longview, City of
Project: Sentinel Wells
Sample Matrix: Drinking water

Service Request: K1502369

Surrogate Recovery Summary
Semivolatile Organics by EPA Method 525.2

Extraction Method: METHOD
Analysis Method: 525.2

Units: Percent
Level: Low

Sample Name	Lab Code	Sur1	Sur2	Sur3
DW-1	K1502369-001	100	84	90
Batch QC	K1502415-001	105	84	71
Method Blank	KWG1502393-4	97	83	86
Batch QCMS	KWG1502393-1	91	93	88
Batch QCDMS	KWG1502393-2	95	96	89
Lab Control Sample	KWG1502393-3	96	100	82

Surrogate Recovery Control Limits (%)

Sur1	=	1,3-Dimethyl-2-nitrobenzene	70-130
Sur2	=	Triphenyl Phosphate	70-130
Sur3	=	Perylene-d12	70-130

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502369
Project:	Sentinel Wells	**Date Extracted:**	03/23/2015
Sample Matrix:	Drinking water	**Date Analyzed:**	03/26/2015

Matrix Spike/Duplicate Matrix Spike Summary
Semivolatile Organics by EPA Method 525.2

Sample Name:	Batch QC	**Units:**	ug/L
Lab Code:	K1502415-001	**Basis:**	NA
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	525.2	**Extraction Lot:**	KWG1502393

		Batch QCMS KWG1502393-1 Matrix Spike			Batch QCDMS KWG1502393-2 Duplicate Matrix Spike					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**%Rec**	**Result**	**Spike Amount**	**%Rec**	**%Rec Limits**	**RPD**	**RPD Limit**
Hexachlorocyclopentadiene	ND	1.48	0.971	152 *	1.43	0.971	147 *	70-130	3	30
Fluorene	ND	1.01	0.971	104	1.00	0.971	103	70-130	0	30
Propachlor	ND	1.10	0.971	114	1.11	0.971	114	70-130	1	30
Hexachlorobenzene	ND	0.911	0.971	94	0.920	0.971	95	70-130	1	30
Simazine	ND	0.865	0.971	89	0.868	0.971	89	70-130	0	30
Atrazine	ND	0.942	0.971	97	0.878	0.971	90	70-130	7	30
Metribuzin	ND	0.999	0.971	103	0.989	0.971	102	70-130	1	30
Alachlor	ND	1.02	0.971	105	1.01	0.971	104	70-130	1	30
Bromacil	ND	1.06	0.971	109	1.02	0.971	105	70-130	4	30
Metolachlor	ND	1.12	0.971	116	1.10	0.971	113	70-130	2	30
Butachlor	ND	1.09	0.971	112	1.07	0.971	111	70-130	1	30
Bis(2-ethylhexyl) Adipate	ND	1.13	0.971	116	1.14	0.971	117	70-130	1	30
Bis(2-ethylhexyl) Phthalate	0.62	1.17	0.971	57 *	1.27	0.971	67 *	70-130	8	30
Benzo(a)pyrene	ND	1.07	0.971	110	1.05	0.971	108	70-130	2	30

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502369
Project:	Sentinel Wells	**Date Extracted:**	03/23/2015
Sample Matrix:	Drinking water	**Date Analyzed:**	03/25/2015

Lab Control Spike Summary
Semivolatile Organics by EPA Method 525.2

Extraction Method:	METHOD	**Units:**	ug/L
Analysis Method:	525.2	**Basis:**	NA
		Level:	Low
		Extraction Lot:	KWG1502393

	Lab Control Sample KWG1502393-3 Lab Control Spike			
Analyte Name	**Result**	**Spike Amount**	**%Rec**	**%Rec Limits**
Hexachlorocyclopentadiene	1.48	1.00	148 *	70-130
Fluorene	1.05	1.00	105	70-130
Propachlor	1.24	1.00	124	70-130
Hexachlorobenzene	0.947	1.00	95	70-130
Simazine	1.08	1.00	108	70-130
Atrazine	1.12	1.00	112	70-130
Metribuzin	1.09	1.00	109	70-130
Alachlor	1.11	1.00	111	70-130
Bromacil	1.10	1.00	110	70-130
Metolachlor	1.27	1.00	127	70-130
Butachlor	1.16	1.00	116	70-130
Bis(2-ethylhexyl) Adipate	1.03	1.00	103	70-130
Bis(2-ethylhexyl) Phthalate	1.03	1.00	103	70-130
Benzo(a)pyrene	1.06	1.00	106	70-130

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Endothall by EPA Method 548.1

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Analytical Results

Client:	Longview, City of	**Service Request:**	K1502369
Project:	Sentinel Wells	**Date Collected:**	03/10/2015
Sample Matrix:	Drinking water	**Date Received:**	03/10/2015

Endothall by EPA Method 548.1

Sample Name:	DW-1 3/10	**Units:**	ug/L
Lab Code:	K1502369-002	**Basis:**	NA
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	548.1		

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Endothall	ND	U	5.0	1	03/12/15	03/24/15	KWG1502057	

Comments:

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Analytical Results

Client:	Longview, City of	**Service Request:**	K1502369
Project:	Sentinel Wells	**Date Collected:**	NA
Sample Matrix:	Drinking water	**Date Received:**	NA

Endothall by EPA Method 548.1

Sample Name:	Method Blank	**Units:**	ug/L
Lab Code:	KWG1502057-4	**Basis:**	NA
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	548.1		

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Endothall	ND	U	5.0	1	03/12/15	03/24/15	KWG1502057	

Comments:

Client:	Longview, City of	**Service Request:**	K1502369
Project:	Sentinel Wells	**Date Extracted:**	03/12/2015
Sample Matrix:	Drinking water	**Date Analyzed:**	03/24/2015

Matrix Spike/Duplicate Matrix Spike Summary
Endothall by EPA Method 548.1

Sample Name:	Batch QC	**Units:**	ug/L
Lab Code:	K1502415-001	**Basis:**	NA
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	548.1	**Extraction Lot:**	KWG1502057

		Batch QCMS KWG1502057-1 Matrix Spike			Batch QCDMS KWG1502057-2 Duplicate Matrix Spike					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**%Rec**	**Result**	**Spike Amount**	**%Rec**	**%Rec Limits**	**RPD**	**RPD Limit**
Endothall	ND	91.2	100	91	94.4	100	94	30-142	3	30

Results flagged with an asterisk (*) indicate values outside control criteria.

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Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Client:	Longview, City of	**Service Request:**	K1502369
Project:	Sentinel Wells	**Date Extracted:**	03/12/2015
Sample Matrix:	Drinking water	**Date Analyzed:**	03/24/2015

Lab Control Spike Summary
Endothall by EPA Method 548.1

Extraction Method:	METHOD	**Units:**	ug/L
Analysis Method:	548.1	**Basis:**	NA
		Level:	Low
		Extraction Lot:	KWG1502057

	Lab Control Sample KWG1502057-3 Lab Control Spike			
Analyte Name	**Result**	**Spike Amount**	**%Rec**	**%Rec Limits**
Endothall	94.0	100	94	30-142

Results flagged with an asterisk (*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Diquat and Paraquat by EPA Method 549.2

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Analytical Results

Client:	Longview, City of	**Service Request:**	K1502369
Project:	Sentinel Wells	**Date Collected:**	03/09/2015
Sample Matrix:	Drinking water	**Date Received:**	03/09/2015

Diquat and Paraquat by EPA Method 549.2

Sample Name:	DW-1	**Units:**	ug/L
Lab Code:	K1502369-001	**Basis:**	NA
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	549.2		

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Diquat	ND	U	0.40	1	03/12/15	03/12/15	KWG1502015	
Paraquat	ND	U	0.80	1	03/12/15	03/12/15	KWG1502015	

Comments:

Analytical Results

Client:	Longview, City of	**Service Request:**	K1502369
Project:	Sentinel Wells	**Date Collected:**	NA
Sample Matrix:	Drinking water	**Date Received:**	NA

Diquat and Paraquat by EPA Method 549.2

Sample Name:	Method Blank	**Units:**	ug/L
Lab Code:	KWG1502015-5	**Basis:**	NA
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	549.2		

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Diquat	ND	U	0.40	1	03/12/15	03/12/15	KWG1502015	
Paraquat	ND	U	0.80	1	03/12/15	03/12/15	KWG1502015	

Comments:

QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502369
Project:	Sentinel Wells	**Date Extracted:**	03/12/2015
Sample Matrix:	Drinking water	**Date Analyzed:**	03/12/2015

Matrix Spike/Duplicate Matrix Spike Summary
Diquat and Paraquat by EPA Method 549.2

Sample Name:	Batch QC	**Units:**	ug/L
Lab Code:	K1502415-001	**Basis:**	NA
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	549.2	**Extraction Lot:**	KWG1502015

		Batch QCMS KWG1502015-1 Matrix Spike				Batch QCDMS KWG1502015-2 Duplicate Matrix Spike						
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**%Rec**		**Result**	**Spike Amount**	**%Rec**		**%Rec Limits**	**RPD**	**RPD Limit**
Diquat	ND	7.09	12.0	59	*	6.64	12.0	55	*	70-130	7	30
Paraquat	ND	14.6	12.0	122		13.2	12.0	110		70-130	10	30

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Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502369
Project:	Sentinel Wells	**Date Extracted:**	03/12/2015
Sample Matrix:	Drinking water	**Date Analyzed:**	03/12/2015

Lab Control Spike Summary
Diquat and Paraquat by EPA Method 549.2

Extraction Method:	METHOD	**Units:**	ug/L
Analysis Method:	549.2	**Basis:**	NA
		Level:	Low
		Extraction Lot:	KWG1502015

	Lab Control Sample KWG1502015-4 Lab Control Spike			
Analyte Name	**Result**	**Spike Amount**	**%Rec**	**%Rec Limits**
Diquat	12.7	12.0	106	70-130
Paraquat	13.5	12.0	112	70-130

Results flagged with an asterisk (*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Chlorinated Phenolic Organic Compounds

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Analytical Results

Client:	Longview, City of	**Service Request:**	K1502369
Project:	Sentinel Wells	**Date Collected:**	3/9/2015
Sample Matrix:	Drinking water	**Date Received:**	3/9/2015

EPA Method 1653A
Chlorinated Phenolic Organic Compounds

Sample Name:	DW-1	Units:	ug/L (ppb)
Lab Code:	K1502369-001	Basis:	NA
Test Notes:			

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
2,4,6-Trichlorophenol	METHOD	1653A	2.5	1	3/11/2015	3/17/2015	ND	
2,4,5-Trichlorophenol	METHOD	1653A	2.5	1	3/11/2015	3/17/2015	ND	
2,3,4,6-Tetrachlorophenol	METHOD	1653A	2.5	1	3/11/2015	3/17/2015	ND	
3,4,6-Trichloroguaiacol	METHOD	1653A	2.5	1	3/11/2015	3/17/2015	ND	
3,4,5-Trichloroguaiacol	METHOD	1653A	2.5	1	3/11/2015	3/17/2015	ND	
3,4,6-Trichlorocatechol	METHOD	1653A	5.0	1	3/11/2015	3/17/2015	ND	
3,4,5-Trichlorocatechol	METHOD	1653A	5.0	1	3/11/2015	3/17/2015	ND	
Trichlorosyringol	METHOD	1653A	2.5	1	3/11/2015	3/17/2015	ND	
4,5,6-Trichloroguaiacol	METHOD	1653A	2.5	1	3/11/2015	3/17/2015	ND	
Pentachlorophenol	METHOD	1653A	5.0	1	3/11/2015	3/17/2015	ND	
Tetrachloroguaiacol	METHOD	1653A	5.0	1	3/11/2015	3/17/2015	ND	
Tetrachlorocatechol	METHOD	1653A	5.0	1	3/11/2015	3/17/2015	ND	

ALS Group USA, Corp. dba ALS Environmental

Analytical Results

Client:	Longview, City of	**Service Request:**	K1502369
Project:	Sentinel Wells	**Date Collected:**	NA
Sample Matrix:	Drinking water	**Date Received:**	NA

EPA Method 1653A
Chlorinated Phenolic Organic Compounds

Sample Name:	Method Blank	Units:	ug/L (ppb)
Lab Code:	KWG1502012-3	Basis:	NA
Test Notes:			

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
2,4,6-Trichlorophenol	METHOD	1653A	2.5	1	3/11/2015	3/17/2015	ND	
2,4,5-Trichlorophenol	METHOD	1653A	2.5	1	3/11/2015	3/17/2015	ND	
2,3,4,6-Tetrachlorophenol	METHOD	1653A	2.5	1	3/11/2015	3/17/2015	ND	
3,4,6-Trichloroguaiacol	METHOD	1653A	2.5	1	3/11/2015	3/17/2015	ND	
3,4,5-Trichloroguaiacol	METHOD	1653A	2.5	1	3/11/2015	3/17/2015	ND	
3,4,6-Trichlorocatechol	METHOD	1653A	5.0	1	3/11/2015	3/17/2015	ND	
3,4,5-Trichlorocatechol	METHOD	1653A	5.0	1	3/11/2015	3/17/2015	ND	
Trichlorosyringol	METHOD	1653A	2.5	1	3/11/2015	3/17/2015	ND	
4,5,6-Trichloroguaiacol	METHOD	1653A	2.5	1	3/11/2015	3/17/2015	ND	
Pentachlorophenol	METHOD	1653A	5.0	1	3/11/2015	3/17/2015	ND	
Tetrachloroguaiacol	METHOD	1653A	5.0	1	3/11/2015	3/17/2015	ND	
Tetrachlorocatechol	METHOD	1653A	5.0	1	3/11/2015	3/17/2015	ND	

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Analytical Results

Client:	Longview, City of	**Service Request:**	K1502369
Project:	Sentinel Wells	**Date Collected:**	NA
Sample Matrix:	Drinking water	**Date Received:**	NA
		Date Extracted:	3/11/2015

Labeled Compound and Internal Standard Recovery Summary
Chlorinated Phenolic Organic Compounds
1653A

			Percent Recovery	
	CAS	Sample Name:	**DW-1**	**Method Blank**
	Percent	Lab Code:	K1502369-001	KWG1502012-3
	Recovery	Date Analyzed:	3/17/2015	3/17/2015
Analyte	**Acceptance Criteria**			
3,4,5-Trichlorophenol	36-131		98	101
4,5,6-Trichloroguaiacol-13c6	25-134		97	105
Pentachlorophenol-13c6	22-117		82	100
Tetrachloroguaiacol-13c6	18-129		94	105
Tetrachlorocatechol-13c6	D-121		41	88

ALS Group USA, Corp. dba ALS Environmental

Analytical Results

Client:	Longview, City of	**Service Request:**	K1502369
Project:	Sentinel Wells	**Date Collected:**	NA
Sample Matrix:	Drinking water	**Date Received:**	NA
		Date Extracted:	3/11/2015
		Date Analyzed:	3/17/2015

Duplicate Summary
Chlorinated Phenolic Organic Compounds

Sample Name:	Batch QC	Units:	ug/L (ppb)
Lab Code:	KWG1502012-1	Basis:	NA
Test Notes:			

Analyte	Prep Method	Analysis Method	MRL	Sample Result	Duplicate Sample Result	Average	Relative Percent Difference	Result Notes
2,4,6-Trichlorophenol	METHOD	1653A	2.5	ND	ND	ND	-	
2,4,5-Trichlorophenol	METHOD	1653A	2.5	ND	ND	ND	-	
2,3,4,6-Tetrachlorophenol	METHOD	1653A	2.5	ND	ND	ND	-	
3,4,6-Trichloroguaiacol	METHOD	1653A	2.5	ND	ND	ND	-	
3,4,5-Trichloroguaiacol	METHOD	1653A	2.5	ND	ND	ND	-	
3,4,6-Trichlorocatechol	METHOD	1653A	5.0	ND	ND	ND	-	
3,4,5-Trichlorocatechol	METHOD	1653A	5.0	ND	ND	ND	-	
Trichlorosyringol	METHOD	1653A	2.5	ND	ND	ND	-	
4,5,6-Trichloroguaiacol	METHOD	1653A	2.5	ND	ND	ND	-	
Pentachlorophenol	METHOD	1653A	5.0	ND	ND	ND	-	
Tetrachloroguaiacol	METHOD	1653A	5.0	ND	ND	ND	-	
Tetrachlorocatechol	METHOD	1653A	5.0	ND	ND	ND	-	

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Analytical Results

Client:	Longview, City of	**Service Request:**	K1502369
Project:	Sentinel Wells	**Date Collected:**	NA
LCS Matrix:	Drinking water	**Date Received:**	NA
		Date Extracted:	3/11/2015
		Date Analyzed:	3/17/2015

Ongoing Precision and Recovery Summary
Chlorinated Phenolic Organic Compounds

Sample Name:	Lab Control Sample	Units:	ug/L (ppb)
Lab Code:	KWG1502012-2	Basis:	NA
Test Notes:			

Analyte	Prep Method	Analysis Method	True Value	Result	Percent Recovery	CAS Percent Recovery Acceptance Limits	Result Notes
2,4,6-Trichlorophenol	METHOD	1653A	50	46.1	92	72-146	
2,4,5-Trichlorophenol	METHOD	1653A	50	47.5	95	82-128	
2,3,4,6-Tetrachlorophenol	METHOD	1653A	50	50.0	100	82-132	
3,4,6-Trichloroguaiacol	METHOD	1653A	50	46.7	93	74-140	
3,4,5-Trichloroguaiacol	METHOD	1653A	50	49.3	99	80-134	
3,4,6-Trichlorocatechol	METHOD	1653A	100	89.3	89	64-149	
3,4,5-Trichlorocatechol	METHOD	1653A	100	96.9	97	72-128	
Trichlorosyringol	METHOD	1653A	50	51.1	102	66-174	
4,5,6-Trichloroguaiacol	METHOD	1653A	50	49.2	98	88-116	
Pentachlorophenol	METHOD	1653A	100	89.0	89	84-120	
Tetrachloroguaiacol	METHOD	1653A	100	93.2	93	81-126	
Tetrachlorocatechol	METHOD	1653A	100	94.4	94	81-132	

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

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34 Dogwood Lane ▪ Middletown, PA 17057 ▪ Phone: 717-944-5541 ▪ Fax: 717-944-1430 ▪ www.alsglobal.com

NELAP Certifications: NJ PA010 , NY 11759 , PA 22-293 DoD ELAP: A2LA 0818.01
State Certifications: DE ID 11 , MA PA0102 , MD 128 , VA 460157 , WV 343

March 23, 2015

Mr. Gregory Salata
ALS Environmental - Kelso
1317 S. 13th Avenue
Kelso, WA 98626

Certificate of Analysis

Project Name:	**SOCs**	Workorder:	**2058592**
Purchase Order:	**K1502369**	Workorder ID:	**K1502369**

Dear Mr. Salata:

Enclosed are the analytical results for samples received by the laboratory on Wednesday, March 11, 2015.

The ALS Environmental laboratory in Middletown, Pennsylvania is a National Environmental Laboratory Accreditation Program (NELAP) accredited laboratory and as such, certifies that all applicable test results meet the requirements of NELAP.

If you have any questions regarding this certificate of analysis, please contact Mrs. Kelli L Wolfgang (Project Coordinator) at (717) 944-5541.

Analyses were performed according to our laboratory's NELAP-approved quality assurance program and any applicable state requirements. The test results meet requirements of the current NELAP standards or state requirements, where applicable. For a specific list of accredited analytes, refer to the certifications section of the ALS website at www.alsglobal.com/en/Our-Services/Life-Sciences/Environmental/Downloads.

This laboratory report may not be reproduced, except in full, without the written approval of ALS Environmental.

ALS Spring City: 10 Riverside Drive, Spring City, PA 19475 610-948-4903

CC: Ms. Chris Leaf

This page is included as part of the Analytical Report and must be retained as a permanent record thereof.

Kelli Wolfgang

Mrs. Kelli L Wolfgang
Project Coordinator

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State Certifications: DE ID 11 , MA PA0102 , MD 128 , VA 460157 , WV 343

SAMPLE SUMMARY

Workorder: 2058592 K1502369

Lab ID	Sample ID	Matrix	Date Collected	Date Received	Collected By
2058592001	K1502369-001	Drinking Water	3/9/2015 12:00	3/11/2015 09:21	Collected by Client

Notes

-- Samples collected by ALS personnel are done so in accordance with the procedures set forth in the ALS Field Sampling Plan (20 - Field Services Sampling Plan).
-- All Waste Water analyses comply with methodology requirements of 40 CFR Part 136.
-- All Drinking Water analyses comply with methodology requirements of 40 CFR Part 141.
-- Unless otherwise noted, all quantitative results for soils are reported on a dry weight basis.
-- The Chain of Custody document is included as part of this report.
-- All Library Search analytes should be regarded as tentative identifications based on the presumptive evidence of the mass spectra. Concentrations reported are estimated values.
-- Parameters identified as "analyze immediately" require analysis within 15 minutes of collection. Any "analyze immediately" parameters not listed under the header "Field Parameters" are preformed in the laboratory and are therefore analyzed out of hold time.
-- Method references listed on this report beginning with the prefix “S” followed by a method number (such as S2310B-97) refer to methods from “Standard Methods for the Examination of Water and Wastewater”.

Standard Acronyms/Flags

J	Indicates an estimated value between the Method Detection Limit (MDL) and the Practical Quantitation Limit (PQL) for the analyte
U	Indicates that the analyte was Not Detected (ND)
N	Indicates presumptive evidence of the presence of a compound
MDL	Method Detection Limit
PQL	Practical Quantitation Limit
RDL	Reporting Detection Limit
ND	Not Detected - indicates that the analyte was Not Detected at the RDL
Cntr	Analysis was performed using this container
RegLmt	Regulatory Limit
LCS	Laboratory Control Sample
MS	Matrix Spike
MSD	Matrix Spike Duplicate
DUP	Sample Duplicate
%Rec	Percent Recovery
RPD	Relative Percent Difference
LOD	DoD Limit of Detection
LOQ	DoD Limit of Quantitation
DL	DoD Detection Limit
I	Indicates reported value is greater than or equal to the Method Detection Limit (MDL) but less than the Report Detection Limit (RDL)

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ANALYTICAL RESULTS

Workorder: 2058592 K1502369

Lab ID: **2058592001** Date Collected: 3/9/2015 12:00 Matrix: Drinking Water

Sample ID: **K1502369-001** Date Received: 3/11/2015 09:21

Parameters	Results	Flag	Units	RDL	Method	Prepared By	Analyzed	By	*Cntr*
HERBICIDES									
Glyphosate	ND		ug/L	4.5	EPA 547		3/22/15 12:57	CGS	C
CARBAMATES									
Aldicarb	ND		ug/L	0.26	EPA 531.1		3/16/15 22:48	CGS	A
Aldicarb Sulfone	ND		ug/L	0.32	EPA 531.1		3/16/15 22:48	CGS	A
Aldicarb Sulfoxide	ND		ug/L	0.27	EPA 531.1		3/16/15 22:48	CGS	A
Carbaryl	ND		ug/L	0.29	EPA 531.1		3/16/15 22:48	CGS	A
Carbofuran	ND		ug/L	0.43	EPA 531.1		3/16/15 22:48	CGS	A
3-Hydroxycarbofuran	ND		ug/L	0.27	EPA 531.1		3/16/15 22:48	CGS	A
Methiocarb	ND		ug/L	0.18	EPA 531.1		3/16/15 22:48	CGS	A
Methomyl	ND		ug/L	0.49	EPA 531.1		3/16/15 22:48	CGS	A
Oxamyl	ND		ug/L	0.50	EPA 531.1		3/16/15 22:48	CGS	A
Propoxur	ND		ug/L	0.32	EPA 531.1		3/16/15 22:48	CGS	A

Kelli Wolfgang

Mrs. Kelli L Wolfgang
Project Coordinator

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State Certifications: DE ID 11 , MA PA0102 , MD 128 , VA 460157 , WV 343

QUALITY CONTROL DATA

Workorder: 2058592 K1502369

QC Batch: HPLC/3911 **Analysis Method:** EPA 531.1

QC Batch Method: EPA 531.1

Associated Lab Samples: 2058592001

METHOD BLANK: 2149046

Parameter	Blank Result	Units	Reporting Limit	Qualifiers
Aldicarb Sulfoxide	ND	ug/L	0.27	
Aldicarb Sulfone	ND	ug/L	0.32	
Oxamyl	ND	ug/L	0.50	
Methomyl	ND	ug/L	0.49	
3-Hydroxycarbofuran	ND	ug/L	0.27	
Aldicarb	ND	ug/L	0.26	
Propoxur	ND	ug/L	0.32	
Carbofuran	ND	ug/L	0.43	
Carbaryl	ND	ug/L	0.29	
Methiocarb	ND	ug/L	0.18	

LABORATORY CONTROL SAMPLE: 2149047

Parameter	LCS % Rec	Units	Spike Conc.	LCS Result	% Rec Limit	Qualifiers
Aldicarb Sulfoxide	98.7	ug/L	10	9.9	80 - 120	
Aldicarb Sulfone	87.3	ug/L	10	8.7	80 - 120	
Oxamyl	99.8	ug/L	10	10	80 - 120	
Methomyl	94.4	ug/L	10	9.4	80 - 120	
3-Hydroxycarbofuran	100	ug/L	10	10.0	80 - 120	
Aldicarb	96.5	ug/L	10	9.7	80 - 120	
Propoxur	92.4	ug/L	10	9.2	80 - 120	
Carbofuran	90.9	ug/L	10	9.1	80 - 120	
Carbaryl	88.8	ug/L	10	8.9	80 - 120	
Methiocarb	90.6	ug/L	10	9.1	80 - 120	

SAMPLE DUPLICATE: 2150707 ORIGINAL:

Parameter	Original Result	Units	DUP Result	RPD	Max RPD	Qualifiers
Aldicarb Sulfoxide	0	ug/L	0	NC	20	
Aldicarb Sulfone	0	ug/L	0	NC	20	
Oxamyl	0	ug/L	0	NC	20	
Methomyl	0	ug/L	0	NC	20	
3-Hydroxycarbofuran	0	ug/L	0	NC	20	

QUALITY CONTROL DATA

Workorder: 2058592 K1502369

Aldicarb	0	ug/L	0	NC	20
Propoxur	0	ug/L	0	NC	20
Carbofuran	0	ug/L	0	NC	20
Carbaryl	0	ug/L	0	NC	20
Methiocarb	0	ug/L	0	NC	20

MATRIX SPIKE SAMPLE: 2149049 ORIGINAL:

****NOTE - The Original Result shown below is a raw result and is only used for the purpose of calculating Matrix Spike percent recoveries. This result is not a final value and cannot be used as such.

Parameter	Original Result	Units	Spike Conc.	MS Result	MS % Rec	% Rec Limit	Qualifiers
Aldicarb Sulfoxide	0	ug/L	10	12.3558	124	65 - 135	
Aldicarb Sulfone	0	ug/L	10	11.5018	115	65 - 135	
Oxamyl	0	ug/L	10	13.1784	132	65 - 135	
Methomyl	0	ug/L	10	12.0278	120	65 - 135	
3-Hydroxycarbofuran	0	ug/L	10	12.6868	127	65 - 135	
Aldicarb	0	ug/L	10	12.1718	122	65 - 135	
Propoxur	0	ug/L	10	11.4132	114	65 - 135	
Carbofuran	0	ug/L	10	11.52	115	65 - 135	
Carbaryl	0	ug/L	10	11.5322	115	65 - 135	
Methiocarb	0	ug/L	10	10.9469	109	65 - 135	

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State Certifications: DE ID 11 , MA PA0102 , MD 128 , VA 460157 , WV 343

QUALITY CONTROL DATA

Workorder: 2058592 K1502369

QC Batch: HPLC/3915 **Analysis Method:** EPA 547

QC Batch Method: EPA 547

Associated Lab Samples: 2058592001

METHOD BLANK: 2153468

Parameter	Blank Result	Units	Reporting Limit	Qualifiers
Glyphosate	ND	ug/L	4.5	

LABORATORY CONTROL SAMPLE: 2153469

Parameter	LCS % Rec	Units	Spike Conc.	LCS Result	% Rec Limit	Qualifiers
Glyphosate	99.5	ug/L	500	497	80 - 120	

MATRIX SPIKE SAMPLE: 2153470 ORIGINAL:

****NOTE - The Original Result shown below is a raw result and is only used for the purpose of calculating Matrix Spike percent recoveries. This result is not a final value and cannot be used as such.

Parameter	Original Result	Units	Spike Conc.	MS Result	MS % Rec	% Rec Limit	Qualifiers
Glyphosate	0	ug/L	500	482.285	96.5	70 - 130	

SAMPLE DUPLICATE: 2153471 ORIGINAL:

Parameter	Original Result	Units	DUP Result	RPD	Max RPD	Qualifiers
Glyphosate	0	ug/L	0	NC	40	

MATRIX SPIKE SAMPLE: 2153472 ORIGINAL:

****NOTE - The Original Result shown below is a raw result and is only used for the purpose of calculating Matrix Spike percent recoveries. This result is not a final value and cannot be used as such.

Parameter	Original Result	Units	Spike Conc.	MS Result	MS % Rec	% Rec Limit	Qualifiers
Glyphosate	0	ug/L	500	448.493	89.7	70 - 130	

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State Certifications: DE ID 11 , MA PA0102 , MD 128 , VA 460157 , WV 343

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Workorder: 2058592 K1502369

Lab ID	Sample ID	Prep Method	Prep Batch	Analysis Method	Analysis Batch
2058592001	K1502369-001			EPA 531.1	HPLC/3911
2058592001	K1502369-001			EPA 547	HPLC/3915

ALS Environmental Chain of Custody

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ALS *205892*

Project Number: K1502369
Project Manager: Chris Leaf

Lab Code	Sample ID	# of Cont.	Matrix	Sample Date	Sample Time	Lab ID	CARBAM 531.1	GLYPH 547
K1502369-001	DW-1	4	Drinking Water	3/9/15	1200	Middletown ALS	X	X

RCVD- 2-40mL amber
2-125mL amber
AT 3/11/15

AT
3/11/15
13C

Test Comments
CARBAM - 531.1 K1502369-001 Full list for WA Regulations - no compliance report required.

w/ac

Folder Comments:
Report all metals in mg/L. No DW State form required.

KW 03/12/15

	Y	N	Initials	Cooler Temp
Custody Seals Present?	✓		AT	2 °C
(if present) Seals Intact?	✓			Cooler #:
Received on Ice?	✓			
COC/Lbls Complete	✓			Therm ID: TH294
Cont in Good Cond?	✓			
Correct Containers?	✓			Ship Carrier
Correct Samp Vol?	✓			FedEx UPS
Correct Preservation?	✓			
Headspace/Volatiles?				DHL

Tracking #: 5478974225 7

Special Instructions/Comments
Please provide the electronic (PDF and EDD) report to the following e-mail address:
ALKLS.Data@alsglobal.com

CL 3/10/15

H - Test is On Hold P - Test is Authorized for Prep Only

Turnaround Requirements
___ RUSH (Surcharges Apply)
PLEASE CIRCLE WORK DAYS
1 2 3 4 5
✓ STANDARD
Requested FAX Date: ___
Requested Report Date: 03/26/15

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 N
EDD N

Invoice Information
PO# K1502369
Bill to

Relinquished By: [signature] 3/10/15 1130 Received By: [signature] 3/11/15 0921 Airbill Number: ___

K1502369

✓ **Ship To: Middletown ALS**
ALS Laboratory Group
34 Dogwood Lane
Middletown, PA 17057

PC ✓ Date CL 3/10/15
SMO AM Date 3/10/15

Instructions:
Ice ✓
Dry Ice ____
No Ice ____

Shipping:
Overnight ✓
2nd Day ____
Ground ____

Bill to Client Account ____

Comments:

ALS Group USA, Corp.
www.alsglobal.com
An ALS Limited Company

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State Certification: CT PH-0224, DE ID 11, GA 914, MA PA0102, MD 128, LA 04162, VA 421, WY EPA Region 8, WV 343

QUALITY CONTROL DATA

Workorder **2058592** **Project Name** **K1502369**

QC Batch HPLC / 3911

QC Batch Method EPA 531.1 **Analysis Method** EPA 531.1

Associated Lab Samples 2058592001

METHOD BLANK 2149046

Parameter	Blank Result	Qualifiers	Units	Reporting Limit	% Rec	% Rec Limits
3-Hydroxycarbofuran	ND	U	ug/L	0.27		
Aldicarb	ND	U	ug/L	0.26		
Aldicarb Sulfone	ND	U	ug/L	0.32		
Aldicarb Sulfoxide	ND	U	ug/L	0.27		
Carbaryl	ND	U	ug/L	0.29		
Carbofuran	ND	U	ug/L	0.43		
Methiocarb	ND	U	ug/L	0.18		
Methomyl	ND	U	ug/L	0.49		
Oxamyl	ND	U	ug/L	0.50		
Propoxur	ND	U	ug/L	0.32		

LABORATORY CONTROL SAMPLE 2149047

Parameter	LCS Result	Qualifiers	Units	Spike Conc.	LCS % Rec	% Rec Limits
3-Hydroxycarbofuran	10		ug/L	10	100	80-120
Aldicarb	9.7		ug/L	10	96.5	80-120
Aldicarb Sulfone	8.7		ug/L	10	87.3	80-120
Aldicarb Sulfoxide	9.9		ug/L	10	98.7	80-120
Carbaryl	8.9		ug/L	10	88.8	80-120
Carbofuran	9.1		ug/L	10	90.9	80-120

This is an addendum to the Certificate of Analysis.

Methiocarb	9.1	ug/L	10	90.6	80-120
Methomyl	9.4	ug/L	10	94.4	80-120
Oxamyl	10	ug/L	10	99.8	80-120
Propoxur	9.2	ug/L	10	92.4	80-120

SAMPLE DUPLICATE 2150707 Original 2057116002

*****NOTE - The Original Result and Duplicate Result shown below are raw results and are only used for the purpose of calculating Sample Duplicate percent recoveries. This result is not a final value and cannot be used as such.*

Parameter	Original Result	Qualifiers	Units	DUP Result	RPD	Max RPD	% Rec	% Rec Limits
3-Hydroxycarbofuran	ND	U	ug/L	ND	NC	20		
Aldicarb	ND	U	ug/L	ND	NC	20		
Aldicarb Sulfone	ND	U	ug/L	ND	NC	20		
Aldicarb Sulfoxide	ND	U	ug/L	ND	NC	20		
Carbaryl	ND	U	ug/L	ND	NC	20		
Carbofuran	ND	U	ug/L	ND	NC	20		
Methiocarb	ND	U	ug/L	ND	NC	20		
Methomyl	ND	U	ug/L	ND	NC	20		
Oxamyl	ND	U	ug/L	ND	NC	20		
Propoxur	ND	U	ug/L	ND	NC	20		

MATRIX SPIKE 2149049 Original 2058591001

*****NOTE - The Original Result shown below is a raw result and is only used for the purpose of calculating Matrix Spike percent recoveries. This result is not a final value and cannot be used as such.*

Parameter	Original Result	Qualifiers	Units	Spike Conc.	MS Result	MS % Rec	% Rec Limits
3-Hydroxycarbofuran	ND		ug/L	10	12.6868	127	65-135
Aldicarb	ND		ug/L	10	12.1718	122	65-135
Aldicarb Sulfone	ND		ug/L	10	11.5018	115	65-135
Aldicarb Sulfoxide	ND		ug/L	10	12.3558	124	65-135
Carbaryl	ND		ug/L	10	11.5322	115	65-135
Carbofuran	ND		ug/L	10	11.52	115	65-135
Methiocarb	ND		ug/L	10	10.9469	109	65-135
Methomyl	ND		ug/L	10	12.0278	120	65-135
Oxamyl	ND		ug/L	10	13.1784	132	65-135
Propoxur	ND		ug/L	10	11.4132	114	65-135

Workorder	**2058592**	**Project Name**	**K1502369**
QC Batch	HPLC / 3915		
QC Batch Method	EPA 547	**Analysis Method**	EPA 547
Associated Lab Samples	2058592001		

METHOD BLANK 2153468

Parameter	Blank Result	Qualifiers	Units	Reporting Limit	% Rec	% Rec Limits
Glyphosate	ND	U	ug/L	4.5		

LABORATORY CONTROL SAMPLE 2153469

Parameter	LCS Result	Qualifiers	Units	Spike Conc.	LCS % Rec	% Rec Limits
Glyphosate	497		ug/L	500	99.5	80-120

SAMPLE DUPLICATE 2153471 Original 2058366001

*****NOTE - The Original Result and Duplicate Result shown below are raw results and are only used for the purpose of calculating Sample Duplicate percent recoveries. This result is not a final value and cannot be used as such.*

Parameter	Original Result	Qualifiers	Units	DUP Result	RPD	Max RPD	% Rec	% Rec Limits
Glyphosate	ND	U	ug/L	ND	NC	40		

MATRIX SPIKE 2153470 Original 2058366001

*****NOTE - The Original Result shown below is a raw result and is only used for the purpose of calculating Matrix Spike percent recoveries. This result is not a final value and cannot be used as such.*

Parameter	Original Result	Qualifiers	Units	Spike Conc.	MS Result	MS % Rec	% Rec Limits
Glyphosate	ND		ug/L	500	482.285	96.5	70-130

MATRIX SPIKE 2153472 Original 2059505001

*****NOTE - The Original Result shown below is a raw result and is only used for the purpose of calculating Matrix Spike percent recoveries. This result is not a final value and cannot be used as such.*

Parameter	Original Result	Qualifiers	Units	Spike Conc.	MS Result	MS % Rec	% Rec Limits
Glyphosate	ND		ug/L	500	448.493	89.7	70-130

Standard Acronyms/Flags	
J	Indicates an estimated value between the Method Detection Limit (MDL) and the Practical Quantitation Limit (PQL) for the analyte
U	Indicates that the analyte was Not Detected (ND)
N	Indicates presumptive evidence of the presence of a compound
MDL	Method Detection Limit
PQL	Practical Quantitation Limit
RDL	Reporting Detection Limit
ND	Not Detected - indicates that the analyte was Not Detected at the RDL
Cntr	Analysis was performed using this container
RegLmt	Regulatory Limit
LCS	Laboratory Control Sample
MS	Matrix Spike
MSD	Matrix Spike Duplicate
DUP	Sample Duplicate
%Rec	Percent Recovery
RPD	Relative Percent Difference
LOD	DoD Limit of Detection
LOQ	DoD Limit of Quantitation
DL	DoD Detection Limit
NC	Not Calculated
*	Result outside of QC limits
DIL	Dilution Factor

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Lab ID	Sample ID	Prep Method	Prep Batch	Analysis Method	Analysis Batch
2057116002	ZZZZZZZZZZ	EPA 531.1	HPLC / 3911	EPA 531.1	HPLC / 3911
2058591001	ZZZZZZZZZZ	EPA 531.1	HPLC / 3911	EPA 531.1	HPLC / 3911
2058592001	K1502369-001	EPA 531.1	HPLC / 3911	EPA 531.1	HPLC / 3911

Lab ID	Sample ID	Prep Method	Prep Batch	Analysis Method	Analysis Batch
2058366001	ZZZZZZZZZZ	EPA 547	HPLC / 3915	EPA 547	HPLC / 3915
2058592001	K1502369-001	EPA 547	HPLC / 3915	EPA 547	HPLC / 3915
2059505001	ZZZZZZZZZZ	EPA 547	HPLC / 3915	EPA 547	HPLC / 3915

LABORATORY REPORT

March 26, 2015

Jeff Coleman
Longview, City of
W/S Operation Center
Longview, WA 98632

RE: Sentinel Wells

Dear Jeff:

Enclosed are the results of the sample submitted to our laboratory on March 9, 2015. For your reference, these analyses have been assigned our service request number K1502369.

All analyses were performed according to our laboratory's NELAP and DoD-ELAP-approved quality assurance program. The test results meet requirements of the current NELAP and DoD-ELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP and DoD-ELAP-accredited analytes, refer to the certifications section at www.alsglobal.com. Results are intended to be considered in their entirety and apply only to the samples analyzed and reported herein.

If you have any questions, please call me at (805) 526-7161.

Respectfully submitted,

ALS | Environmental

Kate Aguilera

By Kate Aguilera at 9:52 am, Mar 26, 2015

Kate Aguilera
Project Manager

CASE NARRATIVE

The sample was received intact under chain of custody on March 9, 2015 and were stored in accordance with the analytical method requirements. Please refer to the sample acceptance check form for additional information. The results reported herein are applicable only to the condition of the sample at the time of sample receipt.

Hydrogen Sulfide Analysis

The sample was analyzed for hydrogen sulfide using a gas chromatograph equipped with a sulfur chemiluminescence detector (SCD). This method is not included on the laboratory's NELAP, DoD-ELAP, or AIHA-LAP scope of accreditation.

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 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.

ALS Environmental – Simi Valley

CERTIFICATIONS, ACCREDITATIONS, AND REGISTRATIONS

Agency	Web Site	Number
AIHA	http://www.aihaaccreditedlabs.org	101661
Arizona DHS	http://www.azdhs.gov/lab/license/env.htm	AZ0694
DoD ELAP	http://www.pjlabs.com/search-accredited-labs	L14-2
Florida DOH (NELAP)	http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm	E871020
Maine DHHS	http://www.maine.gov/dhhs/mecdc/environmental-health/water/dwp-services/labcert/labcert.htm	2014025
Minnesota DOH (NELAP)	http://www.health.state.mn.us/accreditation	876241
New Jersey DEP (NELAP)	http://www.nj.gov/dep/oqa/	CA009
New York DOH (NELAP)	http://www.wadsworth.org/labcert/elap/elap.html	11221
Oregon PHD (NELAP)	http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Pages/index.aspx	4068-001
Pennsylvania DEP	http://www.depweb.state.pa.us/labs	68-03307 (Registration)
Texas CEQ (NELAP)	http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html	T104704413-14-5
Utah DOH (NELAP)	http://www.health.utah.gov/lab/labimp/certification/index.html	CA016272014-4
Washington DOE	http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html	C946

Analyses were performed according to our laboratory's NELAP and DoD-ELAP approved quality assurance program. A complete listing of specific NELAP and DoD-ELAP certified analytes can be found in the certifications section at www.alsglobal.com, or at the accreditation body's website.

Each of the certifications listed above have an explicit Scope of Accreditation that applies to specific matrices/methods/analytes; therefore, please contact the laboratory for information corresponding to a particular certification.

Intra-Network Chain of Custody

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

ALS Contact: Chris Leaf

Project Name: Sentinel Wells
Project Number:
Project Manager: Jeff Coleman
Company: Longview, City of

Lab Code	Client Sample ID	# of Cont.	Matrix	Sample Date	Sample Time	Date Received	Send To	Sulfur Sulfur Liq
K1502369-002	DW-1 3/10	2	Drinking Water	3/10/15	1050	3/10/15	SIMIVALLEY	II

Test Comments

Sulfur - Sulfur Liq K1502369-002 Hydrogen Sulfide ✓

Folder Comments:

Report all metals in mg/L. No DW State form required.

Special Instructions/Comments

Please provide the electronic (PDF and EDD) report to the following e-mail address: ALKLS.Data@alsglobal.com.

CL 3/11/15

pH Checked _____

Turnaround Requirements

____ **RUSH** (Surcharges Apply)

PLEASE CIRCLE WORK DAYS

1 2 3 4 5

✓ **STANDARD**

Requested FAX Date: _____

Requested Report Date: 03/26/15

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 N

EDD N

Invoice Information

PO# K1502369

Bill to

Relinquished By: [illegible] 3/12/15 1130 Received By: K Kehr 3/13/15 1630 2° blank Airbill Number:

ALS Environmental
Sample Acceptance Check Form

Client: Longview, City of Work order: K1502369

Project: Sentinel Wells

Sample(s) received on: 3/9/15 Date opened: 3/9/15 by: SWOLF

Note: This form is used for all samples received by ALS. The use of this form for custody seals is strictly meant to indicate presence/absence and not as an indication of compliance or nonconformity. Thermal preservation and pH will only be evaluated either at the request of the client and/or as required by the method/SOP.

		Yes	No	N/A
1	Were **sample containers** properly marked with client sample ID?	☒	☐	☐
2	Container(s) **supplied by ALS**?	☒	☐	☐
3	Did **sample containers** arrive in good condition?	☒	☐	☐
4	Were **chain-of-custody** papers used and filled out?	☒	☐	☐
5	Did **sample container labels** and/or tags agree with custody papers?	☒	☐	☐
6	Was **sample volume** received adequate for analysis?	☒	☐	☐
7	Are samples within specified holding times?	☒	☐	☐
8	Was proper **temperature** (thermal preservation) of cooler at receipt adhered to?	☒	☐	☐
	Cooler Temperature: ° C Blank Temperature: 2° C **Gel Packs**			
9	Was a **trip blank** received?	☐	☒	☐
10	Were **custody seals** on outside of cooler/Box?	☒	☐	☐
	Location of seal(s)? _____ Sealing Lid?	☒	☐	☐
	Were signature and date included?	☒	☐	☐
	Were seals intact?	☒	☐	☐
	Were custody seals on outside of sample container?	☐	☒	☐
	Location of seal(s)? _____ Sealing Lid?	☐	☐	☒
	Were signature and date included?	☐	☐	☒
	Were seals intact?	☐	☐	☒
11	Do containers have appropriate **preservation**, according to method/SOP or Client specified information?	☒	☐	☐
	Is there a client indication that the submitted samples are **pH** preserved?	☐	☐	☒
	Were **VOA vials** checked for presence/absence of air bubbles?	☒	☐	☐
	Does the client/method/SOP require that the analyst check the sample pH and if necessary alter it?	☒	☐	☐
12	**Tubes:** Are the tubes capped and intact?	☐	☐	☒
	Do they contain moisture?	☐	☐	☒
13	**Badges:** Are the badges properly capped and intact?	☐	☐	☒
	Are dual bed badges separated and individually capped and intact?	☐	☐	☒

Lab Sample ID	Container Description	Required pH *	Received pH	Adjusted pH	VOA Headspace (Presence/Absence)	Receipt / Preservation Comments
K1502369-002.08	40mL VOA NP		7	1		MC 3/23/2015
K1502369-002.09	40mL VOA NP					

Explain any discrepancies: (include lab sample ID numbers): _____

RSK - MEEPP, HCL (pH<2); RSK - CO2, (pH 5-8); Sulfur (pH>4)

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Longview, City of**
Client Project ID: **Sentinel Wells** ALS Project ID: K1502369

Hydrogen Sulfide

Test Code: GC/SCD Reduced Sulfur Analysis
Instrument ID: Agilent 6890A/GC13/SCD Date(s) Collected: 3/10/15
Analyst: Mike Conejo Date Received: 3/10/15
Sample Type: Drinking Water Date Analyzed: 3/23/15
Test Notes:

Client Sample ID	ALS Sample ID	Sample Amount ml(s)	Purge Volume Liter(s)	Injection Volume ml(s)	**Result µg/L**	MRL µg/L	Data Qualifier
DW-1 3/10	K1502369-002	10.0	0.30	1.00	ND	0.21	
Method Blank	P150323-MB	10.0	0.30	1.00	ND	0.21	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

LABORATORY CONTROL SAMPLE / DUPLICATE LABORATORY CONTROL SAMPLE SUMMARY

Client: **Longview, City of**
Client Sample ID: **Duplicate Lab Control Sample**
Client Project ID: **Sentinel Wells**

ALS Project ID: K1502369
ALS Sample ID: P150323-DLCS

Test Code: GC/SCD Reduced Sulfur Analysis
Instrument ID: Agilent 6890A/GC13/SCD
Analyst: Mike Conejo
Sample Type: Drinking Water
Test Notes:

Date Collected: NA
Date Received: NA
Date Analyzed: 3/23/15
Liquid Amount: 10.0 ml(s)
Purge Volume: 0.30 Liter(s)
Injection Volume: 0.20 ml(s)

CAS #	Compound	Spike Amount LCS / DLCS ug/L	Result LCS ug/L	Result DLCS ug/L	% Recovery LCS	% Recovery DLCS	ALS Acceptance Limits	RPD	RPD Limit	Data Qualifier
7783-06-4	Hydrogen Sulfide	416	391	395	**94**	**95**	54-133	1	20	

ALS Environmental
ALS Group USA, Corp
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F : +1 360 636 1068
www.alsglobal.com

April 13, 2015

Analytical Report for Service Request No: K1502416

Jeff Coleman
Longview, City of
W/S Operation Center
P.O. Box 128
Longview, WA 98632

RE: Sentinel Wells

Dear Jeff,

Enclosed are the results of the sample(s) submitted to our laboratory March 10, 2015
For your reference, these analyses have been assigned our service request number **K1502416.**

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 3275. You may also contact me via email at Chris.Leaf@ALSGlobal.com.

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental

Chris Leaf
Project Manager

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 DEC UST	http://dec.alaska.gov/applications/eh/ehllabreports/USTLabs.aspx	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	L14-51
Florida DOH	http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm	E87412
Hawaii DOH	Not available	-
Idaho DHW	http://www.healthandwelfare.idaho.gov/Health/Labs/CertificationDrinkingWaterLabs/tabid/1833/Default.aspx	-
ISO 17025	http://www.pjlabs.com/	L14-50
Louisiana DEQ	http://www.deq.louisiana.gov/portal/DIVISIONS/PublicParticipationandPermitSupport/LouisianaLaboratoryAccreditationProgram.aspx	03016
Maine DHS	Not available	WA01276
Michigan DEQ	http://www.michigan.gov/deq/0,1607,7-135-3307_4131_4156---,00.html	9949
Minnesota DOH	http://www.health.state.mn.us/accreditation	053-999-457
Montana DPHHS	http://www.dphhs.mt.gov/publichealth/	CERT0047
Nevada DEP	http://ndep.nv.gov/bsdw/labservice.htm	WA01276
New Jersey DEP	http://www.nj.gov/dep/oqa/	WA005
North Carolina DWQ	http://www.dwqlab.org/	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/envserv/	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
Wisconsin DNR	http://dnr.wi.gov/	998386840
Wyoming (EPA Region 8)	http://www.epa.gov/region8/water/dwhome/wyomingdi.html	-
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/anlayte is offered by that state.

Case Narrative

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

ALS ENVIRONMENTAL

Client:	Longview, City of	**Service Request No.:**	K1502416
Project:	Sentinel Well Program	**Date Received:**	03/10/15
Sample Matrix:	Drinking Water		

Case Narrative

All analyses were performed consistent with the quality assurance program of ALS Environmental. This report contains analytical results for samples designated for Tier II data deliverables. When appropriate to the method, method blank results have been reported with each analytical test. Surrogate recoveries have been reported for all applicable organic analyses. Additional quality control analyses reported herein include: Laboratory Duplicate (DUP), Matrix Spike (MS), Matrix/Duplicate Matrix Spike (MS/DMS), Laboratory Control Sample (LCS), and Laboratory/Duplicate Laboratory Control Sample (LCS/DLCS).

Sample Receipt

One drinking water sample was received for analysis at ALS Environmental on 03/10/15. The sample was received in good condition and consistent with the accompanying chain of custody form. The sample was stored in a refrigerator at 4ºC upon receipt at the laboratory.

General Chemistry Parameters

Chloride by EPA Method 300.0:
The matrix spike recoveries for sample DW-2 were outside control criteria because of suspected matrix interference. As a result of the interference, the results for this analyte contained a potential low bias. No further corrective action was taken.

No other anomalies associated with the analysis of this sample were observed.

Total Metals

No anomalies associated with the analysis of this sample were observed.

EDB and DBCP by EPA Method 504.1

No anomalies associated with the analysis of this sample were observed.

Pesticides and Polychlorinated Biphenyls by EPA Method 508.1

Matrix Spike Recovery Exceptions:
The duplicate matrix spike recovery of Endrin for sample Well #6 was outside control criteria. Recovery in the Laboratory Control Sample (LCS) and Matrix Spike was acceptable, which indicated the analytical batch was in control. The matrix spike outlier suggested a potential low bias in this matrix. No further corrective action was appropriate.

No other anomalies associated with the analysis of this sample were observed.

Approved by_____

Chlorinated Acids by EPA Method 515.4

Second Source Exceptions:
The analysis of Chlorinated Herbicides in Drinking Water by EPA 515.4 requires the use of dual column confirmation. The Initial Calibration Verification (ICV) evaluation criteria were not met on the confirmation column for 2,4,5-TP (Silvex) in CAL13913. The ICV criteria were met on the alternate column. The data quality was not affected. No further corrective action was necessary.

Calibration Verification Exceptions:
The analysis of Chlorinated Herbicides in Drinking Water by EPA 515.4 requires the use of dual column confirmation. When the Continuing Calibration Verification (CCV) criterion is met for both columns, the lower of the two sample results is generally reported. The primary evaluation criteria were not met on the confirmation column for Dichloroprop, 2,4-Dichlorophenylacetic Acid, and 2,4-D for CCV 03230032. The results were reported from the column with an acceptable CCV. The data quality was not affected. No further corrective action was necessary.

The analysis of Chlorinated Herbicides in Drinking Water by EPA 515.4 requires the use of dual column confirmation. When the Continuing Calibration Verification (CCV) criterion is met for both columns, the lower of the two sample results is generally reported. The primary evaluation criteria were not met on the confirmation column for Dichloroprop, and 2,4-D for CCV 03230045. The results were reported from the column with an acceptable CCV. The data quality was not affected. No further corrective action was necessary.

Surrogate Exceptions:
The upper control criterion was exceeded for 2,4-Dichlorophenylacetic Acid in sample DW-2. No target analytes were detected in the sample. The error associated with an elevated recovery equated to a high bias. The quality of the sample data was not significantly affected. No further corrective action was appropriate.

No other anomalies associated with the analysis of this sample were observed.

Volatile Organic Compounds by EPA Method 524.2

Sample Notes and Discussion:
The sample DW-2 has a pH of 6.

No other anomalies associated with the analysis of this sample were observed.

Semivolatile Organic Compounds by EPA Method 525.2

Matrix Spike Recovery Exceptions:
The matrix spike recovery of Bis(2-ethylhexyl) Phthalate for sample Batch QC was outside control criteria. Recovery in the Laboratory Control Sample (LCS) was acceptable, which indicated the analytical batch was in control. The matrix spike outlier suggested a potential low bias in this matrix. No further corrective action was appropriate.

The upper control criterion was exceeded for the following analyte in Matrix Spike (MS) KWG1502393-1 and Matrix Spike Duplicate (MSD) KWG1502393-2: Hexachlorocyclopentadiene. The analyte in question was not detected in the associated field samples. The error associated with elevated recovery indicated a high bias. The sample data was not significantly affected. No further corrective action was appropriate.

Approved by___ _____ ___ _____

Semivolatile Organic Compounds by EPA Method 525.2 (cont.)

Lab Control Sample Exceptions:
The upper control criterion was exceeded for Hexachlorocyclopentadiene in Laboratory Control Sample (LCS) KWG1502393-3. The analyte in question was not detected in the associated field samples. The error associated with elevated recovery indicated a high bias. The sample data was not significantly affected. No further corrective action was appropriate.

No other anomalies associated with the analysis of this sample were observed.

Endothall by EPA Method 548.1

No anomalies associated with the analysis of this sample were observed.

Diquat by High Performance Liquid Chromatography

Matrix Spike Recovery Exceptions:
The matrix spike recovery of Diquat for samples KWG1502015-1, and KWG1502015-2 was outside control criteria because of matrix interference. The chromatogram indicated the presence of non-target background components that prevented adequate resolution of the target analyte. As a result, accurate quantitation was not possible. No further corrective action was required.

No other anomalies associated with the analysis of this sample were observed.

Chlorinated Phenols by EPA Method 1653

No anomalies associated with the analysis of this sample were observed.

Glyphosate and Carbamates

These analyses were performed at ALS Environmental, Middletown, PA. The data for these analyses are included in the corresponding section of this report.

Sulfur

This analysis was performed at ALS Environmental, Simi Valley, CA. The data for this analysis is included in the corresponding section of this report.

Approved by_____

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

ALS Environmental

57731

CHAIN OF CUSTODY

57731

001, 005

SR# K1502416

COC Set____of____

COC#_____

1317 South 13th Ave, Kelso, WA 98626 Phone (360) 577-7222 / 800-695-7222 / FAX (360) 636-1068
www.alsglobal.com

Project Name: Sentinel Wells
Project Number:
Project Manager: Jeff Coleman
Company: City of Longview
Address: PO Box 128 Longview WA 98632
Phone #
email
Sampler Signature: T Daly
Sampler Printed Name: T Daly

CLIENT SAMPLE ID	LABID	SAMPLING Date	SAMPLING Time	Matrix	NUMBER OF CONTAINERS	6H: SM 9223 B / Coli L (+/-)	48H: 180.1 / Turbidity	48H: 300.0 / NO2	48H: 300.0 / NO3	48H: SM 2120 B / Color	48H: SM 4500-P E / O Phos	7D: 548.1 / ENDO	7D: 549.2 / DIQ_PARAQ	7D: SM 2540 C / TDS	14D: 335.4 / CN T	14D: 504.1 / EDB DBCP 123TCP	14D: 508.1 / PEST_CL	14D: 515.4 / CL_ACID_HERB	14D: 524.2 / VOC	14D: 525.2 / SVO	14D: 547 / GLYPH	14D: SM 2320 B / Alkalinity Titr	14D: Sulfur Liq / Sulfur	28D: 245.1 / Hg T	28D: 300.0 / Br	28D: 300.0 / F	28D: 300.0 / SO4	28D: 531.1 / CARBAM	Remarks
1. DW-2		3/10/15	1430		28																								
2.																													
3.																													
4.																													
5.																													
6.																													
7.																													
8.																													
9.																													
10.																													

Report Requirements

___ I. Routine Report: Method Blank, Surrogate, as required

___ II. Report Dup., MS, MSD as required

___ III. CLP Like Summary (no raw data)

___ IV. Data Validation Report

___ V. EDD

Invoice Information

P.O.# 36-4558

Bill To: City of Longview
PO Box 128
Longview WA 98632

Turnaround Requirements

____ 24 hr. ____48 hr.
____ 5 Day
____ Standard

Requested Report Date

Circle which metals are to be analyzed

Total Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

Dissolved Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

Special Instructions/Comments:

*Indicate State Hydrocarbon Procedure: AK CA WI Northwest Other_____(Circle One)

Relinquished By:	Received By:	Relinquished By:	Received By:	Relinquished By:	Received By:
T Daly	[illegible]				
Signature	Signature	Signature	Signature	Signature	Signature
T Daly	[illegible]	Printed Name	Printed Name	Printed Name	Printed Name
Printed Name	Printed Name				
CoL	A S	Firm	Firm	Firm	Firm
Firm	Firm				
3/10/15 1540	3/10/15 1540	Date/Time	Date/Time	Date/Time	Date/Time
Date/Time	Date/Time				

ALS Environmental

57731

CHAIN OF CUSTODY

57731

001, 005

SR# K1502416

COC Set_____of_____

COC#_____

1317 South 13th Ave, Kelso, WA 98626 Phone (360) 577-7222 / 800-695-7222 / FAX (360) 636-1068
www.alsglobal.com

Project Name: Sentinel Wells
Project Number:
Project Manager: Jeff Coleman
Company: City of Longview
Address: PO Box 128 Longview WA 98632
Phone #:
email:
Sampler Signature: T Daly
Sampler Printed Name: T Daly

CLIENT SAMPLE ID	LABID	SAMPLING Date	SAMPLING Time	Matrix	NUMBER OF CONTAINERS	28D: 300.0 / Chloride	28D: 314.0 / ClO4	28D: SM 2510 B / Conductivity	28D: SM 4500-NH3 G / Ammonia	30D: 1653A / CHLOR_PHEN	180D: 1630 / Methyl Hg T	180D: 200.7 / Metals T	180D: 200.8 / Metals T	999D: Calculation / NO2 NO3 Calc	999D: SM 2340 B / Hardness Calc	1	2	3	4	5	Remarks
1. DW-2		3/10/15	1430		28																
2.																					
3.																					
4.																					
5.																					
6.																					
7.																					
8.																					
9.																					
10.																					

Report Requirements

___ I. Routine Report: Method Blank, Surrogate, as required

___ II. Report Dup., MS, MSD as required

___ III. CLP Like Summary (no raw data)

___ IV. Data Validation Report

___ V. EDD

Invoice Information

P.O.# 36-4558

Bill To: City of Longview
PO Box 128
Longview WA 98632

Turnaround Requirements

___ 24 hr. ___ 48 hr.
___ 5 Day
___ Standard

Requested Report Date

Circle which metals are to be analyzed

Total Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

Dissolved Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

Special Instructions/Comments:

*Indicate State Hydrocarbon Procedure: AK CA WI Northwest Other_____(Circle One)

Relinquished By:	Received By:	Relinquished By:	Received By:	Relinquished By:	Received By:
Signature: T Daly	Signature: [illegible]	Signature	Signature	Signature	Signature
Printed Name: Cal L	Printed Name: [illegible]	Printed Name	Printed Name	Printed Name	Printed Name
Firm: 3/10/15 1540	Firm: ALS 3/10/15 1540	Firm	Firm	Firm	Firm
Date/Time	Date/Time	Date/Time	Date/Time	Date/Time	Date/Time

PC CV

Cooler Receipt and Preservation Form

Client / Project: Longview Service Request *K15* 02416

Received: 3/10/15 Opened: 3/10/15 By: uu Unloaded: 3/10/15 By: uu

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

   If present, were custody seals intact? Y N If present, were they signed and dated? Y N

Raw Cooler Temp	Corrected. Cooler Temp	Raw Temp Blank	Corrected Temp Blank	Corr. Factor	Thermometer ID	Cooler/COC ID NA	Tracking Number NA	Filed
10.2	10.1	12.6	12.5	-0.1	349	OW-2	/	
5.2	5.1	14.2	14.1	-0.1	350	DW-2		

4. Packing material: *Inserts* *Baggies* *Bubble Wrap* *Gel Packs* *Wet Ice* *Dry Ice* *Sleeves* _____
5. Were custody papers properly filled out (ink, signed, etc.)? NA Y N
6. Did all bottles arrive in good condition (unbroken)? *Indicate in the table below.* 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.* NA Y N
9. 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

SHORT HOLD TIME

Notes, Discrepancies, & Resolutions: Insufficient time for samples to chill completely.

Page ____ *of* ____

General Chemistry

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

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client:	Longview, City of	**Service Request:**	K1502416
Project:	Sentinel Wells	**Date Collected:**	03/10/15
Sample Matrix:	Drinking Water	**Date Received:**	03/10/15
Analysis Method:	180.1	**Units:**	NTU
Prep Method:	None	**Basis:**	NA

Turbidity

Sample Name	Lab Code	Result	MRL	Dil.	Date Analyzed	Q
DW-2	K1502416-001	**1.43**	0.20	1	03/11/15 11:58	
Method Blank	K1502416-MB1	ND U	0.20	1	03/11/15 11:58	

ALS Group USA, Corp.
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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502416
Project	Sentinel Wells	**Date Collected:**	NA
Sample Matrix:	Drinking Water	**Date Received:**	NA
		Date Analyzed:	03/11/15

Replicate Sample Summary
General Chemistry Parameters

Sample Name:	Batch QC	**Units:**	NTU
Lab Code:	K1502415-001	**Basis:**	NA

Analyte Name	Analysis Method	MRL	Sample Result	Duplicate Sample K1502415-001DUP Result	Average	RPD	RPD Limit
Turbidity	180.1	0.20	8.79	8.87	8.83	<1	20

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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502416
Project:	Sentinel Wells	**Date Analyzed:**	03/11/15
Sample Matrix:	Drinking Water	**Date Extracted:**	NA

Lab Control Sample Summary
Turbidity

Analysis Method:	180.1	**Units:**	NTU
Prep Method:	None	**Basis:**	NA
		Analysis Lot:	435868

Sample Name	Lab Code	Result	Spike Amount	% Rec	% Rec Limits
Lab Control Sample	K1502416-LCS	6.18	6.37	97	90-110

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client:	Longview, City of	**Service Request:**	K1502416
Project:	Sentinel Wells	**Date Collected:**	03/10/15
Sample Matrix:	Drinking Water	**Date Received:**	03/10/15
Analysis Method:	300.0	**Units:**	mg/L
Prep Method:	Method	**Basis:**	NA

Bromide

Sample Name	Lab Code	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
DW-2	K1502416-001	ND U	0.20	2	03/11/15 10:14	3/11/15	
Method Blank	K1502416-MB1	ND U	0.10	1	03/11/15 13:10	3/11/15	

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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502416
Project	Sentinel Wells	**Date Collected:**	03/10/15
Sample Matrix:	Drinking Water	**Date Received:**	03/10/15
		Date Analyzed:	03/11/15

Replicate Sample Summary
General Chemistry Parameters

Sample Name:	DW-2	**Units:**	mg/L
Lab Code:	K1502416-001	**Basis:**	NA

Analyte Name	Analysis Method	MRL	Sample Result	Duplicate Sample K1502416-001DUP Result	Average	RPD	RPD Limit
Bromide	300.0	0.20	ND U	ND U	NC	NC	20

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ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502416
Project:	Sentinel Wells	**Date Collected:**	03/10/15
Sample Matrix:	Drinking Water	**Date Received:**	03/10/15
		Date Analyzed:	03/11/15
		Date Extracted:	03/11/15

Duplicate Matrix Spike Summary
Bromide

Sample Name:	DW-2	**Units:**	mg/L
Lab Code:	K1502416-001	**Basis:**	NA
Analysis Method:	300.0		
Prep Method:	Method		

		Matrix Spike K1502416-001MS			Duplicate Matrix Spike K1502416-001DMS					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Bromide	ND U	9.40	10.0	94	9.54	10.0	95	90-110	1	20

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ALS Group USA, Corp.
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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502416
Project:	Sentinel Wells	**Date Analyzed:**	03/11/15
Sample Matrix:	Drinking Water	**Date Extracted:**	03/11/15

Lab Control Sample Summary
Bromide

Analysis Method:	300.0	**Units:**	mg/L
Prep Method:	Method	**Basis:**	NA
		Analysis Lot:	435994

Sample Name	Lab Code	Result	Spike Amount	% Rec	% Rec Limits
Lab Control Sample	K1502416-LCS	2.32	2.50	93	90-110

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client:	Longview, City of	**Service Request:**	K1502416
Project:	Sentinel Wells	**Date Collected:**	03/10/15
Sample Matrix:	Drinking Water	**Date Received:**	03/10/15
Analysis Method:	300.0	**Units:**	mg/L
Prep Method:	Method	**Basis:**	NA

Chloride

Sample Name	Lab Code	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
DW-2	K1502416-001	**8.81**	0.40	2	03/11/15 10:14	3/11/15	
Method Blank	K1502416-MB1	ND U	0.20	1	03/11/15 13:10	3/11/15	

ALS Group USA, Corp.
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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502416
Project	Sentinel Wells	**Date Collected:**	03/10/15
Sample Matrix:	Drinking Water	**Date Received:**	03/10/15
		Date Analyzed:	03/11/15

Replicate Sample Summary
General Chemistry Parameters

Sample Name:	DW-2	**Units:**	mg/L
Lab Code:	K1502416-001	**Basis:**	NA

Analyte Name	Analysis Method	MRL	Sample Result	Duplicate Sample K1502416-001DUP Result	Average	RPD	RPD Limit
Chloride	300.0	0.40	8.81	8.72	8.76	1	20

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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502416
Project:	Sentinel Wells	**Date Collected:**	03/10/15
Sample Matrix:	Drinking Water	**Date Received:**	03/10/15
		Date Analyzed:	03/11/15
		Date Extracted:	03/11/15

Duplicate Matrix Spike Summary
Chloride

Sample Name:	DW-2	**Units:**	mg/L
Lab Code:	K1502416-001	**Basis:**	NA
Analysis Method:	300.0		
Prep Method:	Method		

		Matrix Spike K1502416-001MS			Duplicate Matrix Spike K1502416-001DMS					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Chloride	8.81	17.7	10.0	89 *	17.7	10.0	89 *	90-110	<1	20

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ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502416
Project:	Sentinel Wells	**Date Analyzed:**	03/11/15
Sample Matrix:	Drinking Water	**Date Extracted:**	03/11/15

Lab Control Sample Summary
Chloride

Analysis Method:	300.0	**Units:**	mg/L
Prep Method:	Method	**Basis:**	NA
		Analysis Lot:	435994

Sample Name	Lab Code	Result	Spike Amount	% Rec	% Rec Limits
Lab Control Sample	K1502416-LCS	4.68	5.00	94	90-110

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client:	Longview, City of	**Service Request:**	K1502416
Project:	Sentinel Wells	**Date Collected:**	03/10/15
Sample Matrix:	Drinking Water	**Date Received:**	03/10/15
Analysis Method:	300.0	**Units:**	mg/L
Prep Method:	Method	**Basis:**	NA

Fluoride

Sample Name	Lab Code	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
DW-2	K1502416-001	ND U	0.20	2	03/11/15 10:14	3/11/15	
Method Blank	K1502416-MB1	ND U	0.10	1	03/11/15 13:10	3/11/15	

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502416
Project	Sentinel Wells	**Date Collected:**	03/10/15
Sample Matrix:	Drinking Water	**Date Received:**	03/10/15
		Date Analyzed:	03/11/15

Replicate Sample Summary
General Chemistry Parameters

Sample Name:	DW-2	**Units:**	mg/L
Lab Code:	K1502416-001	**Basis:**	NA

Analyte Name	Analysis Method	MRL	Sample Result	Duplicate Sample K1502416-001DUP Result	Average	RPD	RPD Limit
Fluoride	300.0	0.20	ND U	0.21	NC	NC	20

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ALS Group USA, Corp.
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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502416
Project:	Sentinel Wells	**Date Collected:**	03/10/15
Sample Matrix:	Drinking Water	**Date Received:**	03/10/15
		Date Analyzed:	03/11/15
		Date Extracted:	03/11/15

Duplicate Matrix Spike Summary
Fluoride

Sample Name:	DW-2	**Units:**	mg/L
Lab Code:	K1502416-001	**Basis:**	NA
Analysis Method:	300.0		
Prep Method:	Method		

		Matrix Spike K1502416-001MS			Duplicate Matrix Spike K1502416-001DMS					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Fluoride	ND U	10.1	10.0	101	10.3	10.0	103	90-110	2	20

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ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502416
Project:	Sentinel Wells	**Date Analyzed:**	03/11/15
Sample Matrix:	Drinking Water	**Date Extracted:**	03/11/15

Lab Control Sample Summary
Fluoride

Analysis Method:	300.0	**Units:**	mg/L
Prep Method:	Method	**Basis:**	NA
		Analysis Lot:	435994

Sample Name	Lab Code	Result	Spike Amount	% Rec	% Rec Limits
Lab Control Sample	K1502416-LCS	5.15	5.00	103	90-110

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client:	Longview, City of	**Service Request:**	K1502416
Project:	Sentinel Wells	**Date Collected:**	03/10/15
Sample Matrix:	Drinking Water	**Date Received:**	03/10/15
Analysis Method:	300.0	**Units:**	mg/L
Prep Method:	Method	**Basis:**	NA

Nitrite as Nitrogen

Sample Name	Lab Code	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
DW-2	K1502416-001	ND U	0.10	2	03/11/15 10:14	3/11/15	
Method Blank	K1502416-MB1	ND U	0.050	1	03/11/15 13:10	3/11/15	

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502416
Project	Sentinel Wells	**Date Collected:**	03/10/15
Sample Matrix:	Drinking Water	**Date Received:**	03/10/15
		Date Analyzed:	03/11/15

Replicate Sample Summary
General Chemistry Parameters

Sample Name:	DW-2	**Units:**	mg/L
Lab Code:	K1502416-001	**Basis:**	NA

Analyte Name	Analysis Method	MRL	Sample Result	Duplicate Sample K1502416-001DUP Result	Average	RPD	RPD Limit
Nitrite as Nitrogen	300.0	0.10	ND U	ND U	NC	NC	20

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ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502416
Project:	Sentinel Wells	**Date Collected:**	03/10/15
Sample Matrix:	Drinking Water	**Date Received:**	03/10/15
		Date Analyzed:	03/11/15
		Date Extracted:	03/11/15

Duplicate Matrix Spike Summary
Nitrite as Nitrogen

Sample Name:	DW-2	**Units:**	mg/L
Lab Code:	K1502416-001	**Basis:**	NA
Analysis Method:	300.0		
Prep Method:	Method		

		Matrix Spike K1502416-001MS			Duplicate Matrix Spike K1502416-001DMS					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Nitrite as Nitrogen	ND U	10.1	10.0	101	10.2	10.0	102	90-110	2	20

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ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502416
Project:	Sentinel Wells	**Date Analyzed:**	03/11/15
Sample Matrix:	Drinking Water	**Date Extracted:**	03/11/15

Lab Control Sample Summary
Nitrite as Nitrogen

Analysis Method:	300.0	**Units:**	mg/L
Prep Method:	Method	**Basis:**	NA
		Analysis Lot:	435994

Sample Name	Lab Code	Result	Spike Amount	% Rec	% Rec Limits
Lab Control Sample	K1502416-LCS	2.41	2.50	96	90-110

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client:	Longview, City of	**Service Request:**	K1502416
Project:	Sentinel Wells	**Date Collected:**	03/10/15
Sample Matrix:	Drinking Water	**Date Received:**	03/10/15
Analysis Method:	300.0	**Units:**	mg/L
Prep Method:	Method	**Basis:**	NA

Nitrate as Nitrogen

Sample Name	Lab Code	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
DW-2	K1502416-001	ND U	0.10	2	03/11/15 10:14	3/11/15	
Method Blank	K1502416-MB1	ND U	0.050	1	03/11/15 13:10	3/11/15	

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502416
Project	Sentinel Wells	**Date Collected:**	03/10/15
Sample Matrix:	Drinking Water	**Date Received:**	03/10/15
		Date Analyzed:	03/11/15

Replicate Sample Summary
General Chemistry Parameters

Sample Name:	DW-2	**Units:**	mg/L
Lab Code:	K1502416-001	**Basis:**	NA

Analyte Name	Analysis Method	MRL	Sample Result	Duplicate Sample K1502416-001DUP Result	Average	RPD	RPD Limit
Nitrate as Nitrogen	300.0	0.10	ND U	ND U	NC	NC	20

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ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502416
Project:	Sentinel Wells	**Date Collected:**	03/10/15
Sample Matrix:	Drinking Water	**Date Received:**	03/10/15
		Date Analyzed:	03/11/15
		Date Extracted:	03/11/15

Duplicate Matrix Spike Summary
Nitrate as Nitrogen

Sample Name:	DW-2	**Units:**	mg/L
Lab Code:	K1502416-001	**Basis:**	NA
Analysis Method:	300.0		
Prep Method:	Method		

		Matrix Spike K1502416-001MS			**Duplicate Matrix Spike** K1502416-001DMS					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Nitrate as Nitrogen	ND U	9.23	10.0	92	9.31	10.0	93	90-110	<1	20

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ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502416
Project:	Sentinel Wells	**Date Analyzed:**	03/11/15
Sample Matrix:	Drinking Water	**Date Extracted:**	03/11/15

Lab Control Sample Summary
Nitrate as Nitrogen

Analysis Method:	300.0	**Units:**	mg/L
Prep Method:	Method	**Basis:**	NA
		Analysis Lot:	435994

Sample Name	Lab Code	Result	Spike Amount	% Rec	% Rec Limits
Lab Control Sample	K1502416-LCS	2.32	2.50	93	90-110

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client:	Longview, City of	**Service Request:**	K1502416
Project:	Sentinel Wells	**Date Collected:**	03/10/15
Sample Matrix:	Drinking Water	**Date Received:**	03/10/15
Analysis Method:	300.0	**Units:**	mg/L
Prep Method:	Method	**Basis:**	NA

Sulfate

Sample Name	Lab Code	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
DW-2	K1502416-001	ND U	0.20	2	03/11/15 10:14	3/11/15	
Method Blank	K1502416-MB1	ND U	0.10	1	03/11/15 13:10	3/11/15	

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502416
Project	Sentinel Wells	**Date Collected:**	03/10/15
Sample Matrix:	Drinking Water	**Date Received:**	03/10/15
		Date Analyzed:	03/11/15

Replicate Sample Summary
General Chemistry Parameters

Sample Name:	DW-2	**Units:**	mg/L
Lab Code:	K1502416-001	**Basis:**	NA

Analyte Name	Analysis Method	MRL	Sample Result	Duplicate Sample K1502416-001DUP Result	Average	RPD	RPD Limit
Sulfate	300.0	0.20	ND U	0.24	NC	NC	20

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ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502416
Project:	Sentinel Wells	**Date Collected:**	03/10/15
Sample Matrix:	Drinking Water	**Date Received:**	03/10/15
		Date Analyzed:	03/11/15
		Date Extracted:	03/11/15

Duplicate Matrix Spike Summary
Sulfate

Sample Name:	DW-2	**Units:**	mg/L
Lab Code:	K1502416-001	**Basis:**	NA
Analysis Method:	300.0		
Prep Method:	Method		

		Matrix Spike K1502416-001MS			Duplicate Matrix Spike K1502416-001DMS					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Sulfate	ND U	9.03	10.0	90	9.10	10.0	91	90-110	<1	20

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ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502416
Project:	Sentinel Wells	**Date Analyzed:**	03/11/15
Sample Matrix:	Drinking Water	**Date Extracted:**	03/11/15

Lab Control Sample Summary
Sulfate

Analysis Method:	300.0	**Units:**	mg/L
Prep Method:	Method	**Basis:**	NA
		Analysis Lot:	435994

Sample Name	Lab Code	Result	Spike Amount	% Rec	% Rec Limits
Lab Control Sample	K1502416-LCS	4.81	5.00	96	90-110

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client:	Longview, City of	**Service Request:**	K1502416
Project:	Sentinel Wells	**Date Collected:**	03/10/15
Sample Matrix:	Drinking Water	**Date Received:**	03/10/15
Analysis Method:	314.0	**Units:**	ug/L
Prep Method:	None	**Basis:**	NA

Perchlorate

Sample Name	Lab Code	Result	MRL	Dil.	Date Analyzed	Q
DW-2	K1502416-001	ND U	1.0	1	03/31/15 13:27	
Method Blank	K1502416-MB1	ND U	1.0	1	03/31/15 11:44	

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502416
Project	Sentinel Wells	**Date Collected:**	NA
Sample Matrix:	Drinking Water	**Date Received:**	NA
		Date Analyzed:	03/31/15

Replicate Sample Summary
General Chemistry Parameters

Sample Name:	Batch QC	**Units:**	ug/L
Lab Code:	K1502415-001	**Basis:**	NA

Analyte Name	Analysis Method	MRL	Sample Result	Duplicate Sample K1502415-001DUP Result	Average	RPD	RPD Limit
Perchlorate	314.0	1.0	ND U	ND U	NC	NC	20

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ALS Group USA, Corp.
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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502416
Project:	Sentinel Wells	**Date Collected:**	N/A
Sample Matrix:	Drinking Water	**Date Received:**	N/A
		Date Analyzed:	03/31/15
		Date Extracted:	NA

Duplicate Matrix Spike Summary
Perchlorate

Sample Name:	Batch QC	**Units:**	ug/L
Lab Code:	K1502415-001	**Basis:**	NA
Analysis Method:	314.0		
Prep Method:	None		

		Matrix Spike K1502415-001MS			Duplicate Matrix Spike K1502415-001DMS					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Perchlorate	ND U	10.7	10.0	107	9.7	10.0	97	80-120	10	20

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ALS Group USA, Corp.
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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502416
Project:	Sentinel Wells	**Date Analyzed:**	03/31/15
Sample Matrix:	Drinking Water	**Date Extracted:**	NA

Lab Control Sample Summary
Perchlorate

Analysis Method:	314.0	**Units:**	ug/L
Prep Method:	None	**Basis:**	NA
		Analysis Lot:	438526

Sample Name	Lab Code	Result	Spike Amount	% Rec	% Rec Limits
Lab Control Sample	K1502416-LCS	15.4	16.8	92	85-115

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client:	Longview, City of	**Service Request:**	K1502416
Project:	Sentinel Wells	**Date Collected:**	03/10/15
Sample Matrix:	Drinking Water	**Date Received:**	03/10/15
Analysis Method:	335.4	**Units:**	mg/L
Prep Method:	Method	**Basis:**	NA

Cyanide, Total

Sample Name	Lab Code	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
DW-2	K1502416-001	ND U	0.010	1	03/11/15 10:44	3/11/15	
Method Blank	K1502416-MB1	ND U	0.010	1	03/11/15 10:44	3/11/15	

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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502416
Project	Sentinel Wells	**Date Collected:**	NA
Sample Matrix:	Drinking Water	**Date Received:**	NA
		Date Analyzed:	03/11/15

Replicate Sample Summary
General Chemistry Parameters

Sample Name:	Batch QC	**Units:**	mg/L
Lab Code:	K1502415-001	**Basis:**	NA

Analyte Name	Analysis Method	MRL	Sample Result	Duplicate Sample K1502415-001DUP Result	Average	RPD	RPD Limit
Cyanide, Total	335.4	0.010	ND U	ND U	NC	NC	20

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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502416
Project:	Sentinel Wells	**Date Collected:**	N/A
Sample Matrix:	Drinking Water	**Date Received:**	N/A
		Date Analyzed:	03/11/15
		Date Extracted:	03/11/15

Duplicate Matrix Spike Summary
Cyanide, Total

Sample Name:	Batch QC	**Units:**	mg/L
Lab Code:	K1502415-001	**Basis:**	NA
Analysis Method:	335.4		
Prep Method:	Method		

		Matrix Spike K1502415-001MS			**Duplicate Matrix Spike** K1502415-001DMS					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Cyanide, Total	ND U	0.095	0.100	94	0.104	0.100	104	90-110	9	20

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ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502416
Project:	Sentinel Wells	**Date Analyzed:**	03/11/15
Sample Matrix:	Drinking Water	**Date Extracted:**	03/11/15

Lab Control Sample Summary
Cyanide, Total

Analysis Method:	335.4	**Units:**	mg/L
Prep Method:	Method	**Basis:**	NA
		Analysis Lot:	436013

Sample Name	Lab Code	Result	Spike Amount	% Rec	% Rec Limits
Lab Control Sample	K1502416-LCS	0.147	0.150	98	90-110

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client:	Longview, City of	**Service Request:**	K1502416
Project:	Sentinel Wells	**Date Collected:**	03/10/15
Sample Matrix:	Drinking Water	**Date Received:**	03/10/15
Analysis Method:	Calculation	**Units:**	mg/L
Prep Method:	None	**Basis:**	NA

Nitrate+Nitrite as Nitrogen

Sample Name	Lab Code	Result	MRL	Dil.	Date Analyzed	Q
DW-2	K1502416-001	ND U	0.20	1	03/11/15 10:14	

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dba ALS Environmental

Analytical Report

Client:	Longview, City of	**Service Request:**	K1502416
Project:	Sentinel Wells	**Date Collected:**	03/10/15
Sample Matrix:	Drinking Water	**Date Received:**	03/10/15
Analysis Method:	SM 2120 B	**Units:**	ColorUnits
Prep Method:	None	**Basis:**	NA

Color

Sample Name	Lab Code	Result	MRL	Dil.	Date Analyzed	Q
DW-2	K1502416-001	**20.0**	5.0	1	03/11/15 10:30	
Method Blank	K1502416-MB1	ND U	5.0	1	03/11/15 10:18	

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502416
Project	Sentinel Wells	**Date Collected:**	NA
Sample Matrix:	Drinking Water	**Date Received:**	NA
		Date Analyzed:	03/11/15

Replicate Sample Summary
General Chemistry Parameters

Sample Name:	Batch QC	**Units:**	ColorUnits
Lab Code:	K1502415-001	**Basis:**	NA

Analyte Name	Analysis Method	MRL	Sample Result	Duplicate Sample K1502415-001DUP Result	Average	RPD	RPD Limit
Color	SM 2120 B	5.0	5.0	5.0	5.00	<1	20

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ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502416
Project:	Sentinel Wells	**Date Analyzed:**	03/11/15
Sample Matrix:	Drinking Water	**Date Extracted:**	NA

Lab Control Sample Summary
Color

Analysis Method:	SM 2120 B	**Units:**	ColorUnits
Prep Method:	None	**Basis:**	NA
		Analysis Lot:	435804

Sample Name	Lab Code	Result	Spike Amount	% Rec	% Rec Limits
Lab Control Sample	K1502416-LCS	50.0	50.0	100	85-115

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client:	Longview, City of	**Service Request:**	K1502416
Project:	Sentinel Wells	**Date Collected:**	03/10/15
Sample Matrix:	Drinking Water	**Date Received:**	03/10/15
Analysis Method:	SM 2320 B	**Units:**	mg/L
Prep Method:	None	**Basis:**	NA

Alkalinity as CaCO3, Total

Sample Name	Lab Code	Result	MRL	Dil.	Date Analyzed	Q
DW-2	K1502416-001	**145**	2.0	1	03/14/15 14:15	
Method Blank	K1502416-MB1	ND U	2.0	1	03/14/15 14:15	

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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502416
Project	Sentinel Wells	**Date Collected:**	03/10/15
Sample Matrix:	Drinking Water	**Date Received:**	03/10/15
		Date Analyzed:	03/14/15

Replicate Sample Summary
General Chemistry Parameters

Sample Name:	DW-2	**Units:**	mg/L
Lab Code:	K1502416-001	**Basis:**	NA

Analyte Name	Analysis Method	MRL	Sample Result	Duplicate Sample K1502416-001DUP Result	Average	RPD	RPD Limit
Alkalinity as CaCO3, Total	SM 2320 B	2.0	145	145	145	<1	20

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dba ALS Environmental

QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502416
Project:	Sentinel Wells	**Date Analyzed:**	03/14/15
Sample Matrix:	Drinking Water	**Date Extracted:**	NA

Lab Control Sample Summary
Alkalinity as CaCO3, Total

Analysis Method:	SM 2320 B	**Units:**	mg/L
Prep Method:	None	**Basis:**	NA
		Analysis Lot:	436281

Sample Name	Lab Code	Result	Spike Amount	% Rec	% Rec Limits
Lab Control Sample	K1502416-LCS	34.6	34.4	101	90-110

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client:	Longview, City of	**Service Request:**	K1502416
Project:	Sentinel Wells	**Date Collected:**	03/10/15
Sample Matrix:	Drinking Water	**Date Received:**	03/10/15
Analysis Method:	SM 2510 B	**Units:**	uMHOS/cm
Prep Method:	None	**Basis:**	NA

Conductivity at 25 Degrees Celsius

Sample Name	Lab Code	Result	MRL	Dil.	Date Analyzed	Q
DW-2	K1502416-001	**329**	2.0	1	03/17/15 09:23	
Method Blank	K1502416-MB1	ND U	2.0	1	03/17/15 09:23	
Method Blank	K1502416-MB2	ND U	2.0	1	03/17/15 09:23	

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502416
Project	Sentinel Wells	**Date Collected:**	NA
Sample Matrix:	Drinking Water	**Date Received:**	NA
		Date Analyzed:	03/17/15

Replicate Sample Summary
General Chemistry Parameters

Sample Name:	Batch QC	**Units:**	uMHOS/cm
Lab Code:	K1502368-001	**Basis:**	NA

Analyte Name	Analysis Method	MRL	Sample Result	Duplicate Sample K1502368-001DUP Result	Average	RPD	RPD Limit
Conductivity at 25 Degrees Celsius	SM 2510 B	2.0	212	212	212	<1	20

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ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502416
Project:	Sentinel Wells	**Date Analyzed:**	03/17/15
Sample Matrix:	Drinking Water	**Date Extracted:**	NA

Lab Control Sample Summary
Conductivity at 25 Degrees Celsius

Analysis Method:	SM 2510 B	**Units:**	uMHOS/cm
Prep Method:	None	**Basis:**	NA
		Analysis Lot:	436633

Sample Name	Lab Code	Result	Spike Amount	% Rec	% Rec Limits
Lab Control Sample	K1502416-LCS	317	289	110	86-113

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client:	Longview, City of	**Service Request:**	K1502416
Project:	Sentinel Wells	**Date Collected:**	03/10/15
Sample Matrix:	Drinking Water	**Date Received:**	03/10/15
Analysis Method:	SM 2540 C	**Units:**	mg/L
Prep Method:	None	**Basis:**	NA

Solids, Total Dissolved

Sample Name	Lab Code	Result	MRL	Dil.	Date Analyzed	Q
DW-2	K1502416-001	**188**	10	1	03/11/15 13:02	
Method Blank	K1502416-MB1	ND U	5.0	1	03/11/15 13:02	
Method Blank	K1502416-MB2	ND U	5.0	1	03/11/15 13:02	

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502416
Project	Sentinel Wells	**Date Collected:**	NA
Sample Matrix:	Drinking Water	**Date Received:**	NA
Analysis Method:	SM 2540 C	**Units:**	mg/L
Prep Method:	None	**Basis:**	NA

Replicate Sample Summary
Solids, Total Dissolved

Sample Name:	Lab Code:	MRL	Sample Result	Duplicate Result	Average	RPD	RPD Limit	Date Analyzed
Batch QC	K1502365-001DUP	10	170	160	165	6	10	03/11/15
Batch QC	K1502415-001DUP	10	474	468	471	1	10	03/11/15

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ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502416
Project:	Sentinel Wells	**Date Analyzed:**	03/11/15
Sample Matrix:	Drinking Water	**Date Extracted:**	NA

Lab Control Sample Summary
Solids, Total Dissolved

Analysis Method:	SM 2540 C	**Units:**	mg/L
Prep Method:	None	**Basis:**	NA
		Analysis Lot:	435923

Sample Name	Lab Code	Result	Spike Amount	% Rec	% Rec Limits
Lab Control Sample	K1502416-LCS	1260	1300	97	85-115

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client:	Longview, City of	**Service Request:**	K1502416
Project:	Sentinel Wells	**Date Collected:**	03/10/15
Sample Matrix:	Drinking Water	**Date Received:**	03/10/15
Analysis Method:	SM 4500-NH3 G	**Units:**	mg/L
Prep Method:	Method	**Basis:**	NA

Ammonia as Nitrogen

Sample Name	Lab Code	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
DW-2	K1502416-001	**0.071**	0.050	1	03/17/15 15:23	3/17/15	
Method Blank	K1502416-MB1	ND U	0.050	1	03/17/15 15:23	3/17/15	

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502416
Project	Sentinel Wells	**Date Collected:**	NA
Sample Matrix:	Drinking Water	**Date Received:**	NA
Analysis Method:	SM 4500-NH3 G	**Units:**	mg/L
Prep Method:	Method	**Basis:**	NA

Replicate Sample Summary
Ammonia as Nitrogen

Sample Name:	Lab Code:	MRL	Sample Result	Duplicate Result	Average	RPD	RPD Limit	Date Analyzed
Batch QC	K1502387-001DUP	0.050	ND U	ND U	NC	NC	20	03/17/15
Batch QC	K1502441-001DUP	0.050	ND U	ND U	NC	NC	20	03/17/15

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ALS Group USA, Corp.
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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502416
Project:	Sentinel Wells	**Date Collected:**	N/A
Sample Matrix:	Drinking Water	**Date Received:**	N/A
		Date Analyzed:	03/17/15
		Date Extracted:	03/17/15

Duplicate Matrix Spike Summary
Ammonia as Nitrogen

Sample Name:	Batch QC	**Units:**	mg/L
Lab Code:	K1502387-001	**Basis:**	NA
Analysis Method:	SM 4500-NH3 G		
Prep Method:	Method		

		Matrix Spike K1502387-001MS			**Duplicate Matrix Spike** K1502387-001DMS					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Ammonia as Nitrogen	ND U	1.95	2.00	98	1.94	2.00	97	90-110	1	20

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ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502416
Project:	Sentinel Wells	**Date Collected:**	N/A
Sample Matrix:	Drinking Water	**Date Received:**	N/A
		Date Analyzed:	03/17/15
		Date Extracted:	03/17/15

Duplicate Matrix Spike Summary
Ammonia as Nitrogen

Sample Name:	Batch QC	**Units:**	mg/L
Lab Code:	K1502441-001	**Basis:**	NA
Analysis Method:	SM 4500-NH3 G		
Prep Method:	Method		

		Matrix Spike K1502441-001MS			**Duplicate Matrix Spike** K1502441-001DMS					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Ammonia as Nitrogen	ND U	1.98	2.00	99	1.90	2.00	95	90-110	4	20

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ALS Group USA, Corp.
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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502416
Project:	Sentinel Wells	**Date Analyzed:**	03/17/15
Sample Matrix:	Drinking Water	**Date Extracted:**	03/17/15

Lab Control Sample Summary
Ammonia as Nitrogen

Analysis Method:	SM 4500-NH3 G	**Units:**	mg/L
Prep Method:	Method	**Basis:**	NA
		Analysis Lot:	436692

Sample Name	Lab Code	Result	Spike Amount	% Rec	% Rec Limits
Lab Control Sample	K1502416-LCS	14.6	15.4	95	90-110

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client:	Longview, City of	**Service Request:**	K1502416
Project:	Sentinel Wells	**Date Collected:**	03/10/15
Sample Matrix:	Drinking Water	**Date Received:**	03/10/15
Analysis Method:	SM 4500-P E	**Units:**	mg/L
Prep Method:	None	**Basis:**	NA

Orthophosphate as Phosphorus

Sample Name	Lab Code	Result	MRL	Dil.	Date Analyzed	Q
DW-2	K1502416-001	**0.483**	0.050	1	03/11/15 11:44	
Method Blank	K1502416-MB1	ND U	0.050	1	03/11/15 11:44	

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502416
Project	Sentinel Wells	**Date Collected:**	NA
Sample Matrix:	Drinking Water	**Date Received:**	NA
		Date Analyzed:	03/11/15

Replicate Sample Summary
General Chemistry Parameters

Sample Name:	Batch QC	**Units:**	mg/L
Lab Code:	K1502415-001	**Basis:**	NA

Analyte Name	Analysis Method	MRL	Sample Result	Duplicate Sample K1502415-001DUP Result	Average	RPD	RPD Limit
Orthophosphate as Phosphorus	SM 4500-P E	0.050	0.340	0.347	0.344	2	20

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ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502416
Project:	Sentinel Wells	**Date Collected:**	N/A
Sample Matrix:	Drinking Water	**Date Received:**	N/A
		Date Analyzed:	03/11/15
		Date Extracted:	NA

Duplicate Matrix Spike Summary
Orthophosphate as Phosphorus

Sample Name:	Batch QC	**Units:**	mg/L
Lab Code:	K1502415-001	**Basis:**	NA
Analysis Method:	SM 4500-P E		
Prep Method:	None		

		Matrix Spike K1502415-001MS			**Duplicate Matrix Spike** K1502415-001DMS					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Orthophosphate as Phosphorus	0.340	0.58	0.20	118	0.57	0.20	117	75-125	<1	20

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ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502416
Project:	Sentinel Wells	**Date Analyzed:**	03/11/15
Sample Matrix:	Drinking Water	**Date Extracted:**	NA

Lab Control Sample Summary
Orthophosphate as Phosphorus

Analysis Method:	SM 4500-P E	**Units:**	mg/L
Prep Method:	None	**Basis:**	NA
		Analysis Lot:	435833

Sample Name	Lab Code	Result	Spike Amount	% Rec	% Rec Limits
Lab Control Sample	K1502416-LCS	6.04	6.1	99	85-115

ALS Group USA, Corp.
dba ALS Environmental
Analytical Report

Client:	Longview, City of	**Service Request:**	K1502416
Project:	Sentinel Wells	**Date Collected:**	3/10/2015
Sample Matrix:	Drinking water	**Date Received:**	3/10/2015

Colilert, E. Coli

Prep Method: NONE
Analysis Method: SM 9223B Basis: NA
Test Notes:

Sample Name	Lab Code	MRL	Date Analyzed	Time Test Started		Result	Result Notes
DW-2	K1502416-001	1	3/11/2015	09:20	hrs	Absent	

SM *Standard Methods for the Examination of Water and Wastewater* , 20th Ed., 1998.

ALS Group USA, Corp.
dba ALS Environmental
Analytical Report

Client:	Longview, City of	**Service Request:**	K1502416
Project:	Sentinel Wells	**Date Collected:**	3/10/2015
Sample Matrix:	Drinking water	**Date Received:**	3/10/2015

Colilert, T. Coli

Prep Method: NONE
Analysis Method: SM 9223B Basis: NA
Test Notes:

Sample Name	Lab Code	MRL	Date Analyzed	Time Test Started		Result	Result Notes
DW-2	K1502416-001	1	3/11/2015	09:20	hrs	Absent	

SM *Standard Methods for the Examination of Water and Wastewater* , 20th Ed., 1998.

Metals

ALS Environmental—Kelso Laboratory
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ALS Group USA, Corp.
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Analytical Report

Client:	Longview, City of	**Service Request:**	K1502416
Project:	Sentinel Wells	**Date Collected:**	03/10/15
Sample Matrix:	Drinking water	**Date Received:**	03/10/15

Hardness as CaCO3

Prep Method:	CLAA	Units:	mg/L (ppm)
Analysis Method:	200.7/SM 2340B	Basis:	NA
Test Notes:			

Sample Name	Lab Code	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
DW-2	K1502416-001	0.07	1	03/13/15	03/16/15	121	
Method Blank	K1502416-MB	0.07	1	03/13/15	03/16/15	ND	

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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502416
Project:	Sentinel Wells	**Date Collected:**	NA
Sample Matrix:	Drinking water	**Date Received:**	NA
		Date Extracted:	03/13/15
		Date Analyzed:	03/16/15

Duplicate Summary
Metals

Sample Name:	Batch QC	Units:	mg/L (ppm)
Lab Code:	K1502415-001D	Basis:	NA
Test Notes:			

Analyte	Prep Method	Analysis Method	MRL	Sample Result	Duplicate Sample Result	Average	Relative Percent Difference	Result Notes
Hardness as CaCO3	CLAA	200.7/SM 2340B	0.07	245	247	246	<1	

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Analytical Report

Client:	Longview, City of	**Service Request:**	K1502416
Project:	Sentinel Wells	**Date Collected:**	03/10/15
Sample Matrix:	Drinking water	**Date Received:**	03/10/15

Methyl Mercury

Prep Method:	Method	Units:	ng/L
Analysis Method:	1630	Basis:	NA
Test Notes:			

Sample Name	Lab Code	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
DW-2	K1502416-001	0.1	1	03/16/15	03/17/15	ND	
Method Blank 1	K1502416-MB1	0.1	1	03/16/15	03/17/15	ND	
Method Blank 2	K1502416-MB2	0.1	1	03/16/15	03/17/15	ND	
Method Blank 3	K1502416-MB3	0.1	1	03/16/15	03/17/15	ND	

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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502416
Project:	Sentinel Wells	**Date Collected:**	NA
Sample Matrix:	Drinking water	**Date Received:**	NA
		Date Extracted:	03/16/15
		Date Analyzed:	03/17/15

Matrix Spike/Duplicate Matrix Spike Summary
Metals

Sample Name:	Batch QC		Units:	ng/L
Lab Code:	K1502365-001MS,	K1502365-001MS	Basis:	NA
Test Notes:				

									Percent Recovery				
				Spike Level			Spike Result				CAS	Relative	
Analyte	**Prep Method**	**Analysis Method**	**MRL**	**MS**	**DMS**	**Sample Result**	**MS**	**DMS**	**MS**	**DMS**	**Acceptance Limits**	**Percent Difference**	**Result Notes**
Mercury, Methyl	Method	1630	0.1	2.22	2.22	ND	2.50	2.43	113	109	65-135	3	

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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502416
Project:	Sentinel Wells	**Date Collected:**	NA
LCS Matrix:	Water	**Date Received:**	NA
		Date Extracted:	03/16/15
		Date Analyzed:	03/17/15

Ongoing Precision and Recovery (OPR) Sample Summary
Metals

Sample Name: Ongoing Precision and Recovery (Initial)

Units: ng/L
Basis: NA

Test Notes:

Analyte	Prep Method	Analysis Method	True Value	Result	Percent Recovery	CAS Percent Recovery Acceptance Limits	Result Notes
Mercury, Methyl	Method	1630	2.22	2.56	115	67-133	

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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502416
Project:	Sentinel Wells	**Date Collected:**	NA
LCS Matrix:	Water	**Date Received:**	NA
		Date Extracted:	03/16/15
		Date Analyzed:	03/17/15

Ongoing Precision and Recovery (OPR) Sample Summary
Metals

Sample Name: Ongoing Precision and Recovery (Final)

Units: ng/L
Basis: NA

Test Notes:

Analyte	Prep Method	Analysis Method	True Value	Result	Percent Recovery	CAS Percent Recovery Acceptance Limits	Result Notes
Mercury, Methyl	Method	1630	2.22	2.19	99	67-133	

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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502416
Project:	Sentinel Wells	**Date Collected:**	NA
LCS Matrix:	Water	**Date Received:**	NA
		Date Extracted:	03/16/15
		Date Analyzed:	03/17/15

Quality Control Sample (QCS) Summary
Metals

Sample Name: Quality Control Sample

Units: pg
Basis: NA

Test Notes:

Analyte	Prep Method	Analysis Method	True Value	Result	Percent Recovery	CAS Percent Recovery Acceptance Limits	Result Notes
Mercury, Methyl	Method	1630	100	109	109	67-133	

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Analytical Report

Client :	Longview, City of	**Service Request :**	K1502416
Project Name :	Sentinel Wells	**Date Collected :**	03/10/15
Project No. :	NA	**Date Received :**	03/10/15
Matrix :	Drinking Water	**Date Extracted :**	03/11-13/15

Total Metals

Sample Name :	DW-2	**Units :**	mg/L (ppm)
Lab Code :	K1502416-001	**Basis :**	NA

Analyte	Analysis Method	MRL	Date Analyzed	Sample Result	Result Notes
Antimony	200.8	0.00005	03/19/15	ND	
Arsenic	200.8	0.0005	03/19/15	0.0098	
Barium	200.7	0.004	03/16/15	0.021	
Beryllium	200.8	0.00002	03/19/15	ND	
Cadmium	200.8	0.00002	03/19/15	ND	
Chromium	200.8	0.0002	03/19/15	ND	
Copper	200.7	0.004	03/16/15	ND	
Iron	200.7	0.02	03/16/15	0.57	
Lead	200.8	0.00002	03/19/15	ND	
Manganese	200.7	0.001	03/16/15	0.318	
Mercury	245.1	0.0002	03/12/15	ND	
Nickel	200.8	0.0002	03/19/15	0.0003	
Selenium	200.8	0.001	03/19/15	ND	
Silver	200.8	0.00002	03/19/15	0.00005	
Sodium	200.7	0.2	03/16/15	15.2	
Thallium	200.8	0.00002	03/19/15	0.00002	
Zinc	200.7	0.004	03/16/15	ND	

Comments:

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Analytical Report

Client :	Longview, City of	**Service Request :**	K1502416
Project Name :	Sentinel Wells	**Date Collected :**	NA
Project No. :	NA	**Date Received :**	NA
Matrix :	Drinking Water	**Date Extracted :**	03/13/15

Total Metals

Sample Name :	Method Blank	**Units :**	mg/L (ppm)
Lab Code :	KQ1502195-01	**Basis :**	NA

Analyte	Analysis Method	MRL	Date Analyzed	Sample Result	Result Notes
Barium	200.7	0.004	03/16/15	ND	
Copper	200.7	0.004	03/16/15	ND	
Iron	200.7	0.02	03/16/15	ND	
Manganese	200.7	0.001	03/16/15	ND	
Sodium	200.7	0.2	03/16/15	ND	
Zinc	200.7	0.004	03/16/15	ND	

Comments:

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Analytical Report

Client :	Longview, City of	**Service Request :**	K1502416
Project Name :	Sentinel Wells	**Date Collected :**	NA
Project No. :	NA	**Date Received :**	NA
Matrix :	Drinking Water	**Date Extracted :**	03/11/15

Total Metals

Sample Name :	Method Blank	**Units :**	mg/L (ppm)
Lab Code :	KQ1502275-03	**Basis :**	NA

Analyte	Analysis Method	MRL	Date Analyzed	Sample Result	Result Notes
Mercury	245.1	0.0002	03/12/15	ND	

Comments:

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Analytical Report

Client :	Longview, City of	**Service Request :**	K1502416
Project Name :	Sentinel Wells	**Date Collected :**	NA
Project No. :	NA	**Date Received :**	NA
Matrix :	Drinking Water	**Date Extracted :**	03/13/15

Total Metals

Sample Name :	Method Blank	**Units :**	mg/L (ppm)
Lab Code :	KQ1502374-01	**Basis :**	NA

Analyte	Analysis Method	MRL	Date Analyzed	Sample Result	Result Notes
Antimony	200.8	0.00005	03/19/15	ND	
Arsenic	200.8	0.0005	03/19/15	ND	
Beryllium	200.8	0.00002	03/19/15	ND	
Cadmium	200.8	0.00002	03/19/15	ND	
Chromium	200.8	0.0002	03/19/15	ND	
Lead	200.8	0.00002	03/19/15	ND	
Nickel	200.8	0.0002	03/19/15	ND	
Selenium	200.8	0.001	03/19/15	ND	
Silver	200.8	0.00002	03/19/15	ND	
Thallium	200.8	0.00002	03/19/15	ND	

Comments:

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QA/QC Report

Client :	Longview, City of	**Service Request :**	K1502416
Project Name :	Sentinel Wells	**Date Collected :**	NA
Project No. :	NA	**Date Received :**	NA
Matrix :	Drinking Water	**Date Extracted :**	03/11-13/15
		Date Analyzed :	03/12-19/15

Duplicate Summary
Total Metals

Sample Name :	Batch QC	**Units :**	mg/L (ppm)
Lab Code :	K1502415-001D	**Basis :**	NA

Analyte	Analysis Method	MRL	Sample Result	Duplicate Sample Result	Average	Relative Percent Difference	Result Notes
Antimony	200.8	0.00005	ND	ND	ND	-	
Arsenic	200.8	0.0005	0.0048	0.0049	0.0048	2	
Barium	200.7	0.004	0.030	0.030	0.030	<1	
Beryllium	200.8	0.00002	ND	ND	ND	-	
Cadmium	200.8	0.00002	ND	ND	ND	-	
Chromium	200.8	0.0002	ND	ND	ND	-	
Copper	200.7	0.004	ND	ND	ND	-	
Iron	200.7	0.02	1.02	1.04	1.03	2	
Lead	200.8	0.00002	ND	ND	ND	-	
Manganese	200.7	0.001	0.972	0.983	0.978	1	
Mercury	245.1	0.0002	ND	ND	ND	-	
Nickel	200.8	0.0002	0.0006	0.0006	0.0006	<1	
Selenium	200.8	0.001	ND	ND	ND	-	
Silver	200.8	0.00002	ND	ND	ND	-	
Sodium	200.7	0.2	17.0	17.2	17.1	1	
Thallium	200.8	0.00002	0.00002	0.00002	0.00002	<1	
Zinc	200.7	0.004	ND	ND	ND	-	

Comments:

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QA/QC Report

Client :	Longview, City of	**Service Request :**	K1502416
Project Name :	Sentinel Wells	**Date Collected :**	NA
Project No. :	NA	**Date Received :**	NA
Matrix :	Drinking Water	**Date Extracted :**	03/11-13/15
		Date Analyzed :	03/12-19/15

Matrix Spike Summary
Total Metals

Sample Name :	Batch QC	**Units :**	mg/L (ppm)
Lab Code :	K1502415-001S	**Basis :**	NA

Analyte	MRL	Spike Level	Sample Result	Spiked Sample Result	Percent Recovery	ALS Percent Recovery Acceptance Limits	Result Notes
Antimony	0.00005	0.050	ND	0.0520	104	70-130	
Arsenic	0.0005	0.050	0.0048	0.0535	97	70-130	
Barium	0.004	1.00	0.030	1.01	98	70-130	
Beryllium	0.00002	0.0025	ND	0.00239	96	70-130	
Cadmium	0.00002	0.025	ND	0.0252	101	70-130	
Chromium	0.0002	0.010	ND	0.0092	92	70-130	
Copper	0.004	0.25	ND	0.232	93	70-130	
Iron	0.02	1.00	1.02	1.97	95	70-130	
Lead	0.00002	0.050	ND	0.0483	97	70-130	
Manganese	0.001	0.50	0.972	1.42	90	70-130	
Mercury	0.0002	0.0050	ND	0.0048	96	70-130	
Nickel	0.0002	0.025	0.0006	0.0233	91	70-130	
Selenium	0.001	0.050	ND	0.0500	100	70-130	
Silver	0.00002	0.013	ND	0.0120	96	70-130	
Sodium	0.2	10.0	17.0	26.0	90	70-130	
Thallium	0.00002	0.050	0.00002	0.0500	100	70-130	
Zinc	0.004	0.50	ND	0.458	92	70-130	

Comments:

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QA/QC Report

Client :	Longview, City of	**Service Request :**	K1502416
Project Name :	Sentinel Wells	**Date Collected :**	NA
Project No. :	NA	**Date Received :**	NA
Matrix :	Drinking Water	**Date Extracted :**	03/11-13/15
		Date Analyzed :	03/12-19/15

Laboratory Control Sample Summary
Total Metals

Sample Name :	Laboratory Control Sample	**Units :**	mg/L (ppm)
Lab Code :	K1502416-LCS	**Basis :**	NA

Analyte	Analysis Method	True Value	Result	Percent	ALS Percent Recovery Acceptance Limits	Result Notes
Antimony	200.8	0.050	0.0511	102	85-115	
Arsenic	200.8	0.050	0.0485	97	85-115	
Barium	200.7	5.00	5.08	102	85-115	
Beryllium	200.8	0.0025	0.00244	97	85-115	
Cadmium	200.8	0.025	0.0250	100	85-115	
Chromium	200.8	0.010	0.0097	97	85-115	
Copper	200.7	0.63	0.611	98	85-115	
Iron	200.7	2.50	2.54	102	85-115	
Lead	200.8	0.050	0.0487	97	85-115	
Manganese	200.7	1.25	1.28	102	85-115	
Mercury	245.1	0.0050	0.0050	100	85-115	
Nickel	200.8	0.025	0.0243	97	85-115	
Selenium	200.8	0.050	0.050	100	85-115	
Silver	200.8	0.013	0.0123	98	85-115	
Sodium	200.7	12.5	12.8	103	85-115	
Thallium	200.8	0.050	0.0500	100	85-115	
Zinc	200.7	1.25	1.21	97	85-115	

Comments:

EPA Method 504.1

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Analytical Results

Client:	Longview, City of	**Service Request:**	K1502416
Project:	Sentinel Wells	**Date Collected:**	03/10/2015
Sample Matrix:	Drinking water	**Date Received:**	03/10/2015

EPA Method 504.1

Sample Name:	DW-2	**Units:**	ug/L
Lab Code:	K1502416-001	**Basis:**	NA
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	504.1		

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
1,2-Dibromoethane (EDB)	ND	U	0.0095	1	03/16/15	03/17/15	KWG1502136	
1,2,3-Trichloropropane	ND	U	0.39	1	03/16/15	03/17/15	KWG1502136	
1,2-Dibromo-3-chloropropane (DBCP	ND	U	0.0095	1	03/16/15	03/17/15	KWG1502136	

Comments:

Analytical Results

Client:	Longview, City of	**Service Request:**	K1502416
Project:	Sentinel Wells	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA

EPA Method 504.1

Sample Name:	Method Blank	**Units:**	ug/L
Lab Code:	KWG1502136-7	**Basis:**	NA
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	504.1		

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
1,2-Dibromoethane (EDB)	ND	U	0.0099	1	03/16/15	03/16/15	KWG1502136	
1,2,3-Trichloropropane	ND	U	0.40	1	03/16/15	03/16/15	KWG1502136	
1,2-Dibromo-3-chloropropane (DBCP	ND	U	0.0099	1	03/16/15	03/16/15	KWG1502136	

Comments:

QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502416
Project:	Sentinel Wells	**Date Extracted:**	03/16/2015
Sample Matrix:	Water	**Date Analyzed:**	03/16/2015

Matrix Spike/Duplicate Matrix Spike Summary
EPA Method 504.1

Sample Name:	Batch QC	**Units:**	ug/L
Lab Code:	K1502111-002	**Basis:**	NA
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	504.1	**Extraction Lot:**	KWG1502136

		Batch QCMS KWG1502136-1 Matrix Spike			Batch QCDMS KWG1502136-2 Duplicate Matrix Spike					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**%Rec**	**Result**	**Spike Amount**	**%Rec**	**%Rec Limits**	**RPD**	**RPD Limit**
1,2-Dibromoethane (EDB)	ND	0.194	0.240	81	0.211	0.243	87	65-135	8	30
1,2,3-Trichloropropane	ND	0.178	0.240	74	0.195	0.243	80	65-135	9	30
1,2-Dibromo-3-chloropropane (DBCP)	ND	0.182	0.240	76	0.204	0.243	84	65-135	12	30

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502416
Project:	Sentinel Wells	**Date Extracted:**	03/16/2015
Sample Matrix:	Drinking water	**Date Analyzed:**	03/17/2015

Matrix Spike/Duplicate Matrix Spike Summary
EPA Method 504.1

Sample Name:	Batch QC	**Units:**	ug/L
Lab Code:	K1502415-001	**Basis:**	NA
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	504.1	**Extraction Lot:**	KWG1502136

		Batch QCMS KWG1502136-3 Matrix Spike			Batch QCDMS KWG1502136-4 Duplicate Matrix Spike					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**%Rec**	**Result**	**Spike Amount**	**%Rec**	**%Rec Limits**	**RPD**	**RPD Limit**
1,2-Dibromoethane (EDB)	ND	0.215	0.242	89	0.211	0.239	88	65-135	2	30
1,2,3-Trichloropropane	ND	0.209	0.242	87	0.208	0.239	87	65-135	1	30
1,2-Dibromo-3-chloropropane (DBCP)	ND	0.222	0.242	92	0.215	0.239	90	65-135	3	30

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Client:	Longview, City of	**Service Request:**	K1502416
Project:	Sentinel Wells	**Date Extracted:**	03/16/2015
Sample Matrix:	Water	**Date Analyzed:**	03/16/2015

Lab Control Spike Summary
EPA Method 504.1

Extraction Method:	METHOD	**Units:**	ug/L
Analysis Method:	504.1	**Basis:**	NA
		Level:	Low
		Extraction Lot:	KWG1502136

	Lab Control Sample KWG1502136-5 Lab Control Spike			
Analyte Name	**Result**	**Spike Amount**	**%Rec**	**%Rec Limits**
1,2-Dibromoethane (EDB)	0.233	0.250	93	70-130
1,2,3-Trichloropropane	0.225	0.250	90	70-130
1,2-Dibromo-3-chloropropane (DBCP)	0.237	0.250	95	70-130

Results flagged with an asterisk (*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Client:	Longview, City of	**Service Request:**	K1502416
Project:	Sentinel Wells	**Date Extracted:**	03/16/2015
Sample Matrix:	Water	**Date Analyzed:**	03/16/2015

Lab Control Spike Summary
EPA Method 504.1

Extraction Method:	METHOD	**Units:**	ug/L
Analysis Method:	504.1	**Basis:**	NA
		Level:	Low
		Extraction Lot:	KWG1502136

	Lab Control Sample KWG1502136-6 Lab Control Spike			
Analyte Name	**Result**	**Spike Amount**	**%Rec**	**%Rec Limits**
1,2-Dibromoethane (EDB)	0.231	0.250	92	70-130
1,2,3-Trichloropropane	0.220	0.250	88	70-130
1,2-Dibromo-3-chloropropane (DBCP)	0.231	0.250	92	70-130

Results flagged with an asterisk (*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Pesticides/PCBs by EPA Method 508.1

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Analytical Results

Client:	Longview, City of	**Service Request:**	K1502416
Project:	Sentinel Wells	**Date Collected:**	03/10/2015
Sample Matrix:	Drinking water	**Date Received:**	03/10/2015

Pesticides/PCBs by EPA Method 508.1

Sample Name:	DW-2	**Units:**	ug/L
Lab Code:	K1502416-001	**Basis:**	NA
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	508.1		

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
gamma-BHC (Lindane)	ND	U	0.0098	1	03/23/15	03/24/15	KWG1502390	
Heptachlor	ND	U	0.0098	1	03/23/15	03/24/15	KWG1502390	
Aldrin	ND	U	0.0098	1	03/23/15	03/24/15	KWG1502390	
Heptachlor Epoxide	ND	U	0.0098	1	03/23/15	03/24/15	KWG1502390	
Heptachlor Epoxide (Isomer A)	ND	U	0.0098	1	03/23/15	03/24/15	KWG1502390	
4,4'-DDE	ND	U	0.0098	1	03/23/15	03/24/15	KWG1502390	
Dieldrin	ND	U	0.0098	1	03/23/15	03/24/15	KWG1502390	
Endrin	ND	U	0.0098	1	03/23/15	03/24/15	KWG1502390	
4,4'-DDD	ND	U	0.0098	1	03/23/15	03/24/15	KWG1502390	
4,4'-DDT	ND	U	0.0098	1	03/23/15	03/24/15	KWG1502390	
Methoxychlor	ND	U	0.0098	1	03/23/15	03/24/15	KWG1502390	
Toxaphene	ND	U	0.098	1	03/23/15	03/24/15	KWG1502390	
Chlordane	ND	U	0.098	1	03/23/15	03/24/15	KWG1502390	
Aroclor 1016	ND	U	0.049	1	03/23/15	03/24/15	KWG1502390	
Aroclor 1221	ND	U	0.098	1	03/23/15	03/24/15	KWG1502390	
Aroclor 1232	ND	U	0.098	1	03/23/15	03/24/15	KWG1502390	
Aroclor 1242	ND	U	0.098	1	03/23/15	03/24/15	KWG1502390	
Aroclor 1248	ND	U	0.098	1	03/23/15	03/24/15	KWG1502390	
Aroclor 1254	ND	U	0.098	1	03/23/15	03/24/15	KWG1502390	
Aroclor 1260	ND	U	0.098	1	03/23/15	03/24/15	KWG1502390	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
4,4'-Dibromooctafluorobiphenyl	98	70-130	03/24/15	Acceptable

Comments:

ALS Group USA, Corp. dba ALS Environmental

Analytical Results

Client:	Longview, City of	**Service Request:**	K1502416
Project:	Sentinel Wells	**Date Collected:**	NA
Sample Matrix:	Drinking water	**Date Received:**	NA

Pesticides/PCBs by EPA Method 508.1

Sample Name:	Method Blank	**Units:**	ug/L
Lab Code:	KWG1502390-7	**Basis:**	NA
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	508.1		

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
gamma-BHC (Lindane)	ND	U	0.010	1	03/23/15	03/24/15	KWG1502390	
Heptachlor	ND	U	0.010	1	03/23/15	03/24/15	KWG1502390	
Aldrin	ND	U	0.010	1	03/23/15	03/24/15	KWG1502390	
Heptachlor Epoxide	ND	U	0.010	1	03/23/15	03/24/15	KWG1502390	
Heptachlor Epoxide (Isomer A)	ND	U	0.010	1	03/23/15	03/24/15	KWG1502390	
4,4'-DDE	ND	U	0.010	1	03/23/15	03/24/15	KWG1502390	
Dieldrin	ND	U	0.010	1	03/23/15	03/24/15	KWG1502390	
Endrin	ND	U	0.010	1	03/23/15	03/24/15	KWG1502390	
4,4'-DDD	ND	U	0.010	1	03/23/15	03/24/15	KWG1502390	
4,4'-DDT	ND	U	0.010	1	03/23/15	03/24/15	KWG1502390	
Methoxychlor	ND	U	0.010	1	03/23/15	03/24/15	KWG1502390	
Toxaphene	ND	U	0.10	1	03/23/15	03/24/15	KWG1502390	
Chlordane	ND	U	0.10	1	03/23/15	03/24/15	KWG1502390	
Aroclor 1016	ND	U	0.050	1	03/23/15	03/24/15	KWG1502390	
Aroclor 1221	ND	U	0.10	1	03/23/15	03/24/15	KWG1502390	
Aroclor 1232	ND	U	0.10	1	03/23/15	03/24/15	KWG1502390	
Aroclor 1242	ND	U	0.10	1	03/23/15	03/24/15	KWG1502390	
Aroclor 1248	ND	U	0.10	1	03/23/15	03/24/15	KWG1502390	
Aroclor 1254	ND	U	0.10	1	03/23/15	03/24/15	KWG1502390	
Aroclor 1260	ND	U	0.10	1	03/23/15	03/24/15	KWG1502390	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
4,4'-Dibromooctafluorobiphenyl	100	70-130	03/24/15	Acceptable

Comments:

Client: Longview, City of
Project: Sentinel Wells
Sample Matrix: Drinking water

Service Request: K1502416

Surrogate Recovery Summary
Pesticides/PCBs by EPA Method 508.1

Extraction Method: METHOD
Analysis Method: 508.1

Units: Percent
Level: Low

Sample Name	Lab Code	Sur1
Batch QC	K1502415-001	102
DW-2	K1502416-001	98
Method Blank	KWG1502390-7	100
Batch QCMS	KWG1502390-4	89
Batch QCDMS	KWG1502390-5	89
Lab Control Sample	KWG1502390-6	90

Surrogate Recovery Control Limits (%)

Sur1 = 4,4'-Dibromooctafluorobiphenyl 70-130

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502416
Project:	Sentinel Wells	**Date Extracted:**	03/23/2015
Sample Matrix:	Drinking water	**Date Analyzed:**	03/24/2015

Matrix Spike/Duplicate Matrix Spike Summary
Pesticides/PCBs by EPA Method 508.1

Sample Name:	Batch QC	**Units:**	ug/L
Lab Code:	K1502415-001	**Basis:**	NA
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	508.1	**Extraction Lot:**	KWG1502390

		Batch QCMS KWG1502390-4 Matrix Spike			Batch QCDMS KWG1502390-5 Duplicate Matrix Spike					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**%Rec**	**Result**	**Spike Amount**	**%Rec**	**%Rec Limits**	**RPD**	**RPD Limit**
gamma-BHC (Lindane)	ND	0.101	0.0971	104	0.101	0.0971	104	65-135	0	30
Heptachlor	ND	0.0824	0.0971	85	0.0795	0.0971	82	65-135	4	30
Aldrin	ND	0.0919	0.0971	95	0.0897	0.0971	92	65-135	2	30
Heptachlor Epoxide	ND	0.102	0.0971	105	0.0983	0.0971	101	65-135	3	30
Heptachlor Epoxide (Isomer A)	ND	0.0964	0.0971	99	0.0938	0.0971	97	65-135	3	30
4,4'-DDE	ND	0.108	0.0971	112	0.106	0.0971	109	65-135	2	30
Dieldrin	ND	0.0968	0.0971	100	0.0942	0.0971	97	65-135	3	30
Endrin	ND	0.0681	0.0971	70	0.0620	0.0971	64 *	65-135	9	30
4,4'-DDD	ND	0.114	0.0971	118	0.113	0.0971	116	65-135	1	30
4,4'-DDT	ND	0.113	0.0971	116	0.111	0.0971	115	65-135	1	30
Methoxychlor	ND	0.114	0.0971	118	0.114	0.0971	118	65-135	0	30
Aroclor 1248	ND	0.336	0.485	69	0.336	0.485	69	65-135	0	30

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Client:	Longview, City of	**Service Request:**	K1502416
Project:	Sentinel Wells	**Date Extracted:**	03/23/2015
Sample Matrix:	Drinking water	**Date Analyzed:**	03/24/2015

Lab Control Spike Summary
Pesticides/PCBs by EPA Method 508.1

Extraction Method:	METHOD	**Units:**	ug/L
Analysis Method:	508.1	**Basis:**	NA
		Level:	Low
		Extraction Lot:	KWG1502390

	Lab Control Sample KWG1502390-6 Lab Control Spike			
Analyte Name	**Result**	**Spike Amount**	**%Rec**	**%Rec Limits**
gamma-BHC (Lindane)	0.107	0.100	107	70-130
Heptachlor	0.0961	0.100	96	70-130
Aldrin	0.0900	0.100	90	70-130
Heptachlor Epoxide	0.103	0.100	103	70-130
Heptachlor Epoxide (Isomer A)	0.106	0.100	106	70-130
4,4'-DDE	0.107	0.100	107	70-130
Dieldrin	0.112	0.100	112	70-130
Endrin	0.113	0.100	113	70-130
4,4'-DDD	0.115	0.100	115	70-130
4,4'-DDT	0.108	0.100	108	70-130
Methoxychlor	0.112	0.100	112	70-130
Aroclor 1248	0.394	0.500	79	70-130

Results flagged with an asterisk (*) indicate values outside control criteria.

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Chlorinated Herbicides by EPA 515.4

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
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ALS Group USA, Corp. dba ALS Environmental

Analytical Results

Client:	Longview, City of	**Service Request:**	K1502416
Project:	Sentinel Wells	**Date Collected:**	03/10/2015
Sample Matrix:	Drinking water	**Date Received:**	03/10/2015

Chlorinated Herbicides by EPA 515.4

Sample Name:	DW-2	**Units:**	ug/L
Lab Code:	K1502416-001	**Basis:**	NA
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	515.4		

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Dalapon	ND	U	1.0	1	03/17/15	03/24/15	KWG1502203	
3,5-Dichlorobenzoic Acid	ND	U	0.50	1	03/17/15	03/24/15	KWG1502203	
Dicamba	ND	U	0.20	1	03/17/15	03/24/15	KWG1502203	
Dichlorprop	ND	U	0.50	1	03/17/15	03/24/15	KWG1502203	
2,4-D	ND	U	0.10	1	03/17/15	03/24/15	KWG1502203	
Pentachlorophenol	ND	U	0.040	1	03/17/15	03/24/15	KWG1502203	
2,4,5-TP (Silvex)	ND	U	0.20	1	03/17/15	03/24/15	KWG1502203	
Chloramben	ND	U	0.20	1	03/17/15	03/24/15	KWG1502203	
2,4-DB	ND	U	1.0	1	03/17/15	03/24/15	KWG1502203	
Dinoseb	ND	U	0.20	1	03/17/15	03/24/15	KWG1502203	
Dacthal Diacid	ND	U	0.020	1	03/17/15	03/24/15	KWG1502203	
Picloram	ND	U	0.10	1	03/17/15	03/24/15	KWG1502203	
Acifluorfen	ND	U	2.0	1	03/17/15	03/24/15	KWG1502203	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
2,4-Dichlorophenylacetic Acid	142	70-130	03/24/15	Outside Control Limits

Comments:

Analytical Results

Client:	Longview, City of	**Service Request:**	K1502416
Project:	Sentinel Wells	**Date Collected:**	NA
Sample Matrix:	Drinking water	**Date Received:**	NA

Chlorinated Herbicides by EPA 515.4

Sample Name:	Method Blank	**Units:**	ug/L
Lab Code:	KWG1502203-4	**Basis:**	NA
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	515.4		

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Dalapon	ND	U	1.0	1	03/17/15	03/24/15	KWG1502203	
3,5-Dichlorobenzoic Acid	ND	U	0.50	1	03/17/15	03/24/15	KWG1502203	
Dicamba	ND	U	0.20	1	03/17/15	03/24/15	KWG1502203	
Dichlorprop	ND	U	0.50	1	03/17/15	03/24/15	KWG1502203	
2,4-D	ND	U	0.10	1	03/17/15	03/24/15	KWG1502203	
Pentachlorophenol	ND	U	0.040	1	03/17/15	03/24/15	KWG1502203	
2,4,5-TP (Silvex)	ND	U	0.20	1	03/17/15	03/24/15	KWG1502203	
Chloramben	ND	U	0.20	1	03/17/15	03/24/15	KWG1502203	
2,4-DB	ND	U	1.0	1	03/17/15	03/24/15	KWG1502203	
Dinoseb	ND	U	0.20	1	03/17/15	03/24/15	KWG1502203	
Dacthal Diacid	ND	U	0.020	1	03/17/15	03/24/15	KWG1502203	
Picloram	ND	U	0.10	1	03/17/15	03/24/15	KWG1502203	
Acifluorfen	ND	U	2.0	1	03/17/15	03/24/15	KWG1502203	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
2,4-Dichlorophenylacetic Acid	86	70-130	03/24/15	Acceptable

Comments:

Client: Longview, City of
Project: Sentinel Wells
Sample Matrix: Drinking water

Service Request: K1502416

Surrogate Recovery Summary
Chlorinated Herbicides by EPA 515.4

Extraction Method: METHOD
Analysis Method: 515.4

Units: Percent
Level: Low

Sample Name	Lab Code	Sur1	
Batch QC	K1502415-001	114	
DW-2	K1502416-001	142	*
Method Blank	KWG1502203-4	86	
Batch QCMS	KWG1502203-1	126	
Batch QCDMS	KWG1502203-2	121	
Lab Control Sample	KWG1502203-3	97	

Surrogate Recovery Control Limits (%)

Sur1 = 2,4-Dichlorophenylacetic Acid 70-130

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Client:	Longview, City of	**Service Request:**	K1502416
Project:	Sentinel Wells	**Date Extracted:**	03/17/2015
Sample Matrix:	Drinking water	**Date Analyzed:**	03/24/2015

Matrix Spike/Duplicate Matrix Spike Summary
Chlorinated Herbicides by EPA 515.4

Sample Name:	Batch QC	**Units:**	ug/L
Lab Code:	K1502415-001	**Basis:**	NA
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	515.4	**Extraction Lot:**	KWG1502203

		Batch QCMS KWG1502203-1 Matrix Spike			Batch QCDMS KWG1502203-2 Duplicate Matrix Spike					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**%Rec**	**Result**	**Spike Amount**	**%Rec**	**%Rec Limits**	**RPD**	**RPD Limit**
Dalapon	ND	4.28	4.98	86	4.31	4.97	87	70-130	1	30
3,5-Dichlorobenzoic Acid	ND	4.86	4.98	98	4.86	4.97	98	70-130	0	30
Dicamba	ND	5.19	4.98	104	5.16	4.97	104	70-130	1	30
Dichlorprop	ND	5.11	4.98	103	5.03	4.97	101	70-130	2	30
2,4-D	ND	5.13	4.98	103	5.08	4.97	102	70-130	1	30
Pentachlorophenol	ND	5.12	4.98	103	5.08	4.97	102	70-130	1	30
2,4,5-TP (Silvex)	ND	4.78	4.98	96	4.74	4.97	95	70-130	1	30
Chloramben	ND	4.82	4.98	97	4.72	4.97	95	70-130	2	30
2,4-DB	ND	4.87	4.98	98	4.80	4.97	97	70-130	1	30
Dinoseb	ND	4.99	4.98	100	5.07	4.97	102	70-130	2	30
Dacthal Diacid	ND	5.99	4.98	120	6.03	4.97	121	70-130	1	30
Picloram	ND	5.45	4.98	109	5.38	4.97	108	70-130	1	30
Acifluorfen	ND	4.78	4.98	96	4.77	4.97	96	70-130	0	30

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Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Client:	Longview, City of	**Service Request:**	K1502416
Project:	Sentinel Wells	**Date Extracted:**	03/17/2015
Sample Matrix:	Drinking water	**Date Analyzed:**	03/24/2015

Lab Control Spike Summary
Chlorinated Herbicides by EPA 515.4

Extraction Method:	METHOD	**Units:**	ug/L
Analysis Method:	515.4	**Basis:**	NA
		Level:	Low
		Extraction Lot:	KWG1502203

	Lab Control Sample KWG1502203-3 Lab Control Spike			
Analyte Name	**Result**	**Spike Amount**	**%Rec**	**%Rec Limits**
Dalapon	4.16	5.00	83	70-130
3,5-Dichlorobenzoic Acid	4.48	5.00	90	70-130
Dicamba	4.79	5.00	96	70-130
Dichlorprop	4.79	5.00	96	70-130
2,4-D	4.83	5.00	97	70-130
Pentachlorophenol	4.92	5.00	98	70-130
2,4,5-TP (Silvex)	4.64	5.00	93	70-130
Chloramben	5.14	5.00	103	70-130
2,4-DB	4.68	5.00	94	70-130
Dinoseb	4.85	5.00	97	70-130
Dacthal Diacid	4.85	5.00	97	70-130
Picloram	5.08	5.00	102	70-130
Acifluorfen	4.74	5.00	95	70-130

Results flagged with an asterisk (*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Volatile Organic Compounds

ALS Environmental—Kelso Laboratory
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Phone (360)577-7222 Fax (360)636-1068
www.alsglobal.com

Analytical Results

Client: Longview, City of
Project: Sentinel Wells
Sample Matrix: Drinking water

Service Request: K1502416
Date Collected: 03/10/2015
Date Received: 03/10/2015

Volatile Organic Compounds

Sample Name: DW-2
Lab Code: K1502416-001

Units: ug/L
Basis: NA

Extraction Method: METHOD
Analysis Method: 524.2

Level: Low

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Dichlorodifluoromethane	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Chloromethane	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Vinyl Chloride	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Bromomethane	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Chloroethane	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Trichlorofluoromethane	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Methylene Chloride	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
trans-1,2-Dichloroethene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
1,1-Dichloroethene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
cis-1,2-Dichloroethene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Methyl tert-Butyl Ether	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Chloroform	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Bromochloromethane	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Carbon Tetrachloride	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Benzene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
1,2-Dichloroethane	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Trichloroethene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
1,2-Dichloropropane	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Bromodichloromethane	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Dibromomethane	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
cis-1,3-Dichloropropene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
1,1-Dichloroethane	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Toluene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
trans-1,3-Dichloropropene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Tetrachloroethene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
2,2-Dichloropropane	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
1,3-Dichloropropane	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Dibromochloromethane	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
1,2-Dibromoethane (EDB)	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Chlorobenzene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Ethylbenzene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Styrene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
m,p-Xylenes	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
o-Xylene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	

Comments:

Analytical Results

Client:	Longview, City of	**Service Request:**	K1502416
Project:	Sentinel Wells	**Date Collected:**	03/10/2015
Sample Matrix:	Drinking water	**Date Received:**	03/10/2015

Volatile Organic Compounds

Sample Name:	DW-2	**Units:**	ug/L
Lab Code:	K1502416-001	**Basis:**	NA
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	524.2		

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
1,1,1-Trichloroethane	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Bromoform	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
1,1,2,2-Tetrachloroethane	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Isopropylbenzene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
1,1-Dichloropropene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Bromobenzene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
n-Propylbenzene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
1,3,5-Trimethylbenzene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
2-Chlorotoluene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
4-Chlorotoluene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
tert-Butylbenzene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
1,2,4-Trimethylbenzene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
sec-Butylbenzene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
p-Isopropyltoluene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
1,3-Dichlorobenzene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
1,4-Dichlorobenzene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
n-Butylbenzene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
1,2-Dichlorobenzene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
1,2-Dibromo-3-chloropropane (DBCP	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
1,2,4-Trichlorobenzene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Hexachlorobutadiene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Naphthalene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
1,1,2-Trichloroethane	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
1,1,1,2-Tetrachloroethane	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
1,2,3-Trichloropropane	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
1,2,3-Trichlorobenzene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
4-Bromofluorobenzene	91	70-130	03/17/15	Acceptable
Dibromofluoromethane	95	82-124	03/17/15	Acceptable
Toluene-d8	95	82-124	03/17/15	Acceptable

Comments:

Analytical Results

Client: Longview, City of
Project: Sentinel Wells
Sample Matrix: Drinking water

Service Request: K1502416
Date Collected: NA
Date Received: NA

Volatile Organic Compounds

Sample Name: Method Blank
Lab Code: KWG1502193-4
Extraction Method: METHOD
Analysis Method: 524.2

Units: ug/L
Basis: NA
Level: Low

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Dichlorodifluoromethane	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Chloromethane	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Vinyl Chloride	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Bromomethane	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Chloroethane	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Trichlorofluoromethane	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Methylene Chloride	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
trans-1,2-Dichloroethene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
1,1-Dichloroethene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
cis-1,2-Dichloroethene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Methyl tert-Butyl Ether	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Chloroform	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Bromochloromethane	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Carbon Tetrachloride	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Benzene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
1,2-Dichloroethane	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Trichloroethene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
1,2-Dichloropropane	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Bromodichloromethane	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Dibromomethane	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
cis-1,3-Dichloropropene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
1,1-Dichloroethane	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Toluene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
trans-1,3-Dichloropropene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Tetrachloroethene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
2,2-Dichloropropane	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
1,3-Dichloropropane	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Dibromochloromethane	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
1,2-Dibromoethane (EDB)	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Chlorobenzene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Ethylbenzene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Styrene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
m,p-Xylenes	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
o-Xylene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	

Comments:

Analytical Results

Client:	Longview, City of	**Service Request:**	K1502416
Project:	Sentinel Wells	**Date Collected:**	NA
Sample Matrix:	Drinking water	**Date Received:**	NA

Volatile Organic Compounds

Sample Name:	Method Blank	**Units:**	ug/L
Lab Code:	KWG1502193-4	**Basis:**	NA
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	524.2		

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
1,1,1-Trichloroethane	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Bromoform	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
1,1,2,2-Tetrachloroethane	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Isopropylbenzene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
1,1-Dichloropropene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Bromobenzene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
n-Propylbenzene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
1,3,5-Trimethylbenzene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
2-Chlorotoluene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
4-Chlorotoluene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
tert-Butylbenzene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
1,2,4-Trimethylbenzene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
sec-Butylbenzene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
p-Isopropyltoluene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
1,3-Dichlorobenzene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
1,4-Dichlorobenzene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
n-Butylbenzene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
1,2-Dichlorobenzene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
1,2-Dibromo-3-chloropropane (DBCP	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
1,2,4-Trichlorobenzene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Hexachlorobutadiene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Naphthalene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
1,1,2-Trichloroethane	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
1,1,1,2-Tetrachloroethane	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
1,2,3-Trichloropropane	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
1,2,3-Trichlorobenzene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
4-Bromofluorobenzene	91	70-130	03/17/15	Acceptable
Dibromofluoromethane	95	82-124	03/17/15	Acceptable
Toluene-d8	96	82-124	03/17/15	Acceptable

Comments:

Client: Longview, City of
Project: Sentinel Wells
Sample Matrix: Drinking water

Service Request: K1502416

Surrogate Recovery Summary
Volatile Organic Compounds

Extraction Method: METHOD
Analysis Method: 524.2

Units: Percent
Level: Low

Sample Name	Lab Code	Sur1	Sur2	Sur3
Batch QC	K1502415-001	90	94	96
DW-2	K1502416-001	91	95	95
Method Blank	KWG1502193-4	91	95	96
Batch QCMS	KWG1502193-1	100	97	95
Batch QCDMS	KWG1502193-2	100	96	96
Lab Control Sample	KWG1502193-3	100	96	96

Surrogate Recovery Control Limits (%)

Sur1	=	4-Bromofluorobenzene	70-130
Sur2	=	Dibromofluoromethane	82-124
Sur3	=	Toluene-d8	82-124

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Client:	Longview, City of	**Service Request:**	K1502416
Project:	Sentinel Wells	**Date Extracted:**	03/17/2015
Sample Matrix:	Drinking water	**Date Analyzed:**	03/17/2015

Matrix Spike/Duplicate Matrix Spike Summary
Volatile Organic Compounds

Sample Name:	Batch QC	**Units:**	ug/L
Lab Code:	K1502415-001	**Basis:**	NA
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	524.2	**Extraction Lot:**	KWG1502193

		Batch QCMS KWG1502193-1 Matrix Spike			Batch QCDMS KWG1502193-2 Duplicate Matrix Spike					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**%Rec**	**Result**	**Spike Amount**	**%Rec**	**%Rec Limits**	**RPD**	**RPD Limit**
Dichlorodifluoromethane	ND	6.19	5.00	124	5.50	5.00	110	70-130	12	30
Chloromethane	ND	5.94	5.00	119	5.90	5.00	118	70-130	1	30
Vinyl Chloride	ND	5.34	5.00	107	4.99	5.00	100	70-130	7	30
Bromomethane	ND	4.53	5.00	91	3.92	5.00	78	70-130	14	30
Chloroethane	ND	5.26	5.00	105	4.83	5.00	97	70-130	9	30
Trichlorofluoromethane	ND	5.51	5.00	110	5.04	5.00	101	70-130	9	30
Methylene Chloride	ND	4.64	5.00	93	4.47	5.00	89	70-130	4	30
trans-1,2-Dichloroethene	ND	4.93	5.00	99	4.56	5.00	91	70-130	8	30
cis-1,2-Dichloroethene	ND	4.66	5.00	93	4.46	5.00	89	70-130	4	30
1,1-Dichloroethene	ND	4.99	5.00	100	4.57	5.00	91	70-130	9	30
Methyl tert-Butyl Ether	ND	8.10	10.0	81	7.93	10.0	79	70-130	2	30
Chloroform	ND	4.91	5.00	98	4.69	5.00	94	70-130	5	30
Bromochloromethane	ND	4.50	5.00	90	4.41	5.00	88	70-130	2	30
Carbon Tetrachloride	ND	5.71	5.00	114	5.27	5.00	105	70-130	8	30
Benzene	ND	4.84	5.00	97	4.64	5.00	93	70-130	4	30
1,2-Dichloroethane	ND	5.11	5.00	102	4.97	5.00	99	70-130	3	30
Trichloroethene	ND	4.70	5.00	94	4.49	5.00	90	70-130	5	30
1,2-Dichloropropane	ND	4.54	5.00	91	4.29	5.00	86	70-130	6	30
Bromodichloromethane	ND	4.49	5.00	90	4.34	5.00	87	70-130	3	30
Dibromomethane	ND	4.54	5.00	91	4.33	5.00	87	70-130	5	30
cis-1,3-Dichloropropene	ND	4.22	5.00	84	4.20	5.00	84	70-130	0	30
1,1-Dichloroethane	ND	4.96	5.00	99	4.75	5.00	95	70-130	4	30
Toluene	ND	4.63	5.00	93	4.47	5.00	89	70-130	4	30
trans-1,3-Dichloropropene	ND	4.05	5.00	81	3.91	5.00	78	70-130	4	30
Tetrachloroethene	ND	4.73	5.00	95	4.42	5.00	88	70-130	7	30
2,2-Dichloropropane	ND	4.98	5.00	100	4.76	5.00	95	70-130	5	30
1,3-Dichloropropane	ND	4.72	5.00	94	4.61	5.00	92	70-130	2	30
Dibromochloromethane	ND	4.73	5.00	95	4.47	5.00	89	70-130	6	30
1,2-Dibromoethane (EDB)	ND	4.74	5.00	95	4.61	5.00	92	70-130	3	30
Chlorobenzene	ND	4.79	5.00	96	4.58	5.00	92	70-130	4	30
Ethylbenzene	ND	4.87	5.00	97	4.55	5.00	91	70-130	7	30
Styrene	ND	4.67	5.00	93	4.42	5.00	88	70-130	6	30
m,p-Xylenes	ND	9.79	10.0	98	9.27	10.0	93	70-130	5	30

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Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Client:	Longview, City of	**Service Request:**	K1502416
Project:	Sentinel Wells	**Date Extracted:**	03/17/2015
Sample Matrix:	Drinking water	**Date Analyzed:**	03/17/2015

Matrix Spike/Duplicate Matrix Spike Summary
Volatile Organic Compounds

Sample Name:	Batch QC	**Units:**	ug/L
Lab Code:	K1502415-001	**Basis:**	NA
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	524.2	**Extraction Lot:**	KWG1502193

		Batch QCMS KWG1502193-1 Matrix Spike			Batch QCDMS KWG1502193-2 Duplicate Matrix Spike					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**%Rec**	**Result**	**Spike Amount**	**%Rec**	**%Rec Limits**	**RPD**	**RPD Limit**
o-Xylene	ND	4.57	5.00	91	4.36	5.00	87	70-130	5	30
1,1,2,2-Tetrachloroethane	ND	5.34	5.00	107	5.11	5.00	102	70-130	4	30
1,1,1-Trichloroethane	ND	5.01	5.00	100	4.68	5.00	94	70-130	7	30
Bromoform	ND	4.82	5.00	96	4.75	5.00	95	70-130	1	30
Isopropylbenzene	ND	4.93	5.00	99	4.61	5.00	92	70-130	7	30
1,1-Dichloropropene	ND	5.03	5.00	101	4.69	5.00	94	70-130	7	30
Bromobenzene	ND	5.02	5.00	100	4.70	5.00	94	70-130	7	30
n-Propylbenzene	ND	5.76	5.00	115	5.40	5.00	108	70-130	6	30
1,3,5-Trimethylbenzene	ND	5.56	5.00	111	5.27	5.00	105	70-130	5	30
2-Chlorotoluene	ND	5.58	5.00	112	5.28	5.00	106	70-130	6	30
4-Chlorotoluene	ND	5.67	5.00	113	5.32	5.00	106	70-130	6	30
tert-Butylbenzene	ND	5.53	5.00	111	5.14	5.00	103	70-130	7	30
1,2,4-Trimethylbenzene	ND	5.57	5.00	111	5.29	5.00	106	70-130	5	30
sec-Butylbenzene	ND	5.67	5.00	113	5.32	5.00	106	70-130	6	30
p-Isopropyltoluene	ND	5.50	5.00	110	5.21	5.00	104	70-130	5	30
1,3-Dichlorobenzene	ND	5.16	5.00	103	4.94	5.00	99	70-130	4	30
1,4-Dichlorobenzene	ND	5.04	5.00	101	4.82	5.00	96	70-130	4	30
n-Butylbenzene	ND	5.55	5.00	111	5.21	5.00	104	70-130	6	30
1,2-Dichlorobenzene	ND	5.08	5.00	102	4.79	5.00	96	70-130	6	30
1,2-Dibromo-3-chloropropane (DBCP)	ND	5.29	5.00	106	5.38	5.00	108	70-130	2	30
1,2,4-Trichlorobenzene	ND	4.82	5.00	96	4.64	5.00	93	70-130	4	30
Hexachlorobutadiene	ND	5.15	5.00	103	4.86	5.00	97	70-130	6	30
Naphthalene	ND	4.50	5.00	90	4.37	5.00	87	70-130	3	30
1,1,2-Trichloroethane	ND	4.38	5.00	88	4.25	5.00	85	70-130	3	30
1,1,1,2-Tetrachloroethane	ND	5.13	5.00	103	5.03	5.00	101	70-130	2	30
1,2,3-Trichloropropane	ND	5.08	5.00	102	4.87	5.00	97	70-130	4	30
1,2,3-Trichlorobenzene	ND	5.03	5.00	101	4.81	5.00	96	70-130	4	30

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QA/QC Report

Client: Longview, City of
Project: Sentinel Wells
Sample Matrix: Drinking water

Service Request: K1502416
Date Extracted: 03/17/2015
Date Analyzed: 03/17/2015

Lab Control Spike Summary
Volatile Organic Compounds

Extraction Method: METHOD
Analysis Method: 524.2

Units: ug/L
Basis: NA
Level: Low
Extraction Lot: KWG1502193

	Lab Control Sample KWG1502193-3 Lab Control Spike			
Analyte Name	**Result**	**Spike Amount**	**%Rec**	**%Rec Limits**
Dichlorodifluoromethane	6.13	5.00	123	70-130
Chloromethane	6.39	5.00	128	70-130
Vinyl Chloride	5.46	5.00	109	70-130
Bromomethane	4.74	5.00	95	70-130
Chloroethane	5.39	5.00	108	70-130
Trichlorofluoromethane	5.53	5.00	111	70-130
Methylene Chloride	5.12	5.00	102	70-130
trans-1,2-Dichloroethene	5.07	5.00	101	70-130
1,1-Dichloroethene	5.14	5.00	103	70-130
cis-1,2-Dichloroethene	4.85	5.00	97	70-130
Methyl tert-Butyl Ether	8.70	10.0	87	70-130
Chloroform	5.30	5.00	106	70-130
Bromochloromethane	4.78	5.00	96	70-130
Carbon Tetrachloride	5.84	5.00	117	70-130
Benzene	5.13	5.00	103	70-130
1,2-Dichloroethane	5.36	5.00	107	70-130
Trichloroethene	4.97	5.00	99	70-130
1,2-Dichloropropane	4.82	5.00	96	70-130
Bromodichloromethane	4.83	5.00	97	70-130
Dibromomethane	4.72	5.00	94	70-130
cis-1,3-Dichloropropene	4.56	5.00	91	70-130
Toluene	4.91	5.00	98	70-130
1,1-Dichloroethane	5.26	5.00	105	70-130
trans-1,3-Dichloropropene	4.23	5.00	85	70-130
Tetrachloroethene	5.01	5.00	100	70-130
1,3-Dichloropropane	5.05	5.00	101	70-130
2,2-Dichloropropane	5.21	5.00	104	70-130
Dibromochloromethane	5.11	5.00	102	70-130
1,2-Dibromoethane (EDB)	5.10	5.00	102	70-130
Chlorobenzene	5.10	5.00	102	70-130
Ethylbenzene	5.12	5.00	102	70-130
Styrene	4.82	5.00	96	70-130
m,p-Xylenes	10.3	10.0	103	70-130
o-Xylene	4.93	5.00	99	70-130
1,1,1-Trichloroethane	5.22	5.00	104	70-130

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Client: Longview, City of
Project: Sentinel Wells
Sample Matrix: Drinking water

Service Request: K1502416
Date Extracted: 03/17/2015
Date Analyzed: 03/17/2015

Lab Control Spike Summary
Volatile Organic Compounds

Extraction Method: METHOD
Analysis Method: 524.2

Units: ug/L
Basis: NA
Level: Low
Extraction Lot: KWG1502193

	Lab Control Sample KWG1502193-3 Lab Control Spike			
Analyte Name	**Result**	**Spike Amount**	**%Rec**	**%Rec Limits**
Bromoform	5.13	5.00	103	70-130
1,1,2,2-Tetrachloroethane	5.59	5.00	112	70-130
Isopropylbenzene	5.24	5.00	105	70-130
1,1-Dichloropropene	5.21	5.00	104	70-130
Bromobenzene	5.24	5.00	105	70-130
n-Propylbenzene	6.02	5.00	120	70-130
1,3,5-Trimethylbenzene	5.78	5.00	116	70-130
2-Chlorotoluene	5.90	5.00	118	70-130
4-Chlorotoluene	5.92	5.00	118	70-130
tert-Butylbenzene	5.68	5.00	114	70-130
1,2,4-Trimethylbenzene	5.81	5.00	116	70-130
sec-Butylbenzene	5.94	5.00	119	70-130
p-Isopropyltoluene	5.73	5.00	115	70-130
1,3-Dichlorobenzene	5.40	5.00	108	70-130
1,4-Dichlorobenzene	5.25	5.00	105	70-130
n-Butylbenzene	5.73	5.00	115	70-130
1,2-Dichlorobenzene	5.38	5.00	108	70-130
1,2-Dibromo-3-chloropropane (DBCP)	5.40	5.00	108	70-130
1,2,4-Trichlorobenzene	5.04	5.00	101	70-130
Hexachlorobutadiene	5.33	5.00	107	70-130
Naphthalene	4.83	5.00	97	70-130
1,1,2-Trichloroethane	4.76	5.00	95	70-130
1,1,1,2-Tetrachloroethane	5.54	5.00	111	70-130
1,2,3-Trichloropropane	5.13	5.00	103	70-130
1,2,3-Trichlorobenzene	5.20	5.00	104	70-130

Results flagged with an asterisk (*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Semivolatile Organics by EPA Method 525.2

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ALS Group USA, Corp. dba ALS Environmental

Analytical Results

Client:	Longview, City of	**Service Request:**	K1502416
Project:	Sentinel Wells	**Date Collected:**	03/10/2015
Sample Matrix:	Drinking water	**Date Received:**	03/10/2015

Semivolatile Organics by EPA Method 525.2

Sample Name:	DW-2	**Units:**	ug/L
Lab Code:	K1502416-001	**Basis:**	NA
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	525.2		

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Hexachlorocyclopentadiene	ND	U	0.098	1	03/23/15	03/26/15	KWG1502393	*
Fluorene	ND	U	0.049	1	03/23/15	03/26/15	KWG1502393	
Propachlor	ND	U	0.098	1	03/23/15	03/26/15	KWG1502393	
Hexachlorobenzene	ND	U	0.098	1	03/23/15	03/26/15	KWG1502393	
Simazine	ND	U	0.049	1	03/23/15	03/26/15	KWG1502393	
Atrazine	ND	U	0.098	1	03/23/15	03/26/15	KWG1502393	
Metribuzin	ND	U	0.20	1	03/23/15	03/26/15	KWG1502393	
Alachlor	ND	U	0.070	1	03/23/15	03/26/15	KWG1502393	
Bromacil	ND	U	0.20	1	03/23/15	03/26/15	KWG1502393	
Metolachlor	ND	U	0.088	1	03/23/15	03/26/15	KWG1502393	
Butachlor	ND	U	0.098	1	03/23/15	03/26/15	KWG1502393	
Bis(2-ethylhexyl) Adipate	ND	U	0.59	1	03/23/15	03/26/15	KWG1502393	
Bis(2-ethylhexyl) Phthalate	ND	U	0.59	1	03/23/15	03/26/15	KWG1502393	
Benzo(a)pyrene	ND	U	0.020	1	03/23/15	03/26/15	KWG1502393	

* See Case Narrative

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
1,3-Dimethyl-2-nitrobenzene	98	70-130	03/26/15	Acceptable
Triphenyl Phosphate	88	70-130	03/26/15	Acceptable
Perylene-d12	88	70-130	03/26/15	Acceptable

Comments:

ALS Group USA, Corp. dba ALS Environmental

Analytical Results

Client:	Longview, City of	**Service Request:**	K1502416
Project:	Sentinel Wells	**Date Collected:**	NA
Sample Matrix:	Drinking water	**Date Received:**	NA

Semivolatile Organics by EPA Method 525.2

Sample Name:	Method Blank	**Units:**	ug/L
Lab Code:	KWG1502393-4	**Basis:**	NA
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	525.2		

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Hexachlorocyclopentadiene	ND	U	0.10	1	03/23/15	03/25/15	KWG1502393	*
Fluorene	ND	U	0.050	1	03/23/15	03/25/15	KWG1502393	
Propachlor	ND	U	0.10	1	03/23/15	03/25/15	KWG1502393	
Hexachlorobenzene	ND	U	0.10	1	03/23/15	03/25/15	KWG1502393	
Simazine	ND	U	0.050	1	03/23/15	03/25/15	KWG1502393	
Atrazine	ND	U	0.10	1	03/23/15	03/25/15	KWG1502393	
Metribuzin	ND	U	0.20	1	03/23/15	03/25/15	KWG1502393	
Alachlor	ND	U	0.072	1	03/23/15	03/25/15	KWG1502393	
Bromacil	ND	U	0.20	1	03/23/15	03/25/15	KWG1502393	
Metolachlor	ND	U	0.090	1	03/23/15	03/25/15	KWG1502393	
Butachlor	ND	U	0.10	1	03/23/15	03/25/15	KWG1502393	
Bis(2-ethylhexyl) Adipate	ND	U	0.60	1	03/23/15	03/25/15	KWG1502393	
Bis(2-ethylhexyl) Phthalate	ND	U	0.60	1	03/23/15	03/25/15	KWG1502393	
Benzo(a)pyrene	ND	U	0.020	1	03/23/15	03/25/15	KWG1502393	

* See Case Narrative

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
1,3-Dimethyl-2-nitrobenzene	97	70-130	03/25/15	Acceptable
Triphenyl Phosphate	83	70-130	03/25/15	Acceptable
Perylene-d12	86	70-130	03/25/15	Acceptable

Comments:

Client: Longview, City of
Project: Sentinel Wells
Sample Matrix: Drinking water

Service Request: K1502416

Surrogate Recovery Summary
Semivolatile Organics by EPA Method 525.2

Extraction Method: METHOD
Analysis Method: 525.2

Units: Percent
Level: Low

Sample Name	Lab Code	Sur1	Sur2	Sur3
Batch QC	K1502415-001	105	84	71
DW-2	K1502416-001	98	88	88
Method Blank	KWG1502393-4	97	83	86
Batch QCMS	KWG1502393-1	91	93	88
Batch QCDMS	KWG1502393-2	95	96	89
Lab Control Sample	KWG1502393-3	96	100	82

Surrogate Recovery Control Limits (%)

Sur1	=	1,3-Dimethyl-2-nitrobenzene	70-130
Sur2	=	Triphenyl Phosphate	70-130
Sur3	=	Perylene-d12	70-130

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502416
Project:	Sentinel Wells	**Date Extracted:**	03/23/2015
Sample Matrix:	Drinking water	**Date Analyzed:**	03/26/2015

Matrix Spike/Duplicate Matrix Spike Summary
Semivolatile Organics by EPA Method 525.2

Sample Name:	Batch QC	**Units:**	ug/L
Lab Code:	K1502415-001	**Basis:**	NA
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	525.2	**Extraction Lot:**	KWG1502393

		Batch QCMS KWG1502393-1 Matrix Spike			Batch QCDMS KWG1502393-2 Duplicate Matrix Spike					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**%Rec**	**Result**	**Spike Amount**	**%Rec**	**%Rec Limits**	**RPD**	**RPD Limit**
Hexachlorocyclopentadiene	ND	1.48	0.971	152 *	1.43	0.971	147 *	70-130	3	30
Fluorene	ND	1.01	0.971	104	1.00	0.971	103	70-130	0	30
Propachlor	ND	1.10	0.971	114	1.11	0.971	114	70-130	1	30
Hexachlorobenzene	ND	0.911	0.971	94	0.920	0.971	95	70-130	1	30
Simazine	ND	0.865	0.971	89	0.868	0.971	89	70-130	0	30
Atrazine	ND	0.942	0.971	97	0.878	0.971	90	70-130	7	30
Metribuzin	ND	0.999	0.971	103	0.989	0.971	102	70-130	1	30
Alachlor	ND	1.02	0.971	105	1.01	0.971	104	70-130	1	30
Bromacil	ND	1.06	0.971	109	1.02	0.971	105	70-130	4	30
Metolachlor	ND	1.12	0.971	116	1.10	0.971	113	70-130	2	30
Butachlor	ND	1.09	0.971	112	1.07	0.971	111	70-130	1	30
Bis(2-ethylhexyl) Adipate	ND	1.13	0.971	116	1.14	0.971	117	70-130	1	30
Bis(2-ethylhexyl) Phthalate	0.62	1.17	0.971	57 *	1.27	0.971	67 *	70-130	8	30
Benzo(a)pyrene	ND	1.07	0.971	110	1.05	0.971	108	70-130	2	30

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502416
Project:	Sentinel Wells	**Date Extracted:**	03/23/2015
Sample Matrix:	Drinking water	**Date Analyzed:**	03/25/2015

Lab Control Spike Summary
Semivolatile Organics by EPA Method 525.2

Extraction Method:	METHOD	**Units:**	ug/L
Analysis Method:	525.2	**Basis:**	NA
		Level:	Low
		Extraction Lot:	KWG1502393

	Lab Control Sample KWG1502393-3 Lab Control Spike			
Analyte Name	**Result**	**Spike Amount**	**%Rec**	**%Rec Limits**
Hexachlorocyclopentadiene	1.48	1.00	148 *	70-130
Fluorene	1.05	1.00	105	70-130
Propachlor	1.24	1.00	124	70-130
Hexachlorobenzene	0.947	1.00	95	70-130
Simazine	1.08	1.00	108	70-130
Atrazine	1.12	1.00	112	70-130
Metribuzin	1.09	1.00	109	70-130
Alachlor	1.11	1.00	111	70-130
Bromacil	1.10	1.00	110	70-130
Metolachlor	1.27	1.00	127	70-130
Butachlor	1.16	1.00	116	70-130
Bis(2-ethylhexyl) Adipate	1.03	1.00	103	70-130
Bis(2-ethylhexyl) Phthalate	1.03	1.00	103	70-130
Benzo(a)pyrene	1.06	1.00	106	70-130

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Endothall by EPA Method 548.1

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Analytical Results

Client:	Longview, City of	**Service Request:**	K1502416
Project:	Sentinel Wells	**Date Collected:**	03/10/2015
Sample Matrix:	Drinking water	**Date Received:**	03/10/2015

Endothall by EPA Method 548.1

Sample Name:	DW-2	**Units:**	ug/L
Lab Code:	K1502416-001	**Basis:**	NA
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	548.1		

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Endothall	ND	U	5.0	1	03/12/15	03/24/15	KWG1502057	

Comments:

ALS Group USA, Corp. dba ALS Environmental

Analytical Results

Client:	Longview, City of	**Service Request:**	K1502416
Project:	Sentinel Wells	**Date Collected:**	NA
Sample Matrix:	Drinking water	**Date Received:**	NA

Endothall by EPA Method 548.1

Sample Name:	Method Blank	**Units:**	ug/L
Lab Code:	KWG1502057-4	**Basis:**	NA
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	548.1		

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Endothall	ND	U	5.0	1	03/12/15	03/24/15	KWG1502057	

Comments:

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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502416
Project:	Sentinel Wells	**Date Extracted:**	03/12/2015
Sample Matrix:	Drinking water	**Date Analyzed:**	03/24/2015

Matrix Spike/Duplicate Matrix Spike Summary
Endothall by EPA Method 548.1

Sample Name:	Batch QC	**Units:**	ug/L
Lab Code:	K1502415-001	**Basis:**	NA
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	548.1	**Extraction Lot:**	KWG1502057

		Batch QCMS KWG1502057-1 Matrix Spike			Batch QCDMS KWG1502057-2 Duplicate Matrix Spike					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**%Rec**	**Result**	**Spike Amount**	**%Rec**	**%Rec Limits**	**RPD**	**RPD Limit**
Endothall	ND	91.2	100	91	94.4	100	94	30-142	3	30

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Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502416
Project:	Sentinel Wells	**Date Extracted:**	03/12/2015
Sample Matrix:	Drinking water	**Date Analyzed:**	03/24/2015

Lab Control Spike Summary
Endothall by EPA Method 548.1

Extraction Method:	METHOD	**Units:**	ug/L
Analysis Method:	548.1	**Basis:**	NA
		Level:	Low
		Extraction Lot:	KWG1502057

	Lab Control Sample KWG1502057-3 Lab Control Spike			
Analyte Name	**Result**	**Spike Amount**	**%Rec**	**%Rec Limits**
Endothall	94.0	100	94	30-142

Results flagged with an asterisk (*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Diquat and Paraquat by EPA Method 549.2

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Analytical Results

Client:	Longview, City of	**Service Request:**	K1502416
Project:	Sentinel Wells	**Date Collected:**	03/10/2015
Sample Matrix:	Drinking water	**Date Received:**	03/10/2015

Diquat and Paraquat by EPA Method 549.2

Sample Name:	DW-2	**Units:**	ug/L
Lab Code:	K1502416-001	**Basis:**	NA
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	549.2		

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Diquat	ND	U	0.40	1	03/12/15	03/12/15	KWG1502015	
Paraquat	ND	U	0.80	1	03/12/15	03/12/15	KWG1502015	

Comments:

ALS Group USA, Corp. dba ALS Environmental

Analytical Results

Client:	Longview, City of	**Service Request:**	K1502416
Project:	Sentinel Wells	**Date Collected:**	NA
Sample Matrix:	Drinking water	**Date Received:**	NA

Diquat and Paraquat by EPA Method 549.2

Sample Name:	Method Blank	**Units:**	ug/L
Lab Code:	KWG1502015-5	**Basis:**	NA
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	549.2		

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Diquat	ND	U	0.40	1	03/12/15	03/12/15	KWG1502015	
Paraquat	ND	U	0.80	1	03/12/15	03/12/15	KWG1502015	

Comments:

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502416
Project:	Sentinel Wells	**Date Extracted:**	03/12/2015
Sample Matrix:	Drinking water	**Date Analyzed:**	03/12/2015

Matrix Spike/Duplicate Matrix Spike Summary
Diquat and Paraquat by EPA Method 549.2

Sample Name:	Batch QC	**Units:**	ug/L
Lab Code:	K1502415-001	**Basis:**	NA
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	549.2	**Extraction Lot:**	KWG1502015

		Batch QCMS KWG1502015-1 Matrix Spike				Batch QCDMS KWG1502015-2 Duplicate Matrix Spike						
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**%Rec**		**Result**	**Spike Amount**	**%Rec**		**%Rec Limits**	**RPD**	**RPD Limit**
Diquat	ND	7.09	12.0	59	*	6.64	12.0	55	*	70-130	7	30
Paraquat	ND	14.6	12.0	122		13.2	12.0	110		70-130	10	30

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502416
Project:	Sentinel Wells	**Date Extracted:**	03/12/2015
Sample Matrix:	Drinking water	**Date Analyzed:**	03/12/2015

Lab Control Spike Summary
Diquat and Paraquat by EPA Method 549.2

Extraction Method:	METHOD	**Units:**	ug/L
Analysis Method:	549.2	**Basis:**	NA
		Level:	Low
		Extraction Lot:	KWG1502015

	Lab Control Sample KWG1502015-4 Lab Control Spike			
Analyte Name	**Result**	**Spike Amount**	**%Rec**	**%Rec Limits**
Diquat	12.7	12.0	106	70-130
Paraquat	13.5	12.0	112	70-130

Results flagged with an asterisk (*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Chlorinated Phenolic Organic Compounds

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Analytical Results

Client:	Longview, City of	**Service Request:**	K1502416
Project:	Sentinel Wells	**Date Collected:**	3/10/2015
Sample Matrix:	Drinking water	**Date Received:**	3/10/2015

EPA Method 1653A
Chlorinated Phenolic Organic Compounds

Sample Name:	DW-2	Units:	ug/L (ppb)
Lab Code:	K1502416-001	Basis:	NA
Test Notes:			

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
2,4,6-Trichlorophenol	METHOD	1653A	2.5	1	3/11/2015	3/17/2015	ND	
2,4,5-Trichlorophenol	METHOD	1653A	2.5	1	3/11/2015	3/17/2015	ND	
2,3,4,6-Tetrachlorophenol	METHOD	1653A	2.5	1	3/11/2015	3/17/2015	ND	
3,4,6-Trichloroguaiacol	METHOD	1653A	2.5	1	3/11/2015	3/17/2015	ND	
3,4,5-Trichloroguaiacol	METHOD	1653A	2.5	1	3/11/2015	3/17/2015	ND	
3,4,6-Trichlorocatechol	METHOD	1653A	5.0	1	3/11/2015	3/17/2015	ND	
3,4,5-Trichlorocatechol	METHOD	1653A	5.0	1	3/11/2015	3/17/2015	ND	
Trichlorosyringol	METHOD	1653A	2.5	1	3/11/2015	3/17/2015	ND	
4,5,6-Trichloroguaiacol	METHOD	1653A	2.5	1	3/11/2015	3/17/2015	ND	
Pentachlorophenol	METHOD	1653A	5.0	1	3/11/2015	3/17/2015	ND	
Tetrachloroguaiacol	METHOD	1653A	5.0	1	3/11/2015	3/17/2015	ND	
Tetrachlorocatechol	METHOD	1653A	5.0	1	3/11/2015	3/17/2015	ND	

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Analytical Results

Client:	Longview, City of	**Service Request:**	K1502416
Project:	Sentinel Wells	**Date Collected:**	NA
Sample Matrix:	Drinking water	**Date Received:**	NA

EPA Method 1653A
Chlorinated Phenolic Organic Compounds

Sample Name:	Method Blank	Units:	ug/L (ppb)
Lab Code:	KWG1502012-3	Basis:	NA
Test Notes:			

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
2,4,6-Trichlorophenol	METHOD	1653A	2.5	1	3/11/2015	3/17/2015	ND	
2,4,5-Trichlorophenol	METHOD	1653A	2.5	1	3/11/2015	3/17/2015	ND	
2,3,4,6-Tetrachlorophenol	METHOD	1653A	2.5	1	3/11/2015	3/17/2015	ND	
3,4,6-Trichloroguaiacol	METHOD	1653A	2.5	1	3/11/2015	3/17/2015	ND	
3,4,5-Trichloroguaiacol	METHOD	1653A	2.5	1	3/11/2015	3/17/2015	ND	
3,4,6-Trichlorocatechol	METHOD	1653A	5.0	1	3/11/2015	3/17/2015	ND	
3,4,5-Trichlorocatechol	METHOD	1653A	5.0	1	3/11/2015	3/17/2015	ND	
Trichlorosyringol	METHOD	1653A	2.5	1	3/11/2015	3/17/2015	ND	
4,5,6-Trichloroguaiacol	METHOD	1653A	2.5	1	3/11/2015	3/17/2015	ND	
Pentachlorophenol	METHOD	1653A	5.0	1	3/11/2015	3/17/2015	ND	
Tetrachloroguaiacol	METHOD	1653A	5.0	1	3/11/2015	3/17/2015	ND	
Tetrachlorocatechol	METHOD	1653A	5.0	1	3/11/2015	3/17/2015	ND	

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Analytical Results

Client:	Longview, City of	**Service Request:**	K1502416
Project:	Sentinel Wells	**Date Collected:**	NA
Sample Matrix:	Drinking water	**Date Received:**	NA
		Date Extracted:	3/11/2015

Labeled Compound and Internal Standard Recovery Summary
Chlorinated Phenolic Organic Compounds
1653A

			Percent Recovery	
	CAS Percent Recovery Acceptance Criteria	Sample Name:	**DW-2**	**Method Blank**
		Lab Code:	K1502416-001	KWG1502012-3
		Date Analyzed:	3/17/2015	3/17/2015
Analyte				
3,4,5-Trichlorophenol	36-131		109	101
4,5,6-Trichloroguaiacol-13c6	25-134		108	105
Pentachlorophenol-13c6	22-117		100	100
Tetrachloroguaiacol-13c6	18-129		109	105
Tetrachlorocatechol-13c6	D-121		58	88

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Analytical Results

Client: Longview, City of
Project: Sentinel Wells
Sample Matrix: Drinking water

Service Request: K1502416
Date Collected: NA
Date Received: NA
Date Extracted: 3/11/2015
Date Analyzed: 3/17/2015

Duplicate Summary
Chlorinated Phenolic Organic Compounds

Sample Name: (batch sample)
Lab Code: KWG1502012-1
Test Notes:

Units: ug/L (ppb)
Basis: NA

Analyte	Prep Method	Analysis Method	MRL	Sample Result	Duplicate Sample Result	Average	Relative Percent Difference	Result Notes
2,4,6-Trichlorophenol	METHOD	1653A	2.5	ND	ND	ND	-	
2,4,5-Trichlorophenol	METHOD	1653A	2.5	ND	ND	ND	-	
2,3,4,6-Tetrachlorophenol	METHOD	1653A	2.5	ND	ND	ND	-	
3,4,6-Trichloroguaiacol	METHOD	1653A	2.5	ND	ND	ND	-	
3,4,5-Trichloroguaiacol	METHOD	1653A	2.5	ND	ND	ND	-	
3,4,6-Trichlorocatechol	METHOD	1653A	5.0	ND	ND	ND	-	
3,4,5-Trichlorocatechol	METHOD	1653A	5.0	ND	ND	ND	-	
Trichlorosyringol	METHOD	1653A	2.5	ND	ND	ND	-	
4,5,6-Trichloroguaiacol	METHOD	1653A	2.5	ND	ND	ND	-	
Pentachlorophenol	METHOD	1653A	5.0	ND	ND	ND	-	
Tetrachloroguaiacol	METHOD	1653A	5.0	ND	ND	ND	-	
Tetrachlorocatechol	METHOD	1653A	5.0	ND	ND	ND	-	

ALS Group USA, Corp. dba ALS Environmental

Analytical Results

Client:	Longview, City of	**Service Request:**	K1502416
Project:	Sentinel Wells	**Date Collected:**	NA
LCS Matrix:	Drinking water	**Date Received:**	NA
		Date Extracted:	3/11/2015
		Date Analyzed:	3/17/2015

Ongoing Precision and Recovery Summary
Chlorinated Phenolic Organic Compounds

Sample Name:	Lab Control Sample	Units:	ug/L (ppb)
Lab Code:	KWG1502012-2	Basis:	NA
Test Notes:			

Analyte	Prep Method	Analysis Method	True Value	Result	Percent Recovery	CAS Percent Recovery Acceptance Limits	Result Notes
2,4,6-Trichlorophenol	METHOD	1653A	50	46.1	92	72-146	
2,4,5-Trichlorophenol	METHOD	1653A	50	47.5	95	82-128	
2,3,4,6-Tetrachlorophenol	METHOD	1653A	50	50.0	100	82-132	
3,4,6-Trichloroguaiacol	METHOD	1653A	50	46.7	93	74-140	
3,4,5-Trichloroguaiacol	METHOD	1653A	50	49.3	99	80-134	
3,4,6-Trichlorocatechol	METHOD	1653A	100	89.3	89	64-149	
3,4,5-Trichlorocatechol	METHOD	1653A	100	96.9	97	72-128	
Trichlorosyringol	METHOD	1653A	50	51.1	102	66-174	
4,5,6-Trichloroguaiacol	METHOD	1653A	50	49.2	98	88-116	
Pentachlorophenol	METHOD	1653A	100	89.0	89	84-120	
Tetrachloroguaiacol	METHOD	1653A	100	93.2	93	81-126	
Tetrachlorocatechol	METHOD	1653A	100	94.4	94	81-132	

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

ALS Environmental

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NELAP Certifications: NJ PA010 , NY 11759 , PA 22-293 DoD ELAP: A2LA 0818.01
State Certifications: DE ID 11 , MA PA0102 , MD 128 , VA 460157 , WV 343

March 23, 2015

Ms. Chris Leaf
ALS Environmental - Kelso
1317 S. 13th Avenue
Kelso, WA 98626

Certificate of Analysis

Project Name:	**SOCs**	Workorder:	**2059256**
Purchase Order:	**K1502416**	Workorder ID:	**K1502416**

Dear Ms. Leaf:

Enclosed are the analytical results for samples received by the laboratory on Friday, March 13, 2015.

The ALS Environmental laboratory in Middletown, Pennsylvania is a National Environmental Laboratory Accreditation Program (NELAP) accredited laboratory and as such, certifies that all applicable test results meet the requirements of NELAP.

If you have any questions regarding this certificate of analysis, please contact Mrs. Kelli L Wolfgang (Project Coordinator) at (717) 944-5541.

Analyses were performed according to our laboratory's NELAP-approved quality assurance program and any applicable state requirements. The test results meet requirements of the current NELAP standards or state requirements, where applicable. For a specific list of accredited analytes, refer to the certifications section of the ALS website at www.alsglobal.com/en/Our-Services/Life-Sciences/Environmental/Downloads.

This laboratory report may not be reproduced, except in full, without the written approval of ALS Environmental.

ALS Spring City: 10 Riverside Drive, Spring City, PA 19475 610-948-4903

CC: Mr. Gregory Salata

This page is included as part of the Analytical Report and must be retained as a permanent record thereof.

Kelli Wolfgang

Mrs. Kelli L Wolfgang
Project Coordinator

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State Certifications: DE ID 11 , MA PA0102 , MD 128 , VA 460157 , WV 343

SAMPLE SUMMARY

Workorder: 2059256 K1502416

Lab ID	Sample ID	Matrix	Date Collected	Date Received	Collected By
2059256001	K1502416-001	Drinking Water	3/10/2015 14:30	3/13/2015 12:36	Collected by Client

Notes

-- Samples collected by ALS personnel are done so in accordance with the procedures set forth in the ALS Field Sampling Plan (20 - Field Services Sampling Plan).
-- All Waste Water analyses comply with methodology requirements of 40 CFR Part 136.
-- All Drinking Water analyses comply with methodology requirements of 40 CFR Part 141.
-- Unless otherwise noted, all quantitative results for soils are reported on a dry weight basis.
-- The Chain of Custody document is included as part of this report.
-- All Library Search analytes should be regarded as tentative identifications based on the presumptive evidence of the mass spectra. Concentrations reported are estimated values.
-- Parameters identified as "analyze immediately" require analysis within 15 minutes of collection. Any "analyze immediately" parameters not listed under the header "Field Parameters" are preformed in the laboratory and are therefore analyzed out of hold time.
-- Method references listed on this report beginning with the prefix “S” followed by a method number (such as S2310B-97) refer to methods from “Standard Methods for the Examination of Water and Wastewater”.

Standard Acronyms/Flags

J	Indicates an estimated value between the Method Detection Limit (MDL) and the Practical Quantitation Limit (PQL) for the analyte
U	Indicates that the analyte was Not Detected (ND)
N	Indicates presumptive evidence of the presence of a compound
MDL	Method Detection Limit
PQL	Practical Quantitation Limit
RDL	Reporting Detection Limit
ND	Not Detected - indicates that the analyte was Not Detected at the RDL
Cntr	Analysis was performed using this container
RegLmt	Regulatory Limit
LCS	Laboratory Control Sample
MS	Matrix Spike
MSD	Matrix Spike Duplicate
DUP	Sample Duplicate
%Rec	Percent Recovery
RPD	Relative Percent Difference
LOD	DoD Limit of Detection
LOQ	DoD Limit of Quantitation
DL	DoD Detection Limit
I	Indicates reported value is greater than or equal to the Method Detection Limit (MDL) but less than the Report Detection Limit (RDL)

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ANALYTICAL RESULTS

Workorder: 2059256 K1502416

Lab ID: **2059256001** Date Collected: 3/10/2015 14:30 Matrix: Drinking Water

Sample ID: **K1502416-001** Date Received: 3/13/2015 12:36

Parameters	Results	Flag	Units	RDL	Method	Prepared By	Analyzed	By	*Cntr*
HERBICIDES									
Glyphosate	ND		ug/L	4.5	EPA 547		3/22/15 14:00	CGS	C
CARBAMATES									
Aldicarb	ND		ug/L	0.26	EPA 531.1		3/17/15 02:09	CGS	A
Aldicarb Sulfone	ND		ug/L	0.32	EPA 531.1		3/17/15 02:09	CGS	A
Aldicarb Sulfoxide	ND		ug/L	0.27	EPA 531.1		3/17/15 02:09	CGS	A
Carbaryl	ND		ug/L	0.29	EPA 531.1		3/17/15 02:09	CGS	A
Carbofuran	ND		ug/L	0.43	EPA 531.1		3/17/15 02:09	CGS	A
3-Hydroxycarbofuran	ND		ug/L	0.27	EPA 531.1		3/17/15 02:09	CGS	A
Methiocarb	ND		ug/L	0.18	EPA 531.1		3/17/15 02:09	CGS	A
Methomyl	ND		ug/L	0.49	EPA 531.1		3/17/15 02:09	CGS	A
Oxamyl	ND		ug/L	0.50	EPA 531.1		3/17/15 02:09	CGS	A
Propoxur	ND		ug/L	0.32	EPA 531.1		3/17/15 02:09	CGS	A

Kelli Wolfgang

Mrs. Kelli L Wolfgang
Project Coordinator

ALS Environmental
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State Certifications: DE ID 11 , MA PA0102 , MD 128 , VA 460157 , WV 343

QUALITY CONTROL DATA

Workorder: 2059256 K1502416

QC Batch: HPLC/3911 **Analysis Method:** EPA 531.1

QC Batch Method: EPA 531.1

Associated Lab Samples: 2059256001

METHOD BLANK: 2149046

Parameter	Blank Result	Units	Reporting Limit	Qualifiers
Aldicarb Sulfoxide	ND	ug/L	0.27	
Aldicarb Sulfone	ND	ug/L	0.32	
Oxamyl	ND	ug/L	0.50	
Methomyl	ND	ug/L	0.49	
3-Hydroxycarbofuran	ND	ug/L	0.27	
Aldicarb	ND	ug/L	0.26	
Propoxur	ND	ug/L	0.32	
Carbofuran	ND	ug/L	0.43	
Carbaryl	ND	ug/L	0.29	
Methiocarb	ND	ug/L	0.18	

LABORATORY CONTROL SAMPLE: 2149047

Parameter	LCS % Rec	Units	Spike Conc.	LCS Result	% Rec Limit	Qualifiers
Aldicarb Sulfoxide	98.7	ug/L	10	9.9	80 - 120	
Aldicarb Sulfone	87.3	ug/L	10	8.7	80 - 120	
Oxamyl	99.8	ug/L	10	10	80 - 120	
Methomyl	94.4	ug/L	10	9.4	80 - 120	
3-Hydroxycarbofuran	100	ug/L	10	10.0	80 - 120	
Aldicarb	96.5	ug/L	10	9.7	80 - 120	
Propoxur	92.4	ug/L	10	9.2	80 - 120	
Carbofuran	90.9	ug/L	10	9.1	80 - 120	
Carbaryl	88.8	ug/L	10	8.9	80 - 120	
Methiocarb	90.6	ug/L	10	9.1	80 - 120	

SAMPLE DUPLICATE: 2150707 ORIGINAL:

Parameter	Original Result	Units	DUP Result	RPD	Max RPD	Qualifiers
Aldicarb Sulfoxide	0	ug/L	0	NC	20	
Aldicarb Sulfone	0	ug/L	0	NC	20	
Oxamyl	0	ug/L	0	NC	20	
Methomyl	0	ug/L	0	NC	20	
3-Hydroxycarbofuran	0	ug/L	0	NC	20	

QUALITY CONTROL DATA

Workorder: 2059256 K1502416

Aldicarb	0	ug/L	0	NC	20
Propoxur	0	ug/L	0	NC	20
Carbofuran	0	ug/L	0	NC	20
Carbaryl	0	ug/L	0	NC	20
Methiocarb	0	ug/L	0	NC	20

MATRIX SPIKE SAMPLE: 2149049 ORIGINAL:

****NOTE - The Original Result shown below is a raw result and is only used for the purpose of calculating Matrix Spike percent recoveries. This result is not a final value and cannot be used as such.

Parameter	Original Result	Units	Spike Conc.	MS Result	MS % Rec	% Rec Limit	Qualifiers
Aldicarb Sulfoxide	0	ug/L	10	12.3558	124	65 - 135	
Aldicarb Sulfone	0	ug/L	10	11.5018	115	65 - 135	
Oxamyl	0	ug/L	10	13.1784	132	65 - 135	
Methomyl	0	ug/L	10	12.0278	120	65 - 135	
3-Hydroxycarbofuran	0	ug/L	10	12.6868	127	65 - 135	
Aldicarb	0	ug/L	10	12.1718	122	65 - 135	
Propoxur	0	ug/L	10	11.4132	114	65 - 135	
Carbofuran	0	ug/L	10	11.52	115	65 - 135	
Carbaryl	0	ug/L	10	11.5322	115	65 - 135	
Methiocarb	0	ug/L	10	10.9469	109	65 - 135	

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QUALITY CONTROL DATA

Workorder: 2059256 K1502416

QC Batch: HPLC/3915 **Analysis Method:** EPA 547

QC Batch Method: EPA 547

Associated Lab Samples: 2059256001

METHOD BLANK: 2153468

Parameter	Blank Result	Units	Reporting Limit	Qualifiers
Glyphosate	ND	ug/L	4.5	

LABORATORY CONTROL SAMPLE: 2153469

Parameter	LCS % Rec	Units	Spike Conc.	LCS Result	% Rec Limit	Qualifiers
Glyphosate	99.5	ug/L	500	497	80 - 120	

MATRIX SPIKE SAMPLE: 2153470 ORIGINAL:

****NOTE - The Original Result shown below is a raw result and is only used for the purpose of calculating Matrix Spike percent recoveries. This result is not a final value and cannot be used as such.

Parameter	Original Result	Units	Spike Conc.	MS Result	MS % Rec	% Rec Limit	Qualifiers
Glyphosate	0	ug/L	500	482.285	96.5	70 - 130	

SAMPLE DUPLICATE: 2153471 ORIGINAL:

Parameter	Original Result	Units	DUP Result	RPD	Max RPD	Qualifiers
Glyphosate	0	ug/L	0	NC	40	

MATRIX SPIKE SAMPLE: 2153472 ORIGINAL:

****NOTE - The Original Result shown below is a raw result and is only used for the purpose of calculating Matrix Spike percent recoveries. This result is not a final value and cannot be used as such.

Parameter	Original Result	Units	Spike Conc.	MS Result	MS % Rec	% Rec Limit	Qualifiers
Glyphosate	0	ug/L	500	448.493	89.7	70 - 130	

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State Certifications: DE ID 11 , MA PA0102 , MD 128 , VA 460157 , WV 343

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Workorder: 2059256 K1502416

Lab ID	Sample ID	Prep Method	Prep Batch	Analysis Method	Analysis Batch
2059256001	K1502416-001			EPA 531.1	HPLC/3911
2059256001	K1502416-001			EPA 547	HPLC/3915

ALS Environmental Chain of Custody

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

KLW

ALS Contact: Chris Leaf

2059256

Project Number: K1502416
Project Manager: Chris Leaf

Lab Code	Sample ID	# of Cont.	Matrix	Sample Date	Sample Time	Lab ID	CARBAM 531.1	GLYPH 547
K1502416-001	DW-2	4	Drinking Water	3/10/15	1430	Middletown ALS	X	X

RCVD - 2-125mL amber
2-40m amber
AT 3/13/15

	Y	N	Initials
Custody Seals Present?			
(If present) Seals Intact?			AT
Received on Ice?			
COC/Lbls Complete			
Cont in Good Cond?			
Correct Containers?			
Correct Samp Vol?			
Correct Preservation?			
Headspace/Volatiles?			

Cooler Temp: 3 °C
Cooler #:
Therm ID: T14291
Ship Carrier: FedEx UPS DHL
Tracking #: 547897423373

Test Comments
CARBAM - 531.1 K1502416-001 Full list for WA Regulations - no compliance report required. w/QC

Folder Comments:
Report all metals in mg/L. No DW State form required.

KLW
3/13/15 1648

Special Instructions/Comments
Please provide the electronic (PDF and EDD) report to the following e-mail address:
ALKLS.Data@alsglobal.com

CL 3/11/15

H - Test is On Hold P - Test is Authorized for Prep Only

Turnaround Requirements
___ RUSH (Surcharges Apply)
PLEASE CIRCLE WORK DAYS
1 2 3 4 5
✓ STANDARD
Requested FAX Date: _____
Requested Report Date: 03/27/15

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 N
EDD N

Invoice Information
PO# K1502416
Bill to

Relinquished By: [signature] 3/12/15 1800
Received By: [signature] 3/13/15 1236
Airbill Number:

ALS

K1502416

2054256

✓ **Ship To: Middletown ALS**
ALS Laboratory Group
34 Dogwood Lane
Middletown, PA 17057

PC _____ Date 3/11/15
SMO _____ Date 3/12/15

Instructions:
Ice ✓
Dry Ice _____
No Ice _____

Shipping:
Overnight ✓
2nd Day _____
Ground _____

Bill to Client Account _____

Comments:

ALS Group USA, Corp.
www.alsglobal.com
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State Certification: CT PH-0224, DE ID 11, GA 914, MA PA0102, MD 128, LA 04162, VA 421, WY EPA Region 8, WV 343

QUALITY CONTROL DATA

Workorder **2059256** **Project Name** **K1502416**

QC Batch HPLC / 3911

QC Batch Method EPA 531.1 **Analysis Method** EPA 531.1

Associated Lab Samples 2059256001

METHOD BLANK 2149046

Parameter	Blank Result	Qualifiers	Units	Reporting Limit	% Rec	% Rec Limits
3-Hydroxycarbofuran	ND	U	ug/L	0.27		
Aldicarb	ND	U	ug/L	0.26		
Aldicarb Sulfone	ND	U	ug/L	0.32		
Aldicarb Sulfoxide	ND	U	ug/L	0.27		
Carbaryl	ND	U	ug/L	0.29		
Carbofuran	ND	U	ug/L	0.43		
Methiocarb	ND	U	ug/L	0.18		
Methomyl	ND	U	ug/L	0.49		
Oxamyl	ND	U	ug/L	0.50		
Propoxur	ND	U	ug/L	0.32		

LABORATORY CONTROL SAMPLE 2149047

Parameter	LCS Result	Qualifiers	Units	Spike Conc.	LCS % Rec	% Rec Limits
3-Hydroxycarbofuran	10		ug/L	10	100	80-120
Aldicarb	9.7		ug/L	10	96.5	80-120
Aldicarb Sulfone	8.7		ug/L	10	87.3	80-120
Aldicarb Sulfoxide	9.9		ug/L	10	98.7	80-120
Carbaryl	8.9		ug/L	10	88.8	80-120
Carbofuran	9.1		ug/L	10	90.9	80-120

This is an addendum to the Certificate of Analysis.

Methiocarb	9.1	ug/L	10	90.6	80-120
Methomyl	9.4	ug/L	10	94.4	80-120
Oxamyl	10	ug/L	10	99.8	80-120
Propoxur	9.2	ug/L	10	92.4	80-120

SAMPLE DUPLICATE 2150707 Original 2057116002

*****NOTE - The Original Result and Duplicate Result shown below are raw results and are only used for the purpose of calculating Sample Duplicate percent recoveries. This result is not a final value and cannot be used as such.*

Parameter	Original Result	Qualifiers	Units	DUP Result	RPD	Max RPD	% Rec	% Rec Limits
3-Hydroxycarbofuran	ND	U	ug/L	ND	NC	20		
Aldicarb	ND	U	ug/L	ND	NC	20		
Aldicarb Sulfone	ND	U	ug/L	ND	NC	20		
Aldicarb Sulfoxide	ND	U	ug/L	ND	NC	20		
Carbaryl	ND	U	ug/L	ND	NC	20		
Carbofuran	ND	U	ug/L	ND	NC	20		
Methiocarb	ND	U	ug/L	ND	NC	20		
Methomyl	ND	U	ug/L	ND	NC	20		
Oxamyl	ND	U	ug/L	ND	NC	20		
Propoxur	ND	U	ug/L	ND	NC	20		

MATRIX SPIKE 2149049 Original 2058591001

*****NOTE - The Original Result shown below is a raw result and is only used for the purpose of calculating Matrix Spike percent recoveries. This result is not a final value and cannot be used as such.*

Parameter	Original Result	Qualifiers	Units	Spike Conc.	MS Result	MS % Rec	% Rec Limits
3-Hydroxycarbofuran	ND		ug/L	10	12.6868	127	65-135
Aldicarb	ND		ug/L	10	12.1718	122	65-135
Aldicarb Sulfone	ND		ug/L	10	11.5018	115	65-135
Aldicarb Sulfoxide	ND		ug/L	10	12.3558	124	65-135
Carbaryl	ND		ug/L	10	11.5322	115	65-135
Carbofuran	ND		ug/L	10	11.52	115	65-135
Methiocarb	ND		ug/L	10	10.9469	109	65-135
Methomyl	ND		ug/L	10	12.0278	120	65-135
Oxamyl	ND		ug/L	10	13.1784	132	65-135
Propoxur	ND		ug/L	10	11.4132	114	65-135

Workorder	**2059256**	**Project Name**	**K1502416**
QC Batch	HPLC / 3915		
QC Batch Method	EPA 547	**Analysis Method**	EPA 547
Associated Lab Samples	2059256001		

METHOD BLANK 2153468

Parameter	Blank Result	Qualifiers	Units	Reporting Limit	% Rec	% Rec Limits
Glyphosate	ND	U	ug/L	4.5		

LABORATORY CONTROL SAMPLE 2153469

Parameter	LCS Result	Qualifiers	Units	Spike Conc.	LCS % Rec	% Rec Limits
Glyphosate	497		ug/L	500	99.5	80-120

SAMPLE DUPLICATE 2153471 Original 2058366001

*****NOTE - The Original Result and Duplicate Result shown below are raw results and are only used for the purpose of calculating Sample Duplicate percent recoveries. This result is not a final value and cannot be used as such.*

Parameter	Original Result	Qualifiers	Units	DUP Result	RPD	Max RPD	% Rec	% Rec Limits
Glyphosate	ND	U	ug/L	ND	NC	40		

MATRIX SPIKE 2153470 Original 2058366001

*****NOTE - The Original Result shown below is a raw result and is only used for the purpose of calculating Matrix Spike percent recoveries. This result is not a final value and cannot be used as such.*

Parameter	Original Result	Qualifiers	Units	Spike Conc.	MS Result	MS % Rec	% Rec Limits
Glyphosate	ND		ug/L	500	482.285	96.5	70-130

MATRIX SPIKE 2153472 Original 2059505001

*****NOTE - The Original Result shown below is a raw result and is only used for the purpose of calculating Matrix Spike percent recoveries. This result is not a final value and cannot be used as such.*

Parameter	Original Result	Qualifiers	Units	Spike Conc.	MS Result	MS % Rec	% Rec Limits
Glyphosate	ND		ug/L	500	448.493	89.7	70-130

Standard Acronyms/Flags	
J	Indicates an estimated value between the Method Detection Limit (MDL) and the Practical Quantitation Limit (PQL) for the analyte
U	Indicates that the analyte was Not Detected (ND)
N	Indicates presumptive evidence of the presence of a compound
MDL	Method Detection Limit
PQL	Practical Quantitation Limit
RDL	Reporting Detection Limit
ND	Not Detected - indicates that the analyte was Not Detected at the RDL
Cntr	Analysis was performed using this container
RegLmt	Regulatory Limit
LCS	Laboratory Control Sample
MS	Matrix Spike
MSD	Matrix Spike Duplicate
DUP	Sample Duplicate
%Rec	Percent Recovery
RPD	Relative Percent Difference
LOD	DoD Limit of Detection
LOQ	DoD Limit of Quantitation
DL	DoD Detection Limit
NC	Not Calculated
*	Result outside of QC limits
DIL	Dilution Factor

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Lab ID	Sample ID	Prep Method	Prep Batch	Analysis Method	Analysis Batch
2057116002	ZZZZZZZZZZ	EPA 531.1	HPLC / 3911	EPA 531.1	HPLC / 3911
2058591001	ZZZZZZZZZZ	EPA 531.1	HPLC / 3911	EPA 531.1	HPLC / 3911
2059256001	K1502416-001	EPA 531.1	HPLC / 3911	EPA 531.1	HPLC / 3911

Lab ID	Sample ID	Prep Method	Prep Batch	Analysis Method	Analysis Batch
2058366001	ZZZZZZZZZZ	EPA 547	HPLC / 3915	EPA 547	HPLC / 3915
2059256001	K1502416-001	EPA 547	HPLC / 3915	EPA 547	HPLC / 3915
2059505001	ZZZZZZZZZZ	EPA 547	HPLC / 3915	EPA 547	HPLC / 3915

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www.alsglobal.com

LABORATORY REPORT

March 27, 2015

Jeff Coleman
Longview, City of
W/S Operation Center
Longview, WA 98632

RE: Sentinel Wells

Dear Jeff:

Enclosed are the results of the sample submitted to our laboratory on March 10, 2015. For your reference, this analysis has been assigned our service request number K1502416.

All analyses were performed according to our laboratory's NELAP and DoD-ELAP-approved quality assurance program. The test results meet requirements of the current NELAP and DoD-ELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP and DoD-ELAP-accredited analytes, refer to the certifications section at www.alsglobal.com. Results are intended to be considered in their entirety and apply only to the samples analyzed and reported herein.

If you have any questions, please call me at (805) 526-7161.

Respectfully submitted,

ALS | Environmental

By Sue Anderson at 10:34 am, Mar 27, 2015

For Kate Aguilera
Project Manager

2655 Park Center Dr., Suite A
Simi Valley, CA 93065
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www.alsglobal.com

Client: Longview, City of
Project: Sentinel Wells

Service Request No: K1502416

CASE NARRATIVE

The sample was received intact under chain of custody on March 10, 2015 and was stored in accordance with the analytical method requirements. Please refer to the sample acceptance check form for additional information. The results reported herein are applicable only to the condition of the sample at the time of sample receipt.

Hydrogen Sulfide Analysis

The sample was analyzed for hydrogen sulfide using a gas chromatograph equipped with a sulfur chemiluminescence detector (SCD). This method is not included on the laboratory's NELAP, DoD-ELAP, or AIHA-LAP scope of accreditation.

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 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.

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ALS Environmental – Simi Valley

CERTIFICATIONS, ACCREDITATIONS, AND REGISTRATIONS

Agency	Web Site	Number
AIHA	http://www.aihaaccreditedlabs.org	101661
Arizona DHS	http://www.azdhs.gov/lab/license/env.htm	AZ0694
DoD ELAP	http://www.pjlabs.com/search-accredited-labs	L14-2
Florida DOH (NELAP)	http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm	E871020
Maine DHHS	http://www.maine.gov/dhhs/mecdc/environmental-health/water/dwp-services/labcert/labcert.htm	2014025
Minnesota DOH (NELAP)	http://www.health.state.mn.us/accreditation	876241
New Jersey DEP (NELAP)	http://www.nj.gov/dep/oqa/	CA009
New York DOH (NELAP)	http://www.wadsworth.org/labcert/elap/elap.html	11221
Oregon PHD (NELAP)	http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Pages/index.aspx	4068-001
Pennsylvania DEP	http://www.depweb.state.pa.us/labs	68-03307 (Registration)
Texas CEQ (NELAP)	http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html	T104704413-14-5
Utah DOH (NELAP)	http://www.health.utah.gov/lab/labimp/certification/index.html	CA016272014-4
Washington DOE	http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html	C946

Analyses were performed according to our laboratory's NELAP and DoD-ELAP approved quality assurance program. A complete listing of specific NELAP and DoD-ELAP certified analytes can be found in the certifications section at www.alsglobal.com, or at the accreditation body's website.

Each of the certifications listed above have an explicit Scope of Accreditation that applies to specific matrices/methods/analytes; therefore, please contact the laboratory for information corresponding to a particular certification.

Intra-Network Chain of Custody

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

ALS Contact: Chris Leaf

Project Name: Sentinel Wells
Project Number:
Project Manager: Jeff Coleman
Company: Longview, City of

Lab Code	Client Sample ID	# of Cont.	Matrix	Sample Date	Sample Time	Date Received	Send To	Sulfur Sulfur Liq
K1502416-001	DW-2	2	Drinking Water	3/10/15	1430	3/10/15	SIMIVALLEY	II

Test Comments

Sulfur - Sulfur Liq K1502416-001 Hydrogen Sulfide

Folder Comments:

Report all metals in mg/L. No DW State form required.

Special Instructions/Comments

Please provide the electronic (PDF and EDD) report to the following e-mail address: ALKLS.Data@alsglobal.com.

CL 3/11/15

pH Checked _____

Turnaround Requirements

____ **RUSH** (Surcharges Apply)

PLEASE CIRCLE WORK DAYS

1 2 3 4 5

____ **STANDARD**

Requested FAX Date: _____

Requested Report Date: 03/27/15

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 N

EDD N

Invoice Information

PO# K1502416

Bill to

Relinquished By: [signature] 3/12/15 1130

Received By: K. Kelly 3/13/15 1630 2° blank

Airbill Number: _____

ALS Environmental
Sample Acceptance Check Form

Client: Longview, City of Work order: K1502416

Project: Sentinel Wells

Sample(s) received on: 3/10/15 Date opened: 3/10/15 by: SWOLF

Note: This form is used for all samples received by ALS. The use of this form for custody seals is strictly meant to indicate presence/absence and not as an indication of compliance or nonconformity. Thermal preservation and pH will only be evaluated either at the request of the client and/or as required by the method/SOP.

		Yes	No	N/A
1	Were **sample containers** properly marked with client sample ID?	☒	☐	☐
2	Container(s) **supplied by ALS**?	☒	☐	☐
3	Did **sample containers** arrive in good condition?	☒	☐	☐
4	Were **chain-of-custody** papers used and filled out?	☒	☐	☐
5	Did **sample container labels** and/or tags agree with custody papers?	☒	☐	☐
6	Was **sample volume** received adequate for analysis?	☒	☐	☐
7	Are samples within specified holding times?	☒	☐	☐
8	Was proper **temperature** (thermal preservation) of cooler at receipt adhered to?	☒	☐	☐
	Cooler Temperature: ° C Blank Temperature: 2° C **Gel Packs**			
9	Was a **trip blank** received?	☐	☒	☐
10	Were **custody seals** on outside of cooler/Box?	☒	☐	☐
	Location of seal(s)? _____ Sealing Lid?	☒	☐	☐
	Were signature and date included?	☒	☐	☐
	Were seals intact?	☒	☐	☐
	Were custody seals on outside of sample container?	☐	☒	☐
	Location of seal(s)? _____ Sealing Lid?	☐	☐	☒
	Were signature and date included?	☐	☐	☒
	Were seals intact?	☐	☐	☒
11	Do containers have appropriate **preservation**, according to method/SOP or Client specified information?	☒	☐	☐
	Is there a client indication that the submitted samples are **pH** preserved?	☐	☐	☒
	Were **VOA vials** checked for presence/absence of air bubbles?	☒	☐	☐
	Does the client/method/SOP require that the analyst check the sample pH and if necessary alter it?	☒	☐	☐
12	**Tubes:** Are the tubes capped and intact?	☐	☐	☒
	Do they contain moisture?	☐	☐	☒
13	**Badges:** Are the badges properly capped and intact?	☐	☐	☒
	Are dual bed badges separated and individually capped and intact?	☐	☐	☒

Lab Sample ID	Container Description	Required pH *	Received pH	Adjusted pH	VOA Headspace (Presence/Absence)	Receipt / Preservation Comments
K1502416-001.24	40mL VOA NP		7	1	A	MC 3/23/2015
K1502416-001.25	40mL VOA NP				A	

Explain any discrepancies: (include lab sample ID numbers): _____

RSK - MEEPP, HCL (pH<2); RSK - CO2, (pH 5-8); Sulfur (pH>4)

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Longview, City of**
Client Project ID: **Sentinel Wells** ALS Project ID: K1502416

Hydrogen Sulfide

Test Code: GC/SCD Reduced Sulfur Analysis
Instrument ID: Agilent 6890A/GC13/SCD Date(s) Collected: 3/10/15
Analyst: Mike Conejo Date Received: 3/10/15
Sample Type: Drinking Water Date Analyzed: 3/23/15
Test Notes:

Client Sample ID	ALS Sample ID	Sample Amount ml(s)	Purge Volume Liter(s)	Injection Volume ml(s)	**Result µg/L**	MRL µg/L	Data Qualifier
DW-2	K1502416-001	10.0	0.30	1.0	ND	0.84	
Method Blank	P150323-MB	10.0	0.30	1.0	ND	0.84	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

LABORATORY CONTROL SAMPLE / DUPLICATE LABORATORY CONTROL SAMPLE SUMMARY

Client: **Longview, City of**
Client Sample ID: **Duplicate Lab Control Sample**
Client Project ID: **Sentinel Wells**

ALS Project ID: K1502416
ALS Sample ID: P150323-DLCS

Test Code: GC/SCD Reduced Sulfur Analysis
Instrument ID: Agilent 6890A/GC13/SCD
Analyst: Mike Conejo
Sample Type: Drinking Water
Test Notes:

Date Collected: NA
Date Received: NA
Date Analyzed: 3/23/15
Liquid Amount: 10.0 ml(s)
Purge Volume: 0.30 Liter(s)
Injection Volume: 0.20 ml(s)

CAS #	Compound	Spike Amount LCS / DLCS ug/L	Result LCS ug/L	Result DLCS ug/L	% Recovery LCS	% Recovery DLCS	ALS Acceptance Limits	RPD	RPD Limit	Data Qualifier
7783-06-4	Hydrogen Sulfide	416	391	395	**94**	**95**	54-133	1	20	

ALS Environmental
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April 14, 2015

Analytical Report for Service Request No: K1502414

Jeff Coleman
Longview, City of
W/S Operation Center
P.O. Box 128
Longview, WA 98632

RE: Sentinel Well Program

Dear Jeff,

Enclosed are the results of the sample(s) submitted to our laboratory March 10, 2015
For your reference, these analyses have been assigned our service request number **K1502414.**

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 3275. You may also contact me via email at Chris.Leaf@ALSGlobal.com.

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental

Chris Leaf
Project Manager

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 DEC UST	http://dec.alaska.gov/applications/eh/ehllabreports/USTLabs.aspx	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	L14-51
Florida DOH	http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm	E87412
Hawaii DOH	Not available	-
Idaho DHW	http://www.healthandwelfare.idaho.gov/Health/Labs/CertificationDrinkingWaterLabs/tabid/1833/Default.aspx	-
ISO 17025	http://www.pjlabs.com/	L14-50
Louisiana DEQ	http://www.deq.louisiana.gov/portal/DIVISIONS/PublicParticipationandPermitSupport/LouisianaLaboratoryAccreditationProgram.aspx	03016
Maine DHS	Not available	WA01276
Michigan DEQ	http://www.michigan.gov/deq/0,1607,7-135-3307_4131_4156---,00.html	9949
Minnesota DOH	http://www.health.state.mn.us/accreditation	053-999-457
Montana DPHHS	http://www.dphhs.mt.gov/publichealth/	CERT0047
Nevada DEP	http://ndep.nv.gov/bsdw/labservice.htm	WA01276
New Jersey DEP	http://www.nj.gov/dep/oqa/	WA005
North Carolina DWQ	http://www.dwqlab.org/	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/envserv/	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
Wisconsin DNR	http://dnr.wi.gov/	998386840
Wyoming (EPA Region 8)	http://www.epa.gov/region8/water/dwhome/wyomingdi.html	-
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/anlayte is offered by that state.

Case Narrative

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

ALS ENVIRONMENTAL

Client:	Longview, City of	**Service Request No.:**	K1502414
Project:	Sentinel Wells	**Date Received:**	03/10/15
Sample Matrix:	Drinking Water		

Case Narrative

All analyses were performed consistent with the quality assurance program of ALS Environmental. This report contains analytical results for samples designated for Tier II data deliverables. When appropriate to the method, method blank results have been reported with each analytical test. Surrogate recoveries have been reported for all applicable organic analyses. Additional quality control analyses reported herein include: Laboratory Duplicate (DUP), Matrix Spike (MS), Matrix/Duplicate Matrix Spike (MS/DMS), Laboratory Control Sample (LCS), and Laboratory/Duplicate Laboratory Control Sample (LCS/DLCS).

Sample Receipt

One drinking water sample was received for analysis at ALS Environmental on 03/10/15. The sample was received in good condition and consistent with the accompanying chain of custody form. The sample was stored in a refrigerator at 4ºC upon receipt at the laboratory.

General Chemistry Parameters

No other anomalies associated with the analysis of this sample were observed.

Total Metals

No anomalies associated with the analysis of this sample were observed.

EDB and DBCP by EPA Method 504.1

No anomalies associated with the analysis of this sample were observed.

Pesticides and Polychlorinated Biphenyls by EPA Method 508.1

Matrix Spike Recovery Exceptions:
The duplicate matrix spike recovery of Endrin for sample Batch QC was outside control criteria. Recovery in the Laboratory Control Sample (LCS) and Matrix Spike was acceptable, which indicated the analytical batch was in control. The matrix spike outlier suggested a potential low bias in this matrix. No further corrective action was appropriate.

No other anomalies associated with the analysis of this sample were observed.

Chlorinated Acids by EPA Method 515.4

Second Source Exceptions:
The analysis of Chlorinated Herbicides in Drinking Water by EPA 515.4 requires the use of dual column confirmation. The Initial Calibration Verification (ICV) evaluation criteria were not met on the confirmation column for 2,4,5-TP (Silvex) in CAL13913. The ICV criteria were met on the alternate column. The data quality was not affected. No further corrective action was necessary.

Approved by_____

Chlorinated Acids by EPA Method 515.4 (cont.)

Calibration Verification Exceptions:
The analysis of Chlorinated Herbicides in Drinking Water by EPA 515.4 requires the use of dual column confirmation. When the Continuing Calibration Verification (CCV) criterion is met for both columns, the lower of the two sample results is generally reported. The primary evaluation criteria were not met on the confirmation column for Dichloroprop, 2,4-Dichlorophenylacetic Acid, and 2,4-D for CCV 03230032. The results were reported from the column with an acceptable CCV. The data quality was not affected. No further corrective action was necessary.

The analysis of Chlorinated Herbicides in Drinking Water by EPA 515.4 requires the use of dual column confirmation. When the Continuing Calibration Verification (CCV) criterion is met for both columns, the lower of the two sample results is generally reported. The primary evaluation criteria were not met on the confirmation column for Dichloroprop, and 2,4-D for CCV 03230045. The results were reported from the column with an acceptable CCV. The data quality was not affected. No further corrective action was necessary.

No other anomalies associated with the analysis of this sample were observed.

Volatile Organic Compounds by EPA Method 524.2

Sample Notes and Discussion:
The sample DW-5 had a pH of 7.

No other anomalies associated with the analysis of this sample were observed.

Semivolatile Organic Compounds by EPA Method 525.2

Lab Control Sample Exceptions:
The upper control criterion was exceeded for Hexachlorocyclopentadiene in Laboratory Control Sample (LCS) KWG1502393-3. The analyte in question was not detected in the associated field samples. The error associated with elevated recovery indicated a high bias. The sample data was not significantly affected. No further corrective action was appropriate.

Matrix Spike Recovery Exceptions:
The matrix spike recovery of Bis(2-ethylhexyl) Phthalate for sample Well #6 was outside control criteria. Recovery in the Laboratory Control Sample (LCS) was acceptable, which indicated the analytical batch was in control. The matrix spike outlier suggested a potential low bias in this matrix. No further corrective action was appropriate.

The upper control criterion was exceeded for the following analyte in Matrix Spike (MS) KWG1502393-1 and Matrix Spike Duplicate (MSD) KWG1502393-2: Hexachlorocyclopentadiene. The analyte in question was not detected in the associated field samples. The error associated with elevated recovery indicated a high bias. The sample data was not significantly affected. No further corrective action was appropriate.

No other anomalies associated with the analysis of this sample were observed.

Endothall by EPA Method 548.1

No anomalies associated with the analysis of this sample were observed.

Approved by_____

Diquat by High Performance Liquid Chromatography

Matrix Spike Recovery Exceptions:
The matrix spike recovery of Diquat for samples KWG1502015-1, and KWG1502015-2 was outside control criteria because of matrix interference. The chromatogram indicated the presence of non-target background components that prevented adequate resolution of the target analyte. As a result, accurate quantitation was not possible. No further corrective action was required.

No other anomalies associated with the analysis of this sample were observed.

Chlorinated Phenols by EPA Method 1653

No anomalies associated with the analysis of this sample were observed.

Glyphosate and Carbamates

These analyses were performed at ALS Environmental, Middletown, PA. The data for these analyses are included in the corresponding section of this report.

Sulfur

This analysis was performed at ALS Environmental, Simi Valley, CA. The data for this analysis is included in the corresponding section of this report.

Approved by_____

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

ALS Environmental

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CHAIN OF CUSTODY

57729

001, 005

SR# K1502414

COC Set____of____

COC#_____

1317 South 13th Ave, Kelso, WA 98626 Phone (360) 577-7222 / 800-695-7222 / FAX (360) 636-1068
www.alsglobal.com

Rev #2

Project Name: Sentinel Well
Project Number:
Project Manager: Jeff Coleman
Company: City of Longview
Address: PO Box 128 Longview WA 98632
Phone #:
email:
Sampler Signature: T Daly
Sampler Printed Name: T Daly

CLIENT SAMPLE ID	LABID	SAMPLING Date	SAMPLING Time	Matrix	NUMBER OF CONTAINERS	6H: SM 9223 B / Coli L (+/-)	48H: 180.1 / Turbidity	48H: 300.0 / NO2	48H: 300.0 / NO3	48H: SM 2120 B / Color	48H: SM 4500-P E / O Phos	7D: 548.1 / ENDO	7D: 549.2 / DIQ_PARAQ	7D: SM 2540 C / TDS	14D: 335.4 / CN T	14D: 504.1 / EDB DBCP 123TCP	14D: 508.1 / PEST_CL	14D: 515.4 / CL_ACID_HERB	14D: 524.2 / VOC	14D: 525.2 / SVO	14D: 547 / GLYPH	14D: SM 2320 B / Alkalinity Titr	14D: Sulfur Liq / Sulfur	28D: 300.0 / Br	28D: 314.0 / ClO4	28D: 531.1 / CARBAM	28D: SM 2510 B / Conductivity	28D: SM 4500-NH3 G / Ammonia	Remarks
1. DW-5		3/10/15	1330		28																								
2.																													
3.																													
4.																													
5.																													
6.																													
7.																													
8.																													
9.																													
10.																													

Report Requirements

___ I. Routine Report: Method Blank, Surrogate, as required

___ II. Report Dup., MS, MSD as required

___ III. CLP Like Summary (no raw data)

___ IV. Data Validation Report

___ V. EDD

Invoice Information

P.O.# 16-45356
Bill To: City of Longview
PO Box 128
Longview WA 98632

Turnaround Requirements

____ 24 hr. ____48 hr.
____ 5 Day
____ Standard

Requested Report Date

Circle which metals are to be analyzed

Total Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

Dissolved Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

Special Instructions/Comments:

*Indicate State Hydrocarbon Procedure: AK CA WI Northwest Other_____(Circle One

Relinquished By:	Received By:	Relinquished By:	Received By:	Relinquished By:	Received By:
T Daly	[illegible]				
Signature: T Daly	Signature: [illegible]	Signature	Signature	Signature	Signature
Printed Name: Cof L	Printed Name: ALS	Printed Name	Printed Name	Printed Name	Printed Name
Firm: 3/10/15 1540	Firm: 3/10/15 1540	Firm	Firm	Firm	Firm
Date/Time	Date/Time	Date/Time	Date/Time	Date/Time	Date/Time

ALS Environmental

57729

CHAIN OF CUSTODY

57729

001, 005

SR# 1C150244

COC Set_____of_____

COC#_____

1317 South 13th Ave, Kelso, WA 98626 Phone (360) 577-7222 / 800-695-7222 / FAX (360) 636-1068
www.alsglobal.com

Project Name: Sentinel Wells
Project Number:
Project Manager: Jeff Coleman
Company: City of Longview
Address: PO Box 128 Longview
Phone #:
email:
Sampler Signature: T Daly
Sampler Printed Name: T Daly

CLIENT SAMPLE ID	LABID	SAMPLING Date	SAMPLING Time	Matrix	NUMBER OF CONTAINERS	28D: 245.1 / Hg T	28D: 300.0 / Chloride	28D: 300.0 / F	28D: 300.0 / SO4	30D: 1653A / CHLOR_PHEN	180D: 1630 / Methyl Hg T	180D: 200.7 / Metals T	180D: 200.8 / Metals T	999D: Calculation / NO2 NO3 Calc	999D: SM 2340 B / Hardness Calc	1	2	3	4	5	Remarks
1. ~~DW 5~~ DW5		3/10/15	1330		28																
2.																					
3.																					
4.																					
5.																					
6.																					
7.																					
8.																					
9.																					
10.																					

Report Requirements

___ I. Routine Report: Method Blank, Surrogate, as required
___ II. Report Dup., MS, MSD as required
___ III. CLP Like Summary (no raw data)
___ IV. Data Validation Report
___ V. EDD

Invoice Information

P.O.# 36-4552
Bill To: City of Longview
PO Box 128
Longview WA 98632

Turnaround Requirements

___ 24 hr. ___ 48 hr.
___ 5 Day
___ Standard

Requested Report Date

Circle which metals are to be analyzed

Total Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

Dissolved Metals. Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

Special Instructions/Comments:

*Indicate State Hydrocarbon Procedure: AK CA WI Northwest Other_____(Circle One)

Relinquished By:	Received By:	Relinquished By:	Received By:	Relinquished By:	Received By:
T Daly	[illegible]				
Signature: T Daly	Signature: [illegible]	Signature	Signature	Signature	Signature
Printed Name: Coleman	Printed Name: ALS	Printed Name	Printed Name	Printed Name	Printed Name
Firm: 3/10/15 1540	Firm: 3/10/15 1540	Firm	Firm	Firm	Firm
Date/Time	Date/Time	Date/Time	Date/Time	Date/Time	Date/Time

PC CL

Cooler Receipt and Preservation Form

Client / Project: ~~Ketso~~ ~~Ket~~ Longview Service Request K15 02414

Received: 3/10/15 Opened: 3/10/15 By: LL Unloaded: 3/10/15 By: LL

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

   If present, were custody seals intact? Y N If present, were they signed and dated? Y N

Raw Cooler Temp	Corrected. Cooler Temp	Raw Temp Blank	Corrected Temp Blank	Corr. Factor	Thermometer ID	Cooler/COC ID NA	Tracking Number NA	Filed
7.9	8.1	8.0	8.2	+0.2	338	DW-5		
10.1	10.1	9.3	9.3	0	356	DW-6		
9.6	9.7	9.3	9.4	+0.1	354	DW-5		
7.6	7.6	9.7	9.7	0	353	DW-6		

4. Packing material: *Inserts* *Baggies* *Bubble Wrap* *Gel Packs* *Wet Ice* *Dry Ice* *Sleeves* _____
5. Were custody papers properly filled out (ink, signed, etc.)? NA Y N
6. Did all bottles arrive in good condition (unbroken)? *Indicate in the table below.* 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.* NA Y N
9. 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

SHORT HOLD TIME

Notes, Discrepancies, & Resolutions: Insufficient time for samples to chill completely

Page ____ *of* ____

General Chemistry

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

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client:	Longview, City of	**Service Request:**	K1502414
Project:	Sentinel Well Program	**Date Collected:**	03/10/15
Sample Matrix:	Drinking Water	**Date Received:**	03/10/15
Analysis Method:	180.1	**Units:**	NTU
Prep Method:	None	**Basis:**	NA

Turbidity

Sample Name	Lab Code	Result	MRL	Dil.	Date Analyzed	Q
DW-5	K1502414-001	**0.75**	0.20	1	03/11/15 11:58	
Method Blank	K1502414-MB1	ND U	0.20	1	03/11/15 11:58	

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502414
Project	Sentinel Well Program	**Date Collected:**	NA
Sample Matrix:	Drinking Water	**Date Received:**	NA
		Date Analyzed:	03/11/15

Replicate Sample Summary
General Chemistry Parameters

Sample Name:	Batch QC	**Units:**	NTU
Lab Code:	K1502415-001	**Basis:**	NA

Analyte Name	Analysis Method	MRL	Sample Result	Duplicate Sample K1502415-001DUP Result	Average	RPD	RPD Limit
Turbidity	180.1	0.20	8.79	8.87	8.83	<1	20

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

ALS Group USA, Corp.
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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502414
Project:	Sentinel Well Program	**Date Analyzed:**	03/11/15
Sample Matrix:	Drinking Water	**Date Extracted:**	NA

Lab Control Sample Summary
Turbidity

Analysis Method:	180.1	**Units:**	NTU
Prep Method:	None	**Basis:**	NA
		Analysis Lot:	435868

Sample Name	Lab Code	Result	Spike Amount	% Rec	% Rec Limits
Lab Control Sample	K1502414-LCS	6.18	6.37	97	90-110

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Analytical Report

Client:	Longview, City of	**Service Request:**	K1502414
Project:	Sentinel Well Program	**Date Collected:**	03/10/15
Sample Matrix:	Drinking Water	**Date Received:**	03/10/15
Analysis Method:	300.0	**Units:**	mg/L
Prep Method:	Method	**Basis:**	NA

Bromide

Sample Name	Lab Code	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
DW-5	K1502414-001	ND U	0.20	2	03/11/15 09:48	3/11/15	
Method Blank	K1502414-MB1	ND U	0.10	1	03/11/15 09:21	3/11/15	

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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502414
Project	Sentinel Well Program	**Date Collected:**	NA
Sample Matrix:	Drinking Water	**Date Received:**	NA
		Date Analyzed:	03/11/15

Replicate Sample Summary
General Chemistry Parameters

Sample Name:	Batch QC	**Units:**	mg/L
Lab Code:	K1502415-001	**Basis:**	NA

Analyte Name	Analysis Method	MRL	Sample Result	Duplicate Sample K1502415-001DUP Result	Average	RPD	RPD Limit
Bromide	300.0	5.0	ND U	ND U	NC	NC	20

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ALS Group USA, Corp.
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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502414
Project:	Sentinel Well Program	**Date Collected:**	N/A
Sample Matrix:	Drinking Water	**Date Received:**	N/A
		Date Analyzed:	03/11/15
		Date Extracted:	03/11/15

Duplicate Matrix Spike Summary
Bromide

Sample Name:	Batch QC	**Units:**	mg/L
Lab Code:	K1502415-001	**Basis:**	NA
Analysis Method:	300.0		
Prep Method:	Method		

		Matrix Spike K1502415-001MS			Duplicate Matrix Spike K1502415-001DMS					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Bromide	ND U	95.2	100	95	96.3	100	96	90-110	1	20

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ALS Group USA, Corp.
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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502414
Project:	Sentinel Well Program	**Date Analyzed:**	03/11/15
Sample Matrix:	Drinking Water	**Date Extracted:**	03/11/15

Lab Control Sample Summary
Bromide

Analysis Method:	300.0	**Units:**	mg/L
Prep Method:	Method	**Basis:**	NA
		Analysis Lot:	435994

Sample Name	Lab Code	Result	Spike Amount	% Rec	% Rec Limits
Lab Control Sample	K1502414-LCS	2.34	2.50	93	90-110

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client:	Longview, City of	**Service Request:**	K1502414
Project:	Sentinel Well Program	**Date Collected:**	03/10/15
Sample Matrix:	Drinking Water	**Date Received:**	03/10/15
Analysis Method:	300.0	**Units:**	mg/L
Prep Method:	Method	**Basis:**	NA

Chloride

Sample Name	Lab Code	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
DW-5	K1502414-001	**46.5**	4.0	20	03/11/15 18:56	3/11/15	
Method Blank	K1502414-MB1	ND U	0.20	1	03/11/15 09:21	3/11/15	

ALS Group USA, Corp.
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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502414
Project	Sentinel Well Program	**Date Collected:**	NA
Sample Matrix:	Drinking Water	**Date Received:**	NA
		Date Analyzed:	03/11/15

Replicate Sample Summary
General Chemistry Parameters

Sample Name:	Batch QC	**Units:**	mg/L
Lab Code:	K1502415-001	**Basis:**	NA

Analyte Name	Analysis Method	MRL	Sample Result	Duplicate Sample K1502415-001DUP Result	Average	RPD	RPD Limit
Chloride	300.0	10	114	114	114	<1	20

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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502414
Project:	Sentinel Well Program	**Date Collected:**	N/A
Sample Matrix:	Drinking Water	**Date Received:**	N/A
		Date Analyzed:	03/11/15
		Date Extracted:	03/11/15

Duplicate Matrix Spike Summary
Chloride

Sample Name:	Batch QC	**Units:**	mg/L
Lab Code:	K1502415-001	**Basis:**	NA
Analysis Method:	300.0		
Prep Method:	Method		

		Matrix Spike K1502415-001MS			**Duplicate Matrix Spike** K1502415-001DMS					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Chloride	114	218	100	104	219	100	105	90-110	<1	20

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ALS Group USA, Corp.
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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502414
Project:	Sentinel Well Program	**Date Analyzed:**	03/11/15
Sample Matrix:	Drinking Water	**Date Extracted:**	03/11/15

Lab Control Sample Summary
Chloride

Analysis Method:	300.0	**Units:**	mg/L
Prep Method:	Method	**Basis:**	NA
		Analysis Lot:	435994

Sample Name	Lab Code	Result	Spike Amount	% Rec	% Rec Limits
Lab Control Sample	K1502414-LCS	4.73	5.00	95	90-110

ALS Group USA, Corp.
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Analytical Report

Client:	Longview, City of	**Service Request:**	K1502414
Project:	Sentinel Well Program	**Date Collected:**	03/10/15
Sample Matrix:	Drinking Water	**Date Received:**	03/10/15
Analysis Method:	300.0	**Units:**	mg/L
Prep Method:	Method	**Basis:**	NA

Fluoride

Sample Name	Lab Code	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
DW-5	K1502414-001	ND U	0.20	2	03/11/15 09:48	3/11/15	
Method Blank	K1502414-MB1	ND U	0.10	1	03/11/15 09:21	3/11/15	

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dba ALS Environmental

QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502414
Project	Sentinel Well Program	**Date Collected:**	NA
Sample Matrix:	Drinking Water	**Date Received:**	NA
		Date Analyzed:	03/11/15

Replicate Sample Summary
General Chemistry Parameters

Sample Name:	Batch QC	**Units:**	mg/L
Lab Code:	K1502415-001	**Basis:**	NA

Analyte Name	Analysis Method	MRL	Sample Result	Duplicate Sample K1502415-001DUP Result	Average	RPD	RPD Limit
Fluoride	300.0	5.0	ND U	ND U	NC	NC	20

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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502414
Project:	Sentinel Well Program	**Date Collected:**	N/A
Sample Matrix:	Drinking Water	**Date Received:**	N/A
		Date Analyzed:	03/11/15
		Date Extracted:	03/11/15

Duplicate Matrix Spike Summary
Fluoride

Sample Name:	Batch QC	**Units:**	mg/L
Lab Code:	K1502415-001	**Basis:**	NA
Analysis Method:	300.0		
Prep Method:	Method		

		Matrix Spike K1502415-001MS			Duplicate Matrix Spike K1502415-001DMS					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Fluoride	ND U	98.7	100	99	100	100	100	90-110	1	20

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ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502414
Project:	Sentinel Well Program	**Date Analyzed:**	03/11/15
Sample Matrix:	Drinking Water	**Date Extracted:**	03/11/15

Lab Control Sample Summary
Fluoride

Analysis Method:	300.0	**Units:**	mg/L
Prep Method:	Method	**Basis:**	NA
		Analysis Lot:	435994

Sample Name	Lab Code	Result	Spike Amount	% Rec	% Rec Limits
Lab Control Sample	K1502414-LCS	5.12	5.00	102	90-110

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client:	Longview, City of	**Service Request:**	K1502414
Project:	Sentinel Well Program	**Date Collected:**	03/10/15
Sample Matrix:	Drinking Water	**Date Received:**	03/10/15
Analysis Method:	300.0	**Units:**	mg/L
Prep Method:	Method	**Basis:**	NA

Nitrite as Nitrogen

Sample Name	Lab Code	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
DW-5	K1502414-001	ND U	0.10	2	03/11/15 09:48	3/11/15	
Method Blank	K1502414-MB1	ND U	0.050	1	03/11/15 09:21	3/11/15	

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502414
Project	Sentinel Well Program	**Date Collected:**	NA
Sample Matrix:	Drinking Water	**Date Received:**	NA
		Date Analyzed:	03/11/15

Replicate Sample Summary
General Chemistry Parameters

Sample Name:	Batch QC	**Units:**	mg/L
Lab Code:	K1502415-001	**Basis:**	NA

Analyte Name	Analysis Method	MRL	Sample Result	Duplicate Sample K1502415-001DUP Result	Average	RPD	RPD Limit
Nitrite as Nitrogen	300.0	0.10	ND U	ND U	NC	NC	20

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ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502414
Project:	Sentinel Well Program	**Date Collected:**	N/A
Sample Matrix:	Drinking Water	**Date Received:**	N/A
		Date Analyzed:	03/11/15
		Date Extracted:	03/11/15

Duplicate Matrix Spike Summary
Nitrite as Nitrogen

Sample Name:	Batch QC	**Units:**	mg/L
Lab Code:	K1502415-001	**Basis:**	NA
Analysis Method:	300.0		
Prep Method:	Method		

		Matrix Spike			**Duplicate Matrix Spike**					
		K1502415-001MS			K1502415-001DMS					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Nitrite as Nitrogen	ND U	3.84	4.00	96	3.88	4.00	97	90-110	<1	20

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ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502414
Project:	Sentinel Well Program	**Date Analyzed:**	03/11/15
Sample Matrix:	Drinking Water	**Date Extracted:**	03/11/15

Lab Control Sample Summary
Nitrite as Nitrogen

Analysis Method:	300.0	**Units:**	mg/L
Prep Method:	Method	**Basis:**	NA
		Analysis Lot:	435994

Sample Name	Lab Code	Result	Spike Amount	% Rec	% Rec Limits
Lab Control Sample	K1502414-LCS	2.41	2.50	97	90-110

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client:	Longview, City of	**Service Request:**	K1502414
Project:	Sentinel Well Program	**Date Collected:**	03/10/15
Sample Matrix:	Drinking Water	**Date Received:**	03/10/15
Analysis Method:	300.0	**Units:**	mg/L
Prep Method:	Method	**Basis:**	NA

Nitrate as Nitrogen

Sample Name	Lab Code	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
DW-5	K1502414-001	ND U	0.10	2	03/11/15 09:48	3/11/15	
Method Blank	K1502414-MB1	ND U	0.050	1	03/11/15 09:21	3/11/15	

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502414
Project	Sentinel Well Program	**Date Collected:**	NA
Sample Matrix:	Drinking Water	**Date Received:**	NA
		Date Analyzed:	03/11/15

Replicate Sample Summary
General Chemistry Parameters

Sample Name:	Batch QC	**Units:**	mg/L
Lab Code:	K1502415-001	**Basis:**	NA

Analyte Name	Analysis Method	MRL	Sample Result	Duplicate Sample K1502415-001DUP Result	Average	RPD	RPD Limit
Nitrate as Nitrogen	300.0	0.10	ND U	ND U	NC	NC	20

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ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502414
Project:	Sentinel Well Program	**Date Collected:**	N/A
Sample Matrix:	Drinking Water	**Date Received:**	N/A
		Date Analyzed:	03/11/15
		Date Extracted:	03/11/15

Duplicate Matrix Spike Summary
Nitrate as Nitrogen

Sample Name:	Batch QC	**Units:**	mg/L
Lab Code:	K1502415-001	**Basis:**	NA
Analysis Method:	300.0		
Prep Method:	Method		

		Matrix Spike K1502415-001MS			**Duplicate Matrix Spike** K1502415-001DMS					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Nitrate as Nitrogen	ND U	3.63	4.00	91	3.68	4.00	92	90-110	1	20

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ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502414
Project:	Sentinel Well Program	**Date Analyzed:**	03/11/15
Sample Matrix:	Drinking Water	**Date Extracted:**	03/11/15

Lab Control Sample Summary
Nitrate as Nitrogen

Analysis Method:	300.0	**Units:**	mg/L
Prep Method:	Method	**Basis:**	NA
		Analysis Lot:	435994

Sample Name	Lab Code	Result	Spike Amount	% Rec	% Rec Limits
Lab Control Sample	K1502414-LCS	2.34	2.50	94	90-110

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client:	Longview, City of	**Service Request:**	K1502414
Project:	Sentinel Well Program	**Date Collected:**	03/10/15
Sample Matrix:	Drinking Water	**Date Received:**	03/10/15
Analysis Method:	300.0	**Units:**	mg/L
Prep Method:	Method	**Basis:**	NA

Sulfate

Sample Name	Lab Code	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
DW-5	K1502414-001	**0.28**	0.20	2	03/11/15 09:48	3/11/15	
Method Blank	K1502414-MB1	ND U	0.10	1	03/11/15 09:21	3/11/15	

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502414
Project	Sentinel Well Program	**Date Collected:**	NA
Sample Matrix:	Drinking Water	**Date Received:**	NA
		Date Analyzed:	03/11/15

Replicate Sample Summary
General Chemistry Parameters

Sample Name:	Batch QC	**Units:**	mg/L
Lab Code:	K1502415-001	**Basis:**	NA

Analyte Name	Analysis Method	MRL	Sample Result	Duplicate Sample K1502415-001DUP Result	Average	RPD	RPD Limit
Sulfate	300.0	5.0	0.43	ND U	NC	NC	20

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ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502414
Project:	Sentinel Well Program	**Date Collected:**	N/A
Sample Matrix:	Drinking Water	**Date Received:**	N/A
		Date Analyzed:	03/11/15
		Date Extracted:	03/11/15

Duplicate Matrix Spike Summary
Sulfate

Sample Name:	Batch QC	**Units:**	mg/L
Lab Code:	K1502415-001	**Basis:**	NA
Analysis Method:	300.0		
Prep Method:	Method		

		Matrix Spike			**Duplicate Matrix Spike**					
		K1502415-001MS			K1502415-001DMS					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Sulfate	0.43	91.4	100	91	92.4	100	92	90-110	1	20

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ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502414
Project:	Sentinel Well Program	**Date Analyzed:**	03/11/15
Sample Matrix:	Drinking Water	**Date Extracted:**	03/11/15

Lab Control Sample Summary
Sulfate

Analysis Method:	300.0	**Units:**	mg/L
Prep Method:	Method	**Basis:**	NA
		Analysis Lot:	435994

Sample Name	Lab Code	Result	Spike Amount	% Rec	% Rec Limits
Lab Control Sample	K1502414-LCS	4.84	5.00	97	90-110

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client:	Longview, City of	**Service Request:**	K1502414
Project:	Sentinel Well Program	**Date Collected:**	03/10/15
Sample Matrix:	Drinking Water	**Date Received:**	03/10/15
Analysis Method:	314.0	**Units:**	ug/L
Prep Method:	None	**Basis:**	NA

Perchlorate

Sample Name	Lab Code	Result	MRL	Dil.	Date Analyzed	Q
DW-5	K1502414-001	ND U	1.0	1	03/31/15 13:53	
Method Blank	K1502414-MB1	ND U	1.0	1	03/31/15 11:44	

ALS Group USA, Corp.
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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502414
Project	Sentinel Well Program	**Date Collected:**	NA
Sample Matrix:	Drinking Water	**Date Received:**	NA
		Date Analyzed:	03/31/15

Replicate Sample Summary
General Chemistry Parameters

Sample Name:	Batch QC	**Units:**	ug/L
Lab Code:	K1502415-001	**Basis:**	NA

Analyte Name	Analysis Method	MRL	Sample Result	Duplicate Sample K1502415-001DUP Result	Average	RPD	RPD Limit
Perchlorate	314.0	1.0	ND U	ND U	NC	NC	20

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ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502414
Project:	Sentinel Well Program	**Date Collected:**	N/A
Sample Matrix:	Drinking Water	**Date Received:**	N/A
		Date Analyzed:	03/31/15
		Date Extracted:	NA

Duplicate Matrix Spike Summary
Perchlorate

Sample Name:	Batch QC	**Units:**	ug/L
Lab Code:	K1502415-001	**Basis:**	NA
Analysis Method:	314.0		
Prep Method:	None		

		Matrix Spike K1502415-001MS			Duplicate Matrix Spike K1502415-001DMS					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Perchlorate	ND U	10.7	10.0	107	9.7	10.0	97	80-120	10	20

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ALS Group USA, Corp.
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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502414
Project:	Sentinel Well Program	**Date Analyzed:**	03/31/15
Sample Matrix:	Drinking Water	**Date Extracted:**	NA

Lab Control Sample Summary
Perchlorate

Analysis Method:	314.0	**Units:**	ug/L
Prep Method:	None	**Basis:**	NA
		Analysis Lot:	438526

Sample Name	Lab Code	Result	Spike Amount	% Rec	% Rec Limits
Lab Control Sample	K1502414-LCS	15.4	16.8	92	85-115

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client:	Longview, City of	**Service Request:**	K1502414
Project:	Sentinel Well Program	**Date Collected:**	03/10/15
Sample Matrix:	Drinking Water	**Date Received:**	03/10/15
Analysis Method:	335.4	**Units:**	mg/L
Prep Method:	Method	**Basis:**	NA

Cyanide, Total

Sample Name	Lab Code	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
DW-5	K1502414-001	ND U	0.010	1	03/11/15 10:44	3/11/15	
Method Blank	K1502414-MB1	ND U	0.010	1	03/11/15 10:44	3/11/15	

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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502414
Project	Sentinel Well Program	**Date Collected:**	NA
Sample Matrix:	Drinking Water	**Date Received:**	NA
		Date Analyzed:	03/11/15

Replicate Sample Summary
General Chemistry Parameters

Sample Name:	Batch QC	**Units:**	mg/L
Lab Code:	K1502415-001	**Basis:**	NA

Analyte Name	Analysis Method	MRL	Sample Result	Duplicate Sample K1502415-001DUP Result	Average	RPD	RPD Limit
Cyanide, Total	335.4	0.010	ND U	ND U	NC	NC	20

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ALS Group USA, Corp.
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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502414
Project:	Sentinel Well Program	**Date Collected:**	N/A
Sample Matrix:	Drinking Water	**Date Received:**	N/A
		Date Analyzed:	03/11/15
		Date Extracted:	03/11/15

Duplicate Matrix Spike Summary
Cyanide, Total

Sample Name:	Batch QC	**Units:**	mg/L
Lab Code:	K1502415-001	**Basis:**	NA
Analysis Method:	335.4		
Prep Method:	Method		

		Matrix Spike K1502415-001MS			**Duplicate Matrix Spike** K1502415-001DMS					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Cyanide, Total	ND U	0.095	0.100	94	0.104	0.100	104	90-110	9	20

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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502414
Project:	Sentinel Well Program	**Date Analyzed:**	03/11/15
Sample Matrix:	Drinking Water	**Date Extracted:**	03/11/15

Lab Control Sample Summary
Cyanide, Total

Analysis Method:	335.4	**Units:**	mg/L
Prep Method:	Method	**Basis:**	NA
		Analysis Lot:	436013

Sample Name	Lab Code	Result	Spike Amount	% Rec	% Rec Limits
Lab Control Sample	K1502414-LCS	0.147	0.150	98	90-110

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client:	Longview, City of	**Service Request:**	K1502414
Project:	Sentinel Well Program	**Date Collected:**	03/10/15
Sample Matrix:	Drinking Water	**Date Received:**	03/10/15
Analysis Method:	Calculation	**Units:**	mg/L
Prep Method:	None	**Basis:**	NA

Nitrate+Nitrite as Nitrogen

Sample Name	Lab Code	Result	MRL	Dil.	Date Analyzed	Q
DW-5	K1502414-001	ND U	0.20	1	03/11/15 09:48	

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Analytical Report

Client:	Longview, City of	**Service Request:**	K1502414
Project:	Sentinel Well Program	**Date Collected:**	03/10/15
Sample Matrix:	Drinking Water	**Date Received:**	03/10/15
Analysis Method:	SM 2120 B	**Units:**	ColorUnits
Prep Method:	None	**Basis:**	NA

Color

Sample Name	Lab Code	Result	MRL	Dil.	Date Analyzed	Q
DW-5	K1502414-001	**5.0**	5.0	1	03/11/15 10:22	
Method Blank	K1502414-MB1	ND U	5.0	1	03/11/15 10:18	

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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502414
Project	Sentinel Well Program	**Date Collected:**	NA
Sample Matrix:	Drinking Water	**Date Received:**	NA
		Date Analyzed:	03/11/15

Replicate Sample Summary
General Chemistry Parameters

Sample Name:	Batch QC	**Units:**	ColorUnits
Lab Code:	K1502415-001	**Basis:**	NA

Analyte Name	Analysis Method	MRL	Sample Result	Duplicate Sample K1502415-001DUP Result	Average	RPD	RPD Limit
Color	SM 2120 B	5.0	5.0	5.0	5.00	<1	20

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ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502414
Project:	Sentinel Well Program	**Date Analyzed:**	03/11/15
Sample Matrix:	Drinking Water	**Date Extracted:**	NA

Lab Control Sample Summary
Color

Analysis Method:	SM 2120 B	**Units:**	ColorUnits
Prep Method:	None	**Basis:**	NA
		Analysis Lot:	435804

Sample Name	Lab Code	Result	Spike Amount	% Rec	% Rec Limits
Lab Control Sample	K1502414-LCS	50.0	50.0	100	85-115

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client:	Longview, City of	**Service Request:**	K1502414
Project:	Sentinel Well Program	**Date Collected:**	03/10/15
Sample Matrix:	Drinking Water	**Date Received:**	03/10/15
Analysis Method:	SM 2320 B	**Units:**	mg/L
Prep Method:	None	**Basis:**	NA

Alkalinity as CaCO3, Total

Sample Name	Lab Code	Result	MRL	Dil.	Date Analyzed	Q
DW-5	K1502414-001	**105**	2.0	1	03/14/15 14:15	
Method Blank	K1502414-MB1	ND U	2.0	1	03/14/15 14:15	

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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502414
Project	Sentinel Well Program	**Date Collected:**	NA
Sample Matrix:	Drinking Water	**Date Received:**	NA
Analysis Method:	SM 2320 B	**Units:**	mg/L
Prep Method:	None	**Basis:**	NA

Replicate Sample Summary
Alkalinity as CaCO3, Total

Sample Name:	Lab Code:	MRL	Sample Result	Duplicate Result	Average	RPD	RPD Limit	Date Analyzed
Batch QC	K1502190-001DUP	2.0	66.0	66.0	66.0	<1	20	03/14/15
Batch QC	K1502416-001DUP	2.0	145	145	145	<1	20	03/14/15

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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502414
Project:	Sentinel Well Program	**Date Analyzed:**	03/14/15
Sample Matrix:	Drinking Water	**Date Extracted:**	NA

Lab Control Sample Summary
Alkalinity as CaCO3, Total

Analysis Method:	SM 2320 B	**Units:**	mg/L
Prep Method:	None	**Basis:**	NA
		Analysis Lot:	436281

Sample Name	Lab Code	Result	Spike Amount	% Rec	% Rec Limits
Lab Control Sample	K1502414-LCS	34.6	34.4	101	90-110

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client:	Longview, City of	**Service Request:**	K1502414
Project:	Sentinel Well Program	**Date Collected:**	03/10/15
Sample Matrix:	Drinking Water	**Date Received:**	03/10/15
Analysis Method:	SM 2510 B	**Units:**	uMHOS/cm
Prep Method:	None	**Basis:**	NA

Conductivity at 25 Degrees Celsius

Sample Name	Lab Code	Result	MRL	Dil.	Date Analyzed	Q
DW-5	K1502414-001	**421**	2.0	1	03/19/15 09:45	
Method Blank	K1502414-MB1	ND U	2.0	1	03/19/15 09:45	
Method Blank	K1502414-MB2	ND U	2.0	1	03/19/15 09:45	

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502414
Project	Sentinel Well Program	**Date Collected:**	NA
Sample Matrix:	Drinking Water	**Date Received:**	NA
		Date Analyzed:	03/19/15

Replicate Sample Summary
General Chemistry Parameters

Sample Name:	Batch QC	**Units:**	uMHOS/cm
Lab Code:	K1502415-001	**Basis:**	NA

Analyte Name	Analysis Method	MRL	Sample Result	Duplicate Sample K1502415-001DUP Result	Average	RPD	RPD Limit
Conductivity at 25 Degrees Celsius	SM 2510 B	2.0	701	699	700	<1	20

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ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502414
Project:	Sentinel Well Program	**Date Analyzed:**	03/19/15
Sample Matrix:	Drinking Water	**Date Extracted:**	NA

Lab Control Sample Summary
Conductivity at 25 Degrees Celsius

Analysis Method:	SM 2510 B	**Units:**	uMHOS/cm
Prep Method:	None	**Basis:**	NA
		Analysis Lot:	436981

Sample Name	Lab Code	Result	Spike Amount	% Rec	% Rec Limits
Lab Control Sample	K1502414-LCS	319	289	110	86-113

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client:	Longview, City of	**Service Request:**	K1502414
Project:	Sentinel Well Program	**Date Collected:**	03/10/15
Sample Matrix:	Drinking Water	**Date Received:**	03/10/15
Analysis Method:	SM 2540 C	**Units:**	mg/L
Prep Method:	None	**Basis:**	NA

Solids, Total Dissolved

Sample Name	Lab Code	Result	MRL	Dil.	Date Analyzed	Q
DW-5	K1502414-001	**252**	10	1	03/11/15 13:02	
Method Blank	K1502414-MB1	ND U	5.0	1	03/11/15 13:02	
Method Blank	K1502414-MB2	ND U	5.0	1	03/11/15 13:02	

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502414
Project	Sentinel Well Program	**Date Collected:**	NA
Sample Matrix:	Drinking Water	**Date Received:**	NA
Analysis Method:	SM 2540 C	**Units:**	mg/L
Prep Method:	None	**Basis:**	NA

Replicate Sample Summary
Solids, Total Dissolved

Sample Name:	Lab Code:	MRL	Sample Result	Duplicate Result	Average	RPD	RPD Limit	Date Analyzed
Batch QC	K1502365-001DUP	10	170	160	165	6	10	03/11/15
Batch QC	K1502415-001DUP	10	474	468	471	1	10	03/11/15

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ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502414
Project:	Sentinel Well Program	**Date Analyzed:**	03/11/15
Sample Matrix:	Drinking Water	**Date Extracted:**	NA

Lab Control Sample Summary
Solids, Total Dissolved

Analysis Method:	SM 2540 C	**Units:**	mg/L
Prep Method:	None	**Basis:**	NA
		Analysis Lot:	435923

Sample Name	Lab Code	Result	Spike Amount	% Rec	% Rec Limits
Lab Control Sample	K1502414-LCS	1260	1300	97	85-115

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client:	Longview, City of	**Service Request:**	K1502414
Project:	Sentinel Well Program	**Date Collected:**	03/10/15
Sample Matrix:	Drinking Water	**Date Received:**	03/10/15
Analysis Method:	SM 4500-NH3 G	**Units:**	mg/L
Prep Method:	Method	**Basis:**	NA

Ammonia as Nitrogen

Sample Name	Lab Code	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
DW-5	K1502414-001	**0.074**	0.050	1	03/17/15 15:23	3/17/15	
Method Blank	K1502414-MB1	ND U	0.050	1	03/17/15 15:23	3/17/15	

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502414
Project	Sentinel Well Program	**Date Collected:**	NA
Sample Matrix:	Drinking Water	**Date Received:**	NA
Analysis Method:	SM 4500-NH3 G	**Units:**	mg/L
Prep Method:	Method	**Basis:**	NA

Replicate Sample Summary
Ammonia as Nitrogen

Sample Name:	Lab Code:	MRL	Sample Result	Duplicate Result	Average	RPD	RPD Limit	Date Analyzed
Batch QC	K1502403-001DUP	0.50	25.0	25.4	25.2	1	20	03/17/15
Batch QC	K1502403-006DUP	0.050	0.03 J	ND U	NC	NC	20	03/17/15

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ALS Group USA, Corp.
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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502414
Project:	Sentinel Well Program	**Date Collected:**	N/A
Sample Matrix:	Drinking Water	**Date Received:**	N/A
		Date Analyzed:	03/17/15
		Date Extracted:	03/17/15

Duplicate Matrix Spike Summary
Ammonia as Nitrogen

Sample Name:	Batch QC	**Units:**	mg/L
Lab Code:	K1502403-001	**Basis:**	NA
Analysis Method:	SM 4500-NH3 G		
Prep Method:	Method		

		Matrix Spike K1502403-001MS			Duplicate Matrix Spike K1502403-001DMS					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Ammonia as Nitrogen	25.0	44.5	20.0	97	44.3	20.0	96	90-110	1	20

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ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502414
Project:	Sentinel Well Program	**Date Collected:**	N/A
Sample Matrix:	Drinking Water	**Date Received:**	N/A
		Date Analyzed:	03/17/15
		Date Extracted:	03/17/15

Duplicate Matrix Spike Summary
Ammonia as Nitrogen

Sample Name:	Batch QC	**Units:**	mg/L
Lab Code:	K1502403-006	**Basis:**	NA
Analysis Method:	SM 4500-NH3 G		
Prep Method:	Method		

		Matrix Spike K1502403-006MS			**Duplicate Matrix Spike** K1502403-006DMS					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Ammonia as Nitrogen	0.03 J	2.01	2.00	99	2.08	2.00	102	90-110	3	20

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ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502414
Project:	Sentinel Well Program	**Date Analyzed:**	03/17/15
Sample Matrix:	Drinking Water	**Date Extracted:**	03/17/15

Lab Control Sample Summary
Ammonia as Nitrogen

Analysis Method:	SM 4500-NH3 G	**Units:**	mg/L
Prep Method:	Method	**Basis:**	NA
		Analysis Lot:	436692

Sample Name	Lab Code	Result	Spike Amount	% Rec	% Rec Limits
Lab Control Sample	K1502414-LCS	14.5	15.4	94	90-110

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client:	Longview, City of	**Service Request:**	K1502414
Project:	Sentinel Well Program	**Date Collected:**	03/10/15
Sample Matrix:	Drinking Water	**Date Received:**	03/10/15
Analysis Method:	SM 4500-P E	**Units:**	mg/L
Prep Method:	None	**Basis:**	NA

Orthophosphate as Phosphorus

Sample Name	Lab Code	Result	MRL	Dil.	Date Analyzed	Q
DW-5	K1502414-001	**0.471**	0.050	1	03/11/15 11:44	
Method Blank	K1502414-MB1	ND U	0.050	1	03/11/15 11:44	

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502414
Project	Sentinel Well Program	**Date Collected:**	NA
Sample Matrix:	Drinking Water	**Date Received:**	NA
		Date Analyzed:	03/11/15

Replicate Sample Summary
General Chemistry Parameters

Sample Name:	Batch QC	**Units:**	mg/L
Lab Code:	K1502415-001	**Basis:**	NA

Analyte Name	Analysis Method	MRL	Sample Result	Duplicate Sample K1502415-001DUP Result	Average	RPD	RPD Limit
Orthophosphate as Phosphorus	SM 4500-P E	0.050	0.340	0.347	0.344	2	20

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ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502414
Project:	Sentinel Well Program	**Date Collected:**	N/A
Sample Matrix:	Drinking Water	**Date Received:**	N/A
		Date Analyzed:	03/11/15
		Date Extracted:	NA

Duplicate Matrix Spike Summary
Orthophosphate as Phosphorus

Sample Name:	Batch QC	**Units:**	mg/L
Lab Code:	K1502415-001	**Basis:**	NA
Analysis Method:	SM 4500-P E		
Prep Method:	None		

		Matrix Spike K1502415-001MS			Duplicate Matrix Spike K1502415-001DMS					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Orthophosphate as Phosphorus	0.340	0.58	0.20	118	0.57	0.20	117	75-125	<1	20

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ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502414
Project:	Sentinel Well Program	**Date Analyzed:**	03/11/15
Sample Matrix:	Drinking Water	**Date Extracted:**	NA

Lab Control Sample Summary
Orthophosphate as Phosphorus

Analysis Method:	SM 4500-P E	**Units:**	mg/L
Prep Method:	None	**Basis:**	NA
		Analysis Lot:	435833

Sample Name	Lab Code	Result	Spike Amount	% Rec	% Rec Limits
Lab Control Sample	K1502414-LCS	6.04	6.1	99	85-115

ALS Group USA, Corp.
dba ALS Environmental
Analytical Report

Client:	Longview, City of	**Service Request:**	K1502414
Project:	Sentinel Well Program	**Date Collected:**	3/10/2015
Sample Matrix:	Drinking water	**Date Received:**	3/10/2015

Colilert, E. Coli

Prep Method: NONE
Analysis Method: SM 9223B Basis: NA
Test Notes:

Sample Name	Lab Code	MRL	Date Analyzed	Time Test Started		Result	Result Notes
DW-5	K1502414-001	1	3/11/2015	09:20	hrs	Absent	

SM *Standard Methods for the Examination of Water and Wastewater* , 20th Ed., 1998.

ALS Group USA, Corp.
dba ALS Environmental
Analytical Report

Client:	Longview, City of	**Service Request:**	K1502414
Project:	Sentinel Well Program	**Date Collected:**	3/10/2015
Sample Matrix:	Drinking water	**Date Received:**	3/10/2015

Colilert, T. Coli

Prep Method: NONE
Analysis Method: SM 9223B Basis: NA
Test Notes:

Sample Name	Lab Code	MRL	Date Analyzed	Time Test Started		Result	Result Notes
DW-5	K1502414-001	1	3/11/2015	09:20	hrs	Absent	

SM *Standard Methods for the Examination of Water and Wastewater* , 20th Ed., 1998.

Metals

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Analytical Report

Client:	Longview, City of	**Service Request:**	K1502414
Project:	Sentinel Well Program	**Date Collected:**	03/10/15
Sample Matrix:	Drinking water	**Date Received:**	03/10/15

Hardness as CaCO3

Prep Method:	CLAA	Units:	mg/L (ppm)
Analysis Method:	200.7/SM 2340B	Basis:	NA
Test Notes:			

Sample Name	Lab Code	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
DW-5	K1502414-001	0.07	1	03/13/15	03/16/15	149	
Method Blank	K1502414-MB	0.07	1	03/13/15	03/16/15	ND	

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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502414
Project:	Sentinel Well Program	**Date Collected:**	NA
Sample Matrix:	Drinking water	**Date Received:**	NA
		Date Extracted:	03/13/15
		Date Analyzed:	03/16/15

Duplicate Summary
Metals

Sample Name:	Batch QC	Units:	mg/L (ppm)
Lab Code:	K1502415-001D	Basis:	NA
Test Notes:			

Analyte	Prep Method	Analysis Method	MRL	Sample Result	Duplicate Sample Result	Average	Relative Percent Difference	Result Notes
Hardness as CaCO3	CLAA	200.7/SM 2340B	0.07	245	247	246	<1	

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Analytical Report

Client:	Longview, City of	**Service Request:**	K1502414
Project:	Sentinel Well Program	**Date Collected:**	03/10/15
Sample Matrix:	Drinking water	**Date Received:**	03/10/15

Methyl Mercury

Prep Method:	Method	Units:	ng/L
Analysis Method:	1630	Basis:	NA
Test Notes:			

Sample Name	Lab Code	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
DW-5	K1502414-001	0.1	1	03/16/15	03/17/15	ND	
Method Blank 1	K1502414-MB1	0.1	1	03/16/15	03/17/15	ND	
Method Blank 2	K1502414-MB2	0.1	1	03/16/15	03/17/15	ND	
Method Blank 3	K1502414-MB3	0.1	1	03/16/15	03/17/15	ND	

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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502414
Project:	Sentinel Well Program	**Date Collected:**	NA
Sample Matrix:	Drinking water	**Date Received:**	NA
		Date Extracted:	03/16/15
		Date Analyzed:	03/17/15

Matrix Spike/Duplicate Matrix Spike Summary
Metals

Sample Name:	Batch QC		Units:	ng/L
Lab Code:	K1502365-001MS,	K1502365-001MS	Basis:	NA
Test Notes:				

									Percent Recovery				
				Spike Level			Spike Result				CAS	Relative	
Analyte	**Prep Method**	**Analysis Method**	**MRL**	**MS**	**DMS**	**Sample Result**	**MS**	**DMS**	**MS**	**DMS**	**Acceptance Limits**	**Percent Difference**	**Result Notes**
Mercury, Methyl	Method	1630	0.1	2.22	2.22	ND	2.50	2.43	113	109	65-135	3	

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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502414
Project:	Sentinel Well Program	**Date Collected:**	NA
LCS Matrix:	Water	**Date Received:**	NA
		Date Extracted:	03/16/15
		Date Analyzed:	03/17/15

Ongoing Precision and Recovery (OPR) Sample Summary
Metals

Sample Name: Ongoing Precision and Recovery (Initial)

Units: ng/L
Basis: NA

Test Notes:

Analyte	Prep Method	Analysis Method	True Value	Result	Percent Recovery	CAS Percent Recovery Acceptance Limits	Result Notes
Mercury, Methyl	Method	1630	2.22	2.56	115	67-133	

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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502414
Project:	Sentinel Well Program	**Date Collected:**	NA
LCS Matrix:	Water	**Date Received:**	NA
		Date Extracted:	03/16/15
		Date Analyzed:	03/17/15

Ongoing Precision and Recovery (OPR) Sample Summary
Metals

Sample Name: Ongoing Precision and Recovery (Final)

Units: ng/L
Basis: NA

Test Notes:

Analyte	Prep Method	Analysis Method	True Value	Result	Percent Recovery	CAS Percent Recovery Acceptance Limits	Result Notes
Mercury, Methyl	Method	1630	2.22	2.19	99	67-133	

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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502414
Project:	Sentinel Well Program	**Date Collected:**	NA
LCS Matrix:	Water	**Date Received:**	NA
		Date Extracted:	03/16/15
		Date Analyzed:	03/17/15

Quality Control Sample (QCS) Summary
Metals

Sample Name: Quality Control Sample

Units: pg
Basis: NA

Test Notes:

Analyte	Prep Method	Analysis Method	True Value	Result	Percent Recovery	CAS Percent Recovery Acceptance Limits	Result Notes
Mercury, Methyl	Method	1630	100	109	109	67-133	

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Analytical Report

Client :	Longview, City of	**Service Request :**	K1502414
Project Name :	Sentinel Well Program	**Date Collected :**	03/10/15
Project No. :	NA	**Date Received :**	03/10/15
Matrix :	Drinking Water	**Date Extracted :**	03/11-13/15

Total Metals

Sample Name :	DW-5	**Units :**	mg/L (ppm)
Lab Code :	K1502414-001	**Basis :**	NA

Analyte	Analysis Method	MRL	Date Analyzed	Sample Result	Result Notes
Antimony	200.8	0.00005	03/19/15	ND	
Arsenic	200.8	0.0005	03/19/15	0.0061	
Barium	200.7	0.004	03/16/15	0.015	
Beryllium	200.8	0.00002	03/19/15	ND	
Cadmium	200.8	0.00002	03/19/15	ND	
Chromium	200.8	0.0002	03/19/15	ND	
Copper	200.7	0.004	03/16/15	ND	
Iron	200.7	0.02	03/16/15	0.34	
Lead	200.8	0.00002	03/19/15	ND	
Manganese	200.7	0.001	03/16/15	0.334	
Mercury	245.1	0.0002	03/12/15	ND	
Nickel	200.8	0.0002	03/19/15	0.0004	
Selenium	200.8	0.001	03/19/15	ND	
Silver	200.8	0.00002	03/19/15	ND	
Sodium	200.7	0.2	03/16/15	14.0	
Thallium	200.8	0.00002	03/19/15	0.00002	
Zinc	200.7	0.004	03/16/15	ND	

Comments:

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Analytical Report

Client :	Longview, City of	**Service Request :**	K1502414
Project Name :	Sentinel Well Program	**Date Collected :**	NA
Project No. :	NA	**Date Received :**	NA
Matrix :	Drinking Water	**Date Extracted :**	03/13/15

Total Metals

Sample Name :	Method Blank	**Units :**	mg/L (ppm)
Lab Code :	KQ1502195-01	**Basis :**	NA

Analyte	Analysis Method	MRL	Date Analyzed	Sample Result	Result Notes
Barium	200.7	0.004	03/16/15	ND	
Copper	200.7	0.004	03/16/15	ND	
Iron	200.7	0.02	03/16/15	ND	
Manganese	200.7	0.001	03/16/15	ND	
Sodium	200.7	0.2	03/16/15	ND	
Zinc	200.7	0.004	03/16/15	ND	

Comments:

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Analytical Report

Client :	Longview, City of	**Service Request :**	K1502414
Project Name :	Sentinel Well Program	**Date Collected :**	NA
Project No. :	NA	**Date Received :**	NA
Matrix :	Drinking Water	**Date Extracted :**	03/11/15

Total Metals

Sample Name :	Method Blank	**Units :**	mg/L (ppm)
Lab Code :	KQ1502275-03	**Basis :**	NA

Analyte	Analysis Method	MRL	Date Analyzed	Sample Result	Result Notes
Mercury	245.1	0.0002	03/12/15	ND	

Comments:

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Analytical Report

Client :	Longview, City of	**Service Request :**	K1502414
Project Name :	Sentinel Well Program	**Date Collected :**	NA
Project No. :	NA	**Date Received :**	NA
Matrix :	Drinking Water	**Date Extracted :**	03/13/15

Total Metals

Sample Name :	Method Blank	**Units :**	mg/L (ppm)
Lab Code :	KQ1502374-01	**Basis :**	NA

Analyte	Analysis Method	MRL	Date Analyzed	Sample Result	Result Notes
Antimony	200.8	0.00005	03/19/15	ND	
Arsenic	200.8	0.0005	03/19/15	ND	
Beryllium	200.8	0.00002	03/19/15	ND	
Cadmium	200.8	0.00002	03/19/15	ND	
Chromium	200.8	0.0002	03/19/15	ND	
Lead	200.8	0.00002	03/19/15	ND	
Nickel	200.8	0.0002	03/19/15	ND	
Selenium	200.8	0.001	03/19/15	ND	
Silver	200.8	0.00002	03/19/15	ND	
Thallium	200.8	0.00002	03/19/15	ND	

Comments:

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QA/QC Report

Client :	Longview, City of	**Service Request :**	K1502414
Project Name :	Sentinel Well Program	**Date Collected :**	NA
Project No. :	NA	**Date Received :**	NA
Matrix :	Drinking Water	**Date Extracted :**	03/11-13/15
		Date Analyzed :	03/12-19/15

Duplicate Summary
Total Metals

Sample Name :	Batch QC	**Units :**	mg/L (ppm)
Lab Code :	K1502415-001D	**Basis :**	NA

Analyte	Analysis Method	MRL	Sample Result	Duplicate Sample Result	Average	Relative Percent Difference	Result Notes
Antimony	200.8	0.00005	ND	ND	ND	-	
Arsenic	200.8	0.0005	0.0048	0.0049	0.0048	2	
Barium	200.7	0.004	0.030	0.030	0.030	<1	
Beryllium	200.8	0.00002	ND	ND	ND	-	
Cadmium	200.8	0.00002	ND	ND	ND	-	
Chromium	200.8	0.0002	ND	ND	ND	-	
Copper	200.7	0.004	ND	ND	ND	-	
Iron	200.7	0.02	1.02	1.04	1.03	2	
Lead	200.8	0.00002	ND	ND	ND	-	
Manganese	200.7	0.001	0.972	0.983	0.978	1	
Mercury	245.1	0.0002	ND	ND	ND	-	
Nickel	200.8	0.0002	0.0006	0.0006	0.0006	<1	
Selenium	200.8	0.001	ND	ND	ND	-	
Silver	200.8	0.00002	ND	ND	ND	-	
Sodium	200.7	0.2	17.0	17.2	17.1	1	
Thallium	200.8	0.00002	0.00002	0.00002	0.00002	<1	
Zinc	200.7	0.004	ND	ND	ND	-	

Comments:

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QA/QC Report

Client :	Longview, City of	**Service Request :**	K1502414
Project Name :	Sentinel Well Program	**Date Collected :**	NA
Project No. :	NA	**Date Received :**	NA
Matrix :	Drinking Water	**Date Extracted :**	03/11-13/15
		Date Analyzed :	03/12-19/15

Matrix Spike Summary
Total Metals

Sample Name :	Batch QC	**Units :**	mg/L (ppm)
Lab Code :	K1502415-001S	**Basis :**	NA

Analyte	MRL	Spike Level	Sample Result	Spiked Sample Result	Percent Recovery	ALS Percent Recovery Acceptance Limits	Result Notes
Antimony	0.00005	0.050	ND	0.0520	104	70-130	
Arsenic	0.0005	0.050	0.0048	0.0535	97	70-130	
Barium	0.004	1.00	0.030	1.0	97	70-130	
Beryllium	0.00002	0.0025	ND	0.00239	96	70-130	
Cadmium	0.00002	0.025	ND	0.0252	101	70-130	
Chromium	0.0002	0.010	ND	0.0092	92	70-130	
Copper	0.004	0.25	ND	0.232	93	70-130	
Iron	0.02	1.00	1.02	1.97	95	70-130	
Lead	0.00002	0.050	ND	0.0483	97	70-130	
Manganese	0.001	0.50	0.972	1.42	90	70-130	
Mercury	0.0002	0.0050	ND	0.005	100	70-130	
Nickel	0.0002	0.025	0.0006	0.0233	91	70-130	
Selenium	0.001	0.050	ND	0.050	100	70-130	
Silver	0.00002	0.013	ND	0.0120	96	70-130	
Sodium	0.2	10.0	17.0	26.0	90	70-130	
Thallium	0.00002	0.050	0.00002	0.0500	100	70-130	
Zinc	0.004	0.50	ND	0.458	92	70-130	

Comments:

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QA/QC Report

Client :	Longview, City of	**Service Request :**	K1502414
Project Name :	Sentinel Well Program	**Date Collected :**	NA
Project No. :	NA	**Date Received :**	NA
Matrix :	Drinking Water	**Date Extracted :**	03/11-13/15
		Date Analyzed :	03/12-19/15

Laboratory Control Sample Summary
Total Metals

Sample Name :	Laboratory Control Sample	**Units :**	mg/L (ppm)
Lab Code :	K1502414-LCS	**Basis :**	NA

Analyte	Analysis Method	True Value	Result	Percent	ALS Percent Recovery Acceptance Limits	Result Notes
Antimony	200.8	0.050	0.0511	102	85-115	
Arsenic	200.8	0.050	0.0485	97	85-115	
Barium	200.7	5.00	5.08	102	85-115	
Beryllium	200.8	0.0025	0.00244	97	85-115	
Cadmium	200.8	0.025	0.0250	100	85-115	
Chromium	200.8	0.010	0.0097	97	85-115	
Copper	200.7	0.63	0.611	98	85-115	
Iron	200.7	2.50	2.54	102	85-115	
Lead	200.8	0.050	0.0487	97	85-115	
Manganese	200.7	1.25	1.28	102	85-115	
Mercury	245.1	0.0050	0.005	100	85-115	
Nickel	200.8	0.025	0.0243	97	85-115	
Selenium	200.8	0.050	0.050	100	85-115	
Silver	200.8	0.013	0.0123	98	85-115	
Sodium	200.7	12.5	12.8	103	85-115	
Thallium	200.8	0.050	0.0500	100	85-115	
Zinc	200.7	1.25	1.21	97	85-115	

Comments:

EPA Method 504.1

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Analytical Results

Client:	Longview, City of	**Service Request:**	K1502414
Project:	Sentinel Well Program	**Date Collected:**	03/10/2015
Sample Matrix:	Drinking water	**Date Received:**	03/10/2015

EPA Method 504.1

Sample Name:	DW-5	**Units:**	ug/L
Lab Code:	K1502414-001	**Basis:**	NA
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	504.1		

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
1,2-Dibromoethane (EDB)	ND	U	0.0096	1	03/16/15	03/17/15	KWG1502136	
1,2,3-Trichloropropane	ND	U	0.39	1	03/16/15	03/17/15	KWG1502136	
1,2-Dibromo-3-chloropropane (DBCP	ND	U	0.0096	1	03/16/15	03/17/15	KWG1502136	

Comments:

Analytical Results

Client:	Longview, City of	**Service Request:**	K1502414
Project:	Sentinel Well Program	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA

EPA Method 504.1

Sample Name:	Method Blank	**Units:**	ug/L
Lab Code:	KWG1502136-7	**Basis:**	NA
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	504.1		

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
1,2-Dibromoethane (EDB)	ND	U	0.0099	1	03/16/15	03/16/15	KWG1502136	
1,2,3-Trichloropropane	ND	U	0.40	1	03/16/15	03/16/15	KWG1502136	
1,2-Dibromo-3-chloropropane (DBCP	ND	U	0.0099	1	03/16/15	03/16/15	KWG1502136	

Comments:

Client:	Longview, City of	**Service Request:**	K1502414
Project:	Sentinel Well Program	**Date Extracted:**	03/16/2015
Sample Matrix:	Water	**Date Analyzed:**	03/16/2015

Matrix Spike/Duplicate Matrix Spike Summary
EPA Method 504.1

Sample Name:	Batch QC	**Units:**	ug/L
Lab Code:	K1502111-002	**Basis:**	NA
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	504.1	**Extraction Lot:**	KWG1502136

		Batch QCMS KWG1502136-1 Matrix Spike			Batch QCDMS KWG1502136-2 Duplicate Matrix Spike					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**%Rec**	**Result**	**Spike Amount**	**%Rec**	**%Rec Limits**	**RPD**	**RPD Limit**
1,2-Dibromoethane (EDB)	ND	0.194	0.240	81	0.211	0.243	87	65-135	8	30
1,2,3-Trichloropropane	ND	0.178	0.240	74	0.195	0.243	80	65-135	9	30
1,2-Dibromo-3-chloropropane (DBCP)	ND	0.182	0.240	76	0.204	0.243	84	65-135	12	30

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502414
Project:	Sentinel Well Program	**Date Extracted:**	03/16/2015
Sample Matrix:	Drinking water	**Date Analyzed:**	03/17/2015

Matrix Spike/Duplicate Matrix Spike Summary
EPA Method 504.1

Sample Name:	Batch QC	**Units:**	ug/L
Lab Code:	K1502415-001	**Basis:**	NA
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	504.1	**Extraction Lot:**	KWG1502136

		Batch QCMS KWG1502136-3 Matrix Spike			Batch QCDMS KWG1502136-4 Duplicate Matrix Spike					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**%Rec**	**Result**	**Spike Amount**	**%Rec**	**%Rec Limits**	**RPD**	**RPD Limit**
1,2-Dibromoethane (EDB)	ND	0.215	0.242	89	0.211	0.239	88	65-135	2	30
1,2,3-Trichloropropane	ND	0.209	0.242	87	0.208	0.239	87	65-135	1	30
1,2-Dibromo-3-chloropropane (DBCP)	ND	0.222	0.242	92	0.215	0.239	90	65-135	3	30

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Client:	Longview, City of	**Service Request:**	K1502414
Project:	Sentinel Well Program	**Date Extracted:**	03/16/2015
Sample Matrix:	Water	**Date Analyzed:**	03/16/2015

Lab Control Spike Summary
EPA Method 504.1

Extraction Method:	METHOD	**Units:**	ug/L
Analysis Method:	504.1	**Basis:**	NA
		Level:	Low
		Extraction Lot:	KWG1502136

	Lab Control Sample KWG1502136-5 Lab Control Spike			
Analyte Name	**Result**	**Spike Amount**	**%Rec**	**%Rec Limits**
1,2-Dibromoethane (EDB)	0.233	0.250	93	70-130
1,2,3-Trichloropropane	0.225	0.250	90	70-130
1,2-Dibromo-3-chloropropane (DBCP)	0.237	0.250	95	70-130

Results flagged with an asterisk (*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Client:	Longview, City of	**Service Request:**	K1502414
Project:	Sentinel Well Program	**Date Extracted:**	03/16/2015
Sample Matrix:	Water	**Date Analyzed:**	03/16/2015

Lab Control Spike Summary
EPA Method 504.1

Extraction Method:	METHOD	**Units:**	ug/L
Analysis Method:	504.1	**Basis:**	NA
		Level:	Low
		Extraction Lot:	KWG1502136

	Lab Control Sample KWG1502136-6 Lab Control Spike			
Analyte Name	**Result**	**Spike Amount**	**%Rec**	**%Rec Limits**
1,2-Dibromoethane (EDB)	0.231	0.250	92	70-130
1,2,3-Trichloropropane	0.220	0.250	88	70-130
1,2-Dibromo-3-chloropropane (DBCP)	0.231	0.250	92	70-130

Results flagged with an asterisk (*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Pesticides/PCBs by EPA Method 508.1

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Analytical Results

Client:	Longview, City of	**Service Request:**	K1502414
Project:	Sentinel Well Program	**Date Collected:**	03/10/2015
Sample Matrix:	Drinking water	**Date Received:**	03/10/2015

Pesticides/PCBs by EPA Method 508.1

Sample Name:	DW-5	**Units:**	ug/L
Lab Code:	K1502414-001	**Basis:**	NA
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	508.1		

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
gamma-BHC (Lindane)	ND	U	0.0098	1	03/23/15	03/24/15	KWG1502390	
Heptachlor	ND	U	0.0098	1	03/23/15	03/24/15	KWG1502390	
Aldrin	ND	U	0.0098	1	03/23/15	03/24/15	KWG1502390	
Heptachlor Epoxide	ND	U	0.0098	1	03/23/15	03/24/15	KWG1502390	
Heptachlor Epoxide (Isomer A)	ND	U	0.0098	1	03/23/15	03/24/15	KWG1502390	
4,4'-DDE	ND	U	0.0098	1	03/23/15	03/24/15	KWG1502390	
Dieldrin	ND	U	0.0098	1	03/23/15	03/24/15	KWG1502390	
Endrin	ND	U	0.0098	1	03/23/15	03/24/15	KWG1502390	
4,4'-DDD	ND	U	0.0098	1	03/23/15	03/24/15	KWG1502390	
4,4'-DDT	ND	U	0.0098	1	03/23/15	03/24/15	KWG1502390	
Methoxychlor	ND	U	0.0098	1	03/23/15	03/24/15	KWG1502390	
Toxaphene	ND	U	0.098	1	03/23/15	03/24/15	KWG1502390	
Chlordane	ND	U	0.098	1	03/23/15	03/24/15	KWG1502390	
Aroclor 1016	ND	U	0.049	1	03/23/15	03/24/15	KWG1502390	
Aroclor 1221	ND	U	0.098	1	03/23/15	03/24/15	KWG1502390	
Aroclor 1232	ND	U	0.098	1	03/23/15	03/24/15	KWG1502390	
Aroclor 1242	ND	U	0.098	1	03/23/15	03/24/15	KWG1502390	
Aroclor 1248	ND	U	0.098	1	03/23/15	03/24/15	KWG1502390	
Aroclor 1254	ND	U	0.098	1	03/23/15	03/24/15	KWG1502390	
Aroclor 1260	ND	U	0.098	1	03/23/15	03/24/15	KWG1502390	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
4,4'-Dibromooctafluorobiphenyl	97	70-130	03/24/15	Acceptable

Comments:

ALS Group USA, Corp. dba ALS Environmental

Analytical Results

Client:	Longview, City of	**Service Request:**	K1502414
Project:	Sentinel Well Program	**Date Collected:**	NA
Sample Matrix:	Drinking water	**Date Received:**	NA

Pesticides/PCBs by EPA Method 508.1

Sample Name:	Method Blank	**Units:**	ug/L
Lab Code:	KWG1502390-7	**Basis:**	NA
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	508.1		

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
gamma-BHC (Lindane)	ND	U	0.010	1	03/23/15	03/24/15	KWG1502390	
Heptachlor	ND	U	0.010	1	03/23/15	03/24/15	KWG1502390	
Aldrin	ND	U	0.010	1	03/23/15	03/24/15	KWG1502390	
Heptachlor Epoxide	ND	U	0.010	1	03/23/15	03/24/15	KWG1502390	
Heptachlor Epoxide (Isomer A)	ND	U	0.010	1	03/23/15	03/24/15	KWG1502390	
4,4'-DDE	ND	U	0.010	1	03/23/15	03/24/15	KWG1502390	
Dieldrin	ND	U	0.010	1	03/23/15	03/24/15	KWG1502390	
Endrin	ND	U	0.010	1	03/23/15	03/24/15	KWG1502390	
4,4'-DDD	ND	U	0.010	1	03/23/15	03/24/15	KWG1502390	
4,4'-DDT	ND	U	0.010	1	03/23/15	03/24/15	KWG1502390	
Methoxychlor	ND	U	0.010	1	03/23/15	03/24/15	KWG1502390	
Toxaphene	ND	U	0.10	1	03/23/15	03/24/15	KWG1502390	
Chlordane	ND	U	0.10	1	03/23/15	03/24/15	KWG1502390	
Aroclor 1016	ND	U	0.050	1	03/23/15	03/24/15	KWG1502390	
Aroclor 1221	ND	U	0.10	1	03/23/15	03/24/15	KWG1502390	
Aroclor 1232	ND	U	0.10	1	03/23/15	03/24/15	KWG1502390	
Aroclor 1242	ND	U	0.10	1	03/23/15	03/24/15	KWG1502390	
Aroclor 1248	ND	U	0.10	1	03/23/15	03/24/15	KWG1502390	
Aroclor 1254	ND	U	0.10	1	03/23/15	03/24/15	KWG1502390	
Aroclor 1260	ND	U	0.10	1	03/23/15	03/24/15	KWG1502390	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
4,4'-Dibromooctafluorobiphenyl	100	70-130	03/24/15	Acceptable

Comments:

Client: Longview, City of
Project: Sentinel Well Program
Sample Matrix: Drinking water

Service Request: K1502414

Surrogate Recovery Summary
Pesticides/PCBs by EPA Method 508.1

Extraction Method: METHOD
Analysis Method: 508.1

Units: Percent
Level: Low

Sample Name	Lab Code	Sur1
DW-5	K1502414-001	97
Batch QC	K1502415-001	102
Method Blank	KWG1502390-7	100
Batch QCMS	KWG1502390-4	89
Batch QCDMS	KWG1502390-5	89
Lab Control Sample	KWG1502390-6	90

Surrogate Recovery Control Limits (%)

Sur1 = 4,4'-Dibromooctafluorobiphenyl 70-130

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502414
Project:	Sentinel Well Program	**Date Extracted:**	03/23/2015
Sample Matrix:	Drinking water	**Date Analyzed:**	03/24/2015

Matrix Spike/Duplicate Matrix Spike Summary
Pesticides/PCBs by EPA Method 508.1

Sample Name:	Batch QC	**Units:**	ug/L
Lab Code:	K1502415-001	**Basis:**	NA
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	508.1	**Extraction Lot:**	KWG1502390

		Batch QCMS KWG1502390-4 Matrix Spike			Batch QCDMS KWG1502390-5 Duplicate Matrix Spike					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**%Rec**	**Result**	**Spike Amount**	**%Rec**	**%Rec Limits**	**RPD**	**RPD Limit**
gamma-BHC (Lindane)	ND	0.101	0.0971	104	0.101	0.0971	104	65-135	0	30
Heptachlor	ND	0.0824	0.0971	85	0.0795	0.0971	82	65-135	4	30
Aldrin	ND	0.0919	0.0971	95	0.0897	0.0971	92	65-135	2	30
Heptachlor Epoxide	ND	0.102	0.0971	105	0.0983	0.0971	101	65-135	3	30
Heptachlor Epoxide (Isomer A)	ND	0.0964	0.0971	99	0.0938	0.0971	97	65-135	3	30
4,4'-DDE	ND	0.108	0.0971	112	0.106	0.0971	109	65-135	2	30
Dieldrin	ND	0.0968	0.0971	100	0.0942	0.0971	97	65-135	3	30
Endrin	ND	0.0681	0.0971	70	0.0620	0.0971	64 *	65-135	9	30
4,4'-DDD	ND	0.114	0.0971	118	0.113	0.0971	116	65-135	1	30
4,4'-DDT	ND	0.113	0.0971	116	0.111	0.0971	115	65-135	1	30
Methoxychlor	ND	0.114	0.0971	118	0.114	0.0971	118	65-135	0	30
Aroclor 1248	ND	0.336	0.485	69	0.336	0.485	69	65-135	0	30

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Client:	Longview, City of	**Service Request:**	K1502414
Project:	Sentinel Well Program	**Date Extracted:**	03/23/2015
Sample Matrix:	Drinking water	**Date Analyzed:**	03/24/2015

Lab Control Spike Summary
Pesticides/PCBs by EPA Method 508.1

Extraction Method:	METHOD	**Units:**	ug/L
Analysis Method:	508.1	**Basis:**	NA
		Level:	Low
		Extraction Lot:	KWG1502390

	Lab Control Sample KWG1502390-6 Lab Control Spike			
Analyte Name	**Result**	**Spike Amount**	**%Rec**	**%Rec Limits**
gamma-BHC (Lindane)	0.107	0.100	107	70-130
Heptachlor	0.0961	0.100	96	70-130
Aldrin	0.0900	0.100	90	70-130
Heptachlor Epoxide	0.103	0.100	103	70-130
Heptachlor Epoxide (Isomer A)	0.106	0.100	106	70-130
4,4'-DDE	0.107	0.100	107	70-130
Dieldrin	0.112	0.100	112	70-130
Endrin	0.113	0.100	113	70-130
4,4'-DDD	0.115	0.100	115	70-130
4,4'-DDT	0.108	0.100	108	70-130
Methoxychlor	0.112	0.100	112	70-130
Aroclor 1248	0.394	0.500	79	70-130

Results flagged with an asterisk (*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Chlorinated Herbicides by EPA 515.4

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

Analytical Results

Client:	Longview, City of	**Service Request:**	K1502414
Project:	Sentinel Well Program	**Date Collected:**	03/10/2015
Sample Matrix:	Drinking water	**Date Received:**	03/10/2015

Chlorinated Herbicides by EPA 515.4

Sample Name:	DW-5	**Units:**	ug/L
Lab Code:	K1502414-001	**Basis:**	NA
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	515.4		

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Dalapon	ND	U	1.0	1	03/17/15	03/24/15	KWG1502203	
3,5-Dichlorobenzoic Acid	ND	U	0.50	1	03/17/15	03/24/15	KWG1502203	
Dicamba	ND	U	0.20	1	03/17/15	03/24/15	KWG1502203	
Dichlorprop	ND	U	0.50	1	03/17/15	03/24/15	KWG1502203	
2,4-D	ND	U	0.10	1	03/17/15	03/24/15	KWG1502203	
Pentachlorophenol	ND	U	0.040	1	03/17/15	03/24/15	KWG1502203	
2,4,5-TP (Silvex)	ND	U	0.20	1	03/17/15	03/24/15	KWG1502203	
Chloramben	ND	U	0.20	1	03/17/15	03/24/15	KWG1502203	
2,4-DB	ND	U	1.0	1	03/17/15	03/24/15	KWG1502203	
Dinoseb	ND	U	0.20	1	03/17/15	03/24/15	KWG1502203	
Dacthal Diacid	ND	U	0.020	1	03/17/15	03/24/15	KWG1502203	
Picloram	ND	U	0.10	1	03/17/15	03/24/15	KWG1502203	
Acifluorfen	ND	U	2.0	1	03/17/15	03/24/15	KWG1502203	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
2,4-Dichlorophenylacetic Acid	113	70-130	03/24/15	Acceptable

Comments:

ALS Group USA, Corp. dba ALS Environmental

Analytical Results

Client:	Longview, City of	**Service Request:**	K1502414
Project:	Sentinel Well Program	**Date Collected:**	NA
Sample Matrix:	Drinking water	**Date Received:**	NA

Chlorinated Herbicides by EPA 515.4

Sample Name:	Method Blank	**Units:**	ug/L
Lab Code:	KWG1502203-4	**Basis:**	NA
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	515.4		

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Dalapon	ND	U	1.0	1	03/17/15	03/24/15	KWG1502203	
3,5-Dichlorobenzoic Acid	ND	U	0.50	1	03/17/15	03/24/15	KWG1502203	
Dicamba	ND	U	0.20	1	03/17/15	03/24/15	KWG1502203	
Dichlorprop	ND	U	0.50	1	03/17/15	03/24/15	KWG1502203	
2,4-D	ND	U	0.10	1	03/17/15	03/24/15	KWG1502203	
Pentachlorophenol	ND	U	0.040	1	03/17/15	03/24/15	KWG1502203	
2,4,5-TP (Silvex)	ND	U	0.20	1	03/17/15	03/24/15	KWG1502203	
Chloramben	ND	U	0.20	1	03/17/15	03/24/15	KWG1502203	
2,4-DB	ND	U	1.0	1	03/17/15	03/24/15	KWG1502203	
Dinoseb	ND	U	0.20	1	03/17/15	03/24/15	KWG1502203	
Dacthal Diacid	ND	U	0.020	1	03/17/15	03/24/15	KWG1502203	
Picloram	ND	U	0.10	1	03/17/15	03/24/15	KWG1502203	
Acifluorfen	ND	U	2.0	1	03/17/15	03/24/15	KWG1502203	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
2,4-Dichlorophenylacetic Acid	86	70-130	03/24/15	Acceptable

Comments:

Client: Longview, City of
Project: Sentinel Well Program
Sample Matrix: Drinking water

Service Request: K1502414

Surrogate Recovery Summary
Chlorinated Herbicides by EPA 515.4

Extraction Method: METHOD
Analysis Method: 515.4

Units: Percent
Level: Low

Sample Name	Lab Code	Sur1
DW-5	K1502414-001	113
Batch QC	K1502415-001	114
Method Blank	KWG1502203-4	86
Batch QCMS	KWG1502203-1	126
Batch QCDMS	KWG1502203-2	121
Lab Control Sample	KWG1502203-3	97

Surrogate Recovery Control Limits (%)

Sur1 = 2,4-Dichlorophenylacetic Acid 70-130

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502414
Project:	Sentinel Well Program	**Date Extracted:**	03/17/2015
Sample Matrix:	Drinking water	**Date Analyzed:**	03/24/2015

Matrix Spike/Duplicate Matrix Spike Summary
Chlorinated Herbicides by EPA 515.4

Sample Name:	Batch QC	**Units:**	ug/L
Lab Code:	K1502415-001	**Basis:**	NA
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	515.4	**Extraction Lot:**	KWG1502203

		Batch QCMS KWG1502203-1 Matrix Spike			Batch QCDMS KWG1502203-2 Duplicate Matrix Spike					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**%Rec**	**Result**	**Spike Amount**	**%Rec**	**%Rec Limits**	**RPD**	**RPD Limit**
Dalapon	ND	4.28	4.98	86	4.31	4.97	87	70-130	1	30
3,5-Dichlorobenzoic Acid	ND	4.86	4.98	98	4.86	4.97	98	70-130	0	30
Dicamba	ND	5.19	4.98	104	5.16	4.97	104	70-130	1	30
Dichlorprop	ND	5.11	4.98	103	5.03	4.97	101	70-130	2	30
2,4-D	ND	5.13	4.98	103	5.08	4.97	102	70-130	1	30
Pentachlorophenol	ND	5.12	4.98	103	5.08	4.97	102	70-130	1	30
2,4,5-TP (Silvex)	ND	4.78	4.98	96	4.74	4.97	95	70-130	1	30
Chloramben	ND	4.82	4.98	97	4.72	4.97	95	70-130	2	30
2,4-DB	ND	4.87	4.98	98	4.80	4.97	97	70-130	1	30
Dinoseb	ND	4.99	4.98	100	5.07	4.97	102	70-130	2	30
Dacthal Diacid	ND	5.99	4.98	120	6.03	4.97	121	70-130	1	30
Picloram	ND	5.45	4.98	109	5.38	4.97	108	70-130	1	30
Acifluorfen	ND	4.78	4.98	96	4.77	4.97	96	70-130	0	30

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Client:	Longview, City of	**Service Request:**	K1502414
Project:	Sentinel Well Program	**Date Extracted:**	03/17/2015
Sample Matrix:	Drinking water	**Date Analyzed:**	03/24/2015

Lab Control Spike Summary
Chlorinated Herbicides by EPA 515.4

Extraction Method:	METHOD	**Units:**	ug/L
Analysis Method:	515.4	**Basis:**	NA
		Level:	Low
		Extraction Lot:	KWG1502203

	Lab Control Sample KWG1502203-3 Lab Control Spike			
Analyte Name	**Result**	**Spike Amount**	**%Rec**	**%Rec Limits**
Dalapon	4.16	5.00	83	70-130
3,5-Dichlorobenzoic Acid	4.48	5.00	90	70-130
Dicamba	4.79	5.00	96	70-130
Dichlorprop	4.79	5.00	96	70-130
2,4-D	4.83	5.00	97	70-130
Pentachlorophenol	4.92	5.00	98	70-130
2,4,5-TP (Silvex)	4.64	5.00	93	70-130
Chloramben	5.14	5.00	103	70-130
2,4-DB	4.68	5.00	94	70-130
Dinoseb	4.85	5.00	97	70-130
Dacthal Diacid	4.85	5.00	97	70-130
Picloram	5.08	5.00	102	70-130
Acifluorfen	4.74	5.00	95	70-130

Results flagged with an asterisk (*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Volatile Organic Compounds

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

Analytical Results

Client:	Longview, City of	**Service Request:**	K1502414
Project:	Sentinel Well Program	**Date Collected:**	03/10/2015
Sample Matrix:	Drinking water	**Date Received:**	03/10/2015

Volatile Organic Compounds

Sample Name:	DW-5	**Units:**	ug/L
Lab Code:	K1502414-001	**Basis:**	NA
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	524.2		

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Dichlorodifluoromethane	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Chloromethane	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Vinyl Chloride	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Bromomethane	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Chloroethane	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Trichlorofluoromethane	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Methylene Chloride	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
trans-1,2-Dichloroethene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
1,1-Dichloroethene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
cis-1,2-Dichloroethene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Methyl tert-Butyl Ether	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Chloroform	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Bromochloromethane	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Carbon Tetrachloride	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Benzene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
1,2-Dichloroethane	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Trichloroethene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
1,2-Dichloropropane	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Bromodichloromethane	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Dibromomethane	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
cis-1,3-Dichloropropene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
1,1-Dichloroethane	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Toluene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
trans-1,3-Dichloropropene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Tetrachloroethene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
2,2-Dichloropropane	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
1,3-Dichloropropane	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Dibromochloromethane	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
1,2-Dibromoethane (EDB)	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Chlorobenzene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Ethylbenzene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Styrene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
m,p-Xylenes	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
o-Xylene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	

Comments:

Analytical Results

Client:	Longview, City of	**Service Request:**	K1502414
Project:	Sentinel Well Program	**Date Collected:**	03/10/2015
Sample Matrix:	Drinking water	**Date Received:**	03/10/2015

Volatile Organic Compounds

Sample Name:	DW-5	**Units:**	ug/L
Lab Code:	K1502414-001	**Basis:**	NA
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	524.2		

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
1,1,1-Trichloroethane	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Bromoform	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
1,1,2,2-Tetrachloroethane	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Isopropylbenzene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
1,1-Dichloropropene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Bromobenzene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
n-Propylbenzene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
1,3,5-Trimethylbenzene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
2-Chlorotoluene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
4-Chlorotoluene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
tert-Butylbenzene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
1,2,4-Trimethylbenzene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
sec-Butylbenzene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
p-Isopropyltoluene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
1,3-Dichlorobenzene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
1,4-Dichlorobenzene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
n-Butylbenzene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
1,2-Dichlorobenzene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
1,2-Dibromo-3-chloropropane (DBCP	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
1,2,4-Trichlorobenzene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Hexachlorobutadiene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Naphthalene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
1,1,2-Trichloroethane	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
1,1,1,2-Tetrachloroethane	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
1,2,3-Trichloropropane	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
1,2,3-Trichlorobenzene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
4-Bromofluorobenzene	92	70-130	03/17/15	Acceptable
Dibromofluoromethane	96	82-124	03/17/15	Acceptable
Toluene-d8	96	82-124	03/17/15	Acceptable

Comments:

Analytical Results

Client:	Longview, City of	**Service Request:**	K1502414
Project:	Sentinel Well Program	**Date Collected:**	NA
Sample Matrix:	Drinking water	**Date Received:**	NA

Volatile Organic Compounds

Sample Name:	Method Blank	**Units:**	ug/L
Lab Code:	KWG1502193-4	**Basis:**	NA
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	524.2		

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Dichlorodifluoromethane	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Chloromethane	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Vinyl Chloride	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Bromomethane	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Chloroethane	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Trichlorofluoromethane	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Methylene Chloride	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
trans-1,2-Dichloroethene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
1,1-Dichloroethene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
cis-1,2-Dichloroethene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Methyl tert-Butyl Ether	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Chloroform	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Bromochloromethane	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Carbon Tetrachloride	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Benzene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
1,2-Dichloroethane	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Trichloroethene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
1,2-Dichloropropane	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Bromodichloromethane	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Dibromomethane	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
cis-1,3-Dichloropropene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
1,1-Dichloroethane	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Toluene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
trans-1,3-Dichloropropene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Tetrachloroethene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
2,2-Dichloropropane	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
1,3-Dichloropropane	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Dibromochloromethane	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
1,2-Dibromoethane (EDB)	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Chlorobenzene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Ethylbenzene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Styrene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
m,p-Xylenes	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
o-Xylene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	

Comments:

Analytical Results

Client:	Longview, City of	**Service Request:**	K1502414
Project:	Sentinel Well Program	**Date Collected:**	NA
Sample Matrix:	Drinking water	**Date Received:**	NA

Volatile Organic Compounds

Sample Name:	Method Blank	**Units:**	ug/L
Lab Code:	KWG1502193-4	**Basis:**	NA
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	524.2		

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
1,1,1-Trichloroethane	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Bromoform	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
1,1,2,2-Tetrachloroethane	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Isopropylbenzene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
1,1-Dichloropropene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Bromobenzene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
n-Propylbenzene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
1,3,5-Trimethylbenzene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
2-Chlorotoluene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
4-Chlorotoluene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
tert-Butylbenzene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
1,2,4-Trimethylbenzene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
sec-Butylbenzene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
p-Isopropyltoluene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
1,3-Dichlorobenzene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
1,4-Dichlorobenzene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
n-Butylbenzene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
1,2-Dichlorobenzene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
1,2-Dibromo-3-chloropropane (DBCP	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
1,2,4-Trichlorobenzene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Hexachlorobutadiene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Naphthalene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
1,1,2-Trichloroethane	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
1,1,1,2-Tetrachloroethane	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
1,2,3-Trichloropropane	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
1,2,3-Trichlorobenzene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
4-Bromofluorobenzene	91	70-130	03/17/15	Acceptable
Dibromofluoromethane	95	82-124	03/17/15	Acceptable
Toluene-d8	96	82-124	03/17/15	Acceptable

Comments:

QA/QC Report

Client: Longview, City of
Project: Sentinel Well Program
Sample Matrix: Drinking water

Service Request: K1502414

Surrogate Recovery Summary
Volatile Organic Compounds

Extraction Method: METHOD
Analysis Method: 524.2

Units: Percent
Level: Low

Sample Name	Lab Code	Sur1	Sur2	Sur3
DW-5	K1502414-001	92	96	96
Batch QC	K1502415-001	90	94	96
Method Blank	KWG1502193-4	91	95	96
Batch QCMS	KWG1502193-1	100	97	95
Batch QCDMS	KWG1502193-2	100	96	96
Lab Control Sample	KWG1502193-3	100	96	96

Surrogate Recovery Control Limits (%)

Sur1	=	4-Bromofluorobenzene	70-130
Sur2	=	Dibromofluoromethane	82-124
Sur3	=	Toluene-d8	82-124

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502414
Project:	Sentinel Well Program	**Date Extracted:**	03/17/2015
Sample Matrix:	Drinking water	**Date Analyzed:**	03/17/2015

Matrix Spike/Duplicate Matrix Spike Summary
Volatile Organic Compounds

Sample Name:	Batch QC	**Units:**	ug/L
Lab Code:	K1502415-001	**Basis:**	NA
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	524.2	**Extraction Lot:**	KWG1502193

		Batch QCMS KWG1502193-1 Matrix Spike			Batch QCDMS KWG1502193-2 Duplicate Matrix Spike					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**%Rec**	**Result**	**Spike Amount**	**%Rec**	**%Rec Limits**	**RPD**	**RPD Limit**
Dichlorodifluoromethane	ND	6.19	5.00	124	5.50	5.00	110	70-130	12	30
Chloromethane	ND	5.94	5.00	119	5.90	5.00	118	70-130	1	30
Vinyl Chloride	ND	5.34	5.00	107	4.99	5.00	100	70-130	7	30
Bromomethane	ND	4.53	5.00	91	3.92	5.00	78	70-130	14	30
Chloroethane	ND	5.26	5.00	105	4.83	5.00	97	70-130	9	30
Trichlorofluoromethane	ND	5.51	5.00	110	5.04	5.00	101	70-130	9	30
Methylene Chloride	ND	4.64	5.00	93	4.47	5.00	89	70-130	4	30
trans-1,2-Dichloroethene	ND	4.93	5.00	99	4.56	5.00	91	70-130	8	30
cis-1,2-Dichloroethene	ND	4.66	5.00	93	4.46	5.00	89	70-130	4	30
1,1-Dichloroethene	ND	4.99	5.00	100	4.57	5.00	91	70-130	9	30
Methyl tert-Butyl Ether	ND	8.10	10.0	81	7.93	10.0	79	70-130	2	30
Chloroform	ND	4.91	5.00	98	4.69	5.00	94	70-130	5	30
Bromochloromethane	ND	4.50	5.00	90	4.41	5.00	88	70-130	2	30
Carbon Tetrachloride	ND	5.71	5.00	114	5.27	5.00	105	70-130	8	30
Benzene	ND	4.84	5.00	97	4.64	5.00	93	70-130	4	30
1,2-Dichloroethane	ND	5.11	5.00	102	4.97	5.00	99	70-130	3	30
Trichloroethene	ND	4.70	5.00	94	4.49	5.00	90	70-130	5	30
1,2-Dichloropropane	ND	4.54	5.00	91	4.29	5.00	86	70-130	6	30
Bromodichloromethane	ND	4.49	5.00	90	4.34	5.00	87	70-130	3	30
Dibromomethane	ND	4.54	5.00	91	4.33	5.00	87	70-130	5	30
cis-1,3-Dichloropropene	ND	4.22	5.00	84	4.20	5.00	84	70-130	0	30
1,1-Dichloroethane	ND	4.96	5.00	99	4.75	5.00	95	70-130	4	30
Toluene	ND	4.63	5.00	93	4.47	5.00	89	70-130	4	30
trans-1,3-Dichloropropene	ND	4.05	5.00	81	3.91	5.00	78	70-130	4	30
Tetrachloroethene	ND	4.73	5.00	95	4.42	5.00	88	70-130	7	30
2,2-Dichloropropane	ND	4.98	5.00	100	4.76	5.00	95	70-130	5	30
1,3-Dichloropropane	ND	4.72	5.00	94	4.61	5.00	92	70-130	2	30
Dibromochloromethane	ND	4.73	5.00	95	4.47	5.00	89	70-130	6	30
1,2-Dibromoethane (EDB)	ND	4.74	5.00	95	4.61	5.00	92	70-130	3	30
Chlorobenzene	ND	4.79	5.00	96	4.58	5.00	92	70-130	4	30
Ethylbenzene	ND	4.87	5.00	97	4.55	5.00	91	70-130	7	30
Styrene	ND	4.67	5.00	93	4.42	5.00	88	70-130	6	30
m,p-Xylenes	ND	9.79	10.0	98	9.27	10.0	93	70-130	5	30

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Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Client:	Longview, City of	**Service Request:**	K1502414
Project:	Sentinel Well Program	**Date Extracted:**	03/17/2015
Sample Matrix:	Drinking water	**Date Analyzed:**	03/17/2015

Matrix Spike/Duplicate Matrix Spike Summary
Volatile Organic Compounds

Sample Name:	Batch QC	**Units:**	ug/L
Lab Code:	K1502415-001	**Basis:**	NA
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	524.2	**Extraction Lot:**	KWG1502193

		Batch QCMS KWG1502193-1 Matrix Spike			Batch QCDMS KWG1502193-2 Duplicate Matrix Spike					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**%Rec**	**Result**	**Spike Amount**	**%Rec**	**%Rec Limits**	**RPD**	**RPD Limit**
o-Xylene	ND	4.57	5.00	91	4.36	5.00	87	70-130	5	30
1,1,2,2-Tetrachloroethane	ND	5.34	5.00	107	5.11	5.00	102	70-130	4	30
1,1,1-Trichloroethane	ND	5.01	5.00	100	4.68	5.00	94	70-130	7	30
Bromoform	ND	4.82	5.00	96	4.75	5.00	95	70-130	1	30
Isopropylbenzene	ND	4.93	5.00	99	4.61	5.00	92	70-130	7	30
1,1-Dichloropropene	ND	5.03	5.00	101	4.69	5.00	94	70-130	7	30
Bromobenzene	ND	5.02	5.00	100	4.70	5.00	94	70-130	7	30
n-Propylbenzene	ND	5.76	5.00	115	5.40	5.00	108	70-130	6	30
1,3,5-Trimethylbenzene	ND	5.56	5.00	111	5.27	5.00	105	70-130	5	30
2-Chlorotoluene	ND	5.58	5.00	112	5.28	5.00	106	70-130	6	30
4-Chlorotoluene	ND	5.67	5.00	113	5.32	5.00	106	70-130	6	30
tert-Butylbenzene	ND	5.53	5.00	111	5.14	5.00	103	70-130	7	30
1,2,4-Trimethylbenzene	ND	5.57	5.00	111	5.29	5.00	106	70-130	5	30
sec-Butylbenzene	ND	5.67	5.00	113	5.32	5.00	106	70-130	6	30
p-Isopropyltoluene	ND	5.50	5.00	110	5.21	5.00	104	70-130	5	30
1,3-Dichlorobenzene	ND	5.16	5.00	103	4.94	5.00	99	70-130	4	30
1,4-Dichlorobenzene	ND	5.04	5.00	101	4.82	5.00	96	70-130	4	30
n-Butylbenzene	ND	5.55	5.00	111	5.21	5.00	104	70-130	6	30
1,2-Dichlorobenzene	ND	5.08	5.00	102	4.79	5.00	96	70-130	6	30
1,2-Dibromo-3-chloropropane (DBCP)	ND	5.29	5.00	106	5.38	5.00	108	70-130	2	30
1,2,4-Trichlorobenzene	ND	4.82	5.00	96	4.64	5.00	93	70-130	4	30
Hexachlorobutadiene	ND	5.15	5.00	103	4.86	5.00	97	70-130	6	30
Naphthalene	ND	4.50	5.00	90	4.37	5.00	87	70-130	3	30
1,1,2-Trichloroethane	ND	4.38	5.00	88	4.25	5.00	85	70-130	3	30
1,1,1,2-Tetrachloroethane	ND	5.13	5.00	103	5.03	5.00	101	70-130	2	30
1,2,3-Trichloropropane	ND	5.08	5.00	102	4.87	5.00	97	70-130	4	30
1,2,3-Trichlorobenzene	ND	5.03	5.00	101	4.81	5.00	96	70-130	4	30

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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502414
Project:	Sentinel Well Program	**Date Extracted:**	03/17/2015
Sample Matrix:	Drinking water	**Date Analyzed:**	03/17/2015

Lab Control Spike Summary
Volatile Organic Compounds

Extraction Method:	METHOD	**Units:**	ug/L
Analysis Method:	524.2	**Basis:**	NA
		Level:	Low
		Extraction Lot:	KWG1502193

	Lab Control Sample KWG1502193-3 Lab Control Spike			
Analyte Name	**Result**	**Spike Amount**	**%Rec**	**%Rec Limits**
Dichlorodifluoromethane	6.13	5.00	123	70-130
Chloromethane	6.39	5.00	128	70-130
Vinyl Chloride	5.46	5.00	109	70-130
Bromomethane	4.74	5.00	95	70-130
Chloroethane	5.39	5.00	108	70-130
Trichlorofluoromethane	5.53	5.00	111	70-130
Methylene Chloride	5.12	5.00	102	70-130
trans-1,2-Dichloroethene	5.07	5.00	101	70-130
1,1-Dichloroethene	5.14	5.00	103	70-130
cis-1,2-Dichloroethene	4.85	5.00	97	70-130
Methyl tert-Butyl Ether	8.70	10.0	87	70-130
Chloroform	5.30	5.00	106	70-130
Bromochloromethane	4.78	5.00	96	70-130
Carbon Tetrachloride	5.84	5.00	117	70-130
Benzene	5.13	5.00	103	70-130
1,2-Dichloroethane	5.36	5.00	107	70-130
Trichloroethene	4.97	5.00	99	70-130
1,2-Dichloropropane	4.82	5.00	96	70-130
Bromodichloromethane	4.83	5.00	97	70-130
Dibromomethane	4.72	5.00	94	70-130
cis-1,3-Dichloropropene	4.56	5.00	91	70-130
Toluene	4.91	5.00	98	70-130
1,1-Dichloroethane	5.26	5.00	105	70-130
trans-1,3-Dichloropropene	4.23	5.00	85	70-130
Tetrachloroethene	5.01	5.00	100	70-130
1,3-Dichloropropane	5.05	5.00	101	70-130
2,2-Dichloropropane	5.21	5.00	104	70-130
Dibromochloromethane	5.11	5.00	102	70-130
1,2-Dibromoethane (EDB)	5.10	5.00	102	70-130
Chlorobenzene	5.10	5.00	102	70-130
Ethylbenzene	5.12	5.00	102	70-130
Styrene	4.82	5.00	96	70-130
m,p-Xylenes	10.3	10.0	103	70-130
o-Xylene	4.93	5.00	99	70-130
1,1,1-Trichloroethane	5.22	5.00	104	70-130

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Client: Longview, City of
Project: Sentinel Well Program
Sample Matrix: Drinking water

Service Request: K1502414
Date Extracted: 03/17/2015
Date Analyzed: 03/17/2015

Lab Control Spike Summary
Volatile Organic Compounds

Extraction Method: METHOD
Analysis Method: 524.2

Units: ug/L
Basis: NA
Level: Low
Extraction Lot: KWG1502193

	Lab Control Sample KWG1502193-3 Lab Control Spike			
Analyte Name	**Result**	**Spike Amount**	**%Rec**	**%Rec Limits**
Bromoform	5.13	5.00	103	70-130
1,1,2,2-Tetrachloroethane	5.59	5.00	112	70-130
Isopropylbenzene	5.24	5.00	105	70-130
1,1-Dichloropropene	5.21	5.00	104	70-130
Bromobenzene	5.24	5.00	105	70-130
n-Propylbenzene	6.02	5.00	120	70-130
1,3,5-Trimethylbenzene	5.78	5.00	116	70-130
2-Chlorotoluene	5.90	5.00	118	70-130
4-Chlorotoluene	5.92	5.00	118	70-130
tert-Butylbenzene	5.68	5.00	114	70-130
1,2,4-Trimethylbenzene	5.81	5.00	116	70-130
sec-Butylbenzene	5.94	5.00	119	70-130
p-Isopropyltoluene	5.73	5.00	115	70-130
1,3-Dichlorobenzene	5.40	5.00	108	70-130
1,4-Dichlorobenzene	5.25	5.00	105	70-130
n-Butylbenzene	5.73	5.00	115	70-130
1,2-Dichlorobenzene	5.38	5.00	108	70-130
1,2-Dibromo-3-chloropropane (DBCP)	5.40	5.00	108	70-130
1,2,4-Trichlorobenzene	5.04	5.00	101	70-130
Hexachlorobutadiene	5.33	5.00	107	70-130
Naphthalene	4.83	5.00	97	70-130
1,1,2-Trichloroethane	4.76	5.00	95	70-130
1,1,1,2-Tetrachloroethane	5.54	5.00	111	70-130
1,2,3-Trichloropropane	5.13	5.00	103	70-130
1,2,3-Trichlorobenzene	5.20	5.00	104	70-130

Results flagged with an asterisk (*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Semivolatile Organics by EPA Method 525.2

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Analytical Results

Client:	Longview, City of	**Service Request:**	K1502414
Project:	Sentinel Well Program	**Date Collected:**	03/10/2015
Sample Matrix:	Drinking water	**Date Received:**	03/10/2015

Semivolatile Organics by EPA Method 525.2

Sample Name:	DW-5	**Units:**	ug/L
Lab Code:	K1502414-001	**Basis:**	NA
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	525.2		

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Hexachlorocyclopentadiene	ND	U	0.098	1	03/23/15	03/25/15	KWG1502393	*
Fluorene	ND	U	0.049	1	03/23/15	03/25/15	KWG1502393	
Propachlor	ND	U	0.098	1	03/23/15	03/25/15	KWG1502393	
Hexachlorobenzene	ND	U	0.098	1	03/23/15	03/25/15	KWG1502393	
Simazine	ND	U	0.049	1	03/23/15	03/25/15	KWG1502393	
Atrazine	ND	U	0.098	1	03/23/15	03/25/15	KWG1502393	
Metribuzin	ND	U	0.20	1	03/23/15	03/25/15	KWG1502393	
Alachlor	ND	U	0.070	1	03/23/15	03/25/15	KWG1502393	
Bromacil	ND	U	0.20	1	03/23/15	03/25/15	KWG1502393	
Metolachlor	ND	U	0.088	1	03/23/15	03/25/15	KWG1502393	
Butachlor	ND	U	0.098	1	03/23/15	03/25/15	KWG1502393	
Bis(2-ethylhexyl) Adipate	ND	U	0.59	1	03/23/15	03/25/15	KWG1502393	
Bis(2-ethylhexyl) Phthalate	ND	U	0.59	1	03/23/15	03/25/15	KWG1502393	
Benzo(a)pyrene	ND	U	0.020	1	03/23/15	03/25/15	KWG1502393	

* See Case Narrative

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
1,3-Dimethyl-2-nitrobenzene	100	70-130	03/25/15	Acceptable
Triphenyl Phosphate	84	70-130	03/25/15	Acceptable
Perylene-d12	89	70-130	03/25/15	Acceptable

Comments:

ALS Group USA, Corp. dba ALS Environmental

Analytical Results

Client:	Longview, City of	**Service Request:**	K1502414
Project:	Sentinel Well Program	**Date Collected:**	NA
Sample Matrix:	Drinking water	**Date Received:**	NA

Semivolatile Organics by EPA Method 525.2

Sample Name:	Method Blank	**Units:**	ug/L
Lab Code:	KWG1502393-4	**Basis:**	NA
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	525.2		

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Hexachlorocyclopentadiene	ND	U	0.10	1	03/23/15	03/25/15	KWG1502393	*
Fluorene	ND	U	0.050	1	03/23/15	03/25/15	KWG1502393	
Propachlor	ND	U	0.10	1	03/23/15	03/25/15	KWG1502393	
Hexachlorobenzene	ND	U	0.10	1	03/23/15	03/25/15	KWG1502393	
Simazine	ND	U	0.050	1	03/23/15	03/25/15	KWG1502393	
Atrazine	ND	U	0.10	1	03/23/15	03/25/15	KWG1502393	
Metribuzin	ND	U	0.20	1	03/23/15	03/25/15	KWG1502393	
Alachlor	ND	U	0.072	1	03/23/15	03/25/15	KWG1502393	
Bromacil	ND	U	0.20	1	03/23/15	03/25/15	KWG1502393	
Metolachlor	ND	U	0.090	1	03/23/15	03/25/15	KWG1502393	
Butachlor	ND	U	0.10	1	03/23/15	03/25/15	KWG1502393	
Bis(2-ethylhexyl) Adipate	ND	U	0.60	1	03/23/15	03/25/15	KWG1502393	
Bis(2-ethylhexyl) Phthalate	ND	U	0.60	1	03/23/15	03/25/15	KWG1502393	
Benzo(a)pyrene	ND	U	0.020	1	03/23/15	03/25/15	KWG1502393	

* See Case Narrative

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
1,3-Dimethyl-2-nitrobenzene	97	70-130	03/25/15	Acceptable
Triphenyl Phosphate	83	70-130	03/25/15	Acceptable
Perylene-d12	86	70-130	03/25/15	Acceptable

Comments:

Client: Longview, City of
Project: Sentinel Well Program
Sample Matrix: Drinking water

Service Request: K1502414

Surrogate Recovery Summary
Semivolatile Organics by EPA Method 525.2

Extraction Method: METHOD
Analysis Method: 525.2

Units: Percent
Level: Low

Sample Name	Lab Code	Sur1	Sur2	Sur3
DW-5	K1502414-001	100	84	89
Batch QC	K1502415-001	105	84	71
Method Blank	KWG1502393-4	97	83	86
Batch QCMS	KWG1502393-1	91	93	88
Batch QCDMS	KWG1502393-2	95	96	89
Lab Control Sample	KWG1502393-3	96	100	82

Surrogate Recovery Control Limits (%)

Sur1	=	1,3-Dimethyl-2-nitrobenzene	70-130
Sur2	=	Triphenyl Phosphate	70-130
Sur3	=	Perylene-d12	70-130

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502414
Project:	Sentinel Well Program	**Date Extracted:**	03/23/2015
Sample Matrix:	Drinking water	**Date Analyzed:**	03/26/2015

Matrix Spike/Duplicate Matrix Spike Summary
Semivolatile Organics by EPA Method 525.2

Sample Name:	Batch QC	**Units:**	ug/L
Lab Code:	K1502415-001	**Basis:**	NA
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	525.2	**Extraction Lot:**	KWG1502393

		Batch QCMS KWG1502393-1 Matrix Spike			Batch QCDMS KWG1502393-2 Duplicate Matrix Spike					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**%Rec**	**Result**	**Spike Amount**	**%Rec**	**%Rec Limits**	**RPD**	**RPD Limit**
Hexachlorocyclopentadiene	ND	1.48	0.971	152 *	1.43	0.971	147 *	70-130	3	30
Fluorene	ND	1.01	0.971	104	1.00	0.971	103	70-130	0	30
Propachlor	ND	1.10	0.971	114	1.11	0.971	114	70-130	1	30
Hexachlorobenzene	ND	0.911	0.971	94	0.920	0.971	95	70-130	1	30
Simazine	ND	0.865	0.971	89	0.868	0.971	89	70-130	0	30
Atrazine	ND	0.942	0.971	97	0.878	0.971	90	70-130	7	30
Metribuzin	ND	0.999	0.971	103	0.989	0.971	102	70-130	1	30
Alachlor	ND	1.02	0.971	105	1.01	0.971	104	70-130	1	30
Bromacil	ND	1.06	0.971	109	1.02	0.971	105	70-130	4	30
Metolachlor	ND	1.12	0.971	116	1.10	0.971	113	70-130	2	30
Butachlor	ND	1.09	0.971	112	1.07	0.971	111	70-130	1	30
Bis(2-ethylhexyl) Adipate	ND	1.13	0.971	116	1.14	0.971	117	70-130	1	30
Bis(2-ethylhexyl) Phthalate	0.62	1.17	0.971	57 *	1.27	0.971	67 *	70-130	8	30
Benzo(a)pyrene	ND	1.07	0.971	110	1.05	0.971	108	70-130	2	30

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Client:	Longview, City of	**Service Request:**	K1502414
Project:	Sentinel Well Program	**Date Extracted:**	03/23/2015
Sample Matrix:	Drinking water	**Date Analyzed:**	03/25/2015

Lab Control Spike Summary
Semivolatile Organics by EPA Method 525.2

Extraction Method:	METHOD	**Units:**	ug/L
Analysis Method:	525.2	**Basis:**	NA
		Level:	Low
		Extraction Lot:	KWG1502393

	Lab Control Sample KWG1502393-3 Lab Control Spike			
Analyte Name	**Result**	**Spike Amount**	**%Rec**	**%Rec Limits**
Hexachlorocyclopentadiene	1.48	1.00	148 *	70-130
Fluorene	1.05	1.00	105	70-130
Propachlor	1.24	1.00	124	70-130
Hexachlorobenzene	0.947	1.00	95	70-130
Simazine	1.08	1.00	108	70-130
Atrazine	1.12	1.00	112	70-130
Metribuzin	1.09	1.00	109	70-130
Alachlor	1.11	1.00	111	70-130
Bromacil	1.10	1.00	110	70-130
Metolachlor	1.27	1.00	127	70-130
Butachlor	1.16	1.00	116	70-130
Bis(2-ethylhexyl) Adipate	1.03	1.00	103	70-130
Bis(2-ethylhexyl) Phthalate	1.03	1.00	103	70-130
Benzo(a)pyrene	1.06	1.00	106	70-130

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Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Endothall by EPA Method 548.1

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Analytical Results

Client:	Longview, City of	**Service Request:**	K1502414
Project:	Sentinel Well Program	**Date Collected:**	03/10/2015
Sample Matrix:	Drinking water	**Date Received:**	03/10/2015

Endothall by EPA Method 548.1

Sample Name:	DW-5	**Units:**	ug/L
Lab Code:	K1502414-001	**Basis:**	NA
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	548.1		

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Endothall	ND	U	5.0	1	03/12/15	03/24/15	KWG1502057	

Comments:

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Analytical Results

Client:	Longview, City of	**Service Request:**	K1502414
Project:	Sentinel Well Program	**Date Collected:**	NA
Sample Matrix:	Drinking water	**Date Received:**	NA

Endothall by EPA Method 548.1

Sample Name:	Method Blank	**Units:**	ug/L
Lab Code:	KWG1502057-4	**Basis:**	NA
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	548.1		

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Endothall	ND	U	5.0	1	03/12/15	03/24/15	KWG1502057	

Comments:

Client:	Longview, City of	**Service Request:**	K1502414
Project:	Sentinel Well Program	**Date Extracted:**	03/12/2015
Sample Matrix:	Drinking water	**Date Analyzed:**	03/24/2015

Matrix Spike/Duplicate Matrix Spike Summary
Endothall by EPA Method 548.1

Sample Name:	Batch QC	**Units:**	ug/L
Lab Code:	K1502415-001	**Basis:**	NA
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	548.1	**Extraction Lot:**	KWG1502057

		Batch QCMS KWG1502057-1 Matrix Spike			Batch QCDMS KWG1502057-2 Duplicate Matrix Spike					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**%Rec**	**Result**	**Spike Amount**	**%Rec**	**%Rec Limits**	**RPD**	**RPD Limit**
Endothall	ND	91.2	100	91	94.4	100	94	30-142	3	30

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Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Client:	Longview, City of	**Service Request:**	K1502414
Project:	Sentinel Well Program	**Date Extracted:**	03/12/2015
Sample Matrix:	Drinking water	**Date Analyzed:**	03/24/2015

Lab Control Spike Summary
Endothall by EPA Method 548.1

Extraction Method:	METHOD	**Units:**	ug/L
Analysis Method:	548.1	**Basis:**	NA
		Level:	Low
		Extraction Lot:	KWG1502057

	Lab Control Sample KWG1502057-3 Lab Control Spike			
Analyte Name	**Result**	**Spike Amount**	**%Rec**	**%Rec Limits**
Endothall	94.0	100	94	30-142

Results flagged with an asterisk (*) indicate values outside control criteria.

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Diquat and Paraquat by EPA Method 549.2

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Analytical Results

Client:	Longview, City of	**Service Request:**	K1502414
Project:	Sentinel Well Program	**Date Collected:**	03/10/2015
Sample Matrix:	Drinking water	**Date Received:**	03/10/2015

Diquat and Paraquat by EPA Method 549.2

Sample Name:	DW-5	**Units:**	ug/L
Lab Code:	K1502414-001	**Basis:**	NA
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	549.2		

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Diquat	ND	U	0.40	1	03/12/15	03/12/15	KWG1502015	
Paraquat	ND	U	0.80	1	03/12/15	03/12/15	KWG1502015	

Comments:

Analytical Results

Client:	Longview, City of	**Service Request:**	K1502414
Project:	Sentinel Well Program	**Date Collected:**	NA
Sample Matrix:	Drinking water	**Date Received:**	NA

Diquat and Paraquat by EPA Method 549.2

Sample Name:	Method Blank	**Units:**	ug/L
Lab Code:	KWG1502015-5	**Basis:**	NA
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	549.2		

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Diquat	ND	U	0.40	1	03/12/15	03/12/15	KWG1502015	
Paraquat	ND	U	0.80	1	03/12/15	03/12/15	KWG1502015	

Comments:

QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502414
Project:	Sentinel Well Program	**Date Extracted:**	03/12/2015
Sample Matrix:	Drinking water	**Date Analyzed:**	03/12/2015

Matrix Spike/Duplicate Matrix Spike Summary
Diquat and Paraquat by EPA Method 549.2

Sample Name:	Batch QC	**Units:**	ug/L
Lab Code:	K1502415-001	**Basis:**	NA
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	549.2	**Extraction Lot:**	KWG1502015

		Batch QCMS KWG1502015-1 Matrix Spike				Batch QCDMS KWG1502015-2 Duplicate Matrix Spike						
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**%Rec**		**Result**	**Spike Amount**	**%Rec**		**%Rec Limits**	**RPD**	**RPD Limit**
Diquat	ND	7.09	12.0	59	*	6.64	12.0	55	*	70-130	7	30
Paraquat	ND	14.6	12.0	122		13.2	12.0	110		70-130	10	30

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502414
Project:	Sentinel Well Program	**Date Extracted:**	03/12/2015
Sample Matrix:	Drinking water	**Date Analyzed:**	03/12/2015

Lab Control Spike Summary
Diquat and Paraquat by EPA Method 549.2

Extraction Method:	METHOD	**Units:**	ug/L
Analysis Method:	549.2	**Basis:**	NA
		Level:	Low
		Extraction Lot:	KWG1502015

	Lab Control Sample KWG1502015-4 Lab Control Spike			
Analyte Name	**Result**	**Spike Amount**	**%Rec**	**%Rec Limits**
Diquat	12.7	12.0	106	70-130
Paraquat	13.5	12.0	112	70-130

Results flagged with an asterisk (*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Chlorinated Phenolic Organic Compounds

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Analytical Results

Client:	Longview, City of	**Service Request:**	K1502414
Project:	Sentinel Well Program	**Date Collected:**	3/10/2015
Sample Matrix:	Drinking water	**Date Received:**	3/10/2015

EPA Method 1653A
Chlorinated Phenolic Organic Compounds

Sample Name:	DW-5	Units:	ug/L (ppb)
Lab Code:	K1502414-001	Basis:	NA
Test Notes:			

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
2,4,6-Trichlorophenol	METHOD	1653A	2.5	1	3/11/2015	3/17/2015	ND	
2,4,5-Trichlorophenol	METHOD	1653A	2.5	1	3/11/2015	3/17/2015	ND	
2,3,4,6-Tetrachlorophenol	METHOD	1653A	2.5	1	3/11/2015	3/17/2015	ND	
3,4,6-Trichloroguaiacol	METHOD	1653A	2.5	1	3/11/2015	3/17/2015	ND	
3,4,5-Trichloroguaiacol	METHOD	1653A	2.5	1	3/11/2015	3/17/2015	ND	
3,4,6-Trichlorocatechol	METHOD	1653A	5.0	1	3/11/2015	3/17/2015	ND	
3,4,5-Trichlorocatechol	METHOD	1653A	5.0	1	3/11/2015	3/17/2015	ND	
Trichlorosyringol	METHOD	1653A	2.5	1	3/11/2015	3/17/2015	ND	
4,5,6-Trichloroguaiacol	METHOD	1653A	2.5	1	3/11/2015	3/17/2015	ND	
Pentachlorophenol	METHOD	1653A	5.0	1	3/11/2015	3/17/2015	ND	
Tetrachloroguaiacol	METHOD	1653A	5.0	1	3/11/2015	3/17/2015	ND	
Tetrachlorocatechol	METHOD	1653A	5.0	1	3/11/2015	3/17/2015	ND	

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Analytical Results

Client:	Longview, City of	**Service Request:**	K1502414
Project:	Sentinel Well Program	**Date Collected:**	NA
Sample Matrix:	Drinking water	**Date Received:**	NA

EPA Method 1653A
Chlorinated Phenolic Organic Compounds

Sample Name:	Method Blank	Units:	ug/L (ppb)
Lab Code:	KWG1502012-3	Basis:	NA
Test Notes:			

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
2,4,6-Trichlorophenol	METHOD	1653A	2.5	1	3/11/2015	3/17/2015	ND	
2,4,5-Trichlorophenol	METHOD	1653A	2.5	1	3/11/2015	3/17/2015	ND	
2,3,4,6-Tetrachlorophenol	METHOD	1653A	2.5	1	3/11/2015	3/17/2015	ND	
3,4,6-Trichloroguaiacol	METHOD	1653A	2.5	1	3/11/2015	3/17/2015	ND	
3,4,5-Trichloroguaiacol	METHOD	1653A	2.5	1	3/11/2015	3/17/2015	ND	
3,4,6-Trichlorocatechol	METHOD	1653A	5.0	1	3/11/2015	3/17/2015	ND	
3,4,5-Trichlorocatechol	METHOD	1653A	5.0	1	3/11/2015	3/17/2015	ND	
Trichlorosyringol	METHOD	1653A	2.5	1	3/11/2015	3/17/2015	ND	
4,5,6-Trichloroguaiacol	METHOD	1653A	2.5	1	3/11/2015	3/17/2015	ND	
Pentachlorophenol	METHOD	1653A	5.0	1	3/11/2015	3/17/2015	ND	
Tetrachloroguaiacol	METHOD	1653A	5.0	1	3/11/2015	3/17/2015	ND	
Tetrachlorocatechol	METHOD	1653A	5.0	1	3/11/2015	3/17/2015	ND	

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Analytical Results

Client:	Longview, City of	**Service Request:**	K1502414
Project:	Sentinel Well Program	**Date Collected:**	NA
Sample Matrix:	Drinking water	**Date Received:**	NA
		Date Extracted:	3/11/2015

Labeled Compound and Internal Standard Recovery Summary
Chlorinated Phenolic Organic Compounds
1653A

			Percent Recovery	
	CAS Percent Recovery Acceptance Criteria	Sample Name:	**DW-5**	**Method Blank**
		Lab Code:	K1502414-001	KWG1502012-3
		Date Analyzed:	3/17/2015	3/17/2015
Analyte				
3,4,5-Trichlorophenol	36-131		105	101
4,5,6-Trichloroguaiacol-13c6	25-134		96	105
Pentachlorophenol-13c6	22-117		93	100
Tetrachloroguaiacol-13c6	18-129		106	105
Tetrachlorocatechol-13c6	D-121		39	88

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Analytical Results

Client: Longview, City of
Project: Sentinel Well Program
Sample Matrix: Drinking water

Service Request: K1502414
Date Collected: NA
Date Received: NA
Date Extracted: 3/11/2015
Date Analyzed: 3/17/2015

Duplicate Summary
Chlorinated Phenolic Organic Compounds

Sample Name: Batch QC
Lab Code: KWG1502012-1
Test Notes:

Units: ug/L (ppb)
Basis: NA

Analyte	Prep Method	Analysis Method	MRL	Sample Result	Duplicate Sample Result	Average	Relative Percent Difference	Result Notes
2,4,6-Trichlorophenol	METHOD	1653A	2.5	ND	ND	ND	-	
2,4,5-Trichlorophenol	METHOD	1653A	2.5	ND	ND	ND	-	
2,3,4,6-Tetrachlorophenol	METHOD	1653A	2.5	ND	ND	ND	-	
3,4,6-Trichloroguaiacol	METHOD	1653A	2.5	ND	ND	ND	-	
3,4,5-Trichloroguaiacol	METHOD	1653A	2.5	ND	ND	ND	-	
3,4,6-Trichlorocatechol	METHOD	1653A	5.0	ND	ND	ND	-	
3,4,5-Trichlorocatechol	METHOD	1653A	5.0	ND	ND	ND	-	
Trichlorosyringol	METHOD	1653A	2.5	ND	ND	ND	-	
4,5,6-Trichloroguaiacol	METHOD	1653A	2.5	ND	ND	ND	-	
Pentachlorophenol	METHOD	1653A	5.0	ND	ND	ND	-	
Tetrachloroguaiacol	METHOD	1653A	5.0	ND	ND	ND	-	
Tetrachlorocatechol	METHOD	1653A	5.0	ND	ND	ND	-	

ALS Group USA, Corp. dba ALS Environmental

Analytical Results

Client:	Longview, City of	**Service Request:**	K1502414
Project:	Sentinel Well Program	**Date Collected:**	NA
LCS Matrix:	Drinking water	**Date Received:**	NA
		Date Extracted:	3/11/2015
		Date Analyzed:	3/17/2015

Ongoing Precision and Recovery Summary
Chlorinated Phenolic Organic Compounds

Sample Name:	Lab Control Sample	Units:	ug/L (ppb)
Lab Code:	KWG1502012-2	Basis:	NA
Test Notes:			

Analyte	Prep Method	Analysis Method	True Value	Result	Percent Recovery	CAS Percent Recovery Acceptance Limits	Result Notes
2,4,6-Trichlorophenol	METHOD	1653A	50	46.1	92	72-146	
2,4,5-Trichlorophenol	METHOD	1653A	50	47.5	95	82-128	
2,3,4,6-Tetrachlorophenol	METHOD	1653A	50	50.0	100	82-132	
3,4,6-Trichloroguaiacol	METHOD	1653A	50	46.7	93	74-140	
3,4,5-Trichloroguaiacol	METHOD	1653A	50	49.3	99	80-134	
3,4,6-Trichlorocatechol	METHOD	1653A	100	89.3	89	64-149	
3,4,5-Trichlorocatechol	METHOD	1653A	100	96.9	97	72-128	
Trichlorosyringol	METHOD	1653A	50	51.1	102	66-174	
4,5,6-Trichloroguaiacol	METHOD	1653A	50	49.2	98	88-116	
Pentachlorophenol	METHOD	1653A	100	89.0	89	84-120	
Tetrachloroguaiacol	METHOD	1653A	100	93.2	93	81-126	
Tetrachlorocatechol	METHOD	1653A	100	94.4	94	81-132	

Subcontract Lab Results

ALS Environmental—Kelso Laboratory
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Phone (360)577-7222 Fax (360)636-1068
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State Certifications: DE ID 11 , MA PA0102 , MD 128 , VA 460157 , WV 343

March 23, 2015

Mr. Gregory Salata
ALS Environmental - Kelso
1317 S. 13th Avenue
Kelso, WA 98626

Certificate of Analysis

Project Name:	**SOCs**	Workorder:	**2059255**
Purchase Order:	**K1502414**	Workorder ID:	**K1502414**

Dear Mr. Salata:

Enclosed are the analytical results for samples received by the laboratory on Friday, March 13, 2015.

The ALS Environmental laboratory in Middletown, Pennsylvania is a National Environmental Laboratory Accreditation Program (NELAP) accredited laboratory and as such, certifies that all applicable test results meet the requirements of NELAP.

If you have any questions regarding this certificate of analysis, please contact Mrs. Kelli L Wolfgang (Project Coordinator) at (717) 944-5541.

Analyses were performed according to our laboratory's NELAP-approved quality assurance program and any applicable state requirements. The test results meet requirements of the current NELAP standards or state requirements, where applicable. For a specific list of accredited analytes, refer to the certifications section of the ALS website at www.alsglobal.com/en/Our-Services/Life-Sciences/Environmental/Downloads.

This laboratory report may not be reproduced, except in full, without the written approval of ALS Environmental.

ALS Spring City: 10 Riverside Drive, Spring City, PA 19475 610-948-4903

CC: Ms. Chris Leaf

This page is included as part of the Analytical Report and must be retained as a permanent record thereof.

Kelli Wolfgang

Mrs. Kelli L Wolfgang
Project Coordinator

ALS Environmental

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SAMPLE SUMMARY

Workorder: 2059255 K1502414

Lab ID	Sample ID	Matrix	Date Collected	Date Received	Collected By
2059255001	K1502414-001	Drinking Water	3/10/2015 13:30	3/13/2015 12:36	Collected by Client

Notes

-- Samples collected by ALS personnel are done so in accordance with the procedures set forth in the ALS Field Sampling Plan (20 - Field Services Sampling Plan).
-- All Waste Water analyses comply with methodology requirements of 40 CFR Part 136.
-- All Drinking Water analyses comply with methodology requirements of 40 CFR Part 141.
-- Unless otherwise noted, all quantitative results for soils are reported on a dry weight basis.
-- The Chain of Custody document is included as part of this report.
-- All Library Search analytes should be regarded as tentative identifications based on the presumptive evidence of the mass spectra. Concentrations reported are estimated values.
-- Parameters identified as "analyze immediately" require analysis within 15 minutes of collection. Any "analyze immediately" parameters not listed under the header "Field Parameters" are preformed in the laboratory and are therefore analyzed out of hold time.
-- Method references listed on this report beginning with the prefix “S” followed by a method number (such as S2310B-97) refer to methods from “Standard Methods for the Examination of Water and Wastewater”.

Standard Acronyms/Flags

J	Indicates an estimated value between the Method Detection Limit (MDL) and the Practical Quantitation Limit (PQL) for the analyte
U	Indicates that the analyte was Not Detected (ND)
N	Indicates presumptive evidence of the presence of a compound
MDL	Method Detection Limit
PQL	Practical Quantitation Limit
RDL	Reporting Detection Limit
ND	Not Detected - indicates that the analyte was Not Detected at the RDL
Cntr	Analysis was performed using this container
RegLmt	Regulatory Limit
LCS	Laboratory Control Sample
MS	Matrix Spike
MSD	Matrix Spike Duplicate
DUP	Sample Duplicate
%Rec	Percent Recovery
RPD	Relative Percent Difference
LOD	DoD Limit of Detection
LOQ	DoD Limit of Quantitation
DL	DoD Detection Limit
I	Indicates reported value is greater than or equal to the Method Detection Limit (MDL) but less than the Report Detection Limit (RDL)

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ANALYTICAL RESULTS

Workorder: 2059255 K1502414

Lab ID: **2059255001** Date Collected: 3/10/2015 13:30 Matrix: Drinking Water

Sample ID: **K1502414-001** Date Received: 3/13/2015 12:36

Parameters	Results	Flag	Units	RDL	Method	Prepared By	Analyzed	By	*Cntr*
HERBICIDES									
Glyphosate	ND		ug/L	4.5	EPA 547		3/22/15 13:44	CGS	C
CARBAMATES									
Aldicarb	ND		ug/L	0.26	EPA 531.1		3/17/15 01:28	CGS	A
Aldicarb Sulfone	ND		ug/L	0.32	EPA 531.1		3/17/15 01:28	CGS	A
Aldicarb Sulfoxide	ND		ug/L	0.27	EPA 531.1		3/17/15 01:28	CGS	A
Carbaryl	ND		ug/L	0.29	EPA 531.1		3/17/15 01:28	CGS	A
Carbofuran	ND		ug/L	0.43	EPA 531.1		3/17/15 01:28	CGS	A
3-Hydroxycarbofuran	ND		ug/L	0.27	EPA 531.1		3/17/15 01:28	CGS	A
Methiocarb	ND		ug/L	0.18	EPA 531.1		3/17/15 01:28	CGS	A
Methomyl	ND		ug/L	0.49	EPA 531.1		3/17/15 01:28	CGS	A
Oxamyl	ND		ug/L	0.50	EPA 531.1		3/17/15 01:28	CGS	A
Propoxur	ND		ug/L	0.32	EPA 531.1		3/17/15 01:28	CGS	A

Kelli Wolfgang

Mrs. Kelli L Wolfgang
Project Coordinator

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QUALITY CONTROL DATA

Workorder: 2059255 K1502414

QC Batch: HPLC/3911 **Analysis Method:** EPA 531.1

QC Batch Method: EPA 531.1

Associated Lab Samples: 2059255001

METHOD BLANK: 2149046

Parameter	Blank Result	Units	Reporting Limit	Qualifiers
Aldicarb Sulfoxide	ND	ug/L	0.27	
Aldicarb Sulfone	ND	ug/L	0.32	
Oxamyl	ND	ug/L	0.50	
Methomyl	ND	ug/L	0.49	
3-Hydroxycarbofuran	ND	ug/L	0.27	
Aldicarb	ND	ug/L	0.26	
Propoxur	ND	ug/L	0.32	
Carbofuran	ND	ug/L	0.43	
Carbaryl	ND	ug/L	0.29	
Methiocarb	ND	ug/L	0.18	

LABORATORY CONTROL SAMPLE: 2149047

Parameter	LCS % Rec	Units	Spike Conc.	LCS Result	% Rec Limit	Qualifiers
Aldicarb Sulfoxide	98.7	ug/L	10	9.9	80 - 120	
Aldicarb Sulfone	87.3	ug/L	10	8.7	80 - 120	
Oxamyl	99.8	ug/L	10	10	80 - 120	
Methomyl	94.4	ug/L	10	9.4	80 - 120	
3-Hydroxycarbofuran	100	ug/L	10	10.0	80 - 120	
Aldicarb	96.5	ug/L	10	9.7	80 - 120	
Propoxur	92.4	ug/L	10	9.2	80 - 120	
Carbofuran	90.9	ug/L	10	9.1	80 - 120	
Carbaryl	88.8	ug/L	10	8.9	80 - 120	
Methiocarb	90.6	ug/L	10	9.1	80 - 120	

SAMPLE DUPLICATE: 2150707 ORIGINAL:

Parameter	Original Result	Units	DUP Result	RPD	Max RPD	Qualifiers
Aldicarb Sulfoxide	0	ug/L	0	NC	20	
Aldicarb Sulfone	0	ug/L	0	NC	20	
Oxamyl	0	ug/L	0	NC	20	
Methomyl	0	ug/L	0	NC	20	
3-Hydroxycarbofuran	0	ug/L	0	NC	20	

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QUALITY CONTROL DATA

Workorder: 2059255 K1502414

Aldicarb	0	ug/L	0	NC	20
Propoxur	0	ug/L	0	NC	20
Carbofuran	0	ug/L	0	NC	20
Carbaryl	0	ug/L	0	NC	20
Methiocarb	0	ug/L	0	NC	20

MATRIX SPIKE SAMPLE: 2149049 ORIGINAL:

****NOTE - The Original Result shown below is a raw result and is only used for the purpose of calculating Matrix Spike percent recoveries. This result is not a final value and cannot be used as such.

Parameter	Original Result	Units	Spike Conc.	MS Result	MS % Rec	% Rec Limit	Qualifiers
Aldicarb Sulfoxide	0	ug/L	10	12.3558	124	65 - 135	
Aldicarb Sulfone	0	ug/L	10	11.5018	115	65 - 135	
Oxamyl	0	ug/L	10	13.1784	132	65 - 135	
Methomyl	0	ug/L	10	12.0278	120	65 - 135	
3-Hydroxycarbofuran	0	ug/L	10	12.6868	127	65 - 135	
Aldicarb	0	ug/L	10	12.1718	122	65 - 135	
Propoxur	0	ug/L	10	11.4132	114	65 - 135	
Carbofuran	0	ug/L	10	11.52	115	65 - 135	
Carbaryl	0	ug/L	10	11.5322	115	65 - 135	
Methiocarb	0	ug/L	10	10.9469	109	65 - 135	

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QUALITY CONTROL DATA

Workorder: 2059255 K1502414

QC Batch: HPLC/3915 **Analysis Method:** EPA 547

QC Batch Method: EPA 547

Associated Lab Samples: 2059255001

METHOD BLANK: 2153468

Parameter	Blank Result	Units	Reporting Limit	Qualifiers
Glyphosate	ND	ug/L	4.5	

LABORATORY CONTROL SAMPLE: 2153469

Parameter	LCS % Rec	Units	Spike Conc.	LCS Result	% Rec Limit	Qualifiers
Glyphosate	99.5	ug/L	500	497	80 - 120	

MATRIX SPIKE SAMPLE: 2153470 ORIGINAL:

****NOTE - The Original Result shown below is a raw result and is only used for the purpose of calculating Matrix Spike percent recoveries. This result is not a final value and cannot be used as such.

Parameter	Original Result	Units	Spike Conc.	MS Result	MS % Rec	% Rec Limit	Qualifiers
Glyphosate	0	ug/L	500	482.285	96.5	70 - 130	

SAMPLE DUPLICATE: 2153471 ORIGINAL:

Parameter	Original Result	Units	DUP Result	RPD	Max RPD	Qualifiers
Glyphosate	0	ug/L	0	NC	40	

MATRIX SPIKE SAMPLE: 2153472 ORIGINAL:

****NOTE - The Original Result shown below is a raw result and is only used for the purpose of calculating Matrix Spike percent recoveries. This result is not a final value and cannot be used as such.

Parameter	Original Result	Units	Spike Conc.	MS Result	MS % Rec	% Rec Limit	Qualifiers
Glyphosate	0	ug/L	500	448.493	89.7	70 - 130	

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State Certifications: DE ID 11 , MA PA0102 , MD 128 , VA 460157 , WV 343

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Workorder: 2059255 K1502414

Lab ID	Sample ID	Prep Method	Prep Batch	Analysis Method	Analysis Batch
2059255001	K1502414-001			EPA 531.1	HPLC/3911
2059255001	K1502414-001			EPA 547	HPLC/3915

KW

ALS Environmental Chain of Custody

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ALS

205925

Project Number: K1502414
Project Manager: Chris Leaf

Lab Code	Sample ID	# of Cont.	Matrix	Sample Date	Sample Time	Lab ID	CARBAM 531.1	GLYPH 547
K1502414-001	DW-5	4	Drinking Water	3/10/15	1330	Middletown ALS	X	X

RCVD 2-125 amber
2-40 mL amber
AT 3/13/15

	Y	N	Initials	
Custody Seals Present?	✓		AT	Cooler Temp. 3 °C
(if present) Seals Intact?	✓			Cooler #
Received on Ice?	✓			
COC/Lbls Complete	✓			Therm ID: TH291
Cont in Good Cond?	✓			
Correct Containers?	✓			Ship Carrier
Correct Samp Vol?	✓			FedEx UPS
Correct Preservation?	✓			
Headspace/Volatiles?			✓	DHL

Tracking #: 547897423373

Test Comments
CARBAM - 531.1 K1502414-001 Full list for WA Regulations - no compliance report required. w/QC

Folder Comments:
Report all metals in mg/L. No DW State form required.

KW

Special Instructions/Comments
Please provide the electronic (PDF and EDD) report to the following e-mail address: ALKLS.Data@alsglobal.com.

CL 3/11/15

H - Test is On Hold P - Test is Authorized for Prep Only

Turnaround Requirements
____RUSH (Surcharges Apply)
PLEASE CIRCLE WORK DAYS
1 2 3 4 5
____STANDARD
Requested FAX Date: _____
Requested Report Date: 03/27/15

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 N
EDD N

Invoice Information
PO# K1502414
Bill to

Relinquished By: MS 3/12/15 1130 Received By: 3/13/15 1236 Airbill Number:

ALS

K1502414

2059205

✓ **Ship To: Middletown ALS**
ALS Laboratory Group
34 Dogwood Lane
Middletown, PA 17057

PC _____ Date 3/11
SMO _____ Date 3/12/15

Instructions:
Ice ✓
Dry Ice ____
No Ice ____

Shipping:
Overnight ✓
2nd Day ____
Ground ____

Bill to Client Account _____

Comments:

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State Certification: CT PH-0224, DE ID 11, GA 914, MA PA0102, MD 128, LA 04162, VA 421, WY EPA Region 8, WV 343

QUALITY CONTROL DATA

Workorder **2059255** **Project Name** **K1502414**

QC Batch HPLC / 3911

QC Batch Method EPA 531.1 **Analysis Method** EPA 531.1

Associated Lab Samples 2059255001

METHOD BLANK 2149046

Parameter	Blank Result	Qualifiers	Units	Reporting Limit	% Rec	% Rec Limits
3-Hydroxycarbofuran	ND	U	ug/L	0.27		
Aldicarb	ND	U	ug/L	0.26		
Aldicarb Sulfone	ND	U	ug/L	0.32		
Aldicarb Sulfoxide	ND	U	ug/L	0.27		
Carbaryl	ND	U	ug/L	0.29		
Carbofuran	ND	U	ug/L	0.43		
Methiocarb	ND	U	ug/L	0.18		
Methomyl	ND	U	ug/L	0.49		
Oxamyl	ND	U	ug/L	0.50		
Propoxur	ND	U	ug/L	0.32		

LABORATORY CONTROL SAMPLE 2149047

Parameter	LCS Result	Qualifiers	Units	Spike Conc.	LCS % Rec	% Rec Limits
3-Hydroxycarbofuran	10		ug/L	10	100	80-120
Aldicarb	9.7		ug/L	10	96.5	80-120
Aldicarb Sulfone	8.7		ug/L	10	87.3	80-120
Aldicarb Sulfoxide	9.9		ug/L	10	98.7	80-120
Carbaryl	8.9		ug/L	10	88.8	80-120
Carbofuran	9.1		ug/L	10	90.9	80-120

This is an addendum to the Certificate of Analysis.

Methiocarb	9.1	ug/L	10	90.6	80-120
Methomyl	9.4	ug/L	10	94.4	80-120
Oxamyl	10	ug/L	10	99.8	80-120
Propoxur	9.2	ug/L	10	92.4	80-120

SAMPLE DUPLICATE 2150707 Original 2057116002

*****NOTE - The Original Result and Duplicate Result shown below are raw results and are only used for the purpose of calculating Sample Duplicate percent recoveries. This result is not a final value and cannot be used as such.*

Parameter	Original Result	Qualifiers	Units	DUP Result	RPD	Max RPD	% Rec	% Rec Limits
3-Hydroxycarbofuran	ND	U	ug/L	ND	NC	20		
Aldicarb	ND	U	ug/L	ND	NC	20		
Aldicarb Sulfone	ND	U	ug/L	ND	NC	20		
Aldicarb Sulfoxide	ND	U	ug/L	ND	NC	20		
Carbaryl	ND	U	ug/L	ND	NC	20		
Carbofuran	ND	U	ug/L	ND	NC	20		
Methiocarb	ND	U	ug/L	ND	NC	20		
Methomyl	ND	U	ug/L	ND	NC	20		
Oxamyl	ND	U	ug/L	ND	NC	20		
Propoxur	ND	U	ug/L	ND	NC	20		

MATRIX SPIKE 2149049 Original 2058591001

*****NOTE - The Original Result shown below is a raw result and is only used for the purpose of calculating Matrix Spike percent recoveries. This result is not a final value and cannot be used as such.*

Parameter	Original Result	Qualifiers	Units	Spike Conc.	MS Result	MS % Rec	% Rec Limits
3-Hydroxycarbofuran	ND		ug/L	10	12.6868	127	65-135
Aldicarb	ND		ug/L	10	12.1718	122	65-135
Aldicarb Sulfone	ND		ug/L	10	11.5018	115	65-135
Aldicarb Sulfoxide	ND		ug/L	10	12.3558	124	65-135
Carbaryl	ND		ug/L	10	11.5322	115	65-135
Carbofuran	ND		ug/L	10	11.52	115	65-135
Methiocarb	ND		ug/L	10	10.9469	109	65-135
Methomyl	ND		ug/L	10	12.0278	120	65-135
Oxamyl	ND		ug/L	10	13.1784	132	65-135
Propoxur	ND		ug/L	10	11.4132	114	65-135

Workorder	**2059255**	**Project Name**	**K1502414**
QC Batch	HPLC / 3915		
QC Batch Method	EPA 547	**Analysis Method**	EPA 547
Associated Lab Samples	2059255001		

METHOD BLANK 2153468

Parameter	Blank Result	Qualifiers	Units	Reporting Limit	% Rec	% Rec Limits
Glyphosate	ND	U	ug/L	4.5		

LABORATORY CONTROL SAMPLE 2153469

Parameter	LCS Result	Qualifiers	Units	Spike Conc.	LCS % Rec	% Rec Limits
Glyphosate	497		ug/L	500	99.5	80-120

SAMPLE DUPLICATE 2153471 Original 2058366001

*****NOTE - The Original Result and Duplicate Result shown below are raw results and are only used for the purpose of calculating Sample Duplicate percent recoveries. This result is not a final value and cannot be used as such.*

Parameter	Original Result	Qualifiers	Units	DUP Result	RPD	Max RPD	% Rec	% Rec Limits
Glyphosate	ND	U	ug/L	ND	NC	40		

MATRIX SPIKE 2153470 Original 2058366001

*****NOTE - The Original Result shown below is a raw result and is only used for the purpose of calculating Matrix Spike percent recoveries. This result is not a final value and cannot be used as such.*

Parameter	Original Result	Qualifiers	Units	Spike Conc.	MS Result	MS % Rec	% Rec Limits
Glyphosate	ND		ug/L	500	482.285	96.5	70-130

MATRIX SPIKE 2153472 Original 2059505001

*****NOTE - The Original Result shown below is a raw result and is only used for the purpose of calculating Matrix Spike percent recoveries. This result is not a final value and cannot be used as such.*

Parameter	Original Result	Qualifiers	Units	Spike Conc.	MS Result	MS % Rec	% Rec Limits
Glyphosate	ND		ug/L	500	448.493	89.7	70-130

Standard Acronyms/Flags	
J	Indicates an estimated value between the Method Detection Limit (MDL) and the Practical Quantitation Limit (PQL) for the analyte
U	Indicates that the analyte was Not Detected (ND)
N	Indicates presumptive evidence of the presence of a compound
MDL	Method Detection Limit
PQL	Practical Quantitation Limit
RDL	Reporting Detection Limit
ND	Not Detected - indicates that the analyte was Not Detected at the RDL
Cntr	Analysis was performed using this container
RegLmt	Regulatory Limit
LCS	Laboratory Control Sample
MS	Matrix Spike
MSD	Matrix Spike Duplicate
DUP	Sample Duplicate
%Rec	Percent Recovery
RPD	Relative Percent Difference
LOD	DoD Limit of Detection
LOQ	DoD Limit of Quantitation
DL	DoD Detection Limit
NC	Not Calculated
*	Result outside of QC limits
DIL	Dilution Factor

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Lab ID	Sample ID	Prep Method	Prep Batch	Analysis Method	Analysis Batch
2057116002	ZZZZZZZZZZ	EPA 531.1	HPLC / 3911	EPA 531.1	HPLC / 3911
2058591001	ZZZZZZZZZZ	EPA 531.1	HPLC / 3911	EPA 531.1	HPLC / 3911
2059255001	K1502414-001	EPA 531.1	HPLC / 3911	EPA 531.1	HPLC / 3911

Lab ID	Sample ID	Prep Method	Prep Batch	Analysis Method	Analysis Batch
2058366001	ZZZZZZZZZZ	EPA 547	HPLC / 3915	EPA 547	HPLC / 3915
2059255001	K1502414-001	EPA 547	HPLC / 3915	EPA 547	HPLC / 3915
2059505001	ZZZZZZZZZZ	EPA 547	HPLC / 3915	EPA 547	HPLC / 3915

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LABORATORY REPORT

March 27, 2015

Jeff Coleman
Longview, City of
W/S Operation Center
Longview, WA 98632

RE: Sentinel Well Program

Dear Jeff:

Enclosed are the results of the sample submitted to our laboratory on March 10, 2015. For your reference, this analysis has been assigned our service request number K1502414.

All analyses were performed according to our laboratory's NELAP and DoD-ELAP-approved quality assurance program. The test results meet requirements of the current NELAP and DoD-ELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP and DoD-ELAP-accredited analytes, refer to the certifications section at www.alsglobal.com. Results are intended to be considered in their entirety and apply only to the samples analyzed and reported herein.

If you have any questions, please call me at (805) 526-7161.

Respectfully submitted,

ALS | Environmental

By Sue Anderson at 9:35 am, Mar 27, 2015

For Kate Aguilera
Project Manager

2655 Park Center Dr., Suite A
Simi Valley, CA 93065
T: +1 805 526 7161
F: +1 805 526 7270
www.alsglobal.com

Client: Longview, City of
Project: Sentinel Well Program

Service Request No: K1502414

CASE NARRATIVE

The sample was received intact under chain of custody on March 10, 2015 and was stored in accordance with the analytical method requirements. Please refer to the sample acceptance check form for additional information. The results reported herein are applicable only to the condition of the sample at the time of sample receipt.

Hydrogen Sulfide Analysis

The sample was analyzed for hydrogen sulfide using a gas chromatograph equipped with a sulfur chemiluminescence detector (SCD). This method is not included on the laboratory's NELAP, DoD-ELAP, or AIHA-LAP scope of accreditation.

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 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.

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Simi Valley, CA 93065
T: +1 805 526 7161
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ALS Environmental – Simi Valley

CERTIFICATIONS, ACCREDITATIONS, AND REGISTRATIONS

Agency	Web Site	Number
AIHA	http://www.aihaaccreditedlabs.org	101661
Arizona DHS	http://www.azdhs.gov/lab/license/env.htm	AZ0694
DoD ELAP	http://www.pjlabs.com/search-accredited-labs	L14-2
Florida DOH (NELAP)	http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm	E871020
Maine DHHS	http://www.maine.gov/dhhs/mecdc/environmental-health/water/dwp-services/labcert/labcert.htm	2014025
Minnesota DOH (NELAP)	http://www.health.state.mn.us/accreditation	876241
New Jersey DEP (NELAP)	http://www.nj.gov/dep/oqa/	CA009
New York DOH (NELAP)	http://www.wadsworth.org/labcert/elap/elap.html	11221
Oregon PHD (NELAP)	http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Pages/index.aspx	4068-001
Pennsylvania DEP	http://www.depweb.state.pa.us/labs	68-03307 (Registration)
Texas CEQ (NELAP)	http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html	T104704413-14-5
Utah DOH (NELAP)	http://www.health.utah.gov/lab/labimp/certification/index.html	CA016272014-4
Washington DOE	http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html	C946

Analyses were performed according to our laboratory's NELAP and DoD-ELAP approved quality assurance program. A complete listing of specific NELAP and DoD-ELAP certified analytes can be found in the certifications section at www.alsglobal.com, or at the accreditation body's website.

Each of the certifications listed above have an explicit Scope of Accreditation that applies to specific matrices/methods/analytes; therefore, please contact the laboratory for information corresponding to a particular certification.

Intra-Network Chain of Custody

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

ALS Contact: Chris Leaf

Project Name: Sentinel Well Program
Project Number:
Project Manager: Jeff Coleman
Company: Longview, City of

Lab Code	Client Sample ID	# of Cont.	Matrix	Sample Date	Sample Time	Date Received	Send To	Sulfur Sulfur Liq
K1502414-001	DW-5	2	Drinking Water	3/10/15	1330	3/10/15	SIMIVALLEY	II

Test Comments

Sulfur - Sulfur Liq K1502414-001 Hydrogen Sulfide

Folder Comments:

Report all metals in mg/L. No DW State form required.

Special Instructions/Comments	Turnaround Requirements	Report Requirements	Invoice Information
Please provide the electronic (PDF and EDD) report to the following e-mail address: ALKLS.Data@alsglobal.com. pH Checked _____	____ **RUSH** (Surcharges Apply) **PLEASE CIRCLE WORK DAYS** 1 2 3 4 5 ____ **STANDARD** Requested FAX Date: _____ Requested Report Date: 03/27/15	____ I. Results Only ____ II. Results + QC Summaries ____ III. Results + QC and Calibration Summaries ____ IV. Data Validation Report with Raw Data PQL/MDL/J N EDD N	PO# K1502414 Bill to

Relinquished By: [signature] ALS 3/12/15 1130 Received By: K. Kuh 3/13/15 1630 2 blank Airbill Number:

ALS Environmental
Sample Acceptance Check Form

Client: Longview, City of Work order: K1502414
Project: Sentinel Well Program
Sample(s) received on: 3/10/15 Date opened: 3/10/15 by: ARYNEVICH

Note: This form is used for all samples received by ALS. The use of this form for custody seals is strictly meant to indicate presence/absence and not as an indication of compliance or nonconformity. Thermal preservation and pH will only be evaluated either at the request of the client and/or as required by the method/SOP.

		Yes	No	N/A
1	Were **sample containers** properly marked with client sample ID?	☒	☐	☐
2	Container(s) **supplied by ALS**?	☒	☐	☐
3	Did **sample containers** arrive in good condition?	☒	☐	☐
4	Were **chain-of-custody** papers used and filled out?	☒	☐	☐
5	Did **sample container labels** and/or tags agree with custody papers?	☒	☐	☐
6	Was **sample volume** received adequate for analysis?	☒	☐	☐
7	Are samples within specified holding times?	☒	☐	☐
8	Was proper **temperature** (thermal preservation) of cooler at receipt adhered to?	☒	☐	☐
	Cooler Temperature: ° C Blank Temperature: 2° C **Gel Packs**			
9	Was a **trip blank** received?	☐	☒	☐
10	Were **custody seals** on outside of cooler/Box?	☒	☐	☐
	Location of seal(s)? _____ Sealing Lid?	☒	☐	☐
	Were signature and date included?	☒	☐	☐
	Were seals intact?	☒	☐	☐
	Were custody seals on outside of sample container?	☐	☒	☐
	Location of seal(s)? _____ Sealing Lid?	☐	☐	☒
	Were signature and date included?	☐	☐	☒
	Were seals intact?	☐	☐	☒
11	Do containers have appropriate **preservation**, according to method/SOP or Client specified information?	☒	☐	☐
	Is there a client indication that the submitted samples are **pH** preserved?	☐	☐	☒
	Were **VOA vials** checked for presence/absence of air bubbles?	☒	☐	☐
	Does the client/method/SOP require that the analyst check the sample pH and if necessary alter it?	☒	☐	☐
12	**Tubes:** Are the tubes capped and intact?	☐	☐	☒
	Do they contain moisture?	☐	☐	☒
13	**Badges:** Are the badges properly capped and intact?	☐	☐	☒
	Are dual bed badges separated and individually capped and intact?	☐	☐	☒

Lab Sample ID	Container Description	Required pH *	Received pH	Adjusted pH	VOA Headspace (Presence/Absence)	Receipt / Preservation Comments
K1502414-001.01	40mL VOA NP		7	1	A	MC 3/23/2015
K1502414-001.02	40mL VOA NP				A	

Explain any discrepancies: (include lab sample ID numbers): _____

RSK - MEEPP, HCL (pH<2); RSK - CO2, (pH 5-8); Sulfur (pH>4)

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Longview, City of**
Client Project ID: **Sentinel Well Program** ALS Project ID: K1502414

Hydrogen Sulfide

Test Code: GC/SCD Reduced Sulfur Analysis
Instrument ID: Agilent 7890A/GC22/SCD Date(s) Collected: 3/10/15
Analyst: Mike Conejo Date Received: 3/10/15
Sample Type: Drinking Water Date Analyzed: 3/23/15
Test Notes:

Client Sample ID	ALS Sample ID	Sample Amount ml(s)	Purge Volume Liter(s)	Injection Volume ml(s)	**Result µg/L**	MRL µg/L	Data Qualifier
DW-5	K1502414-001	10.0	0.30	1.0	ND	0.84	
Method Blank	P150323-MB	10.0	0.30	1.0	ND	0.84	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

LABORATORY CONTROL SAMPLE / DUPLICATE LABORATORY CONTROL SAMPLE SUMMARY

Client: **Longview, City of**
Client Sample ID: **Duplicate Lab Control Sample**
Client Project ID: **Sentinel Well Program**

ALS Project ID: K1502414
ALS Sample ID: P150323-DLCS

Test Code: GC/SCD Reduced Sulfur Analysis
Instrument ID: Agilent 7890A/GC22/SCD
Analyst: Mike Conejo
Sample Type: Drinking Water
Test Notes:

Date Collected: NA
Date Received: NA
Date Analyzed: 3/23/15
Liquid Amount: 10.0 ml(s)
Purge Volume: 0.30 Liter(s)
Injection Volume: 0.20 ml(s)

CAS #	Compound	Spike Amount LCS / DLCS ug/L	Result LCS ug/L	Result DLCS ug/L	% Recovery LCS	% Recovery DLCS	ALS Acceptance Limits	RPD	RPD Limit	Data Qualifier
7783-06-4	Hydrogen Sulfide	416	391	395	**94**	**95**	54-133	1	20	

ALS Environmental
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www.alsglobal.com

April 14, 2015

Analytical Report for Service Request No: K1502415

Jeff Coleman
Longview, City of
W/S Operation Center
P.O. Box 128
Longview, WA 98632

RE: Sentinel Well Program

Dear Jeff,

Enclosed are the results of the sample(s) submitted to our laboratory March 10, 2015
For your reference, these analyses have been assigned our service request number **K1502415.**

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 3275. You may also contact me via email at Chris.Leaf@ALSGlobal.com.

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental

Chris Leaf
Project Manager

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 DEC UST	http://dec.alaska.gov/applications/eh/ehllabreports/USTLabs.aspx	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	L14-51
Florida DOH	http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm	E87412
Hawaii DOH	Not available	-
Idaho DHW	http://www.healthandwelfare.idaho.gov/Health/Labs/CertificationDrinkingWaterLabs/tabid/1833/Default.aspx	-
ISO 17025	http://www.pjlabs.com/	L14-50
Louisiana DEQ	http://www.deq.louisiana.gov/portal/DIVISIONS/PublicParticipationandPermitSupport/LouisianaLaboratoryAccreditationProgram.aspx	03016
Maine DHS	Not available	WA01276
Michigan DEQ	http://www.michigan.gov/deq/0,1607,7-135-3307_4131_4156---,00.html	9949
Minnesota DOH	http://www.health.state.mn.us/accreditation	053-999-457
Montana DPHHS	http://www.dphhs.mt.gov/publichealth/	CERT0047
Nevada DEP	http://ndep.nv.gov/bsdw/labservice.htm	WA01276
New Jersey DEP	http://www.nj.gov/dep/oqa/	WA005
North Carolina DWQ	http://www.dwqlab.org/	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/envserv/	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
Wisconsin DNR	http://dnr.wi.gov/	998386840
Wyoming (EPA Region 8)	http://www.epa.gov/region8/water/dwhome/wyomingdi.html	-
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/anlayte is offered by that state.

Case Narrative

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

ALS ENVIRONMENTAL

Client:	Longview, City of	**Service Request No.:**	K1502415
Project:	Sentinel Well Program	**Date Received:**	03/10/15
Sample Matrix:	Drinking Water		

Case Narrative

All analyses were performed consistent with the quality assurance program of ALS Environmental. This report contains analytical results for samples designated for Tier II data deliverables. When appropriate to the method, method blank results have been reported with each analytical test. Surrogate recoveries have been reported for all applicable organic analyses. Additional quality control analyses reported herein include: Laboratory Duplicate (DUP), Matrix Spike (MS), Matrix/Duplicate Matrix Spike (MS/DMS), Laboratory Control Sample (LCS), and Laboratory/Duplicate Laboratory Control Sample (LCS/DLCS).

Sample Receipt

One drinking water sample was received for analysis at ALS Environmental on 03/10/15. The sample was received in good condition and consistent with the accompanying chain of custody form. The sample was stored in a refrigerator at 4ºC upon receipt at the laboratory.

General Chemistry Parameters

No other anomalies associated with the analysis of this sample were observed.

Total Metals

No anomalies associated with the analysis of this sample were observed.

EDB and DBCP by EPA Method 504.1

No anomalies associated with the analysis of this sample were observed.

Pesticides and Polychlorinated Biphenyls by EPA Method 508.1

Matrix Spike Recovery Exceptions:
The duplicate matrix spike recovery of Endrin for sample Well #6 was outside control criteria. Recovery in the Laboratory Control Sample (LCS) and Matrix Spike was acceptable, which indicated the analytical batch was in control. The matrix spike outlier suggested a potential low bias in this matrix. No further corrective action was appropriate.

No other anomalies associated with the analysis of this sample were observed.

Chlorinated Acids by EPA Method 515.4

Second Source Exceptions:
The analysis of Chlorinated Herbicides in Drinking Water by EPA 515.4 requires the use of dual column confirmation. The Initial Calibration Verification (ICV) evaluation criteria were not met on the confirmation column for 2,4,5-TP (Silvex) in CAL13913. The ICV criteria were met on the alternate column. The data quality was not affected. No further corrective action was necessary.

Approved by_____

Chlorinated Acids by EPA Method 515.4 (cont.)

Calibration Verification Exceptions:
The analysis of Chlorinated Herbicides in Drinking Water by EPA 515.4 requires the use of dual column confirmation. When the Continuing Calibration Verification (CCV) criterion is met for both columns, the lower of the two sample results is generally reported. The primary evaluation criteria were not met on the confirmation column for Dichloroprop, 2,4-Dichlorophenylacetic Acid, and 2,4-D for CCV 03230032. The results were reported from the column with an acceptable CCV. The data quality was not affected. No further corrective action was necessary.

The analysis of Chlorinated Herbicides in Drinking Water by EPA 515.4 requires the use of dual column confirmation. When the Continuing Calibration Verification (CCV) criterion is met for both columns, the lower of the two sample results is generally reported. The primary evaluation criteria were not met on the confirmation column for Dichloroprop, and 2,4-D for CCV 03230045. The results were reported from the column with an acceptable CCV. The data quality was not affected. No further corrective action was necessary.

No other anomalies associated with the analysis of this sample were observed.

Volatile Organic Compounds by EPA Method 524.2

No anomalies associated with the analysis of this sample were observed.

Semivolatile Organic Compounds by EPA Method 525.2

Matrix Spike Recovery Exceptions:
The matrix spike recovery of Bis(2-ethylhexyl) Phthalate for sample Well #6 was outside control criteria. Recovery in the Laboratory Control Sample (LCS) was acceptable, which indicated the analytical batch was in control. The matrix spike outlier suggested a potential low bias in this matrix. No further corrective action was appropriate.

The upper control criterion was exceeded for the following analyte in Matrix Spike (MS) KWG1502393-1 and Matrix Spike Duplicate (MSD) KWG1502393-2: Hexachlorocyclopentadiene. The analyte in question was not detected in the associated field samples. The error associated with elevated recovery indicated a high bias. The sample data was not significantly affected. No further corrective action was appropriate.

Lab Control Sample Exceptions:
The upper control criterion was exceeded for Hexachlorocyclopentadiene in Laboratory Control Sample (LCS) KWG1502393-3. The analyte in question was not detected in the associated field samples. The error associated with elevated recovery indicated a high bias. The sample data was not significantly affected. No further corrective action was appropriate.

No other anomalies associated with the analysis of this sample were observed.

Endothall by EPA Method 548.1

No anomalies associated with the analysis of this sample were observed.

Diquat by High Performance Liquid Chromatography

Matrix Spike Recovery Exceptions:
The matrix spike recovery of Diquat for samples KWG1502015-1, and KWG1502015-2 was outside control criteria because of matrix interference. The chromatogram indicated the presence of non-target background components that prevented adequate resolution of the target analyte. As a result, accurate quantitation was not possible. No further corrective action was required.

No other anomalies associated with the analysis of this sample were observed.

Approved by_____

Chlorinated Phenols by EPA Method 1653

No anomalies associated with the analysis of this sample were observed.

Glyphosate and Carbamates

These analyses were performed at ALS Environmental, Middletown, PA. The data for these analyses are included in the corresponding section of this report.

Sulfur

This analysis was performed at ALS Environmental, Simi Valley, CA. The data for this analysis is included in the corresponding section of this report.

Approved by_____ _____ ___ _____

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

ALS Environmental

CHAIN OF CUSTODY

57727

001, 005

SR# K1502415

COC Set____of____

COC#_____

1317 South 13th Ave, Kelso, WA 98626 Phone (360) 577-7222 / 800-695-7222 / FAX (360) 636-1068

www.alsglobal.com

Project Name: Sentinel Well

Project Number:

Project Manager: Jeff Coleman

Company: City of Longview

Address: PO Box 128 Longview WA 98632

Phone #

Email

Sampler Signature: T Daly

Sampler Printed Name: T Daly

CLIENT SAMPLE ID	LABID	SAMPLING Date Time	Matrix	NUMBER OF CONTAINERS	6H: SM 9223 B / Coli L (+/-)	48H: 180.1 / Turbidity	48H: 300.0 / NO2	48H: 300.0 / NO3	48H: SM 2120 B / Color	48H: SM 4500-P E / O Phos	7D: 548.1 / ENDO	7D: 549.2 / DIQ_PARAQ	7D: SM 2540 C / TDS	14D: 335.4 / CN T	14D: 504.1 / EDB DBCP 123TCP	14D: 508.1 / PEST_CL	14D: 515.4 / CL_ACID_HERB	14D: 524.2 / VOC	14D: 525.2 / SVO	14D: 547 / GLYPH	14D: SM 2320 B / Alkalinity Titr	14D: Sulfur Liq / Sulfur	28D: 245.1 / Hg T	28D: 300.0 / Chloride	28D: 300.0 / F	28D: 314.0 / ClO4	28D: 531.1 / CARBAM	Remarks
1. Well #6		3/10/15 1115		42																								
2.																												
3.																												
4.																												
5.																												
6.																												
7.																												
8.																												
9.																												
10.																												

Report Requirements

___ I. Routine Report: Method Blank, Surrogate, as required

___ II. Report Dup., MS, MSD as required

___ III. CLP Like Summary (no raw data)

___ IV. Data Validation Report

___ V. EDD

Invoice Information

P.O.# 36-4554

Bill To: City of Longview
PO Box 128
Longview WA 98632

Turnaround Requirements

____ 24 hr. ____48 hr.
____ 5 Day
____ Standard

Requested Report Date

Circle which metals are to be analyzed

Total Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

Dissolved Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

Special Instructions/Comments:

*Indicate State Hydrocarbon Procedure: AK CA WI Northwest Other_____(Circle One)

Relinquished By:	Received By:	Relinquished By:	Received By:	Relinquished By:	Received By:
Signature: T Daly	Signature: [illegible]	Signature	Signature	Signature	Signature
Printed Name: Cof L	Printed Name: ALS	Printed Name	Printed Name	Printed Name	Printed Name
Firm: 3/10/15 1540	Firm: 3/10/15 1540	Firm	Firm	Firm	Firm
Date/Time	Date/Time	Date/Time	Date/Time	Date/Time	Date/Time

ALS Environmental

CHAIN OF CUSTODY

57727

001, 005

SR# K1502415

COC Set____of____

COC#_____

1317 South 13th Ave, Kelso, WA 98626 Phone (360) 577-7222 / 800-695-7222 / FAX (360) 636-1068
www.alsglobal.com

Project Name: Sentinel Well
Project Number:
Project Manager: Jeff Coleman
Company: City of Longview
Address: PO Box 128 Longview WA 98632
Phone #:
email:
Sampler Signature: T Daly
Sampler Printed Name: T Daly

CLIENT SAMPLE ID	LABID	SAMPLING Date	SAMPLING Time	Matrix	NUMBER OF CONTAINERS	28D: 300.0 / Br	28D: 300.0 / SO4	28D: SM 2510 B / Conductivity	28D: SM 4500-NH3 G / Ammonia	30D: 1653A / CHLOR_PHEN	180D: 1630 / Methyl Hg T	180D: 200.7 / Metals T	180D: 200.8 / Metals T	999D: Calculation / NO2 NO3 Calc	999D: SM 2340 B / Hardness Calc	1	2	3	4	5	Remarks
1. Well #6		3/10/15	1115		42																
2.																					
3.																					
4.																					
5.																					
6.																					
7.																					
8.																					
9.																					
10.																					

Report Requirements

___ I. Routine Report: Method Blank, Surrogate, as required

___ II. Report Dup., MS, MSD as required

___ III. CLP Like Summary (no raw data)

___ IV. Data Validation Report

___ V. EDD

Invoice Information

P.O.# 36-4554

Bill To: City of Longview
PO Box 128
Longview WA 98632

Turnaround Requirements

____ 24 hr. ____ 48 hr.
____ 5 Day
____ Standard

Requested Report Date

Circle which metals are to be analyzed

Total Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

Dissolved Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

Special Instructions/Comments:

*Indicate State Hydrocarbon Procedure: AK CA WI Northwest Other_____(Circle One)

Relinquished By:	Received By:	Relinquished By:	Received By:	Relinquished By:	Received By:
Signature: T Daly	Signature: [illegible]	Signature	Signature	Signature	Signature
Printed Name: Cal L	Printed Name: ALS	Printed Name	Printed Name	Printed Name	Printed Name
Firm: 3/10/15 1540	Firm: 3/10/15 1540	Firm	Firm	Firm	Firm
Date/Time	Date/Time	Date/Time	Date/Time	Date/Time	Date/Time

PC CL

Cooler Receipt and Preservation Form

Client / Project: ~~Kelso~~ LONGVIEW Service Request K15 2415

Received: 3/10/15 Opened: 3/10/15 By: LL Unloaded: 3/10/15 By: LL

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

   If present, were custody seals intact? Y N If present, were they signed and dated? Y N

Raw Cooler Temp	Corrected. Cooler Temp	Raw Temp Blank	Corrected Temp Blank	Corr. Factor	Thermometer ID	Cooler/COC ID NA	Tracking Number NA	Filed
7.9	8.1	8.0	8.2	+0.2	338	DW-5		
10.1	10.1	9.3	9.3	0	356	DW-6		
9.6	9.7	9.3	9.4	+0.1	354	DW-5		
7.6	7.6	9.7	9.7	0	353	DW-6		

4. Packing material: *Inserts* *Baggies* *Bubble Wrap* *Gel Packs* *Wet Ice* *Dry Ice* *Sleeves* _____
5. Were custody papers properly filled out (ink, signed, etc.)? NA Y N
6. Did all bottles arrive in good condition (unbroken)? *Indicate in the table below.* 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.* NA Y N
9. 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

SHORT HOLD TIME

Notes, Discrepancies, & Resolutions: Insufficient time for samples to chill completely.

Page ____ *of* ____

General Chemistry

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

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client:	Longview, City of	**Service Request:**	K1502415
Project:	Sentinel Well Program	**Date Collected:**	03/10/15
Sample Matrix:	Drinking Water	**Date Received:**	03/10/15
Analysis Method:	180.1	**Units:**	NTU
Prep Method:	None	**Basis:**	NA

Turbidity

Sample Name	Lab Code	Result	MRL	Dil.	Date Analyzed	Q
Well #6	K1502415-001	**8.79**	0.20	1	03/11/15 11:58	
Method Blank	K1502415-MB1	ND U	0.20	1	03/11/15 11:58	

ALS Group USA, Corp.
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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502415
Project	Sentinel Well Program	**Date Collected:**	03/10/15
Sample Matrix:	Drinking Water	**Date Received:**	03/10/15
		Date Analyzed:	03/11/15

Replicate Sample Summary
General Chemistry Parameters

Sample Name:	Well #6	**Units:**	NTU
Lab Code:	K1502415-001	**Basis:**	NA

Analyte Name	Analysis Method	MRL	Sample Result	Duplicate Sample K1502415-001DUP Result	Average	RPD	RPD Limit
Turbidity	180.1	0.20	8.79	8.87	8.83	<1	20

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

ALS Group USA, Corp.
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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502415
Project:	Sentinel Well Program	**Date Analyzed:**	03/11/15
Sample Matrix:	Drinking Water	**Date Extracted:**	NA

Lab Control Sample Summary
Turbidity

Analysis Method:	180.1	**Units:**	NTU
Prep Method:	None	**Basis:**	NA
		Analysis Lot:	435868

Sample Name	Lab Code	Result	Spike Amount	% Rec	% Rec Limits
Lab Control Sample	K1502415-LCS	6.18	6.37	97	90-110

ALS Group USA, Corp.
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Analytical Report

Client:	Longview, City of	**Service Request:**	K1502415
Project:	Sentinel Well Program	**Date Collected:**	03/10/15
Sample Matrix:	Drinking Water	**Date Received:**	03/10/15
Analysis Method:	300.0	**Units:**	mg/L
Prep Method:	Method	**Basis:**	NA

Bromide

Sample Name	Lab Code	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Well #6	K1502415-001	ND U	0.20	2	03/11/15 10:01	3/11/15	
Method Blank	K1502415-MB1	ND U	0.10	1	03/11/15 09:21	3/11/15	

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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502415
Project	Sentinel Well Program	**Date Collected:**	03/10/15
Sample Matrix:	Drinking Water	**Date Received:**	03/10/15
		Date Analyzed:	03/11/15

Replicate Sample Summary
General Chemistry Parameters

Sample Name:	Well #6	**Units:**	mg/L
Lab Code:	K1502415-001	**Basis:**	NA

Analyte Name	Analysis Method	MRL	Sample Result	Duplicate Sample K1502415-001DUP Result	Average	RPD	RPD Limit
Bromide	300.0	5.0	ND U	ND U	NC	NC	20

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ALS Group USA, Corp.
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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502415
Project:	Sentinel Well Program	**Date Collected:**	03/10/15
Sample Matrix:	Drinking Water	**Date Received:**	03/10/15
		Date Analyzed:	03/11/15
		Date Extracted:	03/11/15

Duplicate Matrix Spike Summary
Bromide

Sample Name:	Well #6	**Units:**	mg/L
Lab Code:	K1502415-001	**Basis:**	NA
Analysis Method:	300.0		
Prep Method:	Method		

		Matrix Spike K1502415-001MS			**Duplicate Matrix Spike** K1502415-001DMS					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Bromide	ND U	95.2	100	95	96.3	100	96	90-110	1	20

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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502415
Project:	Sentinel Well Program	**Date Analyzed:**	03/11/15
Sample Matrix:	Drinking Water	**Date Extracted:**	03/11/15

Lab Control Sample Summary
Bromide

Analysis Method:	300.0	**Units:**	mg/L
Prep Method:	Method	**Basis:**	NA
		Analysis Lot:	435994

Sample Name	Lab Code	Result	Spike Amount	% Rec	% Rec Limits
Lab Control Sample	K1502415-LCS	2.34	2.50	93	90-110

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Analytical Report

Client:	Longview, City of	**Service Request:**	K1502415
Project:	Sentinel Well Program	**Date Collected:**	03/10/15
Sample Matrix:	Drinking Water	**Date Received:**	03/10/15
Analysis Method:	300.0	**Units:**	mg/L
Prep Method:	Method	**Basis:**	NA

Chloride

Sample Name	Lab Code	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Well #6	K1502415-001	**114**	10	50	03/11/15 16:30	3/11/15	
Method Blank	K1502415-MB1	ND U	0.20	1	03/11/15 09:21	3/11/15	

ALS Group USA, Corp.
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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502415
Project	Sentinel Well Program	**Date Collected:**	03/10/15
Sample Matrix:	Drinking Water	**Date Received:**	03/10/15
		Date Analyzed:	03/11/15

Replicate Sample Summary
General Chemistry Parameters

Sample Name:	Well #6	**Units:**	mg/L
Lab Code:	K1502415-001	**Basis:**	NA

Analyte Name	Analysis Method	MRL	Sample Result	Duplicate Sample K1502415-001DUP Result	Average	RPD	RPD Limit
Chloride	300.0	10	114	114	114	<1	20

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ALS Group USA, Corp.
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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502415
Project:	Sentinel Well Program	**Date Collected:**	03/10/15
Sample Matrix:	Drinking Water	**Date Received:**	03/10/15
		Date Analyzed:	03/11/15
		Date Extracted:	03/11/15

Duplicate Matrix Spike Summary
Chloride

Sample Name:	Well #6	**Units:**	mg/L
Lab Code:	K1502415-001	**Basis:**	NA
Analysis Method:	300.0		
Prep Method:	Method		

		Matrix Spike K1502415-001MS			**Duplicate Matrix Spike** K1502415-001DMS					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Chloride	114	218	100	104	219	100	105	90-110	<1	20

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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502415
Project:	Sentinel Well Program	**Date Analyzed:**	03/11/15
Sample Matrix:	Drinking Water	**Date Extracted:**	03/11/15

Lab Control Sample Summary
Chloride

Analysis Method:	300.0	**Units:**	mg/L
Prep Method:	Method	**Basis:**	NA
		Analysis Lot:	435994

Sample Name	Lab Code	Result	Spike Amount	% Rec	% Rec Limits
Lab Control Sample	K1502415-LCS	4.73	5.00	95	90-110

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client:	Longview, City of	**Service Request:**	K1502415
Project:	Sentinel Well Program	**Date Collected:**	03/10/15
Sample Matrix:	Drinking Water	**Date Received:**	03/10/15
Analysis Method:	300.0	**Units:**	mg/L
Prep Method:	Method	**Basis:**	NA

Fluoride

Sample Name	Lab Code	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Well #6	K1502415-001	ND U	0.20	2	03/11/15 10:01	3/11/15	
Method Blank	K1502415-MB1	ND U	0.10	1	03/11/15 09:21	3/11/15	

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502415
Project	Sentinel Well Program	**Date Collected:**	03/10/15
Sample Matrix:	Drinking Water	**Date Received:**	03/10/15
		Date Analyzed:	03/11/15

Replicate Sample Summary
General Chemistry Parameters

Sample Name:	Well #6	**Units:**	mg/L
Lab Code:	K1502415-001	**Basis:**	NA

Analyte Name	Analysis Method	MRL	Sample Result	Duplicate Sample K1502415-001DUP Result	Average	RPD	RPD Limit
Fluoride	300.0	5.0	ND U	ND U	NC	NC	20

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ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502415
Project:	Sentinel Well Program	**Date Collected:**	03/10/15
Sample Matrix:	Drinking Water	**Date Received:**	03/10/15
		Date Analyzed:	03/11/15
		Date Extracted:	03/11/15

Duplicate Matrix Spike Summary
Fluoride

Sample Name:	Well #6	**Units:**	mg/L
Lab Code:	K1502415-001	**Basis:**	NA
Analysis Method:	300.0		
Prep Method:	Method		

		Matrix Spike K1502415-001MS			**Duplicate Matrix Spike** K1502415-001DMS					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Fluoride	ND U	98.7	100	99	100	100	100	90-110	1	20

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ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502415
Project:	Sentinel Well Program	**Date Analyzed:**	03/11/15
Sample Matrix:	Drinking Water	**Date Extracted:**	03/11/15

Lab Control Sample Summary
Fluoride

Analysis Method:	300.0	**Units:**	mg/L
Prep Method:	Method	**Basis:**	NA
		Analysis Lot:	435994

Sample Name	Lab Code	Result	Spike Amount	% Rec	% Rec Limits
Lab Control Sample	K1502415-LCS	5.12	5.00	102	90-110

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client:	Longview, City of	**Service Request:**	K1502415
Project:	Sentinel Well Program	**Date Collected:**	03/10/15
Sample Matrix:	Drinking Water	**Date Received:**	03/10/15
Analysis Method:	300.0	**Units:**	mg/L
Prep Method:	Method	**Basis:**	NA

Nitrite as Nitrogen

Sample Name	Lab Code	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Well #6	K1502415-001	ND U	0.10	2	03/11/15 10:01	3/11/15	
Method Blank	K1502415-MB1	ND U	0.050	1	03/11/15 09:21	3/11/15	

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dba ALS Environmental

QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502415
Project	Sentinel Well Program	**Date Collected:**	03/10/15
Sample Matrix:	Drinking Water	**Date Received:**	03/10/15
		Date Analyzed:	03/11/15

Replicate Sample Summary
General Chemistry Parameters

Sample Name:	Well #6	**Units:**	mg/L
Lab Code:	K1502415-001	**Basis:**	NA

Analyte Name	Analysis Method	MRL	Sample Result	Duplicate Sample K1502415-001DUP Result	Average	RPD	RPD Limit
Nitrite as Nitrogen	300.0	0.10	ND U	ND U	NC	NC	20

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ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502415
Project:	Sentinel Well Program	**Date Collected:**	03/10/15
Sample Matrix:	Drinking Water	**Date Received:**	03/10/15
		Date Analyzed:	03/11/15
		Date Extracted:	03/11/15

Duplicate Matrix Spike Summary
Nitrite as Nitrogen

Sample Name:	Well #6	**Units:**	mg/L
Lab Code:	K1502415-001	**Basis:**	NA
Analysis Method:	300.0		
Prep Method:	Method		

		Matrix Spike K1502415-001MS			**Duplicate Matrix Spike** K1502415-001DMS					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Nitrite as Nitrogen	ND U	3.84	4.00	96	3.88	4.00	97	90-110	<1	20

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ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502415
Project:	Sentinel Well Program	**Date Analyzed:**	03/11/15
Sample Matrix:	Drinking Water	**Date Extracted:**	03/11/15

Lab Control Sample Summary
Nitrite as Nitrogen

Analysis Method:	300.0	**Units:**	mg/L
Prep Method:	Method	**Basis:**	NA
		Analysis Lot:	435994

Sample Name	Lab Code	Result	Spike Amount	% Rec	% Rec Limits
Lab Control Sample	K1502415-LCS	2.41	2.50	97	90-110

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client:	Longview, City of	**Service Request:**	K1502415
Project:	Sentinel Well Program	**Date Collected:**	03/10/15
Sample Matrix:	Drinking Water	**Date Received:**	03/10/15
Analysis Method:	300.0	**Units:**	mg/L
Prep Method:	Method	**Basis:**	NA

Nitrate as Nitrogen

Sample Name	Lab Code	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Well #6	K1502415-001	ND U	0.10	2	03/11/15 10:01	3/11/15	
Method Blank	K1502415-MB1	ND U	0.050	1	03/11/15 09:21	3/11/15	

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502415
Project	Sentinel Well Program	**Date Collected:**	03/10/15
Sample Matrix:	Drinking Water	**Date Received:**	03/10/15
		Date Analyzed:	03/11/15

Replicate Sample Summary
General Chemistry Parameters

Sample Name:	Well #6	**Units:**	mg/L
Lab Code:	K1502415-001	**Basis:**	NA

Analyte Name	Analysis Method	MRL	Sample Result	Duplicate Sample K1502415-001DUP Result	Average	RPD	RPD Limit
Nitrate as Nitrogen	300.0	0.10	ND U	ND U	NC	NC	20

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ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502415
Project:	Sentinel Well Program	**Date Collected:**	03/10/15
Sample Matrix:	Drinking Water	**Date Received:**	03/10/15
		Date Analyzed:	03/11/15
		Date Extracted:	03/11/15

Duplicate Matrix Spike Summary
Nitrate as Nitrogen

Sample Name:	Well #6	**Units:**	mg/L
Lab Code:	K1502415-001	**Basis:**	NA
Analysis Method:	300.0		
Prep Method:	Method		

		Matrix Spike K1502415-001MS			**Duplicate Matrix Spike** K1502415-001DMS					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Nitrate as Nitrogen	ND U	3.63	4.00	91	3.68	4.00	92	90-110	1	20

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ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502415
Project:	Sentinel Well Program	**Date Analyzed:**	03/11/15
Sample Matrix:	Drinking Water	**Date Extracted:**	03/11/15

Lab Control Sample Summary
Nitrate as Nitrogen

Analysis Method:	300.0	**Units:**	mg/L
Prep Method:	Method	**Basis:**	NA
		Analysis Lot:	435994

Sample Name	Lab Code	Result	Spike Amount	% Rec	% Rec Limits
Lab Control Sample	K1502415-LCS	2.34	2.50	94	90-110

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client:	Longview, City of	**Service Request:**	K1502415
Project:	Sentinel Well Program	**Date Collected:**	03/10/15
Sample Matrix:	Drinking Water	**Date Received:**	03/10/15
Analysis Method:	300.0	**Units:**	mg/L
Prep Method:	Method	**Basis:**	NA

Sulfate

Sample Name	Lab Code	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Well #6	K1502415-001	**0.43**	0.20	2	03/11/15 10:01	3/11/15	
Method Blank	K1502415-MB1	ND U	0.10	1	03/11/15 09:21	3/11/15	

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502415
Project	Sentinel Well Program	**Date Collected:**	03/10/15
Sample Matrix:	Drinking Water	**Date Received:**	03/10/15
		Date Analyzed:	03/11/15

Replicate Sample Summary
General Chemistry Parameters

Sample Name:	Well #6	**Units:**	mg/L
Lab Code:	K1502415-001	**Basis:**	NA

Analyte Name	Analysis Method	MRL	Sample Result	Duplicate Sample K1502415-001DUP Result	Average	RPD	RPD Limit
Sulfate	300.0	5.0	0.43	ND U	NC	NC	20

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ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502415
Project:	Sentinel Well Program	**Date Collected:**	03/10/15
Sample Matrix:	Drinking Water	**Date Received:**	03/10/15
		Date Analyzed:	03/11/15
		Date Extracted:	03/11/15

Duplicate Matrix Spike Summary
Sulfate

Sample Name:	Well #6	**Units:**	mg/L
Lab Code:	K1502415-001	**Basis:**	NA
Analysis Method:	300.0		
Prep Method:	Method		

		Matrix Spike K1502415-001MS			Duplicate Matrix Spike K1502415-001DMS					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Sulfate	0.43	91.4	100	91	92.4	100	92	90-110	1	20

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ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502415
Project:	Sentinel Well Program	**Date Analyzed:**	03/11/15
Sample Matrix:	Drinking Water	**Date Extracted:**	03/11/15

Lab Control Sample Summary
Sulfate

Analysis Method:	300.0	**Units:**	mg/L
Prep Method:	Method	**Basis:**	NA
		Analysis Lot:	435994

Sample Name	Lab Code	Result	Spike Amount	% Rec	% Rec Limits
Lab Control Sample	K1502415-LCS	4.84	5.00	97	90-110

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client:	Longview, City of	**Service Request:**	K1502415
Project:	Sentinel Well Program	**Date Collected:**	03/10/15
Sample Matrix:	Drinking Water	**Date Received:**	03/10/15
Analysis Method:	314.0	**Units:**	ug/L
Prep Method:	None	**Basis:**	NA

Perchlorate

Sample Name	Lab Code	Result	MRL	Dil.	Date Analyzed	Q
Well #6	K1502415-001	ND U	1.0	1	03/31/15 12:10	
Method Blank	K1502415-MB1	ND U	1.0	1	03/31/15 11:44	

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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502415
Project	Sentinel Well Program	**Date Collected:**	03/10/15
Sample Matrix:	Drinking Water	**Date Received:**	03/10/15
		Date Analyzed:	03/31/15

Replicate Sample Summary
General Chemistry Parameters

Sample Name:	Well #6	**Units:**	ug/L
Lab Code:	K1502415-001	**Basis:**	NA

Analyte Name	Analysis Method	MRL	Sample Result	Duplicate Sample K1502415-001DUP Result	Average	RPD	RPD Limit
Perchlorate	314.0	1.0	ND U	ND U	NC	NC	20

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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502415
Project:	Sentinel Well Program	**Date Collected:**	03/10/15
Sample Matrix:	Drinking Water	**Date Received:**	03/10/15
		Date Analyzed:	03/31/15
		Date Extracted:	NA

Duplicate Matrix Spike Summary
Perchlorate

Sample Name:	Well #6	**Units:**	ug/L
Lab Code:	K1502415-001	**Basis:**	NA
Analysis Method:	314.0		
Prep Method:	None		

		Matrix Spike K1502415-001MS			Duplicate Matrix Spike K1502415-001DMS					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Perchlorate	ND U	10.7	10.0	107	9.7	10.0	97	80-120	10	20

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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502415
Project:	Sentinel Well Program	**Date Analyzed:**	03/31/15
Sample Matrix:	Drinking Water	**Date Extracted:**	NA

Lab Control Sample Summary
Perchlorate

Analysis Method:	314.0	**Units:**	ug/L
Prep Method:	None	**Basis:**	NA
		Analysis Lot:	438526

Sample Name	Lab Code	Result	Spike Amount	% Rec	% Rec Limits
Lab Control Sample	K1502415-LCS	15.4	16.8	92	85-115

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client:	Longview, City of	**Service Request:**	K1502415
Project:	Sentinel Well Program	**Date Collected:**	03/10/15
Sample Matrix:	Drinking Water	**Date Received:**	03/10/15
Analysis Method:	335.4	**Units:**	mg/L
Prep Method:	Method	**Basis:**	NA

Cyanide, Total

Sample Name	Lab Code	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Well #6	K1502415-001	ND U	0.010	1	03/11/15 10:44	3/11/15	
Method Blank	K1502415-MB1	ND U	0.010	1	03/11/15 10:44	3/11/15	

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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502415
Project	Sentinel Well Program	**Date Collected:**	03/10/15
Sample Matrix:	Drinking Water	**Date Received:**	03/10/15
		Date Analyzed:	03/11/15

Replicate Sample Summary
General Chemistry Parameters

Sample Name:	Well #6	**Units:**	mg/L
Lab Code:	K1502415-001	**Basis:**	NA

Analyte Name	Analysis Method	MRL	Sample Result	Duplicate Sample K1502415-001DUP Result	Average	RPD	RPD Limit
Cyanide, Total	335.4	0.010	ND U	ND U	NC	NC	20

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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502415
Project:	Sentinel Well Program	**Date Collected:**	03/10/15
Sample Matrix:	Drinking Water	**Date Received:**	03/10/15
		Date Analyzed:	03/11/15
		Date Extracted:	03/11/15

Duplicate Matrix Spike Summary
Cyanide, Total

Sample Name:	Well #6	**Units:**	mg/L
Lab Code:	K1502415-001	**Basis:**	NA
Analysis Method:	335.4		
Prep Method:	Method		

		Matrix Spike K1502415-001MS			Duplicate Matrix Spike K1502415-001DMS					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Cyanide, Total	ND U	0.095	0.100	94	0.104	0.100	104	90-110	9	20

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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502415
Project:	Sentinel Well Program	**Date Analyzed:**	03/11/15
Sample Matrix:	Drinking Water	**Date Extracted:**	03/11/15

Lab Control Sample Summary
Cyanide, Total

Analysis Method:	335.4	**Units:**	mg/L
Prep Method:	Method	**Basis:**	NA
		Analysis Lot:	436013

Sample Name	Lab Code	Result	Spike Amount	% Rec	% Rec Limits
Lab Control Sample	K1502415-LCS	0.147	0.150	98	90-110

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Analytical Report

Client:	Longview, City of	**Service Request:**	K1502415
Project:	Sentinel Well Program	**Date Collected:**	03/10/15
Sample Matrix:	Drinking Water	**Date Received:**	03/10/15
Analysis Method:	Calculation	**Units:**	mg/L
Prep Method:	None	**Basis:**	NA

Nitrate+Nitrite as Nitrogen

Sample Name	Lab Code	Result	MRL	Dil.	Date Analyzed	Q
Well #6	K1502415-001	ND U	0.20	1	03/11/15 10:01	

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Analytical Report

Client:	Longview, City of	**Service Request:**	K1502415
Project:	Sentinel Well Program	**Date Collected:**	03/10/15
Sample Matrix:	Drinking Water	**Date Received:**	03/10/15
Analysis Method:	SM 2120 B	**Units:**	ColorUnits
Prep Method:	None	**Basis:**	NA

Color

Sample Name	Lab Code	Result	MRL	Dil.	Date Analyzed	Q
Well #6	K1502415-001	**5.0**	5.0	1	03/11/15 10:21	
Method Blank	K1502415-MB1	ND U	5.0	1	03/11/15 10:18	

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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502415
Project	Sentinel Well Program	**Date Collected:**	03/10/15
Sample Matrix:	Drinking Water	**Date Received:**	03/10/15
		Date Analyzed:	03/11/15

Replicate Sample Summary
General Chemistry Parameters

Sample Name:	Well #6	**Units:**	ColorUnits
Lab Code:	K1502415-001	**Basis:**	NA

Analyte Name	Analysis Method	MRL	Sample Result	Duplicate Sample K1502415-001DUP Result	Average	RPD	RPD Limit
Color	SM 2120 B	5.0	5.0	5.0	5.00	<1	20

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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502415
Project:	Sentinel Well Program	**Date Analyzed:**	03/11/15
Sample Matrix:	Drinking Water	**Date Extracted:**	NA

Lab Control Sample Summary
Color

Analysis Method:	SM 2120 B	**Units:**	ColorUnits
Prep Method:	None	**Basis:**	NA
		Analysis Lot:	435804

Sample Name	Lab Code	Result	Spike Amount	% Rec	% Rec Limits
Lab Control Sample	K1502415-LCS	50.0	50.0	100	85-115

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client:	Longview, City of	**Service Request:**	K1502415
Project:	Sentinel Well Program	**Date Collected:**	03/10/15
Sample Matrix:	Drinking Water	**Date Received:**	03/10/15
Analysis Method:	SM 2320 B	**Units:**	mg/L
Prep Method:	None	**Basis:**	NA

Alkalinity as CaCO3, Total

Sample Name	Lab Code	Result	MRL	Dil.	Date Analyzed	Q
Well #6	K1502415-001	**98.1**	2.0	1	03/14/15 14:15	
Method Blank	K1502415-MB1	ND U	2.0	1	03/14/15 14:15	

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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502415
Project	Sentinel Well Program	**Date Collected:**	NA
Sample Matrix:	Drinking Water	**Date Received:**	NA
Analysis Method:	SM 2320 B	**Units:**	mg/L
Prep Method:	None	**Basis:**	NA

Replicate Sample Summary
Alkalinity as CaCO3, Total

Sample Name:	Lab Code:	MRL	Sample Result	Duplicate Result	Average	RPD	RPD Limit	Date Analyzed
Batch QC	K1502190-001DUP	2.0	66.0	66.0	66.0	<1	20	03/14/15
Batch QC	K1502416-001DUP	2.0	145	145	145	<1	20	03/14/15

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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502415
Project:	Sentinel Well Program	**Date Analyzed:**	03/14/15
Sample Matrix:	Drinking Water	**Date Extracted:**	NA

Lab Control Sample Summary
Alkalinity as CaCO3, Total

Analysis Method:	SM 2320 B	**Units:**	mg/L
Prep Method:	None	**Basis:**	NA
		Analysis Lot:	436281

Sample Name	Lab Code	Result	Spike Amount	% Rec	% Rec Limits
Lab Control Sample	K1502415-LCS	34.6	34.4	101	90-110

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client:	Longview, City of	**Service Request:**	K1502415
Project:	Sentinel Well Program	**Date Collected:**	03/10/15
Sample Matrix:	Drinking Water	**Date Received:**	03/10/15
Analysis Method:	SM 2510 B	**Units:**	uMHOS/cm
Prep Method:	None	**Basis:**	NA

Conductivity at 25 Degrees Celsius

Sample Name	Lab Code	Result	MRL	Dil.	Date Analyzed	Q
Well #6	K1502415-001	**701**	2.0	1	03/19/15 09:45	
Method Blank	K1502415-MB1	ND U	2.0	1	03/19/15 09:45	
Method Blank	K1502415-MB2	ND U	2.0	1	03/19/15 09:45	

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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502415
Project	Sentinel Well Program	**Date Collected:**	03/10/15
Sample Matrix:	Drinking Water	**Date Received:**	03/10/15
		Date Analyzed:	03/19/15

Replicate Sample Summary
General Chemistry Parameters

Sample Name:	Well #6	**Units:**	uMHOS/cm
Lab Code:	K1502415-001	**Basis:**	NA

Analyte Name	Analysis Method	MRL	Sample Result	Duplicate Sample K1502415-001DUP Result	Average	RPD	RPD Limit
Conductivity at 25 Degrees Celsius	SM 2510 B	2.0	701	699	700	<1	20

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ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502415
Project:	Sentinel Well Program	**Date Analyzed:**	03/19/15
Sample Matrix:	Drinking Water	**Date Extracted:**	NA

Lab Control Sample Summary
Conductivity at 25 Degrees Celsius

Analysis Method:	SM 2510 B	**Units:**	uMHOS/cm
Prep Method:	None	**Basis:**	NA
		Analysis Lot:	436981

Sample Name	Lab Code	Result	Spike Amount	% Rec	% Rec Limits
Lab Control Sample	K1502415-LCS	319	289	110	86-113

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client:	Longview, City of	**Service Request:**	K1502415
Project:	Sentinel Well Program	**Date Collected:**	03/10/15
Sample Matrix:	Drinking Water	**Date Received:**	03/10/15
Analysis Method:	SM 2540 C	**Units:**	mg/L
Prep Method:	None	**Basis:**	NA

Solids, Total Dissolved

Sample Name	Lab Code	Result	MRL	Dil.	Date Analyzed	Q
Well #6	K1502415-001	**474**	10	1	03/11/15 13:02	
Method Blank	K1502415-MB1	ND U	5.0	1	03/11/15 13:02	
Method Blank	K1502415-MB2	ND U	5.0	1	03/11/15 13:02	

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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502415
Project	Sentinel Well Program	**Date Collected:**	03/10/15
Sample Matrix:	Drinking Water	**Date Received:**	03/10/15
		Date Analyzed:	03/11/15

Replicate Sample Summary
General Chemistry Parameters

Sample Name:	Well #6	**Units:**	mg/L
Lab Code:	K1502415-001	**Basis:**	NA

Analyte Name	Analysis Method	MRL	Sample Result	Duplicate Sample K1502415-001DUP Result	Average	RPD	RPD Limit
Solids, Total Dissolved	SM 2540 C	10	474	468	471	1	10

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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502415
Project:	Sentinel Well Program	**Date Analyzed:**	03/11/15
Sample Matrix:	Drinking Water	**Date Extracted:**	NA

Lab Control Sample Summary
Solids, Total Dissolved

Analysis Method:	SM 2540 C	**Units:**	mg/L
Prep Method:	None	**Basis:**	NA
		Analysis Lot:	435923

Sample Name	Lab Code	Result	Spike Amount	% Rec	% Rec Limits
Lab Control Sample	K1502415-LCS	1260	1300	97	85-115

ALS Group USA, Corp.
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Analytical Report

Client:	Longview, City of	**Service Request:**	K1502415
Project:	Sentinel Well Program	**Date Collected:**	03/10/15
Sample Matrix:	Drinking Water	**Date Received:**	03/10/15
Analysis Method:	SM 4500-NH3 G	**Units:**	mg/L
Prep Method:	Method	**Basis:**	NA

Ammonia as Nitrogen

Sample Name	Lab Code	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Well #6	K1502415-001	**0.159**	0.050	1	03/17/15 15:23	3/17/15	
Method Blank	K1502415-MB1	ND U	0.050	1	03/17/15 15:23	3/17/15	

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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502415
Project	Sentinel Well Program	**Date Collected:**	03/10/15
Sample Matrix:	Drinking Water	**Date Received:**	03/10/15
		Date Analyzed:	03/17/15

Replicate Sample Summary
General Chemistry Parameters

Sample Name:	Well #6	**Units:**	mg/L
Lab Code:	K1502415-001	**Basis:**	NA

Analyte Name	Analysis Method	MRL	Sample Result	Duplicate Sample K1502415-001DUP Result	Average	RPD	RPD Limit
Ammonia as Nitrogen	SM 4500-NH3 G	0.050	0.159	0.162	0.161	2	20

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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502415
Project:	Sentinel Well Program	**Date Collected:**	03/10/15
Sample Matrix:	Drinking Water	**Date Received:**	03/10/15
		Date Analyzed:	03/17/15
		Date Extracted:	03/17/15

Duplicate Matrix Spike Summary
Ammonia as Nitrogen

Sample Name:	Well #6	**Units:**	mg/L
Lab Code:	K1502415-001	**Basis:**	NA
Analysis Method:	SM 4500-NH3 G		
Prep Method:	Method		

		Matrix Spike K1502415-001MS			**Duplicate Matrix Spike** K1502415-001DMS					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Ammonia as Nitrogen	0.159	2.13	2.00	98	2.13	2.00	98	90-110	<1	20

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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502415
Project:	Sentinel Well Program	**Date Analyzed:**	03/17/15
Sample Matrix:	Drinking Water	**Date Extracted:**	03/17/15

Lab Control Sample Summary
Ammonia as Nitrogen

Analysis Method:	SM 4500-NH3 G	**Units:**	mg/L
Prep Method:	Method	**Basis:**	NA
		Analysis Lot:	436692

Sample Name	Lab Code	Result	Spike Amount	% Rec	% Rec Limits
Lab Control Sample	K1502415-LCS	14.6	15.4	95	90-110

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client:	Longview, City of	**Service Request:**	K1502415
Project:	Sentinel Well Program	**Date Collected:**	03/10/15
Sample Matrix:	Drinking Water	**Date Received:**	03/10/15
Analysis Method:	SM 4500-P E	**Units:**	mg/L
Prep Method:	None	**Basis:**	NA

Orthophosphate as Phosphorus

Sample Name	Lab Code	Result	MRL	Dil.	Date Analyzed	Q
Well #6	K1502415-001	**0.340**	0.050	1	03/11/15 11:44	
Method Blank	K1502415-MB1	ND U	0.050	1	03/11/15 11:44	

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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502415
Project	Sentinel Well Program	**Date Collected:**	03/10/15
Sample Matrix:	Drinking Water	**Date Received:**	03/10/15
		Date Analyzed:	03/11/15

Replicate Sample Summary
General Chemistry Parameters

Sample Name:	Well #6	**Units:**	mg/L
Lab Code:	K1502415-001	**Basis:**	NA

Analyte Name	Analysis Method	MRL	Sample Result	Duplicate Sample K1502415-001DUP Result	Average	RPD	RPD Limit
Orthophosphate as Phosphorus	SM 4500-P E	0.050	0.340	0.347	0.344	2	20

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ALS Group USA, Corp.
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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502415
Project:	Sentinel Well Program	**Date Collected:**	03/10/15
Sample Matrix:	Drinking Water	**Date Received:**	03/10/15
		Date Analyzed:	03/11/15
		Date Extracted:	NA

Duplicate Matrix Spike Summary
Orthophosphate as Phosphorus

Sample Name:	Well #6	**Units:**	mg/L
Lab Code:	K1502415-001	**Basis:**	NA
Analysis Method:	SM 4500-P E		
Prep Method:	None		

		Matrix Spike K1502415-001MS			**Duplicate Matrix Spike** K1502415-001DMS					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Orthophosphate as Phosphorus	0.340	0.58	0.20	118	0.57	0.20	117	75-125	<1	20

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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502415
Project:	Sentinel Well Program	**Date Analyzed:**	03/11/15
Sample Matrix:	Drinking Water	**Date Extracted:**	NA

Lab Control Sample Summary
Orthophosphate as Phosphorus

Analysis Method:	SM 4500-P E	**Units:**	mg/L
Prep Method:	None	**Basis:**	NA
		Analysis Lot:	435833

Sample Name	Lab Code	Result	Spike Amount	% Rec	% Rec Limits
Lab Control Sample	K1502415-LCS	6.04	6.1	99	85-115

ALS Group USA, Corp.
dba ALS Environmental
Analytical Report

Client:	Longview, City of	**Service Request:**	K1502415
Project:	Sentinel Well Program	**Date Collected:**	3/10/2015
Sample Matrix:	Drinking water	**Date Received:**	3/10/2015

Colilert, E. Coli

Prep Method: NONE
Analysis Method: SM 9223B Basis: NA
Test Notes:

Sample Name	Lab Code	MRL	Date Analyzed	Time Test Started		Result	Result Notes
Well #6	K1502415-001	1	3/11/2015	09:20	hrs	Absent	

SM *Standard Methods for the Examination of Water and Wastewater* , 20th Ed., 1998.

ALS Group USA, Corp.
dba ALS Environmental
Analytical Report

Client:	Longview, City of	**Service Request:**	K1502415
Project:	Sentinel Well Program	**Date Collected:**	3/10/2015
Sample Matrix:	Drinking water	**Date Received:**	3/10/2015

Colilert, T. Coli

Prep Method: NONE
Analysis Method: SM 9223B Basis: NA
Test Notes:

Sample Name	Lab Code	MRL	Date Analyzed	Time Test Started		Result	Result Notes
Well #6	K1502415-001	1	3/11/2015	09:20	hrs	Absent	

SM *Standard Methods for the Examination of Water and Wastewater* , 20th Ed., 1998.

Metals

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Analytical Report

Client:	Longview, City of	**Service Request:**	K1502415
Project:	Sentinel Well Program	**Date Collected:**	03/10/15
Sample Matrix:	Drinking water	**Date Received:**	03/10/15

Hardness as CaCO3

Prep Method:	CLAA	Units:	mg/L (ppm)
Analysis Method:	200.7/SM 2340B	Basis:	NA
Test Notes:			

Sample Name	Lab Code	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Well #6	K1502415-001	0.07	1	03/13/15	03/16/15	245	
Method Blank	K1502415-MB	0.07	1	03/13/15	03/16/15	ND	

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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502415
Project:	Sentinel Well Program	**Date Collected:**	03/10/15
Sample Matrix:	Drinking water	**Date Received:**	03/10/15
		Date Extracted:	03/13/15
		Date Analyzed:	03/16/15

Duplicate Summary
Metals

Sample Name:	Well #6	Units:	mg/L (ppm)
Lab Code:	K1502415-001	Basis:	NA
Test Notes:			

Analyte	Prep Method	Analysis Method	MRL	Sample Result	Duplicate Sample Result	Average	Relative Percent Difference	Result Notes
Hardness as CaCO3	CLAA	200.7/SM 2340B	0.07	245	247	246	<1	

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Analytical Report

Client:	Longview, City of	**Service Request:**	K1502415
Project:	Sentinel Well Program	**Date Collected:**	03/10/15
Sample Matrix:	Drinking water	**Date Received:**	03/10/15

Methyl Mercury

Prep Method:	Method	Units:	ng/L
Analysis Method:	1630	Basis:	NA
Test Notes:			

Sample Name	Lab Code	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Well #6	K1502415-001	0.1	1	03/16/15	03/17/15	ND	
Method Blank 1	K1502415-MB1	0.1	1	03/16/15	03/17/15	ND	
Method Blank 2	K1502415-MB2	0.1	1	03/16/15	03/17/15	ND	
Method Blank 3	K1502415-MB3	0.1	1	03/16/15	03/17/15	ND	

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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502415
Project:	Sentinel Well Program	**Date Collected:**	03/10/15
Sample Matrix:	Drinking water	**Date Received:**	03/10/15
		Date Extracted:	03/16/15
		Date Analyzed:	03/17/15

Matrix Spike/Duplicate Matrix Spike Summary
Metals

Sample Name:	Well #6		Units:	ng/L
Lab Code:	K1502415-001MS,	K1502415-001MSD	Basis:	NA
Test Notes:				

				Spike Level		Sample	Spike Result		Percent Recovery				
Analyte	**Prep Method**	**Analysis Method**	**MRL**	**MS**	**DMS**	**Result**	**MS**	**DMS**	**MS**	**DMS**	**CAS Acceptance Limits**	**Relative Percent Difference**	**Result Notes**
Mercury, Methyl	Method	1630	0.1	2.22	2.22	ND	2.67	2.45	120	110	65-135	9	

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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502415
Project:	Sentinel Well Program	**Date Collected:**	NA
LCS Matrix:	Water	**Date Received:**	NA
		Date Extracted:	03/16/15
		Date Analyzed:	03/17/15

Ongoing Precision and Recovery (OPR) Sample Summary
Metals

Sample Name: Ongoing Precision and Recovery (Initial)

Units: ng/L
Basis: NA

Test Notes:

Analyte	Prep Method	Analysis Method	True Value	Result	Percent Recovery	CAS Percent Recovery Acceptance Limits	Result Notes
Mercury, Methyl	Method	1630	2.22	2.56	115	67-133	

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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502415
Project:	Sentinel Well Program	**Date Collected:**	NA
LCS Matrix:	Water	**Date Received:**	NA
		Date Extracted:	03/16/15
		Date Analyzed:	03/17/15

Ongoing Precision and Recovery (OPR) Sample Summary
Metals

Sample Name: Ongoing Precision and Recovery (Final)

Units: ng/L
Basis: NA

Test Notes:

Analyte	Prep Method	Analysis Method	True Value	Result	Percent Recovery	CAS Percent Recovery Acceptance Limits	Result Notes
Mercury, Methyl	Method	1630	2.22	2.19	99	67-133	

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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502415
Project:	Sentinel Well Program	**Date Collected:**	NA
LCS Matrix:	Water	**Date Received:**	NA
		Date Extracted:	03/16/15
		Date Analyzed:	03/17/15

Quality Control Sample (QCS) Summary
Metals

Sample Name: Quality Control Sample

Units: pg
Basis: NA

Test Notes:

Analyte	Prep Method	Analysis Method	True Value	Result	Percent Recovery	CAS Percent Recovery Acceptance Limits	Result Notes
Mercury, Methyl	Method	1630	100	109	109	67-133	

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Analytical Report

Client :	Longview, City of	**Service Request :**	K1502415
Project Name :	Sentinel Well Program	**Date Collected :**	03/10/15
Project No. :	NA	**Date Received :**	03/10/15
Matrix :	Drinking Water	**Date Extracted :**	03/11-13/15

Total Metals

Sample Name :	Well #6	**Units :**	mg/L (ppm)
Lab Code :	K1502415-001	**Basis :**	NA

Analyte	Analysis Method	MRL	Date Analyzed	Sample Result	Result Notes
Antimony	200.8	0.00005	03/19/15	ND	
Arsenic	200.8	0.0005	03/19/15	0.0048	
Barium	200.7	0.004	03/16/15	0.030	
Beryllium	200.8	0.00002	03/19/15	ND	
Cadmium	200.8	0.00002	03/19/15	ND	
Chromium	200.8	0.0002	03/19/15	0.0020	
Copper	200.7	0.004	03/16/15	ND	
Iron	200.7	0.02	03/16/15	1.02	
Lead	200.8	0.00002	03/19/15	ND	
Manganese	200.7	0.001	03/16/15	0.972	
Mercury	245.1	0.0002	03/12/15	ND	
Nickel	200.8	0.0002	03/19/15	0.0006	
Selenium	200.8	0.001	03/19/15	ND	
Silver	200.8	0.00002	03/19/15	ND	
Sodium	200.7	0.2	03/16/15	17.0	
Thallium	200.8	0.00002	03/19/15	0.00002	
Zinc	200.7	0.004	03/16/15	ND	

Comments:

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Analytical Report

Client :	Longview, City of	**Service Request :**	K1502415
Project Name :	Sentinel Well Program	**Date Collected :**	NA
Project No. :	NA	**Date Received :**	NA
Matrix :	Drinking Water	**Date Extracted :**	03/13/15

Total Metals

Sample Name :	Method Blank	**Units :**	mg/L (ppm)
Lab Code :	KQ1502195-01	**Basis :**	NA

Analyte	Analysis Method	MRL	Date Analyzed	Sample Result	Result Notes
Barium	200.7	0.004	03/16/15	ND	
Copper	200.7	0.004	03/16/15	ND	
Iron	200.7	0.02	03/16/15	ND	
Manganese	200.7	0.001	03/16/15	ND	
Sodium	200.7	0.2	03/16/15	ND	
Zinc	200.7	0.004	03/16/15	ND	

Comments:

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Analytical Report

Client :	Longview, City of	**Service Request :**	K1502415
Project Name :	Sentinel Well Program	**Date Collected :**	NA
Project No. :	NA	**Date Received :**	NA
Matrix :	Drinking Water	**Date Extracted :**	03/11/15

Total Metals

Sample Name :	Method Blank	**Units :**	mg/L (ppm)
Lab Code :	KQ1502275-03	**Basis :**	NA

Analyte	Analysis Method	MRL	Date Analyzed	Sample Result	Result Notes
Mercury	245.1	0.0002	03/12/15	ND	

Comments:

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Analytical Report

Client :	Longview, City of	**Service Request :**	K1502415
Project Name :	Sentinel Well Program	**Date Collected :**	NA
Project No. :	NA	**Date Received :**	NA
Matrix :	Drinking Water	**Date Extracted :**	03/13/15

Total Metals

Sample Name :	Method Blank	**Units :**	mg/L (ppm)
Lab Code :	KQ1502374-01	**Basis :**	NA

Analyte	Analysis Method	MRL	Date Analyzed	Sample Result	Result Notes
Antimony	200.8	0.00005	03/19/15	ND	
Arsenic	200.8	0.0005	03/19/15	ND	
Beryllium	200.8	0.00002	03/19/15	ND	
Cadmium	200.8	0.00002	03/19/15	ND	
Chromium	200.8	0.0002	03/19/15	ND	
Lead	200.8	0.00002	03/19/15	ND	
Nickel	200.8	0.0002	03/19/15	ND	
Selenium	200.8	0.001	03/19/15	ND	
Silver	200.8	0.00002	03/19/15	ND	
Thallium	200.8	0.00002	03/19/15	ND	

Comments:

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QA/QC Report

Client :	Longview, City of	**Service Request :**	K1502415
Project Name :	Sentinel Well Program	**Date Collected :**	03/10/15
Project No. :	NA	**Date Received :**	03/10/15
Matrix :	Drinking Water	**Date Extracted :**	03/11-13/15
		Date Analyzed :	03/12-19/15

Duplicate Summary
Total Metals

Sample Name :	Well #6	**Units :**	mg/L (ppm)
Lab Code :	K1502415-001D	**Basis :**	NA

Analyte	Analysis Method	MRL	Sample Result	Duplicate Sample Result	Average	Relative Percent Difference	Result Notes
Antimony	200.8	0.00005	ND	ND	ND	-	
Arsenic	200.8	0.0005	0.0048	0.0049	0.0048	2	
Barium	200.7	0.004	0.030	0.030	0.030	<1	
Beryllium	200.8	0.00002	ND	ND	ND	-	
Cadmium	200.8	0.00002	ND	ND	ND	-	
Chromium	200.8	0.0002	0.0020	0.0019	0.0019	5	
Copper	200.7	0.004	ND	ND	ND	-	
Iron	200.7	0.02	1.02	1.04	1.03	2	
Lead	200.8	0.00002	ND	ND	ND	-	
Manganese	200.7	0.001	0.972	0.983	0.978	1	
Mercury	245.1	0.0002	ND	ND	ND	-	
Nickel	200.8	0.0002	0.0006	0.0006	0.0006	<1	
Selenium	200.8	0.001	ND	ND	ND	-	
Silver	200.8	0.00002	ND	ND	ND	-	
Sodium	200.7	0.2	17.0	17.2	17.1	1	
Thallium	200.8	0.00002	0.00002	0.00002	0.00002	<1	
Zinc	200.7	0.004	ND	ND	ND	-	

Comments:

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QA/QC Report

Client :	Longview, City of	**Service Request :**	K1502415
Project Name :	Sentinel Well Program	**Date Collected :**	03/10/15
Project No. :	NA	**Date Received :**	03/10/15
Matrix :	Drinking Water	**Date Extracted :**	03/11-13/15
		Date Analyzed :	03/12-19/15

Matrix Spike Summary
Total Metals

Sample Name :	Well #6	**Units :**	mg/L (ppm)
Lab Code :	K1502415-001S	**Basis :**	NA

Analyte	MRL	Spike Level	Sample Result	Spiked Sample Result	Percent Recovery	ALS Percent Recovery Acceptance Limits	Result Notes
Antimony	0.00005	0.050	ND	0.0520	104	70-130	
Arsenic	0.0005	0.050	0.0048	0.0535	97	70-130	
Barium	0.004	1.00	0.030	1.01	98	70-130	
Beryllium	0.00002	0.0025	ND	0.00239	96	70-130	
Cadmium	0.00002	0.025	ND	0.0252	101	70-130	
Chromium	0.0002	0.010	0.0020	0.0121	101	70-130	
Copper	0.004	0.25	ND	0.232	93	70-130	
Iron	0.02	1.00	1.02	1.97	95	70-130	
Lead	0.00002	0.050	ND	0.0483	97	70-130	
Manganese	0.001	0.50	0.972	1.42	90	70-130	
Mercury	0.0002	0.0050	ND	0.0048	96	70-130	
Nickel	0.0002	0.025	0.0006	0.0233	91	70-130	
Selenium	0.001	0.050	ND	0.050	100	70-130	
Silver	0.00002	0.013	ND	0.0120	96	70-130	
Sodium	0.2	10.0	17.0	26.0	90	70-130	
Thallium	0.00002	0.050	0.00002	0.0500	100	70-130	
Zinc	0.004	0.50	ND	0.458	92	70-130	

Comments:

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QA/QC Report

Client :	Longview, City of	**Service Request :**	K1502415
Project Name :	Sentinel Well Program	**Date Collected :**	NA
Project No. :	NA	**Date Received :**	NA
Matrix :	Drinking Water	**Date Extracted :**	03/11-13/15
		Date Analyzed :	03/12-19/15

Laboratory Control Sample Summary
Total Metals

Sample Name :	Laboratory Control Sample	**Units :**	mg/L (ppm)
Lab Code :	K1502415-LCS	**Basis :**	NA

Analyte	Analysis Method	True Value	Result	Percent	ALS Percent Recovery Acceptance Limits	Result Notes
Antimony	200.8	0.050	0.0511	102	85-115	
Arsenic	200.8	0.050	0.0485	97	85-115	
Barium	200.7	5.00	5.08	102	85-115	
Beryllium	200.8	0.0025	0.00244	97	85-115	
Cadmium	200.8	0.025	0.0250	100	85-115	
Chromium	200.8	0.010	0.0107	107	85-115	
Copper	200.7	0.63	0.611	98	85-115	
Iron	200.7	2.50	2.54	102	85-115	
Lead	200.8	0.050	0.0487	97	85-115	
Manganese	200.7	1.25	1.28	102	85-115	
Mercury	245.1	0.0050	0.0050	100	85-115	
Nickel	200.8	0.025	0.0243	97	85-115	
Selenium	200.8	0.050	0.0501	100	85-115	
Silver	200.8	0.013	0.0123	98	85-115	
Sodium	200.7	12.5	12.8	103	85-115	
Thallium	200.8	0.050	0.0500	100	85-115	
Zinc	200.7	1.25	1.21	97	85-115	

Comments:

EPA Method 504.1

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Analytical Results

Client:	Longview, City of	**Service Request:**	K1502415
Project:	Sentinel Well Program	**Date Collected:**	03/10/2015
Sample Matrix:	Drinking water	**Date Received:**	03/10/2015

EPA Method 504.1

Sample Name:	Well #6	**Units:**	ug/L
Lab Code:	K1502415-001	**Basis:**	NA
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	504.1		

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
1,2-Dibromoethane (EDB)	ND	U	0.0096	1	03/16/15	03/17/15	KWG1502136	
1,2,3-Trichloropropane	ND	U	0.39	1	03/16/15	03/17/15	KWG1502136	
1,2-Dibromo-3-chloropropane (DBCP	ND	U	0.0096	1	03/16/15	03/17/15	KWG1502136	

Comments:

Analytical Results

Client:	Longview, City of	**Service Request:**	K1502415
Project:	Sentinel Well Program	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA

EPA Method 504.1

Sample Name:	Method Blank	**Units:**	ug/L
Lab Code:	KWG1502136-7	**Basis:**	NA
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	504.1		

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
1,2-Dibromoethane (EDB)	ND	U	0.0099	1	03/16/15	03/16/15	KWG1502136	
1,2,3-Trichloropropane	ND	U	0.40	1	03/16/15	03/16/15	KWG1502136	
1,2-Dibromo-3-chloropropane (DBCP	ND	U	0.0099	1	03/16/15	03/16/15	KWG1502136	

Comments:

QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502415
Project:	Sentinel Well Program	**Date Extracted:**	03/16/2015
Sample Matrix:	Drinking water	**Date Analyzed:**	03/17/2015

Matrix Spike/Duplicate Matrix Spike Summary
EPA Method 504.1

Sample Name:	Well #6	**Units:**	ug/L
Lab Code:	K1502415-001	**Basis:**	NA
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	504.1	**Extraction Lot:**	KWG1502136

		Well #6MS KWG1502136-3 Matrix Spike			Well #6DMS KWG1502136-4 Duplicate Matrix Spike					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**%Rec**	**Result**	**Spike Amount**	**%Rec**	**%Rec Limits**	**RPD**	**RPD Limit**
1,2-Dibromoethane (EDB)	ND	0.215	0.242	89	0.211	0.239	88	65-135	2	30
1,2,3-Trichloropropane	ND	0.209	0.242	87	0.208	0.239	87	65-135	1	30
1,2-Dibromo-3-chloropropane (DBCP)	ND	0.222	0.242	92	0.215	0.239	90	65-135	3	30

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502415
Project:	Sentinel Well Program	**Date Extracted:**	03/16/2015
Sample Matrix:	Water	**Date Analyzed:**	03/16/2015

Lab Control Spike Summary
EPA Method 504.1

Extraction Method:	METHOD	**Units:**	ug/L
Analysis Method:	504.1	**Basis:**	NA
		Level:	Low
		Extraction Lot:	KWG1502136

	Lab Control Sample KWG1502136-5 Lab Control Spike			
Analyte Name	**Result**	**Spike Amount**	**%Rec**	**%Rec Limits**
1,2-Dibromoethane (EDB)	0.233	0.250	93	70-130
1,2,3-Trichloropropane	0.225	0.250	90	70-130
1,2-Dibromo-3-chloropropane (DBCP)	0.237	0.250	95	70-130

Results flagged with an asterisk (*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Client:	Longview, City of	**Service Request:**	K1502415
Project:	Sentinel Well Program	**Date Extracted:**	03/16/2015
Sample Matrix:	Water	**Date Analyzed:**	03/16/2015

Lab Control Spike Summary
EPA Method 504.1

Extraction Method:	METHOD	**Units:**	ug/L
Analysis Method:	504.1	**Basis:**	NA
		Level:	Low
		Extraction Lot:	KWG1502136

	Lab Control Sample KWG1502136-6 Lab Control Spike			
Analyte Name	**Result**	**Spike Amount**	**%Rec**	**%Rec Limits**
1,2-Dibromoethane (EDB)	0.231	0.250	92	70-130
1,2,3-Trichloropropane	0.220	0.250	88	70-130
1,2-Dibromo-3-chloropropane (DBCP)	0.231	0.250	92	70-130

Results flagged with an asterisk (*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Pesticides/PCBs by EPA Method 508.1

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Analytical Results

Client:	Longview, City of	**Service Request:**	K1502415
Project:	Sentinel Well Program	**Date Collected:**	03/10/2015
Sample Matrix:	Drinking water	**Date Received:**	03/10/2015

Pesticides/PCBs by EPA Method 508.1

Sample Name:	Well #6	**Units:**	ug/L
Lab Code:	K1502415-001	**Basis:**	NA
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	508.1		

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
gamma-BHC (Lindane)	ND	U	0.0098	1	03/23/15	03/24/15	KWG1502390	
Heptachlor	ND	U	0.0098	1	03/23/15	03/24/15	KWG1502390	
Aldrin	ND	U	0.0098	1	03/23/15	03/24/15	KWG1502390	
Heptachlor Epoxide	ND	U	0.0098	1	03/23/15	03/24/15	KWG1502390	
Heptachlor Epoxide (Isomer A)	ND	U	0.0098	1	03/23/15	03/24/15	KWG1502390	
4,4'-DDE	ND	U	0.0098	1	03/23/15	03/24/15	KWG1502390	
Dieldrin	ND	U	0.0098	1	03/23/15	03/24/15	KWG1502390	
Endrin	ND	U	0.0098	1	03/23/15	03/24/15	KWG1502390	
4,4'-DDD	ND	U	0.0098	1	03/23/15	03/24/15	KWG1502390	
4,4'-DDT	ND	U	0.0098	1	03/23/15	03/24/15	KWG1502390	
Methoxychlor	ND	U	0.0098	1	03/23/15	03/24/15	KWG1502390	
Toxaphene	ND	U	0.098	1	03/23/15	03/24/15	KWG1502390	
Chlordane	ND	U	0.098	1	03/23/15	03/24/15	KWG1502390	
Aroclor 1016	ND	U	0.049	1	03/23/15	03/24/15	KWG1502390	
Aroclor 1221	ND	U	0.098	1	03/23/15	03/24/15	KWG1502390	
Aroclor 1232	ND	U	0.098	1	03/23/15	03/24/15	KWG1502390	
Aroclor 1242	ND	U	0.098	1	03/23/15	03/24/15	KWG1502390	
Aroclor 1248	ND	U	0.098	1	03/23/15	03/24/15	KWG1502390	
Aroclor 1254	ND	U	0.098	1	03/23/15	03/24/15	KWG1502390	
Aroclor 1260	ND	U	0.098	1	03/23/15	03/24/15	KWG1502390	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
4,4'-Dibromooctafluorobiphenyl	102	70-130	03/24/15	Acceptable

Comments:

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Analytical Results

Client:	Longview, City of	**Service Request:**	K1502415
Project:	Sentinel Well Program	**Date Collected:**	NA
Sample Matrix:	Drinking water	**Date Received:**	NA

Pesticides/PCBs by EPA Method 508.1

Sample Name:	Method Blank	**Units:**	ug/L
Lab Code:	KWG1502390-7	**Basis:**	NA
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	508.1		

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
gamma-BHC (Lindane)	ND	U	0.010	1	03/23/15	03/24/15	KWG1502390	
Heptachlor	ND	U	0.010	1	03/23/15	03/24/15	KWG1502390	
Aldrin	ND	U	0.010	1	03/23/15	03/24/15	KWG1502390	
Heptachlor Epoxide	ND	U	0.010	1	03/23/15	03/24/15	KWG1502390	
Heptachlor Epoxide (Isomer A)	ND	U	0.010	1	03/23/15	03/24/15	KWG1502390	
4,4'-DDE	ND	U	0.010	1	03/23/15	03/24/15	KWG1502390	
Dieldrin	ND	U	0.010	1	03/23/15	03/24/15	KWG1502390	
Endrin	ND	U	0.010	1	03/23/15	03/24/15	KWG1502390	
4,4'-DDD	ND	U	0.010	1	03/23/15	03/24/15	KWG1502390	
4,4'-DDT	ND	U	0.010	1	03/23/15	03/24/15	KWG1502390	
Methoxychlor	ND	U	0.010	1	03/23/15	03/24/15	KWG1502390	
Toxaphene	ND	U	0.10	1	03/23/15	03/24/15	KWG1502390	
Chlordane	ND	U	0.10	1	03/23/15	03/24/15	KWG1502390	
Aroclor 1016	ND	U	0.050	1	03/23/15	03/24/15	KWG1502390	
Aroclor 1221	ND	U	0.10	1	03/23/15	03/24/15	KWG1502390	
Aroclor 1232	ND	U	0.10	1	03/23/15	03/24/15	KWG1502390	
Aroclor 1242	ND	U	0.10	1	03/23/15	03/24/15	KWG1502390	
Aroclor 1248	ND	U	0.10	1	03/23/15	03/24/15	KWG1502390	
Aroclor 1254	ND	U	0.10	1	03/23/15	03/24/15	KWG1502390	
Aroclor 1260	ND	U	0.10	1	03/23/15	03/24/15	KWG1502390	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
4,4'-Dibromooctafluorobiphenyl	100	70-130	03/24/15	Acceptable

Comments:

Client: Longview, City of
Project: Sentinel Well Program
Sample Matrix: Drinking water

Service Request: K1502415

Surrogate Recovery Summary
Pesticides/PCBs by EPA Method 508.1

Extraction Method: METHOD
Analysis Method: 508.1

Units: Percent
Level: Low

Sample Name	Lab Code	Sur1
Well #6	K1502415-001	102
Method Blank	KWG1502390-7	100
Well #6MS	KWG1502390-4	89
Well #6DMS	KWG1502390-5	89
Lab Control Sample	KWG1502390-6	90

Surrogate Recovery Control Limits (%)

Sur1 = 4,4'-Dibromooctafluorobiphenyl 70-130

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502415
Project:	Sentinel Well Program	**Date Extracted:**	03/23/2015
Sample Matrix:	Drinking water	**Date Analyzed:**	03/24/2015

Matrix Spike/Duplicate Matrix Spike Summary
Pesticides/PCBs by EPA Method 508.1

Sample Name:	Well #6	**Units:**	ug/L
Lab Code:	K1502415-001	**Basis:**	NA
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	508.1	**Extraction Lot:**	KWG1502390

		Well #6MS KWG1502390-4 Matrix Spike			Well #6DMS KWG1502390-5 Duplicate Matrix Spike					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**%Rec**	**Result**	**Spike Amount**	**%Rec**	**%Rec Limits**	**RPD**	**RPD Limit**
gamma-BHC (Lindane)	ND	0.101	0.0971	104	0.101	0.0971	104	65-135	0	30
Heptachlor	ND	0.0824	0.0971	85	0.0795	0.0971	82	65-135	4	30
Aldrin	ND	0.0919	0.0971	95	0.0897	0.0971	92	65-135	2	30
Heptachlor Epoxide	ND	0.102	0.0971	105	0.0983	0.0971	101	65-135	3	30
Heptachlor Epoxide (Isomer A)	ND	0.0964	0.0971	99	0.0938	0.0971	97	65-135	3	30
4,4'-DDE	ND	0.108	0.0971	112	0.106	0.0971	109	65-135	2	30
Dieldrin	ND	0.0968	0.0971	100	0.0942	0.0971	97	65-135	3	30
Endrin	ND	0.0681	0.0971	70	0.0620	0.0971	64 *	65-135	9	30
4,4'-DDD	ND	0.114	0.0971	118	0.113	0.0971	116	65-135	1	30
4,4'-DDT	ND	0.113	0.0971	116	0.111	0.0971	115	65-135	1	30
Methoxychlor	ND	0.114	0.0971	118	0.114	0.0971	118	65-135	0	30
Aroclor 1248	ND	0.336	0.485	69	0.336	0.485	69	65-135	0	30

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Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502415
Project:	Sentinel Well Program	**Date Extracted:**	03/23/2015
Sample Matrix:	Drinking water	**Date Analyzed:**	03/24/2015

Lab Control Spike Summary
Pesticides/PCBs by EPA Method 508.1

Extraction Method:	METHOD	**Units:**	ug/L
Analysis Method:	508.1	**Basis:**	NA
		Level:	Low
		Extraction Lot:	KWG1502390

	Lab Control Sample KWG1502390-6 Lab Control Spike			
Analyte Name	**Result**	**Spike Amount**	**%Rec**	**%Rec Limits**
gamma-BHC (Lindane)	0.107	0.100	107	70-130
Heptachlor	0.0961	0.100	96	70-130
Aldrin	0.0900	0.100	90	70-130
Heptachlor Epoxide	0.103	0.100	103	70-130
Heptachlor Epoxide (Isomer A)	0.106	0.100	106	70-130
4,4'-DDE	0.107	0.100	107	70-130
Dieldrin	0.112	0.100	112	70-130
Endrin	0.113	0.100	113	70-130
4,4'-DDD	0.115	0.100	115	70-130
4,4'-DDT	0.108	0.100	108	70-130
Methoxychlor	0.112	0.100	112	70-130
Aroclor 1248	0.394	0.500	79	70-130

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Chlorinated Herbicides by EPA 515.4

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

ALS Group USA, Corp. dba ALS Environmental

Analytical Results

Client:	Longview, City of	**Service Request:**	K1502415
Project:	Sentinel Well Program	**Date Collected:**	03/10/2015
Sample Matrix:	Drinking water	**Date Received:**	03/10/2015

Chlorinated Herbicides by EPA 515.4

Sample Name:	Well #6	**Units:**	ug/L
Lab Code:	K1502415-001	**Basis:**	NA
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	515.4		

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Dalapon	ND	U	1.0	1	03/17/15	03/24/15	KWG1502203	
3,5-Dichlorobenzoic Acid	ND	U	0.50	1	03/17/15	03/24/15	KWG1502203	
Dicamba	ND	U	0.20	1	03/17/15	03/24/15	KWG1502203	
Dichlorprop	ND	U	0.50	1	03/17/15	03/24/15	KWG1502203	
2,4-D	ND	U	0.10	1	03/17/15	03/24/15	KWG1502203	
Pentachlorophenol	ND	U	0.040	1	03/17/15	03/24/15	KWG1502203	
2,4,5-TP (Silvex)	ND	U	0.20	1	03/17/15	03/24/15	KWG1502203	
Chloramben	ND	U	0.20	1	03/17/15	03/24/15	KWG1502203	
2,4-DB	ND	U	1.0	1	03/17/15	03/24/15	KWG1502203	
Dinoseb	ND	U	0.20	1	03/17/15	03/24/15	KWG1502203	
Dacthal Diacid	ND	U	0.020	1	03/17/15	03/24/15	KWG1502203	
Picloram	ND	U	0.10	1	03/17/15	03/24/15	KWG1502203	
Acifluorfen	ND	U	2.0	1	03/17/15	03/24/15	KWG1502203	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
2,4-Dichlorophenylacetic Acid	114	70-130	03/24/15	Acceptable

Comments:

Analytical Results

Client:	Longview, City of	**Service Request:**	K1502415
Project:	Sentinel Well Program	**Date Collected:**	NA
Sample Matrix:	Drinking water	**Date Received:**	NA

Chlorinated Herbicides by EPA 515.4

Sample Name:	Method Blank	**Units:**	ug/L
Lab Code:	KWG1502203-4	**Basis:**	NA
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	515.4		

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Dalapon	ND	U	1.0	1	03/17/15	03/24/15	KWG1502203	
3,5-Dichlorobenzoic Acid	ND	U	0.50	1	03/17/15	03/24/15	KWG1502203	
Dicamba	ND	U	0.20	1	03/17/15	03/24/15	KWG1502203	
Dichlorprop	ND	U	0.50	1	03/17/15	03/24/15	KWG1502203	
2,4-D	ND	U	0.10	1	03/17/15	03/24/15	KWG1502203	
Pentachlorophenol	ND	U	0.040	1	03/17/15	03/24/15	KWG1502203	
2,4,5-TP (Silvex)	ND	U	0.20	1	03/17/15	03/24/15	KWG1502203	
Chloramben	ND	U	0.20	1	03/17/15	03/24/15	KWG1502203	
2,4-DB	ND	U	1.0	1	03/17/15	03/24/15	KWG1502203	
Dinoseb	ND	U	0.20	1	03/17/15	03/24/15	KWG1502203	
Dacthal Diacid	ND	U	0.020	1	03/17/15	03/24/15	KWG1502203	
Picloram	ND	U	0.10	1	03/17/15	03/24/15	KWG1502203	
Acifluorfen	ND	U	2.0	1	03/17/15	03/24/15	KWG1502203	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
2,4-Dichlorophenylacetic Acid	86	70-130	03/24/15	Acceptable

Comments:

Client: Longview, City of
Project: Sentinel Well Program
Sample Matrix: Drinking water

Service Request: K1502415

Surrogate Recovery Summary
Chlorinated Herbicides by EPA 515.4

Extraction Method: METHOD
Analysis Method: 515.4

Units: Percent
Level: Low

Sample Name	Lab Code	Sur1
Well #6	K1502415-001	114
Method Blank	KWG1502203-4	86
Well #6MS	KWG1502203-1	126
Well #6DMS	KWG1502203-2	121
Lab Control Sample	KWG1502203-3	97

Surrogate Recovery Control Limits (%)

Sur1 = 2,4-Dichlorophenylacetic Acid 70-130

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502415
Project:	Sentinel Well Program	**Date Extracted:**	03/17/2015
Sample Matrix:	Drinking water	**Date Analyzed:**	03/24/2015

Matrix Spike/Duplicate Matrix Spike Summary
Chlorinated Herbicides by EPA 515.4

Sample Name:	Well #6	**Units:**	ug/L
Lab Code:	K1502415-001	**Basis:**	NA
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	515.4	**Extraction Lot:**	KWG1502203

		Well #6MS KWG1502203-1 Matrix Spike			Well #6DMS KWG1502203-2 Duplicate Matrix Spike					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**%Rec**	**Result**	**Spike Amount**	**%Rec**	**%Rec Limits**	**RPD**	**RPD Limit**
Dalapon	ND	4.28	4.98	86	4.31	4.97	87	70-130	1	30
3,5-Dichlorobenzoic Acid	ND	4.86	4.98	98	4.86	4.97	98	70-130	0	30
Dicamba	ND	5.19	4.98	104	5.16	4.97	104	70-130	1	30
Dichlorprop	ND	5.11	4.98	103	5.03	4.97	101	70-130	2	30
2,4-D	ND	5.13	4.98	103	5.08	4.97	102	70-130	1	30
Pentachlorophenol	ND	5.12	4.98	103	5.08	4.97	102	70-130	1	30
2,4,5-TP (Silvex)	ND	4.78	4.98	96	4.74	4.97	95	70-130	1	30
Chloramben	ND	4.82	4.98	97	4.72	4.97	95	70-130	2	30
2,4-DB	ND	4.87	4.98	98	4.80	4.97	97	70-130	1	30
Dinoseb	ND	4.99	4.98	100	5.07	4.97	102	70-130	2	30
Dacthal Diacid	ND	5.99	4.98	120	6.03	4.97	121	70-130	1	30
Picloram	ND	5.45	4.98	109	5.38	4.97	108	70-130	1	30
Acifluorfen	ND	4.78	4.98	96	4.77	4.97	96	70-130	0	30

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Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Client:	Longview, City of	**Service Request:**	K1502415
Project:	Sentinel Well Program	**Date Extracted:**	03/17/2015
Sample Matrix:	Drinking water	**Date Analyzed:**	03/24/2015

Lab Control Spike Summary
Chlorinated Herbicides by EPA 515.4

Extraction Method:	METHOD	**Units:**	ug/L
Analysis Method:	515.4	**Basis:**	NA
		Level:	Low
		Extraction Lot:	KWG1502203

	Lab Control Sample KWG1502203-3 Lab Control Spike			
Analyte Name	**Result**	**Spike Amount**	**%Rec**	**%Rec Limits**
Dalapon	4.16	5.00	83	70-130
3,5-Dichlorobenzoic Acid	4.48	5.00	90	70-130
Dicamba	4.79	5.00	96	70-130
Dichlorprop	4.79	5.00	96	70-130
2,4-D	4.83	5.00	97	70-130
Pentachlorophenol	4.92	5.00	98	70-130
2,4,5-TP (Silvex)	4.64	5.00	93	70-130
Chloramben	5.14	5.00	103	70-130
2,4-DB	4.68	5.00	94	70-130
Dinoseb	4.85	5.00	97	70-130
Dacthal Diacid	4.85	5.00	97	70-130
Picloram	5.08	5.00	102	70-130
Acifluorfen	4.74	5.00	95	70-130

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Volatile Organic Compounds

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

Analytical Results

Client:	Longview, City of	**Service Request:**	K1502415
Project:	Sentinel Well Program	**Date Collected:**	03/10/2015
Sample Matrix:	Drinking water	**Date Received:**	03/10/2015

Volatile Organic Compounds

Sample Name:	Well #6	**Units:**	ug/L
Lab Code:	K1502415-001	**Basis:**	NA
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	524.2		

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Dichlorodifluoromethane	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Chloromethane	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Vinyl Chloride	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Bromomethane	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Chloroethane	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Trichlorofluoromethane	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Methylene Chloride	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
trans-1,2-Dichloroethene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
1,1-Dichloroethene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
cis-1,2-Dichloroethene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Methyl tert-Butyl Ether	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Chloroform	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Bromochloromethane	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Carbon Tetrachloride	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Benzene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
1,2-Dichloroethane	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Trichloroethene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
1,2-Dichloropropane	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Bromodichloromethane	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Dibromomethane	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
cis-1,3-Dichloropropene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
1,1-Dichloroethane	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Toluene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
trans-1,3-Dichloropropene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Tetrachloroethene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
2,2-Dichloropropane	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
1,3-Dichloropropane	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Dibromochloromethane	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
1,2-Dibromoethane (EDB)	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Chlorobenzene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Ethylbenzene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Styrene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
m,p-Xylenes	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
o-Xylene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	

Comments:

Analytical Results

Client:	Longview, City of	**Service Request:**	K1502415
Project:	Sentinel Well Program	**Date Collected:**	03/10/2015
Sample Matrix:	Drinking water	**Date Received:**	03/10/2015

Volatile Organic Compounds

Sample Name:	Well #6	**Units:**	ug/L
Lab Code:	K1502415-001	**Basis:**	NA
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	524.2		

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
1,1,1-Trichloroethane	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Bromoform	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
1,1,2,2-Tetrachloroethane	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Isopropylbenzene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
1,1-Dichloropropene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Bromobenzene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
n-Propylbenzene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
1,3,5-Trimethylbenzene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
2-Chlorotoluene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
4-Chlorotoluene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
tert-Butylbenzene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
1,2,4-Trimethylbenzene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
sec-Butylbenzene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
p-Isopropyltoluene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
1,3-Dichlorobenzene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
1,4-Dichlorobenzene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
n-Butylbenzene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
1,2-Dichlorobenzene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
1,2-Dibromo-3-chloropropane (DBCP	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
1,2,4-Trichlorobenzene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Hexachlorobutadiene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Naphthalene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
1,1,2-Trichloroethane	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
1,1,1,2-Tetrachloroethane	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
1,2,3-Trichloropropane	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
1,2,3-Trichlorobenzene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
4-Bromofluorobenzene	90	70-130	03/17/15	Acceptable
Dibromofluoromethane	94	82-124	03/17/15	Acceptable
Toluene-d8	96	82-124	03/17/15	Acceptable

Comments:

Analytical Results

Client:	Longview, City of	**Service Request:**	K1502415
Project:	Sentinel Well Program	**Date Collected:**	NA
Sample Matrix:	Drinking water	**Date Received:**	NA

Volatile Organic Compounds

Sample Name:	Method Blank	**Units:**	ug/L
Lab Code:	KWG1502193-4	**Basis:**	NA
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	524.2		

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Dichlorodifluoromethane	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Chloromethane	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Vinyl Chloride	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Bromomethane	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Chloroethane	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Trichlorofluoromethane	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Methylene Chloride	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
trans-1,2-Dichloroethene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
1,1-Dichloroethene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
cis-1,2-Dichloroethene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Methyl tert-Butyl Ether	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Chloroform	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Bromochloromethane	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Carbon Tetrachloride	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Benzene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
1,2-Dichloroethane	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Trichloroethene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
1,2-Dichloropropane	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Bromodichloromethane	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Dibromomethane	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
cis-1,3-Dichloropropene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
1,1-Dichloroethane	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Toluene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
trans-1,3-Dichloropropene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Tetrachloroethene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
2,2-Dichloropropane	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
1,3-Dichloropropane	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Dibromochloromethane	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
1,2-Dibromoethane (EDB)	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Chlorobenzene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Ethylbenzene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Styrene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
m,p-Xylenes	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
o-Xylene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	

Comments:

Analytical Results

Client:	Longview, City of	**Service Request:**	K1502415
Project:	Sentinel Well Program	**Date Collected:**	NA
Sample Matrix:	Drinking water	**Date Received:**	NA

Volatile Organic Compounds

Sample Name:	Method Blank	**Units:**	ug/L
Lab Code:	KWG1502193-4	**Basis:**	NA
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	524.2		

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
1,1,1-Trichloroethane	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Bromoform	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
1,1,2,2-Tetrachloroethane	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Isopropylbenzene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
1,1-Dichloropropene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Bromobenzene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
n-Propylbenzene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
1,3,5-Trimethylbenzene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
2-Chlorotoluene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
4-Chlorotoluene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
tert-Butylbenzene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
1,2,4-Trimethylbenzene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
sec-Butylbenzene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
p-Isopropyltoluene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
1,3-Dichlorobenzene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
1,4-Dichlorobenzene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
n-Butylbenzene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
1,2-Dichlorobenzene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
1,2-Dibromo-3-chloropropane (DBCP	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
1,2,4-Trichlorobenzene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Hexachlorobutadiene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Naphthalene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
1,1,2-Trichloroethane	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
1,1,1,2-Tetrachloroethane	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
1,2,3-Trichloropropane	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
1,2,3-Trichlorobenzene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
4-Bromofluorobenzene	91	70-130	03/17/15	Acceptable
Dibromofluoromethane	95	82-124	03/17/15	Acceptable
Toluene-d8	96	82-124	03/17/15	Acceptable

Comments:

Client: Longview, City of
Project: Sentinel Well Program
Sample Matrix: Drinking water

Service Request: K1502415

Surrogate Recovery Summary
Volatile Organic Compounds

Extraction Method: METHOD
Analysis Method: 524.2

Units: Percent
Level: Low

Sample Name	Lab Code	Sur1	Sur2	Sur3
Well #6	K1502415-001	90	94	96
Method Blank	KWG1502193-4	91	95	96
Well #6MS	KWG1502193-1	100	97	95
Well #6DMS	KWG1502193-2	100	96	96
Lab Control Sample	KWG1502193-3	100	96	96

Surrogate Recovery Control Limits (%)

Sur1	=	4-Bromofluorobenzene	70-130
Sur2	=	Dibromofluoromethane	82-124
Sur3	=	Toluene-d8	82-124

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502415
Project:	Sentinel Well Program	**Date Extracted:**	03/17/2015
Sample Matrix:	Drinking water	**Date Analyzed:**	03/17/2015

Matrix Spike/Duplicate Matrix Spike Summary
Volatile Organic Compounds

Sample Name:	Well #6	**Units:**	ug/L
Lab Code:	K1502415-001	**Basis:**	NA
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	524.2	**Extraction Lot:**	KWG1502193

		Well #6MS KWG1502193-1 Matrix Spike			Well #6DMS KWG1502193-2 Duplicate Matrix Spike					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**%Rec**	**Result**	**Spike Amount**	**%Rec**	**%Rec Limits**	**RPD**	**RPD Limit**
Dichlorodifluoromethane	ND	6.19	5.00	124	5.50	5.00	110	70-130	12	30
Chloromethane	ND	5.94	5.00	119	5.90	5.00	118	70-130	1	30
Vinyl Chloride	ND	5.34	5.00	107	4.99	5.00	100	70-130	7	30
Bromomethane	ND	4.53	5.00	91	3.92	5.00	78	70-130	14	30
Chloroethane	ND	5.26	5.00	105	4.83	5.00	97	70-130	9	30
Trichlorofluoromethane	ND	5.51	5.00	110	5.04	5.00	101	70-130	9	30
Methylene Chloride	ND	4.64	5.00	93	4.47	5.00	89	70-130	4	30
trans-1,2-Dichloroethene	ND	4.93	5.00	99	4.56	5.00	91	70-130	8	30
cis-1,2-Dichloroethene	ND	4.66	5.00	93	4.46	5.00	89	70-130	4	30
1,1-Dichloroethene	ND	4.99	5.00	100	4.57	5.00	91	70-130	9	30
Methyl tert-Butyl Ether	ND	8.10	10.0	81	7.93	10.0	79	70-130	2	30
Chloroform	ND	4.91	5.00	98	4.69	5.00	94	70-130	5	30
Bromochloromethane	ND	4.50	5.00	90	4.41	5.00	88	70-130	2	30
Carbon Tetrachloride	ND	5.71	5.00	114	5.27	5.00	105	70-130	8	30
Benzene	ND	4.84	5.00	97	4.64	5.00	93	70-130	4	30
1,2-Dichloroethane	ND	5.11	5.00	102	4.97	5.00	99	70-130	3	30
Trichloroethene	ND	4.70	5.00	94	4.49	5.00	90	70-130	5	30
1,2-Dichloropropane	ND	4.54	5.00	91	4.29	5.00	86	70-130	6	30
Bromodichloromethane	ND	4.49	5.00	90	4.34	5.00	87	70-130	3	30
Dibromomethane	ND	4.54	5.00	91	4.33	5.00	87	70-130	5	30
cis-1,3-Dichloropropene	ND	4.22	5.00	84	4.20	5.00	84	70-130	0	30
1,1-Dichloroethane	ND	4.96	5.00	99	4.75	5.00	95	70-130	4	30
Toluene	ND	4.63	5.00	93	4.47	5.00	89	70-130	4	30
trans-1,3-Dichloropropene	ND	4.05	5.00	81	3.91	5.00	78	70-130	4	30
Tetrachloroethene	ND	4.73	5.00	95	4.42	5.00	88	70-130	7	30
2,2-Dichloropropane	ND	4.98	5.00	100	4.76	5.00	95	70-130	5	30
1,3-Dichloropropane	ND	4.72	5.00	94	4.61	5.00	92	70-130	2	30
Dibromochloromethane	ND	4.73	5.00	95	4.47	5.00	89	70-130	6	30
1,2-Dibromoethane (EDB)	ND	4.74	5.00	95	4.61	5.00	92	70-130	3	30
Chlorobenzene	ND	4.79	5.00	96	4.58	5.00	92	70-130	4	30
Ethylbenzene	ND	4.87	5.00	97	4.55	5.00	91	70-130	7	30
Styrene	ND	4.67	5.00	93	4.42	5.00	88	70-130	6	30
m,p-Xylenes	ND	9.79	10.0	98	9.27	10.0	93	70-130	5	30

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Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Client:	Longview, City of	**Service Request:**	K1502415
Project:	Sentinel Well Program	**Date Extracted:**	03/17/2015
Sample Matrix:	Drinking water	**Date Analyzed:**	03/17/2015

Matrix Spike/Duplicate Matrix Spike Summary
Volatile Organic Compounds

Sample Name:	Well #6	**Units:**	ug/L
Lab Code:	K1502415-001	**Basis:**	NA
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	524.2	**Extraction Lot:**	KWG1502193

		Well #6MS KWG1502193-1 Matrix Spike			Well #6DMS KWG1502193-2 Duplicate Matrix Spike					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**%Rec**	**Result**	**Spike Amount**	**%Rec**	**%Rec Limits**	**RPD**	**RPD Limit**
o-Xylene	ND	4.57	5.00	91	4.36	5.00	87	70-130	5	30
1,1,2,2-Tetrachloroethane	ND	5.34	5.00	107	5.11	5.00	102	70-130	4	30
1,1,1-Trichloroethane	ND	5.01	5.00	100	4.68	5.00	94	70-130	7	30
Bromoform	ND	4.82	5.00	96	4.75	5.00	95	70-130	1	30
Isopropylbenzene	ND	4.93	5.00	99	4.61	5.00	92	70-130	7	30
1,1-Dichloropropene	ND	5.03	5.00	101	4.69	5.00	94	70-130	7	30
Bromobenzene	ND	5.02	5.00	100	4.70	5.00	94	70-130	7	30
n-Propylbenzene	ND	5.76	5.00	115	5.40	5.00	108	70-130	6	30
1,3,5-Trimethylbenzene	ND	5.56	5.00	111	5.27	5.00	105	70-130	5	30
2-Chlorotoluene	ND	5.58	5.00	112	5.28	5.00	106	70-130	6	30
4-Chlorotoluene	ND	5.67	5.00	113	5.32	5.00	106	70-130	6	30
tert-Butylbenzene	ND	5.53	5.00	111	5.14	5.00	103	70-130	7	30
1,2,4-Trimethylbenzene	ND	5.57	5.00	111	5.29	5.00	106	70-130	5	30
sec-Butylbenzene	ND	5.67	5.00	113	5.32	5.00	106	70-130	6	30
p-Isopropyltoluene	ND	5.50	5.00	110	5.21	5.00	104	70-130	5	30
1,3-Dichlorobenzene	ND	5.16	5.00	103	4.94	5.00	99	70-130	4	30
1,4-Dichlorobenzene	ND	5.04	5.00	101	4.82	5.00	96	70-130	4	30
n-Butylbenzene	ND	5.55	5.00	111	5.21	5.00	104	70-130	6	30
1,2-Dichlorobenzene	ND	5.08	5.00	102	4.79	5.00	96	70-130	6	30
1,2-Dibromo-3-chloropropane (DBCP)	ND	5.29	5.00	106	5.38	5.00	108	70-130	2	30
1,2,4-Trichlorobenzene	ND	4.82	5.00	96	4.64	5.00	93	70-130	4	30
Hexachlorobutadiene	ND	5.15	5.00	103	4.86	5.00	97	70-130	6	30
Naphthalene	ND	4.50	5.00	90	4.37	5.00	87	70-130	3	30
1,1,2-Trichloroethane	ND	4.38	5.00	88	4.25	5.00	85	70-130	3	30
1,1,1,2-Tetrachloroethane	ND	5.13	5.00	103	5.03	5.00	101	70-130	2	30
1,2,3-Trichloropropane	ND	5.08	5.00	102	4.87	5.00	97	70-130	4	30
1,2,3-Trichlorobenzene	ND	5.03	5.00	101	4.81	5.00	96	70-130	4	30

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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502415
Project:	Sentinel Well Program	**Date Extracted:**	03/17/2015
Sample Matrix:	Drinking water	**Date Analyzed:**	03/17/2015

Lab Control Spike Summary
Volatile Organic Compounds

Extraction Method:	METHOD	**Units:**	ug/L
Analysis Method:	524.2	**Basis:**	NA
		Level:	Low
		Extraction Lot:	KWG1502193

	Lab Control Sample KWG1502193-3 Lab Control Spike			
Analyte Name	**Result**	**Spike Amount**	**%Rec**	**%Rec Limits**
Dichlorodifluoromethane	6.13	5.00	123	70-130
Chloromethane	6.39	5.00	128	70-130
Vinyl Chloride	5.46	5.00	109	70-130
Bromomethane	4.74	5.00	95	70-130
Chloroethane	5.39	5.00	108	70-130
Trichlorofluoromethane	5.53	5.00	111	70-130
Methylene Chloride	5.12	5.00	102	70-130
trans-1,2-Dichloroethene	5.07	5.00	101	70-130
cis-1,2-Dichloroethene	4.85	5.00	97	70-130
1,1-Dichloroethene	5.14	5.00	103	70-130
Methyl tert-Butyl Ether	8.70	10.0	87	70-130
Chloroform	5.30	5.00	106	70-130
Bromochloromethane	4.78	5.00	96	70-130
Carbon Tetrachloride	5.84	5.00	117	70-130
Benzene	5.13	5.00	103	70-130
1,2-Dichloroethane	5.36	5.00	107	70-130
Trichloroethene	4.97	5.00	99	70-130
1,2-Dichloropropane	4.82	5.00	96	70-130
Bromodichloromethane	4.83	5.00	97	70-130
Dibromomethane	4.72	5.00	94	70-130
cis-1,3-Dichloropropene	4.56	5.00	91	70-130
1,1-Dichloroethane	5.26	5.00	105	70-130
Toluene	4.91	5.00	98	70-130
trans-1,3-Dichloropropene	4.23	5.00	85	70-130
Tetrachloroethene	5.01	5.00	100	70-130
1,3-Dichloropropane	5.05	5.00	101	70-130
2,2-Dichloropropane	5.21	5.00	104	70-130
Dibromochloromethane	5.11	5.00	102	70-130
1,2-Dibromoethane (EDB)	5.10	5.00	102	70-130
Chlorobenzene	5.10	5.00	102	70-130
Ethylbenzene	5.12	5.00	102	70-130
Styrene	4.82	5.00	96	70-130
m,p-Xylenes	10.3	10.0	103	70-130
o-Xylene	4.93	5.00	99	70-130
1,1,2,2-Tetrachloroethane	5.59	5.00	112	70-130

Results flagged with an asterisk (*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Client:	Longview, City of	**Service Request:**	K1502415
Project:	Sentinel Well Program	**Date Extracted:**	03/17/2015
Sample Matrix:	Drinking water	**Date Analyzed:**	03/17/2015

Lab Control Spike Summary
Volatile Organic Compounds

Extraction Method:	METHOD	**Units:**	ug/L
Analysis Method:	524.2	**Basis:**	NA
		Level:	Low
		Extraction Lot:	KWG1502193

	Lab Control Sample KWG1502193-3 Lab Control Spike			
Analyte Name	**Result**	**Spike Amount**	**%Rec**	**%Rec Limits**
Bromoform	5.13	5.00	103	70-130
1,1,1-Trichloroethane	5.22	5.00	104	70-130
Isopropylbenzene	5.24	5.00	105	70-130
1,1-Dichloropropene	5.21	5.00	104	70-130
Bromobenzene	5.24	5.00	105	70-130
n-Propylbenzene	6.02	5.00	120	70-130
1,3,5-Trimethylbenzene	5.78	5.00	116	70-130
2-Chlorotoluene	5.90	5.00	118	70-130
4-Chlorotoluene	5.92	5.00	118	70-130
tert-Butylbenzene	5.68	5.00	114	70-130
1,2,4-Trimethylbenzene	5.81	5.00	116	70-130
sec-Butylbenzene	5.94	5.00	119	70-130
p-Isopropyltoluene	5.73	5.00	115	70-130
1,3-Dichlorobenzene	5.40	5.00	108	70-130
1,4-Dichlorobenzene	5.25	5.00	105	70-130
n-Butylbenzene	5.73	5.00	115	70-130
1,2-Dichlorobenzene	5.38	5.00	108	70-130
1,2-Dibromo-3-chloropropane (DBCP)	5.40	5.00	108	70-130
1,2,4-Trichlorobenzene	5.04	5.00	101	70-130
Hexachlorobutadiene	5.33	5.00	107	70-130
Naphthalene	4.83	5.00	97	70-130
1,1,2-Trichloroethane	4.76	5.00	95	70-130
1,1,1,2-Tetrachloroethane	5.54	5.00	111	70-130
1,2,3-Trichloropropane	5.13	5.00	103	70-130
1,2,3-Trichlorobenzene	5.20	5.00	104	70-130

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Semivolatile Organics by EPA Method 525.2

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ALS Group USA, Corp. dba ALS Environmental

Analytical Results

Client:	Longview, City of	**Service Request:**	K1502415
Project:	Sentinel Well Program	**Date Collected:**	03/10/2015
Sample Matrix:	Drinking water	**Date Received:**	03/10/2015

Semivolatile Organics by EPA Method 525.2

Sample Name:	Well #6	**Units:**	ug/L
Lab Code:	K1502415-001	**Basis:**	NA
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	525.2		

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Hexachlorocyclopentadiene	ND	U	0.098	1	03/23/15	03/26/15	KWG1502393	*
Fluorene	ND	U	0.049	1	03/23/15	03/26/15	KWG1502393	
Propachlor	ND	U	0.098	1	03/23/15	03/26/15	KWG1502393	
Hexachlorobenzene	ND	U	0.098	1	03/23/15	03/26/15	KWG1502393	
Simazine	ND	U	0.049	1	03/23/15	03/26/15	KWG1502393	
Atrazine	ND	U	0.098	1	03/23/15	03/26/15	KWG1502393	
Metribuzin	ND	U	0.20	1	03/23/15	03/26/15	KWG1502393	
Alachlor	ND	U	0.070	1	03/23/15	03/26/15	KWG1502393	
Bromacil	ND	U	0.20	1	03/23/15	03/26/15	KWG1502393	
Metolachlor	ND	U	0.088	1	03/23/15	03/26/15	KWG1502393	
Butachlor	ND	U	0.098	1	03/23/15	03/26/15	KWG1502393	
Bis(2-ethylhexyl) Adipate	ND	U	0.59	1	03/23/15	03/26/15	KWG1502393	
Bis(2-ethylhexyl) Phthalate	**0.62**		0.59	1	03/23/15	03/26/15	KWG1502393	
Benzo(a)pyrene	ND	U	0.020	1	03/23/15	03/26/15	KWG1502393	

* See Case Narrative

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
1,3-Dimethyl-2-nitrobenzene	105	70-130	03/26/15	Acceptable
Triphenyl Phosphate	84	70-130	03/26/15	Acceptable
Perylene-d12	71	70-130	03/26/15	Acceptable

Comments:

ALS Group USA, Corp. dba ALS Environmental

Analytical Results

Client:	Longview, City of	**Service Request:**	K1502415
Project:	Sentinel Well Program	**Date Collected:**	NA
Sample Matrix:	Drinking water	**Date Received:**	NA

Semivolatile Organics by EPA Method 525.2

Sample Name:	Method Blank	**Units:**	ug/L
Lab Code:	KWG1502393-4	**Basis:**	NA
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	525.2		

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Hexachlorocyclopentadiene	ND	U	0.10	1	03/23/15	03/25/15	KWG1502393	*
Fluorene	ND	U	0.050	1	03/23/15	03/25/15	KWG1502393	
Propachlor	ND	U	0.10	1	03/23/15	03/25/15	KWG1502393	
Hexachlorobenzene	ND	U	0.10	1	03/23/15	03/25/15	KWG1502393	
Simazine	ND	U	0.050	1	03/23/15	03/25/15	KWG1502393	
Atrazine	ND	U	0.10	1	03/23/15	03/25/15	KWG1502393	
Metribuzin	ND	U	0.20	1	03/23/15	03/25/15	KWG1502393	
Alachlor	ND	U	0.072	1	03/23/15	03/25/15	KWG1502393	
Bromacil	ND	U	0.20	1	03/23/15	03/25/15	KWG1502393	
Metolachlor	ND	U	0.090	1	03/23/15	03/25/15	KWG1502393	
Butachlor	ND	U	0.10	1	03/23/15	03/25/15	KWG1502393	
Bis(2-ethylhexyl) Adipate	ND	U	0.60	1	03/23/15	03/25/15	KWG1502393	
Bis(2-ethylhexyl) Phthalate	ND	U	0.60	1	03/23/15	03/25/15	KWG1502393	
Benzo(a)pyrene	ND	U	0.020	1	03/23/15	03/25/15	KWG1502393	

* See Case Narrative

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
1,3-Dimethyl-2-nitrobenzene	97	70-130	03/25/15	Acceptable
Triphenyl Phosphate	83	70-130	03/25/15	Acceptable
Perylene-d12	86	70-130	03/25/15	Acceptable

Comments:

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client: Longview, City of
Project: Sentinel Well Program
Sample Matrix: Drinking water

Service Request: K1502415

Surrogate Recovery Summary
Semivolatile Organics by EPA Method 525.2

Extraction Method: METHOD
Analysis Method: 525.2

Units: Percent
Level: Low

Sample Name	Lab Code	Sur1	Sur2	Sur3
Well #6	K1502415-001	105	84	71
Method Blank	KWG1502393-4	97	83	86
Well #6MS	KWG1502393-1	91	93	88
Well #6DMS	KWG1502393-2	95	96	89
Lab Control Sample	KWG1502393-3	96	100	82

Surrogate Recovery Control Limits (%)

Sur1	=	1,3-Dimethyl-2-nitrobenzene	70-130
Sur2	=	Triphenyl Phosphate	70-130
Sur3	=	Perylene-d12	70-130

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502415
Project:	Sentinel Well Program	**Date Extracted:**	03/23/2015
Sample Matrix:	Drinking water	**Date Analyzed:**	03/26/2015

Matrix Spike/Duplicate Matrix Spike Summary
Semivolatile Organics by EPA Method 525.2

Sample Name:	Well #6	**Units:**	ug/L
Lab Code:	K1502415-001	**Basis:**	NA
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	525.2	**Extraction Lot:**	KWG1502393

		Well #6MS KWG1502393-1 Matrix Spike			Well #6DMS KWG1502393-2 Duplicate Matrix Spike					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**%Rec**	**Result**	**Spike Amount**	**%Rec**	**%Rec Limits**	**RPD**	**RPD Limit**
Hexachlorocyclopentadiene	ND	1.48	0.971	152 *	1.43	0.971	147 *	70-130	3	30
Fluorene	ND	1.01	0.971	104	1.00	0.971	103	70-130	0	30
Propachlor	ND	1.10	0.971	114	1.11	0.971	114	70-130	1	30
Hexachlorobenzene	ND	0.911	0.971	94	0.920	0.971	95	70-130	1	30
Simazine	ND	0.865	0.971	89	0.868	0.971	89	70-130	0	30
Atrazine	ND	0.942	0.971	97	0.878	0.971	90	70-130	7	30
Metribuzin	ND	0.999	0.971	103	0.989	0.971	102	70-130	1	30
Alachlor	ND	1.02	0.971	105	1.01	0.971	104	70-130	1	30
Bromacil	ND	1.06	0.971	109	1.02	0.971	105	70-130	4	30
Metolachlor	ND	1.12	0.971	116	1.10	0.971	113	70-130	2	30
Butachlor	ND	1.09	0.971	112	1.07	0.971	111	70-130	1	30
Bis(2-ethylhexyl) Adipate	ND	1.13	0.971	116	1.14	0.971	117	70-130	1	30
Bis(2-ethylhexyl) Phthalate	0.62	1.17	0.971	57 *	1.27	0.971	67 *	70-130	8	30
Benzo(a)pyrene	ND	1.07	0.971	110	1.05	0.971	108	70-130	2	30

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Client:	Longview, City of	**Service Request:**	K1502415
Project:	Sentinel Well Program	**Date Extracted:**	03/23/2015
Sample Matrix:	Drinking water	**Date Analyzed:**	03/25/2015

Lab Control Spike Summary
Semivolatile Organics by EPA Method 525.2

Extraction Method:	METHOD	**Units:**	ug/L
Analysis Method:	525.2	**Basis:**	NA
		Level:	Low
		Extraction Lot:	KWG1502393

	Lab Control Sample KWG1502393-3 Lab Control Spike			
Analyte Name	**Result**	**Spike Amount**	**%Rec**	**%Rec Limits**
Hexachlorocyclopentadiene	1.48	1.00	148 *	70-130
Fluorene	1.05	1.00	105	70-130
Propachlor	1.24	1.00	124	70-130
Hexachlorobenzene	0.947	1.00	95	70-130
Simazine	1.08	1.00	108	70-130
Atrazine	1.12	1.00	112	70-130
Metribuzin	1.09	1.00	109	70-130
Alachlor	1.11	1.00	111	70-130
Bromacil	1.10	1.00	110	70-130
Metolachlor	1.27	1.00	127	70-130
Butachlor	1.16	1.00	116	70-130
Bis(2-ethylhexyl) Adipate	1.03	1.00	103	70-130
Bis(2-ethylhexyl) Phthalate	1.03	1.00	103	70-130
Benzo(a)pyrene	1.06	1.00	106	70-130

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Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Endothall by EPA Method 548.1

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Analytical Results

Client:	Longview, City of	**Service Request:**	K1502415
Project:	Sentinel Well Program	**Date Collected:**	03/10/2015
Sample Matrix:	Drinking water	**Date Received:**	03/10/2015

Endothall by EPA Method 548.1

Sample Name:	Well #6	**Units:**	ug/L
Lab Code:	K1502415-001	**Basis:**	NA
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	548.1		

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Endothall	ND	U	5.0	1	03/12/15	03/24/15	KWG1502057	

Comments:

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Analytical Results

Client:	Longview, City of	**Service Request:**	K1502415
Project:	Sentinel Well Program	**Date Collected:**	NA
Sample Matrix:	Drinking water	**Date Received:**	NA

Endothall by EPA Method 548.1

Sample Name:	Method Blank	**Units:**	ug/L
Lab Code:	KWG1502057-4	**Basis:**	NA
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	548.1		

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Endothall	ND	U	5.0	1	03/12/15	03/24/15	KWG1502057	

Comments:

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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502415
Project:	Sentinel Well Program	**Date Extracted:**	03/12/2015
Sample Matrix:	Drinking water	**Date Analyzed:**	03/24/2015

Matrix Spike/Duplicate Matrix Spike Summary
Endothall by EPA Method 548.1

Sample Name:	Well #6	**Units:**	ug/L
Lab Code:	K1502415-001	**Basis:**	NA
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	548.1	**Extraction Lot:**	KWG1502057

		Well #6MS KWG1502057-1 Matrix Spike			Well #6DMS KWG1502057-2 Duplicate Matrix Spike					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**%Rec**	**Result**	**Spike Amount**	**%Rec**	**%Rec Limits**	**RPD**	**RPD Limit**
Endothall	ND	91.2	100	91	94.4	100	94	30-142	3	30

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Client:	Longview, City of	**Service Request:**	K1502415
Project:	Sentinel Well Program	**Date Extracted:**	03/12/2015
Sample Matrix:	Drinking water	**Date Analyzed:**	03/24/2015

Lab Control Spike Summary
Endothall by EPA Method 548.1

Extraction Method:	METHOD	**Units:**	ug/L
Analysis Method:	548.1	**Basis:**	NA
		Level:	Low
		Extraction Lot:	KWG1502057

	Lab Control Sample KWG1502057-3 Lab Control Spike			
Analyte Name	**Result**	**Spike Amount**	**%Rec**	**%Rec Limits**
Endothall	94.0	100	94	30-142

Results flagged with an asterisk (*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Diquat and Paraquat by EPA Method 549.2

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Analytical Results

Client:	Longview, City of	**Service Request:**	K1502415
Project:	Sentinel Well Program	**Date Collected:**	03/10/2015
Sample Matrix:	Drinking water	**Date Received:**	03/10/2015

Diquat and Paraquat by EPA Method 549.2

Sample Name:	Well #6	**Units:**	ug/L
Lab Code:	K1502415-001	**Basis:**	NA
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	549.2		

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Diquat	ND	U	0.40	1	03/12/15	03/12/15	KWG1502015	
Paraquat	ND	U	0.80	1	03/12/15	03/12/15	KWG1502015	

Comments:

Analytical Results

Client:	Longview, City of	**Service Request:**	K1502415
Project:	Sentinel Well Program	**Date Collected:**	NA
Sample Matrix:	Drinking water	**Date Received:**	NA

Diquat and Paraquat by EPA Method 549.2

Sample Name:	Method Blank	**Units:**	ug/L
Lab Code:	KWG1502015-5	**Basis:**	NA
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	549.2		

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Diquat	ND	U	0.40	1	03/12/15	03/12/15	KWG1502015	
Paraquat	ND	U	0.80	1	03/12/15	03/12/15	KWG1502015	

Comments:

QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502415
Project:	Sentinel Well Program	**Date Extracted:**	03/12/2015
Sample Matrix:	Drinking water	**Date Analyzed:**	03/12/2015

Matrix Spike/Duplicate Matrix Spike Summary
Diquat and Paraquat by EPA Method 549.2

Sample Name:	Well #6	**Units:**	ug/L
Lab Code:	K1502415-001	**Basis:**	NA
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	549.2	**Extraction Lot:**	KWG1502015

		Well #6MS KWG1502015-1 Matrix Spike				Well #6DMS KWG1502015-2 Duplicate Matrix Spike						
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**%Rec**		**Result**	**Spike Amount**	**%Rec**		**%Rec Limits**	**RPD**	**RPD Limit**
Diquat	ND	7.09	12.0	59	*	6.64	12.0	55	*	70-130	7	30
Paraquat	ND	14.6	12.0	122		13.2	12.0	110		70-130	10	30

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502415
Project:	Sentinel Well Program	**Date Extracted:**	03/12/2015
Sample Matrix:	Drinking water	**Date Analyzed:**	03/12/2015

Lab Control Spike Summary
Diquat and Paraquat by EPA Method 549.2

Extraction Method:	METHOD	**Units:**	ug/L
Analysis Method:	549.2	**Basis:**	NA
		Level:	Low
		Extraction Lot:	KWG1502015

	Lab Control Sample KWG1502015-4 Lab Control Spike			
Analyte Name	**Result**	**Spike Amount**	**%Rec**	**%Rec Limits**
Diquat	12.7	12.0	106	70-130
Paraquat	13.5	12.0	112	70-130

Results flagged with an asterisk (*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Chlorinated Phenolic Organic Compounds

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Analytical Results

Client:	Longview, City of	**Service Request:**	K1502415
Project:	Sentinel Well Program	**Date Collected:**	3/10/2015
Sample Matrix:	Drinking water	**Date Received:**	3/10/2015

EPA Method 1653A
Chlorinated Phenolic Organic Compounds

Sample Name:	Well #6	Units:	ug/L (ppb)
Lab Code:	K1502415-001	Basis:	NA
Test Notes:			

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
2,4,6-Trichlorophenol	METHOD	1653A	2.5	1	3/11/2015	3/17/2015	ND	
2,4,5-Trichlorophenol	METHOD	1653A	2.5	1	3/11/2015	3/17/2015	ND	
2,3,4,6-Tetrachlorophenol	METHOD	1653A	2.5	1	3/11/2015	3/17/2015	ND	
3,4,6-Trichloroguaiacol	METHOD	1653A	2.5	1	3/11/2015	3/17/2015	ND	
3,4,5-Trichloroguaiacol	METHOD	1653A	2.5	1	3/11/2015	3/17/2015	ND	
3,4,6-Trichlorocatechol	METHOD	1653A	5.0	1	3/11/2015	3/17/2015	ND	
3,4,5-Trichlorocatechol	METHOD	1653A	5.0	1	3/11/2015	3/17/2015	ND	
Trichlorosyringol	METHOD	1653A	2.5	1	3/11/2015	3/17/2015	ND	
4,5,6-Trichloroguaiacol	METHOD	1653A	2.5	1	3/11/2015	3/17/2015	ND	
Pentachlorophenol	METHOD	1653A	5.0	1	3/11/2015	3/17/2015	ND	
Tetrachloroguaiacol	METHOD	1653A	5.0	1	3/11/2015	3/17/2015	ND	
Tetrachlorocatechol	METHOD	1653A	5.0	1	3/11/2015	3/17/2015	ND	

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Analytical Results

Client:	Longview, City of	**Service Request:**	K1502415
Project:	Sentinel Well Program	**Date Collected:**	NA
Sample Matrix:	Drinking water	**Date Received:**	NA

EPA Method 1653A
Chlorinated Phenolic Organic Compounds

Sample Name:	Method Blank	Units:	ug/L (ppb)
Lab Code:	KWG1502012-3	Basis:	NA
Test Notes:			

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
2,4,6-Trichlorophenol	METHOD	1653A	2.5	1	3/11/2015	3/17/2015	ND	
2,4,5-Trichlorophenol	METHOD	1653A	2.5	1	3/11/2015	3/17/2015	ND	
2,3,4,6-Tetrachlorophenol	METHOD	1653A	2.5	1	3/11/2015	3/17/2015	ND	
3,4,6-Trichloroguaiacol	METHOD	1653A	2.5	1	3/11/2015	3/17/2015	ND	
3,4,5-Trichloroguaiacol	METHOD	1653A	2.5	1	3/11/2015	3/17/2015	ND	
3,4,6-Trichlorocatechol	METHOD	1653A	5.0	1	3/11/2015	3/17/2015	ND	
3,4,5-Trichlorocatechol	METHOD	1653A	5.0	1	3/11/2015	3/17/2015	ND	
Trichlorosyringol	METHOD	1653A	2.5	1	3/11/2015	3/17/2015	ND	
4,5,6-Trichloroguaiacol	METHOD	1653A	2.5	1	3/11/2015	3/17/2015	ND	
Pentachlorophenol	METHOD	1653A	5.0	1	3/11/2015	3/17/2015	ND	
Tetrachloroguaiacol	METHOD	1653A	5.0	1	3/11/2015	3/17/2015	ND	
Tetrachlorocatechol	METHOD	1653A	5.0	1	3/11/2015	3/17/2015	ND	

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Analytical Results

Client:	Longview, City of	**Service Request:**	K1502415
Project:	Sentinel Well Program	**Date Collected:**	NA
Sample Matrix:	Drinking water	**Date Received:**	NA
		Date Extracted:	3/11/2015

Labeled Compound and Internal Standard Recovery Summary
Chlorinated Phenolic Organic Compounds
1653A

			Percent Recovery	
	CAS Percent Recovery Acceptance Criteria	Sample Name:	**Well #6**	**Method Blank**
		Lab Code:	K1502415-001	KWG1502012-3
		Date Analyzed:	3/17/2015	3/17/2015
Analyte				
3,4,5-Trichlorophenol	36-131		89	101
4,5,6-Trichloroguaiacol-13c6	25-134		86	105
Pentachlorophenol-13c6	22-117		82	100
Tetrachloroguaiacol-13c6	18-129		95	105
Tetrachlorocatechol-13c6	D-121		23	88

ALS Group USA, Corp. dba ALS Environmental

Analytical Results

Client: Longview, City of
Project: Sentinel Well Program
Sample Matrix: Drinking water

Service Request: K1502415
Date Collected: NA
Date Received: NA
Date Extracted: 3/11/2015
Date Analyzed: 3/17/2015

Duplicate Summary
Chlorinated Phenolic Organic Compounds

Sample Name: Batch QC
Lab Code: KWG1502012-1
Test Notes:

Units: ug/L (ppb)
Basis: NA

Analyte	Prep Method	Analysis Method	MRL	Sample Result	Duplicate Sample Result	Average	Relative Percent Difference	Result Notes
2,4,6-Trichlorophenol	METHOD	1653A	2.5	ND	ND	ND	-	
2,4,5-Trichlorophenol	METHOD	1653A	2.5	ND	ND	ND	-	
2,3,4,6-Tetrachlorophenol	METHOD	1653A	2.5	ND	ND	ND	-	
3,4,6-Trichloroguaiacol	METHOD	1653A	2.5	ND	ND	ND	-	
3,4,5-Trichloroguaiacol	METHOD	1653A	2.5	ND	ND	ND	-	
3,4,6-Trichlorocatechol	METHOD	1653A	5.0	ND	ND	ND	-	
3,4,5-Trichlorocatechol	METHOD	1653A	5.0	ND	ND	ND	-	
Trichlorosyringol	METHOD	1653A	2.5	ND	ND	ND	-	
4,5,6-Trichloroguaiacol	METHOD	1653A	2.5	ND	ND	ND	-	
Pentachlorophenol	METHOD	1653A	5.0	ND	ND	ND	-	
Tetrachloroguaiacol	METHOD	1653A	5.0	ND	ND	ND	-	
Tetrachlorocatechol	METHOD	1653A	5.0	ND	ND	ND	-	

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Analytical Results

Client:	Longview, City of	**Service Request:**	K1502415
Project:	Sentinel Well Program	**Date Collected:**	NA
LCS Matrix:	Drinking water	**Date Received:**	NA
		Date Extracted:	3/11/2015
		Date Analyzed:	3/17/2015

Ongoing Precision and Recovery Summary
Chlorinated Phenolic Organic Compounds

Sample Name:	Lab Control Sample	Units:	ug/L (ppb)
Lab Code:	KWG1502012-2	Basis:	NA
Test Notes:			

Analyte	Prep Method	Analysis Method	True Value	Result	Percent Recovery	CAS Percent Recovery Acceptance Limits	Result Notes
2,4,6-Trichlorophenol	METHOD	1653A	50	46.1	92	72-146	
2,4,5-Trichlorophenol	METHOD	1653A	50	47.5	95	82-128	
2,3,4,6-Tetrachlorophenol	METHOD	1653A	50	50.0	100	82-132	
3,4,6-Trichloroguaiacol	METHOD	1653A	50	46.7	93	74-140	
3,4,5-Trichloroguaiacol	METHOD	1653A	50	49.3	99	80-134	
3,4,6-Trichlorocatechol	METHOD	1653A	100	89.3	89	64-149	
3,4,5-Trichlorocatechol	METHOD	1653A	100	96.9	97	72-128	
Trichlorosyringol	METHOD	1653A	50	51.1	102	66-174	
4,5,6-Trichloroguaiacol	METHOD	1653A	50	49.2	98	88-116	
Pentachlorophenol	METHOD	1653A	100	89.0	89	84-120	
Tetrachloroguaiacol	METHOD	1653A	100	93.2	93	81-126	
Tetrachlorocatechol	METHOD	1653A	100	94.4	94	81-132	

Subcontract Lab Results

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

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State Certifications: DE ID 11 , MA PA0102 , MD 128 , VA 460157 , WV 343

March 23, 2015

Mr. Gregory Salata
ALS Environmental - Kelso
1317 S. 13th Avenue
Kelso, WA 98626

Certificate of Analysis

Project Name:	**SOCs**	Workorder:	**2059254**
Purchase Order:	**K1502415**	Workorder ID:	**K1502415**

Dear Mr. Salata:

Enclosed are the analytical results for samples received by the laboratory on Friday, March 13, 2015.

The ALS Environmental laboratory in Middletown, Pennsylvania is a National Environmental Laboratory Accreditation Program (NELAP) accredited laboratory and as such, certifies that all applicable test results meet the requirements of NELAP.

If you have any questions regarding this certificate of analysis, please contact Mrs. Kelli L Wolfgang (Project Coordinator) at (717) 944-5541.

Analyses were performed according to our laboratory's NELAP-approved quality assurance program and any applicable state requirements. The test results meet requirements of the current NELAP standards or state requirements, where applicable. For a specific list of accredited analytes, refer to the certifications section of the ALS website at www.alsglobal.com/en/Our-Services/Life-Sciences/Environmental/Downloads.

This laboratory report may not be reproduced, except in full, without the written approval of ALS Environmental.

ALS Spring City: 10 Riverside Drive, Spring City, PA 19475 610-948-4903

CC: Ms. Chris Leaf

This page is included as part of the Analytical Report and must be retained as a permanent record thereof.

Kelli Wolfgang

Mrs. Kelli L Wolfgang
Project Coordinator

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State Certifications: DE ID 11 , MA PA0102 , MD 128 , VA 460157 , WV 343

SAMPLE SUMMARY

Workorder: 2059254 K1502415

Lab ID	Sample ID	Matrix	Date Collected	Date Received	Collected By
2059254001	K1502415-001	Drinking Water	3/10/2015 11:15	3/13/2015 12:36	Collected by Client

Notes

-- Samples collected by ALS personnel are done so in accordance with the procedures set forth in the ALS Field Sampling Plan (20 - Field Services Sampling Plan).
-- All Waste Water analyses comply with methodology requirements of 40 CFR Part 136.
-- All Drinking Water analyses comply with methodology requirements of 40 CFR Part 141.
-- Unless otherwise noted, all quantitative results for soils are reported on a dry weight basis.
-- The Chain of Custody document is included as part of this report.
-- All Library Search analytes should be regarded as tentative identifications based on the presumptive evidence of the mass spectra. Concentrations reported are estimated values.
-- Parameters identified as "analyze immediately" require analysis within 15 minutes of collection. Any "analyze immediately" parameters not listed under the header "Field Parameters" are preformed in the laboratory and are therefore analyzed out of hold time.
-- Method references listed on this report beginning with the prefix “S” followed by a method number (such as S2310B-97) refer to methods from “Standard Methods for the Examination of Water and Wastewater”.

Standard Acronyms/Flags

J	Indicates an estimated value between the Method Detection Limit (MDL) and the Practical Quantitation Limit (PQL) for the analyte
U	Indicates that the analyte was Not Detected (ND)
N	Indicates presumptive evidence of the presence of a compound
MDL	Method Detection Limit
PQL	Practical Quantitation Limit
RDL	Reporting Detection Limit
ND	Not Detected - indicates that the analyte was Not Detected at the RDL
Cntr	Analysis was performed using this container
RegLmt	Regulatory Limit
LCS	Laboratory Control Sample
MS	Matrix Spike
MSD	Matrix Spike Duplicate
DUP	Sample Duplicate
%Rec	Percent Recovery
RPD	Relative Percent Difference
LOD	DoD Limit of Detection
LOQ	DoD Limit of Quantitation
DL	DoD Detection Limit
I	Indicates reported value is greater than or equal to the Method Detection Limit (MDL) but less than the Report Detection Limit (RDL)

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ANALYTICAL RESULTS

Workorder: 2059254 K1502415

Lab ID: **2059254001** Date Collected: 3/10/2015 11:15 Matrix: Drinking Water

Sample ID: **K1502415-001** Date Received: 3/13/2015 12:36

Parameters	Results	Flag	Units	RDL	Method	Prepared By	Analyzed	By	*Cntr*
HERBICIDES									
Glyphosate	ND		ug/L	4.5	EPA 547		3/22/15 13:28	CGS	D
CARBAMATES									
Aldicarb	ND		ug/L	0.26	EPA 531.1		3/17/15 00:48	CGS	A
Aldicarb Sulfone	ND		ug/L	0.32	EPA 531.1		3/17/15 00:48	CGS	A
Aldicarb Sulfoxide	ND		ug/L	0.27	EPA 531.1		3/17/15 00:48	CGS	A
Carbaryl	ND		ug/L	0.29	EPA 531.1		3/17/15 00:48	CGS	A
Carbofuran	ND		ug/L	0.43	EPA 531.1		3/17/15 00:48	CGS	A
3-Hydroxycarbofuran	ND		ug/L	0.27	EPA 531.1		3/17/15 00:48	CGS	A
Methiocarb	ND		ug/L	0.18	EPA 531.1		3/17/15 00:48	CGS	A
Methomyl	ND		ug/L	0.49	EPA 531.1		3/17/15 00:48	CGS	A
Oxamyl	ND		ug/L	0.50	EPA 531.1		3/17/15 00:48	CGS	A
Propoxur	ND		ug/L	0.32	EPA 531.1		3/17/15 00:48	CGS	A

Kelli Wolfgang

Mrs. Kelli L Wolfgang
Project Coordinator

ALS Environmental
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State Certifications: DE ID 11 , MA PA0102 , MD 128 , VA 460157 , WV 343

QUALITY CONTROL DATA

Workorder: 2059254 K1502415

QC Batch: HPLC/3911 **Analysis Method:** EPA 531.1

QC Batch Method: EPA 531.1

Associated Lab Samples: 2059254001

METHOD BLANK: 2149046

Parameter	Blank Result	Units	Reporting Limit	Qualifiers
Aldicarb Sulfoxide	ND	ug/L	0.27	
Aldicarb Sulfone	ND	ug/L	0.32	
Oxamyl	ND	ug/L	0.50	
Methomyl	ND	ug/L	0.49	
3-Hydroxycarbofuran	ND	ug/L	0.27	
Aldicarb	ND	ug/L	0.26	
Propoxur	ND	ug/L	0.32	
Carbofuran	ND	ug/L	0.43	
Carbaryl	ND	ug/L	0.29	
Methiocarb	ND	ug/L	0.18	

LABORATORY CONTROL SAMPLE: 2149047

Parameter	LCS % Rec	Units	Spike Conc.	LCS Result	% Rec Limit	Qualifiers
Aldicarb Sulfoxide	98.7	ug/L	10	9.9	80 - 120	
Aldicarb Sulfone	87.3	ug/L	10	8.7	80 - 120	
Oxamyl	99.8	ug/L	10	10	80 - 120	
Methomyl	94.4	ug/L	10	9.4	80 - 120	
3-Hydroxycarbofuran	100	ug/L	10	10.0	80 - 120	
Aldicarb	96.5	ug/L	10	9.7	80 - 120	
Propoxur	92.4	ug/L	10	9.2	80 - 120	
Carbofuran	90.9	ug/L	10	9.1	80 - 120	
Carbaryl	88.8	ug/L	10	8.9	80 - 120	
Methiocarb	90.6	ug/L	10	9.1	80 - 120	

SAMPLE DUPLICATE: 2150707 ORIGINAL:

Parameter	Original Result	Units	DUP Result	RPD	Max RPD	Qualifiers
Aldicarb Sulfoxide	0	ug/L	0	NC	20	
Aldicarb Sulfone	0	ug/L	0	NC	20	
Oxamyl	0	ug/L	0	NC	20	
Methomyl	0	ug/L	0	NC	20	
3-Hydroxycarbofuran	0	ug/L	0	NC	20	

QUALITY CONTROL DATA

Workorder: 2059254 K1502415

Aldicarb	0	ug/L	0	NC	20
Propoxur	0	ug/L	0	NC	20
Carbofuran	0	ug/L	0	NC	20
Carbaryl	0	ug/L	0	NC	20
Methiocarb	0	ug/L	0	NC	20

MATRIX SPIKE SAMPLE: 2149049 ORIGINAL:

****NOTE - The Original Result shown below is a raw result and is only used for the purpose of calculating Matrix Spike percent recoveries. This result is not a final value and cannot be used as such.

Parameter	Original Result	Units	Spike Conc.	MS Result	MS % Rec	% Rec Limit	Qualifiers
Aldicarb Sulfoxide	0	ug/L	10	12.3558	124	65 - 135	
Aldicarb Sulfone	0	ug/L	10	11.5018	115	65 - 135	
Oxamyl	0	ug/L	10	13.1784	132	65 - 135	
Methomyl	0	ug/L	10	12.0278	120	65 - 135	
3-Hydroxycarbofuran	0	ug/L	10	12.6868	127	65 - 135	
Aldicarb	0	ug/L	10	12.1718	122	65 - 135	
Propoxur	0	ug/L	10	11.4132	114	65 - 135	
Carbofuran	0	ug/L	10	11.52	115	65 - 135	
Carbaryl	0	ug/L	10	11.5322	115	65 - 135	
Methiocarb	0	ug/L	10	10.9469	109	65 - 135	

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State Certifications: DE ID 11 , MA PA0102 , MD 128 , VA 460157 , WV 343

QUALITY CONTROL DATA

Workorder: 2059254 K1502415

QC Batch: HPLC/3915 **Analysis Method:** EPA 547

QC Batch Method: EPA 547

Associated Lab Samples: 2059254001

METHOD BLANK: 2153468

Parameter	Blank Result	Units	Reporting Limit	Qualifiers
Glyphosate	ND	ug/L	4.5	

LABORATORY CONTROL SAMPLE: 2153469

Parameter	LCS % Rec	Units	Spike Conc.	LCS Result	% Rec Limit	Qualifiers
Glyphosate	99.5	ug/L	500	497	80 - 120	

MATRIX SPIKE SAMPLE: 2153470 ORIGINAL:

****NOTE - The Original Result shown below is a raw result and is only used for the purpose of calculating Matrix Spike percent recoveries. This result is not a final value and cannot be used as such.

Parameter	Original Result	Units	Spike Conc.	MS Result	MS % Rec	% Rec Limit	Qualifiers
Glyphosate	0	ug/L	500	482.285	96.5	70 - 130	

SAMPLE DUPLICATE: 2153471 ORIGINAL:

Parameter	Original Result	Units	DUP Result	RPD	Max RPD	Qualifiers
Glyphosate	0	ug/L	0	NC	40	

MATRIX SPIKE SAMPLE: 2153472 ORIGINAL:

****NOTE - The Original Result shown below is a raw result and is only used for the purpose of calculating Matrix Spike percent recoveries. This result is not a final value and cannot be used as such.

Parameter	Original Result	Units	Spike Conc.	MS Result	MS % Rec	% Rec Limit	Qualifiers
Glyphosate	0	ug/L	500	448.493	89.7	70 - 130	

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State Certifications: DE ID 11 , MA PA0102 , MD 128 , VA 460157 , WV 343

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Workorder: 2059254 K1502415

Lab ID	Sample ID	Prep Method	Prep Batch	Analysis Method	Analysis Batch
2059254001	K1502415-001			EPA 531.1	HPLC/3911
2059254001	K1502415-001			EPA 547	HPLC/3915

ALS Environmental Chain of Custody

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

ALS Contact: Chris Leaf

2059254

KLW

Project Number: K1502415
Project Manager: Chris Leaf

Lab Code	Sample ID	# of Cont.	Matrix	Sample Date	Sample Time	Lab ID	CARBAM 531.1	GLYPH 547
K1502415-001	Well #6	6	Drinking Water	3/10/15	1115	Middletown ALS	X	X

RCVD 3-125 amber
3-40mL amber
AT 3/13/15

	Y	N	Initials	Cooler Temp
Custody Seals Present?	✓		AT	3 °C
(if present) Seals Intact?	✓			Cooler #.
Received on Ice?	✓			
COC/Lbls Complete	✓			Therm ID. 171291
Cont in Good Cond?	✓			
Correct Containers?	✓			Ship Carrier
Correct Samp Vol?	✓			
Correct Preservation?	✓			FedEx UPS
Headspace/Volatiles?		✓		DHL

Tracking # 5478974233 73

Test Comments
CARBAM - 531.1 K1502415-001
Run QC on sample K1502415-001 for Both Methods.

Full list for WA Regulations - no compliance report required. w/QC

Folder Comments:
Report all metals in mg/L. No DW State form required.

KLW

3/13/15 1640

Special Instructions/Comments
Please provide the electronic (PDF and EDD) report to the following e-mail address: ALKLS.Data@alsglobal.com.

CL 3/11/15

H - Test is On Hold P - Test is Authorized for Prep Only

Turnaround Requirements
___ RUSH (Surcharges Apply)
PLEASE CIRCLE WORK DAYS
1 2 3 4 5
✓ STANDARD
Requested FAX Date: ___
Requested Report Date: 03/27/15

Report Requirements
___ I. Results Only
___ II. Results + QC Summaries
___ III. Results + QC and Calibration Summaries
___ IV. Data Validation Report with Raw Data
PQL/MDL/1 N
EDD N

Invoice Information
PO# K1502415
Bill to

Relinquished By: MS 3/12/15 1130 Received By: 3/13/15 1236 Airbill Number:

ALS

2059254

K1502415

✓ **Ship To: Middletown ALS**
ALS Laboratory Group
34 Dogwood Lane
Middletown, PA 17057

PC CL Date 3/11
SMO [illegible] Date 3/12/15

Instructions:
Ice ✓
Dry Ice
No Ice

Shipping:
Overnight ✓
2nd Day
Ground

Bill to Client Account

Comments:

ALS Group USA, Corp.
www.alsglobal.com
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State Certification: CT PH-0224, DE ID 11, GA 914, MA PA0102, MD 128, LA 04162, VA 421, WY EPA Region 8, WV 343

QUALITY CONTROL DATA

Workorder **2059254** **Project Name** **K1502415**

QC Batch HPLC / 3911

QC Batch Method EPA 531.1 **Analysis Method** EPA 531.1

Associated Lab Samples 2059254001

METHOD BLANK 2149046

Parameter	Blank Result	Qualifiers	Units	Reporting Limit	% Rec	% Rec Limits
3-Hydroxycarbofuran	ND	U	ug/L	0.27		
Aldicarb	ND	U	ug/L	0.26		
Aldicarb Sulfone	ND	U	ug/L	0.32		
Aldicarb Sulfoxide	ND	U	ug/L	0.27		
Carbaryl	ND	U	ug/L	0.29		
Carbofuran	ND	U	ug/L	0.43		
Methiocarb	ND	U	ug/L	0.18		
Methomyl	ND	U	ug/L	0.49		
Oxamyl	ND	U	ug/L	0.50		
Propoxur	ND	U	ug/L	0.32		

LABORATORY CONTROL SAMPLE 2149047

Parameter	LCS Result	Qualifiers	Units	Spike Conc.	LCS % Rec	% Rec Limits
3-Hydroxycarbofuran	10		ug/L	10	100	80-120
Aldicarb	9.7		ug/L	10	96.5	80-120
Aldicarb Sulfone	8.7		ug/L	10	87.3	80-120
Aldicarb Sulfoxide	9.9		ug/L	10	98.7	80-120
Carbaryl	8.9		ug/L	10	88.8	80-120
Carbofuran	9.1		ug/L	10	90.9	80-120

This is an addendum to the Certificate of Analysis.

Methiocarb	9.1	ug/L	10	90.6	80-120
Methomyl	9.4	ug/L	10	94.4	80-120
Oxamyl	10	ug/L	10	99.8	80-120
Propoxur	9.2	ug/L	10	92.4	80-120

SAMPLE DUPLICATE 2150707 Original 2057116002

*****NOTE - The Original Result and Duplicate Result shown below are raw results and are only used for the purpose of calculating Sample Duplicate percent recoveries. This result is not a final value and cannot be used as such.*

Parameter	Original Result	Qualifiers	Units	DUP Result	RPD	Max RPD	% Rec	% Rec Limits
3-Hydroxycarbofuran	ND	U	ug/L	ND	NC	20		
Aldicarb	ND	U	ug/L	ND	NC	20		
Aldicarb Sulfone	ND	U	ug/L	ND	NC	20		
Aldicarb Sulfoxide	ND	U	ug/L	ND	NC	20		
Carbaryl	ND	U	ug/L	ND	NC	20		
Carbofuran	ND	U	ug/L	ND	NC	20		
Methiocarb	ND	U	ug/L	ND	NC	20		
Methomyl	ND	U	ug/L	ND	NC	20		
Oxamyl	ND	U	ug/L	ND	NC	20		
Propoxur	ND	U	ug/L	ND	NC	20		

MATRIX SPIKE 2149049 Original 2058591001

*****NOTE - The Original Result shown below is a raw result and is only used for the purpose of calculating Matrix Spike percent recoveries. This result is not a final value and cannot be used as such.*

Parameter	Original Result	Qualifiers	Units	Spike Conc.	MS Result	MS % Rec	% Rec Limits
3-Hydroxycarbofuran	ND		ug/L	10	12.6868	127	65-135
Aldicarb	ND		ug/L	10	12.1718	122	65-135
Aldicarb Sulfone	ND		ug/L	10	11.5018	115	65-135
Aldicarb Sulfoxide	ND		ug/L	10	12.3558	124	65-135
Carbaryl	ND		ug/L	10	11.5322	115	65-135
Carbofuran	ND		ug/L	10	11.52	115	65-135
Methiocarb	ND		ug/L	10	10.9469	109	65-135
Methomyl	ND		ug/L	10	12.0278	120	65-135
Oxamyl	ND		ug/L	10	13.1784	132	65-135
Propoxur	ND		ug/L	10	11.4132	114	65-135

Workorder	**2059254**	**Project Name**	**K1502415**
QC Batch	HPLC / 3915		
QC Batch Method	EPA 547	**Analysis Method**	EPA 547
Associated Lab Samples	2059254001		

METHOD BLANK 2153468

Parameter	Blank Result	Qualifiers	Units	Reporting Limit	% Rec	% Rec Limits
Glyphosate	ND	U	ug/L	4.5		

LABORATORY CONTROL SAMPLE 2153469

Parameter	LCS Result	Qualifiers	Units	Spike Conc.	LCS % Rec	% Rec Limits
Glyphosate	497		ug/L	500	99.5	80-120

SAMPLE DUPLICATE 2153471 Original 2058366001

*****NOTE - The Original Result and Duplicate Result shown below are raw results and are only used for the purpose of calculating Sample Duplicate percent recoveries. This result is not a final value and cannot be used as such.*

Parameter	Original Result	Qualifiers	Units	DUP Result	RPD	Max RPD	% Rec	% Rec Limits
Glyphosate	ND	U	ug/L	ND	NC	40		

MATRIX SPIKE 2153470 Original 2058366001

*****NOTE - The Original Result shown below is a raw result and is only used for the purpose of calculating Matrix Spike percent recoveries. This result is not a final value and cannot be used as such.*

Parameter	Original Result	Qualifiers	Units	Spike Conc.	MS Result	MS % Rec	% Rec Limits
Glyphosate	ND		ug/L	500	482.285	96.5	70-130

MATRIX SPIKE 2153472 Original 2059505001

*****NOTE - The Original Result shown below is a raw result and is only used for the purpose of calculating Matrix Spike percent recoveries. This result is not a final value and cannot be used as such.*

Parameter	Original Result	Qualifiers	Units	Spike Conc.	MS Result	MS % Rec	% Rec Limits
Glyphosate	ND		ug/L	500	448.493	89.7	70-130

Standard Acronyms/Flags	
J	Indicates an estimated value between the Method Detection Limit (MDL) and the Practical Quantitation Limit (PQL) for the analyte
U	Indicates that the analyte was Not Detected (ND)
N	Indicates presumptive evidence of the presence of a compound
MDL	Method Detection Limit
PQL	Practical Quantitation Limit
RDL	Reporting Detection Limit
ND	Not Detected - indicates that the analyte was Not Detected at the RDL
Cntr	Analysis was performed using this container
RegLmt	Regulatory Limit
LCS	Laboratory Control Sample
MS	Matrix Spike
MSD	Matrix Spike Duplicate
DUP	Sample Duplicate
%Rec	Percent Recovery
RPD	Relative Percent Difference
LOD	DoD Limit of Detection
LOQ	DoD Limit of Quantitation
DL	DoD Detection Limit
NC	Not Calculated
*	Result outside of QC limits
DIL	Dilution Factor

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Lab ID	Sample ID	Prep Method	Prep Batch	Analysis Method	Analysis Batch
2057116002	ZZZZZZZZZZ	EPA 531.1	HPLC / 3911	EPA 531.1	HPLC / 3911
2058591001	ZZZZZZZZZZ	EPA 531.1	HPLC / 3911	EPA 531.1	HPLC / 3911
2059254001	K1502415-001	EPA 531.1	HPLC / 3911	EPA 531.1	HPLC / 3911

Lab ID	Sample ID	Prep Method	Prep Batch	Analysis Method	Analysis Batch
2058366001	ZZZZZZZZZZ	EPA 547	HPLC / 3915	EPA 547	HPLC / 3915
2059254001	K1502415-001	EPA 547	HPLC / 3915	EPA 547	HPLC / 3915
2059505001	ZZZZZZZZZZ	EPA 547	HPLC / 3915	EPA 547	HPLC / 3915

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www.alsglobal.com

LABORATORY REPORT

March 27, 2015

Jeff Coleman
Longview, City of
W/S Operation Center
Longview, WA 98632

RE: Sentinel Well Program

Dear Jeff:

Enclosed are the results of the sample submitted to our laboratory on March 10, 2015. For your reference, this analysis has been assigned our service request number K1502415.

All analyses were performed according to our laboratory's NELAP and DoD-ELAP-approved quality assurance program. The test results meet requirements of the current NELAP and DoD-ELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP and DoD-ELAP-accredited analytes, refer to the certifications section at www.alsglobal.com. Results are intended to be considered in their entirety and apply only to the samples analyzed and reported herein.

If you have any questions, please call me at (805) 526-7161.

Respectfully submitted,

ALS | Environmental

By Sue Anderson at 10:24 am, Mar 27, 2015

For Kate Aguilera
Project Manager

2655 Park Center Dr., Suite A
Simi Valley, CA 93065
T: +1 805 526 7161
F: +1 805 526 7270
www.alsglobal.com

Client: Longview, City of
Project: Sentinel Well Program

Service Request No: K1502415

CASE NARRATIVE

The sample was received intact under chain of custody on March 10, 2015 and was stored in accordance with the analytical method requirements. Please refer to the sample acceptance check form for additional information. The results reported herein are applicable only to the condition of the sample at the time of sample receipt.

Hydrogen Sulfide Analysis

The sample was analyzed for hydrogen sulfide using a gas chromatograph equipped with a sulfur chemiluminescence detector (SCD). This method is not included on the laboratory's NELAP, DoD-ELAP, or AIHA-LAP scope of accreditation.

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 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.

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Simi Valley, CA 93065
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F: +1 805 526 7270
www.alsglobal.com

ALS Environmental – Simi Valley

CERTIFICATIONS, ACCREDITATIONS, AND REGISTRATIONS

Agency	Web Site	Number
AIHA	http://www.aihaaccreditedlabs.org	101661
Arizona DHS	http://www.azdhs.gov/lab/license/env.htm	AZ0694
DoD ELAP	http://www.pjlabs.com/search-accredited-labs	L14-2
Florida DOH (NELAP)	http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm	E871020
Maine DHHS	http://www.maine.gov/dhhs/mecdc/environmental-health/water/dwp-services/labcert/labcert.htm	2014025
Minnesota DOH (NELAP)	http://www.health.state.mn.us/accreditation	876241
New Jersey DEP (NELAP)	http://www.nj.gov/dep/oqa/	CA009
New York DOH (NELAP)	http://www.wadsworth.org/labcert/elap/elap.html	11221
Oregon PHD (NELAP)	http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Pages/index.aspx	4068-001
Pennsylvania DEP	http://www.depweb.state.pa.us/labs	68-03307 (Registration)
Texas CEQ (NELAP)	http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html	T104704413-14-5
Utah DOH (NELAP)	http://www.health.utah.gov/lab/labimp/certification/index.html	CA016272014-4
Washington DOE	http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html	C946

Analyses were performed according to our laboratory's NELAP and DoD-ELAP approved quality assurance program. A complete listing of specific NELAP and DoD-ELAP certified analytes can be found in the certifications section at www.alsglobal.com, or at the accreditation body's website.

Each of the certifications listed above have an explicit Scope of Accreditation that applies to specific matrices/methods/analytes; therefore, please contact the laboratory for information corresponding to a particular certification.

Intra-Network Chain of Custody

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

ALS Contact: Chris Leaf

Project Name: Sentinel Well Program
Project Number:
Project Manager: Jeff Coleman
Company: Longview, City of

Lab Code	Client Sample ID	# of Cont.	Matrix	Sample Date	Sample Time	Date Received	Send To	Sulfur Sulfur Liq
K1502415-001	Well #6	3	Drinking Water	3/10/15	1115	3/10/15	SIMIVALLEY	II

Test Comments

Sulfur - Sulfur Liq K1502415-001 Hydrogen Sulfide

Run QC on sample K1502415-001 for H_2S

Folder Comments:

Report all metals in mg/L. No DW State form required.

Special Instructions/Comments

Please provide the electronic (PDF and EDD) report to the following e-mail address: ALKLS.Data@alsglobal.com.

pH Checked ____

Turnaround Requirements

____ **RUSH** (Surcharges Apply)

PLEASE CIRCLE WORK DAYS

1 2 3 4 5

X **STANDARD**

Requested FAX Date: ____

Requested Report Date: 03/27/15

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 N

EDD N

Invoice Information

PO# K1502415

Bill to

Relinquished By: [signature] ALS 3/12/15 1130

Received By: K. Kule 3/13/15 1630 2° blank

Airbill Number:

ALS Environmental
Sample Acceptance Check Form

Client: Longview, City of Work order: K1502415

Project: Sentinel Well Program

Sample(s) received on: 3/10/15 Date opened: 3/10/15 by: ARYNEVICH

Note: This form is used for all samples received by ALS. The use of this form for custody seals is strictly meant to indicate presence/absence and not as an indication of compliance or nonconformity. Thermal preservation and pH will only be evaluated either at the request of the client and/or as required by the method/SOP.

		Yes	No	N/A
1	Were **sample containers** properly marked with client sample ID?	☒	☐	☐
2	Container(s) **supplied by ALS**?	☒	☐	☐
3	Did **sample containers** arrive in good condition?	☒	☐	☐
4	Were **chain-of-custody** papers used and filled out?	☒	☐	☐
5	Did **sample container labels** and/or tags agree with custody papers?	☒	☐	☐
6	Was **sample volume** received adequate for analysis?	☒	☐	☐
7	Are samples within specified holding times?	☒	☐	☐
8	Was proper **temperature** (thermal preservation) of cooler at receipt adhered to?	☒	☐	☐
	Cooler Temperature: ° C Blank Temperature: 2° C **Gel Packs**			
9	Was a **trip blank** received?	☐	☒	☐
10	Were **custody seals** on outside of cooler/Box?	☒	☐	☐
	Location of seal(s)? _____ Sealing Lid?	☒	☐	☐
	Were signature and date included?	☒	☐	☐
	Were seals intact?	☒	☐	☐
	Were custody seals on outside of sample container?	☐	☒	☐
	Location of seal(s)? _____ Sealing Lid?	☐	☐	☒
	Were signature and date included?	☐	☐	☒
	Were seals intact?	☐	☐	☒
11	Do containers have appropriate **preservation**, according to method/SOP or Client specified information?	☒	☐	☐
	Is there a client indication that the submitted samples are **pH** preserved?	☐	☐	☒
	Were **VOA vials** checked for presence/absence of air bubbles?	☒	☐	☐
	Does the client/method/SOP require that the analyst check the sample pH and if necessary alter it?	☒	☐	☐
12	**Tubes:** Are the tubes capped and intact?	☐	☐	☒
	Do they contain moisture?	☐	☐	☒
13	**Badges:** Are the badges properly capped and intact?	☐	☐	☒
	Are dual bed badges separated and individually capped and intact?	☐	☐	☒

Lab Sample ID	Container Description	Required pH *	Received pH	Adjusted pH	VOA Headspace (Presence/Absence)	Receipt / Preservation Comments
K1502415-001.01	40mL VOA NP		7	1	A	MC 3/23/2015
K1502415-001.02	40mL VOA NP				A	
K1502415-001.29	40mL VOA NP				A	

Explain any discrepancies: (include lab sample ID numbers): _____

RSK - MEEPP, HCL (pH<2); RSK - CO2, (pH 5-8); Sulfur (pH>4)

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Longview, City of**
Client Project ID: **Sentinel Well Program** ALS Project ID: K1502415

Hydrogen Sulfide

Test Code: GC/SCD Reduced Sulfur Analysis
Instrument ID: Agilent 6890A/GC13/SCD Date(s) Collected: 3/10/15
Analyst: Mike Conejo Date Received: 3/10/15
Sample Type: Drinking Water Date Analyzed: 3/23/15
Test Notes:

Client Sample ID	ALS Sample ID	Sample Amount ml(s)	Purge Volume Liter(s)	Injection Volume ml(s)	**Result µg/L**	MRL µg/L	Data Qualifier
Well #6	K1502415-001	10.0	0.30	1.0	ND	0.84	
Method Blank	P150323-MB	10.0	0.30	1.0	ND	0.84	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

LABORATORY CONTROL SAMPLE / DUPLICATE LABORATORY CONTROL SAMPLE SUMMARY

Client: **Longview, City of**
Client Sample ID: **Duplicate Lab Control Sample**
Client Project ID: **Sentinel Well Program**

ALS Project ID: K1502415
ALS Sample ID: P150323-DLCS

Test Code: GC/SCD Reduced Sulfur Analysis
Instrument ID: Agilent 6890A/GC13/SCD
Analyst: Mike Conejo
Sample Type: Drinking Water
Test Notes:

Date Collected: NA
Date Received: NA
Date Analyzed: 3/23/15
Liquid Amount: 10.0 ml(s)
Purge Volume: 0.30 Liter(s)
Injection Volume: 0.20 ml(s)

CAS #	Compound	Spike Amount LCS / DLCS ug/L	Result LCS ug/L	Result DLCS ug/L	% Recovery LCS	% Recovery DLCS	ALS Acceptance Limits	RPD	RPD Limit	Data Qualifier
7783-06-4	Hydrogen Sulfide	416	391	395	**94**	**95**	54-133	1	20	

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

April 14, 2015

Analytical Report for Service Request No: K1502365

Jeff Coleman
Longview, City of
W/S Operation Center
P.O. Box 128
Longview, WA 98632

RE: Sentinel Wells

Dear Jeff,

Enclosed are the results of the sample(s) submitted to our laboratory March 09, 2015
For your reference, these analyses have been assigned our service request number **K1502365.**

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 3275. You may also contact me via email at Chris.Leaf@ALSGlobal.com.

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental

Chris Leaf
Project Manager

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 DEC UST	http://dec.alaska.gov/applications/eh/ehllabreports/USTLabs.aspx	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	L14-51
Florida DOH	http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm	E87412
Hawaii DOH	Not available	-
Idaho DHW	http://www.healthandwelfare.idaho.gov/Health/Labs/CertificationDrinkingWaterLabs/tabid/1833/Default.aspx	-
ISO 17025	http://www.pjlabs.com/	L14-50
Louisiana DEQ	http://www.deq.louisiana.gov/portal/DIVISIONS/PublicParticipationandPermitSupport/LouisianaLaboratoryAccreditationProgram.aspx	03016
Maine DHS	Not available	WA01276
Michigan DEQ	http://www.michigan.gov/deq/0,1607,7-135-3307_4131_4156---,00.html	9949
Minnesota DOH	http://www.health.state.mn.us/accreditation	053-999-457
Montana DPHHS	http://www.dphhs.mt.gov/publichealth/	CERT0047
Nevada DEP	http://ndep.nv.gov/bsdw/labservice.htm	WA01276
New Jersey DEP	http://www.nj.gov/dep/oqa/	WA005
North Carolina DWQ	http://www.dwqlab.org/	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/envserv/	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
Wisconsin DNR	http://dnr.wi.gov/	998386840
Wyoming (EPA Region 8)	http://www.epa.gov/region8/water/dwhome/wyomingdi.html	-
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/anlayte is offered by that state.

Case Narrative

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

ALS ENVIRONMENTAL

Client:	Longview, City of	**Service Request No.:**	K1502365
Project:	Sentinel Wells	**Date Received:**	03/09/15
Sample Matrix:	Drinking Water		

Case Narrative

All analyses were performed consistent with the quality assurance program of ALS Environmental. This report contains analytical results for samples designated for Tier II data deliverables. When appropriate to the method, method blank results have been reported with each analytical test. Surrogate recoveries have been reported for all applicable organic analyses. Additional quality control analyses reported herein include: Laboratory Duplicate (DUP), Matrix Spike (MS), Matrix/Duplicate Matrix Spike (MS/DMS), Laboratory Control Sample (LCS), and Laboratory/Duplicate Laboratory Control Sample (LCS/DLCS).

Sample Receipt

One drinking water sample was received for analysis at ALS Environmental on 03/09/15. The sample was received in good condition and consistent with the accompanying chain of custody form. The sample was stored in a refrigerator at 4ºC upon receipt at the laboratory.

General Chemistry Parameters

Chloride by EPA Method 300.0:
The matrix spike recoveries for sample DW-7 were outside control criteria because of suspected matrix interference. As a result of the interference, the results for this analyte contained a potential low bias. No further corrective action was taken.

No other anomalies associated with the analysis of this sample were observed.

Total Metals

No anomalies associated with the analysis of this sample were observed.

EDB and DBCP by EPA Method 504.1

No anomalies associated with the analysis of this sample were observed.

Pesticides and Polychlorinated Biphenyls by EPA Method 508.1

Matrix Spike Recovery Exceptions:
The duplicate matrix spike recovery of Endrin for sample Batch QC was outside control criteria. Recovery in the Laboratory Control Sample (LCS) and Matrix Spike was acceptable, which indicated the analytical batch was in control. The matrix spike outlier suggested a potential low bias in this matrix. No further corrective action was appropriate.

No other anomalies associated with the analysis of this sample were observed.

Approved by_____

Chlorinated Acids by EPA Method 515.4

Second Source Exceptions:
The analysis of Chlorinated Herbicides in Drinking Water by EPA 515.4 requires the use of dual column confirmation. The Initial Calibration Verification (ICV) evaluation criteria were not met on the confirmation column for 2,4,5-TP (Silvex) in CAL13913. The ICV criteria were met on the alternate column. The data quality was not affected. No further corrective action was necessary.

Calibration Verification Exceptions:
The analysis of Chlorinated Herbicides in Drinking Water by EPA 515.4 requires the use of dual column confirmation. When the Continuing Calibration Verification (CCV) criterion is met for both columns, the lower of the two sample results is generally reported. The primary evaluation criteria were not met on the confirmation column for Dichloroprop, 2,4-Dichlorophenylacetic Acid, and 2,4-D for CCV 03230032. The results were reported from the column with an acceptable CCV. The data quality was not affected. No further corrective action was necessary.

The analysis of Chlorinated Herbicides in Drinking Water by EPA 515.4 requires the use of dual column confirmation. When the Continuing Calibration Verification (CCV) criterion is met for both columns, the lower of the two sample results is generally reported. The primary evaluation criteria were not met on the confirmation column for Dichloroprop, and 2,4-D for CCV 03230045. The results were reported from the column with an acceptable CCV. The data quality was not affected. No further corrective action was necessary.

No other anomalies associated with the analysis of this sample were observed.

Volatile Organic Compounds by EPA Method 524.2

No anomalies associated with the analysis of this sample were observed.

Semivolatile Organic Compounds by EPA Method 525.2

Lab Control Sample Exceptions:
The upper control criterion was exceeded for Hexachlorocyclopentadiene in Laboratory Control Sample (LCS) KWG1502393-3. The analyte in question was not detected in the associated field samples. The error associated with elevated recovery indicated a high bias. The sample data was not significantly affected. No further corrective action was appropriate.

Matrix Spike Recovery Exceptions:
The matrix spike recovery of Bis(2-ethylhexyl) Phthalate for sample Batch QC was outside control criteria. Recovery in the Laboratory Control Sample (LCS) was acceptable, which indicated the analytical batch was in control. The matrix spike outlier suggested a potential low bias in this matrix. No further corrective action was appropriate.

The upper control criterion was exceeded for the following analyte in Matrix Spike (MS) KWG1502393-1 and Matrix Spike Duplicate (MSD) KWG1502393-2: Hexachlorocyclopentadiene. The analyte in question was not detected in the associated field samples. The error associated with elevated recovery indicated a high bias. The sample data was not significantly affected. No further corrective action was appropriate.

No other anomalies associated with the analysis of this sample were observed.

Endothall by EPA Method 548.1

No anomalies associated with the analysis of this sample were observed.

Approved by_____

Diquat by High Performance Liquid Chromatography

Matrix Spike Recovery Exceptions:
The matrix spike recovery of Diquat for samples KWG1502015-1, and KWG1502015-2 was outside control criteria because of matrix interference. The chromatogram indicated the presence of non-target background components that prevented adequate resolution of the target analyte. As a result, accurate quantitation was not possible. No further corrective action was required.

No other anomalies associated with the analysis of this sample were observed.

Chlorinated Phenols by EPA Method 1653

No anomalies associated with the analysis of this sample were observed.

Glyphosate and Carbamates

These analyses were performed at ALS Environmental, Middletown, PA. The data for these analyses are included in the corresponding section of this report.

Sulfur

This analysis was performed at ALS Environmental, Simi Valley, CA. The data for this analysis is included in the corresponding section of this report.

Approved by_____

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

ALS Environmental

CHAIN OF CUSTODY

57725

001, 005

SR# K150 7369

COC Set_____of_____

COC#_____

1317 South 13th Ave, Kelso, WA 98626 Phone (360) 577-7222 / 800-695-7222 / FAX (360) 636-1068
www.alsglobal.com

Project Name: Sen Temp Wells
Project Number:
Project Manager: Jeff Coleman
Company: City of Longview
Address: PO Box 128 Longview WA 98632
Phone #:
email:
Sampler Signature: T Daly
Sampler Printed Name: T Daly

CLIENT SAMPLE ID	LABID	SAMPLING Date Time	Matrix	NUMBER OF CONTAINERS	6H: SM 9223 B / Coli L (+/-)	48H: 180.1 / Turbidity	48H: 300.0 / NO2	48H: 300.0 / NO3	48H: SM 2120 B / Color	48H: SM 4500-P E / O Phos	7D: 548.1 / ENDO	7D: 549.2 / DIQ_PARAQ	7D: SM 2540 C / TDS	14D: 335.4 / CN T	14D: 504.1 / EDB DBCP 123TCP	14D: 508.1 / PEST_CL	14D: 515.4 / CL_ACID_HERB	14D: 524.2 / VOC	14D: 525.2 / SVO	14D: 547 / GLYPH	14D: SM 2320 B / Alkalinity Titr	14D: Sulfur Liq / Sulfur	28D: 300.0 / Chloride	28D: 300.0 / SO4	28D: 314.0 / ClO4	28D: 531.1 / CARBAM	28D: SM 2510 B / Conductivity	Remarks
1. DW-7		3/9/15 1330		28	5																							
2.																												
3.																												
4.																												
5.																												
6.																												
7.																												
8.																												
9.																												
10.																												

Report Requirements

___ I. Routine Report: Method Blank, Surrogate, as required

___ II. Report Dup., MS, MSD as required

___ III. CLP Like Summary (no raw data)

___ IV. Data Validation Report

___ V. EDD

Invoice Information

P.O.# 96-4552

Bill To: City of Longview
PO Box 128
Longview WA 98632

Turnaround Requirements

____ 24 hr. ____48 hr.
____ 5 Day
____ Standard

Requested Report Date

Circle which metals are to be analyzed

Total Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

Dissolved Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

Special Instructions/Comments:

*Indicate State Hydrocarbon Procedure: AK CA WI Northwest Other_____(Circle One)

Relinquished By:	Received By:	Relinquished By:	Received By:	Relinquished By:	Received By:
Signature: T Daly	Signature: [illegible]	Signature	Signature	Signature	Signature
Printed Name: Coleman	Printed Name: ALS	Printed Name	Printed Name	Printed Name	Printed Name
Firm: 3/9/15 1507	Firm: 3/9/15 1510	Firm	Firm	Firm	Firm
Date/Time	Date/Time	Date/Time	Date/Time	Date/Time	Date/Time

ALS Environmental

CHAIN OF CUSTODY

57725

001, 005

SR# K1506969

COC Set____of____

COC#_____

1317 South 13th Ave, Kelso, WA 98626 Phone (360) 577-7222 / 800-695-7222 / FAX (360) 636-1068
www.alsglobal.com

Project Name: Sentinel Wells	Project Number:
Project Manager: Jeff Coleman	
Company: City of Longview	
Address: PO Box 128 Longview WA 98632	
Phone #:	email:
Sampler Signature: T Daly	Sampler Printed Name: T Daly

CLIENT SAMPLE ID	LABID	SAMPLING Date Time	Matrix	NUMBER OF CONTAINERS	28D: 245.1 / Hg T	28D: 300.0 / Br	28D: 300.0 / F	28D: SM 4500-NH3 G / Ammonia	30D: 1653A / CHLOR_PHEN	180D: 1630 / Methyl Hg T	180D: 200.7 / Metals T	180D: 200.8 / Metals T	999D: Calculation / NO2 NO3 Calc	999D: SM 2340 B / Hardness Calc	1	2	3	4	5	Remarks
1. DW-7		3/9/15 1530		28																
2.																				
3.																				
4.																				
5.																				
6.																				
7.																				
8.																				
9.																				
10.																				

Report Requirements

___ I. Routine Report: Method Blank, Surrogate, as required

___ II. Report Dup., MS, MSD as required

___ III. CLP Like Summary (no raw data)

___ IV. Data Validation Report

___ V. EDD

Invoice Information

P.O.# 36-45552

Bill To: City of Longview
PO Box 128
Longview WA 98632

Turnaround Requirements

____ 24 hr. ____48 hr.
____ 5 Day
____ Standard

Requested Report Date

Circle which metals are to be analyzed

Total Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

Dissolved Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

Special Instructions/Comments:

*Indicate State Hydrocarbon Procedure: AK CA WI Northwest Other_____(Circle One)

Relinquished By:	Received By:	Relinquished By:	Received By:	Relinquished By:	Received By:
Signature: T Daly	Signature: [illegible]	Signature	Signature	Signature	Signature
Printed Name: T Daly	Printed Name: [illegible]	Printed Name	Printed Name	Printed Name	Printed Name
Firm: CofL	Firm: ALS	Firm	Firm	Firm	Firm
Date/Time: 3/9/15 1507	Date/Time: 3/9/15 1510	Date/Time	Date/Time	Date/Time	Date/Time

PC CK

Cooler Receipt and Preservation Form

Client / Project: City of LV Service Request *K15* 02365

Received: 3/9/15 Opened: 3/9/15 By: TD Unloaded: 3/9/15 By: TD

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

   If present, were custody seals intact? Y N If present, were they signed and dated? Y N

Raw Cooler Temp	Corrected. Cooler Temp	Raw Temp Blank	Corrected Temp Blank	Corr. Factor	Thermometer ID	Cooler/COC ID NA	Tracking Number NA	Filed
5.0	5.1	11.8	11.9	+0.1	355			
3.0	2.8	8.9	8.7	-0.2	336			
0.4	0.3	5.2	5.1	-0.1	298			
2.4	2.5	4.7	4.8	+0.1	360			

4. Packing material: *Inserts* *Baggies* *Bubble Wrap* *Gel Packs* *Wet Ice* *Dry Ice* *Sleeves* _____
5. Were custody papers properly filled out (ink, signed, etc.)? NA Y N
6. Did all bottles arrive in good condition (unbroken)? *Indicate in the table below.* 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.* NA Y N
9. 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

SHORT HOLD TIME

*Notes, Discrepancies, & Resolutions:*_____

*Page*_____*of*_____

PC CV

Cooler Receipt and Preservation Form

Client / Project: City of LV Service Request *K15* 07365

Received: 3/9/15 Opened: 3/9/15 By: [illegible] Unloaded: 3/9/15 By: [illegible]

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

   If present, were custody seals intact? Y N If present, were they signed and dated? Y N

Raw Cooler Temp	Corrected Cooler Temp	Raw Temp Blank	Corrected Temp Blank	Corr. Factor	Thermometer ID	Cooler/COC ID NA	Tracking Number NA	Filed
3.1	2.1			0	353			
5.3	5.3	5.6	5.6	0	372			
5.2	5.3	5.4	5.5	+0.1	361			
10.9	10.8	13.1	13.0	−0.1	351			
6.8	6.8	5.2	5.2	0	356			

4. Packing material: *Inserts* *Baggies* *Bubble Wrap* *Gel Packs* *Wet Ice* *Dry Ice* *Sleeves* _____
5. Were custody papers properly filled out (ink, signed, etc.)? NA Y N
6. Did all bottles arrive in good condition (unbroken)? *Indicate in the table below.* 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.* NA Y N
9. 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: _____

Page ____ *of* ____

General Chemistry

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

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client:	Longview, City of	**Service Request:**	K1502365
Project:	Sentinel Wells	**Date Collected:**	03/9/15
Sample Matrix:	Drinking Water	**Date Received:**	03/9/15
Analysis Method:	180.1	**Units:**	NTU
Prep Method:	None	**Basis:**	NA

Turbidity

Sample Name	Lab Code	Result	MRL	Dil.	Date Analyzed	Q
DW-7	K1502365-001	**4.56**	0.20	1	03/10/15 14:08	
Method Blank	K1502365-MB1	ND U	0.20	1	03/10/15 14:08	

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502365
Project	Sentinel Wells	**Date Collected:**	03/09/15
Sample Matrix:	Drinking Water	**Date Received:**	03/09/15
		Date Analyzed:	03/10/15

Replicate Sample Summary
General Chemistry Parameters

Sample Name:	DW-7	**Units:**	NTU
Lab Code:	K1502365-001	**Basis:**	NA

Analyte Name	Analysis Method	MRL	Sample Result	Duplicate Sample K1502365-001DUP1 Result	Average	RPD	RPD Limit
Turbidity	180.1	0.20	4.56	4.64	4.60	2	20

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502365
Project:	Sentinel Wells	**Date Analyzed:**	03/10/15
Sample Matrix:	Drinking Water	**Date Extracted:**	NA

Lab Control Sample Summary
Turbidity

Analysis Method:	180.1	**Units:**	NTU
Prep Method:	None	**Basis:**	NA
		Analysis Lot:	435823

Sample Name	Lab Code	Result	Spike Amount	% Rec	% Rec Limits
Lab Control Sample	K1502365-LCS1	6.29	6.37	99	90-110

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client:	Longview, City of	**Service Request:**	K1502365
Project:	Sentinel Wells	**Date Collected:**	03/9/15
Sample Matrix:	Drinking Water	**Date Received:**	03/9/15
Analysis Method:	300.0	**Units:**	mg/L
Prep Method:	Method	**Basis:**	NA

Bromide

Sample Name	Lab Code	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
DW-7	K1502365-001	ND U	0.20	2	03/10/15 10:58	3/10/15	
Method Blank	K1502365-MB1	ND U	0.10	1	03/10/15 09:39	3/10/15	

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502365
Project	Sentinel Wells	**Date Collected:**	03/09/15
Sample Matrix:	Drinking Water	**Date Received:**	03/09/15
		Date Analyzed:	03/10/15

Replicate Sample Summary
General Chemistry Parameters

Sample Name:	DW-7	**Units:**	mg/L
Lab Code:	K1502365-001	**Basis:**	NA

Analyte Name	Analysis Method	MRL	Sample Result	Duplicate Sample K1502365-001DUP1 Result	Average	RPD	RPD Limit
Bromide	300.0	0.20	ND U	ND U	NC	NC	20

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ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502365
Project:	Sentinel Wells	**Date Collected:**	03/09/15
Sample Matrix:	Drinking Water	**Date Received:**	03/09/15
		Date Analyzed:	03/10/15
		Date Extracted:	03/10/15

Duplicate Matrix Spike Summary
Bromide

Sample Name:	DW-7	**Units:**	mg/L
Lab Code:	K1502365-001	**Basis:**	NA
Analysis Method:	300.0		
Prep Method:	Method		

		Matrix Spike K1502365-001MS			Duplicate Matrix Spike K1502365-001DMS					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Bromide	ND U	9.44	10.0	94	9.58	10.0	96	90-110	2	20

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ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502365
Project:	Sentinel Wells	**Date Analyzed:**	03/10/15
Sample Matrix:	Drinking Water	**Date Extracted:**	03/10/15

Lab Control Sample Summary
Bromide

Analysis Method:	300.0	**Units:**	mg/L
Prep Method:	Method	**Basis:**	NA
		Analysis Lot:	435845

Sample Name	Lab Code	Result	Spike Amount	% Rec	% Rec Limits
Lab Control Sample	K1502365-LCS1	2.30	2.50	92	90-110

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client:	Longview, City of	**Service Request:**	K1502365
Project:	Sentinel Wells	**Date Collected:**	03/9/15
Sample Matrix:	Drinking Water	**Date Received:**	03/9/15
Analysis Method:	300.0	**Units:**	mg/L
Prep Method:	Method	**Basis:**	NA

Chloride

Sample Name	Lab Code	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
DW-7	K1502365-001	**13.5**	0.40	2	03/10/15 10:58	3/10/15	
Method Blank	K1502365-MB1	ND U	0.20	1	03/10/15 09:39	3/10/15	

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502365
Project	Sentinel Wells	**Date Collected:**	03/09/15
Sample Matrix:	Drinking Water	**Date Received:**	03/09/15
		Date Analyzed:	03/10/15

Replicate Sample Summary
General Chemistry Parameters

Sample Name:	DW-7	**Units:**	mg/L
Lab Code:	K1502365-001	**Basis:**	NA

Analyte Name	Analysis Method	MRL	Sample Result	Duplicate Sample K1502365-001DUP1 Result	Average	RPD	RPD Limit
Chloride	300.0	0.40	13.5	13.6	13.5	<1	20

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ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502365
Project:	Sentinel Wells	**Date Collected:**	03/09/15
Sample Matrix:	Drinking Water	**Date Received:**	03/09/15
		Date Analyzed:	03/10/15
		Date Extracted:	03/10/15

Duplicate Matrix Spike Summary
Chloride

Sample Name:	DW-7	**Units:**	mg/L
Lab Code:	K1502365-001	**Basis:**	NA
Analysis Method:	300.0		
Prep Method:	Method		

		Matrix Spike K1502365-001MS			Duplicate Matrix Spike K1502365-001DMS					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Chloride	13.5	22.3	10.0	88 *	22.2	10.0	87 *	90-110	<1	20

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ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502365
Project:	Sentinel Wells	**Date Analyzed:**	03/10/15
Sample Matrix:	Drinking Water	**Date Extracted:**	03/10/15

Lab Control Sample Summary
Chloride

Analysis Method:	300.0	**Units:**	mg/L
Prep Method:	Method	**Basis:**	NA
		Analysis Lot:	435845

Sample Name	Lab Code	Result	Spike Amount	% Rec	% Rec Limits
Lab Control Sample	K1502365-LCS1	4.72	5.00	94	90-110

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client:	Longview, City of	**Service Request:**	K1502365
Project:	Sentinel Wells	**Date Collected:**	03/9/15
Sample Matrix:	Drinking Water	**Date Received:**	03/9/15
Analysis Method:	300.0	**Units:**	mg/L
Prep Method:	Method	**Basis:**	NA

Fluoride

Sample Name	Lab Code	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
DW-7	K1502365-001	**0.22**	0.20	2	03/10/15 10:58	3/10/15	
Method Blank	K1502365-MB1	ND U	0.10	1	03/10/15 09:39	3/10/15	

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502365
Project	Sentinel Wells	**Date Collected:**	03/09/15
Sample Matrix:	Drinking Water	**Date Received:**	03/09/15
		Date Analyzed:	03/10/15

Replicate Sample Summary
General Chemistry Parameters

Sample Name:	DW-7	**Units:**	mg/L
Lab Code:	K1502365-001	**Basis:**	NA

Analyte Name	Analysis Method	MRL	Sample Result	Duplicate Sample K1502365-001DUP1 Result	Average	RPD	RPD Limit
Fluoride	300.0	0.20	0.22	ND U	NC	NC	20

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ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502365
Project:	Sentinel Wells	**Date Collected:**	03/09/15
Sample Matrix:	Drinking Water	**Date Received:**	03/09/15
		Date Analyzed:	03/10/15
		Date Extracted:	03/10/15

Duplicate Matrix Spike Summary
Fluoride

Sample Name:	DW-7	**Units:**	mg/L
Lab Code:	K1502365-001	**Basis:**	NA
Analysis Method:	300.0		
Prep Method:	Method		

		Matrix Spike K1502365-001MS			Duplicate Matrix Spike K1502365-001DMS					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Fluoride	0.22	10.0	10.0	98	10.2	10.0	100	90-110	1	20

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ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502365
Project:	Sentinel Wells	**Date Analyzed:**	03/10/15
Sample Matrix:	Drinking Water	**Date Extracted:**	03/10/15

Lab Control Sample Summary
Fluoride

Analysis Method:	300.0	**Units:**	mg/L
Prep Method:	Method	**Basis:**	NA
		Analysis Lot:	435845

Sample Name	Lab Code	Result	Spike Amount	% Rec	% Rec Limits
Lab Control Sample	K1502365-LCS1	5.12	5.00	102	90-110

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client:	Longview, City of	**Service Request:**	K1502365
Project:	Sentinel Wells	**Date Collected:**	03/9/15
Sample Matrix:	Drinking Water	**Date Received:**	03/9/15
Analysis Method:	300.0	**Units:**	mg/L
Prep Method:	Method	**Basis:**	NA

Nitrite as Nitrogen

Sample Name	Lab Code	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
DW-7	K1502365-001	ND U	0.10	2	03/10/15 10:58	3/10/15	
Method Blank	K1502365-MB1	ND U	0.050	1	03/10/15 09:39	3/10/15	

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502365
Project	Sentinel Wells	**Date Collected:**	03/09/15
Sample Matrix:	Drinking Water	**Date Received:**	03/09/15
		Date Analyzed:	03/10/15

Replicate Sample Summary
General Chemistry Parameters

Sample Name:	DW-7	**Units:**	mg/L
Lab Code:	K1502365-001	**Basis:**	NA

Analyte Name	Analysis Method	MRL	Sample Result	Duplicate Sample K1502365-001DUP1 Result	Average	RPD	RPD Limit
Nitrite as Nitrogen	300.0	0.10	ND U	ND U	NC	NC	20

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ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502365
Project:	Sentinel Wells	**Date Collected:**	03/09/15
Sample Matrix:	Drinking Water	**Date Received:**	03/09/15
		Date Analyzed:	03/10/15
		Date Extracted:	03/10/15

Duplicate Matrix Spike Summary
Nitrite as Nitrogen

Sample Name:	DW-7	**Units:**	mg/L
Lab Code:	K1502365-001	**Basis:**	NA
Analysis Method:	300.0		
Prep Method:	Method		

		Matrix Spike K1502365-001MS			Duplicate Matrix Spike K1502365-001DMS					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Nitrite as Nitrogen	ND U	10.1	10.0	101	10.2	10.0	102	90-110	<1	20

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ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502365
Project:	Sentinel Wells	**Date Analyzed:**	03/10/15
Sample Matrix:	Drinking Water	**Date Extracted:**	03/10/15

Lab Control Sample Summary
Nitrite as Nitrogen

Analysis Method:	300.0	**Units:**	mg/L
Prep Method:	Method	**Basis:**	NA
		Analysis Lot:	435845

Sample Name	Lab Code	Result	Spike Amount	% Rec	% Rec Limits
Lab Control Sample	K1502365-LCS1	2.42	2.50	97	90-110

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client:	Longview, City of	**Service Request:**	K1502365
Project:	Sentinel Wells	**Date Collected:**	03/9/15
Sample Matrix:	Drinking Water	**Date Received:**	03/9/15
Analysis Method:	300.0	**Units:**	mg/L
Prep Method:	Method	**Basis:**	NA

Nitrate as Nitrogen

Sample Name	Lab Code	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
DW-7	K1502365-001	ND U	0.10	2	03/10/15 10:58	3/10/15	
Method Blank	K1502365-MB1	ND U	0.050	1	03/10/15 09:39	3/10/15	

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502365
Project	Sentinel Wells	**Date Collected:**	03/09/15
Sample Matrix:	Drinking Water	**Date Received:**	03/09/15
		Date Analyzed:	03/10/15

Replicate Sample Summary
General Chemistry Parameters

Sample Name:	DW-7	**Units:**	mg/L
Lab Code:	K1502365-001	**Basis:**	NA

Analyte Name	Analysis Method	MRL	Sample Result	Duplicate Sample K1502365-001DUP1 Result	Average	RPD	RPD Limit
Nitrate as Nitrogen	300.0	0.10	ND U	ND U	NC	NC	20

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ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502365
Project:	Sentinel Wells	**Date Collected:**	03/09/15
Sample Matrix:	Drinking Water	**Date Received:**	03/09/15
		Date Analyzed:	03/10/15
		Date Extracted:	03/10/15

Duplicate Matrix Spike Summary
Nitrate as Nitrogen

Sample Name:	DW-7	**Units:**	mg/L
Lab Code:	K1502365-001	**Basis:**	NA
Analysis Method:	300.0		
Prep Method:	Method		

		Matrix Spike K1502365-001MS			Duplicate Matrix Spike K1502365-001DMS					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Nitrate as Nitrogen	ND U	9.16	10.0	92	9.32	10.0	93	90-110	2	20

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ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502365
Project:	Sentinel Wells	**Date Analyzed:**	03/10/15
Sample Matrix:	Drinking Water	**Date Extracted:**	03/10/15

Lab Control Sample Summary
Nitrate as Nitrogen

Analysis Method:	300.0	**Units:**	mg/L
Prep Method:	Method	**Basis:**	NA
		Analysis Lot:	435845

Sample Name	Lab Code	Result	Spike Amount	% Rec	% Rec Limits
Lab Control Sample	K1502365-LCS1	2.33	2.50	93	90-110

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client:	Longview, City of	**Service Request:**	K1502365
Project:	Sentinel Wells	**Date Collected:**	03/9/15
Sample Matrix:	Drinking Water	**Date Received:**	03/9/15
Analysis Method:	300.0	**Units:**	mg/L
Prep Method:	Method	**Basis:**	NA

Sulfate

Sample Name	Lab Code	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
DW-7	K1502365-001	**2.76**	0.20	2	03/10/15 10:58	3/10/15	
Method Blank	K1502365-MB1	ND U	0.10	1	03/10/15 09:39	3/10/15	

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502365
Project	Sentinel Wells	**Date Collected:**	03/09/15
Sample Matrix:	Drinking Water	**Date Received:**	03/09/15
		Date Analyzed:	03/10/15

Replicate Sample Summary
General Chemistry Parameters

Sample Name:	DW-7	**Units:**	mg/L
Lab Code:	K1502365-001	**Basis:**	NA

Analyte Name	Analysis Method	MRL	Sample Result	Duplicate Sample K1502365-001DUP1 Result	Average	RPD	RPD Limit
Sulfate	300.0	0.20	2.76	2.75	2.75	<1	20

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ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502365
Project:	Sentinel Wells	**Date Collected:**	03/09/15
Sample Matrix:	Drinking Water	**Date Received:**	03/09/15
		Date Analyzed:	03/10/15
		Date Extracted:	03/10/15

Duplicate Matrix Spike Summary
Sulfate

Sample Name:	DW-7	**Units:**	mg/L
Lab Code:	K1502365-001	**Basis:**	NA
Analysis Method:	300.0		
Prep Method:	Method		

		Matrix Spike K1502365-001MS			**Duplicate Matrix Spike** K1502365-001DMS					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Sulfate	2.76	12.0	10.0	92	12.0	10.0	93	90-110	<1	20

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ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502365
Project:	Sentinel Wells	**Date Analyzed:**	03/10/15
Sample Matrix:	Drinking Water	**Date Extracted:**	03/10/15

Lab Control Sample Summary
Sulfate

Analysis Method:	300.0	**Units:**	mg/L
Prep Method:	Method	**Basis:**	NA
		Analysis Lot:	435845

Sample Name	Lab Code	Result	Spike Amount	% Rec	% Rec Limits
Lab Control Sample	K1502365-LCS1	4.87	5.00	97	90-110

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client:	Longview, City of	**Service Request:**	K1502365
Project:	Sentinel Wells	**Date Collected:**	03/9/15
Sample Matrix:	Drinking Water	**Date Received:**	03/9/15
Analysis Method:	314.0	**Units:**	ug/L
Prep Method:	None	**Basis:**	NA

Perchlorate

Sample Name	Lab Code	Result	MRL	Dil.	Date Analyzed	Q
DW-7	K1502365-001	ND U	1.0	1	03/31/15 13:40	
Method Blank	K1502365-MB1	ND U	1.0	1	03/31/15 11:44	

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502365
Project	Sentinel Wells	**Date Collected:**	NA
Sample Matrix:	Drinking Water	**Date Received:**	NA
		Date Analyzed:	03/31/15

Replicate Sample Summary
General Chemistry Parameters

Sample Name:	Batch QC	**Units:**	ug/L
Lab Code:	K1502415-001	**Basis:**	NA

Analyte Name	Analysis Method	MRL	Sample Result	Duplicate Sample K1502415-001DUP Result	Average	RPD	RPD Limit
Perchlorate	314.0	1.0	ND U	ND U	NC	NC	20

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ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502365
Project:	Sentinel Wells	**Date Collected:**	N/A
Sample Matrix:	Drinking Water	**Date Received:**	N/A
		Date Analyzed:	03/31/15
		Date Extracted:	NA

Duplicate Matrix Spike Summary
Perchlorate

Sample Name:	Batch QC	**Units:**	ug/L
Lab Code:	K1502415-001	**Basis:**	NA
Analysis Method:	314.0		
Prep Method:	None		

		Matrix Spike K1502415-001MS			Duplicate Matrix Spike K1502415-001DMS					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Perchlorate	ND U	10.7	10.0	107	9.7	10.0	97	80-120	10	20

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ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502365
Project:	Sentinel Wells	**Date Analyzed:**	03/31/15
Sample Matrix:	Drinking Water	**Date Extracted:**	NA

Lab Control Sample Summary
Perchlorate

Analysis Method:	314.0	**Units:**	ug/L
Prep Method:	None	**Basis:**	NA
		Analysis Lot:	438526

Sample Name	Lab Code	Result	Spike Amount	% Rec	% Rec Limits
Lab Control Sample	K1502365-LCS1	15.4	16.8	92	85-115

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client:	Longview, City of	**Service Request:**	K1502365
Project:	Sentinel Wells	**Date Collected:**	03/9/15
Sample Matrix:	Drinking Water	**Date Received:**	03/9/15
Analysis Method:	335.4	**Units:**	mg/L
Prep Method:	Method	**Basis:**	NA

Cyanide, Total

Sample Name	Lab Code	Result		MRL	Dil.	Date Analyzed	Date Extracted	Q
DW-7	K1502365-001	ND	U	0.010	1	03/11/15 10:44	3/11/15	
Method Blank	K1502365-MB1	ND	U	0.010	1	03/11/15 10:44	3/11/15	

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502365
Project	Sentinel Wells	**Date Collected:**	NA
Sample Matrix:	Drinking Water	**Date Received:**	NA
		Date Analyzed:	03/11/15

Replicate Sample Summary
General Chemistry Parameters

Sample Name:	Batch QC	**Units:**	mg/L
Lab Code:	K1502415-001	**Basis:**	NA

Analyte Name	Analysis Method	MRL	Sample Result	Duplicate Sample K1502415-001DUP Result	Average	RPD	RPD Limit
Cyanide, Total	335.4	0.010	ND U	ND U	NC	NC	20

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ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502365
Project:	Sentinel Wells	**Date Collected:**	N/A
Sample Matrix:	Drinking Water	**Date Received:**	N/A
		Date Analyzed:	03/11/15
		Date Extracted:	03/11/15

Duplicate Matrix Spike Summary
Cyanide, Total

Sample Name:	Batch QC	**Units:**	mg/L
Lab Code:	K1502415-001	**Basis:**	NA
Analysis Method:	335.4		
Prep Method:	Method		

		Matrix Spike K1502415-001MS			Duplicate Matrix Spike K1502415-001DMS					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Cyanide, Total	ND U	0.095	0.100	94	0.104	0.100	104	90-110	9	20

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ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502365
Project:	Sentinel Wells	**Date Analyzed:**	03/11/15
Sample Matrix:	Drinking Water	**Date Extracted:**	03/11/15

Lab Control Sample Summary
Cyanide, Total

Analysis Method:	335.4	**Units:**	mg/L
Prep Method:	Method	**Basis:**	NA
		Analysis Lot:	436013

Sample Name	Lab Code	Result	Spike Amount	% Rec	% Rec Limits
Lab Control Sample	K1502365-LCS1	0.147	0.150	98	90-110

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client:	Longview, City of	**Service Request:**	K1502365
Project:	Sentinel Wells	**Date Collected:**	03/9/15
Sample Matrix:	Drinking Water	**Date Received:**	03/9/15
Analysis Method:	Calculation	**Units:**	mg/L
Prep Method:	None	**Basis:**	NA

Nitrate+Nitrite as Nitrogen

Sample Name	Lab Code	Result	MRL	Dil.	Date Analyzed	Q
DW-7	K1502365-001	ND U	0.20	1	03/10/15 10:58	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client:	Longview, City of	**Service Request:**	K1502365
Project:	Sentinel Wells	**Date Collected:**	03/9/15
Sample Matrix:	Drinking Water	**Date Received:**	03/9/15
Analysis Method:	SM 2120 B	**Units:**	ColorUnits
Prep Method:	None	**Basis:**	NA

Color

Sample Name	Lab Code	Result	MRL	Dil.	Date Analyzed	Q
DW-7	K1502365-001	**30.0**	5.0	1	03/10/15 09:37	
Method Blank	K1502365-MB1	ND U	5.0	1	03/10/15 09:30	

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502365
Project	Sentinel Wells	**Date Collected:**	03/09/15
Sample Matrix:	Drinking Water	**Date Received:**	03/09/15
Analysis Method:	SM 2120 B	**Units:**	ColorUnits
Prep Method:	None	**Basis:**	NA

Replicate Sample Summary
Color

Sample Name:	Lab Code:	MRL	Sample Result	Duplicate Result	Average	RPD	RPD Limit	Date Analyzed
DW-7	K1502365-001DUP1	5.0	30.0	30.0	30.0	<1	20	03/10/15
DW-7	K1502365-001DUP2	5.0	30.0	30.0	30.0	<1	20	03/10/15

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ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502365
Project:	Sentinel Wells	**Date Analyzed:**	03/10/15
Sample Matrix:	Drinking Water	**Date Extracted:**	NA

Lab Control Sample Summary
Color

Analysis Method:	SM 2120 B	**Units:**	ColorUnits
Prep Method:	None	**Basis:**	NA
		Analysis Lot:	435586

Sample Name	Lab Code	Result	Spike Amount	% Rec	% Rec Limits
Lab Control Sample	K1502365-LCS1	50.0	50.0	100	85-115

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client:	Longview, City of	**Service Request:**	K1502365
Project:	Sentinel Wells	**Date Collected:**	03/9/15
Sample Matrix:	Drinking Water	**Date Received:**	03/9/15
Analysis Method:	SM 2320 B	**Units:**	mg/L
Prep Method:	None	**Basis:**	NA

Alkalinity as CaCO3, Total

Sample Name	Lab Code	Result	MRL	Dil.	Date Analyzed	Q
DW-7	K1502365-001	**89.7**	2.0	1	03/14/15 14:15	
Method Blank	K1502365-MB1	ND U	2.0	1	03/14/15 14:15	

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502365
Project	Sentinel Wells	**Date Collected:**	NA
Sample Matrix:	Drinking Water	**Date Received:**	NA
Analysis Method:	SM 2320 B	**Units:**	mg/L
Prep Method:	None	**Basis:**	NA

Replicate Sample Summary
Alkalinity as CaCO3, Total

Sample Name:	Lab Code:	MRL	Sample Result	Duplicate Result	Average	RPD	RPD Limit	Date Analyzed
Batch QC	K1502190-001DUP	2.0	66.0	66.0	66.0	<1	20	03/14/15
Batch QC	K1502416-001DUP	2.0	145	145	145	<1	20	03/14/15

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ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502365
Project:	Sentinel Wells	**Date Analyzed:**	03/14/15
Sample Matrix:	Drinking Water	**Date Extracted:**	NA

Lab Control Sample Summary
Alkalinity as CaCO3, Total

Analysis Method:	SM 2320 B	**Units:**	mg/L
Prep Method:	None	**Basis:**	NA
		Analysis Lot:	436281

Sample Name	Lab Code	Result	Spike Amount	% Rec	% Rec Limits
Lab Control Sample	K1502365-LCS1	34.6	34.4	101	90-110

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client:	Longview, City of	**Service Request:**	K1502365
Project:	Sentinel Wells	**Date Collected:**	03/9/15
Sample Matrix:	Drinking Water	**Date Received:**	03/9/15
Analysis Method:	SM 2510 B	**Units:**	uMHOS/cm
Prep Method:	None	**Basis:**	NA

Conductivity at 25 Degrees Celsius

Sample Name	Lab Code	Result	MRL	Dil.	Date Analyzed	Q
DW-7	K1502365-001	**247**	2.0	1	03/19/15 09:45	
Method Blank	K1502365-MB1	ND U	2.0	1	03/19/15 09:45	
Method Blank	K1502365-MB2	ND U	2.0	1	03/19/15 09:45	

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502365
Project	Sentinel Wells	**Date Collected:**	NA
Sample Matrix:	Drinking Water	**Date Received:**	NA
		Date Analyzed:	03/19/15

Replicate Sample Summary
General Chemistry Parameters

Sample Name:	Batch QC	**Units:**	uMHOS/cm
Lab Code:	K1502415-001	**Basis:**	NA

Analyte Name	Analysis Method	MRL	Sample Result	Duplicate Sample K1502415-001DUP Result	Average	RPD	RPD Limit
Conductivity at 25 Degrees Celsius	SM 2510 B	2.0	701	699	700	<1	20

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ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502365
Project:	Sentinel Wells	**Date Analyzed:**	03/19/15
Sample Matrix:	Drinking Water	**Date Extracted:**	NA

Lab Control Sample Summary
Conductivity at 25 Degrees Celsius

Analysis Method:	SM 2510 B	**Units:**	uMHOS/cm
Prep Method:	None	**Basis:**	NA
		Analysis Lot:	436981

Sample Name	Lab Code	Result	Spike Amount	% Rec	% Rec Limits
Lab Control Sample	K1502365-LCS1	319	289	110	86-113

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client:	Longview, City of	**Service Request:**	K1502365
Project:	Sentinel Wells	**Date Collected:**	03/9/15
Sample Matrix:	Drinking Water	**Date Received:**	03/9/15
Analysis Method:	SM 2540 C	**Units:**	mg/L
Prep Method:	None	**Basis:**	NA

Solids, Total Dissolved

Sample Name	Lab Code	Result	MRL	Dil.	Date Analyzed	Q
DW-7	K1502365-001	**170**	10	1	03/11/15 13:02	
Method Blank	K1502365-MB1	ND U	5.0	1	03/11/15 13:02	
Method Blank	K1502365-MB2	ND U	5.0	1	03/11/15 13:02	

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502365
Project	Sentinel Wells	**Date Collected:**	03/09/15
Sample Matrix:	Drinking Water	**Date Received:**	03/09/15
		Date Analyzed:	03/11/15

Replicate Sample Summary
General Chemistry Parameters

Sample Name:	DW-7	**Units:**	mg/L
Lab Code:	K1502365-001	**Basis:**	NA

Analyte Name	Analysis Method	MRL	Sample Result	Duplicate Sample K1502365-001DUP1 Result	Average	RPD	RPD Limit
Solids, Total Dissolved	SM 2540 C	10	170	160	165	6	10

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ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502365
Project:	Sentinel Wells	**Date Analyzed:**	03/11/15
Sample Matrix:	Drinking Water	**Date Extracted:**	NA

Lab Control Sample Summary
Solids, Total Dissolved

Analysis Method:	SM 2540 C	**Units:**	mg/L
Prep Method:	None	**Basis:**	NA
		Analysis Lot:	435923

Sample Name	Lab Code	Result	Spike Amount	% Rec	% Rec Limits
Lab Control Sample	K1502365-LCS1	1260	1300	97	85-115

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client:	Longview, City of	**Service Request:**	K1502365
Project:	Sentinel Wells	**Date Collected:**	03/9/15
Sample Matrix:	Drinking Water	**Date Received:**	03/9/15
Analysis Method:	SM 4500-NH3 G	**Units:**	mg/L
Prep Method:	Method	**Basis:**	NA

Ammonia as Nitrogen

Sample Name	Lab Code	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
DW-7	K1502365-001	**0.247**	0.050	1	03/10/15 11:47	3/10/15	
Method Blank	K1502365-MB1	ND U	0.050	1	03/10/15 11:47	3/10/15	

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502365
Project	Sentinel Wells	**Date Collected:**	NA
Sample Matrix:	Drinking Water	**Date Received:**	NA
Analysis Method:	SM 4500-NH3 G	**Units:**	mg/L
Prep Method:	Method	**Basis:**	NA

Replicate Sample Summary
Ammonia as Nitrogen

Sample Name:	Lab Code:	MRL	Sample Result	Duplicate Result	Average	RPD	RPD Limit	Date Analyzed
Batch QC	K1502184-001DUP	0.050	0.050 J	0.055	0.0522	10	20	03/10/15
Batch QC	K1502326-001DUP	0.50	26.3	26.0	26.1	1	20	03/10/15

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ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502365
Project:	Sentinel Wells	**Date Collected:**	N/A
Sample Matrix:	Drinking Water	**Date Received:**	N/A
		Date Analyzed:	03/10/15
		Date Extracted:	03/10/15

Duplicate Matrix Spike Summary
Ammonia as Nitrogen

Sample Name:	Batch QC	**Units:**	mg/L
Lab Code:	K1502184-001	**Basis:**	NA
Analysis Method:	SM 4500-NH3 G		
Prep Method:	Method		

		Matrix Spike K1502184-001MS			**Duplicate Matrix Spike** K1502184-001DMS					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Ammonia as Nitrogen	0.050 J	2.12	2.00	104	2.07	2.00	101	90-110	3	20

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ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502365
Project:	Sentinel Wells	**Date Collected:**	N/A
Sample Matrix:	Drinking Water	**Date Received:**	N/A
		Date Analyzed:	03/10/15
		Date Extracted:	03/10/15

Duplicate Matrix Spike Summary
Ammonia as Nitrogen

Sample Name:	Batch QC	**Units:**	mg/L
Lab Code:	K1502326-001	**Basis:**	NA
Analysis Method:	SM 4500-NH3 G		
Prep Method:	Method		

		Matrix Spike K1502326-001MS			**Duplicate Matrix Spike** K1502326-001DMS					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Ammonia as Nitrogen	26.3	46.6	20.0	101	47.0	20.0	104	90-110	3	20

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ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502365
Project:	Sentinel Wells	**Date Analyzed:**	03/10/15
Sample Matrix:	Drinking Water	**Date Extracted:**	03/10/15

Lab Control Sample Summary
Ammonia as Nitrogen

Analysis Method:	SM 4500-NH3 G	**Units:**	mg/L
Prep Method:	Method	**Basis:**	NA
		Analysis Lot:	435737

Sample Name	Lab Code	Result	Spike Amount	% Rec	% Rec Limits
Lab Control Sample	K1502365-LCS1	15.3	15.1	102	90-110

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client:	Longview, City of	**Service Request:**	K1502365
Project:	Sentinel Wells	**Date Collected:**	03/9/15
Sample Matrix:	Drinking Water	**Date Received:**	03/9/15
Analysis Method:	SM 4500-P E	**Units:**	mg/L
Prep Method:	None	**Basis:**	NA

Orthophosphate as Phosphorus

Sample Name	Lab Code	Result	MRL	Dil.	Date Analyzed	Q
DW-7	K1502365-001	**0.52**	0.25	5	03/10/15 15:18	
Method Blank	K1502365-MB1	ND U	0.050	1	03/10/15 15:18	

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502365
Project	Sentinel Wells	**Date Collected:**	03/09/15
Sample Matrix:	Drinking Water	**Date Received:**	03/09/15
		Date Analyzed:	03/10/15

Replicate Sample Summary
General Chemistry Parameters

Sample Name:	DW-7	**Units:**	mg/L
Lab Code:	K1502365-001	**Basis:**	NA

Analyte Name	Analysis Method	MRL	Sample Result	Duplicate Sample K1502365-001DUP1 Result	Average	RPD	RPD Limit
Orthophosphate as Phosphorus	SM 4500-P E	0.25	0.52	0.53	0.524	1	20

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ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502365
Project:	Sentinel Wells	**Date Collected:**	03/09/15
Sample Matrix:	Drinking Water	**Date Received:**	03/09/15
		Date Analyzed:	03/10/15
		Date Extracted:	NA

Duplicate Matrix Spike Summary
Orthophosphate as Phosphorus

Sample Name:	DW-7	**Units:**	mg/L
Lab Code:	K1502365-001	**Basis:**	NA
Analysis Method:	SM 4500-P E		
Prep Method:	None		

		Matrix Spike K1502365-001MS			**Duplicate Matrix Spike** K1502365-001DMS					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Orthophosphate as Phosphorus	0.52	0.98	0.40	115	1.01	0.40	121	75-125	5	20

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ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502365
Project:	Sentinel Wells	**Date Analyzed:**	03/10/15
Sample Matrix:	Drinking Water	**Date Extracted:**	NA

Lab Control Sample Summary
Orthophosphate as Phosphorus

Analysis Method:	SM 4500-P E	**Units:**	mg/L
Prep Method:	None	**Basis:**	NA
		Analysis Lot:	435715

Sample Name	Lab Code	Result	Spike Amount	% Rec	% Rec Limits
Lab Control Sample	K1502365-LCS1	6.29	6.1	103	85-115
Lab Control Sample	K1502365-LCS2	6.31	6.1	104	85-115
Lab Control Sample	K1502365-LCS3	6.27	6.1	103	85-115
Lab Control Sample	K1502365-LCS4	6.36	6.1	105	85-115

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Analytical Report

Client:	Longview, City of	**Service Request:**	K1502365
Project:	Sentinel Wells	**Date Collected:**	3/9/2015
Sample Matrix:	Drinking water	**Date Received:**	3/9/2015

Colilert, E. Coli

Prep Method: NONE
Analysis Method: SM 9223B Basis: NA
Test Notes:

Sample Name	Lab Code	MRL	Date Analyzed	Time Test Started		Result	Result Notes
DW-7	K1502365-001	1	3/9/2015	17:19	hrs	Absent	

SM *Standard Methods for the Examination of Water and Wastewater* , 20th Ed., 1998.

ALS Group USA, Corp.
dba ALS Environmental
Analytical Report

Client:	Longview, City of	**Service Request:**	K1502365
Project:	Sentinel Wells	**Date Collected:**	3/9/2015
Sample Matrix:	Drinking water	**Date Received:**	3/9/2015

Colilert, T. Coli

Prep Method: NONE
Analysis Method: SM 9223B Basis: NA
Test Notes:

Sample Name	Lab Code	MRL	Date Analyzed	Time Test Started		Result	Result Notes
DW-7	K1502365-001	1	3/9/2015	17:19	hrs	Absent	

SM *Standard Methods for the Examination of Water and Wastewater* , 20th Ed., 1998.

Metals

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Analytical Report

Client:	Longview, City of	**Service Request:**	K1502365
Project:	Sentinel Wells	**Date Collected:**	03/09/15
Sample Matrix:	Drinking water	**Date Received:**	03/09/15

Hardness as CaCO3

Prep Method:	CLAA	Units:	mg/L (ppm)
Analysis Method:	200.7/SM 2340B	Basis:	NA
Test Notes:			

Sample Name	Lab Code	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
DW-7	K1502365-001	0.07	1	03/13/15	03/16/15	87.2	
Method Blank	K1502365-MB	0.07	1	03/13/15	03/16/15	ND	

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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502365
Project:	Sentinel Wells	**Date Collected:**	NA
Sample Matrix:	Drinking water	**Date Received:**	NA
		Date Extracted:	03/13/15
		Date Analyzed:	03/16/15

Duplicate Summary
Metals

Sample Name:	Batch QC	Units:	mg/L (ppm)
Lab Code:	K1502330-001D	Basis:	NA
Test Notes:			

Analyte	Prep Method	Analysis Method	MRL	Sample Result	Duplicate Sample Result	Average	Relative Percent Difference	Result Notes
Hardness as CaCO3	CLAA	200.7/SM 2340B	0.07	99.8	101	100	1	

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Analytical Report

Client:	Longview, City of	**Service Request:**	K1502365
Project:	Sentinel Wells	**Date Collected:**	03/09/15
Sample Matrix:	Drinking water	**Date Received:**	03/09/15

Methyl Mercury

Prep Method:	Method	Units:	ng/L
Analysis Method:	1630	Basis:	NA
Test Notes:			

Sample Name	Lab Code	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
DW-7	K1502365-001	0.1	1	03/16/15	03/17/15	ND	
Method Blank 1	K1502365-MB1	0.1	1	03/16/15	03/17/15	ND	
Method Blank 2	K1502365-MB2	0.1	1	03/16/15	03/17/15	ND	
Method Blank 3	K1502365-MB3	0.1	1	03/16/15	03/17/15	ND	

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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502365
Project:	Sentinel Wells	**Date Collected:**	03/09/15
Sample Matrix:	Drinking water	**Date Received:**	03/09/15
		Date Extracted:	03/16/15
		Date Analyzed:	03/17/15

Matrix Spike/Duplicate Matrix Spike Summary
Metals

Sample Name:	DW-7		Units:	ng/L
Lab Code:	K1502365-001MS,	K1502365-001MSD	Basis:	NA
Test Notes:				

				Spike Level		Sample	Spike Result		Percent Recovery				
Analyte	**Prep Method**	**Analysis Method**	**MRL**	**MS**	**DMS**	**Result**	**MS**	**DMS**	**MS**	**DMS**	**CAS Acceptance Limits**	**Relative Percent Difference**	**Result Notes**
Mercury, Methyl	Method	1630	0.1	2.22	2.22	ND	2.50	2.43	113	109	65-135	3	

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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502365
Project:	Sentinel Wells	**Date Collected:**	NA
LCS Matrix:	Water	**Date Received:**	NA
		Date Extracted:	03/16/15
		Date Analyzed:	03/17/15

Ongoing Precision and Recovery (OPR) Sample Summary
Metals

Sample Name: Ongoing Precision and Recovery (Initial)

Units: ng/L
Basis: NA

Test Notes:

Analyte	Prep Method	Analysis Method	True Value	Result	Percent Recovery	CAS Percent Recovery Acceptance Limits	Result Notes
Mercury, Methyl	Method	1630	2.22	2.56	115	67-133	

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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502365
Project:	Sentinel Wells	**Date Collected:**	NA
LCS Matrix:	Water	**Date Received:**	NA
		Date Extracted:	03/16/15
		Date Analyzed:	03/17/15

Ongoing Precision and Recovery (OPR) Sample Summary
Metals

Sample Name: Ongoing Precision and Recovery (Final)

Units: ng/L
Basis: NA

Test Notes:

Analyte	Prep Method	Analysis Method	True Value	Result	Percent Recovery	CAS Percent Recovery Acceptance Limits	Result Notes
Mercury, Methyl	Method	1630	2.22	2.19	99	67-133	

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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502365
Project:	Sentinel Wells	**Date Collected:**	NA
LCS Matrix:	Water	**Date Received:**	NA
		Date Extracted:	03/16/15
		Date Analyzed:	03/17/15

Quality Control Sample (QCS) Summary
Metals

Sample Name: Quality Control Sample

Units: pg
Basis: NA

Test Notes:

Analyte	Prep Method	Analysis Method	True Value	Result	Percent Recovery	CAS Percent Recovery Acceptance Limits	Result Notes
Mercury, Methyl	Method	1630	100	109	109	67-133	

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Analytical Report

Client :	Longview, City of	**Service Request :**	K1502365
Project Name :	Sentinel Wells	**Date Collected :**	03/09/15
Project No. :	NA	**Date Received :**	03/09/15
Matrix :	Drinking Water	**Date Extracted :**	03/10-13/15

Total Metals

Sample Name :	DW-7	**Units :**	mg/L (ppm)
Lab Code :	K1502365-001	**Basis :**	NA

Analyte	Analysis Method	MRL	Date Analyzed	Sample Result	Result Notes
Antimony	200.8	0.00005	03/12/15	ND	
Arsenic	200.8	0.0005	03/12/15	0.0038	
Barium	200.7	0.004	03/16/15	0.01	
Beryllium	200.8	0.00002	03/12/15	ND	
Cadmium	200.8	0.00002	03/12/15	ND	
Chromium	200.8	0.0002	03/12/15	ND	
Copper	200.7	0.004	03/16/15	ND	
Iron	200.7	0.02	03/16/15	1.28	
Lead	200.8	0.00002	03/12/15	ND	
Manganese	200.7	0.001	03/16/15	0.761	
Mercury	245.1	0.0002	03/11/15	ND	
Nickel	200.8	0.0002	03/12/15	0.0003	
Selenium	200.8	0.001	03/12/15	ND	
Silver	200.8	0.00002	03/12/15	ND	
Sodium	200.7	0.2	03/16/15	9.8	
Thallium	200.8	0.00002	03/12/15	ND	
Zinc	200.7	0.004	03/16/15	ND	

Comments:

ALS Group USA, Corp.
dba ALS Enviromental

Analytical Report

Client :	Longview, City of	**Service Request :**	K1502365
Project Name :	Sentinel Wells	**Date Collected :**	NA
Project No. :	NA	**Date Received :**	NA
Matrix :	Drinking Water	**Date Extracted :**	03/13/15

Total Metals

Sample Name :	Method Blank	**Units :**	mg/L (ppm)
Lab Code :	KQ1502195-01	**Basis :**	NA

Analyte	Analysis Method	MRL	Date Analyzed	Sample Result	Result Notes
Barium	200.7	0.004	03/16/15	ND	
Copper	200.7	0.004	03/16/15	ND	
Iron	200.7	0.02	03/16/15	ND	
Manganese	200.7	0.001	03/16/15	ND	
Sodium	200.7	0.2	03/16/15	ND	
Zinc	200.7	0.004	03/16/15	ND	

Comments:

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Analytical Report

Client :	Longview, City of	**Service Request :**	K1502365
Project Name :	Sentinel Wells	**Date Collected :**	NA
Project No. :	NA	**Date Received :**	NA
Matrix :	Drinking Water	**Date Extracted :**	03/10/15

Total Metals

Sample Name :	Method Blank	**Units :**	mg/L (ppm)
Lab Code :	KQ1502212-03	**Basis :**	NA

Analyte	Analysis Method	MRL	Date Analyzed	Sample Result	Result Notes
Mercury	245.1	0.0002	03/11/15	ND	

Comments:

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Analytical Report

Client :	Longview, City of	**Service Request :**	K1502365
Project Name :	Sentinel Wells	**Date Collected :**	NA
Project No. :	NA	**Date Received :**	NA
Matrix :	Drinking Water	**Date Extracted :**	03/11/15

Total Metals

Sample Name :	Method Blank	**Units :**	mg/L (ppm)
Lab Code :	KQ1502271-01	**Basis :**	NA

Analyte	Analysis Method	MRL	Date Analyzed	Sample Result	Result Notes
Antimony	200.8	0.00005	03/12/15	ND	
Arsenic	200.8	0.0005	03/12/15	ND	
Beryllium	200.8	0.00002	03/12/15	ND	
Cadmium	200.8	0.00002	03/12/15	ND	
Chromium	200.8	0.0002	03/12/15	ND	
Lead	200.8	0.00002	03/12/15	ND	
Nickel	200.8	0.0002	03/12/15	ND	
Selenium	200.8	0.001	03/12/15	ND	
Silver	200.8	0.00002	03/12/15	ND	
Thallium	200.8	0.00002	03/12/15	ND	

Comments:

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QA/QC Report

Client :	Longview, City of	**Service Request :**	K1502365
Project Name :	Sentinel Wells	**Date Collected :**	NA
Project No. :	NA	**Date Received :**	NA
Matrix :	Drinking Water	**Date Extracted :**	03/10/15
		Date Analyzed :	03/11/15

Duplicate Summary
Total Metals

Sample Name :	Batch QC	**Units :**	mg/L (ppm)
Lab Code :	K1502318-001D	**Basis :**	NA

Analyte	Analysis Method	MRL	Sample Result	Duplicate Sample Result	Average	Relative Percent Difference	Result Notes
Mercury	245.1	0.0002	ND	ND	ND	-	

Comments:

ALS Group USA, Corp.
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QA/QC Report

Client :	Longview, City of	**Service Request :**	K1502365
Project Name :	Sentinel Wells	**Date Collected :**	NA
Project No. :	NA	**Date Received :**	NA
Matrix :	Drinking Water	**Date Extracted :**	03/10/15
		Date Analyzed :	03/11/15

Matrix Spike Summary
Total Metals

Sample Name :	Batch QC	**Units :**	mg/L (ppm)
Lab Code :	K1502318-001S	**Basis :**	NA

Analyte	MRL	Spike Level	Sample Result	Spiked Sample Result	Percent Recovery	ALS Percent Recovery Acceptance Limits	Result Notes
Mercury	0.0002	0.0050	ND	0.0049	98	70-130	

Comments:

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QA/QC Report

Client :	Longview, City of	**Service Request :**	K1502365
Project Name :	Sentinel Wells	**Date Collected :**	NA
Project No. :	NA	**Date Received :**	NA
Matrix :	Drinking Water	**Date Extracted :**	03/13/15
		Date Analyzed :	03/16/15

Duplicate Summary
Total Metals

Sample Name :	Batch QC	**Units :**	mg/L (ppm)
Lab Code :	K1502330-001D	**Basis :**	NA

Analyte	Analysis Method	MRL	Sample Result	Duplicate Sample Result	Average	Relative Percent Difference	Result Notes
Barium	200.7	0.004	0.008	0.009	0.009	12	
Copper	200.7	0.004	ND	ND	ND	-	
Iron	200.7	0.02	ND	ND	ND	-	
Manganese	200.7	0.001	0.009	0.0095	0.0091	5	
Sodium	200.7	0.2	8.4	8.4	8.4	<1	
Zinc	200.7	0.004	0.004	0.004	0.004	<1	

Comments:

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QA/QC Report

Client :	Longview, City of	**Service Request :**	K1502365
Project Name :	Sentinel Wells	**Date Collected :**	NA
Project No. :	NA	**Date Received :**	NA
Matrix :	Drinking Water	**Date Extracted :**	03/13/15
		Date Analyzed :	03/16/15

Matrix Spike Summary
Total Metals

Sample Name :	Batch QC	**Units :**	mg/L (ppm)
Lab Code :	K1502330-001S	**Basis :**	NA

Analyte	MRL	Spike Level	Sample Result	Spiked Sample Result	Percent Recovery	ALS Percent Recovery Acceptance Limits	Result Notes
Barium	0.004	1.00	0.008	1.0	99	70-130	
Copper	0.004	0.25	ND	0.242	97	70-130	
Iron	0.02	1.00	ND	0.99	99	70-130	
Manganese	0.001	0.50	0.009	0.498	98	70-130	
Sodium	0.2	10.0	8.4	18.3	99	70-130	
Zinc	0.004	0.50	0.004	0.473	94	70-130	

Comments:

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QA/QC Report

Client :	Longview, City of	**Service Request :**	K1502365
Project Name :	Sentinel Wells	**Date Collected :**	03/09/15
Project No. :	NA	**Date Received :**	03/09/15
Matrix :	Drinking Water	**Date Extracted :**	03/11/15
		Date Analyzed :	03/12/15

Duplicate Summary
Total Metals

Sample Name :	DW-7	**Units :**	mg/L (ppm)
Lab Code :	K1502365-001D	**Basis :**	NA

Analyte	Analysis Method	MRL	Sample Result	Duplicate Sample Result	Average	Relative Percent Difference	Result Notes
Antimony	200.8	0.00005	ND	ND	ND	-	
Arsenic	200.8	0.0005	0.0038	0.0037	0.0037	3	
Beryllium	200.8	0.00002	ND	ND	ND	-	
Cadmium	200.8	0.00002	ND	ND	ND	-	
Chromium	200.8	0.0002	ND	ND	ND	-	
Lead	200.8	0.00002	ND	ND	ND	-	
Nickel	200.8	0.0002	0.0003	0.0003	0.0003	<1	
Selenium	200.8	0.001	ND	ND	ND	-	
Silver	200.8	0.00002	ND	ND	ND	-	
Thallium	200.8	0.00002	ND	ND	ND	-	

Comments:

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QA/QC Report

Client :	Longview, City of	**Service Request :**	K1502365
Project Name :	Sentinel Wells	**Date Collected :**	03/09/15
Project No. :	NA	**Date Received :**	03/09/15
Matrix :	Drinking Water	**Date Extracted :**	03/11/15
		Date Analyzed :	03/12/15

Matrix Spike Summary
Total Metals

Sample Name :	DW-7	**Units :**	mg/L (ppm)
Lab Code :	K1502365-001S	**Basis :**	NA

Analyte	MRL	Spike Level	Sample Result	Spiked Sample Result	Percent Recovery	ALS Percent Recovery Acceptance Limits	Result Notes
Antimony	0.00005	0.050	ND	0.0517	103	70-130	
Arsenic	0.0005	0.050	0.0038	0.0538	100	70-130	
Beryllium	0.00002	0.0025	ND	0.00240	96	70-130	
Cadmium	0.00002	0.025	ND	0.0251	100	70-130	
Chromium	0.0002	0.010	ND	0.0088	88	70-130	
Lead	0.00002	0.050	ND	0.0493	99	70-130	
Nickel	0.0002	0.025	0.0003	0.0222	88	70-130	
Selenium	0.001	0.050	ND	0.050	100	70-130	
Silver	0.00002	0.013	ND	0.0118	94	70-130	
Thallium	0.00002	0.050	ND	0.0501	100	70-130	

Comments:

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QA/QC Report

Client :	Longview, City of	**Service Request :**	K1502365
Project Name :	Sentinel Wells	**Date Collected :**	NA
Project No. :	NA	**Date Received :**	NA
Matrix :	Drinking Water	**Date Extracted :**	03/10-13/15
		Date Analyzed :	03/11-16/15

Laboratory Control Sample Summary
Total Metals

Sample Name :	Laboratory Control Sample	**Units :**	mg/L (ppm)
Lab Code :	K1502365-LCS	**Basis :**	NA

Analyte	Analysis Method	True Value	Result	Percent	ALS Percent Recovery Acceptance Limits	Result Notes
Antimony	200.8	0.050	0.0504	101	85-115	
Arsenic	200.8	0.050	0.0488	98	85-115	
Barium	200.7	5.00	5.1	102	85-115	
Beryllium	200.8	0.0025	0.00243	97	85-115	
Cadmium	200.8	0.025	0.0249	100	85-115	
Chromium	200.8	0.010	0.0095	95	85-115	
Copper	200.7	0.63	0.611	98	85-115	
Iron	200.7	2.50	2.54	102	85-115	
Lead	200.8	0.050	0.0487	97	85-115	
Magnesium	200.7	12.5	12.8	103	85-115	
Mercury	245.1	0.0050	0.0050	100	85-115	
Nickel	200.8	0.025	0.0233	93	85-115	
Selenium	200.8	0.050	0.050	101	85-115	
Silver	200.8	0.013	0.0120	96	85-115	
Sodium	200.7	12.5	12.8	103	85-115	
Thallium	200.8	0.050	0.0495	99	85-115	
Zinc	200.7	1.25	1.21	97	85-115	

Comments:

EPA Method 504.1

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Analytical Results

Client:	Longview, City of	**Service Request:**	K1502365
Project:	Sentinel Wells	**Date Collected:**	03/09/2015
Sample Matrix:	Drinking water	**Date Received:**	03/09/2015

EPA Method 504.1

Sample Name:	DW-7	**Units:**	ug/L
Lab Code:	K1502365-001	**Basis:**	NA
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	504.1		

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
1,2-Dibromoethane (EDB)	ND	U	0.0095	1	03/16/15	03/16/15	KWG1502136	
1,2,3-Trichloropropane	ND	U	0.39	1	03/16/15	03/16/15	KWG1502136	
1,2-Dibromo-3-chloropropane (DBCP	ND	U	0.0095	1	03/16/15	03/16/15	KWG1502136	

Comments:

Analytical Results

Client:	Longview, City of	**Service Request:**	K1502365
Project:	Sentinel Wells	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA

EPA Method 504.1

Sample Name:	Method Blank	**Units:**	ug/L
Lab Code:	KWG1502136-7	**Basis:**	NA
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	504.1		

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
1,2-Dibromoethane (EDB)	ND	U	0.0099	1	03/16/15	03/16/15	KWG1502136	
1,2,3-Trichloropropane	ND	U	0.40	1	03/16/15	03/16/15	KWG1502136	
1,2-Dibromo-3-chloropropane (DBCP	ND	U	0.0099	1	03/16/15	03/16/15	KWG1502136	

Comments:

QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502365
Project:	Sentinel Wells	**Date Extracted:**	03/16/2015
Sample Matrix:	Water	**Date Analyzed:**	03/16/2015

Matrix Spike/Duplicate Matrix Spike Summary
EPA Method 504.1

Sample Name:	Batch QC	**Units:**	ug/L
Lab Code:	K1502111-002	**Basis:**	NA
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	504.1	**Extraction Lot:**	KWG1502136

		Batch QCMS KWG1502136-1 Matrix Spike			Batch QCDMS KWG1502136-2 Duplicate Matrix Spike					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**%Rec**	**Result**	**Spike Amount**	**%Rec**	**%Rec Limits**	**RPD**	**RPD Limit**
1,2-Dibromoethane (EDB)	ND	0.194	0.240	81	0.211	0.243	87	65-135	8	30
1,2,3-Trichloropropane	ND	0.178	0.240	74	0.195	0.243	80	65-135	9	30
1,2-Dibromo-3-chloropropane (DBCP)	ND	0.182	0.240	76	0.204	0.243	84	65-135	12	30

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502365
Project:	Sentinel Wells	**Date Extracted:**	03/16/2015
Sample Matrix:	Drinking water	**Date Analyzed:**	03/17/2015

Matrix Spike/Duplicate Matrix Spike Summary
EPA Method 504.1

Sample Name:	Batch QC	**Units:**	ug/L
Lab Code:	K1502415-001	**Basis:**	NA
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	504.1	**Extraction Lot:**	KWG1502136

		Batch QCMS KWG1502136-3 Matrix Spike			Batch QCDMS KWG1502136-4 Duplicate Matrix Spike					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**%Rec**	**Result**	**Spike Amount**	**%Rec**	**%Rec Limits**	**RPD**	**RPD Limit**
1,2-Dibromoethane (EDB)	ND	0.215	0.242	89	0.211	0.239	88	65-135	2	30
1,2,3-Trichloropropane	ND	0.209	0.242	87	0.208	0.239	87	65-135	1	30
1,2-Dibromo-3-chloropropane (DBCP)	ND	0.222	0.242	92	0.215	0.239	90	65-135	3	30

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Client:	Longview, City of	**Service Request:**	K1502365
Project:	Sentinel Wells	**Date Extracted:**	03/16/2015
Sample Matrix:	Water	**Date Analyzed:**	03/16/2015

Lab Control Spike Summary
EPA Method 504.1

Extraction Method:	METHOD	**Units:**	ug/L
Analysis Method:	504.1	**Basis:**	NA
		Level:	Low
		Extraction Lot:	KWG1502136

	Lab Control Sample KWG1502136-5 Lab Control Spike			
Analyte Name	**Result**	**Spike Amount**	**%Rec**	**%Rec Limits**
1,2-Dibromoethane (EDB)	0.233	0.250	93	70-130
1,2,3-Trichloropropane	0.225	0.250	90	70-130
1,2-Dibromo-3-chloropropane (DBCP)	0.237	0.250	95	70-130

Results flagged with an asterisk (*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Client:	Longview, City of	**Service Request:**	K1502365
Project:	Sentinel Wells	**Date Extracted:**	03/16/2015
Sample Matrix:	Water	**Date Analyzed:**	03/16/2015

Lab Control Spike Summary
EPA Method 504.1

Extraction Method:	METHOD	**Units:**	ug/L
Analysis Method:	504.1	**Basis:**	NA
		Level:	Low
		Extraction Lot:	KWG1502136

	Lab Control Sample KWG1502136-6 Lab Control Spike			
Analyte Name	**Result**	**Spike Amount**	**%Rec**	**%Rec Limits**
1,2-Dibromoethane (EDB)	0.231	0.250	92	70-130
1,2,3-Trichloropropane	0.220	0.250	88	70-130
1,2-Dibromo-3-chloropropane (DBCP)	0.231	0.250	92	70-130

Results flagged with an asterisk (*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Pesticides/PCBs by EPA Method 508.1

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Analytical Results

Client:	Longview, City of	**Service Request:**	K1502365
Project:	Sentinel Wells	**Date Collected:**	03/09/2015
Sample Matrix:	Drinking water	**Date Received:**	03/09/2015

Pesticides/PCBs by EPA Method 508.1

Sample Name:	DW-7	**Units:**	ug/L
Lab Code:	K1502365-001	**Basis:**	NA
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	508.1		

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
gamma-BHC (Lindane)	ND	U	0.0098	1	03/23/15	03/24/15	KWG1502390	
Heptachlor	ND	U	0.0098	1	03/23/15	03/24/15	KWG1502390	
Aldrin	ND	U	0.0098	1	03/23/15	03/24/15	KWG1502390	
Heptachlor Epoxide	ND	U	0.0098	1	03/23/15	03/24/15	KWG1502390	
Heptachlor Epoxide (Isomer A)	ND	U	0.0098	1	03/23/15	03/24/15	KWG1502390	
4,4'-DDE	ND	U	0.0098	1	03/23/15	03/24/15	KWG1502390	
Dieldrin	ND	U	0.0098	1	03/23/15	03/24/15	KWG1502390	
Endrin	ND	U	0.0098	1	03/23/15	03/24/15	KWG1502390	
4,4'-DDD	ND	U	0.0098	1	03/23/15	03/24/15	KWG1502390	
4,4'-DDT	ND	U	0.0098	1	03/23/15	03/24/15	KWG1502390	
Methoxychlor	ND	U	0.0098	1	03/23/15	03/24/15	KWG1502390	
Toxaphene	ND	U	0.098	1	03/23/15	03/24/15	KWG1502390	
Chlordane	ND	U	0.098	1	03/23/15	03/24/15	KWG1502390	
Aroclor 1016	ND	U	0.049	1	03/23/15	03/24/15	KWG1502390	
Aroclor 1221	ND	U	0.098	1	03/23/15	03/24/15	KWG1502390	
Aroclor 1232	ND	U	0.098	1	03/23/15	03/24/15	KWG1502390	
Aroclor 1242	ND	U	0.098	1	03/23/15	03/24/15	KWG1502390	
Aroclor 1248	ND	U	0.098	1	03/23/15	03/24/15	KWG1502390	
Aroclor 1254	ND	U	0.098	1	03/23/15	03/24/15	KWG1502390	
Aroclor 1260	ND	U	0.098	1	03/23/15	03/24/15	KWG1502390	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
4,4'-Dibromooctafluorobiphenyl	98	70-130	03/24/15	Acceptable

Comments:

ALS Group USA, Corp. dba ALS Environmental

Analytical Results

Client:	Longview, City of	**Service Request:**	K1502365
Project:	Sentinel Wells	**Date Collected:**	NA
Sample Matrix:	Drinking water	**Date Received:**	NA

Pesticides/PCBs by EPA Method 508.1

Sample Name:	Method Blank	**Units:**	ug/L
Lab Code:	KWG1502390-7	**Basis:**	NA
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	508.1		

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
gamma-BHC (Lindane)	ND	U	0.010	1	03/23/15	03/24/15	KWG1502390	
Heptachlor	ND	U	0.010	1	03/23/15	03/24/15	KWG1502390	
Aldrin	ND	U	0.010	1	03/23/15	03/24/15	KWG1502390	
Heptachlor Epoxide	ND	U	0.010	1	03/23/15	03/24/15	KWG1502390	
Heptachlor Epoxide (Isomer A)	ND	U	0.010	1	03/23/15	03/24/15	KWG1502390	
4,4'-DDE	ND	U	0.010	1	03/23/15	03/24/15	KWG1502390	
Dieldrin	ND	U	0.010	1	03/23/15	03/24/15	KWG1502390	
Endrin	ND	U	0.010	1	03/23/15	03/24/15	KWG1502390	
4,4'-DDD	ND	U	0.010	1	03/23/15	03/24/15	KWG1502390	
4,4'-DDT	ND	U	0.010	1	03/23/15	03/24/15	KWG1502390	
Methoxychlor	ND	U	0.010	1	03/23/15	03/24/15	KWG1502390	
Toxaphene	ND	U	0.10	1	03/23/15	03/24/15	KWG1502390	
Chlordane	ND	U	0.10	1	03/23/15	03/24/15	KWG1502390	
Aroclor 1016	ND	U	0.050	1	03/23/15	03/24/15	KWG1502390	
Aroclor 1221	ND	U	0.10	1	03/23/15	03/24/15	KWG1502390	
Aroclor 1232	ND	U	0.10	1	03/23/15	03/24/15	KWG1502390	
Aroclor 1242	ND	U	0.10	1	03/23/15	03/24/15	KWG1502390	
Aroclor 1248	ND	U	0.10	1	03/23/15	03/24/15	KWG1502390	
Aroclor 1254	ND	U	0.10	1	03/23/15	03/24/15	KWG1502390	
Aroclor 1260	ND	U	0.10	1	03/23/15	03/24/15	KWG1502390	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
4,4'-Dibromooctafluorobiphenyl	100	70-130	03/24/15	Acceptable

Comments:

Client: Longview, City of
Project: Sentinel Wells
Sample Matrix: Drinking water

Service Request: K1502365

Surrogate Recovery Summary
Pesticides/PCBs by EPA Method 508.1

Extraction Method: METHOD
Analysis Method: 508.1

Units: Percent
Level: Low

Sample Name	Lab Code	Sur1
DW-7	K1502365-001	98
Batch QC	K1502415-001	102
Method Blank	KWG1502390-7	100
Batch QCMS	KWG1502390-4	89
Batch QCDMS	KWG1502390-5	89
Lab Control Sample	KWG1502390-6	90

Surrogate Recovery Control Limits (%)

Sur1 = 4,4'-Dibromooctafluorobiphenyl 70-130

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502365
Project:	Sentinel Wells	**Date Extracted:**	03/23/2015
Sample Matrix:	Drinking water	**Date Analyzed:**	03/24/2015

Matrix Spike/Duplicate Matrix Spike Summary
Pesticides/PCBs by EPA Method 508.1

Sample Name:	Batch QC	**Units:**	ug/L
Lab Code:	K1502415-001	**Basis:**	NA
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	508.1	**Extraction Lot:**	KWG1502390

		Batch QCMS KWG1502390-4 Matrix Spike			Batch QCDMS KWG1502390-5 Duplicate Matrix Spike					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**%Rec**	**Result**	**Spike Amount**	**%Rec**	**%Rec Limits**	**RPD**	**RPD Limit**
gamma-BHC (Lindane)	ND	0.101	0.0971	104	0.101	0.0971	104	65-135	0	30
Heptachlor	ND	0.0824	0.0971	85	0.0795	0.0971	82	65-135	4	30
Aldrin	ND	0.0919	0.0971	95	0.0897	0.0971	92	65-135	2	30
Heptachlor Epoxide	ND	0.102	0.0971	105	0.0983	0.0971	101	65-135	3	30
Heptachlor Epoxide (Isomer A)	ND	0.0964	0.0971	99	0.0938	0.0971	97	65-135	3	30
4,4'-DDE	ND	0.108	0.0971	112	0.106	0.0971	109	65-135	2	30
Dieldrin	ND	0.0968	0.0971	100	0.0942	0.0971	97	65-135	3	30
Endrin	ND	0.0681	0.0971	70	0.0620	0.0971	64 *	65-135	9	30
4,4'-DDD	ND	0.114	0.0971	118	0.113	0.0971	116	65-135	1	30
4,4'-DDT	ND	0.113	0.0971	116	0.111	0.0971	115	65-135	1	30
Methoxychlor	ND	0.114	0.0971	118	0.114	0.0971	118	65-135	0	30
Aroclor 1248	ND	0.336	0.485	69	0.336	0.485	69	65-135	0	30

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Client:	Longview, City of	**Service Request:**	K1502365
Project:	Sentinel Wells	**Date Extracted:**	03/23/2015
Sample Matrix:	Drinking water	**Date Analyzed:**	03/24/2015

Lab Control Spike Summary
Pesticides/PCBs by EPA Method 508.1

Extraction Method:	METHOD	**Units:**	ug/L
Analysis Method:	508.1	**Basis:**	NA
		Level:	Low
		Extraction Lot:	KWG1502390

	Lab Control Sample KWG1502390-6 Lab Control Spike			
Analyte Name	**Result**	**Spike Amount**	**%Rec**	**%Rec Limits**
gamma-BHC (Lindane)	0.107	0.100	107	70-130
Heptachlor	0.0961	0.100	96	70-130
Aldrin	0.0900	0.100	90	70-130
Heptachlor Epoxide	0.103	0.100	103	70-130
Heptachlor Epoxide (Isomer A)	0.106	0.100	106	70-130
4,4'-DDE	0.107	0.100	107	70-130
Dieldrin	0.112	0.100	112	70-130
Endrin	0.113	0.100	113	70-130
4,4'-DDD	0.115	0.100	115	70-130
4,4'-DDT	0.108	0.100	108	70-130
Methoxychlor	0.112	0.100	112	70-130
Aroclor 1248	0.394	0.500	79	70-130

Results flagged with an asterisk (*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Chlorinated Herbicides by EPA 515.4

ALS Environmental—Kelso Laboratory
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Analytical Results

Client:	Longview, City of	**Service Request:**	K1502365
Project:	Sentinel Wells	**Date Collected:**	03/09/2015
Sample Matrix:	Drinking water	**Date Received:**	03/09/2015

Chlorinated Herbicides by EPA 515.4

Sample Name:	DW-7	**Units:**	ug/L
Lab Code:	K1502365-001	**Basis:**	NA
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	515.4		

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Dalapon	ND	U	1.0	1	03/17/15	03/24/15	KWG1502203	
3,5-Dichlorobenzoic Acid	ND	U	0.50	1	03/17/15	03/24/15	KWG1502203	
Dicamba	ND	U	0.20	1	03/17/15	03/24/15	KWG1502203	
Dichlorprop	ND	U	0.50	1	03/17/15	03/24/15	KWG1502203	
2,4-D	ND	U	0.10	1	03/17/15	03/24/15	KWG1502203	
Pentachlorophenol	ND	U	0.040	1	03/17/15	03/24/15	KWG1502203	
2,4,5-TP (Silvex)	ND	U	0.20	1	03/17/15	03/24/15	KWG1502203	
Chloramben	ND	U	0.20	1	03/17/15	03/24/15	KWG1502203	
2,4-DB	ND	U	1.0	1	03/17/15	03/24/15	KWG1502203	
Dinoseb	ND	U	0.20	1	03/17/15	03/24/15	KWG1502203	
Dacthal Diacid	ND	U	0.020	1	03/17/15	03/24/15	KWG1502203	
Picloram	ND	U	0.10	1	03/17/15	03/24/15	KWG1502203	
Acifluorfen	ND	U	2.0	1	03/17/15	03/24/15	KWG1502203	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
2,4-Dichlorophenylacetic Acid	121	70-130	03/24/15	Acceptable

Comments:

Analytical Results

Client:	Longview, City of	**Service Request:**	K1502365
Project:	Sentinel Wells	**Date Collected:**	NA
Sample Matrix:	Drinking water	**Date Received:**	NA

Chlorinated Herbicides by EPA 515.4

Sample Name:	Method Blank	**Units:**	ug/L
Lab Code:	KWG1502203-4	**Basis:**	NA
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	515.4		

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Dalapon	ND	U	1.0	1	03/17/15	03/24/15	KWG1502203	
3,5-Dichlorobenzoic Acid	ND	U	0.50	1	03/17/15	03/24/15	KWG1502203	
Dicamba	ND	U	0.20	1	03/17/15	03/24/15	KWG1502203	
Dichlorprop	ND	U	0.50	1	03/17/15	03/24/15	KWG1502203	
2,4-D	ND	U	0.10	1	03/17/15	03/24/15	KWG1502203	
Pentachlorophenol	ND	U	0.040	1	03/17/15	03/24/15	KWG1502203	
2,4,5-TP (Silvex)	ND	U	0.20	1	03/17/15	03/24/15	KWG1502203	
Chloramben	ND	U	0.20	1	03/17/15	03/24/15	KWG1502203	
2,4-DB	ND	U	1.0	1	03/17/15	03/24/15	KWG1502203	
Dinoseb	ND	U	0.20	1	03/17/15	03/24/15	KWG1502203	
Dacthal Diacid	ND	U	0.020	1	03/17/15	03/24/15	KWG1502203	
Picloram	ND	U	0.10	1	03/17/15	03/24/15	KWG1502203	
Acifluorfen	ND	U	2.0	1	03/17/15	03/24/15	KWG1502203	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
2,4-Dichlorophenylacetic Acid	86	70-130	03/24/15	Acceptable

Comments:

Client: Longview, City of
Project: Sentinel Wells
Sample Matrix: Drinking water

Service Request: K1502365

Surrogate Recovery Summary
Chlorinated Herbicides by EPA 515.4

Extraction Method: METHOD
Analysis Method: 515.4

Units: Percent
Level: Low

Sample Name	Lab Code	Sur1
DW-7	K1502365-001	121
Batch QC	K1502415-001	114
Method Blank	KWG1502203-4	86
Batch QCMS	KWG1502203-1	126
Batch QCDMS	KWG1502203-2	121
Lab Control Sample	KWG1502203-3	97

Surrogate Recovery Control Limits (%)

Sur1 = 2,4-Dichlorophenylacetic Acid 70-130

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502365
Project:	Sentinel Wells	**Date Extracted:**	03/17/2015
Sample Matrix:	Drinking water	**Date Analyzed:**	03/24/2015

Matrix Spike/Duplicate Matrix Spike Summary
Chlorinated Herbicides by EPA 515.4

Sample Name:	Batch QC	**Units:**	ug/L
Lab Code:	K1502415-001	**Basis:**	NA
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	515.4	**Extraction Lot:**	KWG1502203

		Batch QCMS KWG1502203-1 Matrix Spike			Batch QCDMS KWG1502203-2 Duplicate Matrix Spike					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**%Rec**	**Result**	**Spike Amount**	**%Rec**	**%Rec Limits**	**RPD**	**RPD Limit**
Dalapon	ND	4.28	4.98	86	4.31	4.97	87	70-130	1	30
3,5-Dichlorobenzoic Acid	ND	4.86	4.98	98	4.86	4.97	98	70-130	0	30
Dicamba	ND	5.19	4.98	104	5.16	4.97	104	70-130	1	30
Dichlorprop	ND	5.11	4.98	103	5.03	4.97	101	70-130	2	30
2,4-D	ND	5.13	4.98	103	5.08	4.97	102	70-130	1	30
Pentachlorophenol	ND	5.12	4.98	103	5.08	4.97	102	70-130	1	30
2,4,5-TP (Silvex)	ND	4.78	4.98	96	4.74	4.97	95	70-130	1	30
Chloramben	ND	4.82	4.98	97	4.72	4.97	95	70-130	2	30
2,4-DB	ND	4.87	4.98	98	4.80	4.97	97	70-130	1	30
Dinoseb	ND	4.99	4.98	100	5.07	4.97	102	70-130	2	30
Dacthal Diacid	ND	5.99	4.98	120	6.03	4.97	121	70-130	1	30
Picloram	ND	5.45	4.98	109	5.38	4.97	108	70-130	1	30
Acifluorfen	ND	4.78	4.98	96	4.77	4.97	96	70-130	0	30

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Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Client:	Longview, City of	**Service Request:**	K1502365
Project:	Sentinel Wells	**Date Extracted:**	03/17/2015
Sample Matrix:	Drinking water	**Date Analyzed:**	03/24/2015

Lab Control Spike Summary
Chlorinated Herbicides by EPA 515.4

Extraction Method:	METHOD	**Units:**	ug/L
Analysis Method:	515.4	**Basis:**	NA
		Level:	Low
		Extraction Lot:	KWG1502203

	Lab Control Sample KWG1502203-3 Lab Control Spike			
Analyte Name	**Result**	**Spike Amount**	**%Rec**	**%Rec Limits**
Dalapon	4.16	5.00	83	70-130
3,5-Dichlorobenzoic Acid	4.48	5.00	90	70-130
Dicamba	4.79	5.00	96	70-130
Dichlorprop	4.79	5.00	96	70-130
2,4-D	4.83	5.00	97	70-130
Pentachlorophenol	4.92	5.00	98	70-130
2,4,5-TP (Silvex)	4.64	5.00	93	70-130
Chloramben	5.14	5.00	103	70-130
2,4-DB	4.68	5.00	94	70-130
Dinoseb	4.85	5.00	97	70-130
Dacthal Diacid	4.85	5.00	97	70-130
Picloram	5.08	5.00	102	70-130
Acifluorfen	4.74	5.00	95	70-130

Results flagged with an asterisk (*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Volatile Organic Compounds

ALS Environmental—Kelso Laboratory
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Analytical Results

Client: Longview, City of
Project: Sentinel Wells
Sample Matrix: Drinking water

Service Request: K1502365
Date Collected: 03/09/2015
Date Received: 03/09/2015

Volatile Organic Compounds

Sample Name: DW-7
Lab Code: K1502365-001

Units: ug/L
Basis: NA

Extraction Method: METHOD
Analysis Method: 524.2

Level: Low

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Dichlorodifluoromethane	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Chloromethane	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Vinyl Chloride	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Bromomethane	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Chloroethane	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Trichlorofluoromethane	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Methylene Chloride	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
trans-1,2-Dichloroethene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
1,1-Dichloroethene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
cis-1,2-Dichloroethene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Methyl tert-Butyl Ether	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Chloroform	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Bromochloromethane	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Carbon Tetrachloride	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Benzene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
1,2-Dichloroethane	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Trichloroethene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
1,2-Dichloropropane	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Bromodichloromethane	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Dibromomethane	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
cis-1,3-Dichloropropene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
1,1-Dichloroethane	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Toluene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
trans-1,3-Dichloropropene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Tetrachloroethene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
2,2-Dichloropropane	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
1,3-Dichloropropane	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Dibromochloromethane	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
1,2-Dibromoethane (EDB)	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Chlorobenzene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Ethylbenzene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Styrene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
m,p-Xylenes	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
o-Xylene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	

Comments:

Analytical Results

Client:	Longview, City of	**Service Request:**	K1502365
Project:	Sentinel Wells	**Date Collected:**	03/09/2015
Sample Matrix:	Drinking water	**Date Received:**	03/09/2015

Volatile Organic Compounds

Sample Name:	DW-7	**Units:**	ug/L
Lab Code:	K1502365-001	**Basis:**	NA
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	524.2		

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
1,1,1-Trichloroethane	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Bromoform	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
1,1,2,2-Tetrachloroethane	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Isopropylbenzene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
1,1-Dichloropropene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Bromobenzene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
n-Propylbenzene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
1,3,5-Trimethylbenzene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
2-Chlorotoluene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
4-Chlorotoluene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
tert-Butylbenzene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
1,2,4-Trimethylbenzene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
sec-Butylbenzene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
p-Isopropyltoluene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
1,3-Dichlorobenzene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
1,4-Dichlorobenzene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
n-Butylbenzene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
1,2-Dichlorobenzene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
1,2-Dibromo-3-chloropropane (DBCP	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
1,2,4-Trichlorobenzene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Hexachlorobutadiene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Naphthalene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
1,1,2-Trichloroethane	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
1,1,1,2-Tetrachloroethane	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
1,2,3-Trichloropropane	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
1,2,3-Trichlorobenzene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
4-Bromofluorobenzene	90	70-130	03/17/15	Acceptable
Dibromofluoromethane	95	82-124	03/17/15	Acceptable
Toluene-d8	96	82-124	03/17/15	Acceptable

Comments:

Analytical Results

Client: Longview, City of
Project: Sentinel Wells
Sample Matrix: Drinking water

Service Request: K1502365
Date Collected: NA
Date Received: NA

Volatile Organic Compounds

Sample Name: Method Blank
Lab Code: KWG1502193-4

Units: ug/L
Basis: NA

Extraction Method: METHOD
Analysis Method: 524.2

Level: Low

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Dichlorodifluoromethane	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Chloromethane	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Vinyl Chloride	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Bromomethane	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Chloroethane	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Trichlorofluoromethane	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Methylene Chloride	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
trans-1,2-Dichloroethene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
1,1-Dichloroethene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
cis-1,2-Dichloroethene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Methyl tert-Butyl Ether	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Chloroform	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Bromochloromethane	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Carbon Tetrachloride	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Benzene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
1,2-Dichloroethane	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Trichloroethene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
1,2-Dichloropropane	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Bromodichloromethane	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Dibromomethane	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
cis-1,3-Dichloropropene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
1,1-Dichloroethane	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Toluene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
trans-1,3-Dichloropropene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Tetrachloroethene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
2,2-Dichloropropane	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
1,3-Dichloropropane	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Dibromochloromethane	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
1,2-Dibromoethane (EDB)	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Chlorobenzene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Ethylbenzene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Styrene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
m,p-Xylenes	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
o-Xylene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	

Comments:

Analytical Results

Client:	Longview, City of	**Service Request:**	K1502365
Project:	Sentinel Wells	**Date Collected:**	NA
Sample Matrix:	Drinking water	**Date Received:**	NA

Volatile Organic Compounds

Sample Name:	Method Blank	**Units:**	ug/L
Lab Code:	KWG1502193-4	**Basis:**	NA
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	524.2		

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
1,1,1-Trichloroethane	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Bromoform	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
1,1,2,2-Tetrachloroethane	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Isopropylbenzene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
1,1-Dichloropropene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Bromobenzene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
n-Propylbenzene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
1,3,5-Trimethylbenzene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
2-Chlorotoluene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
4-Chlorotoluene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
tert-Butylbenzene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
1,2,4-Trimethylbenzene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
sec-Butylbenzene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
p-Isopropyltoluene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
1,3-Dichlorobenzene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
1,4-Dichlorobenzene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
n-Butylbenzene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
1,2-Dichlorobenzene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
1,2-Dibromo-3-chloropropane (DBCP	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
1,2,4-Trichlorobenzene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Hexachlorobutadiene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Naphthalene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
1,1,2-Trichloroethane	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
1,1,1,2-Tetrachloroethane	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
1,2,3-Trichloropropane	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
1,2,3-Trichlorobenzene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
4-Bromofluorobenzene	91	70-130	03/17/15	Acceptable
Dibromofluoromethane	95	82-124	03/17/15	Acceptable
Toluene-d8	96	82-124	03/17/15	Acceptable

Comments:

QA/QC Report

Client: Longview, City of
Project: Sentinel Wells
Sample Matrix: Drinking water

Service Request: K1502365

Surrogate Recovery Summary
Volatile Organic Compounds

Extraction Method: METHOD
Analysis Method: 524.2

Units: Percent
Level: Low

Sample Name	Lab Code	Sur1	Sur2	Sur3
DW-7	K1502365-001	90	95	96
Batch QC	K1502415-001	90	94	96
Method Blank	KWG1502193-4	91	95	96
Batch QCMS	KWG1502193-1	100	97	95
Batch QCDMS	KWG1502193-2	100	96	96
Lab Control Sample	KWG1502193-3	100	96	96

Surrogate Recovery Control Limits (%)

Sur1	=	4-Bromofluorobenzene	70-130
Sur2	=	Dibromofluoromethane	82-124
Sur3	=	Toluene-d8	82-124

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Client:	Longview, City of	**Service Request:**	K1502365
Project:	Sentinel Wells	**Date Extracted:**	03/17/2015
Sample Matrix:	Drinking water	**Date Analyzed:**	03/17/2015

Matrix Spike/Duplicate Matrix Spike Summary
Volatile Organic Compounds

Sample Name:	Batch QC	**Units:**	ug/L
Lab Code:	K1502415-001	**Basis:**	NA
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	524.2	**Extraction Lot:**	KWG1502193

		Batch QCMS KWG1502193-1 Matrix Spike			Batch QCDMS KWG1502193-2 Duplicate Matrix Spike					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**%Rec**	**Result**	**Spike Amount**	**%Rec**	**%Rec Limits**	**RPD**	**RPD Limit**
Dichlorodifluoromethane	ND	6.19	5.00	124	5.50	5.00	110	70-130	12	30
Chloromethane	ND	5.94	5.00	119	5.90	5.00	118	70-130	1	30
Vinyl Chloride	ND	5.34	5.00	107	4.99	5.00	100	70-130	7	30
Bromomethane	ND	4.53	5.00	91	3.92	5.00	78	70-130	14	30
Chloroethane	ND	5.26	5.00	105	4.83	5.00	97	70-130	9	30
Trichlorofluoromethane	ND	5.51	5.00	110	5.04	5.00	101	70-130	9	30
Methylene Chloride	ND	4.64	5.00	93	4.47	5.00	89	70-130	4	30
trans-1,2-Dichloroethene	ND	4.93	5.00	99	4.56	5.00	91	70-130	8	30
cis-1,2-Dichloroethene	ND	4.66	5.00	93	4.46	5.00	89	70-130	4	30
1,1-Dichloroethene	ND	4.99	5.00	100	4.57	5.00	91	70-130	9	30
Methyl tert-Butyl Ether	ND	8.10	10.0	81	7.93	10.0	79	70-130	2	30
Chloroform	ND	4.91	5.00	98	4.69	5.00	94	70-130	5	30
Bromochloromethane	ND	4.50	5.00	90	4.41	5.00	88	70-130	2	30
Carbon Tetrachloride	ND	5.71	5.00	114	5.27	5.00	105	70-130	8	30
Benzene	ND	4.84	5.00	97	4.64	5.00	93	70-130	4	30
1,2-Dichloroethane	ND	5.11	5.00	102	4.97	5.00	99	70-130	3	30
Trichloroethene	ND	4.70	5.00	94	4.49	5.00	90	70-130	5	30
1,2-Dichloropropane	ND	4.54	5.00	91	4.29	5.00	86	70-130	6	30
Bromodichloromethane	ND	4.49	5.00	90	4.34	5.00	87	70-130	3	30
Dibromomethane	ND	4.54	5.00	91	4.33	5.00	87	70-130	5	30
cis-1,3-Dichloropropene	ND	4.22	5.00	84	4.20	5.00	84	70-130	0	30
1,1-Dichloroethane	ND	4.96	5.00	99	4.75	5.00	95	70-130	4	30
Toluene	ND	4.63	5.00	93	4.47	5.00	89	70-130	4	30
trans-1,3-Dichloropropene	ND	4.05	5.00	81	3.91	5.00	78	70-130	4	30
Tetrachloroethene	ND	4.73	5.00	95	4.42	5.00	88	70-130	7	30
2,2-Dichloropropane	ND	4.98	5.00	100	4.76	5.00	95	70-130	5	30
1,3-Dichloropropane	ND	4.72	5.00	94	4.61	5.00	92	70-130	2	30
Dibromochloromethane	ND	4.73	5.00	95	4.47	5.00	89	70-130	6	30
1,2-Dibromoethane (EDB)	ND	4.74	5.00	95	4.61	5.00	92	70-130	3	30
Chlorobenzene	ND	4.79	5.00	96	4.58	5.00	92	70-130	4	30
Ethylbenzene	ND	4.87	5.00	97	4.55	5.00	91	70-130	7	30
Styrene	ND	4.67	5.00	93	4.42	5.00	88	70-130	6	30
m,p-Xylenes	ND	9.79	10.0	98	9.27	10.0	93	70-130	5	30

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Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Client:	Longview, City of	**Service Request:**	K1502365
Project:	Sentinel Wells	**Date Extracted:**	03/17/2015
Sample Matrix:	Drinking water	**Date Analyzed:**	03/17/2015

Matrix Spike/Duplicate Matrix Spike Summary
Volatile Organic Compounds

Sample Name:	Batch QC	**Units:**	ug/L
Lab Code:	K1502415-001	**Basis:**	NA
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	524.2	**Extraction Lot:**	KWG1502193

		Batch QCMS KWG1502193-1 Matrix Spike			Batch QCDMS KWG1502193-2 Duplicate Matrix Spike					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**%Rec**	**Result**	**Spike Amount**	**%Rec**	**%Rec Limits**	**RPD**	**RPD Limit**
o-Xylene	ND	4.57	5.00	91	4.36	5.00	87	70-130	5	30
1,1,2,2-Tetrachloroethane	ND	5.34	5.00	107	5.11	5.00	102	70-130	4	30
Bromoform	ND	4.82	5.00	96	4.75	5.00	95	70-130	1	30
1,1,1-Trichloroethane	ND	5.01	5.00	100	4.68	5.00	94	70-130	7	30
Isopropylbenzene	ND	4.93	5.00	99	4.61	5.00	92	70-130	7	30
1,1-Dichloropropene	ND	5.03	5.00	101	4.69	5.00	94	70-130	7	30
Bromobenzene	ND	5.02	5.00	100	4.70	5.00	94	70-130	7	30
n-Propylbenzene	ND	5.76	5.00	115	5.40	5.00	108	70-130	6	30
1,3,5-Trimethylbenzene	ND	5.56	5.00	111	5.27	5.00	105	70-130	5	30
2-Chlorotoluene	ND	5.58	5.00	112	5.28	5.00	106	70-130	6	30
4-Chlorotoluene	ND	5.67	5.00	113	5.32	5.00	106	70-130	6	30
tert-Butylbenzene	ND	5.53	5.00	111	5.14	5.00	103	70-130	7	30
1,2,4-Trimethylbenzene	ND	5.57	5.00	111	5.29	5.00	106	70-130	5	30
sec-Butylbenzene	ND	5.67	5.00	113	5.32	5.00	106	70-130	6	30
p-Isopropyltoluene	ND	5.50	5.00	110	5.21	5.00	104	70-130	5	30
1,3-Dichlorobenzene	ND	5.16	5.00	103	4.94	5.00	99	70-130	4	30
1,4-Dichlorobenzene	ND	5.04	5.00	101	4.82	5.00	96	70-130	4	30
n-Butylbenzene	ND	5.55	5.00	111	5.21	5.00	104	70-130	6	30
1,2-Dichlorobenzene	ND	5.08	5.00	102	4.79	5.00	96	70-130	6	30
1,2-Dibromo-3-chloropropane (DBCP)	ND	5.29	5.00	106	5.38	5.00	108	70-130	2	30
1,2,4-Trichlorobenzene	ND	4.82	5.00	96	4.64	5.00	93	70-130	4	30
Hexachlorobutadiene	ND	5.15	5.00	103	4.86	5.00	97	70-130	6	30
Naphthalene	ND	4.50	5.00	90	4.37	5.00	87	70-130	3	30
1,1,2-Trichloroethane	ND	4.38	5.00	88	4.25	5.00	85	70-130	3	30
1,1,1,2-Tetrachloroethane	ND	5.13	5.00	103	5.03	5.00	101	70-130	2	30
1,2,3-Trichloropropane	ND	5.08	5.00	102	4.87	5.00	97	70-130	4	30
1,2,3-Trichlorobenzene	ND	5.03	5.00	101	4.81	5.00	96	70-130	4	30

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Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Client: Longview, City of
Project: Sentinel Wells
Sample Matrix: Drinking water

Service Request: K1502365
Date Extracted: 03/17/2015
Date Analyzed: 03/17/2015

Lab Control Spike Summary
Volatile Organic Compounds

Extraction Method: METHOD
Analysis Method: 524.2

Units: ug/L
Basis: NA
Level: Low
Extraction Lot: KWG1502193

	Lab Control Sample KWG1502193-3 Lab Control Spike			
Analyte Name	**Result**	**Spike Amount**	**%Rec**	**%Rec Limits**
Dichlorodifluoromethane	6.13	5.00	123	70-130
Chloromethane	6.39	5.00	128	70-130
Vinyl Chloride	5.46	5.00	109	70-130
Bromomethane	4.74	5.00	95	70-130
Chloroethane	5.39	5.00	108	70-130
Trichlorofluoromethane	5.53	5.00	111	70-130
Methylene Chloride	5.12	5.00	102	70-130
trans-1,2-Dichloroethene	5.07	5.00	101	70-130
1,1-Dichloroethene	5.14	5.00	103	70-130
cis-1,2-Dichloroethene	4.85	5.00	97	70-130
Methyl tert-Butyl Ether	8.70	10.0	87	70-130
Chloroform	5.30	5.00	106	70-130
Bromochloromethane	4.78	5.00	96	70-130
Carbon Tetrachloride	5.84	5.00	117	70-130
Benzene	5.13	5.00	103	70-130
1,2-Dichloroethane	5.36	5.00	107	70-130
Trichloroethene	4.97	5.00	99	70-130
1,2-Dichloropropane	4.82	5.00	96	70-130
Bromodichloromethane	4.83	5.00	97	70-130
Dibromomethane	4.72	5.00	94	70-130
cis-1,3-Dichloropropene	4.56	5.00	91	70-130
Toluene	4.91	5.00	98	70-130
1,1-Dichloroethane	5.26	5.00	105	70-130
trans-1,3-Dichloropropene	4.23	5.00	85	70-130
Tetrachloroethene	5.01	5.00	100	70-130
1,3-Dichloropropane	5.05	5.00	101	70-130
2,2-Dichloropropane	5.21	5.00	104	70-130
Dibromochloromethane	5.11	5.00	102	70-130
1,2-Dibromoethane (EDB)	5.10	5.00	102	70-130
Chlorobenzene	5.10	5.00	102	70-130
Ethylbenzene	5.12	5.00	102	70-130
Styrene	4.82	5.00	96	70-130
m,p-Xylenes	10.3	10.0	103	70-130
o-Xylene	4.93	5.00	99	70-130
1,1,1-Trichloroethane	5.22	5.00	104	70-130

Results flagged with an asterisk (*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Client:	Longview, City of	**Service Request:**	K1502365
Project:	Sentinel Wells	**Date Extracted:**	03/17/2015
Sample Matrix:	Drinking water	**Date Analyzed:**	03/17/2015

Lab Control Spike Summary
Volatile Organic Compounds

Extraction Method:	METHOD	**Units:**	ug/L
Analysis Method:	524.2	**Basis:**	NA
		Level:	Low
		Extraction Lot:	KWG1502193

	Lab Control Sample KWG1502193-3 Lab Control Spike			
Analyte Name	**Result**	**Spike Amount**	**%Rec**	**%Rec Limits**
Bromoform	5.13	5.00	103	70-130
1,1,2,2-Tetrachloroethane	5.59	5.00	112	70-130
Isopropylbenzene	5.24	5.00	105	70-130
1,1-Dichloropropene	5.21	5.00	104	70-130
Bromobenzene	5.24	5.00	105	70-130
n-Propylbenzene	6.02	5.00	120	70-130
1,3,5-Trimethylbenzene	5.78	5.00	116	70-130
2-Chlorotoluene	5.90	5.00	118	70-130
4-Chlorotoluene	5.92	5.00	118	70-130
tert-Butylbenzene	5.68	5.00	114	70-130
1,2,4-Trimethylbenzene	5.81	5.00	116	70-130
sec-Butylbenzene	5.94	5.00	119	70-130
p-Isopropyltoluene	5.73	5.00	115	70-130
1,3-Dichlorobenzene	5.40	5.00	108	70-130
1,4-Dichlorobenzene	5.25	5.00	105	70-130
n-Butylbenzene	5.73	5.00	115	70-130
1,2-Dichlorobenzene	5.38	5.00	108	70-130
1,2-Dibromo-3-chloropropane (DBCP)	5.40	5.00	108	70-130
1,2,4-Trichlorobenzene	5.04	5.00	101	70-130
Hexachlorobutadiene	5.33	5.00	107	70-130
Naphthalene	4.83	5.00	97	70-130
1,1,2-Trichloroethane	4.76	5.00	95	70-130
1,1,1,2-Tetrachloroethane	5.54	5.00	111	70-130
1,2,3-Trichloropropane	5.13	5.00	103	70-130
1,2,3-Trichlorobenzene	5.20	5.00	104	70-130

Results flagged with an asterisk (*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Semivolatile Organics by EPA Method 525.2

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Analytical Results

Client:	Longview, City of	**Service Request:**	K1502365
Project:	Sentinel Wells	**Date Collected:**	03/09/2015
Sample Matrix:	Drinking water	**Date Received:**	03/09/2015

Semivolatile Organics by EPA Method 525.2

Sample Name:	DW-7	**Units:**	ug/L
Lab Code:	K1502365-001	**Basis:**	NA
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	525.2		

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Hexachlorocyclopentadiene	ND	U	0.098	1	03/23/15	03/25/15	KWG1502393	*
Fluorene	ND	U	0.049	1	03/23/15	03/25/15	KWG1502393	
Propachlor	ND	U	0.098	1	03/23/15	03/25/15	KWG1502393	
Hexachlorobenzene	ND	U	0.098	1	03/23/15	03/25/15	KWG1502393	
Simazine	ND	U	0.049	1	03/23/15	03/25/15	KWG1502393	
Atrazine	ND	U	0.098	1	03/23/15	03/25/15	KWG1502393	
Metribuzin	ND	U	0.20	1	03/23/15	03/25/15	KWG1502393	
Alachlor	ND	U	0.070	1	03/23/15	03/25/15	KWG1502393	
Bromacil	ND	U	0.20	1	03/23/15	03/25/15	KWG1502393	
Metolachlor	ND	U	0.088	1	03/23/15	03/25/15	KWG1502393	
Butachlor	ND	U	0.098	1	03/23/15	03/25/15	KWG1502393	
Bis(2-ethylhexyl) Adipate	ND	U	0.59	1	03/23/15	03/25/15	KWG1502393	
Bis(2-ethylhexyl) Phthalate	ND	U	0.59	1	03/23/15	03/25/15	KWG1502393	
Benzo(a)pyrene	ND	U	0.020	1	03/23/15	03/25/15	KWG1502393	

* See Case Narrative

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
1,3-Dimethyl-2-nitrobenzene	94	70-130	03/25/15	Acceptable
Triphenyl Phosphate	92	70-130	03/25/15	Acceptable
Perylene-d12	93	70-130	03/25/15	Acceptable

Comments:

ALS Group USA, Corp. dba ALS Environmental

Analytical Results

Client:	Longview, City of	**Service Request:**	K1502365
Project:	Sentinel Wells	**Date Collected:**	NA
Sample Matrix:	Drinking water	**Date Received:**	NA

Semivolatile Organics by EPA Method 525.2

Sample Name:	Method Blank	**Units:**	ug/L
Lab Code:	KWG1502393-4	**Basis:**	NA
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	525.2		

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Hexachlorocyclopentadiene	ND	U	0.10	1	03/23/15	03/25/15	KWG1502393	*
Fluorene	ND	U	0.050	1	03/23/15	03/25/15	KWG1502393	
Propachlor	ND	U	0.10	1	03/23/15	03/25/15	KWG1502393	
Hexachlorobenzene	ND	U	0.10	1	03/23/15	03/25/15	KWG1502393	
Simazine	ND	U	0.050	1	03/23/15	03/25/15	KWG1502393	
Atrazine	ND	U	0.10	1	03/23/15	03/25/15	KWG1502393	
Metribuzin	ND	U	0.20	1	03/23/15	03/25/15	KWG1502393	
Alachlor	ND	U	0.072	1	03/23/15	03/25/15	KWG1502393	
Bromacil	ND	U	0.20	1	03/23/15	03/25/15	KWG1502393	
Metolachlor	ND	U	0.090	1	03/23/15	03/25/15	KWG1502393	
Butachlor	ND	U	0.10	1	03/23/15	03/25/15	KWG1502393	
Bis(2-ethylhexyl) Adipate	ND	U	0.60	1	03/23/15	03/25/15	KWG1502393	
Bis(2-ethylhexyl) Phthalate	ND	U	0.60	1	03/23/15	03/25/15	KWG1502393	
Benzo(a)pyrene	ND	U	0.020	1	03/23/15	03/25/15	KWG1502393	

* See Case Narrative

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
1,3-Dimethyl-2-nitrobenzene	97	70-130	03/25/15	Acceptable
Triphenyl Phosphate	83	70-130	03/25/15	Acceptable
Perylene-d12	86	70-130	03/25/15	Acceptable

Comments:

Client: Longview, City of
Project: Sentinel Wells
Sample Matrix: Drinking water

Service Request: K1502365

Surrogate Recovery Summary
Semivolatile Organics by EPA Method 525.2

Extraction Method: METHOD
Analysis Method: 525.2

Units: Percent
Level: Low

Sample Name	Lab Code	Sur1	Sur2	Sur3
DW-7	K1502365-001	94	92	93
Batch QC	K1502415-001	105	84	71
Method Blank	KWG1502393-4	97	83	86
Batch QCMS	KWG1502393-1	91	93	88
Batch QCDMS	KWG1502393-2	95	96	89
Lab Control Sample	KWG1502393-3	96	100	82

Surrogate Recovery Control Limits (%)

Sur1	=	1,3-Dimethyl-2-nitrobenzene	70-130
Sur2	=	Triphenyl Phosphate	70-130
Sur3	=	Perylene-d12	70-130

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502365
Project:	Sentinel Wells	**Date Extracted:**	03/23/2015
Sample Matrix:	Drinking water	**Date Analyzed:**	03/26/2015

Matrix Spike/Duplicate Matrix Spike Summary
Semivolatile Organics by EPA Method 525.2

Sample Name:	Batch QC	**Units:**	ug/L
Lab Code:	K1502415-001	**Basis:**	NA
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	525.2	**Extraction Lot:**	KWG1502393

		Batch QCMS KWG1502393-1 Matrix Spike			Batch QCDMS KWG1502393-2 Duplicate Matrix Spike					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**%Rec**	**Result**	**Spike Amount**	**%Rec**	**%Rec Limits**	**RPD**	**RPD Limit**
Hexachlorocyclopentadiene	ND	1.48	0.971	152 *	1.43	0.971	147 *	70-130	3	30
Fluorene	ND	1.01	0.971	104	1.00	0.971	103	70-130	0	30
Propachlor	ND	1.10	0.971	114	1.11	0.971	114	70-130	1	30
Hexachlorobenzene	ND	0.911	0.971	94	0.920	0.971	95	70-130	1	30
Simazine	ND	0.865	0.971	89	0.868	0.971	89	70-130	0	30
Atrazine	ND	0.942	0.971	97	0.878	0.971	90	70-130	7	30
Metribuzin	ND	0.999	0.971	103	0.989	0.971	102	70-130	1	30
Alachlor	ND	1.02	0.971	105	1.01	0.971	104	70-130	1	30
Bromacil	ND	1.06	0.971	109	1.02	0.971	105	70-130	4	30
Metolachlor	ND	1.12	0.971	116	1.10	0.971	113	70-130	2	30
Butachlor	ND	1.09	0.971	112	1.07	0.971	111	70-130	1	30
Bis(2-ethylhexyl) Adipate	ND	1.13	0.971	116	1.14	0.971	117	70-130	1	30
Bis(2-ethylhexyl) Phthalate	0.62	1.17	0.971	57 *	1.27	0.971	67 *	70-130	8	30
Benzo(a)pyrene	ND	1.07	0.971	110	1.05	0.971	108	70-130	2	30

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Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Client:	Longview, City of	**Service Request:**	K1502365
Project:	Sentinel Wells	**Date Extracted:**	03/23/2015
Sample Matrix:	Drinking water	**Date Analyzed:**	03/25/2015

Lab Control Spike Summary
Semivolatile Organics by EPA Method 525.2

Extraction Method:	METHOD	**Units:**	ug/L
Analysis Method:	525.2	**Basis:**	NA
		Level:	Low
		Extraction Lot:	KWG1502393

	Lab Control Sample KWG1502393-3 Lab Control Spike			
Analyte Name	**Result**	**Spike Amount**	**%Rec**	**%Rec Limits**
Hexachlorocyclopentadiene	1.48	1.00	148 *	70-130
Fluorene	1.05	1.00	105	70-130
Propachlor	1.24	1.00	124	70-130
Hexachlorobenzene	0.947	1.00	95	70-130
Simazine	1.08	1.00	108	70-130
Atrazine	1.12	1.00	112	70-130
Metribuzin	1.09	1.00	109	70-130
Alachlor	1.11	1.00	111	70-130
Bromacil	1.10	1.00	110	70-130
Metolachlor	1.27	1.00	127	70-130
Butachlor	1.16	1.00	116	70-130
Bis(2-ethylhexyl) Adipate	1.03	1.00	103	70-130
Bis(2-ethylhexyl) Phthalate	1.03	1.00	103	70-130
Benzo(a)pyrene	1.06	1.00	106	70-130

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Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Endothall by EPA Method 548.1

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Analytical Results

Client:	Longview, City of	**Service Request:**	K1502365
Project:	Sentinel Wells	**Date Collected:**	03/09/2015
Sample Matrix:	Drinking water	**Date Received:**	03/09/2015

Endothall by EPA Method 548.1

Sample Name:	DW-7	**Units:**	ug/L
Lab Code:	K1502365-001	**Basis:**	NA
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	548.1		

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Endothall	ND	U	5.0	1	03/12/15	03/24/15	KWG1502057	

Comments:

ALS Group USA, Corp. dba ALS Environmental

Analytical Results

Client:	Longview, City of	**Service Request:**	K1502365
Project:	Sentinel Wells	**Date Collected:**	NA
Sample Matrix:	Drinking water	**Date Received:**	NA

Endothall by EPA Method 548.1

Sample Name:	Method Blank	**Units:**	ug/L
Lab Code:	KWG1502057-4	**Basis:**	NA
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	548.1		

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Endothall	ND	U	5.0	1	03/12/15	03/24/15	KWG1502057	

Comments:

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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502365
Project:	Sentinel Wells	**Date Extracted:**	03/12/2015
Sample Matrix:	Drinking water	**Date Analyzed:**	03/24/2015

Matrix Spike/Duplicate Matrix Spike Summary
Endothall by EPA Method 548.1

Sample Name:	Batch QC	**Units:**	ug/L
Lab Code:	K1502415-001	**Basis:**	NA
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	548.1	**Extraction Lot:**	KWG1502057

		Batch QCMS KWG1502057-1 Matrix Spike			Batch QCDMS KWG1502057-2 Duplicate Matrix Spike					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**%Rec**	**Result**	**Spike Amount**	**%Rec**	**%Rec Limits**	**RPD**	**RPD Limit**
Endothall	ND	91.2	100	91	94.4	100	94	30-142	3	30

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Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Client:	Longview, City of	**Service Request:**	K1502365
Project:	Sentinel Wells	**Date Extracted:**	03/12/2015
Sample Matrix:	Drinking water	**Date Analyzed:**	03/24/2015

Lab Control Spike Summary
Endothall by EPA Method 548.1

Extraction Method:	METHOD	**Units:**	ug/L
Analysis Method:	548.1	**Basis:**	NA
		Level:	Low
		Extraction Lot:	KWG1502057

	Lab Control Sample KWG1502057-3 Lab Control Spike			
Analyte Name	**Result**	**Spike Amount**	**%Rec**	**%Rec Limits**
Endothall	94.0	100	94	30-142

Results flagged with an asterisk (*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Diquat and Paraquat by EPA Method 549.2

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Analytical Results

Client:	Longview, City of	**Service Request:**	K1502365
Project:	Sentinel Wells	**Date Collected:**	03/09/2015
Sample Matrix:	Drinking water	**Date Received:**	03/09/2015

Diquat and Paraquat by EPA Method 549.2

Sample Name:	DW-7	**Units:**	ug/L
Lab Code:	K1502365-001	**Basis:**	NA
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	549.2		

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Diquat	ND	U	0.40	1	03/12/15	03/12/15	KWG1502015	
Paraquat	ND	U	0.80	1	03/12/15	03/12/15	KWG1502015	

Comments:

Analytical Results

Client:	Longview, City of	**Service Request:**	K1502365
Project:	Sentinel Wells	**Date Collected:**	NA
Sample Matrix:	Drinking water	**Date Received:**	NA

Diquat and Paraquat by EPA Method 549.2

Sample Name:	Method Blank	**Units:**	ug/L
Lab Code:	KWG1502015-5	**Basis:**	NA
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	549.2		

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Diquat	ND	U	0.40	1	03/12/15	03/12/15	KWG1502015	
Paraquat	ND	U	0.80	1	03/12/15	03/12/15	KWG1502015	

Comments:

QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502365
Project:	Sentinel Wells	**Date Extracted:**	03/12/2015
Sample Matrix:	Drinking water	**Date Analyzed:**	03/12/2015

Matrix Spike/Duplicate Matrix Spike Summary
Diquat and Paraquat by EPA Method 549.2

Sample Name:	Batch QC	**Units:**	ug/L
Lab Code:	K1502415-001	**Basis:**	NA
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	549.2	**Extraction Lot:**	KWG1502015

		Batch QCMS KWG1502015-1 Matrix Spike				Batch QCDMS KWG1502015-2 Duplicate Matrix Spike					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**%Rec**		**Result**	**Spike Amount**	**%Rec**		**%Rec Limits**	**RPD**	**RPD Limit**
Diquat	ND	7.09	12.0	59	*	6.64	12.0	55	*	70-130	7	30
Paraquat	ND	14.6	12.0	122		13.2	12.0	110		70-130	10	30

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Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502365
Project:	Sentinel Wells	**Date Extracted:**	03/12/2015
Sample Matrix:	Drinking water	**Date Analyzed:**	03/12/2015

Lab Control Spike Summary
Diquat and Paraquat by EPA Method 549.2

Extraction Method:	METHOD	**Units:**	ug/L
Analysis Method:	549.2	**Basis:**	NA
		Level:	Low
		Extraction Lot:	KWG1502015

	Lab Control Sample KWG1502015-4 Lab Control Spike			
Analyte Name	**Result**	**Spike Amount**	**%Rec**	**%Rec Limits**
Diquat	12.7	12.0	106	70-130
Paraquat	13.5	12.0	112	70-130

Results flagged with an asterisk (*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Chlorinated Phenolic Organic Compounds

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Analytical Results

Client:	Longview, City of	**Service Request:**	K1502365
Project:	Sentinel Wells	**Date Collected:**	3/9/2015
Sample Matrix:	Drinking water	**Date Received:**	3/9/2015

EPA Method 1653A
Chlorinated Phenolic Organic Compounds

Sample Name:	DW-7	Units:	ug/L (ppb)
Lab Code:	K1502365-001	Basis:	NA
Test Notes:			

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
2,4,6-Trichlorophenol	METHOD	1653A	2.5	1	3/11/2015	3/17/2015	ND	
2,4,5-Trichlorophenol	METHOD	1653A	2.5	1	3/11/2015	3/17/2015	ND	
2,3,4,6-Tetrachlorophenol	METHOD	1653A	2.5	1	3/11/2015	3/17/2015	ND	
3,4,6-Trichloroguaiacol	METHOD	1653A	2.5	1	3/11/2015	3/17/2015	ND	
3,4,5-Trichloroguaiacol	METHOD	1653A	2.5	1	3/11/2015	3/17/2015	ND	
3,4,6-Trichlorocatechol	METHOD	1653A	5.0	1	3/11/2015	3/17/2015	ND	
3,4,5-Trichlorocatechol	METHOD	1653A	5.0	1	3/11/2015	3/17/2015	ND	
Trichlorosyringol	METHOD	1653A	2.5	1	3/11/2015	3/17/2015	ND	
4,5,6-Trichloroguaiacol	METHOD	1653A	2.5	1	3/11/2015	3/17/2015	ND	
Pentachlorophenol	METHOD	1653A	5.0	1	3/11/2015	3/17/2015	ND	
Tetrachloroguaiacol	METHOD	1653A	5.0	1	3/11/2015	3/17/2015	ND	
Tetrachlorocatechol	METHOD	1653A	5.0	1	3/11/2015	3/17/2015	ND	

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Analytical Results

Client:	Longview, City of	**Service Request:**	K1502365
Project:	Sentinel Wells	**Date Collected:**	NA
Sample Matrix:	Drinking water	**Date Received:**	NA

EPA Method 1653A
Chlorinated Phenolic Organic Compounds

Sample Name:	Method Blank	Units:	ug/L (ppb)
Lab Code:	KWG1502012-3	Basis:	NA
Test Notes:			

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
2,4,6-Trichlorophenol	METHOD	1653A	2.5	1	3/11/2015	3/17/2015	ND	
2,4,5-Trichlorophenol	METHOD	1653A	2.5	1	3/11/2015	3/17/2015	ND	
2,3,4,6-Tetrachlorophenol	METHOD	1653A	2.5	1	3/11/2015	3/17/2015	ND	
3,4,6-Trichloroguaiacol	METHOD	1653A	2.5	1	3/11/2015	3/17/2015	ND	
3,4,5-Trichloroguaiacol	METHOD	1653A	2.5	1	3/11/2015	3/17/2015	ND	
3,4,6-Trichlorocatechol	METHOD	1653A	5.0	1	3/11/2015	3/17/2015	ND	
3,4,5-Trichlorocatechol	METHOD	1653A	5.0	1	3/11/2015	3/17/2015	ND	
Trichlorosyringol	METHOD	1653A	2.5	1	3/11/2015	3/17/2015	ND	
4,5,6-Trichloroguaiacol	METHOD	1653A	2.5	1	3/11/2015	3/17/2015	ND	
Pentachlorophenol	METHOD	1653A	5.0	1	3/11/2015	3/17/2015	ND	
Tetrachloroguaiacol	METHOD	1653A	5.0	1	3/11/2015	3/17/2015	ND	
Tetrachlorocatechol	METHOD	1653A	5.0	1	3/11/2015	3/17/2015	ND	

ALS Group USA, Corp. dba ALS Environmental

Analytical Results

Client:	Longview, City of	**Service Request:**	K1502365
Project:	Sentinel Wells	**Date Collected:**	NA
Sample Matrix:	Drinking water	**Date Received:**	NA
		Date Extracted:	3/11/2015

Labeled Compound and Internal Standard Recovery Summary
Chlorinated Phenolic Organic Compounds
1653A

			Percent Recovery	
	CAS Percent Recovery Acceptance Criteria	Sample Name:	**DW-7**	**Method Blank**
		Lab Code:	K1502365-001	KWG1502012-3
		Date Analyzed:	3/17/2015	3/17/2015
Analyte				
3,4,5-Trichlorophenol	36-131		104	101
4,5,6-Trichloroguaiacol-13c6	25-134		93	105
Pentachlorophenol-13c6	22-117		96	100
Tetrachloroguaiacol-13c6	18-129		107	105
Tetrachlorocatechol-13c6	D-121		23	88

ALS Group USA, Corp. dba ALS Environmental

Analytical Results

Client: Longview, City of
Project: Sentinel Wells
Sample Matrix: Drinking water

Service Request: K1502365
Date Collected: NA
Date Received: NA
Date Extracted: 3/11/2015
Date Analyzed: 3/17/2015

Duplicate Summary
Chlorinated Phenolic Organic Compounds

Sample Name: Batch QC
Lab Code: KWG1502012-1
Test Notes:

Units: ug/L (ppb)
Basis: NA

Analyte	Prep Method	Analysis Method	MRL	Sample Result	Duplicate Sample Result	Average	Relative Percent Difference	Result Notes
2,4,6-Trichlorophenol	METHOD	1653A	2.5	ND	ND	ND	-	
2,4,5-Trichlorophenol	METHOD	1653A	2.5	ND	ND	ND	-	
2,3,4,6-Tetrachlorophenol	METHOD	1653A	2.5	ND	ND	ND	-	
3,4,6-Trichloroguaiacol	METHOD	1653A	2.5	ND	ND	ND	-	
3,4,5-Trichloroguaiacol	METHOD	1653A	2.5	ND	ND	ND	-	
3,4,6-Trichlorocatechol	METHOD	1653A	5.0	ND	ND	ND	-	
3,4,5-Trichlorocatechol	METHOD	1653A	5.0	ND	ND	ND	-	
Trichlorosyringol	METHOD	1653A	2.5	ND	ND	ND	-	
4,5,6-Trichloroguaiacol	METHOD	1653A	2.5	ND	ND	ND	-	
Pentachlorophenol	METHOD	1653A	5.0	ND	ND	ND	-	
Tetrachloroguaiacol	METHOD	1653A	5.0	ND	ND	ND	-	
Tetrachlorocatechol	METHOD	1653A	5.0	ND	ND	ND	-	

ALS Group USA, Corp. dba ALS Environmental

Analytical Results

Client:	Longview, City of	**Service Request:**	K1502365
Project:	Sentinel Wells	**Date Collected:**	NA
LCS Matrix:	Drinking water	**Date Received:**	NA
		Date Extracted:	3/11/2015
		Date Analyzed:	3/17/2015

Ongoing Precision and Recovery Summary
Chlorinated Phenolic Organic Compounds

Sample Name:	Lab Control Sample	Units:	ug/L (ppb)
Lab Code:	KWG1502012-2	Basis:	NA
Test Notes:			

Analyte	Prep Method	Analysis Method	True Value	Result	Percent Recovery	CAS Percent Recovery Acceptance Limits	Result Notes
2,4,6-Trichlorophenol	METHOD	1653A	50	46.1	92	72-146	
2,4,5-Trichlorophenol	METHOD	1653A	50	47.5	95	82-128	
2,3,4,6-Tetrachlorophenol	METHOD	1653A	50	50.0	100	82-132	
3,4,6-Trichloroguaiacol	METHOD	1653A	50	46.7	93	74-140	
3,4,5-Trichloroguaiacol	METHOD	1653A	50	49.3	99	80-134	
3,4,6-Trichlorocatechol	METHOD	1653A	100	89.3	89	64-149	
3,4,5-Trichlorocatechol	METHOD	1653A	100	96.9	97	72-128	
Trichlorosyringol	METHOD	1653A	50	51.1	102	66-174	
4,5,6-Trichloroguaiacol	METHOD	1653A	50	49.2	98	88-116	
Pentachlorophenol	METHOD	1653A	100	89.0	89	84-120	
Tetrachloroguaiacol	METHOD	1653A	100	93.2	93	81-126	
Tetrachlorocatechol	METHOD	1653A	100	94.4	94	81-132	

Subcontract Lab Results

ALS Environmental—Kelso Laboratory
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State Certifications: DE ID 11 , MA PA0102 , MD 128 , VA 460157 , WV 343

March 23, 2015

Mr. Gregory Salata
ALS Environmental - Kelso
1317 S. 13th Avenue
Kelso, WA 98626

Certificate of Analysis

Project Name:	**SOCs**	Workorder:	**2058583**
Purchase Order:	**K1502365**	Workorder ID:	**K1502365**

Dear Mr. Salata:

Enclosed are the analytical results for samples received by the laboratory on Wednesday, March 11, 2015.

The ALS Environmental laboratory in Middletown, Pennsylvania is a National Environmental Laboratory Accreditation Program (NELAP) accredited laboratory and as such, certifies that all applicable test results meet the requirements of NELAP.

If you have any questions regarding this certificate of analysis, please contact Mrs. Kelli L Wolfgang (Project Coordinator) at (717) 944-5541.

Analyses were performed according to our laboratory's NELAP-approved quality assurance program and any applicable state requirements. The test results meet requirements of the current NELAP standards or state requirements, where applicable. For a specific list of accredited analytes, refer to the certifications section of the ALS website at www.alsglobal.com/en/Our-Services/Life-Sciences/Environmental/Downloads.

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ALS Spring City: 10 Riverside Drive, Spring City, PA 19475 610-948-4903

CC: Ms. Chris Leaf

This page is included as part of the Analytical Report and must be retained as a permanent record thereof.

Kelli Wolfgang

Mrs. Kelli L Wolfgang
Project Coordinator

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SAMPLE SUMMARY

Workorder: 2058583 K1502365

Lab ID	Sample ID	Matrix	Date Collected	Date Received	Collected By
2058583001	K1502365-001	Drinking Water	3/9/2015 13:30	3/11/2015 09:21	Collected by Client

Notes

-- Samples collected by ALS personnel are done so in accordance with the procedures set forth in the ALS Field Sampling Plan (20 - Field Services Sampling Plan).
-- All Waste Water analyses comply with methodology requirements of 40 CFR Part 136.
-- All Drinking Water analyses comply with methodology requirements of 40 CFR Part 141.
-- Unless otherwise noted, all quantitative results for soils are reported on a dry weight basis.
-- The Chain of Custody document is included as part of this report.
-- All Library Search analytes should be regarded as tentative identifications based on the presumptive evidence of the mass spectra. Concentrations reported are estimated values.
-- Parameters identified as "analyze immediately" require analysis within 15 minutes of collection. Any "analyze immediately" parameters not listed under the header "Field Parameters" are preformed in the laboratory and are therefore analyzed out of hold time.
-- Method references listed on this report beginning with the prefix “S” followed by a method number (such as S2310B-97) refer to methods from “Standard Methods for the Examination of Water and Wastewater”.

Standard Acronyms/Flags

J	Indicates an estimated value between the Method Detection Limit (MDL) and the Practical Quantitation Limit (PQL) for the analyte
U	Indicates that the analyte was Not Detected (ND)
N	Indicates presumptive evidence of the presence of a compound
MDL	Method Detection Limit
PQL	Practical Quantitation Limit
RDL	Reporting Detection Limit
ND	Not Detected - indicates that the analyte was Not Detected at the RDL
Cntr	Analysis was performed using this container
RegLmt	Regulatory Limit
LCS	Laboratory Control Sample
MS	Matrix Spike
MSD	Matrix Spike Duplicate
DUP	Sample Duplicate
%Rec	Percent Recovery
RPD	Relative Percent Difference
LOD	DoD Limit of Detection
LOQ	DoD Limit of Quantitation
DL	DoD Detection Limit
I	Indicates reported value is greater than or equal to the Method Detection Limit (MDL) but less than the Report Detection Limit (RDL)

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ANALYTICAL RESULTS

Workorder: 2058583 K1502365

Lab ID: **2058583001** Date Collected: 3/9/2015 13:30 Matrix: Drinking Water

Sample ID: **K1502365-001** Date Received: 3/11/2015 09:21

Parameters	Results	Flag	Units	RDL	Method	Prepared By	Analyzed	By	*Cntr*
HERBICIDES									
Glyphosate	ND		ug/L	4.5	EPA 547		3/22/15 13:13	CGS	C
CARBAMATES									
Aldicarb	ND		ug/L	0.26	EPA 531.1		3/16/15 20:47	CGS	A
Aldicarb Sulfone	ND		ug/L	0.32	EPA 531.1		3/16/15 20:47	CGS	A
Aldicarb Sulfoxide	ND		ug/L	0.27	EPA 531.1		3/16/15 20:47	CGS	A
Carbaryl	ND		ug/L	0.29	EPA 531.1		3/16/15 20:47	CGS	A
Carbofuran	ND		ug/L	0.43	EPA 531.1		3/16/15 20:47	CGS	A
3-Hydroxycarbofuran	ND		ug/L	0.27	EPA 531.1		3/16/15 20:47	CGS	A
Methiocarb	ND		ug/L	0.18	EPA 531.1		3/16/15 20:47	CGS	A
Methomyl	ND		ug/L	0.49	EPA 531.1		3/16/15 20:47	CGS	A
Oxamyl	ND		ug/L	0.50	EPA 531.1		3/16/15 20:47	CGS	A
Propoxur	ND		ug/L	0.32	EPA 531.1		3/16/15 20:47	CGS	A

Kelli Wolfgang

Mrs. Kelli L Wolfgang
Project Coordinator

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QUALITY CONTROL DATA

Workorder: 2058583 K1502365

QC Batch: HPLC/3911 **Analysis Method:** EPA 531.1

QC Batch Method: EPA 531.1

Associated Lab Samples: 2058583001

METHOD BLANK: 2149046

Parameter	Blank Result	Units	Reporting Limit	Qualifiers
Aldicarb Sulfoxide	ND	ug/L	0.27	
Aldicarb Sulfone	ND	ug/L	0.32	
Oxamyl	ND	ug/L	0.50	
Methomyl	ND	ug/L	0.49	
3-Hydroxycarbofuran	ND	ug/L	0.27	
Aldicarb	ND	ug/L	0.26	
Propoxur	ND	ug/L	0.32	
Carbofuran	ND	ug/L	0.43	
Carbaryl	ND	ug/L	0.29	
Methiocarb	ND	ug/L	0.18	

LABORATORY CONTROL SAMPLE: 2149047

Parameter	LCS % Rec	Units	Spike Conc.	LCS Result	% Rec Limit	Qualifiers
Aldicarb Sulfoxide	98.7	ug/L	10	9.9	80 - 120	
Aldicarb Sulfone	87.3	ug/L	10	8.7	80 - 120	
Oxamyl	99.8	ug/L	10	10	80 - 120	
Methomyl	94.4	ug/L	10	9.4	80 - 120	
3-Hydroxycarbofuran	100	ug/L	10	10.0	80 - 120	
Aldicarb	96.5	ug/L	10	9.7	80 - 120	
Propoxur	92.4	ug/L	10	9.2	80 - 120	
Carbofuran	90.9	ug/L	10	9.1	80 - 120	
Carbaryl	88.8	ug/L	10	8.9	80 - 120	
Methiocarb	90.6	ug/L	10	9.1	80 - 120	

SAMPLE DUPLICATE: 2150707 ORIGINAL:

Parameter	Original Result	Units	DUP Result	RPD	Max RPD	Qualifiers
Aldicarb Sulfoxide	0	ug/L	0	NC	20	
Aldicarb Sulfone	0	ug/L	0	NC	20	
Oxamyl	0	ug/L	0	NC	20	
Methomyl	0	ug/L	0	NC	20	
3-Hydroxycarbofuran	0	ug/L	0	NC	20	

QUALITY CONTROL DATA

Workorder: 2058583 K1502365

Aldicarb	0	ug/L	0	NC	20
Propoxur	0	ug/L	0	NC	20
Carbofuran	0	ug/L	0	NC	20
Carbaryl	0	ug/L	0	NC	20
Methiocarb	0	ug/L	0	NC	20

MATRIX SPIKE SAMPLE: 2149049 ORIGINAL:

****NOTE - The Original Result shown below is a raw result and is only used for the purpose of calculating Matrix Spike percent recoveries. This result is not a final value and cannot be used as such.

Parameter	Original Result	Units	Spike Conc.	MS Result	MS % Rec	% Rec Limit	Qualifiers
Aldicarb Sulfoxide	0	ug/L	10	12.3558	124	65 - 135	
Aldicarb Sulfone	0	ug/L	10	11.5018	115	65 - 135	
Oxamyl	0	ug/L	10	13.1784	132	65 - 135	
Methomyl	0	ug/L	10	12.0278	120	65 - 135	
3-Hydroxycarbofuran	0	ug/L	10	12.6868	127	65 - 135	
Aldicarb	0	ug/L	10	12.1718	122	65 - 135	
Propoxur	0	ug/L	10	11.4132	114	65 - 135	
Carbofuran	0	ug/L	10	11.52	115	65 - 135	
Carbaryl	0	ug/L	10	11.5322	115	65 - 135	
Methiocarb	0	ug/L	10	10.9469	109	65 - 135	

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QUALITY CONTROL DATA

Workorder: 2058583 K1502365

QC Batch: HPLC/3915 **Analysis Method:** EPA 547

QC Batch Method: EPA 547

Associated Lab Samples: 2058583001

METHOD BLANK: 2153468

Parameter	Blank Result	Units	Reporting Limit	Qualifiers
Glyphosate	ND	ug/L	4.5	

LABORATORY CONTROL SAMPLE: 2153469

Parameter	LCS % Rec	Units	Spike Conc.	LCS Result	% Rec Limit	Qualifiers
Glyphosate	99.5	ug/L	500	497	80 - 120	

MATRIX SPIKE SAMPLE: 2153470 ORIGINAL:

****NOTE - The Original Result shown below is a raw result and is only used for the purpose of calculating Matrix Spike percent recoveries. This result is not a final value and cannot be used as such.

Parameter	Original Result	Units	Spike Conc.	MS Result	MS % Rec	% Rec Limit	Qualifiers
Glyphosate	0	ug/L	500	482.285	96.5	70 - 130	

SAMPLE DUPLICATE: 2153471 ORIGINAL:

Parameter	Original Result	Units	DUP Result	RPD	Max RPD	Qualifiers
Glyphosate	0	ug/L	0	NC	40	

MATRIX SPIKE SAMPLE: 2153472 ORIGINAL:

****NOTE - The Original Result shown below is a raw result and is only used for the purpose of calculating Matrix Spike percent recoveries. This result is not a final value and cannot be used as such.

Parameter	Original Result	Units	Spike Conc.	MS Result	MS % Rec	% Rec Limit	Qualifiers
Glyphosate	0	ug/L	500	448.493	89.7	70 - 130	

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Workorder: 2058583 K1502365

Lab ID	Sample ID	Prep Method	Prep Batch	Analysis Method	Analysis Batch
2058583001	K1502365-001			EPA 531.1	HPLC/3911
2058583001	K1502365-001			EPA 547	HPLC/3915

ALS Environmental Chain of Custody

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2058583

Project Number: K1502365
Project Manager: Chris Leaf

Lab Code	Sample ID	# of Cont.	Matrix	Sample Date	Sample Time	Lab ID	CARBAM 531.1	GLYPH 547 Amiga
K1502365-001	DW-7	4	Drinking Water	3/9/15	1330	Middletown ALS	X	X

KCVD - 2 - 40mL Amber
2 - 125mL Amber
AT 3/11/15

AT 3/11/15 1247

w/QC

Test Comments
CARBAM - 531.1 K1502365-001 Full list for WA Regulations - no compliance report required.

Folder Comments:
Report all metals in mg/L. No DW State form required.

KW 03/12/15

	Y	N	Initials
Custody Seals Present?			
(If present) Seals Intact?			
Received on Ice?			
COC/Lbls Complete			
Cont in Good Cond?			
Correct Containers?			
Correct Samp Vol?			
Correct Preservation?			
Headspace/Volatiles?			

Cooler Temp: °C
Cooler #
Therm ID:
Ship Carrier: FedEx UPS DHL
Tracking # 5478 0742 2150

Special Instructions/Comments
Please provide the electronic (PDF and EDD) report to the following e-mail address: ALKLS.Data@alsglobal.com.

CL 3/10/15

H - Test is On Hold P - Test is Authorized for Prep Only

Turnaround Requirements
___ RUSH (Surcharges Apply)
PLEASE CIRCLE WORK DAYS
1 2 3 4 5
✓ STANDARD
Requested FAX Date: ___
Requested Report Date: 03/26/15

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 N
EDD N

Invoice Information
PO# K1502365 ✓
Bill to

Relinquished By: AS 3/10/15 1130 Received By: 3/11/15 0921 Airbill Number:

Page 1

K1502365

✓ **Ship To: Middletown ALS**
ALS Laboratory Group
34 Dogwood Lane
Middletown, PA 17057

PC CL Date 3/10/15
SMO AR Date 3/10/15

Instructions:
Ice ✓
Dry Ice
No Ice

Shipping:
Overnight ✓
2nd Day
Ground

Bill to Client Account

Comments:

ALS Group USA, Corp.
www.alsglobal.com
An ALS Limited Company

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State Certification: CT PH-0224, DE ID 11, GA 914, MA PA0102, MD 128, LA 04162, VA 421, WY EPA Region 8, WV 343

QUALITY CONTROL DATA

Workorder	**2058583**	**Project Name**	**K1502365**
QC Batch	HPLC / 3911		
QC Batch Method	EPA 531.1	**Analysis Method**	EPA 531.1
Associated Lab Samples	2058583001		

METHOD BLANK 2149046

Parameter	Blank Result	Qualifiers	Units	Reporting Limit	% Rec	% Rec Limits
3-Hydroxycarbofuran	ND	U	ug/L	0.27		
Aldicarb	ND	U	ug/L	0.26		
Aldicarb Sulfone	ND	U	ug/L	0.32		
Aldicarb Sulfoxide	ND	U	ug/L	0.27		
Carbaryl	ND	U	ug/L	0.29		
Carbofuran	ND	U	ug/L	0.43		
Methiocarb	ND	U	ug/L	0.18		
Methomyl	ND	U	ug/L	0.49		
Oxamyl	ND	U	ug/L	0.50		
Propoxur	ND	U	ug/L	0.32		

LABORATORY CONTROL SAMPLE 2149047

Parameter	LCS Result	Qualifiers	Units	Spike Conc.	LCS % Rec	% Rec Limits
3-Hydroxycarbofuran	10		ug/L	10	100	80-120
Aldicarb	9.7		ug/L	10	96.5	80-120
Aldicarb Sulfone	8.7		ug/L	10	87.3	80-120
Aldicarb Sulfoxide	9.9		ug/L	10	98.7	80-120
Carbaryl	8.9		ug/L	10	88.8	80-120
Carbofuran	9.1		ug/L	10	90.9	80-120

This is an addendum to the Certificate of Analysis.

Methiocarb	9.1	ug/L	10	90.6	80-120
Methomyl	9.4	ug/L	10	94.4	80-120
Oxamyl	10	ug/L	10	99.8	80-120
Propoxur	9.2	ug/L	10	92.4	80-120

SAMPLE DUPLICATE 2150707 Original 2057116002

*****NOTE - The Original Result and Duplicate Result shown below are raw results and are only used for the purpose of calculating Sample Duplicate percent recoveries. This result is not a final value and cannot be used as such.*

Parameter	Original Result	Qualifiers	Units	DUP Result	RPD	Max RPD	% Rec	% Rec Limits
3-Hydroxycarbofuran	ND	U	ug/L	ND	NC	20		
Aldicarb	ND	U	ug/L	ND	NC	20		
Aldicarb Sulfone	ND	U	ug/L	ND	NC	20		
Aldicarb Sulfoxide	ND	U	ug/L	ND	NC	20		
Carbaryl	ND	U	ug/L	ND	NC	20		
Carbofuran	ND	U	ug/L	ND	NC	20		
Methiocarb	ND	U	ug/L	ND	NC	20		
Methomyl	ND	U	ug/L	ND	NC	20		
Oxamyl	ND	U	ug/L	ND	NC	20		
Propoxur	ND	U	ug/L	ND	NC	20		

MATRIX SPIKE 2149049 Original 2058591001

*****NOTE - The Original Result shown below is a raw result and is only used for the purpose of calculating Matrix Spike percent recoveries. This result is not a final value and cannot be used as such.*

Parameter	Original Result	Qualifiers	Units	Spike Conc.	MS Result	MS % Rec	% Rec Limits
3-Hydroxycarbofuran	ND		ug/L	10	12.6868	127	65-135
Aldicarb	ND		ug/L	10	12.1718	122	65-135
Aldicarb Sulfone	ND		ug/L	10	11.5018	115	65-135
Aldicarb Sulfoxide	ND		ug/L	10	12.3558	124	65-135
Carbaryl	ND		ug/L	10	11.5322	115	65-135
Carbofuran	ND		ug/L	10	11.52	115	65-135
Methiocarb	ND		ug/L	10	10.9469	109	65-135
Methomyl	ND		ug/L	10	12.0278	120	65-135
Oxamyl	ND		ug/L	10	13.1784	132	65-135
Propoxur	ND		ug/L	10	11.4132	114	65-135

Workorder	**2058583**	**Project Name**	**K1502365**
QC Batch	HPLC / 3915		
QC Batch Method	EPA 547	**Analysis Method**	EPA 547
Associated Lab Samples	2058583001		

METHOD BLANK 2153468

Parameter	Blank Result	Qualifiers	Units	Reporting Limit	% Rec	% Rec Limits
Glyphosate	ND	U	ug/L	4.5		

LABORATORY CONTROL SAMPLE 2153469

Parameter	LCS Result	Qualifiers	Units	Spike Conc.	LCS % Rec	% Rec Limits
Glyphosate	497		ug/L	500	99.5	80-120

SAMPLE DUPLICATE 2153471 Original 2058366001

*****NOTE - The Original Result and Duplicate Result shown below are raw results and are only used for the purpose of calculating Sample Duplicate percent recoveries. This result is not a final value and cannot be used as such.*

Parameter	Original Result	Qualifiers	Units	DUP Result	RPD	Max RPD	% Rec	% Rec Limits
Glyphosate	ND	U	ug/L	ND	NC	40		

MATRIX SPIKE 2153470 Original 2058366001

*****NOTE - The Original Result shown below is a raw result and is only used for the purpose of calculating Matrix Spike percent recoveries. This result is not a final value and cannot be used as such.*

Parameter	Original Result	Qualifiers	Units	Spike Conc.	MS Result	MS % Rec	% Rec Limits
Glyphosate	ND		ug/L	500	482.285	96.5	70-130

MATRIX SPIKE 2153472 Original 2059505001

*****NOTE - The Original Result shown below is a raw result and is only used for the purpose of calculating Matrix Spike percent recoveries. This result is not a final value and cannot be used as such.*

Parameter	Original Result	Qualifiers	Units	Spike Conc.	MS Result	MS % Rec	% Rec Limits
Glyphosate	ND		ug/L	500	448.493	89.7	70-130

Standard Acronyms/Flags	
J	Indicates an estimated value between the Method Detection Limit (MDL) and the Practical Quantitation Limit (PQL) for the analyte
U	Indicates that the analyte was Not Detected (ND)
N	Indicates presumptive evidence of the presence of a compound
MDL	Method Detection Limit
PQL	Practical Quantitation Limit
RDL	Reporting Detection Limit
ND	Not Detected - indicates that the analyte was Not Detected at the RDL
Cntr	Analysis was performed using this container
RegLmt	Regulatory Limit
LCS	Laboratory Control Sample
MS	Matrix Spike
MSD	Matrix Spike Duplicate
DUP	Sample Duplicate
%Rec	Percent Recovery
RPD	Relative Percent Difference
LOD	DoD Limit of Detection
LOQ	DoD Limit of Quantitation
DL	DoD Detection Limit
NC	Not Calculated
*	Result outside of QC limits
DIL	Dilution Factor

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Lab ID	Sample ID	Prep Method	Prep Batch	Analysis Method	Analysis Batch
2057116002	ZZZZZZZZZZ	EPA 531.1	HPLC / 3911	EPA 531.1	HPLC / 3911
2058583001	K1502365-001	EPA 531.1	HPLC / 3911	EPA 531.1	HPLC / 3911
2058591001	ZZZZZZZZZZ	EPA 531.1	HPLC / 3911	EPA 531.1	HPLC / 3911

Lab ID	Sample ID	Prep Method	Prep Batch	Analysis Method	Analysis Batch
2058366001	ZZZZZZZZZZ	EPA 547	HPLC / 3915	EPA 547	HPLC / 3915
2058583001	K1502365-001	EPA 547	HPLC / 3915	EPA 547	HPLC / 3915
2059505001	ZZZZZZZZZZ	EPA 547	HPLC / 3915	EPA 547	HPLC / 3915

LABORATORY REPORT

March 21, 2015

Jeff Coleman
Longview, City of
W/S Operation Center
Longview, WA 98632

RE: Sentinel Wells

Dear Jeff:

Enclosed are the results of the sample submitted to our laboratory on March 9, 2015. For your reference, this analysis has been assigned our service request number K1502365.

All analyses were performed according to our laboratory's NELAP and DoD-ELAP-approved quality assurance program. The test results meet requirements of the current NELAP and DoD-ELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP and DoD-ELAP-accredited analytes, refer to the certifications section at www.alsglobal.com. Results are intended to be considered in their entirety and apply only to the samples analyzed and reported herein.

If you have any questions, please call me at (805) 526-7161.

Respectfully submitted,

ALS | Environmental

Kate Aguilera

By Kate Aguilera at 8:28 am, Mar 21, 2015

Kate Aguilera
Project Manager

CASE NARRATIVE

The sample was received intact under chain of custody on March 9, 2015 and was stored in accordance with the analytical method requirements. Please refer to the sample acceptance check form for additional information. The results reported herein are applicable only to the condition of the sample at the time of sample receipt.

Hydrogen Sulfide Analysis

The sample was analyzed for hydrogen sulfide using a gas chromatograph equipped with a sulfur chemiluminescence detector (SCD). This method is not included on the laboratory's NELAP, DoD-ELAP, or AIHA-LAP scope of accreditation.

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 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.

ALS Environmental – Simi Valley

CERTIFICATIONS, ACCREDITATIONS, AND REGISTRATIONS

Agency	Web Site	Number
AIHA	http://www.aihaaccreditedlabs.org	101661
Arizona DHS	http://www.azdhs.gov/lab/license/env.htm	AZ0694
DoD ELAP	http://www.pjlabs.com/search-accredited-labs	L14-2
Florida DOH (NELAP)	http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm	E871020
Maine DHHS	http://www.maine.gov/dhhs/mecdc/environmental-health/water/dwp-services/labcert/labcert.htm	2014025
Minnesota DOH (NELAP)	http://www.health.state.mn.us/accreditation	876241
New Jersey DEP (NELAP)	http://www.nj.gov/dep/oqa/	CA009
New York DOH (NELAP)	http://www.wadsworth.org/labcert/elap/elap.html	11221
Oregon PHD (NELAP)	http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Pages/index.aspx	4068-001
Pennsylvania DEP	http://www.depweb.state.pa.us/labs	68-03307 (Registration)
Texas CEQ (NELAP)	http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html	T104704413-14-5
Utah DOH (NELAP)	http://www.health.utah.gov/lab/labimp/certification/index.html	CA016272014-4
Washington DOE	http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html	C946

Analyses were performed according to our laboratory's NELAP and DoD-ELAP approved quality assurance program. A complete listing of specific NELAP and DoD-ELAP certified analytes can be found in the certifications section at www.alsglobal.com, or at the accreditation body's website.

Each of the certifications listed above have an explicit Scope of Accreditation that applies to specific matrices/methods/analytes; therefore, please contact the laboratory for information corresponding to a particular certification.

Intra-Network Chain of Custody

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

ALS Contact: Chris Leaf

Project Name: Sentinel Wells
Project Number:
Project Manager: Jeff Coleman
Company: Longview, City of

Lab Code	Client Sample ID	# of Cont.	Matrix	Sample Date	Sample Time	Date Received	Send To	Sulfur Sulfur Liq
K1502365-001	DW-7	2	Drinking Water	3/9/15	1330	3/9/15	SIMIVALLEY	II

Test Comments

Sulfur - Sulfur Liq K1502365-001 Hydrogen Sulfide

Folder Comments:

Report all metals in mg/L. No DW State form required.

Special Instructions/Comments

Please provide the electronic (PDF and EDD) report to the following e-mail address: ALKLS.Data@alsglobal.com.

pH Checked _____

Turnaround Requirements

____ **RUSH** (Surcharges Apply)

PLEASE CIRCLE WORK DAYS

1 2 3 4 5

____ **STANDARD**

Requested FAX Date: _____

Requested Report Date: 03/26/15

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 N

EDD N

Invoice Information

PO# K1502365

Bill to

Relinquished By: ARS 3/10/15 1130

Received By: (FOR GA) KKELPE 3/11/15 1446

3° temp blank

Airbill Number:

ALS Environmental
Sample Acceptance Check Form

Client: Longview, City of Work order: K1502365

Project: Sentinel Wells

Sample(s) received on: 3/9/15 Date opened: 3/9/15 by: SWOLF

Note: This form is used for all samples received by ALS. The use of this form for custody seals is strictly meant to indicate presence/absence and not as an indication of compliance or nonconformity. Thermal preservation and pH will only be evaluated either at the request of the client and/or as required by the method/SOP.

		Yes	No	N/A
1	Were **sample containers** properly marked with client sample ID?	☒	☐	☐
2	Container(s) **supplied by ALS**?	☐	☒	☐
3	Did **sample containers** arrive in good condition?	☒	☐	☐
4	Were **chain-of-custody** papers used and filled out?	☒	☐	☐
5	Did **sample container labels** and/or tags agree with custody papers?	☒	☐	☐
6	Was **sample volume** received adequate for analysis?	☒	☐	☐
7	Are samples within specified holding times?	☒	☐	☐
8	Was proper **temperature** (thermal preservation) of cooler at receipt adhered to?	☒	☐	☐
	Cooler Temperature: ° C Blank Temperature: 3° C **Gel Packs**			
9	Was a **trip blank** received?	☐	☒	☐
10	Were **custody seals** on outside of cooler/Box?	☒	☐	☐
	Location of seal(s)? _____ Sealing Lid?	☒	☐	☐
	Were signature and date included?	☒	☐	☐
	Were seals intact?	☒	☐	☐
	Were custody seals on outside of sample container?	☐	☒	☐
	Location of seal(s)? _____ Sealing Lid?	☐	☐	☒
	Were signature and date included?	☐	☐	☒
	Were seals intact?	☐	☐	☒
11	Do containers have appropriate **preservation**, according to method/SOP or Client specified information?	☒	☐	☐
	Is there a client indication that the submitted samples are **pH** preserved?	☐	☐	☒
	Were **VOA vials** checked for presence/absence of air bubbles?	☒	☐	☐
	Does the client/method/SOP require that the analyst check the sample pH and if necessary alter it?	☒	☐	☐
12	**Tubes:** Are the tubes capped and intact?	☐	☐	☒
	Do they contain moisture?	☐	☐	☒
13	**Badges:** Are the badges properly capped and intact?	☐	☐	☒
	Are dual bed badges separated and individually capped and intact?	☐	☐	☒

Lab Sample ID	Container Description	Required pH *	Received pH	Adjusted pH	VOA Headspace (Presence/Absence)	Receipt / Preservation Comments
K1502365-001.01	40mL VOA NP		7	1	A	MC 03/16/2015
K1502365-001.02	40mL VOA NP				A	

Explain any discrepancies: (include lab sample ID numbers): _____

RSK - MEEPP, HCL (pH<2); RSK - CO2, (pH 5-8); Sulfur (pH>4)

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Longview, City of**
Client Project ID: **Sentinel Wells** ALS Project ID: K1502365

Hydrogen Sulfide

Test Code: GC/SCD Reduced Sulfur Analysis
Instrument ID: Agilent 7890A/GC22/SCD Date(s) Collected: 3/9/15
Analyst: Mike Conejo Date Received: 3/9/15
Sample Type: Drinking Water Date Analyzed: 3/16/15
Test Notes:

Client Sample ID	ALS Sample ID	Sample Amount ml(s)	Purge Volume Liter(s)	Injection Volume ml(s)	**Result µg/L**	MRL µg/L	Data Qualifier
DW-7	K1502365-001	10.0	0.30	1.0	ND	0.84	
Method Blank	P150316-MB	10.0	0.30	1.0	ND	0.84	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

LABORATORY CONTROL SAMPLE / DUPLICATE LABORATORY CONTROL SAMPLE SUMMARY

Client: **Longview, City of**
Client Sample ID: **Duplicate Lab Control Sample**
Client Project ID: **Sentinel Wells**

ALS Project ID: K1502365
ALS Sample ID: P150316-DLCS

Test Code: GC/SCD Reduced Sulfur Analysis
Instrument ID: Agilent 7890A/GC22/SCD
Analyst: Mike Conejo
Sample Type: Drinking Water
Test Notes:

Date Collected: NA
Date Received: NA
Date Analyzed: 3/16/15
Liquid Amount: 10.0 ml(s)
Purge Volume: 0.30 Liter(s)
Injection Volume: 0.20 ml(s)

CAS #	Compound	Spike Amount LCS / DLCS ug/L	Result LCS ug/L	Result DLCS ug/L	% Recovery LCS	% Recovery DLCS	ALS Acceptance Limits	RPD	RPD Limit	Data Qualifier
7783-06-4	Hydrogen Sulfide	416	487	504	**117**	**121**	54-133	3	20	

ALS Environmental

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NELAP Certifications: NJ PA010 , NY 11759 , PA 22-293 DoD ELAP: A2LA 0818.01
State Certifications: DE ID 11 , MA PA0102 , MD 128 , VA 460157 , WV 343

March 23, 2015

Mr. Gregory Salata
ALS Environmental - Kelso
1317 S. 13th Avenue
Kelso, WA 98626

Certificate of Analysis

Project Name:	**SOCs**	Workorder:	**2058583**
Purchase Order:	**K1502365**	Workorder ID:	**K1502365**

Dear Mr. Salata:

Enclosed are the analytical results for samples received by the laboratory on Wednesday, March 11, 2015.

The ALS Environmental laboratory in Middletown, Pennsylvania is a National Environmental Laboratory Accreditation Program (NELAP) accredited laboratory and as such, certifies that all applicable test results meet the requirements of NELAP.

If you have any questions regarding this certificate of analysis, please contact Mrs. Kelli L Wolfgang (Project Coordinator) at (717) 944-5541.

Analyses were performed according to our laboratory's NELAP-approved quality assurance program and any applicable state requirements. The test results meet requirements of the current NELAP standards or state requirements, where applicable. For a specific list of accredited analytes, refer to the certifications section of the ALS website at www.alsglobal.com/en/Our-Services/Life-Sciences/Environmental/Downloads.

This laboratory report may not be reproduced, except in full, without the written approval of ALS Environmental.

ALS Spring City: 10 Riverside Drive, Spring City, PA 19475 610-948-4903

CC: Ms. Chris Leaf

This page is included as part of the Analytical Report and must be retained as a permanent record thereof.

Kelli Wolfgang

Mrs. Kelli L Wolfgang
Project Coordinator

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SAMPLE SUMMARY

Workorder: 2058583 K1502365

Lab ID	Sample ID	Matrix	Date Collected	Date Received	Collected By
2058583001	K1502365-001	Drinking Water	3/9/2015 13:30	3/11/2015 09:21	Collected by Client

Notes

-- Samples collected by ALS personnel are done so in accordance with the procedures set forth in the ALS Field Sampling Plan (20 - Field Services Sampling Plan).
-- All Waste Water analyses comply with methodology requirements of 40 CFR Part 136.
-- All Drinking Water analyses comply with methodology requirements of 40 CFR Part 141.
-- Unless otherwise noted, all quantitative results for soils are reported on a dry weight basis.
-- The Chain of Custody document is included as part of this report.
-- All Library Search analytes should be regarded as tentative identifications based on the presumptive evidence of the mass spectra. Concentrations reported are estimated values.
-- Parameters identified as "analyze immediately" require analysis within 15 minutes of collection. Any "analyze immediately" parameters not listed under the header "Field Parameters" are preformed in the laboratory and are therefore analyzed out of hold time.
-- Method references listed on this report beginning with the prefix “S” followed by a method number (such as S2310B-97) refer to methods from “Standard Methods for the Examination of Water and Wastewater”.

Standard Acronyms/Flags

J	Indicates an estimated value between the Method Detection Limit (MDL) and the Practical Quantitation Limit (PQL) for the analyte
U	Indicates that the analyte was Not Detected (ND)
N	Indicates presumptive evidence of the presence of a compound
MDL	Method Detection Limit
PQL	Practical Quantitation Limit
RDL	Reporting Detection Limit
ND	Not Detected - indicates that the analyte was Not Detected at the RDL
Cntr	Analysis was performed using this container
RegLmt	Regulatory Limit
LCS	Laboratory Control Sample
MS	Matrix Spike
MSD	Matrix Spike Duplicate
DUP	Sample Duplicate
%Rec	Percent Recovery
RPD	Relative Percent Difference
LOD	DoD Limit of Detection
LOQ	DoD Limit of Quantitation
DL	DoD Detection Limit
I	Indicates reported value is greater than or equal to the Method Detection Limit (MDL) but less than the Report Detection Limit (RDL)

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State Certifications: DE ID 11 , MA PA0102 , MD 128 , VA 460157 , WV 343

ANALYTICAL RESULTS

Workorder: 2058583 K1502365

Lab ID: **2058583001** Date Collected: 3/9/2015 13:30 Matrix: Drinking Water
Sample ID: **K1502365-001** Date Received: 3/11/2015 09:21

Parameters	Results	Flag	Units	RDL	Method	Prepared By	Analyzed	By	*Cntr*
HERBICIDES									
Glyphosate	ND		ug/L	4.5	EPA 547		3/22/15 13:13	CGS	C
CARBAMATES									
Aldicarb	ND		ug/L	0.26	EPA 531.1		3/16/15 20:47	CGS	A
Aldicarb Sulfone	ND		ug/L	0.32	EPA 531.1		3/16/15 20:47	CGS	A
Aldicarb Sulfoxide	ND		ug/L	0.27	EPA 531.1		3/16/15 20:47	CGS	A
Carbaryl	ND		ug/L	0.29	EPA 531.1		3/16/15 20:47	CGS	A
Carbofuran	ND		ug/L	0.43	EPA 531.1		3/16/15 20:47	CGS	A
3-Hydroxycarbofuran	ND		ug/L	0.27	EPA 531.1		3/16/15 20:47	CGS	A
Methiocarb	ND		ug/L	0.18	EPA 531.1		3/16/15 20:47	CGS	A
Methomyl	ND		ug/L	0.49	EPA 531.1		3/16/15 20:47	CGS	A
Oxamyl	ND		ug/L	0.50	EPA 531.1		3/16/15 20:47	CGS	A
Propoxur	ND		ug/L	0.32	EPA 531.1		3/16/15 20:47	CGS	A

Kelli Wolfgang
Mrs. Kelli L Wolfgang
Project Coordinator

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QUALITY CONTROL DATA

Workorder: 2058583 K1502365

QC Batch: HPLC/3911 **Analysis Method:** EPA 531.1

QC Batch Method: EPA 531.1

Associated Lab Samples: 2058583001

METHOD BLANK: 2149046

Parameter	Blank Result	Units	Reporting Limit	Qualifiers
Aldicarb Sulfoxide	ND	ug/L	0.27	
Aldicarb Sulfone	ND	ug/L	0.32	
Oxamyl	ND	ug/L	0.50	
Methomyl	ND	ug/L	0.49	
3-Hydroxycarbofuran	ND	ug/L	0.27	
Aldicarb	ND	ug/L	0.26	
Propoxur	ND	ug/L	0.32	
Carbofuran	ND	ug/L	0.43	
Carbaryl	ND	ug/L	0.29	
Methiocarb	ND	ug/L	0.18	

LABORATORY CONTROL SAMPLE: 2149047

Parameter	LCS % Rec	Units	Spike Conc.	LCS Result	% Rec Limit	Qualifiers
Aldicarb Sulfoxide	98.7	ug/L	10	9.9	80 - 120	
Aldicarb Sulfone	87.3	ug/L	10	8.7	80 - 120	
Oxamyl	99.8	ug/L	10	10	80 - 120	
Methomyl	94.4	ug/L	10	9.4	80 - 120	
3-Hydroxycarbofuran	100	ug/L	10	10.0	80 - 120	
Aldicarb	96.5	ug/L	10	9.7	80 - 120	
Propoxur	92.4	ug/L	10	9.2	80 - 120	
Carbofuran	90.9	ug/L	10	9.1	80 - 120	
Carbaryl	88.8	ug/L	10	8.9	80 - 120	
Methiocarb	90.6	ug/L	10	9.1	80 - 120	

SAMPLE DUPLICATE: 2150707 ORIGINAL:

Parameter	Original Result	Units	DUP Result	RPD	Max RPD	Qualifiers
Aldicarb Sulfoxide	0	ug/L	0	NC	20	
Aldicarb Sulfone	0	ug/L	0	NC	20	
Oxamyl	0	ug/L	0	NC	20	
Methomyl	0	ug/L	0	NC	20	
3-Hydroxycarbofuran	0	ug/L	0	NC	20	

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QUALITY CONTROL DATA

Workorder: 2058583 K1502365

Aldicarb	0	ug/L	0	NC	20
Propoxur	0	ug/L	0	NC	20
Carbofuran	0	ug/L	0	NC	20
Carbaryl	0	ug/L	0	NC	20
Methiocarb	0	ug/L	0	NC	20

MATRIX SPIKE SAMPLE: 2149049 ORIGINAL:

****NOTE - The Original Result shown below is a raw result and is only used for the purpose of calculating Matrix Spike percent recoveries. This result is not a final value and cannot be used as such.

Parameter	Original Result	Units	Spike Conc.	MS Result	MS % Rec	% Rec Limit	Qualifiers
Aldicarb Sulfoxide	0	ug/L	10	12.3558	124	65 - 135	
Aldicarb Sulfone	0	ug/L	10	11.5018	115	65 - 135	
Oxamyl	0	ug/L	10	13.1784	132	65 - 135	
Methomyl	0	ug/L	10	12.0278	120	65 - 135	
3-Hydroxycarbofuran	0	ug/L	10	12.6868	127	65 - 135	
Aldicarb	0	ug/L	10	12.1718	122	65 - 135	
Propoxur	0	ug/L	10	11.4132	114	65 - 135	
Carbofuran	0	ug/L	10	11.52	115	65 - 135	
Carbaryl	0	ug/L	10	11.5322	115	65 - 135	
Methiocarb	0	ug/L	10	10.9469	109	65 - 135	

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State Certifications: DE ID 11 , MA PA0102 , MD 128 , VA 460157 , WV 343

QUALITY CONTROL DATA

Workorder: 2058583 K1502365

QC Batch: HPLC/3915 **Analysis Method:** EPA 547

QC Batch Method: EPA 547

Associated Lab Samples: 2058583001

METHOD BLANK: 2153468

Parameter	Blank Result	Units	Reporting Limit	Qualifiers
Glyphosate	ND	ug/L	4.5	

LABORATORY CONTROL SAMPLE: 2153469

Parameter	LCS % Rec	Units	Spike Conc.	LCS Result	% Rec Limit	Qualifiers
Glyphosate	99.5	ug/L	500	497	80 - 120	

MATRIX SPIKE SAMPLE: 2153470 ORIGINAL:

****NOTE - The Original Result shown below is a raw result and is only used for the purpose of calculating Matrix Spike percent recoveries. This result is not a final value and cannot be used as such.

Parameter	Original Result	Units	Spike Conc.	MS Result	MS % Rec	% Rec Limit	Qualifiers
Glyphosate	0	ug/L	500	482.285	96.5	70 - 130	

SAMPLE DUPLICATE: 2153471 ORIGINAL:

Parameter	Original Result	Units	DUP Result	RPD	Max RPD	Qualifiers
Glyphosate	0	ug/L	0	NC	40	

MATRIX SPIKE SAMPLE: 2153472 ORIGINAL:

****NOTE - The Original Result shown below is a raw result and is only used for the purpose of calculating Matrix Spike percent recoveries. This result is not a final value and cannot be used as such.

Parameter	Original Result	Units	Spike Conc.	MS Result	MS % Rec	% Rec Limit	Qualifiers
Glyphosate	0	ug/L	500	448.493	89.7	70 - 130	

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NELAP Certifications: NJ PA010 , NY 11759 , PA 22-293 DoD ELAP: A2LA 0818.01
State Certifications: DE ID 11 , MA PA0102 , MD 128 , VA 460157 , WV 343

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Workorder: 2058583 K1502365

Lab ID	Sample ID	Prep Method	Prep Batch	Analysis Method	Analysis Batch
2058583001	K1502365-001			EPA 531.1	HPLC/3911
2058583001	K1502365-001			EPA 547	HPLC/3915

ALS Environmental Chain of Custody

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2058583

Project Number: K1502365
Project Manager: Chris Leaf

Lab Code	Sample ID	# of Cont.	Matrix	Sample Date	Sample Time	Lab ID	CARBAM 531.1	GLYPH 547 Amega
K1502365-001	DW-7	4	Drinking Water	3/9/15	1330	Middletown ALS	X	X

KCVD - 2 - 40mL Amber
2 - 125mL Amber
AT 3/11/15

AT 3/11/15 1247

w/QC

Test Comments
CARBAM - 531.1 K1502365-001 Full list for WA Regulations - no compliance report required.

Folder Comments:
Report all metals in mg/L. No DW State form required.

KW 03/12/15

	Y	N	Initials
Custody Seals Present?			
(If present) Seals Intact?			
Received on Ice?			
COC/Lbls Complete			
Cont in Good Cond?			
Correct Containers?			
Correct Samp Vol?			
Correct Preservation?			
Headspace/Volatiles?			

Cooler Temp: °C
Cooler #
Therm ID: T-Hand
Ship Carrier: FedEx UPS DHL
Tracking # 5478 0742 2570

Special Instructions/Comments
Please provide the electronic (PDF and EDD) report to the following e-mail address:
ALKLS.Data@alsglobal.com

CL 3/10/15

H - Test is On Hold P - Test is Authorized for Prep Only

Turnaround Requirements
___ RUSH (Surcharges Apply)
PLEASE CIRCLE WORK DAYS
1 2 3 4 5
✓ STANDARD
Requested FAX Date: ___
Requested Report Date: 03/26/15

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 N
EDD N

Invoice Information
PO# K1502365 ✓
Bill to

Relinquished By: AS 3/10/15 1130 Received By: 3/11/15 0921 Airbill Number:

Page 1

K1502365

✓ **Ship To: Middletown ALS**
ALS Laboratory Group
34 Dogwood Lane
Middletown, PA 17057

PC CL Date 3/10/15
SMO AR Date 3/10/15

Instructions:
Ice ✓
Dry Ice ____
No Ice ____

Shipping:
Overnight ✓
2nd Day ____
Ground ____

Bill to Client Account ____

Comments:

ALS Group USA, Corp.
www.alsglobal.com
An ALS Limited Company

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

April 20, 2015

Analytical Report for Service Request No: K1502368

Jeff Coleman
Longview, City of
W/S Operation Center
P.O. Box 128
Longview, WA 98632

RE: Sentinel Wells

Dear Jeff,

Enclosed are the results of the sample(s) submitted to our laboratory March 09, 2015
For your reference, these analyses have been assigned our service request number **K1502368.**

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 3275. You may also contact me via email at Chris.Leaf@ALSGlobal.com.

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental

Chris Leaf
Project Manager

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 DEC UST	http://dec.alaska.gov/applications/eh/ehllabreports/USTLabs.aspx	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	L14-51
Florida DOH	http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm	E87412
Hawaii DOH	Not available	-
Idaho DHW	http://www.healthandwelfare.idaho.gov/Health/Labs/CertificationDrinkingWaterLabs/tabid/1833/Default.aspx	-
ISO 17025	http://www.pjlabs.com/	L14-50
Louisiana DEQ	http://www.deq.louisiana.gov/portal/DIVISIONS/PublicParticipationandPermitSupport/LouisianaLaboratoryAccreditationProgram.aspx	03016
Maine DHS	Not available	WA01276
Michigan DEQ	http://www.michigan.gov/deq/0,1607,7-135-3307_4131_4156---,00.html	9949
Minnesota DOH	http://www.health.state.mn.us/accreditation	053-999-457
Montana DPHHS	http://www.dphhs.mt.gov/publichealth/	CERT0047
Nevada DEP	http://ndep.nv.gov/bsdw/labservice.htm	WA01276
New Jersey DEP	http://www.nj.gov/dep/oqa/	WA005
North Carolina DWQ	http://www.dwqlab.org/	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/envserv/	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
Wisconsin DNR	http://dnr.wi.gov/	998386840
Wyoming (EPA Region 8)	http://www.epa.gov/region8/water/dwhome/wyomingdi.html	-
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/anlayte is offered by that state.

Case Narrative

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

ALS ENVIRONMENTAL

Client:	Longview, City of	**Service Request No.:**	K1502368
Project:	Sentinel Wells	**Date Received:**	03/09/15
Sample Matrix:	Drinking Water		

Case Narrative

All analyses were performed consistent with the quality assurance program of ALS Environmental. This report contains analytical results for samples designated for Tier II data deliverables. When appropriate to the method, method blank results have been reported with each analytical test. Surrogate recoveries have been reported for all applicable organic analyses. Additional quality control analyses reported herein include: Laboratory Duplicate (DUP), Matrix Spike (MS), Matrix/Duplicate Matrix Spike (MS/DMS), Laboratory Control Sample (LCS), and Laboratory/Duplicate Laboratory Control Sample (LCS/DLCS).

Sample Receipt

One drinking water sample was received for analysis at ALS Environmental on 03/09/15. The sample was received in good condition and consistent with the accompanying chain of custody form. The sample was stored in a refrigerator at 4ºC upon receipt at the laboratory.

General Chemistry Parameters

Chloride by EPA Method 300.0:
The matrix spike recoveries for sample Batch QC were outside control criteria because of suspected matrix interference. Recovery in the Laboratory Control Sample (LCS) was acceptable, which indicated the analytical batch was in control. No further corrective action was taken.

No other anomalies associated with the analysis of this sample were observed.

Total Metals

No anomalies associated with the analysis of this sample were observed.

EDB and DBCP by EPA Method 504.1

No anomalies associated with the analysis of this sample were observed.

Pesticides and Polychlorinated Biphenyls by EPA Method 508.1

Matrix Spike Recovery Exceptions:
The duplicate matrix spike recovery of Endrin for sample Batch QC was outside control criteria. Recovery in the Laboratory Control Sample (LCS) and Matrix Spike was acceptable, which indicated the analytical batch was in control. The matrix spike outlier suggested a potential low bias in this matrix. No further corrective action was appropriate.

No other anomalies associated with the analysis of this sample were observed.

Approved by_____ _____

Chlorinated Acids by EPA Method 515.4

Second Source Exceptions:
The analysis of Chlorinated Herbicides in Drinking Water by EPA 515.4 requires the use of dual column confirmation. The Initial Calibration Verification (ICV) evaluation criteria were not met on the confirmation column for 2,4,5-TP (Silvex) in CAL13913. The ICV criteria were met on the alternate column. The data quality was not affected. No further corrective action was necessary.

Calibration Verification Exceptions:
The analysis of Chlorinated Herbicides in Drinking Water by EPA 515.4 requires the use of dual column confirmation. When the Continuing Calibration Verification (CCV) criterion is met for both columns, the lower of the two sample results is generally reported. The primary evaluation criteria were not met on the confirmation column for Dichloroprop, 2,4-Dichlorophenylacetic Acid, and 2,4-D for CCV 03230032. The results were reported from the column with an acceptable CCV. The data quality was not affected. No further corrective action was necessary.

The analysis of Chlorinated Herbicides in Drinking Water by EPA 515.4 requires the use of dual column confirmation. When the Continuing Calibration Verification (CCV) criterion is met for both columns, the lower of the two sample results is generally reported. The primary evaluation criteria were not met on the confirmation column for Dichloroprop, and 2,4-D for CCV 03230045. The results were reported from the column with an acceptable CCV. The data quality was not affected. No further corrective action was necessary.

No other anomalies associated with the analysis of this sample were observed.

Volatile Organic Compounds by EPA Method 524.2

No anomalies associated with the analysis of this sample were observed.

Semivolatile Organic Compounds by EPA Method 525.2

Lab Control Sample Exceptions:
The upper control criterion was exceeded for Hexachlorocyclopentadiene in Laboratory Control Sample (LCS) KWG1502393-3. The analyte in question was not detected in the associated field samples. The error associated with elevated recovery indicated a high bias. The sample data was not significantly affected. No further corrective action was appropriate.

Matrix Spike Recovery Exceptions:
The matrix spike recovery of Bis(2-ethylhexyl) Phthalate for sample Batch QC was outside control criteria. Recovery in the Laboratory Control Sample (LCS) was acceptable, which indicated the analytical batch was in control. The matrix spike outlier suggested a potential low bias in this matrix. No further corrective action was appropriate.

The upper control criterion was exceeded for the following analyte in Matrix Spike (MS) KWG1502393-1 and Matrix Spike Duplicate (MSD) KWG1502393-2: Hexachlorocyclopentadiene. The analyte in question was not detected in the associated field samples. The error associated with elevated recovery indicated a high bias. The sample data was not significantly affected. No further corrective action was appropriate.

No other anomalies associated with the analysis of this sample were observed.

Endothall by EPA Method 548.1

No anomalies associated with the analysis of this sample were observed.

Approved by_____

Diquat by High Performance Liquid Chromatography

Matrix Spike Recovery Exceptions:
The matrix spike recovery of Diquat for samples KWG1502015-1, and KWG1502015-2 was outside control criteria because of matrix interference. The chromatogram indicated the presence of non-target background components that prevented adequate resolution of the target analyte. As a result, accurate quantitation was not possible. No further corrective action was required.

No other anomalies associated with the analysis of this sample were observed.

Chlorinated Phenols by EPA Method 1653

No anomalies associated with the analysis of this sample were observed.

Glyphosate and Carbamates

These analyses were performed at ALS Environmental, Middletown, PA. The data for these analyses are included in the corresponding section of this report.

Sulfur

This analysis was performed at ALS Environmental, Simi Valley, CA. The data for this analysis is included in the corresponding section of this report.

Approved by_____

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

ALS Environmental

CHAIN OF CUSTODY

57721

001, 005

SR# K150268

COC Set 1 of 2

COC#

1317 South 13th Ave, Kelso, WA 98626 Phone (360) 577-7222 / 800-695-7222 / FAX (360) 636-1068
www.alsglobal.com

Project Name: Sentinel Wells
Project Number:
Project Manager: Jeff Coleman
Company: City of Longview
Address: PO Box 128 Longview WA 98632
Phone #
email
Sampler Signature: T Daly
Sampler Printed Name: T Daly

CLIENT SAMPLE ID	LABID	SAMPLING Date	Time	Matrix	NUMBER OF CONTAINERS	6H: SM 9223 B / Coli L (+/-)	48H: 180.1 / Turbidity	48H: 300.0 / NO2	48H: 300.0 / NO3	48H: SM 2120 B / Color	48H: SM 4500-P E / O Phos	7D: 548.1 / ENDO	7D: 549.2 / DIQ_PARAQ	7D: SM 2540 C / TDS	14D: 335.4 / CN T	14D: 504.1 / EDB DBCP 123TCP	14D: 508.1 / PEST_CL	14D: 515.4 / CL_ACID_HERB	14D: 524.2 / VOC	14D: 525.2 / SVO	14D: 547 / GLYPH	14D: SM 2320 B / Alkalinity Titr	14D: Sulfur Liq / Sulfur	28D: 300.0 / Br	28D: 300.0 / Chloride	28D: 531.1 / CARBAM	28D: SM 2510 B / Conductivity	28D: SM 4500-NH3 G / Ammonia	Remarks
1. ~~DW-9~~		~~1000~~																											
2. DW-9		3/9/15	1000		42	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
3.																													
4.																													
5.																													
6.																													
7.																													
8.																													
9.																													
10.																													

Report Requirements

___ I. Routine Report: Method Blank, Surrogate, as required
___ II. Report Dup., MS, MSD as required
___ III. CLP Like Summary (no raw data)
___ IV. Data Validation Report
___ V. EDD

Invoice Information

P.O.# 36-4548
Bill To: City of Longview
PO Box 128
Longview WA 98632

Turnaround Requirements

___ 24 hr. ___ 48 hr.
___ 5 Day
___ Standard

Requested Report Date

Circle which metals are to be analyzed

Total Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

Dissolved Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

Special Instructions/Comments: Do Not Report

*Indicate State Hydrocarbon Procedure: AK CA WI Northwest Other_____(Circle One)

Relinquished By:	Received By:	Relinquished By:	Received By:	Relinquished By:	Received By:
Signature: T Daly	Signature: [illegible]	Signature	Signature	Signature	Signature
Printed Name: Call	Printed Name: ALS	Printed Name	Printed Name	Printed Name	Printed Name
Firm: 3/9/15 1507	Firm: 3/9/15 1510	Firm	Firm	Firm	Firm
Date/Time	Date/Time	Date/Time	Date/Time	Date/Time	Date/Time

ALS Environmental

CHAIN OF CUSTODY

57721

001, 005

SR# K1505969

COC Set 2 of 2

COC#

1317 South 13th Ave, Kelso, WA 98626 Phone (360) 577-7222 / 800-695-7222 / FAX (360) 636-1068
www.alsglobal.com

Project Name: Sentinel Wells
Project Number:
Project Manager: Jeff Coleman
Company: City of Longview
Address: PO Box 128 Longview WA 98632
Phone #
email
Sampler Signature: T Daly
Sampler Printed Name: T Daly

CLIENT SAMPLE ID	LABID	SAMPLING Date Time	Matrix	NUMBER OF CONTAINERS	28D 245.1 / Hg T	28D 300.0 / F	28D 300.0 / SO4	28D 314.0 / ClO4	30D 1653A / CHLOR_PHEN	180D 1630 / Methyl Hg T	180D 200.7 / Metals T	180D 200.8 / Metals T	999D Calculation / NO2 NO3 Calc	999D SM 2340 B / Hardness Calc	1	2	3	4	5	Remarks
1. DW-9					✓	✓	✓	✓	✓	✓	✓	✓	✓	✓						
2.																				
3.																				
4.																				
5.																				
6.																				
7.																				
8.																				
9.																				
10.																				

Report Requirements

___ I. Routine Report: Method Blank, Surrogate, as required
___ II. Report Dup., MS, MSD as required
___ III. CLP Like Summary (no raw data)
___ IV. Data Validation Report
___ V. EDD

Invoice Information

P.O.# 32-4548
Bill To: City of Longview
PO Box 128
Longview WA 98632

Turnaround Requirements

___ 24 hr. ___ 48 hr.
___ 5 Day
___ Standard

Requested Report Date

Circle which metals are to be analyzed

Total Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

Dissolved Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

Special Instructions/Comments: Do Not Report

*Indicate State Hydrocarbon Procedure: AK CA WI Northwest Other_____(Circle One)

Relinquished By:	Received By:	Relinquished By:	Received By:	Relinquished By:	Received By:
Signature: T Daly	Signature: SWOZF	Signature	Signature	Signature	Signature
Printed Name: Coleman	Printed Name: ALS	Printed Name	Printed Name	Printed Name	Printed Name
Firm: 3/9/15 1507	Firm: 3/9/15 1510	Firm	Firm	Firm	Firm
Date/Time	Date/Time	Date/Time	Date/Time	Date/Time	Date/Time

PC CV

Cooler Receipt and Preservation Form

Client / Project: City of LV Service Request *K15* 07368

Received: 3/9/15 Opened: 3/9/15 By: TO Unloaded: 3/9/15 By: TO

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

   If present, were custody seals intact? Y N If present, were they signed and dated? Y N

Raw Cooler Temp	Corrected. Cooler Temp	Raw Temp Blank	Corrected Temp Blank	Corr. Factor	Thermometer ID	Cooler/COC ID NA	Tracking Number NA	Filed
5.0	5.1	11.8	11.9	+0.1	355			
3.0	2.8	8.9	8.7	-0.2	336			
0.4	0.3	5.2	5.1	-0.1	298			
2.4	2.5	4.7	4.8	+0.1	360			

4. Packing material: *Inserts* *Baggies* *Bubble Wrap* *Gel Packs* *Wet Ice* *Dry Ice* *Sleeves* _____
5. Were custody papers properly filled out (ink, signed, etc.)? NA Y N
6. Did all bottles arrive in good condition (unbroken)? *Indicate in the table below.* 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.* NA Y N
9. 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

SHORT HOLD TIME

Notes, Discrepancies, & Resolutions: _____

Page ____ *of* ____

PC CV

Cooler Receipt and Preservation Form

Client / Project: City of LV Service Request K15 03368

Received: 3/9/15 Opened: 3/9/15 By: [illegible] Unloaded: 3/9/15 By: [illegible]

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

   If present, were custody seals intact? Y N If present, were they signed and dated? Y N

Raw Cooler Temp	Corrected. Cooler Temp	Raw Temp Blank	Corrected Temp Blank	Corr. Factor	Thermometer ID	Cooler/COC ID NA	Tracking Number NA	Filed
3.1	3.1			0	359			
5.3	5.3	5.6	5.6	0	372			
5.2	5.3	5.4	5.5	+0.1	361			
10.9	10.8	13.1	13.0	−0.1	351			
6.8	6.8	5.2	5.2	0	356			

4. Packing material: *Inserts* *Baggies* *Bubble Wrap* *Gel Packs* *Wet Ice* *Dry Ice* *Sleeves* _____
5. Were custody papers properly filled out (ink, signed, etc.)? NA Y N
6. Did all bottles arrive in good condition (unbroken)? *Indicate in the table below.* 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.* NA Y N
9. 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: _____

Page ____ *of* ____

General Chemistry

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

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client:	Longview, City of	**Service Request:**	K1502368
Project:	Sentinel Wells	**Date Collected:**	03/9/15
Sample Matrix:	Drinking Water	**Date Received:**	03/9/15
Analysis Method:	180.1	**Units:**	NTU
Prep Method:	None	**Basis:**	NA

Turbidity

Sample Name	Lab Code	Result	MRL	Dil.	Date Analyzed	Q
DW-9	K1502368-001	**1.40**	0.20	1	03/10/15 14:08	
Method Blank	K1502368-MB1	ND U	0.20	1	03/10/15 14:08	

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502368
Project	Sentinel Wells	**Date Collected:**	NA
Sample Matrix:	Drinking Water	**Date Received:**	NA
		Date Analyzed:	03/10/15

Replicate Sample Summary
General Chemistry Parameters

Sample Name:	Batch QC	**Units:**	NTU
Lab Code:	K1502365-001	**Basis:**	NA

Analyte Name	Analysis Method	MRL	Sample Result	Duplicate Sample K1502365-001DUP1 Result	Average	RPD	RPD Limit
Turbidity	180.1	0.20	4.56	4.64	4.60	2	20

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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502368
Project:	Sentinel Wells	**Date Analyzed:**	03/10/15
Sample Matrix:	Drinking Water	**Date Extracted:**	NA

Lab Control Sample Summary
Turbidity

Analysis Method:	180.1	**Units:**	NTU
Prep Method:	None	**Basis:**	NA
		Analysis Lot:	435823

Sample Name	Lab Code	Result	Spike Amount	% Rec	% Rec Limits
Lab Control Sample	K1502368-LCS1	6.29	6.37	99	90-110

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client:	Longview, City of	**Service Request:**	K1502368
Project:	Sentinel Wells	**Date Collected:**	03/9/15
Sample Matrix:	Drinking Water	**Date Received:**	03/9/15
Analysis Method:	300.0	**Units:**	mg/L
Prep Method:	Method	**Basis:**	NA

Bromide

Sample Name	Lab Code	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
DW-9	K1502368-001	ND U	0.20	2	03/10/15 11:11	3/10/15	
Method Blank	K1502368-MB1	ND U	0.10	1	03/10/15 09:39	3/10/15	

ALS Group USA, Corp.
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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502368
Project	Sentinel Wells	**Date Collected:**	NA
Sample Matrix:	Drinking Water	**Date Received:**	NA
		Date Analyzed:	03/10/15

Replicate Sample Summary
General Chemistry Parameters

Sample Name:	Batch QC	**Units:**	mg/L
Lab Code:	KQ1502285-03	**Basis:**	NA

Analyte Name	Analysis Method	MRL	Sample Result	Duplicate Sample KQ1502285-03DUP Result	Average	RPD	RPD Limit
Bromide	300.0	0.20	ND U	ND U	NC	NC	20

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ALS Group USA, Corp.
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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502368
Project:	Sentinel Wells	**Date Collected:**	N/A
Sample Matrix:	Drinking Water	**Date Received:**	N/A
		Date Analyzed:	03/10/15
		Date Extracted:	03/10/15

Duplicate Matrix Spike Summary
Bromide

Sample Name:	Batch QC	**Units:**	mg/L
Lab Code:	KQ1502285-03	**Basis:**	NA
Analysis Method:	300.0		
Prep Method:	Method		

		Matrix Spike KQ1502285-03MS			Duplicate Matrix Spike KQ1502285-03DMS					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Bromide	ND U	9.44	10.0	94	9.58	10.0	96	90-110	2	20

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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502368
Project:	Sentinel Wells	**Date Analyzed:**	03/10/15
Sample Matrix:	Drinking Water	**Date Extracted:**	03/10/15

Lab Control Sample Summary
Bromide

Analysis Method:	300.0	**Units:**	mg/L
Prep Method:	Method	**Basis:**	NA
		Analysis Lot:	435845

Sample Name	Lab Code	Result	Spike Amount	% Rec	% Rec Limits
Lab Control Sample	K1502368-LCS1	2.30	2.50	92	90-110

ALS Group USA, Corp.
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Analytical Report

Client:	Longview, City of	**Service Request:**	K1502368
Project:	Sentinel Wells	**Date Collected:**	03/9/15
Sample Matrix:	Drinking Water	**Date Received:**	03/9/15
Analysis Method:	300.0	**Units:**	mg/L
Prep Method:	Method	**Basis:**	NA

Chloride

Sample Name	Lab Code	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
DW-9	K1502368-001	**5.22**	0.40	2	03/10/15 11:11	3/10/15	
Method Blank	K1502368-MB1	ND U	0.20	1	03/10/15 09:39	3/10/15	

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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502368
Project	Sentinel Wells	**Date Collected:**	NA
Sample Matrix:	Drinking Water	**Date Received:**	NA
		Date Analyzed:	03/10/15

Replicate Sample Summary
General Chemistry Parameters

Sample Name:	Batch QC	**Units:**	mg/L
Lab Code:	KQ1502285-03	**Basis:**	NA

Analyte Name	Analysis Method	MRL	Sample Result	Duplicate Sample KQ1502285-03DUP Result	Average	RPD	RPD Limit
Chloride	300.0	0.40	13.5	13.6	13.5	<1	20

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ALS Group USA, Corp.
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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502368
Project:	Sentinel Wells	**Date Collected:**	N/A
Sample Matrix:	Drinking Water	**Date Received:**	N/A
		Date Analyzed:	03/10/15
		Date Extracted:	03/10/15

Duplicate Matrix Spike Summary
Chloride

Sample Name:	Batch QC	**Units:**	mg/L
Lab Code:	KQ1502285-03	**Basis:**	NA
Analysis Method:	300.0		
Prep Method:	Method		

		Matrix Spike KQ1502285-03MS			**Duplicate Matrix Spike** KQ1502285-03DMS					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Chloride	13.5	22.3	10.0	88 *	22.2	10.0	87 *	90-110	<1	20

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ALS Group USA, Corp.
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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502368
Project:	Sentinel Wells	**Date Analyzed:**	03/10/15
Sample Matrix:	Drinking Water	**Date Extracted:**	03/10/15

Lab Control Sample Summary
Chloride

Analysis Method:	300.0	**Units:**	mg/L
Prep Method:	Method	**Basis:**	NA
		Analysis Lot:	435845

Sample Name	Lab Code	Result	Spike Amount	% Rec	% Rec Limits
Lab Control Sample	K1502368-LCS1	4.72	5.00	94	90-110

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client:	Longview, City of	**Service Request:**	K1502368
Project:	Sentinel Wells	**Date Collected:**	03/9/15
Sample Matrix:	Drinking Water	**Date Received:**	03/9/15
Analysis Method:	300.0	**Units:**	mg/L
Prep Method:	Method	**Basis:**	NA

Fluoride

Sample Name	Lab Code	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
DW-9	K1502368-001	ND U	0.20	2	03/10/15 11:11	3/10/15	
Method Blank	K1502368-MB1	ND U	0.10	1	03/10/15 09:39	3/10/15	

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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502368
Project	Sentinel Wells	**Date Collected:**	NA
Sample Matrix:	Drinking Water	**Date Received:**	NA
		Date Analyzed:	03/10/15

Replicate Sample Summary
General Chemistry Parameters

Sample Name:	Batch QC	**Units:**	mg/L
Lab Code:	KQ1502285-03	**Basis:**	NA

Analyte Name	Analysis Method	MRL	Sample Result	Duplicate Sample KQ1502285-03DUP Result	Average	RPD	RPD Limit
Fluoride	300.0	0.20	0.22	ND U	NC	NC	20

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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502368
Project:	Sentinel Wells	**Date Collected:**	N/A
Sample Matrix:	Drinking Water	**Date Received:**	N/A
		Date Analyzed:	03/10/15
		Date Extracted:	03/10/15

Duplicate Matrix Spike Summary
Fluoride

Sample Name:	Batch QC	**Units:**	mg/L
Lab Code:	KQ1502285-03	**Basis:**	NA
Analysis Method:	300.0		
Prep Method:	Method		

		Matrix Spike KQ1502285-03MS			Duplicate Matrix Spike KQ1502285-03DMS					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Fluoride	0.22	10.0	10.0	98	10.2	10.0	100	90-110	1	20

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dba ALS Environmental

QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502368
Project:	Sentinel Wells	**Date Analyzed:**	03/10/15
Sample Matrix:	Drinking Water	**Date Extracted:**	03/10/15

Lab Control Sample Summary
Fluoride

Analysis Method:	300.0	**Units:**	mg/L
Prep Method:	Method	**Basis:**	NA
		Analysis Lot:	435845

Sample Name	Lab Code	Result	Spike Amount	% Rec	% Rec Limits
Lab Control Sample	K1502368-LCS1	5.12	5.00	102	90-110

ALS Group USA, Corp.
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Analytical Report

Client:	Longview, City of	**Service Request:**	K1502368
Project:	Sentinel Wells	**Date Collected:**	03/9/15
Sample Matrix:	Drinking Water	**Date Received:**	03/9/15
Analysis Method:	300.0	**Units:**	mg/L
Prep Method:	Method	**Basis:**	NA

Nitrite as Nitrogen

Sample Name	Lab Code	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
DW-9	K1502368-001	ND U	0.10	2	03/10/15 11:11	3/10/15	
Method Blank	K1502368-MB1	ND U	0.050	1	03/10/15 09:39	3/10/15	

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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502368
Project	Sentinel Wells	**Date Collected:**	NA
Sample Matrix:	Drinking Water	**Date Received:**	NA
		Date Analyzed:	03/10/15

Replicate Sample Summary
General Chemistry Parameters

Sample Name:	Batch QC	**Units:**	mg/L
Lab Code:	KQ1502284-03	**Basis:**	NA

Analyte Name	Analysis Method	MRL	Sample Result	Duplicate Sample KQ1502284-03DUP Result	Average	RPD	RPD Limit
Nitrite as Nitrogen	300.0	0.10	ND U	ND U	NC	NC	20

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ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502368
Project:	Sentinel Wells	**Date Collected:**	N/A
Sample Matrix:	Drinking Water	**Date Received:**	N/A
		Date Analyzed:	03/10/15
		Date Extracted:	03/10/15

Duplicate Matrix Spike Summary
Nitrite as Nitrogen

Sample Name:	Batch QC	**Units:**	mg/L
Lab Code:	KQ1502284-03	**Basis:**	NA
Analysis Method:	300.0		
Prep Method:	Method		

		Matrix Spike KQ1502284-03MS			Duplicate Matrix Spike KQ1502284-03DMS					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Nitrite as Nitrogen	ND U	10.1	10.0	101	10.2	10.0	102	90-110	<1	20

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ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502368
Project:	Sentinel Wells	**Date Analyzed:**	03/10/15
Sample Matrix:	Drinking Water	**Date Extracted:**	03/10/15

Lab Control Sample Summary
Nitrite as Nitrogen

Analysis Method:	300.0	**Units:**	mg/L
Prep Method:	Method	**Basis:**	NA
		Analysis Lot:	435845

Sample Name	Lab Code	Result	Spike Amount	% Rec	% Rec Limits
Lab Control Sample	K1502368-LCS1	2.42	2.50	97	90-110

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client:	Longview, City of	**Service Request:**	K1502368
Project:	Sentinel Wells	**Date Collected:**	03/9/15
Sample Matrix:	Drinking Water	**Date Received:**	03/9/15
Analysis Method:	300.0	**Units:**	mg/L
Prep Method:	Method	**Basis:**	NA

Nitrate as Nitrogen

Sample Name	Lab Code	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
DW-9	K1502368-001	ND U	0.10	2	03/10/15 11:11	3/10/15	
Method Blank	K1502368-MB1	ND U	0.050	1	03/10/15 09:39	3/10/15	

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502368
Project	Sentinel Wells	**Date Collected:**	NA
Sample Matrix:	Drinking Water	**Date Received:**	NA
		Date Analyzed:	03/10/15

Replicate Sample Summary
General Chemistry Parameters

Sample Name:	Batch QC	**Units:**	mg/L
Lab Code:	KQ1502284-03	**Basis:**	NA

Analyte Name	Analysis Method	MRL	Sample Result	Duplicate Sample KQ1502284-03DUP Result	Average	RPD	RPD Limit
Nitrate as Nitrogen	300.0	0.10	ND U	ND U	NC	NC	20

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ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502368
Project:	Sentinel Wells	**Date Collected:**	N/A
Sample Matrix:	Drinking Water	**Date Received:**	N/A
		Date Analyzed:	03/10/15
		Date Extracted:	03/10/15

Duplicate Matrix Spike Summary
Nitrate as Nitrogen

Sample Name:	Batch QC	**Units:**	mg/L
Lab Code:	KQ1502284-03	**Basis:**	NA
Analysis Method:	300.0		
Prep Method:	Method		

		Matrix Spike KQ1502284-03MS				**Duplicate Matrix Spike** KQ1502284-03DMS					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**% Rec**		**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Nitrate as Nitrogen	ND U	9.16	10.0	92		9.32	10.0	93	90-110	2	20

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ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502368
Project:	Sentinel Wells	**Date Analyzed:**	03/10/15
Sample Matrix:	Drinking Water	**Date Extracted:**	03/10/15

Lab Control Sample Summary
Nitrate as Nitrogen

Analysis Method:	300.0	**Units:**	mg/L
Prep Method:	Method	**Basis:**	NA
		Analysis Lot:	435845

Sample Name	Lab Code	Result	Spike Amount	% Rec	% Rec Limits
Lab Control Sample	K1502368-LCS1	2.33	2.50	93	90-110

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client:	Longview, City of	**Service Request:**	K1502368
Project:	Sentinel Wells	**Date Collected:**	03/9/15
Sample Matrix:	Drinking Water	**Date Received:**	03/9/15
Analysis Method:	300.0	**Units:**	mg/L
Prep Method:	Method	**Basis:**	NA

Sulfate

Sample Name	Lab Code	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
DW-9	K1502368-001	**2.14**	0.20	2	03/10/15 11:11	3/10/15	
Method Blank	K1502368-MB1	ND U	0.10	1	03/10/15 09:39	3/10/15	

ALS Group USA, Corp.
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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502368
Project	Sentinel Wells	**Date Collected:**	NA
Sample Matrix:	Drinking Water	**Date Received:**	NA
		Date Analyzed:	03/10/15

Replicate Sample Summary
General Chemistry Parameters

Sample Name:	Batch QC	**Units:**	mg/L
Lab Code:	KQ1502285-03	**Basis:**	NA

Analyte Name	Analysis Method	MRL	Sample Result	Duplicate Sample KQ1502285-03DUP Result	Average	RPD	RPD Limit
Sulfate	300.0	0.20	2.76	2.75	2.75	<1	20

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ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502368
Project:	Sentinel Wells	**Date Collected:**	N/A
Sample Matrix:	Drinking Water	**Date Received:**	N/A
		Date Analyzed:	03/10/15
		Date Extracted:	03/10/15

Duplicate Matrix Spike Summary
Sulfate

Sample Name:	Batch QC	**Units:**	mg/L
Lab Code:	KQ1502285-03	**Basis:**	NA
Analysis Method:	300.0		
Prep Method:	Method		

		Matrix Spike KQ1502285-03MS			Duplicate Matrix Spike KQ1502285-03DMS					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Sulfate	2.76	12.0	10.0	92	12.0	10.0	93	90-110	<1	20

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ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502368
Project:	Sentinel Wells	**Date Analyzed:**	03/10/15
Sample Matrix:	Drinking Water	**Date Extracted:**	03/10/15

Lab Control Sample Summary
Sulfate

Analysis Method:	300.0	**Units:**	mg/L
Prep Method:	Method	**Basis:**	NA
		Analysis Lot:	435845

Sample Name	Lab Code	Result	Spike Amount	% Rec	% Rec Limits
Lab Control Sample	K1502368-LCS1	4.87	5.00	97	90-110

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client:	Longview, City of	**Service Request:**	K1502368
Project:	Sentinel Wells	**Date Collected:**	03/9/15
Sample Matrix:	Drinking Water	**Date Received:**	03/9/15
Analysis Method:	314.0	**Units:**	ug/L
Prep Method:	None	**Basis:**	NA

Perchlorate

Sample Name	Lab Code	Result	MRL	Dil.	Date Analyzed	Q
DW-9	K1502368-001	ND U	1.0	1	03/31/15 13:01	
Method Blank	K1502368-MB1	ND U	1.0	1	03/31/15 11:44	

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502368
Project	Sentinel Wells	**Date Collected:**	NA
Sample Matrix:	Drinking Water	**Date Received:**	NA
		Date Analyzed:	03/31/15

Replicate Sample Summary
General Chemistry Parameters

Sample Name:	Batch QC	**Units:**	ug/L
Lab Code:	K1502415-001	**Basis:**	NA

Analyte Name	Analysis Method	MRL	Sample Result	Duplicate Sample K1502415-001DUP Result	Average	RPD	RPD Limit
Perchlorate	314.0	1.0	ND U	ND U	NC	NC	20

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ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502368
Project:	Sentinel Wells	**Date Collected:**	N/A
Sample Matrix:	Drinking Water	**Date Received:**	N/A
		Date Analyzed:	03/31/15
		Date Extracted:	NA

Duplicate Matrix Spike Summary
Perchlorate

Sample Name:	Batch QC	**Units:**	ug/L
Lab Code:	K1502415-001	**Basis:**	NA
Analysis Method:	314.0		
Prep Method:	None		

		Matrix Spike K1502415-001MS			Duplicate Matrix Spike K1502415-001DMS					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Perchlorate	ND U	10.7	10.0	107	9.7	10.0	97	80-120	10	20

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ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502368
Project:	Sentinel Wells	**Date Analyzed:**	03/31/15
Sample Matrix:	Drinking Water	**Date Extracted:**	NA

Lab Control Sample Summary
Perchlorate

Analysis Method:	314.0	**Units:**	ug/L
Prep Method:	None	**Basis:**	NA
		Analysis Lot:	438526

Sample Name	Lab Code	Result	Spike Amount	% Rec	% Rec Limits
Lab Control Sample	K1502368-LCS1	15.4	16.8	92	85-115

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client:	Longview, City of	**Service Request:**	K1502368
Project:	Sentinel Wells	**Date Collected:**	03/9/15
Sample Matrix:	Drinking Water	**Date Received:**	03/9/15
Analysis Method:	335.4	**Units:**	mg/L
Prep Method:	Method	**Basis:**	NA

Cyanide, Total

Sample Name	Lab Code	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
DW-9	K1502368-001	ND U	0.010	1	03/11/15 10:44	3/11/15	
Method Blank	K1502368-MB1	ND U	0.010	1	03/11/15 10:44	3/11/15	

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502368
Project	Sentinel Wells	**Date Collected:**	NA
Sample Matrix:	Drinking Water	**Date Received:**	NA
		Date Analyzed:	03/11/15

Replicate Sample Summary
General Chemistry Parameters

Sample Name:	Batch QC	**Units:**	mg/L
Lab Code:	K1502415-001	**Basis:**	NA

Analyte Name	Analysis Method	MRL	Sample Result	Duplicate Sample K1502415-001DUP Result	Average	RPD	RPD Limit
Cyanide, Total	335.4	0.010	ND U	ND U	NC	NC	20

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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502368
Project:	Sentinel Wells	**Date Collected:**	N/A
Sample Matrix:	Drinking Water	**Date Received:**	N/A
		Date Analyzed:	03/11/15
		Date Extracted:	03/11/15

Duplicate Matrix Spike Summary
Cyanide, Total

Sample Name:	Batch QC	**Units:**	mg/L
Lab Code:	K1502415-001	**Basis:**	NA
Analysis Method:	335.4		
Prep Method:	Method		

		Matrix Spike K1502415-001MS			Duplicate Matrix Spike K1502415-001DMS					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Cyanide, Total	ND U	0.095	0.100	94	0.104	0.100	104	90-110	9	20

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ALS Group USA, Corp.
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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502368
Project:	Sentinel Wells	**Date Analyzed:**	03/11/15
Sample Matrix:	Drinking Water	**Date Extracted:**	03/11/15

Lab Control Sample Summary
Cyanide, Total

Analysis Method:	335.4	**Units:**	mg/L
Prep Method:	Method	**Basis:**	NA
		Analysis Lot:	436013

Sample Name	Lab Code	Result	Spike Amount	% Rec	% Rec Limits
Lab Control Sample	K1502368-LCS1	0.147	0.150	98	90-110

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Analytical Report

Client:	Longview, City of	**Service Request:**	K1502368
Project:	Sentinel Wells	**Date Collected:**	03/9/15
Sample Matrix:	Drinking Water	**Date Received:**	03/9/15
Analysis Method:	Calculation	**Units:**	mg/L
Prep Method:	None	**Basis:**	NA

Nitrate+Nitrite as Nitrogen

Sample Name	Lab Code	Result	MRL	Dil.	Date Analyzed	Q
DW-9	K1502368-001	ND U	0.20	1	03/10/15 11:11	

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Analytical Report

Client:	Longview, City of	**Service Request:**	K1502368
Project:	Sentinel Wells	**Date Collected:**	03/9/15
Sample Matrix:	Drinking Water	**Date Received:**	03/9/15
Analysis Method:	SM 2120 B	**Units:**	ColorUnits
Prep Method:	None	**Basis:**	NA

Color

Sample Name	Lab Code	Result	MRL	Dil.	Date Analyzed	Q
DW-9	K1502368-001	**15.0**	5.0	1	03/10/15 09:42	
Method Blank	K1502368-MB1	ND U	5.0	1	03/10/15 09:30	

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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502368
Project	Sentinel Wells	**Date Collected:**	NA
Sample Matrix:	Drinking Water	**Date Received:**	NA
Analysis Method:	SM 2120 B	**Units:**	ColorUnits
Prep Method:	None	**Basis:**	NA

Replicate Sample Summary
Color

Sample Name:	Lab Code:	MRL	Sample Result	Duplicate Result	Average	RPD	RPD Limit	Date Analyzed
Batch QC	K1502365-001DUP1	5.0	30.0	30.0	30.0	<1	20	03/10/15
Batch QC	K1502365-001DUP2	5.0	30.0	30.0	30.0	<1	20	03/10/15

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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502368
Project:	Sentinel Wells	**Date Analyzed:**	03/10/15
Sample Matrix:	Drinking Water	**Date Extracted:**	NA

Lab Control Sample Summary
Color

Analysis Method:	SM 2120 B	**Units:**	ColorUnits
Prep Method:	None	**Basis:**	NA
		Analysis Lot:	435586

Sample Name	Lab Code	Result	Spike Amount	% Rec	% Rec Limits
Lab Control Sample	K1502368-LCS1	50.0	50.0	100	85-115

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Analytical Report

Client:	Longview, City of	**Service Request:**	K1502368
Project:	Sentinel Wells	**Date Collected:**	03/9/15
Sample Matrix:	Drinking Water	**Date Received:**	03/9/15
Analysis Method:	SM 2320 B	**Units:**	mg/L
Prep Method:	None	**Basis:**	NA

Alkalinity as CaCO3, Total

Sample Name	Lab Code	Result	MRL	Dil.	Date Analyzed	Q
DW-9	K1502368-001	**87.0**	2.0	1	03/14/15 14:15	
Method Blank	K1502368-MB1	ND U	2.0	1	03/14/15 14:15	

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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502368
Project	Sentinel Wells	**Date Collected:**	NA
Sample Matrix:	Drinking Water	**Date Received:**	NA
Analysis Method:	SM 2320 B	**Units:**	mg/L
Prep Method:	None	**Basis:**	NA

Replicate Sample Summary
Alkalinity as CaCO3, Total

Sample Name:	Lab Code:	MRL	Sample Result	Duplicate Result	Average	RPD	RPD Limit	Date Analyzed
Batch QC	K1502190-001DUP	2.0	66.0	66.0	66.0	<1	20	03/14/15
Batch QC	K1502416-001DUP	2.0	145	145	145	<1	20	03/14/15

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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502368
Project:	Sentinel Wells	**Date Analyzed:**	03/14/15
Sample Matrix:	Drinking Water	**Date Extracted:**	NA

Lab Control Sample Summary
Alkalinity as CaCO3, Total

Analysis Method:	SM 2320 B	**Units:**	mg/L
Prep Method:	None	**Basis:**	NA
		Analysis Lot:	436281

Sample Name	Lab Code	Result	Spike Amount	% Rec	% Rec Limits
Lab Control Sample	K1502368-LCS1	34.6	34.4	101	90-110

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Analytical Report

Client:	Longview, City of	**Service Request:**	K1502368
Project:	Sentinel Wells	**Date Collected:**	03/9/15
Sample Matrix:	Drinking Water	**Date Received:**	03/9/15
Analysis Method:	SM 2510 B	**Units:**	uMHOS/cm
Prep Method:	None	**Basis:**	NA

Conductivity at 25 Degrees Celsius

Sample Name	Lab Code	Result	MRL	Dil.	Date Analyzed	Q
DW-9	K1502368-001	**212**	2.0	1	03/17/15 09:23	
Method Blank	K1502368-MB1	ND U	2.0	1	03/17/15 09:23	
Method Blank	K1502368-MB2	ND U	2.0	1	03/17/15 09:23	

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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502368
Project	Sentinel Wells	**Date Collected:**	03/09/15
Sample Matrix:	Drinking Water	**Date Received:**	03/09/15
		Date Analyzed:	03/17/15

Replicate Sample Summary
General Chemistry Parameters

Sample Name:	DW-9	**Units:**	uMHOS/cm
Lab Code:	K1502368-001	**Basis:**	NA

Analyte Name	Analysis Method	MRL	Sample Result	Duplicate Sample K1502368-001DUP Result	Average	RPD	RPD Limit
Conductivity at 25 Degrees Celsius	SM 2510 B	2.0	212	212	212	<1	20

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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502368
Project:	Sentinel Wells	**Date Analyzed:**	03/17/15
Sample Matrix:	Drinking Water	**Date Extracted:**	NA

Lab Control Sample Summary
Conductivity at 25 Degrees Celsius

Analysis Method:	SM 2510 B	**Units:**	uMHOS/cm
Prep Method:	None	**Basis:**	NA
		Analysis Lot:	436633

Sample Name	Lab Code	Result	Spike Amount	% Rec	% Rec Limits
Lab Control Sample	K1502368-LCS1	317	289	110	86-113

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Analytical Report

Client:	Longview, City of	**Service Request:**	K1502368
Project:	Sentinel Wells	**Date Collected:**	03/9/15
Sample Matrix:	Drinking Water	**Date Received:**	03/9/15
Analysis Method:	SM 2540 C	**Units:**	mg/L
Prep Method:	None	**Basis:**	NA

Solids, Total Dissolved

Sample Name	Lab Code	Result	MRL	Dil.	Date Analyzed	Q
DW-9	K1502368-001	**157**	10	1	03/11/15 13:02	
Method Blank	K1502368-MB1	ND U	5.0	1	03/11/15 13:02	
Method Blank	K1502368-MB2	ND U	5.0	1	03/11/15 13:02	

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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502368
Project	Sentinel Wells	**Date Collected:**	NA
Sample Matrix:	Drinking Water	**Date Received:**	NA
Analysis Method:	SM 2540 C	**Units:**	mg/L
Prep Method:	None	**Basis:**	NA

Replicate Sample Summary
Solids, Total Dissolved

Sample Name:	Lab Code:	MRL	Sample Result	Duplicate Result	Average	RPD	RPD Limit	Date Analyzed
Batch QC	K1502365-001DUP1	10	170	160	165	6	10	03/11/15
Batch QC	K1502415-001DUP	10	474	468	471	1	10	03/11/15

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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502368
Project:	Sentinel Wells	**Date Analyzed:**	03/11/15
Sample Matrix:	Drinking Water	**Date Extracted:**	NA

Lab Control Sample Summary
Solids, Total Dissolved

Analysis Method:	SM 2540 C	**Units:**	mg/L
Prep Method:	None	**Basis:**	NA
		Analysis Lot:	435923

Sample Name	Lab Code	Result	Spike Amount	% Rec	% Rec Limits
Lab Control Sample	K1502368-LCS1	1260	1300	97	85-115

ALS Group USA, Corp.
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Analytical Report

Client:	Longview, City of	**Service Request:**	K1502368
Project:	Sentinel Wells	**Date Collected:**	03/9/15
Sample Matrix:	Drinking Water	**Date Received:**	03/9/15
Analysis Method:	SM 4500-NH3 G	**Units:**	mg/L
Prep Method:	Method	**Basis:**	NA

Ammonia as Nitrogen

Sample Name	Lab Code	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
DW-9	K1502368-001	**0.162**	0.050	1	03/10/15 11:47	3/10/15	
Method Blank	K1502368-MB1	ND U	0.050	1	03/10/15 11:47	3/10/15	

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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502368
Project	Sentinel Wells	**Date Collected:**	NA
Sample Matrix:	Drinking Water	**Date Received:**	NA
Analysis Method:	SM 4500-NH3 G	**Units:**	mg/L
Prep Method:	Method	**Basis:**	NA

Replicate Sample Summary
Ammonia as Nitrogen

Sample Name:	Lab Code:	MRL	Sample Result	Duplicate Result	Average	RPD	RPD Limit	Date Analyzed
Batch QC	K1502184-001DUP	0.050	0.050 J	0.055	0.0522	10	20	03/10/15
Batch QC	K1502326-001DUP	0.50	26.3	26.0	26.1	1	20	03/10/15

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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502368
Project:	Sentinel Wells	**Date Collected:**	N/A
Sample Matrix:	Drinking Water	**Date Received:**	N/A
		Date Analyzed:	03/10/15
		Date Extracted:	03/10/15

Duplicate Matrix Spike Summary
Ammonia as Nitrogen

Sample Name:	Batch QC	**Units:**	mg/L
Lab Code:	K1502184-001	**Basis:**	NA
Analysis Method:	SM 4500-NH3 G		
Prep Method:	Method		

		Matrix Spike K1502184-001MS			**Duplicate Matrix Spike** K1502184-001DMS					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Ammonia as Nitrogen	0.050 J	2.12	2.00	104	2.07	2.00	101	90-110	3	20

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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502368
Project:	Sentinel Wells	**Date Collected:**	N/A
Sample Matrix:	Drinking Water	**Date Received:**	N/A
		Date Analyzed:	03/10/15
		Date Extracted:	03/10/15

Duplicate Matrix Spike Summary
Ammonia as Nitrogen

Sample Name:	Batch QC	**Units:**	mg/L
Lab Code:	K1502326-001	**Basis:**	NA
Analysis Method:	SM 4500-NH3 G		
Prep Method:	Method		

		Matrix Spike K1502326-001MS			**Duplicate Matrix Spike** K1502326-001DMS					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Ammonia as Nitrogen	26.3	46.6	20.0	101	47.0	20.0	104	90-110	3	20

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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502368
Project:	Sentinel Wells	**Date Analyzed:**	03/10/15
Sample Matrix:	Drinking Water	**Date Extracted:**	03/10/15

Lab Control Sample Summary
Ammonia as Nitrogen

Analysis Method:	SM 4500-NH3 G	**Units:**	mg/L
Prep Method:	Method	**Basis:**	NA
		Analysis Lot:	435737

Sample Name	Lab Code	Result	Spike Amount	% Rec	% Rec Limits
Lab Control Sample	K1502368-LCS1	15.3	15.1	102	90-110

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Analytical Report

Client:	Longview, City of	**Service Request:**	K1502368
Project:	Sentinel Wells	**Date Collected:**	03/9/15
Sample Matrix:	Drinking Water	**Date Received:**	03/9/15
Analysis Method:	SM 4500-P E	**Units:**	mg/L
Prep Method:	None	**Basis:**	NA

Orthophosphate as Phosphorus

Sample Name	Lab Code	Result	MRL	Dil.	Date Analyzed	Q
DW-9	K1502368-001	**0.60**	0.25	5	03/10/15 15:18	
Method Blank	K1502368-MB1	ND U	0.050	1	03/10/15 15:18	

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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502368
Project	Sentinel Wells	**Date Collected:**	NA
Sample Matrix:	Drinking Water	**Date Received:**	NA
		Date Analyzed:	03/10/15

Replicate Sample Summary
General Chemistry Parameters

Sample Name:	Batch QC	**Units:**	mg/L
Lab Code:	K1502365-001	**Basis:**	NA

Analyte Name	Analysis Method	MRL	Sample Result	Duplicate Sample K1502365-001DUP1 Result	Average	RPD	RPD Limit
Orthophosphate as Phosphorus	SM 4500-P E	0.25	0.52	0.53	0.524	1	20

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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502368
Project:	Sentinel Wells	**Date Collected:**	N/A
Sample Matrix:	Drinking Water	**Date Received:**	N/A
		Date Analyzed:	03/10/15
		Date Extracted:	NA

Duplicate Matrix Spike Summary
Orthophosphate as Phosphorus

Sample Name:	Batch QC	**Units:**	mg/L
Lab Code:	K1502365-001	**Basis:**	NA
Analysis Method:	SM 4500-P E		
Prep Method:	None		

		Matrix Spike K1502365-001MS			**Duplicate Matrix Spike** K1502365-001DMS					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Orthophosphate as Phosphorus	0.52	0.98	0.40	115	1.01	0.40	121	75-125	5	20

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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502368
Project:	Sentinel Wells	**Date Analyzed:**	03/10/15
Sample Matrix:	Drinking Water	**Date Extracted:**	NA

Lab Control Sample Summary
Orthophosphate as Phosphorus

Analysis Method:	SM 4500-P E	**Units:**	mg/L
Prep Method:	None	**Basis:**	NA
		Analysis Lot:	435715

Sample Name	Lab Code	Result	Spike Amount	% Rec	% Rec Limits
Lab Control Sample	K1502368-LCS1	6.29	6.1	103	85-115
Lab Control Sample	K1502368-LCS2	6.31	6.1	104	85-115
Lab Control Sample	K1502368-LCS3	6.27	6.1	103	85-115
Lab Control Sample	K1502368-LCS4	6.36	6.1	105	85-115

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Analytical Report

Client:	Longview, City of	**Service Request:**	K1502368
Project:	Sentinel Wells	**Date Collected:**	3/9/2015
Sample Matrix:	Drinking water	**Date Received:**	3/9/2015

Colilert, E. Coli

Prep Method: NONE
Analysis Method: SM 9223B Basis: NA
Test Notes:

Sample Name	Lab Code	MRL	Date Analyzed	Time Test Started		Result	Result Notes
DW-9	K1502368-001	1	3/9/2015	17:19	hrs	Absent	

SM *Standard Methods for the Examination of Water and Wastewater* , 20th Ed., 1998.

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Analytical Report

Client:	Longview, City of	**Service Request:**	K1502368
Project:	Sentinel Wells	**Date Collected:**	3/9/2015
Sample Matrix:	Drinking water	**Date Received:**	3/9/2015

Colilert, T. Coli

Prep Method: NONE
Analysis Method: SM 9223B Basis: NA
Test Notes:

Sample Name	Lab Code	MRL	Date Analyzed	Time Test Started		Result	Result Notes
DW-9	K1502368-001	1	3/9/2015	17:19	hrs	Absent	

SM *Standard Methods for the Examination of Water and Wastewater* , 20th Ed., 1998.

Metals

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www.alsglobal.com

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Analytical Report

Client:	Longview, City of	**Service Request:**	K1502368
Project:	Sentinel Wells	**Date Collected:**	03/09/15
Sample Matrix:	Drinking water	**Date Received:**	03/09/15

Hardness as CaCO3

Prep Method:	CLAA	Units:	mg/L (ppm)
Analysis Method:	200.7/SM 2340B	Basis:	NA
Test Notes:			

Sample Name	Lab Code	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
DW-9	K1502368-001	0.07	1	03/13/15	03/16/15	76.1	
Method Blank	K1502368-MB	0.07	1	03/13/15	03/16/15	ND	

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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502368
Project:	Sentinel Wells	**Date Collected:**	NA
Sample Matrix:	Drinking water	**Date Received:**	NA
		Date Extracted:	03/13/15
		Date Analyzed:	03/16/15

Duplicate Summary
Metals

Sample Name:	Batch QC	Units:	mg/L (ppm)
Lab Code:	K1502330-001D	Basis:	NA
Test Notes:			

Analyte	Prep Method	Analysis Method	MRL	Sample Result	Duplicate Sample Result	Average	Relative Percent Difference	Result Notes
Hardness as CaCO3	CLAA	200.7/SM 2340B	0.07	99.8	101	100	1	

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Analytical Report

Client:	Longview, City of	**Service Request:**	K1502368
Project:	Sentinel Wells	**Date Collected:**	03/09/15
Sample Matrix:	Drinking water	**Date Received:**	03/09/15

Methyl Mercury

Prep Method:	Method	Units:	ng/L
Analysis Method:	1630	Basis:	NA
Test Notes:			

Sample Name	Lab Code	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
DW-9	K1502368-001	0.1	1	03/16/15	03/17/15	ND	
Method Blank 1	K1502368-MB1	0.1	1	03/16/15	03/17/15	ND	
Method Blank 2	K1502368-MB2	0.1	1	03/16/15	03/17/15	ND	
Method Blank 3	K1502368-MB3	0.1	1	03/16/15	03/17/15	ND	

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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502368
Project:	Sentinel Wells	**Date Collected:**	NA
Sample Matrix:	Drinking water	**Date Received:**	NA
		Date Extracted:	03/16/15
		Date Analyzed:	03/17/15

Matrix Spike/Duplicate Matrix Spike Summary
Metals

Sample Name:	Batch QC		Units:	ng/L
Lab Code:	K1502365-001MS,	K1502365-001MS	Basis:	NA
Test Notes:				

									Percent Recovery				
				Spike Level			Spike Result				CAS	Relative	
Analyte	**Prep Method**	**Analysis Method**	**MRL**	**MS**	**DMS**	**Sample Result**	**MS**	**DMS**	**MS**	**DMS**	**Acceptance Limits**	**Percent Difference**	**Result Notes**
Mercury, Methyl	Method	1630	0.1	2.22	2.22	ND	2.50	2.43	113	109	65-135	3	

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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502368
Project:	Sentinel Wells	**Date Collected:**	NA
LCS Matrix:	Water	**Date Received:**	NA
		Date Extracted:	03/16/15
		Date Analyzed:	03/17/15

Ongoing Precision and Recovery (OPR) Sample Summary
Metals

Sample Name: Ongoing Precision and Recovery (Initial)

Units: ng/L
Basis: NA

Test Notes:

Analyte	Prep Method	Analysis Method	True Value	Result	Percent Recovery	CAS Percent Recovery Acceptance Limits	Result Notes
Mercury, Methyl	Method	1630	2.22	2.56	115	67-133	

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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502368
Project:	Sentinel Wells	**Date Collected:**	NA
LCS Matrix:	Water	**Date Received:**	NA
		Date Extracted:	03/16/15
		Date Analyzed:	03/17/15

Ongoing Precision and Recovery (OPR) Sample Summary
Metals

Sample Name: Ongoing Precision and Recovery (Final)

Units: ng/L
Basis: NA

Test Notes:

Analyte	Prep Method	Analysis Method	True Value	Result	Percent Recovery	CAS Percent Recovery Acceptance Limits	Result Notes
Mercury, Methyl	Method	1630	2.22	2.19	99	67-133	

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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502368
Project:	Sentinel Wells	**Date Collected:**	NA
LCS Matrix:	Water	**Date Received:**	NA
		Date Extracted:	03/16/15
		Date Analyzed:	03/17/15

Quality Control Sample (QCS) Summary
Metals

Sample Name: Quality Control Sample

Units: pg
Basis: NA

Test Notes:

Analyte	Prep Method	Analysis Method	True Value	Result	Percent Recovery	CAS Percent Recovery Acceptance Limits	Result Notes
Mercury, Methyl	Method	1630	100	109	109	67-133	

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Analytical Report

Client :	Longview, City of	**Service Request :**	K1502368
Project Name :	Sentinel Wells	**Date Collected :**	03/09/15
Project No. :	NA	**Date Received :**	03/09/15
Matrix :	Drinking Water	**Date Extracted :**	03/10-13/15

Total Metals

Sample Name :	DW-9	**Units :**	mg/L (ppm)
Lab Code :	K1502368-001	**Basis :**	NA

Analyte	Analysis Method	MRL	Date Analyzed	Sample Result	Result Notes
Antimony	200.8	0.00005	03/12/15	ND	
Arsenic	200.8	0.0005	03/12/15	0.0037	
Barium	200.7	0.004	03/16/15	0.009	
Beryllium	200.8	0.00002	03/12/15	ND	
Cadmium	200.8	0.00002	03/12/15	ND	
Chromium	200.8	0.0002	03/12/15	ND	
Copper	200.7	0.004	03/16/15	ND	
Iron	200.7	0.02	03/16/15	0.63	
Lead	200.8	0.00002	03/12/15	ND	
Manganese	200.7	0.001	03/16/15	0.544	
Mercury	245.1	0.0002	03/11/15	ND	
Nickel	200.8	0.0002	03/12/15	0.0002	
Selenium	200.8	0.001	03/12/15	ND	
Silver	200.8	0.00002	03/12/15	0.00005	
Sodium	200.7	0.2	03/16/15	9.0	
Thallium	200.8	0.00002	03/12/15	ND	
Zinc	200.7	0.004	03/16/15	ND	

Comments:

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Analytical Report

Client :	Longview, City of	**Service Request :**	K1502368
Project Name :	Sentinel Wells	**Date Collected :**	NA
Project No. :	NA	**Date Received :**	NA
Matrix :	Drinking Water	**Date Extracted :**	03/13/15

Total Metals

Sample Name :	Method Blank	**Units :**	mg/L (ppm)
Lab Code :	KQ1502195-01	**Basis :**	NA

Analyte	Analysis Method	MRL	Date Analyzed	Sample Result	Result Notes
Barium	200.7	0.004	03/16/15	ND	
Copper	200.7	0.004	03/16/15	ND	
Iron	200.7	0.02	03/16/15	ND	
Manganese	200.7	0.001	03/16/15	ND	
Sodium	200.7	0.2	03/16/15	ND	
Zinc	200.7	0.004	03/16/15	ND	

Comments:

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Analytical Report

Client :	Longview, City of	**Service Request :**	K1502368
Project Name :	Sentinel Wells	**Date Collected :**	NA
Project No. :	NA	**Date Received :**	NA
Matrix :	Drinking Water	**Date Extracted :**	03/10/15

Total Metals

Sample Name :	Method Blank	**Units :**	mg/L (ppm)
Lab Code :	KQ1502212-03	**Basis :**	NA

Analyte	Analysis Method	MRL	Date Analyzed	Sample Result	Result Notes
Mercury	245.1	0.0002	03/11/15	ND	

Comments:

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Analytical Report

Client :	Longview, City of	**Service Request :**	K1502368
Project Name :	Sentinel Wells	**Date Collected :**	NA
Project No. :	NA	**Date Received :**	NA
Matrix :	Drinking Water	**Date Extracted :**	03/11/15

Total Metals

Sample Name :	Method Blank	**Units :**	mg/L (ppm)
Lab Code :	KQ1502271-01	**Basis :**	NA

Analyte	Analysis Method	MRL	Date Analyzed	Sample Result	Result Notes
Antimony	200.8	0.00005	03/12/15	ND	
Arsenic	200.8	0.0005	03/12/15	ND	
Beryllium	200.8	0.00002	03/12/15	ND	
Cadmium	200.8	0.00002	03/12/15	ND	
Chromium	200.8	0.0002	03/12/15	ND	
Lead	200.8	0.00002	03/12/15	ND	
Nickel	200.8	0.0002	03/12/15	ND	
Selenium	200.8	0.001	03/12/15	ND	
Silver	200.8	0.00002	03/12/15	ND	
Thallium	200.8	0.00002	03/12/15	ND	

Comments:

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QA/QC Report

Client :	Longview, City of	**Service Request :**	K1502368
Project Name :	Sentinel Wells	**Date Collected :**	NA
Project No. :	NA	**Date Received :**	NA
Matrix :	Drinking Water	**Date Extracted :**	03/10/15
		Date Analyzed :	03/11/15

Duplicate Summary
Total Metals

Sample Name :	Batch QC	**Units :**	mg/L (ppm)
Lab Code :	K1502318-001D	**Basis :**	NA

Analyte	Analysis Method	MRL	Sample Result	Duplicate Sample Result	Average	Relative Percent Difference	Result Notes
Mercury	245.1	0.0002	ND	ND	ND	-	

Comments:

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QA/QC Report

Client :	Longview, City of	**Service Request :**	K1502368
Project Name :	Sentinel Wells	**Date Collected :**	NA
Project No. :	NA	**Date Received :**	NA
Matrix :	Drinking Water	**Date Extracted :**	03/10/15
		Date Analyzed :	03/11/15

Matrix Spike Summary
Total Metals

Sample Name :	Batch QC	**Units :**	mg/L (ppm)
Lab Code :	K1502318-001S	**Basis :**	NA

Analyte	MRL	Spike Level	Sample Result	Spiked Sample Result	Percent Recovery	ALS Percent Recovery Acceptance Limits	Result Notes
Mercury	0.0002	0.0050	ND	0.0049	98	70-130	

Comments:

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QA/QC Report

Client :	Longview, City of	**Service Request :**	K1502368
Project Name :	Sentinel Wells	**Date Collected :**	NA
Project No. :	NA	**Date Received :**	NA
Matrix :	Drinking Water	**Date Extracted :**	03/13/15
		Date Analyzed :	03/16/15

Duplicate Summary
Total Metals

Sample Name :	Batch QC	**Units :**	mg/L (ppm)
Lab Code :	K1502330-001D	**Basis :**	NA

Analyte	Analysis Method	MRL	Sample Result	Duplicate Sample Result	Average	Relative Percent Difference	Result Notes
Barium	200.7	0.004	0.008	0.009	0.009	12	
Copper	200.7	0.004	ND	ND	ND	-	
Iron	200.7	0.02	ND	ND	ND	-	
Manganese	200.7	0.001	0.009	0.010	0.009	11	
Sodium	200.7	0.2	8.4	8.4	8.4	<1	
Zinc	200.7	0.004	0.004	0.004	0.004	<1	

Comments:

ALS Group USA, Corp.
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QA/QC Report

Client :	Longview, City of	**Service Request :**	K1502368
Project Name :	Sentinel Wells	**Date Collected :**	NA
Project No. :	NA	**Date Received :**	NA
Matrix :	Drinking Water	**Date Extracted :**	03/13/15
		Date Analyzed :	03/16/15

Matrix Spike Summary
Total Metals

Sample Name :	Batch QC	**Units :**	mg/L (ppm)
Lab Code :	K1502330-001S	**Basis :**	NA

Analyte	MRL	Spike Level	Sample Result	Spiked Sample Result	Percent Recovery	ALS Percent Recovery Acceptance Limits	Result Notes
Barium	0.004	1.00	0.008	1.01	100	70-130	
Copper	0.004	0.25	ND	0.242	97	70-130	
Iron	0.02	1.00	ND	0.99	99	70-130	
Manganese	0.001	0.50	0.009	0.498	98	70-130	
Sodium	0.2	10.0	8.4	18.3	99	70-130	
Zinc	0.004	0.50	0.004	0.473	94	70-130	

Comments:

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QA/QC Report

Client :	Longview, City of	**Service Request :**	K1502368
Project Name :	Sentinel Wells	**Date Collected :**	NA
Project No. :	NA	**Date Received :**	NA
Matrix :	Drinking Water	**Date Extracted :**	03/11/15
		Date Analyzed :	03/12/15

Duplicate Summary
Total Metals

Sample Name :	Batch QC	**Units :**	mg/L (ppm)
Lab Code :	K1502365-001D	**Basis :**	NA

Analyte	Analysis Method	MRL	Sample Result	Duplicate Sample Result	Average	Relative Percent Difference	Result Notes
Antimony	200.8	0.00005	ND	ND	ND	-	
Arsenic	200.8	0.0005	0.0038	0.0037	0.0037	3	
Beryllium	200.8	0.00002	ND	ND	ND	-	
Cadmium	200.8	0.00002	ND	ND	ND	-	
Chromium	200.8	0.0002	ND	ND	ND	-	
Lead	200.8	0.00002	ND	ND	ND	-	
Nickel	200.8	0.0002	0.0003	0.0003	0.0003	<1	
Selenium	200.8	0.001	ND	ND	ND	-	
Silver	200.8	0.00002	ND	ND	ND	-	
Thallium	200.8	0.00002	ND	ND	ND	-	

Comments:

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QA/QC Report

Client :	Longview, City of	**Service Request :**	K1502368
Project Name :	Sentinel Wells	**Date Collected :**	NA
Project No. :	NA	**Date Received :**	NA
Matrix :	Drinking Water	**Date Extracted :**	03/11/15
		Date Analyzed :	03/12/15

Matrix Spike Summary
Total Metals

Sample Name :	Batch QC	**Units :**	mg/L (ppm)
Lab Code :	K1502365-001S	**Basis :**	NA

Analyte	MRL	Spike Level	Sample Result	Spiked Sample Result	Percent Recovery	ALS Percent Recovery Acceptance Limits	Result Notes
Antimony	0.00005	0.050	ND	0.0517	103	70-130	
Arsenic	0.0005	0.050	0.0038	0.0538	100	70-130	
Beryllium	0.00002	0.0025	ND	0.00240	96	70-130	
Cadmium	0.00002	0.025	ND	0.0251	100	70-130	
Chromium	0.0002	0.010	ND	0.0088	88	70-130	
Lead	0.00002	0.050	ND	0.0493	99	70-130	
Nickel	0.0002	0.025	0.0003	0.0222	88	70-130	
Selenium	0.001	0.050	ND	0.050	100	70-130	
Silver	0.00002	0.013	ND	0.0118	94	70-130	
Thallium	0.00002	0.050	ND	0.0501	100	70-130	

Comments:

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QA/QC Report

Client :	Longview, City of	**Service Request :**	K1502368
Project Name :	Sentinel Wells	**Date Collected :**	NA
Project No. :	NA	**Date Received :**	NA
Matrix :	Drinking Water	**Date Extracted :**	03/10-13/15
		Date Analyzed :	03/11-16/15

Laboratory Control Sample Summary
Total Metals

Sample Name :	Laboratory Control Sample	**Units :**	mg/L (ppm)
Lab Code :	K1502368-LCS	**Basis :**	NA

Analyte	Analysis Method	True Value	Result	Percent	ALS Percent Recovery Acceptance Limits	Result Notes
Antimony	200.8	0.050	0.0504	101	85-115	
Arsenic	200.8	0.050	0.0488	98	85-115	
Barium	200.7	5.00	5.08	102	85-115	
Beryllium	200.8	0.0025	0.00243	97	85-115	
Cadmium	200.8	0.025	0.0249	100	85-115	
Chromium	200.8	0.010	0.0095	95	85-115	
Copper	200.7	0.63	0.611	98	85-115	
Iron	200.7	2.50	2.54	102	85-115	
Lead	200.8	0.050	0.0487	97	85-115	
Manganese	200.7	1.25	1.28	102	85-115	
Mercury	245.1	0.0050	0.0050	100	85-115	
Nickel	200.8	0.025	0.0233	93	85-115	
Selenium	200.8	0.050	0.050	101	85-115	
Silver	200.8	0.013	0.0120	96	85-115	
Sodium	200.7	12.5	12.8	103	85-115	
Thallium	200.8	0.050	0.0495	99	85-115	
Zinc	200.7	1.25	1.21	97	85-115	

Comments:

EPA Method 504.1

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Analytical Results

Client:	Longview, City of	**Service Request:**	K1502368
Project:	Sentinel Wells	**Date Collected:**	03/09/2015
Sample Matrix:	Drinking water	**Date Received:**	03/09/2015

EPA Method 504.1

Sample Name:	DW-9	**Units:**	ug/L
Lab Code:	K1502368-001	**Basis:**	NA
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	504.1		

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
1,2-Dibromoethane (EDB)	ND	U	0.0097	1	03/16/15	03/16/15	KWG1502136	
1,2,3-Trichloropropane	ND	U	0.39	1	03/16/15	03/16/15	KWG1502136	
1,2-Dibromo-3-chloropropane (DBCP	ND	U	0.0097	1	03/16/15	03/16/15	KWG1502136	

Comments:

Analytical Results

Client:	Longview, City of	**Service Request:**	K1502368
Project:	Sentinel Wells	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA

EPA Method 504.1

Sample Name:	Method Blank	**Units:**	ug/L
Lab Code:	KWG1502136-7	**Basis:**	NA
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	504.1		

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
1,2-Dibromoethane (EDB)	ND	U	0.0099	1	03/16/15	03/16/15	KWG1502136	
1,2,3-Trichloropropane	ND	U	0.40	1	03/16/15	03/16/15	KWG1502136	
1,2-Dibromo-3-chloropropane (DBCP	ND	U	0.0099	1	03/16/15	03/16/15	KWG1502136	

Comments:

QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502368
Project:	Sentinel Wells	**Date Extracted:**	03/16/2015
Sample Matrix:	Water	**Date Analyzed:**	03/16/2015

Matrix Spike/Duplicate Matrix Spike Summary
EPA Method 504.1

Sample Name:	Batch QC	**Units:**	ug/L
Lab Code:	K1502111-002	**Basis:**	NA
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	504.1	**Extraction Lot:**	KWG1502136

		Batch QCMS KWG1502136-1 Matrix Spike			Batch QCDMS KWG1502136-2 Duplicate Matrix Spike					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**%Rec**	**Result**	**Spike Amount**	**%Rec**	**%Rec Limits**	**RPD**	**RPD Limit**
1,2-Dibromoethane (EDB)	ND	0.194	0.240	81	0.211	0.243	87	65-135	8	30
1,2,3-Trichloropropane	ND	0.178	0.240	74	0.195	0.243	80	65-135	9	30
1,2-Dibromo-3-chloropropane (DBCP)	ND	0.182	0.240	76	0.204	0.243	84	65-135	12	30

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502368
Project:	Sentinel Wells	**Date Extracted:**	03/16/2015
Sample Matrix:	Drinking water	**Date Analyzed:**	03/17/2015

Matrix Spike/Duplicate Matrix Spike Summary
EPA Method 504.1

Sample Name:	Batch QC	**Units:**	ug/L
Lab Code:	K1502415-001	**Basis:**	NA
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	504.1	**Extraction Lot:**	KWG1502136

		Batch QCMS KWG1502136-3 Matrix Spike			Batch QCDMS KWG1502136-4 Duplicate Matrix Spike					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**%Rec**	**Result**	**Spike Amount**	**%Rec**	**%Rec Limits**	**RPD**	**RPD Limit**
1,2-Dibromoethane (EDB)	ND	0.215	0.242	89	0.211	0.239	88	65-135	2	30
1,2,3-Trichloropropane	ND	0.209	0.242	87	0.208	0.239	87	65-135	1	30
1,2-Dibromo-3-chloropropane (DBCP)	ND	0.222	0.242	92	0.215	0.239	90	65-135	3	30

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Client:	Longview, City of	**Service Request:**	K1502368
Project:	Sentinel Wells	**Date Extracted:**	03/16/2015
Sample Matrix:	Water	**Date Analyzed:**	03/16/2015

Lab Control Spike Summary
EPA Method 504.1

Extraction Method:	METHOD	**Units:**	ug/L
Analysis Method:	504.1	**Basis:**	NA
		Level:	Low
		Extraction Lot:	KWG1502136

	Lab Control Sample KWG1502136-5 Lab Control Spike			
Analyte Name	**Result**	**Spike Amount**	**%Rec**	**%Rec Limits**
1,2-Dibromoethane (EDB)	0.233	0.250	93	70-130
1,2,3-Trichloropropane	0.225	0.250	90	70-130
1,2-Dibromo-3-chloropropane (DBCP)	0.237	0.250	95	70-130

Results flagged with an asterisk (*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Client:	Longview, City of	**Service Request:**	K1502368
Project:	Sentinel Wells	**Date Extracted:**	03/16/2015
Sample Matrix:	Water	**Date Analyzed:**	03/16/2015

Lab Control Spike Summary
EPA Method 504.1

Extraction Method:	METHOD	**Units:**	ug/L
Analysis Method:	504.1	**Basis:**	NA
		Level:	Low
		Extraction Lot:	KWG1502136

	Lab Control Sample KWG1502136-6 Lab Control Spike			
Analyte Name	**Result**	**Spike Amount**	**%Rec**	**%Rec Limits**
1,2-Dibromoethane (EDB)	0.231	0.250	92	70-130
1,2,3-Trichloropropane	0.220	0.250	88	70-130
1,2-Dibromo-3-chloropropane (DBCP)	0.231	0.250	92	70-130

Results flagged with an asterisk (*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Pesticides/PCBs by EPA Method 508.1

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Analytical Results

Client:	Longview, City of	**Service Request:**	K1502368
Project:	Sentinel Wells	**Date Collected:**	03/09/2015
Sample Matrix:	Drinking water	**Date Received:**	03/09/2015

Pesticides/PCBs by EPA Method 508.1

Sample Name:	DW-9	**Units:**	ug/L
Lab Code:	K1502368-001	**Basis:**	NA
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	508.1		

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
gamma-BHC (Lindane)	ND	U	0.0098	1	03/23/15	03/24/15	KWG1502390	
Heptachlor	ND	U	0.0098	1	03/23/15	03/24/15	KWG1502390	
Aldrin	ND	U	0.0098	1	03/23/15	03/24/15	KWG1502390	
Heptachlor Epoxide	ND	U	0.0098	1	03/23/15	03/24/15	KWG1502390	
Heptachlor Epoxide (Isomer A)	ND	U	0.0098	1	03/23/15	03/24/15	KWG1502390	
4,4'-DDE	ND	U	0.0098	1	03/23/15	03/24/15	KWG1502390	
Dieldrin	ND	U	0.0098	1	03/23/15	03/24/15	KWG1502390	
Endrin	ND	U	0.0098	1	03/23/15	03/24/15	KWG1502390	
4,4'-DDD	ND	U	0.0098	1	03/23/15	03/24/15	KWG1502390	
4,4'-DDT	ND	U	0.0098	1	03/23/15	03/24/15	KWG1502390	
Methoxychlor	ND	U	0.0098	1	03/23/15	03/24/15	KWG1502390	
Toxaphene	ND	U	0.098	1	03/23/15	03/24/15	KWG1502390	
Chlordane	ND	U	0.098	1	03/23/15	03/24/15	KWG1502390	
Aroclor 1016	ND	U	0.049	1	03/23/15	03/24/15	KWG1502390	
Aroclor 1221	ND	U	0.098	1	03/23/15	03/24/15	KWG1502390	
Aroclor 1232	ND	U	0.098	1	03/23/15	03/24/15	KWG1502390	
Aroclor 1242	ND	U	0.098	1	03/23/15	03/24/15	KWG1502390	
Aroclor 1248	ND	U	0.098	1	03/23/15	03/24/15	KWG1502390	
Aroclor 1254	ND	U	0.098	1	03/23/15	03/24/15	KWG1502390	
Aroclor 1260	ND	U	0.098	1	03/23/15	03/24/15	KWG1502390	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
4,4'-Dibromooctafluorobiphenyl	102	70-130	03/24/15	Acceptable

Comments:

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Analytical Results

Client:	Longview, City of	**Service Request:**	K1502368
Project:	Sentinel Wells	**Date Collected:**	NA
Sample Matrix:	Drinking water	**Date Received:**	NA

Pesticides/PCBs by EPA Method 508.1

Sample Name:	Method Blank	**Units:**	ug/L
Lab Code:	KWG1502390-7	**Basis:**	NA
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	508.1		

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
gamma-BHC (Lindane)	ND	U	0.010	1	03/23/15	03/24/15	KWG1502390	
Heptachlor	ND	U	0.010	1	03/23/15	03/24/15	KWG1502390	
Aldrin	ND	U	0.010	1	03/23/15	03/24/15	KWG1502390	
Heptachlor Epoxide	ND	U	0.010	1	03/23/15	03/24/15	KWG1502390	
Heptachlor Epoxide (Isomer A)	ND	U	0.010	1	03/23/15	03/24/15	KWG1502390	
4,4'-DDE	ND	U	0.010	1	03/23/15	03/24/15	KWG1502390	
Dieldrin	ND	U	0.010	1	03/23/15	03/24/15	KWG1502390	
Endrin	ND	U	0.010	1	03/23/15	03/24/15	KWG1502390	
4,4'-DDD	ND	U	0.010	1	03/23/15	03/24/15	KWG1502390	
4,4'-DDT	ND	U	0.010	1	03/23/15	03/24/15	KWG1502390	
Methoxychlor	ND	U	0.010	1	03/23/15	03/24/15	KWG1502390	
Toxaphene	ND	U	0.10	1	03/23/15	03/24/15	KWG1502390	
Chlordane	ND	U	0.10	1	03/23/15	03/24/15	KWG1502390	
Aroclor 1016	ND	U	0.050	1	03/23/15	03/24/15	KWG1502390	
Aroclor 1221	ND	U	0.10	1	03/23/15	03/24/15	KWG1502390	
Aroclor 1232	ND	U	0.10	1	03/23/15	03/24/15	KWG1502390	
Aroclor 1242	ND	U	0.10	1	03/23/15	03/24/15	KWG1502390	
Aroclor 1248	ND	U	0.10	1	03/23/15	03/24/15	KWG1502390	
Aroclor 1254	ND	U	0.10	1	03/23/15	03/24/15	KWG1502390	
Aroclor 1260	ND	U	0.10	1	03/23/15	03/24/15	KWG1502390	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
4,4'-Dibromooctafluorobiphenyl	100	70-130	03/24/15	Acceptable

Comments:

Client: Longview, City of
Project: Sentinel Wells
Sample Matrix: Drinking water

Service Request: K1502368

Surrogate Recovery Summary
Pesticides/PCBs by EPA Method 508.1

Extraction Method: METHOD
Analysis Method: 508.1

Units: Percent
Level: Low

Sample Name	Lab Code	Sur1
DW-9	K1502368-001	102
Batch QC	K1502415-001	102
Method Blank	KWG1502390-7	100
Batch QCMS	KWG1502390-4	89
Batch QCDMS	KWG1502390-5	89
Lab Control Sample	KWG1502390-6	90

Surrogate Recovery Control Limits (%)

Sur1 = 4,4'-Dibromooctafluorobiphenyl 70-130

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502368
Project:	Sentinel Wells	**Date Extracted:**	03/23/2015
Sample Matrix:	Drinking water	**Date Analyzed:**	03/24/2015

Matrix Spike/Duplicate Matrix Spike Summary
Pesticides/PCBs by EPA Method 508.1

Sample Name:	Batch QC	**Units:**	ug/L
Lab Code:	K1502415-001	**Basis:**	NA
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	508.1	**Extraction Lot:**	KWG1502390

		Batch QCMS KWG1502390-4 Matrix Spike			Batch QCDMS KWG1502390-5 Duplicate Matrix Spike					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**%Rec**	**Result**	**Spike Amount**	**%Rec**	**%Rec Limits**	**RPD**	**RPD Limit**
gamma-BHC (Lindane)	ND	0.101	0.0971	104	0.101	0.0971	104	65-135	0	30
Heptachlor	ND	0.0824	0.0971	85	0.0795	0.0971	82	65-135	4	30
Aldrin	ND	0.0919	0.0971	95	0.0897	0.0971	92	65-135	2	30
Heptachlor Epoxide	ND	0.102	0.0971	105	0.0983	0.0971	101	65-135	3	30
Heptachlor Epoxide (Isomer A)	ND	0.0964	0.0971	99	0.0938	0.0971	97	65-135	3	30
4,4'-DDE	ND	0.108	0.0971	112	0.106	0.0971	109	65-135	2	30
Dieldrin	ND	0.0968	0.0971	100	0.0942	0.0971	97	65-135	3	30
Endrin	ND	0.0681	0.0971	70	0.0620	0.0971	64 *	65-135	9	30
4,4'-DDD	ND	0.114	0.0971	118	0.113	0.0971	116	65-135	1	30
4,4'-DDT	ND	0.113	0.0971	116	0.111	0.0971	115	65-135	1	30
Methoxychlor	ND	0.114	0.0971	118	0.114	0.0971	118	65-135	0	30
Aroclor 1248	ND	0.336	0.485	69	0.336	0.485	69	65-135	0	30

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502368
Project:	Sentinel Wells	**Date Extracted:**	03/23/2015
Sample Matrix:	Drinking water	**Date Analyzed:**	03/24/2015

Lab Control Spike Summary
Pesticides/PCBs by EPA Method 508.1

Extraction Method:	METHOD	**Units:**	ug/L
Analysis Method:	508.1	**Basis:**	NA
		Level:	Low
		Extraction Lot:	KWG1502390

	Lab Control Sample KWG1502390-6 Lab Control Spike			
Analyte Name	**Result**	**Spike Amount**	**%Rec**	**%Rec Limits**
gamma-BHC (Lindane)	0.107	0.100	107	70-130
Heptachlor	0.0961	0.100	96	70-130
Aldrin	0.0900	0.100	90	70-130
Heptachlor Epoxide	0.103	0.100	103	70-130
Heptachlor Epoxide (Isomer A)	0.106	0.100	106	70-130
4,4'-DDE	0.107	0.100	107	70-130
Dieldrin	0.112	0.100	112	70-130
Endrin	0.113	0.100	113	70-130
4,4'-DDD	0.115	0.100	115	70-130
4,4'-DDT	0.108	0.100	108	70-130
Methoxychlor	0.112	0.100	112	70-130
Aroclor 1248	0.394	0.500	79	70-130

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Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Chlorinated Herbicides by EPA 515.4

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

Analytical Results

Client:	Longview, City of	**Service Request:**	K1502368
Project:	Sentinel Wells	**Date Collected:**	03/09/2015
Sample Matrix:	Drinking water	**Date Received:**	03/09/2015

Chlorinated Herbicides by EPA 515.4

Sample Name:	DW-9	**Units:**	ug/L
Lab Code:	K1502368-001	**Basis:**	NA
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	515.4		

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Dalapon	ND	U	1.0	1	03/17/15	03/24/15	KWG1502203	
3,5-Dichlorobenzoic Acid	ND	U	0.50	1	03/17/15	03/24/15	KWG1502203	
Dicamba	ND	U	0.20	1	03/17/15	03/24/15	KWG1502203	
Dichlorprop	ND	U	0.50	1	03/17/15	03/24/15	KWG1502203	
2,4-D	ND	U	0.10	1	03/17/15	03/24/15	KWG1502203	
Pentachlorophenol	ND	U	0.040	1	03/17/15	03/24/15	KWG1502203	
2,4,5-TP (Silvex)	ND	U	0.20	1	03/17/15	03/24/15	KWG1502203	
Chloramben	ND	U	0.20	1	03/17/15	03/24/15	KWG1502203	
2,4-DB	ND	U	1.0	1	03/17/15	03/24/15	KWG1502203	
Dinoseb	ND	U	0.20	1	03/17/15	03/24/15	KWG1502203	
Dacthal Diacid	ND	U	0.020	1	03/17/15	03/24/15	KWG1502203	
Picloram	ND	U	0.10	1	03/17/15	03/24/15	KWG1502203	
Acifluorfen	ND	U	2.0	1	03/17/15	03/24/15	KWG1502203	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
2,4-Dichlorophenylacetic Acid	121	70-130	03/24/15	Acceptable

Comments:

Analytical Results

Client:	Longview, City of	**Service Request:**	K1502368
Project:	Sentinel Wells	**Date Collected:**	NA
Sample Matrix:	Drinking water	**Date Received:**	NA

Chlorinated Herbicides by EPA 515.4

Sample Name:	Method Blank	**Units:**	ug/L
Lab Code:	KWG1502203-4	**Basis:**	NA
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	515.4		

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Dalapon	ND	U	1.0	1	03/17/15	03/24/15	KWG1502203	
3,5-Dichlorobenzoic Acid	ND	U	0.50	1	03/17/15	03/24/15	KWG1502203	
Dicamba	ND	U	0.20	1	03/17/15	03/24/15	KWG1502203	
Dichlorprop	ND	U	0.50	1	03/17/15	03/24/15	KWG1502203	
2,4-D	ND	U	0.10	1	03/17/15	03/24/15	KWG1502203	
Pentachlorophenol	ND	U	0.040	1	03/17/15	03/24/15	KWG1502203	
2,4,5-TP (Silvex)	ND	U	0.20	1	03/17/15	03/24/15	KWG1502203	
Chloramben	ND	U	0.20	1	03/17/15	03/24/15	KWG1502203	
2,4-DB	ND	U	1.0	1	03/17/15	03/24/15	KWG1502203	
Dinoseb	ND	U	0.20	1	03/17/15	03/24/15	KWG1502203	
Dacthal Diacid	ND	U	0.020	1	03/17/15	03/24/15	KWG1502203	
Picloram	ND	U	0.10	1	03/17/15	03/24/15	KWG1502203	
Acifluorfen	ND	U	2.0	1	03/17/15	03/24/15	KWG1502203	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
2,4-Dichlorophenylacetic Acid	86	70-130	03/24/15	Acceptable

Comments:

Client: Longview, City of
Project: Sentinel Wells
Sample Matrix: Drinking water

Service Request: K1502368

Surrogate Recovery Summary
Chlorinated Herbicides by EPA 515.4

Extraction Method: METHOD
Analysis Method: 515.4

Units: Percent
Level: Low

Sample Name	Lab Code	Sur1
DW-9	K1502368-001	121
Batch QC	K1502415-001	114
Method Blank	KWG1502203-4	86
Batch QCMS	KWG1502203-1	126
Batch QCDMS	KWG1502203-2	121
Lab Control Sample	KWG1502203-3	97

Surrogate Recovery Control Limits (%)

Sur1 = 2,4-Dichlorophenylacetic Acid 70-130

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502368
Project:	Sentinel Wells	**Date Extracted:**	03/17/2015
Sample Matrix:	Drinking water	**Date Analyzed:**	03/24/2015

Matrix Spike/Duplicate Matrix Spike Summary
Chlorinated Herbicides by EPA 515.4

Sample Name:	Batch QC	**Units:**	ug/L
Lab Code:	K1502415-001	**Basis:**	NA
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	515.4	**Extraction Lot:**	KWG1502203

		Batch QCMS KWG1502203-1 Matrix Spike			Batch QCDMS KWG1502203-2 Duplicate Matrix Spike					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**%Rec**	**Result**	**Spike Amount**	**%Rec**	**%Rec Limits**	**RPD**	**RPD Limit**
Dalapon	ND	4.28	4.98	86	4.31	4.97	87	70-130	1	30
3,5-Dichlorobenzoic Acid	ND	4.86	4.98	98	4.86	4.97	98	70-130	0	30
Dicamba	ND	5.19	4.98	104	5.16	4.97	104	70-130	1	30
Dichlorprop	ND	5.11	4.98	103	5.03	4.97	101	70-130	2	30
2,4-D	ND	5.13	4.98	103	5.08	4.97	102	70-130	1	30
Pentachlorophenol	ND	5.12	4.98	103	5.08	4.97	102	70-130	1	30
2,4,5-TP (Silvex)	ND	4.78	4.98	96	4.74	4.97	95	70-130	1	30
Chloramben	ND	4.82	4.98	97	4.72	4.97	95	70-130	2	30
2,4-DB	ND	4.87	4.98	98	4.80	4.97	97	70-130	1	30
Dinoseb	ND	4.99	4.98	100	5.07	4.97	102	70-130	2	30
Dacthal Diacid	ND	5.99	4.98	120	6.03	4.97	121	70-130	1	30
Picloram	ND	5.45	4.98	109	5.38	4.97	108	70-130	1	30
Acifluorfen	ND	4.78	4.98	96	4.77	4.97	96	70-130	0	30

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Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Client:	Longview, City of	**Service Request:**	K1502368
Project:	Sentinel Wells	**Date Extracted:**	03/17/2015
Sample Matrix:	Drinking water	**Date Analyzed:**	03/24/2015

Lab Control Spike Summary
Chlorinated Herbicides by EPA 515.4

Extraction Method:	METHOD	**Units:**	ug/L
Analysis Method:	515.4	**Basis:**	NA
		Level:	Low
		Extraction Lot:	KWG1502203

	Lab Control Sample KWG1502203-3 Lab Control Spike			
Analyte Name	**Result**	**Spike Amount**	**%Rec**	**%Rec Limits**
Dalapon	4.16	5.00	83	70-130
3,5-Dichlorobenzoic Acid	4.48	5.00	90	70-130
Dicamba	4.79	5.00	96	70-130
Dichlorprop	4.79	5.00	96	70-130
2,4-D	4.83	5.00	97	70-130
Pentachlorophenol	4.92	5.00	98	70-130
2,4,5-TP (Silvex)	4.64	5.00	93	70-130
Chloramben	5.14	5.00	103	70-130
2,4-DB	4.68	5.00	94	70-130
Dinoseb	4.85	5.00	97	70-130
Dacthal Diacid	4.85	5.00	97	70-130
Picloram	5.08	5.00	102	70-130
Acifluorfen	4.74	5.00	95	70-130

Results flagged with an asterisk (*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Volatile Organic Compounds

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

Analytical Results

Client: Longview, City of
Project: Sentinel Wells
Sample Matrix: Drinking water

Service Request: K1502368
Date Collected: 03/09/2015
Date Received: 03/09/2015

Volatile Organic Compounds

Sample Name: DW-9
Lab Code: K1502368-001

Units: ug/L
Basis: NA

Extraction Method: METHOD
Analysis Method: 524.2

Level: Low

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Dichlorodifluoromethane	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Chloromethane	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Vinyl Chloride	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Bromomethane	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Chloroethane	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Trichlorofluoromethane	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Methylene Chloride	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
trans-1,2-Dichloroethene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
1,1-Dichloroethene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
cis-1,2-Dichloroethene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Methyl tert-Butyl Ether	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Chloroform	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Bromochloromethane	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Carbon Tetrachloride	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Benzene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
1,2-Dichloroethane	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Trichloroethene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
1,2-Dichloropropane	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Bromodichloromethane	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Dibromomethane	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
cis-1,3-Dichloropropene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
1,1-Dichloroethane	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Toluene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
trans-1,3-Dichloropropene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Tetrachloroethene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
2,2-Dichloropropane	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
1,3-Dichloropropane	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Dibromochloromethane	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
1,2-Dibromoethane (EDB)	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Chlorobenzene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Ethylbenzene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Styrene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
m,p-Xylenes	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
o-Xylene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	

Comments:

Analytical Results

Client:	Longview, City of	**Service Request:**	K1502368
Project:	Sentinel Wells	**Date Collected:**	03/09/2015
Sample Matrix:	Drinking water	**Date Received:**	03/09/2015

Volatile Organic Compounds

Sample Name:	DW-9	**Units:**	ug/L
Lab Code:	K1502368-001	**Basis:**	NA
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	524.2		

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
1,1,1-Trichloroethane	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Bromoform	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
1,1,2,2-Tetrachloroethane	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Isopropylbenzene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
1,1-Dichloropropene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Bromobenzene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
n-Propylbenzene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
1,3,5-Trimethylbenzene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
2-Chlorotoluene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
4-Chlorotoluene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
tert-Butylbenzene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
1,2,4-Trimethylbenzene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
sec-Butylbenzene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
p-Isopropyltoluene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
1,3-Dichlorobenzene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
1,4-Dichlorobenzene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
n-Butylbenzene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
1,2-Dichlorobenzene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
1,2-Dibromo-3-chloropropane (DBCP	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
1,2,4-Trichlorobenzene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Hexachlorobutadiene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Naphthalene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
1,1,2-Trichloroethane	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
1,1,1,2-Tetrachloroethane	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
1,2,3-Trichloropropane	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
1,2,3-Trichlorobenzene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
4-Bromofluorobenzene	91	70-130	03/17/15	Acceptable
Dibromofluoromethane	96	82-124	03/17/15	Acceptable
Toluene-d8	95	82-124	03/17/15	Acceptable

Comments:

Analytical Results

Client: Longview, City of
Project: Sentinel Wells
Sample Matrix: Drinking water

Service Request: K1502368
Date Collected: NA
Date Received: NA

Volatile Organic Compounds

Sample Name: Method Blank
Lab Code: KWG1502193-4

Units: ug/L
Basis: NA

Extraction Method: METHOD
Analysis Method: 524.2

Level: Low

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Dichlorodifluoromethane	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Chloromethane	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Vinyl Chloride	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Bromomethane	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Chloroethane	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Trichlorofluoromethane	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Methylene Chloride	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
trans-1,2-Dichloroethene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
1,1-Dichloroethene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
cis-1,2-Dichloroethene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Methyl tert-Butyl Ether	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Chloroform	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Bromochloromethane	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Carbon Tetrachloride	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Benzene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
1,2-Dichloroethane	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Trichloroethene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
1,2-Dichloropropane	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Bromodichloromethane	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Dibromomethane	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
cis-1,3-Dichloropropene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
1,1-Dichloroethane	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Toluene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
trans-1,3-Dichloropropene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Tetrachloroethene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
2,2-Dichloropropane	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
1,3-Dichloropropane	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Dibromochloromethane	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
1,2-Dibromoethane (EDB)	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Chlorobenzene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Ethylbenzene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Styrene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
m,p-Xylenes	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
o-Xylene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	

Comments:

Analytical Results

Client:	Longview, City of	**Service Request:**	K1502368
Project:	Sentinel Wells	**Date Collected:**	NA
Sample Matrix:	Drinking water	**Date Received:**	NA

Volatile Organic Compounds

Sample Name:	Method Blank	**Units:**	ug/L
Lab Code:	KWG1502193-4	**Basis:**	NA
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	524.2		

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
1,1,1-Trichloroethane	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Bromoform	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
1,1,2,2-Tetrachloroethane	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Isopropylbenzene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
1,1-Dichloropropene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Bromobenzene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
n-Propylbenzene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
1,3,5-Trimethylbenzene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
2-Chlorotoluene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
4-Chlorotoluene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
tert-Butylbenzene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
1,2,4-Trimethylbenzene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
sec-Butylbenzene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
p-Isopropyltoluene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
1,3-Dichlorobenzene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
1,4-Dichlorobenzene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
n-Butylbenzene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
1,2-Dichlorobenzene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
1,2-Dibromo-3-chloropropane (DBCP	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
1,2,4-Trichlorobenzene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Hexachlorobutadiene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
Naphthalene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
1,1,2-Trichloroethane	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
1,1,1,2-Tetrachloroethane	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
1,2,3-Trichloropropane	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	
1,2,3-Trichlorobenzene	ND	U	0.50	1	03/17/15	03/17/15	KWG1502193	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
4-Bromofluorobenzene	91	70-130	03/17/15	Acceptable
Dibromofluoromethane	95	82-124	03/17/15	Acceptable
Toluene-d8	96	82-124	03/17/15	Acceptable

Comments:

QA/QC Report

Client: Longview, City of
Project: Sentinel Wells
Sample Matrix: Drinking water

Service Request: K1502368

Surrogate Recovery Summary
Volatile Organic Compounds

Extraction Method: METHOD
Analysis Method: 524.2

Units: Percent
Level: Low

Sample Name	Lab Code	Sur1	Sur2	Sur3
DW-9	K1502368-001	91	96	95
Batch QC	K1502415-001	90	94	96
Method Blank	KWG1502193-4	91	95	96
Batch QCMS	KWG1502193-1	100	97	95
Batch QCDMS	KWG1502193-2	100	96	96
Lab Control Sample	KWG1502193-3	100	96	96

Surrogate Recovery Control Limits (%)

Sur1	=	4-Bromofluorobenzene	70-130
Sur2	=	Dibromofluoromethane	82-124
Sur3	=	Toluene-d8	82-124

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Client:	Longview, City of	**Service Request:**	K1502368
Project:	Sentinel Wells	**Date Extracted:**	03/17/2015
Sample Matrix:	Drinking water	**Date Analyzed:**	03/17/2015

Matrix Spike/Duplicate Matrix Spike Summary
Volatile Organic Compounds

Sample Name:	Batch QC	**Units:**	ug/L
Lab Code:	K1502415-001	**Basis:**	NA
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	524.2	**Extraction Lot:**	KWG1502193

		Batch QCMS KWG1502193-1 Matrix Spike			Batch QCDMS KWG1502193-2 Duplicate Matrix Spike					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**%Rec**	**Result**	**Spike Amount**	**%Rec**	**%Rec Limits**	**RPD**	**RPD Limit**
Dichlorodifluoromethane	ND	6.19	5.00	124	5.50	5.00	110	70-130	12	30
Chloromethane	ND	5.94	5.00	119	5.90	5.00	118	70-130	1	30
Vinyl Chloride	ND	5.34	5.00	107	4.99	5.00	100	70-130	7	30
Bromomethane	ND	4.53	5.00	91	3.92	5.00	78	70-130	14	30
Chloroethane	ND	5.26	5.00	105	4.83	5.00	97	70-130	9	30
Trichlorofluoromethane	ND	5.51	5.00	110	5.04	5.00	101	70-130	9	30
Methylene Chloride	ND	4.64	5.00	93	4.47	5.00	89	70-130	4	30
trans-1,2-Dichloroethene	ND	4.93	5.00	99	4.56	5.00	91	70-130	8	30
cis-1,2-Dichloroethene	ND	4.66	5.00	93	4.46	5.00	89	70-130	4	30
1,1-Dichloroethene	ND	4.99	5.00	100	4.57	5.00	91	70-130	9	30
Methyl tert-Butyl Ether	ND	8.10	10.0	81	7.93	10.0	79	70-130	2	30
Chloroform	ND	4.91	5.00	98	4.69	5.00	94	70-130	5	30
Bromochloromethane	ND	4.50	5.00	90	4.41	5.00	88	70-130	2	30
Carbon Tetrachloride	ND	5.71	5.00	114	5.27	5.00	105	70-130	8	30
Benzene	ND	4.84	5.00	97	4.64	5.00	93	70-130	4	30
1,2-Dichloroethane	ND	5.11	5.00	102	4.97	5.00	99	70-130	3	30
Trichloroethene	ND	4.70	5.00	94	4.49	5.00	90	70-130	5	30
1,2-Dichloropropane	ND	4.54	5.00	91	4.29	5.00	86	70-130	6	30
Bromodichloromethane	ND	4.49	5.00	90	4.34	5.00	87	70-130	3	30
Dibromomethane	ND	4.54	5.00	91	4.33	5.00	87	70-130	5	30
cis-1,3-Dichloropropene	ND	4.22	5.00	84	4.20	5.00	84	70-130	0	30
1,1-Dichloroethane	ND	4.96	5.00	99	4.75	5.00	95	70-130	4	30
Toluene	ND	4.63	5.00	93	4.47	5.00	89	70-130	4	30
trans-1,3-Dichloropropene	ND	4.05	5.00	81	3.91	5.00	78	70-130	4	30
Tetrachloroethene	ND	4.73	5.00	95	4.42	5.00	88	70-130	7	30
1,3-Dichloropropane	ND	4.72	5.00	94	4.61	5.00	92	70-130	2	30
2,2-Dichloropropane	ND	4.98	5.00	100	4.76	5.00	95	70-130	5	30
Dibromochloromethane	ND	4.73	5.00	95	4.47	5.00	89	70-130	6	30
1,2-Dibromoethane (EDB)	ND	4.74	5.00	95	4.61	5.00	92	70-130	3	30
Chlorobenzene	ND	4.79	5.00	96	4.58	5.00	92	70-130	4	30
Ethylbenzene	ND	4.87	5.00	97	4.55	5.00	91	70-130	7	30
Styrene	ND	4.67	5.00	93	4.42	5.00	88	70-130	6	30
m,p-Xylenes	ND	9.79	10.0	98	9.27	10.0	93	70-130	5	30

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Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Client:	Longview, City of	**Service Request:**	K1502368
Project:	Sentinel Wells	**Date Extracted:**	03/17/2015
Sample Matrix:	Drinking water	**Date Analyzed:**	03/17/2015

Matrix Spike/Duplicate Matrix Spike Summary
Volatile Organic Compounds

Sample Name:	Batch QC	**Units:**	ug/L
Lab Code:	K1502415-001	**Basis:**	NA
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	524.2	**Extraction Lot:**	KWG1502193

		Batch QCMS KWG1502193-1 Matrix Spike			Batch QCDMS KWG1502193-2 Duplicate Matrix Spike					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**%Rec**	**Result**	**Spike Amount**	**%Rec**	**%Rec Limits**	**RPD**	**RPD Limit**
o-Xylene	ND	4.57	5.00	91	4.36	5.00	87	70-130	5	30
1,1,2,2-Tetrachloroethane	ND	5.34	5.00	107	5.11	5.00	102	70-130	4	30
Bromoform	ND	4.82	5.00	96	4.75	5.00	95	70-130	1	30
1,1,1-Trichloroethane	ND	5.01	5.00	100	4.68	5.00	94	70-130	7	30
Isopropylbenzene	ND	4.93	5.00	99	4.61	5.00	92	70-130	7	30
1,1-Dichloropropene	ND	5.03	5.00	101	4.69	5.00	94	70-130	7	30
Bromobenzene	ND	5.02	5.00	100	4.70	5.00	94	70-130	7	30
n-Propylbenzene	ND	5.76	5.00	115	5.40	5.00	108	70-130	6	30
1,3,5-Trimethylbenzene	ND	5.56	5.00	111	5.27	5.00	105	70-130	5	30
2-Chlorotoluene	ND	5.58	5.00	112	5.28	5.00	106	70-130	6	30
4-Chlorotoluene	ND	5.67	5.00	113	5.32	5.00	106	70-130	6	30
tert-Butylbenzene	ND	5.53	5.00	111	5.14	5.00	103	70-130	7	30
1,2,4-Trimethylbenzene	ND	5.57	5.00	111	5.29	5.00	106	70-130	5	30
sec-Butylbenzene	ND	5.67	5.00	113	5.32	5.00	106	70-130	6	30
p-Isopropyltoluene	ND	5.50	5.00	110	5.21	5.00	104	70-130	5	30
1,3-Dichlorobenzene	ND	5.16	5.00	103	4.94	5.00	99	70-130	4	30
1,4-Dichlorobenzene	ND	5.04	5.00	101	4.82	5.00	96	70-130	4	30
n-Butylbenzene	ND	5.55	5.00	111	5.21	5.00	104	70-130	6	30
1,2-Dichlorobenzene	ND	5.08	5.00	102	4.79	5.00	96	70-130	6	30
1,2-Dibromo-3-chloropropane (DBCP)	ND	5.29	5.00	106	5.38	5.00	108	70-130	2	30
1,2,4-Trichlorobenzene	ND	4.82	5.00	96	4.64	5.00	93	70-130	4	30
Hexachlorobutadiene	ND	5.15	5.00	103	4.86	5.00	97	70-130	6	30
Naphthalene	ND	4.50	5.00	90	4.37	5.00	87	70-130	3	30
1,1,2-Trichloroethane	ND	4.38	5.00	88	4.25	5.00	85	70-130	3	30
1,1,1,2-Tetrachloroethane	ND	5.13	5.00	103	5.03	5.00	101	70-130	2	30
1,2,3-Trichloropropane	ND	5.08	5.00	102	4.87	5.00	97	70-130	4	30
1,2,3-Trichlorobenzene	ND	5.03	5.00	101	4.81	5.00	96	70-130	4	30

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QA/QC Report

Client: Longview, City of
Project: Sentinel Wells
Sample Matrix: Drinking water

Service Request: K1502368
Date Extracted: 03/17/2015
Date Analyzed: 03/17/2015

Lab Control Spike Summary
Volatile Organic Compounds

Extraction Method: METHOD
Analysis Method: 524.2

Units: ug/L
Basis: NA
Level: Low
Extraction Lot: KWG1502193

	Lab Control Sample KWG1502193-3 Lab Control Spike			
Analyte Name	**Result**	**Spike Amount**	**%Rec**	**%Rec Limits**
Dichlorodifluoromethane	6.13	5.00	123	70-130
Chloromethane	6.39	5.00	128	70-130
Vinyl Chloride	5.46	5.00	109	70-130
Bromomethane	4.74	5.00	95	70-130
Chloroethane	5.39	5.00	108	70-130
Trichlorofluoromethane	5.53	5.00	111	70-130
Methylene Chloride	5.12	5.00	102	70-130
trans-1,2-Dichloroethene	5.07	5.00	101	70-130
1,1-Dichloroethene	5.14	5.00	103	70-130
cis-1,2-Dichloroethene	4.85	5.00	97	70-130
Methyl tert-Butyl Ether	8.70	10.0	87	70-130
Chloroform	5.30	5.00	106	70-130
Bromochloromethane	4.78	5.00	96	70-130
Carbon Tetrachloride	5.84	5.00	117	70-130
Benzene	5.13	5.00	103	70-130
1,2-Dichloroethane	5.36	5.00	107	70-130
Trichloroethene	4.97	5.00	99	70-130
1,2-Dichloropropane	4.82	5.00	96	70-130
Bromodichloromethane	4.83	5.00	97	70-130
Dibromomethane	4.72	5.00	94	70-130
cis-1,3-Dichloropropene	4.56	5.00	91	70-130
Toluene	4.91	5.00	98	70-130
1,1-Dichloroethane	5.26	5.00	105	70-130
trans-1,3-Dichloropropene	4.23	5.00	85	70-130
Tetrachloroethene	5.01	5.00	100	70-130
1,3-Dichloropropane	5.05	5.00	101	70-130
2,2-Dichloropropane	5.21	5.00	104	70-130
Dibromochloromethane	5.11	5.00	102	70-130
1,2-Dibromoethane (EDB)	5.10	5.00	102	70-130
Chlorobenzene	5.10	5.00	102	70-130
Ethylbenzene	5.12	5.00	102	70-130
Styrene	4.82	5.00	96	70-130
m,p-Xylenes	10.3	10.0	103	70-130
o-Xylene	4.93	5.00	99	70-130
1,1,1-Trichloroethane	5.22	5.00	104	70-130

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Client: Longview, City of
Project: Sentinel Wells
Sample Matrix: Drinking water

Service Request: K1502368
Date Extracted: 03/17/2015
Date Analyzed: 03/17/2015

Lab Control Spike Summary
Volatile Organic Compounds

Extraction Method: METHOD
Analysis Method: 524.2

Units: ug/L
Basis: NA
Level: Low
Extraction Lot: KWG1502193

	Lab Control Sample KWG1502193-3 Lab Control Spike			
Analyte Name	**Result**	**Spike Amount**	**%Rec**	**%Rec Limits**
Bromoform	5.13	5.00	103	70-130
1,1,2,2-Tetrachloroethane	5.59	5.00	112	70-130
Isopropylbenzene	5.24	5.00	105	70-130
1,1-Dichloropropene	5.21	5.00	104	70-130
Bromobenzene	5.24	5.00	105	70-130
n-Propylbenzene	6.02	5.00	120	70-130
1,3,5-Trimethylbenzene	5.78	5.00	116	70-130
2-Chlorotoluene	5.90	5.00	118	70-130
4-Chlorotoluene	5.92	5.00	118	70-130
tert-Butylbenzene	5.68	5.00	114	70-130
1,2,4-Trimethylbenzene	5.81	5.00	116	70-130
sec-Butylbenzene	5.94	5.00	119	70-130
p-Isopropyltoluene	5.73	5.00	115	70-130
1,3-Dichlorobenzene	5.40	5.00	108	70-130
1,4-Dichlorobenzene	5.25	5.00	105	70-130
n-Butylbenzene	5.73	5.00	115	70-130
1,2-Dichlorobenzene	5.38	5.00	108	70-130
1,2-Dibromo-3-chloropropane (DBCP)	5.40	5.00	108	70-130
1,2,4-Trichlorobenzene	5.04	5.00	101	70-130
Hexachlorobutadiene	5.33	5.00	107	70-130
Naphthalene	4.83	5.00	97	70-130
1,1,2-Trichloroethane	4.76	5.00	95	70-130
1,1,1,2-Tetrachloroethane	5.54	5.00	111	70-130
1,2,3-Trichloropropane	5.13	5.00	103	70-130
1,2,3-Trichlorobenzene	5.20	5.00	104	70-130

Results flagged with an asterisk (*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Semivolatile Organics by EPA Method 525.2

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

ALS Group USA, Corp. dba ALS Environmental

Analytical Results

Client:	Longview, City of	**Service Request:**	K1502368
Project:	Sentinel Wells	**Date Collected:**	03/09/2015
Sample Matrix:	Drinking water	**Date Received:**	03/09/2015

Semivolatile Organics by EPA Method 525.2

Sample Name:	DW-9	**Units:**	ug/L
Lab Code:	K1502368-001	**Basis:**	NA
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	525.2		

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Hexachlorocyclopentadiene	ND	U	0.098	1	03/23/15	03/25/15	KWG1502393	*
Fluorene	ND	U	0.049	1	03/23/15	03/25/15	KWG1502393	
Propachlor	ND	U	0.098	1	03/23/15	03/25/15	KWG1502393	
Hexachlorobenzene	ND	U	0.098	1	03/23/15	03/25/15	KWG1502393	
Simazine	ND	U	0.049	1	03/23/15	03/25/15	KWG1502393	
Atrazine	ND	U	0.098	1	03/23/15	03/25/15	KWG1502393	
Metribuzin	ND	U	0.20	1	03/23/15	03/25/15	KWG1502393	
Alachlor	ND	U	0.070	1	03/23/15	03/25/15	KWG1502393	
Bromacil	ND	U	0.20	1	03/23/15	03/25/15	KWG1502393	
Metolachlor	ND	U	0.088	1	03/23/15	03/25/15	KWG1502393	
Butachlor	ND	U	0.098	1	03/23/15	03/25/15	KWG1502393	
Bis(2-ethylhexyl) Adipate	ND	U	0.59	1	03/23/15	03/25/15	KWG1502393	
Bis(2-ethylhexyl) Phthalate	ND	U	0.59	1	03/23/15	03/25/15	KWG1502393	
Benzo(a)pyrene	ND	U	0.020	1	03/23/15	03/25/15	KWG1502393	

* See Case Narrative

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
1,3-Dimethyl-2-nitrobenzene	94	70-130	03/25/15	Acceptable
Triphenyl Phosphate	83	70-130	03/25/15	Acceptable
Perylene-d12	91	70-130	03/25/15	Acceptable

Comments:

ALS Group USA, Corp. dba ALS Environmental

Analytical Results

Client:	Longview, City of	**Service Request:**	K1502368
Project:	Sentinel Wells	**Date Collected:**	NA
Sample Matrix:	Drinking water	**Date Received:**	NA

Semivolatile Organics by EPA Method 525.2

Sample Name:	Method Blank	**Units:**	ug/L
Lab Code:	KWG1502393-4	**Basis:**	NA
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	525.2		

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Hexachlorocyclopentadiene	ND	U	0.10	1	03/23/15	03/25/15	KWG1502393	*
Fluorene	ND	U	0.050	1	03/23/15	03/25/15	KWG1502393	
Propachlor	ND	U	0.10	1	03/23/15	03/25/15	KWG1502393	
Hexachlorobenzene	ND	U	0.10	1	03/23/15	03/25/15	KWG1502393	
Simazine	ND	U	0.050	1	03/23/15	03/25/15	KWG1502393	
Atrazine	ND	U	0.10	1	03/23/15	03/25/15	KWG1502393	
Metribuzin	ND	U	0.20	1	03/23/15	03/25/15	KWG1502393	
Alachlor	ND	U	0.072	1	03/23/15	03/25/15	KWG1502393	
Bromacil	ND	U	0.20	1	03/23/15	03/25/15	KWG1502393	
Metolachlor	ND	U	0.090	1	03/23/15	03/25/15	KWG1502393	
Butachlor	ND	U	0.10	1	03/23/15	03/25/15	KWG1502393	
Bis(2-ethylhexyl) Adipate	ND	U	0.60	1	03/23/15	03/25/15	KWG1502393	
Bis(2-ethylhexyl) Phthalate	ND	U	0.60	1	03/23/15	03/25/15	KWG1502393	
Benzo(a)pyrene	ND	U	0.020	1	03/23/15	03/25/15	KWG1502393	

* See Case Narrative

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
1,3-Dimethyl-2-nitrobenzene	97	70-130	03/25/15	Acceptable
Triphenyl Phosphate	83	70-130	03/25/15	Acceptable
Perylene-d12	86	70-130	03/25/15	Acceptable

Comments:

Client: Longview, City of
Project: Sentinel Wells
Sample Matrix: Drinking water

Service Request: K1502368

Surrogate Recovery Summary
Semivolatile Organics by EPA Method 525.2

Extraction Method: METHOD
Analysis Method: 525.2

Units: Percent
Level: Low

Sample Name	Lab Code	Sur1	Sur2	Sur3
DW-9	K1502368-001	94	83	91
Batch QC	K1502415-001	105	84	71
Method Blank	KWG1502393-4	97	83	86
Batch QCMS	KWG1502393-1	91	93	88
Batch QCDMS	KWG1502393-2	95	96	89
Lab Control Sample	KWG1502393-3	96	100	82

Surrogate Recovery Control Limits (%)

Sur1	=	1,3-Dimethyl-2-nitrobenzene	70-130
Sur2	=	Triphenyl Phosphate	70-130
Sur3	=	Perylene-d12	70-130

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502368
Project:	Sentinel Wells	**Date Extracted:**	03/23/2015
Sample Matrix:	Drinking water	**Date Analyzed:**	03/26/2015

Matrix Spike/Duplicate Matrix Spike Summary
Semivolatile Organics by EPA Method 525.2

Sample Name:	Batch QC	**Units:**	ug/L
Lab Code:	K1502415-001	**Basis:**	NA
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	525.2	**Extraction Lot:**	KWG1502393

		Batch QCMS KWG1502393-1 Matrix Spike			Batch QCDMS KWG1502393-2 Duplicate Matrix Spike					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**%Rec**	**Result**	**Spike Amount**	**%Rec**	**%Rec Limits**	**RPD**	**RPD Limit**
Hexachlorocyclopentadiene	ND	1.48	0.971	152 *	1.43	0.971	147 *	70-130	3	30
Fluorene	ND	1.01	0.971	104	1.00	0.971	103	70-130	0	30
Propachlor	ND	1.10	0.971	114	1.11	0.971	114	70-130	1	30
Hexachlorobenzene	ND	0.911	0.971	94	0.920	0.971	95	70-130	1	30
Simazine	ND	0.865	0.971	89	0.868	0.971	89	70-130	0	30
Atrazine	ND	0.942	0.971	97	0.878	0.971	90	70-130	7	30
Metribuzin	ND	0.999	0.971	103	0.989	0.971	102	70-130	1	30
Alachlor	ND	1.02	0.971	105	1.01	0.971	104	70-130	1	30
Bromacil	ND	1.06	0.971	109	1.02	0.971	105	70-130	4	30
Metolachlor	ND	1.12	0.971	116	1.10	0.971	113	70-130	2	30
Butachlor	ND	1.09	0.971	112	1.07	0.971	111	70-130	1	30
Bis(2-ethylhexyl) Adipate	ND	1.13	0.971	116	1.14	0.971	117	70-130	1	30
Bis(2-ethylhexyl) Phthalate	0.62	1.17	0.971	57 *	1.27	0.971	67 *	70-130	8	30
Benzo(a)pyrene	ND	1.07	0.971	110	1.05	0.971	108	70-130	2	30

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502368
Project:	Sentinel Wells	**Date Extracted:**	03/23/2015
Sample Matrix:	Drinking water	**Date Analyzed:**	03/25/2015

Lab Control Spike Summary
Semivolatile Organics by EPA Method 525.2

Extraction Method:	METHOD	**Units:**	ug/L
Analysis Method:	525.2	**Basis:**	NA
		Level:	Low
		Extraction Lot:	KWG1502393

	Lab Control Sample KWG1502393-3 Lab Control Spike			
Analyte Name	**Result**	**Spike Amount**	**%Rec**	**%Rec Limits**
Hexachlorocyclopentadiene	1.48	1.00	148 *	70-130
Fluorene	1.05	1.00	105	70-130
Propachlor	1.24	1.00	124	70-130
Hexachlorobenzene	0.947	1.00	95	70-130
Simazine	1.08	1.00	108	70-130
Atrazine	1.12	1.00	112	70-130
Metribuzin	1.09	1.00	109	70-130
Alachlor	1.11	1.00	111	70-130
Bromacil	1.10	1.00	110	70-130
Metolachlor	1.27	1.00	127	70-130
Butachlor	1.16	1.00	116	70-130
Bis(2-ethylhexyl) Adipate	1.03	1.00	103	70-130
Bis(2-ethylhexyl) Phthalate	1.03	1.00	103	70-130
Benzo(a)pyrene	1.06	1.00	106	70-130

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Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Endothall by EPA Method 548.1

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ALS Group USA, Corp. dba ALS Environmental

Analytical Results

Client:	Longview, City of	**Service Request:**	K1502368
Project:	Sentinel Wells	**Date Collected:**	03/09/2015
Sample Matrix:	Drinking water	**Date Received:**	03/09/2015

Endothall by EPA Method 548.1

Sample Name:	DW-9	**Units:**	ug/L
Lab Code:	K1502368-001	**Basis:**	NA
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	548.1		

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Endothall	ND	U	5.0	1	03/12/15	03/24/15	KWG1502057	

Comments:

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Analytical Results

Client:	Longview, City of	**Service Request:**	K1502368
Project:	Sentinel Wells	**Date Collected:**	NA
Sample Matrix:	Drinking water	**Date Received:**	NA

Endothall by EPA Method 548.1

Sample Name:	Method Blank	**Units:**	ug/L
Lab Code:	KWG1502057-4	**Basis:**	NA
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	548.1		

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Endothall	ND	U	5.0	1	03/12/15	03/24/15	KWG1502057	

Comments:

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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502368
Project:	Sentinel Wells	**Date Extracted:**	03/12/2015
Sample Matrix:	Drinking water	**Date Analyzed:**	03/24/2015

Matrix Spike/Duplicate Matrix Spike Summary
Endothall by EPA Method 548.1

Sample Name:	Batch QC	**Units:**	ug/L
Lab Code:	K1502415-001	**Basis:**	NA
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	548.1	**Extraction Lot:**	KWG1502057

		Batch QCMS KWG1502057-1 Matrix Spike			Batch QCDMS KWG1502057-2 Duplicate Matrix Spike					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**%Rec**	**Result**	**Spike Amount**	**%Rec**	**%Rec Limits**	**RPD**	**RPD Limit**
Endothall	ND	91.2	100	91	94.4	100	94	30-142	3	30

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Client:	Longview, City of	**Service Request:**	K1502368
Project:	Sentinel Wells	**Date Extracted:**	03/12/2015
Sample Matrix:	Drinking water	**Date Analyzed:**	03/24/2015

Lab Control Spike Summary
Endothall by EPA Method 548.1

Extraction Method:	METHOD	**Units:**	ug/L
Analysis Method:	548.1	**Basis:**	NA
		Level:	Low
		Extraction Lot:	KWG1502057

	Lab Control Sample KWG1502057-3 Lab Control Spike			
Analyte Name	**Result**	**Spike Amount**	**%Rec**	**%Rec Limits**
Endothall	94.0	100	94	30-142

Results flagged with an asterisk (*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Diquat and Paraquat by EPA Method 549.2

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Analytical Results

Client:	Longview, City of	**Service Request:**	K1502368
Project:	Sentinel Wells	**Date Collected:**	03/09/2015
Sample Matrix:	Drinking water	**Date Received:**	03/09/2015

Diquat and Paraquat by EPA Method 549.2

Sample Name:	DW-9	**Units:**	ug/L
Lab Code:	K1502368-001	**Basis:**	NA
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	549.2		

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Diquat	ND	U	0.40	1	03/12/15	03/12/15	KWG1502015	
Paraquat	ND	U	0.80	1	03/12/15	03/12/15	KWG1502015	

Comments:

Analytical Results

Client:	Longview, City of	**Service Request:**	K1502368
Project:	Sentinel Wells	**Date Collected:**	NA
Sample Matrix:	Drinking water	**Date Received:**	NA

Diquat and Paraquat by EPA Method 549.2

Sample Name:	Method Blank	**Units:**	ug/L
Lab Code:	KWG1502015-5	**Basis:**	NA
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	549.2		

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Diquat	ND	U	0.40	1	03/12/15	03/12/15	KWG1502015	
Paraquat	ND	U	0.80	1	03/12/15	03/12/15	KWG1502015	

Comments:

QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502368
Project:	Sentinel Wells	**Date Extracted:**	03/12/2015
Sample Matrix:	Drinking water	**Date Analyzed:**	03/12/2015

Matrix Spike/Duplicate Matrix Spike Summary
Diquat and Paraquat by EPA Method 549.2

Sample Name:	Batch QC	**Units:**	ug/L
Lab Code:	K1502415-001	**Basis:**	NA
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	549.2	**Extraction Lot:**	KWG1502015

		Batch QCMS KWG1502015-1 Matrix Spike				Batch QCDMS KWG1502015-2 Duplicate Matrix Spike						
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**%Rec**		**Result**	**Spike Amount**	**%Rec**		**%Rec Limits**	**RPD**	**RPD Limit**
Diquat	ND	7.09	12.0	59	*	6.64	12.0	55	*	70-130	7	30
Paraquat	ND	14.6	12.0	122		13.2	12.0	110		70-130	10	30

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502368
Project:	Sentinel Wells	**Date Extracted:**	03/12/2015
Sample Matrix:	Drinking water	**Date Analyzed:**	03/12/2015

Lab Control Spike Summary
Diquat and Paraquat by EPA Method 549.2

Extraction Method:	METHOD	**Units:**	ug/L
Analysis Method:	549.2	**Basis:**	NA
		Level:	Low
		Extraction Lot:	KWG1502015

	Lab Control Sample KWG1502015-4 Lab Control Spike			
Analyte Name	**Result**	**Spike Amount**	**%Rec**	**%Rec Limits**
Diquat	12.7	12.0	106	70-130
Paraquat	13.5	12.0	112	70-130

Results flagged with an asterisk (*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Chlorinated Phenolic Organic Compounds

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Analytical Results

Client:	Longview, City of	**Service Request:**	K1502368
Project:	Sentinel Wells	**Date Collected:**	3/9/2015
Sample Matrix:	Drinking water	**Date Received:**	3/9/2015

EPA Method 1653A
Chlorinated Phenolic Organic Compounds

Sample Name:	DW-9	Units:	ug/L (ppb)
Lab Code:	K1502368-001	Basis:	NA
Test Notes:			

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
2,4,6-Trichlorophenol	METHOD	1653A	2.5	1	3/11/2015	3/17/2015	ND	
2,4,5-Trichlorophenol	METHOD	1653A	2.5	1	3/11/2015	3/17/2015	ND	
2,3,4,6-Tetrachlorophenol	METHOD	1653A	2.5	1	3/11/2015	3/17/2015	ND	
3,4,6-Trichloroguaiacol	METHOD	1653A	2.5	1	3/11/2015	3/17/2015	ND	
3,4,5-Trichloroguaiacol	METHOD	1653A	2.5	1	3/11/2015	3/17/2015	ND	
3,4,6-Trichlorocatechol	METHOD	1653A	5.0	1	3/11/2015	3/17/2015	ND	
3,4,5-Trichlorocatechol	METHOD	1653A	5.0	1	3/11/2015	3/17/2015	ND	
Trichlorosyringol	METHOD	1653A	2.5	1	3/11/2015	3/17/2015	ND	
4,5,6-Trichloroguaiacol	METHOD	1653A	2.5	1	3/11/2015	3/17/2015	ND	
Pentachlorophenol	METHOD	1653A	5.0	1	3/11/2015	3/17/2015	ND	
Tetrachloroguaiacol	METHOD	1653A	5.0	1	3/11/2015	3/17/2015	ND	
Tetrachlorocatechol	METHOD	1653A	5.0	1	3/11/2015	3/17/2015	ND	

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Analytical Results

Client:	Longview, City of	**Service Request:**	K1502368
Project:	Sentinel Wells	**Date Collected:**	NA
Sample Matrix:	Drinking water	**Date Received:**	NA

EPA Method 1653A
Chlorinated Phenolic Organic Compounds

Sample Name:	Method Blank	Units:	ug/L (ppb)
Lab Code:	KWG1502012-3	Basis:	NA
Test Notes:			

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
2,4,6-Trichlorophenol	METHOD	1653A	2.5	1	3/11/2015	3/17/2015	ND	
2,4,5-Trichlorophenol	METHOD	1653A	2.5	1	3/11/2015	3/17/2015	ND	
2,3,4,6-Tetrachlorophenol	METHOD	1653A	2.5	1	3/11/2015	3/17/2015	ND	
3,4,6-Trichloroguaiacol	METHOD	1653A	2.5	1	3/11/2015	3/17/2015	ND	
3,4,5-Trichloroguaiacol	METHOD	1653A	2.5	1	3/11/2015	3/17/2015	ND	
3,4,6-Trichlorocatechol	METHOD	1653A	5.0	1	3/11/2015	3/17/2015	ND	
3,4,5-Trichlorocatechol	METHOD	1653A	5.0	1	3/11/2015	3/17/2015	ND	
Trichlorosyringol	METHOD	1653A	2.5	1	3/11/2015	3/17/2015	ND	
4,5,6-Trichloroguaiacol	METHOD	1653A	2.5	1	3/11/2015	3/17/2015	ND	
Pentachlorophenol	METHOD	1653A	5.0	1	3/11/2015	3/17/2015	ND	
Tetrachloroguaiacol	METHOD	1653A	5.0	1	3/11/2015	3/17/2015	ND	
Tetrachlorocatechol	METHOD	1653A	5.0	1	3/11/2015	3/17/2015	ND	

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Analytical Results

Client:	Longview, City of	**Service Request:**	K1502368
Project:	Sentinel Wells	**Date Collected:**	NA
Sample Matrix:	Drinking water	**Date Received:**	NA
		Date Extracted:	3/11/2015

Labeled Compound and Internal Standard Recovery Summary
Chlorinated Phenolic Organic Compounds
1653A

			Percent Recovery	
	CAS	Sample Name:	**DW-9**	**Method Blank**
	Percent	Lab Code:	K1502368-001	KWG1502012-3
	Recovery	Date Analyzed:	3/17/2015	3/17/2015
Analyte	**Acceptance Criteria**			
3,4,5-Trichlorophenol	36-131		89	101
4,5,6-Trichloroguaiacol-13c6	25-134		80	105
Pentachlorophenol-13c6	22-117		79	100
Tetrachloroguaiacol-13c6	18-129		89	105
Tetrachlorocatechol-13c6	D-121		24	88

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Analytical Results

Client: Longview, City of
Project: Sentinel Wells
Sample Matrix: Drinking water

Service Request: K1502368
Date Collected: NA
Date Received: NA
Date Extracted: 3/11/2015
Date Analyzed: 3/17/2015

Duplicate Summary
Chlorinated Phenolic Organic Compounds

Sample Name: Batch QC
Lab Code: KWG1502012-1
Test Notes:

Units: ug/L (ppb)
Basis: NA

Analyte	Prep Method	Analysis Method	MRL	Sample Result	Duplicate Sample Result	Average	Relative Percent Difference	Result Notes
2,4,6-Trichlorophenol	METHOD	1653A	2.5	ND	ND	ND	-	
2,4,5-Trichlorophenol	METHOD	1653A	2.5	ND	ND	ND	-	
2,3,4,6-Tetrachlorophenol	METHOD	1653A	2.5	ND	ND	ND	-	
3,4,6-Trichloroguaiacol	METHOD	1653A	2.5	ND	ND	ND	-	
3,4,5-Trichloroguaiacol	METHOD	1653A	2.5	ND	ND	ND	-	
3,4,6-Trichlorocatechol	METHOD	1653A	5.0	ND	ND	ND	-	
3,4,5-Trichlorocatechol	METHOD	1653A	5.0	ND	ND	ND	-	
Trichlorosyringol	METHOD	1653A	2.5	ND	ND	ND	-	
4,5,6-Trichloroguaiacol	METHOD	1653A	2.5	ND	ND	ND	-	
Pentachlorophenol	METHOD	1653A	5.0	ND	ND	ND	-	
Tetrachloroguaiacol	METHOD	1653A	5.0	ND	ND	ND	-	
Tetrachlorocatechol	METHOD	1653A	5.0	ND	ND	ND	-	

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Analytical Results

Client:	Longview, City of	**Service Request:**	K1502368
Project:	Sentinel Wells	**Date Collected:**	NA
LCS Matrix:	Drinking water	**Date Received:**	NA
		Date Extracted:	3/11/2015
		Date Analyzed:	3/17/2015

Ongoing Precision and Recovery Summary
Chlorinated Phenolic Organic Compounds

Sample Name:	Lab Control Sample	Units:	ug/L (ppb)
Lab Code:	KWG1502012-2	Basis:	NA
Test Notes:			

Analyte	Prep Method	Analysis Method	True Value	Result	Percent Recovery	CAS Percent Recovery Acceptance Limits	Result Notes
2,4,6-Trichlorophenol	METHOD	1653A	50	46.1	92	72-146	
2,4,5-Trichlorophenol	METHOD	1653A	50	47.5	95	82-128	
2,3,4,6-Tetrachlorophenol	METHOD	1653A	50	50.0	100	82-132	
3,4,6-Trichloroguaiacol	METHOD	1653A	50	46.7	93	74-140	
3,4,5-Trichloroguaiacol	METHOD	1653A	50	49.3	99	80-134	
3,4,6-Trichlorocatechol	METHOD	1653A	100	89.3	89	64-149	
3,4,5-Trichlorocatechol	METHOD	1653A	100	96.9	97	72-128	
Trichlorosyringol	METHOD	1653A	50	51.1	102	66-174	
4,5,6-Trichloroguaiacol	METHOD	1653A	50	49.2	98	88-116	
Pentachlorophenol	METHOD	1653A	100	89.0	89	84-120	
Tetrachloroguaiacol	METHOD	1653A	100	93.2	93	81-126	
Tetrachlorocatechol	METHOD	1653A	100	94.4	94	81-132	

Subcontract Lab Results

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NELAP Certifications: NJ PA010 , NY 11759 , PA 22-293 DoD ELAP: A2LA 0818.01
State Certifications: DE ID 11 , MA PA0102 , MD 128 , VA 460157 , WV 343

March 23, 2015

Mr. Gregory Salata
ALS Environmental - Kelso
1317 S. 13th Avenue
Kelso, WA 98626

Certificate of Analysis

Project Name:	**SOCs**	Workorder:	**2058591**
Purchase Order:	**K1502368**	Workorder ID:	**K1502368**

Dear Mr. Salata:

Enclosed are the analytical results for samples received by the laboratory on Wednesday, March 11, 2015.

The ALS Environmental laboratory in Middletown, Pennsylvania is a National Environmental Laboratory Accreditation Program (NELAP) accredited laboratory and as such, certifies that all applicable test results meet the requirements of NELAP.

If you have any questions regarding this certificate of analysis, please contact Mrs. Kelli L Wolfgang (Project Coordinator) at (717) 944-5541.

Analyses were performed according to our laboratory's NELAP-approved quality assurance program and any applicable state requirements. The test results meet requirements of the current NELAP standards or state requirements, where applicable. For a specific list of accredited analytes, refer to the certifications section of the ALS website at www.alsglobal.com/en/Our-Services/Life-Sciences/Environmental/Downloads.

This laboratory report may not be reproduced, except in full, without the written approval of ALS Environmental.

ALS Spring City: 10 Riverside Drive, Spring City, PA 19475 610-948-4903

CC: Ms. Chris Leaf

This page is included as part of the Analytical Report and must be retained as a permanent record thereof.

Kelli Wolfgang

Mrs. Kelli L Wolfgang
Project Coordinator

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SAMPLE SUMMARY

Workorder: 2058591 K1502368

Lab ID	Sample ID	Matrix	Date Collected	Date Received	Collected By
2058591001	K1502368-001	Drinking Water	3/9/2015 10:00	3/11/2015 09:21	Collected by Client

Notes

-- Samples collected by ALS personnel are done so in accordance with the procedures set forth in the ALS Field Sampling Plan (20 - Field Services Sampling Plan).
-- All Waste Water analyses comply with methodology requirements of 40 CFR Part 136.
-- All Drinking Water analyses comply with methodology requirements of 40 CFR Part 141.
-- Unless otherwise noted, all quantitative results for soils are reported on a dry weight basis.
-- The Chain of Custody document is included as part of this report.
-- All Library Search analytes should be regarded as tentative identifications based on the presumptive evidence of the mass spectra. Concentrations reported are estimated values.
-- Parameters identified as "analyze immediately" require analysis within 15 minutes of collection. Any "analyze immediately" parameters not listed under the header "Field Parameters" are preformed in the laboratory and are therefore analyzed out of hold time.
-- Method references listed on this report beginning with the prefix “S” followed by a method number (such as S2310B-97) refer to methods from “Standard Methods for the Examination of Water and Wastewater”.

Standard Acronyms/Flags

J	Indicates an estimated value between the Method Detection Limit (MDL) and the Practical Quantitation Limit (PQL) for the analyte
U	Indicates that the analyte was Not Detected (ND)
N	Indicates presumptive evidence of the presence of a compound
MDL	Method Detection Limit
PQL	Practical Quantitation Limit
RDL	Reporting Detection Limit
ND	Not Detected - indicates that the analyte was Not Detected at the RDL
Cntr	Analysis was performed using this container
RegLmt	Regulatory Limit
LCS	Laboratory Control Sample
MS	Matrix Spike
MSD	Matrix Spike Duplicate
DUP	Sample Duplicate
%Rec	Percent Recovery
RPD	Relative Percent Difference
LOD	DoD Limit of Detection
LOQ	DoD Limit of Quantitation
DL	DoD Detection Limit
I	Indicates reported value is greater than or equal to the Method Detection Limit (MDL) but less than the Report Detection Limit (RDL)

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ANALYTICAL RESULTS

Workorder: 2058591 K1502368

Lab ID: **2058591001** Date Collected: 3/9/2015 10:00 Matrix: Drinking Water
Sample ID: **K1502368-001** Date Received: 3/11/2015 09:21

Parameters	Results	Flag	Units	RDL	Method	Prepared By	Analyzed	By	*Cntr*
HERBICIDES									
Glyphosate	ND		ug/L	4.5	EPA 547		3/22/15 12:41	CGS	D
CARBAMATES									
Aldicarb	ND		ug/L	0.26	EPA 531.1		3/16/15 22:07	CGS	A
Aldicarb Sulfone	ND		ug/L	0.32	EPA 531.1		3/16/15 22:07	CGS	A
Aldicarb Sulfoxide	ND		ug/L	0.27	EPA 531.1		3/16/15 22:07	CGS	A
Carbaryl	ND		ug/L	0.29	EPA 531.1		3/16/15 22:07	CGS	A
Carbofuran	ND		ug/L	0.43	EPA 531.1		3/16/15 22:07	CGS	A
3-Hydroxycarbofuran	ND		ug/L	0.27	EPA 531.1		3/16/15 22:07	CGS	A
Methiocarb	ND		ug/L	0.18	EPA 531.1		3/16/15 22:07	CGS	A
Methomyl	ND		ug/L	0.49	EPA 531.1		3/16/15 22:07	CGS	A
Oxamyl	ND		ug/L	0.50	EPA 531.1		3/16/15 22:07	CGS	A
Propoxur	ND		ug/L	0.32	EPA 531.1		3/16/15 22:07	CGS	A

Kelli Wolfgang
Mrs. Kelli L Wolfgang
Project Coordinator

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QUALITY CONTROL DATA

Workorder: 2058591 K1502368

QC Batch: HPLC/3911 **Analysis Method:** EPA 531.1

QC Batch Method: EPA 531.1

Associated Lab Samples: 2058591001

METHOD BLANK: 2149046

Parameter	Blank Result	Units	Reporting Limit	Qualifiers
Aldicarb Sulfoxide	ND	ug/L	0.27	
Aldicarb Sulfone	ND	ug/L	0.32	
Oxamyl	ND	ug/L	0.50	
Methomyl	ND	ug/L	0.49	
3-Hydroxycarbofuran	ND	ug/L	0.27	
Aldicarb	ND	ug/L	0.26	
Propoxur	ND	ug/L	0.32	
Carbofuran	ND	ug/L	0.43	
Carbaryl	ND	ug/L	0.29	
Methiocarb	ND	ug/L	0.18	

LABORATORY CONTROL SAMPLE: 2149047

Parameter	LCS % Rec	Units	Spike Conc.	LCS Result	% Rec Limit	Qualifiers
Aldicarb Sulfoxide	98.7	ug/L	10	9.9	80 - 120	
Aldicarb Sulfone	87.3	ug/L	10	8.7	80 - 120	
Oxamyl	99.8	ug/L	10	10	80 - 120	
Methomyl	94.4	ug/L	10	9.4	80 - 120	
3-Hydroxycarbofuran	100	ug/L	10	10.0	80 - 120	
Aldicarb	96.5	ug/L	10	9.7	80 - 120	
Propoxur	92.4	ug/L	10	9.2	80 - 120	
Carbofuran	90.9	ug/L	10	9.1	80 - 120	
Carbaryl	88.8	ug/L	10	8.9	80 - 120	
Methiocarb	90.6	ug/L	10	9.1	80 - 120	

SAMPLE DUPLICATE: 2150707 ORIGINAL:

Parameter	Original Result	Units	DUP Result	RPD	Max RPD	Qualifiers
Aldicarb Sulfoxide	0	ug/L	0	NC	20	
Aldicarb Sulfone	0	ug/L	0	NC	20	
Oxamyl	0	ug/L	0	NC	20	
Methomyl	0	ug/L	0	NC	20	
3-Hydroxycarbofuran	0	ug/L	0	NC	20	

QUALITY CONTROL DATA

Workorder: 2058591 K1502368

Aldicarb	0	ug/L	0	NC	20
Propoxur	0	ug/L	0	NC	20
Carbofuran	0	ug/L	0	NC	20
Carbaryl	0	ug/L	0	NC	20
Methiocarb	0	ug/L	0	NC	20

MATRIX SPIKE SAMPLE: 2149049 ORIGINAL: 2058591001

****NOTE - The Original Result shown below is a raw result and is only used for the purpose of calculating Matrix Spike percent recoveries. This result is not a final value and cannot be used as such.

Parameter	Original Result	Units	Spike Conc.	MS Result	MS % Rec	% Rec Limit	Qualifiers
Aldicarb Sulfoxide	0	ug/L	10	12.3558	124	65 - 135	
Aldicarb Sulfone	0	ug/L	10	11.5018	115	65 - 135	
Oxamyl	0	ug/L	10	13.1784	132	65 - 135	
Methomyl	0	ug/L	10	12.0278	120	65 - 135	
3-Hydroxycarbofuran	0	ug/L	10	12.6868	127	65 - 135	
Aldicarb	0	ug/L	10	12.1718	122	65 - 135	
Propoxur	0	ug/L	10	11.4132	114	65 - 135	
Carbofuran	0	ug/L	10	11.52	115	65 - 135	
Carbaryl	0	ug/L	10	11.5322	115	65 - 135	
Methiocarb	0	ug/L	10	10.9469	109	65 - 135	

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QUALITY CONTROL DATA

Workorder: 2058591 K1502368

QC Batch: HPLC/3915 **Analysis Method:** EPA 547

QC Batch Method: EPA 547

Associated Lab Samples: 2058591001

METHOD BLANK: 2153468

Parameter	Blank Result	Units	Reporting Limit	Qualifiers
Glyphosate	ND	ug/L	4.5	

LABORATORY CONTROL SAMPLE: 2153469

Parameter	LCS % Rec	Units	Spike Conc.	LCS Result	% Rec Limit	Qualifiers
Glyphosate	99.5	ug/L	500	497	80 - 120	

MATRIX SPIKE SAMPLE: 2153470 ORIGINAL:

****NOTE - The Original Result shown below is a raw result and is only used for the purpose of calculating Matrix Spike percent recoveries. This result is not a final value and cannot be used as such.

Parameter	Original Result	Units	Spike Conc.	MS Result	MS % Rec	% Rec Limit	Qualifiers
Glyphosate	0	ug/L	500	482.285	96.5	70 - 130	

SAMPLE DUPLICATE: 2153471 ORIGINAL:

Parameter	Original Result	Units	DUP Result	RPD	Max RPD	Qualifiers
Glyphosate	0	ug/L	0	NC	40	

MATRIX SPIKE SAMPLE: 2153472 ORIGINAL:

****NOTE - The Original Result shown below is a raw result and is only used for the purpose of calculating Matrix Spike percent recoveries. This result is not a final value and cannot be used as such.

Parameter	Original Result	Units	Spike Conc.	MS Result	MS % Rec	% Rec Limit	Qualifiers
Glyphosate	0	ug/L	500	448.493	89.7	70 - 130	

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State Certifications: DE ID 11 , MA PA0102 , MD 128 , VA 460157 , WV 343

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Workorder: 2058591 K1502368

Lab ID	Sample ID	Prep Method	Prep Batch	Analysis Method	Analysis Batch
2058591001	K1502368-001			EPA 531.1	HPLC/3911
2058591001	K1502368-001			EPA 547	HPLC/3915

ALS Environmental Chain of Custody

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ALS Con

2058591

Project Number: K1502368
Project Manager: Chris Leaf

Lab Code	Sample ID	# of Cont.	Matrix	Sample Date	Sample Time	Lab ID	CARBAM 531.1	GLYPH 547
K1502368-001	DW-9	6	Drinking Water	3/9/15	1000	Middletown ALS	X	X

AT 3/11/15 1310

RCVD - 3 - 40mL amber
3 - 125mL amber
AT 3/11/15

w/QC

Test Comments
CARBAM - 531.1 K1502368-001 Full list for WA Regulations - no compliance report required.

Folder Comments:
Report all metals in mg/L. No DW State form required.

KLW 03/12/15

	Y	N	Initials	
Custody Seals Present?				Cooler Temp: °C
(If present) Seals Intact?				Cooler #:
Received on Ice?				Therm ID:
COC/Lbls Complete				Ship Carrier
Cont in Good Cond?				FedEx UPS
Correct Containers?				DHL
Correct Samp Vol?				
Correct Preservation?				
Headspace/Volatiles?				

Tracking # 5478 9794 2250

Special Instructions/Comments
Please provide the electronic (PDF and EDD) report to the following e-mail address:
ALKLS.Data@alsglobal.com

CL

H - Test is On Hold P - Test is Authorized for Prep Only

Turnaround Requirements
___ RUSH (Surcharges Apply)
PLEASE CIRCLE WORK DAYS
1 2 3 4 5
✓ STANDARD
Requested FAX Date: _____
Requested Report Date: 03/26/15

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 N
EDD N

Invoice Information
PO# K1502368
Bill to

Relinquished By: MS 3/10/15 1130 Received By: 3/11/15 0921 Airbill Number:

K1502368

✓ **Ship To: Middletown ALS**
ALS Laboratory Group
34 Dogwood Lane
Middletown, PA 17057

PC CL Date 3/10/15
SMO [illegible] Date 3/10/15

Instructions:
Ice ✓
Dry Ice ____
No Ice ____

Shipping:
Overnight ✓
2nd Day ____
Ground ____

Bill to Client Account ____

Comments:

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State Certification: CT PH-0224, DE ID 11, GA 914, MA PA0102, MD 128, LA 04162, VA 421, WY EPA Region 8, WV 343

QUALITY CONTROL DATA

Workorder **2058591** **Project Name** **K1502368**

QC Batch HPLC / 3911

QC Batch Method EPA 531.1 **Analysis Method** EPA 531.1

Associated Lab Samples 2058591001

METHOD BLANK 2149046

Parameter	Blank Result	Qualifiers	Units	Reporting Limit	% Rec	% Rec Limits
3-Hydroxycarbofuran	ND	U	ug/L	0.27		
Aldicarb	ND	U	ug/L	0.26		
Aldicarb Sulfone	ND	U	ug/L	0.32		
Aldicarb Sulfoxide	ND	U	ug/L	0.27		
Carbaryl	ND	U	ug/L	0.29		
Carbofuran	ND	U	ug/L	0.43		
Methiocarb	ND	U	ug/L	0.18		
Methomyl	ND	U	ug/L	0.49		
Oxamyl	ND	U	ug/L	0.50		
Propoxur	ND	U	ug/L	0.32		

LABORATORY CONTROL SAMPLE 2149047

Parameter	LCS Result	Qualifiers	Units	Spike Conc.	LCS % Rec	% Rec Limits
3-Hydroxycarbofuran	10		ug/L	10	100	80-120
Aldicarb	9.7		ug/L	10	96.5	80-120
Aldicarb Sulfone	8.7		ug/L	10	87.3	80-120
Aldicarb Sulfoxide	9.9		ug/L	10	98.7	80-120
Carbaryl	8.9		ug/L	10	88.8	80-120
Carbofuran	9.1		ug/L	10	90.9	80-120

This is an addendum to the Certificate of Analysis.

Methiocarb	9.1	ug/L	10	90.6	80-120
Methomyl	9.4	ug/L	10	94.4	80-120
Oxamyl	10	ug/L	10	99.8	80-120
Propoxur	9.2	ug/L	10	92.4	80-120

SAMPLE DUPLICATE 2150707 Original 2057116002

*****NOTE - The Original Result and Duplicate Result shown below are raw results and are only used for the purpose of calculating Sample Duplicate percent recoveries. This result is not a final value and cannot be used as such.*

Parameter	Original Result	Qualifiers	Units	DUP Result	RPD	Max RPD	% Rec	% Rec Limits
3-Hydroxycarbofuran	ND	U	ug/L	ND	NC	20		
Aldicarb	ND	U	ug/L	ND	NC	20		
Aldicarb Sulfone	ND	U	ug/L	ND	NC	20		
Aldicarb Sulfoxide	ND	U	ug/L	ND	NC	20		
Carbaryl	ND	U	ug/L	ND	NC	20		
Carbofuran	ND	U	ug/L	ND	NC	20		
Methiocarb	ND	U	ug/L	ND	NC	20		
Methomyl	ND	U	ug/L	ND	NC	20		
Oxamyl	ND	U	ug/L	ND	NC	20		
Propoxur	ND	U	ug/L	ND	NC	20		

MATRIX SPIKE 2149049 Original 2058591001

*****NOTE - The Original Result shown below is a raw result and is only used for the purpose of calculating Matrix Spike percent recoveries. This result is not a final value and cannot be used as such.*

Parameter	Original Result	Qualifiers	Units	Spike Conc.	MS Result	MS % Rec	% Rec Limits
3-Hydroxycarbofuran	ND		ug/L	10	12.6868	127	65-135
Aldicarb	ND		ug/L	10	12.1718	122	65-135
Aldicarb Sulfone	ND		ug/L	10	11.5018	115	65-135
Aldicarb Sulfoxide	ND		ug/L	10	12.3558	124	65-135
Carbaryl	ND		ug/L	10	11.5322	115	65-135
Carbofuran	ND		ug/L	10	11.52	115	65-135
Methiocarb	ND		ug/L	10	10.9469	109	65-135
Methomyl	ND		ug/L	10	12.0278	120	65-135
Oxamyl	ND		ug/L	10	13.1784	132	65-135
Propoxur	ND		ug/L	10	11.4132	114	65-135

Workorder	**2058591**	**Project Name**	**K1502368**
QC Batch	HPLC / 3915		
QC Batch Method	EPA 547	**Analysis Method**	EPA 547
Associated Lab Samples	2058591001		

METHOD BLANK 2153468

Parameter	Blank Result	Qualifiers	Units	Reporting Limit	% Rec	% Rec Limits
Glyphosate	ND	U	ug/L	4.5		

LABORATORY CONTROL SAMPLE 2153469

Parameter	LCS Result	Qualifiers	Units	Spike Conc.	LCS % Rec	% Rec Limits
Glyphosate	497		ug/L	500	99.5	80-120

SAMPLE DUPLICATE 2153471 Original 2058366001

*****NOTE - The Original Result and Duplicate Result shown below are raw results and are only used for the purpose of calculating Sample Duplicate percent recoveries. This result is not a final value and cannot be used as such.*

Parameter	Original Result	Qualifiers	Units	DUP Result	RPD	Max RPD	% Rec	% Rec Limits
Glyphosate	ND	U	ug/L	ND	NC	40		

MATRIX SPIKE 2153470 Original 2058366001

*****NOTE - The Original Result shown below is a raw result and is only used for the purpose of calculating Matrix Spike percent recoveries. This result is not a final value and cannot be used as such.*

Parameter	Original Result	Qualifiers	Units	Spike Conc.	MS Result	MS % Rec	% Rec Limits
Glyphosate	ND		ug/L	500	482.285	96.5	70-130

MATRIX SPIKE 2153472 Original 2059505001

*****NOTE - The Original Result shown below is a raw result and is only used for the purpose of calculating Matrix Spike percent recoveries. This result is not a final value and cannot be used as such.*

Parameter	Original Result	Qualifiers	Units	Spike Conc.	MS Result	MS % Rec	% Rec Limits
Glyphosate	ND		ug/L	500	448.493	89.7	70-130

Standard Acronyms/Flags	
J	Indicates an estimated value between the Method Detection Limit (MDL) and the Practical Quantitation Limit (PQL) for the analyte
U	Indicates that the analyte was Not Detected (ND)
N	Indicates presumptive evidence of the presence of a compound
MDL	Method Detection Limit
PQL	Practical Quantitation Limit
RDL	Reporting Detection Limit
ND	Not Detected - indicates that the analyte was Not Detected at the RDL
Cntr	Analysis was performed using this container
RegLmt	Regulatory Limit
LCS	Laboratory Control Sample
MS	Matrix Spike
MSD	Matrix Spike Duplicate
DUP	Sample Duplicate
%Rec	Percent Recovery
RPD	Relative Percent Difference
LOD	DoD Limit of Detection
LOQ	DoD Limit of Quantitation
DL	DoD Detection Limit
NC	Not Calculated
*	Result outside of QC limits
DIL	Dilution Factor

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Lab ID	Sample ID	Prep Method	Prep Batch	Analysis Method	Analysis Batch
2057116002	ZZZZZZZZZZ	EPA 531.1	HPLC / 3911	EPA 531.1	HPLC / 3911
2058591001	K1502368-001	EPA 531.1	HPLC / 3911	EPA 531.1	HPLC / 3911

Lab ID	Sample ID	Prep Method	Prep Batch	Analysis Method	Analysis Batch
2058366001	ZZZZZZZZZZ	EPA 547	HPLC / 3915	EPA 547	HPLC / 3915
2058591001	K1502368-001	EPA 547	HPLC / 3915	EPA 547	HPLC / 3915
2059505001	ZZZZZZZZZZ	EPA 547	HPLC / 3915	EPA 547	HPLC / 3915

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LABORATORY REPORT

March 21, 2015

Jeff Coleman
Longview, City of
W/S Operation Center
Longview, WA 98632

RE: Sentinel Wells

Dear Jeff:

Enclosed are the results of the sample submitted to our laboratory on March 9, 2015. For your reference, this analysis has been assigned our service request number K1502368.

All analyses were performed according to our laboratory's NELAP and DoD-ELAP-approved quality assurance program. The test results meet requirements of the current NELAP and DoD-ELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP and DoD-ELAP-accredited analytes, refer to the certifications section at www.alsglobal.com. Results are intended to be considered in their entirety and apply only to the samples analyzed and reported herein.

If you have any questions, please call me at (805) 526-7161.

Respectfully submitted,

ALS | Environmental

Kate Aguilera

By Kate Aguilera at 8:26 am, Mar 21, 2015

Kate Aguilera
Project Manager

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www.alsglobal.com

Client: Longview, City of
Project: Sentinel Wells

Service Request No: K1502368

CASE NARRATIVE

The sample was received intact under chain of custody on March 9, 2015 and was stored in accordance with the analytical method requirements. Please refer to the sample acceptance check form for additional information. The results reported herein are applicable only to the condition of the sample at the time of sample receipt.

Hydrogen Sulfide Analysis

The sample was analyzed for hydrogen sulfide using a gas chromatograph equipped with a sulfur chemiluminescence detector (SCD). This method is not included on the laboratory's NELAP, DoD-ELAP, or AIHA-LAP scope of accreditation.

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 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.

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F: +1 805 526 7270
www.alsglobal.com

ALS Environmental – Simi Valley

CERTIFICATIONS, ACCREDITATIONS, AND REGISTRATIONS

Agency	Web Site	Number
AIHA	http://www.aihaaccreditedlabs.org	101661
Arizona DHS	http://www.azdhs.gov/lab/license/env.htm	AZ0694
DoD ELAP	http://www.pjlabs.com/search-accredited-labs	L14-2
Florida DOH (NELAP)	http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm	E871020
Maine DHHS	http://www.maine.gov/dhhs/mecdc/environmental-health/water/dwp-services/labcert/labcert.htm	2014025
Minnesota DOH (NELAP)	http://www.health.state.mn.us/accreditation	876241
New Jersey DEP (NELAP)	http://www.nj.gov/dep/oqa/	CA009
New York DOH (NELAP)	http://www.wadsworth.org/labcert/elap/elap.html	11221
Oregon PHD (NELAP)	http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Pages/index.aspx	4068-001
Pennsylvania DEP	http://www.depweb.state.pa.us/labs	68-03307 (Registration)
Texas CEQ (NELAP)	http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html	T104704413-14-5
Utah DOH (NELAP)	http://www.health.utah.gov/lab/labimp/certification/index.html	CA016272014-4
Washington DOE	http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html	C946

Analyses were performed according to our laboratory's NELAP and DoD-ELAP approved quality assurance program. A complete listing of specific NELAP and DoD-ELAP certified analytes can be found in the certifications section at www.alsglobal.com, or at the accreditation body's website.

Each of the certifications listed above have an explicit Scope of Accreditation that applies to specific matrices/methods/analytes; therefore, please contact the laboratory for information corresponding to a particular certification.

Intra-Network Chain of Custody

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

ALS Contact: Chris Leaf

Project Name: Sentinel Wells
Project Number:
Project Manager: Jeff Coleman
Company: Longview, City of

Lab Code	Client Sample ID	# of Cont.	Matrix	Sample Date	Sample Time	Date Received	Send To	Sulfur Sulfur Liq
K1502368-001	DW-9	3	Drinking Water	3/9/15	1000	3/9/15	SIMIVALLEY	II

Test Comments

Sulfur - Sulfur Liq K1502368-001 Hydrogen Sulfide

Folder Comments:

Report all metals in mg/L. No DW State form required.

Special Instructions/Comments

Please provide the electronic (PDF and EDD) report to the following e-mail address: ALKLS.Data@alsglobal.com.

CL 3/10

pH Checked _____

Turnaround Requirements

____ **RUSH** (Surcharges Apply)

PLEASE CIRCLE WORK DAYS

1 2 3 4 5

____ **STANDARD**

Requested FAX Date: _____

Requested Report Date: 03/26/15

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 N

EDD N

Invoice Information

PO# K1502368

Bill to

Relinquished By: [signature] 3/10/15 1130

Received By: K. Kelp 3/11/15 1446

3° temp blank

Airbill Number: _____

ALS Environmental
Sample Acceptance Check Form

Client: Longview, City of Work order: K1502368

Project: Sentinel Wells

Sample(s) received on: 3/9/15 Date opened: 3/9/15 by: SWOLF

Note: This form is used for all samples received by ALS. The use of this form for custody seals is strictly meant to indicate presence/absence and not as an indication of compliance or nonconformity. Thermal preservation and pH will only be evaluated either at the request of the client and/or as required by the method/SOP.

		Yes	No	N/A
1	Were **sample containers** properly marked with client sample ID?	☒	☐	☐
2	Container(s) **supplied by ALS**?	☐	☒	☐
3	Did **sample containers** arrive in good condition?	☒	☐	☐
4	Were **chain-of-custody** papers used and filled out?	☒	☐	☐
5	Did **sample container labels** and/or tags agree with custody papers?	☒	☐	☐
6	Was **sample volume** received adequate for analysis?	☒	☐	☐
7	Are samples within specified holding times?	☒	☐	☐
8	Was proper **temperature** (thermal preservation) of cooler at receipt adhered to?	☒	☐	☐
	Cooler Temperature: ° C Blank Temperature: 3° C **Gel Packs**			
9	Was a **trip blank** received?	☐	☒	☐
10	Were **custody seals** on outside of cooler/Box?	☒	☐	☐
	Location of seal(s)? _____ Sealing Lid?	☒	☐	☐
	Were signature and date included?	☒	☐	☐
	Were seals intact?	☒	☐	☐
	Were custody seals on outside of sample container?	☐	☒	☐
	Location of seal(s)? _____ Sealing Lid?	☐	☐	☒
	Were signature and date included?	☐	☐	☒
	Were seals intact?	☐	☐	☒
11	Do containers have appropriate **preservation**, according to method/SOP or Client specified information?	☒	☐	☐
	Is there a client indication that the submitted samples are **pH** preserved?	☐	☐	☒
	Were **VOA vials** checked for presence/absence of air bubbles?	☒	☐	☐
	Does the client/method/SOP require that the analyst check the sample pH and if necessary alter it?	☒	☐	☐
12	**Tubes:** Are the tubes capped and intact?	☐	☐	☒
	Do they contain moisture?	☐	☐	☒
13	**Badges:** Are the badges properly capped and intact?	☐	☐	☒
	Are dual bed badges separated and individually capped and intact?	☐	☐	☒

Lab Sample ID	Container Description	Required pH *	Received pH	Adjusted pH	VOA Headspace (Presence/Absence)	Receipt / Preservation Comments
K1502368-001.24	40mL VOA NP		7	1	A	MC 03/16/2015
K1502368-001.25	40mL VOA NP				A	
K1502368-001.42	40mL VOA NP				A	

Explain any discrepancies: (include lab sample ID numbers): _____

RSK - MEEPP, HCL (pH<2); RSK - CO2, (pH 5-8); Sulfur (pH>4)

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Longview, City of**
Client Project ID: **Sentinel Wells** ALS Project ID: K1502368

Hydrogen Sulfide

Test Code: GC/SCD Reduced Sulfur Analysis
Instrument ID: Agilent 7890A/GC22/SCD Date(s) Collected: 3/9/15
Analyst: Mike Conejo Date Received: 3/9/15
Sample Type: Drinking Water Date Analyzed: 3/16/15
Test Notes:

Client Sample ID	ALS Sample ID	Sample Amount ml(s)	Purge Volume Liter(s)	Injection Volume ml(s)	**Result µg/L**	MRL µg/L	Data Qualifier
DW-9	K1502368-001	10.0	0.30	1.0	ND	0.84	
Method Blank	P150316-MB	10.0	0.30	1.0	ND	0.84	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

LABORATORY CONTROL SAMPLE / DUPLICATE LABORATORY CONTROL SAMPLE SUMMARY

Client: **Longview, City of**
Client Sample ID: **Duplicate Lab Control Sample**
Client Project ID: **Sentinel Wells**

ALS Project ID: K1502368
ALS Sample ID: P150316-DLCS

Test Code: GC/SCD Reduced Sulfur Analysis
Instrument ID: Agilent 7890A/GC22/SCD
Analyst: Mike Conejo
Sample Type: Drinking Water
Test Notes:

Date Collected: NA
Date Received: NA
Date Analyzed: 3/16/15
Liquid Amount: 10.0 ml(s)
Purge Volume: 0.30 Liter(s)
Injection Volume: 0.20 ml(s)

CAS #	Compound	Spike Amount LCS / DLCS ug/L	Result LCS ug/L	Result DLCS ug/L	% Recovery LCS	% Recovery DLCS	ALS Acceptance Limits	RPD	RPD Limit	Data Qualifier
7783-06-4	Hydrogen Sulfide	416	487	504	**117**	**121**	54-133	3	20	

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

April 21, 2015

Analytical Report for Service Request No: K1502734

Jeff Coleman
Longview, City of
W/S Operation Center
P.O. Box 128
Longview, WA 98632

RE: Mint Farm Monitoring

Dear Jeff,

Enclosed are the results of the sample(s) submitted to our laboratory March 17, 2015
For your reference, these analyses have been assigned our service request number **K1502734.**

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 3275. You may also contact me via email at Chris.Leaf@ALSGlobal.com.

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental

Chris Leaf
Project Manager

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 DEC UST	http://dec.alaska.gov/applications/eh/ehllabreports/USTLabs.aspx	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	L14-51
Florida DOH	http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm	E87412
Hawaii DOH	Not available	-
Idaho DHW	http://www.healthandwelfare.idaho.gov/Health/Labs/CertificationDrinkingWaterLabs/tabid/1833/Default.aspx	-
ISO 17025	http://www.pjlabs.com/	L14-50
Louisiana DEQ	http://www.deq.louisiana.gov/portal/DIVISIONS/PublicParticipationandPermitSupport/LouisianaLaboratoryAccreditationProgram.aspx	03016
Maine DHS	Not available	WA01276
Michigan DEQ	http://www.michigan.gov/deq/0,1607,7-135-3307_4131_4156---,00.html	9949
Minnesota DOH	http://www.health.state.mn.us/accreditation	053-999-457
Montana DPHHS	http://www.dphhs.mt.gov/publichealth/	CERT0047
Nevada DEP	http://ndep.nv.gov/bsdw/labservice.htm	WA01276
New Jersey DEP	http://www.nj.gov/dep/oqa/	WA005
North Carolina DWQ	http://www.dwqlab.org/	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/envserv/	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
Wisconsin DNR	http://dnr.wi.gov/	998386840
Wyoming (EPA Region 8)	http://www.epa.gov/region8/water/dwhome/wyomingdi.html	-
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/anlayte is offered by that state.

Case Narrative

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

ALS ENVIRONMENTAL

Client:	Longview, City of	**Service Request No.:**	K1502734
Project:	Mint Farm Monitoring	**Date Received:**	03/17/15
Sample Matrix:	Drinking Water		

Case Narrative

All analyses were performed consistent with the quality assurance program of ALS Environmental. This report contains analytical results for samples designated for Tier II data deliverables. When appropriate to the method, method blank results have been reported with each analytical test. Surrogate recoveries have been reported for all applicable organic analyses. Additional quality control analyses reported herein include: Laboratory Duplicate (DUP), Matrix Spike (MS), Matrix/Duplicate Matrix Spike (MS/DMS), Laboratory Control Sample (LCS), and Laboratory/Duplicate Laboratory Control Sample (LCS/DLCS).

Sample Receipt

One drinking water sample was received for analysis at ALS Environmental on 03/17/15. The sample was received in good condition and consistent with the accompanying chain of custody form. The sample was stored in a refrigerator at 4ºC upon receipt at the laboratory.

General Chemistry Parameters

No anomalies associated with the analysis of this sample were observed.

Total Metals

No anomalies associated with the analysis of this sample were observed.

Chlorinated Phenolics Organic Compounds by EPA Method 1653A

No anomalies associated with the analysis of this sample were observed.

EDB and DBCP by EPA Method 504.1

No anomalies associated with the analysis of this sample were observed.

Pesticides and Polychlorinated Biphenyls by EPA Method 508.1

Matrix Spike Recovery Exceptions:
The matrix spike and duplicate matrix spike recovery of Aroclor 1248 for sample Well #1 was outside control criteria. Recovery in the Laboratory Control Sample (LCS) was acceptable, which indicated the analytical batch was in control. The matrix spike outlier suggested a potential low bias in this matrix. No further corrective action was appropriate.

No other anomalies associated with the analysis of this sample were observed.

Approved by_____

Chlorinated Acides by EPA Method 515.4

Second Source Exceptions:
The analysis of Chlorinated Herbicides in Drinking Water by EPA 515.4 requires the use of dual column confirmation. The Initial Calibration Verification (ICV) evaluation criteria were not met on the confirmation column for 2,4,5-TP (Silvex) in CAL13913. The ICV criteria were met on the alternate column. The data quality was not affected. No further corrective action was necessary.

Calibration Verification Exceptions:
The analysis of Chlorinated Herbicides in Drinking Water by EPA 515.4 requires the use of dual column confirmation. When the Continuing Calibration Verification (CCV) criterion is met for both columns, the lower of the two sample results is generally reported. The primary evaluation criteria were not met on the confirmation column for Dalapon and Acifluorfen. The results were reported from the column with an acceptable CCV. The data quality was not affected. No further corrective action was necessary.

No other anomalies associated with the analysis of this sample were observed.

Volatile Organic Compounds by EPA Method 524.2

Matrix Spike Recovery Exceptions:
The replicate Matrix Spikes recoveries of several analytes for sample Well #1 were outside control criteria. Recoveries in the Laboratory Control Sample (LCS) were acceptable, which indicated the analytical batch was in control. The matrix spike outliers suggested a potential low bias in this matrix. No further corrective action was appropriate.

Sample Notes and Discussion:
The sample Well #1 had a pH of 4.

No other anomalies associated with the analysis of this sample were observed.

Semivolatile Organic Compounds by EPA Method 525.2

Surrogate Exceptions:
The control criteria were exceeded for Perylene-d12 in DMS KWG1502593-2. The surrogate outlier was flagged accordingly. No further corrective action was appropriate.

Matrix Spike Recovery and Relative Percent Difference Exceptions:
The upper control criterion was exceeded for the following analyte in Matrix Spike (MS) KWG1502593-1 and Matrix Spike Duplicate (MSD) KWG1502593-2: Hexachlorocyclopentadiene. The analyte in question was not detected in the associated field samples. The error associated with elevated recovery indicated a high bias. The sample data was not significantly affected. No further corrective action was appropriate.

The matrix spike and duplicate matrix spike recovery of Benzo(a)pyrene for sample Well #1 was outside control criteria. The Relative Percent Difference (RPD) for Benzo(a)pyrene in the replicate matrix spike analyses of Well #1 was also outside control criteria. Recovery in the Laboratory Control Sample (LCS) was acceptable, which indicated the analytical batch was in control. The matrix spike outlier suggested a potential low bias in this matrix. No further corrective action was appropriate.

Lab Control Sample Exceptions:
The upper control criterion was exceeded for Hexachlorocyclopentadiene in Laboratory Control Sample (LCS) KWG1502593-3. The analyte in question was not detected in the associated field samples. The error associated with elevated recovery indicated a high bias. The sample data was not significantly affected. No further corrective action was appropriate.

No other anomalies associated with the analysis of this sample were observed.

Approved by_____

Endothall by EPA Method 548.1

No anomalies associated with the analysis of this sample were observed.

Diquat by High Performance Liquid Chromatography

No anomalies associated with the analysis of this sample were observed.

Sulfur

This analysis was performed at ALS Environmental, Simi Valley, CA. The data for this analysis is included in the corresponding section of this report.

Glyphosate and Carbamates

These analyses were performed at ALS Environmental, Middletown, PA. The data for these analyses are included in the corresponding section of this report.

Approved by_____

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

ALS Environmental

CHAIN OF CUSTODY

58076

001, 005

SR#_____

COC Set_____of_____

COC#_____

1317 South 13th Ave, Kelso, WA 98626 Phone (360) 577-7222 / 800-695-7222 / FAX (360) 636-1068
www.alsglobal.com

Project Name: Mint Farm Monitoring
Project Number:
Project Manager: Jeff Coleman
Company: City of Longview
Address: PO Box 128 Longview WA 98632
Phone #:
email:
Sampler Signature: T Daly
Sampler Printed Name: T Daly

CLIENT SAMPLE ID	LABID	SAMPLING Date Time	Matrix	NUMBER OF CONTAINERS	6H: SM 9223 B / Coli L (+/-)	48H: 180.1 / Turbidity	48H: 300.0 / NO2	48H: 300.0 / NO3	48H: SM 2120 B / Color	48H: SM 4500-P E / O Phos	7D: 548.1 / ENDO	7D: 549.2 / DIQ_PARAQ	7D: SM 2540 C / TDS	14D: 335.4 / CN T	14D: 504.1 / EDB DBCP 123TCP	14D: 508.1 / PEST_CL	14D: 515.4 / CL_ACID_HERB	14D: 524.2 / VOC	14D: 525.2 / SVO	14D: 547 / GLYPH	14D: SM 2320 B / Alkalinity Titr	14D: Sulfur Liq / Sulfur	28D: 300.0 / F	28D: 300.0 / SO4	28D: 314.0 / ClO4	28D: 531.1 / CARBAM	28D: SM 2510 B / Conductivity	Remarks
1. Well #1		3/17/15 0830		42																								
2.																												
3.																												
4.																												
5.																												
6.																												
7.																												
8.																												
9.																												
10.																												

Report Requirements

___ I. Routine Report: Method Blank, Surrogate, as required

___ II. Report Dup., MS, MSD as required

___ III. CLP Like Summary (no raw data)

___ IV. Data Validation Report

___ V. EDD

Invoice Information

P.O.# 36-4570

Bill To: City of Longview
PO Box 128
Longview WA 98632

Turnaround Requirements

____ 24 hr. ____48 hr.
____ 5 Day
____ Standard

Requested Report Date

Circle which metals are to be analyzed

Total Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

Dissolved Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

Special Instructions/Comments:

*Indicate State Hydrocarbon Procedure: AK CA WI Northwest Other_____(Circle One)

Relinquished By:	Received By:	Relinquished By:	Received By:	Relinquished By:	Received By:
T Daly	K Smith				
Signature	Signature	Signature	Signature	Signature	Signature
T Daly	K Smith				
Printed Name	Printed Name	Printed Name	Printed Name	Printed Name	Printed Name
CoL	ALS				
Firm	Firm	Firm	Firm	Firm	Firm
3/17/15 @ 1453	3/17/15 1453				
Date/Time	Date/Time	Date/Time	Date/Time	Date/Time	Date/Time

ALS Environmental

CHAIN OF CUSTODY

58076

001, 005

SR#_____

COC Set_____of_____

COC#_____

1317 South 13th Ave, Kelso, WA 98626 Phone (360) 577-7222 / 800-695-7222 / FAX (360) 636-1068
www.alsglobal.com

Project Name: Mint Farm Monitoring
Project Number:
Project Manager: Jeff Coleman
Company: City of Longview
Address: PO Box 128 Longview WA 98632
Phone #:
email:
Sampler Signature: T Daly
Sampler Printed Name: T Daly

CLIENT SAMPLE ID	LABID	SAMPLING Date Time	Matrix	NUMBER OF CONTAINERS	28D: 245.1 / Hg T	28D: 300.0 / Br	28D: 300.0 / Chloride	28D: SM 4500-NH3 G / Ammonia	30D: 1653A / CHLOR_PHEN	180D: 1630 / Methyl Hg T	180D: 200.7 / Metals T	180D: 200.8 / Metals T	999D: Calculation / NO2 NO3 Calc	999D: SM 2340 B / Hardness Calc	1	2	3	4	5	Remarks
1. Well #1		3/17/15 0830		42																
2.																				
3.																				
4.																				
5.																				
6.																				
7.																				
8.																				
9.																				
10.																				

Report Requirements

___ I. Routine Report: Method Blank, Surrogate, as required

___ II. Report Dup., MS, MSD as required

___ III. CLP Like Summary (no raw data)

___ IV. Data Validation Report

___ V. EDD

Invoice Information

P.O.# 36-4570

Bill To: City of Longview
PO Box 128
Longview WA 98632

Turnaround Requirements

____ 24 hr. ____48 hr.
____ 5 Day
____ Standard

Requested Report Date

Circle which metals are to be analyzed

Total Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

Dissolved Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

Special Instructions/Comments:

*Indicate State Hydrocarbon Procedure: AK CA WI Northwest Other_____(Circle One)

Relinquished By:	Received By:	Relinquished By:	Received By:	Relinquished By:	Received By:
T Daly	[illegible]				
Signature: T Daly	Signature: [illegible]	Signature	Signature	Signature	Signature
Printed Name: Cole	Printed Name: ALS	Printed Name	Printed Name	Printed Name	Printed Name
Firm: 3/17/15 1453	Firm: 3/17/15 1453	Firm	Firm	Firm	Firm
Date/Time	Date/Time	Date/Time	Date/Time	Date/Time	Date/Time

PC CL

Cooler Receipt and Preservation Form

Client / Project: Longview Service Request K15 02734

Received: 3/17/15 Opened: 3/17/15 By: UL Unloaded: 3/17/15 By: UL

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

   If present, were custody seals intact? Y N If present, were they signed and dated? Y N

Raw Cooler Temp	Corrected. Cooler Temp	UL 3/17/15 SEE Raw Temp Blank	Corrected Temp Blank	Corr. Factor	Thermometer ID	Cooler/COC ID NA	Tracking Number NA	Filed
3.1	3.1	~~3~~4.2	4.2	0	327	Weil 1	/	
8.1	8.0	—	—	-0.1	350	⊥		

4. Packing material: *Inserts* *Baggies* *Bubble Wrap* *Gel Packs* *Wet Ice* *Dry Ice* *Sleeves* _____
5. Were custody papers properly filled out (ink, signed, etc.)? NA Y N
6. Did all bottles arrive in good condition (unbroken)? *Indicate in the table below.* 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.* NA Y N
9. 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: Insuficient time for the samples to chill completely.

*Page*____ *of*____

General Chemistry

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

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client:	Longview, City of	**Service Request:**	K1502734
Project:	Mint Farm Monitoring	**Date Collected:**	03/17/15
Sample Matrix:	Drinking Water	**Date Received:**	03/17/15
Analysis Method:	180.1	**Units:**	NTU
Prep Method:	None	**Basis:**	NA

Turbidity

Sample Name	Lab Code	Result	MRL	Dil.	Date Analyzed	Q
Well #1	K1502734-001	**2.51**	0.20	1	03/18/15 11:16	
Method Blank	K1502734-MB1	ND U	0.20	1	03/18/15 11:16	

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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502734
Project	Mint Farm Monitoring	**Date Collected:**	NA
Sample Matrix:	Drinking Water	**Date Received:**	NA
Analysis Method:	180.1	**Units:**	NTU
Prep Method:	None	**Basis:**	NA

Replicate Sample Summary
Turbidity

Sample Name:	Lab Code:	MRL	Sample Result	Duplicate Result	Average	RPD	RPD Limit	Date Analyzed
Batch QC	K1502718-001DUP	0.20	20.7	20.2	20.5	2	20	03/18/15
Batch QC	K1502771-002DUP	0.20	0.28	0.29	0.282	2	20	03/18/15

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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502734
Project:	Mint Farm Monitoring	**Date Analyzed:**	03/18/15
Sample Matrix:	Drinking Water	**Date Extracted:**	NA

Lab Control Sample Summary
Turbidity

Analysis Method:	180.1	**Units:**	NTU
Prep Method:	None	**Basis:**	NA
		Analysis Lot:	436967

Sample Name	Lab Code	Result	Spike Amount	% Rec	% Rec Limits
Lab Control Sample	K1502734-LCS	6.02	6.37	95	90-110

ALS Group USA, Corp.
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Analytical Report

Client:	Longview, City of	**Service Request:**	K1502734
Project:	Mint Farm Monitoring	**Date Collected:**	03/17/15
Sample Matrix:	Drinking Water	**Date Received:**	03/17/15
Analysis Method:	300.0	**Units:**	mg/L
Prep Method:	Method	**Basis:**	NA

Bromide

Sample Name	Lab Code	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Well #1	K1502734-001	ND U	0.20	2	03/18/15 09:57	3/18/15	
Method Blank	K1502734-MB1	ND U	0.10	1	03/18/15 09:31	3/18/15	

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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502734
Project	Mint Farm Monitoring	**Date Collected:**	03/17/15
Sample Matrix:	Drinking Water	**Date Received:**	03/17/15
		Date Analyzed:	03/18/15

Replicate Sample Summary
General Chemistry Parameters

Sample Name:	Well #1	**Units:**	mg/L
Lab Code:	K1502734-001	**Basis:**	NA

Analyte Name	Analysis Method	MRL	Sample Result	Duplicate Sample K1502734-001DUP Result	Average	RPD	RPD Limit
Bromide	300.0	0.20	ND U	ND U	NC	NC	20

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ALS Group USA, Corp.
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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502734
Project:	Mint Farm Monitoring	**Date Collected:**	03/17/15
Sample Matrix:	Drinking Water	**Date Received:**	03/17/15
		Date Analyzed:	03/18/15
		Date Extracted:	03/18/15

Duplicate Matrix Spike Summary
Bromide

Sample Name:	Well #1	**Units:**	mg/L
Lab Code:	K1502734-001	**Basis:**	NA
Analysis Method:	300.0		
Prep Method:	Method		

		Matrix Spike K1502734-001MS			Duplicate Matrix Spike K1502734-001DMS					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Bromide	ND U	3.62	4.00	90	3.63	4.00	91	90-110	<1	20

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ALS Group USA, Corp.
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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502734
Project:	Mint Farm Monitoring	**Date Analyzed:**	03/18/15
Sample Matrix:	Drinking Water	**Date Extracted:**	03/18/15

Lab Control Sample Summary
Bromide

Analysis Method:	300.0	**Units:**	mg/L
Prep Method:	Method	**Basis:**	NA
		Analysis Lot:	436896

Sample Name	Lab Code	Result	Spike Amount	% Rec	% Rec Limits
Lab Control Sample	K1502734-LCS	2.30	2.50	92	90-110

ALS Group USA, Corp.
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Analytical Report

Client:	Longview, City of	**Service Request:**	K1502734
Project:	Mint Farm Monitoring	**Date Collected:**	03/17/15
Sample Matrix:	Drinking Water	**Date Received:**	03/17/15
Analysis Method:	300.0	**Units:**	mg/L
Prep Method:	Method	**Basis:**	NA

Chloride

Sample Name	Lab Code	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Well #1	K1502734-001	**6.04**	0.40	2	03/18/15 09:57	3/18/15	
Method Blank	K1502734-MB1	ND U	0.20	1	03/18/15 09:31	3/18/15	

ALS Group USA, Corp.
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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502734
Project	Mint Farm Monitoring	**Date Collected:**	03/17/15
Sample Matrix:	Drinking Water	**Date Received:**	03/17/15
		Date Analyzed:	03/18/15

Replicate Sample Summary
General Chemistry Parameters

Sample Name:	Well #1	**Units:**	mg/L
Lab Code:	K1502734-001	**Basis:**	NA

Analyte Name	Analysis Method	MRL	Sample Result	Duplicate Sample K1502734-001DUP Result	Average	RPD	RPD Limit
Chloride	300.0	0.40	6.04	6.07	6.06	<1	20

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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502734
Project:	Mint Farm Monitoring	**Date Collected:**	03/17/15
Sample Matrix:	Drinking Water	**Date Received:**	03/17/15
		Date Analyzed:	03/18/15
		Date Extracted:	03/18/15

Duplicate Matrix Spike Summary
Chloride

Sample Name:	Well #1	**Units:**	mg/L
Lab Code:	K1502734-001	**Basis:**	NA
Analysis Method:	300.0		
Prep Method:	Method		

		Matrix Spike K1502734-001MS			Duplicate Matrix Spike K1502734-001DMS					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Chloride	6.04	10.2	4.00	104	10.2	4.00	103	90-110	<1	20

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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502734
Project:	Mint Farm Monitoring	**Date Analyzed:**	03/18/15
Sample Matrix:	Drinking Water	**Date Extracted:**	03/18/15

Lab Control Sample Summary
Chloride

Analysis Method:	300.0	**Units:**	mg/L
Prep Method:	Method	**Basis:**	NA
		Analysis Lot:	436896

Sample Name	Lab Code	Result	Spike Amount	% Rec	% Rec Limits
Lab Control Sample	K1502734-LCS	4.71	5.00	94	90-110

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Analytical Report

Client:	Longview, City of	**Service Request:**	K1502734
Project:	Mint Farm Monitoring	**Date Collected:**	03/17/15
Sample Matrix:	Drinking Water	**Date Received:**	03/17/15
Analysis Method:	300.0	**Units:**	mg/L
Prep Method:	Method	**Basis:**	NA

Fluoride

Sample Name	Lab Code	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Well #1	K1502734-001	ND U	0.20	2	03/18/15 09:57	3/18/15	
Method Blank	K1502734-MB1	ND U	0.10	1	03/18/15 09:31	3/18/15	

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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502734
Project	Mint Farm Monitoring	**Date Collected:**	03/17/15
Sample Matrix:	Drinking Water	**Date Received:**	03/17/15
		Date Analyzed:	03/18/15

Replicate Sample Summary
General Chemistry Parameters

Sample Name:	Well #1	**Units:**	mg/L
Lab Code:	K1502734-001	**Basis:**	NA

Analyte Name	Analysis Method	MRL	Sample Result	Duplicate Sample K1502734-001DUP Result	Average	RPD	RPD Limit
Fluoride	300.0	0.20	ND U	ND U	NC	NC	20

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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502734
Project:	Mint Farm Monitoring	**Date Collected:**	03/17/15
Sample Matrix:	Drinking Water	**Date Received:**	03/17/15
		Date Analyzed:	03/18/15
		Date Extracted:	03/18/15

Duplicate Matrix Spike Summary
Fluoride

Sample Name:	Well #1	**Units:**	mg/L
Lab Code:	K1502734-001	**Basis:**	NA
Analysis Method:	300.0		
Prep Method:	Method		

		Matrix Spike K1502734-001MS			**Duplicate Matrix Spike** K1502734-001DMS					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Fluoride	ND U	4.10	4.00	102	4.19	4.00	105	90-110	2	20

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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502734
Project:	Mint Farm Monitoring	**Date Analyzed:**	03/18/15
Sample Matrix:	Drinking Water	**Date Extracted:**	03/18/15

Lab Control Sample Summary
Fluoride

Analysis Method:	300.0	**Units:**	mg/L
Prep Method:	Method	**Basis:**	NA
		Analysis Lot:	436896

Sample Name	Lab Code	Result	Spike Amount	% Rec	% Rec Limits
Lab Control Sample	K1502734-LCS	5.10	5.00	102	90-110

ALS Group USA, Corp.
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Analytical Report

Client:	Longview, City of	**Service Request:**	K1502734
Project:	Mint Farm Monitoring	**Date Collected:**	03/17/15
Sample Matrix:	Drinking Water	**Date Received:**	03/17/15
Analysis Method:	300.0	**Units:**	mg/L
Prep Method:	Method	**Basis:**	NA

Nitrite as Nitrogen

Sample Name	Lab Code	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Well #1	K1502734-001	ND U	0.10	2	03/18/15 09:57	3/18/15	
Method Blank	K1502734-MB1	ND U	0.050	1	03/18/15 09:31	3/18/15	

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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502734
Project	Mint Farm Monitoring	**Date Collected:**	03/17/15
Sample Matrix:	Drinking Water	**Date Received:**	03/17/15
		Date Analyzed:	03/18/15

Replicate Sample Summary
General Chemistry Parameters

Sample Name:	Well #1	**Units:**	mg/L
Lab Code:	K1502734-001	**Basis:**	NA

Analyte Name	Analysis Method	MRL	Sample Result	Duplicate Sample K1502734-001DUP Result	Average	RPD	RPD Limit
Nitrite as Nitrogen	300.0	0.10	ND U	ND U	NC	NC	20

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ALS Group USA, Corp.
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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502734
Project:	Mint Farm Monitoring	**Date Collected:**	03/17/15
Sample Matrix:	Drinking Water	**Date Received:**	03/17/15
		Date Analyzed:	03/18/15
		Date Extracted:	03/18/15

Duplicate Matrix Spike Summary
Nitrite as Nitrogen

Sample Name:	Well #1	**Units:**	mg/L
Lab Code:	K1502734-001	**Basis:**	NA
Analysis Method:	300.0		
Prep Method:	Method		

		Matrix Spike K1502734-001MS			Duplicate Matrix Spike K1502734-001DMS					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Nitrite as Nitrogen	ND U	4.00	4.00	100	4.04	4.00	101	90-110	<1	20

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ALS Group USA, Corp.
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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502734
Project:	Mint Farm Monitoring	**Date Analyzed:**	03/18/15
Sample Matrix:	Drinking Water	**Date Extracted:**	03/18/15

Lab Control Sample Summary
Nitrite as Nitrogen

Analysis Method:	300.0	**Units:**	mg/L
Prep Method:	Method	**Basis:**	NA
		Analysis Lot:	436896

Sample Name	Lab Code	Result	Spike Amount	% Rec	% Rec Limits
Lab Control Sample	K1502734-LCS	2.40	2.50	96	90-110

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client:	Longview, City of	**Service Request:**	K1502734
Project:	Mint Farm Monitoring	**Date Collected:**	03/17/15
Sample Matrix:	Drinking Water	**Date Received:**	03/17/15
Analysis Method:	300.0	**Units:**	mg/L
Prep Method:	Method	**Basis:**	NA

Nitrate as Nitrogen

Sample Name	Lab Code	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Well #1	K1502734-001	ND U	0.10	2	03/18/15 09:57	3/18/15	
Method Blank	K1502734-MB1	ND U	0.050	1	03/18/15 09:31	3/18/15	

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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502734
Project	Mint Farm Monitoring	**Date Collected:**	03/17/15
Sample Matrix:	Drinking Water	**Date Received:**	03/17/15
		Date Analyzed:	03/18/15

Replicate Sample Summary
General Chemistry Parameters

Sample Name:	Well #1	**Units:**	mg/L
Lab Code:	K1502734-001	**Basis:**	NA

Analyte Name	Analysis Method	MRL	Sample Result	Duplicate Sample K1502734-001DUP Result	Average	RPD	RPD Limit
Nitrate as Nitrogen	300.0	0.10	ND U	ND U	NC	NC	20

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ALS Group USA, Corp.
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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502734
Project:	Mint Farm Monitoring	**Date Collected:**	03/17/15
Sample Matrix:	Drinking Water	**Date Received:**	03/17/15
		Date Analyzed:	03/18/15
		Date Extracted:	03/18/15

Duplicate Matrix Spike Summary
Nitrate as Nitrogen

Sample Name:	Well #1	**Units:**	mg/L
Lab Code:	K1502734-001	**Basis:**	NA
Analysis Method:	300.0		
Prep Method:	Method		

		Matrix Spike K1502734-001MS			Duplicate Matrix Spike K1502734-001DMS					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Nitrate as Nitrogen	ND U	3.62	4.00	90	3.64	4.00	91	90-110	<1	20

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ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502734
Project:	Mint Farm Monitoring	**Date Analyzed:**	03/18/15
Sample Matrix:	Drinking Water	**Date Extracted:**	03/18/15

Lab Control Sample Summary
Nitrate as Nitrogen

Analysis Method:	300.0	**Units:**	mg/L
Prep Method:	Method	**Basis:**	NA
		Analysis Lot:	436896

Sample Name	Lab Code	Result	Spike Amount	% Rec	% Rec Limits
Lab Control Sample	K1502734-LCS	2.33	2.50	93	90-110

ALS Group USA, Corp.
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Analytical Report

Client:	Longview, City of	**Service Request:**	K1502734
Project:	Mint Farm Monitoring	**Date Collected:**	03/17/15
Sample Matrix:	Drinking Water	**Date Received:**	03/17/15
Analysis Method:	300.0	**Units:**	mg/L
Prep Method:	Method	**Basis:**	NA

Sulfate

Sample Name	Lab Code	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Well #1	K1502734-001	**1.08**	0.20	2	03/18/15 09:57	3/18/15	
Method Blank	K1502734-MB1	ND U	0.10	1	03/18/15 09:31	3/18/15	

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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502734
Project	Mint Farm Monitoring	**Date Collected:**	03/17/15
Sample Matrix:	Drinking Water	**Date Received:**	03/17/15
		Date Analyzed:	03/18/15

Replicate Sample Summary
General Chemistry Parameters

Sample Name:	Well #1	**Units:**	mg/L
Lab Code:	K1502734-001	**Basis:**	NA

Analyte Name	Analysis Method	MRL	Sample Result	Duplicate Sample K1502734-001DUP Result	Average	RPD	RPD Limit
Sulfate	300.0	0.20	1.08	1.08	1.08	<1	20

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ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502734
Project:	Mint Farm Monitoring	**Date Collected:**	03/17/15
Sample Matrix:	Drinking Water	**Date Received:**	03/17/15
		Date Analyzed:	03/18/15
		Date Extracted:	03/18/15

Duplicate Matrix Spike Summary
Sulfate

Sample Name:	Well #1	**Units:**	mg/L
Lab Code:	K1502734-001	**Basis:**	NA
Analysis Method:	300.0		
Prep Method:	Method		

		Matrix Spike K1502734-001MS			**Duplicate Matrix Spike** K1502734-001DMS					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Sulfate	1.08	4.82	4.00	93	4.87	4.00	95	90-110	<1	20

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ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502734
Project:	Mint Farm Monitoring	**Date Analyzed:**	03/18/15
Sample Matrix:	Drinking Water	**Date Extracted:**	03/18/15

Lab Control Sample Summary
Sulfate

Analysis Method:	300.0	**Units:**	mg/L
Prep Method:	Method	**Basis:**	NA
		Analysis Lot:	436896

Sample Name	Lab Code	Result	Spike Amount	% Rec	% Rec Limits
Lab Control Sample	K1502734-LCS	4.85	5.00	97	90-110

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client:	Longview, City of	**Service Request:**	K1502734
Project:	Mint Farm Monitoring	**Date Collected:**	03/17/15
Sample Matrix:	Drinking Water	**Date Received:**	03/17/15
Analysis Method:	314.0	**Units:**	ug/L
Prep Method:	None	**Basis:**	NA

Perchlorate

Sample Name	Lab Code	Result	MRL	Dil.	Date Analyzed	Q
Well #1	K1502734-001	ND U	1.0	1	03/31/15 14:32	
Method Blank	K1502734-MB1	ND U	1.0	1	03/31/15 11:44	

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502734
Project	Mint Farm Monitoring	**Date Collected:**	NA
Sample Matrix:	Drinking Water	**Date Received:**	NA
		Date Analyzed:	03/31/15

Replicate Sample Summary
General Chemistry Parameters

Sample Name:	Batch QC	**Units:**	ug/L
Lab Code:	K1502415-001	**Basis:**	NA

Analyte Name	Analysis Method	MRL	Sample Result	Duplicate Sample K1502415-001DUP Result	Average	RPD	RPD Limit
Perchlorate	314.0	1.0	ND U	ND U	NC	NC	20

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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502734
Project:	Mint Farm Monitoring	**Date Collected:**	N/A
Sample Matrix:	Drinking Water	**Date Received:**	N/A
		Date Analyzed:	03/31/15
		Date Extracted:	NA

Duplicate Matrix Spike Summary
Perchlorate

Sample Name:	Batch QC	**Units:**	ug/L
Lab Code:	K1502415-001	**Basis:**	NA
Analysis Method:	314.0		
Prep Method:	None		

		Matrix Spike K1502415-001MS			Duplicate Matrix Spike K1502415-001DMS					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Perchlorate	ND U	10.7	10.0	107	9.7	10.0	97	80-120	10	20

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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502734
Project:	Mint Farm Monitoring	**Date Analyzed:**	03/31/15
Sample Matrix:	Drinking Water	**Date Extracted:**	NA

Lab Control Sample Summary
Perchlorate

Analysis Method:	314.0	**Units:**	ug/L
Prep Method:	None	**Basis:**	NA
		Analysis Lot:	438526

Sample Name	Lab Code	Result	Spike Amount	% Rec	% Rec Limits
Lab Control Sample	K1502734-LCS	15.4	16.8	92	85-115

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Analytical Report

Client:	Longview, City of	**Service Request:**	K1502734
Project:	Mint Farm Monitoring	**Date Collected:**	03/17/15
Sample Matrix:	Drinking Water	**Date Received:**	03/17/15
Analysis Method:	335.4	**Units:**	mg/L
Prep Method:	Method	**Basis:**	NA

Cyanide, Total

Sample Name	Lab Code	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Well #1	K1502734-001	ND U	0.010	1	03/22/15 14:53	3/18/15	
Method Blank	K1502734-MB1	ND U	0.010	1	03/22/15 14:53	3/18/15	

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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502734
Project	Mint Farm Monitoring	**Date Collected:**	03/17/15
Sample Matrix:	Drinking Water	**Date Received:**	03/17/15
		Date Analyzed:	03/22/15

Replicate Sample Summary
General Chemistry Parameters

Sample Name:	Well #1	**Units:**	mg/L
Lab Code:	K1502734-001	**Basis:**	NA

Analyte Name	Analysis Method	MRL	Sample Result	Duplicate Sample K1502734-001DUP Result	Average	RPD	RPD Limit
Cyanide, Total	335.4	0.010	ND U	ND U	NC	NC	20

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ALS Group USA, Corp.
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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502734
Project:	Mint Farm Monitoring	**Date Collected:**	03/17/15
Sample Matrix:	Drinking Water	**Date Received:**	03/17/15
		Date Analyzed:	03/22/15
		Date Extracted:	03/18/15

Duplicate Matrix Spike Summary
Cyanide, Total

Sample Name:	Well #1	**Units:**	mg/L
Lab Code:	K1502734-001	**Basis:**	NA
Analysis Method:	335.4		
Prep Method:	Method		

		Matrix Spike K1502734-001MS			**Duplicate Matrix Spike** K1502734-001DMS					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Cyanide, Total	ND U	0.099	0.100	98	0.097	0.100	97	90-110	2	20

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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502734
Project:	Mint Farm Monitoring	**Date Analyzed:**	03/22/15
Sample Matrix:	Drinking Water	**Date Extracted:**	03/18/15

Lab Control Sample Summary
Cyanide, Total

Analysis Method:	335.4	**Units:**	mg/L
Prep Method:	Method	**Basis:**	NA
		Analysis Lot:	437339

Sample Name	Lab Code	Result	Spike Amount	% Rec	% Rec Limits
Lab Control Sample	K1502734-LCS	0.147	0.150	98	90-110

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Analytical Report

Client:	Longview, City of	**Service Request:**	K1502734
Project:	Mint Farm Monitoring	**Date Collected:**	03/17/15
Sample Matrix:	Drinking Water	**Date Received:**	03/17/15
Analysis Method:	Calculation	**Units:**	mg/L
Prep Method:	None	**Basis:**	NA

Nitrate+Nitrite as Nitrogen

Sample Name	Lab Code	Result	MRL	Dil.	Date Analyzed	Q
Well #1	K1502734-001	ND U	0.20	1	03/18/15 09:57	

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Analytical Report

Client:	Longview, City of	**Service Request:**	K1502734
Project:	Mint Farm Monitoring	**Date Collected:**	03/17/15
Sample Matrix:	Drinking Water	**Date Received:**	03/17/15
Analysis Method:	SM 2120 B	**Units:**	ColorUnits
Prep Method:	None	**Basis:**	NA

Color

Sample Name	Lab Code	Result	MRL	Dil.	Date Analyzed	Q
Well #1	K1502734-001	**20.0**	5.0	1	03/17/15 18:03	
Method Blank	K1502734-MB1	ND U	5.0	1	03/17/15 17:53	

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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502734
Project	Mint Farm Monitoring	**Date Collected:**	NA
Sample Matrix:	Drinking Water	**Date Received:**	NA
		Date Analyzed:	03/17/15

Replicate Sample Summary
General Chemistry Parameters

Sample Name:	Batch QC	**Units:**	ColorUnits
Lab Code:	K1502735-001	**Basis:**	NA

Analyte Name	Analysis Method	MRL	Sample Result	Duplicate Sample K1502735-001DUP Result	Average	RPD	RPD Limit
Color	SM 2120 B	5.0	20.0	20.0	20.0	<1	20

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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502734
Project:	Mint Farm Monitoring	**Date Analyzed:**	03/17/15
Sample Matrix:	Drinking Water	**Date Extracted:**	NA

Lab Control Sample Summary
Color

Analysis Method:	SM 2120 B	**Units:**	ColorUnits
Prep Method:	None	**Basis:**	NA
		Analysis Lot:	436704

Sample Name	Lab Code	Result	Spike Amount	% Rec	% Rec Limits
Lab Control Sample	K1502734-LCS	50.0	50.0	100	85-115

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Analytical Report

Client:	Longview, City of	**Service Request:**	K1502734
Project:	Mint Farm Monitoring	**Date Collected:**	03/17/15
Sample Matrix:	Drinking Water	**Date Received:**	03/17/15
Analysis Method:	SM 2320 B	**Units:**	mg/L
Prep Method:	None	**Basis:**	NA

Alkalinity as CaCO3, Total

Sample Name	Lab Code	Result	MRL	Dil.	Date Analyzed	Q
Well #1	K1502734-001	**97.3**	2.0	1	03/31/15 11:20	
Method Blank	K1502734-MB1	ND U	2.0	1	03/31/15 11:20	

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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502734
Project	Mint Farm Monitoring	**Date Collected:**	03/17/15
Sample Matrix:	Drinking Water	**Date Received:**	03/17/15
		Date Analyzed:	03/31/15

Replicate Sample Summary
General Chemistry Parameters

Sample Name:	Well #1	**Units:**	mg/L
Lab Code:	K1502734-001	**Basis:**	NA

Analyte Name	Analysis Method	MRL	Sample Result	Duplicate Sample K1502734-001DUP Result	Average	RPD	RPD Limit
Alkalinity as CaCO3, Total	SM 2320 B	2.0	97.3	97.1	97.2	<1	20

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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502734
Project:	Mint Farm Monitoring	**Date Analyzed:**	03/31/15
Sample Matrix:	Drinking Water	**Date Extracted:**	NA

Lab Control Sample Summary
Alkalinity as CaCO3, Total

Analysis Method:	SM 2320 B	**Units:**	mg/L
Prep Method:	None	**Basis:**	NA
		Analysis Lot:	438546

Sample Name	Lab Code	Result	Spike Amount	% Rec	% Rec Limits
Lab Control Sample	K1502734-LCS	35.0	34.4	102	90-110

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Analytical Report

Client:	Longview, City of	**Service Request:**	K1502734
Project:	Mint Farm Monitoring	**Date Collected:**	03/17/15
Sample Matrix:	Drinking Water	**Date Received:**	03/17/15
Analysis Method:	SM 2510 B	**Units:**	uMHOS/cm
Prep Method:	None	**Basis:**	NA

Conductivity at 25 Degrees Celsius

Sample Name	Lab Code	Result	MRL	Dil.	Date Analyzed	Q
Well #1	K1502734-001	**232**	2.0	1	03/19/15 09:45	
Method Blank	K1502734-MB1	ND U	2.0	1	03/19/15 09:45	
Method Blank	K1502734-MB2	ND U	2.0	1	03/19/15 09:45	

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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502734
Project	Mint Farm Monitoring	**Date Collected:**	NA
Sample Matrix:	Drinking Water	**Date Received:**	NA
		Date Analyzed:	03/19/15

Replicate Sample Summary
General Chemistry Parameters

Sample Name:	Batch QC	**Units:**	uMHOS/cm
Lab Code:	K1502415-001	**Basis:**	NA

Analyte Name	Analysis Method	MRL	Sample Result	Duplicate Sample K1502415-001DUP Result	Average	RPD	RPD Limit
Conductivity at 25 Degrees Celsius	SM 2510 B	2.0	701	699	700	<1	20

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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502734
Project:	Mint Farm Monitoring	**Date Analyzed:**	03/19/15
Sample Matrix:	Drinking Water	**Date Extracted:**	NA

Lab Control Sample Summary
Conductivity at 25 Degrees Celsius

Analysis Method:	SM 2510 B	**Units:**	uMHOS/cm
Prep Method:	None	**Basis:**	NA
		Analysis Lot:	436981

Sample Name	Lab Code	Result	Spike Amount	% Rec	% Rec Limits
Lab Control Sample	K1502734-LCS	319	289	110	86-113

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Analytical Report

Client:	Longview, City of	**Service Request:**	K1502734
Project:	Mint Farm Monitoring	**Date Collected:**	03/17/15
Sample Matrix:	Drinking Water	**Date Received:**	03/17/15
Analysis Method:	SM 2540 C	**Units:**	mg/L
Prep Method:	None	**Basis:**	NA

Solids, Total Dissolved

Sample Name	Lab Code	Result	MRL	Dil.	Date Analyzed	Q
Well #1	K1502734-001	**174**	10	1	03/18/15 11:00	
Method Blank	K1502734-MB1	ND U	5.0	1	03/18/15 11:00	
Method Blank	K1502734-MB2	ND U	5.0	1	03/18/15 11:00	

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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502734
Project	Mint Farm Monitoring	**Date Collected:**	NA
Sample Matrix:	Drinking Water	**Date Received:**	NA
Analysis Method:	SM 2540 C	**Units:**	mg/L
Prep Method:	None	**Basis:**	NA

Replicate Sample Summary
Solids, Total Dissolved

Sample Name:	Lab Code:	MRL	Sample Result	Duplicate Result	Average	RPD	RPD Limit	Date Analyzed
Batch QC	K1502696-001DUP	10	376	379	378	<1	10	03/18/15
Batch QC	T1500335-008DUP	10	89	90	89.5	1	10	03/18/15

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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502734
Project:	Mint Farm Monitoring	**Date Analyzed:**	03/18/15
Sample Matrix:	Drinking Water	**Date Extracted:**	NA

Lab Control Sample Summary
Solids, Total Dissolved

Analysis Method:	SM 2540 C	**Units:**	mg/L
Prep Method:	None	**Basis:**	NA
		Analysis Lot:	436831

Sample Name	Lab Code	Result	Spike Amount	% Rec	% Rec Limits
Lab Control Sample	K1502734-LCS	1240	1300	96	85-115

ALS Group USA, Corp.
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Analytical Report

Client:	Longview, City of	**Service Request:**	K1502734
Project:	Mint Farm Monitoring	**Date Collected:**	03/17/15
Sample Matrix:	Drinking Water	**Date Received:**	03/17/15
Analysis Method:	SM 4500-NH3 G	**Units:**	mg/L
Prep Method:	Method	**Basis:**	NA

Ammonia as Nitrogen

Sample Name	Lab Code	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Well #1	K1502734-001	**0.214**	0.050	1	03/20/15 13:01	3/20/15	
Method Blank	K1502734-MB1	ND U	0.050	1	03/20/15 13:01	3/20/15	

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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502734
Project	Mint Farm Monitoring	**Date Collected:**	NA
Sample Matrix:	Drinking Water	**Date Received:**	NA
		Date Analyzed:	03/20/15

Replicate Sample Summary
General Chemistry Parameters

Sample Name:	Batch QC	**Units:**	mg/L
Lab Code:	K1502860-004	**Basis:**	NA

Analyte Name	Analysis Method	MRL	Sample Result	Duplicate Sample K1502860-004DUP Result	Average	RPD	RPD Limit
Ammonia as Nitrogen	SM 4500-NH3 G	0.050	ND U	ND U	NC	NC	20

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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502734
Project:	Mint Farm Monitoring	**Date Collected:**	N/A
Sample Matrix:	Drinking Water	**Date Received:**	N/A
		Date Analyzed:	03/20/15
		Date Extracted:	03/20/15

Duplicate Matrix Spike Summary
Ammonia as Nitrogen

Sample Name:	Batch QC	**Units:**	mg/L
Lab Code:	K1502860-004	**Basis:**	NA
Analysis Method:	SM 4500-NH3 G		
Prep Method:	Method		

		Matrix Spike K1502860-004MS			**Duplicate Matrix Spike** K1502860-004DMS					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Ammonia as Nitrogen	ND U	2.06	2.00	103	2.14	2.00	107	90-110	4	20

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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502734
Project:	Mint Farm Monitoring	**Date Analyzed:**	03/20/15
Sample Matrix:	Drinking Water	**Date Extracted:**	03/20/15

Lab Control Sample Summary
Ammonia as Nitrogen

Analysis Method:	SM 4500-NH3 G	**Units:**	mg/L
Prep Method:	Method	**Basis:**	NA
		Analysis Lot:	437273

Sample Name	Lab Code	Result	Spike Amount	% Rec	% Rec Limits
Lab Control Sample	K1502734-LCS	15.7	15.4	102	90-110

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Analytical Report

Client:	Longview, City of	**Service Request:**	K1502734
Project:	Mint Farm Monitoring	**Date Collected:**	03/17/15
Sample Matrix:	Drinking Water	**Date Received:**	03/17/15
Analysis Method:	SM 4500-P E	**Units:**	mg/L
Prep Method:	None	**Basis:**	NA

Orthophosphate as Phosphorus

Sample Name	Lab Code	Result	MRL	Dil.	Date Analyzed	Q
Well #1	K1502734-001	**0.56**	0.25	5	03/18/15 12:09	
Method Blank	K1502734-MB1	ND U	0.050	1	03/18/15 12:09	

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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502734
Project	Mint Farm Monitoring	**Date Collected:**	03/17/15
Sample Matrix:	Drinking Water	**Date Received:**	03/17/15
		Date Analyzed:	03/18/15

Replicate Sample Summary
General Chemistry Parameters

Sample Name:	Well #1	**Units:**	mg/L
Lab Code:	K1502734-001	**Basis:**	NA

Analyte Name	Analysis Method	MRL	Sample Result	Duplicate Sample K1502734-001DUP Result	Average	RPD	RPD Limit
Orthophosphate as Phosphorus	SM 4500-P E	0.25	0.56	0.57	0.562	2	20

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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502734
Project:	Mint Farm Monitoring	**Date Collected:**	03/17/15
Sample Matrix:	Drinking Water	**Date Received:**	03/17/15
		Date Analyzed:	03/18/15
		Date Extracted:	NA

Duplicate Matrix Spike Summary
Orthophosphate as Phosphorus

Sample Name:	Well #1	**Units:**	mg/L
Lab Code:	K1502734-001	**Basis:**	NA
Analysis Method:	SM 4500-P E		
Prep Method:	None		

		Matrix Spike K1502734-001MS			**Duplicate Matrix Spike** K1502734-001DMS					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Orthophosphate as Phosphorus	0.56	0.96	0.40	101	0.98	0.40	106	75-125	5	20

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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502734
Project:	Mint Farm Monitoring	**Date Analyzed:**	03/18/15
Sample Matrix:	Drinking Water	**Date Extracted:**	NA

Lab Control Sample Summary
Orthophosphate as Phosphorus

Analysis Method:	SM 4500-P E	**Units:**	mg/L
Prep Method:	None	**Basis:**	NA
		Analysis Lot:	436766

Sample Name	Lab Code	Result	Spike Amount	% Rec	% Rec Limits
Lab Control Sample	K1502734-LCS	6.25	6.1	103	85-115

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Analytical Report

Client:	Longview, City of	**Service Request:**	K1502734
Project:	Mint Farm Monitoring	**Date Collected:**	3/17/2015
Sample Matrix:	Drinking water	**Date Received:**	3/17/2015

Colilert, E. Coli

Prep Method: NONE
Analysis Method: SM 9223B Basis: NA
Test Notes:

Sample Name	Lab Code	MRL	Date Analyzed	Time Test Started		Result	Result Notes
Well #1	K1502734-001	1	3/17/2015	16:30	hrs	Absent	

SM *Standard Methods for the Examination of Water and Wastewater* , 20th Ed., 1998.

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Analytical Report

Client:	Longview, City of	**Service Request:**	K1502734
Project:	Mint Farm Monitoring	**Date Collected:**	3/17/2015
Sample Matrix:	Drinking water	**Date Received:**	3/17/2015

Colilert, T. Coli

Prep Method: NONE
Analysis Method: SM 9223B Basis: NA
Test Notes:

Sample Name	Lab Code	MRL	Date Analyzed	Time Test Started		Result	Result Notes
Well #1	K1502734-001	1	3/17/2015	16:30	hrs	Absent	

SM *Standard Methods for the Examination of Water and Wastewater* , 20th Ed., 1998.

Metals

ALS Environmental—Kelso Laboratory
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www.alsglobal.com

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Analytical Report

Client:	Longview, City of	**Service Request:**	K1502734
Project:	Mint Farm Monitoring	**Date Collected:**	03/17/15
Sample Matrix:	Drinking water	**Date Received:**	03/17/15

Hardness as CaCO3

Prep Method:	CLAA	Units:	mg/L (ppm)
Analysis Method:	200.7/SM 2340B	Basis:	NA
Test Notes:			

Sample Name	Lab Code	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Well #1	K1502734-001	0.07	1	03/20/15	03/23/15	83.0	
Method Blank	K1502734-MB	0.07	1	03/20/15	03/23/15	ND	

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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502734
Project:	Mint Farm Monitoring	**Date Collected:**	NA
Sample Matrix:	Drinking water	**Date Received:**	NA
		Date Extracted:	03/20/15
		Date Analyzed:	03/23/15

Duplicate Summary
Metals

Sample Name:	Batch QC	Units:	mg/L (ppm)
Lab Code:	K1502735-001D	Basis:	NA
Test Notes:			

Analyte	Prep Method	Analysis Method	MRL	Sample Result	Duplicate Sample Result	Average	Relative Percent Difference	Result Notes
Hardness as CaCO3	CLAA	200.7/SM 2340B	0.07	72.2	72.2	72.2	<1	

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Analytical Report

Client:	Longview, City of	**Service Request:**	K1502734
Project:	Mint Farm Monitoring	**Date Collected:**	03/17/15
Sample Matrix:	Drinking water	**Date Received:**	03/17/15

Methyl Mercury

Prep Method:	Method	Units:	ng/L
Analysis Method:	1630	Basis:	NA
Test Notes:			

Sample Name	Lab Code	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Well #1	K1502734-001	0.1	1	02/25/15	02/26/15	ND	
Method Blank 1	K1502734-MB1	0.1	1	02/25/15	02/26/15	ND	
Method Blank 2	K1502734-MB2	0.1	1	02/25/15	02/26/15	ND	
Method Blank 3	K1502734-MB3	0.1	1	02/25/15	02/26/15	ND	

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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502734
Project:	Mint Farm Monitoring	**Date Collected:**	NA
Sample Matrix:	Drinking water	**Date Received:**	NA
		Date Extracted:	02/25/15
		Date Analyzed:	02/26/15

Matrix Spike/Duplicate Matrix Spike Summary
Metals

Sample Name:	Batch QC		Units:	ng/L
Lab Code:	K1502708-001MS,	K1502708-001MSD	Basis:	NA
Test Notes:				

				Spike Level		Sample	Spike Result		Percent Recovery		CAS Acceptance	Relative Percent	
Analyte	**Prep Method**	**Analysis Method**	**MRL**	**MS**	**DMS**	**Result**	**MS**	**DMS**	**MS**	**DMS**	**Limits**	**Difference**	**Result Notes**
Mercury, Methyl	Method	1630	0.1	2.22	2.22	0.42	3.22	3.01	126	117	65-135	7	

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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502734
Project:	Mint Farm Monitoring	**Date Collected:**	NA
LCS Matrix:	Water	**Date Received:**	NA
		Date Extracted:	02/25/15
		Date Analyzed:	02/26/15

Ongoing Precision and Recovery (OPR) Sample Summary
Metals

Sample Name: Ongoing Precision and Recovery (Initial)

Units: ng/L
Basis: NA

Test Notes:

Analyte	Prep Method	Analysis Method	True Value	Result	Percent Recovery	CAS Percent Recovery Acceptance Limits	Result Notes
Mercury, Methyl	Method	1630	2.22	2.52	114	67-133	

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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502734
Project:	Mint Farm Monitoring	**Date Collected:**	NA
LCS Matrix:	Water	**Date Received:**	NA
		Date Extracted:	02/25/15
		Date Analyzed:	02/26/15

Ongoing Precision and Recovery (OPR) Sample Summary
Metals

Sample Name: Ongoing Precision and Recovery (Final)

Units: ng/L
Basis: NA

Test Notes:

Analyte	Prep Method	Analysis Method	True Value	Result	Percent Recovery	CAS Percent Recovery Acceptance Limits	Result Notes
Mercury, Methyl	Method	1630	2.22	2.43	109	67-133	

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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502734
Project:	Mint Farm Monitoring	**Date Collected:**	NA
LCS Matrix:	Water	**Date Received:**	NA
		Date Extracted:	02/25/15
		Date Analyzed:	02/26/15

Quality Control Sample (QCS) Summary
Metals

Sample Name: Quality Control Sample

Units: pg
Basis: NA

Test Notes:

Analyte	Prep Method	Analysis Method	True Value	Result	Percent Recovery	CAS Percent Recovery Acceptance Limits	Result Notes
Mercury, Methyl	Method	1630	100	127	127	67-133	

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Analytical Report

Client:	Longview, City of	**Service Request:**	K1502734
Project:	Mint Farm Monitoring	**Date Collected:**	03/17/15 08:30
Sample Matrix:	Drinking Water	**Date Received:**	03/17/15 14:53
Sample Name:	Well #1	**Basis:**	NA
Lab Code:	K1502734-001		

Total Metals

Analyte Name	Analysis Method	Result	Units	MRL	Dil.	Date Analyzed	Date Extracted	Q
Antimony	200.8	ND U	mg/L	0.000050	1	03/25/15 08:45	03/20/15	
Arsenic	200.8	**0.00456**	mg/L	0.00050	1	03/25/15 08:45	03/20/15	
Barium	200.7	**0.0115**	mg/L	0.0040	1	03/23/15 01:38	03/20/15	
Beryllium	200.8	ND U	mg/L	0.000020	1	03/25/15 08:45	03/20/15	
Cadmium	200.8	ND U	mg/L	0.000020	1	03/25/15 08:45	03/20/15	
Chromium	200.8	ND U	mg/L	0.00020	1	03/25/15 08:45	03/20/15	
Copper	200.7	ND U	mg/L	0.0040	1	03/23/15 01:38	03/20/15	
Iron	200.7	**0.981**	mg/L	0.020	1	03/23/15 01:38	03/20/15	
Lead	200.8	ND U	mg/L	0.000020	1	03/25/15 08:45	03/20/15	
Manganese	200.7	**0.582**	mg/L	0.0010	1	03/23/15 01:38	03/20/15	
Mercury	245.1	ND U	mg/L	0.00020	1	03/18/15 03:25	03/18/15	
Nickel	200.8	**0.00036**	mg/L	0.00020	1	03/25/15 08:45	03/20/15	
Selenium	200.8	ND U	mg/L	0.0010	1	03/25/15 08:45	03/20/15	
Silver	200.8	ND U	mg/L	0.000020	1	03/25/15 08:45	03/20/15	
Sodium	200.7	**10.1**	mg/L	0.20	1	03/23/15 01:38	03/20/15	
Thallium	200.8	ND U	mg/L	0.000020	1	03/25/15 08:45	03/20/15	
Zinc	200.7	ND U	mg/L	0.0040	1	03/23/15 01:38	03/20/15	

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Analytical Report

Client:	Longview, City of	**Service Request:**	K1502734
Project:	Mint Farm Monitoring	**Date Collected:**	NA
Sample Matrix:	Drinking Water	**Date Received:**	NA
Sample Name:	Method Blank	**Basis:**	NA
Lab Code:	KQ1502681-01		

Total Metals

Analyte Name	Analysis Method	Result		Units	MRL	Dil.	Date Analyzed	Date Extracted	Q
Barium	200.7	ND	U	mg/L	0.0040	1	03/23/15 12:51	03/20/15	
Copper	200.7	ND	U	mg/L	0.0040	1	03/23/15 12:51	03/20/15	
Iron	200.7	ND	U	mg/L	0.020	1	03/23/15 12:51	03/20/15	
Manganese	200.7	ND	U	mg/L	0.0010	1	03/23/15 12:51	03/20/15	
Sodium	200.7	ND	U	mg/L	0.20	1	03/23/15 12:51	03/20/15	
Zinc	200.7	ND	U	mg/L	0.0040	1	03/23/15 12:51	03/20/15	

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Analytical Report

Client:	Longview, City of	**Service Request:**	K1502734
Project:	Mint Farm Monitoring	**Date Collected:**	NA
Sample Matrix:	Drinking Water	**Date Received:**	NA
Sample Name:	Method Blank	**Basis:**	NA
Lab Code:	KQ1502682-01		

Total Metals

Analyte Name	Analysis Method	Result		Units	MRL	Dil.	Date Analyzed	Date Extracted	Q
Antimony	200.8	ND	U	mg/L	0.000050	1	03/25/15 07:56	03/20/15	
Arsenic	200.8	ND	U	mg/L	0.00050	1	03/25/15 07:56	03/20/15	
Beryllium	200.8	ND	U	mg/L	0.000020	1	03/25/15 07:56	03/20/15	
Cadmium	200.8	ND	U	mg/L	0.000020	1	03/25/15 07:56	03/20/15	
Chromium	200.8	ND	U	mg/L	0.00020	1	03/25/15 07:56	03/20/15	
Lead	200.8	ND	U	mg/L	0.000020	1	03/25/15 07:56	03/20/15	
Nickel	200.8	ND	U	mg/L	0.00020	1	03/25/15 07:56	03/20/15	
Selenium	200.8	ND	U	mg/L	0.0010	1	03/25/15 07:56	03/20/15	
Silver	200.8	ND	U	mg/L	0.000020	1	03/25/15 07:56	03/20/15	
Thallium	200.8	ND	U	mg/L	0.000020	1	03/25/15 07:56	03/20/15	

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Analytical Report

Client:	Longview, City of	**Service Request:**	K1502734
Project:	Mint Farm Monitoring	**Date Collected:**	NA
Sample Matrix:	Drinking Water	**Date Received:**	NA
Sample Name:	Method Blank	**Basis:**	NA
Lab Code:	KQ1502573-01		

Total Metals

Analyte Name	Analysis Method	Result	Units	MRL	Dil.	Date Analyzed	Date Extracted	Q
Mercury	245.1	ND U	mg/L	0.00020	1	03/18/15 03:15	03/18/15	

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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502734
Project	Mint Farm Monitoring	**Date Collected:**	NA
Sample Matrix:	Drinking Water	**Date Received:**	NA
		Date Analyzed:	03/23/15

Replicate Sample Summary
Total Metals

Sample Name:	Batch QC	**Units:**	mg/L
Lab Code:	K1502845-001	**Basis:**	NA

Analyte Name	Analysis Method	MRL	Sample Result	Duplicate Sample KQ1502681-05 Result	Average	RPD	RPD Limit
Barium	200.7	0.0040	ND U	ND U	ND	-	20
Copper	200.7	0.0040	ND U	ND U	ND	-	20
Iron	200.7	0.020	0.832	0.842	0.837	1	20
Manganese	200.7	0.0010	0.0647	0.0629	0.0638	3	20
Sodium	200.7	0.20	8.77	8.85	8810	<1	20
Zinc	200.7	0.0040	ND U	ND U	ND	-	20

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502734
Project	Mint Farm Monitoring	**Date Collected:**	NA
Sample Matrix:	Drinking Water	**Date Received:**	NA
		Date Analyzed:	03/25/15

Replicate Sample Summary
Total Metals

Sample Name:	Batch QC	**Units:**	mg/L
Lab Code:	K1502845-001	**Basis:**	NA

Analyte Name	Analysis Method	MRL	Sample Result	Duplicate Sample KQ1502682-05 Result	Average	RPD	RPD Limit
Antimony	200.8	0.000050	ND U	ND U	ND	-	20
Arsenic	200.8	0.00050	ND U	ND U	ND	-	20
Beryllium	200.8	0.000020	ND U	ND U	ND	-	20
Cadmium	200.8	0.000020	ND U	ND U	ND	-	20
Chromium	200.8	0.00020	ND U	ND U	ND	-	20
Lead	200.8	0.000020	ND U	ND U	NC	NC	20
Nickel	200.8	0.00020	ND U	ND U	ND	-	20
Selenium	200.8	0.0010	ND U	ND U	ND	-	20
Silver	200.8	0.000020	ND U	ND U	ND	-	20
Thallium	200.8	0.000020	ND U	ND U	ND	-	20

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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502734
Project	Mint Farm Monitoring	**Date Collected:**	NA
Sample Matrix:	Drinking Water	**Date Received:**	NA
		Date Analyzed:	03/18/15

Replicate Sample Summary
Total Metals

Sample Name:	Batch QC	**Units:**	mg/L
Lab Code:	K1502518-001	**Basis:**	NA

Analyte Name	Analysis Method	MRL	Sample Result	Duplicate Sample KQ1502573-03 Result	Average	RPD	RPD Limit
Mercury	245.1	0.00020	ND U	ND U	NC	NC	20

Results flagged with an asterisk (*) indicate values outside control criteria.

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Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502734
Project:	Mint Farm Monitoring	**Date Collected:**	N/A
Sample Matrix:	Drinking Water	**Date Received:**	N/A
		Date Analyzed:	03/23/15
		Date Extracted:	03/20/15

Matrix Spike Summary
Total Metals

Sample Name:	Batch QC	**Units:**	mg/L
Lab Code:	K1502845-001	**Basis:**	NA
Analysis Method:	200.7		
Prep Method:	EPA CLP-METALS ILM04.0		

Matrix Spike
KQ1502681-06

Analyte Name	Sample Result	Result	Spike Amount	% Rec	% Rec Limits
Barium	ND U	1.01	1.00	101	70-130
Copper	ND U	0.252	0.250	101	70-130
Iron	0.832	1.82	1.00	98	70-130
Manganese	0.0647	0.558	0.500	99	70-130
Sodium	8.77	19.3	10.0	105	70-130
Zinc	ND U	0.477	0.500	95	70-130

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502734
Project:	Mint Farm Monitoring	**Date Collected:**	N/A
Sample Matrix:	Drinking Water	**Date Received:**	N/A
		Date Analyzed:	03/25/15
		Date Extracted:	03/20/15

Matrix Spike Summary
Total Metals

Sample Name:	Batch QC	**Units:**	mg/L
Lab Code:	K1502845-001	**Basis:**	NA
Analysis Method:	200.8		
Prep Method:	EPA CLP-METALS ILM04.0		

Matrix Spike
KQ1502682-06

Analyte Name	Sample Result	Result	Spike Amount	% Rec	% Rec Limits
Antimony	ND U	0.0489	0.0500	98	70-130
Arsenic	ND U	0.0479	0.0500	96	70-130
Beryllium	ND U	0.00242	0.00250	97	70-130
Cadmium	ND U	0.0248	0.0250	99	70-130
Chromium	ND U	0.00918	0.0100	92	70-130
Lead	ND U	0.0499	0.0500	100	70-130
Nickel	ND U	0.0228	0.0250	91	70-130
Selenium	ND U	0.0490	0.0500	98	70-130
Silver	ND U	0.0119	0.0125	95	70-130
Thallium	ND U	0.0512	0.0500	102	70-130

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502734
Project:	Mint Farm Monitoring	**Date Collected:**	N/A
Sample Matrix:	Drinking Water	**Date Received:**	N/A
		Date Analyzed:	03/18/15
		Date Extracted:	03/18/15

Matrix Spike Summary
Total Metals

Sample Name:	Batch QC	**Units:**	mg/L
Lab Code:	K1502518-001	**Basis:**	NA
Analysis Method:	245.1		
Prep Method:	Method		

Matrix Spike
KQ1502573-04

Analyte Name	Sample Result	Result	Spike Amount	% Rec	% Rec Limits
Mercury	ND U	0.00492	0.00500	98	70-130

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502734
Project:	Mint Farm Monitoring	**Date Analyzed:**	03/23/15
Sample Matrix:	Drinking Water	**Date Extracted:**	03/20/15

Lab Control Sample Summary
Total Metals

Analysis Method:	200.7	**Units:**	mg/L
Prep Method:	EPA CLP-METALS ILM04.0	**Basis:**	NA
		Analysis Lot:	437289

Lab Control Sample
KQ1502681-02

Analyte Name	Result	Spike Amount	% Rec	% Rec Limits
Barium	5.13	5000	103	85-115
Copper	0.648	625	104	85-115
Iron	2.53	2500	101	85-115
Manganese	1.27	1250	101	85-115
Sodium	13.1	12500	105	85-115
Zinc	1.23	1250	98	85-115

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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502734
Project:	Mint Farm Monitoring	**Date Analyzed:**	03/25/15
Sample Matrix:	Drinking Water	**Date Extracted:**	03/20/15

Lab Control Sample Summary
Total Metals

Analysis Method:	200.8	**Units:**	mg/L
Prep Method:	EPA CLP-METALS ILM04.0	**Basis:**	NA
		Analysis Lot:	437636

Lab Control Sample
KQ1502682-02

Analyte Name	Result	Spike Amount	% Rec	% Rec Limits
Antimony	0.0486	50.0	97	85-115
Arsenic	0.0486	50.0	97	85-115
Beryllium	0.00245	2.50	98	85-115
Cadmium	0.0247	25.0	99	85-115
Chromium	0.00978	10.0	98	85-115
Lead	0.0493	50.0	99	85-115
Nickel	0.0243	25.0	97	85-115
Selenium	0.0491	50.0	98	85-115
Silver	0.0120	12.5	96	85-115
Thallium	0.0506	50.0	101	85-115

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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502734
Project:	Mint Farm Monitoring	**Date Analyzed:**	03/18/15
Sample Matrix:	Drinking Water	**Date Extracted:**	03/18/15

Lab Control Sample Summary
Total Metals

Analysis Method:	245.1	**Units:**	mg/L
Prep Method:	Method	**Basis:**	NA
		Analysis Lot:	436816

Lab Control Sample
KQ1502573-02

Analyte Name	Result	Spike Amount	% Rec	% Rec Limits
Mercury	0.00474	5.00	95	85-115

Chlorinated Phenolic Organic Compounds

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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Analytical Results

Client:	Longview, City of	**Service Request:**	K1502734
Project:	Mint Farm Monitoring	**Date Collected:**	3/17/2015
Sample Matrix:	Drinking water	**Date Received:**	3/17/2015

EPA Method 1653A
Chlorinated Phenolic Organic Compounds

Sample Name:	Well #1	Units:	ug/L (ppb)
Lab Code:	K1502734-001	Basis:	NA
Test Notes:			

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
2,4,6-Trichlorophenol	METHOD	1653A	2.5	1	3/20/2015	3/25/2015	ND	
2,4,5-Trichlorophenol	METHOD	1653A	2.5	1	3/20/2015	3/25/2015	ND	
2,3,4,6-Tetrachlorophenol	METHOD	1653A	2.5	1	3/20/2015	3/25/2015	ND	
3,4,6-Trichloroguaiacol	METHOD	1653A	2.5	1	3/20/2015	3/25/2015	ND	
3,4,5-Trichloroguaiacol	METHOD	1653A	2.5	1	3/20/2015	3/25/2015	ND	
3,4,6-Trichlorocatechol	METHOD	1653A	5.0	1	3/20/2015	3/25/2015	ND	
3,4,5-Trichlorocatechol	METHOD	1653A	5.0	1	3/20/2015	3/25/2015	ND	
Trichlorosyringol	METHOD	1653A	2.5	1	3/20/2015	3/25/2015	ND	
4,5,6-Trichloroguaiacol	METHOD	1653A	2.5	1	3/20/2015	3/25/2015	ND	
Pentachlorophenol	METHOD	1653A	5.0	1	3/20/2015	3/25/2015	ND	
Tetrachloroguaiacol	METHOD	1653A	5.0	1	3/20/2015	3/25/2015	ND	
Tetrachlorocatechol	METHOD	1653A	5.0	1	3/20/2015	3/25/2015	ND	

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Analytical Results

Client:	Longview, City of	**Service Request:**	K1502734
Project:	Mint Farm Monitoring	**Date Collected:**	NA
Sample Matrix:	Drinking water	**Date Received:**	NA

EPA Method 1653A
Chlorinated Phenolic Organic Compounds

Sample Name:	Method Blank	Units:	ug/L (ppb)
Lab Code:	KWG1502299-3	Basis:	NA
Test Notes:			

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
2,4,6-Trichlorophenol	METHOD	1653A	2.5	1	3/20/2015	3/25/2015	ND	
2,4,5-Trichlorophenol	METHOD	1653A	2.5	1	3/20/2015	3/25/2015	ND	
2,3,4,6-Tetrachlorophenol	METHOD	1653A	2.5	1	3/20/2015	3/25/2015	ND	
3,4,6-Trichloroguaiacol	METHOD	1653A	2.5	1	3/20/2015	3/25/2015	ND	
3,4,5-Trichloroguaiacol	METHOD	1653A	2.5	1	3/20/2015	3/25/2015	ND	
3,4,6-Trichlorocatechol	METHOD	1653A	5.0	1	3/20/2015	3/25/2015	ND	
3,4,5-Trichlorocatechol	METHOD	1653A	5.0	1	3/20/2015	3/25/2015	ND	
Trichlorosyringol	METHOD	1653A	2.5	1	3/20/2015	3/25/2015	ND	
4,5,6-Trichloroguaiacol	METHOD	1653A	2.5	1	3/20/2015	3/25/2015	ND	
Pentachlorophenol	METHOD	1653A	5.0	1	3/20/2015	3/25/2015	ND	
Tetrachloroguaiacol	METHOD	1653A	5.0	1	3/20/2015	3/25/2015	ND	
Tetrachlorocatechol	METHOD	1653A	5.0	1	3/20/2015	3/25/2015	ND	

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Analytical Results

Client:	Longview, City of	**Service Request:**	K1502734
Project:	Mint Farm Monitoring	**Date Collected:**	NA
Sample Matrix:	Drinking water	**Date Received:**	NA
		Date Extracted:	3/20/2015

Labeled Compound and Internal Standard Recovery Summary
Chlorinated Phenolic Organic Compounds
1653A

			Percent Recovery	
	CAS	Sample Name:	**Well #1**	**Method Blank**
	Percent	Lab Code:	K1502734-001	KWG1502299-3
	Recovery	Date Analyzed:	3/25/2015	3/25/2015
Analyte	**Acceptance Criteria**			
3,4,5-Trichlorophenol	36-131		98	97
4,5,6-Trichloroguaiacol-13c6	25-134		95	99
Pentachlorophenol-13c6	22-117		85	92
Tetrachloroguaiacol-13c6	18-129		92	101
Tetrachlorocatechol-13c6	D-121		39	83

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Analytical Results

Client:	Longview, City of	**Service Request:**	K1502734
Project:	Mint Farm Monitoring	**Date Collected:**	NA
Sample Matrix:	Drinking water	**Date Received:**	NA
		Date Extracted:	3/20/2015
		Date Analyzed:	3/25/2015

Duplicate Summary
Chlorinated Phenolic Organic Compounds

Sample Name:	Batch QC	Units:	ug/L (ppb)
Lab Code:	KWG1502299-1	Basis:	NA
Test Notes:			

Analyte	Prep Method	Analysis Method	MRL	Sample Result	Duplicate Sample Result	Average	Relative Percent Difference	Result Notes
2,4,6-Trichlorophenol	METHOD	1653A	2.5	ND	ND	ND	-	
2,4,5-Trichlorophenol	METHOD	1653A	2.5	ND	ND	ND	-	
2,3,4,6-Tetrachlorophenol	METHOD	1653A	2.5	ND	ND	ND	-	
3,4,6-Trichloroguaiacol	METHOD	1653A	2.5	ND	ND	ND	-	
3,4,5-Trichloroguaiacol	METHOD	1653A	2.5	ND	ND	ND	-	
3,4,6-Trichlorocatechol	METHOD	1653A	5.0	ND	ND	ND	-	
3,4,5-Trichlorocatechol	METHOD	1653A	5.0	ND	ND	ND	-	
Trichlorosyringol	METHOD	1653A	2.5	ND	ND	ND	-	
4,5,6-Trichloroguaiacol	METHOD	1653A	2.5	ND	ND	ND	-	
Pentachlorophenol	METHOD	1653A	5.0	ND	ND	ND	-	
Tetrachloroguaiacol	METHOD	1653A	5.0	ND	ND	ND	-	
Tetrachlorocatechol	METHOD	1653A	5.0	ND	ND	ND	-	

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Analytical Results

Client:	Longview, City of	**Service Request:**	K1502734
Project:	Mint Farm Monitoring	**Date Collected:**	NA
LCS Matrix:	Drinking water	**Date Received:**	NA
		Date Extracted:	3/20/2015
		Date Analyzed:	3/25/2015

Ongoing Precision and Recovery Summary
Chlorinated Phenolic Organic Compounds

Sample Name:	Lab Control Sample	Units:	ug/L (ppb)
Lab Code:	KWG1502299-2	Basis:	NA
Test Notes:			

Analyte	Prep Method	Analysis Method	True Value	Result	Percent Recovery	CAS Percent Recovery Acceptance Limits	Result Notes
2,4,6-Trichlorophenol	METHOD	1653A	50	46.9	94	72-146	
2,4,5-Trichlorophenol	METHOD	1653A	50	47.3	95	82-128	
2,3,4,6-Tetrachlorophenol	METHOD	1653A	50	48.0	96	82-132	
3,4,6-Trichloroguaiacol	METHOD	1653A	50	46.6	93	74-140	
3,4,5-Trichloroguaiacol	METHOD	1653A	50	46.8	94	80-134	
3,4,6-Trichlorocatechol	METHOD	1653A	100	92.9	93	64-149	
3,4,5-Trichlorocatechol	METHOD	1653A	100	98.0	98	72-128	
Trichlorosyringol	METHOD	1653A	50	45.7	91	66-174	
4,5,6-Trichloroguaiacol	METHOD	1653A	50	47.8	96	88-116	
Pentachlorophenol	METHOD	1653A	100	88.5	89	84-120	
Tetrachloroguaiacol	METHOD	1653A	100	90.6	91	81-126	
Tetrachlorocatechol	METHOD	1653A	100	92.0	92	81-132	

EPA Method 504.1

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Analytical Results

Client:	Longview, City of	**Service Request:**	K1502734
Project:	Mint Farm Monitoring	**Date Collected:**	03/17/2015
Sample Matrix:	Drinking water	**Date Received:**	03/17/2015

EPA Method 504.1

Sample Name:	Well #1	**Units:**	ug/L
Lab Code:	K1502734-001	**Basis:**	NA
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	504.1		

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
1,2-Dibromoethane (EDB)	ND	U	0.0095	1	03/19/15	03/19/15	KWG1502269	
1,2,3-Trichloropropane	ND	U	0.39	1	03/19/15	03/19/15	KWG1502269	
1,2-Dibromo-3-chloropropane (DBCP	ND	U	0.0095	1	03/19/15	03/19/15	KWG1502269	

Comments:

ALS Group USA, Corp. dba ALS Environmental

Analytical Results

Client:	Longview, City of	**Service Request:**	K1502734
Project:	Mint Farm Monitoring	**Date Collected:**	NA
Sample Matrix:	Drinking water	**Date Received:**	NA

EPA Method 504.1

Sample Name:	Method Blank	**Units:**	ug/L
Lab Code:	KWG1502269-7	**Basis:**	NA
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	504.1		

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
1,2-Dibromoethane (EDB)	ND	U	0.0099	1	03/19/15	03/19/15	KWG1502269	
1,2,3-Trichloropropane	ND	U	0.40	1	03/19/15	03/19/15	KWG1502269	
1,2-Dibromo-3-chloropropane (DBCP	ND	U	0.0099	1	03/19/15	03/19/15	KWG1502269	

Comments:

QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502734
Project:	Mint Farm Monitoring	**Date Extracted:**	03/19/2015
Sample Matrix:	Drinking water	**Date Analyzed:**	03/19/2015

Matrix Spike/Duplicate Matrix Spike Summary
EPA Method 504.1

Sample Name:	Batch QC	**Units:**	ug/L
Lab Code:	K1502735-001	**Basis:**	NA
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	504.1	**Extraction Lot:**	KWG1502269

		Batch QCMS KWG1502269-3 Matrix Spike			Batch QCDMS KWG1502269-4 Duplicate Matrix Spike					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**%Rec**	**Result**	**Spike Amount**	**%Rec**	**%Rec Limits**	**RPD**	**RPD Limit**
1,2-Dibromoethane (EDB)	ND	0.198	0.241	82	0.205	0.240	86	65-135	3	30
1,2,3-Trichloropropane	ND	0.188	0.241	78	0.205	0.240	86	65-135	9	30
1,2-Dibromo-3-chloropropane (DBCP)	ND	0.188	0.241	78	0.199	0.240	83	65-135	6	30

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Client:	Longview, City of	**Service Request:**	K1502734
Project:	Mint Farm Monitoring	**Date Extracted:**	03/19/2015
Sample Matrix:	Drinking water	**Date Analyzed:**	03/19/2015

Lab Control Spike Summary
EPA Method 504.1

Extraction Method:	METHOD	**Units:**	ug/L
Analysis Method:	504.1	**Basis:**	NA
		Level:	Low
		Extraction Lot:	KWG1502269

	Lab Control Sample KWG1502269-5 Lab Control Spike			
Analyte Name	**Result**	**Spike Amount**	**%Rec**	**%Rec Limits**
1,2-Dibromoethane (EDB)	0.0447	0.0625	71	70-130
1,2,3-Trichloropropane	0.0526	0.0625	84	70-130
1,2-Dibromo-3-chloropropane (DBCP)	0.0512	0.0625	82	70-130

Results flagged with an asterisk (*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Client:	Longview, City of	**Service Request:**	K1502734
Project:	Mint Farm Monitoring	**Date Extracted:**	03/19/2015
Sample Matrix:	Drinking water	**Date Analyzed:**	03/19/2015

Lab Control Spike Summary
EPA Method 504.1

Extraction Method:	METHOD	**Units:**	ug/L
Analysis Method:	504.1	**Basis:**	NA
		Level:	Low
		Extraction Lot:	KWG1502269

	Lab Control Sample KWG1502269-6 Lab Control Spike			
Analyte Name	**Result**	**Spike Amount**	**%Rec**	**%Rec Limits**
1,2-Dibromoethane (EDB)	0.232	0.250	93	70-130
1,2,3-Trichloropropane	0.204	0.250	82	70-130
1,2-Dibromo-3-chloropropane (DBCP)	0.200	0.250	80	70-130

Results flagged with an asterisk (*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Pesticides/PCBs by EPA Method 508.1

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Analytical Results

Client:	Longview, City of	**Service Request:**	K1502734
Project:	Mint Farm Monitoring	**Date Collected:**	03/17/2015
Sample Matrix:	Drinking water	**Date Received:**	03/17/2015

Pesticides/PCBs by EPA Method 508.1

Sample Name:	Well #1	**Units:**	ug/L
Lab Code:	K1502734-001	**Basis:**	NA
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	508.1		

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
gamma-BHC (Lindane)	ND	U	0.0098	1	03/27/15	03/31/15	KWG1502592	
Heptachlor	ND	U	0.0098	1	03/27/15	03/31/15	KWG1502592	
Aldrin	ND	U	0.0098	1	03/27/15	03/31/15	KWG1502592	
Heptachlor Epoxide	ND	U	0.0098	1	03/27/15	03/31/15	KWG1502592	
Heptachlor Epoxide (Isomer A)	ND	U	0.0098	1	03/27/15	03/31/15	KWG1502592	
4,4'-DDE	ND	U	0.0098	1	03/27/15	03/31/15	KWG1502592	
Dieldrin	ND	U	0.0098	1	03/27/15	03/31/15	KWG1502592	
Endrin	ND	U	0.0098	1	03/27/15	03/31/15	KWG1502592	
4,4'-DDD	ND	U	0.0098	1	03/27/15	03/31/15	KWG1502592	
4,4'-DDT	ND	U	0.0098	1	03/27/15	03/31/15	KWG1502592	
Methoxychlor	ND	U	0.0098	1	03/27/15	03/31/15	KWG1502592	
Toxaphene	ND	U	0.098	1	03/27/15	03/31/15	KWG1502592	
Chlordane	ND	U	0.098	1	03/27/15	03/31/15	KWG1502592	
Aroclor 1016	ND	U	0.049	1	03/27/15	03/31/15	KWG1502592	
Aroclor 1221	ND	U	0.098	1	03/27/15	03/31/15	KWG1502592	
Aroclor 1232	ND	U	0.098	1	03/27/15	03/31/15	KWG1502592	
Aroclor 1242	ND	U	0.098	1	03/27/15	03/31/15	KWG1502592	
Aroclor 1248	ND	U	0.098	1	03/27/15	03/31/15	KWG1502592	
Aroclor 1254	ND	U	0.098	1	03/27/15	03/31/15	KWG1502592	
Aroclor 1260	ND	U	0.098	1	03/27/15	03/31/15	KWG1502592	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
4,4'-Dibromooctafluorobiphenyl	105	70-130	03/31/15	Acceptable

Comments:

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Analytical Results

Client:	Longview, City of	**Service Request:**	K1502734
Project:	Mint Farm Monitoring	**Date Collected:**	NA
Sample Matrix:	Drinking water	**Date Received:**	NA

Pesticides/PCBs by EPA Method 508.1

Sample Name:	Method Blank	**Units:**	ug/L
Lab Code:	KWG1502592-7	**Basis:**	NA
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	508.1		

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
gamma-BHC (Lindane)	ND	U	0.010	1	03/27/15	03/31/15	KWG1502592	
Heptachlor	ND	U	0.010	1	03/27/15	03/31/15	KWG1502592	
Aldrin	ND	U	0.010	1	03/27/15	03/31/15	KWG1502592	
Heptachlor Epoxide	ND	U	0.010	1	03/27/15	03/31/15	KWG1502592	
Heptachlor Epoxide (Isomer A)	ND	U	0.010	1	03/27/15	03/31/15	KWG1502592	
4,4'-DDE	ND	U	0.010	1	03/27/15	03/31/15	KWG1502592	
Dieldrin	ND	U	0.010	1	03/27/15	03/31/15	KWG1502592	
Endrin	ND	U	0.010	1	03/27/15	03/31/15	KWG1502592	
4,4'-DDD	ND	U	0.010	1	03/27/15	03/31/15	KWG1502592	
4,4'-DDT	ND	U	0.010	1	03/27/15	03/31/15	KWG1502592	
Methoxychlor	ND	U	0.010	1	03/27/15	03/31/15	KWG1502592	
Toxaphene	ND	U	0.10	1	03/27/15	03/31/15	KWG1502592	
Chlordane	ND	U	0.10	1	03/27/15	03/31/15	KWG1502592	
Aroclor 1016	ND	U	0.050	1	03/27/15	03/31/15	KWG1502592	
Aroclor 1221	ND	U	0.10	1	03/27/15	03/31/15	KWG1502592	
Aroclor 1232	ND	U	0.10	1	03/27/15	03/31/15	KWG1502592	
Aroclor 1242	ND	U	0.10	1	03/27/15	03/31/15	KWG1502592	
Aroclor 1248	ND	U	0.10	1	03/27/15	03/31/15	KWG1502592	
Aroclor 1254	ND	U	0.10	1	03/27/15	03/31/15	KWG1502592	
Aroclor 1260	ND	U	0.10	1	03/27/15	03/31/15	KWG1502592	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
4,4'-Dibromooctafluorobiphenyl	95	70-130	03/31/15	Acceptable

Comments:

Client: Longview, City of
Project: Mint Farm Monitoring
Sample Matrix: Drinking water

Service Request: K1502734

Surrogate Recovery Summary
Pesticides/PCBs by EPA Method 508.1

Extraction Method: METHOD
Analysis Method: 508.1

Units: Percent
Level: Low

Sample Name	Lab Code	Sur1
Well #1	K1502734-001	105
Method Blank	KWG1502592-7	95
Well #1MS	KWG1502592-1	89
Well #1DMS	KWG1502592-2	85
Lab Control Sample	KWG1502592-3	90

Surrogate Recovery Control Limits (%)

Sur1 = 4,4'-Dibromooctafluorobiphenyl 70-130

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502734
Project:	Mint Farm Monitoring	**Date Extracted:**	03/27/2015
Sample Matrix:	Drinking water	**Date Analyzed:**	03/31/2015

Matrix Spike/Duplicate Matrix Spike Summary
Pesticides/PCBs by EPA Method 508.1

Sample Name:	Well #1	**Units:**	ug/L
Lab Code:	K1502734-001	**Basis:**	NA
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	508.1	**Extraction Lot:**	KWG1502592

		Well #1MS KWG1502592-1 Matrix Spike			Well #1DMS KWG1502592-2 Duplicate Matrix Spike					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**%Rec**	**Result**	**Spike Amount**	**%Rec**	**%Rec Limits**	**RPD**	**RPD Limit**
gamma-BHC (Lindane)	ND	0.0989	0.0971	102	0.0930	0.0971	96	65-135	6	30
Heptachlor	ND	0.0776	0.0971	80	0.0753	0.0971	78	65-135	3	30
Aldrin	ND	0.0914	0.0971	94	0.0856	0.0971	88	65-135	7	30
Heptachlor Epoxide	ND	0.0908	0.0971	93	0.0867	0.0971	89	65-135	5	30
Heptachlor Epoxide (Isomer A)	ND	0.0950	0.0971	98	0.0905	0.0971	93	65-135	5	30
4,4'-DDE	ND	0.102	0.0971	105	0.0962	0.0971	99	65-135	6	30
Dieldrin	ND	0.104	0.0971	107	0.0946	0.0971	97	65-135	9	30
Endrin	ND	0.0936	0.0971	96	0.0814	0.0971	84	65-135	14	30
4,4'-DDD	ND	0.107	0.0971	110	0.101	0.0971	104	65-135	6	30
4,4'-DDT	ND	0.106	0.0971	109	0.100	0.0971	103	65-135	6	30
Methoxychlor	ND	0.110	0.0971	113	0.103	0.0971	106	65-135	7	30
Aroclor 1248	ND	0.299	0.485	61 *	0.298	0.485	61 *	65-135	0	30

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502734
Project:	Mint Farm Monitoring	**Date Extracted:**	03/27/2015
Sample Matrix:	Drinking water	**Date Analyzed:**	03/31/2015

Lab Control Spike Summary
Pesticides/PCBs by EPA Method 508.1

Extraction Method:	METHOD	**Units:**	ug/L
Analysis Method:	508.1	**Basis:**	NA
		Level:	Low
		Extraction Lot:	KWG1502592

	Lab Control Sample KWG1502592-3 Lab Control Spike			
Analyte Name	**Result**	**Spike Amount**	**%Rec**	**%Rec Limits**
gamma-BHC (Lindane)	0.102	0.100	102	70-130
Heptachlor	0.0928	0.100	93	70-130
Aldrin	0.0971	0.100	97	70-130
Heptachlor Epoxide	0.106	0.100	106	70-130
Heptachlor Epoxide (Isomer A)	0.102	0.100	102	70-130
4,4'-DDE	0.103	0.100	103	70-130
Dieldrin	0.108	0.100	108	70-130
Endrin	0.107	0.100	107	70-130
4,4'-DDD	0.103	0.100	103	70-130
4,4'-DDT	0.101	0.100	101	70-130
Methoxychlor	0.102	0.100	102	70-130
Aroclor 1248	0.377	0.500	75	70-130

Results flagged with an asterisk (*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Chlorinated Herbicides by EPA 515.4

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Analytical Results

Client:	Longview, City of	**Service Request:**	K1502734
Project:	Mint Farm Monitoring	**Date Collected:**	03/17/2015
Sample Matrix:	Drinking water	**Date Received:**	03/17/2015

Chlorinated Herbicides by EPA 515.4

Sample Name:	Well #1	**Units:**	ug/L
Lab Code:	K1502734-001	**Basis:**	NA
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	515.4		

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Dalapon	ND	U	1.0	1	03/30/15	04/10/15	KWG1502652	
3,5-Dichlorobenzoic Acid	ND	U	0.50	1	03/30/15	04/10/15	KWG1502652	
Dicamba	ND	U	0.20	1	03/30/15	04/10/15	KWG1502652	
Dichlorprop	ND	U	0.50	1	03/30/15	04/10/15	KWG1502652	
2,4-D	ND	U	0.10	1	03/30/15	04/10/15	KWG1502652	
Pentachlorophenol	ND	U	0.040	1	03/30/15	04/10/15	KWG1502652	
2,4,5-TP (Silvex)	ND	U	0.20	1	03/30/15	04/10/15	KWG1502652	
Chloramben	ND	U	0.20	1	03/30/15	04/10/15	KWG1502652	
2,4-DB	ND	U	1.0	1	03/30/15	04/10/15	KWG1502652	
Dinoseb	ND	U	0.20	1	03/30/15	04/10/15	KWG1502652	
Dacthal Diacid	ND	U	0.020	1	03/30/15	04/10/15	KWG1502652	
Picloram	ND	U	0.10	1	03/30/15	04/10/15	KWG1502652	
Acifluorfen	ND	U	2.0	1	03/30/15	04/10/15	KWG1502652	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
2,4-Dichlorophenylacetic Acid	116	70-130	04/10/15	Acceptable

Comments:

ALS Group USA, Corp. dba ALS Environmental

Analytical Results

Client:	Longview, City of	**Service Request:**	K1502734
Project:	Mint Farm Monitoring	**Date Collected:**	NA
Sample Matrix:	Drinking water	**Date Received:**	NA

Chlorinated Herbicides by EPA 515.4

Sample Name:	Method Blank	**Units:**	ug/L
Lab Code:	KWG1502652-4	**Basis:**	NA
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	515.4		

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Dalapon	ND	U	1.0	1	03/30/15	04/10/15	KWG1502652	
3,5-Dichlorobenzoic Acid	ND	U	0.50	1	03/30/15	04/10/15	KWG1502652	
Dicamba	ND	U	0.20	1	03/30/15	04/10/15	KWG1502652	
Dichlorprop	ND	U	0.50	1	03/30/15	04/10/15	KWG1502652	
2,4-D	ND	U	0.10	1	03/30/15	04/10/15	KWG1502652	
Pentachlorophenol	ND	U	0.040	1	03/30/15	04/10/15	KWG1502652	
2,4,5-TP (Silvex)	ND	U	0.20	1	03/30/15	04/10/15	KWG1502652	
Chloramben	ND	U	0.20	1	03/30/15	04/10/15	KWG1502652	
2,4-DB	ND	U	1.0	1	03/30/15	04/10/15	KWG1502652	
Dinoseb	ND	U	0.20	1	03/30/15	04/10/15	KWG1502652	
Dacthal Diacid	ND	U	0.020	1	03/30/15	04/10/15	KWG1502652	
Picloram	ND	U	0.10	1	03/30/15	04/10/15	KWG1502652	
Acifluorfen	ND	U	2.0	1	03/30/15	04/10/15	KWG1502652	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
2,4-Dichlorophenylacetic Acid	102	70-130	04/10/15	Acceptable

Comments:

Client: Longview, City of
Project: Mint Farm Monitoring
Sample Matrix: Drinking water

Service Request: K1502734

Surrogate Recovery Summary
Chlorinated Herbicides by EPA 515.4

Extraction Method: METHOD
Analysis Method: 515.4

Units: Percent
Level: Low

Sample Name	Lab Code	Sur1
Well #1	K1502734-001	116
Batch QC	K1503080-001	118
Method Blank	KWG1502652-4	102
Batch QCMS	KWG1502652-1	106
Batch QCDMS	KWG1502652-2	109
Lab Control Sample	KWG1502652-3	105

Surrogate Recovery Control Limits (%)

Sur1 = 2,4-Dichlorophenylacetic Acid 70-130

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502734
Project:	Mint Farm Monitoring	**Date Extracted:**	03/30/2015
Sample Matrix:	Drinking water	**Date Analyzed:**	04/10/2015

Matrix Spike/Duplicate Matrix Spike Summary
Chlorinated Herbicides by EPA 515.4

Sample Name:	Batch QC	**Units:**	ug/L
Lab Code:	K1503080-001	**Basis:**	NA
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	515.4	**Extraction Lot:**	KWG1502652

		Batch QCMS KWG1502652-1 Matrix Spike			Batch QCDMS KWG1502652-2 Duplicate Matrix Spike					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**%Rec**	**Result**	**Spike Amount**	**%Rec**	**%Rec Limits**	**RPD**	**RPD Limit**
Dalapon	ND	3.99	4.95	81	4.04	4.96	82	70-130	1	30
3,5-Dichlorobenzoic Acid	ND	4.10	4.95	83	4.31	4.96	87	70-130	5	30
Dicamba	ND	4.46	4.95	90	4.71	4.96	95	70-130	6	30
Dichlorprop	ND	4.34	4.95	88	4.57	4.96	92	70-130	5	30
2,4-D	ND	4.40	4.95	89	4.64	4.96	94	70-130	5	30
Pentachlorophenol	ND	4.82	4.95	97	5.04	4.96	102	70-130	4	30
2,4,5-TP (Silvex)	ND	4.28	4.95	86	4.48	4.96	90	70-130	5	30
Chloramben	ND	4.09	4.95	82	4.44	4.96	90	70-130	8	30
2,4-DB	ND	4.31	4.95	87	4.53	4.96	91	70-130	5	30
Dinoseb	ND	4.99	4.95	101	5.31	4.96	107	70-130	6	30
Dacthal Diacid	ND	5.10	4.95	103	5.40	4.96	109	70-130	6	30
Picloram	ND	4.82	4.95	97	4.95	4.96	100	70-130	3	30
Acifluorfen	ND	5.22	4.95	105	5.41	4.96	109	70-130	4	30

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502734
Project:	Mint Farm Monitoring	**Date Extracted:**	03/30/2015
Sample Matrix:	Drinking water	**Date Analyzed:**	04/10/2015

Lab Control Spike Summary
Chlorinated Herbicides by EPA 515.4

Extraction Method:	METHOD	**Units:**	ug/L
Analysis Method:	515.4	**Basis:**	NA
		Level:	Low
		Extraction Lot:	KWG1502652

	Lab Control Sample KWG1502652-3 Lab Control Spike			
Analyte Name	**Result**	**Spike Amount**	**%Rec**	**%Rec Limits**
Dalapon	3.82	5.00	76	70-130
3,5-Dichlorobenzoic Acid	3.86	5.00	77	70-130
Dicamba	4.38	5.00	88	70-130
Dichlorprop	4.50	5.00	90	70-130
2,4-D	4.56	5.00	91	70-130
Pentachlorophenol	4.77	5.00	95	70-130
2,4,5-TP (Silvex)	4.43	5.00	89	70-130
Chloramben	4.50	5.00	90	70-130
2,4-DB	4.34	5.00	87	70-130
Dinoseb	5.11	5.00	102	70-130
Dacthal Diacid	4.79	5.00	96	70-130
Picloram	4.81	5.00	96	70-130
Acifluorfen	5.62	5.00	112	70-130

Results flagged with an asterisk (*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Volatile Organic Compounds

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

Analytical Results

Client:	Longview, City of	**Service Request:**	K1502734
Project:	Mint Farm Monitoring	**Date Collected:**	03/17/2015
Sample Matrix:	Drinking water	**Date Received:**	03/17/2015

Volatile Organic Compounds

Sample Name:	Well #1	**Units:**	ug/L
Lab Code:	K1502734-001	**Basis:**	NA
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	524.2		

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Dichlorodifluoromethane	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
Chloromethane	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
Vinyl Chloride	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
Bromomethane	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
Chloroethane	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
Trichlorofluoromethane	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
Methylene Chloride	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
trans-1,2-Dichloroethene	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
1,1-Dichloroethene	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
cis-1,2-Dichloroethene	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
Methyl tert-Butyl Ether	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
Chloroform	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
Bromochloromethane	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
Carbon Tetrachloride	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
Benzene	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
1,2-Dichloroethane	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
Trichloroethene	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
1,2-Dichloropropane	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
Bromodichloromethane	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
Dibromomethane	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
cis-1,3-Dichloropropene	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
1,1-Dichloroethane	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
Toluene	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
trans-1,3-Dichloropropene	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
Tetrachloroethene	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
2,2-Dichloropropane	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
1,3-Dichloropropane	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
Dibromochloromethane	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
1,2-Dibromoethane (EDB)	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
Chlorobenzene	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
Ethylbenzene	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
Styrene	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
m,p-Xylenes	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
o-Xylene	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	

Comments:

Analytical Results

Client:	Longview, City of	**Service Request:**	K1502734
Project:	Mint Farm Monitoring	**Date Collected:**	03/17/2015
Sample Matrix:	Drinking water	**Date Received:**	03/17/2015

Volatile Organic Compounds

Sample Name:	Well #1	**Units:**	ug/L
Lab Code:	K1502734-001	**Basis:**	NA
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	524.2		

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
1,1,1-Trichloroethane	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
Bromoform	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
1,1,2,2-Tetrachloroethane	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
Isopropylbenzene	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
1,1-Dichloropropene	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
Bromobenzene	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
n-Propylbenzene	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
1,3,5-Trimethylbenzene	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
2-Chlorotoluene	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
4-Chlorotoluene	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
tert-Butylbenzene	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
1,2,4-Trimethylbenzene	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
sec-Butylbenzene	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
p-Isopropyltoluene	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
1,3-Dichlorobenzene	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
1,4-Dichlorobenzene	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
n-Butylbenzene	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
1,2-Dichlorobenzene	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
1,2-Dibromo-3-chloropropane (DBCP	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
1,2,4-Trichlorobenzene	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
Hexachlorobutadiene	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
Naphthalene	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
1,1,2-Trichloroethane	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
1,1,1,2-Tetrachloroethane	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
1,2,3-Trichloropropane	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
1,2,3-Trichlorobenzene	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
4-Bromofluorobenzene	93	70-130	03/19/15	Acceptable
Dibromofluoromethane	98	82-124	03/19/15	Acceptable
Toluene-d8	96	82-124	03/19/15	Acceptable

Comments:

Analytical Results

Client:	Longview, City of	**Service Request:**	K1502734
Project:	Mint Farm Monitoring	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA

Volatile Organic Compounds

Sample Name:	Method Blank	**Units:**	ug/L
Lab Code:	KWG1502273-4	**Basis:**	NA
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	524.2		

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Dichlorodifluoromethane	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
Chloromethane	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
Vinyl Chloride	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
Bromomethane	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
Chloroethane	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
Trichlorofluoromethane	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
Methylene Chloride	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
trans-1,2-Dichloroethene	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
1,1-Dichloroethene	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
cis-1,2-Dichloroethene	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
Methyl tert-Butyl Ether	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
Chloroform	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
Bromochloromethane	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
Carbon Tetrachloride	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
Benzene	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
1,2-Dichloroethane	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
Trichloroethene	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
1,2-Dichloropropane	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
Bromodichloromethane	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
Dibromomethane	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
cis-1,3-Dichloropropene	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
1,1-Dichloroethane	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
Toluene	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
trans-1,3-Dichloropropene	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
Tetrachloroethene	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
2,2-Dichloropropane	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
1,3-Dichloropropane	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
Dibromochloromethane	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
1,2-Dibromoethane (EDB)	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
Chlorobenzene	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
Ethylbenzene	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
Styrene	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
m,p-Xylenes	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
o-Xylene	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	

Comments:

Analytical Results

Client:	Longview, City of	**Service Request:**	K1502734
Project:	Mint Farm Monitoring	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA

Volatile Organic Compounds

Sample Name:	Method Blank	**Units:**	ug/L
Lab Code:	KWG1502273-4	**Basis:**	NA
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	524.2		

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
1,1,1-Trichloroethane	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
Bromoform	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
1,1,2,2-Tetrachloroethane	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
Isopropylbenzene	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
1,1-Dichloropropene	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
Bromobenzene	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
n-Propylbenzene	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
1,3,5-Trimethylbenzene	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
2-Chlorotoluene	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
4-Chlorotoluene	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
tert-Butylbenzene	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
1,2,4-Trimethylbenzene	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
sec-Butylbenzene	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
p-Isopropyltoluene	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
1,3-Dichlorobenzene	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
1,4-Dichlorobenzene	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
n-Butylbenzene	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
1,2-Dichlorobenzene	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
1,2-Dibromo-3-chloropropane (DBCP	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
1,2,4-Trichlorobenzene	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
Hexachlorobutadiene	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
Naphthalene	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
1,1,2-Trichloroethane	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
1,1,1,2-Tetrachloroethane	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
1,2,3-Trichloropropane	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
1,2,3-Trichlorobenzene	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
4-Bromofluorobenzene	92	70-130	03/19/15	Acceptable
Dibromofluoromethane	97	82-124	03/19/15	Acceptable
Toluene-d8	96	82-124	03/19/15	Acceptable

Comments:

Client: Longview, City of
Project: Mint Farm Monitoring
Sample Matrix: Drinking water

Service Request: K1502734

Surrogate Recovery Summary
Volatile Organic Compounds

Extraction Method: METHOD
Analysis Method: 524.2

Units: Percent
Level: Low

Sample Name	Lab Code	Sur1	Sur2	Sur3
Well #1	K1502734-001	93	98	96
Method Blank	KWG1502273-4	92	97	96
Well #1MS	KWG1502273-1	98	98	96
Well #1DMS	KWG1502273-2	96	99	97
Lab Control Sample	KWG1502273-3	99	98	95

Surrogate Recovery Control Limits (%)

Sur1	=	4-Bromofluorobenzene	70-130
Sur2	=	Dibromofluoromethane	82-124
Sur3	=	Toluene-d8	82-124

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502734
Project:	Mint Farm Monitoring	**Date Extracted:**	03/19/2015
Sample Matrix:	Drinking water	**Date Analyzed:**	03/19/2015

Matrix Spike/Duplicate Matrix Spike Summary
Volatile Organic Compounds

Sample Name:	Well #1	**Units:**	ug/L
Lab Code:	K1502734-001	**Basis:**	NA
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	524.2	**Extraction Lot:**	KWG1502273

		Well #1MS KWG1502273-1 Matrix Spike				Well #1DMS KWG1502273-2 Duplicate Matrix Spike						
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**%Rec**		**Result**	**Spike Amount**	**%Rec**		**%Rec Limits**	**RPD**	**RPD Limit**
Dichlorodifluoromethane	ND	4.09	5.00	82		4.15	5.00	83		70-130	1	30
Chloromethane	ND	4.66	5.00	93		4.11	5.00	82		70-130	13	30
Vinyl Chloride	ND	2.62	5.00	52	*	2.66	5.00	53	*	70-130	2	30
Bromomethane	ND	3.42	5.00	68	*	3.52	5.00	70		70-130	3	30
Chloroethane	ND	4.66	5.00	93		4.26	5.00	85		70-130	9	30
Trichlorofluoromethane	ND	3.81	5.00	76		3.87	5.00	77		70-130	2	30
Methylene Chloride	ND	4.43	5.00	89		4.63	5.00	93		70-130	4	30
trans-1,2-Dichloroethene	ND	3.87	5.00	77		3.90	5.00	78		70-130	1	30
1,1-Dichloroethene	ND	0.700	5.00	14	*	0.620	5.00	12	*	70-130	12	30
cis-1,2-Dichloroethene	ND	4.31	5.00	86		4.36	5.00	87		70-130	1	30
Methyl tert-Butyl Ether	ND	7.44	10.0	74		7.83	10.0	78		70-130	5	30
Chloroform	ND	4.53	5.00	91		4.62	5.00	92		70-130	2	30
Bromochloromethane	ND	4.28	5.00	86		4.55	5.00	91		70-130	6	30
Carbon Tetrachloride	ND	4.25	5.00	85		4.29	5.00	86		70-130	1	30
Benzene	ND	4.16	5.00	83		4.28	5.00	86		70-130	3	30
1,2-Dichloroethane	ND	4.86	5.00	97		5.23	5.00	105		70-130	7	30
Trichloroethene	ND	3.76	5.00	75		3.82	5.00	76		70-130	2	30
1,2-Dichloropropane	ND	4.26	5.00	85		4.32	5.00	86		70-130	1	30
Bromodichloromethane	ND	4.51	5.00	90		4.63	5.00	93		70-130	3	30
Dibromomethane	ND	4.51	5.00	90		4.61	5.00	92		70-130	2	30
cis-1,3-Dichloropropene	ND	4.00	5.00	80		4.26	5.00	85		70-130	6	30
Toluene	ND	3.94	5.00	79		4.03	5.00	81		70-130	2	30
1,1-Dichloroethane	ND	4.25	5.00	85		4.39	5.00	88		70-130	3	30
trans-1,3-Dichloropropene	ND	3.69	5.00	74		3.90	5.00	78		70-130	6	30
Tetrachloroethene	ND	3.52	5.00	70		3.53	5.00	71		70-130	0	30
1,3-Dichloropropane	ND	4.55	5.00	91		4.67	5.00	93		70-130	3	30
2,2-Dichloropropane	ND	3.88	5.00	78		3.99	5.00	80		70-130	3	30
Dibromochloromethane	ND	4.67	5.00	93		5.06	5.00	101		70-130	8	30
1,2-Dibromoethane (EDB)	ND	4.61	5.00	92		4.81	5.00	96		70-130	4	30
Chlorobenzene	ND	4.28	5.00	86		4.34	5.00	87		70-130	1	30
Ethylbenzene	ND	3.95	5.00	79		3.92	5.00	78		70-130	1	30
Styrene	ND	ND	5.00	0	*	0.700	5.00	14	*	70-130	NC	30
m,p-Xylenes	ND	8.04	10.0	80		8.07	10.0	81		70-130	0	30

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Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Client:	Longview, City of	**Service Request:**	K1502734
Project:	Mint Farm Monitoring	**Date Extracted:**	03/19/2015
Sample Matrix:	Drinking water	**Date Analyzed:**	03/19/2015

Matrix Spike/Duplicate Matrix Spike Summary
Volatile Organic Compounds

Sample Name:	Well #1	**Units:**	ug/L
Lab Code:	K1502734-001	**Basis:**	NA
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	524.2	**Extraction Lot:**	KWG1502273

		Well #1MS KWG1502273-1 Matrix Spike				Well #1DMS KWG1502273-2 Duplicate Matrix Spike						
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**%Rec**		**Result**	**Spike Amount**	**%Rec**		**%Rec Limits**	**RPD**	**RPD Limit**
o-Xylene	ND	3.98	5.00	80		4.04	5.00	81		70-130	1	30
1,1,1-Trichloroethane	ND	3.81	5.00	76		3.95	5.00	79		70-130	4	30
Bromoform	ND	4.95	5.00	99		5.26	5.00	105		70-130	6	30
1,1,2,2-Tetrachloroethane	ND	5.27	5.00	105		5.49	5.00	110		70-130	4	30
Isopropylbenzene	ND	3.79	5.00	76		3.77	5.00	75		70-130	1	30
1,1-Dichloropropene	ND	2.93	5.00	59	*	3.05	5.00	61	*	70-130	4	30
Bromobenzene	ND	4.59	5.00	92		4.71	5.00	94		70-130	3	30
n-Propylbenzene	ND	4.50	5.00	90		4.51	5.00	90		70-130	0	30
1,3,5-Trimethylbenzene	ND	4.58	5.00	92		4.64	5.00	93		70-130	1	30
2-Chlorotoluene	ND	4.81	5.00	96		4.90	5.00	98		70-130	2	30
4-Chlorotoluene	ND	4.93	5.00	99		5.01	5.00	100		70-130	2	30
tert-Butylbenzene	ND	4.20	5.00	84		4.23	5.00	85		70-130	1	30
1,2,4-Trimethylbenzene	ND	4.78	5.00	96		4.87	5.00	97		70-130	2	30
sec-Butylbenzene	ND	4.27	5.00	85		4.33	5.00	87		70-130	1	30
p-Isopropyltoluene	ND	4.32	5.00	86		4.32	5.00	86		70-130	0	30
1,3-Dichlorobenzene	ND	4.64	5.00	93		4.78	5.00	96		70-130	3	30
1,4-Dichlorobenzene	ND	4.62	5.00	92		4.75	5.00	95		70-130	3	30
n-Butylbenzene	ND	4.24	5.00	85		4.33	5.00	87		70-130	2	30
1,2-Dichlorobenzene	ND	4.68	5.00	94		4.90	5.00	98		70-130	5	30
1,2-Dibromo-3-chloropropane (DBCP)	ND	5.36	5.00	107		5.82	5.00	116		70-130	8	30
1,2,4-Trichlorobenzene	ND	4.48	5.00	90		4.64	5.00	93		70-130	4	30
Hexachlorobutadiene	ND	4.02	5.00	80		4.19	5.00	84		70-130	4	30
Naphthalene	ND	4.18	5.00	84		4.56	5.00	91		70-130	9	30
1,1,2-Trichloroethane	ND	4.26	5.00	85		4.43	5.00	89		70-130	4	30
1,1,1,2-Tetrachloroethane	ND	5.01	5.00	100		5.09	5.00	102		70-130	2	30
1,2,3-Trichloropropane	ND	4.83	5.00	97		4.95	5.00	99		70-130	2	30
1,2,3-Trichlorobenzene	ND	4.69	5.00	94		4.90	5.00	98		70-130	4	30

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Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502734
Project:	Mint Farm Monitoring	**Date Extracted:**	03/19/2015
Sample Matrix:	Water	**Date Analyzed:**	03/19/2015

Lab Control Spike Summary
Volatile Organic Compounds

Extraction Method:	METHOD	**Units:**	ug/L
Analysis Method:	524.2	**Basis:**	NA
		Level:	Low
		Extraction Lot:	KWG1502273

	Lab Control Sample KWG1502273-3 Lab Control Spike			
Analyte Name	**Result**	**Spike Amount**	**%Rec**	**%Rec Limits**
Dichlorodifluoromethane	6.12	5.00	122	70-130
Chloromethane	5.38	5.00	108	70-130
Vinyl Chloride	5.35	5.00	107	70-130
Bromomethane	4.62	5.00	92	70-130
Chloroethane	5.38	5.00	108	70-130
Trichlorofluoromethane	5.74	5.00	115	70-130
Methylene Chloride	4.85	5.00	97	70-130
trans-1,2-Dichloroethene	5.08	5.00	102	70-130
1,1-Dichloroethene	5.03	5.00	101	70-130
cis-1,2-Dichloroethene	4.92	5.00	98	70-130
Methyl tert-Butyl Ether	7.89	10.0	79	70-130
Chloroform	5.04	5.00	101	70-130
Bromochloromethane	4.60	5.00	92	70-130
Carbon Tetrachloride	6.20	5.00	124	70-130
Benzene	4.97	5.00	99	70-130
1,2-Dichloroethane	5.27	5.00	105	70-130
Trichloroethene	4.89	5.00	98	70-130
1,2-Dichloropropane	4.61	5.00	92	70-130
Bromodichloromethane	4.82	5.00	96	70-130
Dibromomethane	4.70	5.00	94	70-130
cis-1,3-Dichloropropene	4.36	5.00	87	70-130
Toluene	4.69	5.00	94	70-130
1,1-Dichloroethane	5.12	5.00	102	70-130
trans-1,3-Dichloropropene	3.98	5.00	80	70-130
Tetrachloroethene	4.72	5.00	94	70-130
1,3-Dichloropropane	4.65	5.00	93	70-130
2,2-Dichloropropane	5.12	5.00	102	70-130
Dibromochloromethane	4.94	5.00	99	70-130
1,2-Dibromoethane (EDB)	4.83	5.00	97	70-130
Chlorobenzene	4.74	5.00	95	70-130
Ethylbenzene	4.82	5.00	96	70-130
Styrene	4.36	5.00	87	70-130
m,p-Xylenes	9.52	10.0	95	70-130
o-Xylene	4.59	5.00	92	70-130
1,1,1-Trichloroethane	5.20	5.00	104	70-130

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Client: Longview, City of
Project: Mint Farm Monitoring
Sample Matrix: Water

Service Request: K1502734
Date Extracted: 03/19/2015
Date Analyzed: 03/19/2015

Lab Control Spike Summary
Volatile Organic Compounds

Extraction Method: METHOD
Analysis Method: 524.2

Units: ug/L
Basis: NA
Level: Low
Extraction Lot: KWG1502273

	Lab Control Sample KWG1502273-3 Lab Control Spike			
Analyte Name	**Result**	**Spike Amount**	**%Rec**	**%Rec Limits**
Bromoform	4.95	5.00	99	70-130
1,1,2,2-Tetrachloroethane	5.49	5.00	110	70-130
Isopropylbenzene	4.91	5.00	98	70-130
1,1-Dichloropropene	5.17	5.00	103	70-130
Bromobenzene	4.98	5.00	100	70-130
n-Propylbenzene	5.79	5.00	116	70-130
1,3,5-Trimethylbenzene	5.43	5.00	109	70-130
2-Chlorotoluene	5.58	5.00	112	70-130
4-Chlorotoluene	5.62	5.00	112	70-130
tert-Butylbenzene	5.47	5.00	109	70-130
1,2,4-Trimethylbenzene	5.43	5.00	109	70-130
sec-Butylbenzene	5.63	5.00	113	70-130
p-Isopropyltoluene	5.49	5.00	110	70-130
1,3-Dichlorobenzene	5.09	5.00	102	70-130
1,4-Dichlorobenzene	4.99	5.00	100	70-130
n-Butylbenzene	5.47	5.00	109	70-130
1,2-Dichlorobenzene	5.06	5.00	101	70-130
1,2-Dibromo-3-chloropropane (DBCP)	5.72	5.00	114	70-130
1,2,4-Trichlorobenzene	4.72	5.00	94	70-130
Hexachlorobutadiene	5.22	5.00	104	70-130
Naphthalene	4.46	5.00	89	70-130
1,1,2-Trichloroethane	4.34	5.00	87	70-130
1,1,1,2-Tetrachloroethane	5.37	5.00	107	70-130
1,2,3-Trichloropropane	5.12	5.00	102	70-130
1,2,3-Trichlorobenzene	4.89	5.00	98	70-130

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Semivolatile Organics by EPA Method 525.2

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Analytical Results

Client:	Longview, City of	**Service Request:**	K1502734
Project:	Mint Farm Monitoring	**Date Collected:**	03/17/2015
Sample Matrix:	Drinking water	**Date Received:**	03/17/2015

Semivolatile Organics by EPA Method 525.2

Sample Name:	Well #1	**Units:**	ug/L
Lab Code:	K1502734-001	**Basis:**	NA
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	525.2		

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Hexachlorocyclopentadiene	ND	U	0.098	1	03/27/15	03/31/15	KWG1502593	*
Fluorene	ND	U	0.049	1	03/27/15	03/31/15	KWG1502593	
Propachlor	ND	U	0.098	1	03/27/15	03/31/15	KWG1502593	
Hexachlorobenzene	ND	U	0.098	1	03/27/15	03/31/15	KWG1502593	
Simazine	ND	U	0.049	1	03/27/15	03/31/15	KWG1502593	
Atrazine	ND	U	0.098	1	03/27/15	03/31/15	KWG1502593	
Metribuzin	ND	U	0.20	1	03/27/15	03/31/15	KWG1502593	
Alachlor	ND	U	0.070	1	03/27/15	03/31/15	KWG1502593	
Bromacil	ND	U	0.20	1	03/27/15	03/31/15	KWG1502593	
Metolachlor	ND	U	0.088	1	03/27/15	03/31/15	KWG1502593	
Butachlor	ND	U	0.098	1	03/27/15	03/31/15	KWG1502593	
Bis(2-ethylhexyl) Adipate	ND	U	0.59	1	03/27/15	03/31/15	KWG1502593	
Bis(2-ethylhexyl) Phthalate	ND	U	0.59	1	03/27/15	03/31/15	KWG1502593	
Benzo(a)pyrene	ND	U	0.020	1	03/27/15	03/31/15	KWG1502593	

* See Case Narrative

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
1,3-Dimethyl-2-nitrobenzene	94	70-130	03/31/15	Acceptable
Triphenyl Phosphate	86	70-130	03/31/15	Acceptable
Perylene-d12	87	70-130	03/31/15	Acceptable

Comments:

ALS Group USA, Corp. dba ALS Environmental

Analytical Results

Client:	Longview, City of	**Service Request:**	K1502734
Project:	Mint Farm Monitoring	**Date Collected:**	NA
Sample Matrix:	Drinking water	**Date Received:**	NA

Semivolatile Organics by EPA Method 525.2

Sample Name:	Method Blank	**Units:**	ug/L
Lab Code:	KWG1502593-4	**Basis:**	NA
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	525.2		

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Hexachlorocyclopentadiene	ND	U	0.10	1	03/27/15	03/31/15	KWG1502593	*
Fluorene	ND	U	0.050	1	03/27/15	03/31/15	KWG1502593	
Propachlor	ND	U	0.10	1	03/27/15	03/31/15	KWG1502593	
Hexachlorobenzene	ND	U	0.10	1	03/27/15	03/31/15	KWG1502593	
Simazine	ND	U	0.050	1	03/27/15	03/31/15	KWG1502593	
Atrazine	ND	U	0.10	1	03/27/15	03/31/15	KWG1502593	
Metribuzin	ND	U	0.20	1	03/27/15	03/31/15	KWG1502593	
Alachlor	ND	U	0.072	1	03/27/15	03/31/15	KWG1502593	
Bromacil	ND	U	0.20	1	03/27/15	03/31/15	KWG1502593	
Metolachlor	ND	U	0.090	1	03/27/15	03/31/15	KWG1502593	
Butachlor	ND	U	0.10	1	03/27/15	03/31/15	KWG1502593	
Bis(2-ethylhexyl) Adipate	ND	U	0.60	1	03/27/15	03/31/15	KWG1502593	
Bis(2-ethylhexyl) Phthalate	ND	U	0.60	1	03/27/15	03/31/15	KWG1502593	
Benzo(a)pyrene	ND	U	0.020	1	03/27/15	03/31/15	KWG1502593	

* See Case Narrative

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
1,3-Dimethyl-2-nitrobenzene	91	70-130	03/31/15	Acceptable
Triphenyl Phosphate	83	70-130	03/31/15	Acceptable
Perylene-d12	85	70-130	03/31/15	Acceptable

Comments:

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client: Longview, City of
Project: Mint Farm Monitoring
Sample Matrix: Drinking water

Service Request: K1502734

Surrogate Recovery Summary
Semivolatile Organics by EPA Method 525.2

Extraction Method: METHOD
Analysis Method: 525.2

Units: Percent
Level: Low

Sample Name	Lab Code	Sur1	Sur2	Sur3	
Well #1	K1502734-001	94	86	87	
Method Blank	KWG1502593-4	91	83	85	
Well #1MS	KWG1502593-1	96	91	76	
Well #1DMS	KWG1502593-2	94	92	59	*
Lab Control Sample	KWG1502593-3	87	91	83	

Surrogate Recovery Control Limits (%)

Sur1	=	1,3-Dimethyl-2-nitrobenzene	70-130
Sur2	=	Triphenyl Phosphate	70-130
Sur3	=	Perylene-d12	70-130

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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502734
Project:	Mint Farm Monitoring	**Date Extracted:**	03/27/2015
Sample Matrix:	Drinking water	**Date Analyzed:**	03/31/2015

Matrix Spike/Duplicate Matrix Spike Summary
Semivolatile Organics by EPA Method 525.2

Sample Name:	Well #1	**Units:**	ug/L
Lab Code:	K1502734-001	**Basis:**	NA
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	525.2	**Extraction Lot:**	KWG1502593

		Well #1MS KWG1502593-1 Matrix Spike			Well #1DMS KWG1502593-2 Duplicate Matrix Spike					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**%Rec**	**Result**	**Spike Amount**	**%Rec**	**%Rec Limits**	**RPD**	**RPD Limit**
Hexachlorocyclopentadiene	ND	1.48	0.971	153 *	1.42	0.971	146 *	70-130	4	30
Fluorene	ND	1.06	0.971	109	1.04	0.971	107	70-130	2	30
Propachlor	ND	1.15	0.971	118	1.13	0.971	116	70-130	2	30
Hexachlorobenzene	ND	0.895	0.971	92	0.903	0.971	93	70-130	1	30
Simazine	ND	0.825	0.971	85	0.879	0.971	91	70-130	6	30
Atrazine	ND	0.870	0.971	90	0.942	0.971	97	70-130	8	30
Metribuzin	ND	0.950	0.971	98	1.02	0.971	105	70-130	7	30
Alachlor	ND	0.950	0.971	98	1.01	0.971	104	70-130	6	30
Bromacil	ND	0.978	0.971	101	1.02	0.971	105	70-130	4	30
Metolachlor	ND	1.10	0.971	113	1.15	0.971	119	70-130	5	30
Butachlor	ND	1.08	0.971	111	1.09	0.971	112	70-130	0	30
Bis(2-ethylhexyl) Adipate	ND	1.01	0.971	105	0.994	0.971	102	70-130	2	30
Bis(2-ethylhexyl) Phthalate	ND	1.03	0.971	106	1.05	0.971	108	70-130	2	30
Benzo(a)pyrene	ND	0.364	0.971	38 *	0.204	0.971	21 *	70-130	56 *	30

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Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Client:	Longview, City of	**Service Request:**	K1502734
Project:	Mint Farm Monitoring	**Date Extracted:**	03/27/2015
Sample Matrix:	Drinking water	**Date Analyzed:**	03/31/2015

Lab Control Spike Summary
Semivolatile Organics by EPA Method 525.2

Extraction Method:	METHOD	**Units:**	ug/L
Analysis Method:	525.2	**Basis:**	NA
		Level:	Low
		Extraction Lot:	KWG1502593

	Lab Control Sample KWG1502593-3 Lab Control Spike			
Analyte Name	**Result**	**Spike Amount**	**%Rec**	**%Rec Limits**
Hexachlorocyclopentadiene	1.41	1.00	141 *	70-130
Fluorene	1.04	1.00	104	70-130
Propachlor	1.20	1.00	120	70-130
Hexachlorobenzene	0.930	1.00	93	70-130
Simazine	1.01	1.00	101	70-130
Atrazine	1.08	1.00	108	70-130
Metribuzin	1.08	1.00	108	70-130
Alachlor	1.07	1.00	107	70-130
Bromacil	1.04	1.00	104	70-130
Metolachlor	1.21	1.00	121	70-130
Butachlor	1.17	1.00	117	70-130
Bis(2-ethylhexyl) Adipate	0.996	1.00	100	70-130
Bis(2-ethylhexyl) Phthalate	1.01	1.00	101	70-130
Benzo(a)pyrene	1.06	1.00	106	70-130

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Endothall by EPA Method 548.1

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Analytical Results

Client:	Longview, City of	**Service Request:**	K1502734
Project:	Mint Farm Monitoring	**Date Collected:**	03/17/2015
Sample Matrix:	Drinking water	**Date Received:**	03/17/2015

Endothall by EPA Method 548.1

Sample Name:	Well #1	**Units:**	ug/L
Lab Code:	K1502734-001	**Basis:**	NA
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	548.1		

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Endothall	ND	U	5.0	1	03/24/15	03/24/15	KWG1502439	

Comments:

Analytical Results

Client:	Longview, City of	**Service Request:**	K1502734
Project:	Mint Farm Monitoring	**Date Collected:**	NA
Sample Matrix:	Drinking water	**Date Received:**	NA

Endothall by EPA Method 548.1

Sample Name:	Method Blank	**Units:**	ug/L
Lab Code:	KWG1502439-4	**Basis:**	NA
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	548.1		

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Endothall	ND	U	5.0	1	03/24/15	03/24/15	KWG1502439	

Comments:

Client:	Longview, City of	**Service Request:**	K1502734
Project:	Mint Farm Monitoring	**Date Extracted:**	03/24/2015
Sample Matrix:	Drinking water	**Date Analyzed:**	03/24/2015

Matrix Spike/Duplicate Matrix Spike Summary
Endothall by EPA Method 548.1

Sample Name:	Batch QC	**Units:**	ug/L
Lab Code:	K1502735-001	**Basis:**	NA
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	548.1	**Extraction Lot:**	KWG1502439

		Batch QCMS KWG1502439-1 Matrix Spike			Batch QCDMS KWG1502439-2 Duplicate Matrix Spike					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**%Rec**	**Result**	**Spike Amount**	**%Rec**	**%Rec Limits**	**RPD**	**RPD Limit**
Endothall	ND	90.0	100	90	91.4	100	91	30-142	2	30

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Client:	Longview, City of	**Service Request:**	K1502734
Project:	Mint Farm Monitoring	**Date Extracted:**	03/24/2015
Sample Matrix:	Drinking water	**Date Analyzed:**	03/24/2015

Lab Control Spike Summary
Endothall by EPA Method 548.1

Extraction Method:	METHOD	**Units:**	ug/L
Analysis Method:	548.1	**Basis:**	NA
		Level:	Low
		Extraction Lot:	KWG1502439

	Lab Control Sample KWG1502439-3 Lab Control Spike			
Analyte Name	**Result**	**Spike Amount**	**%Rec**	**%Rec Limits**
Endothall	92.4	100	92	30-142

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Diquat and Paraquat by EPA Method 549.2

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Analytical Results

Client:	Longview, City of	**Service Request:**	K1502734
Project:	Mint Farm Monitoring	**Date Collected:**	03/17/2015
Sample Matrix:	Drinking water	**Date Received:**	03/17/2015

Diquat and Paraquat by EPA Method 549.2

Sample Name:	Well #1	**Units:**	ug/L
Lab Code:	K1502734-001	**Basis:**	NA
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	549.2		

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Diquat	ND	U	0.40	1	03/24/15	03/24/15	KWG1502408	
Paraquat	ND	U	0.80	1	03/24/15	03/24/15	KWG1502408	

Comments:

ALS Group USA, Corp. dba ALS Environmental

Analytical Results

Client:	Longview, City of	**Service Request:**	K1502734
Project:	Mint Farm Monitoring	**Date Collected:**	NA
Sample Matrix:	Drinking water	**Date Received:**	NA

Diquat and Paraquat by EPA Method 549.2

Sample Name:	Method Blank	**Units:**	ug/L
Lab Code:	KWG1502408-5	**Basis:**	NA
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	549.2		

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Diquat	ND	U	0.40	1	03/24/15	03/24/15	KWG1502408	
Paraquat	ND	U	0.80	1	03/24/15	03/24/15	KWG1502408	

Comments:

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502734
Project:	Mint Farm Monitoring	**Date Extracted:**	03/24/2015
Sample Matrix:	Drinking water	**Date Analyzed:**	03/24/2015

Matrix Spike/Duplicate Matrix Spike Summary
Diquat and Paraquat by EPA Method 549.2

Sample Name:	Batch QC	**Units:**	ug/L
Lab Code:	K1502736-001	**Basis:**	NA
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	549.2	**Extraction Lot:**	KWG1502408

		Batch QCMS KWG1502408-1 Matrix Spike			Batch QCDMS KWG1502408-2 Duplicate Matrix Spike					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**%Rec**	**Result**	**Spike Amount**	**%Rec**	**%Rec Limits**	**RPD**	**RPD Limit**
Diquat	ND	13.3	12.0	111	13.1	12.0	110	70-130	1	30
Paraquat	ND	14.5	12.0	121	14.2	12.0	118	70-130	2	30

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Client:	Longview, City of	**Service Request:**	K1502734
Project:	Mint Farm Monitoring	**Date Extracted:**	03/24/2015
Sample Matrix:	Drinking water	**Date Analyzed:**	03/24/2015

Lab Control Spike Summary
Diquat and Paraquat by EPA Method 549.2

Extraction Method:	METHOD	**Units:**	ug/L
Analysis Method:	549.2	**Basis:**	NA
		Level:	Low
		Extraction Lot:	KWG1502408

	Lab Control Sample KWG1502408-4 Lab Control Spike			
Analyte Name	**Result**	**Spike Amount**	**%Rec**	**%Rec Limits**
Diquat	12.5	12.0	104	70-130
Paraquat	13.2	12.0	110	70-130

Results flagged with an asterisk (*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Subcontract Lab Results

ALS Environmental—Kelso Laboratory
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State Certifications: DE ID 11 , MA PA0102 , MD 128 , VA 460157 , WV 343

March 30, 2015

Mr. Gregory Salata
ALS Environmental - Kelso
1317 S. 13th Avenue
Kelso, WA 98626

Certificate of Analysis

Project Name:	**SOCs**	Workorder:	**2060631**
Purchase Order:	**K1502734**	Workorder ID:	**K1502734**

Dear Mr. Salata:

Enclosed are the analytical results for samples received by the laboratory on Friday, March 20, 2015.

The ALS Environmental laboratory in Middletown, Pennsylvania is a National Environmental Laboratory Accreditation Program (NELAP) accredited laboratory and as such, certifies that all applicable test results meet the requirements of NELAP.

If you have any questions regarding this certificate of analysis, please contact Mrs. Kelli L Wolfgang (Project Coordinator) at (717) 944-5541.

Analyses were performed according to our laboratory's NELAP-approved quality assurance program and any applicable state requirements. The test results meet requirements of the current NELAP standards or state requirements, where applicable. For a specific list of accredited analytes, refer to the certifications section of the ALS website at www.alsglobal.com/en/Our-Services/Life-Sciences/Environmental/Downloads.

This laboratory report may not be reproduced, except in full, without the written approval of ALS Environmental.

ALS Spring City: 10 Riverside Drive, Spring City, PA 19475 610-948-4903

CC: Ms. Chris Leaf

This page is included as part of the Analytical Report and must be retained as a permanent record thereof.

Kelli Wolfgang

Mrs. Kelli L Wolfgang
Project Coordinator

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SAMPLE SUMMARY

Workorder: 2060631 K1502734

Lab ID	Sample ID	Matrix	Date Collected	Date Received	Collected By
2060631001	K1502734-001	Drinking Water	3/17/2015 08:30	3/20/2015 08:47	Collected by Client

Notes

-- Samples collected by ALS personnel are done so in accordance with the procedures set forth in the ALS Field Sampling Plan (20 - Field Services Sampling Plan).
-- All Waste Water analyses comply with methodology requirements of 40 CFR Part 136.
-- All Drinking Water analyses comply with methodology requirements of 40 CFR Part 141.
-- Unless otherwise noted, all quantitative results for soils are reported on a dry weight basis.
-- The Chain of Custody document is included as part of this report.
-- All Library Search analytes should be regarded as tentative identifications based on the presumptive evidence of the mass spectra. Concentrations reported are estimated values.
-- Parameters identified as "analyze immediately" require analysis within 15 minutes of collection. Any "analyze immediately" parameters not listed under the header "Field Parameters" are preformed in the laboratory and are therefore analyzed out of hold time.
-- Method references listed on this report beginning with the prefix “S” followed by a method number (such as S2310B-97) refer to methods from “Standard Methods for the Examination of Water and Wastewater”.

Standard Acronyms/Flags

J	Indicates an estimated value between the Method Detection Limit (MDL) and the Practical Quantitation Limit (PQL) for the analyte
U	Indicates that the analyte was Not Detected (ND)
N	Indicates presumptive evidence of the presence of a compound
MDL	Method Detection Limit
PQL	Practical Quantitation Limit
RDL	Reporting Detection Limit
ND	Not Detected - indicates that the analyte was Not Detected at the RDL
Cntr	Analysis was performed using this container
RegLmt	Regulatory Limit
LCS	Laboratory Control Sample
MS	Matrix Spike
MSD	Matrix Spike Duplicate
DUP	Sample Duplicate
%Rec	Percent Recovery
RPD	Relative Percent Difference
LOD	DoD Limit of Detection
LOQ	DoD Limit of Quantitation
DL	DoD Detection Limit
I	Indicates reported value is greater than or equal to the Method Detection Limit (MDL) but less than the Report Detection Limit (RDL)

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ANALYTICAL RESULTS

Workorder: 2060631 K1502734

Lab ID: **2060631001** Date Collected: 3/17/2015 08:30 Matrix: Drinking Water
Sample ID: **K1502734-001** Date Received: 3/20/2015 08:47

Parameters	Results	Flag	Units	RDL	Method	Prepared By	Analyzed	By	*Cntr*
HERBICIDES									
Glyphosate	ND		ug/L	4.5	EPA 547		3/22/15 15:50	CGS	C
CARBAMATES									
Aldicarb	ND		ug/L	0.26	EPA 531.1		3/27/15 19:02	CGS	A
Aldicarb Sulfone	ND		ug/L	0.32	EPA 531.1		3/27/15 19:02	CGS	A
Aldicarb Sulfoxide	ND		ug/L	0.27	EPA 531.1		3/27/15 19:02	CGS	A
Carbaryl	ND		ug/L	0.29	EPA 531.1		3/27/15 19:02	CGS	A
Carbofuran	ND		ug/L	0.43	EPA 531.1		3/27/15 19:02	CGS	A
3-Hydroxycarbofuran	ND		ug/L	0.27	EPA 531.1		3/27/15 19:02	CGS	A
Methiocarb	ND		ug/L	0.18	EPA 531.1		3/27/15 19:02	CGS	A
Methomyl	ND		ug/L	0.49	EPA 531.1		3/27/15 19:02	CGS	A
Oxamyl	ND		ug/L	0.50	EPA 531.1		3/27/15 19:02	CGS	A
Propoxur	ND		ug/L	0.32	EPA 531.1		3/27/15 19:02	CGS	A

Kelli Wolfgang
Mrs. Kelli L Wolfgang
Project Coordinator

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QUALITY CONTROL DATA

Workorder: 2060631 K1502734

QC Batch: HPLC/3915 **Analysis Method:** EPA 547

QC Batch Method: EPA 547

Associated Lab Samples: 2060631001

METHOD BLANK: 2153468

Parameter	Blank Result	Units	Reporting Limit	Qualifiers
Glyphosate	ND	ug/L	4.5	

LABORATORY CONTROL SAMPLE: 2153469

Parameter	LCS % Rec	Units	Spike Conc.	LCS Result	% Rec Limit	Qualifiers
Glyphosate	99.5	ug/L	500	497	80 - 120	

MATRIX SPIKE SAMPLE: 2153470 ORIGINAL:

****NOTE - The Original Result shown below is a raw result and is only used for the purpose of calculating Matrix Spike percent recoveries. This result is not a final value and cannot be used as such.

Parameter	Original Result	Units	Spike Conc.	MS Result	MS % Rec	% Rec Limit	Qualifiers
Glyphosate	0	ug/L	500	482.285	96.5	70 - 130	

SAMPLE DUPLICATE: 2153471 ORIGINAL:

Parameter	Original Result	Units	DUP Result	RPD	Max RPD	Qualifiers
Glyphosate	0	ug/L	0	NC	40	

MATRIX SPIKE SAMPLE: 2153472 ORIGINAL:

****NOTE - The Original Result shown below is a raw result and is only used for the purpose of calculating Matrix Spike percent recoveries. This result is not a final value and cannot be used as such.

Parameter	Original Result	Units	Spike Conc.	MS Result	MS % Rec	% Rec Limit	Qualifiers
Glyphosate	0	ug/L	500	448.493	89.7	70 - 130	

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State Certifications: DE ID 11 , MA PA0102 , MD 128 , VA 460157 , WV 343

QUALITY CONTROL DATA

Workorder: 2060631 K1502734

QC Batch: HPLC/3918 **Analysis Method:** EPA 531.1

QC Batch Method: EPA 531.1

Associated Lab Samples: 2060631001

LABORATORY CONTROL SAMPLE: 2155517

Parameter	LCS % Rec	Units	Spike Conc.	LCS Result	% Rec Limit	Qualifiers
Aldicarb Sulfoxide	92.8	ug/L	10	9.3	80 - 120	
Aldicarb Sulfone	89.7	ug/L	10	9.0	80 - 120	
Oxamyl	101	ug/L	10	10.1	80 - 120	
Methomyl	95.5	ug/L	10	9.5	80 - 120	
3-Hydroxycarbofuran	99.9	ug/L	10	10	80 - 120	
Aldicarb	102	ug/L	10	10.2	80 - 120	
Propoxur	91	ug/L	10	9.1	80 - 120	
Carbofuran	90.1	ug/L	10	9.0	80 - 120	
Carbaryl	92.2	ug/L	10	9.2	80 - 120	
Methiocarb	88.9	ug/L	10	8.9	80 - 120	

METHOD BLANK: 2155516

Parameter	Blank Result	Units	Reporting Limit	Qualifiers
Aldicarb Sulfoxide	ND	ug/L	0.27	
Aldicarb Sulfone	ND	ug/L	0.32	
Oxamyl	ND	ug/L	0.50	
Methomyl	ND	ug/L	0.49	
3-Hydroxycarbofuran	ND	ug/L	0.27	
Aldicarb	ND	ug/L	0.26	
Propoxur	ND	ug/L	0.32	
Carbofuran	ND	ug/L	0.43	
Carbaryl	ND	ug/L	0.29	
Methiocarb	ND	ug/L	0.18	

SAMPLE DUPLICATE: 2155518 ORIGINAL:

Parameter	Original Result	Units	DUP Result	RPD	Max RPD	Qualifiers
Aldicarb Sulfoxide		ug/L	0	NC	20	
Aldicarb Sulfone		ug/L	0	NC	20	
Oxamyl	0	ug/L	0	NC	20	
Methomyl		ug/L	0	NC	20	
3-Hydroxycarbofuran		ug/L	0	NC	20	

QUALITY CONTROL DATA

Workorder: 2060631 K1502734

Aldicarb		ug/L	0	NC	20
Propoxur		ug/L	0	NC	20
Carbofuran	0	ug/L	0	NC	20
Carbaryl		ug/L	0	NC	20
Methiocarb		ug/L	0	NC	20

MATRIX SPIKE SAMPLE: 2155519 ORIGINAL:

****NOTE - The Original Result shown below is a raw result and is only used for the purpose of calculating Matrix Spike percent recoveries. This result is not a final value and cannot be used as such.

Parameter	Original Result	Units	Spike Conc.	MS Result	MS % Rec	% Rec Limit	Qualifiers
Aldicarb Sulfoxide		ug/L	10	9.89754	99	65 - 135	
Aldicarb Sulfone		ug/L	10	9.09217	90.9	65 - 135	
Oxamyl	0	ug/L	10	10.5484	105	65 - 135	
Methomyl		ug/L	10	9.85644	98.6	65 - 135	
3-Hydroxycarbofuran		ug/L	10	10.4665	105	65 - 135	
Aldicarb		ug/L	10	10.6716	107	65 - 135	
Propoxur		ug/L	10	9.41074	94.1	65 - 135	
Carbofuran	0	ug/L	10	9.32144	93.2	65 - 135	
Carbaryl		ug/L	10	9.47293	94.7	65 - 135	
Methiocarb		ug/L	10	9.21696	92.2	65 - 135	

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State Certifications: DE ID 11 , MA PA0102 , MD 128 , VA 460157 , WV 343

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Workorder: 2060631 K1502734

Lab ID	Sample ID	Prep Method	Prep Batch	Analysis Method	Analysis Batch
2060631001	K1502734-001			EPA 547	HPLC/3915
2060631001	K1502734-001			EPA 531.1	HPLC/3918

ALS Environmental Chain of Custody

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2060631

KW

Project Number: K1502734
Project Manager: Chris Leaf

Lab Code	Sample ID	# of Cont.	Matrix	Sample Date	Sample Time	Lab ID	CARBAM 531.1	GLYPH 547
K1502734-001	Well #1	6	Drinking Water	3/17/15	0830	Middletown ALS	X	X

	Y	N	Initials	Cooler Temp
Custody Seals Present?	✓		AM	2° °C
(if present) Seals Intact?	✓			Cooler #:
Received on Ice?	✓			
COC/Lbls Complete	✓			Therm ID TH-292
Cont in Good Cond?	✓			
Correct Containers?	✓			Ship Carrier
Correct Samp Vol?	✓			FedEx UPS
Correct Preservation?	✓			
Headspace/Volatiles?		✓		DHL

Tracking # 5478 9742 6155

Test Comments
CARBAM - 531.1 K1502734-001 Full list for WA Regulations - no compliance report required.

Folder Comments:
Report all metals in mg/L. No DW State form required.

KW 03/24/15

Special Instructions/Comments
Please provide the electronic (PDF and EDD) report to the following e-mail address: ALKLS.Data@alsglobal.com.

H - Test is On Hold P - Test is Authorized for Prep Only

Turnaround Requirements
____ RUSH (Surcharges Apply)
PLEASE CIRCLE WORK DAYS
✓ 1 2 3 4 5
____ STANDARD
Requested FAX Date: _____
Requested Report Date: 04/03/15

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 N
EDD N

Invoice Information
PO# 51K1502734
Bill to

Relinquished By: H Smith 3/19/15 1030 Received By: ALS 3/20/15 0842 Airbill Number:

ALS

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State Certification: CT PH-0224, DE ID 11, GA 914, MA PA0102, MD 128, LA 04162, VA 421, WY EPA Region 8, WV 343

QUALITY CONTROL DATA

Workorder **2060631** **Project Name** **K1502734**

QC Batch HPLC / 3915

QC Batch Method EPA 547 **Analysis Method** EPA 547

Associated Lab Samples 2060631001

METHOD BLANK 2153468

Parameter	Blank Result	Qualifiers	Units	Reporting Limit	% Rec	% Rec Limits
Glyphosate	ND	U	ug/L	4.5		

LABORATORY CONTROL SAMPLE 2153469

Parameter	LCS Result	Qualifiers	Units	Spike Conc.	LCS % Rec	% Rec Limits
Glyphosate	497		ug/L	500	99.5	80-120

SAMPLE DUPLICATE 2153471 Original 2058366001

*****NOTE - The Original Result and Duplicate Result shown below are raw results and are only used for the purpose of calculating Sample Duplicate percent recoveries. This result is not a final value and cannot be used as such.*

Parameter	Original Result	Qualifiers	Units	DUP Result	RPD	Max RPD	% Rec	% Rec Limits
Glyphosate	ND	U	ug/L	ND	NC	40		

This is an addendum to the Certificate of Analysis.

MATRIX SPIKE 2153470 Original 2058366001

*****NOTE - The Original Result shown below is a raw result and is only used for the purpose of calculating Matrix Spike percent recoveries. This result is not a final value and cannot be used as such.*

Parameter	Original Result	Qualifiers	Units	Spike Conc.	MS Result	MS % Rec	% Rec Limits
Glyphosate	ND		ug/L	500	482.285	96.5	70-130

MATRIX SPIKE 2153472 Original 2059505001

*****NOTE - The Original Result shown below is a raw result and is only used for the purpose of calculating Matrix Spike percent recoveries. This result is not a final value and cannot be used as such.*

Parameter	Original Result	Qualifiers	Units	Spike Conc.	MS Result	MS % Rec	% Rec Limits
Glyphosate	ND		ug/L	500	448.493	89.7	70-130

QC Batch HPLC / 3918

QC Batch Method EPA 531.1 **Analysis Method** EPA 531.1

Associated Lab Samples 2060631001

METHOD BLANK 2155516

Parameter	Blank Result	Qualifiers	Units	Reporting Limit	% Rec	% Rec Limits
3-Hydroxycarbofuran	ND	U	ug/L	0.27		
Aldicarb	ND	U	ug/L	0.26		
Aldicarb Sulfone	ND	U	ug/L	0.32		
Aldicarb Sulfoxide	ND	U	ug/L	0.27		
Carbaryl	ND	U	ug/L	0.29		
Carbofuran	ND	U	ug/L	0.43		
Methiocarb	ND	U	ug/L	0.18		
Methomyl	ND	U	ug/L	0.49		
Oxamyl	ND	U	ug/L	0.50		
Propoxur	ND	U	ug/L	0.32		

LABORATORY CONTROL SAMPLE 2155517

Parameter	LCS Result	Qualifiers	Units	Spike Conc.	LCS % Rec	% Rec Limits
3-Hydroxycarbofuran	10		ug/L	10	99.9	80-120
Aldicarb	10.2		ug/L	10	102	80-120
Aldicarb Sulfone	9		ug/L	10	89.7	80-120

Aldicarb Sulfoxide	9.3	ug/L	10	92.8	80-120
Carbaryl	9.2	ug/L	10	92.2	80-120
Carbofuran	9	ug/L	10	90.1	80-120
Methiocarb	8.9	ug/L	10	88.9	80-120
Methomyl	9.5	ug/L	10	95.5	80-120
Oxamyl	10.1	ug/L	10	101	80-120
Propoxur	9.1	ug/L	10	91	80-120

SAMPLE DUPLICATE 2155518 Original 2059505001

*****NOTE - The Original Result and Duplicate Result shown below are raw results and are only used for the purpose of calculating Sample Duplicate percent recoveries. This result is not a final value and cannot be used as such.*

Parameter	Original Result	Qualifiers	Units	DUP Result	RPD	Max RPD	% Rec	% Rec Limits
3-Hydroxycarbofuran	ND	U	ug/L	ND	NC	20		
Aldicarb	ND	U	ug/L	ND	NC	20		
Aldicarb Sulfone	ND	U	ug/L	ND	NC	20		
Aldicarb Sulfoxide	ND	U	ug/L	ND	NC	20		
Carbaryl	ND	U	ug/L	ND	NC	20		
Carbofuran	ND	U	ug/L	ND	NC	20		
Methiocarb	ND	U	ug/L	ND	NC	20		
Methomyl	ND	U	ug/L	ND	NC	20		
Oxamyl	ND	U	ug/L	ND	NC	20		
Propoxur	ND	U	ug/L	ND	NC	20		

MATRIX SPIKE 2155519 Original 2061316001

*****NOTE - The Original Result shown below is a raw result and is only used for the purpose of calculating Matrix Spike percent recoveries. This result is not a final value and cannot be used as such.*

Parameter	Original Result	Qualifiers	Units	Spike Conc.	MS Result	MS % Rec	% Rec Limits
3-Hydroxycarbofuran	ND		ug/L	10	10.4665	105	65-135
Aldicarb	ND		ug/L	10	10.6716	107	65-135
Aldicarb Sulfone	ND		ug/L	10	9.09217	90.9	65-135
Aldicarb Sulfoxide	ND		ug/L	10	9.89754	99	65-135
Carbaryl	ND		ug/L	10	9.47293	94.7	65-135
Carbofuran	ND		ug/L	10	9.32144	93.2	65-135
Methiocarb	ND		ug/L	10	9.21696	92.2	65-135
Methomyl	ND		ug/L	10	9.85644	98.6	65-135
Oxamyl	ND		ug/L	10	10.5484	105	65-135
Propoxur	ND		ug/L	10	9.41074	94.1	65-135

Standard Acronyms/Flags	
J	Indicates an estimated value between the Method Detection Limit (MDL) and the Practical Quantitation Limit (PQL) for the analyte
U	Indicates that the analyte was Not Detected (ND)
N	Indicates presumptive evidence of the presence of a compound
MDL	Method Detection Limit
PQL	Practical Quantitation Limit
RDL	Reporting Detection Limit
ND	Not Detected - indicates that the analyte was Not Detected at the RDL
Cntr	Analysis was performed using this container
RegLmt	Regulatory Limit
LCS	Laboratory Control Sample
MS	Matrix Spike
MSD	Matrix Spike Duplicate
DUP	Sample Duplicate
%Rec	Percent Recovery
RPD	Relative Percent Difference
LOD	DoD Limit of Detection
LOQ	DoD Limit of Quantitation
DL	DoD Detection Limit
NC	Not Calculated
*	Result outside of QC limits
DIL	Dilution Factor

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Lab ID	Sample ID	Prep Method	Prep Batch	Analysis Method	Analysis Batch
2059505001	ZZZZZZZZZZ	EPA 531.1	HPLC / 3918	EPA 531.1	HPLC / 3918
2060631001	K1502734-001	EPA 531.1	HPLC / 3918	EPA 531.1	HPLC / 3918
2061316001	ZZZZZZZZZZ	EPA 531.1	HPLC / 3918	EPA 531.1	HPLC / 3918

Lab ID	Sample ID	Prep Method	Prep Batch	Analysis Method	Analysis Batch
2058366001	ZZZZZZZZZZ	EPA 547	HPLC / 3915	EPA 547	HPLC / 3915
2059505001	ZZZZZZZZZZ	EPA 547	HPLC / 3915	EPA 547	HPLC / 3915
2060631001	K1502734-001	EPA 547	HPLC / 3915	EPA 547	HPLC / 3915

LABORATORY REPORT

April 3, 2015

Jeff Coleman
Longview, City of
W/S Operation Center
Longview, WA 98632

RE: Mint Farm Monitoring

Dear Jeff:

Enclosed are the results of the sample submitted to our laboratory on March 20, 2015. For your reference, these analyses have been assigned our service request number K1502734.

All analyses were performed according to our laboratory's NELAP and DoD-ELAP-approved quality assurance program. The test results meet requirements of the current NELAP and DoD-ELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP and DoD-ELAP-accredited analytes, refer to the certifications section at www.alsglobal.com. Results are intended to be considered in their entirety and apply only to the samples analyzed and reported herein.

If you have any questions, please call me at (805) 526-7161.

Respectfully submitted,

ALS | Environmental

Kate Aguilera

By Kate Aguilera at 2:28 pm, Apr 03, 2015

Kate Aguilera
Project Manager

CASE NARRATIVE

The sample was received intact under chain of custody on March 17, 2015 and was stored in accordance with the analytical method requirements. Please refer to the sample acceptance check form for additional information. The results reported herein are applicable only to the condition of the sample at the time of sample receipt.

Hydrogen Sulfide Analysis

The sample was analyzed for hydrogen sulfide using a gas chromatograph equipped with a sulfur chemiluminescence detector (SCD). This method is not included on the laboratory's NELAP, DoD-ELAP, or AIHA-LAP scope of accreditation.

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 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.

ALS Environmental – Simi Valley

CERTIFICATIONS, ACCREDITATIONS, AND REGISTRATIONS

Agency	Web Site	Number
AIHA	http://www.aihaaccreditedlabs.org	101661
Arizona DHS	http://www.azdhs.gov/lab/license/env.htm	AZ0694
DoD ELAP	http://www.pjlabs.com/search-accredited-labs	L14-2
Florida DOH (NELAP)	http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm	E871020
Maine DHHS	http://www.maine.gov/dhhs/mecdc/environmental-health/water/dwp-services/labcert/labcert.htm	2014025
Minnesota DOH (NELAP)	http://www.health.state.mn.us/accreditation	876241
New Jersey DEP (NELAP)	http://www.nj.gov/dep/oqa/	CA009
New York DOH (NELAP)	http://www.wadsworth.org/labcert/elap/elap.html	11221
Oregon PHD (NELAP)	http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Pages/index.aspx	4068-001
Pennsylvania DEP	http://www.depweb.state.pa.us/labs	68-03307 (Registration)
Texas CEQ (NELAP)	http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html	T104704413-14-5
Utah DOH (NELAP)	http://www.health.utah.gov/lab/labimp/certification/index.html	CA016272014-4
Washington DOE	http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html	C946

Analyses were performed according to our laboratory's NELAP and DoD-ELAP approved quality assurance program. A complete listing of specific NELAP and DoD-ELAP certified analytes can be found in the certifications section at www.alsglobal.com, or at the accreditation body's website.

Each of the certifications listed above have an explicit Scope of Accreditation that applies to specific matrices/methods/analytes; therefore, please contact the laboratory for information corresponding to a particular certification.

Intra-Network Chain of Custody

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

ALS Contact: Chris Leaf

Project Name: Mint Farm Monitoring
Project Number:
Project Manager: Jeff Coleman
Company: Longview, City of

Lab Code	Client Sample ID	# of Cont.	Matrix	Sample Date	Sample Time	Date Received	Send To	Sulfur Sulfur Liq
K1502734-001	Well #1	3	Drinking Water	3/17/15	0830	3/17/15	SIMIVALLEY	II

Test Comments

Sulfur - Sulfur Liq K1502734-001 Hydrogen Sulfide

Folder Comments:

Report all metals in mg/L. No DW State form required.

Special Instructions/Comments

Please provide the electronic (PDF and EDD) report to the following e-mail address: ALKLS.Data@alsglobal.com.

pH Checked _____

Turnaround Requirements

____RUSH (Surcharges Apply)

PLEASE CIRCLE WORK DAYS

1 2 3 4 5

✓ STANDARD

Requested FAX Date: _____

Requested Report Date: 04/03/15

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 N

EDD N

Invoice Information

PO# 51K1502734

Bill to

Relinquished By: [signature] 3/19/15 1030 Received By: [signature] 3/20/15 0945 Airbill Number:

TEMP BLANK 5°C

ALS Environmental
Sample Acceptance Check Form

Client: Longview, City of Work order: K1502734

Project: Mint Farm Monitoring

Sample(s) received on: 3/17/15 Date opened: 3/17/15 by: ARYNEVICH

Note: This form is used for all samples received by ALS. The use of this form for custody seals is strictly meant to indicate presence/absence and not as an indication of compliance or nonconformity. Thermal preservation and pH will only be evaluated either at the request of the client and/or as required by the method/SOP.

		Yes	No	N/A
1	Were **sample containers** properly marked with client sample ID?	☒	☐	☐
2	Container(s) **supplied by ALS**?	☐	☒	☐
3	Did **sample containers** arrive in good condition?	☒	☐	☐
4	Were **chain-of-custody** papers used and filled out?	☒	☐	☐
5	Did **sample container labels** and/or tags agree with custody papers?	☒	☐	☐
6	Was **sample volume** received adequate for analysis?	☒	☐	☐
7	Are samples within specified holding times?	☒	☐	☐
8	Was proper **temperature** (thermal preservation) of cooler at receipt adhered to?	☒	☐	☐
	Cooler Temperature: ° C Blank Temperature: 3° C			
9	Was a **trip blank** received?	☐	☒	☐
10	Were **custody seals** on outside of cooler/Box?	☒	☐	☐
	Location of seal(s)? _____ Sealing Lid?	☒	☐	☐
	Were signature and date included?	☒	☐	☐
	Were seals intact?	☒	☐	☐
	Were custody seals on outside of sample container?	☐	☒	☐
	Location of seal(s)? _____ Sealing Lid?	☐	☐	☒
	Were signature and date included?	☐	☐	☒
	Were seals intact?	☐	☐	☒
11	Do containers have appropriate **preservation**, according to method/SOP or Client specified information?	☒	☐	☐
	Is there a client indication that the submitted samples are **pH** preserved?	☐	☐	☒
	Were **VOA vials** checked for presence/absence of air bubbles?	☒	☐	☐
	Does the client/method/SOP require that the analyst check the sample pH and if necessary alter it?	☒	☐	☐
12	**Tubes:** Are the tubes capped and intact?	☐	☐	☒
	Do they contain moisture?	☐	☐	☒
13	**Badges:** Are the badges properly capped and intact?	☐	☐	☒
	Are dual bed badges separated and individually capped and intact?	☐	☐	☒

Lab Sample ID	Container Description	Required pH *	Received pH	Adjusted pH	VOA Headspace (Presence/Absence)	Receipt / Preservation Comments
K1502734-001.01	40mL VOA NP		7	1	A	MC 3/31/2015
K1502734-001.02	40mL VOA NP				A	
K1502734-001.36	40mL VOA NP				A	

Explain any discrepancies: (include lab sample ID numbers): _____

RSK - MEEPP, HCL (pH<2); RSK - CO2, (pH 5-8); Sulfur (pH>4)

ALS Environmental
Sample Acceptance Check Form

Client: Longview, City of Work order: K1502734

Project: Mint Farm Monitoring

Sample(s) received on: 3/17/15 Date opened: 3/17/15 by: ARYNEVICH

Lab Sample ID	Container Description	Required pH *	Received pH	Adjusted pH	VOA Headspace (Presence/Absence)	Receipt / Preservation Comments

Explain any discrepancies: (include lab sample ID numbers):

RSK - MEEPP, HCL (pH<2); RSK - CO2, (pH 5-8); Sulfur (pH>4)

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Longview, City of**
Client Project ID: **Mint Farm Monitoring** ALS Project ID: K1502734

Hydrogen Sulfide

Test Code: GC/SCD Reduced Sulfur Analysis
Instrument ID: Agilent 7890A/GC22/SCD Date(s) Collected: 3/17/15
Analyst: Mike Conejo Date Received: 3/17/15
Sample Type: Drinking Water Date Analyzed: 3/31/15
Test Notes:

Client Sample ID	ALS Sample ID	Sample Amount ml(s)	Purge Volume Liter(s)	Injection Volume ml(s)	**Result µg/L**	MRL µg/L	Data Qualifier
Well #1	K1502734-001	10.0	0.30	1.00	ND	0.21	
Method Blank	P150331-MB	10.0	0.30	1.00	ND	0.21	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

LABORATORY CONTROL SAMPLE / DUPLICATE LABORATORY CONTROL SAMPLE SUMMARY

Client: **Longview, City of**
Client Sample ID: **Duplicate Lab Control Sample**
Client Project ID: **Mint Farm Monitoring**

ALS Project ID: K1502734
ALS Sample ID: P150331-DLCS

Test Code: GC/SCD Reduced Sulfur Analysis
Instrument ID: Agilent 7890A/GC22/SCD
Analyst: Mike Conejo
Sample Type: Drinking Water
Test Notes:

Date Collected: NA
Date Received: NA
Date Analyzed: 3/31/15
Liquid Amount: 10.0 ml(s)
Purge Volume: 0.30 Liter(s)
Injection Volume: 0.20 ml(s)

CAS #	Compound	Spike Amount LCS / DLCS ug/L	Result LCS ug/L	Result DLCS ug/L	% Recovery LCS	% Recovery DLCS	ALS Acceptance Limits	RPD	RPD Limit	Data Qualifier
7783-06-4	Hydrogen Sulfide	416	453	428	**109**	**103**	54-133	6	20	

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

April 21, 2015

Analytical Report for Service Request No: K1502735

Jeff Coleman
Longview, City of
W/S Operation Center
P.O. Box 128
Longview, WA 98632

RE: Mint Farm Monitoring

Dear Jeff,

Enclosed are the results of the sample(s) submitted to our laboratory March 17, 2015
For your reference, these analyses have been assigned our service request number **K1502735.**

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 3275. You may also contact me via email at Chris.Leaf@ALSGlobal.com.

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental

Chris Leaf
Project Manager

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 DEC UST	http://dec.alaska.gov/applications/eh/ehllabreports/USTLabs.aspx	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	L14-51
Florida DOH	http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm	E87412
Hawaii DOH	Not available	-
Idaho DHW	http://www.healthandwelfare.idaho.gov/Health/Labs/CertificationDrinkingWaterLabs/tabid/1833/Default.aspx	-
ISO 17025	http://www.pjlabs.com/	L14-50
Louisiana DEQ	http://www.deq.louisiana.gov/portal/DIVISIONS/PublicParticipationandPermitSupport/LouisianaLaboratoryAccreditationProgram.aspx	03016
Maine DHS	Not available	WA01276
Michigan DEQ	http://www.michigan.gov/deq/0,1607,7-135-3307_4131_4156---,00.html	9949
Minnesota DOH	http://www.health.state.mn.us/accreditation	053-999-457
Montana DPHHS	http://www.dphhs.mt.gov/publichealth/	CERT0047
Nevada DEP	http://ndep.nv.gov/bsdw/labservice.htm	WA01276
New Jersey DEP	http://www.nj.gov/dep/oqa/	WA005
North Carolina DWQ	http://www.dwqlab.org/	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/envserv/	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
Wisconsin DNR	http://dnr.wi.gov/	998386840
Wyoming (EPA Region 8)	http://www.epa.gov/region8/water/dwhome/wyomingdi.html	-
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/anlayte is offered by that state.

Case Narrative

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

ALS ENVIRONMENTAL

Client:	Longview, City of	**Service Request No.:**	K1502735
Project:	Mint Farm Monitoring	**Date Received:**	03/17/15
Sample Matrix:	Drinking Water		

Case Narrative

All analyses were performed consistent with the quality assurance program of ALS Environmental. This report contains analytical results for samples designated for Tier II data deliverables. When appropriate to the method, method blank results have been reported with each analytical test. Surrogate recoveries have been reported for all applicable organic analyses. Additional quality control analyses reported herein include: Laboratory Duplicate (DUP), Matrix Spike (MS), Matrix/Duplicate Matrix Spike (MS/DMS), Laboratory Control Sample (LCS), and Laboratory/Duplicate Laboratory Control Sample (LCS/DLCS).

Sample Receipt

One drinking water sample was received for analysis at ALS Environmental on 03/17/15. The sample was received in good condition and consistent with the accompanying chain of custody form. The sample was stored in a refrigerator at 4ºC upon receipt at the laboratory.

General Chemistry Parameters

No anomalies associated with the analysis of this sample were observed.

Total Metals

No anomalies associated with the analysis of this sample were observed.

Chlorinated Phenolics Organic Compounds by EPA Method 1653A

No anomalies associated with the analysis of this sample were observed.

EDB and DBCP by EPA Method 504.1

No anomalies associated with the analysis of this sample were observed.

Pesticides and Polychlorinated Biphenyls by EPA Method 508.1

Matrix Spike Recovery Exceptions:
The matrix spike and duplicate matrix spike recovery of Aroclor 1248 for sample Well #1 was outside control criteria. Recovery in the Laboratory Control Sample (LCS) was acceptable, which indicated the analytical batch was in control. The matrix spike outlier suggested a potential low bias in this matrix. No further corrective action was appropriate.

No other anomalies associated with the analysis of this sample were observed.

Approved by_____

Chlorinated Acides by EPA Method 515.4

Second Source Exceptions:
The analysis of Chlorinated Herbicides in Drinking Water by EPA 515.4 requires the use of dual column confirmation. The Initial Calibration Verification (ICV) evaluation criteria were not met on the confirmation column for 2,4,5-TP (Silvex) in CAL13913. The ICV criteria were met on the alternate column. The data quality was not affected. No further corrective action was necessary.

Calibration Verification Exceptions:
The analysis of Chlorinated Herbicides in Drinking Water by EPA 515.4 requires the use of dual column confirmation. When the Continuing Calibration Verification (CCV) criterion is met for both columns, the lower of the two sample results is generally reported. The primary evaluation criteria were not met on the confirmation column for Dalapon and Acifluorfen. The results were reported from the column with an acceptable CCV. The data quality was not affected. No further corrective action was necessary.

No other anomalies associated with the analysis of this sample were observed.

Volatile Organic Compounds by EPA Method 524.2

Matrix Spike Recovery Exceptions:
The replicate Matrix Spikes recoveries of several analytes for sample Batch QC were outside control criteria. Recoveries in the Laboratory Control Sample (LCS) were acceptable, which indicated the analytical batch was in control. The matrix spike outliers suggested a potential low bias in this matrix. No further corrective action was appropriate.

Sample Notes and Discussion:
The sample Well #2 had a pH of 4.

No other anomalies associated with the analysis of this sample were observed.

Semivolatile Organic Compounds by EPA Method 525.2

Surrogate Exceptions:
The control criteria were exceeded for Perylene-d12 in DMS KWG1502593-2. The surrogate outlier was flagged accordingly. No further corrective action was appropriate.

Matrix Spike Recovery and Relative Percent Difference Exceptions:
The upper control criterion was exceeded for the following analyte in Matrix Spike (MS) KWG1502593-1 and Matrix Spike Duplicate (MSD) KWG1502593-2: Hexachlorocyclopentadiene. The analyte in question was not detected in the associated field samples. The error associated with elevated recovery indicated a high bias. The sample data was not significantly affected. No further corrective action was appropriate.

The matrix spike and duplicate matrix spike recovery of Benzo(a)pyrene for sample Well #1 was outside control criteria. The Relative Percent Difference (RPD) for Benzo(a)pyrene in the replicate matrix spike analyses of Well #1 was also outside control criteria. Recovery in the Laboratory Control Sample (LCS) was acceptable, which indicated the analytical batch was in control. The matrix spike outlier suggested a potential low bias in this matrix. No further corrective action was appropriate.

Approved by_____

Semivolatile Organic Compounds by EPA Method 525.2 (cont.)

Lab Control Sample Exceptions:
The upper control criterion was exceeded for Hexachlorocyclopentadiene in Laboratory Control Sample (LCS) KWG1502593-3. The analyte in question was not detected in the associated field samples. The error associated with elevated recovery indicated a high bias. The sample data was not significantly affected. No further corrective action was appropriate.

No other anomalies associated with the analysis of this sample were observed.

Endothall by EPA Method 548.1

No anomalies associated with the analysis of this sample were observed.

Diquat by High Performance Liquid Chromatography

No anomalies associated with the analysis of this sample were observed.

Sulfur

This analysis was performed at ALS Environmental, Simi Valley, CA. The data for this analysis is included in the corresponding section of this report.

Glyphosate and Carbamates

These analyses were performed at ALS Environmental, Middletown, PA. The data for these analyses are included in the corresponding section of this report.

Approved by_____

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

ALS Environmental

CHAIN OF CUSTODY

58078

001, 005

SR# K1502135

COC Set____of____

COC#_____

1317 South 13th Ave, Kelso, WA 98626 Phone (360) 577-7222 / 800-695-7222 / FAX (360) 636-1068
www.alsglobal.com

Project Name: Mint Farm Monitoring
Project Number:
Project Manager: Jeff Coleman
Company: City of Longview
Address: PO Box 128 Longview WA 98632
Phone #:
email:
Sampler Signature: T Daly
Sampler Printed Name: T Daly

CLIENT SAMPLE ID	LABID	SAMPLING Date	SAMPLING Time	Matrix	NUMBER OF CONTAINERS	6H: SM 9223 B / Coli L (+/-)	48H: 180.1 / Turbidity	48H: 300.0 / NO2	48H: 300.0 / NO3	48H: SM 2120 B / Color	48H: SM 4500-P E / O Phos	7D: 548.1 / ENDO	7D: 549.2 / DIQ_PARAQ	7D: SM 2540 C / TDS	14D: 335.4 / CN T	14D: 504.1 / EDB DBCP 123TCP	14D: 508.1 / PEST_CL	14D: 515.4 / CL_ACID_HERB	14D: 524.2 / VOC	14D: 525.2 / SVO	14D: 547 / GLYPH	14D: SM 2320 B / Alkalinity Titr	14D: Sulfur Liq / Sulfur	28D: 245.1 / Hg T	28D: 300.0 / F	28D: 314.0 / ClO4	28D: 531.1 / CARBAM	28D: SM 2510 B / Conductivity	Remarks
1. Well #2		3/17/15	1100		39																								
2.																													
3.																													
4.																													
5.																													
6.																													
7.																													
8.																													
9.																													
10.																													

Report Requirements

___ I. Routine Report: Method Blank, Surrogate, as required

___ II. Report Dup., MS, MSD as required

___ III. CLP Like Summary (no raw data)

___ IV. Data Validation Report

___ V. EDD

Invoice Information

P.O.# 36-4572

Bill To: City of Longview
PO Box 128
Longview WA 98632

Turnaround Requirements

____ 24 hr. ____48 hr.
____ 5 Day
____ Standard

Requested Report Date

Circle which metals are to be analyzed

Total Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

Dissolved Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

Special Instructions/Comments:

*Indicate State Hydrocarbon Procedure: AK CA WI Northwest Other_____(Circle One)

Relinquished By:	Received By:	Relinquished By:	Received By:	Relinquished By:	Received By:
T Daly	K Smith				
Signature: T Daly	Signature: K Smith	Signature	Signature	Signature	Signature
Printed Name: C of L	Printed Name: ALS	Printed Name	Printed Name	Printed Name	Printed Name
Firm: 3/17/15 1453	Firm: 3/17/15 1453	Firm	Firm	Firm	Firm
Date/Time	Date/Time	Date/Time	Date/Time	Date/Time	Date/Time

ALS Environmental

CHAIN OF CUSTODY

58078

001, 005

SR# K1502736

COC Set_____of_____

COC#_____

1317 South 13th Ave, Kelso, WA 98626 Phone (360) 577-7222 / 800-695-7222 / FAX (360) 636-1068
www.alsglobal.com

Project Name: Paint Farm Monitoring
Project Number:
Project Manager: Jeff Coleman
Company: City of Longview
Address: PO Box 128 Longview WA 98632
Phone #
email
Sampler Signature: T Daly
Sampler Printed Name: T Daly

CLIENT SAMPLE ID	LABID	SAMPLING Date Time	Matrix	NUMBER OF CONTAINERS	28D: 300.0 / Br	28D: 300.0 / Chloride	28D: 300.0 / SO4	28D: SM 4500-NH3 G / Ammonia	30D: 1653A / CHLOR_PHEN	180D: 1630 / Methyl Hg T	180D: 200.7 / Metals T	180D: 200.8 / Metals T	999D: Calculation / NO2 NO3 Calc	999D: SM 2340 B / Hardness Calc	1	2	3	4	5	Remarks
1. Well #2		3/17/15 1100		39																
2.																				
3.																				
4.																				
5.																				
6.																				
7.																				
8.																				
9.																				
10.																				

Report Requirements

___ I. Routine Report: Method Blank, Surrogate, as required

___ II. Report Dup., MS, MSD as required

___ III. CLP Like Summary (no raw data)

___ IV. Data Validation Report

___ V. EDD

Invoice Information

P.O.# 36-457L

Bill To: City of Longview
PO Box 128
Longview WA 98632

Turnaround Requirements

____ 24 hr. ____ 48 hr.
____ 5 Day
____ Standard

Requested Report Date

Circle which metals are to be analyzed

Total Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

Dissolved Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

Special Instructions/Comments:

*Indicate State Hydrocarbon Procedure: AK CA WI Northwest Other_____(Circle One)

Relinquished By:	Received By:	Relinquished By:	Received By:	Relinquished By:	Received By:
T Daly	H Smith				
Signature	Signature	Signature	Signature	Signature	Signature
T Daly	H Smith				
Printed Name	Printed Name	Printed Name	Printed Name	Printed Name	Printed Name
COL	ALS				
Firm	Firm	Firm	Firm	Firm	Firm
3/17/15 1453	3/17/15 1453				
Date/Time	Date/Time	Date/Time	Date/Time	Date/Time	Date/Time

PC CV

Cooler Receipt and Preservation Form

Client / Project: Longview Service Request *K15* 07735

Received: 3/17/15 Opened: 3/17/15 By: LU Unloaded: 3/17/15 By: LU

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

   If present, were custody seals intact? Y N If present, were they signed and dated? Y N

Raw Cooler Temp	Corrected Cooler Temp	Raw Temp Blank	Corrected Temp Blank	Corr. Factor	Thermometer ID	Cooler/COC ID NA	Tracking Number NA	Filed
8.3	8.4	4.5	4.6	+0.1	337	Well 2	/	
6.4	6.4	—	—	0	356	1		

4. Packing material: *Inserts* *Baggies* *Bubble Wrap* *Gel Packs* *Wet Ice* *Dry Ice* *Sleeves* _____
5. Were custody papers properly filled out (ink, signed, etc.)? NA Y N
6. Did all bottles arrive in good condition (unbroken)? *Indicate in the table below.* 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.* NA Y N
9. 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: _____

Page ____ *of* ____

General Chemistry

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

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client:	Longview, City of	**Service Request:**	K1502735
Project:	Mint Farm Monitoring	**Date Collected:**	03/17/15
Sample Matrix:	Drinking Water	**Date Received:**	03/17/15
Analysis Method:	180.1	**Units:**	NTU
Prep Method:	None	**Basis:**	NA

Turbidity

Sample Name	Lab Code	Result	MRL	Dil.	Date Analyzed	Q
Well #2	K1502735-001	**6.22**	0.20	1	03/18/15 11:16	
Method Blank	K1502735-MB1	ND U	0.20	1	03/18/15 11:16	

ALS Group USA, Corp.
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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502735
Project	Mint Farm Monitoring	**Date Collected:**	NA
Sample Matrix:	Drinking Water	**Date Received:**	NA
Analysis Method:	180.1	**Units:**	NTU
Prep Method:	None	**Basis:**	NA

Replicate Sample Summary
Turbidity

Sample Name:	Lab Code:	MRL	Sample Result	Duplicate Result	Average	RPD	RPD Limit	Date Analyzed
Batch QC	K1502718-001DUP	0.20	20.7	20.2	20.5	2	20	03/18/15
Batch QC	K1502771-002DUP	0.20	0.28	0.29	0.282	2	20	03/18/15

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ALS Group USA, Corp.
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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502735
Project:	Mint Farm Monitoring	**Date Analyzed:**	03/18/15
Sample Matrix:	Drinking Water	**Date Extracted:**	NA

Lab Control Sample Summary
Turbidity

Analysis Method:	180.1	**Units:**	NTU
Prep Method:	None	**Basis:**	NA
		Analysis Lot:	436967

Sample Name	Lab Code	Result	Spike Amount	% Rec	% Rec Limits
Lab Control Sample	K1502735-LCS	6.02	6.37	95	90-110

ALS Group USA, Corp.
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Analytical Report

Client:	Longview, City of	**Service Request:**	K1502735
Project:	Mint Farm Monitoring	**Date Collected:**	03/17/15
Sample Matrix:	Drinking Water	**Date Received:**	03/17/15
Analysis Method:	300.0	**Units:**	mg/L
Prep Method:	Method	**Basis:**	NA

Bromide

Sample Name	Lab Code	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Well #2	K1502735-001	ND U	0.20	2	03/18/15 10:10	3/18/15	
Method Blank	K1502735-MB1	ND U	0.10	1	03/18/15 09:31	3/18/15	

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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502735
Project	Mint Farm Monitoring	**Date Collected:**	03/17/15
Sample Matrix:	Drinking Water	**Date Received:**	03/17/15
		Date Analyzed:	03/18/15

Replicate Sample Summary
General Chemistry Parameters

Sample Name:	Well #2	**Units:**	mg/L
Lab Code:	K1502735-001	**Basis:**	NA

Analyte Name	Analysis Method	MRL	Sample Result	Duplicate Sample K1502735-001DUP Result	Average	RPD	RPD Limit
Bromide	300.0	0.20	ND U	ND U	NC	NC	20

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ALS Group USA, Corp.
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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502735
Project:	Mint Farm Monitoring	**Date Collected:**	03/17/15
Sample Matrix:	Drinking Water	**Date Received:**	03/17/15
		Date Analyzed:	03/18/15
		Date Extracted:	03/18/15

Duplicate Matrix Spike Summary
Bromide

Sample Name:	Well #2	**Units:**	mg/L
Lab Code:	K1502735-001	**Basis:**	NA
Analysis Method:	300.0		
Prep Method:	Method		

		Matrix Spike K1502735-001MS			Duplicate Matrix Spike K1502735-001DMS					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Bromide	ND U	3.64	4.00	91	3.68	4.00	92	90-110	<1	20

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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502735
Project:	Mint Farm Monitoring	**Date Analyzed:**	03/18/15
Sample Matrix:	Drinking Water	**Date Extracted:**	03/18/15

Lab Control Sample Summary
Bromide

Analysis Method:	300.0	**Units:**	mg/L
Prep Method:	Method	**Basis:**	NA
		Analysis Lot:	436896

Sample Name	Lab Code	Result	Spike Amount	% Rec	% Rec Limits
Lab Control Sample	K1502735-LCS	2.30	2.50	92	90-110

ALS Group USA, Corp.
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Analytical Report

Client:	Longview, City of	**Service Request:**	K1502735
Project:	Mint Farm Monitoring	**Date Collected:**	03/17/15
Sample Matrix:	Drinking Water	**Date Received:**	03/17/15
Analysis Method:	300.0	**Units:**	mg/L
Prep Method:	Method	**Basis:**	NA

Chloride

Sample Name	Lab Code	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Well #2	K1502735-001	**5.70**	0.40	2	03/18/15 10:10	3/18/15	
Method Blank	K1502735-MB1	ND U	0.20	1	03/18/15 09:31	3/18/15	

ALS Group USA, Corp.
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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502735
Project	Mint Farm Monitoring	**Date Collected:**	03/17/15
Sample Matrix:	Drinking Water	**Date Received:**	03/17/15
		Date Analyzed:	03/18/15

Replicate Sample Summary
General Chemistry Parameters

Sample Name:	Well #2	**Units:**	mg/L
Lab Code:	K1502735-001	**Basis:**	NA

Analyte Name	Analysis Method	MRL	Sample Result	Duplicate Sample K1502735-001DUP Result	Average	RPD	RPD Limit
Chloride	300.0	0.40	5.70	5.63	5.66	1	20

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ALS Group USA, Corp.
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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502735
Project:	Mint Farm Monitoring	**Date Collected:**	03/17/15
Sample Matrix:	Drinking Water	**Date Received:**	03/17/15
		Date Analyzed:	03/18/15
		Date Extracted:	03/18/15

Duplicate Matrix Spike Summary
Chloride

Sample Name:	Well #2	**Units:**	mg/L
Lab Code:	K1502735-001	**Basis:**	NA
Analysis Method:	300.0		
Prep Method:	Method		

		Matrix Spike K1502735-001MS			**Duplicate Matrix Spike** K1502735-001DMS					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Chloride	5.70	9.72	4.00	101	9.78	4.00	102	90-110	<1	20

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ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502735
Project:	Mint Farm Monitoring	**Date Analyzed:**	03/18/15
Sample Matrix:	Drinking Water	**Date Extracted:**	03/18/15

Lab Control Sample Summary
Chloride

Analysis Method:	300.0	**Units:**	mg/L
Prep Method:	Method	**Basis:**	NA
		Analysis Lot:	436896

Sample Name	Lab Code	Result	Spike Amount	% Rec	% Rec Limits
Lab Control Sample	K1502735-LCS	4.71	5.00	94	90-110

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client:	Longview, City of	**Service Request:**	K1502735
Project:	Mint Farm Monitoring	**Date Collected:**	03/17/15
Sample Matrix:	Drinking Water	**Date Received:**	03/17/15
Analysis Method:	300.0	**Units:**	mg/L
Prep Method:	Method	**Basis:**	NA

Fluoride

Sample Name	Lab Code	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Well #2	K1502735-001	ND U	0.20	2	03/18/15 10:10	3/18/15	
Method Blank	K1502735-MB1	ND U	0.10	1	03/18/15 09:31	3/18/15	

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502735
Project	Mint Farm Monitoring	**Date Collected:**	03/17/15
Sample Matrix:	Drinking Water	**Date Received:**	03/17/15
		Date Analyzed:	03/18/15

Replicate Sample Summary
General Chemistry Parameters

Sample Name:	Well #2	**Units:**	mg/L
Lab Code:	K1502735-001	**Basis:**	NA

Analyte Name	Analysis Method	MRL	Sample Result	Duplicate Sample K1502735-001DUP Result	Average	RPD	RPD Limit
Fluoride	300.0	0.20	ND U	ND U	NC	NC	20

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ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502735
Project:	Mint Farm Monitoring	**Date Collected:**	03/17/15
Sample Matrix:	Drinking Water	**Date Received:**	03/17/15
		Date Analyzed:	03/18/15
		Date Extracted:	03/18/15

Duplicate Matrix Spike Summary
Fluoride

Sample Name:	Well #2	**Units:**	mg/L
Lab Code:	K1502735-001	**Basis:**	NA
Analysis Method:	300.0		
Prep Method:	Method		

		Matrix Spike K1502735-001MS			**Duplicate Matrix Spike** K1502735-001DMS					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Fluoride	ND U	4.12	4.00	103	4.21	4.00	105	90-110	2	20

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ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502735
Project:	Mint Farm Monitoring	**Date Analyzed:**	03/18/15
Sample Matrix:	Drinking Water	**Date Extracted:**	03/18/15

Lab Control Sample Summary
Fluoride

Analysis Method:	300.0	**Units:**	mg/L
Prep Method:	Method	**Basis:**	NA
		Analysis Lot:	436896

Sample Name	Lab Code	Result	Spike Amount	% Rec	% Rec Limits
Lab Control Sample	K1502735-LCS	5.10	5.00	102	90-110

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client:	Longview, City of	**Service Request:**	K1502735
Project:	Mint Farm Monitoring	**Date Collected:**	03/17/15
Sample Matrix:	Drinking Water	**Date Received:**	03/17/15
Analysis Method:	300.0	**Units:**	mg/L
Prep Method:	Method	**Basis:**	NA

Nitrite as Nitrogen

Sample Name	Lab Code	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Well #2	K1502735-001	ND U	0.10	2	03/18/15 10:10	3/18/15	
Method Blank	K1502735-MB1	ND U	0.050	1	03/18/15 09:31	3/18/15	

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502735
Project	Mint Farm Monitoring	**Date Collected:**	03/17/15
Sample Matrix:	Drinking Water	**Date Received:**	03/17/15
		Date Analyzed:	03/18/15

Replicate Sample Summary
General Chemistry Parameters

Sample Name:	Well #2	**Units:**	mg/L
Lab Code:	K1502735-001	**Basis:**	NA

Analyte Name	Analysis Method	MRL	Sample Result	Duplicate Sample K1502735-001DUP Result	Average	RPD	RPD Limit
Nitrite as Nitrogen	300.0	0.10	ND U	ND U	NC	NC	20

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ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502735
Project:	Mint Farm Monitoring	**Date Collected:**	03/17/15
Sample Matrix:	Drinking Water	**Date Received:**	03/17/15
		Date Analyzed:	03/18/15
		Date Extracted:	03/18/15

Duplicate Matrix Spike Summary
Nitrite as Nitrogen

Sample Name:	Well #2	**Units:**	mg/L
Lab Code:	K1502735-001	**Basis:**	NA
Analysis Method:	300.0		
Prep Method:	Method		

		Matrix Spike K1502735-001MS			**Duplicate Matrix Spike** K1502735-001DMS					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Nitrite as Nitrogen	ND U	4.01	4.00	100	4.05	4.00	101	90-110	<1	20

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ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502735
Project:	Mint Farm Monitoring	**Date Analyzed:**	03/18/15
Sample Matrix:	Drinking Water	**Date Extracted:**	03/18/15

Lab Control Sample Summary
Nitrite as Nitrogen

Analysis Method:	300.0	**Units:**	mg/L
Prep Method:	Method	**Basis:**	NA
		Analysis Lot:	436896

Sample Name	Lab Code	Result	Spike Amount	% Rec	% Rec Limits
Lab Control Sample	K1502735-LCS	2.40	2.50	96	90-110

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client:	Longview, City of	**Service Request:**	K1502735
Project:	Mint Farm Monitoring	**Date Collected:**	03/17/15
Sample Matrix:	Drinking Water	**Date Received:**	03/17/15
Analysis Method:	300.0	**Units:**	mg/L
Prep Method:	Method	**Basis:**	NA

Nitrate as Nitrogen

Sample Name	Lab Code	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Well #2	K1502735-001	ND U	0.10	2	03/18/15 10:10	3/18/15	
Method Blank	K1502735-MB1	ND U	0.050	1	03/18/15 09:31	3/18/15	

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502735
Project	Mint Farm Monitoring	**Date Collected:**	03/17/15
Sample Matrix:	Drinking Water	**Date Received:**	03/17/15
		Date Analyzed:	03/18/15

Replicate Sample Summary
General Chemistry Parameters

Sample Name:	Well #2	**Units:**	mg/L
Lab Code:	K1502735-001	**Basis:**	NA

Analyte Name	Analysis Method	MRL	Sample Result	Duplicate Sample K1502735-001DUP Result	Average	RPD	RPD Limit
Nitrate as Nitrogen	300.0	0.10	ND U	ND U	NC	NC	20

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ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502735
Project:	Mint Farm Monitoring	**Date Collected:**	03/17/15
Sample Matrix:	Drinking Water	**Date Received:**	03/17/15
		Date Analyzed:	03/18/15
		Date Extracted:	03/18/15

Duplicate Matrix Spike Summary
Nitrate as Nitrogen

Sample Name:	Well #2	**Units:**	mg/L
Lab Code:	K1502735-001	**Basis:**	NA
Analysis Method:	300.0		
Prep Method:	Method		

		Matrix Spike K1502735-001MS			Duplicate Matrix Spike K1502735-001DMS					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Nitrate as Nitrogen	ND U	3.61	4.00	90	3.65	4.00	91	90-110	<1	20

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ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502735
Project:	Mint Farm Monitoring	**Date Analyzed:**	03/18/15
Sample Matrix:	Drinking Water	**Date Extracted:**	03/18/15

Lab Control Sample Summary
Nitrate as Nitrogen

Analysis Method:	300.0	**Units:**	mg/L
Prep Method:	Method	**Basis:**	NA
		Analysis Lot:	436896

Sample Name	Lab Code	Result	Spike Amount	% Rec	% Rec Limits
Lab Control Sample	K1502735-LCS	2.33	2.50	93	90-110

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client:	Longview, City of	**Service Request:**	K1502735
Project:	Mint Farm Monitoring	**Date Collected:**	03/17/15
Sample Matrix:	Drinking Water	**Date Received:**	03/17/15
Analysis Method:	300.0	**Units:**	mg/L
Prep Method:	Method	**Basis:**	NA

Sulfate

Sample Name	Lab Code	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Well #2	K1502735-001	**1.33**	0.20	2	03/18/15 10:10	3/18/15	
Method Blank	K1502735-MB1	ND U	0.10	1	03/18/15 09:31	3/18/15	

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502735
Project	Mint Farm Monitoring	**Date Collected:**	03/17/15
Sample Matrix:	Drinking Water	**Date Received:**	03/17/15
		Date Analyzed:	03/18/15

Replicate Sample Summary
General Chemistry Parameters

Sample Name:	Well #2	**Units:**	mg/L
Lab Code:	K1502735-001	**Basis:**	NA

Analyte Name	Analysis Method	MRL	Sample Result	Duplicate Sample K1502735-001DUP Result	Average	RPD	RPD Limit
Sulfate	300.0	0.20	1.33	1.33	1.33	<1	20

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ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502735
Project:	Mint Farm Monitoring	**Date Collected:**	03/17/15
Sample Matrix:	Drinking Water	**Date Received:**	03/17/15
		Date Analyzed:	03/18/15
		Date Extracted:	03/18/15

Duplicate Matrix Spike Summary
Sulfate

Sample Name:	Well #2	**Units:**	mg/L
Lab Code:	K1502735-001	**Basis:**	NA
Analysis Method:	300.0		
Prep Method:	Method		

		Matrix Spike K1502735-001MS			Duplicate Matrix Spike K1502735-001DMS					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Sulfate	1.33	5.14	4.00	95	5.16	4.00	96	90-110	<1	20

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ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502735
Project:	Mint Farm Monitoring	**Date Analyzed:**	03/18/15
Sample Matrix:	Drinking Water	**Date Extracted:**	03/18/15

Lab Control Sample Summary
Sulfate

Analysis Method:	300.0	**Units:**	mg/L
Prep Method:	Method	**Basis:**	NA
		Analysis Lot:	436896

Sample Name	Lab Code	Result	Spike Amount	% Rec	% Rec Limits
Lab Control Sample	K1502735-LCS	4.85	5.00	97	90-110

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client:	Longview, City of	**Service Request:**	K1502735
Project:	Mint Farm Monitoring	**Date Collected:**	03/17/15
Sample Matrix:	Drinking Water	**Date Received:**	03/17/15
Analysis Method:	314.0	**Units:**	ug/L
Prep Method:	None	**Basis:**	NA

Perchlorate

Sample Name	Lab Code	Result	MRL	Dil.	Date Analyzed	Q
Well #2	K1502735-001	ND U	1.0	1	03/31/15 14:06	
Method Blank	K1502735-MB1	ND U	1.0	1	03/31/15 11:44	

ALS Group USA, Corp.
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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502735
Project	Mint Farm Monitoring	**Date Collected:**	NA
Sample Matrix:	Drinking Water	**Date Received:**	NA
		Date Analyzed:	03/31/15

Replicate Sample Summary
General Chemistry Parameters

Sample Name:	Batch QC	**Units:**	ug/L
Lab Code:	K1502415-001	**Basis:**	NA

Analyte Name	Analysis Method	MRL	Sample Result	Duplicate Sample K1502415-001DUP Result	Average	RPD	RPD Limit
Perchlorate	314.0	1.0	ND U	ND U	NC	NC	20

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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502735
Project:	Mint Farm Monitoring	**Date Collected:**	N/A
Sample Matrix:	Drinking Water	**Date Received:**	N/A
		Date Analyzed:	03/31/15
		Date Extracted:	NA

Duplicate Matrix Spike Summary
Perchlorate

Sample Name:	Batch QC	**Units:**	ug/L
Lab Code:	K1502415-001	**Basis:**	NA
Analysis Method:	314.0		
Prep Method:	None		

		Matrix Spike K1502415-001MS			Duplicate Matrix Spike K1502415-001DMS					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Perchlorate	ND U	10.7	10.0	107	9.7	10.0	97	80-120	10	20

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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502735
Project:	Mint Farm Monitoring	**Date Analyzed:**	03/31/15
Sample Matrix:	Drinking Water	**Date Extracted:**	NA

Lab Control Sample Summary
Perchlorate

Analysis Method:	314.0	**Units:**	ug/L
Prep Method:	None	**Basis:**	NA
		Analysis Lot:	438526

Sample Name	Lab Code	Result	Spike Amount	% Rec	% Rec Limits
Lab Control Sample	K1502735-LCS	15.4	16.8	92	85-115

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client:	Longview, City of	**Service Request:**	K1502735
Project:	Mint Farm Monitoring	**Date Collected:**	03/17/15
Sample Matrix:	Drinking Water	**Date Received:**	03/17/15
Analysis Method:	335.4	**Units:**	mg/L
Prep Method:	Method	**Basis:**	NA

Cyanide, Total

Sample Name	Lab Code	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Well #2	K1502735-001	ND U	0.010	1	03/22/15 14:53	3/18/15	
Method Blank	K1502735-MB1	ND U	0.010	1	03/22/15 14:53	3/18/15	

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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502735
Project	Mint Farm Monitoring	**Date Collected:**	NA
Sample Matrix:	Drinking Water	**Date Received:**	NA
		Date Analyzed:	03/22/15

Replicate Sample Summary
General Chemistry Parameters

Sample Name:	Batch QC	**Units:**	mg/L
Lab Code:	K1502734-001	**Basis:**	NA

Analyte Name	Analysis Method	MRL	Sample Result	Duplicate Sample K1502734-001DUP Result	Average	RPD	RPD Limit
Cyanide, Total	335.4	0.010	ND U	ND U	NC	NC	20

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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502735
Project:	Mint Farm Monitoring	**Date Collected:**	N/A
Sample Matrix:	Drinking Water	**Date Received:**	N/A
		Date Analyzed:	03/22/15
		Date Extracted:	03/18/15

Duplicate Matrix Spike Summary
Cyanide, Total

Sample Name:	Batch QC	**Units:**	mg/L
Lab Code:	K1502734-001	**Basis:**	NA
Analysis Method:	335.4		
Prep Method:	Method		

		Matrix Spike K1502734-001MS			Duplicate Matrix Spike K1502734-001DMS					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Cyanide, Total	ND U	0.099	0.100	98	0.097	0.100	97	90-110	2	20

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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502735
Project:	Mint Farm Monitoring	**Date Analyzed:**	03/22/15
Sample Matrix:	Drinking Water	**Date Extracted:**	03/18/15

Lab Control Sample Summary
Cyanide, Total

Analysis Method:	335.4	**Units:**	mg/L
Prep Method:	Method	**Basis:**	NA
		Analysis Lot:	437339

Sample Name	Lab Code	Result	Spike Amount	% Rec	% Rec Limits
Lab Control Sample	K1502735-LCS	0.147	0.150	98	90-110

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dba ALS Environmental

Analytical Report

Client:	Longview, City of	**Service Request:**	K1502735
Project:	Mint Farm Monitoring	**Date Collected:**	03/17/15
Sample Matrix:	Drinking Water	**Date Received:**	03/17/15
Analysis Method:	Calculation	**Units:**	mg/L
Prep Method:	None	**Basis:**	NA

Nitrate+Nitrite as Nitrogen

Sample Name	Lab Code	Result	MRL	Dil.	Date Analyzed	Q
Well #2	K1502735-001	ND U	0.20	1	03/18/15 10:10	

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Analytical Report

Client:	Longview, City of	**Service Request:**	K1502735
Project:	Mint Farm Monitoring	**Date Collected:**	03/17/15
Sample Matrix:	Drinking Water	**Date Received:**	03/17/15
Analysis Method:	SM 2120 B	**Units:**	ColorUnits
Prep Method:	None	**Basis:**	NA

Color

Sample Name	Lab Code	Result	MRL	Dil.	Date Analyzed	Q
Well #2	K1502735-001	**20.0**	5.0	1	03/17/15 17:59	
Method Blank	K1502735-MB1	ND U	5.0	1	03/17/15 17:53	

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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502735
Project	Mint Farm Monitoring	**Date Collected:**	03/17/15
Sample Matrix:	Drinking Water	**Date Received:**	03/17/15
		Date Analyzed:	03/17/15

Replicate Sample Summary
General Chemistry Parameters

Sample Name:	Well #2	**Units:**	ColorUnits
Lab Code:	K1502735-001	**Basis:**	NA

Analyte Name	Analysis Method	MRL	Sample Result	Duplicate Sample K1502735-001DUP Result	Average	RPD	RPD Limit
Color	SM 2120 B	5.0	20.0	20.0	20.0	<1	20

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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502735
Project:	Mint Farm Monitoring	**Date Analyzed:**	03/17/15
Sample Matrix:	Drinking Water	**Date Extracted:**	NA

Lab Control Sample Summary
Color

Analysis Method:	SM 2120 B	**Units:**	ColorUnits
Prep Method:	None	**Basis:**	NA
		Analysis Lot:	436704

Sample Name	Lab Code	Result	Spike Amount	% Rec	% Rec Limits
Lab Control Sample	K1502735-LCS	50.0	50.0	100	85-115

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client:	Longview, City of	**Service Request:**	K1502735
Project:	Mint Farm Monitoring	**Date Collected:**	03/17/15
Sample Matrix:	Drinking Water	**Date Received:**	03/17/15
Analysis Method:	SM 2320 B	**Units:**	mg/L
Prep Method:	None	**Basis:**	NA

Alkalinity as CaCO3, Total

Sample Name	Lab Code	Result	MRL	Dil.	Date Analyzed	Q
Well #2	K1502735-001	**85.1**	2.0	1	03/31/15 11:20	
Method Blank	K1502735-MB1	ND U	2.0	1	03/31/15 11:20	

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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502735
Project	Mint Farm Monitoring	**Date Collected:**	NA
Sample Matrix:	Drinking Water	**Date Received:**	NA
Analysis Method:	SM 2320 B	**Units:**	mg/L
Prep Method:	None	**Basis:**	NA

Replicate Sample Summary
Alkalinity as CaCO3, Total

Sample Name:	Lab Code:	MRL	Sample Result	Duplicate Result	Average	RPD	RPD Limit	Date Analyzed
Batch QC	K1502734-001DUP	2.0	97.3	97.1	97.2	<1	20	03/31/15
Batch QC	K1502902-005DUP	2.0	53.0	52.6	52.8	<1	20	03/31/15

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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502735
Project:	Mint Farm Monitoring	**Date Analyzed:**	03/31/15
Sample Matrix:	Drinking Water	**Date Extracted:**	NA

Lab Control Sample Summary
Alkalinity as CaCO3, Total

Analysis Method:	SM 2320 B	**Units:**	mg/L
Prep Method:	None	**Basis:**	NA
		Analysis Lot:	438546

Sample Name	Lab Code	Result	Spike Amount	% Rec	% Rec Limits
Lab Control Sample	K1502735-LCS	35.0	34.4	102	90-110

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client:	Longview, City of	**Service Request:**	K1502735
Project:	Mint Farm Monitoring	**Date Collected:**	03/17/15
Sample Matrix:	Drinking Water	**Date Received:**	03/17/15
Analysis Method:	SM 2510 B	**Units:**	uMHOS/cm
Prep Method:	None	**Basis:**	NA

Conductivity at 25 Degrees Celsius

Sample Name	Lab Code	Result	MRL	Dil.	Date Analyzed	Q
Well #2	K1502735-001	**208**	2.0	1	03/19/15 09:45	
Method Blank	K1502735-MB1	ND U	2.0	1	03/19/15 09:45	
Method Blank	K1502735-MB2	ND U	2.0	1	03/19/15 09:45	

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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502735
Project	Mint Farm Monitoring	**Date Collected:**	NA
Sample Matrix:	Drinking Water	**Date Received:**	NA
		Date Analyzed:	03/19/15

Replicate Sample Summary
General Chemistry Parameters

Sample Name:	Batch QC	**Units:**	uMHOS/cm
Lab Code:	K1502415-001	**Basis:**	NA

Analyte Name	Analysis Method	MRL	Sample Result	Duplicate Sample K1502415-001DUP Result	Average	RPD	RPD Limit
Conductivity at 25 Degrees Celsius	SM 2510 B	2.0	701	699	700	<1	20

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ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502735
Project:	Mint Farm Monitoring	**Date Analyzed:**	03/19/15
Sample Matrix:	Drinking Water	**Date Extracted:**	NA

Lab Control Sample Summary
Conductivity at 25 Degrees Celsius

Analysis Method:	SM 2510 B	**Units:**	uMHOS/cm
Prep Method:	None	**Basis:**	NA
		Analysis Lot:	436981

Sample Name	Lab Code	Result	Spike Amount	% Rec	% Rec Limits
Lab Control Sample	K1502735-LCS	319	289	110	86-113

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client:	Longview, City of	**Service Request:**	K1502735
Project:	Mint Farm Monitoring	**Date Collected:**	03/17/15
Sample Matrix:	Drinking Water	**Date Received:**	03/17/15
Analysis Method:	SM 2540 C	**Units:**	mg/L
Prep Method:	None	**Basis:**	NA

Solids, Total Dissolved

Sample Name	Lab Code	Result	MRL	Dil.	Date Analyzed	Q
Well #2	K1502735-001	**160**	10	1	03/18/15 11:00	
Method Blank	K1502735-MB1	ND U	5.0	1	03/18/15 11:00	
Method Blank	K1502735-MB2	ND U	5.0	1	03/18/15 11:00	

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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502735
Project	Mint Farm Monitoring	**Date Collected:**	NA
Sample Matrix:	Drinking Water	**Date Received:**	NA
Analysis Method:	SM 2540 C	**Units:**	mg/L
Prep Method:	None	**Basis:**	NA

Replicate Sample Summary
Solids, Total Dissolved

Sample Name:	Lab Code:	MRL	Sample Result	Duplicate Result	Average	RPD	RPD Limit	Date Analyzed
Batch QC	K1502696-001DUP	10	376	379	378	<1	10	03/18/15
Batch QC	T1500335-008DUP	10	89	90	89.5	1	10	03/18/15

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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502735
Project:	Mint Farm Monitoring	**Date Analyzed:**	03/18/15
Sample Matrix:	Drinking Water	**Date Extracted:**	NA

Lab Control Sample Summary
Solids, Total Dissolved

Analysis Method:	SM 2540 C	**Units:**	mg/L
Prep Method:	None	**Basis:**	NA
		Analysis Lot:	436831

Sample Name	Lab Code	Result	Spike Amount	% Rec	% Rec Limits
Lab Control Sample	K1502735-LCS	1240	1300	96	85-115

ALS Group USA, Corp.
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Analytical Report

Client:	Longview, City of	**Service Request:**	K1502735
Project:	Mint Farm Monitoring	**Date Collected:**	03/17/15
Sample Matrix:	Drinking Water	**Date Received:**	03/17/15
Analysis Method:	SM 4500-NH3 G	**Units:**	mg/L
Prep Method:	Method	**Basis:**	NA

Ammonia as Nitrogen

Sample Name	Lab Code	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Well #2	K1502735-001	**0.373**	0.050	1	03/20/15 13:01	3/20/15	
Method Blank	K1502735-MB1	ND U	0.050	1	03/20/15 13:01	3/20/15	

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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502735
Project	Mint Farm Monitoring	**Date Collected:**	03/17/15
Sample Matrix:	Drinking Water	**Date Received:**	03/17/15
		Date Analyzed:	03/20/15

Replicate Sample Summary
General Chemistry Parameters

Sample Name:	Well #2	**Units:**	mg/L
Lab Code:	K1502735-001	**Basis:**	NA

Analyte Name	Analysis Method	MRL	Sample Result	Duplicate Sample K1502735-001DUP Result	Average	RPD	RPD Limit
Ammonia as Nitrogen	SM 4500-NH3 G	0.050	0.373	0.382	0.377	2	20

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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502735
Project:	Mint Farm Monitoring	**Date Collected:**	03/17/15
Sample Matrix:	Drinking Water	**Date Received:**	03/17/15
		Date Analyzed:	03/20/15
		Date Extracted:	03/20/15

Duplicate Matrix Spike Summary
Ammonia as Nitrogen

Sample Name:	Well #2	**Units:**	mg/L
Lab Code:	K1502735-001	**Basis:**	NA
Analysis Method:	SM 4500-NH3 G		
Prep Method:	Method		

		Matrix Spike K1502735-001MS			**Duplicate Matrix Spike** K1502735-001DMS					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Ammonia as Nitrogen	0.373	2.43	2.00	103	2.37	2.00	100	90-110	3	20

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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502735
Project:	Mint Farm Monitoring	**Date Analyzed:**	03/20/15
Sample Matrix:	Drinking Water	**Date Extracted:**	03/20/15

Lab Control Sample Summary
Ammonia as Nitrogen

Analysis Method:	SM 4500-NH3 G	**Units:**	mg/L
Prep Method:	Method	**Basis:**	NA
		Analysis Lot:	437273

Sample Name	Lab Code	Result	Spike Amount	% Rec	% Rec Limits
Lab Control Sample	K1502735-LCS	15.8	15.4	103	90-110

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client:	Longview, City of	**Service Request:**	K1502735
Project:	Mint Farm Monitoring	**Date Collected:**	03/17/15
Sample Matrix:	Drinking Water	**Date Received:**	03/17/15
Analysis Method:	SM 4500-P E	**Units:**	mg/L
Prep Method:	None	**Basis:**	NA

Orthophosphate as Phosphorus

Sample Name	Lab Code	Result	MRL	Dil.	Date Analyzed	Q
Well #2	K1502735-001	**0.56**	0.25	5	03/18/15 12:09	
Method Blank	K1502735-MB1	ND U	0.050	1	03/18/15 12:09	

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dba ALS Environmental

QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502735
Project	Mint Farm Monitoring	**Date Collected:**	NA
Sample Matrix:	Drinking Water	**Date Received:**	NA
		Date Analyzed:	03/18/15

Replicate Sample Summary
General Chemistry Parameters

Sample Name:	Batch QC	**Units:**	mg/L
Lab Code:	K1502734-001	**Basis:**	NA

Analyte Name	Analysis Method	MRL	Sample Result	Duplicate Sample K1502734-001DUP Result	Average	RPD	RPD Limit
Orthophosphate as Phosphorus	SM 4500-P E	0.25	0.56	0.57	0.562	2	20

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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502735
Project:	Mint Farm Monitoring	**Date Collected:**	N/A
Sample Matrix:	Drinking Water	**Date Received:**	N/A
		Date Analyzed:	03/18/15
		Date Extracted:	NA

Duplicate Matrix Spike Summary
Orthophosphate as Phosphorus

Sample Name:	Batch QC	**Units:**	mg/L
Lab Code:	K1502734-001	**Basis:**	NA
Analysis Method:	SM 4500-P E		
Prep Method:	None		

		Matrix Spike K1502734-001MS			**Duplicate Matrix Spike** K1502734-001DMS					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Orthophosphate as Phosphorus	0.56	0.96	0.40	101	0.98	0.40	106	75-125	5	20

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dba ALS Environmental

QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502735
Project:	Mint Farm Monitoring	**Date Analyzed:**	03/18/15
Sample Matrix:	Drinking Water	**Date Extracted:**	NA

Lab Control Sample Summary
Orthophosphate as Phosphorus

Analysis Method:	SM 4500-P E	**Units:**	mg/L
Prep Method:	None	**Basis:**	NA
		Analysis Lot:	436766

Sample Name	Lab Code	Result	Spike Amount	% Rec	% Rec Limits
Lab Control Sample	K1502735-LCS	6.25	6.1	103	85-115

ALS Group USA, Corp.
dba ALS Environmental
Analytical Report

Client:	Longview, City of	**Service Request:**	K1502735
Project:	Mint Farm Monitoring	**Date Collected:**	3/17/2015
Sample Matrix:	Drinking water	**Date Received:**	3/17/2015

Colilert, E. Coli

Prep Method: NONE
Analysis Method: SM 9223B Basis: NA
Test Notes:

Sample Name	Lab Code	MRL	Date Analyzed	Time Test Started		Result	Result Notes
Well #2	K1502735-001	1	3/17/2015	16:30	hrs	Absent	

SM *Standard Methods for the Examination of Water and Wastewater* , 20th Ed., 1998.

ALS Group USA, Corp.
dba ALS Environmental
Analytical Report

Client:	Longview, City of	**Service Request:**	K1502735
Project:	Mint Farm Monitoring	**Date Collected:**	3/17/2015
Sample Matrix:	Drinking water	**Date Received:**	3/17/2015

Colilert, T. Coli

Prep Method: NONE
Analysis Method: SM 9223B Basis: NA
Test Notes:

Sample Name	Lab Code	MRL	Date Analyzed	Time Test Started		Result	Result Notes
Well #2	K1502735-001	1	3/17/2015	16:30	hrs	Absent	

SM *Standard Methods for the Examination of Water and Wastewater* , 20th Ed., 1998.

Metals

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Analytical Report

Client:	Longview, City of	**Service Request:**	K1502735
Project:	Mint Farm Monitoring	**Date Collected:**	03/17/15
Sample Matrix:	Drinking water	**Date Received:**	03/17/15

Hardness as CaCO3

Prep Method:	CLAA	Units:	mg/L (ppm)
Analysis Method:	200.7/SM 2340B	Basis:	NA
Test Notes:			

Sample Name	Lab Code	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Well #2	K1502735-001	0.07	1	03/20/15	03/23/15	72.2	
Method Blank	K1502735-MB	0.07	1	03/20/15	03/23/15	ND	

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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502735
Project:	Mint Farm Monitoring	**Date Collected:**	03/17/15
Sample Matrix:	Drinking water	**Date Received:**	03/17/15
		Date Extracted:	03/20/15
		Date Analyzed:	03/23/15

Duplicate Summary
Metals

Sample Name:	Well #2	Units:	mg/L (ppm)
Lab Code:	K1502735-001D	Basis:	NA
Test Notes:			

Analyte	Prep Method	Analysis Method	MRL	Sample Result	Duplicate Sample Result	Average	Relative Percent Difference	Result Notes
Hardness as CaCO3	CLAA	200.7/SM 2340B	0.07	72.2	72.2	72.2	<1	

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Analytical Report

Client:	Longview, City of	**Service Request:**	K1502735
Project:	Mint Farm Monitoring	**Date Collected:**	03/17/15
Sample Matrix:	Drinking water	**Date Received:**	03/17/15

Methyl Mercury

Prep Method:	Method	Units:	ng/L
Analysis Method:	1630	Basis:	NA
Test Notes:			

Sample Name	Lab Code	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Well #2	K1502735-001	0.1	1	02/25/15	02/26/15	ND	
Method Blank 1	K1502735-MB1	0.1	1	02/25/15	02/26/15	ND	
Method Blank 2	K1502735-MB2	0.1	1	02/25/15	02/26/15	ND	
Method Blank 3	K1502735-MB3	0.1	1	02/25/15	02/26/15	ND	

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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502735
Project:	Mint Farm Monitoring	**Date Collected:**	NA
Sample Matrix:	Drinking water	**Date Received:**	NA
		Date Extracted:	02/25/15
		Date Analyzed:	02/26/15

Matrix Spike/Duplicate Matrix Spike Summary
Metals

Sample Name:	Batch QC		Units:	ng/L
Lab Code:	K1502708-001MS,	K1502708-001MSD	Basis:	NA
Test Notes:				

				Spike Level		Sample	Spike Result		Percent Recovery		CAS Acceptance	Relative Percent	Result
Analyte	**Prep Method**	**Analysis Method**	**MRL**	**MS**	**DMS**	**Result**	**MS**	**DMS**	**MS**	**DMS**	**Limits**	**Difference**	**Notes**
Mercury, Methyl	Method	1630	0.1	2.22	2.22	0.42	3.22	3.01	126	117	65-135	7	

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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502735
Project:	Mint Farm Monitoring	**Date Collected:**	NA
LCS Matrix:	Water	**Date Received:**	NA
		Date Extracted:	02/25/15
		Date Analyzed:	02/26/15

Ongoing Precision and Recovery (OPR) Sample Summary
Metals

Sample Name: Ongoing Precision and Recovery (Initial)

Units: ng/L
Basis: NA

Test Notes:

Analyte	Prep Method	Analysis Method	True Value	Result	Percent Recovery	CAS Percent Recovery Acceptance Limits	Result Notes
Mercury, Methyl	Method	1630	2.22	2.52	114	67-133	

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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502735
Project:	Mint Farm Monitoring	**Date Collected:**	NA
LCS Matrix:	Water	**Date Received:**	NA
		Date Extracted:	02/25/15
		Date Analyzed:	02/26/15

Ongoing Precision and Recovery (OPR) Sample Summary
Metals

Sample Name: Ongoing Precision and Recovery (Final)

Units: ng/L
Basis: NA

Test Notes:

Analyte	Prep Method	Analysis Method	True Value	Result	Percent Recovery	CAS Percent Recovery Acceptance Limits	Result Notes
Mercury, Methyl	Method	1630	2.22	2.43	109	67-133	

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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502735
Project:	Mint Farm Monitoring	**Date Collected:**	NA
LCS Matrix:	Water	**Date Received:**	NA
		Date Extracted:	02/25/15
		Date Analyzed:	02/26/15

Quality Control Sample (QCS) Summary
Metals

Sample Name: Quality Control Sample

Units: pg
Basis: NA

Test Notes:

Analyte	Prep Method	Analysis Method	True Value	Result	Percent Recovery	CAS Percent Recovery Acceptance Limits	Result Notes
Mercury, Methyl	Method	1630	100	127	127	67-133	

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Analytical Report

Client:	Longview, City of	**Service Request:**	K1502735
Project:	Mint Farm Monitoring	**Date Collected:**	03/17/15 11:00
Sample Matrix:	Drinking Water	**Date Received:**	03/17/15 14:53
Sample Name:	Well #2	**Basis:**	NA
Lab Code:	K1502735-001		

Total Metals

Analyte Name	Analysis Method	Result		Units	MRL	Dil.	Date Analyzed	Date Extracted	Q
Antimony	200.8	ND	U	mg/L	0.000050	1	03/25/15 09:07	03/20/15	
Arsenic	200.8	**0.00412**		mg/L	0.00050	1	03/25/15 09:07	03/20/15	
Barium	200.7	**0.0130**		mg/L	0.0040	1	03/23/15 01:28	03/20/15	
Beryllium	200.8	ND	U	mg/L	0.000020	1	03/25/15 09:07	03/20/15	
Cadmium	200.8	ND	U	mg/L	0.000020	1	03/25/15 09:07	03/20/15	
Chromium	200.8	ND	U	mg/L	0.00020	1	03/25/15 09:07	03/20/15	
Copper	200.7	ND	U	mg/L	0.0040	1	03/23/15 01:28	03/20/15	
Iron	200.7	**1.94**		mg/L	0.020	1	03/23/15 01:28	03/20/15	
Lead	200.8	ND	U	mg/L	0.000020	1	03/25/15 09:07	03/20/15	
Manganese	200.7	**0.594**		mg/L	0.0010	1	03/23/15 01:28	03/20/15	
Mercury	245.1	ND	U	mg/L	0.00020	1	03/18/15 03:26	03/18/15	
Nickel	200.8	**0.00036**		mg/L	0.00020	1	03/25/15 09:07	03/20/15	
Selenium	200.8	ND	U	mg/L	0.0010	1	03/25/15 09:07	03/20/15	
Silver	200.8	ND	U	mg/L	0.000020	1	03/25/15 09:07	03/20/15	
Sodium	200.7	**9.48**		mg/L	0.20	1	03/23/15 01:28	03/20/15	
Thallium	200.8	ND	U	mg/L	0.000020	1	03/25/15 09:07	03/20/15	
Zinc	200.7	ND	U	mg/L	0.0040	1	03/23/15 01:28	03/20/15	

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Analytical Report

Client:	Longview, City of	**Service Request:**	K1502735
Project:	Mint Farm Monitoring	**Date Collected:**	NA
Sample Matrix:	Drinking Water	**Date Received:**	NA
Sample Name:	Method Blank	**Basis:**	NA
Lab Code:	KQ1502681-01		

Total Metals

Analyte Name	Analysis Method	Result		Units	MRL	Dil.	Date Analyzed	Date Extracted	Q
Barium	200.7	ND	U	mg/L	0.0040	1	03/23/15 12:51	03/20/15	
Copper	200.7	ND	U	mg/L	0.0040	1	03/23/15 12:51	03/20/15	
Iron	200.7	ND	U	mg/L	0.020	1	03/23/15 12:51	03/20/15	
Manganese	200.7	ND	U	mg/L	0.0010	1	03/23/15 12:51	03/20/15	
Sodium	200.7	ND	U	mg/L	0.20	1	03/23/15 12:51	03/20/15	
Zinc	200.7	ND	U	mg/L	0.0040	1	03/23/15 12:51	03/20/15	

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Analytical Report

Client:	Longview, City of	**Service Request:**	K1502735
Project:	Mint Farm Monitoring	**Date Collected:**	NA
Sample Matrix:	Drinking Water	**Date Received:**	NA
Sample Name:	Method Blank	**Basis:**	NA
Lab Code:	KQ1502682-01		

Total Metals

Analyte Name	Analysis Method	Result		Units	MRL	Dil.	Date Analyzed	Date Extracted	Q
Antimony	200.8	ND	U	mg/L	0.000050	1	03/25/15 07:56	03/20/15	
Arsenic	200.8	ND	U	mg/L	0.00050	1	03/25/15 07:56	03/20/15	
Beryllium	200.8	ND	U	mg/L	0.000020	1	03/25/15 07:56	03/20/15	
Cadmium	200.8	ND	U	mg/L	0.000020	1	03/25/15 07:56	03/20/15	
Chromium	200.8	ND	U	mg/L	0.00020	1	03/25/15 07:56	03/20/15	
Lead	200.8	ND	U	mg/L	0.000020	1	03/25/15 07:56	03/20/15	
Nickel	200.8	ND	U	mg/L	0.00020	1	03/25/15 07:56	03/20/15	
Selenium	200.8	ND	U	mg/L	0.0010	1	03/25/15 07:56	03/20/15	
Silver	200.8	ND	U	mg/L	0.000020	1	03/25/15 07:56	03/20/15	
Thallium	200.8	ND	U	mg/L	0.000020	1	03/25/15 07:56	03/20/15	

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Analytical Report

Client:	Longview, City of	**Service Request:**	K1502735
Project:	Mint Farm Monitoring	**Date Collected:**	NA
Sample Matrix:	Drinking Water	**Date Received:**	NA
Sample Name:	Method Blank	**Basis:**	NA
Lab Code:	KQ1502573-01		

Total Metals

Analyte Name	Analysis Method	Result	Units	MRL	Dil.	Date Analyzed	Date Extracted	Q
Mercury	245.1	ND U	mg/L	0.00020	1	03/18/15 03:15	03/18/15	

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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502735
Project	Mint Farm Monitoring	**Date Collected:**	NA
Sample Matrix:	Drinking Water	**Date Received:**	NA
		Date Analyzed:	03/23/15

Replicate Sample Summary
Total Metals

Sample Name:	Batch QC	**Units:**	mg/L
Lab Code:	K1502845-001	**Basis:**	NA

Analyte Name	Analysis Method	MRL	Sample Result	Duplicate Sample KQ1502681-05 Result	Average	RPD	RPD Limit
Barium	200.7	0.0040	ND U	ND U	ND	-	20
Copper	200.7	0.0040	ND U	ND U	ND	-	20
Iron	200.7	0.020	0.832	0.842	0.837	1	20
Manganese	200.7	0.0010	0.0647	0.0629	0.0638	3	20
Sodium	200.7	0.20	8.77	8.85	8810	<1	20
Zinc	200.7	0.0040	ND U	ND U	ND	-	20

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502735
Project	Mint Farm Monitoring	**Date Collected:**	NA
Sample Matrix:	Drinking Water	**Date Received:**	NA
		Date Analyzed:	03/25/15

Replicate Sample Summary
Total Metals

Sample Name:	Batch QC	**Units:**	mg/L
Lab Code:	K1502845-001	**Basis:**	NA

Analyte Name	Analysis Method	MRL	Sample Result	Duplicate Sample KQ1502682-05 Result	Average	RPD	RPD Limit
Antimony	200.8	0.000050	ND U	ND U	ND	-	20
Arsenic	200.8	0.00050	ND U	ND U	ND	-	20
Beryllium	200.8	0.000020	ND U	ND U	ND	-	20
Cadmium	200.8	0.000020	ND U	ND U	ND	-	20
Chromium	200.8	0.00020	ND U	ND U	ND	-	20
Lead	200.8	0.000020	ND U	ND U	NC	NC	20
Nickel	200.8	0.00020	ND U	ND U	ND	-	20
Selenium	200.8	0.0010	ND U	ND U	ND	-	20
Silver	200.8	0.000020	ND U	ND U	ND	-	20
Thallium	200.8	0.000020	ND U	ND U	ND	-	20

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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502735
Project	Mint Farm Monitoring	**Date Collected:**	NA
Sample Matrix:	Drinking Water	**Date Received:**	NA
		Date Analyzed:	03/18/15

Replicate Sample Summary
Total Metals

Sample Name:	Batch QC	**Units:**	mg/L
Lab Code:	K1502518-001	**Basis:**	NA

Analyte Name	Analysis Method	MRL	Sample Result	Duplicate Sample KQ1502573-03 Result	Average	RPD	RPD Limit
Mercury	245.1	0.00020	ND U	ND U	NC	NC	20

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502735
Project:	Mint Farm Monitoring	**Date Collected:**	N/A
Sample Matrix:	Drinking Water	**Date Received:**	N/A
		Date Analyzed:	03/23/15
		Date Extracted:	03/20/15

Matrix Spike Summary
Total Metals

Sample Name:	Batch QC	**Units:**	mg/L
Lab Code:	K1502845-001	**Basis:**	NA
Analysis Method:	200.7		
Prep Method:	EPA CLP-METALS ILM04.0		

Matrix Spike
KQ1502681-06

Analyte Name	Sample Result	Result	Spike Amount	% Rec	% Rec Limits
Barium	ND U	1.01	1.00	101	70-130
Copper	ND U	0.252	0.250	101	70-130
Iron	0.832	1.82	1.00	98	70-130
Manganese	0.0647	0.558	0.500	99	70-130
Sodium	8.77	19.3	10.0	105	70-130
Zinc	ND U	0.477	0.500	95	70-130

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Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502735
Project:	Mint Farm Monitoring	**Date Collected:**	N/A
Sample Matrix:	Drinking Water	**Date Received:**	N/A
		Date Analyzed:	03/25/15
		Date Extracted:	03/20/15

Matrix Spike Summary
Total Metals

Sample Name:	Batch QC	**Units:**	mg/L
Lab Code:	K1502845-001	**Basis:**	NA
Analysis Method:	200.8		
Prep Method:	EPA CLP-METALS ILM04.0		

Matrix Spike
KQ1502682-06

Analyte Name	Sample Result	Result	Spike Amount	% Rec	% Rec Limits
Antimony	ND U	0.0489	0.0500	98	70-130
Arsenic	ND U	0.0479	0.0500	96	70-130
Beryllium	ND U	0.00242	0.00250	97	70-130
Cadmium	ND U	0.0248	0.0250	99	70-130
Chromium	ND U	0.00918	0.0100	92	70-130
Lead	ND U	0.0499	0.0500	100	70-130
Nickel	ND U	0.0228	0.0250	91	70-130
Selenium	ND U	0.0490	0.0500	98	70-130
Silver	ND U	0.0119	0.0125	95	70-130
Thallium	ND U	0.0512	0.0500	102	70-130

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502735
Project:	Mint Farm Monitoring	**Date Collected:**	N/A
Sample Matrix:	Drinking Water	**Date Received:**	N/A
		Date Analyzed:	03/18/15
		Date Extracted:	03/18/15

Matrix Spike Summary
Total Metals

Sample Name:	Batch QC	**Units:**	mg/L
Lab Code:	K1502518-001	**Basis:**	NA
Analysis Method:	245.1		
Prep Method:	Method		

Matrix Spike
KQ1502573-04

Analyte Name	Sample Result	Result	Spike Amount	% Rec	% Rec Limits
Mercury	ND U	0.00492	0.00500	98	70-130

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502735
Project:	Mint Farm Monitoring	**Date Analyzed:**	03/23/15
Sample Matrix:	Drinking Water	**Date Extracted:**	03/20/15

Lab Control Sample Summary
Total Metals

Analysis Method:	200.7	**Units:**	mg/L
Prep Method:	EPA CLP-METALS ILM04.0	**Basis:**	NA
		Analysis Lot:	437289

Lab Control Sample
KQ1502681-02

Analyte Name	Result	Spike Amount	% Rec	% Rec Limits
Barium	5.13	5000	103	85-115
Copper	0.648	625	104	85-115
Iron	2.53	2500	101	85-115
Manganese	1.27	1250	101	85-115
Sodium	13.1	12500	105	85-115
Zinc	1.23	1250	98	85-115

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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502735
Project:	Mint Farm Monitoring	**Date Analyzed:**	03/25/15
Sample Matrix:	Drinking Water	**Date Extracted:**	03/20/15

Lab Control Sample Summary
Total Metals

Analysis Method:	200.8	**Units:**	mg/L
Prep Method:	EPA CLP-METALS ILM04.0	**Basis:**	NA
		Analysis Lot:	437636

Lab Control Sample
KQ1502682-02

Analyte Name	Result	Spike Amount	% Rec	% Rec Limits
Antimony	0.0486	50.0	97	85-115
Arsenic	0.0486	50.0	97	85-115
Beryllium	0.00245	2.50	98	85-115
Cadmium	0.0247	25.0	99	85-115
Chromium	0.00978	10.0	98	85-115
Lead	0.0493	50.0	99	85-115
Nickel	0.0243	25.0	97	85-115
Selenium	0.0491	50.0	98	85-115
Silver	0.0120	12.5	96	85-115
Thallium	0.0506	50.0	101	85-115

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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502735
Project:	Mint Farm Monitoring	**Date Analyzed:**	03/18/15
Sample Matrix:	Drinking Water	**Date Extracted:**	03/18/15

Lab Control Sample Summary
Total Metals

Analysis Method:	245.1	**Units:**	mg/L
Prep Method:	Method	**Basis:**	NA
		Analysis Lot:	436816

Lab Control Sample
KQ1502573-02

Analyte Name	Result	Spike Amount	% Rec	% Rec Limits
Mercury	0.00474	5.00	95	85-115

Chlorinated Phenolic Organic Compounds

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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Analytical Results

Client:	Longview, City of	**Service Request:**	K1502735
Project:	Mint Farm Monitoring	**Date Collected:**	3/17/2015
Sample Matrix:	Drinking water	**Date Received:**	3/17/2015

EPA Method 1653A
Chlorinated Phenolic Organic Compounds

Sample Name:	Well #2	Units:	ug/L (ppb)
Lab Code:	K1502735-001	Basis:	NA
Test Notes:			

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
2,4,6-Trichlorophenol	METHOD	1653A	2.5	1	3/20/2015	3/25/2015	ND	
2,4,5-Trichlorophenol	METHOD	1653A	2.5	1	3/20/2015	3/25/2015	ND	
2,3,4,6-Tetrachlorophenol	METHOD	1653A	2.5	1	3/20/2015	3/25/2015	ND	
3,4,6-Trichloroguaiacol	METHOD	1653A	2.5	1	3/20/2015	3/25/2015	ND	
3,4,5-Trichloroguaiacol	METHOD	1653A	2.5	1	3/20/2015	3/25/2015	ND	
3,4,6-Trichlorocatechol	METHOD	1653A	5.0	1	3/20/2015	3/25/2015	ND	
3,4,5-Trichlorocatechol	METHOD	1653A	5.0	1	3/20/2015	3/25/2015	ND	
Trichlorosyringol	METHOD	1653A	2.5	1	3/20/2015	3/25/2015	ND	
4,5,6-Trichloroguaiacol	METHOD	1653A	2.5	1	3/20/2015	3/25/2015	ND	
Pentachlorophenol	METHOD	1653A	5.0	1	3/20/2015	3/25/2015	ND	
Tetrachloroguaiacol	METHOD	1653A	5.0	1	3/20/2015	3/25/2015	ND	
Tetrachlorocatechol	METHOD	1653A	5.0	1	3/20/2015	3/25/2015	ND	

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Analytical Results

Client:	Longview, City of	**Service Request:**	K1502735
Project:	Mint Farm Monitoring	**Date Collected:**	NA
Sample Matrix:	Drinking water	**Date Received:**	NA

EPA Method 1653A
Chlorinated Phenolic Organic Compounds

Sample Name:	Method Blank	Units:	ug/L (ppb)
Lab Code:	KWG1502299-3	Basis:	NA
Test Notes:			

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
2,4,6-Trichlorophenol	METHOD	1653A	2.5	1	3/20/2015	3/25/2015	ND	
2,4,5-Trichlorophenol	METHOD	1653A	2.5	1	3/20/2015	3/25/2015	ND	
2,3,4,6-Tetrachlorophenol	METHOD	1653A	2.5	1	3/20/2015	3/25/2015	ND	
3,4,6-Trichloroguaiacol	METHOD	1653A	2.5	1	3/20/2015	3/25/2015	ND	
3,4,5-Trichloroguaiacol	METHOD	1653A	2.5	1	3/20/2015	3/25/2015	ND	
3,4,6-Trichlorocatechol	METHOD	1653A	5.0	1	3/20/2015	3/25/2015	ND	
3,4,5-Trichlorocatechol	METHOD	1653A	5.0	1	3/20/2015	3/25/2015	ND	
Trichlorosyringol	METHOD	1653A	2.5	1	3/20/2015	3/25/2015	ND	
4,5,6-Trichloroguaiacol	METHOD	1653A	2.5	1	3/20/2015	3/25/2015	ND	
Pentachlorophenol	METHOD	1653A	5.0	1	3/20/2015	3/25/2015	ND	
Tetrachloroguaiacol	METHOD	1653A	5.0	1	3/20/2015	3/25/2015	ND	
Tetrachlorocatechol	METHOD	1653A	5.0	1	3/20/2015	3/25/2015	ND	

ALS Group USA, Corp. dba ALS Environmental

Analytical Results

Client:	Longview, City of	**Service Request:**	K1502735
Project:	Mint Farm Monitoring	**Date Collected:**	NA
Sample Matrix:	Drinking water	**Date Received:**	NA
		Date Extracted:	3/20/2015

Labeled Compound and Internal Standard Recovery Summary
Chlorinated Phenolic Organic Compounds
1653A

			Percent Recovery	
	CAS Percent Recovery Acceptance Criteria	Sample Name:	**Well #2**	**Method Blank**
		Lab Code:	K1502735-001	KWG1502299-3
		Date Analyzed:	3/25/2015	3/25/2015
Analyte				
3,4,5-Trichlorophenol	36-131		98	97
4,5,6-Trichloroguaiacol-13c6	25-134		98	99
Pentachlorophenol-13c6	22-117		88	92
Tetrachloroguaiacol-13c6	18-129		97	101
Tetrachlorocatechol-13c6	D-121		42	83

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Analytical Results

Client: Longview, City of
Project: Mint Farm Monitoring
Sample Matrix: Drinking water

Service Request: K1502735
Date Collected: NA
Date Received: NA
Date Extracted: 3/20/2015
Date Analyzed: 3/25/2015

Duplicate Summary
Chlorinated Phenolic Organic Compounds

Sample Name: Batch QC
Lab Code: KWG1502299-1
Test Notes:

Units: ug/L (ppb)
Basis: NA

Analyte	Prep Method	Analysis Method	MRL	Sample Result	Duplicate Sample Result	Average	Relative Percent Difference	Result Notes
2,4,6-Trichlorophenol	METHOD	1653A	2.5	ND	ND	ND	-	
2,4,5-Trichlorophenol	METHOD	1653A	2.5	ND	ND	ND	-	
2,3,4,6-Tetrachlorophenol	METHOD	1653A	2.5	ND	ND	ND	-	
3,4,6-Trichloroguaiacol	METHOD	1653A	2.5	ND	ND	ND	-	
3,4,5-Trichloroguaiacol	METHOD	1653A	2.5	ND	ND	ND	-	
3,4,6-Trichlorocatechol	METHOD	1653A	5.0	ND	ND	ND	-	
3,4,5-Trichlorocatechol	METHOD	1653A	5.0	ND	ND	ND	-	
Trichlorosyringol	METHOD	1653A	2.5	ND	ND	ND	-	
4,5,6-Trichloroguaiacol	METHOD	1653A	2.5	ND	ND	ND	-	
Pentachlorophenol	METHOD	1653A	5.0	ND	ND	ND	-	
Tetrachloroguaiacol	METHOD	1653A	5.0	ND	ND	ND	-	
Tetrachlorocatechol	METHOD	1653A	5.0	ND	ND	ND	-	

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Analytical Results

Client:	Longview, City of	**Service Request:**	K1502735
Project:	Mint Farm Monitoring	**Date Collected:**	NA
LCS Matrix:	Drinking water	**Date Received:**	NA
		Date Extracted:	3/20/2015
		Date Analyzed:	3/25/2015

Ongoing Precision and Recovery Summary
Chlorinated Phenolic Organic Compounds

Sample Name:	Lab Control Sample	Units:	ug/L (ppb)
Lab Code:	KWG1502299-2	Basis:	NA
Test Notes:			

Analyte	Prep Method	Analysis Method	True Value	Result	Percent Recovery	CAS Percent Recovery Acceptance Limits	Result Notes
2,4,6-Trichlorophenol	METHOD	1653A	50	46.9	94	72-146	
2,4,5-Trichlorophenol	METHOD	1653A	50	47.3	95	82-128	
2,3,4,6-Tetrachlorophenol	METHOD	1653A	50	48.0	96	82-132	
3,4,6-Trichloroguaiacol	METHOD	1653A	50	46.6	93	74-140	
3,4,5-Trichloroguaiacol	METHOD	1653A	50	46.8	94	80-134	
3,4,6-Trichlorocatechol	METHOD	1653A	100	92.9	93	64-149	
3,4,5-Trichlorocatechol	METHOD	1653A	100	98.0	98	72-128	
Trichlorosyringol	METHOD	1653A	50	45.7	91	66-174	
4,5,6-Trichloroguaiacol	METHOD	1653A	50	47.8	96	88-116	
Pentachlorophenol	METHOD	1653A	100	88.5	89	84-120	
Tetrachloroguaiacol	METHOD	1653A	100	90.6	91	81-126	
Tetrachlorocatechol	METHOD	1653A	100	92.0	92	81-132	

EPA Method 504.1

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Analytical Results

Client:	Longview, City of	**Service Request:**	K1502735
Project:	Mint Farm Monitoring	**Date Collected:**	03/17/2015
Sample Matrix:	Drinking water	**Date Received:**	03/17/2015

EPA Method 504.1

Sample Name:	Well #2	**Units:**	ug/L
Lab Code:	K1502735-001	**Basis:**	NA
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	504.1		

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
1,2-Dibromoethane (EDB)	ND	U	0.0095	1	03/19/15	03/19/15	KWG1502269	
1,2,3-Trichloropropane	ND	U	0.39	1	03/19/15	03/19/15	KWG1502269	
1,2-Dibromo-3-chloropropane (DBCP	ND	U	0.0095	1	03/19/15	03/19/15	KWG1502269	

Comments:

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Analytical Results

Client:	Longview, City of	**Service Request:**	K1502735
Project:	Mint Farm Monitoring	**Date Collected:**	NA
Sample Matrix:	Drinking water	**Date Received:**	NA

EPA Method 504.1

Sample Name:	Method Blank	**Units:**	ug/L
Lab Code:	KWG1502269-7	**Basis:**	NA
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	504.1		

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
1,2-Dibromoethane (EDB)	ND	U	0.0099	1	03/19/15	03/19/15	KWG1502269	
1,2,3-Trichloropropane	ND	U	0.40	1	03/19/15	03/19/15	KWG1502269	
1,2-Dibromo-3-chloropropane (DBCP	ND	U	0.0099	1	03/19/15	03/19/15	KWG1502269	

Comments:

QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502735
Project:	Mint Farm Monitoring	**Date Extracted:**	03/19/2015
Sample Matrix:	Drinking water	**Date Analyzed:**	03/19/2015

Matrix Spike/Duplicate Matrix Spike Summary
EPA Method 504.1

Sample Name:	Well #2	**Units:**	ug/L
Lab Code:	K1502735-001	**Basis:**	NA
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	504.1	**Extraction Lot:**	KWG1502269

		Well #2MS KWG1502269-3 Matrix Spike			Well #2DMS KWG1502269-4 Duplicate Matrix Spike					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**%Rec**	**Result**	**Spike Amount**	**%Rec**	**%Rec Limits**	**RPD**	**RPD Limit**
1,2-Dibromoethane (EDB)	ND	0.198	0.241	82	0.205	0.240	86	65-135	3	30
1,2,3-Trichloropropane	ND	0.188	0.241	78	0.205	0.240	86	65-135	9	30
1,2-Dibromo-3-chloropropane (DBCP)	ND	0.188	0.241	78	0.199	0.240	83	65-135	6	30

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Client:	Longview, City of	**Service Request:**	K1502735
Project:	Mint Farm Monitoring	**Date Extracted:**	03/19/2015
Sample Matrix:	Drinking water	**Date Analyzed:**	03/19/2015

Lab Control Spike Summary
EPA Method 504.1

Extraction Method:	METHOD	**Units:**	ug/L
Analysis Method:	504.1	**Basis:**	NA
		Level:	Low
		Extraction Lot:	KWG1502269

	Lab Control Sample KWG1502269-5 Lab Control Spike			
Analyte Name	**Result**	**Spike Amount**	**%Rec**	**%Rec Limits**
1,2-Dibromoethane (EDB)	0.0447	0.0625	71	70-130
1,2,3-Trichloropropane	0.0526	0.0625	84	70-130
1,2-Dibromo-3-chloropropane (DBCP)	0.0512	0.0625	82	70-130

Results flagged with an asterisk (*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Client:	Longview, City of	**Service Request:**	K1502735
Project:	Mint Farm Monitoring	**Date Extracted:**	03/19/2015
Sample Matrix:	Drinking water	**Date Analyzed:**	03/19/2015

Lab Control Spike Summary
EPA Method 504.1

Extraction Method:	METHOD	**Units:**	ug/L
Analysis Method:	504.1	**Basis:**	NA
		Level:	Low
		Extraction Lot:	KWG1502269

	Lab Control Sample KWG1502269-6 Lab Control Spike			
Analyte Name	**Result**	**Spike Amount**	**%Rec**	**%Rec Limits**
1,2-Dibromoethane (EDB)	0.232	0.250	93	70-130
1,2,3-Trichloropropane	0.204	0.250	82	70-130
1,2-Dibromo-3-chloropropane (DBCP)	0.200	0.250	80	70-130

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Pesticides/PCBs by EPA Method 508.1

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Analytical Results

Client:	Longview, City of	**Service Request:**	K1502735
Project:	Mint Farm Monitoring	**Date Collected:**	03/17/2015
Sample Matrix:	Drinking water	**Date Received:**	03/17/2015

Pesticides/PCBs by EPA Method 508.1

Sample Name:	Well #2	**Units:**	ug/L
Lab Code:	K1502735-001	**Basis:**	NA
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	508.1		

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
gamma-BHC (Lindane)	ND	U	0.0098	1	03/27/15	03/31/15	KWG1502592	
Heptachlor	ND	U	0.0098	1	03/27/15	03/31/15	KWG1502592	
Aldrin	ND	U	0.0098	1	03/27/15	03/31/15	KWG1502592	
Heptachlor Epoxide	ND	U	0.0098	1	03/27/15	03/31/15	KWG1502592	
Heptachlor Epoxide (Isomer A)	ND	U	0.0098	1	03/27/15	03/31/15	KWG1502592	
4,4'-DDE	ND	U	0.0098	1	03/27/15	03/31/15	KWG1502592	
Dieldrin	ND	U	0.0098	1	03/27/15	03/31/15	KWG1502592	
Endrin	ND	U	0.0098	1	03/27/15	03/31/15	KWG1502592	
4,4'-DDD	ND	U	0.0098	1	03/27/15	03/31/15	KWG1502592	
4,4'-DDT	ND	U	0.0098	1	03/27/15	03/31/15	KWG1502592	
Methoxychlor	ND	U	0.0098	1	03/27/15	03/31/15	KWG1502592	
Toxaphene	ND	U	0.098	1	03/27/15	03/31/15	KWG1502592	
Chlordane	ND	U	0.098	1	03/27/15	03/31/15	KWG1502592	
Aroclor 1016	ND	U	0.049	1	03/27/15	03/31/15	KWG1502592	
Aroclor 1221	ND	U	0.098	1	03/27/15	03/31/15	KWG1502592	
Aroclor 1232	ND	U	0.098	1	03/27/15	03/31/15	KWG1502592	
Aroclor 1242	ND	U	0.098	1	03/27/15	03/31/15	KWG1502592	
Aroclor 1248	ND	U	0.098	1	03/27/15	03/31/15	KWG1502592	
Aroclor 1254	ND	U	0.098	1	03/27/15	03/31/15	KWG1502592	
Aroclor 1260	ND	U	0.098	1	03/27/15	03/31/15	KWG1502592	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
4,4'-Dibromooctafluorobiphenyl	103	70-130	03/31/15	Acceptable

Comments:

ALS Group USA, Corp. dba ALS Environmental

Analytical Results

Client:	Longview, City of	**Service Request:**	K1502735
Project:	Mint Farm Monitoring	**Date Collected:**	NA
Sample Matrix:	Drinking water	**Date Received:**	NA

Pesticides/PCBs by EPA Method 508.1

Sample Name:	Method Blank	**Units:**	ug/L
Lab Code:	KWG1502592-7	**Basis:**	NA
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	508.1		

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
gamma-BHC (Lindane)	ND	U	0.010	1	03/27/15	03/31/15	KWG1502592	
Heptachlor	ND	U	0.010	1	03/27/15	03/31/15	KWG1502592	
Aldrin	ND	U	0.010	1	03/27/15	03/31/15	KWG1502592	
Heptachlor Epoxide	ND	U	0.010	1	03/27/15	03/31/15	KWG1502592	
Heptachlor Epoxide (Isomer A)	ND	U	0.010	1	03/27/15	03/31/15	KWG1502592	
4,4'-DDE	ND	U	0.010	1	03/27/15	03/31/15	KWG1502592	
Dieldrin	ND	U	0.010	1	03/27/15	03/31/15	KWG1502592	
Endrin	ND	U	0.010	1	03/27/15	03/31/15	KWG1502592	
4,4'-DDD	ND	U	0.010	1	03/27/15	03/31/15	KWG1502592	
4,4'-DDT	ND	U	0.010	1	03/27/15	03/31/15	KWG1502592	
Methoxychlor	ND	U	0.010	1	03/27/15	03/31/15	KWG1502592	
Toxaphene	ND	U	0.10	1	03/27/15	03/31/15	KWG1502592	
Chlordane	ND	U	0.10	1	03/27/15	03/31/15	KWG1502592	
Aroclor 1016	ND	U	0.050	1	03/27/15	03/31/15	KWG1502592	
Aroclor 1221	ND	U	0.10	1	03/27/15	03/31/15	KWG1502592	
Aroclor 1232	ND	U	0.10	1	03/27/15	03/31/15	KWG1502592	
Aroclor 1242	ND	U	0.10	1	03/27/15	03/31/15	KWG1502592	
Aroclor 1248	ND	U	0.10	1	03/27/15	03/31/15	KWG1502592	
Aroclor 1254	ND	U	0.10	1	03/27/15	03/31/15	KWG1502592	
Aroclor 1260	ND	U	0.10	1	03/27/15	03/31/15	KWG1502592	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
4,4'-Dibromooctafluorobiphenyl	95	70-130	03/31/15	Acceptable

Comments:

Client: Longview, City of
Project: Mint Farm Monitoring
Sample Matrix: Drinking water

Service Request: K1502735

Surrogate Recovery Summary
Pesticides/PCBs by EPA Method 508.1

Extraction Method: METHOD
Analysis Method: 508.1

Units: Percent
Level: Low

Sample Name	Lab Code	Sur1
Batch QC	K1502734-001	105
Well #2	K1502735-001	103
Method Blank	KWG1502592-7	95
Batch QCMS	KWG1502592-1	89
Batch QCDMS	KWG1502592-2	85
Lab Control Sample	KWG1502592-3	90

Surrogate Recovery Control Limits (%)

Sur1 = 4,4'-Dibromooctafluorobiphenyl 70-130

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502735
Project:	Mint Farm Monitoring	**Date Extracted:**	03/27/2015
Sample Matrix:	Drinking water	**Date Analyzed:**	03/31/2015

Matrix Spike/Duplicate Matrix Spike Summary
Pesticides/PCBs by EPA Method 508.1

Sample Name:	Batch QC	**Units:**	ug/L
Lab Code:	K1502734-001	**Basis:**	NA
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	508.1	**Extraction Lot:**	KWG1502592

		Batch QCMS KWG1502592-1 Matrix Spike			Batch QCDMS KWG1502592-2 Duplicate Matrix Spike					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**%Rec**	**Result**	**Spike Amount**	**%Rec**	**%Rec Limits**	**RPD**	**RPD Limit**
gamma-BHC (Lindane)	ND	0.0989	0.0971	102	0.0930	0.0971	96	65-135	6	30
Heptachlor	ND	0.0776	0.0971	80	0.0753	0.0971	78	65-135	3	30
Aldrin	ND	0.0914	0.0971	94	0.0856	0.0971	88	65-135	7	30
Heptachlor Epoxide	ND	0.0908	0.0971	93	0.0867	0.0971	89	65-135	5	30
Heptachlor Epoxide (Isomer A)	ND	0.0950	0.0971	98	0.0905	0.0971	93	65-135	5	30
4,4'-DDE	ND	0.102	0.0971	105	0.0962	0.0971	99	65-135	6	30
Dieldrin	ND	0.104	0.0971	107	0.0946	0.0971	97	65-135	9	30
Endrin	ND	0.0936	0.0971	96	0.0814	0.0971	84	65-135	14	30
4,4'-DDD	ND	0.107	0.0971	110	0.101	0.0971	104	65-135	6	30
4,4'-DDT	ND	0.106	0.0971	109	0.100	0.0971	103	65-135	6	30
Methoxychlor	ND	0.110	0.0971	113	0.103	0.0971	106	65-135	7	30
Aroclor 1248	ND	0.299	0.485	61 *	0.298	0.485	61 *	65-135	0	30

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Client:	Longview, City of	**Service Request:**	K1502735
Project:	Mint Farm Monitoring	**Date Extracted:**	03/27/2015
Sample Matrix:	Drinking water	**Date Analyzed:**	03/31/2015

Lab Control Spike Summary
Pesticides/PCBs by EPA Method 508.1

Extraction Method:	METHOD	**Units:**	ug/L
Analysis Method:	508.1	**Basis:**	NA
		Level:	Low
		Extraction Lot:	KWG1502592

	Lab Control Sample KWG1502592-3 Lab Control Spike			
Analyte Name	**Result**	**Spike Amount**	**%Rec**	**%Rec Limits**
gamma-BHC (Lindane)	0.102	0.100	102	70-130
Heptachlor	0.0928	0.100	93	70-130
Aldrin	0.0971	0.100	97	70-130
Heptachlor Epoxide	0.106	0.100	106	70-130
Heptachlor Epoxide (Isomer A)	0.102	0.100	102	70-130
4,4'-DDE	0.103	0.100	103	70-130
Dieldrin	0.108	0.100	108	70-130
Endrin	0.107	0.100	107	70-130
4,4'-DDD	0.103	0.100	103	70-130
4,4'-DDT	0.101	0.100	101	70-130
Methoxychlor	0.102	0.100	102	70-130
Aroclor 1248	0.377	0.500	75	70-130

Results flagged with an asterisk (*) indicate values outside control criteria.

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Chlorinated Herbicides by EPA 515.4

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Analytical Results

Client:	Longview, City of	**Service Request:**	K1502735
Project:	Mint Farm Monitoring	**Date Collected:**	03/17/2015
Sample Matrix:	Drinking water	**Date Received:**	03/17/2015

Chlorinated Herbicides by EPA 515.4

Sample Name:	Well #2	**Units:**	ug/L
Lab Code:	K1502735-001	**Basis:**	NA
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	515.4		

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Dalapon	ND	U	1.0	1	03/30/15	04/10/15	KWG1502652	
3,5-Dichlorobenzoic Acid	ND	U	0.50	1	03/30/15	04/10/15	KWG1502652	
Dicamba	ND	U	0.20	1	03/30/15	04/10/15	KWG1502652	
Dichlorprop	ND	U	0.50	1	03/30/15	04/10/15	KWG1502652	
2,4-D	ND	U	0.10	1	03/30/15	04/10/15	KWG1502652	
Pentachlorophenol	ND	U	0.040	1	03/30/15	04/10/15	KWG1502652	
2,4,5-TP (Silvex)	ND	U	0.20	1	03/30/15	04/10/15	KWG1502652	
Chloramben	ND	U	0.20	1	03/30/15	04/10/15	KWG1502652	
2,4-DB	ND	U	1.0	1	03/30/15	04/10/15	KWG1502652	
Dinoseb	ND	U	0.20	1	03/30/15	04/10/15	KWG1502652	
Dacthal Diacid	ND	U	0.020	1	03/30/15	04/10/15	KWG1502652	
Picloram	ND	U	0.10	1	03/30/15	04/10/15	KWG1502652	
Acifluorfen	ND	U	2.0	1	03/30/15	04/10/15	KWG1502652	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
2,4-Dichlorophenylacetic Acid	120	70-130	04/10/15	Acceptable

Comments:

ALS Group USA, Corp. dba ALS Environmental

Analytical Results

Client:	Longview, City of	**Service Request:**	K1502735
Project:	Mint Farm Monitoring	**Date Collected:**	NA
Sample Matrix:	Drinking water	**Date Received:**	NA

Chlorinated Herbicides by EPA 515.4

Sample Name:	Method Blank	**Units:**	ug/L
Lab Code:	KWG1502652-4	**Basis:**	NA
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	515.4		

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Dalapon	ND	U	1.0	1	03/30/15	04/10/15	KWG1502652	
3,5-Dichlorobenzoic Acid	ND	U	0.50	1	03/30/15	04/10/15	KWG1502652	
Dicamba	ND	U	0.20	1	03/30/15	04/10/15	KWG1502652	
Dichlorprop	ND	U	0.50	1	03/30/15	04/10/15	KWG1502652	
2,4-D	ND	U	0.10	1	03/30/15	04/10/15	KWG1502652	
Pentachlorophenol	ND	U	0.040	1	03/30/15	04/10/15	KWG1502652	
2,4,5-TP (Silvex)	ND	U	0.20	1	03/30/15	04/10/15	KWG1502652	
Chloramben	ND	U	0.20	1	03/30/15	04/10/15	KWG1502652	
2,4-DB	ND	U	1.0	1	03/30/15	04/10/15	KWG1502652	
Dinoseb	ND	U	0.20	1	03/30/15	04/10/15	KWG1502652	
Dacthal Diacid	ND	U	0.020	1	03/30/15	04/10/15	KWG1502652	
Picloram	ND	U	0.10	1	03/30/15	04/10/15	KWG1502652	
Acifluorfen	ND	U	2.0	1	03/30/15	04/10/15	KWG1502652	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
2,4-Dichlorophenylacetic Acid	102	70-130	04/10/15	Acceptable

Comments:

Client: Longview, City of
Project: Mint Farm Monitoring
Sample Matrix: Drinking water

Service Request: K1502735

Surrogate Recovery Summary
Chlorinated Herbicides by EPA 515.4

Extraction Method: METHOD
Analysis Method: 515.4

Units: Percent
Level: Low

Sample Name	Lab Code	Sur1
Well #2	K1502735-001	120
Batch QC	K1503080-001	118
Method Blank	KWG1502652-4	102
Batch QCMS	KWG1502652-1	106
Batch QCDMS	KWG1502652-2	109
Lab Control Sample	KWG1502652-3	105

Surrogate Recovery Control Limits (%)

Sur1 = 2,4-Dichlorophenylacetic Acid 70-130

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502735
Project:	Mint Farm Monitoring	**Date Extracted:**	03/30/2015
Sample Matrix:	Drinking water	**Date Analyzed:**	04/10/2015

Matrix Spike/Duplicate Matrix Spike Summary
Chlorinated Herbicides by EPA 515.4

Sample Name:	Batch QC	**Units:**	ug/L
Lab Code:	K1503080-001	**Basis:**	NA
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	515.4	**Extraction Lot:**	KWG1502652

		Batch QCMS KWG1502652-1 Matrix Spike			Batch QCDMS KWG1502652-2 Duplicate Matrix Spike					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**%Rec**	**Result**	**Spike Amount**	**%Rec**	**%Rec Limits**	**RPD**	**RPD Limit**
Dalapon	ND	3.99	4.95	81	4.04	4.96	82	70-130	1	30
3,5-Dichlorobenzoic Acid	ND	4.10	4.95	83	4.31	4.96	87	70-130	5	30
Dicamba	ND	4.46	4.95	90	4.71	4.96	95	70-130	6	30
Dichlorprop	ND	4.34	4.95	88	4.57	4.96	92	70-130	5	30
2,4-D	ND	4.40	4.95	89	4.64	4.96	94	70-130	5	30
Pentachlorophenol	ND	4.82	4.95	97	5.04	4.96	102	70-130	4	30
2,4,5-TP (Silvex)	ND	4.28	4.95	86	4.48	4.96	90	70-130	5	30
Chloramben	ND	4.09	4.95	82	4.44	4.96	90	70-130	8	30
2,4-DB	ND	4.31	4.95	87	4.53	4.96	91	70-130	5	30
Dinoseb	ND	4.99	4.95	101	5.31	4.96	107	70-130	6	30
Dacthal Diacid	ND	5.10	4.95	103	5.40	4.96	109	70-130	6	30
Picloram	ND	4.82	4.95	97	4.95	4.96	100	70-130	3	30
Acifluorfen	ND	5.22	4.95	105	5.41	4.96	109	70-130	4	30

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502735
Project:	Mint Farm Monitoring	**Date Extracted:**	03/30/2015
Sample Matrix:	Drinking water	**Date Analyzed:**	04/10/2015

Lab Control Spike Summary
Chlorinated Herbicides by EPA 515.4

Extraction Method:	METHOD	**Units:**	ug/L
Analysis Method:	515.4	**Basis:**	NA
		Level:	Low
		Extraction Lot:	KWG1502652

	Lab Control Sample KWG1502652-3 Lab Control Spike			
Analyte Name	**Result**	**Spike Amount**	**%Rec**	**%Rec Limits**
Dalapon	3.82	5.00	76	70-130
3,5-Dichlorobenzoic Acid	3.86	5.00	77	70-130
Dicamba	4.38	5.00	88	70-130
Dichlorprop	4.50	5.00	90	70-130
2,4-D	4.56	5.00	91	70-130
Pentachlorophenol	4.77	5.00	95	70-130
2,4,5-TP (Silvex)	4.43	5.00	89	70-130
Chloramben	4.50	5.00	90	70-130
2,4-DB	4.34	5.00	87	70-130
Dinoseb	5.11	5.00	102	70-130
Dacthal Diacid	4.79	5.00	96	70-130
Picloram	4.81	5.00	96	70-130
Acifluorfen	5.62	5.00	112	70-130

Results flagged with an asterisk (*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Volatile Organic Compounds

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

Analytical Results

Client:	Longview, City of	**Service Request:**	K1502735
Project:	Mint Farm Monitoring	**Date Collected:**	03/17/2015
Sample Matrix:	Drinking water	**Date Received:**	03/17/2015

Volatile Organic Compounds

Sample Name:	Well #2	**Units:**	ug/L
Lab Code:	K1502735-001	**Basis:**	NA
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	524.2		

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Dichlorodifluoromethane	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
Chloromethane	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
Vinyl Chloride	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
Bromomethane	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
Chloroethane	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
Trichlorofluoromethane	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
Methylene Chloride	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
trans-1,2-Dichloroethene	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
1,1-Dichloroethene	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
cis-1,2-Dichloroethene	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
Methyl tert-Butyl Ether	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
Chloroform	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
Bromochloromethane	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
Carbon Tetrachloride	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
Benzene	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
1,2-Dichloroethane	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
Trichloroethene	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
1,2-Dichloropropane	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
Bromodichloromethane	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
Dibromomethane	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
cis-1,3-Dichloropropene	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
1,1-Dichloroethane	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
Toluene	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
trans-1,3-Dichloropropene	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
Tetrachloroethene	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
2,2-Dichloropropane	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
1,3-Dichloropropane	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
Dibromochloromethane	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
1,2-Dibromoethane (EDB)	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
Chlorobenzene	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
Ethylbenzene	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
Styrene	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
m,p-Xylenes	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
o-Xylene	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	

Comments:

Analytical Results

Client:	Longview, City of	**Service Request:**	K1502735
Project:	Mint Farm Monitoring	**Date Collected:**	03/17/2015
Sample Matrix:	Drinking water	**Date Received:**	03/17/2015

Volatile Organic Compounds

Sample Name:	Well #2	**Units:**	ug/L
Lab Code:	K1502735-001	**Basis:**	NA
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	524.2		

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
1,1,1-Trichloroethane	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
Bromoform	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
1,1,2,2-Tetrachloroethane	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
Isopropylbenzene	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
1,1-Dichloropropene	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
Bromobenzene	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
n-Propylbenzene	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
1,3,5-Trimethylbenzene	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
2-Chlorotoluene	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
4-Chlorotoluene	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
tert-Butylbenzene	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
1,2,4-Trimethylbenzene	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
sec-Butylbenzene	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
p-Isopropyltoluene	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
1,3-Dichlorobenzene	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
1,4-Dichlorobenzene	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
n-Butylbenzene	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
1,2-Dichlorobenzene	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
1,2-Dibromo-3-chloropropane (DBCP	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
1,2,4-Trichlorobenzene	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
Hexachlorobutadiene	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
Naphthalene	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
1,1,2-Trichloroethane	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
1,1,1,2-Tetrachloroethane	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
1,2,3-Trichloropropane	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
1,2,3-Trichlorobenzene	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
4-Bromofluorobenzene	95	70-130	03/19/15	Acceptable
Dibromofluoromethane	99	82-124	03/19/15	Acceptable
Toluene-d8	96	82-124	03/19/15	Acceptable

Comments:

Analytical Results

Client:	Longview, City of	**Service Request:**	K1502735
Project:	Mint Farm Monitoring	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA

Volatile Organic Compounds

Sample Name:	Method Blank	**Units:**	ug/L
Lab Code:	KWG1502273-4	**Basis:**	NA
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	524.2		

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Dichlorodifluoromethane	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
Chloromethane	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
Vinyl Chloride	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
Bromomethane	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
Chloroethane	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
Trichlorofluoromethane	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
Methylene Chloride	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
trans-1,2-Dichloroethene	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
1,1-Dichloroethene	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
cis-1,2-Dichloroethene	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
Methyl tert-Butyl Ether	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
Chloroform	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
Bromochloromethane	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
Carbon Tetrachloride	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
Benzene	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
1,2-Dichloroethane	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
Trichloroethene	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
1,2-Dichloropropane	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
Bromodichloromethane	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
Dibromomethane	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
cis-1,3-Dichloropropene	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
1,1-Dichloroethane	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
Toluene	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
trans-1,3-Dichloropropene	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
Tetrachloroethene	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
2,2-Dichloropropane	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
1,3-Dichloropropane	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
Dibromochloromethane	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
1,2-Dibromoethane (EDB)	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
Chlorobenzene	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
Ethylbenzene	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
Styrene	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
m,p-Xylenes	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
o-Xylene	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	

Comments:

Analytical Results

Client:	Longview, City of	**Service Request:**	K1502735
Project:	Mint Farm Monitoring	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA

Volatile Organic Compounds

Sample Name:	Method Blank	**Units:**	ug/L
Lab Code:	KWG1502273-4	**Basis:**	NA
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	524.2		

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
1,1,1-Trichloroethane	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
Bromoform	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
1,1,2,2-Tetrachloroethane	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
Isopropylbenzene	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
1,1-Dichloropropene	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
Bromobenzene	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
n-Propylbenzene	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
1,3,5-Trimethylbenzene	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
2-Chlorotoluene	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
4-Chlorotoluene	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
tert-Butylbenzene	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
1,2,4-Trimethylbenzene	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
sec-Butylbenzene	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
p-Isopropyltoluene	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
1,3-Dichlorobenzene	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
1,4-Dichlorobenzene	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
n-Butylbenzene	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
1,2-Dichlorobenzene	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
1,2-Dibromo-3-chloropropane (DBCP	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
1,2,4-Trichlorobenzene	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
Hexachlorobutadiene	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
Naphthalene	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
1,1,2-Trichloroethane	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
1,1,1,2-Tetrachloroethane	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
1,2,3-Trichloropropane	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
1,2,3-Trichlorobenzene	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
4-Bromofluorobenzene	92	70-130	03/19/15	Acceptable
Dibromofluoromethane	97	82-124	03/19/15	Acceptable
Toluene-d8	96	82-124	03/19/15	Acceptable

Comments:

Client: Longview, City of
Project: Mint Farm Monitoring
Sample Matrix: Drinking water

Service Request: K1502735

Surrogate Recovery Summary
Volatile Organic Compounds

Extraction Method: METHOD
Analysis Method: 524.2

Units: Percent
Level: Low

Sample Name	Lab Code	Sur1	Sur2	Sur3
Batch QC	K1502734-001	93	98	96
Well #2	K1502735-001	95	99	96
Method Blank	KWG1502273-4	92	97	96
Batch QCMS	KWG1502273-1	98	98	96
Batch QCDMS	KWG1502273-2	96	99	97
Lab Control Sample	KWG1502273-3	99	98	95

Surrogate Recovery Control Limits (%)

Sur1	=	4-Bromofluorobenzene	70-130
Sur2	=	Dibromofluoromethane	82-124
Sur3	=	Toluene-d8	82-124

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502735
Project:	Mint Farm Monitoring	**Date Extracted:**	03/19/2015
Sample Matrix:	Drinking water	**Date Analyzed:**	03/19/2015

Matrix Spike/Duplicate Matrix Spike Summary
Volatile Organic Compounds

Sample Name:	Batch QC	**Units:**	ug/L
Lab Code:	K1502734-001	**Basis:**	NA
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	524.2	**Extraction Lot:**	KWG1502273

		Batch QCMS KWG1502273-1 Matrix Spike				Batch QCDMS KWG1502273-2 Duplicate Matrix Spike						
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**%Rec**		**Result**	**Spike Amount**	**%Rec**		**%Rec Limits**	**RPD**	**RPD Limit**
Dichlorodifluoromethane	ND	4.09	5.00	82		4.15	5.00	83		70-130	1	30
Chloromethane	ND	4.66	5.00	93		4.11	5.00	82		70-130	13	30
Vinyl Chloride	ND	2.62	5.00	52	*	2.66	5.00	53	*	70-130	2	30
Bromomethane	ND	3.42	5.00	68	*	3.52	5.00	70		70-130	3	30
Chloroethane	ND	4.66	5.00	93		4.26	5.00	85		70-130	9	30
Trichlorofluoromethane	ND	3.81	5.00	76		3.87	5.00	77		70-130	2	30
Methylene Chloride	ND	4.43	5.00	89		4.63	5.00	93		70-130	4	30
trans-1,2-Dichloroethene	ND	3.87	5.00	77		3.90	5.00	78		70-130	1	30
1,1-Dichloroethene	ND	0.700	5.00	14	*	0.620	5.00	12	*	70-130	12	30
cis-1,2-Dichloroethene	ND	4.31	5.00	86		4.36	5.00	87		70-130	1	30
Methyl tert-Butyl Ether	ND	7.44	10.0	74		7.83	10.0	78		70-130	5	30
Chloroform	ND	4.53	5.00	91		4.62	5.00	92		70-130	2	30
Bromochloromethane	ND	4.28	5.00	86		4.55	5.00	91		70-130	6	30
Carbon Tetrachloride	ND	4.25	5.00	85		4.29	5.00	86		70-130	1	30
Benzene	ND	4.16	5.00	83		4.28	5.00	86		70-130	3	30
1,2-Dichloroethane	ND	4.86	5.00	97		5.23	5.00	105		70-130	7	30
Trichloroethene	ND	3.76	5.00	75		3.82	5.00	76		70-130	2	30
1,2-Dichloropropane	ND	4.26	5.00	85		4.32	5.00	86		70-130	1	30
Bromodichloromethane	ND	4.51	5.00	90		4.63	5.00	93		70-130	3	30
Dibromomethane	ND	4.51	5.00	90		4.61	5.00	92		70-130	2	30
cis-1,3-Dichloropropene	ND	4.00	5.00	80		4.26	5.00	85		70-130	6	30
Toluene	ND	3.94	5.00	79		4.03	5.00	81		70-130	2	30
1,1-Dichloroethane	ND	4.25	5.00	85		4.39	5.00	88		70-130	3	30
trans-1,3-Dichloropropene	ND	3.69	5.00	74		3.90	5.00	78		70-130	6	30
Tetrachloroethene	ND	3.52	5.00	70		3.53	5.00	71		70-130	0	30
1,3-Dichloropropane	ND	4.55	5.00	91		4.67	5.00	93		70-130	3	30
2,2-Dichloropropane	ND	3.88	5.00	78		3.99	5.00	80		70-130	3	30
Dibromochloromethane	ND	4.67	5.00	93		5.06	5.00	101		70-130	8	30
1,2-Dibromoethane (EDB)	ND	4.61	5.00	92		4.81	5.00	96		70-130	4	30
Chlorobenzene	ND	4.28	5.00	86		4.34	5.00	87		70-130	1	30
Ethylbenzene	ND	3.95	5.00	79		3.92	5.00	78		70-130	1	30
Styrene	ND	ND	5.00	0	*	0.700	5.00	14	*	70-130	NC	30
m,p-Xylenes	ND	8.04	10.0	80		8.07	10.0	81		70-130	0	30

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Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Client:	Longview, City of	**Service Request:**	K1502735
Project:	Mint Farm Monitoring	**Date Extracted:**	03/19/2015
Sample Matrix:	Drinking water	**Date Analyzed:**	03/19/2015

Matrix Spike/Duplicate Matrix Spike Summary
Volatile Organic Compounds

Sample Name:	Batch QC	**Units:**	ug/L
Lab Code:	K1502734-001	**Basis:**	NA
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	524.2	**Extraction Lot:**	KWG1502273

		Batch QCMS KWG1502273-1 Matrix Spike				Batch QCDMS KWG1502273-2 Duplicate Matrix Spike					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**%Rec**		**Result**	**Spike Amount**	**%Rec**		**%Rec Limits**	**RPD**	**RPD Limit**
o-Xylene	ND	3.98	5.00	80		4.04	5.00	81		70-130	1	30
1,1,1-Trichloroethane	ND	3.81	5.00	76		3.95	5.00	79		70-130	4	30
Bromoform	ND	4.95	5.00	99		5.26	5.00	105		70-130	6	30
1,1,2,2-Tetrachloroethane	ND	5.27	5.00	105		5.49	5.00	110		70-130	4	30
Isopropylbenzene	ND	3.79	5.00	76		3.77	5.00	75		70-130	1	30
1,1-Dichloropropene	ND	2.93	5.00	59	*	3.05	5.00	61	*	70-130	4	30
Bromobenzene	ND	4.59	5.00	92		4.71	5.00	94		70-130	3	30
n-Propylbenzene	ND	4.50	5.00	90		4.51	5.00	90		70-130	0	30
1,3,5-Trimethylbenzene	ND	4.58	5.00	92		4.64	5.00	93		70-130	1	30
2-Chlorotoluene	ND	4.81	5.00	96		4.90	5.00	98		70-130	2	30
4-Chlorotoluene	ND	4.93	5.00	99		5.01	5.00	100		70-130	2	30
tert-Butylbenzene	ND	4.20	5.00	84		4.23	5.00	85		70-130	1	30
1,2,4-Trimethylbenzene	ND	4.78	5.00	96		4.87	5.00	97		70-130	2	30
sec-Butylbenzene	ND	4.27	5.00	85		4.33	5.00	87		70-130	1	30
p-Isopropyltoluene	ND	4.32	5.00	86		4.32	5.00	86		70-130	0	30
1,3-Dichlorobenzene	ND	4.64	5.00	93		4.78	5.00	96		70-130	3	30
1,4-Dichlorobenzene	ND	4.62	5.00	92		4.75	5.00	95		70-130	3	30
n-Butylbenzene	ND	4.24	5.00	85		4.33	5.00	87		70-130	2	30
1,2-Dichlorobenzene	ND	4.68	5.00	94		4.90	5.00	98		70-130	5	30
1,2-Dibromo-3-chloropropane (DBCP)	ND	5.36	5.00	107		5.82	5.00	116		70-130	8	30
1,2,4-Trichlorobenzene	ND	4.48	5.00	90		4.64	5.00	93		70-130	4	30
Hexachlorobutadiene	ND	4.02	5.00	80		4.19	5.00	84		70-130	4	30
Naphthalene	ND	4.18	5.00	84		4.56	5.00	91		70-130	9	30
1,1,2-Trichloroethane	ND	4.26	5.00	85		4.43	5.00	89		70-130	4	30
1,1,1,2-Tetrachloroethane	ND	5.01	5.00	100		5.09	5.00	102		70-130	2	30
1,2,3-Trichloropropane	ND	4.83	5.00	97		4.95	5.00	99		70-130	2	30
1,2,3-Trichlorobenzene	ND	4.69	5.00	94		4.90	5.00	98		70-130	4	30

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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502735
Project:	Mint Farm Monitoring	**Date Extracted:**	03/19/2015
Sample Matrix:	Water	**Date Analyzed:**	03/19/2015

Lab Control Spike Summary
Volatile Organic Compounds

Extraction Method:	METHOD	**Units:**	ug/L
Analysis Method:	524.2	**Basis:**	NA
		Level:	Low
		Extraction Lot:	KWG1502273

	Lab Control Sample KWG1502273-3 Lab Control Spike			
Analyte Name	**Result**	**Spike Amount**	**%Rec**	**%Rec Limits**
Dichlorodifluoromethane	6.12	5.00	122	70-130
Chloromethane	5.38	5.00	108	70-130
Vinyl Chloride	5.35	5.00	107	70-130
Bromomethane	4.62	5.00	92	70-130
Chloroethane	5.38	5.00	108	70-130
Trichlorofluoromethane	5.74	5.00	115	70-130
Methylene Chloride	4.85	5.00	97	70-130
trans-1,2-Dichloroethene	5.08	5.00	102	70-130
cis-1,2-Dichloroethene	4.92	5.00	98	70-130
1,1-Dichloroethene	5.03	5.00	101	70-130
Methyl tert-Butyl Ether	7.89	10.0	79	70-130
Chloroform	5.04	5.00	101	70-130
Bromochloromethane	4.60	5.00	92	70-130
Carbon Tetrachloride	6.20	5.00	124	70-130
Benzene	4.97	5.00	99	70-130
1,2-Dichloroethane	5.27	5.00	105	70-130
Trichloroethene	4.89	5.00	98	70-130
1,2-Dichloropropane	4.61	5.00	92	70-130
Bromodichloromethane	4.82	5.00	96	70-130
Dibromomethane	4.70	5.00	94	70-130
cis-1,3-Dichloropropene	4.36	5.00	87	70-130
Toluene	4.69	5.00	94	70-130
1,1-Dichloroethane	5.12	5.00	102	70-130
trans-1,3-Dichloropropene	3.98	5.00	80	70-130
Tetrachloroethene	4.72	5.00	94	70-130
1,3-Dichloropropane	4.65	5.00	93	70-130
2,2-Dichloropropane	5.12	5.00	102	70-130
Dibromochloromethane	4.94	5.00	99	70-130
1,2-Dibromoethane (EDB)	4.83	5.00	97	70-130
Chlorobenzene	4.74	5.00	95	70-130
Ethylbenzene	4.82	5.00	96	70-130
Styrene	4.36	5.00	87	70-130
m,p-Xylenes	9.52	10.0	95	70-130
o-Xylene	4.59	5.00	92	70-130
1,1,1-Trichloroethane	5.20	5.00	104	70-130

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Client: Longview, City of
Project: Mint Farm Monitoring
Sample Matrix: Water

Service Request: K1502735
Date Extracted: 03/19/2015
Date Analyzed: 03/19/2015

Lab Control Spike Summary
Volatile Organic Compounds

Extraction Method: METHOD
Analysis Method: 524.2

Units: ug/L
Basis: NA
Level: Low
Extraction Lot: KWG1502273

	Lab Control Sample KWG1502273-3 Lab Control Spike			
Analyte Name	**Result**	**Spike Amount**	**%Rec**	**%Rec Limits**
Bromoform	4.95	5.00	99	70-130
1,1,2,2-Tetrachloroethane	5.49	5.00	110	70-130
Isopropylbenzene	4.91	5.00	98	70-130
1,1-Dichloropropene	5.17	5.00	103	70-130
Bromobenzene	4.98	5.00	100	70-130
n-Propylbenzene	5.79	5.00	116	70-130
1,3,5-Trimethylbenzene	5.43	5.00	109	70-130
2-Chlorotoluene	5.58	5.00	112	70-130
4-Chlorotoluene	5.62	5.00	112	70-130
tert-Butylbenzene	5.47	5.00	109	70-130
1,2,4-Trimethylbenzene	5.43	5.00	109	70-130
sec-Butylbenzene	5.63	5.00	113	70-130
p-Isopropyltoluene	5.49	5.00	110	70-130
1,3-Dichlorobenzene	5.09	5.00	102	70-130
1,4-Dichlorobenzene	4.99	5.00	100	70-130
n-Butylbenzene	5.47	5.00	109	70-130
1,2-Dichlorobenzene	5.06	5.00	101	70-130
1,2-Dibromo-3-chloropropane (DBCP)	5.72	5.00	114	70-130
1,2,4-Trichlorobenzene	4.72	5.00	94	70-130
Hexachlorobutadiene	5.22	5.00	104	70-130
Naphthalene	4.46	5.00	89	70-130
1,1,2-Trichloroethane	4.34	5.00	87	70-130
1,1,1,2-Tetrachloroethane	5.37	5.00	107	70-130
1,2,3-Trichloropropane	5.12	5.00	102	70-130
1,2,3-Trichlorobenzene	4.89	5.00	98	70-130

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Semivolatile Organics by EPA Method 525.2

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Analytical Results

Client:	Longview, City of	**Service Request:**	K1502735
Project:	Mint Farm Monitoring	**Date Collected:**	03/17/2015
Sample Matrix:	Drinking water	**Date Received:**	03/17/2015

Semivolatile Organics by EPA Method 525.2

Sample Name:	Well #2	**Units:**	ug/L
Lab Code:	K1502735-001	**Basis:**	NA
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	525.2		

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Hexachlorocyclopentadiene	ND	U	0.098	1	03/27/15	03/31/15	KWG1502593	*
Fluorene	ND	U	0.049	1	03/27/15	03/31/15	KWG1502593	
Propachlor	ND	U	0.098	1	03/27/15	03/31/15	KWG1502593	
Hexachlorobenzene	ND	U	0.098	1	03/27/15	03/31/15	KWG1502593	
Simazine	ND	U	0.049	1	03/27/15	03/31/15	KWG1502593	
Atrazine	ND	U	0.098	1	03/27/15	03/31/15	KWG1502593	
Metribuzin	ND	U	0.20	1	03/27/15	03/31/15	KWG1502593	
Alachlor	ND	U	0.070	1	03/27/15	03/31/15	KWG1502593	
Bromacil	ND	U	0.20	1	03/27/15	03/31/15	KWG1502593	
Metolachlor	ND	U	0.088	1	03/27/15	03/31/15	KWG1502593	
Butachlor	ND	U	0.098	1	03/27/15	03/31/15	KWG1502593	
Bis(2-ethylhexyl) Adipate	ND	U	0.59	1	03/27/15	03/31/15	KWG1502593	
Bis(2-ethylhexyl) Phthalate	**0.65**		0.59	1	03/27/15	03/31/15	KWG1502593	
Benzo(a)pyrene	ND	U	0.020	1	03/27/15	03/31/15	KWG1502593	

* See Case Narrative

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
1,3-Dimethyl-2-nitrobenzene	93	70-130	03/31/15	Acceptable
Triphenyl Phosphate	84	70-130	03/31/15	Acceptable
Perylene-d12	74	70-130	03/31/15	Acceptable

Comments:

ALS Group USA, Corp. dba ALS Environmental

Analytical Results

Client:	Longview, City of	**Service Request:**	K1502735
Project:	Mint Farm Monitoring	**Date Collected:**	NA
Sample Matrix:	Drinking water	**Date Received:**	NA

Semivolatile Organics by EPA Method 525.2

Sample Name:	Method Blank	**Units:**	ug/L
Lab Code:	KWG1502593-4	**Basis:**	NA
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	525.2		

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Hexachlorocyclopentadiene	ND	U	0.10	1	03/27/15	03/31/15	KWG1502593	*
Fluorene	ND	U	0.050	1	03/27/15	03/31/15	KWG1502593	
Propachlor	ND	U	0.10	1	03/27/15	03/31/15	KWG1502593	
Hexachlorobenzene	ND	U	0.10	1	03/27/15	03/31/15	KWG1502593	
Simazine	ND	U	0.050	1	03/27/15	03/31/15	KWG1502593	
Atrazine	ND	U	0.10	1	03/27/15	03/31/15	KWG1502593	
Metribuzin	ND	U	0.20	1	03/27/15	03/31/15	KWG1502593	
Alachlor	ND	U	0.072	1	03/27/15	03/31/15	KWG1502593	
Bromacil	ND	U	0.20	1	03/27/15	03/31/15	KWG1502593	
Metolachlor	ND	U	0.090	1	03/27/15	03/31/15	KWG1502593	
Butachlor	ND	U	0.10	1	03/27/15	03/31/15	KWG1502593	
Bis(2-ethylhexyl) Adipate	ND	U	0.60	1	03/27/15	03/31/15	KWG1502593	
Bis(2-ethylhexyl) Phthalate	ND	U	0.60	1	03/27/15	03/31/15	KWG1502593	
Benzo(a)pyrene	ND	U	0.020	1	03/27/15	03/31/15	KWG1502593	

* See Case Narrative

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
1,3-Dimethyl-2-nitrobenzene	91	70-130	03/31/15	Acceptable
Triphenyl Phosphate	83	70-130	03/31/15	Acceptable
Perylene-d12	85	70-130	03/31/15	Acceptable

Comments:

Client: Longview, City of
Project: Mint Farm Monitoring
Sample Matrix: Drinking water

Service Request: K1502735

Surrogate Recovery Summary
Semivolatile Organics by EPA Method 525.2

Extraction Method: METHOD
Analysis Method: 525.2

Units: Percent
Level: Low

Sample Name	Lab Code	Sur1	Sur2	Sur3	
Batch QC	K1502734-001	94	86	87	
Well #2	K1502735-001	93	84	74	
Method Blank	KWG1502593-4	91	83	85	
Batch QCMS	KWG1502593-1	96	91	76	
Batch QCDMS	KWG1502593-2	94	92	59	*
Lab Control Sample	KWG1502593-3	87	91	83	

Surrogate Recovery Control Limits (%)

Sur1	=	1,3-Dimethyl-2-nitrobenzene	70-130
Sur2	=	Triphenyl Phosphate	70-130
Sur3	=	Perylene-d12	70-130

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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502735
Project:	Mint Farm Monitoring	**Date Extracted:**	03/27/2015
Sample Matrix:	Drinking water	**Date Analyzed:**	03/31/2015

Matrix Spike/Duplicate Matrix Spike Summary
Semivolatile Organics by EPA Method 525.2

Sample Name:	Batch QC	**Units:**	ug/L
Lab Code:	K1502734-001	**Basis:**	NA
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	525.2	**Extraction Lot:**	KWG1502593

		Batch QCMS KWG1502593-1 Matrix Spike			Batch QCDMS KWG1502593-2 Duplicate Matrix Spike					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**%Rec**	**Result**	**Spike Amount**	**%Rec**	**%Rec Limits**	**RPD**	**RPD Limit**
Hexachlorocyclopentadiene	ND	1.48	0.971	153 *	1.42	0.971	146 *	70-130	4	30
Fluorene	ND	1.06	0.971	109	1.04	0.971	107	70-130	2	30
Propachlor	ND	1.15	0.971	118	1.13	0.971	116	70-130	2	30
Hexachlorobenzene	ND	0.895	0.971	92	0.903	0.971	93	70-130	1	30
Simazine	ND	0.825	0.971	85	0.879	0.971	91	70-130	6	30
Atrazine	ND	0.870	0.971	90	0.942	0.971	97	70-130	8	30
Metribuzin	ND	0.950	0.971	98	1.02	0.971	105	70-130	7	30
Alachlor	ND	0.950	0.971	98	1.01	0.971	104	70-130	6	30
Bromacil	ND	0.978	0.971	101	1.02	0.971	105	70-130	4	30
Metolachlor	ND	1.10	0.971	113	1.15	0.971	119	70-130	5	30
Butachlor	ND	1.08	0.971	111	1.09	0.971	112	70-130	0	30
Bis(2-ethylhexyl) Adipate	ND	1.01	0.971	105	0.994	0.971	102	70-130	2	30
Bis(2-ethylhexyl) Phthalate	ND	1.03	0.971	106	1.05	0.971	108	70-130	2	30
Benzo(a)pyrene	ND	0.364	0.971	38 *	0.204	0.971	21 *	70-130	56 *	30

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Client:	Longview, City of	**Service Request:**	K1502735
Project:	Mint Farm Monitoring	**Date Extracted:**	03/27/2015
Sample Matrix:	Drinking water	**Date Analyzed:**	03/31/2015

Lab Control Spike Summary
Semivolatile Organics by EPA Method 525.2

Extraction Method:	METHOD	**Units:**	ug/L
Analysis Method:	525.2	**Basis:**	NA
		Level:	Low
		Extraction Lot:	KWG1502593

	Lab Control Sample KWG1502593-3 Lab Control Spike			
Analyte Name	**Result**	**Spike Amount**	**%Rec**	**%Rec Limits**
Hexachlorocyclopentadiene	1.41	1.00	141 *	70-130
Fluorene	1.04	1.00	104	70-130
Propachlor	1.20	1.00	120	70-130
Hexachlorobenzene	0.930	1.00	93	70-130
Simazine	1.01	1.00	101	70-130
Atrazine	1.08	1.00	108	70-130
Metribuzin	1.08	1.00	108	70-130
Alachlor	1.07	1.00	107	70-130
Bromacil	1.04	1.00	104	70-130
Metolachlor	1.21	1.00	121	70-130
Butachlor	1.17	1.00	117	70-130
Bis(2-ethylhexyl) Adipate	0.996	1.00	100	70-130
Bis(2-ethylhexyl) Phthalate	1.01	1.00	101	70-130
Benzo(a)pyrene	1.06	1.00	106	70-130

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Endothall by EPA Method 548.1

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Analytical Results

Client:	Longview, City of	**Service Request:**	K1502735
Project:	Mint Farm Monitoring	**Date Collected:**	03/17/2015
Sample Matrix:	Drinking water	**Date Received:**	03/17/2015

Endothall by EPA Method 548.1

Sample Name:	Well #2	**Units:**	ug/L
Lab Code:	K1502735-001	**Basis:**	NA
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	548.1		

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Endothall	ND	U	5.0	1	03/24/15	03/24/15	KWG1502439	

Comments:

ALS Group USA, Corp. dba ALS Environmental

Analytical Results

Client:	Longview, City of	**Service Request:**	K1502735
Project:	Mint Farm Monitoring	**Date Collected:**	NA
Sample Matrix:	Drinking water	**Date Received:**	NA

Endothall by EPA Method 548.1

Sample Name:	Method Blank	**Units:**	ug/L
Lab Code:	KWG1502439-4	**Basis:**	NA
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	548.1		

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Endothall	ND	U	5.0	1	03/24/15	03/24/15	KWG1502439	

Comments:

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502735
Project:	Mint Farm Monitoring	**Date Extracted:**	03/24/2015
Sample Matrix:	Drinking water	**Date Analyzed:**	03/24/2015

Matrix Spike/Duplicate Matrix Spike Summary
Endothall by EPA Method 548.1

Sample Name:	Well #2	**Units:**	ug/L
Lab Code:	K1502735-001	**Basis:**	NA
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	548.1	**Extraction Lot:**	KWG1502439

		Well #2MS KWG1502439-1 Matrix Spike			Well #2DMS KWG1502439-2 Duplicate Matrix Spike					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**%Rec**	**Result**	**Spike Amount**	**%Rec**	**%Rec Limits**	**RPD**	**RPD Limit**
Endothall	ND	90.0	100	90	91.4	100	91	30-142	2	30

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Client:	Longview, City of	**Service Request:**	K1502735
Project:	Mint Farm Monitoring	**Date Extracted:**	03/24/2015
Sample Matrix:	Drinking water	**Date Analyzed:**	03/24/2015

Lab Control Spike Summary
Endothall by EPA Method 548.1

Extraction Method:	METHOD	**Units:**	ug/L
Analysis Method:	548.1	**Basis:**	NA
		Level:	Low
		Extraction Lot:	KWG1502439

	Lab Control Sample KWG1502439-3 Lab Control Spike			
Analyte Name	**Result**	**Spike Amount**	**%Rec**	**%Rec Limits**
Endothall	92.4	100	92	30-142

Results flagged with an asterisk (*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Diquat and Paraquat by EPA Method 549.2

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Analytical Results

Client:	Longview, City of	**Service Request:**	K1502735
Project:	Mint Farm Monitoring	**Date Collected:**	03/17/2015
Sample Matrix:	Drinking water	**Date Received:**	03/17/2015

Diquat and Paraquat by EPA Method 549.2

Sample Name:	Well #2	**Units:**	ug/L
Lab Code:	K1502735-001	**Basis:**	NA
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	549.2		

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Diquat	ND	U	0.40	1	03/24/15	03/24/15	KWG1502408	
Paraquat	ND	U	0.80	1	03/24/15	03/24/15	KWG1502408	

Comments:

Analytical Results

Client:	Longview, City of	**Service Request:**	K1502735
Project:	Mint Farm Monitoring	**Date Collected:**	NA
Sample Matrix:	Drinking water	**Date Received:**	NA

Diquat and Paraquat by EPA Method 549.2

Sample Name:	Method Blank	**Units:**	ug/L
Lab Code:	KWG1502408-5	**Basis:**	NA
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	549.2		

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Diquat	ND	U	0.40	1	03/24/15	03/24/15	KWG1502408	
Paraquat	ND	U	0.80	1	03/24/15	03/24/15	KWG1502408	

Comments:

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502735
Project:	Mint Farm Monitoring	**Date Extracted:**	03/24/2015
Sample Matrix:	Drinking water	**Date Analyzed:**	03/24/2015

Matrix Spike/Duplicate Matrix Spike Summary
Diquat and Paraquat by EPA Method 549.2

Sample Name:	Batch QC	**Units:**	ug/L
Lab Code:	K1502736-001	**Basis:**	NA
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	549.2	**Extraction Lot:**	KWG1502408

		Batch QCMS KWG1502408-1 Matrix Spike			Batch QCDMS KWG1502408-2 Duplicate Matrix Spike					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**%Rec**	**Result**	**Spike Amount**	**%Rec**	**%Rec Limits**	**RPD**	**RPD Limit**
Diquat	ND	13.3	12.0	111	13.1	12.0	110	70-130	1	30
Paraquat	ND	14.5	12.0	121	14.2	12.0	118	70-130	2	30

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Client:	Longview, City of	**Service Request:**	K1502735
Project:	Mint Farm Monitoring	**Date Extracted:**	03/24/2015
Sample Matrix:	Drinking water	**Date Analyzed:**	03/24/2015

Lab Control Spike Summary
Diquat and Paraquat by EPA Method 549.2

Extraction Method:	METHOD	**Units:**	ug/L
Analysis Method:	549.2	**Basis:**	NA
		Level:	Low
		Extraction Lot:	KWG1502408

	Lab Control Sample KWG1502408-4 Lab Control Spike			
Analyte Name	**Result**	**Spike Amount**	**%Rec**	**%Rec Limits**
Diquat	12.5	12.0	104	70-130
Paraquat	13.2	12.0	110	70-130

Results flagged with an asterisk (*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Subcontract Lab Results

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State Certifications: DE ID 11 , MA PA0102 , MD 128 , VA 460157 , WV 343

March 30, 2015

Mr. Gregory Salata
ALS Environmental - Kelso
1317 S. 13th Avenue
Kelso, WA 98626

Certificate of Analysis

Project Name:	**SOCs**	Workorder:	**2060633**
Purchase Order:	**K1502735**	Workorder ID:	**K1502735**

Dear Mr. Salata:

Enclosed are the analytical results for samples received by the laboratory on Friday, March 20, 2015.

The ALS Environmental laboratory in Middletown, Pennsylvania is a National Environmental Laboratory Accreditation Program (NELAP) accredited laboratory and as such, certifies that all applicable test results meet the requirements of NELAP.

If you have any questions regarding this certificate of analysis, please contact Mrs. Kelli L Wolfgang (Project Coordinator) at (717) 944-5541.

Analyses were performed according to our laboratory's NELAP-approved quality assurance program and any applicable state requirements. The test results meet requirements of the current NELAP standards or state requirements, where applicable. For a specific list of accredited analytes, refer to the certifications section of the ALS website at www.alsglobal.com/en/Our-Services/Life-Sciences/Environmental/Downloads.

This laboratory report may not be reproduced, except in full, without the written approval of ALS Environmental.

ALS Spring City: 10 Riverside Drive, Spring City, PA 19475 610-948-4903

CC: Ms. Chris Leaf

This page is included as part of the Analytical Report and must be retained as a permanent record thereof.

Kelli Wolfgang

Mrs. Kelli L Wolfgang
Project Coordinator

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State Certifications: DE ID 11 , MA PA0102 , MD 128 , VA 460157 , WV 343

SAMPLE SUMMARY

Workorder: 2060633 K1502735

Lab ID	Sample ID	Matrix	Date Collected	Date Received	Collected By
2060633001	K1502735-001	Drinking Water	3/17/2015 11:00	3/20/2015 08:47	Collected by Client

Notes

-- Samples collected by ALS personnel are done so in accordance with the procedures set forth in the ALS Field Sampling Plan (20 - Field Services Sampling Plan).
-- All Waste Water analyses comply with methodology requirements of 40 CFR Part 136.
-- All Drinking Water analyses comply with methodology requirements of 40 CFR Part 141.
-- Unless otherwise noted, all quantitative results for soils are reported on a dry weight basis.
-- The Chain of Custody document is included as part of this report.
-- All Library Search analytes should be regarded as tentative identifications based on the presumptive evidence of the mass spectra. Concentrations reported are estimated values.
-- Parameters identified as "analyze immediately" require analysis within 15 minutes of collection. Any "analyze immediately" parameters not listed under the header "Field Parameters" are preformed in the laboratory and are therefore analyzed out of hold time.
-- Method references listed on this report beginning with the prefix “S” followed by a method number (such as S2310B-97) refer to methods from “Standard Methods for the Examination of Water and Wastewater”.

Standard Acronyms/Flags

J	Indicates an estimated value between the Method Detection Limit (MDL) and the Practical Quantitation Limit (PQL) for the analyte
U	Indicates that the analyte was Not Detected (ND)
N	Indicates presumptive evidence of the presence of a compound
MDL	Method Detection Limit
PQL	Practical Quantitation Limit
RDL	Reporting Detection Limit
ND	Not Detected - indicates that the analyte was Not Detected at the RDL
Cntr	Analysis was performed using this container
RegLmt	Regulatory Limit
LCS	Laboratory Control Sample
MS	Matrix Spike
MSD	Matrix Spike Duplicate
DUP	Sample Duplicate
%Rec	Percent Recovery
RPD	Relative Percent Difference
LOD	DoD Limit of Detection
LOQ	DoD Limit of Quantitation
DL	DoD Detection Limit
I	Indicates reported value is greater than or equal to the Method Detection Limit (MDL) but less than the Report Detection Limit (RDL)

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ANALYTICAL RESULTS

Workorder: 2060633 K1502735

Lab ID: **2060633001** Date Collected: 3/17/2015 11:00 Matrix: Drinking Water
Sample ID: **K1502735-001** Date Received: 3/20/2015 08:47

Parameters	Results	Flag	Units	RDL	Method	Prepared By	Analyzed	By	*Cntr*
HERBICIDES									
Glyphosate	ND		ug/L	4.5	EPA 547		3/22/15 16:05	CGS	D
CARBAMATES									
Aldicarb	ND		ug/L	0.26	EPA 531.1		3/27/15 19:42	CGS	A
Aldicarb Sulfone	ND		ug/L	0.32	EPA 531.1		3/27/15 19:42	CGS	A
Aldicarb Sulfoxide	ND		ug/L	0.27	EPA 531.1		3/27/15 19:42	CGS	A
Carbaryl	ND		ug/L	0.29	EPA 531.1		3/27/15 19:42	CGS	A
Carbofuran	ND		ug/L	0.43	EPA 531.1		3/27/15 19:42	CGS	A
3-Hydroxycarbofuran	ND		ug/L	0.27	EPA 531.1		3/27/15 19:42	CGS	A
Methiocarb	ND		ug/L	0.18	EPA 531.1		3/27/15 19:42	CGS	A
Methomyl	ND		ug/L	0.49	EPA 531.1		3/27/15 19:42	CGS	A
Oxamyl	ND		ug/L	0.50	EPA 531.1		3/27/15 19:42	CGS	A
Propoxur	ND		ug/L	0.32	EPA 531.1		3/27/15 19:42	CGS	A

Kelli Wolfgang
Mrs. Kelli L Wolfgang
Project Coordinator

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QUALITY CONTROL DATA

Workorder: 2060633 K1502735

QC Batch: HPLC/3915 **Analysis Method:** EPA 547

QC Batch Method: EPA 547

Associated Lab Samples: 2060633001

METHOD BLANK: 2153468

Parameter	Blank Result	Units	Reporting Limit	Qualifiers
Glyphosate	ND	ug/L	4.5	

LABORATORY CONTROL SAMPLE: 2153469

Parameter	LCS % Rec	Units	Spike Conc.	LCS Result	% Rec Limit	Qualifiers
Glyphosate	99.5	ug/L	500	497	80 - 120	

MATRIX SPIKE SAMPLE: 2153470 ORIGINAL:

****NOTE - The Original Result shown below is a raw result and is only used for the purpose of calculating Matrix Spike percent recoveries. This result is not a final value and cannot be used as such.

Parameter	Original Result	Units	Spike Conc.	MS Result	MS % Rec	% Rec Limit	Qualifiers
Glyphosate	0	ug/L	500	482.285	96.5	70 - 130	

SAMPLE DUPLICATE: 2153471 ORIGINAL:

Parameter	Original Result	Units	DUP Result	RPD	Max RPD	Qualifiers
Glyphosate	0	ug/L	0	NC	40	

MATRIX SPIKE SAMPLE: 2153472 ORIGINAL:

****NOTE - The Original Result shown below is a raw result and is only used for the purpose of calculating Matrix Spike percent recoveries. This result is not a final value and cannot be used as such.

Parameter	Original Result	Units	Spike Conc.	MS Result	MS % Rec	% Rec Limit	Qualifiers
Glyphosate	0	ug/L	500	448.493	89.7	70 - 130	

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State Certifications: DE ID 11 , MA PA0102 , MD 128 , VA 460157 , WV 343

QUALITY CONTROL DATA

Workorder: 2060633 K1502735

QC Batch: HPLC/3918 **Analysis Method:** EPA 531.1

QC Batch Method: EPA 531.1

Associated Lab Samples: 2060633001

LABORATORY CONTROL SAMPLE: 2155517

Parameter	LCS % Rec	Units	Spike Conc.	LCS Result	% Rec Limit	Qualifiers
Aldicarb Sulfoxide	92.8	ug/L	10	9.3	80 - 120	
Aldicarb Sulfone	89.7	ug/L	10	9.0	80 - 120	
Oxamyl	101	ug/L	10	10.1	80 - 120	
Methomyl	95.5	ug/L	10	9.5	80 - 120	
3-Hydroxycarbofuran	99.9	ug/L	10	10	80 - 120	
Aldicarb	102	ug/L	10	10.2	80 - 120	
Propoxur	91	ug/L	10	9.1	80 - 120	
Carbofuran	90.1	ug/L	10	9.0	80 - 120	
Carbaryl	92.2	ug/L	10	9.2	80 - 120	
Methiocarb	88.9	ug/L	10	8.9	80 - 120	

METHOD BLANK: 2155516

Parameter	Blank Result	Units	Reporting Limit	Qualifiers
Aldicarb Sulfoxide	ND	ug/L	0.27	
Aldicarb Sulfone	ND	ug/L	0.32	
Oxamyl	ND	ug/L	0.50	
Methomyl	ND	ug/L	0.49	
3-Hydroxycarbofuran	ND	ug/L	0.27	
Aldicarb	ND	ug/L	0.26	
Propoxur	ND	ug/L	0.32	
Carbofuran	ND	ug/L	0.43	
Carbaryl	ND	ug/L	0.29	
Methiocarb	ND	ug/L	0.18	

SAMPLE DUPLICATE: 2155518 ORIGINAL:

Parameter	Original Result	Units	DUP Result	RPD	Max RPD	Qualifiers
Aldicarb Sulfoxide		ug/L	0	NC	20	
Aldicarb Sulfone		ug/L	0	NC	20	
Oxamyl	0	ug/L	0	NC	20	
Methomyl		ug/L	0	NC	20	
3-Hydroxycarbofuran		ug/L	0	NC	20	

QUALITY CONTROL DATA

Workorder: 2060633 K1502735

Aldicarb		ug/L	0	NC	20
Propoxur		ug/L	0	NC	20
Carbofuran	0	ug/L	0	NC	20
Carbaryl		ug/L	0	NC	20
Methiocarb		ug/L	0	NC	20

MATRIX SPIKE SAMPLE: 2155519 ORIGINAL:

****NOTE - The Original Result shown below is a raw result and is only used for the purpose of calculating Matrix Spike percent recoveries. This result is not a final value and cannot be used as such.

Parameter	Original Result	Units	Spike Conc.	MS Result	MS % Rec	% Rec Limit	Qualifiers
Aldicarb Sulfoxide		ug/L	10	9.89754	99	65 - 135	
Aldicarb Sulfone		ug/L	10	9.09217	90.9	65 - 135	
Oxamyl	0	ug/L	10	10.5484	105	65 - 135	
Methomyl		ug/L	10	9.85644	98.6	65 - 135	
3-Hydroxycarbofuran		ug/L	10	10.4665	105	65 - 135	
Aldicarb		ug/L	10	10.6716	107	65 - 135	
Propoxur		ug/L	10	9.41074	94.1	65 - 135	
Carbofuran	0	ug/L	10	9.32144	93.2	65 - 135	
Carbaryl		ug/L	10	9.47293	94.7	65 - 135	
Methiocarb		ug/L	10	9.21696	92.2	65 - 135	

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State Certifications: DE ID 11 , MA PA0102 , MD 128 , VA 460157 , WV 343

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Workorder: 2060633 K1502735

Lab ID	Sample ID	Prep Method	Prep Batch	Analysis Method	Analysis Batch
2060633001	K1502735-001			EPA 547	HPLC/3915
2060633001	K1502735-001			EPA 531.1	HPLC/3918

KW

ALS Environmental Chain of Custody

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ALS Contact: Chris Leaf

2060633

Project Number: K1502735
Project Manager: Chris Leaf

Lab Code	Sample ID	# of Cont.	Matrix	Sample Date	Sample Time	Lab ID	CARBAM 531.1	GLYPH 547
K1502735-001	Well #2	6	Drinking Water	3/17/15	1100	Middletown ALS	X	X

	Y	N	Initials	Cooler Temp: 2 °C
Custody Seals Present?	✓		KM	
(if present) Seals Intact?	✓			Cooler #
Received on Ice?	✓			
COC/Lbls Complete	✓			Therm ID: TH 291
Cont in Good Cond?	✓			
Correct Containers?	✓			Ship Carrier
Correct Samp Vol?	✓			
Correct Preservation?	✓			FedEx UPS
Headspace/Volatiles?		✓		DHL

Tracking # 5478 9742 6155

Test Comments
CARBAM - 531.1 K1502735-001 Full list for WA Regulations - no compliance report required.

Folder Comments:
Report all metals in mg/L. No DW State form required.

3/20/15 1204 KW 03/24/14

Special Instructions/Comments
Please provide the electronic (PDF and EDD) report to the following e-mail address: ALKLS.Data@alsglobal.com.

H - Test is On Hold P - Test is Authorized for Prep Only

Turnaround Requirements
___ RUSH (Surcharges Apply)
PLEASE CIRCLE WORK DAYS
1 2 3 4 5
✓ STANDARD
Requested FAX Date: _____
Requested Report Date: 04/03/15

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 N
EDD N

Invoice Information
PO# 51K1502735
Bill to

Relinquished By: K Smith 3/19/15 1030 Received By: ALS 3/20/15 0817 Airbill Number:

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State Certification: CT PH-0224, DE ID 11, GA 914, MA PA0102, MD 128, LA 04162, VA 421, WY EPA Region 8, WV 343

QUALITY CONTROL DATA

Workorder **2060633** **Project Name** **K1502735**

QC Batch HPLC / 3915

QC Batch Method EPA 547 **Analysis Method** EPA 547

Associated Lab Samples 2060633001

METHOD BLANK 2153468

Parameter	Blank Result	Qualifiers	Units	Reporting Limit	% Rec	% Rec Limits
Glyphosate	ND	U	ug/L	4.5		

LABORATORY CONTROL SAMPLE 2153469

Parameter	LCS Result	Qualifiers	Units	Spike Conc.	LCS % Rec	% Rec Limits
Glyphosate	497		ug/L	500	99.5	80-120

SAMPLE DUPLICATE 2153471 Original 2058366001

*****NOTE - The Original Result and Duplicate Result shown below are raw results and are only used for the purpose of calculating Sample Duplicate percent recoveries. This result is not a final value and cannot be used as such.*

Parameter	Original Result	Qualifiers	Units	DUP Result	RPD	Max RPD	% Rec	% Rec Limits
Glyphosate	ND	U	ug/L	ND	NC	40		

This is an addendum to the Certificate of Analysis.

MATRIX SPIKE 2153470 Original 2058366001

*****NOTE - The Original Result shown below is a raw result and is only used for the purpose of calculating Matrix Spike percent recoveries. This result is not a final value and cannot be used as such.*

Parameter	Original Result	Qualifiers	Units	Spike Conc.	MS Result	MS % Rec	% Rec Limits
Glyphosate	ND		ug/L	500	482.285	96.5	70-130

MATRIX SPIKE 2153472 Original 2059505001

*****NOTE - The Original Result shown below is a raw result and is only used for the purpose of calculating Matrix Spike percent recoveries. This result is not a final value and cannot be used as such.*

Parameter	Original Result	Qualifiers	Units	Spike Conc.	MS Result	MS % Rec	% Rec Limits
Glyphosate	ND		ug/L	500	448.493	89.7	70-130

QC Batch HPLC / 3918

QC Batch Method EPA 531.1 **Analysis Method** EPA 531.1

Associated Lab Samples 2060633001

METHOD BLANK 2155516

Parameter	Blank Result	Qualifiers	Units	Reporting Limit	% Rec	% Rec Limits
3-Hydroxycarbofuran	ND	U	ug/L	0.27		
Aldicarb	ND	U	ug/L	0.26		
Aldicarb Sulfone	ND	U	ug/L	0.32		
Aldicarb Sulfoxide	ND	U	ug/L	0.27		
Carbaryl	ND	U	ug/L	0.29		
Carbofuran	ND	U	ug/L	0.43		
Methiocarb	ND	U	ug/L	0.18		
Methomyl	ND	U	ug/L	0.49		
Oxamyl	ND	U	ug/L	0.50		
Propoxur	ND	U	ug/L	0.32		

LABORATORY CONTROL SAMPLE 2155517

Parameter	LCS Result	Qualifiers	Units	Spike Conc.	LCS % Rec	% Rec Limits
3-Hydroxycarbofuran	10		ug/L	10	99.9	80-120
Aldicarb	10.2		ug/L	10	102	80-120
Aldicarb Sulfone	9		ug/L	10	89.7	80-120

Aldicarb Sulfoxide	9.3	ug/L	10	92.8	80-120
Carbaryl	9.2	ug/L	10	92.2	80-120
Carbofuran	9	ug/L	10	90.1	80-120
Methiocarb	8.9	ug/L	10	88.9	80-120
Methomyl	9.5	ug/L	10	95.5	80-120
Oxamyl	10.1	ug/L	10	101	80-120
Propoxur	9.1	ug/L	10	91	80-120

SAMPLE DUPLICATE 2155518 Original 2059505001

*****NOTE - The Original Result and Duplicate Result shown below are raw results and are only used for the purpose of calculating Sample Duplicate percent recoveries. This result is not a final value and cannot be used as such.*

Parameter	Original Result	Qualifiers	Units	DUP Result	RPD	Max RPD	% Rec	% Rec Limits
3-Hydroxycarbofuran	ND	U	ug/L	ND	NC	20		
Aldicarb	ND	U	ug/L	ND	NC	20		
Aldicarb Sulfone	ND	U	ug/L	ND	NC	20		
Aldicarb Sulfoxide	ND	U	ug/L	ND	NC	20		
Carbaryl	ND	U	ug/L	ND	NC	20		
Carbofuran	ND	U	ug/L	ND	NC	20		
Methiocarb	ND	U	ug/L	ND	NC	20		
Methomyl	ND	U	ug/L	ND	NC	20		
Oxamyl	ND	U	ug/L	ND	NC	20		
Propoxur	ND	U	ug/L	ND	NC	20		

MATRIX SPIKE 2155519 Original 2061316001

*****NOTE - The Original Result shown below is a raw result and is only used for the purpose of calculating Matrix Spike percent recoveries. This result is not a final value and cannot be used as such.*

Parameter	Original Result	Qualifiers	Units	Spike Conc.	MS Result	MS % Rec	% Rec Limits
3-Hydroxycarbofuran	ND		ug/L	10	10.4665	105	65-135
Aldicarb	ND		ug/L	10	10.6716	107	65-135
Aldicarb Sulfone	ND		ug/L	10	9.09217	90.9	65-135
Aldicarb Sulfoxide	ND		ug/L	10	9.89754	99	65-135
Carbaryl	ND		ug/L	10	9.47293	94.7	65-135
Carbofuran	ND		ug/L	10	9.32144	93.2	65-135
Methiocarb	ND		ug/L	10	9.21696	92.2	65-135
Methomyl	ND		ug/L	10	9.85644	98.6	65-135
Oxamyl	ND		ug/L	10	10.5484	105	65-135
Propoxur	ND		ug/L	10	9.41074	94.1	65-135

Standard Acronyms/Flags	
J	Indicates an estimated value between the Method Detection Limit (MDL) and the Practical Quantitation Limit (PQL) for the analyte
U	Indicates that the analyte was Not Detected (ND)
N	Indicates presumptive evidence of the presence of a compound
MDL	Method Detection Limit
PQL	Practical Quantitation Limit
RDL	Reporting Detection Limit
ND	Not Detected - indicates that the analyte was Not Detected at the RDL
Cntr	Analysis was performed using this container
RegLmt	Regulatory Limit
LCS	Laboratory Control Sample
MS	Matrix Spike
MSD	Matrix Spike Duplicate
DUP	Sample Duplicate
%Rec	Percent Recovery
RPD	Relative Percent Difference
LOD	DoD Limit of Detection
LOQ	DoD Limit of Quantitation
DL	DoD Detection Limit
NC	Not Calculated
*	Result outside of QC limits
DIL	Dilution Factor

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Lab ID	Sample ID	Prep Method	Prep Batch	Analysis Method	Analysis Batch
2059505001	ZZZZZZZZZZ	EPA 531.1	HPLC / 3918	EPA 531.1	HPLC / 3918
2060633001	K1502735-001	EPA 531.1	HPLC / 3918	EPA 531.1	HPLC / 3918
2061316001	ZZZZZZZZZZ	EPA 531.1	HPLC / 3918	EPA 531.1	HPLC / 3918

Lab ID	Sample ID	Prep Method	Prep Batch	Analysis Method	Analysis Batch
2058366001	ZZZZZZZZZZ	EPA 547	HPLC / 3915	EPA 547	HPLC / 3915
2059505001	ZZZZZZZZZZ	EPA 547	HPLC / 3915	EPA 547	HPLC / 3915
2060633001	K1502735-001	EPA 547	HPLC / 3915	EPA 547	HPLC / 3915

LABORATORY REPORT

April 3, 2015

Jeff Coleman
Longview, City of
W/S Operation Center
Longview, WA 98632

RE: Mint Farm Monitoring

Dear Jeff:

Enclosed are the results of the sample submitted to our laboratory on March 20, 2015. For your reference, this analysis has been assigned our service request number K1502735.

All analyses were performed according to our laboratory's NELAP and DoD-ELAP-approved quality assurance program. The test results meet requirements of the current NELAP and DoD-ELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP and DoD-ELAP-accredited analytes, refer to the certifications section at www.alsglobal.com. Results are intended to be considered in their entirety and apply only to the samples analyzed and reported herein.

If you have any questions, please call me at (805) 526-7161.

Respectfully submitted,

ALS | Environmental

Kate Aguilera

By Kate Aguilera at 2:27 pm, Apr 03, 2015

Kate Aguilera
Project Manager

CASE NARRATIVE

The sample was received intact under chain of custody on March 17, 2015 and was stored in accordance with the analytical method requirements. Please refer to the sample acceptance check form for additional information. The results reported herein are applicable only to the condition of the sample at the time of sample receipt.

Hydrogen Sulfide Analysis

The sample was analyzed for hydrogen sulfide using a gas chromatograph equipped with a sulfur chemiluminescence detector (SCD). This method is not included on the laboratory's NELAP, DoD-ELAP, or AIHA-LAP scope of accreditation.

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 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.

ALS Environmental – Simi Valley

CERTIFICATIONS, ACCREDITATIONS, AND REGISTRATIONS

Agency	Web Site	Number
AIHA	http://www.aihaaccreditedlabs.org	101661
Arizona DHS	http://www.azdhs.gov/lab/license/env.htm	AZ0694
DoD ELAP	http://www.pjlabs.com/search-accredited-labs	L14-2
Florida DOH (NELAP)	http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm	E871020
Maine DHHS	http://www.maine.gov/dhhs/mecdc/environmental-health/water/dwp-services/labcert/labcert.htm	2014025
Minnesota DOH (NELAP)	http://www.health.state.mn.us/accreditation	876241
New Jersey DEP (NELAP)	http://www.nj.gov/dep/oqa/	CA009
New York DOH (NELAP)	http://www.wadsworth.org/labcert/elap/elap.html	11221
Oregon PHD (NELAP)	http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Pages/index.aspx	4068-001
Pennsylvania DEP	http://www.depweb.state.pa.us/labs	68-03307 (Registration)
Texas CEQ (NELAP)	http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html	T104704413-14-5
Utah DOH (NELAP)	http://www.health.utah.gov/lab/labimp/certification/index.html	CA016272014-4
Washington DOE	http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html	C946

Analyses were performed according to our laboratory's NELAP and DoD-ELAP approved quality assurance program. A complete listing of specific NELAP and DoD-ELAP certified analytes can be found in the certifications section at www.alsglobal.com, or at the accreditation body's website.

Each of the certifications listed above have an explicit Scope of Accreditation that applies to specific matrices/methods/analytes; therefore, please contact the laboratory for information corresponding to a particular certification.

Intra-Network Chain of Custody

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

ALS Contact: Chris Leaf

Project Name: Mint Farm Monitoring
Project Number:
Project Manager: Jeff Coleman
Company: Longview, City of

Lab Code	Client Sample ID	# of Cont.	Matrix	Sample Date	Sample Time	Date Received	Send To	Sulfur Sulfur Liq
K1502735-001	Well #2	3	Drinking Water	3/17/15	1100	3/17/15	SIMIVALLEY	II

Test Comments

Sulfur - Sulfur Liq K1502735-001 Hydrogen Sulfide

Folder Comments:

Report all metals in mg/L. No DW State form required.

TEMP BLANK 3°C

Special Instructions/Comments

Please provide the electronic (PDF and EDD) report to the following e-mail address: ALKLS.Data@alsglobal.com.

pH Checked _____

Turnaround Requirements

____ RUSH (Surcharges Apply)

PLEASE CIRCLE WORK DAYS

1 2 3 4 5

✓ STANDARD

Requested FAX Date: _____

Requested Report Date: 04/03/15

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 N

EDD N

Invoice Information

PO# 51K1502735

Bill to

Relinquished By: [signature] 3/19/15 1030 Received By: [signature] 3/20/15 0945 Airbill Number:

TEMP BLANK: 3°C

ALS Environmental
Sample Acceptance Check Form

Client: Longview, City of Work order: K1502735

Project: Mint Farm Monitoring

Sample(s) received on: 3/17/15 Date opened: 3/17/15 by: SWOLF

Note: This form is used for all samples received by ALS. The use of this form for custody seals is strictly meant to indicate presence/absence and not as an indication of compliance or nonconformity. Thermal preservation and pH will only be evaluated either at the request of the client and/or as required by the method/SOP.

		Yes	No	N/A
1	Were **sample containers** properly marked with client sample ID?	☒	☐	☐
2	Container(s) **supplied by ALS**?	☐	☒	☐
3	Did **sample containers** arrive in good condition?	☒	☐	☐
4	Were **chain-of-custody** papers used and filled out?	☒	☐	☐
5	Did **sample container labels** and/or tags agree with custody papers?	☒	☐	☐
6	Was **sample volume** received adequate for analysis?	☒	☐	☐
7	Are samples within specified holding times?	☒	☐	☐
8	Was proper **temperature** (thermal preservation) of cooler at receipt adhered to?	☒	☐	☐
	Cooler Temperature: ° C Blank Temperature: 3° C			
9	Was a **trip blank** received?	☒	☐	☐
10	Were **custody seals** on outside of cooler/Box?	☒	☐	☐
	Location of seal(s)? _____ Sealing Lid?	☒	☐	☐
	Were signature and date included?	☒	☐	☐
	Were seals intact?	☒	☐	☐
	Were custody seals on outside of sample container?	☐	☒	☐
	Location of seal(s)? _____ Sealing Lid?	☐	☐	☒
	Were signature and date included?	☐	☐	☒
	Were seals intact?	☐	☐	☒
11	Do containers have appropriate **preservation**, according to method/SOP or Client specified information?	☒	☐	☐
	Is there a client indication that the submitted samples are **pH** preserved?	☐	☐	☒
	Were **VOA vials** checked for presence/absence of air bubbles?	☒	☐	☐
	Does the client/method/SOP require that the analyst check the sample pH and if necessary alter it?	☒	☐	☐
12	**Tubes:** Are the tubes capped and intact?	☐	☐	☒
	Do they contain moisture?	☐	☐	☒
13	**Badges:** Are the badges properly capped and intact?	☐	☐	☒
	Are dual bed badges separated and individually capped and intact?	☐	☐	☒

Lab Sample ID	Container Description	Required pH *	Received pH	Adjusted pH	VOA Headspace (Presence/Absence)	Receipt / Preservation Comments
K1502735-001.24	40mL VOA NP		7	1	A	MC 3/31/2015
K1502735-001.25	40mL VOA NP				A	
K1502735-001.35	40mL VOA NP				A	

RSK - MEEPP, HCL (pH<2); RSK - CO2, (pH 5-8); Sulfur (pH>4)

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RESULTS OF ANALYSIS

Client: **Longview, City of**
Client Project ID: **Mint Farm Monitoring** ALS Project ID: K1502735

Hydrogen Sulfide

Test Code: GC/SCD Reduced Sulfur Analysis
Instrument ID: Agilent 7890A/GC22/SCD Date(s) Collected: 3/17/15
Analyst: Mike Conejo Date Received: 3/17/15
Sample Type: Drinking Water Date Analyzed: 3/31/15
Test Notes:

Client Sample ID	ALS Sample ID	Sample Amount ml(s)	Purge Volume Liter(s)	Injection Volume ml(s)	**Result µg/L**	MRL µg/L	Data Qualifier
Well #2	K1502735-001	10.0	0.30	1.00	ND	0.21	
Method Blank	P150331-MB	10.0	0.30	1.00	ND	0.21	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

LABORATORY CONTROL SAMPLE / DUPLICATE LABORATORY CONTROL SAMPLE SUMMARY

Client: **Longview, City of**
Client Sample ID: **Duplicate Lab Control Sample**
Client Project ID: **Mint Farm Monitoring**

ALS Project ID: K1502735
ALS Sample ID: P150331-DLCS

Test Code: GC/SCD Reduced Sulfur Analysis
Instrument ID: Agilent 7890A/GC22/SCD
Analyst: Mike Conejo
Sample Type: Drinking Water
Test Notes:

Date Collected: NA
Date Received: NA
Date Analyzed: 3/31/15
Liquid Amount: 10.0 ml(s)
Purge Volume: 0.30 Liter(s)
Injection Volume: 0.20 ml(s)

CAS #	Compound	Spike Amount LCS / DLCS ug/L	Result LCS ug/L	Result DLCS ug/L	% Recovery LCS	% Recovery DLCS	ALS Acceptance Limits	RPD	RPD Limit	Data Qualifier
7783-06-4	Hydrogen Sulfide	416	453	428	**109**	**103**	54-133	6	20	

ALS Environmental
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www.alsglobal.com

April 24, 2015

Analytical Report for Service Request No: K1502736

Jeff Coleman
Longview, City of
W/S Operation Center
P.O. Box 128
Longview, WA 98632

RE: Mint Farm Monitoring

Dear Jeff,

Enclosed are the results of the sample(s) submitted to our laboratory March 17, 2015
For your reference, these analyses have been assigned our service request number **K1502736.**

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 3275. You may also contact me via email at Chris.Leaf@ALSGlobal.com.

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental

Chris Leaf
Project Manager

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 DEC UST	http://dec.alaska.gov/applications/eh/ehllabreports/USTLabs.aspx	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	L14-51
Florida DOH	http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm	E87412
Hawaii DOH	Not available	-
Idaho DHW	http://www.healthandwelfare.idaho.gov/Health/Labs/CertificationDrinkingWaterLabs/tabid/1833/Default.aspx	-
ISO 17025	http://www.pjlabs.com/	L14-50
Louisiana DEQ	http://www.deq.louisiana.gov/portal/DIVISIONS/PublicParticipationandPermitSupport/LouisianaLaboratoryAccreditationProgram.aspx	03016
Maine DHS	Not available	WA01276
Michigan DEQ	http://www.michigan.gov/deq/0,1607,7-135-3307_4131_4156---,00.html	9949
Minnesota DOH	http://www.health.state.mn.us/accreditation	053-999-457
Montana DPHHS	http://www.dphhs.mt.gov/publichealth/	CERT0047
Nevada DEP	http://ndep.nv.gov/bsdw/labservice.htm	WA01276
New Jersey DEP	http://www.nj.gov/dep/oqa/	WA005
North Carolina DWQ	http://www.dwqlab.org/	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/envserv/	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
Wisconsin DNR	http://dnr.wi.gov/	998386840
Wyoming (EPA Region 8)	http://www.epa.gov/region8/water/dwhome/wyomingdi.html	-
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/anlayte is offered by that state.

Case Narrative

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

ALS ENVIRONMENTAL

Client:	Longview, City of	**Service Request No.:**	K1502736
Project:	Mint Farm Monitoring	**Date Received:**	03/17/15
Sample Matrix:	Drinking Water		

Case Narrative

All analyses were performed consistent with the quality assurance program of ALS Environmental. This report contains analytical results for samples designated for Tier II data deliverables. When appropriate to the method, method blank results have been reported with each analytical test. Surrogate recoveries have been reported for all applicable organic analyses. Additional quality control analyses reported herein include: Laboratory Duplicate (DUP), Matrix Spike (MS), Matrix/Duplicate Matrix Spike (MS/DMS), Laboratory Control Sample (LCS), and Laboratory/Duplicate Laboratory Control Sample (LCS/DLCS).

Sample Receipt

One drinking water sample was received for analysis at ALS Environmental on 03/17/15. The sample was received in good condition and consistent with the accompanying chain of custody form. The sample was stored in a refrigerator at 4ºC upon receipt at the laboratory.

General Chemistry Parameters

No anomalies associated with the analysis of this sample were observed.

Total Metals

No anomalies associated with the analysis of this sample were observed.

Chlorinated Phenolics Organic Compounds by EPA Method 1653A

No anomalies associated with the analysis of this sample were observed.

EDB and DBCP by EPA Method 504.1

No anomalies associated with the analysis of this sample were observed.

Pesticides and Polychlorinated Biphenyls by EPA Method 508.1

Matrix Spike Recovery Exceptions:
The matrix spike and duplicate matrix spike recovery of Aroclor 1248 for sample Well #1 was outside control criteria. Recovery in the Laboratory Control Sample (LCS) was acceptable, which indicated the analytical batch was in control. The matrix spike outlier suggested a potential low bias in this matrix. No further corrective action was appropriate.

No other anomalies associated with the analysis of this sample were observed.

Approved by_____

Chlorinated Acides by EPA Method 515.4

Second Source Exceptions:
The analysis of Chlorinated Herbicides in Drinking Water by EPA 515.4 requires the use of dual column confirmation. The Initial Calibration Verification (ICV) evaluation criteria were not met on the confirmation column for 2,4,5-TP (Silvex) in CAL13913. The ICV criteria were met on the alternate column. The data quality was not affected. No further corrective action was necessary.

Calibration Verification Exceptions:
The analysis of Chlorinated Herbicides in Drinking Water by EPA 515.4 requires the use of dual column confirmation. When the Continuing Calibration Verification (CCV) criterion is met for both columns, the lower of the two sample results is generally reported. The primary evaluation criteria were not met on the confirmation column for Dalapon and Acifluorfen. The results were reported from the column with an acceptable CCV. The data quality was not affected. No further corrective action was necessary.

No other anomalies associated with the analysis of this sample were observed.

Volatile Organic Compounds by EPA Method 524.2

Matrix Spike Recovery Exceptions:
The replicate Matrix Spikes recoveries of several analytes for sample Batch QC were outside control criteria. Recoveries in the Laboratory Control Sample (LCS) were acceptable, which indicated the analytical batch was in control. The matrix spike outliers suggested a potential low bias in this matrix. No further corrective action was appropriate.

Sample Notes and Discussion:
The sample Well #3 had a pH of 6.

No other anomalies associated with the analysis of this sample were observed.

Semivolatile Organic Compounds by EPA Method 525.2

Surrogate Exceptions:
The control criteria were exceeded for perylene-d12 in DMS KWG1502593-2. The associated lab control spike recoveries of target compounds were in control, indicating the analysis was in control. The surrogate outlier was flagged accordingly. No further corrective action was appropriate.

Matrix Spike Recovery and Relative Percent Difference Exceptions:
The upper control criterion was exceeded for the following analyte in Matrix Spike (MS) KWG1502593-1 and Matrix Spike Duplicate (MSD) KWG1502593-2: Hexachlorocyclopentadiene. The analyte in question was not detected in the associated field samples. The error associated with elevated recovery indicated a high bias. The sample data was not significantly affected. No further corrective action was appropriate.

The matrix spike and duplicate matrix spike recovery of Benzo(a)pyrene for sample Well #1 was outside control criteria. The Relative Percent Difference (RPD) for Benzo(a)pyrene in the replicate matrix spike analyses of Well #1 was also outside control criteria. Recovery in the Laboratory Control Sample (LCS) was acceptable, which indicated the analytical batch was in control. The matrix spike outlier suggested a potential low bias in this matrix. No further corrective action was appropriate.

Approved by_____

Semivolatile Organic Compounds by EPA Method 525.2 (cont.)

Lab Control Sample Exceptions:
The upper control criterion was exceeded for Hexachlorocyclopentadiene in Laboratory Control Sample (LCS) KWG1502593-3. The analyte in question was not detected in the associated field samples. The error associated with elevated recovery indicated a high bias. The sample data was not significantly affected. No further corrective action was appropriate.

No other anomalies associated with the analysis of this sample were observed.

Endothall by EPA Method 548.1

No anomalies associated with the analysis of this sample were observed.

Diquat by High Performance Liquid Chromatography

No anomalies associated with the analysis of this sample were observed.

Sulfur

This analysis was performed at ALS Environmental, Simi Valley, CA. The data for this analysis is included in the corresponding section of this report.

Glyphosate and Carbamates

These analyses were performed at ALS Environmental, Middletown, PA. The data for these analyses are included in the corresponding section of this report.

Approved by_____

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

ALS Environmental

CHAIN OF CUSTODY

58080

001, 005

SR# 1151827 36

COC Set_____of_____

COC#_____

1317 South 13th Ave, Kelso, WA 98626 Phone (360) 577-7222 / 800-695-7222 / FAX (360) 636-1068
www.alsglobal.com

Project Name: Mint Farm Monitoring
Project Number:
Project Manager: Jeff Coleman
Company: City of Longview
Address: PO Box 128 Longview WA 98632
Phone #
email
Sampler Signature: T Daly
Sampler Printed Name: T Daly

CLIENT SAMPLE ID	LABID	SAMPLING Date	SAMPLING Time	Matrix	NUMBER OF CONTAINERS	6H: SM 9223 B / Coli L (+/-)	48H: 180.1 / Turbidity	48H: 300.0 / NO2	48H: 300.0 / NO3	48H: SM 2120 B / Color	48H: SM 4500-P E / O Phos	7D: 548.1 / ENDO	7D: 549.2 / DIQ_PARAQ	7D: SM 2540 C / TDS	14D: 335.4 / CN T	14D: 504.1 / EDB DBCP 123TCP	14D: 508.1 / PEST_CL	14D: 515.4 / CL_ACID_HERB	14D: 524.2 / VOC	14D: 525.2 / SVO	14D: 547 / GLYPH	14D: SM 2320 B / Alkalinity Titr	14D: Sulfur Liq / Sulfur	28D: 300.0 / Br	28D: 300.0 / SO4	28D: 531.1 / CARBAM	28D: SM 2510 B / Conductivity	28D: SM 4500-NH3 G / Ammonia	Remarks
1. Well #3		3/17/15	1315		39																									
2.																														
3.																														
4.																														
5.																														
6.																														
7.																														
8.																														
9.																														
10.																														

Report Requirements

___ I. Routine Report: Method Blank, Surrogate, as required

___ II. Report Dup., MS, MSD as required

___ III. CLP Like Summary (no raw data)

___ IV. Data Validation Report

___ V. EDD

Invoice Information

P.O.# 36-45 74

Bill To: City of Longview
PO Box 128
Longview WA 98632

Turnaround Requirements

____ 24 hr. ____ 48 hr.
____ 5 Day
____ Standard

Requested Report Date

Circle which metals are to be analyzed

Total Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

Dissolved Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

Special Instructions/Comments:

*Indicate State Hydrocarbon Procedure: AK CA WI Northwest Other_____(Circle One)

Relinquished By:	Received By:	Relinquished By:	Received By:	Relinquished By:	Received By:
T Daly	H Smith				
Signature	Signature	Signature	Signature	Signature	Signature
T Daly	H Smith				
Printed Name	Printed Name	Printed Name	Printed Name	Printed Name	Printed Name
CofL	ALS				
Firm	Firm	Firm	Firm	Firm	Firm
3/17/15 1453	3/17/15 1453				
Date/Time	Date/Time	Date/Time	Date/Time	Date/Time	Date/Time

ALS Environmental

CHAIN OF CUSTODY

58080

001, 005

SR# K1502730

COC Set_____of_____

COC#_____

1317 South 13th Ave, Kelso, WA 98626 Phone (360) 577-7222 / 800-695-7222 / FAX (360) 636-1068
www.alsglobal.com

Project Name: Mint Farm Monitoring
Project Number:
Project Manager: Jeff Coleman
Company: City of Longview
Address: PO Box 128 Longview WA 98632
Phone #:
email:
Sampler Signature: T Daly
Sampler Printed Name: T Daly

CLIENT SAMPLE ID	LABID	SAMPLING Date Time	Matrix	NUMBER OF CONTAINERS	28D: 245.1 / Hg T	28D: 300.0 / Chloride	28D: 300.0 / F	28D: 314.0 / ClO4	30D: 1653A / CHLOR_PHEN	180D: 1630 / Methyl Hg T	180D: 200.7 / Metals T	180D: 200.8 / Metals T	999D: Calculation / NO2 NO3 Calc	999D: SM 2340 B / Hardness Calc	1	2	3	4	5	Remarks
1. Well #3		3/17/15 1315		39																
2.																				
3.																				
4.																				
5.																				
6.																				
7.																				
8.																				
9.																				
10.																				

Report Requirements

___ I. Routine Report: Method Blank, Surrogate, as required

___ II. Report Dup., MS, MSD as required

___ III. CLP Like Summary (no raw data)

___ IV. Data Validation Report

___ V. EDD

Invoice Information

P.O.# 36-4574

Bill To: City of Longview
PO Box 128
Longview WA 98632

Turnaround Requirements

___ 24 hr. ___ 48 hr.
___ 5 Day
___ Standard

Requested Report Date

Circle which metals are to be analyzed

Total Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

Dissolved Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

Special Instructions/Comments:

*Indicate State Hydrocarbon Procedure: AK CA WI Northwest Other_____(Circle One)

Relinquished By:	Received By:	Relinquished By:	Received By:	Relinquished By:	Received By:
T Daly	K Smith				
Signature	Signature	Signature	Signature	Signature	Signature
T Daly	K Smith				
Printed Name	Printed Name	Printed Name	Printed Name	Printed Name	Printed Name
CoR	ALS				
Firm	Firm	Firm	Firm	Firm	Firm
3/17/15 1453	3/17/15 1453				
Date/Time	Date/Time	Date/Time	Date/Time	Date/Time	Date/Time

PC CL

Cooler Receipt and Preservation Form

Client / Project: Longview Service Request *K15* 02736

Received: 3/17/15 Opened: 3/17/15 By: LL Unloaded: 3/17/15 By: LL

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

   If present, were custody seals intact? Y N If present, were they signed and dated? Y N

Raw Cooler Temp	Corrected. Cooler Temp	Raw Temp Blank	Corrected Temp Blank	Corr. Factor	Thermometer ID	Cooler/COC ID NA	Tracking Number NA	Filed
1.9	2.0	9.9	10.0	+0.1	347	Well 3	/	
6.4	6.3	—	—	-0.1	325	⊥	/	

4. Packing material: *Inserts* *Baggies* *Bubble Wrap* *Gel Packs* *Wet Ice* *Dry Ice* *Sleeves* _____
5. Were custody papers properly filled out (ink, signed, etc.)? NA Y N
6. Did all bottles arrive in good condition (unbroken)? *Indicate in the table below.* 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.* NA Y N
9. 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: Insufficient time for samples to chill completely.

Page _____ ***of*** _____

General Chemistry

ALS Environmental—Kelso Laboratory
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www.alsglobal.com

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client:	Longview, City of	**Service Request:**	K1502736
Project:	Mint Farm Monitoring	**Date Collected:**	03/17/15
Sample Matrix:	Drinking Water	**Date Received:**	03/17/15
Analysis Method:	180.1	**Units:**	NTU
Prep Method:	None	**Basis:**	NA

Turbidity

Sample Name	Lab Code	Result	MRL	Dil.	Date Analyzed	Q
Well #3	K1502736-001	**4.18**	0.20	1	03/18/15 11:16	
Method Blank	K1502736-MB1	ND U	0.20	1	03/18/15 11:16	

ALS Group USA, Corp.
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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502736
Project	Mint Farm Monitoring	**Date Collected:**	NA
Sample Matrix:	Drinking Water	**Date Received:**	NA
Analysis Method:	180.1	**Units:**	NTU
Prep Method:	None	**Basis:**	NA

Replicate Sample Summary
Turbidity

Sample Name:	Lab Code:	MRL	Sample Result	Duplicate Result	Average	RPD	RPD Limit	Date Analyzed
Batch QC	K1502718-001DUP	0.20	20.7	20.2	20.5	2	20	03/18/15
Batch QC	K1502771-002DUP	0.20	0.28	0.29	0.282	2	20	03/18/15

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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502736
Project:	Mint Farm Monitoring	**Date Analyzed:**	03/18/15
Sample Matrix:	Drinking Water	**Date Extracted:**	NA

Lab Control Sample Summary
Turbidity

Analysis Method:	180.1	**Units:**	NTU
Prep Method:	None	**Basis:**	NA
		Analysis Lot:	436967

Sample Name	Lab Code	Result	Spike Amount	% Rec	% Rec Limits
Lab Control Sample	K1502736-LCS	6.02	6.37	95	90-110

ALS Group USA, Corp.
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Analytical Report

Client:	Longview, City of	**Service Request:**	K1502736
Project:	Mint Farm Monitoring	**Date Collected:**	03/17/15
Sample Matrix:	Drinking Water	**Date Received:**	03/17/15
Analysis Method:	300.0	**Units:**	mg/L
Prep Method:	Method	**Basis:**	NA

Bromide

Sample Name	Lab Code	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Well #3	K1502736-001	ND U	0.20	2	03/18/15 10:24	3/18/15	
Method Blank	K1502736-MB1	ND U	0.10	1	03/18/15 09:31	3/18/15	

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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502736
Project	Mint Farm Monitoring	**Date Collected:**	NA
Sample Matrix:	Drinking Water	**Date Received:**	NA
Analysis Method:	300.0	**Units:**	mg/L
Prep Method:	Method	**Basis:**	NA

Replicate Sample Summary
Bromide

Sample Name:	Lab Code:	MRL	Sample Result	Duplicate Result	Average	RPD	RPD Limit	Date Analyzed
Batch QC	K1502734-001DUP	0.20	ND U	ND U	NC	NC	20	03/18/15
Batch QC	K1502735-001DUP	0.20	ND U	ND U	NC	NC	20	03/18/15

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ALS Group USA, Corp.
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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502736
Project:	Mint Farm Monitoring	**Date Collected:**	N/A
Sample Matrix:	Drinking Water	**Date Received:**	N/A
		Date Analyzed:	03/18/15
		Date Extracted:	03/18/15

Duplicate Matrix Spike Summary
Bromide

Sample Name:	Batch QC	**Units:**	mg/L
Lab Code:	K1502734-001	**Basis:**	NA
Analysis Method:	300.0		
Prep Method:	Method		

		Matrix Spike			**Duplicate Matrix Spike**					
		K1502734-001MS			K1502734-001DMS					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Bromide	ND U	3.62	4.00	90	3.63	4.00	91	90-110	<1	20

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ALS Group USA, Corp.
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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502736
Project:	Mint Farm Monitoring	**Date Collected:**	N/A
Sample Matrix:	Drinking Water	**Date Received:**	N/A
		Date Analyzed:	03/18/15
		Date Extracted:	03/18/15

Duplicate Matrix Spike Summary
Bromide

Sample Name:	Batch QC	**Units:**	mg/L
Lab Code:	K1502735-001	**Basis:**	NA
Analysis Method:	300.0		
Prep Method:	Method		

		Matrix Spike K1502735-001MS			**Duplicate Matrix Spike** K1502735-001DMS					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Bromide	ND U	3.64	4.00	91	3.68	4.00	92	90-110	<1	20

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ALS Group USA, Corp.
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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502736
Project:	Mint Farm Monitoring	**Date Analyzed:**	03/18/15
Sample Matrix:	Drinking Water	**Date Extracted:**	03/18/15

Lab Control Sample Summary
Bromide

Analysis Method:	300.0	**Units:**	mg/L
Prep Method:	Method	**Basis:**	NA
		Analysis Lot:	436896

Sample Name	Lab Code	Result	Spike Amount	% Rec	% Rec Limits
Lab Control Sample	K1502736-LCS	2.30	2.50	92	90-110

ALS Group USA, Corp.
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Analytical Report

Client:	Longview, City of	**Service Request:**	K1502736
Project:	Mint Farm Monitoring	**Date Collected:**	03/17/15
Sample Matrix:	Drinking Water	**Date Received:**	03/17/15
Analysis Method:	300.0	**Units:**	mg/L
Prep Method:	Method	**Basis:**	NA

Chloride

Sample Name	Lab Code	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Well #3	K1502736-001	**25.7**	2.0	10	03/18/15 13:02	3/18/15	
Method Blank	K1502736-MB1	ND U	0.20	1	03/18/15 09:31	3/18/15	

ALS Group USA, Corp.
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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502736
Project	Mint Farm Monitoring	**Date Collected:**	NA
Sample Matrix:	Drinking Water	**Date Received:**	NA
Analysis Method:	300.0	**Units:**	mg/L
Prep Method:	Method	**Basis:**	NA

Replicate Sample Summary
Chloride

Sample Name:	Lab Code:	MRL	Sample Result	Duplicate Result	Average	RPD	RPD Limit	Date Analyzed
Batch QC	K1502734-001DUP	0.40	6.04	6.07	6.06	<1	20	03/18/15
Batch QC	K1502735-001DUP	0.40	5.70	5.63	5.66	1	20	03/18/15

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ALS Group USA, Corp.
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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502736
Project:	Mint Farm Monitoring	**Date Collected:**	N/A
Sample Matrix:	Drinking Water	**Date Received:**	N/A
		Date Analyzed:	03/18/15
		Date Extracted:	03/18/15

Duplicate Matrix Spike Summary
Chloride

Sample Name:	Batch QC	**Units:**	mg/L
Lab Code:	K1502734-001	**Basis:**	NA
Analysis Method:	300.0		
Prep Method:	Method		

		Matrix Spike K1502734-001MS			Duplicate Matrix Spike K1502734-001DMS					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Chloride	6.04	10.2	4.00	104	10.2	4.00	103	90-110	<1	20

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ALS Group USA, Corp.
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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502736
Project:	Mint Farm Monitoring	**Date Collected:**	N/A
Sample Matrix:	Drinking Water	**Date Received:**	N/A
		Date Analyzed:	03/18/15
		Date Extracted:	03/18/15

Duplicate Matrix Spike Summary
Chloride

Sample Name:	Batch QC	**Units:**	mg/L
Lab Code:	K1502735-001	**Basis:**	NA
Analysis Method:	300.0		
Prep Method:	Method		

		Matrix Spike K1502735-001MS			**Duplicate Matrix Spike** K1502735-001DMS					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Chloride	5.70	9.72	4.00	101	9.78	4.00	102	90-110	<1	20

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ALS Group USA, Corp.
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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502736
Project:	Mint Farm Monitoring	**Date Analyzed:**	03/18/15
Sample Matrix:	Drinking Water	**Date Extracted:**	03/18/15

Lab Control Sample Summary
Chloride

Analysis Method:	300.0	**Units:**	mg/L
Prep Method:	Method	**Basis:**	NA
		Analysis Lot:	436896

Sample Name	Lab Code	Result	Spike Amount	% Rec	% Rec Limits
Lab Control Sample	K1502736-LCS	4.71	5.00	94	90-110

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client:	Longview, City of	**Service Request:**	K1502736
Project:	Mint Farm Monitoring	**Date Collected:**	03/17/15
Sample Matrix:	Drinking Water	**Date Received:**	03/17/15
Analysis Method:	300.0	**Units:**	mg/L
Prep Method:	Method	**Basis:**	NA

Fluoride

Sample Name	Lab Code	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Well #3	K1502736-001	ND U	0.20	2	03/18/15 10:24	3/18/15	
Method Blank	K1502736-MB1	ND U	0.10	1	03/18/15 09:31	3/18/15	

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502736
Project	Mint Farm Monitoring	**Date Collected:**	NA
Sample Matrix:	Drinking Water	**Date Received:**	NA
Analysis Method:	300.0	**Units:**	mg/L
Prep Method:	Method	**Basis:**	NA

Replicate Sample Summary
Fluoride

Sample Name:	Lab Code:	MRL	Sample Result	Duplicate Result	Average	RPD	RPD Limit	Date Analyzed
Batch QC	K1502734-001DUP	0.20	ND U	ND U	NC	NC	20	03/18/15
Batch QC	K1502735-001DUP	0.20	ND U	ND U	NC	NC	20	03/18/15

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ALS Group USA, Corp.
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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502736
Project:	Mint Farm Monitoring	**Date Collected:**	N/A
Sample Matrix:	Drinking Water	**Date Received:**	N/A
		Date Analyzed:	03/18/15
		Date Extracted:	03/18/15

Duplicate Matrix Spike Summary
Fluoride

Sample Name:	Batch QC	**Units:**	mg/L
Lab Code:	K1502734-001	**Basis:**	NA
Analysis Method:	300.0		
Prep Method:	Method		

		Matrix Spike K1502734-001MS			**Duplicate Matrix Spike** K1502734-001DMS					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Fluoride	ND U	4.10	4.00	102	4.19	4.00	105	90-110	2	20

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ALS Group USA, Corp.
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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502736
Project:	Mint Farm Monitoring	**Date Collected:**	N/A
Sample Matrix:	Drinking Water	**Date Received:**	N/A
		Date Analyzed:	03/18/15
		Date Extracted:	03/18/15

Duplicate Matrix Spike Summary
Fluoride

Sample Name:	Batch QC	**Units:**	mg/L
Lab Code:	K1502735-001	**Basis:**	NA
Analysis Method:	300.0		
Prep Method:	Method		

		Matrix Spike K1502735-001MS			**Duplicate Matrix Spike** K1502735-001DMS					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Fluoride	ND U	4.12	4.00	103	4.21	4.00	105	90-110	2	20

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ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502736
Project:	Mint Farm Monitoring	**Date Analyzed:**	03/18/15
Sample Matrix:	Drinking Water	**Date Extracted:**	03/18/15

Lab Control Sample Summary
Fluoride

Analysis Method:	300.0	**Units:**	mg/L
Prep Method:	Method	**Basis:**	NA
		Analysis Lot:	436896

Sample Name	Lab Code	Result	Spike Amount	% Rec	% Rec Limits
Lab Control Sample	K1502736-LCS	5.10	5.00	102	90-110

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client:	Longview, City of	**Service Request:**	K1502736
Project:	Mint Farm Monitoring	**Date Collected:**	03/17/15
Sample Matrix:	Drinking Water	**Date Received:**	03/17/15
Analysis Method:	300.0	**Units:**	mg/L
Prep Method:	Method	**Basis:**	NA

Nitrite as Nitrogen

Sample Name	Lab Code	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Well #3	K1502736-001	ND U	0.10	2	03/18/15 10:24	3/18/15	
Method Blank	K1502736-MB1	ND U	0.050	1	03/18/15 09:31	3/18/15	

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502736
Project	Mint Farm Monitoring	**Date Collected:**	NA
Sample Matrix:	Drinking Water	**Date Received:**	NA
Analysis Method:	300.0	**Units:**	mg/L
Prep Method:	Method	**Basis:**	NA

Replicate Sample Summary
Nitrite as Nitrogen

Sample Name:	Lab Code:	MRL	Sample Result	Duplicate Result	Average	RPD	RPD Limit	Date Analyzed
Batch QC	K1502734-001DUP	0.10	ND U	ND U	NC	NC	20	03/18/15
Batch QC	K1502735-001DUP	0.10	ND U	ND U	NC	NC	20	03/18/15

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ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502736
Project:	Mint Farm Monitoring	**Date Collected:**	N/A
Sample Matrix:	Drinking Water	**Date Received:**	N/A
		Date Analyzed:	03/18/15
		Date Extracted:	03/18/15

Duplicate Matrix Spike Summary
Nitrite as Nitrogen

Sample Name:	Batch QC	**Units:**	mg/L
Lab Code:	K1502734-001	**Basis:**	NA
Analysis Method:	300.0		
Prep Method:	Method		

		Matrix Spike K1502734-001MS			Duplicate Matrix Spike K1502734-001DMS					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Nitrite as Nitrogen	ND U	4.00	4.00	100	4.04	4.00	101	90-110	<1	20

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ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502736
Project:	Mint Farm Monitoring	**Date Collected:**	N/A
Sample Matrix:	Drinking Water	**Date Received:**	N/A
		Date Analyzed:	03/18/15
		Date Extracted:	03/18/15

Duplicate Matrix Spike Summary
Nitrite as Nitrogen

Sample Name:	Batch QC	**Units:**	mg/L
Lab Code:	K1502735-001	**Basis:**	NA
Analysis Method:	300.0		
Prep Method:	Method		

		Matrix Spike K1502735-001MS			**Duplicate Matrix Spike** K1502735-001DMS					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Nitrite as Nitrogen	ND U	4.01	4.00	100	4.05	4.00	101	90-110	<1	20

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ALS Group USA, Corp.
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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502736
Project:	Mint Farm Monitoring	**Date Analyzed:**	03/18/15
Sample Matrix:	Drinking Water	**Date Extracted:**	03/18/15

Lab Control Sample Summary
Nitrite as Nitrogen

Analysis Method:	300.0	**Units:**	mg/L
Prep Method:	Method	**Basis:**	NA
		Analysis Lot:	436896

Sample Name	Lab Code	Result	Spike Amount	% Rec	% Rec Limits
Lab Control Sample	K1502736-LCS	2.40	2.50	96	90-110

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client:	Longview, City of	**Service Request:**	K1502736
Project:	Mint Farm Monitoring	**Date Collected:**	03/17/15
Sample Matrix:	Drinking Water	**Date Received:**	03/17/15
Analysis Method:	300.0	**Units:**	mg/L
Prep Method:	Method	**Basis:**	NA

Nitrate as Nitrogen

Sample Name	Lab Code	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Well #3	K1502736-001	ND U	0.10	2	03/18/15 10:24	3/18/15	
Method Blank	K1502736-MB1	ND U	0.050	1	03/18/15 09:31	3/18/15	

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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502736
Project	Mint Farm Monitoring	**Date Collected:**	NA
Sample Matrix:	Drinking Water	**Date Received:**	NA
Analysis Method:	300.0	**Units:**	mg/L
Prep Method:	Method	**Basis:**	NA

Replicate Sample Summary
Nitrate as Nitrogen

Sample Name:	Lab Code:	MRL	Sample Result	Duplicate Result	Average	RPD	RPD Limit	Date Analyzed
Batch QC	K1502734-001DUP	0.10	ND U	ND U	NC	NC	20	03/18/15
Batch QC	K1502735-001DUP	0.10	ND U	ND U	NC	NC	20	03/18/15

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ALS Group USA, Corp.
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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502736
Project:	Mint Farm Monitoring	**Date Collected:**	N/A
Sample Matrix:	Drinking Water	**Date Received:**	N/A
		Date Analyzed:	03/18/15
		Date Extracted:	03/18/15

Duplicate Matrix Spike Summary
Nitrate as Nitrogen

Sample Name:	Batch QC	**Units:**	mg/L
Lab Code:	K1502734-001	**Basis:**	NA
Analysis Method:	300.0		
Prep Method:	Method		

		Matrix Spike K1502734-001MS			**Duplicate Matrix Spike** K1502734-001DMS					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Nitrate as Nitrogen	ND U	3.62	4.00	90	3.64	4.00	91	90-110	<1	20

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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502736
Project:	Mint Farm Monitoring	**Date Collected:**	N/A
Sample Matrix:	Drinking Water	**Date Received:**	N/A
		Date Analyzed:	03/18/15
		Date Extracted:	03/18/15

Duplicate Matrix Spike Summary
Nitrate as Nitrogen

Sample Name:	Batch QC	**Units:**	mg/L
Lab Code:	K1502735-001	**Basis:**	NA
Analysis Method:	300.0		
Prep Method:	Method		

		Matrix Spike K1502735-001MS			**Duplicate Matrix Spike** K1502735-001DMS					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Nitrate as Nitrogen	ND U	3.61	4.00	90	3.65	4.00	91	90-110	<1	20

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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502736
Project:	Mint Farm Monitoring	**Date Analyzed:**	03/18/15
Sample Matrix:	Drinking Water	**Date Extracted:**	03/18/15

Lab Control Sample Summary
Nitrate as Nitrogen

Analysis Method:	300.0	**Units:**	mg/L
Prep Method:	Method	**Basis:**	NA
		Analysis Lot:	436896

Sample Name	Lab Code	Result	Spike Amount	% Rec	% Rec Limits
Lab Control Sample	K1502736-LCS	2.33	2.50	93	90-110

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client:	Longview, City of	**Service Request:**	K1502736
Project:	Mint Farm Monitoring	**Date Collected:**	03/17/15
Sample Matrix:	Drinking Water	**Date Received:**	03/17/15
Analysis Method:	300.0	**Units:**	mg/L
Prep Method:	Method	**Basis:**	NA

Sulfate

Sample Name	Lab Code	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Well #3	K1502736-001	**0.96**	0.20	2	03/18/15 10:24	3/18/15	
Method Blank	K1502736-MB1	ND U	0.10	1	03/18/15 09:31	3/18/15	

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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502736
Project	Mint Farm Monitoring	**Date Collected:**	NA
Sample Matrix:	Drinking Water	**Date Received:**	NA
Analysis Method:	300.0	**Units:**	mg/L
Prep Method:	Method	**Basis:**	NA

Replicate Sample Summary
Sulfate

Sample Name:	Lab Code:	MRL	Sample Result	Duplicate Result	Average	RPD	RPD Limit	Date Analyzed
Batch QC	K1502734-001DUP	0.20	1.08	1.08	1.08	<1	20	03/18/15
Batch QC	K1502735-001DUP	0.20	1.33	1.33	1.33	<1	20	03/18/15

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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502736
Project:	Mint Farm Monitoring	**Date Collected:**	N/A
Sample Matrix:	Drinking Water	**Date Received:**	N/A
		Date Analyzed:	03/18/15
		Date Extracted:	03/18/15

Duplicate Matrix Spike Summary
Sulfate

Sample Name:	Batch QC	**Units:**	mg/L
Lab Code:	K1502734-001	**Basis:**	NA
Analysis Method:	300.0		
Prep Method:	Method		

		Matrix Spike			**Duplicate Matrix Spike**					
		K1502734-001MS			K1502734-001DMS					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Sulfate	1.08	4.82	4.00	93	4.87	4.00	95	90-110	<1	20

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dba ALS Environmental

QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502736
Project:	Mint Farm Monitoring	**Date Collected:**	N/A
Sample Matrix:	Drinking Water	**Date Received:**	N/A
		Date Analyzed:	03/18/15
		Date Extracted:	03/18/15

Duplicate Matrix Spike Summary
Sulfate

Sample Name:	Batch QC	**Units:**	mg/L
Lab Code:	K1502735-001	**Basis:**	NA
Analysis Method:	300.0		
Prep Method:	Method		

		Matrix Spike			**Duplicate Matrix Spike**					
		K1502735-001MS			K1502735-001DMS					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Sulfate	1.33	5.14	4.00	95	5.16	4.00	96	90-110	<1	20

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ALS Group USA, Corp.
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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502736
Project:	Mint Farm Monitoring	**Date Analyzed:**	03/18/15
Sample Matrix:	Drinking Water	**Date Extracted:**	03/18/15

Lab Control Sample Summary
Sulfate

Analysis Method:	300.0	**Units:**	mg/L
Prep Method:	Method	**Basis:**	NA
		Analysis Lot:	436896

Sample Name	Lab Code	Result	Spike Amount	% Rec	% Rec Limits
Lab Control Sample	K1502736-LCS	4.85	5.00	97	90-110

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client:	Longview, City of	**Service Request:**	K1502736
Project:	Mint Farm Monitoring	**Date Collected:**	03/17/15
Sample Matrix:	Drinking Water	**Date Received:**	03/17/15
Analysis Method:	314.0	**Units:**	ug/L
Prep Method:	None	**Basis:**	NA

Perchlorate

Sample Name	Lab Code	Result	MRL	Dil.	Date Analyzed	Q
Well #3	K1502736-001	ND U	1.0	1	03/31/15 14:19	
Method Blank	K1502736-MB1	ND U	1.0	1	03/31/15 11:44	

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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502736
Project	Mint Farm Monitoring	**Date Collected:**	NA
Sample Matrix:	Drinking Water	**Date Received:**	NA
		Date Analyzed:	03/31/15

Replicate Sample Summary
General Chemistry Parameters

Sample Name:	Batch QC	**Units:**	ug/L
Lab Code:	K1502415-001	**Basis:**	NA

Analyte Name	Analysis Method	MRL	Sample Result	Duplicate Sample K1502415-001DUP Result	Average	RPD	RPD Limit
Perchlorate	314.0	1.0	ND U	ND U	NC	NC	20

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dba ALS Environmental

QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502736
Project:	Mint Farm Monitoring	**Date Collected:**	N/A
Sample Matrix:	Drinking Water	**Date Received:**	N/A
		Date Analyzed:	03/31/15
		Date Extracted:	NA

Duplicate Matrix Spike Summary
Perchlorate

Sample Name:	Batch QC	**Units:**	ug/L
Lab Code:	K1502415-001	**Basis:**	NA
Analysis Method:	314.0		
Prep Method:	None		

		Matrix Spike K1502415-001MS			Duplicate Matrix Spike K1502415-001DMS					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Perchlorate	ND U	10.7	10.0	107	9.7	10.0	97	80-120	10	20

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ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502736
Project:	Mint Farm Monitoring	**Date Analyzed:**	03/31/15
Sample Matrix:	Drinking Water	**Date Extracted:**	NA

Lab Control Sample Summary
Perchlorate

Analysis Method:	314.0	**Units:**	ug/L
Prep Method:	None	**Basis:**	NA
		Analysis Lot:	438526

Sample Name	Lab Code	Result	Spike Amount	% Rec	% Rec Limits
Lab Control Sample	K1502736-LCS	15.4	16.8	92	85-115

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client:	Longview, City of	**Service Request:**	K1502736
Project:	Mint Farm Monitoring	**Date Collected:**	03/17/15
Sample Matrix:	Drinking Water	**Date Received:**	03/17/15
Analysis Method:	335.4	**Units:**	mg/L
Prep Method:	Method	**Basis:**	NA

Cyanide, Total

Sample Name	Lab Code	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Well #3	K1502736-001	ND U	0.010	1	03/22/15 14:53	3/18/15	
Method Blank	K1502736-MB1	ND U	0.010	1	03/22/15 14:53	3/18/15	

ALS Group USA, Corp.
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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502736
Project	Mint Farm Monitoring	**Date Collected:**	NA
Sample Matrix:	Drinking Water	**Date Received:**	NA
		Date Analyzed:	03/22/15

Replicate Sample Summary
General Chemistry Parameters

Sample Name:	Batch QC	**Units:**	mg/L
Lab Code:	K1502734-001	**Basis:**	NA

Analyte Name	Analysis Method	MRL	Sample Result	Duplicate Sample K1502734-001DUP Result	Average	RPD	RPD Limit
Cyanide, Total	335.4	0.010	ND U	ND U	NC	NC	20

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ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502736
Project:	Mint Farm Monitoring	**Date Collected:**	N/A
Sample Matrix:	Drinking Water	**Date Received:**	N/A
		Date Analyzed:	03/22/15
		Date Extracted:	03/18/15

Duplicate Matrix Spike Summary
Cyanide, Total

Sample Name:	Batch QC	**Units:**	mg/L
Lab Code:	K1502734-001	**Basis:**	NA
Analysis Method:	335.4		
Prep Method:	Method		

		Matrix Spike K1502734-001MS			Duplicate Matrix Spike K1502734-001DMS					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Cyanide, Total	ND U	0.099	0.100	98	0.097	0.100	97	90-110	2	20

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ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502736
Project:	Mint Farm Monitoring	**Date Analyzed:**	03/22/15
Sample Matrix:	Drinking Water	**Date Extracted:**	03/18/15

Lab Control Sample Summary
Cyanide, Total

Analysis Method:	335.4	**Units:**	mg/L
Prep Method:	Method	**Basis:**	NA
		Analysis Lot:	437339

Sample Name	Lab Code	Result	Spike Amount	% Rec	% Rec Limits
Lab Control Sample	K1502736-LCS	0.147	0.150	98	90-110

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client:	Longview, City of	**Service Request:**	K1502736
Project:	Mint Farm Monitoring	**Date Collected:**	03/17/15
Sample Matrix:	Drinking Water	**Date Received:**	03/17/15
Analysis Method:	Calculation	**Units:**	mg/L
Prep Method:	None	**Basis:**	NA

Nitrate+Nitrite as Nitrogen

Sample Name	Lab Code	Result	MRL	Dil.	Date Analyzed	Q
Well #3	K1502736-001	ND U	0.20	1	03/18/15 10:24	

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Analytical Report

Client:	Longview, City of	**Service Request:**	K1502736
Project:	Mint Farm Monitoring	**Date Collected:**	03/17/15
Sample Matrix:	Drinking Water	**Date Received:**	03/17/15
Analysis Method:	SM 2120 B	**Units:**	ColorUnits
Prep Method:	None	**Basis:**	NA

Color

Sample Name	Lab Code	Result	MRL	Dil.	Date Analyzed	Q
Well #3	K1502736-001	**15.0**	5.0	1	03/17/15 18:01	
Method Blank	K1502736-MB1	ND U	5.0	1	03/17/15 17:53	

ALS Group USA, Corp.
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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502736
Project	Mint Farm Monitoring	**Date Collected:**	NA
Sample Matrix:	Drinking Water	**Date Received:**	NA
		Date Analyzed:	03/17/15

Replicate Sample Summary
General Chemistry Parameters

Sample Name:	Batch QC	**Units:**	ColorUnits
Lab Code:	K1502735-001	**Basis:**	NA

Analyte Name	Analysis Method	MRL	Sample Result	Duplicate Sample K1502735-001DUP Result	Average	RPD	RPD Limit
Color	SM 2120 B	5.0	20.0	20.0	20.0	<1	20

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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502736
Project:	Mint Farm Monitoring	**Date Analyzed:**	03/17/15
Sample Matrix:	Drinking Water	**Date Extracted:**	NA

Lab Control Sample Summary
Color

Analysis Method:	SM 2120 B	**Units:**	ColorUnits
Prep Method:	None	**Basis:**	NA
		Analysis Lot:	436704

Sample Name	Lab Code	Result	Spike Amount	% Rec	% Rec Limits
Lab Control Sample	K1502736-LCS	50.0	50.0	100	85-115

ALS Group USA, Corp.
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Analytical Report

Client:	Longview, City of	**Service Request:**	K1502736
Project:	Mint Farm Monitoring	**Date Collected:**	03/17/15
Sample Matrix:	Drinking Water	**Date Received:**	03/17/15
Analysis Method:	SM 2320 B	**Units:**	mg/L
Prep Method:	None	**Basis:**	NA

Alkalinity as CaCO3, Total

Sample Name	Lab Code	Result	MRL	Dil.	Date Analyzed	Q
Well #3	K1502736-001	**98.1**	2.0	1	03/31/15 11:20	
Method Blank	K1502736-MB1	ND U	2.0	1	03/31/15 11:20	

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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502736
Project	Mint Farm Monitoring	**Date Collected:**	NA
Sample Matrix:	Drinking Water	**Date Received:**	NA
Analysis Method:	SM 2320 B	**Units:**	mg/L
Prep Method:	None	**Basis:**	NA

Replicate Sample Summary
Alkalinity as CaCO3, Total

Sample Name:	Lab Code:	MRL	Sample Result	Duplicate Result	Average	RPD	RPD Limit	Date Analyzed
Batch QC	K1502734-001DUP	2.0	97.3	97.1	97.2	<1	20	03/31/15
Batch QC	K1502902-005DUP	2.0	53.0	52.6	52.8	<1	20	03/31/15

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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502736
Project:	Mint Farm Monitoring	**Date Analyzed:**	03/31/15
Sample Matrix:	Drinking Water	**Date Extracted:**	NA

Lab Control Sample Summary
Alkalinity as CaCO3, Total

Analysis Method:	SM 2320 B	**Units:**	mg/L
Prep Method:	None	**Basis:**	NA
		Analysis Lot:	438546

Sample Name	Lab Code	Result	Spike Amount	% Rec	% Rec Limits
Lab Control Sample	K1502736-LCS	35.0	34.4	102	90-110

ALS Group USA, Corp.
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Analytical Report

Client:	Longview, City of	**Service Request:**	K1502736
Project:	Mint Farm Monitoring	**Date Collected:**	03/17/15
Sample Matrix:	Drinking Water	**Date Received:**	03/17/15
Analysis Method:	SM 2510 B	**Units:**	uMHOS/cm
Prep Method:	None	**Basis:**	NA

Conductivity at 25 Degrees Celsius

Sample Name	Lab Code	Result	MRL	Dil.	Date Analyzed	Q
Well #3	K1502736-001	**321**	2.0	1	03/19/15 09:45	
Method Blank	K1502736-MB1	ND U	2.0	1	03/19/15 09:45	
Method Blank	K1502736-MB2	ND U	2.0	1	03/19/15 09:45	

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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502736
Project	Mint Farm Monitoring	**Date Collected:**	NA
Sample Matrix:	Drinking Water	**Date Received:**	NA
		Date Analyzed:	03/19/15

Replicate Sample Summary
General Chemistry Parameters

Sample Name:	Batch QC	**Units:**	uMHOS/cm
Lab Code:	K1502415-001	**Basis:**	NA

Analyte Name	Analysis Method	MRL	Sample Result	Duplicate Sample K1502415-001DUP Result	Average	RPD	RPD Limit
Conductivity at 25 Degrees Celsius	SM 2510 B	2.0	701	699	700	<1	20

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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502736
Project:	Mint Farm Monitoring	**Date Analyzed:**	03/19/15
Sample Matrix:	Drinking Water	**Date Extracted:**	NA

Lab Control Sample Summary
Conductivity at 25 Degrees Celsius

Analysis Method:	SM 2510 B	**Units:**	uMHOS/cm
Prep Method:	None	**Basis:**	NA
		Analysis Lot:	436981

Sample Name	Lab Code	Result	Spike Amount	% Rec	% Rec Limits
Lab Control Sample	K1502736-LCS	319	289	110	86-113

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client:	Longview, City of	**Service Request:**	K1502736
Project:	Mint Farm Monitoring	**Date Collected:**	03/17/15
Sample Matrix:	Drinking Water	**Date Received:**	03/17/15
Analysis Method:	SM 2540 C	**Units:**	mg/L
Prep Method:	None	**Basis:**	NA

Solids, Total Dissolved

Sample Name	Lab Code	Result	MRL	Dil.	Date Analyzed	Q
Well #3	K1502736-001	**218**	10	1	03/18/15 11:00	
Method Blank	K1502736-MB1	ND U	5.0	1	03/18/15 11:00	
Method Blank	K1502736-MB2	ND U	5.0	1	03/18/15 11:00	

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dba ALS Environmental

QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502736
Project	Mint Farm Monitoring	**Date Collected:**	NA
Sample Matrix:	Drinking Water	**Date Received:**	NA
Analysis Method:	SM 2540 C	**Units:**	mg/L
Prep Method:	None	**Basis:**	NA

Replicate Sample Summary
Solids, Total Dissolved

Sample Name:	Lab Code:	MRL	Sample Result	Duplicate Result	Average	RPD	RPD Limit	Date Analyzed
Batch QC	K1502696-001DUP	10	376	379	378	<1	10	03/18/15
Batch QC	T1500335-008DUP	10	89	90	89.5	1	10	03/18/15

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ALS Group USA, Corp.
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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502736
Project:	Mint Farm Monitoring	**Date Analyzed:**	03/18/15
Sample Matrix:	Drinking Water	**Date Extracted:**	NA

Lab Control Sample Summary
Solids, Total Dissolved

Analysis Method:	SM 2540 C	**Units:**	mg/L
Prep Method:	None	**Basis:**	NA
		Analysis Lot:	436831

Sample Name	Lab Code	Result	Spike Amount	% Rec	% Rec Limits
Lab Control Sample	K1502736-LCS	1240	1300	96	85-115

ALS Group USA, Corp.
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Analytical Report

Client:	Longview, City of	**Service Request:**	K1502736
Project:	Mint Farm Monitoring	**Date Collected:**	03/17/15
Sample Matrix:	Drinking Water	**Date Received:**	03/17/15
Analysis Method:	SM 4500-NH3 G	**Units:**	mg/L
Prep Method:	Method	**Basis:**	NA

Ammonia as Nitrogen

Sample Name	Lab Code	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Well #3	K1502736-001	**0.269**	0.050	1	03/20/15 13:01	3/20/15	
Method Blank	K1502736-MB1	ND U	0.050	1	03/20/15 13:01	3/20/15	

ALS Group USA, Corp.
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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502736
Project	Mint Farm Monitoring	**Date Collected:**	NA
Sample Matrix:	Drinking Water	**Date Received:**	NA
Analysis Method:	SM 4500-NH3 G	**Units:**	mg/L
Prep Method:	Method	**Basis:**	NA

Replicate Sample Summary
Ammonia as Nitrogen

Sample Name:	Lab Code:	MRL	Sample Result	Duplicate Result	Average	RPD	RPD Limit	Date Analyzed
Batch QC	K1502735-001DUP	0.050	0.373	0.382	0.377	2	20	03/20/15
Batch QC	K1502755-001DUP	0.050	ND U	ND U	NC	NC	20	03/20/15

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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502736
Project:	Mint Farm Monitoring	**Date Collected:**	N/A
Sample Matrix:	Drinking Water	**Date Received:**	N/A
		Date Analyzed:	03/20/15
		Date Extracted:	03/20/15

Duplicate Matrix Spike Summary
Ammonia as Nitrogen

Sample Name:	Batch QC	**Units:**	mg/L
Lab Code:	K1502735-001	**Basis:**	NA
Analysis Method:	SM 4500-NH3 G		
Prep Method:	Method		

		Matrix Spike K1502735-001MS			**Duplicate Matrix Spike** K1502735-001DMS					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Ammonia as Nitrogen	0.373	2.43	2.00	103	2.37	2.00	100	90-110	3	20

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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502736
Project:	Mint Farm Monitoring	**Date Collected:**	N/A
Sample Matrix:	Drinking Water	**Date Received:**	N/A
		Date Analyzed:	03/20/15
		Date Extracted:	03/20/15

Duplicate Matrix Spike Summary
Ammonia as Nitrogen

Sample Name:	Batch QC	**Units:**	mg/L
Lab Code:	K1502755-001	**Basis:**	NA
Analysis Method:	SM 4500-NH3 G		
Prep Method:	Method		

		Matrix Spike K1502755-001MS			**Duplicate Matrix Spike** K1502755-001DMS					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Ammonia as Nitrogen	ND U	2.09	2.00	105	2.00	2.00	100	90-110	5	20

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ALS Group USA, Corp.
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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502736
Project:	Mint Farm Monitoring	**Date Analyzed:**	03/20/15
Sample Matrix:	Drinking Water	**Date Extracted:**	03/20/15

Lab Control Sample Summary
Ammonia as Nitrogen

Analysis Method:	SM 4500-NH3 G	**Units:**	mg/L
Prep Method:	Method	**Basis:**	NA
		Analysis Lot:	437273

Sample Name	Lab Code	Result	Spike Amount	% Rec	% Rec Limits
Lab Control Sample	K1502736-LCS	15.8	15.4	103	90-110

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Analytical Report

Client:	Longview, City of	**Service Request:**	K1502736
Project:	Mint Farm Monitoring	**Date Collected:**	03/17/15
Sample Matrix:	Drinking Water	**Date Received:**	03/17/15
Analysis Method:	SM 4500-P E	**Units:**	mg/L
Prep Method:	None	**Basis:**	NA

Orthophosphate as Phosphorus

Sample Name	Lab Code	Result	MRL	Dil.	Date Analyzed	Q
Well #3	K1502736-001	**0.51**	0.25	5	03/18/15 12:09	
Method Blank	K1502736-MB1	ND U	0.050	1	03/18/15 12:09	

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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502736
Project	Mint Farm Monitoring	**Date Collected:**	NA
Sample Matrix:	Drinking Water	**Date Received:**	NA
		Date Analyzed:	03/18/15

Replicate Sample Summary
General Chemistry Parameters

Sample Name:	Batch QC	**Units:**	mg/L
Lab Code:	K1502734-001	**Basis:**	NA

Analyte Name	Analysis Method	MRL	Sample Result	Duplicate Sample K1502734-001DUP Result	Average	RPD	RPD Limit
Orthophosphate as Phosphorus	SM 4500-P E	0.25	0.56	0.57	0.562	2	20

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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502736
Project:	Mint Farm Monitoring	**Date Collected:**	N/A
Sample Matrix:	Drinking Water	**Date Received:**	N/A
		Date Analyzed:	03/18/15
		Date Extracted:	NA

Duplicate Matrix Spike Summary
Orthophosphate as Phosphorus

Sample Name:	Batch QC	**Units:**	mg/L
Lab Code:	K1502734-001	**Basis:**	NA
Analysis Method:	SM 4500-P E		
Prep Method:	None		

		Matrix Spike K1502734-001MS			**Duplicate Matrix Spike** K1502734-001DMS					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Orthophosphate as Phosphorus	0.56	0.96	0.40	101	0.98	0.40	106	75-125	5	20

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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502736
Project:	Mint Farm Monitoring	**Date Analyzed:**	03/18/15
Sample Matrix:	Drinking Water	**Date Extracted:**	NA

Lab Control Sample Summary
Orthophosphate as Phosphorus

Analysis Method:	SM 4500-P E	**Units:**	mg/L
Prep Method:	None	**Basis:**	NA
		Analysis Lot:	436766

Sample Name	Lab Code	Result	Spike Amount	% Rec	% Rec Limits
Lab Control Sample	K1502736-LCS	6.25	6.1	103	85-115

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Analytical Report

Client:	Longview, City of	**Service Request:**	K1502736
Project:	Mint Farm Monitoring	**Date Collected:**	3/17/2015
Sample Matrix:	Drinking water	**Date Received:**	3/17/2015

Colilert, E. Coli

Prep Method: NONE
Analysis Method: SM 9223B Basis: NA
Test Notes:

Sample Name	Lab Code	MRL	Date Analyzed	Time Test Started		Result	Result Notes
Well #3	K1502736-001	1	3/17/2015	16:30	hrs	Absent	

SM *Standard Methods for the Examination of Water and Wastewater* , 20th Ed., 1998.

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Analytical Report

Client:	Longview, City of	**Service Request:**	K1502736
Project:	Mint Farm Monitoring	**Date Collected:**	3/17/2015
Sample Matrix:	Drinking water	**Date Received:**	3/17/2015

Colilert, T. Coli

Prep Method: NONE
Analysis Method: SM 9223B Basis: NA
Test Notes:

Sample Name	Lab Code	MRL	Date Analyzed	Time Test Started		Result	Result Notes
Well #3	K1502736-001	1	3/17/2015	16:30	hrs	Absent	

SM *Standard Methods for the Examination of Water and Wastewater* , 20th Ed., 1998.

Metals

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Analytical Report

Client:	Longview, City of	**Service Request:**	K1502736
Project:	Mint Farm Monitoring	**Date Collected:**	03/17/15
Sample Matrix:	Drinking water	**Date Received:**	03/17/15

Hardness as CaCO3

Prep Method:	CLAA	Units:	mg/L (ppm)
Analysis Method:	200.7/SM 2340B	Basis:	NA
Test Notes:			

Sample Name	Lab Code	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Well #3	K1502736-001	0.07	1	03/20/15	03/23/15	112	
Method Blank	K1502736-MB	0.07	1	03/20/15	03/23/15	ND	

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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502736
Project:	Mint Farm Monitoring	**Date Collected:**	NA
Sample Matrix:	Drinking water	**Date Received:**	NA
		Date Extracted:	03/20/15
		Date Analyzed:	03/23/15

Duplicate Summary
Metals

Sample Name:	Batch QC	Units:	mg/L (ppm)
Lab Code:	K1502735-001D	Basis:	NA
Test Notes:			

Analyte	Prep Method	Analysis Method	MRL	Sample Result	Duplicate Sample Result	Average	Relative Percent Difference	Result Notes
Hardness as CaCO3	CLAA	200.7/SM 2340B	0.07	72.2	72.2	72.2	<1	

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Analytical Report

Client:	Longview, City of	**Service Request:**	K1502736
Project:	Mint Farm Monitoring	**Date Collected:**	03/17/15
Sample Matrix:	Drinking water	**Date Received:**	03/17/15

Methyl Mercury

Prep Method:	Method	Units:	ng/L
Analysis Method:	1630	Basis:	NA
Test Notes:			

Sample Name	Lab Code	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Well #3	K1502736-001	0.1	1	02/25/15	02/26/15	ND	
Method Blank 1	K1502736-MB1	0.1	1	02/25/15	02/26/15	ND	
Method Blank 2	K1502736-MB2	0.1	1	02/25/15	02/26/15	ND	
Method Blank 3	K1502736-MB3	0.1	1	02/25/15	02/26/15	ND	

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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502736
Project:	Mint Farm Monitoring	**Date Collected:**	NA
Sample Matrix:	Drinking water	**Date Received:**	NA
		Date Extracted:	02/25/15
		Date Analyzed:	02/26/15

Matrix Spike/Duplicate Matrix Spike Summary
Metals

Sample Name:	Batch QC		Units:	ng/L
Lab Code:	K1502708-001MS,	K1502708-001MSD	Basis:	NA
Test Notes:				

				Spike Level		Sample	Spike Result		Percent Recovery		CAS Acceptance	Relative Percent	Result
Analyte	**Prep Method**	**Analysis Method**	**MRL**	**MS**	**DMS**	**Result**	**MS**	**DMS**	**MS**	**DMS**	**Limits**	**Difference**	**Notes**
Mercury, Methyl	Method	1630	0.1	2.22	2.22	0.42	3.22	3.01	126	117	65-135	7	

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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502736
Project:	Mint Farm Monitoring	**Date Collected:**	NA
LCS Matrix:	Water	**Date Received:**	NA
		Date Extracted:	02/25/15
		Date Analyzed:	02/26/15

Ongoing Precision and Recovery (OPR) Sample Summary
Metals

Sample Name: Ongoing Precision and Recovery (Initial)

Units: ng/L
Basis: NA

Test Notes:

Analyte	Prep Method	Analysis Method	True Value	Result	Percent Recovery	CAS Percent Recovery Acceptance Limits	Result Notes
Mercury, Methyl	Method	1630	2.22	2.52	114	67-133	

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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502736
Project:	Mint Farm Monitoring	**Date Collected:**	NA
LCS Matrix:	Water	**Date Received:**	NA
		Date Extracted:	02/25/15
		Date Analyzed:	02/26/15

Ongoing Precision and Recovery (OPR) Sample Summary
Metals

Sample Name: Ongoing Precision and Recovery (Final)

Units: ng/L
Basis: NA

Test Notes:

Analyte	Prep Method	Analysis Method	True Value	Result	Percent Recovery	CAS Percent Recovery Acceptance Limits	Result Notes
Mercury, Methyl	Method	1630	2.22	2.43	109	67-133	

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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502736
Project:	Mint Farm Monitoring	**Date Collected:**	NA
LCS Matrix:	Water	**Date Received:**	NA
		Date Extracted:	02/25/15
		Date Analyzed:	02/26/15

Quality Control Sample (QCS) Summary
Metals

Sample Name: Quality Control Sample

Units: pg
Basis: NA

Test Notes:

Analyte	Prep Method	Analysis Method	True Value	Result	Percent Recovery	CAS Percent Recovery Acceptance Limits	Result Notes
Mercury, Methyl	Method	1630	100	127	127	67-133	

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Analytical Report

Client:	Longview, City of	**Service Request:**	K1502736
Project:	Mint Farm Monitoring	**Date Collected:**	03/17/15 13:15
Sample Matrix:	Drinking Water	**Date Received:**	03/17/15 14:53
Sample Name:	Well #3	**Basis:**	NA
Lab Code:	K1502736-001		

Total Metals

Analyte Name	Analysis Method	Result		Units	MRL	Dil.	Date Analyzed	Date Extracted	Q
Antimony	200.8	ND	U	mg/L	0.000050	1	03/25/15 09:26	03/20/15	
Arsenic	200.8	**0.00499**		mg/L	0.00050	1	03/25/15 09:26	03/20/15	
Barium	200.7	**0.0140**		mg/L	0.0040	1	03/23/15 01:41	03/20/15	
Beryllium	200.8	ND	U	mg/L	0.000020	1	03/25/15 09:26	03/20/15	
Cadmium	200.8	ND	U	mg/L	0.000020	1	03/25/15 09:26	03/20/15	
Chromium	200.8	ND	U	mg/L	0.00020	1	03/25/15 09:26	03/20/15	
Copper	200.7	ND	U	mg/L	0.0040	1	03/23/15 01:41	03/20/15	
Iron	200.7	**1.08**		mg/L	0.020	1	03/23/15 01:41	03/20/15	
Lead	200.8	ND	U	mg/L	0.000020	1	03/25/15 09:26	03/20/15	
Manganese	200.7	**0.646**		mg/L	0.0010	1	03/23/15 01:41	03/20/15	
Mercury	245.1	ND	U	mg/L	0.00020	1	03/18/15 03:28	03/18/15	
Nickel	200.8	**0.00036**		mg/L	0.00020	1	03/25/15 09:26	03/20/15	
Selenium	200.8	ND	U	mg/L	0.0010	1	03/25/15 09:26	03/20/15	
Silver	200.8	ND	U	mg/L	0.000020	1	03/25/15 09:26	03/20/15	
Sodium	200.7	**11.2**		mg/L	0.20	1	03/23/15 01:41	03/20/15	
Thallium	200.8	ND	U	mg/L	0.000020	1	03/25/15 09:26	03/20/15	
Zinc	200.7	ND	U	mg/L	0.0040	1	03/23/15 01:41	03/20/15	

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Analytical Report

Client:	Longview, City of	**Service Request:**	K1502736
Project:	Mint Farm Monitoring	**Date Collected:**	NA
Sample Matrix:	Drinking Water	**Date Received:**	NA
Sample Name:	Method Blank	**Basis:**	NA
Lab Code:	KQ1502681-01		

Total Metals

Analyte Name	Analysis Method	Result		Units	MRL	Dil.	Date Analyzed	Date Extracted	Q
Barium	200.7	ND	U	mg/L	0.0040	1	03/23/15 12:51	03/20/15	
Copper	200.7	ND	U	mg/L	0.0040	1	03/23/15 12:51	03/20/15	
Iron	200.7	ND	U	mg/L	0.020	1	03/23/15 12:51	03/20/15	
Manganese	200.7	ND	U	mg/L	0.0010	1	03/23/15 12:51	03/20/15	
Sodium	200.7	ND	U	mg/L	0.20	1	03/23/15 12:51	03/20/15	
Zinc	200.7	ND	U	mg/L	0.0040	1	03/23/15 12:51	03/20/15	

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Analytical Report

Client:	Longview, City of	**Service Request:**	K1502736
Project:	Mint Farm Monitoring	**Date Collected:**	NA
Sample Matrix:	Drinking Water	**Date Received:**	NA
Sample Name:	Method Blank	**Basis:**	NA
Lab Code:	KQ1502682-01		

Total Metals

Analyte Name	Analysis Method	Result	Units	MRL	Dil.	Date Analyzed	Date Extracted	Q
Antimony	200.8	ND U	mg/L	0.000050	1	03/25/15 07:56	03/20/15	
Arsenic	200.8	ND U	mg/L	0.00050	1	03/25/15 07:56	03/20/15	
Beryllium	200.8	ND U	mg/L	0.000020	1	03/25/15 07:56	03/20/15	
Cadmium	200.8	ND U	mg/L	0.000020	1	03/25/15 07:56	03/20/15	
Chromium	200.8	ND U	mg/L	0.00020	1	03/25/15 07:56	03/20/15	
Lead	200.8	ND U	mg/L	0.000020	1	03/25/15 07:56	03/20/15	
Nickel	200.8	ND U	mg/L	0.00020	1	03/25/15 07:56	03/20/15	
Selenium	200.8	ND U	mg/L	0.0010	1	03/25/15 07:56	03/20/15	
Silver	200.8	ND U	mg/L	0.000020	1	03/25/15 07:56	03/20/15	
Thallium	200.8	ND U	mg/L	0.000020	1	03/25/15 07:56	03/20/15	

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Analytical Report

Client:	Longview, City of	**Service Request:**	K1502736
Project:	Mint Farm Monitoring	**Date Collected:**	NA
Sample Matrix:	Drinking Water	**Date Received:**	NA
Sample Name:	Method Blank	**Basis:**	NA
Lab Code:	KQ1502573-01		

Total Metals

Analyte Name	Analysis Method	Result	Units	MRL	Dil.	Date Analyzed	Date Extracted	Q
Mercury	245.1	ND U	mg/L	0.00020	1	03/18/15 03:15	03/18/15	

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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502736
Project	Mint Farm Monitoring	**Date Collected:**	NA
Sample Matrix:	Drinking Water	**Date Received:**	NA
		Date Analyzed:	03/23/15

Replicate Sample Summary
Total Metals

Sample Name:	Batch QC	**Units:**	mg/L
Lab Code:	K1502845-001	**Basis:**	NA

Analyte Name	Analysis Method	MRL	Sample Result	Duplicate Sample KQ1502681-05 Result	Average	RPD	RPD Limit
Barium	200.7	0.0040	ND U	ND U	ND	-	20
Copper	200.7	0.0040	ND U	ND U	ND	-	20
Iron	200.7	0.020	0.832	0.842	0.837	1	20
Manganese	200.7	0.0010	0.0647	0.0629	0.0638	3	20
Sodium	200.7	0.20	8.77	8.85	8810	<1	20
Zinc	200.7	0.0040	ND U	ND U	ND	-	20

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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502736
Project	Mint Farm Monitoring	**Date Collected:**	NA
Sample Matrix:	Drinking Water	**Date Received:**	NA
		Date Analyzed:	03/25/15

Replicate Sample Summary
Total Metals

Sample Name:	Batch QC	**Units:**	mg/L
Lab Code:	K1502845-001	**Basis:**	NA

Analyte Name	Analysis Method	MRL	Sample Result	Duplicate Sample KQ1502682-05 Result	Average	RPD	RPD Limit
Antimony	200.8	0.000050	ND U	ND U	ND	-	20
Arsenic	200.8	0.00050	ND U	ND U	ND	-	20
Beryllium	200.8	0.000020	ND U	ND U	ND	-	20
Cadmium	200.8	0.000020	ND U	ND U	ND	-	20
Chromium	200.8	0.00020	ND U	ND U	ND	-	20
Lead	200.8	0.000020	ND U	ND U	NC	NC	20
Nickel	200.8	0.00020	ND U	ND U	ND	-	20
Selenium	200.8	0.0010	ND U	ND U	ND	-	20
Silver	200.8	0.000020	ND U	ND U	ND	-	20
Thallium	200.8	0.000020	ND U	ND U	ND	-	20

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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502736
Project	Mint Farm Monitoring	**Date Collected:**	NA
Sample Matrix:	Drinking Water	**Date Received:**	NA
		Date Analyzed:	03/18/15

Replicate Sample Summary
Total Metals

Sample Name:	Batch QC	**Units:**	mg/L
Lab Code:	K1502518-001	**Basis:**	NA

Analyte Name	Analysis Method	MRL	Sample Result	Duplicate Sample KQ1502573-03 Result	Average	RPD	RPD Limit
Mercury	245.1	0.00020	ND U	ND U	NC	NC	20

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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502736
Project:	Mint Farm Monitoring	**Date Collected:**	N/A
Sample Matrix:	Drinking Water	**Date Received:**	N/A
		Date Analyzed:	03/23/15
		Date Extracted:	03/20/15

Matrix Spike Summary
Total Metals

Sample Name:	Batch QC	**Units:**	mg/L
Lab Code:	K1502845-001	**Basis:**	NA
Analysis Method:	200.7		
Prep Method:	EPA CLP-METALS ILM04.0		

Matrix Spike
KQ1502681-06

Analyte Name	Sample Result	Result	Spike Amount	% Rec	% Rec Limits
Barium	ND U	1.01	1.00	101	70-130
Copper	ND U	0.252	0.250	101	70-130
Iron	0.832	1.82	1.00	98	70-130
Manganese	0.0647	0.558	0.500	99	70-130
Sodium	8.77	19.3	10.0	105	70-130
Zinc	ND U	0.477	0.500	95	70-130

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Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502736
Project:	Mint Farm Monitoring	**Date Collected:**	N/A
Sample Matrix:	Drinking Water	**Date Received:**	N/A
		Date Analyzed:	03/25/15
		Date Extracted:	03/20/15

Matrix Spike Summary
Total Metals

Sample Name:	Batch QC	**Units:**	mg/L
Lab Code:	K1502845-001	**Basis:**	NA
Analysis Method:	200.8		
Prep Method:	EPA CLP-METALS ILM04.0		

Matrix Spike
KQ1502682-06

Analyte Name	Sample Result	Result	Spike Amount	% Rec	% Rec Limits
Antimony	ND U	0.0489	0.0500	98	70-130
Arsenic	ND U	0.0479	0.0500	96	70-130
Beryllium	ND U	0.00242	0.00250	97	70-130
Cadmium	ND U	0.0248	0.0250	99	70-130
Chromium	ND U	0.00918	0.0100	92	70-130
Lead	ND U	0.0499	0.0500	100	70-130
Nickel	ND U	0.0228	0.0250	91	70-130
Selenium	ND U	0.0490	0.0500	98	70-130
Silver	ND U	0.0119	0.0125	95	70-130
Thallium	ND U	0.0512	0.0500	102	70-130

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Results flagged with a pound (#) indicate the control criteria is not applicable.

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ALS Group USA, Corp.
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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502736
Project:	Mint Farm Monitoring	**Date Collected:**	N/A
Sample Matrix:	Drinking Water	**Date Received:**	N/A
		Date Analyzed:	03/18/15
		Date Extracted:	03/18/15

Matrix Spike Summary
Total Metals

Sample Name:	Batch QC	**Units:**	mg/L
Lab Code:	K1502518-001	**Basis:**	NA
Analysis Method:	245.1		
Prep Method:	Method		

Matrix Spike
KQ1502573-04

Analyte Name	Sample Result	Result	Spike Amount	% Rec	% Rec Limits
Mercury	ND U	0.00492	0.00500	98	70-130

Results flagged with an asterisk (*) indicate values outside control criteria.

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Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

ALS Group USA, Corp.
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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502736
Project:	Mint Farm Monitoring	**Date Analyzed:**	03/23/15
Sample Matrix:	Drinking Water	**Date Extracted:**	03/20/15

Lab Control Sample Summary
Total Metals

Analysis Method:	200.7	**Units:**	mg/L
Prep Method:	EPA CLP-METALS ILM04.0	**Basis:**	NA
		Analysis Lot:	437289

Lab Control Sample
KQ1502681-02

Analyte Name	Result	Spike Amount	% Rec	% Rec Limits
Barium	5.13	5000	103	85-115
Copper	0.648	625	104	85-115
Iron	2.53	2500	101	85-115
Manganese	1.27	1250	101	85-115
Sodium	13.1	12500	105	85-115
Zinc	1.23	1250	98	85-115

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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502736
Project:	Mint Farm Monitoring	**Date Analyzed:**	03/25/15
Sample Matrix:	Drinking Water	**Date Extracted:**	03/20/15

Lab Control Sample Summary
Total Metals

Analysis Method:	200.8	**Units:**	mg/L
Prep Method:	EPA CLP-METALS ILM04.0	**Basis:**	NA
		Analysis Lot:	437636

Lab Control Sample
KQ1502682-02

Analyte Name	Result	Spike Amount	% Rec	% Rec Limits
Antimony	0.0486	50.0	97	85-115
Arsenic	0.0486	50.0	97	85-115
Beryllium	0.00245	2.50	98	85-115
Cadmium	0.0247	25.0	99	85-115
Chromium	0.00978	10.0	98	85-115
Lead	0.0493	50.0	99	85-115
Nickel	0.0243	25.0	97	85-115
Selenium	0.0491	50.0	98	85-115
Silver	0.0120	12.5	96	85-115
Thallium	0.0506	50.0	101	85-115

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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502736
Project:	Mint Farm Monitoring	**Date Analyzed:**	03/18/15
Sample Matrix:	Drinking Water	**Date Extracted:**	03/18/15

Lab Control Sample Summary
Total Metals

Analysis Method:	245.1	**Units:**	mg/L
Prep Method:	Method	**Basis:**	NA
		Analysis Lot:	436816

Lab Control Sample
KQ1502573-02

Analyte Name	Result	Spike Amount	% Rec	% Rec Limits
Mercury	0.00474	5.00	95	85-115

Chlorinated Phenolic Organic Compounds

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Analytical Results

Client:	Longview, City of	**Service Request:**	K1502736
Project:	Mint Farm Monitoring	**Date Collected:**	3/17/2015
Sample Matrix:	Drinking water	**Date Received:**	3/17/2015

EPA Method 1653A
Chlorinated Phenolic Organic Compounds

Sample Name:	Well #3	Units:	ug/L (ppb)
Lab Code:	K1502736-001	Basis:	NA
Test Notes:			

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
2,4,6-Trichlorophenol	METHOD	1653A	2.5	1	3/20/2015	3/25/2015	ND	
2,4,5-Trichlorophenol	METHOD	1653A	2.5	1	3/20/2015	3/25/2015	ND	
2,3,4,6-Tetrachlorophenol	METHOD	1653A	2.5	1	3/20/2015	3/25/2015	ND	
3,4,6-Trichloroguaiacol	METHOD	1653A	2.5	1	3/20/2015	3/25/2015	ND	
3,4,5-Trichloroguaiacol	METHOD	1653A	2.5	1	3/20/2015	3/25/2015	ND	
3,4,6-Trichlorocatechol	METHOD	1653A	5.0	1	3/20/2015	3/25/2015	ND	
3,4,5-Trichlorocatechol	METHOD	1653A	5.0	1	3/20/2015	3/25/2015	ND	
Trichlorosyringol	METHOD	1653A	2.5	1	3/20/2015	3/25/2015	ND	
4,5,6-Trichloroguaiacol	METHOD	1653A	2.5	1	3/20/2015	3/25/2015	ND	
Pentachlorophenol	METHOD	1653A	5.0	1	3/20/2015	3/25/2015	ND	
Tetrachloroguaiacol	METHOD	1653A	5.0	1	3/20/2015	3/25/2015	ND	
Tetrachlorocatechol	METHOD	1653A	5.0	1	3/20/2015	3/25/2015	ND	

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Analytical Results

Client:	Longview, City of	**Service Request:**	K1502736
Project:	Mint Farm Monitoring	**Date Collected:**	NA
Sample Matrix:	Drinking water	**Date Received:**	NA

EPA Method 1653A
Chlorinated Phenolic Organic Compounds

Sample Name:	Method Blank	Units:	ug/L (ppb)
Lab Code:	KWG1502299-3	Basis:	NA
Test Notes:			

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
2,4,6-Trichlorophenol	METHOD	1653A	2.5	1	3/20/2015	3/25/2015	ND	
2,4,5-Trichlorophenol	METHOD	1653A	2.5	1	3/20/2015	3/25/2015	ND	
2,3,4,6-Tetrachlorophenol	METHOD	1653A	2.5	1	3/20/2015	3/25/2015	ND	
3,4,6-Trichloroguaiacol	METHOD	1653A	2.5	1	3/20/2015	3/25/2015	ND	
3,4,5-Trichloroguaiacol	METHOD	1653A	2.5	1	3/20/2015	3/25/2015	ND	
3,4,6-Trichlorocatechol	METHOD	1653A	5.0	1	3/20/2015	3/25/2015	ND	
3,4,5-Trichlorocatechol	METHOD	1653A	5.0	1	3/20/2015	3/25/2015	ND	
Trichlorosyringol	METHOD	1653A	2.5	1	3/20/2015	3/25/2015	ND	
4,5,6-Trichloroguaiacol	METHOD	1653A	2.5	1	3/20/2015	3/25/2015	ND	
Pentachlorophenol	METHOD	1653A	5.0	1	3/20/2015	3/25/2015	ND	
Tetrachloroguaiacol	METHOD	1653A	5.0	1	3/20/2015	3/25/2015	ND	
Tetrachlorocatechol	METHOD	1653A	5.0	1	3/20/2015	3/25/2015	ND	

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Analytical Results

Client:	Longview, City of	**Service Request:**	K1502736
Project:	Mint Farm Monitoring	**Date Collected:**	NA
Sample Matrix:	Drinking water	**Date Received:**	NA
		Date Extracted:	3/20/2015

Labeled Compound and Internal Standard Recovery Summary
Chlorinated Phenolic Organic Compounds
1653A

			Percent Recovery	
	CAS Percent Recovery Acceptance Criteria	Sample Name:	**Well #3**	**Method Blank**
		Lab Code:	K1502736-001	KWG1502299-3
		Date Analyzed:	3/25/2015	3/25/2015
Analyte				
3,4,5-Trichlorophenol	36-131		101	97
4,5,6-Trichloroguaiacol-13c6	25-134		99	99
Pentachlorophenol-13c6	22-117		94	92
Tetrachloroguaiacol-13c6	18-129		102	101
Tetrachlorocatechol-13c6	D-121		41	83

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Analytical Results

Client:	Longview, City of	**Service Request:**	K1502736
Project:	Mint Farm Monitoring	**Date Collected:**	NA
Sample Matrix:	Drinking water	**Date Received:**	NA
		Date Extracted:	3/20/2015
		Date Analyzed:	3/25/2015

Duplicate Summary
Chlorinated Phenolic Organic Compounds

Sample Name:	Batch QC	Units:	ug/L (ppb)
Lab Code:	KWG1502299-1	Basis:	NA
Test Notes:			

Analyte	Prep Method	Analysis Method	MRL	Sample Result	Duplicate Sample Result	Average	Relative Percent Difference	Result Notes
2,4,6-Trichlorophenol	METHOD	1653A	2.5	ND	ND	ND	-	
2,4,5-Trichlorophenol	METHOD	1653A	2.5	ND	ND	ND	-	
2,3,4,6-Tetrachlorophenol	METHOD	1653A	2.5	ND	ND	ND	-	
3,4,6-Trichloroguaiacol	METHOD	1653A	2.5	ND	ND	ND	-	
3,4,5-Trichloroguaiacol	METHOD	1653A	2.5	ND	ND	ND	-	
3,4,6-Trichlorocatechol	METHOD	1653A	5.0	ND	ND	ND	-	
3,4,5-Trichlorocatechol	METHOD	1653A	5.0	ND	ND	ND	-	
Trichlorosyringol	METHOD	1653A	2.5	ND	ND	ND	-	
4,5,6-Trichloroguaiacol	METHOD	1653A	2.5	ND	ND	ND	-	
Pentachlorophenol	METHOD	1653A	5.0	ND	ND	ND	-	
Tetrachloroguaiacol	METHOD	1653A	5.0	ND	ND	ND	-	
Tetrachlorocatechol	METHOD	1653A	5.0	ND	ND	ND	-	

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Analytical Results

Client:	Longview, City of	**Service Request:**	K1502736
Project:	Mint Farm Monitoring	**Date Collected:**	NA
LCS Matrix:	Drinking water	**Date Received:**	NA
		Date Extracted:	3/20/2015
		Date Analyzed:	3/25/2015

Ongoing Precision and Recovery Summary
Chlorinated Phenolic Organic Compounds

Sample Name:	Lab Control Sample	Units:	ug/L (ppb)
Lab Code:	KWG1502299-2	Basis:	NA
Test Notes:			

Analyte	Prep Method	Analysis Method	True Value	Result	Percent Recovery	CAS Percent Recovery Acceptance Limits	Result Notes
2,4,6-Trichlorophenol	METHOD	1653A	50	46.9	94	72-146	
2,4,5-Trichlorophenol	METHOD	1653A	50	47.3	95	82-128	
2,3,4,6-Tetrachlorophenol	METHOD	1653A	50	48.0	96	82-132	
3,4,6-Trichloroguaiacol	METHOD	1653A	50	46.6	93	74-140	
3,4,5-Trichloroguaiacol	METHOD	1653A	50	46.8	94	80-134	
3,4,6-Trichlorocatechol	METHOD	1653A	100	92.9	93	64-149	
3,4,5-Trichlorocatechol	METHOD	1653A	100	98.0	98	72-128	
Trichlorosyringol	METHOD	1653A	50	45.7	91	66-174	
4,5,6-Trichloroguaiacol	METHOD	1653A	50	47.8	96	88-116	
Pentachlorophenol	METHOD	1653A	100	88.5	89	84-120	
Tetrachloroguaiacol	METHOD	1653A	100	90.6	91	81-126	
Tetrachlorocatechol	METHOD	1653A	100	92.0	92	81-132	

EPA Method 504.1

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Analytical Results

Client:	Longview, City of	**Service Request:**	K1502736
Project:	Mint Farm Monitoring	**Date Collected:**	03/17/2015
Sample Matrix:	Drinking water	**Date Received:**	03/17/2015

EPA Method 504.1

Sample Name:	Well #3	**Units:**	ug/L
Lab Code:	K1502736-001	**Basis:**	NA
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	504.1		

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
1,2-Dibromoethane (EDB)	ND	U	0.0096	1	03/19/15	03/19/15	KWG1502269	
1,2,3-Trichloropropane	ND	U	0.39	1	03/19/15	03/19/15	KWG1502269	
1,2-Dibromo-3-chloropropane (DBCP	ND	U	0.0096	1	03/19/15	03/19/15	KWG1502269	

Comments:

Analytical Results

Client:	Longview, City of	**Service Request:**	K1502736
Project:	Mint Farm Monitoring	**Date Collected:**	NA
Sample Matrix:	Drinking water	**Date Received:**	NA

EPA Method 504.1

Sample Name:	Method Blank	**Units:**	ug/L
Lab Code:	KWG1502269-7	**Basis:**	NA
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	504.1		

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
1,2-Dibromoethane (EDB)	ND	U	0.0099	1	03/19/15	03/19/15	KWG1502269	
1,2,3-Trichloropropane	ND	U	0.40	1	03/19/15	03/19/15	KWG1502269	
1,2-Dibromo-3-chloropropane (DBCP	ND	U	0.0099	1	03/19/15	03/19/15	KWG1502269	

Comments:

Client:	Longview, City of	**Service Request:**	K1502736
Project:	Mint Farm Monitoring	**Date Extracted:**	03/19/2015
Sample Matrix:	Drinking water	**Date Analyzed:**	03/19/2015

Matrix Spike/Duplicate Matrix Spike Summary
EPA Method 504.1

Sample Name:	Batch QC	**Units:**	ug/L
Lab Code:	K1502735-001	**Basis:**	NA
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	504.1	**Extraction Lot:**	KWG1502269

		Batch QCMS KWG1502269-3 Matrix Spike			Batch QCDMS KWG1502269-4 Duplicate Matrix Spike					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**%Rec**	**Result**	**Spike Amount**	**%Rec**	**%Rec Limits**	**RPD**	**RPD Limit**
1,2-Dibromoethane (EDB)	ND	0.198	0.241	82	0.205	0.240	86	65-135	3	30
1,2,3-Trichloropropane	ND	0.188	0.241	78	0.205	0.240	86	65-135	9	30
1,2-Dibromo-3-chloropropane (DBCP)	ND	0.188	0.241	78	0.199	0.240	83	65-135	6	30

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Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Client:	Longview, City of	**Service Request:**	K1502736
Project:	Mint Farm Monitoring	**Date Extracted:**	03/19/2015
Sample Matrix:	Drinking water	**Date Analyzed:**	03/19/2015

Lab Control Spike Summary
EPA Method 504.1

Extraction Method:	METHOD	**Units:**	ug/L
Analysis Method:	504.1	**Basis:**	NA
		Level:	Low
		Extraction Lot:	KWG1502269

	Lab Control Sample KWG1502269-5 Lab Control Spike			
Analyte Name	**Result**	**Spike Amount**	**%Rec**	**%Rec Limits**
1,2-Dibromoethane (EDB)	0.0447	0.0625	71	70-130
1,2,3-Trichloropropane	0.0526	0.0625	84	70-130
1,2-Dibromo-3-chloropropane (DBCP)	0.0512	0.0625	82	70-130

Results flagged with an asterisk (*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Client:	Longview, City of	**Service Request:**	K1502736
Project:	Mint Farm Monitoring	**Date Extracted:**	03/19/2015
Sample Matrix:	Drinking water	**Date Analyzed:**	03/19/2015

Lab Control Spike Summary
EPA Method 504.1

Extraction Method:	METHOD	**Units:**	ug/L
Analysis Method:	504.1	**Basis:**	NA
		Level:	Low
		Extraction Lot:	KWG1502269

	Lab Control Sample KWG1502269-6 Lab Control Spike			
Analyte Name	**Result**	**Spike Amount**	**%Rec**	**%Rec Limits**
1,2-Dibromoethane (EDB)	0.232	0.250	93	70-130
1,2,3-Trichloropropane	0.204	0.250	82	70-130
1,2-Dibromo-3-chloropropane (DBCP)	0.200	0.250	80	70-130

Results flagged with an asterisk (*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Pesticides/PCBs by EPA Method 508.1

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Analytical Results

Client:	Longview, City of	**Service Request:**	K1502736
Project:	Mint Farm Monitoring	**Date Collected:**	03/17/2015
Sample Matrix:	Drinking water	**Date Received:**	03/17/2015

Pesticides/PCBs by EPA Method 508.1

Sample Name:	Well #3	**Units:**	ug/L
Lab Code:	K1502736-001	**Basis:**	NA
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	508.1		

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
gamma-BHC (Lindane)	ND	U	0.0098	1	03/27/15	03/31/15	KWG1502592	
Heptachlor	ND	U	0.0098	1	03/27/15	03/31/15	KWG1502592	
Aldrin	ND	U	0.0098	1	03/27/15	03/31/15	KWG1502592	
Heptachlor Epoxide	ND	U	0.0098	1	03/27/15	03/31/15	KWG1502592	
Heptachlor Epoxide (Isomer A)	ND	U	0.0098	1	03/27/15	03/31/15	KWG1502592	
4,4'-DDE	ND	U	0.0098	1	03/27/15	03/31/15	KWG1502592	
Dieldrin	ND	U	0.0098	1	03/27/15	03/31/15	KWG1502592	
Endrin	ND	U	0.0098	1	03/27/15	03/31/15	KWG1502592	
4,4'-DDD	ND	U	0.0098	1	03/27/15	03/31/15	KWG1502592	
4,4'-DDT	ND	U	0.0098	1	03/27/15	03/31/15	KWG1502592	
Methoxychlor	ND	U	0.0098	1	03/27/15	03/31/15	KWG1502592	
Toxaphene	ND	U	0.098	1	03/27/15	03/31/15	KWG1502592	
Chlordane	ND	U	0.098	1	03/27/15	03/31/15	KWG1502592	
Aroclor 1016	ND	U	0.049	1	03/27/15	03/31/15	KWG1502592	
Aroclor 1221	ND	U	0.098	1	03/27/15	03/31/15	KWG1502592	
Aroclor 1232	ND	U	0.098	1	03/27/15	03/31/15	KWG1502592	
Aroclor 1242	ND	U	0.098	1	03/27/15	03/31/15	KWG1502592	
Aroclor 1248	ND	U	0.098	1	03/27/15	03/31/15	KWG1502592	
Aroclor 1254	ND	U	0.098	1	03/27/15	03/31/15	KWG1502592	
Aroclor 1260	ND	U	0.098	1	03/27/15	03/31/15	KWG1502592	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
4,4'-Dibromooctafluorobiphenyl	101	70-130	03/31/15	Acceptable

Comments:

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Analytical Results

Client:	Longview, City of	**Service Request:**	K1502736
Project:	Mint Farm Monitoring	**Date Collected:**	NA
Sample Matrix:	Drinking water	**Date Received:**	NA

Pesticides/PCBs by EPA Method 508.1

Sample Name:	Method Blank	**Units:**	ug/L
Lab Code:	KWG1502592-7	**Basis:**	NA
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	508.1		

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
gamma-BHC (Lindane)	ND	U	0.010	1	03/27/15	03/31/15	KWG1502592	
Heptachlor	ND	U	0.010	1	03/27/15	03/31/15	KWG1502592	
Aldrin	ND	U	0.010	1	03/27/15	03/31/15	KWG1502592	
Heptachlor Epoxide	ND	U	0.010	1	03/27/15	03/31/15	KWG1502592	
Heptachlor Epoxide (Isomer A)	ND	U	0.010	1	03/27/15	03/31/15	KWG1502592	
4,4'-DDE	ND	U	0.010	1	03/27/15	03/31/15	KWG1502592	
Dieldrin	ND	U	0.010	1	03/27/15	03/31/15	KWG1502592	
Endrin	ND	U	0.010	1	03/27/15	03/31/15	KWG1502592	
4,4'-DDD	ND	U	0.010	1	03/27/15	03/31/15	KWG1502592	
4,4'-DDT	ND	U	0.010	1	03/27/15	03/31/15	KWG1502592	
Methoxychlor	ND	U	0.010	1	03/27/15	03/31/15	KWG1502592	
Toxaphene	ND	U	0.10	1	03/27/15	03/31/15	KWG1502592	
Chlordane	ND	U	0.10	1	03/27/15	03/31/15	KWG1502592	
Aroclor 1016	ND	U	0.050	1	03/27/15	03/31/15	KWG1502592	
Aroclor 1221	ND	U	0.10	1	03/27/15	03/31/15	KWG1502592	
Aroclor 1232	ND	U	0.10	1	03/27/15	03/31/15	KWG1502592	
Aroclor 1242	ND	U	0.10	1	03/27/15	03/31/15	KWG1502592	
Aroclor 1248	ND	U	0.10	1	03/27/15	03/31/15	KWG1502592	
Aroclor 1254	ND	U	0.10	1	03/27/15	03/31/15	KWG1502592	
Aroclor 1260	ND	U	0.10	1	03/27/15	03/31/15	KWG1502592	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
4,4'-Dibromooctafluorobiphenyl	95	70-130	03/31/15	Acceptable

Comments:

Client: Longview, City of
Project: Mint Farm Monitoring
Sample Matrix: Drinking water

Service Request: K1502736

Surrogate Recovery Summary
Pesticides/PCBs by EPA Method 508.1

Extraction Method: METHOD
Analysis Method: 508.1

Units: Percent
Level: Low

Sample Name	Lab Code	Sur1
Batch QC	K1502734-001	105
Well #3	K1502736-001	101
Method Blank	KWG1502592-7	95
Batch QCMS	KWG1502592-1	89
Batch QCDMS	KWG1502592-2	85
Lab Control Sample	KWG1502592-3	90

Surrogate Recovery Control Limits (%)

Sur1 = 4,4'-Dibromooctafluorobiphenyl 70-130

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502736
Project:	Mint Farm Monitoring	**Date Extracted:**	03/27/2015
Sample Matrix:	Drinking water	**Date Analyzed:**	03/31/2015

Matrix Spike/Duplicate Matrix Spike Summary
Pesticides/PCBs by EPA Method 508.1

Sample Name:	Batch QC	**Units:**	ug/L
Lab Code:	K1502734-001	**Basis:**	NA
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	508.1	**Extraction Lot:**	KWG1502592

		Batch QCMS KWG1502592-1 Matrix Spike			Batch QCDMS KWG1502592-2 Duplicate Matrix Spike					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**%Rec**	**Result**	**Spike Amount**	**%Rec**	**%Rec Limits**	**RPD**	**RPD Limit**
gamma-BHC (Lindane)	ND	0.0989	0.0971	102	0.0930	0.0971	96	65-135	6	30
Heptachlor	ND	0.0776	0.0971	80	0.0753	0.0971	78	65-135	3	30
Aldrin	ND	0.0914	0.0971	94	0.0856	0.0971	88	65-135	7	30
Heptachlor Epoxide	ND	0.0908	0.0971	93	0.0867	0.0971	89	65-135	5	30
Heptachlor Epoxide (Isomer A)	ND	0.0950	0.0971	98	0.0905	0.0971	93	65-135	5	30
4,4'-DDE	ND	0.102	0.0971	105	0.0962	0.0971	99	65-135	6	30
Dieldrin	ND	0.104	0.0971	107	0.0946	0.0971	97	65-135	9	30
Endrin	ND	0.0936	0.0971	96	0.0814	0.0971	84	65-135	14	30
4,4'-DDD	ND	0.107	0.0971	110	0.101	0.0971	104	65-135	6	30
4,4'-DDT	ND	0.106	0.0971	109	0.100	0.0971	103	65-135	6	30
Methoxychlor	ND	0.110	0.0971	113	0.103	0.0971	106	65-135	7	30
Aroclor 1248	ND	0.299	0.485	61 *	0.298	0.485	61 *	65-135	0	30

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Client:	Longview, City of	**Service Request:**	K1502736
Project:	Mint Farm Monitoring	**Date Extracted:**	03/27/2015
Sample Matrix:	Drinking water	**Date Analyzed:**	03/31/2015

Lab Control Spike Summary
Pesticides/PCBs by EPA Method 508.1

Extraction Method:	METHOD	**Units:**	ug/L
Analysis Method:	508.1	**Basis:**	NA
		Level:	Low
		Extraction Lot:	KWG1502592

	Lab Control Sample KWG1502592-3 Lab Control Spike			
Analyte Name	**Result**	**Spike Amount**	**%Rec**	**%Rec Limits**
gamma-BHC (Lindane)	0.102	0.100	102	70-130
Heptachlor	0.0928	0.100	93	70-130
Aldrin	0.0971	0.100	97	70-130
Heptachlor Epoxide	0.106	0.100	106	70-130
Heptachlor Epoxide (Isomer A)	0.102	0.100	102	70-130
4,4'-DDE	0.103	0.100	103	70-130
Dieldrin	0.108	0.100	108	70-130
Endrin	0.107	0.100	107	70-130
4,4'-DDD	0.103	0.100	103	70-130
4,4'-DDT	0.101	0.100	101	70-130
Methoxychlor	0.102	0.100	102	70-130
Aroclor 1248	0.377	0.500	75	70-130

Results flagged with an asterisk (*) indicate values outside control criteria.

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Chlorinated Herbicides by EPA 515.4

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

ALS Group USA, Corp. dba ALS Environmental

Analytical Results

Client:	Longview, City of	**Service Request:**	K1502736
Project:	Mint Farm Monitoring	**Date Collected:**	03/17/2015
Sample Matrix:	Drinking water	**Date Received:**	03/17/2015

Chlorinated Herbicides by EPA 515.4

Sample Name:	Well #3	**Units:**	ug/L
Lab Code:	K1502736-001	**Basis:**	NA
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	515.4		

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Dalapon	ND	U	0.99	1	03/30/15	04/10/15	KWG1502652	
3,5-Dichlorobenzoic Acid	ND	U	0.50	1	03/30/15	04/10/15	KWG1502652	
Dicamba	ND	U	0.20	1	03/30/15	04/10/15	KWG1502652	
Dichlorprop	ND	U	0.50	1	03/30/15	04/10/15	KWG1502652	
2,4-D	ND	U	0.099	1	03/30/15	04/10/15	KWG1502652	
Pentachlorophenol	ND	U	0.040	1	03/30/15	04/10/15	KWG1502652	
2,4,5-TP (Silvex)	ND	U	0.20	1	03/30/15	04/10/15	KWG1502652	
Chloramben	ND	U	0.20	1	03/30/15	04/10/15	KWG1502652	
2,4-DB	ND	U	0.99	1	03/30/15	04/10/15	KWG1502652	
Dinoseb	ND	U	0.20	1	03/30/15	04/10/15	KWG1502652	
Dacthal Diacid	ND	U	0.020	1	03/30/15	04/10/15	KWG1502652	
Picloram	ND	U	0.099	1	03/30/15	04/10/15	KWG1502652	
Acifluorfen	ND	U	2.0	1	03/30/15	04/10/15	KWG1502652	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
2,4-Dichlorophenylacetic Acid	129	70-130	04/10/15	Acceptable

Comments:

ALS Group USA, Corp. dba ALS Environmental

Analytical Results

Client:	Longview, City of	**Service Request:**	K1502736
Project:	Mint Farm Monitoring	**Date Collected:**	NA
Sample Matrix:	Drinking water	**Date Received:**	NA

Chlorinated Herbicides by EPA 515.4

Sample Name:	Method Blank	**Units:**	ug/L
Lab Code:	KWG1502652-4	**Basis:**	NA
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	515.4		

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Dalapon	ND	U	1.0	1	03/30/15	04/10/15	KWG1502652	
3,5-Dichlorobenzoic Acid	ND	U	0.50	1	03/30/15	04/10/15	KWG1502652	
Dicamba	ND	U	0.20	1	03/30/15	04/10/15	KWG1502652	
Dichlorprop	ND	U	0.50	1	03/30/15	04/10/15	KWG1502652	
2,4-D	ND	U	0.10	1	03/30/15	04/10/15	KWG1502652	
Pentachlorophenol	ND	U	0.040	1	03/30/15	04/10/15	KWG1502652	
2,4,5-TP (Silvex)	ND	U	0.20	1	03/30/15	04/10/15	KWG1502652	
Chloramben	ND	U	0.20	1	03/30/15	04/10/15	KWG1502652	
2,4-DB	ND	U	1.0	1	03/30/15	04/10/15	KWG1502652	
Dinoseb	ND	U	0.20	1	03/30/15	04/10/15	KWG1502652	
Dacthal Diacid	ND	U	0.020	1	03/30/15	04/10/15	KWG1502652	
Picloram	ND	U	0.10	1	03/30/15	04/10/15	KWG1502652	
Acifluorfen	ND	U	2.0	1	03/30/15	04/10/15	KWG1502652	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
2,4-Dichlorophenylacetic Acid	102	70-130	04/10/15	Acceptable

Comments:

Client: Longview, City of
Project: Mint Farm Monitoring
Sample Matrix: Drinking water

Service Request: K1502736

Surrogate Recovery Summary
Chlorinated Herbicides by EPA 515.4

Extraction Method: METHOD
Analysis Method: 515.4

Units: Percent
Level: Low

Sample Name	Lab Code	Sur1
Well #3	K1502736-001	129
Batch QC	K1503080-001	118
Method Blank	KWG1502652-4	102
Batch QCMS	KWG1502652-1	106
Batch QCDMS	KWG1502652-2	109
Lab Control Sample	KWG1502652-3	105

Surrogate Recovery Control Limits (%)

Sur1 = 2,4-Dichlorophenylacetic Acid 70-130

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502736
Project:	Mint Farm Monitoring	**Date Extracted:**	03/30/2015
Sample Matrix:	Drinking water	**Date Analyzed:**	04/10/2015

Matrix Spike/Duplicate Matrix Spike Summary
Chlorinated Herbicides by EPA 515.4

Sample Name:	Batch QC	**Units:**	ug/L
Lab Code:	K1503080-001	**Basis:**	NA
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	515.4	**Extraction Lot:**	KWG1502652

		Batch QCMS KWG1502652-1 Matrix Spike			Batch QCDMS KWG1502652-2 Duplicate Matrix Spike					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**%Rec**	**Result**	**Spike Amount**	**%Rec**	**%Rec Limits**	**RPD**	**RPD Limit**
Dalapon	ND	3.99	4.95	81	4.04	4.96	82	70-130	1	30
3,5-Dichlorobenzoic Acid	ND	4.10	4.95	83	4.31	4.96	87	70-130	5	30
Dicamba	ND	4.46	4.95	90	4.71	4.96	95	70-130	6	30
Dichlorprop	ND	4.34	4.95	88	4.57	4.96	92	70-130	5	30
2,4-D	ND	4.40	4.95	89	4.64	4.96	94	70-130	5	30
Pentachlorophenol	ND	4.82	4.95	97	5.04	4.96	102	70-130	4	30
2,4,5-TP (Silvex)	ND	4.28	4.95	86	4.48	4.96	90	70-130	5	30
Chloramben	ND	4.09	4.95	82	4.44	4.96	90	70-130	8	30
2,4-DB	ND	4.31	4.95	87	4.53	4.96	91	70-130	5	30
Dinoseb	ND	4.99	4.95	101	5.31	4.96	107	70-130	6	30
Dacthal Diacid	ND	5.10	4.95	103	5.40	4.96	109	70-130	6	30
Picloram	ND	4.82	4.95	97	4.95	4.96	100	70-130	3	30
Acifluorfen	ND	5.22	4.95	105	5.41	4.96	109	70-130	4	30

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Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Client:	Longview, City of	**Service Request:**	K1502736
Project:	Mint Farm Monitoring	**Date Extracted:**	03/30/2015
Sample Matrix:	Drinking water	**Date Analyzed:**	04/10/2015

Lab Control Spike Summary
Chlorinated Herbicides by EPA 515.4

Extraction Method:	METHOD	**Units:**	ug/L
Analysis Method:	515.4	**Basis:**	NA
		Level:	Low
		Extraction Lot:	KWG1502652

	Lab Control Sample KWG1502652-3 Lab Control Spike			
Analyte Name	**Result**	**Spike Amount**	**%Rec**	**%Rec Limits**
Dalapon	3.82	5.00	76	70-130
3,5-Dichlorobenzoic Acid	3.86	5.00	77	70-130
Dicamba	4.38	5.00	88	70-130
Dichlorprop	4.50	5.00	90	70-130
2,4-D	4.56	5.00	91	70-130
Pentachlorophenol	4.77	5.00	95	70-130
2,4,5-TP (Silvex)	4.43	5.00	89	70-130
Chloramben	4.50	5.00	90	70-130
2,4-DB	4.34	5.00	87	70-130
Dinoseb	5.11	5.00	102	70-130
Dacthal Diacid	4.79	5.00	96	70-130
Picloram	4.81	5.00	96	70-130
Acifluorfen	5.62	5.00	112	70-130

Results flagged with an asterisk (*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Volatile Organic Compounds

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

Analytical Results

Client:	Longview, City of	**Service Request:**	K1502736
Project:	Mint Farm Monitoring	**Date Collected:**	03/17/2015
Sample Matrix:	Drinking water	**Date Received:**	03/17/2015

Volatile Organic Compounds

Sample Name:	Well #3	**Units:**	ug/L
Lab Code:	K1502736-001	**Basis:**	NA
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	524.2		

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Dichlorodifluoromethane	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
Chloromethane	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
Vinyl Chloride	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
Bromomethane	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
Chloroethane	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
Trichlorofluoromethane	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
Methylene Chloride	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
trans-1,2-Dichloroethene	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
1,1-Dichloroethene	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
cis-1,2-Dichloroethene	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
Methyl tert-Butyl Ether	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
Chloroform	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
Bromochloromethane	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
Carbon Tetrachloride	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
Benzene	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
1,2-Dichloroethane	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
Trichloroethene	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
1,2-Dichloropropane	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
Bromodichloromethane	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
Dibromomethane	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
cis-1,3-Dichloropropene	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
1,1-Dichloroethane	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
Toluene	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
trans-1,3-Dichloropropene	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
Tetrachloroethene	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
2,2-Dichloropropane	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
1,3-Dichloropropane	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
Dibromochloromethane	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
1,2-Dibromoethane (EDB)	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
Chlorobenzene	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
Ethylbenzene	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
Styrene	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
m,p-Xylenes	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
o-Xylene	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	

Comments:

Analytical Results

Client:	Longview, City of	**Service Request:**	K1502736
Project:	Mint Farm Monitoring	**Date Collected:**	03/17/2015
Sample Matrix:	Drinking water	**Date Received:**	03/17/2015

Volatile Organic Compounds

Sample Name:	Well #3	**Units:**	ug/L
Lab Code:	K1502736-001	**Basis:**	NA
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	524.2		

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
1,1,1-Trichloroethane	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
Bromoform	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
1,1,2,2-Tetrachloroethane	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
Isopropylbenzene	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
1,1-Dichloropropene	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
Bromobenzene	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
n-Propylbenzene	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
1,3,5-Trimethylbenzene	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
2-Chlorotoluene	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
4-Chlorotoluene	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
tert-Butylbenzene	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
1,2,4-Trimethylbenzene	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
sec-Butylbenzene	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
p-Isopropyltoluene	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
1,3-Dichlorobenzene	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
1,4-Dichlorobenzene	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
n-Butylbenzene	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
1,2-Dichlorobenzene	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
1,2-Dibromo-3-chloropropane (DBCP	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
1,2,4-Trichlorobenzene	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
Hexachlorobutadiene	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
Naphthalene	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
1,1,2-Trichloroethane	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
1,1,1,2-Tetrachloroethane	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
1,2,3-Trichloropropane	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
1,2,3-Trichlorobenzene	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
4-Bromofluorobenzene	96	70-130	03/19/15	Acceptable
Dibromofluoromethane	101	82-124	03/19/15	Acceptable
Toluene-d8	97	82-124	03/19/15	Acceptable

Comments:

Analytical Results

Client: Longview, City of
Project: Mint Farm Monitoring
Sample Matrix: Water

Service Request: K1502736
Date Collected: NA
Date Received: NA

Volatile Organic Compounds

Sample Name: Method Blank
Lab Code: KWG1502273-4

Units: ug/L
Basis: NA

Extraction Method: METHOD
Analysis Method: 524.2

Level: Low

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Dichlorodifluoromethane	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
Chloromethane	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
Vinyl Chloride	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
Bromomethane	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
Chloroethane	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
Trichlorofluoromethane	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
Methylene Chloride	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
trans-1,2-Dichloroethene	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
1,1-Dichloroethene	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
cis-1,2-Dichloroethene	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
Methyl tert-Butyl Ether	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
Chloroform	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
Bromochloromethane	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
Carbon Tetrachloride	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
Benzene	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
1,2-Dichloroethane	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
Trichloroethene	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
1,2-Dichloropropane	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
Bromodichloromethane	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
Dibromomethane	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
cis-1,3-Dichloropropene	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
1,1-Dichloroethane	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
Toluene	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
trans-1,3-Dichloropropene	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
Tetrachloroethene	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
2,2-Dichloropropane	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
1,3-Dichloropropane	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
Dibromochloromethane	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
1,2-Dibromoethane (EDB)	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
Chlorobenzene	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
Ethylbenzene	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
Styrene	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
m,p-Xylenes	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
o-Xylene	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	

Comments:

Analytical Results

Client:	Longview, City of	**Service Request:**	K1502736
Project:	Mint Farm Monitoring	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA

Volatile Organic Compounds

Sample Name:	Method Blank	**Units:**	ug/L
Lab Code:	KWG1502273-4	**Basis:**	NA
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	524.2		

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
1,1,1-Trichloroethane	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
Bromoform	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
1,1,2,2-Tetrachloroethane	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
Isopropylbenzene	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
1,1-Dichloropropene	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
Bromobenzene	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
n-Propylbenzene	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
1,3,5-Trimethylbenzene	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
2-Chlorotoluene	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
4-Chlorotoluene	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
tert-Butylbenzene	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
1,2,4-Trimethylbenzene	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
sec-Butylbenzene	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
p-Isopropyltoluene	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
1,3-Dichlorobenzene	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
1,4-Dichlorobenzene	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
n-Butylbenzene	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
1,2-Dichlorobenzene	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
1,2-Dibromo-3-chloropropane (DBCP	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
1,2,4-Trichlorobenzene	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
Hexachlorobutadiene	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
Naphthalene	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
1,1,2-Trichloroethane	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
1,1,1,2-Tetrachloroethane	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
1,2,3-Trichloropropane	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	
1,2,3-Trichlorobenzene	ND	U	0.50	1	03/19/15	03/19/15	KWG1502273	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
4-Bromofluorobenzene	92	70-130	03/19/15	Acceptable
Dibromofluoromethane	97	82-124	03/19/15	Acceptable
Toluene-d8	96	82-124	03/19/15	Acceptable

Comments:

Client: Longview, City of
Project: Mint Farm Monitoring
Sample Matrix: Drinking water

Service Request: K1502736

Surrogate Recovery Summary
Volatile Organic Compounds

Extraction Method: METHOD
Analysis Method: 524.2

Units: Percent
Level: Low

Sample Name	Lab Code	Sur1	Sur2	Sur3
Batch QC	K1502734-001	93	98	96
Well #3	K1502736-001	96	101	97
Method Blank	KWG1502273-4	92	97	96
Batch QCMS	KWG1502273-1	98	98	96
Batch QCDMS	KWG1502273-2	96	99	97
Lab Control Sample	KWG1502273-3	99	98	95

Surrogate Recovery Control Limits (%)

Sur1	=	4-Bromofluorobenzene	70-130
Sur2	=	Dibromofluoromethane	82-124
Sur3	=	Toluene-d8	82-124

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Client:	Longview, City of	**Service Request:**	K1502736
Project:	Mint Farm Monitoring	**Date Extracted:**	03/19/2015
Sample Matrix:	Drinking water	**Date Analyzed:**	03/19/2015

Matrix Spike/Duplicate Matrix Spike Summary
Volatile Organic Compounds

Sample Name:	Batch QC	**Units:**	ug/L
Lab Code:	K1502734-001	**Basis:**	NA
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	524.2	**Extraction Lot:**	KWG1502273

		Batch QCMS KWG1502273-1 Matrix Spike				Batch QCDMS KWG1502273-2 Duplicate Matrix Spike						
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**%Rec**		**Result**	**Spike Amount**	**%Rec**		**%Rec Limits**	**RPD**	**RPD Limit**
Dichlorodifluoromethane	ND	4.09	5.00	82		4.15	5.00	83		70-130	1	30
Chloromethane	ND	4.66	5.00	93		4.11	5.00	82		70-130	13	30
Vinyl Chloride	ND	2.62	5.00	52	*	2.66	5.00	53	*	70-130	2	30
Bromomethane	ND	3.42	5.00	68	*	3.52	5.00	70		70-130	3	30
Chloroethane	ND	4.66	5.00	93		4.26	5.00	85		70-130	9	30
Trichlorofluoromethane	ND	3.81	5.00	76		3.87	5.00	77		70-130	2	30
Methylene Chloride	ND	4.43	5.00	89		4.63	5.00	93		70-130	4	30
trans-1,2-Dichloroethene	ND	3.87	5.00	77		3.90	5.00	78		70-130	1	30
1,1-Dichloroethene	ND	0.700	5.00	14	*	0.620	5.00	12	*	70-130	12	30
cis-1,2-Dichloroethene	ND	4.31	5.00	86		4.36	5.00	87		70-130	1	30
Methyl tert-Butyl Ether	ND	7.44	10.0	74		7.83	10.0	78		70-130	5	30
Chloroform	ND	4.53	5.00	91		4.62	5.00	92		70-130	2	30
Bromochloromethane	ND	4.28	5.00	86		4.55	5.00	91		70-130	6	30
Carbon Tetrachloride	ND	4.25	5.00	85		4.29	5.00	86		70-130	1	30
Benzene	ND	4.16	5.00	83		4.28	5.00	86		70-130	3	30
1,2-Dichloroethane	ND	4.86	5.00	97		5.23	5.00	105		70-130	7	30
Trichloroethene	ND	3.76	5.00	75		3.82	5.00	76		70-130	2	30
1,2-Dichloropropane	ND	4.26	5.00	85		4.32	5.00	86		70-130	1	30
Bromodichloromethane	ND	4.51	5.00	90		4.63	5.00	93		70-130	3	30
Dibromomethane	ND	4.51	5.00	90		4.61	5.00	92		70-130	2	30
cis-1,3-Dichloropropene	ND	4.00	5.00	80		4.26	5.00	85		70-130	6	30
Toluene	ND	3.94	5.00	79		4.03	5.00	81		70-130	2	30
1,1-Dichloroethane	ND	4.25	5.00	85		4.39	5.00	88		70-130	3	30
trans-1,3-Dichloropropene	ND	3.69	5.00	74		3.90	5.00	78		70-130	6	30
Tetrachloroethene	ND	3.52	5.00	70		3.53	5.00	71		70-130	0	30
1,3-Dichloropropane	ND	4.55	5.00	91		4.67	5.00	93		70-130	3	30
2,2-Dichloropropane	ND	3.88	5.00	78		3.99	5.00	80		70-130	3	30
Dibromochloromethane	ND	4.67	5.00	93		5.06	5.00	101		70-130	8	30
1,2-Dibromoethane (EDB)	ND	4.61	5.00	92		4.81	5.00	96		70-130	4	30
Chlorobenzene	ND	4.28	5.00	86		4.34	5.00	87		70-130	1	30
Ethylbenzene	ND	3.95	5.00	79		3.92	5.00	78		70-130	1	30
Styrene	ND	ND	5.00	0	*	0.700	5.00	14	*	70-130	NC	30
m,p-Xylenes	ND	8.04	10.0	80		8.07	10.0	81		70-130	0	30

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Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Client:	Longview, City of	**Service Request:**	K1502736
Project:	Mint Farm Monitoring	**Date Extracted:**	03/19/2015
Sample Matrix:	Drinking water	**Date Analyzed:**	03/19/2015

Matrix Spike/Duplicate Matrix Spike Summary
Volatile Organic Compounds

Sample Name:	Batch QC	**Units:**	ug/L
Lab Code:	K1502734-001	**Basis:**	NA
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	524.2	**Extraction Lot:**	KWG1502273

		Batch QCMS KWG1502273-1 Matrix Spike				Batch QCDMS KWG1502273-2 Duplicate Matrix Spike					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**%Rec**		**Result**	**Spike Amount**	**%Rec**		**%Rec Limits**	**RPD**	**RPD Limit**
o-Xylene	ND	3.98	5.00	80		4.04	5.00	81		70-130	1	30
1,1,1-Trichloroethane	ND	3.81	5.00	76		3.95	5.00	79		70-130	4	30
Bromoform	ND	4.95	5.00	99		5.26	5.00	105		70-130	6	30
1,1,2,2-Tetrachloroethane	ND	5.27	5.00	105		5.49	5.00	110		70-130	4	30
Isopropylbenzene	ND	3.79	5.00	76		3.77	5.00	75		70-130	1	30
1,1-Dichloropropene	ND	2.93	5.00	59	*	3.05	5.00	61	*	70-130	4	30
Bromobenzene	ND	4.59	5.00	92		4.71	5.00	94		70-130	3	30
n-Propylbenzene	ND	4.50	5.00	90		4.51	5.00	90		70-130	0	30
1,3,5-Trimethylbenzene	ND	4.58	5.00	92		4.64	5.00	93		70-130	1	30
2-Chlorotoluene	ND	4.81	5.00	96		4.90	5.00	98		70-130	2	30
4-Chlorotoluene	ND	4.93	5.00	99		5.01	5.00	100		70-130	2	30
tert-Butylbenzene	ND	4.20	5.00	84		4.23	5.00	85		70-130	1	30
1,2,4-Trimethylbenzene	ND	4.78	5.00	96		4.87	5.00	97		70-130	2	30
sec-Butylbenzene	ND	4.27	5.00	85		4.33	5.00	87		70-130	1	30
p-Isopropyltoluene	ND	4.32	5.00	86		4.32	5.00	86		70-130	0	30
1,3-Dichlorobenzene	ND	4.64	5.00	93		4.78	5.00	96		70-130	3	30
1,4-Dichlorobenzene	ND	4.62	5.00	92		4.75	5.00	95		70-130	3	30
n-Butylbenzene	ND	4.24	5.00	85		4.33	5.00	87		70-130	2	30
1,2-Dichlorobenzene	ND	4.68	5.00	94		4.90	5.00	98		70-130	5	30
1,2-Dibromo-3-chloropropane (DBCP)	ND	5.36	5.00	107		5.82	5.00	116		70-130	8	30
1,2,4-Trichlorobenzene	ND	4.48	5.00	90		4.64	5.00	93		70-130	4	30
Hexachlorobutadiene	ND	4.02	5.00	80		4.19	5.00	84		70-130	4	30
Naphthalene	ND	4.18	5.00	84		4.56	5.00	91		70-130	9	30
1,1,2-Trichloroethane	ND	4.26	5.00	85		4.43	5.00	89		70-130	4	30
1,1,1,2-Tetrachloroethane	ND	5.01	5.00	100		5.09	5.00	102		70-130	2	30
1,2,3-Trichloropropane	ND	4.83	5.00	97		4.95	5.00	99		70-130	2	30
1,2,3-Trichlorobenzene	ND	4.69	5.00	94		4.90	5.00	98		70-130	4	30

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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502736
Project:	Mint Farm Monitoring	**Date Extracted:**	03/19/2015
Sample Matrix:	Water	**Date Analyzed:**	03/19/2015

Lab Control Spike Summary
Volatile Organic Compounds

Extraction Method:	METHOD	**Units:**	ug/L
Analysis Method:	524.2	**Basis:**	NA
		Level:	Low
		Extraction Lot:	KWG1502273

	Lab Control Sample KWG1502273-3 Lab Control Spike			
Analyte Name	**Result**	**Spike Amount**	**%Rec**	**%Rec Limits**
Dichlorodifluoromethane	6.12	5.00	122	70-130
Chloromethane	5.38	5.00	108	70-130
Vinyl Chloride	5.35	5.00	107	70-130
Bromomethane	4.62	5.00	92	70-130
Chloroethane	5.38	5.00	108	70-130
Trichlorofluoromethane	5.74	5.00	115	70-130
Methylene Chloride	4.85	5.00	97	70-130
trans-1,2-Dichloroethene	5.08	5.00	102	70-130
cis-1,2-Dichloroethene	4.92	5.00	98	70-130
1,1-Dichloroethene	5.03	5.00	101	70-130
Methyl tert-Butyl Ether	7.89	10.0	79	70-130
Chloroform	5.04	5.00	101	70-130
Bromochloromethane	4.60	5.00	92	70-130
Carbon Tetrachloride	6.20	5.00	124	70-130
Benzene	4.97	5.00	99	70-130
1,2-Dichloroethane	5.27	5.00	105	70-130
Trichloroethene	4.89	5.00	98	70-130
1,2-Dichloropropane	4.61	5.00	92	70-130
Bromodichloromethane	4.82	5.00	96	70-130
Dibromomethane	4.70	5.00	94	70-130
cis-1,3-Dichloropropene	4.36	5.00	87	70-130
Toluene	4.69	5.00	94	70-130
1,1-Dichloroethane	5.12	5.00	102	70-130
trans-1,3-Dichloropropene	3.98	5.00	80	70-130
Tetrachloroethene	4.72	5.00	94	70-130
1,3-Dichloropropane	4.65	5.00	93	70-130
2,2-Dichloropropane	5.12	5.00	102	70-130
Dibromochloromethane	4.94	5.00	99	70-130
1,2-Dibromoethane (EDB)	4.83	5.00	97	70-130
Chlorobenzene	4.74	5.00	95	70-130
Ethylbenzene	4.82	5.00	96	70-130
Styrene	4.36	5.00	87	70-130
m,p-Xylenes	9.52	10.0	95	70-130
o-Xylene	4.59	5.00	92	70-130
1,1,1-Trichloroethane	5.20	5.00	104	70-130

Results flagged with an asterisk (*) indicate values outside control criteria.

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Client: Longview, City of
Project: Mint Farm Monitoring
Sample Matrix: Water

Service Request: K1502736
Date Extracted: 03/19/2015
Date Analyzed: 03/19/2015

Lab Control Spike Summary
Volatile Organic Compounds

Extraction Method: METHOD
Analysis Method: 524.2

Units: ug/L
Basis: NA
Level: Low
Extraction Lot: KWG1502273

	Lab Control Sample KWG1502273-3 Lab Control Spike			
Analyte Name	**Result**	**Spike Amount**	**%Rec**	**%Rec Limits**
1,1,2,2-Tetrachloroethane	5.49	5.00	110	70-130
Bromoform	4.95	5.00	99	70-130
Isopropylbenzene	4.91	5.00	98	70-130
1,1-Dichloropropene	5.17	5.00	103	70-130
Bromobenzene	4.98	5.00	100	70-130
n-Propylbenzene	5.79	5.00	116	70-130
1,3,5-Trimethylbenzene	5.43	5.00	109	70-130
2-Chlorotoluene	5.58	5.00	112	70-130
4-Chlorotoluene	5.62	5.00	112	70-130
tert-Butylbenzene	5.47	5.00	109	70-130
1,2,4-Trimethylbenzene	5.43	5.00	109	70-130
sec-Butylbenzene	5.63	5.00	113	70-130
p-Isopropyltoluene	5.49	5.00	110	70-130
1,3-Dichlorobenzene	5.09	5.00	102	70-130
1,4-Dichlorobenzene	4.99	5.00	100	70-130
n-Butylbenzene	5.47	5.00	109	70-130
1,2-Dichlorobenzene	5.06	5.00	101	70-130
1,2-Dibromo-3-chloropropane (DBCP)	5.72	5.00	114	70-130
1,2,4-Trichlorobenzene	4.72	5.00	94	70-130
Hexachlorobutadiene	5.22	5.00	104	70-130
Naphthalene	4.46	5.00	89	70-130
1,1,2-Trichloroethane	4.34	5.00	87	70-130
1,1,1,2-Tetrachloroethane	5.37	5.00	107	70-130
1,2,3-Trichloropropane	5.12	5.00	102	70-130
1,2,3-Trichlorobenzene	4.89	5.00	98	70-130

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Semivolatile Organics by EPA Method 525.2

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

ALS Group USA, Corp. dba ALS Environmental

Analytical Results

Client:	Longview, City of	**Service Request:**	K1502736
Project:	Mint Farm Monitoring	**Date Collected:**	03/17/2015
Sample Matrix:	Drinking water	**Date Received:**	03/17/2015

Semivolatile Organics by EPA Method 525.2

Sample Name:	Well #3	**Units:**	ug/L
Lab Code:	K1502736-001	**Basis:**	NA
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	525.2		

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Hexachlorocyclopentadiene	ND	U	0.098	1	03/27/15	03/31/15	KWG1502593	*
Fluorene	ND	U	0.049	1	03/27/15	03/31/15	KWG1502593	
Propachlor	ND	U	0.098	1	03/27/15	03/31/15	KWG1502593	
Hexachlorobenzene	ND	U	0.098	1	03/27/15	03/31/15	KWG1502593	
Simazine	ND	U	0.049	1	03/27/15	03/31/15	KWG1502593	
Atrazine	ND	U	0.098	1	03/27/15	03/31/15	KWG1502593	
Metribuzin	ND	U	0.20	1	03/27/15	03/31/15	KWG1502593	
Alachlor	ND	U	0.070	1	03/27/15	03/31/15	KWG1502593	
Bromacil	ND	U	0.20	1	03/27/15	03/31/15	KWG1502593	
Metolachlor	ND	U	0.088	1	03/27/15	03/31/15	KWG1502593	
Butachlor	ND	U	0.098	1	03/27/15	03/31/15	KWG1502593	
Bis(2-ethylhexyl) Adipate	ND	U	0.59	1	03/27/15	03/31/15	KWG1502593	
Bis(2-ethylhexyl) Phthalate	ND	U	0.59	1	03/27/15	03/31/15	KWG1502593	
Benzo(a)pyrene	ND	U	0.020	1	03/27/15	03/31/15	KWG1502593	

* See Case Narrative

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
1,3-Dimethyl-2-nitrobenzene	99	70-130	03/31/15	Acceptable
Triphenyl Phosphate	88	70-130	03/31/15	Acceptable
Perylene-d12	71	70-130	03/31/15	Acceptable

Comments:

ALS Group USA, Corp. dba ALS Environmental

Analytical Results

Client:	Longview, City of	**Service Request:**	K1502736
Project:	Mint Farm Monitoring	**Date Collected:**	NA
Sample Matrix:	Drinking water	**Date Received:**	NA

Semivolatile Organics by EPA Method 525.2

Sample Name:	Method Blank	**Units:**	ug/L
Lab Code:	KWG1502593-4	**Basis:**	NA
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	525.2		

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Hexachlorocyclopentadiene	ND	U	0.10	1	03/27/15	03/31/15	KWG1502593	*
Fluorene	ND	U	0.050	1	03/27/15	03/31/15	KWG1502593	
Propachlor	ND	U	0.10	1	03/27/15	03/31/15	KWG1502593	
Hexachlorobenzene	ND	U	0.10	1	03/27/15	03/31/15	KWG1502593	
Simazine	ND	U	0.050	1	03/27/15	03/31/15	KWG1502593	
Atrazine	ND	U	0.10	1	03/27/15	03/31/15	KWG1502593	
Metribuzin	ND	U	0.20	1	03/27/15	03/31/15	KWG1502593	
Alachlor	ND	U	0.072	1	03/27/15	03/31/15	KWG1502593	
Bromacil	ND	U	0.20	1	03/27/15	03/31/15	KWG1502593	
Metolachlor	ND	U	0.090	1	03/27/15	03/31/15	KWG1502593	
Butachlor	ND	U	0.10	1	03/27/15	03/31/15	KWG1502593	
Bis(2-ethylhexyl) Adipate	ND	U	0.60	1	03/27/15	03/31/15	KWG1502593	
Bis(2-ethylhexyl) Phthalate	ND	U	0.60	1	03/27/15	03/31/15	KWG1502593	
Benzo(a)pyrene	ND	U	0.020	1	03/27/15	03/31/15	KWG1502593	

* See Case Narrative

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
1,3-Dimethyl-2-nitrobenzene	91	70-130	03/31/15	Acceptable
Triphenyl Phosphate	83	70-130	03/31/15	Acceptable
Perylene-d12	85	70-130	03/31/15	Acceptable

Comments:

Client: Longview, City of
Project: Mint Farm Monitoring
Sample Matrix: Drinking water

Service Request: K1502736

Surrogate Recovery Summary
Semivolatile Organics by EPA Method 525.2

Extraction Method: METHOD
Analysis Method: 525.2

Units: Percent
Level: Low

Sample Name	Lab Code	Sur1	Sur2	Sur3	
Batch QC	K1502734-001	94	86	87	
Well #3	K1502736-001	99	88	71	
Method Blank	KWG1502593-4	91	83	85	
Batch QCMS	KWG1502593-1	96	91	76	
Batch QCDMS	KWG1502593-2	94	92	59	*
Lab Control Sample	KWG1502593-3	87	91	83	

Surrogate Recovery Control Limits (%)

Sur1	=	1,3-Dimethyl-2-nitrobenzene	70-130
Sur2	=	Triphenyl Phosphate	70-130
Sur3	=	Perylene-d12	70-130

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502736
Project:	Mint Farm Monitoring	**Date Extracted:**	03/27/2015
Sample Matrix:	Drinking water	**Date Analyzed:**	03/31/2015

Matrix Spike/Duplicate Matrix Spike Summary
Semivolatile Organics by EPA Method 525.2

Sample Name:	Batch QC	**Units:**	ug/L
Lab Code:	K1502734-001	**Basis:**	NA
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	525.2	**Extraction Lot:**	KWG1502593

		Batch QCMS KWG1502593-1 Matrix Spike			Batch QCDMS KWG1502593-2 Duplicate Matrix Spike					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**%Rec**	**Result**	**Spike Amount**	**%Rec**	**%Rec Limits**	**RPD**	**RPD Limit**
Hexachlorocyclopentadiene	ND	1.48	0.971	153 *	1.42	0.971	146 *	70-130	4	30
Fluorene	ND	1.06	0.971	109	1.04	0.971	107	70-130	2	30
Propachlor	ND	1.15	0.971	118	1.13	0.971	116	70-130	2	30
Hexachlorobenzene	ND	0.895	0.971	92	0.903	0.971	93	70-130	1	30
Simazine	ND	0.825	0.971	85	0.879	0.971	91	70-130	6	30
Atrazine	ND	0.870	0.971	90	0.942	0.971	97	70-130	8	30
Metribuzin	ND	0.950	0.971	98	1.02	0.971	105	70-130	7	30
Alachlor	ND	0.950	0.971	98	1.01	0.971	104	70-130	6	30
Bromacil	ND	0.978	0.971	101	1.02	0.971	105	70-130	4	30
Metolachlor	ND	1.10	0.971	113	1.15	0.971	119	70-130	5	30
Butachlor	ND	1.08	0.971	111	1.09	0.971	112	70-130	0	30
Bis(2-ethylhexyl) Adipate	ND	1.01	0.971	105	0.994	0.971	102	70-130	2	30
Bis(2-ethylhexyl) Phthalate	ND	1.03	0.971	106	1.05	0.971	108	70-130	2	30
Benzo(a)pyrene	ND	0.364	0.971	38 *	0.204	0.971	21 *	70-130	56 *	30

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502736
Project:	Mint Farm Monitoring	**Date Extracted:**	03/27/2015
Sample Matrix:	Drinking water	**Date Analyzed:**	03/31/2015

Lab Control Spike Summary
Semivolatile Organics by EPA Method 525.2

Extraction Method:	METHOD	**Units:**	ug/L
Analysis Method:	525.2	**Basis:**	NA
		Level:	Low
		Extraction Lot:	KWG1502593

	Lab Control Sample KWG1502593-3 Lab Control Spike			
Analyte Name	**Result**	**Spike Amount**	**%Rec**	**%Rec Limits**
Hexachlorocyclopentadiene	1.41	1.00	141 *	70-130
Fluorene	1.04	1.00	104	70-130
Propachlor	1.20	1.00	120	70-130
Hexachlorobenzene	0.930	1.00	93	70-130
Simazine	1.01	1.00	101	70-130
Atrazine	1.08	1.00	108	70-130
Metribuzin	1.08	1.00	108	70-130
Alachlor	1.07	1.00	107	70-130
Bromacil	1.04	1.00	104	70-130
Metolachlor	1.21	1.00	121	70-130
Butachlor	1.17	1.00	117	70-130
Bis(2-ethylhexyl) Adipate	0.996	1.00	100	70-130
Bis(2-ethylhexyl) Phthalate	1.01	1.00	101	70-130
Benzo(a)pyrene	1.06	1.00	106	70-130

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Endothall by EPA Method 548.1

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Analytical Results

Client:	Longview, City of	**Service Request:**	K1502736
Project:	Mint Farm Monitoring	**Date Collected:**	03/17/2015
Sample Matrix:	Drinking water	**Date Received:**	03/17/2015

Endothall by EPA Method 548.1

Sample Name:	Well #3	**Units:**	ug/L
Lab Code:	K1502736-001	**Basis:**	NA
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	548.1		

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Endothall	ND	U	5.0	1	03/24/15	03/24/15	KWG1502439	

Comments:

Analytical Results

Client:	Longview, City of	**Service Request:**	K1502736
Project:	Mint Farm Monitoring	**Date Collected:**	NA
Sample Matrix:	Drinking water	**Date Received:**	NA

Endothall by EPA Method 548.1

Sample Name:	Method Blank	**Units:**	ug/L
Lab Code:	KWG1502439-4	**Basis:**	NA
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	548.1		

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Endothall	ND	U	5.0	1	03/24/15	03/24/15	KWG1502439	

Comments:

Client:	Longview, City of	**Service Request:**	K1502736
Project:	Mint Farm Monitoring	**Date Extracted:**	03/24/2015
Sample Matrix:	Drinking water	**Date Analyzed:**	03/24/2015

Matrix Spike/Duplicate Matrix Spike Summary
Endothall by EPA Method 548.1

Sample Name:	Batch QC	**Units:**	ug/L
Lab Code:	K1502735-001	**Basis:**	NA
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	548.1	**Extraction Lot:**	KWG1502439

		Batch QCMS KWG1502439-1 Matrix Spike			Batch QCDMS KWG1502439-2 Duplicate Matrix Spike					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**%Rec**	**Result**	**Spike Amount**	**%Rec**	**%Rec Limits**	**RPD**	**RPD Limit**
Endothall	ND	90.0	100	90	91.4	100	91	30-142	2	30

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Client:	Longview, City of	**Service Request:**	K1502736
Project:	Mint Farm Monitoring	**Date Extracted:**	03/24/2015
Sample Matrix:	Drinking water	**Date Analyzed:**	03/24/2015

Lab Control Spike Summary
Endothall by EPA Method 548.1

Extraction Method:	METHOD	**Units:**	ug/L
Analysis Method:	548.1	**Basis:**	NA
		Level:	Low
		Extraction Lot:	KWG1502439

	Lab Control Sample KWG1502439-3 Lab Control Spike			
Analyte Name	**Result**	**Spike Amount**	**%Rec**	**%Rec Limits**
Endothall	92.4	100	92	30-142

Results flagged with an asterisk (*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Diquat and Paraquat by EPA Method 549.2

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Analytical Results

Client:	Longview, City of	**Service Request:**	K1502736
Project:	Mint Farm Monitoring	**Date Collected:**	03/17/2015
Sample Matrix:	Drinking water	**Date Received:**	03/17/2015

Diquat and Paraquat by EPA Method 549.2

Sample Name:	Well #3	**Units:**	ug/L
Lab Code:	K1502736-001	**Basis:**	NA
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	549.2		

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Diquat	ND	U	0.40	1	03/24/15	03/24/15	KWG1502408	
Paraquat	ND	U	0.80	1	03/24/15	03/24/15	KWG1502408	

Comments:

Analytical Results

Client:	Longview, City of	**Service Request:**	K1502736
Project:	Mint Farm Monitoring	**Date Collected:**	NA
Sample Matrix:	Drinking water	**Date Received:**	NA

Diquat and Paraquat by EPA Method 549.2

Sample Name:	Method Blank	**Units:**	ug/L
Lab Code:	KWG1502408-5	**Basis:**	NA
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	549.2		

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Diquat	ND	U	0.40	1	03/24/15	03/24/15	KWG1502408	
Paraquat	ND	U	0.80	1	03/24/15	03/24/15	KWG1502408	

Comments:

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QA/QC Report

Client:	Longview, City of	**Service Request:**	K1502736
Project:	Mint Farm Monitoring	**Date Extracted:**	03/24/2015
Sample Matrix:	Drinking water	**Date Analyzed:**	03/24/2015

Matrix Spike/Duplicate Matrix Spike Summary
Diquat and Paraquat by EPA Method 549.2

Sample Name:	Well #3	**Units:**	ug/L
Lab Code:	K1502736-001	**Basis:**	NA
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	549.2	**Extraction Lot:**	KWG1502408

		Well #3MS KWG1502408-1 Matrix Spike			Well #3DMS KWG1502408-2 Duplicate Matrix Spike					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**%Rec**	**Result**	**Spike Amount**	**%Rec**	**%Rec Limits**	**RPD**	**RPD Limit**
Diquat	ND	13.3	12.0	111	13.1	12.0	110	70-130	1	30
Paraquat	ND	14.5	12.0	121	14.2	12.0	118	70-130	2	30

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Client:	Longview, City of	**Service Request:**	K1502736
Project:	Mint Farm Monitoring	**Date Extracted:**	03/24/2015
Sample Matrix:	Drinking water	**Date Analyzed:**	03/24/2015

Lab Control Spike Summary
Diquat and Paraquat by EPA Method 549.2

Extraction Method:	METHOD	**Units:**	ug/L
Analysis Method:	549.2	**Basis:**	NA
		Level:	Low
		Extraction Lot:	KWG1502408

	Lab Control Sample KWG1502408-4 Lab Control Spike			
Analyte Name	**Result**	**Spike Amount**	**%Rec**	**%Rec Limits**
Diquat	12.5	12.0	104	70-130
Paraquat	13.2	12.0	110	70-130

Results flagged with an asterisk (*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Subcontract Lab Results

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State Certifications: DE ID 11 , MA PA0102 , MD 128 , VA 460157 , WV 343

March 30, 2015

Mr. Gregory Salata
ALS Environmental - Kelso
1317 S. 13th Avenue
Kelso, WA 98626

Certificate of Analysis

Project Name:	**SOCs**	Workorder:	**2060634**
Purchase Order:	**K1502736**	Workorder ID:	**K1502736**

Dear Mr. Salata:

Enclosed are the analytical results for samples received by the laboratory on Friday, March 20, 2015.

The ALS Environmental laboratory in Middletown, Pennsylvania is a National Environmental Laboratory Accreditation Program (NELAP) accredited laboratory and as such, certifies that all applicable test results meet the requirements of NELAP.

If you have any questions regarding this certificate of analysis, please contact Mrs. Kelli L Wolfgang (Project Coordinator) at (717) 944-5541.

Analyses were performed according to our laboratory's NELAP-approved quality assurance program and any applicable state requirements. The test results meet requirements of the current NELAP standards or state requirements, where applicable. For a specific list of accredited analytes, refer to the certifications section of the ALS website at www.alsglobal.com/en/Our-Services/Life-Sciences/Environmental/Downloads.

This laboratory report may not be reproduced, except in full, without the written approval of ALS Environmental.

ALS Spring City: 10 Riverside Drive, Spring City, PA 19475 610-948-4903

CC: Ms. Chris Leaf

This page is included as part of the Analytical Report and must be retained as a permanent record thereof.

Kelli Wolfgang

Mrs. Kelli L Wolfgang
Project Coordinator

SAMPLE SUMMARY

Workorder: 2060634 K1502736

Lab ID	Sample ID	Matrix	Date Collected	Date Received	Collected By
2060634001	K1502736-001	Drinking Water	3/17/2015 13:15	3/20/2015 08:47	Collected by Client

Notes

-- Samples collected by ALS personnel are done so in accordance with the procedures set forth in the ALS Field Sampling Plan (20 - Field Services Sampling Plan).
-- All Waste Water analyses comply with methodology requirements of 40 CFR Part 136.
-- All Drinking Water analyses comply with methodology requirements of 40 CFR Part 141.
-- Unless otherwise noted, all quantitative results for soils are reported on a dry weight basis.
-- The Chain of Custody document is included as part of this report.
-- All Library Search analytes should be regarded as tentative identifications based on the presumptive evidence of the mass spectra. Concentrations reported are estimated values.
-- Parameters identified as "analyze immediately" require analysis within 15 minutes of collection. Any "analyze immediately" parameters not listed under the header "Field Parameters" are preformed in the laboratory and are therefore analyzed out of hold time.
-- Method references listed on this report beginning with the prefix “S” followed by a method number (such as S2310B-97) refer to methods from “Standard Methods for the Examination of Water and Wastewater”.

Standard Acronyms/Flags

J	Indicates an estimated value between the Method Detection Limit (MDL) and the Practical Quantitation Limit (PQL) for the analyte
U	Indicates that the analyte was Not Detected (ND)
N	Indicates presumptive evidence of the presence of a compound
MDL	Method Detection Limit
PQL	Practical Quantitation Limit
RDL	Reporting Detection Limit
ND	Not Detected - indicates that the analyte was Not Detected at the RDL
Cntr	Analysis was performed using this container
RegLmt	Regulatory Limit
LCS	Laboratory Control Sample
MS	Matrix Spike
MSD	Matrix Spike Duplicate
DUP	Sample Duplicate
%Rec	Percent Recovery
RPD	Relative Percent Difference
LOD	DoD Limit of Detection
LOQ	DoD Limit of Quantitation
DL	DoD Detection Limit
I	Indicates reported value is greater than or equal to the Method Detection Limit (MDL) but less than the Report Detection Limit (RDL)

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State Certifications: DE ID 11 , MA PA0102 , MD 128 , VA 460157 , WV 343

ANALYTICAL RESULTS

Workorder: 2060634 K1502736

Lab ID: **2060634001** Date Collected: 3/17/2015 13:15 Matrix: Drinking Water
Sample ID: **K1502736-001** Date Received: 3/20/2015 08:47

Parameters	Results	Flag	Units	RDL	Method	Prepared By	Analyzed	By	*Cntr*
HERBICIDES									
Glyphosate	ND		ug/L	4.5	EPA 547		3/22/15 16:21	CGS	D
CARBAMATES									
Aldicarb	ND		ug/L	0.26	EPA 531.1		3/27/15 21:03	CGS	A
Aldicarb Sulfone	ND		ug/L	0.32	EPA 531.1		3/27/15 21:03	CGS	A
Aldicarb Sulfoxide	ND		ug/L	0.27	EPA 531.1		3/27/15 21:03	CGS	A
Carbaryl	ND		ug/L	0.29	EPA 531.1		3/27/15 21:03	CGS	A
Carbofuran	ND		ug/L	0.43	EPA 531.1		3/27/15 21:03	CGS	A
3-Hydroxycarbofuran	ND		ug/L	0.27	EPA 531.1		3/27/15 21:03	CGS	A
Methiocarb	ND		ug/L	0.18	EPA 531.1		3/27/15 21:03	CGS	A
Methomyl	ND		ug/L	0.49	EPA 531.1		3/27/15 21:03	CGS	A
Oxamyl	ND		ug/L	0.50	EPA 531.1		3/27/15 21:03	CGS	A
Propoxur	ND		ug/L	0.32	EPA 531.1		3/27/15 21:03	CGS	A

Kelli Wolfgang
Mrs. Kelli L Wolfgang
Project Coordinator

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QUALITY CONTROL DATA

Workorder: 2060634 K1502736

QC Batch: HPLC/3915 **Analysis Method:** EPA 547

QC Batch Method: EPA 547

Associated Lab Samples: 2060634001

METHOD BLANK: 2153468

Parameter	Blank Result	Units	Reporting Limit	Qualifiers
Glyphosate	ND	ug/L	4.5	

LABORATORY CONTROL SAMPLE: 2153469

Parameter	LCS % Rec	Units	Spike Conc.	LCS Result	% Rec Limit	Qualifiers
Glyphosate	99.5	ug/L	500	497	80 - 120	

MATRIX SPIKE SAMPLE: 2153470 ORIGINAL:

****NOTE - The Original Result shown below is a raw result and is only used for the purpose of calculating Matrix Spike percent recoveries. This result is not a final value and cannot be used as such.

Parameter	Original Result	Units	Spike Conc.	MS Result	MS % Rec	% Rec Limit	Qualifiers
Glyphosate	0	ug/L	500	482.285	96.5	70 - 130	

SAMPLE DUPLICATE: 2153471 ORIGINAL:

Parameter	Original Result	Units	DUP Result	RPD	Max RPD	Qualifiers
Glyphosate	0	ug/L	0	NC	40	

MATRIX SPIKE SAMPLE: 2153472 ORIGINAL:

****NOTE - The Original Result shown below is a raw result and is only used for the purpose of calculating Matrix Spike percent recoveries. This result is not a final value and cannot be used as such.

Parameter	Original Result	Units	Spike Conc.	MS Result	MS % Rec	% Rec Limit	Qualifiers
Glyphosate	0	ug/L	500	448.493	89.7	70 - 130	

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State Certifications: DE ID 11 , MA PA0102 , MD 128 , VA 460157 , WV 343

QUALITY CONTROL DATA

Workorder: 2060634 K1502736

QC Batch: HPLC/3918 **Analysis Method:** EPA 531.1

QC Batch Method: EPA 531.1

Associated Lab Samples: 2060634001

LABORATORY CONTROL SAMPLE: 2155517

Parameter	LCS % Rec	Units	Spike Conc.	LCS Result	% Rec Limit	Qualifiers
Aldicarb Sulfoxide	92.8	ug/L	10	9.3	80 - 120	
Aldicarb Sulfone	89.7	ug/L	10	9.0	80 - 120	
Oxamyl	101	ug/L	10	10.1	80 - 120	
Methomyl	95.5	ug/L	10	9.5	80 - 120	
3-Hydroxycarbofuran	99.9	ug/L	10	10	80 - 120	
Aldicarb	102	ug/L	10	10.2	80 - 120	
Propoxur	91	ug/L	10	9.1	80 - 120	
Carbofuran	90.1	ug/L	10	9.0	80 - 120	
Carbaryl	92.2	ug/L	10	9.2	80 - 120	
Methiocarb	88.9	ug/L	10	8.9	80 - 120	

METHOD BLANK: 2155516

Parameter	Blank Result	Units	Reporting Limit	Qualifiers
Aldicarb Sulfoxide	ND	ug/L	0.27	
Aldicarb Sulfone	ND	ug/L	0.32	
Oxamyl	ND	ug/L	0.50	
Methomyl	ND	ug/L	0.49	
3-Hydroxycarbofuran	ND	ug/L	0.27	
Aldicarb	ND	ug/L	0.26	
Propoxur	ND	ug/L	0.32	
Carbofuran	ND	ug/L	0.43	
Carbaryl	ND	ug/L	0.29	
Methiocarb	ND	ug/L	0.18	

SAMPLE DUPLICATE: 2155518 ORIGINAL:

Parameter	Original Result	Units	DUP Result	RPD	Max RPD	Qualifiers
Aldicarb Sulfoxide		ug/L	0	NC	20	
Aldicarb Sulfone		ug/L	0	NC	20	
Oxamyl	0	ug/L	0	NC	20	
Methomyl		ug/L	0	NC	20	
3-Hydroxycarbofuran		ug/L	0	NC	20	

ALS Environmental
34 Dogwood Lane ▪ Middletown, PA 17057 ▪ Phone: 717-944-5541 ▪ Fax: 717-944-1430 ▪ www.alsglobal.com

NELAP Certifications: NJ PA010 , NY 11759 , PA 22-293 DoD ELAP: A2LA 0818.01
State Certifications: DE ID 11 , MA PA0102 , MD 128 , VA 460157 , WV 343

QUALITY CONTROL DATA

Workorder: 2060634 K1502736

Aldicarb		ug/L	0	NC	20
Propoxur		ug/L	0	NC	20
Carbofuran	0	ug/L	0	NC	20
Carbaryl		ug/L	0	NC	20
Methiocarb		ug/L	0	NC	20

MATRIX SPIKE SAMPLE: 2155519 ORIGINAL:

****NOTE - The Original Result shown below is a raw result and is only used for the purpose of calculating Matrix Spike percent recoveries. This result is not a final value and cannot be used as such.

Parameter	Original Result	Units	Spike Conc.	MS Result	MS % Rec	% Rec Limit	Qualifiers
Aldicarb Sulfoxide		ug/L	10	9.89754	99	65 - 135	
Aldicarb Sulfone		ug/L	10	9.09217	90.9	65 - 135	
Oxamyl	0	ug/L	10	10.5484	105	65 - 135	
Methomyl		ug/L	10	9.85644	98.6	65 - 135	
3-Hydroxycarbofuran		ug/L	10	10.4665	105	65 - 135	
Aldicarb		ug/L	10	10.6716	107	65 - 135	
Propoxur		ug/L	10	9.41074	94.1	65 - 135	
Carbofuran	0	ug/L	10	9.32144	93.2	65 - 135	
Carbaryl		ug/L	10	9.47293	94.7	65 - 135	
Methiocarb		ug/L	10	9.21696	92.2	65 - 135	

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NELAP Certifications: NJ PA010 , NY 11759 , PA 22-293 DoD ELAP: A2LA 0818.01
State Certifications: DE ID 11 , MA PA0102 , MD 128 , VA 460157 , WV 343

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Workorder: 2060634 K1502736

Lab ID	Sample ID	Prep Method	Prep Batch	Analysis Method	Analysis Batch
2060634001	K1502736-001			EPA 547	HPLC/3915
2060634001	K1502736-001			EPA 531.1	HPLC/3918

KW

ALS Environmental Chain of Custody

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

ALS Contact: Chris Leaf

2060634

Project Number: K1502736
Project Manager: Chris Leaf

Lab Code	Sample ID	# of Cont.	Matrix	Sample Date	Sample Time	Lab ID	CARBAM 531.1	GLYPH 547
K1502736-001	Well #3	6	Drinking Water	3/17/15	1315	Middletown ALS	X	X

	Y	N	Initials
Custody Seals Present?	✓		
(if present) Seals Intact?	✓		
Received on Ice?	✓		
COC/Labs Complete	✓		
Cont in Good Cond?	✓		
Correct Containers?	✓		
Correct Samp Vol?	✓		
Correct Preservation?	✓		
Headspace/Volatiles?		✓	

Cooler Temp: 2 °C
Cooler #:
Therm ID: IR-27
Ship Carrier: ~~FedEx~~ UPS DHL
Tracking # 5478 9742 6155

Test Comments
CARBAM - 531.1 K1502736-001 Full list for WA Regulations - no compliance report required.

Folder Comments:
Report all metals in mg/L. No DW State form required.

KW 03/24/15

3/20/15 MW

Special Instructions/Comments
Please provide the electronic (PDF and EDD) report to the following e-mail address: ALKLS.Data@alsglobal.com.

H - Test is On Hold P - Test is Authorized for Prep Only

Turnaround Requirements
___ RUSH (Surcharges Apply)
PLEASE CIRCLE WORK DAYS
1 2 3 4 5
✓ STANDARD
Requested FAX Date: _____
Requested Report Date: 04/03/15

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 N
EDD N

Invoice Information
PO# 51K1502736
Bill to

Relinquished By: 3/19/15 1080 Received By: 3/20/15 0847 Airbill Number:

ALS

ALS Environmental
34 Dogwood Lane ▪ Middletown, PA 17057 ▪ Phone: 717-944-5541 ▪ Fax: 717-944-1430 ▪ www.alsglobal.com

NELAP Certifications: NJ PA010, NY 11759, PA 22-293 DoD ELAP: AZLA 0818.01
State Certification: CT PH-0224, DE ID 11, GA 914, MA PA0102, MD 128, LA 04162, VA 421, WY EPA Region 8, WV 343

QUALITY CONTROL DATA

Workorder **2060634** **Project Name** **K1502736**

QC Batch HPLC / 3915

QC Batch Method EPA 547 **Analysis Method** EPA 547

Associated Lab Samples 2060634001

METHOD BLANK 2153468

Parameter	Blank Result	Qualifiers	Units	Reporting Limit	% Rec	% Rec Limits
Glyphosate	ND	U	ug/L	4.5		

LABORATORY CONTROL SAMPLE 2153469

Parameter	LCS Result	Qualifiers	Units	Spike Conc.	LCS % Rec	% Rec Limits
Glyphosate	497		ug/L	500	99.5	80-120

SAMPLE DUPLICATE 2153471 Original 2058366001

*****NOTE - The Original Result and Duplicate Result shown below are raw results and are only used for the purpose of calculating Sample Duplicate percent recoveries. This result is not a final value and cannot be used as such.*

Parameter	Original Result	Qualifiers	Units	DUP Result	RPD	Max RPD	% Rec	% Rec Limits
Glyphosate	ND	U	ug/L	ND	NC	40		

This is an addendum to the Certificate of Analysis.

Workorder 2060634 **Project Name** K1502736

MATRIX SPIKE 2153470 Original 2058366001

*****NOTE - The Original Result shown below is a raw result and is only used for the purpose of calculating Matrix Spike percent recoveries. This result is not a final value and cannot be used as such.*

Parameter	Original Result	Qualifiers	Units	Spike Conc.	MS Result	MS % Rec	% Rec Limits
Glyphosate	ND		ug/L	500	482.285	96.5	70-130

MATRIX SPIKE 2153472 Original 2059505001

*****NOTE - The Original Result shown below is a raw result and is only used for the purpose of calculating Matrix Spike percent recoveries. This result is not a final value and cannot be used as such.*

Parameter	Original Result	Qualifiers	Units	Spike Conc.	MS Result	MS % Rec	% Rec Limits
Glyphosate	ND		ug/L	500	448.493	89.7	70-130

QC Batch HPLC / 3918

QC Batch Method EPA 531.1 **Analysis Method** EPA 531.1

Associated Lab Samples 2060634001

METHOD BLANK 2155516

Parameter	Blank Result	Qualifiers	Units	Reporting Limit	% Rec	% Rec Limits
3-Hydroxycarbofuran	ND	U	ug/L	0.27		
Aldicarb	ND	U	ug/L	0.26		
Aldicarb Sulfone	ND	U	ug/L	0.32		
Aldicarb Sulfoxide	ND	U	ug/L	0.27		
Carbaryl	ND	U	ug/L	0.29		
Carbofuran	ND	U	ug/L	0.43		
Methiocarb	ND	U	ug/L	0.18		
Methomyl	ND	U	ug/L	0.49		
Oxamyl	ND	U	ug/L	0.50		
Propoxur	ND	U	ug/L	0.32		

LABORATORY CONTROL SAMPLE 2155517

Parameter	LCS Result	Qualifiers	Units	Spike Conc.	LCS % Rec	% Rec Limits
3-Hydroxycarbofuran	10		ug/L	10	99.9	80-120
Aldicarb	10.2		ug/L	10	102	80-120
Aldicarb Sulfone	9		ug/L	10	89.7	80-120

This is an addendum to the Certificate of Analysis.

Aldicarb Sulfoxide	9.3	ug/L	10	92.8	80-120
Carbaryl	9.2	ug/L	10	92.2	80-120
Carbofuran	9	ug/L	10	90.1	80-120
Methiocarb	8.9	ug/L	10	88.9	80-120
Methomyl	9.5	ug/L	10	95.5	80-120
Oxamyl	10.1	ug/L	10	101	80-120
Propoxur	9.1	ug/L	10	91	80-120

SAMPLE DUPLICATE 2155518 Original 2059505001

*****NOTE - The Original Result and Duplicate Result shown below are raw results and are only used for the purpose of calculating Sample Duplicate percent recoveries. This result is not a final value and cannot be used as such.*

Parameter	Original Result	Qualifiers	Units	DUP Result	RPD	Max RPD	% Rec	% Rec Limits
3-Hydroxycarbofuran	ND	U	ug/L	ND	NC	20		
Aldicarb	ND	U	ug/L	ND	NC	20		
Aldicarb Sulfone	ND	U	ug/L	ND	NC	20		
Aldicarb Sulfoxide	ND	U	ug/L	ND	NC	20		
Carbaryl	ND	U	ug/L	ND	NC	20		
Carbofuran	ND	U	ug/L	ND	NC	20		
Methiocarb	ND	U	ug/L	ND	NC	20		
Methomyl	ND	U	ug/L	ND	NC	20		
Oxamyl	ND	U	ug/L	ND	NC	20		
Propoxur	ND	U	ug/L	ND	NC	20		

MATRIX SPIKE 2155519 Original 2061316001

*****NOTE - The Original Result shown below is a raw result and is only used for the purpose of calculating Matrix Spike percent recoveries. This result is not a final value and cannot be used as such.*

Parameter	Original Result	Qualifiers	Units	Spike Conc.	MS Result	MS % Rec	% Rec Limits
3-Hydroxycarbofuran	ND		ug/L	10	10.4665	105	65-135
Aldicarb	ND		ug/L	10	10.6716	107	65-135
Aldicarb Sulfone	ND		ug/L	10	9.09217	90.9	65-135
Aldicarb Sulfoxide	ND		ug/L	10	9.89754	99	65-135
Carbaryl	ND		ug/L	10	9.47293	94.7	65-135
Carbofuran	ND		ug/L	10	9.32144	93.2	65-135
Methiocarb	ND		ug/L	10	9.21696	92.2	65-135
Methomyl	ND		ug/L	10	9.85644	98.6	65-135
Oxamyl	ND		ug/L	10	10.5484	105	65-135
Propoxur	ND		ug/L	10	9.41074	94.1	65-135

Standard Acronyms/Flags	
J	Indicates an estimated value between the Method Detection Limit (MDL) and the Practical Quantitation Limit (PQL) for the analyte
U	Indicates that the analyte was Not Detected (ND)
N	Indicates presumptive evidence of the presence of a compound
MDL	Method Detection Limit
PQL	Practical Quantitation Limit
RDL	Reporting Detection Limit
ND	Not Detected - indicates that the analyte was Not Detected at the RDL
Cntr	Analysis was performed using this container
RegLmt	Regulatory Limit
LCS	Laboratory Control Sample
MS	Matrix Spike
MSD	Matrix Spike Duplicate
DUP	Sample Duplicate
%Rec	Percent Recovery
RPD	Relative Percent Difference
LOD	DoD Limit of Detection
LOQ	DoD Limit of Quantitation
DL	DoD Detection Limit
NC	Not Calculated
*	Result outside of QC limits
DIL	Dilution Factor

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Lab ID	Sample ID	Prep Method	Prep Batch	Analysis Method	Analysis Batch
2059505001	ZZZZZZZZZZ	EPA 531.1	HPLC / 3918	EPA 531.1	HPLC / 3918
2060634001	K1502736-001	EPA 531.1	HPLC / 3918	EPA 531.1	HPLC / 3918
2061316001	ZZZZZZZZZZ	EPA 531.1	HPLC / 3918	EPA 531.1	HPLC / 3918

Lab ID	Sample ID	Prep Method	Prep Batch	Analysis Method	Analysis Batch
2058366001	ZZZZZZZZZZ	EPA 547	HPLC / 3915	EPA 547	HPLC / 3915
2059505001	ZZZZZZZZZZ	EPA 547	HPLC / 3915	EPA 547	HPLC / 3915
2060634001	K1502736-001	EPA 547	HPLC / 3915	EPA 547	HPLC / 3915

LABORATORY REPORT

April 3, 2015

Jeff Coleman
Longview, City of
W/S Operation Center
Longview, WA 98632

RE: Mint Farm Monitoring

Dear Jeff:

Enclosed are the results of the sample submitted to our laboratory on March 20, 2015. For your reference, this analysis has been assigned our service request number K1502736.

All analyses were performed according to our laboratory's NELAP and DoD-ELAP-approved quality assurance program. The test results meet requirements of the current NELAP and DoD-ELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP and DoD-ELAP-accredited analytes, refer to the certifications section at www.alsglobal.com. Results are intended to be considered in their entirety and apply only to the samples analyzed and reported herein.

If you have any questions, please call me at (805) 526-7161.

Respectfully submitted,

ALS | Environmental

Kate Aguilera

By Kate Aguilera at 2:27 pm, Apr 03, 2015

Kate Aguilera
Project Manager

CASE NARRATIVE

The sample was received intact under chain of custody on March 17, 2015 and was stored in accordance with the analytical method requirements. Please refer to the sample acceptance check form for additional information. The results reported herein are applicable only to the condition of the sample at the time of sample receipt.

Hydrogen Sulfide Analysis

The sample was analyzed for hydrogen sulfide using a gas chromatograph equipped with a sulfur chemiluminescence detector (SCD). This method is not included on the laboratory's NELAP, DoD-ELAP, or AIHA-LAP scope of accreditation.

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 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.

ALS Environmental – Simi Valley

CERTIFICATIONS, ACCREDITATIONS, AND REGISTRATIONS

Agency	Web Site	Number
AIHA	http://www.aihaaccreditedlabs.org	101661
Arizona DHS	http://www.azdhs.gov/lab/license/env.htm	AZ0694
DoD ELAP	http://www.pjlabs.com/search-accredited-labs	L14-2
Florida DOH (NELAP)	http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm	E871020
Maine DHHS	http://www.maine.gov/dhhs/mecdc/environmental-health/water/dwp-services/labcert/labcert.htm	2014025
Minnesota DOH (NELAP)	http://www.health.state.mn.us/accreditation	876241
New Jersey DEP (NELAP)	http://www.nj.gov/dep/oqa/	CA009
New York DOH (NELAP)	http://www.wadsworth.org/labcert/elap/elap.html	11221
Oregon PHD (NELAP)	http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Pages/index.aspx	4068-001
Pennsylvania DEP	http://www.depweb.state.pa.us/labs	68-03307 (Registration)
Texas CEQ (NELAP)	http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html	T104704413-14-5
Utah DOH (NELAP)	http://www.health.utah.gov/lab/labimp/certification/index.html	CA016272014-4
Washington DOE	http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html	C946

Analyses were performed according to our laboratory's NELAP and DoD-ELAP approved quality assurance program. A complete listing of specific NELAP and DoD-ELAP certified analytes can be found in the certifications section at www.alsglobal.com, or at the accreditation body's website.

Each of the certifications listed above have an explicit Scope of Accreditation that applies to specific matrices/methods/analytes; therefore, please contact the laboratory for information corresponding to a particular certification.

Intra-Network Chain of Custody

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

ALS Contact: Chris Leaf

Project Name: Mint Farm Monitoring
Project Number:
Project Manager: Jeff Coleman
Company: Longview, City of

Lab Code	Client Sample ID	# of Cont.	Matrix	Sample Date	Sample Time	Date Received	Send To	Sulfur Sulfur Liq
K1502736-001	Well #3	3	Drinking Water	3/17/15	1315	3/17/15	SIMIVALLEY	II

24, 25, 27

Test Comments

Sulfur - Sulfur Liq K1502736-001 Hydrogen Sulfide

Folder Comments:

Report all metals in mg/L. No DW State form required.

Special Instructions/Comments

Please provide the electronic (PDF and EDD) report to the following e-mail address: ALKLS.Data@alsglobal.com.

pH Checked _____

Turnaround Requirements

____RUSH (Surcharges Apply)

PLEASE CIRCLE WORK DAYS

1 2 3 4 5

✓ STANDARD

Requested FAX Date: _____

Requested Report Date: 04/03/15

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 N

EDD N

Invoice Information

PO# 51K1502736

Bill to

3° BLANK

Relinquished By: [signature] 3/19/15 1030 Received By: K. Lopez 3/20/15 0945 Airbill Number:

ALS Environmental
Sample Acceptance Check Form

Client: Longview, City of Work order: K1502736

Project: Mint Farm Monitoring

Sample(s) received on: 3/17/15 Date opened: 3/17/15 by: KSMITH

Note: This form is used for all samples received by ALS. The use of this form for custody seals is strictly meant to indicate presence/absence and not as an indication of compliance or nonconformity. Thermal preservation and pH will only be evaluated either at the request of the client and/or as required by the method/SOP.

		Yes	No	N/A
1	Were **sample containers** properly marked with client sample ID?	☒	☐	☐
2	Container(s) **supplied by ALS**?	☒	☐	☐
3	Did **sample containers** arrive in good condition?	☒	☐	☐
4	Were **chain-of-custody** papers used and filled out?	☒	☐	☐
5	Did **sample container labels** and/or tags agree with custody papers?	☒	☐	☐
6	Was **sample volume** received adequate for analysis?	☒	☐	☐
7	Are samples within specified holding times?	☒	☐	☐
8	Was proper **temperature** (thermal preservation) of cooler at receipt adhered to?	☒	☐	☐
	Cooler Temperature: ° C Blank Temperature: 3° C **Gel Packs**			
9	Was a **trip blank** received?	☐	☒	☐
10	Were **custody seals** on outside of cooler/Box?	☒	☐	☐
	Location of seal(s)? _____ Sealing Lid?	☒	☐	☐
	Were signature and date included?	☒	☐	☐
	Were seals intact?	☒	☐	☐
	Were custody seals on outside of sample container?	☐	☒	☐
	Location of seal(s)? _____ Sealing Lid?	☐	☐	☒
	Were signature and date included?	☐	☐	☒
	Were seals intact?	☐	☐	☒
11	Do containers have appropriate **preservation**, according to method/SOP or Client specified information?	☒	☐	☐
	Is there a client indication that the submitted samples are **pH** preserved?	☐	☐	☒
	Were **VOA vials** checked for presence/absence of air bubbles?	☒	☐	☐
	Does the client/method/SOP require that the analyst check the sample pH and if necessary alter it?	☒	☐	☐
12	**Tubes:** Are the tubes capped and intact?	☐	☐	☒
	Do they contain moisture?	☐	☐	☒
13	**Badges:** Are the badges properly capped and intact?	☐	☐	☒
	Are dual bed badges separated and individually capped and intact?	☐	☐	☒

Lab Sample ID	Container Description	Required pH *	Received pH	Adjusted pH	VOA Headspace (Presence/Absence)	Receipt / Preservation Comments
K1502736-001.24	40mL VOA NP		7	1	A	MC 3/31/2015
K1502736-001.25	40mL VOA NP				A	
K1502736-001.37	40mL VOA NP				A	

Explain any discrepancies: (include lab sample ID numbers): _____

RSK - MEEPP, HCL (pH<2); RSK - CO2, (pH 5-8); Sulfur (pH>4)

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Longview, City of**
Client Project ID: **Mint Farm Monitoring** ALS Project ID: K1502736

Hydrogen Sulfide

Test Code: GC/SCD Reduced Sulfur Analysis
Instrument ID: Agilent 7890A/GC22/SCD Date(s) Collected: 3/17/15
Analyst: Mike Conejo Date Received: 3/17/15
Sample Type: Drinking Water Date Analyzed: 3/31/15
Test Notes:

Client Sample ID	ALS Sample ID	Sample Amount ml(s)	Purge Volume Liter(s)	Injection Volume ml(s)	**Result µg/L**	MRL µg/L	Data Qualifier
Well #3	K1502736-001	10.0	0.30	1.00	ND	0.21	
Method Blank	P150331-MB	10.0	0.30	1.00	ND	0.21	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

LABORATORY CONTROL SAMPLE / DUPLICATE LABORATORY CONTROL SAMPLE SUMMARY

Client: **Longview, City of**
Client Sample ID: **Duplicate Lab Control Sample**
Client Project ID: **Mint Farm Monitoring**

ALS Project ID: K1502736
ALS Sample ID: P150331-DLCS

Test Code: GC/SCD Reduced Sulfur Analysis
Instrument ID: Agilent 7890A/GC22/SCD
Analyst: Mike Conejo
Sample Type: Drinking Water
Test Notes:

Date Collected: NA
Date Received: NA
Date Analyzed: 3/31/15
Liquid Amount: 10.0 ml(s)
Purge Volume: 0.30 Liter(s)
Injection Volume: 0.20 ml(s)

CAS #	Compound	Spike Amount LCS / DLCS ug/L	Result LCS ug/L	Result DLCS ug/L	% Recovery LCS	% Recovery DLCS	ALS Acceptance Limits	RPD	RPD Limit	Data Qualifier
7783-06-4	Hydrogen Sulfide	416	453	428	**109**	**103**	54-133	6	20	