## Facility Identification Information

| | |
|---|---|
| **Facility Name :** | LOTT CLEAN WATER ALLIANCE BUDD INLET WWTP |
| **Street Address :** | 500 ADAMS ST NE |
| **City, State, Zip :** | OLYMPIA, WA, 98501 |

| | |
|---|---|
| **Submitted By:** | Valenta, Matthew |
| **Report By:** | Matthew Valenta<br>(360) 280-3245 mattvalenta@lottcleanwater.org |
| **Submitted Date:** | 2/21/2024 |
| **Responsible Official:** | Matthew Kennelly Executive Director |

**Give a brief description of your biosolids management practices:**

LOTT has 4 anaerobic digesters. WAS and Primary sludge are thickened, and then sent to digesters for >15 days at > 95 degrees. The digested sludge is dewatered using one of two centrifuges, then trucked to Boulder Park for land application

**How much Biosolids stored onsite from a previous year?**
*If biosolids are in compost form, in cubic yards. Septage management facilities with lagoons, in gallons.

0.00

**How much Biosolids stored onsite for more than two years?**

0.00

**How much biosolids stored onsite at end of reporting year?**

0.00

**What biosolids (not septage) did you receive from any other facility during the reporting year**

| Facility | Permit | Quantity |
|---|---|---|

**What septage did you receive during the reporting year**

| Source | Amount (gallons) |
|---|---|

**How many gallons of septage did you lime stabilize?**

**What biosolids did you apply directly to a site permitted for your facility or sell/give away**

| Loc Name | Location Description | Quantity | Acres | Crop | Type | Method | Lime Stab | Till / Inject |
|---|---|---|---|---|---|---|---|---|

**Did you send any biosolids off site to another permitted facility, or were any of your biosolids incinerated?** Yes

**What did you do with your biosolids?**

| Type | Facility Name | Permit Number | Dry Tons |
|---|---|---|---|
| Sent to a biosolids beneficial use facility (BUF) | BOULDER PARK BUF | BT0518 | 1684.74 |

**Compost Feedstock, including biosolids**

| Waste Type Name | Quantity | County | State | Country |
|---|---|---|---|---|

**How many dry tons of biosolids did you produce in the reporting year?** 1684.74

**How many cubic yards of biosolids compost did you produce in the reporting year?**

**How many cubic yards did you sell or give away during the reporting year?**

**What was the last year your lagoon(s) were surveyed for biosolids accumulation?** 1

**Remaining capacity (feet)**

**When was the last time biosolids in your lagoon were analyzed for pollutants?** 1

**When was the last year that solids were removed?**

**What is the next year you anticipate removing solids?** 1

## Pollutant Monitoring

**Number of pollutant monitoring events during year** 6

**Pollutants exceeding Table 1 value**

| As | Cd | Cu | Hg | Mo | Ni | Pb | Se | Zn |
|---|---|---|---|---|---|---|---|---|
| No | No | No | No | No | No | No | No | No |

**Pollutants exceeding Table 3 value**

| As | Cd | Cu | Hg | Mo | Ni | Pb | Se | Zn |
|---|---|---|---|---|---|---|---|---|
| No | No | No | No | No | No | No | No | No |

## Pathogen Reduction

**Pathogen requirement does not apply** False

**Pathogen Reduction requirements met** True

**How did you comply with pathogen reduction requirements?**

**Class A compliance methods**

| | |
|---|---|
| Alt 1 Time/Temp | False |
| Alt 2 pH/Time/Temp Solids | False |
| Alt 3 Beta Ray Irradiation | False |
| Alt 3 Composting | False |
| Alt 3 Gamma Ray Irradiation | False |
| Alt 3 Heat Drying | False |

**Class B compliance methods**

| | |
|---|---|
| Alternative 1 - 7 Samples | False |
| Alternative 2 Aerobic Digestion | False |
| Alternative 2 Air Drying | False |
| Alternative 2 Anaerobic Digestion | True |
| Alternative 2 Composting | False |

| | |
|---|---|
| Alt 3 Heat Treatment | False |
| Alt 3 Pasteurization | False |
| Alt 3 Thermophilic Aerobic Digestion | False |
| Alt 4 PFRP Equivalent | False |

| | |
|---|---|
| Alternative 2 Liming | False |
| Alternative 3 PSRP Equivalent | False |

## Vector Attraction Reduction

**Vector attraction reduction requirement does not apply** False

**Vector attraction reduction requirements met** True

**How did you comply with vector attraction reduction requirements?**

| | |
|---|---|
| Alternative 1 | True |
| Alternative 1a Bench Test Anaerobic | False |
| Alternative 1b Bench Test Aerobic | False |
| Alternative 2 SOUR | False |
| Alternative 3 Aerobic Process | False |
| Alternative 4 pH Stabilization | False |
| Alternative 5 More Than 75 Per Solids | False |
| Alternative 6 More Than 90 Per Solids | False |
| Alternative 7 Injection | False |

| | |
|---|---|
| Alternative 8 Incorporation | False |

**Comments:**

## Documents Uploaded

**Signature Authority**

**Biosolid Analytical Data** 2023 Biosolids Report Documentation.pdf

**Other Supporting Documents**

**BUDD INLET TREATMENT PLANT**
**BIOSOLIDS PRIORITY POLLUTANTS ANALYSES SUMMARY**
**2023**
**40 CFR Part 122 Table III Metals/Cyanide/Phenol Priority Pollutants & Molybdenum**

| | | ANTIMONY | ARSENIC | BERYLLIUM | CADMIUM | CHROMIUM | COPPER | LEAD | MERCURY | MOLYBDENUM | NICKEL | SELENIUM | SILVER | THALLIUM | ZINC | CYANIDE | PHENOLS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Units (as Dry Wt.) | | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg |
| JAN | | | | | | | | | | | | | | | | | |
| FEB | | 4.75 | 4.60 | 0.099 | 1.09 | 17.3 | 411 | 14.0 | 0.38 | 10.10 | 14.9 | 6.60 | 2.72 | 0.075 | 797 | 2.82 | 1.67 |
| MAR | | | | | | | | | | | | | | | | | |
| APR | | 2.76 | 3.80 | 0.095 | 1.13 | 17.0 | 438 | 13.3 | 0.832 | 9.58 | 15.6 | 7.30 | 3.18 | 0.078 | 781 | 2.00 | 2.86 |
| MAY | | | | | | | | | | | | | | | | | |
| JUN | | 2.23 | 3.80 | 0.095 | 1.05 | 19.0 | 440 | 12.5 | 1.00 | 10.60 | 17.6 | 6.80 | 2.93 | 0.036 | 765 | 1.65 | 4.26 |
| JUL | | | | | | | | | | | | | | | | | |
| AUG | | 2.39 | 4.50 | 0.077 | 0.99 | 18.0 | 451 | 12.5 | 0.675 | 10.60 | 19.3 | 7.10 | 2.77 | 0.053 | 729 | 1.49 | 1.18 |
| SEP | | | | | | | | | | | | | | | | | |
| OCT | | 2.60 | 5.10 | 0.090 | 0.88 | 17.6 | 454 | 13.6 | 0.545 | 10.90 | 17.3 | 6.80 | 2.46 | 0.057 | 761 | 1.49 | 1.88 |
| NOV | | | | | | | | | | | | | | | | | |
| DEC | | 2.23 | 4.70 | 0.080 | 0.900 | 18.6 | 425 | 17.0 | 0.479 | 11.20 | 18.7 | 6.30 | 2.63 | 0.060 | 690 | 1.27 | 0.90 |
| | MIN | 2.23 | 3.8 | 0.077 | 0.88 | 17.0 | 411 | 12.5 | 0.381 | 9.58 | 14.9 | 6.30 | 2.46 | 0.036 | 690 | 1.27 | 0.90 |
| | MAX | 4.75 | 5.1 | 0.099 | 1.13 | 19.0 | 454 | 17.0 | 0.999 | 11.20 | 17.2 | 7.30 | 3.18 | 0.078 | 797 | 2.82 | 4.26 |
| | AVE | 2.83 | 4.4 | 0.089 | 1.01 | 17.9 | 437 | 13.8 | 0.652 | 10.50 | 17.2 | 6.82 | 2.78 | 0.060 | 754 | 1.787 | 2.13 |
| **LIMITS** | **TABLE 1** | | **75** | | **85** | | **4,300** | **840** | **57** | **75** | **420** | **100** | | | **7,500** | | |
| | **TABLE 3** | | **41** | | **39** | | **1,500** | **300** | **17** | | **420** | **100** | | | **2,800** | | |

**BUDD INLET TREATMENT PLANT**
**BIOSOLIDS NUTRIENTS ANALYSES SUMMARY**
**2023**

| | TOTAL SOLIDS | NH3-N | TKN-N | ORG-N | PHOSPHORUS | POTASSIUM | SULFUR |
|---|---|---|---|---|---|---|---|
| Units (as Dry Wt.) | % | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg |
| JAN | | | | | | | |
| FEB | 18.8 | 15,400 | 74,900 | 59,500 | 25,000 | 2,130 | 10,300 |
| MAR | | | | | | | |
| APR | 20.1 | 11,600 | 71,000 | 59,400 | 27,100 | 2,110 | 12,700 |
| MAY | | | | | | | |
| JUN | 20.6 | 11,500 | 73,000 | 61,500 | 21,700 | 1,900 | 10,700 |
| JUL | | | | | | | |
| AUG | 20.0 | 12,000 | 67,100 | 55,100 | 22,900 | 1,750 | 11,200 |
| SEP | | | | | | | |
| OCT | 19.6 | 13,900 | 20,800 | 6,900 | 22,800 | 1,590 | 10,700 |
| NOV | | | | | | | |
| DEC | 19.1 | 11,100 | 60,900 | 49,800 | 20,800 | 1,640 | 9,930 |
| MIN | 18.8 | 11,100 | 20,800 | 6,900 | 20,800 | 1,590 | 9,930 |
| MAX | 20.6 | 15,400 | 74,900 | 61,500 | 27,100 | 1,853 | 12,700 |
| AVE | 19.7 | 12,583 | 61,283 | 48,700 | 23,383 | 1,853 | 10,922 |

07:00 AM Lab error likely for October's result for TKN-N and ORG-N.

**BUDD INLET TREATMENT PLANT**
**BIOSOLIDS MANAGEMENT**
**PROCESS MONITORING & ANALYTICAL DATA FOR PATHOGEN & VECTOR ATTRACTION REDUCTION**
**January 2023**

| DATE | RAIN | THS | PRIMARY DIGESTERS | | | | | | | SECONDARY DIGESTER | | | BIOSOLIDS | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | DATA | TVS | TEMP(°F) | | | | TVS | VSR | MCRT | TEMP | TVS | VSR | TS | pH | LOADS | TONS | |
| | (IN.) | (%) | DIG.1 | DIG.2 | DIG. 3 | DIG. 4 | (%) | (%) | (Days) | °F | (%) | (%) | (%) | | | WET | DRY |
| **1** | 0.00 | 88.3 | 98.6 | 97.8 | | | 77.0 | 55.3 | 39.1 | 98.0 | 75.5 | 59.1 | | | | | |
| **2** | 0.01 | 88.2 | 98.4 | 98.3 | | | 81.5 | 41.2 | 35.6 | 97.9 | 78.3 | 52.0 | 20.20 | 8.6 | 1 | 30.88 | 6.24 |
| **3** | 0.05 | 88.3 | 97.9 | 98.4 | | | 78.0 | 53.1 | 33.3 | 97.8 | 80.4 | 45.6 | 19.69 | | 1 | 31.60 | 6.22 |
| **4** | 0.08 | 88.3 | 97.3 | 98.0 | | | 76.9 | 55.7 | 27.0 | 98.0 | 75.0 | 60.1 | 20.38 | | 1 | 28.77 | 5.86 |
| **5** | 0.09 | 88.5 | 97.1 | 97.6 | | | 78.3 | 53.1 | 30.7 | 98.0 | 75.6 | 59.9 | 20.23 | | 1 | 30.02 | 6.07 |
| **6** | 0.30 | 88.6 | 97.3 | 97.8 | | | 79.0 | 51.7 | 37.3 | 98.2 | 76.5 | 58.3 | 20.28 | | 1 | 30.46 | 6.18 |
| **7** | 0.45 | 88.7 | 97.8 | 98.2 | | | 76.0 | 59.7 | 32.4 | 98.3 | 75.0 | 61.7 | 20.06 | | 1 | 30.69 | 6.16 |
| **8** | 0.35 | 88.8 | 98.2 | 98.2 | | | 76.3 | 59.2 | 32.1 | 98.0 | 78.0 | 55.1 | | | | | |
| **9** | 0.33 | 88.7 | 98.4 | 98.0 | | | 76.7 | 58.3 | 33.4 | 97.8 | 74.4 | 63.1 | 20.24 | 8.5 | 2 | 57.48 | 11.63 |
| **10** | 0.02 | 89.0 | 98.3 | 97.8 | | | 77.4 | 57.5 | 30.7 | 97.8 | 76.1 | 60.6 | 20.36 | | 1 | 30.57 | 6.23 |
| **11** | 0.21 | 89.1 | 97.7 | 97.6 | | | 79.2 | 53.4 | 32.5 | 97.8 | 76.6 | 59.8 | 20.20 | | 1 | 31.54 | 6.37 |
| **12** | 0.41 | 89.2 | 97.2 | 97.7 | | | 79.6 | 52.6 | 32.9 | 98.0 | 72.9 | 67.4 | 19.70 | | 2 | 62.05 | 12.22 |
| **13** | 0.38 | 89.4 | 97.2 | 98.0 | | | 79.5 | 52.9 | 31.2 | 98.4 | 75.0 | 64.3 | 20.07 | | 1 | 31.86 | 6.39 |
| **14** | 0.10 | 89.4 | 97.7 | 98.3 | | | 77.7 | 58.8 | 31.9 | 98.3 | 75.6 | 63.4 | 19.81 | | 1 | 30.44 | 6.03 |
| **15** | 0.46 | 89.3 | 97.8 | 98.3 | | | 77.4 | 59.1 | 34.2 | 98.1 | 72.3 | 68.7 | | | | | |
| **16** | 0.00 | 89.3 | 97.8 | 97.9 | | | 79.2 | 54.4 | 31.3 | 97.9 | 78.7 | 55.7 | 19.71 | 8.5 | 1 | 33.24 | 6.55 |
| **17** | 0.04 | 89.3 | 98.1 | 97.8 | | | 77.9 | 57.7 | 36.2 | 97.7 | 76.7 | 60.5 | 19.69 | | 1 | 33.05 | 6.51 |
| **18** | 0.14 | 89.4 | 98.3 | 98.0 | | | 76.7 | 60.9 | 32.6 | 97.9 | 74.5 | 65.3 | 20.04 | | 1 | 29.86 | 5.98 |
| **19** | 0.00 | 89.5 | 98.0 | 98.2 | | | 77.8 | 59.0 | 34.3 | 98.5 | 73.8 | 67.0 | 20.02 | | 1 | 33.10 | 6.63 |
| **20** | 0.00 | 89.5 | 97.7 | 98.2 | | | 78.6 | 56.7 | 33.7 | 98.6 | 75.0 | 64.7 | 19.75 | | 1 | 32.29 | 6.38 |
| **21** | 0.31 | 89.6 | 97.6 | 98.0 | | | 76.8 | 61.7 | 36.4 | 98.1 | 75.9 | 63.5 | | | | | |
| **22** | 0.00 | 89.7 | 97.7 | 97.8 | | | 80.9 | 51.3 | 36.1 | 98.0 | 77.6 | 60.4 | | | | | |
| **23** | 0.00 | 89.9 | 98.1 | 97.8 | | | 78.6 | 59.0 | 36.0 | 97.9 | 74.4 | 67.5 | 20.14 | 8.7 | 1 | 31.81 | 6.41 |
| **24** | 0.00 | 90.1 | 98.6 | 98.1 | | | 78.0 | 60.8 | 33.9 | 97.9 | 75.6 | 65.9 | 19.65 | | 1 | 32.34 | 6.35 |
| **25** | 0.00 | 90.1 | 98.8 | 98.4 | | | 81.5 | 51.2 | 31.8 | 97.9 | 77.3 | 62.7 | 19.62 | | 1 | 30.40 | 5.96 |
| **26** | 0.02 | 90.2 | 98.6 | 98.4 | | | 78.3 | 60.9 | 35.2 | 98.1 | 76.1 | 65.4 | 19.72 | | 1 | 32.97 | 6.50 |
| **27** | 0.00 | 90.4 | 98.1 | 98.1 | | | 79.6 | 58.4 | 33.2 | 98.2 | 78.7 | 60.5 | 19.90 | | 1 | 33.16 | 6.60 |
| **28** | 0.10 | 90.4 | 97.6 | 97.8 | | | 78.0 | 62.3 | 35.4 | 98.2 | 76.6 | 65.3 | 19.82 | | 1 | 31.93 | 6.33 |
| **29** | 0.00 | 90.5 | 97.3 | 97.8 | | | 78.8 | 60.8 | 37.0 | 98.1 | 76.6 | 65.5 | | | | | |
| **30** | 0.00 | 90.6 | 97.3 | 97.9 | | | 77.4 | 64.5 | 34.1 | 98.0 | 74.4 | 70.0 | 19.61 | 8.6 | 1 | 33.10 | 6.49 |
| **31** | 0.00 | 90.7 | 97.5 | 98.1 | | | 79.6 | 60.0 | 33.8 | 97.9 | 75.6 | 68.4 | 19.82 | | 1 | 32.70 | 6.48 |
| **MIN** | 0.00 | 88.2 | 97.1 | 97.6 | | | 76.0 | 41.2 | 27.0 | 97.7 | 72.3 | 45.6 | 19.61 | 8.5 | | 28.77 | 5.86 |
| **MAX** | 0.46 | 90.7 | 98.8 | 98.4 | | | 81.5 | 64.5 | 39.1 | 98.6 | 80.4 | 70.0 | 20.38 | 8.7 | | 62.05 | 12.22 |
| **AVE** | 0.12 | 89.4 | 97.9 | 98.0 | | | 78.3 | 56.8 | 33.7 | 98.0 | 76.0 | 62.2 | 19.95 | 8.6 | | 33.85 | 6.75 |
| **TOTAL** | 3.85 | | | | | | | | | | | | | | 27 | 846.31 | 168.77 |
| **AVE/DAY** | | | | | | | | | | | | | | | 0.87 | 27.30 | 5.44 |

1 Heavy rainfall causes temporary reduction in Thickened Sludge (THS) total volatile solids. 14-day moving average used to approximate actual digester conditions.

2 Pathogen reduction – The biosolids must be treated in the absence of air for a specific Mean Cell Residence Time (MCRT) and temperature that must be between fifteen (15) days at 35° C to 55°C (95° to 131°F) and sixty days at 20°C (68°F). Temperature taken from sludge recirculation system.

3 V.S.R. – Volatile Solids Reduction. Vector Attraction Reduction requirements; the mass of Volatile Solids in the biosolids must be reduced by a minimum of 38%.

**BUDD INLET TREATMENT PLANT**
**BIOSOLIDS MANAGEMENT**
**PROCESS MONITORING & ANALYTICAL DATA FOR PATHOGEN & VECTOR ATTRACTION REDUCTION**
**February 2023**

| DATE | RAIN | THS | PRIMARY DIGESTERS | | | | | | | SECONDARY DIGESTER | | | BIOSOLIDS | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | DATA | TVS | TEMP(°F) | | | | TVS | VSR | MCRT | TEMP | TVS | VSR | TS | pH | LOADS | TONS | |
| | (IN.) | (%) | DIG.1 | DIG.2 | DIG. 3 | DIG. 4 | (%) | (%) | (Days) | °F | (%) | (%) | (%) | | | WET | DRY |
| **1** | 0.00 | 90.8 | 97.8 | 98.2 | | | 78.8 | 62.5 | 37.9 | 97.9 | 75.6 | 68.8 | 19.70 | | 1 | 32.91 | 6.48 |
| **2** | 0.00 | 91.0 | 98.4 | 98.2 | | | 77.8 | 65.1 | 36.5 | 98.1 | 75.5 | 69.4 | 19.37 | | 1 | 32.51 | 6.30 |
| **3** | 0.37 | 90.9 | 98.6 | 98.0 | | | 78.7 | 63.2 | 35.6 | 98.1 | 76.0 | 68.5 | 19.76 | | 1 | 31.16 | 6.16 |
| **4** | 0.28 | 90.9 | 98.5 | 97.8 | | | 79.2 | 61.7 | 39.6 | 98.2 | 75.0 | 69.9 | | | | | |
| **5** | 0.16 | 90.8 | 98.2 | 97.9 | | | 78.1 | 63.9 | 36.2 | 98.1 | 76.9 | 66.3 | | | | | |
| **6** | 0.22 | 90.9 | 97.8 | 98.1 | | | 77.4 | 65.4 | 37.1 | 98.0 | 75.0 | 69.8 | 19.59 | 8.6 | 1 | 30.50 | 5.97 |
| **7** | 0.79 | 90.8 | 97.6 | 98.2 | | | 79.4 | 61.0 | 38.1 | 97.9 | 76.1 | 67.8 | 19.67 | | 1 | 31.96 | 6.29 |
| **8** | 0.04 | 90.9 | 97.6 | 98.2 | | | 77.1 | 66.1 | 40.7 | 97.8 | 75.0 | 69.8 | 19.40 | | 1 | 32.64 | 6.33 |
| **9** | 0.03 | 90.8 | 97.9 | 98.3 | | | 78.8 | 62.2 | 38.7 | 98.0 | 77.6 | 65.0 | 19.53 | | 1 | 32.28 | 6.31 |
| **10** | 0.01 | 90.8 | 98.2 | 98.2 | | | 78.1 | 63.6 | 39.3 | 98.2 | 76.7 | 66.5 | 19.29 | | 1 | 32.67 | 6.30 |
| **11** | 0.00 | 90.9 | 98.2 | 98.0 | | | 78.0 | 64.4 | 39.3 | 98.3 | 77.3 | 65.9 | | | | | |
| **12** | 0.01 | 90.9 | 97.9 | 97.8 | | | 78.9 | 62.2 | 37.2 | 98.1 | 77.6 | 65.6 | | | | | |
| **13** | 0.18 | 90.8 | 97.6 | 97.6 | | | 79.5 | 60.3 | 35.6 | 97.8 | 75.0 | 69.7 | 19.48 | 8.4 | 1 | 32.19 | 6.27 |
| **14** | 0.00 | 90.8 | 97.3 | 97.7 | | | 77.5 | 65.3 | 35.6 | 97.8 | 75.6 | 68.8 | 19.45 | | 1 | 32.90 | 6.40 |
| **15** | 0.00 | 90.8 | 98.1 | 96.4 | | | 79.0 | 61.6 | 35.8 | 98.0 | 78.0 | 63.9 | 19.52 | | 1 | 32.39 | 6.32 |
| **16** | 0.01 | 90.8 | 99.2 | 98.9 | | | 78.1 | 63.9 | 49.4 | 98.3 | 77.3 | 65.7 | 19.10 | | 1 | 31.03 | 5.93 |
| **17** | 0.06 | 91.0 | 99.5 | 99.7 | | | 78.8 | 63.0 | 45.7 | 98.4 | 75.6 | 69.3 | 19.69 | | 1 | 30.52 | 6.01 |
| **18** | 0.04 | 91.0 | 98.0 | 98.3 | | | 79.6 | 61.3 | 43.3 | 98.2 | 76.1 | 68.6 | | | | | |
| **19** | 0.00 | 91.2 | 96.5 | 97.0 | | | 79.8 | 61.7 | 42.5 | 97.8 | 75.0 | 70.9 | | | | | |
| **20** | 0.04 | 91.3 | 96.9 | 96.7 | | | 79.2 | 63.4 | 35.6 | 97.6 | 76.6 | 68.7 | 19.63 | 8.6 | 1 | 31.34 | 6.15 |
| **21** | 0.03 | 91.3 | 97.7 | 97.5 | | | 79.2 | 63.8 | 39.2 | 97.8 | 77.6 | 67.2 | 19.39 | | 1 | 33.87 | 6.57 |
| **22** | 0.02 | 91.4 | 98.7 | 98.7 | | | 76.8 | 68.3 | 48.8 | 98.2 | 74.4 | 72.5 | | | | | |
| **23** | 0.06 | 91.4 | 99.0 | 99.3 | | | 79.6 | 63.5 | 41.9 | 98.3 | 76.1 | 70.2 | 19.54 | | 1 | 29.94 | 5.85 |
| **24** | 0.00 | 91.6 | 97.8 | 98.3 | | | 78.9 | 65.1 | 42.5 | 98.4 | 77.8 | 67.7 | 19.54 | | 1 | 31.79 | 6.21 |
| **25** | 0.05 | 91.5 | 97.0 | 97.2 | | | 78.4 | 66.3 | 40.8 | 97.9 | 77.6 | 68.0 | | | | | |
| **26** | 0.35 | 91.5 | 97.3 | 97.6 | | | 79.4 | 64.2 | 41.0 | 97.5 | 76.9 | 69.1 | | | | | |
| **27** | 0.15 | 91.5 | 97.5 | 98.0 | | | 78.7 | 65.8 | 37.9 | 97.6 | 75.0 | 72.3 | 19.51 | 8.5 | 1 | 32.06 | 6.26 |
| **28** | 0.02 | 91.5 | 97.9 | 98.3 | | | 78.1 | 66.8 | 40.3 | 98.1 | 77.6 | 68.0 | 19.27 | | 1 | 30.46 | 5.87 |
| **MIN** | 0.00 | 90.8 | 96.5 | 96.4 | | | 76.8 | 60.3 | 35.6 | 97.5 | 74.4 | 63.9 | 19.10 | 8.4 | | 29.94 | 5.85 |
| **MAX** | 0.79 | 91.6 | 99.5 | 99.7 | | | 79.8 | 68.3 | 49.4 | 98.4 | 78.0 | 72.5 | 19.76 | 8.6 | | 33.87 | 6.57 |
| **AVE** | 0.10 | 91.1 | 98.0 | 98.0 | | | 78.6 | 63.8 | 39.7 | 98.0 | 76.3 | 68.3 | 19.50 | 8.5 | | 31.85 | 6.21 |
| **TOTAL** | 2.92 | | | | | | | | | | | | | | 19 | 605.12 | 117.97 |
| **AVE/DAY** | | | | | | | | | | | | | | | 0.68 | 21.61 | 4.21 |

1 Heavy rainfall causes temporary reduction in Thickened Sludge (THS) total volatile solids. 14-day moving average used to approximate actual digester conditions.

2 Pathogen reduction – The biosolids must be treated in the absence of air for a specific Mean Cell Residence Time (MCRT) and temperature that must be between fifteen (15) days at 35° C to 55°C (95° to 131°F) and sixty days at 20°C (68°F). Temperature taken from sludge recirculation system.

3 V.S.R. – Volatile Solids Reduction. Vector Attraction Reduction requirements; the mass of Volatile Solids in the biosolids must be reduced by a minimum of 38%.

**BUDD INLET TREATMENT PLANT**
**BIOSOLIDS MANAGEMENT**
**PROCESS MONITORING & ANALYTICAL DATA FOR PATHOGEN & VECTOR ATTRACTION REDUCTION**
**March 2023**

| DATE | RAIN | THS | PRIMARY DIGESTERS | | | | | | | SECONDARY DIGESTER | | | BIOSOLIDS | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | DATA | TVS | TEMP(°F) | | | | TVS | VSR | MCRT | TEMP | TVS | VSR | TS | pH | LOADS | TONS | |
| | (IN.) | (%) | DIG.1 | DIG.2 | DIG. 3 | DIG. 4 | (%) | (%) | (Days) | °F | (%) | (%) | (%) | | | WET | DRY |
| **1** | 0.02 | 91.6 | 98.5 | 98.3 | | | 79.8 | 63.9 | 45.7 | 98.0 | 76.6 | 70.1 | | | | | |
| **2** | 0.49 | 91.5 | 98.6 | 97.9 | | | 79.2 | 64.4 | 37.6 | 98.8 | 76.0 | 70.5 | 19.67 | | 1 | 31.84 | 6.26 |
| **3** | 0.42 | 91.6 | 98.2 | 97.7 | | | 79.8 | 63.6 | 43.8 | 98.6 | 76.6 | 69.8 | 19.64 | | 1 | 31.95 | 6.27 |
| **4** | 0.36 | 91.5 | 97.7 | 97.9 | | | 78.2 | 66.7 | 46.1 | 98.1 | 77.8 | 67.6 | | | | | |
| **5** | 0.02 | 91.4 | 97.6 | 98.3 | | | 79.8 | 62.8 | 44.4 | 97.6 | 77.3 | 68.0 | | | | | |
| **6** | 0.00 | 91.3 | 98.0 | 98.4 | | | 80.4 | 61.0 | 41.4 | 97.6 | 76.9 | 68.4 | 19.34 | 8.5 | 1 | 32.87 | 6.36 |
| **7** | 0.22 | 91.4 | 98.3 | 98.1 | | | 81.6 | 58.3 | 38.7 | 98.0 | 76.2 | 69.8 | 19.60 | | 1 | 31.53 | 6.18 |
| **8** | 0.07 | 91.4 | 98.3 | 97.8 | | | 79.1 | 64.1 | 40.3 | 98.3 | 77.6 | 67.4 | 19.57 | | 1 | 32.11 | 6.28 |
| **9** | 0.14 | 91.3 | 97.9 | 97.9 | | | 78.8 | 64.7 | 36.4 | 98.1 | 77.8 | 66.8 | 19.73 | | 1 | 30.94 | 6.10 |
| **10** | 0.40 | 91.2 | 97.6 | 97.9 | | | 80.2 | 60.7 | 37.6 | 97.9 | 78.7 | 64.3 | 20.22 | | 1 | 28.20 | 5.70 |
| **11** | 0.02 | 91.2 | 97.8 | 98.1 | | | 78.6 | 64.5 | 34.7 | 97.9 | 78.7 | 64.2 | | | | | |
| **12** | 0.28 | 91.1 | 98.1 | 98.1 | | | 80.0 | 60.7 | 34.4 | 98.2 | 78.3 | 64.7 | | | | | |
| **13** | 0.31 | 91.0 | 98.2 | 98.0 | | | 80.0 | 60.5 | 31.2 | 98.6 | 80.0 | 60.5 | 19.78 | 8.8 | 1 | 32.51 | 6.43 |
| **14** | 0.06 | 90.9 | 98.0 | 98.0 | | | 80.2 | 59.5 | 31.1 | 98.3 | 76.7 | 67.1 | 19.77 | | 1 | 30.67 | 6.06 |
| **15** | 0.00 | 90.9 | 97.9 | 98.1 | | | 79.1 | 61.8 | 32.0 | 97.7 | 76.1 | 68.0 | 19.19 | | 1 | 32.98 | 6.33 |
| **16** | 0.00 | 90.9 | 98.0 | 98.2 | | | 79.8 | 60.4 | 32.7 | 97.6 | 78.7 | 63.0 | 19.79 | | 1 | 32.21 | 6.38 |
| **17** | 0.00 | 90.7 | 98.0 | 98.1 | | | 76.6 | 66.4 | 34.0 | 97.8 | 76.7 | 66.4 | 19.93 | | 1 | 30.98 | 6.17 |
| **18** | 0.00 | 90.8 | 98.2 | 98.2 | | | 79.1 | 61.6 | 41.4 | 98.2 | 75.5 | 68.9 | | | | | |
| **19** | 0.09 | 90.9 | 98.2 | 98.2 | | | 79.2 | 62.0 | 41.8 | 98.5 | 78.3 | 64.0 | | | | | |
| **20** | 0.30 | 90.8 | 97.8 | 98.0 | | | 80.4 | 58.1 | 30.5 | 98.3 | 77.6 | 64.8 | 19.37 | 8.5 | 1 | 33.68 | 6.52 |
| **21** | 0.00 | 90.7 | 97.4 | 97.8 | | | 79.4 | 60.0 | 37.9 | 97.9 | 80.0 | 58.8 | 19.96 | | 1 | 32.29 | 6.44 |
| **22** | 0.00 | 90.6 | 97.6 | 98.0 | | | 80.0 | 58.6 | 37.9 | 97.6 | 77.3 | 64.9 | 19.65 | | 1 | 31.72 | 6.23 |
| **23** | 0.12 | 90.7 | 98.2 | 98.2 | | | 78.0 | 63.5 | 37.8 | 97.8 | 76.7 | 66.1 | 20.22 | | 1 | 31.64 | 6.40 |
| **24** | 0.12 | 90.7 | 98.3 | 98.1 | | | 79.0 | 61.3 | 31.1 | 98.1 | 78.7 | 61.9 | 19.92 | | 1 | 32.95 | 6.56 |
| **25** | 0.00 | 90.6 | 98.0 | 97.9 | | | 80.5 | 57.1 | 35.1 | 98.3 | 80.0 | 58.6 | 19.75 | | 1 | 29.54 | 5.84 |
| **26** | 0.08 | 90.8 | 97.7 | 97.8 | | | 79.4 | 60.6 | 36.3 | 98.2 | 75.5 | 68.6 | | | | | |
| **27** | 0.00 | 90.8 | 97.8 | 97.8 | | | 79.8 | 59.8 | 29.1 | 97.9 | 77.1 | 65.8 | 19.75 | 8.6 | 1 | 29.28 | 5.78 |
| **28** | 0.00 | 90.8 | 98.2 | 98.1 | | | 80.0 | 59.6 | 37.6 | 97.7 | 76.6 | 66.9 | 20.05 | | 1 | 31.97 | 6.41 |
| **29** | 0.00 | 90.7 | 98.4 | 98.3 | | | 80.8 | 57.0 | 39.7 | 97.9 | 78.0 | 63.8 | 19.65 | | 1 | 32.46 | 6.38 |
| **30** | 0.00 | 90.7 | 97.9 | 97.8 | | | 79.6 | 59.9 | 44.5 | 97.9 | 78.7 | 62.1 | 19.90 | | 1 | 32.20 | 6.41 |
| **31** | 0.67 | 90.7 | 97.6 | 97.6 | | | 79.6 | 60.1 | 39.4 | 97.9 | 75.6 | 68.5 | 19.82 | | 1 | 32.44 | 6.43 |
| **MIN** | 0.00 | 90.6 | 97.4 | 97.6 | | | 76.6 | 57.0 | 29.1 | 97.6 | 75.5 | 58.6 | 19.19 | 8.5 | | 28.20 | 5.70 |
| **MAX** | 0.67 | 91.6 | 98.6 | 98.4 | | | 81.6 | 66.7 | 46.1 | 98.8 | 80.0 | 70.5 | 20.22 | 8.8 | | 33.68 | 6.56 |
| **AVE** | 0.14 | 91.0 | 98.0 | 98.0 | | | 79.6 | 61.4 | 37.5 | 98.0 | 77.5 | 65.8 | 19.75 | 8.6 | | 31.69 | 6.26 |
| **TOTAL** | 4.19 | | | | | | | | | | | | | | 23 | 728.96 | 143.93 |
| **AVE/DAY** | | | | | | | | | | | | | | | 0.74 | 23.51 | 4.64 |

1 Heavy rainfall causes temporary reduction in Thickened Sludge (THS) total volatile solids. 14-day moving average used to approximate actual digester conditions.

2 Pathogen reduction – The biosolids must be treated in the absence of air for a specific Mean Cell Residence Time (MCRT) and temperature that must be between fifteen (15) days at 35° C to 55°C (95° to 131°F) and sixty days at 20°C (68°F). Temperature taken from sludge recirculation system.

3 V.S.R. – Volatile Solids Reduction. Vector Attraction Reduction requirements; the mass of Volatile Solids in the biosolids must be reduced by a minimum of 38%.

**BUDD INLET TREATMENT PLANT**
**BIOSOLIDS MANAGEMENT**
**PROCESS MONITORING & ANALYTICAL DATA FOR PATHOGEN & VECTOR ATTRACTION REDUCTION**
**April 2023**

| DATE | RAIN | THS | PRIMARY DIGESTERS | | | | | | | SECONDARY DIGESTER | | | BIOSOLIDS | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | DATA | TVS | TEMP(°F) | | | | TVS | VSR | MCRT | TEMP | TVS | VSR | TS | pH | LOADS | TONS | |
| | (IN.) | (%) | DIG.1 | DIG.2 | DIG. 3 | DIG. 4 | (%) | (%) | (Days) | °F | (%) | (%) | (%) | | | WET | DRY |
| **1** | 0.37 | 90.6 | 97.3 | 97.6 | | | 79.1 | 60.6 | 41.3 | 97.8 | 78.3 | 62.5 | | | | | |
| **2** | 0.39 | 90.5 | 97.5 | 98.0 | | | 80.2 | 57.4 | 39.0 | 98.0 | 79.2 | 60.0 | | | | | |
| **3** | 0.01 | 90.5 | 98.0 | 98.4 | | | 79.5 | 59.1 | 38.4 | 98.3 | 80.0 | 57.9 | 19.89 | 8.6 | 1 | 32.60 | 6.49 |
| **4** | 0.00 | 90.5 | 98.6 | 98.6 | | | 79.8 | 58.5 | 41.4 | 98.4 | 75.6 | 67.4 | 19.95 | | 1 | 34.89 | 6.96 |
| **5** | 0.01 | 90.4 | 98.8 | 98.4 | | | 78.7 | 60.9 | 42.6 | 98.1 | 77.5 | 63.5 | | | | | |
| **6** | 0.72 | 90.4 | 98.6 | 97.9 | | | 80.0 | 57.3 | 40.7 | 97.8 | 79.1 | 59.7 | 19.81 | | 1 | 34.01 | 6.74 |
| **7** | 0.18 | 90.2 | 98.0 | 97.6 | | | 79.2 | 58.7 | 39.7 | 97.7 | 78.8 | 59.7 | 19.79 | | 1 | 31.75 | 6.28 |
| **8** | 0.03 | 90.3 | 97.6 | 97.7 | | | 79.0 | 59.6 | 40.2 | 98.0 | 77.1 | 63.9 | | | | | |
| **9** | 0.62 | 90.2 | 97.4 | 98.0 | | | 81.0 | 54.0 | 36.1 | 98.3 | 77.3 | 63.2 | | | | | |
| **10** | 0.53 | 90.2 | 97.5 | 98.3 | | | 78.8 | 59.6 | 34.9 | 98.2 | 75.6 | 66.4 | 19.56 | 8.6 | 1 | 32.02 | 6.26 |
| **11** | 0.22 | 90.2 | 98.0 | 98.2 | | | 81.2 | 53.1 | 35.6 | 97.9 | 77.6 | 62.5 | 19.63 | | 1 | 32.70 | 6.42 |
| **12** | 0.29 | 90.1 | 98.5 | 97.9 | | | 79.6 | 57.0 | 26.7 | 97.8 | 79.5 | 57.1 | 19.50 | | 1 | 31.67 | 6.18 |
| **13** | 0.15 | 90.1 | 98.5 | 97.7 | | | 79.7 | 56.1 | 32.8 | 97.9 | 78.0 | 60.7 | | | | | |
| **14** | 0.00 | 89.9 | 98.1 | 98.0 | | | 77.9 | 60.2 | 35.5 | 98.1 | 75.6 | 65.2 | 20.01 | | 1 | 31.98 | 6.40 |
| **15** | 0.03 | 89.9 | 97.9 | 98.4 | | | 78.2 | 59.7 | 60.3 | 98.3 | 78.7 | 58.4 | 20.09 | | 1 | 31.64 | 6.36 |
| **16** | 0.32 | 89.9 | 97.8 | 98.4 | | | 80.0 | 55.0 | 45.9 | 98.2 | 79.5 | 56.3 | | | | | |
| **17** | 0.15 | 89.9 | 97.9 | 97.7 | | | 80.6 | 53.2 | 38.4 | 98.0 | 78.6 | 58.8 | 20.12 | 8.7 | 1 | 30.99 | 6.24 |
| **18** | 0.59 | 90.0 | 97.9 | 97.2 | | | 78.9 | 58.1 | 37.9 | 97.8 | 76.2 | 64.3 | 19.82 | | 1 | 30.75 | 6.09 |
| **19** | 0.40 | 90.0 | 98.0 | 97.5 | | | 83.2 | 44.6 | 38.7 | 97.8 | 81.8 | 49.7 | 19.82 | | 1 | 31.66 | 6.28 |
| **20** | 0.44 | 89.9 | 98.2 | 98.3 | | | 78.1 | 59.8 | 38.1 | 98.1 | 78.3 | 59.6 | 20.07 | | 1 | 31.75 | 6.37 |
| **21** | 0.00 | 90.0 | 98.1 | 98.9 | | | 79.6 | 56.6 | 35.2 | 98.4 | 78.7 | 58.8 | 20.35 | | 1 | 31.70 | 6.45 |
| **22** | 0.14 | 90.0 | 97.9 | 99.0 | | | 78.5 | 59.3 | 43.1 | 98.4 | 76.1 | 64.5 | | | | | |
| **23** | 0.40 | 89.9 | 97.8 | 98.7 | | | 79.7 | 56.1 | 42.1 | 98.1 | 78.7 | 58.6 | | | | | |
| **24** | 0.02 | 90.1 | 97.9 | 98.0 | | | 79.8 | 56.5 | 51.6 | 97.8 | 79.2 | 58.3 | 20.00 | 8.6 | 1 | 29.55 | 5.91 |
| **25** | 0.00 | 90.2 | 98.3 | 97.6 | | | 80.4 | 55.3 | 45.6 | 97.8 | 80.5 | 55.2 | 19.93 | | 1 | 31.65 | 6.31 |
| **26** | 0.00 | 90.2 | 98.5 | 97.6 | | | 80.7 | 54.3 | 38.4 | 98.1 | 75.6 | 66.5 | 20.02 | | 1 | 31.71 | 6.35 |
| **27** | 0.00 | 90.4 | 98.2 | 98.0 | | | 79.8 | 57.9 | 37.8 | 98.3 | 73.2 | 70.9 | 19.93 | | 1 | 31.14 | 6.21 |
| **28** | 0.00 | 90.5 | 97.8 | 98.4 | | | 79.0 | 60.3 | 34.8 | 98.3 | 77.3 | 64.4 | 20.61 | | 1 | 31.14 | 6.42 |
| **29** | 0.00 | 90.6 | 97.7 | 98.5 | | | 79.0 | 60.8 | 42.1 | 98.0 | 78.3 | 62.6 | | | | | |
| **30** | 0.00 | 90.6 | 98.0 | 98.3 | | | 79.6 | 59.3 | 49.5 | 97.7 | 76.1 | 66.9 | | | | | |
| **MIN** | 0.00 | 89.9 | 97.3 | 97.2 | | | 77.9 | 44.6 | 26.7 | 97.7 | 73.2 | 49.7 | 19.50 | 8.6 | | 29.55 | 5.91 |
| **MAX** | 0.72 | 90.6 | 98.8 | 99.0 | | | 83.2 | 60.9 | 60.3 | 98.4 | 81.8 | 70.9 | 20.61 | 8.7 | | 34.89 | 6.96 |
| **AVE** | 0.20 | 90.2 | 98.0 | 98.1 | | | 79.6 | 57.3 | 40.1 | 98.0 | 77.9 | 61.5 | 19.94 | 8.6 | | 31.86 | 6.35 |
| **TOTAL** | 6.01 | | | | | | | | | | | | | | 19 | 605.30 | 120.70 |
| **AVE/DAY** | | | | | | | | | | | | | | | 0.63 | 20.18 | 4.02 |

1 Heavy rainfall causes temporary reduction in Thickened Sludge (THS) total volatile solids. 14-day moving average used to approximate actual digester conditions.

2 Pathogen reduction – The biosolids must be treated in the absence of air for a specific Mean Cell Residence Time (MCRT) and temperature that must be between fifteen (15) days at 35° C to 55°C (95° to 131°F) and sixty days at 20°C (68°F). Temperature taken from sludge recirculation system.

3 V.S.R. – Volatile Solids Reduction. Vector Attraction Reduction requirements; the mass of Volatile Solids in the biosolids must be reduced by a minimum of 38%.

**BUDD INLET TREATMENT PLANT**
**BIOSOLIDS MANAGEMENT**
**PROCESS MONITORING & ANALYTICAL DATA FOR PATHOGEN & VECTOR ATTRACTION REDUCTION**
**May 2023**

| DATE | RAIN | THS | PRIMARY DIGESTERS | | | | | | | SECONDARY DIGESTER | | | BIOSOLIDS | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | DATA | TVS | TEMP(°F) | | | | TVS | VSR | MCRT | TEMP | TVS | VSR | TS | pH | LOADS | TONS | |
| | (IN.) | (%) | DIG.1 | DIG.2 | DIG. 3 | DIG. 4 | (%) | (%) | (Days) | °F | (%) | (%) | (%) | | | WET | DRY |
| **1** | 0.00 | 90.7 | 98.2 | 97.8 | | | 79.4 | 60.6 | 36.9 | 97.7 | 76.7 | 66.2 | 20.05 | 8.7 | 1 | 30.50 | 6.11 |
| **2** | 0.00 | 90.6 | 98.1 | 97.4 | | | 80.7 | 56.5 | 37.9 | 98.0 | 78.0 | 63.1 | 20.60 | | 1 | 30.69 | 6.32 |
| **3** | 0.00 | 90.7 | 97.8 | 97.6 | | | 80.0 | 58.2 | 35.1 | 98.3 | 78.6 | 62.2 | 19.50 | | 1 | 32.58 | 6.35 |
| **4** | 0.07 | 90.7 | 97.7 | 98.0 | | | 79.8 | 59.6 | 34.5 | 98.3 | 77.8 | 64.2 | 20.16 | | 1 | 32.11 | 6.47 |
| **5** | 0.21 | 90.8 | 97.9 | 98.5 | | | 79.2 | 61.3 | 36.6 | 97.8 | 78.0 | 64.0 | 20.48 | | 1 | 32.04 | 6.56 |
| **6** | 0.14 | 90.7 | 98.2 | 98.5 | | | 81.1 | 56.1 | 39.4 | 98.0 | 79.2 | 61.1 | | | | | |
| **7** | 0.00 | 90.8 | 98.3 | 98.2 | | | 80.8 | 57.3 | 38.7 | 97.9 | 77.1 | 65.9 | | | | | |
| **8** | 0.00 | 90.8 | 98.1 | 97.8 | | | 78.6 | 62.5 | 37.3 | 97.8 | 77.1 | 65.7 | 20.04 | 8.4 | 1 | 31.02 | 6.22 |
| **9** | 0.00 | 90.7 | 97.9 | 97.6 | | | 79.1 | 60.9 | 35.9 | 97.9 | 75.6 | 68.1 | 19.87 | | 1 | 32.33 | 6.42 |
| **10** | 0.00 | 90.7 | 97.8 | 97.8 | | | 79.6 | 60.2 | 39.6 | 98.1 | 76.2 | 67.3 | | | | | |
| **11** | 0.00 | 90.7 | 98.1 | 98.2 | | | 79.8 | 59.7 | 37.8 | 98.3 | 76.9 | 65.9 | 19.97 | | 1 | 32.05 | 6.40 |
| **12** | 0.00 | 90.8 | 98.2 | 98.4 | | | 81.9 | 54.0 | 34.9 | 98.2 | 75.0 | 69.6 | 19.92 | | 1 | 32.73 | 6.52 |
| **13** | 0.00 | 90.8 | 98.1 | 98.1 | | | 79.0 | 62.0 | 36.3 | 98.1 | 75.5 | 68.9 | 19.89 | | 1 | 32.36 | 6.44 |
| **14** | 0.00 | 90.9 | 98.0 | 97.9 | | | 81.2 | 56.7 | 37.1 | 98.0 | 77.3 | 66.0 | | | | | |
| **15** | 0.00 | 90.9 | 97.9 | 97.8 | | | 80.5 | 58.9 | 30.9 | 97.9 | 79.1 | 62.4 | 19.93 | 8.5 | 1 | 32.24 | 6.42 |
| **16** | 0.25 | 90.6 | 97.8 | 97.9 | | | 79.5 | 59.9 | 30.7 | 97.8 | 77.8 | 63.9 | 20.70 | | 1 | 30.67 | 6.35 |
| **17** | 0.00 | 90.6 | 98.0 | 98.1 | | | 78.2 | 62.6 | 37.0 | 97.9 | 77.1 | 65.0 | 20.31 | | 1 | 31.24 | 6.35 |
| **18** | 0.00 | 90.5 | 98.3 | 98.3 | | | 80.1 | 57.7 | 37.4 | 98.1 | 77.1 | 64.8 | 20.58 | | 1 | 32.38 | 6.66 |
| **19** | 0.00 | 90.5 | 98.3 | 98.2 | | | 78.8 | 61.1 | 36.5 | 98.2 | 75.6 | 67.6 | 20.20 | | 1 | 32.18 | 6.50 |
| **20** | 0.00 | 90.7 | 97.9 | 97.8 | | | 80.0 | 58.8 | 36.6 | 98.2 | 79.2 | 60.9 | | | | | |
| **21** | 0.00 | 90.8 | 97.7 | 97.8 | | | 81.4 | 55.4 | 38.3 | 98.1 | 77.8 | 64.4 | | | | | |
| **22** | 0.00 | 90.8 | 97.8 | 97.9 | | | 80.9 | 56.7 | 37.4 | 97.9 | 78.0 | 63.8 | 20.42 | 8.4 | 1 | 32.54 | 6.64 |
| **23** | 0.00 | 90.9 | 98.1 | 98.2 | | | 80.7 | 57.8 | 38.9 | 97.8 | 79.5 | 60.9 | 20.81 | | 1 | 31.75 | 6.61 |
| **24** | 0.00 | 90.9 | 98.3 | 98.2 | | | 79.8 | 60.6 | 43.1 | 97.9 | 73.8 | 71.9 | 20.67 | | 1 | 32.30 | 6.67 |
| **25** | 0.00 | 90.9 | 98.2 | 98.1 | | | 80.2 | 59.2 | 41.6 | 98.1 | 76.7 | 66.8 | 20.71 | | 1 | 31.65 | 6.55 |
| **26** | 0.00 | 90.4 | 98.0 | 98.0 | | | 79.8 | 57.9 | 36.3 | 98.3 | 78.0 | 62.1 | 20.57 | | 1 | 31.22 | 6.42 |
| **27** | 0.00 | 90.2 | 97.8 | 98.0 | | | 78.0 | 61.5 | 44.9 | 98.2 | 77.8 | 62.0 | | | | | |
| **28** | 0.00 | 90.2 | 97.9 | 97.9 | | | 79.2 | 58.3 | 44.2 | 97.9 | 76.1 | 65.2 | | | | | |
| **29** | 0.00 | 90.1 | 98.0 | 97.8 | | | 80.2 | 55.3 | 41.6 | 97.8 | 78.7 | 59.1 | 20.15 | 8.7 | 1 | 32.23 | 6.50 |
| **30** | 0.00 | 90.5 | 98.1 | 97.9 | | | 79.6 | 58.7 | 39.7 | 97.9 | 77.8 | 63.0 | 20.45 | | 1 | 32.80 | 6.71 |
| **31** | 0.00 | 90.5 | 98.2 | 98.0 | | | 79.4 | 59.3 | 41.7 | 98.1 | 79.5 | 59.2 | 20.58 | | 1 | 32.45 | 6.68 |
| **MIN** | 0.00 | 90.1 | 97.7 | 97.4 | | | 78.0 | 54.0 | 30.7 | 97.7 | 73.8 | 59.1 | 19.50 | 8.4 | | 30.50 | 6.11 |
| **MAX** | 0.25 | 90.9 | 98.3 | 98.5 | | | 81.9 | 62.6 | 44.9 | 98.3 | 79.5 | 71.9 | 20.81 | 8.7 | | 32.80 | 6.71 |
| **AVE** | 0.02 | 90.7 | 98.0 | 98.0 | | | 79.9 | 58.9 | 37.9 | 98.0 | 77.4 | 64.6 | 20.29 | 8.5 | | 31.92 | 6.47 |
| **TOTAL** | 0.67 | | | | | | | | | | | | | | 23 | 734.06 | 148.89 |
| **AVE/DAY** | | | | | | | | | | | | | | | 0.74 | 23.68 | 4.80 |

1 Heavy rainfall causes temporary reduction in Thickened Sludge (THS) total volatile solids. 14-day moving average used to approximate actual digester conditions.

2 Pathogen reduction – The biosolids must be treated in the absence of air for a specific Mean Cell Residence Time (MCRT) and temperature that must be between fifteen (15) days at 35° C to 55°C (95° to 131°F) and sixty days at 20°C (68°F). Temperature taken from sludge recirculation system.

3 V.S.R. – Volatile Solids Reduction. Vector Attraction Reduction requirements; the mass of Volatile Solids in the biosolids must be reduced by a minimum of 38%.

**BUDD INLET TREATMENT PLANT**
**BIOSOLIDS MANAGEMENT**
**PROCESS MONITORING & ANALYTICAL DATA FOR PATHOGEN & VECTOR ATTRACTION REDUCTION**
**June 2023**

| DATE | RAIN | THS | PRIMARY DIGESTERS | | | | | | | SECONDARY DIGESTER | | | BIOSOLIDS | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | DATA | TVS | TEMP(°F) | | | | TVS | VSR | MCRT | TEMP | TVS | VSR | TS | pH | LOADS | TONS | |
| | (IN.) | (%) | DIG.1 | DIG.2 | DIG. 3 | DIG. 4 | (%) | (%) | (Days) | °F | (%) | (%) | (%) | | | WET | DRY |
| **1** | 0.00 | 90.5 | 98.1 | 98.1 | | | 78.3 | 62.0 | 37.7 | 98.3 | 80.5 | 56.6 | 20.06 | | 1 | 32.63 | 6.55 |
| **2** | 0.00 | 90.4 | 97.9 | 98.2 | | | 78.2 | 62.1 | 43.5 | 98.2 | 77.6 | 63.4 | 20.46 | | 1 | 32.93 | 6.74 |
| **3** | 0.00 | 90.3 | 97.8 | 98.2 | | | 79.8 | 57.4 | 41.8 | 98.1 | 75.5 | 66.9 | | | | | |
| **4** | 0.00 | 90.2 | 97.9 | 98.1 | | | 78.5 | 60.2 | 41.0 | 97.9 | 75.6 | 66.4 | | | | | |
| **5** | 0.00 | 90.2 | 98.1 | 97.9 | | | 79.3 | 57.9 | 38.9 | 97.8 | 78.7 | 59.6 | 20.46 | 8.7 | 1 | 32.08 | 6.56 |
| **6** | 0.00 | 90.0 | 98.2 | 97.9 | | | 79.1 | 58.1 | 41.0 | 97.9 | 77.5 | 61.9 | 20.35 | | 1 | 32.41 | 6.60 |
| **7** | 0.00 | 90.0 | 98.2 | 97.9 | | | 77.8 | 61.1 | 40.1 | 98.0 | 76.1 | 64.8 | | | | | |
| **8** | 0.00 | 90.0 | 97.9 | 98.0 | | | 79.4 | 56.9 | 39.0 | 98.1 | 77.8 | 61.3 | 20.33 | | 1 | 32.43 | 6.59 |
| **9** | 0.52 | 90.4 | 97.7 | 98.0 | | | 79.2 | 59.4 | 36.7 | 98.1 | 78.0 | 62.3 | 20.16 | | 1 | 32.89 | 6.63 |
| **10** | 0.15 | 90.5 | 97.7 | 98.0 | | | 79.1 | 59.9 | 41.7 | 98.1 | 80.4 | 56.8 | | | | | |
| **11** | 0.00 | 90.6 | 98.1 | 98.0 | | | 78.7 | 61.3 | 45.5 | 98.1 | 77.3 | 64.8 | | | | | |
| **12** | 0.00 | 90.7 | 98.4 | 98.0 | | | 78.6 | 62.3 | 32.8 | 98.1 | 77.8 | 64.1 | 19.93 | 8.6 | 1 | 31.46 | 6.27 |
| **13** | 0.00 | 90.8 | 98.3 | 98.0 | | | 80.2 | 58.1 | 36.6 | 98.2 | 77.3 | 65.4 | 20.50 | | 1 | 30.23 | 6.20 |
| **14** | 0.00 | 90.8 | 98.0 | 98.0 | | | 77.6 | 64.9 | 45.0 | 98.2 | 78.7 | 62.4 | | | | | |
| **15** | 0.00 | 90.8 | 97.8 | 98.0 | | | 77.2 | 65.6 | 39.0 | 98.2 | 77.3 | 65.4 | 20.15 | | 1 | 32.02 | 6.45 |
| **16** | 0.12 | 90.8 | 97.7 | 98.0 | | | 78.5 | 62.9 | 36.4 | 98.2 | 78.0 | 64.0 | 20.43 | | 1 | 32.52 | 6.64 |
| **17** | 0.00 | 90.8 | 98.0 | 97.9 | | | 77.9 | 64.2 | 42.5 | 98.2 | 75.6 | 68.7 | | | | | |
| **18** | 0.12 | 90.8 | 98.2 | 97.9 | | | 78.9 | 62.0 | 41.4 | 98.1 | 76.0 | 67.9 | | | | | |
| **19** | 0.00 | 90.8 | 98.2 | 97.9 | | | 80.2 | 58.6 | 41.0 | 98.1 | 74.4 | 70.4 | 19.92 | 8.5 | 1 | 32.37 | 6.45 |
| **20** | 0.00 | 90.7 | 97.9 | 97.9 | | | 81.1 | 56.0 | 37.5 | 98.0 | 76.0 | 67.6 | 20.23 | | 1 | 32.39 | 6.55 |
| **21** | 0.00 | 90.7 | 97.8 | 98.0 | | | 80.5 | 57.6 | 36.7 | 98.0 | 78.0 | 63.5 | 20.70 | | 1 | 32.08 | 6.64 |
| **22** | 0.00 | 90.7 | 98.0 | 98.1 | | | 79.8 | 59.7 | 37.2 | 98.0 | 74.5 | 70.2 | 20.42 | | 1 | 32.05 | 6.55 |
| **23** | 0.00 | 90.9 | 98.3 | 98.3 | | | 79.7 | 60.4 | 38.7 | 98.0 | 80.0 | 60.1 | 20.33 | | 1 | 32.61 | 6.63 |
| **24** | 0.00 | 90.9 | 98.3 | 98.2 | | | 79.4 | 61.4 | 42.5 | 98.1 | 78.0 | 64.4 | | | | | |
| **25** | 0.00 | 90.8 | 98.1 | 98.0 | | | 79.5 | 60.4 | 46.9 | 98.1 | 76.6 | 66.7 | | | | | |
| **26** | 0.00 | 90.7 | 97.8 | 97.8 | | | 78.8 | 61.8 | 37.0 | 98.1 | 77.3 | 65.1 | 20.48 | 8.3 | 1 | 32.86 | 6.73 |
| **27** | 0.00 | 90.5 | 97.6 | 97.7 | | | 78.1 | 62.5 | 34.5 | 98.1 | 80.0 | 58.1 | 20.41 | | 1 | 33.00 | 6.73 |
| **28** | 0.00 | 90.5 | 97.7 | 98.0 | | | 79.4 | 59.3 | 34.9 | 98.1 | 77.8 | 63.2 | 20.47 | | 1 | 31.78 | 6.50 |
| **29** | 0.00 | 90.5 | 98.2 | 98.4 | | | 79.2 | 60.1 | 41.5 | 98.2 | 77.1 | 64.7 | 20.13 | | 1 | 32.29 | 6.50 |
| **30** | 0.00 | 90.5 | 98.5 | 98.5 | | | 79.0 | 60.5 | 41.0 | 98.2 | 78.7 | 61.3 | 20.55 | | 1 | 33.46 | 6.87 |
| **MIN** | 0.00 | 90.0 | 97.6 | 97.7 | | | 77.2 | 56.0 | 32.8 | 97.8 | 74.4 | 56.6 | 19.92 | 8.3 | | 30.23 | 6.20 |
| **MAX** | 0.52 | 90.9 | 98.5 | 98.5 | | | 81.1 | 65.6 | 46.9 | 98.3 | 80.5 | 70.4 | 20.70 | 8.7 | | 33.46 | 6.87 |
| **AVE** | 0.03 | 90.6 | 98.0 | 98.0 | | | 79.0 | 60.5 | 39.7 | 98.1 | 77.5 | 63.9 | 20.32 | 8.5 | | 32.32 | 6.57 |
| **TOTAL** | 0.91 | | | | | | | | | | | | | | 20 | 646.49 | 131.39 |
| **AVE/DAY** | | | | | | | | | | | | | | | 0.67 | 21.55 | 4.38 |

1 Heavy rainfall causes temporary reduction in Thickened Sludge (THS) total volatile solids. 14-day moving average used to approximate actual digester conditions.

2 Pathogen reduction – The biosolids must be treated in the absence of air for a specific Mean Cell Residence Time (MCRT) and temperature that must be between fifteen (15) days at 35° C to 55°C (95° to 131°F) and sixty days at 20°C (68°F). Temperature taken from sludge recirculation system.

3 V.S.R. – Volatile Solids Reduction. Vector Attraction Reduction requirements; the mass of Volatile Solids in the biosolids must be reduced by a minimum of 38%.

**BUDD INLET TREATMENT PLANT**
**BIOSOLIDS MANAGEMENT**
**PROCESS MONITORING & ANALYTICAL DATA FOR PATHOGEN & VECTOR ATTRACTION REDUCTION**
**July 2023**

| DATE | RAIN | THS | PRIMARY DIGESTERS | | | | | | | SECONDARY DIGESTER | | | BIOSOLIDS | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | DATA | TVS | TEMP(°F) | | | | TVS | VSR | MCRT | TEMP | TVS | VSR | TS | pH | LOADS | TONS | |
| | (IN.) | (%) | DIG.1 | DIG.2 | DIG. 3 | DIG. 4 | (%) | (%) | (Days) | °F | (%) | (%) | (%) | | | WET | DRY |
| **1** | 0.00 | 90.6 | 98.5 | 98.2 | | | 79.0 | 60.7 | 42.6 | 98.2 | 77.8 | 63.6 | | | | | |
| **2** | 0.00 | 90.6 | 98.1 | 97.8 | | | 79.6 | 59.3 | 42.6 | 98.1 | 77.8 | 63.5 | | | | | |
| **3** | 0.00 | 90.5 | 97.7 | 97.6 | | | 82.2 | 50.6 | 37.6 | 98.0 | 76.2 | 66.5 | 20.19 | 8.7 | 1 | 33.05 | 6.67 |
| **4** | 0.00 | 90.7 | 97.6 | 97.7 | | | 80.0 | 58.7 | 41.1 | 98.0 | 77.3 | 65.0 | 20.52 | | 1 | 32.82 | 6.74 |
| **5** | 0.00 | 90.6 | 97.8 | 98.2 | | | 78.3 | 62.5 | 38.7 | 97.9 | 77.3 | 64.9 | 20.63 | | 1 | 31.92 | 6.59 |
| **6** | 0.00 | 90.5 | 98.1 | 98.4 | | | 78.2 | 62.2 | 37.1 | 97.9 | 78.3 | 62.1 | 20.42 | | 1 | 32.69 | 6.68 |
| **7** | 0.00 | 90.4 | 98.2 | 98.3 | | | 79.6 | 58.5 | 35.3 | 97.9 | 76.0 | 66.4 | 20.77 | | 1 | 31.38 | 6.52 |
| **8** | 0.00 | 90.4 | 98.1 | 97.9 | | | 78.7 | 60.7 | 41.0 | 97.9 | 78.3 | 61.7 | | | | | |
| **9** | 0.00 | 90.5 | 98.0 | 97.7 | | | 78.0 | 62.6 | 44.6 | 97.9 | 76.9 | 64.9 | | | | | |
| **10** | 0.00 | 90.5 | 97.9 | 97.9 | | | 77.7 | 63.6 | 40.6 | 97.9 | 79.5 | 59.3 | 19.96 | 8.6 | 1 | 31.62 | 6.31 |
| **11** | 0.00 | 90.5 | 97.8 | 98.1 | | | 77.3 | 64.4 | 41.3 | 97.9 | 80.0 | 58.2 | 20.71 | | 1 | 31.29 | 6.48 |
| **12** | 0.00 | 90.5 | 97.9 | 98.3 | | | 78.7 | 61.2 | 43.4 | 98.0 | 77.1 | 64.7 | | | | | |
| **13** | 0.00 | 90.5 | 98.1 | 98.2 | | | 77.9 | 63.0 | 38.1 | 98.1 | 80.0 | 58.1 | 20.64 | | 1 | 30.98 | 6.40 |
| **14** | 0.00 | 90.4 | 98.2 | 97.9 | | | 79.4 | 59.3 | 44.7 | 98.1 | 76.6 | 65.4 | 20.84 | | 1 | 31.67 | 6.60 |
| **15** | 0.00 | 90.2 | 98.1 | 97.8 | | | 79.6 | 57.6 | 43.1 | 98.2 | 77.6 | 62.6 | 19.92 | | 1 | 31.45 | 6.26 |
| **16** | 0.00 | 90.2 | 98.0 | 98.0 | | | 79.2 | 58.5 | 45.9 | 98.2 | 78.0 | 61.4 | | | | | |
| **17** | 0.00 | 90.1 | 97.8 | 98.2 | | | 81.1 | 53.1 | 36.2 | 98.1 | 83.7 | 43.6 | 19.89 | 8.5 | 1 | 32.16 | 6.40 |
| **18** | 0.00 | 90.1 | 96.2 | 97.5 | | | 79.6 | 57.1 | 55.5 | 96.7 | 78.0 | 61.0 | | | | | |
| **19** | 0.00 | 90.0 | 98.1 | 98.3 | | | 80.2 | 55.1 | 38.0 | 97.9 | 76.7 | 63.4 | 20.35 | | 1 | 31.97 | 6.51 |
| **20** | 0.00 | 90.1 | 98.3 | 98.5 | | | 79.8 | 56.5 | 35.3 | 97.8 | 80.0 | 55.9 | 20.94 | | 1 | 32.20 | 6.74 |
| **21** | 0.00 | 90.0 | 98.2 | 99.1 | | | 79.5 | 56.6 | 33.3 | 97.9 | 77.8 | 61.0 | 20.24 | | 1 | 30.41 | 6.16 |
| **22** | 0.00 | 90.0 | 97.9 | 99.0 | | | 79.4 | 56.9 | 39.4 | 98.1 | 79.6 | 56.5 | 20.33 | | 1 | 30.98 | 6.30 |
| **23** | 0.00 | 90.1 | 97.7 | 98.8 | | | 82.1 | 49.4 | 39.8 | 98.1 | 78.8 | 59.0 | | | | | |
| **24** | 0.01 | 89.9 | 97.8 | 98.9 | | | 84.8 | 37.0 | 34.2 | 98.2 | 83.3 | 43.6 | 20.30 | 8.6 | 1 | 31.41 | 6.38 |
| **25** | 0.00 | 89.8 | 98.0 | 99.0 | | | 77.5 | 60.8 | 32.7 | 98.2 | 75.5 | 64.9 | 20.09 | | 1 | 32.65 | 6.56 |
| **26** | 0.00 | 89.8 | 98.1 | 99.2 | | | 77.7 | 60.1 | 39.3 | 98.2 | 79.2 | 56.7 | 20.58 | | 1 | 32.99 | 6.79 |
| **27** | 0.00 | 89.6 | 98.2 | 99.3 | | | 78.3 | 58.1 | 42.3 | 98.2 | 77.8 | 59.5 | 20.17 | | 1 | 32.39 | 6.53 |
| **28** | 0.00 | 89.7 | 98.1 | 98.6 | | | 78.9 | 57.1 | 46.9 | 98.2 | 77.3 | 61.1 | | | | | |
| **29** | 0.00 | 89.9 | 98.1 | 98.5 | | | 78.2 | 60.0 | 73.6 | 98.1 | 78.4 | 59.4 | | | | | |
| **30** | 0.00 | 90.0 | 98.1 | 97.9 | | | 77.5 | 61.7 | 69.3 | 98.1 | 77.4 | 62.0 | | | | | |
| **31** | 0.00 | 90.0 | 98.1 | 97.5 | | | 78.5 | 58.7 | 62.4 | 96.7 | 76.7 | 63.3 | 20.37 | 8.7 | 1 | 32.09 | 6.54 |
| **MIN** | 0.00 | 89.6 | 96.2 | 97.5 | | | 77.3 | 37.0 | 32.7 | 96.7 | 75.5 | 43.6 | 19.89 | 8.5 | | 30.41 | 6.16 |
| **MAX** | 0.01 | 90.7 | 98.5 | 99.3 | | | 84.8 | 64.4 | 73.6 | 98.2 | 83.7 | 66.5 | 20.94 | 8.7 | | 33.05 | 6.79 |
| **AVE** | 0.00 | 90.2 | 98.0 | 98.3 | | | 79.2 | 58.1 | 43.1 | 98.0 | 78.2 | 60.6 | 20.39 | 8.6 | | 31.91 | 6.51 |
| **TOTAL** | 0.01 | | | | | | | | | | | | | | 20 | 638.12 | 130.13 |
| **AVE/DAY** | | | | | | | | | | | | | | | 0.65 | 20.58 | 4.20 |

1 Heavy rainfall causes temporary reduction in Thickened Sludge (THS) total volatile solids. 14-day moving average used to approximate actual digester conditions.

2 Pathogen reduction – The biosolids must be treated in the absence of air for a specific Mean Cell Residence Time (MCRT) and temperature that must be between fifteen (15) days at 35° C to 55°C (95° to 131°F) and sixty days at 20°C (68°F). Temperature taken from sludge recirculation system.

3 V.S.R. – Volatile Solids Reduction. Vector Attraction Reduction requirements; the mass of Volatile Solids in the biosolids must be reduced by a minimum of 38%.

7/24/2023 11:59 PM Primary digesters VSR <38%. Laboratory error likely cause. VSR for previous and following days both >38%

**BUDD INLET TREATMENT PLANT**
**BIOSOLIDS MANAGEMENT**
**PROCESS MONITORING & ANALYTICAL DATA FOR PATHOGEN & VECTOR ATTRACTION REDUCTION**
**August 2023**

| DATE | RAIN | THS | PRIMARY DIGESTERS | | | | | | | SECONDARY DIGESTER | | | BIOSOLIDS | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | DATA | TVS | TEMP(°F) | | | | TVS | VSR | MCRT | TEMP | TVS | VSR | TS | pH | LOADS | TONS | |
| | (IN.) | (%) | DIG.1 | DIG.2 | DIG. 3 | DIG. 4 | (%) | (%) | (Days) | °F | (%) | (%) | (%) | | | WET | DRY |
| **1** | 0.00 | 90.0 | 98.1 | 97.6 | | | 77.0 | 62.8 | 361.8 | 97.8 | 80.0 | 55.5 | 21.26 | | 1 | 32.42 | |
| **2** | 0.00 | 90.1 | 98.1 | 98.0 | | | 77.1 | 62.9 | 66.0 | 97.9 | 77.8 | 61.6 | 21.12 | | 1 | 32.38 | |
| **3** | 0.00 | 90.2 | 98.0 | 98.4 | | | 78.4 | 60.7 | 51.5 | 98.1 | 79.6 | 57.7 | 20.34 | | 1 | 32.44 | 6.60 |
| **4** | 0.00 | 90.4 | 97.9 | 98.4 | | | 78.8 | 60.2 | 54.2 | 98.3 | 80.4 | 56.1 | | | | | |
| **5** | 0.02 | 90.4 | 97.8 | 98.0 | | | 79.2 | 59.4 | 46.2 | 98.2 | 79.2 | 59.6 | | | | | |
| **6** | 0.00 | 90.3 | 97.9 | 97.7 | | | 78.1 | 61.7 | 49.0 | 97.9 | 79.2 | 59.0 | | | | | |
| **7** | 0.00 | 90.5 | 98.1 | 97.8 | | | 79.6 | 59.1 | 47.1 | 97.7 | 81.8 | 52.9 | 20.13 | | 1 | 32.48 | 6.54 |
| **8** | 0.00 | 90.7 | 98.2 | 98.1 | | | 80.2 | 58.2 | 46.9 | 97.9 | 78.3 | 62.9 | 20.41 | | 1 | 31.84 | 6.50 |
| **9** | 0.11 | 90.6 | 98.1 | 98.3 | | | 78.2 | 62.7 | 46.6 | 98.1 | 78.6 | 62.0 | | | | | |
| **10** | 0.00 | 90.6 | 97.9 | 98.1 | | | 79.8 | 59.0 | 41.6 | 98.3 | 77.1 | 65.2 | 20.39 | | 1 | 31.60 | 6.44 |
| **11** | 0.00 | 90.5 | 97.8 | 97.9 | | | 80.0 | 58.1 | 43.6 | 98.2 | 77.1 | 64.7 | 20.78 | | 1 | 31.22 | 6.49 |
| **12** | 0.00 | 90.5 | 98.0 | 97.9 | | | 79.6 | 59.2 | 55.1 | 98.0 | 77.6 | 63.9 | | | | | |
| **13** | 0.00 | 90.6 | 98.3 | 98.0 | | | 78.8 | 61.4 | 54.7 | 97.9 | 77.3 | 64.8 | | | | | |
| **14** | 0.00 | 90.8 | 98.2 | 98.1 | | | 79.6 | 60.3 | 45.6 | 97.9 | 80.0 | 59.2 | 20.46 | 8.7 | 1 | 31.27 | 6.40 |
| **15** | 0.00 | 90.7 | 98.0 | 98.2 | | | 78.4 | 62.7 | 56.6 | 98.0 | 77.8 | 64.0 | | | | | |
| **16** | 0.00 | 90.7 | 97.9 | 98.2 | | | 77.6 | 64.1 | 45.5 | 98.1 | 79.2 | 60.8 | 20.36 | | 1 | 31.68 | 6.45 |
| **17** | 0.00 | 90.6 | 97.7 | 97.9 | | | 80.0 | 58.6 | 37.5 | 98.2 | 79.5 | 59.9 | 20.36 | | 1 | 31.72 | 6.46 |
| **18** | 0.00 | 90.5 | 97.8 | 97.6 | | | 77.3 | 64.2 | 36.2 | 98.2 | 76.1 | 66.6 | 20.43 | | 1 | 31.57 | 6.45 |
| **19** | 0.00 | 90.6 | 98.0 | 97.7 | | | 78.3 | 62.3 | 36.0 | 98.1 | 76.9 | 65.3 | | | | | |
| **20** | 0.00 | 90.3 | 98.1 | 98.1 | | | 80.0 | 57.0 | 38.9 | 98.1 | 79.5 | 58.4 | | | | | |
| **21** | 0.00 | 90.2 | 98.2 | 98.4 | | | 79.1 | 58.9 | 38.2 | 98.0 | 76.7 | 64.1 | | | | | |
| **22** | 0.03 | 90.1 | 98.1 | 98.3 | | | 80.0 | 55.9 | 36.6 | 97.9 | 79.1 | 58.4 | 20.48 | 8.5 | 1 | 31.68 | 6.49 |
| **23** | 0.04 | 90.1 | 97.9 | 97.9 | | | 76.9 | 63.3 | 33.9 | 97.9 | 77.5 | 62.2 | 20.17 | | 1 | 32.12 | 6.48 |
| **24** | 0.00 | 90.1 | 97.8 | 97.6 | | | 79.8 | 56.4 | 31.5 | 97.9 | 79.1 | 58.3 | 20.41 | | 1 | 31.82 | 6.49 |
| **25** | 0.16 | 90.0 | 97.9 | 97.7 | | | 79.0 | 58.1 | 34.1 | 97.9 | 77.8 | 61.1 | 19.77 | | 1 | 31.37 | 6.20 |
| **26** | 0.00 | 89.9 | 98.0 | 98.2 | | | 79.6 | 56.1 | 38.7 | 98.0 | 76.0 | 64.4 | | | | | |
| **27** | 0.00 | 89.8 | 98.0 | 98.5 | | | 79.8 | 54.9 | 38.2 | 98.1 | 77.6 | 60.6 | | | | | |
| **28** | 0.00 | 89.7 | 98.0 | 98.4 | | | 78.1 | 58.9 | 32.5 | 98.1 | 76.6 | 62.4 | 19.82 | | 1 | 31.10 | 6.17 |
| **29** | 0.06 | 89.6 | 97.8 | 98.0 | | | 78.4 | 58.1 | 32.7 | 98.1 | 77.1 | 61.1 | 20.17 | | 1 | 32.03 | 6.46 |
| **30** | 0.00 | 89.5 | 98.2 | 97.6 | | | 78.3 | 57.7 | 31.8 | 98.1 | 77.1 | 60.6 | 19.37 | | 1 | 32.91 | 6.37 |
| **31** | 0.22 | 89.3 | 98.1 | 97.6 | | | 79.6 | 53.3 | 30.0 | 98.2 | 78.8 | 55.5 | 20.31 | | 1 | 32.04 | 6.51 |
| **MIN** | 0.00 | 89.3 | 97.7 | 97.6 | | | 76.9 | 53.3 | 30.0 | 97.7 | 76.0 | 52.9 | 19.37 | 8.5 | | 31.10 | 6.17 |
| **MAX** | 0.22 | 90.8 | 98.3 | 98.5 | | | 80.2 | 64.2 | 361.8 | 98.3 | 81.8 | 66.6 | 21.26 | 8.7 | | 32.91 | 6.60 |
| **AVE** | 0.02 | 90.3 | 98.0 | 98.0 | | | 78.9 | 59.6 | 52.9 | 98.0 | 78.3 | 60.9 | 20.34 | 8.6 | | 31.88 | 6.44 |
| **TOTAL** | 0.64 | | | | | | | | | | | | | | 19 | 605.69 | 109.49 |
| **AVE/DAY** | | | | | | | | | | | | | | | 0.61 | 19.54 | 3.53 |

1 Heavy rainfall causes temporary reduction in Thickened Sludge (THS) total volatile solids. 14-day moving average used to approximate actual digester conditions.

2 Pathogen reduction – The biosolids must be treated in the absence of air for a specific Mean Cell Residence Time (MCRT) and temperature that must be between fifteen (15) days at 35° C to 55°C (95° to 131°F) and sixty days at 20°C (68°F). Temperature taken from sludge recirculation system.

3 V.S.R. – Volatile Solids Reduction. Vector Attraction Reduction requirements; the mass of Volatile Solids in the biosolids must be reduced by a minimum of 38%.

**BUDD INLET TREATMENT PLANT**
**BIOSOLIDS MANAGEMENT**
**PROCESS MONITORING & ANALYTICAL DATA FOR PATHOGEN & VECTOR ATTRACTION REDUCTION**
**September 2023**

| DATE | RAIN | THS | PRIMARY DIGESTERS | | | | | | | SECONDARY DIGESTER | | | BIOSOLIDS | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | DATA | TVS | TEMP(°F) | | | | TVS | VSR | MCRT | TEMP | TVS | VSR | TS | pH | LOADS | TONS | |
| | (IN.) | (%) | DIG.1 | DIG.2 | DIG. 3 | DIG. 4 | (%) | (%) | (Days) | °F | (%) | (%) | (%) | | | WET | DRY |
| **1** | 0.00 | 89.4 | 97.7 | 98.0 | | | 78.7 | 56.0 | 37.0 | 98.2 | 76.4 | 61.7 | 20.17 | | 1 | 32.44 | 6.54 |
| **2** | 0.00 | 89.4 | 97.8 | 98.6 | | | 80.0 | 52.6 | 40.6 | 98.2 | 78.0 | 58.0 | 20.13 | | 1 | 32.07 | 6.46 |
| **3** | 0.00 | 89.5 | 98.1 | 98.8 | | | 79.6 | 54.1 | 38.5 | 98.1 | 80.0 | 53.0 | | | | | |
| **4** | 0.00 | 89.6 | 98.1 | 98.4 | | | 80.6 | 51.5 | 31.7 | 98.0 | 77.8 | 59.3 | 20.54 | | 1 | 30.23 | 6.21 |
| **5** | 0.00 | 89.6 | 98.0 | 97.8 | | | 79.1 | 56.1 | 38.7 | 97.8 | 78.0 | 58.8 | 19.94 | | 1 | 32.81 | 6.54 |
| **6** | 0.00 | 89.6 | 98.0 | 97.4 | | | 78.8 | 57.0 | 30.4 | 97.9 | 78.3 | 58.4 | 19.99 | | 1 | 32.85 | 6.57 |
| **7** | 0.00 | 89.7 | 98.1 | 97.5 | | | 80.0 | 53.9 | 34.5 | 97.9 | 76.6 | 62.3 | 19.57 | | 2 | 86.20 | 16.87 |
| **8** | 0.00 | 89.8 | 98.1 | 97.9 | | | 77.2 | 61.3 | 34.9 | 98.1 | 77.1 | 61.8 | 20.51 | | 1 | 32.31 | 6.63 |
| **9** | 0.00 | 89.7 | 98.0 | 98.4 | | | 79.8 | 54.7 | 33.7 | 98.1 | 78.4 | 58.5 | 20.02 | | 1 | 32.38 | 6.48 |
| **10** | 0.00 | 89.7 | 97.9 | 98.5 | | | 79.0 | 56.5 | 34.7 | 98.2 | 78.4 | 58.1 | | | | | |
| **11** | 0.00 | 89.7 | 97.9 | 98.3 | | | 79.8 | 54.5 | 34.9 | 98.2 | 78.8 | 57.1 | 20.03 | 8.7 | 1 | 32.59 | 6.53 |
| **12** | 0.00 | 89.8 | 97.9 | 97.9 | | | 78.5 | 58.5 | 33.9 | 98.3 | 80.5 | 53.1 | 20.13 | | 1 | 32.67 | 6.58 |
| **13** | 0.00 | 89.9 | 98.3 | 97.6 | | | 80.9 | 52.1 | 34.6 | 98.1 | 85.1 | 35.6 | 19.64 | | 1 | 33.02 | 6.49 |
| **14** | 0.00 | 90.0 | 98.3 | 97.7 | | | 79.1 | 58.0 | 35.0 | 97.8 | 77.8 | 61.0 | 20.12 | | 1 | 32.68 | 6.57 |
| **15** | 0.00 | 90.0 | 98.0 | 98.2 | | | 78.5 | 59.0 | 36.8 | 97.8 | 78.7 | 58.8 | 20.01 | | 1 | 32.84 | 6.57 |
| **16** | 0.00 | 89.9 | 97.7 | 98.5 | | | 79.8 | 55.7 | 35.2 | 98.0 | 75.0 | 66.3 | 20.09 | | 1 | 32.51 | 6.53 |
| **17** | 0.00 | 90.0 | 97.6 | 98.4 | | | 80.2 | 55.0 | 38.9 | 98.1 | 78.4 | 59.6 | | | | | |
| **18** | 0.00 | 90.0 | 98.0 | 98.0 | | | 79.1 | 57.8 | 35.3 | 98.2 | 76.6 | 63.7 | 20.42 | 8.7 | 1 | 32.05 | 6.55 |
| **19** | 0.00 | 90.1 | 98.3 | 97.6 | | | 80.2 | 55.1 | 35.9 | 98.2 | 80.0 | 55.9 | 20.44 | | 1 | 32.30 | 6.60 |
| **20** | 0.00 | 90.1 | 98.3 | 97.5 | | | 79.8 | 56.7 | 40.3 | 98.1 | 77.3 | 62.8 | 19.30 | | 1 | 33.59 | 6.48 |
| **21** | 0.00 | 90.2 | 98.1 | 97.7 | | | 80.2 | 56.0 | 36.4 | 98.1 | 77.8 | 62.1 | 19.56 | | 1 | 33.41 | 6.53 |
| **22** | 0.00 | 90.2 | 97.7 | 98.0 | | | 77.5 | 62.7 | 30.4 | 98.0 | 77.1 | 63.5 | 20.06 | | 1 | 31.63 | 6.34 |
| **23** | 0.24 | 90.2 | 97.7 | 98.3 | | | 79.1 | 58.9 | 35.7 | 97.8 | 79.2 | 58.9 | 20.05 | | 1 | 31.63 | 6.34 |
| **24** | 0.35 | 90.3 | 98.2 | 98.3 | | | 79.4 | 58.4 | 41.1 | 98.1 | 76.5 | 64.9 | | | | | |
| **25** | 0.49 | 90.2 | 98.4 | 98.0 | | | 77.6 | 62.5 | 35.9 | 98.3 | 76.2 | 65.3 | 20.32 | 8.8 | 1 | 31.32 | 6.36 |
| **26** | 0.38 | 90.0 | 98.0 | 97.7 | | | 77.7 | 61.6 | 37.5 | 98.1 | 75.0 | 66.8 | 20.14 | | 1 | 31.41 | 6.33 |
| **27** | 0.38 | 89.6 | 97.8 | 97.5 | | | 80.6 | 52.0 | 32.6 | 97.9 | 78.4 | 58.0 | 19.73 | | 1 | 31.87 | 6.29 |
| **28** | 0.08 | 89.5 | 97.6 | 97.7 | | | 78.3 | 57.8 | 36.9 | 97.8 | 78.4 | 57.5 | 19.90 | | 1 | 30.66 | 6.10 |
| **29** | 0.00 | 89.5 | 97.9 | 98.2 | | | 79.3 | 54.9 | 41.8 | 97.9 | 77.8 | 59.1 | 19.48 | | 1 | 31.78 | 6.19 |
| **30** | 0.00 | 89.5 | 98.3 | 98.6 | | | 78.2 | 58.0 | 44.7 | 98.0 | 79.2 | 55.4 | | | | | |
| **MIN** | 0.00 | 89.4 | 97.6 | 97.4 | | | 77.2 | 51.5 | 30.4 | 97.8 | 75.0 | 35.6 | 19.30 | 8.7 | | 30.23 | 6.10 |
| **MAX** | 0.49 | 90.3 | 98.4 | 98.8 | | | 80.9 | 62.7 | 44.7 | 98.3 | 85.1 | 66.8 | 20.54 | 8.8 | | 86.20 | 16.87 |
| **AVE** | 0.06 | 89.8 | 98.0 | 98.0 | | | 79.2 | 56.6 | 36.3 | 98.0 | 78.1 | 59.2 | 20.01 | 8.7 | | 34.37 | 6.87 |
| **TOTAL** | 1.92 | | | | | | | | | | | | | | 26 | 859.25 | 171.69 |
| **AVE/DAY** | | | | | | | | | | | | | | | 0.87 | 28.64 | 5.72 |

1 Heavy rainfall causes temporary reduction in Thickened Sludge (THS) total volatile solids. 14-day moving average used to approximate actual digester conditions.

2 Pathogen reduction – The biosolids must be treated in the absence of air for a specific Mean Cell Residence Time (MCRT) and temperature that must be between fifteen (15) days at 35° C to 55°C (95° to 131°F) and sixty days at 20°C (68°F). Temperature taken from sludge recirculation system.

3 V.S.R. – Volatile Solids Reduction. Vector Attraction Reduction requirements; the mass of Volatile Solids in the biosolids must be reduced by a minimum of 38%.

**BUDD INLET TREATMENT PLANT**
**BIOSOLIDS MANAGEMENT**
**PROCESS MONITORING & ANALYTICAL DATA FOR PATHOGEN & VECTOR ATTRACTION REDUCTION**
**October 2023**

| DATE | RAIN | THS | PRIMARY DIGESTERS | | | | | | | SECONDARY DIGESTER | | | BIOSOLIDS | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | DATA | TVS | TEMP(°F) | | | | TVS | VSR | MCRT | TEMP | TVS | VSR | TS | pH | LOADS | TONS | |
| | (IN.) | (%) | DIG.1 | DIG.2 | DIG. 3 | DIG. 4 | (%) | (%) | (Days) | °F | (%) | (%) | (%) | | | WET | DRY |
| **1** | 0.00 | 89.4 | 98.4 | 98.5 | | | 76.0 | 62.5 | 37.0 | 98.1 | 76.7 | 61.1 | | | | | |
| **2** | 0.23 | 89.4 | 98.1 | 98.1 | | | 78.6 | 56.5 | 36.6 | 98.2 | 76.1 | 62.3 | 19.78 | 8.7 | 1 | 32.31 | 6.39 |
| **3** | 0.04 | 89.3 | 97.7 | 97.6 | | | 79.8 | 52.5 | 31.2 | 98.2 | 76.1 | 61.8 | 19.62 | | 1 | 32.04 | 6.29 |
| **4** | 0.00 | 89.3 | 97.3 | 97.4 | | | 79.6 | 52.8 | 33.0 | 98.2 | 77.8 | 57.9 | 19.49 | | 1 | 31.98 | 6.23 |
| **5** | 0.00 | 89.2 | 97.8 | 97.6 | | | 77.2 | 59.0 | 37.9 | 98.2 | 78.3 | 56.4 | 19.47 | | 1 | 32.75 | 6.38 |
| **6** | 0.00 | 89.1 | 98.3 | 98.0 | | | 78.0 | 56.5 | 40.3 | 98.2 | 78.2 | 56.0 | 19.97 | | 1 | 32.35 | 6.46 |
| **7** | 0.00 | 89.1 | 98.6 | 98.6 | | | 78.4 | 55.8 | 39.4 | 98.2 | 78.7 | 54.9 | 19.60 | | 1 | 32.79 | 6.43 |
| **8** | 0.00 | 89.2 | 98.5 | 98.8 | | | 77.7 | 58.0 | 41.4 | 98.1 | 77.4 | 58.7 | | | | | |
| **9** | 0.04 | 89.2 | 98.0 | 98.5 | | | 78.8 | 55.0 | 39.4 | 98.0 | 77.1 | 59.4 | 19.46 | 8.7 | 1 | 32.78 | 6.38 |
| **10** | 0.80 | 89.3 | 97.4 | 98.2 | | | 79.6 | 52.9 | 40.3 | 97.8 | 76.7 | 60.3 | | | | | |
| **11** | 1.00 | 89.3 | 97.2 | 97.5 | | | 77.1 | 59.6 | 42.2 | 97.7 | 75.5 | 63.1 | 18.66 | | 1 | 32.66 | 6.09 |
| **12** | 0.00 | 89.2 | 97.5 | 97.3 | | | 78.5 | 55.7 | 43.4 | 97.9 | 77.1 | 59.1 | 19.57 | | 1 | 30.35 | 5.94 |
| **13** | 0.11 | 89.2 | 98.2 | 96.3 | | | 77.9 | 57.2 | 42.5 | 98.3 | 78.0 | 56.9 | 19.58 | | 1 | 31.36 | 6.14 |
| **14** | 0.07 | 89.1 | 98.7 | 98.6 | | | 77.9 | 57.1 | 45.3 | 98.4 | 77.1 | 59.0 | 19.16 | | 1 | 30.96 | 5.93 |
| **15** | 0.01 | 89.1 | 98.8 | 99.6 | | | 78.7 | 54.7 | 43.6 | 98.3 | 78.4 | 55.6 | | | | | |
| **16** | 0.56 | 89.0 | 98.7 | 99.9 | | | 76.4 | 59.7 | 41.3 | 97.9 | 77.3 | 58.0 | 19.08 | 8.6 | 1 | 33.38 | 6.37 |
| **17** | 0.08 | 89.0 | 97.7 | 99.6 | | | 77.4 | 57.6 | 36.3 | 97.7 | 75.6 | 61.8 | 18.92 | | 1 | 33.39 | 6.32 |
| **18** | 0.00 | 89.0 | 97.5 | 99.2 | | | 77.7 | 56.8 | 34.0 | 97.8 | 74.5 | 63.8 | 18.70 | | 1 | 34.17 | 6.39 |
| **19** | 0.00 | 89.0 | 96.2 | 98.3 | | | 78.1 | 55.7 | 34.4 | 98.0 | 78.3 | 55.5 | 18.61 | | 1 | 27.99 | 5.21 |
| **20** | 0.00 | 88.9 | 96.8 | 97.5 | | | 77.4 | 57.3 | 34.4 | 98.2 | 79.2 | 52.7 | 20.15 | | 1 | 32.03 | 6.45 |
| **21** | 0.02 | 88.9 | 97.1 | 96.9 | | | 77.4 | 56.8 | 35.4 | 98.3 | 79.6 | 51.1 | | | | | |
| **22** | 0.00 | 88.8 | 97.6 | 96.8 | | | 79.0 | 52.4 | 34.6 | 98.1 | 77.6 | 56.4 | | | | | |
| **23** | 0.00 | 88.7 | 98.3 | 97.0 | | | 78.3 | 54.3 | 34.3 | 97.9 | 77.3 | 56.9 | 19.23 | 8.6 | 1 | 33.00 | 6.35 |
| **24** | 0.60 | 88.8 | 98.7 | 97.6 | | | 77.6 | 55.9 | 34.3 | 97.7 | 76.1 | 59.8 | 18.74 | | 1 | 33.63 | 6.30 |
| **25** | 0.56 | 88.8 | 98.6 | 98.3 | | | 77.4 | 56.8 | 34.4 | 97.8 | 75.9 | 60.4 | 19.08 | | 1 | 33.17 | 6.33 |
| **26** | 0.00 | 88.9 | 98.1 | 98.6 | | | 76.8 | 58.6 | 34.3 | 98.1 | 75.6 | 61.4 | 18.90 | | 1 | 32.38 | 6.12 |
| **27** | 0.00 | 88.8 | 97.6 | 98.5 | | | 77.1 | 57.5 | 33.8 | 98.4 | 79.2 | 52.2 | 20.01 | | 1 | 31.67 | 6.34 |
| **28** | 0.00 | 88.8 | 97.3 | 98.1 | | | 75.9 | 60.4 | 32.8 | 98.2 | 75.5 | 61.2 | 18.76 | | 1 | 31.52 | 5.91 |
| **29** | 0.00 | 88.8 | 97.4 | 97.5 | | | 78.7 | 53.4 | 32.0 | 98.0 | 77.4 | 56.9 | | | | | |
| **30** | 0.00 | 88.8 | 97.8 | 97.4 | | | 79.2 | 52.0 | 31.2 | 97.8 | 76.7 | 58.3 | 19.02 | 8.6 | 1 | 33.43 | 6.36 |
| **31** | 0.00 | 88.8 | 98.3 | 97.5 | | | 78.1 | 54.8 | 26.9 | 97.8 | 78.7 | 53.1 | 18.97 | | 1 | 33.63 | 6.38 |
| **MIN** | 0.00 | 88.7 | 96.2 | 96.3 | | | 75.9 | 52.0 | 26.9 | 97.7 | 74.5 | 51.1 | 18.61 | 8.6 | | 27.99 | 5.21 |
| **MAX** | 1.00 | 89.4 | 98.8 | 99.9 | | | 79.8 | 62.5 | 45.3 | 98.4 | 79.6 | 63.8 | 20.15 | 8.7 | | 34.17 | 6.46 |
| **AVE** | 0.13 | 89.0 | 97.9 | 98.0 | | | 77.9 | 56.3 | 36.7 | 98.0 | 77.2 | 58.1 | 19.27 | 8.6 | | 32.32 | 6.23 |
| **TOTAL** | 4.12 | | | | | | | | | | | | | | 24 | 775.72 | 149.48 |
| **AVE/DAY** | | | | | | | | | | | | | | | 0.77 | 25.02 | 4.82 |

1 Heavy rainfall causes temporary reduction in Thickened Sludge (THS) total volatile solids. 14-day moving average used to approximate actual digester conditions.

2 Pathogen reduction – The biosolids must be treated in the absence of air for a specific Mean Cell Residence Time (MCRT) and temperature that must be between fifteen (15) days at 35° C to 55°C (95° to 131°F) and sixty days at 20°C (68°F). Temperature taken from sludge recirculation system.

3 V.S.R. – Volatile Solids Reduction. Vector Attraction Reduction requirements; the mass of Volatile Solids in the biosolids must be reduced by a minimum of 38%.

**BUDD INLET TREATMENT PLANT**
**BIOSOLIDS MANAGEMENT**
**PROCESS MONITORING & ANALYTICAL DATA FOR PATHOGEN & VECTOR ATTRACTION REDUCTION**
**November 2023**

| DATE | RAIN | THS | PRIMARY DIGESTERS | | | | | | | SECONDARY DIGESTER | | | BIOSOLIDS | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | DATA | TVS | TEMP(°F) | | | | TVS | VSR | MCRT | TEMP | TVS | VSR | TS | pH | LOADS | TONS | |
| | (IN.) | (%) | DIG.1 | DIG.2 | DIG. 3 | DIG. 4 | (%) | (%) | (Days) | °F | (%) | (%) | (%) | | | WET | DRY |
| **1** | 0.51 | 88.8 | 98.4 | 97.9 | | | 77.1 | 57.3 | 28.8 | 97.9 | 76.5 | 58.8 | 18.98 | | 1 | 33.50 | 6.36 |
| **2** | 0.91 | 88.5 | 98.4 | 98.5 | | | 77.0 | 56.2 | 32.8 | 98.2 | 76.5 | 57.7 | 18.82 | | 1 | 33.22 | 6.25 |
| **3** | 0.51 | 88.6 | 98.0 | 98.8 | | | 78.5 | 52.7 | 32.7 | 98.3 | 75.0 | 61.5 | 19.00 | | 1 | 33.23 | 6.31 |
| **4** | 1.13 | 88.3 | 97.6 | 98.7 | | | 78.0 | 53.0 | 31.4 | 98.1 | 78.4 | 51.7 | 19.03 | | 1 | 33.06 | 6.29 |
| **5** | 0.26 | 88.2 | 97.5 | 98.2 | | | 76.1 | 57.2 | 34.2 | 97.9 | 76.7 | 55.8 | | | | | |
| **6** | 0.72 | 88.1 | 97.9 | 97.7 | | | 78.9 | 49.4 | 34.8 | 97.8 | 79.2 | 48.7 | 19.12 | 8.6 | 1 | 31.48 | 6.02 |
| **7** | 0.03 | 88.0 | 98.4 | 97.6 | | | 78.3 | 50.9 | 35.8 | 97.9 | 76.6 | 55.4 | 18.53 | | 2 | 64.35 | 11.93 |
| **8** | 0.00 | 88.2 | 98.5 | 97.9 | | | 78.7 | 50.3 | 36.9 | 98.2 | 80.4 | 44.8 | 18.00 | | 1 | 33.11 | 5.96 |
| **9** | 0.33 | 88.3 | 98.1 | 98.2 | | | 77.1 | 55.3 | 41.7 | 98.3 | 75.0 | 60.2 | 18.33 | | 1 | 32.14 | 5.89 |
| **10** | 0.15 | 88.3 | 97.9 | 98.4 | | | 77.0 | 55.7 | 38.1 | 98.2 | 76.0 | 58.1 | 18.58 | | 1 | 29.71 | 5.52 |
| **11** | 0.84 | 88.0 | 97.5 | 98.1 | | | 77.9 | 52.1 | 39.4 | 97.8 | 74.5 | 60.4 | 18.51 | | 1 | 29.81 | 5.52 |
| **12** | 0.49 | 87.9 | 97.5 | 97.8 | | | 77.1 | 53.8 | 47.9 | 97.8 | 78.0 | 51.3 | | 8.6 | | | |
| **13** | 0.01 | 87.9 | 97.8 | 97.7 | | | 77.4 | 52.7 | 41.8 | 97.9 | 78.3 | 50.4 | 18.69 | | 1 | 30.11 | 5.63 |
| **14** | 0.00 | 88.0 | 98.3 | 97.9 | | | 77.2 | 53.9 | 47.2 | 98.2 | 76.7 | 55.1 | 18.58 | | 1 | 31.48 | 5.85 |
| **15** | 0.00 | 88.1 | 98.6 | 98.3 | | | 76.5 | 55.8 | 48.1 | 98.3 | 76.0 | 57.2 | 19.36 | | 1 | 29.31 | 5.67 |
| **16** | 0.00 | 88.4 | 98.6 | 98.5 | | | 77.3 | 55.2 | 42.9 | 98.2 | 76.4 | 57.5 | 18.46 | | 1 | 32.38 | 5.98 |
| **17** | 0.00 | 88.5 | 98.1 | 98.2 | | | 77.7 | 54.9 | 43.7 | 98.0 | 76.7 | 57.2 | 19.66 | | 1 | 31.57 | 6.21 |
| **18** | 0.25 | 88.9 | 97.6 | 97.8 | | | 77.1 | 58.1 | 41.6 | 97.8 | 75.9 | 60.7 | 19.40 | | 1 | 29.69 | 5.76 |
| **19** | 0.02 | 89.1 | 97.3 | 97.6 | | | 77.3 | 58.5 | 43.6 | 97.8 | 79.6 | 52.5 | | | | | |
| **20** | 0.00 | 89.4 | 97.3 | 97.8 | | | 77.5 | 58.9 | 41.6 | 98.0 | 74.5 | 65.3 | 18.97 | 8.6 | 1 | 32.84 | 6.23 |
| **21** | 0.09 | 89.6 | 97.7 | 98.1 | | | 77.9 | 59.1 | 41.5 | 98.2 | 76.1 | 63.1 | 18.74 | | 1 | 33.92 | 6.36 |
| **22** | 0.04 | 89.6 | 98.3 | 98.4 | | | 78.4 | 57.9 | 41.2 | 98.2 | 74.5 | 66.2 | 18.99 | | 1 | 32.21 | 6.12 |
| **23** | 0.00 | 89.7 | 98.6 | 98.3 | | | 77.9 | 59.4 | 37.2 | 98.2 | 74.5 | 66.4 | | | | | |
| **24** | 0.00 | 89.7 | 98.4 | 97.9 | | | 77.9 | 59.6 | 37.1 | 98.1 | 77.8 | 60.0 | 18.93 | | 1 | 28.53 | 5.40 |
| **25** | 0.00 | 90.1 | 98.0 | 97.6 | | | 77.6 | 61.8 | 33.8 | 97.9 | 78.7 | 59.2 | | | | | |
| **26** | 0.01 | 90.2 | 97.4 | 97.5 | | | 78.2 | 60.9 | 34.6 | 97.8 | 76.6 | 64.3 | | | | | |
| **27** | 0.00 | 90.2 | 97.2 | 97.4 | | | 77.7 | 62.2 | 36.3 | 97.9 | 75.0 | 67.5 | 19.38 | 8.6 | 1 | 29.03 | 5.63 |
| **28** | 0.00 | 90.3 | 97.4 | 96.4 | | | 75.5 | 66.7 | 35.3 | 98.0 | 78.6 | 60.5 | 19.80 | | 1 | 29.99 | 5.94 |
| **29** | 0.00 | 90.3 | 97.9 | 95.3 | | | 77.9 | 62.1 | 35.5 | 98.1 | 75.6 | 66.7 | 19.17 | | 1 | 31.32 | 6.00 |
| **30** | 0.11 | 90.4 | 98.4 | 96.1 | | | 78.4 | 61.7 | 37.7 | 98.1 | 76.6 | 65.4 | 19.50 | | 1 | 31.25 | 6.09 |
| **MIN** | 0.00 | 87.9 | 97.2 | 95.3 | | | 75.5 | 49.4 | 28.8 | 97.8 | 74.5 | 44.8 | 18.00 | 8.6 | | 28.53 | 5.40 |
| **MAX** | 1.13 | 90.4 | 98.6 | 98.8 | | | 78.9 | 66.7 | 48.1 | 98.3 | 80.4 | 67.5 | 19.80 | 8.6 | | 64.35 | 11.93 |
| **AVE** | 0.21 | 88.9 | 98.0 | 97.8 | | | 77.6 | 56.8 | 38.5 | 98.0 | 76.7 | 58.6 | 18.94 | 8.6 | | 32.80 | 6.21 |
| **TOTAL** | 6.41 | | | | | | | | | | | | | | 25 | 787.24 | 148.92 |
| **AVE/DAY** | | | | | | | | | | | | | | | 0.83 | 26.24 | 4.96 |

1 Heavy rainfall causes temporary reduction in Thickened Sludge (THS) total volatile solids. 14-day moving average used to approximate actual digester conditions.

2 Pathogen reduction – The biosolids must be treated in the absence of air for a specific Mean Cell Residence Time (MCRT) and temperature that must be between fifteen (15) days at 35° C to 55°C (95° to 131°F) and sixty days at 20°C (68°F). Temperature taken from sludge recirculation system.

3 V.S.R. – Volatile Solids Reduction. Vector Attraction Reduction requirements; the mass of Volatile Solids in the biosolids must be reduced by a minimum of 38%.

**BUDD INLET TREATMENT PLANT**
**BIOSOLIDS MANAGEMENT**
**PROCESS MONITORING & ANALYTICAL DATA FOR PATHOGEN & VECTOR ATTRACTION REDUCTION**
**December 2023**

| DATE | RAIN | THS | PRIMARY DIGESTERS | | | | | | | SECONDARY DIGESTER | | | BIOSOLIDS | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | DATA | TVS | TEMP(°F) | | | | TVS | VSR | MCRT | TEMP | TVS | VSR | TS | pH | LOADS | TONS | |
| | (IN.) | (%) | DIG.1 | DIG.2 | DIG. 3 | DIG. 4 | (%) | (%) | (Days) | °F | (%) | (%) | (%) | | | WET | DRY |
| **1** | 0.97 | 90.1 | 98.4 | 96.6 | | | 77.6 | 62.0 | 35.3 | 98.0 | 77.6 | 62.2 | 19.37 | | 1 | 31.98 | 6.19 |
| **2** | 0.63 | 89.8 | 98.4 | 97.0 | | | 79.6 | 55.6 | 39.4 | 98.0 | 74.5 | 66.8 | 19.39 | | 1 | 32.05 | 6.21 |
| **3** | 0.34 | 89.7 | 98.1 | 97.6 | | | 77.4 | 60.9 | 44.0 | 98.1 | 75.0 | 65.6 | | | | | |
| **4** | 2.00 | 89.6 | 97.7 | 98.3 | | | 78.2 | 58.3 | 40.5 | 98.1 | 76.9 | 61.2 | 18.28 | 8.5 | 1 | 30.42 | 5.56 |
| **5** | 2.88 | 88.1 | 97.5 | 98.6 | | | 77.6 | 53.0 | 45.0 | 97.9 | 75.0 | 59.3 | 18.40 | | 2 | 65.52 | 12.06 |
| **6** | 0.09 | 87.8 | 97.8 | 98.9 | | | 77.5 | 51.8 | 41.3 | 97.9 | 76.7 | 54.0 | 18.97 | | 1 | 32.91 | 6.24 |
| **7** | 0.38 | 87.6 | 98.1 | 98.7 | | | 77.1 | 52.2 | 36.0 | 98.1 | 74.5 | 58.9 | 18.87 | | 1 | 32.81 | 6.19 |
| **8** | 0.00 | 87.6 | 97.9 | 97.8 | | | 77.1 | 52.3 | 34.0 | 98.2 | 84.4 | 23.2 | 19.17 | | 1 | 31.96 | 6.13 |
| **9** | 1.10 | 87.5 | 97.6 | 97.6 | | | 76.9 | 52.5 | 38.3 | 98.2 | 76.0 | 54.7 | 18.91 | | 1 | 33.15 | 6.27 |
| **10** | 0.40 | 87.3 | 97.5 | 97.6 | | | 77.6 | 49.5 | 41.5 | 98.1 | 77.8 | 49.1 | | | | | |
| **11** | 0.00 | 87.3 | 97.6 | 97.9 | | | 77.3 | 50.2 | 35.3 | 98.1 | 76.1 | 53.5 | 19.32 | 8.7 | 1 | 31.11 | 6.01 |
| **12** | 0.00 | 87.1 | 98.4 | 98.3 | | | 77.5 | 49.0 | 32.3 | 98.2 | 75.6 | 54.4 | 19.52 | | 1 | 29.08 | 5.68 |
| **13** | 0.00 | 86.9 | 98.6 | 98.3 | | | 76.1 | 51.9 | 35.5 | 98.2 | 76.2 | 51.9 | 18.68 | | 1 | 31.94 | 5.97 |
| **14** | 0.14 | 86.7 | 98.8 | 98.2 | | | 77.0 | 48.7 | 29.5 | 98.2 | 77.6 | 47.1 | 18.79 | | 1 | 32.63 | 6.13 |
| **15** | 0.00 | 86.9 | 98.4 | 97.9 | | | 77.8 | 47.0 | 35.9 | 98.1 | 74.5 | 55.8 | 18.82 | | 1 | 32.48 | 6.11 |
| **16** | 0.00 | 87.1 | 97.8 | 97.8 | | | 76.9 | 50.9 | 29.4 | 98.0 | 76.0 | 53.3 | 18.82 | | 1 | 32.31 | 6.08 |
| **17** | 0.01 | 87.1 | 97.1 | 97.6 | | | 77.9 | 48.0 | 32.2 | 97.9 | 77.8 | 48.2 | | | | | |
| **18** | 0.17 | 87.2 | 97.0 | 97.8 | | | 76.7 | 51.6 | 30.8 | 97.8 | 75.0 | 55.8 | 18.04 | 8.5 | 1 | 28.80 | 5.19 |
| **19** | 0.22 | 88.5 | 97.1 | 97.8 | | | 79.1 | 51.0 | 27.6 | 97.9 | 76.6 | 57.6 | 18.67 | | 2 | 63.73 | 11.90 |
| **20** | 0.00 | 88.8 | 97.4 | 97.2 | | | 77.3 | 57.2 | 30.4 | 98.1 | 77.6 | 56.6 | 18.45 | | 1 | 32.31 | 5.96 |
| **21** | 0.00 | 88.7 | 98.1 | 98.0 | | | 78.1 | 54.6 | 30.4 | 98.3 | 72.7 | 66.2 | 18.34 | | 1 | 30.08 | 5.52 |
| **22** | 0.18 | 88.8 | 98.5 | 98.5 | | | 78.3 | 54.1 | 30.5 | 98.2 | 75.0 | 62.1 | 18.82 | | 2 | 59.01 | 11.11 |
| **23** | 0.00 | 89.0 | 98.2 | 98.6 | | | 78.4 | 55.2 | 33.1 | 98.1 | 76.0 | 60.8 | 18.37 | | 1 | 32.11 | 5.90 |
| **24** | 0.06 | 89.1 | 97.7 | 98.3 | | | 79.4 | 52.7 | 28.8 | 97.9 | 77.6 | 57.5 | | | | | |
| **25** | 0.57 | 89.2 | 97.2 | 97.6 | | | 78.7 | 55.0 | 31.1 | 97.7 | 73.9 | 65.6 | | | | | |
| **26** | 0.10 | 89.2 | 97.3 | 97.3 | | | 78.3 | 56.4 | 33.4 | 97.8 | 76.0 | 61.7 | 18.18 | 8.4 | 1 | 32.25 | 5.86 |
| **27** | 0.12 | 89.4 | 97.7 | 97.5 | | | 78.3 | 56.9 | 45.0 | 98.1 | 76.0 | 62.3 | 18.18 | | 2 | 65.54 | 11.91 |
| **28** | 0.17 | 89.5 | 98.3 | 98.0 | | | 79.4 | 54.5 | 33.4 | 98.3 | 75.6 | 63.7 | 18.73 | | 1 | 31.12 | 5.83 |
| **29** | 0.03 | 89.6 | 98.6 | 98.4 | | | 77.0 | 61.4 | 34.3 | 98.4 | 72.0 | 70.3 | 18.56 | | 2 | 63.90 | 11.86 |
| **30** | 0.08 | 89.8 | 98.5 | 98.5 | | | 79.4 | 55.9 | 39.0 | 98.2 | 74.0 | 67.5 | 18.53 | | 1 | 31.74 | 5.88 |
| **31** | 0.01 | 89.9 | 98.1 | 98.3 | | | 80.0 | 54.8 | 43.4 | 97.9 | 77.8 | 60.5 | | | | | |
| **MIN** | 0.00 | 86.7 | 97.0 | 96.6 | | | 76.1 | 47.0 | 27.6 | 97.7 | 72.0 | 23.2 | 18.04 | 8.4 | | 28.80 | 5.19 |
| **MAX** | 2.88 | 90.1 | 98.8 | 98.9 | | | 80.0 | 62.0 | 45.0 | 98.4 | 84.4 | 70.3 | 19.52 | 8.7 | | 65.54 | 12.06 |
| **AVE** | 0.34 | 88.4 | 97.9 | 98.0 | | | 77.9 | 53.7 | 35.4 | 98.1 | 76.1 | 57.7 | 18.73 | 8.5 | | 38.04 | 7.11 |
| **TOTAL** | 10.65 | | | | | | | | | | | | | | 30 | 950.94 | 177.76 |
| **AVE/DAY** | | | | | | | | | | | | | | | 0.97 | 30.68 | 5.73 |

1 Heavy rainfall causes temporary reduction in Thickened Sludge (THS) total volatile solids. 14-day moving average used to approximate actual digester conditions.

2 Pathogen reduction – The biosolids must be treated in the absence of air for a specific Mean Cell Residence Time (MCRT) and temperature that must be between fifteen (15) days at 35° C to 55°C (95° to 131°F) and sixty days at 20°C (68°F). Temperature taken from sludge recirculation system.

3 V.S.R. – Volatile Solids Reduction. Vector Attraction Reduction requirements; the mass of Volatile Solids in the biosolids must be reduced by a minimum of 38%.

February 24, 2023 Service Request No:K2301433

Mark Petrie
Lott Clean Water Alliance
500 Adams Street NE
Olympia, WA 98501

**Laboratory Results for: LOTTBSFEB2023**

Dear Mark,

Enclosed are the results of the sample(s) submitted to our laboratory February 03, 2023
For your reference, these analyses have been assigned our service request number **K2301433.**

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 3376. You may also contact me via email at Mark.Harris@alsglobal.com.

Respectfully submitted,

**ALS Group USA, Corp. dba ALS Environmental**

Mark Harris
Project Manager

ADDRESS 1317 S. 13th Avenue, Kelso, WA 98626
PHONE +1 360 577 7222 | FAX +1 360 636 1068
ALS Group USA, Corp.
dba ALS Environmental

# Narrative Documents

**ALS Environmental—Kelso Laboratory**
1317 South 13th Avenue, Kelso, WA 98626
Phone (360) 577-7222 Fax (360) 425-9096
www.alsglobal.com

**Client:** LOTT Clean Water Alliance
**Project:** LOTTBSFEB2023
**Sample Matrix:** Sludge

**Service Request:** K2301433
**Date Received:** 02/03/2023

## CASE NARRATIVE

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

**Sample Receipt:**

One sludge sample was received for analysis at ALS Environmental on 02/03/2023. Any discrepancies upon initial sample inspection are annotated on the sample receipt and preservation form included within this report. The sample was stored at minimum in accordance with the analytical method requirements.

**Metals:**

Method 6020A, 02/13/2023:The Relative Percent Difference (RPD) for the replicate analysis of Antimony in sample Biosolids was outside the normal ALS control limits. The variability in the results was attributed to the heterogeneous character of the sample. Standard mixing techniques were used, but were not sufficient for complete homogenization of this sample.

**General Chemistry:**

No significant anomalies were noted with this analysis.

Approved by Noe D. Dan Date 02/24/2023

## SAMPLE DETECTION SUMMARY

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

| CLIENT ID: Biosolids | | | Lab ID: K2301433-001 | | | |
|---|---|---|---|---|---|---|
| **Analyte** | **Results** | **Flag** | **MDL** | **MRL** | **Units** | **Method** |
| Ammonia as Nitrogen | 15400 | | 50 | 520 | mg/Kg | 350.1M |
| Antimony | 4.75 | | 0.08 | 0.40 | mg/Kg | 6020A |
| Arsenic | 4.6 | | 0.2 | 2.0 | mg/Kg | 6020A |
| Beryllium | 0.099 | | 0.024 | 0.080 | mg/Kg | 6020A |
| Cadmium | 1.09 | | 0.028 | 0.080 | mg/Kg | 6020A |
| Chromium | 17.3 | | 0.24 | 0.80 | mg/Kg | 6020A |
| Copper | 411 | | 0.16 | 0.40 | mg/Kg | 6020A |
| Cyanide, Total | 2.82 | | 0.29 | 0.48 | mg/Kg | SM 4500-CN- E Modified |
| Lead | 14.0 | | 0.08 | 0.20 | mg/Kg | 6020A |
| Mercury | 0.381 | | 0.009 | 0.089 | mg/Kg | 7471B |
| Molybdenum | 10.1 | | 0.08 | 0.20 | mg/Kg | 6020A |
| Nickel | 14.9 | | 0.12 | 0.80 | mg/Kg | 6020A |
| Nitrogen, Total Kjeldahl (TKN) | 74900 | | 40 | 210 | mg/Kg | ASTM D1426-15B Mod |
| Phenolics, Total | 1.67 | | 0.38 | 0.93 | mg/Kg | 9065 Modified |
| Phosphorus | 25000 | | 12 | 80 | mg/Kg | 6010C |
| Potassium | 2130 | | 40 | 160 | mg/Kg | 6010C |
| Selenium | 6.6 | | 0.4 | 4.0 | mg/Kg | 6020A |
| Silver | 2.72 | | 0.016 | 0.080 | mg/Kg | 6020A |
| Solids, Total | 18.8 | | | | Percent | SM 2540 G |
| Sulfur | 10300 | | 8 | 64 | mg/Kg | 6010C |
| Thallium | 0.075 | J | 0.016 | 0.080 | mg/Kg | 6020A |
| Zinc | 797 | | 0.8 | 2.0 | mg/Kg | 6020A |

# Sample Receipt Information

**ALS Environmental—Kelso Laboratory**
1317 South 13th Avenue, Kelso, WA 98626
Phone (360) 577-7222 Fax (360) 425-9096
www.alsglobal.com

**Client:** LOTT Clean Water Alliance **Service Request:**K2301433
**Project:** LOTTBSFEB2023

## SAMPLE CROSS-REFERENCE

| SAMPLE # | CLIENT SAMPLE ID | DATE | TIME |
|---|---|---|---|
| K2301433-001 | Biosolids | 2/2/2023 | 1500 |

ALS Environmental
128732 1317 South 13th Ave, Kelso, WA 98626 | 360-577-7222 | 360-636-1068 (fax)

SR# K2301423

COC Set _____ of _____

# CHAIN OF CUSTODY

Page 1 of 1 COC # _____

| | |
|---|---|
| Project Name: | LOTTBSFEB23 |
| Project Number: | |
| Project Manager | Mark Petrie |
| Company Name: | LOTT Clean Water Alliance |
| Company Address: | 500 Adams St. NE |
| City/State/Zip | Olympia, WA 98501 |
| E-mail Address | markpetrie@lottcleanwater.org |
| Phone # | 360-528-5749 Fax # |
| Sampler Signature: | |

| Sample ID | Date | Time | Lab ID | Matrix | Number of Containers | 999D: SM 2540 G / Total Solids | 28D: 350.1M / Ammonia, as N | 28D: ASTM D1426-93B Mod. / TKN | 28D: 9065 Modified / Phenolics | 28D: 7471B / Hg | 28D | 28D | 28D | 28D | 28D | 28D | 180D: 6020A / Sb, As, Be, Cd, Cr, Cu, Pb | 180D: 6020A / Mo, Ni, Se, Ag, Tl, Zn | 14D: 6010C / P, K, S, | 14D: 4500-CN-E Mod / Cyanide | 14D: 5035A / 8260C, Volatiles | 14D / 40D: 3541 / 8270C, Semi-Volatiles | 14D / 40D: 3541 / 8081B – Pesticides | 14D / 365D: 3541 / 8082A – PCBs | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 Biosolids | 02/02/23 | Comp. | | S | 1 | X | X | X | X | X | | | | | | | X | X | X | X | | | | | 1 0700 - 1500 |
| 2 | | | | | | | | | | | | | | | | | | | | | | | | | 2 |
| 3 | | | | | | | | | | | | | | | | | | | | | | | | | 3 |
| 4 | | | | | | | | | | | | | | | | | | | | | | | | | 4 |
| 5 | | | | | | | | | | | | | | | | | | | | | | | | | 5 |
| 6 | | | | | | | | | | | | | | | | | | | | | | | | | 6 |
| 7 | | | | | | | | | | | | | | | | | | | | | | | | | 7 |
| 8 | | | | | | | | | | | | | | | | | | | | | | | | | 8 |
| 9 | | | | | | | | | | | | | | | | | | | | | | | | | 9 |
| 10 | | | | | | | | | | | | | | | | | | | | | | | | | 10 |

**Report Requirements**

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

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

___ III. Data Validation Report (includes all raw data)

___ IV. CLP Deliverable Report

___ V. EDD

**Invoice Information**

PO# 65

Bill to: see above

**Turnaround Requirements**

___ 24 hr. ___ 48 hr.

___ 5 Day

X Standard (10-15 working days)

___ Provide Fax Results

Circle which metals are to be analyzed

Total Metals: (Sb) (As) Ba (Be) B Ca (Cd) Co (Cr) (Cu) Fe (Pb) Mg Mn (Mo) (Ni) (K) (P) (Ag) Na (Se) Sr (S) (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_____

☐ Sample Shipment contains USDA regulated soil samples (check box if applicable)

| Relinquished By: | Received By: | Relinquished By: | Received By: |
|---|---|---|---|
| Signature | Signature | Signature | Signature |
| John Damitio | Alex Desmonie | Alex Desmonie | Printed Name |
| Printed Name | LOTT | LOTT | Firm |
| 02/03/23 0948 | 02/03/23 0943 | 02/03/23 1054 | 2/3/23 1054 |
| Date/Time | Date/Time | Date/Time | Date/Time |
| LOTT | | | |
| Firm | | | |

Make a copy for LOTT driver

PM KC

# Cooler Receipt and Preservation Form

Client LOTT Service Request K23 01433

Received: 2/3/23 Opened: 2/3/23 By: VM Unloaded: 2/3/23 By: VM

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

| Temp Blank | Sample Temp | IR Gun | Cooler #/COC ID / NA | Out of temp indicate with "X" | PM Notified If out of temp | Tracking Number NA | Filed |
|---|---|---|---|---|---|---|---|
| 0.9 | | IR01 | Cooler 1 | | | | |
| 3.9 | | IR01 | Cooler 2 | | | | |
| 1.7 | | IR01 | Cooler 3 | | | | |
| 1.8 | | IR01 | Cooler 4 | | | | |
| 4.6 | | IR01 | Cooler 5 | | | | |

4. Was a Temperature Blank present in cooler? NA (Y) N If yes, notate the temperature in the appropriate column above:
   If no, take the temperature of a representative sample bottle contained within the cooler; notate in the column "Sample Temp":
5. Were samples received within the method specified temperature ranges? NA (Y) N
   If no, were they received on ice and same day as collected? If not, notate the cooler # above and notify the PM. (NA) Y N

If applicable, tissue samples were received: *Frozen* *Partially Thawed* *Thawed*

6. Packing material: *Inserts* *Baggies* *Bubble Wrap* *Gel Packs* *Wet Ice* *Dry Ice* *Sleeves* _____
7. Were custody papers properly filled out (ink, signed, etc.)? NA (Y) N
8. Were samples received in good condition (unbroken) NA (Y) N
9. Were all sample labels complete (ie, analysis, preservation, etc.)? NA (Y) N
10. Did all sample labels and tags agree with custody papers? NA (Y) N
11. Were appropriate bottles/containers and volumes received for the tests indicated? NA (Y) N
12. Were the pH-preserved bottles (*see SMO GEN SOP*) received at the appropriate pH? *Indicate in the table below* (NA) Y N
13. Were VOA vials received without headspace? *Indicate in the table below.* (NA) Y N
14. Was C12/Res negative? (NA) Y N
15. Were samples received within the method specified time limit? If not, notate the error below and notify the PM (NA) Y N
16. Were 100ml sterile microbiology bottles filled exactly to the 100ml mark? (NA) Y N Underfilled Overfilled

| Sample ID on Bottle | Sample ID on COC | Identified by: |
|---|---|---|
| | | |
| | | |
| | | |

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

Notes, Discrepancies, Resolutions: _____

# Miscellaneous Forms

**ALS Environmental—Kelso Laboratory**
1317 South 13th Avenue, Kelso, WA 98626
Phone (360) 577-7222 Fax (360) 425-9096
www.alsglobal.com

## Inorganic Data Qualifiers

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

## Metals Data Qualifiers

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

## Additional Petroleum Hydrocarbon Specific Qualifiers

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

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

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

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. A complete listing of specific NELAP-certified analytes, can be found in the certification section at www.ALSGlobal.com or at the accreditation bodies web site.
Please refer to the certification and/or accreditation body's web site if samples are submitted for compliance purposes. The states highlighted above, require the analysis be listed on the state certification if used for compliance purposes and if the method/anlayte is offered by that state.

## Acronyms

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

**Client:** LOTT Clean Water Alliance **Service Request:** K2301433
**Project:** LOTTBSFEB2023/

**Sample Name:** Biosolids **Date Collected:** 02/2/23
**Lab Code:** K2301433-001 **Date Received:** 02/3/23
**Sample Matrix:** Sludge

| Analysis Method | Extracted/Digested By | Analyzed By |
|---|---|---|
| 350.1M | ESCHLOSS | ESCHLOSS |
| 6010C | KLINN | AMCKORNEY |
| 6020A | KLINN | JCHAN |
| 7471B | SSOLADEY | SSOLADEY |
| 9065 Modified | MSPECHT | MSPECHT |
| ASTM D1426-15B Mod | ACHEATLEY | ACHEATLEY |
| SM 2540 G | | JARTHUR |
| SM 4500-CN- E Modified | MRICH | MRICH |

**Sample Name:** Biosolids **Date Collected:** 02/2/23
**Lab Code:** K2301433-001.R01 **Date Received:** 02/3/23
**Sample Matrix:** Sludge

| Analysis Method | Extracted/Digested By | Analyzed By |
|---|---|---|
| 6020A | KLINN | JCHAN |

# Sample Results

**ALS Environmental—Kelso Laboratory**
1317 South 13th Avenue, Kelso, WA 98626
Phone (360) 577-7222 Fax (360) 425-9096
www.alsglobal.com

# Metals

**ALS Environmental—Kelso Laboratory**
1317 South 13th Avenue, Kelso, WA 98626
Phone (360) 577-7222 Fax (360) 425-9096
www.alsglobal.com

Analytical Report

| | | | |
|---|---|---|---|
| **Client:** | LOTT Clean Water Alliance | **Service Request:** | K2301433 |
| **Project:** | LOTTBSFEB2023 | **Date Collected:** | 02/02/23 15:00 |
| **Sample Matrix:** | Sludge | **Date Received:** | 02/03/23 10:54 |
| **Sample Name:** | Biosolids | **Basis:** | Dry |
| **Lab Code:** | K2301433-001 | | |

## Total Metals

| Analyte Name | Analysis Method | Result | Units | MRL | MDL | Dil. | Date Analyzed | Date Extracted | Q |
|---|---|---|---|---|---|---|---|---|---|
| Antimony | 6020A | **4.75** | mg/Kg | 0.40 | 0.08 | 5 | 02/13/23 14:21 | 02/07/23 | |
| Arsenic | 6020A | **4.6** | mg/Kg | 2.0 | 0.2 | 5 | 02/13/23 12:31 | 02/07/23 | |
| Beryllium | 6020A | **0.099** | mg/Kg | 0.080 | 0.024 | 5 | 02/13/23 12:31 | 02/07/23 | |
| Cadmium | 6020A | **1.09** | mg/Kg | 0.080 | 0.028 | 5 | 02/13/23 12:31 | 02/07/23 | |
| Chromium | 6020A | **17.3** | mg/Kg | 0.80 | 0.24 | 5 | 02/13/23 12:31 | 02/07/23 | |
| Copper | 6020A | **411** | mg/Kg | 0.40 | 0.16 | 5 | 02/13/23 12:31 | 02/07/23 | |
| Lead | 6020A | **14.0** | mg/Kg | 0.20 | 0.08 | 5 | 02/13/23 12:31 | 02/07/23 | |
| Mercury | 7471B | **0.381** | mg/Kg | 0.089 | 0.009 | 1 | 02/08/23 11:07 | 02/07/23 | |
| Molybdenum | 6020A | **10.1** | mg/Kg | 0.20 | 0.08 | 5 | 02/13/23 12:31 | 02/07/23 | |
| Nickel | 6020A | **14.9** | mg/Kg | 0.80 | 0.12 | 5 | 02/13/23 12:31 | 02/07/23 | |
| Phosphorus | 6010C | **25000** | mg/Kg | 80 | 12 | 2 | 02/20/23 10:36 | 02/07/23 | |
| Potassium | 6010C | **2130** | mg/Kg | 160 | 40 | 2 | 02/20/23 10:36 | 02/07/23 | |
| Selenium | 6020A | **6.6** | mg/Kg | 4.0 | 0.4 | 5 | 02/13/23 12:31 | 02/07/23 | |
| Silver | 6020A | **2.72** | mg/Kg | 0.080 | 0.016 | 5 | 02/13/23 12:31 | 02/07/23 | |
| Sulfur | 6010C | **10300** | mg/Kg | 64 | 8 | 2 | 02/20/23 10:36 | 02/07/23 | |
| Thallium | 6020A | **0.075** | mg/Kg | 0.080 | 0.016 | 5 | 02/13/23 12:31 | 02/07/23 | **J** |
| Zinc | 6020A | **797** | mg/Kg | 2.0 | 0.8 | 5 | 02/13/23 12:31 | 02/07/23 | |

# General Chemistry

**ALS Environmental—Kelso Laboratory**
1317 South 13th Avenue, Kelso, WA 98626
Phone (360) 577-7222 Fax (360) 425-9096
www.alsglobal.com

Analytical Report

| | | | |
|---|---|---|---|
| **Client:** | LOTT Clean Water Alliance | **Service Request:** | K2301433 |
| **Project:** | LOTTBSFEB2023 | **Date Collected:** | 02/02/23 15:00 |
| **Sample Matrix:** | Sludge | **Date Received:** | 02/03/23 10:54 |
| **Sample Name:** | Biosolids | **Basis:** | Dry |
| **Lab Code:** | K2301433-001 | | |

## General Chemistry Parameters

| Analyte Name | Analysis Method | Result | Units | MRL | MDL | Dil. | Date Analyzed | Date Extracted | Q |
|---|---|---|---|---|---|---|---|---|---|
| Ammonia as Nitrogen | 350.1M | **15400** | mg/Kg | 520 | 50 | 200 | 02/23/23 16:22 | 02/06/23 | |
| Cyanide, Total | SM 4500-CN- E Modified | **2.82** | mg/Kg | 0.48 | 0.29 | 1 | 02/11/23 09:50 | 02/10/23 | |
| Nitrogen, Total Kjeldahl (TKN) | ASTM D1426-15B Mod | **74900** | mg/Kg | 210 | 40 | 1 | 02/14/23 04:15 | 02/13/23 | |
| Phenolics, Total | 9065 Modified | **1.67** | mg/Kg | 0.93 | 0.38 | 1 | 02/23/23 18:45 | 02/22/23 | |
| Solids, Total | SM 2540 G | **18.8** | Percent | - | - | 1 | 02/07/23 16:30 | NA | |

# QC Summary Forms

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# Metals

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

Analytical Report

| | | | |
|---|---|---|---|
| **Client:** | LOTT Clean Water Alliance | **Service Request:** | K2301433 |
| **Project:** | LOTTBSFEB2023 | **Date Collected:** | NA |
| **Sample Matrix:** | Sludge | **Date Received:** | NA |
| **Sample Name:** | Method Blank | **Basis:** | Dry |
| **Lab Code:** | KQ2302008-03 | | |

## Total Metals

| Analyte Name | Analysis Method | Result | Units | MRL | MDL | Dil. | Date Analyzed | Date Extracted | Q |
|---|---|---|---|---|---|---|---|---|---|
| Mercury | 7471B | ND U | mg/Kg | 0.02 | 0.002 | 1 | 02/08/23 10:31 | 02/07/23 | |

Analytical Report

| | | | |
|---|---|---|---|
| **Client:** | LOTT Clean Water Alliance | **Service Request:** | K2301433 |
| **Project:** | LOTTBSFEB2023 | **Date Collected:** | NA |
| **Sample Matrix:** | Sludge | **Date Received:** | NA |
| **Sample Name:** | Method Blank | **Basis:** | Dry |
| **Lab Code:** | KQ2302158-03 | | |

## Total Metals

| Analyte Name | Analysis Method | Result | Units | MRL | MDL | Dil. | Date Analyzed | Date Extracted | Q |
|---|---|---|---|---|---|---|---|---|---|
| Antimony | 6020A | ND U | mg/Kg | 0.10 | 0.02 | 5 | 02/13/23 14:18 | 02/07/23 | |
| Arsenic | 6020A | ND U | mg/Kg | 0.5 | 0.06 | 5 | 02/13/23 11:59 | 02/07/23 | |
| Beryllium | 6020A | ND U | mg/Kg | 0.020 | 0.006 | 5 | 02/13/23 11:59 | 02/07/23 | |
| Cadmium | 6020A | ND U | mg/Kg | 0.020 | 0.007 | 5 | 02/13/23 11:59 | 02/07/23 | |
| Chromium | 6020A | ND U | mg/Kg | 0.20 | 0.06 | 5 | 02/13/23 11:59 | 02/07/23 | |
| Copper | 6020A | ND U | mg/Kg | 0.10 | 0.04 | 5 | 02/13/23 11:59 | 02/07/23 | |
| Lead | 6020A | **0.022 J** | mg/Kg | 0.05 | 0.020 | 5 | 02/13/23 11:59 | 02/07/23 | |
| Molybdenum | 6020A | ND U | mg/Kg | 0.05 | 0.020 | 5 | 02/13/23 11:59 | 02/07/23 | |
| Nickel | 6020A | ND U | mg/Kg | 0.20 | 0.03 | 5 | 02/13/23 11:59 | 02/07/23 | |
| Phosphorus | 6010C | ND U | mg/Kg | 20 | 3 | 2 | 02/20/23 10:15 | 02/07/23 | |
| Potassium | 6010C | ND U | mg/Kg | 40 | 10 | 2 | 02/20/23 10:15 | 02/07/23 | |
| Selenium | 6020A | ND U | mg/Kg | 1.0 | 0.09 | 5 | 02/13/23 11:59 | 02/07/23 | |
| Silver | 6020A | ND U | mg/Kg | 0.020 | 0.004 | 5 | 02/13/23 11:59 | 02/07/23 | |
| Sulfur | 6010C | ND U | mg/Kg | 16 | 2 | 2 | 02/20/23 10:15 | 02/07/23 | |
| Thallium | 6020A | **0.010 J** | mg/Kg | 0.020 | 0.004 | 5 | 02/13/23 11:59 | 02/07/23 | |
| Zinc | 6020A | ND U | mg/Kg | 0.5 | 0.20 | 5 | 02/13/23 11:59 | 02/07/23 | |

**Client:** LOTT Clean Water Alliance
**Project:** LOTTBSFEB2023
**Sample Matrix:** Sludge

**Service Request:**K2301433
**Date Collected:**02/02/23
**Date Received:**02/03/23
**Date Analyzed:**02/13/23 - 02/20/23

## Matrix Spike Summary
## Total Metals

**Sample Name:** Biosolids
**Lab Code:** K2301433-001

**Units:**mg/Kg
**Basis:**Dry

### Matrix Spike
KQ2302158-02

| Analyte Name | Method | Sample Result | Result | Spike Amount | % Rec | % Rec Limits |
|---|---|---|---|---|---|---|
| Antimony | 6020A | 4.75 | 469 | 516 | 90 | 75-125 |
| Arsenic | 6020A | 4.6 | 577 | 516 | 111 | 75-125 |
| Beryllium | 6020A | 0.10 | 55.0 | 51.6 | 106 | 75-125 |
| Cadmium | 6020A | 1.09 | 55.7 | 51.6 | 106 | 75-125 |
| Chromium | 6020A | 17.3 | 236 | 206 | 106 | 75-125 |
| Copper | 6020A | 411 | 712 | 258 | 117 | 75-125 |
| Lead | 6020A | 14.0 | 579 | 516 | 109 | 75-125 |
| Molybdenum | 6020A | 10.1 | 577 | 516 | 110 | 75-125 |
| Nickel | 6020A | 14.9 | 569 | 516 | 107 | 75-125 |
| Phosphorus | 6010C | 25000 | 26900 | 2580 | 73 # | 75-125 |
| Potassium | 6010C | 2130 | 7580 | 5160 | 106 | 75-125 |
| Selenium | 6020A | 6.6 | 578 | 516 | 111 | 75-125 |
| Silver | 6020A | 2.72 | 56.6 | 51.6 | 104 | 75-125 |
| Sulfur | 6010C | 10300 | 12800 | 2580 | 96 | 75-125 |
| Thallium | 6020A | 0.08 J | 111 | 103 | 108 | 75-125 |
| Zinc | 6020A | 797 | 1380 | 516 | 112 | 75-125 |

**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:** | LOTT Clean Water Alliance | **Service Request:** | K2301433 |
| **Project** | LOTTBSFEB2023 | **Date Collected:** | 02/02/23 |
| **Sample Matrix:** | Sludge | **Date Received:** | 02/03/23 |
| | | **Date Analyzed:** | 02/13/23 - 02/20/23 |

## Replicate Sample Summary
## Total Metals

| | | | |
|---|---|---|---|
| **Sample Name:** | Biosolids | **Units:** | mg/Kg |
| **Lab Code:** | K2301433-001 | **Basis:** | Dry |

| Analyte Name | Analysis Method | MRL | MDL | Sample Result | Duplicate Sample KQ2302158-01 Result | Average | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|
| Antimony | 6020A | 0.43 | 0.09 | 4.75 | 2.33 | 3.54 | 68 * | 20 |
| Arsenic | 6020A | 2.1 | 0.3 | 4.6 | 4.4 | 4.5 | 5 | 20 |
| Beryllium | 6020A | 0.085 | 0.026 | 0.099 | 0.105 | 0.102 | 5 | 20 |
| Cadmium | 6020A | 0.085 | 0.030 | 1.09 | 1.14 | 1.12 | 4 | 20 |
| Chromium | 6020A | 0.85 | 0.26 | 17.3 | 17.6 | 17.5 | 2 | 20 |
| Copper | 6020A | 0.43 | 0.17 | 411 | 418 | 415 | 2 | 20 |
| Lead | 6020A | 0.21 | 0.09 | 14.0 | 13.6 | 13.8 | 3 | 20 |
| Molybdenum | 6020A | 0.21 | 0.09 | 10.1 | 10.1 | 10.1 | <1 | 20 |
| Nickel | 6020A | 0.85 | 0.13 | 14.9 | 15.7 | 15.3 | 5 | 20 |
| Phosphorus | 6010C | 85 | 13 | 25000 | 24100 | 24600 | 4 | 20 |
| Potassium | 6010C | 170 | 40 | 2130 | 2160 | 2150 | <1 | 20 |
| Selenium | 6020A | 4.3 | 0.4 | 6.6 | 6.7 | 6.7 | 2 | 20 |
| Silver | 6020A | 0.085 | 0.017 | 2.72 | 2.56 | 2.64 | 6 | 20 |
| Sulfur | 6010C | 68 | 9 | 10300 | 10300 | 10300 | <1 | 20 |
| Thallium | 6020A | 0.085 | 0.017 | 0.075 J | 0.066 J | 0.071 | 15 | 20 |
| Zinc | 6020A | 2.1 | 0.9 | 797 | 781 | 789 | 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.

**Client:** LOTT Clean Water Alliance
**Project:** LOTTBSFEB2023
**Sample Matrix:** Sludge

**Service Request:** K2301433
**Date Analyzed:** 02/08/23

## Lab Control Sample Summary
## Total Metals

**Units:**mg/Kg
**Basis:**Dry

### Lab Control Sample
KQ2302008-04

| Analyte Name | Analytical Method | Result | Spike Amount | % Rec | % Rec Limits |
|---|---|---|---|---|---|
| Mercury | 7471B | 0.487 | 0.500 | 97 | 80-120 |

**Client:** LOTT Clean Water Alliance
**Project:** LOTTBSFEB2023
**Sample Matrix:** Sludge

**Service Request:** K2301433
**Date Analyzed:** 02/20/23

## Lab Control Sample Summary
## Total Metals

**Units:**mg/Kg
**Basis:**Dry

### Lab Control Sample
KQ2302158-04

| Analyte Name | Analytical Method | Result | Spike Amount | % Rec | % Rec Limits |
|---|---|---|---|---|---|
| Phosphorus | 6010C | 481 | 500 | 96 | 80-120 |
| Potassium | 6010C | 997 | 1000 | 100 | 80-120 |
| Sulfur | 6010C | 459 | 500 | 92 | 80-120 |

**Client:** LOTT Clean Water Alliance
**Project:** LOTTBSFEB2023
**Sample Matrix:** Sludge

**Service Request:** K2301433
**Date Analyzed:** 02/13/23

## Lab Control Sample Summary
## Total Metals

**Units:**mg/Kg
**Basis:**Dry

### Lab Control Sample
KQ2302158-04

| Analyte Name | Analytical Method | Result | Spike Amount | % Rec | % Rec Limits |
|---|---|---|---|---|---|
| Antimony | 6020A | 90.3 | 100 | 90 | 80-120 |
| Arsenic | 6020A | 94.2 | 100 | 94 | 80-120 |
| Beryllium | 6020A | 9.58 | 10.0 | 96 | 80-120 |
| Cadmium | 6020A | 9.66 | 10.0 | 97 | 80-120 |
| Chromium | 6020A | 37.0 | 40.0 | 93 | 80-120 |
| Copper | 6020A | 45.4 | 50.0 | 91 | 80-120 |
| Lead | 6020A | 96.5 | 100 | 96 | 80-120 |
| Molybdenum | 6020A | 100 | 100 | 100 | 80-120 |
| Nickel | 6020A | 92.1 | 100 | 92 | 80-120 |
| Selenium | 6020A | 94.2 | 100 | 94 | 80-120 |
| Silver | 6020A | 9.60 | 10.0 | 96 | 80-120 |
| Thallium | 6020A | 20.1 | 20.0 | 100 | 80-120 |
| Zinc | 6020A | 94.2 | 100 | 94 | 80-120 |

# General Chemistry

**ALS Environmental—Kelso Laboratory**
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| | | | |
|---|---|---|---|
| **Client:** | LOTT Clean Water Alliance | **Service Request:** | K2301433 |
| **Project:** | LOTTBSFEB2023 | **Date Collected:** | NA |
| **Sample Matrix:** | Sludge | **Date Received:** | NA |
| **Sample Name:** | Method Blank | **Basis:** | Dry |
| **Lab Code:** | K2301433-MB | | |

## General Chemistry Parameters

| Analyte Name | Analysis Method | Result | | Units | MRL | MDL | Dil. | Date Analyzed | Date Extracted | Q |
|---|---|---|---|---|---|---|---|---|---|---|
| Ammonia as Nitrogen | 350.1M | ND | U | mg/Kg | 0.50 | 0.04 | 1 | 02/23/23 16:22 | 02/06/23 | |
| Cyanide, Total | SM 4500-CN- E Modified | ND | U | mg/Kg | 0.10 | 0.06 | 1 | 02/11/23 09:50 | 02/10/23 | |
| Nitrogen, Total Kjeldahl (TKN) | ASTM D1426-15B Mod | ND | U | mg/Kg | 40 | 6 | 1 | 02/14/23 04:15 | 02/13/23 | |
| Phenolics, Total | 9065 Modified | ND | U | mg/Kg | 0.20 | 0.08 | 1 | 02/23/23 18:45 | 02/22/23 | |
| Solids, Total | SM 2540 G | ND | U | Percent | - | - | 1 | 02/07/23 16:30 | NA | |

| | | | |
|---|---|---|---|
| **Client:** | LOTT Clean Water Alliance | **Service Request:** | K2301433 |
| **Project:** | LOTTBSFEB2023 | **Date Collected:** | 02/02/23 |
| **Sample Matrix:** | Sludge | **Date Received:** | 02/03/23 |
| | | **Date Analyzed:** | 02/11/23 |
| | | **Date Extracted:** | 02/10/23 |

## Duplicate Matrix Spike Summary
## Cyanide, Total

| | | | |
|---|---|---|---|
| **Sample Name:** | Biosolids | **Units:** | mg/Kg |
| **Lab Code:** | K2301433-001 | **Basis:** | Dry |
| **Analysis Method:** | SM 4500-CN- E Modified | | |
| **Prep Method:** | SM 4500-CN-C Modified | | |

| | | Matrix Spike | | | Duplicate Matrix Spike | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | K2301433-001MS | | | K2301433-001DMS | | | | | |
| **Analyte Name** | **Sample Result** | **Result** | **Spike Amount** | **% Rec** | **Result** | **Spike Amount** | **% Rec** | **% Rec Limits** | **RPD** | **RPD Limit** |
| Cyanide, Total | 2.82 | 10.4 | 10.4 | 73 | 10.7 | 9.50 | 83 | 10-167 | 13 | 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.

**Matrix Spike and Matrix Spike Duplicate Data is presented for information purposes only. The matrix may or may not be relevant to samples reported in this report. The laboratory evaluates system performance based on the LCS and LCSD control limits.**

**ALS Group USA, Corp.**

**dba ALS Environmental**

QA/QC Report

| | | | |
|---|---|---|---|
| **Client:** | LOTT Clean Water Alliance | **Service Request:** | K2301433 |
| **Project** | LOTTBSFEB2023 | **Date Collected:** | 02/02/23 |
| **Sample Matrix:** | Sludge | **Date Received:** | 02/03/23 |
| | | **Date Analyzed:** | 02/11/23 |

## Replicate Sample Summary
## General Chemistry Parameters

| | | | |
|---|---|---|---|
| **Sample Name:** | Biosolids | **Units:** | mg/Kg |
| **Lab Code:** | K2301433-001 | **Basis:** | Dry |

| Analyte Name | Analysis Method | MRL | MDL | Sample Result | Duplicate Sample K2301433-001DUP Result | Average | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|
| Cyanide, Total | SM 4500-CN- E Modified | 0.48 | 0.29 | 2.82 | 2.76 | 2.79 | 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.

**Client:** LOTT Clean Water Alliance
**Project:** LOTTBSFEB2023
**Sample Matrix:** Sludge

**Service Request:** K2301433
**Date Analyzed:** 02/14/23 - 02/23/23

## Lab Control Sample Summary
## General Chemistry Parameters

**Units:**mg/Kg
**Basis:**Dry

### Lab Control Sample
K2301433-LCS2

| Analyte Name | Analytical Method | Result | Spike Amount | % Rec | % Rec Limits |
|---|---|---|---|---|---|
| Ammonia as Nitrogen | 350.1M | 3.81 | 3.79 | 101 | 86-114 |
| Nitrogen, Total Kjeldahl (TKN) | ASTM D1426-15B Mod | 929 | 772 | 120 | 82-131 |
| Phenolics, Total | 9065 Modified | 10.9 | 12.0 | 91 | 85-115 |

QA/QC Report

| | | | |
|---|---|---|---|
| **Client:** | LOTT Clean Water Alliance | **Service Request:** | K2301433 |
| **Project:** | LOTTBSFEB2023 | **Date Analyzed:** | 02/11/23 |
| **Sample Matrix:** | Sludge | **Date Extracted:** | 02/10/23 |

## Duplicate Lab Control Sample Summary
## General Chemistry Parameters

| | | | |
|---|---|---|---|
| **Analysis Method:** | SM 4500-CN- E Modified | **Units:** | mg/Kg |
| **Prep Method:** | Method | **Basis:** | Dry |
| | | **Analysis Lot:** | 794351 |

| | Lab Control Sample K2301433-LCS1 | | | Duplicate Lab Control Sample K2301433-DLCS1 | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **Analyte Name** | **Result** | **Spike Amount** | **% Rec** | **Result** | **Spike Amount** | **% Rec** | **% Rec Limits** | **RPD** | **RPD Limit** |
| Cyanide, Total | 1.39 | 1.50 | 93 | 1.45 | 1.50 | 97 | 62-128 | 4 | 20 |

April 20, 2023 Service Request No:K2304115

Mark Petrie
Lott Clean Water Alliance
500 Adams Street NE
Olympia, WA 98501

**Laboratory Results for: LOTTBSAPR23**

Dear Mark,

Enclosed are the results of the sample(s) submitted to our laboratory April 07, 2023
For your reference, these analyses have been assigned our service request number **K2304115.**

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 3376. You may also contact me via email at Mark.Harris@alsglobal.com.

Respectfully submitted,

**ALS Group USA, Corp. dba ALS Environmental**

Mark Harris
Project Manager

ADDRESS 1317 S. 13th Avenue, Kelso, WA 98626
PHONE +1 360 577 7222 | FAX +1 360 636 1068
ALS Group USA, Corp.
dba ALS Environmental

# Narrative Documents

**ALS Environmental—Kelso Laboratory**
1317 South 13th Avenue, Kelso, WA 98626
Phone (360) 577-7222 Fax (360) 425-9096
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**Client:** LOTT Clean Water Alliance
**Project:** LOTTBSAPR23
**Sample Matrix:** Sludge

**Service Request:** K2304115
**Date Received:** 04/07/2023

## CASE NARRATIVE

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

**Sample Receipt:**

One sludge sample was received for analysis at ALS Environmental on 04/07/2023. Any discrepancies upon initial sample inspection are annotated on the sample receipt and preservation form included within this report. The sample was stored at minimum in accordance with the analytical method requirements.

**Metals:**

No significant anomalies were noted with this analysis.

**General Chemistry:**

No significant anomalies were noted with this analysis.

Approved by _____ Date 04/20/2023

## SAMPLE DETECTION SUMMARY

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

| CLIENT ID: Biosolids | | | Lab ID: K2304115-001 | | | |
|---|---|---|---|---|---|---|
| **Analyte** | **Results** | **Flag** | **MDL** | **MRL** | **Units** | **Method** |
| Ammonia as Nitrogen | 11600 | | 40 | 470 | mg/Kg | 350.1M |
| Antimony | 2.76 | | 0.07 | 0.18 | mg/Kg | 6020A |
| Arsenic | 3.8 | | 0.2 | 1.8 | mg/Kg | 6020A |
| Beryllium | 0.095 | | 0.022 | 0.072 | mg/Kg | 6020A |
| Cadmium | 1.13 | | 0.025 | 0.072 | mg/Kg | 6020A |
| Chromium | 17.0 | | 0.22 | 0.72 | mg/Kg | 6020A |
| Copper | 438 | | 0.14 | 0.36 | mg/Kg | 6020A |
| Cyanide, Total | 2.00 | | 0.28 | 0.46 | mg/Kg | SM 4500-CN- E Modified |
| Lead | 13.3 | | 0.07 | 0.18 | mg/Kg | 6020A |
| Mercury | 0.832 | | 0.009 | 0.091 | mg/Kg | 7471B |
| Molybdenum | 9.58 | | 0.07 | 0.18 | mg/Kg | 6020A |
| Nickel | 15.6 | | 0.11 | 0.72 | mg/Kg | 6020A |
| Nitrogen, Total Kjeldahl (TKN) | 71000 | | 150 | 990 | mg/Kg | ASTM D3590 Mod |
| Phenolics, Total | 2.86 | | 0.40 | 0.99 | mg/Kg | 9065 Modified |
| Phosphorus | 27100 | | 11 | 72 | mg/Kg | 6010C |
| Potassium | 2110 | | 40 | 140 | mg/Kg | 6010C |
| Selenium | 7.3 | | 0.3 | 3.6 | mg/Kg | 6020A |
| Silver | 3.18 | | 0.014 | 0.072 | mg/Kg | 6020A |
| Solids, Total | 20.1 | | | | Percent | SM 2540 G |
| Sulfur | 12700 | | 7 | 29 | mg/Kg | 6010C |
| Thallium | 0.078 | | 0.014 | 0.072 | mg/Kg | 6020A |
| Zinc | 781 | | 0.7 | 1.8 | mg/Kg | 6020A |

# Sample Receipt Information

**ALS Environmental—Kelso Laboratory**
1317 South 13th Avenue, Kelso, WA 98626
Phone (360) 577-7222 Fax (360) 425-9096
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**Client:** LOTT Clean Water Alliance **Service Request:**K2304115
**Project:** LOTTBSAPR23

## SAMPLE CROSS-REFERENCE

| SAMPLE # | CLIENT SAMPLE ID | DATE | TIME |
|---|---|---|---|
| K2304115-001 | Biosolids | 4/6/2023 | |

ALS Environmental
129937 1317 South 13th Ave, Kelso, WA 98626 | 360-577-7222 | 360-636-1068 (fax)

SR# K2304115

COC Set _____ of _____

# CHAIN OF CUSTODY

Page 1 of 1 COC # _____

| | |
|---|---|
| Project Name: | LOTTBSAPR23 |
| Project Number: | |
| Project Manager | Mark Petrie |
| Company Name: | LOTT Clean Water Alliance |
| Company Address: | 500 Adams St. NE |
| City/State/Zip | Olympia, WA 98501 |
| E-mail Address | markpetrie@lottcleanwater.org |
| Phone # | 360-528-5749 Fax # |
| Sampler Signature: | |

| Sample ID | Date | Time | Lab ID | Matrix | Number of Containers | 999D: SM 2540 G / Total Solids | 28D: 350.1M / Ammonia, as N | 28D: ASTM D1426-93B Mod. / TKN | 28D: 9065 Modified / Phenolics | 28D: 7471B / Hg | 28D | 28D | 28D | 28D | 28D | 28D | 180D: 6020A / Sb, As, Be, Cd, Cr, Cu, Pb | 180D: 6020A / Mo, Ni, Se, Ag, Tl, Zn | 180D: 6010C / P, K, S, | 14D: 4500-CN-E Mod / Cyanide | 14D: 5035A / 8260C, Volatiles | 14D / 40D: 3541 / 8270C, Semi-Volatiles | 14D / 40D: 3541 / 8081B – Pesticides | 14D / 365D: 3541 / 8082A – PCBs | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 Biosolids | 04/06/23 | Comp. | | S | 1 | X | X | X | X | X | | | | | | | X | X | X | X | | | | | 1 0830 - 1430 |
| 2 | | | | | | | | | | | | | | | | | | | | | | | | | 2 |
| 3 | | | | | | | | | | | | | | | | | | | | | | | | | 3 |
| 4 | | | | | | | | | | | | | | | | | | | | | | | | | 4 |
| 5 | | | | | | | | | | | | | | | | | | | | | | | | | 5 |
| 6 | | | | | | | | | | | | | | | | | | | | | | | | | 6 |
| 7 | | | | | | | | | | | | | | | | | | | | | | | | | 7 |
| 8 | | | | | | | | | | | | | | | | | | | | | | | | | 8 |
| 9 | | | | | | | | | | | | | | | | | | | | | | | | | 9 |
| 10 | | | | | | | | | | | | | | | | | | | | | | | | | 10 |

**Report Requirements**

- ___ I. Routine Report: Method Blank, Surrogate, as required
- X II. Report Dup., MS, MSD as required
- ___ III. Data Validation Report (includes all raw data)
- ___ IV. CLP Deliverable Report
- ___ V. EDD

**Invoice Information**

PO# 65

Bill to: see above

**Turnaround Requirements**

___ 24 hr. ___ 48 hr.

___ 5 Day

X Standard (10-15 working days)

___ Provide Fax Results

Circle which metals are to be analyzed

Total Metals: (Sb) (As) Ba (Be) B Ca (Cd) Co (Cr) (Cu) Fe (Pb) Mg Mn (Mo) (Ni) (K) (P) (Ag) Na (Se) Sr (S) (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_____

___ Sample Shipment contains USDA regulated soil samples (check box if applicable)

| Relinquished By: | Received By: | Relinquished By: | Received By: |
|---|---|---|---|
| Signature | Signature | Signature | Signature |
| 04/07/23 Date/Time | 04/07/23 Date/Time | 4-7-23 02/03/23 10:57 Date/Time | 1058 4/7/23 Date/Time |
| John Damitio | Nick Townsend | Nick Townsend | Printed Name |
| LOTT Firm | LOTT Firm | LOTT Firm | Firm |
| Printed Name | Printed Name | Printed Name | |

Make a copy for LOTT driver

PM MN

# Cooler Receipt and Preservation Form

Client LOTT Service Request K23 04115

Received: 4/7/23 Opened: 4/7/23 By: VM Unloaded: 4/7/23 By: VM

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

| Temp Blank | Sample Temp | IR Gun | Cooler #/COC ID / NA | Out of temp indicate with "X" | PM Notified if out of temp | Tracking Number NA | Filed |
|---|---|---|---|---|---|---|---|
| 1.3 | " | IR01 | Cooler 1 | | | | |
| 1.5 | | IR01 | Cooler 2 | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |

4. Was a Temperature Blank present in cooler? NA (Y) N If yes, notate the temperature in the appropriate column above:
   If no, take the temperature of a representative sample bottle contained within the cooler; notate in the column "Sample Temp":
5. Were samples received within the method specified temperature ranges? NA (Y) N
   If no, were they received on ice and same day as collected? If not, notate the cooler # above and notify the PM. (NA) Y N

If applicable, tissue samples were received: *Frozen* *Partially Thawed* *Thawed*

6. Packing material: *Inserts* (*Baggies*) (*Bubble Wrap*) *Gel Packs* *Wet Ice* *Dry Ice* *Sleeves* _____
7. Were custody papers properly filled out (ink, signed, etc.)? NA (Y) N
8. Were samples received in good condition (unbroken) NA (Y) N
9. Were all sample labels complete (ie, analysis, preservation, etc.)? NA (Y) N
10. Did all sample labels and tags agree with custody papers? NA (Y) N
11. Were appropriate bottles/containers and volumes received for the tests indicated? NA (Y) N
12. Were the pH-preserved bottles (*see SMO GEN SOP*) received at the appropriate pH? *Indicate in the table below* NA (Y) N
13. Were VOA vials received without headspace? *Indicate in the table below.* (NA) Y N
14. Was C12/Res negative? (NA) Y N
15. Were samples received within the method specified time limit? If not, notate the error below and notify the PM (NA) Y N
16. Were 100ml sterile microbiology bottles filled exactly to the 100ml mark? (NA) Y N Underfilled Overfilled

| Sample ID on Bottle | Sample ID on COC | Identified by: |
|---|---|---|
| | | |
| | | |
| | | |

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

Notes, Discrepancies, Resolutions: _____

# Miscellaneous Forms

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## Inorganic Data Qualifiers

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

## Metals Data Qualifiers

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

## Organic Data Qualifiers

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

## Additional Petroleum Hydrocarbon Specific Qualifiers

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

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

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

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. A complete listing of specific NELAP-certified analytes, can be found in the certification section at www.ALSGlobal.com or at the accreditation bodies web site.
Please refer to the certification and/or accreditation body's web site if samples are submitted for compliance purposes. The states highlighted above, require the analysis be listed on the state certification if used for compliance purposes and if the method/anlayte is offered by that state.

## Acronyms

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

Analyst Summary report

| | | | |
|---|---|---|---|
| **Client:** | LOTT Clean Water Alliance | **Service Request:** | K2304115 |
| **Project:** | LOTTBSAPR23/ | | |

| | | | |
|---|---|---|---|
| **Sample Name:** | Biosolids | **Date Collected:** | 04/6/23 |
| **Lab Code:** | K2304115-001 | **Date Received:** | 04/7/23 |
| **Sample Matrix:** | Sludge | | |

| Analysis Method | Extracted/Digested By | Analyzed By |
|---|---|---|
| 350.1M | ESCHLOSS | ESCHLOSS |
| 6010C | MSOLADEY | JCHAN |
| 6020A | MSOLADEY | JCHAN |
| 7471B | SSOLADEY | SSOLADEY |
| 9065 Modified | MSPECHT | MSPECHT |
| ASTM D3590 Mod | ACHEATLEY | ACHEATLEY |
| SM 2540 G | | TRICKMAN |
| SM 4500-CN- E Modified | MRICH | MRICH |

# Sample Results

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# Metals

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Analytical Report

| | | | |
|---|---|---|---|
| **Client:** | LOTT Clean Water Alliance | **Service Request:** | K2304115 |
| **Project:** | LOTTBSAPR23 | **Date Collected:** | 04/06/23 |
| **Sample Matrix:** | Sludge | **Date Received:** | 04/07/23 10:58 |
| **Sample Name:** | Biosolids | **Basis:** | Dry |
| **Lab Code:** | K2304115-001 | | |

## Total Metals

| Analyte Name | Analysis Method | Result | Units | MRL | MDL | Dil. | Date Analyzed | Date Extracted | Q |
|---|---|---|---|---|---|---|---|---|---|
| Antimony | 6020A | **2.76** | mg/Kg | 0.18 | 0.07 | 5 | 04/17/23 13:43 | 04/13/23 | |
| Arsenic | 6020A | **3.8** | mg/Kg | 1.8 | 0.2 | 5 | 04/17/23 13:43 | 04/13/23 | |
| Beryllium | 6020A | **0.095** | mg/Kg | 0.072 | 0.022 | 5 | 04/17/23 13:43 | 04/13/23 | |
| Cadmium | 6020A | **1.13** | mg/Kg | 0.072 | 0.025 | 5 | 04/17/23 13:43 | 04/13/23 | |
| Chromium | 6020A | **17.0** | mg/Kg | 0.72 | 0.22 | 5 | 04/17/23 13:43 | 04/13/23 | |
| Copper | 6020A | **438** | mg/Kg | 0.36 | 0.14 | 5 | 04/17/23 13:43 | 04/13/23 | |
| Lead | 6020A | **13.3** | mg/Kg | 0.18 | 0.07 | 5 | 04/17/23 13:43 | 04/13/23 | |
| Mercury | 7471B | **0.832** | mg/Kg | 0.091 | 0.009 | 1 | 04/13/23 08:34 | 04/12/23 | |
| Molybdenum | 6020A | **9.58** | mg/Kg | 0.18 | 0.07 | 5 | 04/17/23 13:43 | 04/13/23 | |
| Nickel | 6020A | **15.6** | mg/Kg | 0.72 | 0.11 | 5 | 04/17/23 13:43 | 04/13/23 | |
| Phosphorus | 6010C | **27100** | mg/Kg | 72 | 11 | 2 | 04/19/23 12:11 | 04/13/23 | |
| Potassium | 6010C | **2110** | mg/Kg | 140 | 40 | 2 | 04/19/23 12:11 | 04/13/23 | |
| Selenium | 6020A | **7.3** | mg/Kg | 3.6 | 0.3 | 5 | 04/17/23 13:43 | 04/13/23 | |
| Silver | 6020A | **3.18** | mg/Kg | 0.072 | 0.014 | 5 | 04/17/23 13:43 | 04/13/23 | |
| Sulfur | 6010C | **12700** | mg/Kg | 29 | 7 | 2 | 04/19/23 12:11 | 04/13/23 | |
| Thallium | 6020A | **0.078** | mg/Kg | 0.072 | 0.014 | 5 | 04/17/23 13:43 | 04/13/23 | |
| Zinc | 6020A | **781** | mg/Kg | 1.8 | 0.7 | 5 | 04/17/23 13:43 | 04/13/23 | |

# General Chemistry

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| | | | |
|---|---|---|---|
| **Client:** | LOTT Clean Water Alliance | **Service Request:** | K2304115 |
| **Project:** | LOTTBSAPR23 | **Date Collected:** | 04/06/23 |
| **Sample Matrix:** | Sludge | **Date Received:** | 04/07/23 10:58 |
| **Sample Name:** | Biosolids | **Basis:** | Dry |
| **Lab Code:** | K2304115-001 | | |

## General Chemistry Parameters

| Analyte Name | Analysis Method | Result | Units | MRL | MDL | Dil. | Date Analyzed | Date Extracted | Q |
|---|---|---|---|---|---|---|---|---|---|
| Ammonia as Nitrogen | 350.1M | **11600** | mg/Kg | 470 | 40 | 200 | 04/14/23 13:58 | 04/12/23 | |
| Cyanide, Total | SM 4500-CN- E Modified | **2.00** | mg/Kg | 0.46 | 0.28 | 1 | 04/15/23 12:26 | 04/15/23 | |
| Nitrogen, Total Kjeldahl (TKN) | ASTM D3590 Mod | **71000** | mg/Kg | 990 | 150 | 5 | 04/17/23 10:30 | 04/13/23 | |
| Phenolics, Total | 9065 Modified | **2.86** | mg/Kg | 0.99 | 0.40 | 1 | 04/18/23 16:50 | 04/18/23 | |
| Solids, Total | SM 2540 G | **20.1** | Percent | - | - | 1 | 04/11/23 13:02 | NA | |

# QC Summary Forms

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# Metals

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Analytical Report

| | | | |
|---|---|---|---|
| **Client:** | LOTT Clean Water Alliance | **Service Request:** | K2304115 |
| **Project:** | LOTTBSAPR23 | **Date Collected:** | NA |
| **Sample Matrix:** | Sludge | **Date Received:** | NA |
| **Sample Name:** | Method Blank | **Basis:** | Dry |
| **Lab Code:** | KQ2306539-03 | | |

## Total Metals

| Analyte Name | Analysis Method | Result | Units | MRL | MDL | Dil. | Date Analyzed | Date Extracted | Q |
|---|---|---|---|---|---|---|---|---|---|
| Antimony | 6020A | ND U | mg/Kg | 0.05 | 0.020 | 5 | 04/17/23 13:23 | 04/13/23 | |
| Arsenic | 6020A | ND U | mg/Kg | 0.5 | 0.06 | 5 | 04/17/23 13:23 | 04/13/23 | |
| Beryllium | 6020A | ND U | mg/Kg | 0.020 | 0.006 | 5 | 04/17/23 13:23 | 04/13/23 | |
| Cadmium | 6020A | ND U | mg/Kg | 0.020 | 0.007 | 5 | 04/17/23 13:23 | 04/13/23 | |
| Chromium | 6020A | ND U | mg/Kg | 0.20 | 0.06 | 5 | 04/17/23 13:23 | 04/13/23 | |
| Copper | 6020A | ND U | mg/Kg | 0.10 | 0.04 | 5 | 04/17/23 13:23 | 04/13/23 | |
| Lead | 6020A | ND U | mg/Kg | 0.05 | 0.020 | 5 | 04/17/23 13:23 | 04/13/23 | |
| Molybdenum | 6020A | ND U | mg/Kg | 0.05 | 0.020 | 5 | 04/17/23 13:23 | 04/13/23 | |
| Nickel | 6020A | ND U | mg/Kg | 0.20 | 0.03 | 5 | 04/17/23 13:23 | 04/13/23 | |
| Phosphorus | 6010C | ND U | mg/Kg | 20 | 3 | 2 | 04/19/23 11:56 | 04/13/23 | |
| Potassium | 6010C | ND U | mg/Kg | 40 | 10 | 2 | 04/19/23 11:56 | 04/13/23 | |
| Selenium | 6020A | ND U | mg/Kg | 1.0 | 0.09 | 5 | 04/17/23 13:23 | 04/13/23 | |
| Silver | 6020A | ND U | mg/Kg | 0.020 | 0.004 | 5 | 04/17/23 13:23 | 04/13/23 | |
| Sulfur | 6010C | ND U | mg/Kg | 8 | 2.0 | 2 | 04/19/23 11:56 | 04/13/23 | |
| Thallium | 6020A | ND U | mg/Kg | 0.020 | 0.004 | 5 | 04/17/23 13:23 | 04/13/23 | |
| Zinc | 6020A | ND U | mg/Kg | 0.5 | 0.20 | 5 | 04/17/23 13:23 | 04/13/23 | |

Analytical Report

| | | | |
|---|---|---|---|
| **Client:** | LOTT Clean Water Alliance | **Service Request:** | K2304115 |
| **Project:** | LOTTBSAPR23 | **Date Collected:** | NA |
| **Sample Matrix:** | Sludge | **Date Received:** | NA |
| **Sample Name:** | Method Blank | **Basis:** | Dry |
| **Lab Code:** | KQ2306561-03 | | |

## Total Metals

| Analyte Name | Analysis Method | Result | Units | MRL | MDL | Dil. | Date Analyzed | Date Extracted | Q |
|---|---|---|---|---|---|---|---|---|---|
| Mercury | 7471B | ND U | mg/Kg | 0.02 | 0.002 | 1 | 04/13/23 08:20 | 04/12/23 | |

**Client:** LOTT Clean Water Alliance
**Project:** LOTTBSAPR23
**Sample Matrix:** Sludge

**Service Request:** K2304115
**Date Analyzed:** 04/19/23

## Lab Control Sample Summary
## Total Metals

**Units:**mg/Kg
**Basis:**Dry

### Lab Control Sample
KQ2306539-04

| Analyte Name | Analytical Method | Result | Spike Amount | % Rec | % Rec Limits |
|---|---|---|---|---|---|
| Phosphorus | 6010C | 514 | 500 | 103 | 80-120 |
| Potassium | 6010C | 1040 | 1000 | 104 | 80-120 |
| Sulfur | 6010C | 502 | 500 | 100 | 80-120 |

**Client:** LOTT Clean Water Alliance
**Project:** LOTTBSAPR23
**Sample Matrix:** Sludge

**Service Request:** K2304115
**Date Analyzed:** 04/17/23

## Lab Control Sample Summary
## Total Metals

**Units:**mg/Kg
**Basis:**Dry

### Lab Control Sample
KQ2306539-04

| Analyte Name | Analytical Method | Result | Spike Amount | % Rec | % Rec Limits |
|---|---|---|---|---|---|
| Antimony | 6020A | 101 | 100 | 101 | 80-120 |
| Arsenic | 6020A | 93.8 | 100 | 94 | 80-120 |
| Beryllium | 6020A | 10.3 | 10.0 | 103 | 80-120 |
| Cadmium | 6020A | 9.90 | 10.0 | 99 | 80-120 |
| Chromium | 6020A | 37.6 | 40.0 | 94 | 80-120 |
| Copper | 6020A | 47.5 | 50.0 | 95 | 80-120 |
| Lead | 6020A | 109 | 100 | 109 | 80-120 |
| Molybdenum | 6020A | 105 | 100 | 105 | 80-120 |
| Nickel | 6020A | 94.8 | 100 | 95 | 80-120 |
| Selenium | 6020A | 95.3 | 100 | 95 | 80-120 |
| Silver | 6020A | 10.3 | 10.0 | 103 | 80-120 |
| Thallium | 6020A | 22.1 | 20.0 | 110 | 80-120 |
| Zinc | 6020A | 95.5 | 100 | 96 | 80-120 |

**Client:** LOTT Clean Water Alliance
**Project:** LOTTBSAPR23
**Sample Matrix:** Sludge

**Service Request:** K2304115
**Date Analyzed:** 04/13/23

## Lab Control Sample Summary
## Total Metals

**Units:**mg/Kg
**Basis:**Dry

### Lab Control Sample
KQ2306561-04

| Analyte Name | Analytical Method | Result | Spike Amount | % Rec | % Rec Limits |
|---|---|---|---|---|---|
| Mercury | 7471B | 0.470 | 0.500 | 94 | 80-120 |

# General Chemistry

**ALS Environmental—Kelso Laboratory**
1317 South 13th Avenue, Kelso, WA 98626
Phone (360) 577-7222 Fax (360) 425-9096
www.alsglobal.com

| | | | |
|---|---|---|---|
| **Client:** | LOTT Clean Water Alliance | **Service Request:** | K2304115 |
| **Project:** | LOTTBSAPR23 | **Date Collected:** | NA |
| **Sample Matrix:** | Sludge | **Date Received:** | NA |
| **Sample Name:** | Method Blank | **Basis:** | Dry |
| **Lab Code:** | K2304115-MB | | |

## General Chemistry Parameters

| Analyte Name | Analysis Method | Result | | Units | MRL | MDL | Dil. | Date Analyzed | Date Extracted | Q |
|---|---|---|---|---|---|---|---|---|---|---|
| Ammonia as Nitrogen | 350.1M | **0.06** | **J** | mg/Kg | 0.50 | 0.04 | 1 | 04/14/23 13:58 | 04/12/23 | |
| Cyanide, Total | SM 4500-CN- E Modified | ND | U | mg/Kg | 0.10 | 0.06 | 1 | 04/15/23 12:26 | 04/15/23 | |
| Nitrogen, Total Kjeldahl (TKN) | ASTM D3590 Mod | ND | U | mg/Kg | 40 | 6 | 1 | 04/17/23 10:30 | 04/13/23 | |
| Phenolics, Total | 9065 Modified | **0.14** | **J** | mg/Kg | 0.20 | 0.08 | 1 | 04/18/23 16:50 | 04/18/23 | |
| Solids, Total | SM 2540 G | ND | U | Percent | - | - | 1 | 04/11/23 07:05 | NA | |

**ALS Group USA, Corp.**
**dba ALS Environmental**

QA/QC Report

| | | | |
|---|---|---|---|
| **Client:** | LOTT Clean Water Alliance | **Service Request:** | K2304115 |
| **Project:** | LOTTBSAPR23 | **Date Collected:** | 04/06/23 |
| **Sample Matrix:** | Sludge | **Date Received:** | 04/07/23 |
| | | **Date Analyzed:** | 04/17/23 |
| | | **Date Extracted:** | 04/13/23 |

**Duplicate Matrix Spike Summary**
**Nitrogen, Total Kjeldahl (TKN)**

| | | | |
|---|---|---|---|
| **Sample Name:** | Biosolids | **Units:** | mg/Kg |
| **Lab Code:** | K2304115-001 | **Basis:** | Dry |
| **Analysis Method:** | ASTM D3590 Mod | | |
| **Prep Method:** | Method | | |

| | | Matrix Spike K2304115-001MS | | | Duplicate Matrix Spike K2304115-001DMS | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **Analyte Name** | **Sample Result** | **Result** | **Spike Amount** | **% Rec** | **Result** | **Spike Amount** | **% Rec** | **% Rec Limits** | **RPD** | **RPD Limit** |
| Nitrogen, Total Kjeldahl (TKN) | 71000 | 89600 | 16400 | 114 # | 85600 | 15500 | 94 # | 23-174 | 19 | 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.

**Matrix Spike and Matrix Spike Duplicate Data is presented for information purposes only. The matrix may or may not be relevant to samples reported in this report. The laboratory evaluates system performance based on the LCS and LCSD control limits.**

**ALS Group USA, Corp.**

**dba ALS Environmental**

QA/QC Report

| | | | |
|---|---|---|---|
| **Client:** | LOTT Clean Water Alliance | **Service Request:** | K2304115 |
| **Project** | LOTTBSAPR23 | **Date Collected:** | 04/06/23 |
| **Sample Matrix:** | Sludge | **Date Received:** | 04/07/23 |
| | | **Date Analyzed:** | 04/17/23 |

## Replicate Sample Summary
## General Chemistry Parameters

| | | | |
|---|---|---|---|
| **Sample Name:** | Biosolids | **Units:** | mg/Kg |
| **Lab Code:** | K2304115-001 | **Basis:** | Dry |

| Analyte Name | Analysis Method | MRL | MDL | Sample Result | Duplicate Sample K2304115-001DUP Result | Average | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|
| Nitrogen, Total Kjeldahl (TKN) | ASTM D3590 Mod | 970 | 150 | 71000 | 65400 | 68200 | 8 | 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:** LOTT Clean Water Alliance
**Project:** LOTTBSAPR23
**Sample Matrix:** Sludge

**Service Request:** K2304115
**Date Analyzed:** 04/14/23 - 04/18/23

**Lab Control Sample Summary**
**General Chemistry Parameters**

**Units:**mg/Kg
**Basis:**Dry

**Lab Control Sample**
K2304115-LCS

| Analyte Name | Analytical Method | Result | Spike Amount | % Rec | % Rec Limits |
|---|---|---|---|---|---|
| Ammonia as Nitrogen | 350.1M | 3.85 | 3.79 | 102 | 86-114 |
| Cyanide, Total | SM 4500-CN- E Modified | 1.44 | 1.50 | 96 | 62-128 |
| Nitrogen, Total Kjeldahl (TKN) | ASTM D3590 Mod | 805 | 772 | 104 | 82-131 |
| Phenolics, Total | 9065 Modified | 11.6 | 12.0 | 97 | 85-115 |

June 16, 2023 Service Request No:K2306235

Mark Petrie
Lott Clean Water Alliance
500 Adams Street NE
Olympia, WA 98501

**Laboratory Results for: LOTTBSJUN23**

Dear Mark,

Enclosed are the results of the sample(s) submitted to our laboratory June 02, 2023
For your reference, these analyses have been assigned our service request number **K2306235.**

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 3376. You may also contact me via email at Mark.Harris@alsglobal.com.

Respectfully submitted,

**ALS Group USA, Corp. dba ALS Environmental**

Mark Harris
Project Manager

ADDRESS 1317 S. 13th Avenue, Kelso, WA 98626
PHONE +1 360 577 7222 | FAX +1 360 636 1068
ALS Group USA, Corp.
dba ALS Environmental

# Narrative Documents

**ALS Environmental—Kelso Laboratory**
1317 South 13th Avenue, Kelso, WA 98626
Phone (360) 577-7222 Fax (360) 425-9096
www.alsglobal.com

**Client:** LOTT Clean Water Alliance
**Project:** LOTTBSJUN23
**Sample Matrix:** Sludge

**Service Request:** K2306235
**Date Received:** 06/02/2023

## CASE NARRATIVE

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

**Sample Receipt:**

One sludge sample was received for analysis at ALS Environmental on 06/02/2023. Any discrepancies upon initial sample inspection are annotated on the sample receipt and preservation form included within this report. The sample was stored at minimum in accordance with the analytical method requirements.

**Metals:**

No significant anomalies were noted with this analysis.

**General Chemistry:**

No significant anomalies were noted with this analysis.

Approved by _____ Date 06/16/2023

## SAMPLE DETECTION SUMMARY

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

| CLIENT ID: Biosolids | | | Lab ID: K2306235-001 | | | |
|---|---|---|---|---|---|---|
| **Analyte** | **Results** | **Flag** | **MDL** | **MRL** | **Units** | **Method** |
| Ammonia as Nitrogen | 11500 | | 40 | 460 | mg/Kg | 350.1M |
| Antimony | 2.23 | | 0.09 | 0.23 | mg/Kg | 6020A |
| Arsenic | 3.8 | | 0.3 | 2.3 | mg/Kg | 6020A |
| Beryllium | 0.095 | | 0.028 | 0.092 | mg/Kg | 6020A |
| Cadmium | 1.05 | | 0.032 | 0.092 | mg/Kg | 6020A |
| Chromium | 19.0 | | 0.28 | 0.92 | mg/Kg | 6020A |
| Copper | 440 | | 0.18 | 0.46 | mg/Kg | 6020A |
| Cyanide, Total | 1.65 | | 0.29 | 0.47 | mg/Kg | SM 4500-CN- E Modified |
| Lead | 12.5 | | 0.09 | 0.23 | mg/Kg | 6020A |
| Mercury | 0.999 | | 0.009 | 0.090 | mg/Kg | 7471B |
| Molybdenum | 10.6 | | 0.09 | 0.23 | mg/Kg | 6020A |
| Nickel | 17.6 | | 0.14 | 0.92 | mg/Kg | 6020A |
| Nitrogen, Total Kjeldahl (TKN) | 73000 | | 140 | 870 | mg/Kg | ASTM D3590 Mod |
| Phenolics, Total | 4.26 | | 0.38 | 0.93 | mg/Kg | 9065 Modified |
| Phosphorus | 21700 | | 14 | 92 | mg/Kg | 6010C |
| Potassium | 1900 | | 50 | 180 | mg/Kg | 6010C |
| Selenium | 6.8 | | 0.4 | 4.6 | mg/Kg | 6020A |
| Silver | 2.93 | | 0.018 | 0.092 | mg/Kg | 6020A |
| Solids, Total | 20.6 | | | | Percent | SM 2540 G |
| Sulfur | 10700 | | 9 | 74 | mg/Kg | 6010C |
| Thallium | 0.036 | J | 0.018 | 0.092 | mg/Kg | 6020A |
| Zinc | 765 | | 0.9 | 2.3 | mg/Kg | 6020A |

# Sample Receipt Information

**ALS Environmental—Kelso Laboratory**
1317 South 13th Avenue, Kelso, WA 98626
Phone (360) 577-7222 Fax (360) 425-9096
www.alsglobal.com

**Client:** LOTT Clean Water Alliance **Service Request:**K2306235
**Project:** LOTTBSJUN23

## SAMPLE CROSS-REFERENCE

| SAMPLE # | CLIENT SAMPLE ID | DATE | TIME |
|---|---|---|---|
| K2306235-001 | Biosolids | 6/1/2023 | |

ALS Environmental
131198 1317 South 13th Ave, Kelso, WA 98626 | 360-577-7222 | 360-636-1068 (fax)

SR# K2304235

COC Set _____ of _____

# CHAIN OF CUSTODY

Page 1 of 1 COC # _____

| | |
|---|---|
| Project Name: | **LOTTBSJUN23** |
| Project Number: | |
| Project Manager | Mark Petrie |
| Company Name: | LOTT Clean Water Alliance |
| Company Address: | 500 Adams St. NE |
| City/State/Zip | Olympia, WA 98501 |
| E-mail Address | markpetrie@lottcleanwater.org |
| Phone # | 360-528-5749 Fax # |
| Sampler Signature | |

| Sample ID | Date | Time | Lab ID | Matrix | Number of Containers | 999D: SM 2540 G / Total Solids | 28D: 350.1M / Ammonia, as N | 28D: ASTM D1426-93B Mod. / TKN | 28D: 9065 Modified / Phenolics | 28D: 7471B / Hg | 180D: 6020A / Sb, As, Be, Cd, Cr, Cu, Pb | 180D: 6020A / Mo, Ni, Se, Ag, Tl, Zn | 180D: 6010C / P, K, S, | 14D: 4500-CN-E Mod / Cyanide | 14D: 5035A / 8260C, Volatiles | 14D / 40D: 3541 / 8270C, Semi-Volatiles | 14D / 40D: 3541 / 8081B – Pesticides | 14D / 365D: 3541 / 8082A – PCBs | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 Biosolids | 06/01/23 | Comp. | | S | 1 | X | X | X | X | X | X | X | X | X | | | | | 1 0940 - 1400 |
| 2 | | | | | | | | | | | | | | | | | | | 2 |
| 3 | | | | | | | | | | | | | | | | | | | 3 |
| 4 | | | | | | | | | | | | | | | | | | | 4 |
| 5 | | | | | | | | | | | | | | | | | | | 5 |
| 6 | | | | | | | | | | | | | | | | | | | 6 |
| 7 | | | | | | | | | | | | | | | | | | | 7 |
| 8 | | | | | | | | | | | | | | | | | | | 8 |
| 9 | | | | | | | | | | | | | | | | | | | 9 |
| 10 | | | | | | | | | | | | | | | | | | | 10 |

**Report Requirements**

- ___ I. Routine Report: Method Blank, Surrogate, as required
- X II. Report Dup., MS, MSD as required
- ___ III. Data Validation Report (includes all raw data)
- ___ IV. CLP Deliverable Report
- ___ V. EDD

**Invoice Information**

PO# 65

Bill to: see above

**Turnaround Requirements**

___ 24 hr. ___ 48 hr.

___ 5 Day

X Standard (10-15 working days)

___ Provide Fax Results

Circle which metals are to be analyzed

Total Metals: (Sb) (As) Ba (Be) B Ca (Cd) Co (Cr) (Cu) Fe (Pb) Mg Mn (Mo) (Ni) (K) (P) (Ag) Na (Se) Sr (S) (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_____

☐ Sample Shipment contains USDA regulated soil samples (check box if applicable)

| Relinquished By: | Received By: | Relinquished By: | Received By: |
|---|---|---|---|
| Signature | Signature | Signature | Signature |
| John Damitio | Colby Bradshaw | Colby Bradshaw | |
| Printed Name | Printed Name | Printed Name | Printed Name |
| 06/02/23 0811 | 06/02/23 0811 | 06/02/23 10:13 | 1015 6/2/23 |
| Date/Time | Date/Time | Date/Time | Date/Time |
| LOTT | LOTT | LOTT | Firm |
| Firm | Firm | Firm | |

Make a copy for LOTT driver

PM MH

# Cooler Receipt and Preservation Form

Client LOTT Service Request K23 062235

Received: 6/2/23 Opened: 6/2/23 By: VM Unloaded: 6/2/23 By VM

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

| Temp Blank | Sample Temp | IR Gun | Cooler #/COC ID / NA | Out of temp indicate with "X" | PM Notified If out of temp | Tracking Number NA | Filed |
|---|---|---|---|---|---|---|---|
| 4.3 | | IR01 | Cooler 1 | | | | |
| 2.5 | | IR01 | Cooler 2 | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |

4. Was a Temperature Blank present in cooler? NA (Y) N If yes, notate the temperature in the appropriate column above:
   If no, take the temperature of a representative sample bottle contained within the cooler; notate in the column "Sample Temp":
5. Were samples received within the method specified temperature ranges? NA (Y) N
   If no, were they received on ice and same day as collected? If not, notate the cooler # above and notify the PM. (NA) Y N

If applicable, tissue samples were received: *Frozen* *Partially Thawed* *Thawed*

6. Packing material: *Inserts* (*Baggies*) (*Bubble Wrap*) (*Gel Packs*) *Wet Ice* *Dry Ice* *Sleeves* _____
7. Were custody papers properly filled out (ink, signed, etc.)? NA (Y) N
8. Were samples received in good condition (unbroken) NA (Y) N
9. Were all sample labels complete (ie, analysis, preservation, etc.)? NA (Y) N
10. Did all sample labels and tags agree with custody papers? NA (Y) N
11. Were appropriate bottles/containers and volumes received for the tests indicated? NA (Y) N
12. Were the pH-preserved bottles (*see SMO GEN SOP*) received at the appropriate pH? *Indicate in the table below* (NA) Y N
13. Were VOA vials received without headspace? *Indicate in the table below.* (NA) Y N
14. Was C12/Res negative? (NA) Y N
15. Were samples received within the method specified time limit? If not, notate the error below and notify the PM (NA) Y N
16. Were 100ml sterile microbiology bottles filled exactly to the 100ml mark? (NA) Y N Underfilled Overfilled

| Sample ID on Bottle | Sample ID on COC | Identified by: |
|---|---|---|
| | | |
| | | |
| | | |

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

Notes, Discrepancies, Resolutions: _____

# Miscellaneous Forms

**ALS Environmental—Kelso Laboratory**
1317 South 13th Avenue, Kelso, WA 98626
Phone (360) 577-7222 Fax (360) 425-9096
www.alsglobal.com

## Inorganic Data Qualifiers

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

## Metals Data Qualifiers

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

## Organic Data Qualifiers

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

## Additional Petroleum Hydrocarbon Specific Qualifiers

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

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

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

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. A complete listing of specific NELAP-certified analytes, can be found in the certification section at www.ALSGlobal.com or at the accreditation bodies web site.
Please refer to the certification and/or accreditation body's web site if samples are submitted for compliance purposes. The states highlighted above, require the analysis be listed on the state certification if used for compliance purposes and if the method/anlayte is offered by that state.

## Acronyms

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

Analyst Summary report

| | | | |
|---|---|---|---|
| **Client:** | LOTT Clean Water Alliance | **Service Request:** | K2306235 |
| **Project:** | LOTTBSJUN23/ | | |

| | | | |
|---|---|---|---|
| **Sample Name:** | Biosolids | **Date Collected:** | 06/1/23 |
| **Lab Code:** | K2306235-001 | **Date Received:** | 06/2/23 |
| **Sample Matrix:** | Sludge | | |

| Analysis Method | Extracted/Digested By | Analyzed By |
|---|---|---|
| 350.1M | ESCHLOSS | ESCHLOSS |
| 6010C | MSOLADEY | AMCKORNEY |
| 6020A | MSOLADEY | JCHAN |
| 7471B | SSOLADEY | SSOLADEY |
| 9065 Modified | MSPECHT | MSPECHT |
| ASTM D3590 Mod | ACHEATLEY | ACHEATLEY |
| SM 2540 G | | ZBIBI |
| SM 4500-CN- E Modified | MRICH | MRICH |

# Sample Results

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# Metals

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Analytical Report

| | | | |
|---|---|---|---|
| **Client:** | LOTT Clean Water Alliance | **Service Request:** | K2306235 |
| **Project:** | LOTTBSJUN23 | **Date Collected:** | 06/01/23 |
| **Sample Matrix:** | Sludge | **Date Received:** | 06/02/23 10:15 |
| **Sample Name:** | Biosolids | **Basis:** | Dry |
| **Lab Code:** | K2306235-001 | | |

## Total Metals

| Analyte Name | Analysis Method | Result | Units | MRL | MDL | Dil. | Date Analyzed | Date Extracted | Q |
|---|---|---|---|---|---|---|---|---|---|
| Antimony | 6020A | **2.23** | mg/Kg | 0.23 | 0.09 | 5 | 06/08/23 09:05 | 06/07/23 | |
| Arsenic | 6020A | **3.8** | mg/Kg | 2.3 | 0.3 | 5 | 06/08/23 09:05 | 06/07/23 | |
| Beryllium | 6020A | **0.095** | mg/Kg | 0.092 | 0.028 | 5 | 06/08/23 09:05 | 06/07/23 | |
| Cadmium | 6020A | **1.05** | mg/Kg | 0.092 | 0.032 | 5 | 06/08/23 09:05 | 06/07/23 | |
| Chromium | 6020A | **19.0** | mg/Kg | 0.92 | 0.28 | 5 | 06/08/23 09:05 | 06/07/23 | |
| Copper | 6020A | **440** | mg/Kg | 0.46 | 0.18 | 5 | 06/08/23 09:05 | 06/07/23 | |
| Lead | 6020A | **12.5** | mg/Kg | 0.23 | 0.09 | 5 | 06/08/23 09:05 | 06/07/23 | |
| Mercury | 7471B | **0.999** | mg/Kg | 0.090 | 0.009 | 1 | 06/08/23 15:44 | 06/07/23 | |
| Molybdenum | 6020A | **10.6** | mg/Kg | 0.23 | 0.09 | 5 | 06/08/23 09:05 | 06/07/23 | |
| Nickel | 6020A | **17.6** | mg/Kg | 0.92 | 0.14 | 5 | 06/08/23 09:05 | 06/07/23 | |
| Phosphorus | 6010C | **21700** | mg/Kg | 92 | 14 | 2 | 06/08/23 14:08 | 06/07/23 | |
| Potassium | 6010C | **1900** | mg/Kg | 180 | 50 | 2 | 06/08/23 14:08 | 06/07/23 | |
| Selenium | 6020A | **6.8** | mg/Kg | 4.6 | 0.4 | 5 | 06/08/23 09:05 | 06/07/23 | |
| Silver | 6020A | **2.93** | mg/Kg | 0.092 | 0.018 | 5 | 06/08/23 09:05 | 06/07/23 | |
| Sulfur | 6010C | **10700** | mg/Kg | 74 | 9 | 2 | 06/08/23 14:08 | 06/07/23 | |
| Thallium | 6020A | **0.036** | mg/Kg | 0.092 | 0.018 | 5 | 06/08/23 09:05 | 06/07/23 | **J** |
| Zinc | 6020A | **765** | mg/Kg | 2.3 | 0.9 | 5 | 06/08/23 09:05 | 06/07/23 | |

# General Chemistry

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Analytical Report

| | | | |
|---|---|---|---|
| **Client:** | LOTT Clean Water Alliance | **Service Request:** | K2306235 |
| **Project:** | LOTTBSJUN23 | **Date Collected:** | 06/01/23 |
| **Sample Matrix:** | Sludge | **Date Received:** | 06/02/23 10:15 |
| **Sample Name:** | Biosolids | **Basis:** | Dry |
| **Lab Code:** | K2306235-001 | | |

## General Chemistry Parameters

| Analyte Name | Analysis Method | Result | Units | MRL | MDL | Dil. | Date Analyzed | Date Extracted | Q |
|---|---|---|---|---|---|---|---|---|---|
| Ammonia as Nitrogen | 350.1M | **11500** | mg/Kg | 460 | 40 | 200 | 06/06/23 16:51 | 06/05/23 | |
| Cyanide, Total | SM 4500-CN- E Modified | **1.65** | mg/Kg | 0.47 | 0.29 | 1 | 06/14/23 16:49 | 06/14/23 | |
| Nitrogen, Total Kjeldahl (TKN) | ASTM D3590 Mod | **73000** | mg/Kg | 870 | 140 | 5 | 06/14/23 11:50 | 06/12/23 | |
| Phenolics, Total | 9065 Modified | **4.26** | mg/Kg | 0.93 | 0.38 | 1 | 06/08/23 14:05 | 06/07/23 | |
| Solids, Total | SM 2540 G | **20.6** | Percent | - | - | 1 | 06/06/23 10:55 | NA | |

# QC Summary Forms

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# Metals

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Phone (360) 577-7222 Fax (360) 425-9096
www.alsglobal.com

Analytical Report

| | | | |
|---|---|---|---|
| **Client:** | LOTT Clean Water Alliance | **Service Request:** | K2306235 |
| **Project:** | LOTTBSJUN23 | **Date Collected:** | NA |
| **Sample Matrix:** | Sludge | **Date Received:** | NA |
| **Sample Name:** | Method Blank | **Basis:** | Dry |
| **Lab Code:** | KQ2309952-03 | | |

## Total Metals

| Analyte Name | Analysis Method | Result | Units | MRL | MDL | Dil. | Date Analyzed | Date Extracted | Q |
|---|---|---|---|---|---|---|---|---|---|
| Mercury | 7471B | ND U | mg/Kg | 0.02 | 0.002 | 1 | 06/08/23 14:52 | 06/07/23 | |

Analytical Report

| | | | |
|---|---|---|---|
| **Client:** | LOTT Clean Water Alliance | **Service Request:** | K2306235 |
| **Project:** | LOTTBSJUN23 | **Date Collected:** | NA |
| **Sample Matrix:** | Sludge | **Date Received:** | NA |
| **Sample Name:** | Method Blank | **Basis:** | Dry |
| **Lab Code:** | KQ2309969-03 | | |

## Total Metals

| Analyte Name | Analysis Method | Result | Q | Units | MRL | MDL | Dil. | Date Analyzed | Date Extracted | Q |
|---|---|---|---|---|---|---|---|---|---|---|
| Antimony | 6020A | ND | U | mg/Kg | 0.05 | 0.020 | 5 | 06/08/23 08:59 | 06/07/23 | |
| Arsenic | 6020A | ND | U | mg/Kg | 0.5 | 0.06 | 5 | 06/08/23 08:59 | 06/07/23 | |
| Beryllium | 6020A | ND | U | mg/Kg | 0.020 | 0.006 | 5 | 06/08/23 08:59 | 06/07/23 | |
| Cadmium | 6020A | ND | U | mg/Kg | 0.020 | 0.007 | 5 | 06/08/23 08:59 | 06/07/23 | |
| Chromium | 6020A | **0.07** | **J** | mg/Kg | 0.20 | 0.06 | 5 | 06/08/23 08:59 | 06/07/23 | |
| Copper | 6020A | **0.17** | | mg/Kg | 0.10 | 0.04 | 5 | 06/08/23 08:59 | 06/07/23 | |
| Lead | 6020A | ND | U | mg/Kg | 0.05 | 0.020 | 5 | 06/08/23 08:59 | 06/07/23 | |
| Molybdenum | 6020A | ND | U | mg/Kg | 0.05 | 0.020 | 5 | 06/08/23 08:59 | 06/07/23 | |
| Nickel | 6020A | **0.04** | **J** | mg/Kg | 0.20 | 0.03 | 5 | 06/08/23 08:59 | 06/07/23 | |
| Phosphorus | 6010C | **4** | **J** | mg/Kg | 20 | 3 | 2 | 06/08/23 14:03 | 06/07/23 | |
| Potassium | 6010C | ND | U | mg/Kg | 40 | 10 | 2 | 06/08/23 14:03 | 06/07/23 | |
| Selenium | 6020A | ND | U | mg/Kg | 1.0 | 0.09 | 5 | 06/08/23 08:59 | 06/07/23 | |
| Silver | 6020A | ND | U | mg/Kg | 0.020 | 0.004 | 5 | 06/08/23 08:59 | 06/07/23 | |
| Sulfur | 6010C | ND | U | mg/Kg | 16 | 2 | 2 | 06/08/23 14:03 | 06/07/23 | |
| Thallium | 6020A | ND | U | mg/Kg | 0.020 | 0.004 | 5 | 06/08/23 08:59 | 06/07/23 | |
| Zinc | 6020A | ND | U | mg/Kg | 0.5 | 0.20 | 5 | 06/08/23 08:59 | 06/07/23 | |

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QA/QC Report

**Client:** LOTT Clean Water Alliance
**Project:** LOTTBSJUN23
**Sample Matrix:** Sludge

**Service Request:**K2306235
**Date Collected:**06/01/23
**Date Received:**06/02/23
**Date Analyzed:**6/8/23

## Matrix Spike Summary
## Total Metals

**Sample Name:** Biosolids
**Lab Code:** K2306235-001

**Units:**mg/Kg
**Basis:**Dry

### Matrix Spike
KQ2309969-02

| Analyte Name | Method | Sample Result | Result | Spike Amount | % Rec | % Rec Limits |
|---|---|---|---|---|---|---|
| Antimony | 6020A | 2.23 | 399 | 447 | 89 | 75-125 |
| Arsenic | 6020A | 3.8 | 503 | 447 | 112 | 75-125 |
| Beryllium | 6020A | 0.095 | 47.2 | 44.7 | 105 | 75-125 |
| Cadmium | 6020A | 1.05 | 45.6 | 44.7 | 100 | 75-125 |
| Chromium | 6020A | 19.0 | 217 | 179 | 111 | 75-125 |
| Copper | 6020A | 440 | 689 | 223 | 111 | 75-125 |
| Lead | 6020A | 12.5 | 477 | 447 | 104 | 75-125 |
| Molybdenum | 6020A | 10.6 | 486 | 447 | 106 | 75-125 |
| Nickel | 6020A | 17.6 | 505 | 447 | 109 | 75-125 |
| Phosphorus | 6010C | 21700 | 22800 | 2230 | 50 # | 75-125 |
| Potassium | 6010C | 1900 | 6210 | 4470 | 96 | 75-125 |
| Selenium | 6020A | 6.8 | 492 | 447 | 108 | 75-125 |
| Silver | 6020A | 2.93 | 48.0 | 44.7 | 101 | 75-125 |
| Sulfur | 6010C | 10700 | 12000 | 2230 | 61 # | 75-125 |
| Thallium | 6020A | 0.036 J | 89.1 | 89.3 | 100 | 75-125 |
| Zinc | 6020A | 765 | 1280 | 447 | 114 | 75-125 |

**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:** | LOTT Clean Water Alliance | **Service Request:** | K2306235 |
| **Project** | LOTTBSJUN23 | **Date Collected:** | 06/01/23 |
| **Sample Matrix:** | Sludge | **Date Received:** | 06/02/23 |
| | | **Date Analyzed:** | 06/08/23 |

## Replicate Sample Summary
## Total Metals

| | | | |
|---|---|---|---|
| **Sample Name:** | Biosolids | **Units:** | mg/Kg |
| **Lab Code:** | K2306235-001 | **Basis:** | Dry |

| Analyte Name | Analysis Method | MRL | MDL | Sample Result | Duplicate Sample KQ2309969-01 Result | Average | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|
| Antimony | 6020A | 0.21 | 0.08 | 2.23 | 2.24 | 2.24 | <1 | 20 |
| Arsenic | 6020A | 2.1 | 0.3 | 3.8 | 4.5 | 4.2 | 17 | 20 |
| Beryllium | 6020A | 0.085 | 0.025 | 0.095 | 0.082 J | 0.089 | 16 | 20 |
| Cadmium | 6020A | 0.085 | 0.030 | 1.05 | 1.10 | 1.08 | 5 | 20 |
| Chromium | 6020A | 0.85 | 0.25 | 19.0 | 18.9 | 19.0 | <1 | 20 |
| Copper | 6020A | 0.42 | 0.17 | 440 | 443 | 442 | <1 | 20 |
| Lead | 6020A | 0.21 | 0.08 | 12.5 | 13.0 | 12.8 | 4 | 20 |
| Molybdenum | 6020A | 0.21 | 0.08 | 10.6 | 10.9 | 10.8 | 2 | 20 |
| Nickel | 6020A | 0.85 | 0.13 | 17.6 | 16.9 | 17.3 | 4 | 20 |
| Phosphorus | 6010C | 85 | 13 | 21700 | 20200 | 21000 | 7 | 20 |
| Potassium | 6010C | 170 | 40 | 1900 | 1750 | 1830 | 8 | 20 |
| Selenium | 6020A | 4.2 | 0.4 | 6.8 | 6.7 | 6.8 | <1 | 20 |
| Silver | 6020A | 0.085 | 0.017 | 2.93 | 2.89 | 2.91 | 1 | 20 |
| Sulfur | 6010C | 68 | 8 | 10700 | 9990 | 10300 | 6 | 20 |
| Thallium | 6020A | 0.085 | 0.017 | 0.036 J | 0.044 J | 0.040 | 25 # | 20 |
| Zinc | 6020A | 2.1 | 0.8 | 765 | 773 | 769 | <1 | 20 |

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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:** LOTT Clean Water Alliance
**Project:** LOTTBSJUN23
**Sample Matrix:** Sludge

**Service Request:** K2306235
**Date Analyzed:** 06/08/23

## Lab Control Sample Summary
## Total Metals

**Units:**mg/Kg
**Basis:**Dry

### Lab Control Sample
KQ2309952-04

| Analyte Name | Analytical Method | Result | Spike Amount | % Rec | % Rec Limits |
|---|---|---|---|---|---|
| Mercury | 7471B | 0.494 | 0.500 | 99 | 80-120 |

**Client:** LOTT Clean Water Alliance
**Project:** LOTTBSJUN23
**Sample Matrix:** Sludge

**Service Request:** K2306235
**Date Analyzed:** 06/08/23

## Lab Control Sample Summary
## Total Metals

**Units:**mg/Kg
**Basis:**Dry

### Lab Control Sample
KQ2309969-04

| Analyte Name | Analytical Method | Result | Spike Amount | % Rec | % Rec Limits |
|---|---|---|---|---|---|
| Phosphorus | 6010C | 473 | 500 | 95 | 80-120 |
| Potassium | 6010C | 988 | 1000 | 99 | 80-120 |
| Sulfur | 6010C | 462 | 500 | 92 | 80-120 |

**Client:** LOTT Clean Water Alliance
**Project:** LOTTBSJUN23
**Sample Matrix:** Sludge

**Service Request:** K2306235
**Date Analyzed:** 06/08/23

## Lab Control Sample Summary
## Total Metals

**Units:**mg/Kg
**Basis:**Dry

### Lab Control Sample
KQ2309969-04

| Analyte Name | Analytical Method | Result | Spike Amount | % Rec | % Rec Limits |
|---|---|---|---|---|---|
| Antimony | 6020A | 100 | 100 | 100 | 80-120 |
| Arsenic | 6020A | 96.8 | 100 | 97 | 80-120 |
| Beryllium | 6020A | 10.5 | 10.0 | 105 | 80-120 |
| Cadmium | 6020A | 10.1 | 10.0 | 101 | 80-120 |
| Chromium | 6020A | 38.9 | 40.0 | 97 | 80-120 |
| Copper | 6020A | 48.1 | 50.0 | 96 | 80-120 |
| Lead | 6020A | 99.0 | 100 | 99 | 80-120 |
| Molybdenum | 6020A | 108 | 100 | 108 | 80-120 |
| Nickel | 6020A | 97.1 | 100 | 97 | 80-120 |
| Selenium | 6020A | 97.7 | 100 | 98 | 80-120 |
| Silver | 6020A | 10.3 | 10.0 | 103 | 80-120 |
| Thallium | 6020A | 19.9 | 20.0 | 100 | 80-120 |
| Zinc | 6020A | 96.6 | 100 | 97 | 80-120 |

# General Chemistry

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| | | | |
|---|---|---|---|
| **Client:** | LOTT Clean Water Alliance | **Service Request:** | K2306235 |
| **Project:** | LOTTBSJUN23 | **Date Collected:** | NA |
| **Sample Matrix:** | Sludge | **Date Received:** | NA |
| **Sample Name:** | Method Blank | **Basis:** | Dry |
| **Lab Code:** | K2306235-MB | | |

## General Chemistry Parameters

| Analyte Name | Analysis Method | Result | | Units | MRL | MDL | Dil. | Date Analyzed | Date Extracted | Q |
|---|---|---|---|---|---|---|---|---|---|---|
| Ammonia as Nitrogen | 350.1M | **0.09** | **J** | mg/Kg | 0.50 | 0.04 | 1 | 06/06/23 16:51 | 06/05/23 | |
| Cyanide, Total | SM 4500-CN- E Modified | ND | U | mg/Kg | 0.10 | 0.06 | 1 | 06/14/23 16:49 | 06/14/23 | |
| Nitrogen, Total Kjeldahl (TKN) | ASTM D3590 Mod | ND | U | mg/Kg | 40 | 6 | 1 | 06/14/23 11:50 | 06/12/23 | |
| Phenolics, Total | 9065 Modified | **0.08** | **J** | mg/Kg | 0.20 | 0.08 | 1 | 06/08/23 14:05 | 06/07/23 | |
| Solids, Total | SM 2540 G | ND | U | Percent | - | - | 1 | 06/06/23 10:55 | NA | |

| | | | |
|---|---|---|---|
| **Client:** | LOTT Clean Water Alliance | **Service Request:** | K2306235 |
| **Project:** | LOTTBSJUN23 | **Date Collected:** | 06/01/23 |
| **Sample Matrix:** | Sludge | **Date Received:** | 06/02/23 |
| | | **Date Analyzed:** | 06/8/23 |
| | | **Date Extracted:** | 06/7/23 |

## Duplicate Matrix Spike Summary
## Phenolics, Total

| | | | |
|---|---|---|---|
| **Sample Name:** | Biosolids | **Units:** | mg/Kg |
| **Lab Code:** | K2306235-001 | **Basis:** | Dry |
| **Analysis Method:** | 9065 Modified | | |
| **Prep Method:** | Method | | |

| | | Matrix Spike | | | Duplicate Matrix Spike | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | K2306235-001MS | | | K2306235-001DMS | | | | | |
| **Analyte Name** | **Sample Result** | **Result** | **Spike Amount** | **% Rec** | **Result** | **Spike Amount** | **% Rec** | **% Rec Limits** | **RPD** | **RPD Limit** |
| Phenolics, Total | 4.26 | 35.9 | 36.2 | 87 | 39.0 | 38.3 | 91 | 75-125 | 8 | 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.

**Matrix Spike and Matrix Spike Duplicate Data is presented for information purposes only. The matrix may or may not be relevant to samples reported in this report. The laboratory evaluates system performance based on the LCS and LCSD control limits.**

**ALS Group USA, Corp.**

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QA/QC Report

| | | | |
|---|---|---|---|
| **Client:** | LOTT Clean Water Alliance | **Service Request:** | K2306235 |
| **Project** | LOTTBSJUN23 | **Date Collected:** | 06/01/23 |
| **Sample Matrix:** | Sludge | **Date Received:** | 06/02/23 |
| | | **Date Analyzed:** | 06/08/23 |

## Replicate Sample Summary
## General Chemistry Parameters

| | | | |
|---|---|---|---|
| **Sample Name:** | Biosolids | **Units:** | mg/Kg |
| **Lab Code:** | K2306235-001 | **Basis:** | Dry |

| Analyte Name | Analysis Method | MRL | MDL | Sample Result | Duplicate Sample K2306235-001DUP Result | Average | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|
| Phenolics, Total | 9065 Modified | 0.91 | 0.37 | 4.26 | 4.20 | 4.23 | 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:** | LOTT Clean Water Alliance | **Service Request:** | K2306235 |
| **Project** | LOTTBSJUN23 | **Date Collected:** | 06/01/23 |
| **Sample Matrix:** | Sludge | **Date Received:** | 06/02/23 |
| | | **Date Analyzed:** | 06/06/23 |

## Replicate Sample Summary
## General Chemistry Parameters

| | | | |
|---|---|---|---|
| **Sample Name:** | Biosolids | **Units:** | Percent |
| **Lab Code:** | K2306235-001 | **Basis:** | Dry |

| Analyte Name | Analysis Method | MRL | MDL | Sample Result | Duplicate Sample K2306235-001DUP Result | Average | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|
| Solids, Total | SM 2540 G | - | - | 20.6 | 20.6 | 20.6 | <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.

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QA/QC Report

**Client:** LOTT Clean Water Alliance
**Project:** LOTTBSJUN23
**Sample Matrix:** Sludge

**Service Request:** K2306235
**Date Analyzed:** 06/06/23 - 06/14/23

**Lab Control Sample Summary**
**General Chemistry Parameters**

**Units:**mg/Kg
**Basis:**Dry

**Lab Control Sample**
K2306235-LCS2

| Analyte Name | Analytical Method | Result | Spike Amount | % Rec | % Rec Limits |
|---|---|---|---|---|---|
| Ammonia as Nitrogen | 350.1M | 3.75 | 3.79 | 99 | 86-114 |
| Nitrogen, Total Kjeldahl (TKN) | ASTM D3590 Mod | 747 | 772 | 97 | 82-131 |
| Phenolics, Total | 9065 Modified | 11.3 | 12.0 | 95 | 85-115 |

**ALS Group USA, Corp.**
**dba ALS Environmental**

QA/QC Report

| | | | |
|---|---|---|---|
| **Client:** | LOTT Clean Water Alliance | **Service Request:** | K2306235 |
| **Project:** | LOTTBSJUN23 | **Date Analyzed:** | 06/14/23 |
| **Sample Matrix:** | Sludge | **Date Extracted:** | 06/14/23 |

## Duplicate Lab Control Sample Summary
## General Chemistry Parameters

| | | | |
|---|---|---|---|
| **Analysis Method:** | SM 4500-CN- E Modified | **Units:** | mg/Kg |
| **Prep Method:** | Method | **Basis:** | Dry |
| | | **Analysis Lot:** | 807527 |

| | Lab Control Sample K2306235-LCS1 | | | Duplicate Lab Control Sample K2306235-DLCS1 | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **Analyte Name** | **Result** | **Spike Amount** | **% Rec** | **Result** | **Spike Amount** | **% Rec** | **% Rec Limits** | **RPD** | **RPD Limit** |
| Cyanide, Total | 1.53 | 1.50 | 102 | 1.53 | 1.50 | 102 | 62-128 | <1 | 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**

October 17, 2023

**Analytical Report for Service Request No:** K2308760

Mark Petrie
Lott Clean Water Alliance
500 Adams Street NE
Olympia, WA 98501

**RE: LOTTBSAUG23**

Dear Mark,

Enclosed are the results of the sample(s) submitted to our laboratory August 04, 2023
For your reference, these analyses have been assigned our service request number **K2308760.**

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 3376. You may also contact me via email at Mark.Harris@alsglobal.com.

Respectfully submitted,

**ALS Group USA, Corp. dba ALS Environmental**

Mark Harris
Project Manager

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

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## 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. |
| 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.<br>*DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution. |
| i | The MRL/MDL or LOQ/LOD is elevated due to a matrix interference. |
| X | See case narrative. |
| Q | See case narrative. One or more quality control criteria was outside the limits. |
| H | The holding time for this test is immediately following sample collection. The samples were analyzed as soon as possible after receipt by the laboratory. |

## Metals Data Qualifiers

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

## Additional Petroleum Hydrocarbon Specific Qualifiers

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

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

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

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. A complete listing of specific NELAP-certified analytes, can be found in the certification section at www.ALSGlobal.com or at the accreditation bodies web site.
Please refer to the certification and/or accreditation body's web site if samples are submitted for compliance purposes. The states highlighted above, require the analysis be listed on the state certification if used for compliance purposes and if the method/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

**Client:** LOTT Clean Water Alliance
**Project:** LOTTBSAUG23
**Sample Matrix:** Sludge

**Service Request:** K2308760
**Date Received:** 08/04/2023

## CASE NARRATIVE

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

**Sample Receipt:**

One sludge sample was received for analysis at ALS Environmental on 08/04/2023. Any discrepancies upon initial sample inspection are annotated on the sample receipt and preservation form included within this report. The samples were stored at minimum in accordance with the analytical method requirements.

**Semivolatiles by GC/MS:**

The lower control criterion was exceeded by 5% for Benzo(g,h,i)perylene in Laboratory Control Sample (LCS) KQ2313839-01. The analyte in question was in control in the associated Duplicate Laboratory Control Sample (DLCS); the Relative Percent Difference (RPD) for the replicate LCS/DLCS was in control. The analyte in question was not detected in the associated sample. The low recovery in the LCS indicates a potential slight low bias for the analyte in the associated sample. No further corrective action was taken.

Method 8270D, 08/28/2023: The detection limit was elevated for all analytes in sample Biosolids. The sample extract was diluted prior to instrumental analysis due to historical high levels of non-target background components. The reporting limits were elevated to reflect the dilution.

The following analyte was flagged as outside the control criterion for Continuing Calibration Verification (CCV) KQ2315370-04: 2-Methyl-4,6-dinitrophenol. In accordance with the EPA Method, 80% or more of the CCV analytes must have passed within 20% of the true value. The remaining analytes are allowed a 40% difference as per the ALS SOP. The CCV met these criteria. No further corrective action was required.

Method 8270D, 08/30/2023: The upper control criterion was exceeded for 2,4-Dinitrophenol in Continuing Calibration Verification (CCV) KQ2315370-04. The analyte in question was in control in the Duplicate Laboratory Control Sample (DLCS) KQ2313839-02 analyzed in this sequence. The elevated recovery indicated a potential high bias in the reported results for the associated extracts. No further corrective action was taken.

Method 8270D, 08/30/2023: The lower control criterion was exceeded for Aniline in Continuing Calibration Verification (CCV) KQ2315370-04. The analyte in question was in control in the Duplicate Laboratory Control Sample (DLCS) KQ2313839-02 analyzed in this sequence. The low recovery indicated a potential low bias in the reported results for the associated extracts. No further corrective action was taken.

**Semivoa GC:**

Method 8081B, 08/19/2023: The analysis of sample Biosolid sludge for all analytes except Toxaphene was initially performed within the recommended holding time. Reanalysis was required due to multiple copper cleanups (total=4). The reanalysis was performed 2 days past the recommended holding time. The data was flagged to indicate the holding time violation.

Method 8081B, 09/22/2023:The analysis of Chlorinated Pesticides by EPA 8081 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 4,4'-DDD. The results were reported from the column with an acceptable CCV. The data quality was not affected. No further corrective action was necessary.

Method 8081B, 09/22/2023: The detection limit was elevated for gamma-BHC (Lindane) in sample Biosolids. The chromatogram

Approved by _____ Date 10/17/2023

indicated the presence of non-target background components. The matrix interference prevented adequate resolution of the target compound at the normal limit. The result was flagged to indicate the matrix interference.

Method 8082A, : The upper control criterion was exceeded for Decachlorobiphenyl for both the primary and confirmation columns in Continuing Calibration Verification (CCV) KWG2301381-0. The surrogate in question was in control for both columns in the extracts analyzed in this sequence. The Method Blank (MB) KWG2301380-4 analyzed in this sequence did not contain any target analytes. The recovery of the target analytes was in control in the Laboratory Control Sample (LCS) KWG2301380-3. Since the apparent problem indicated a potential high bias, the data quality was not affected. No further corrective action was required.

Method 8082A, : The analysis of PCB Aroclors by EPA 8082A 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 Aroclors 1016 and 1260. The results were reported from the column with an acceptable CCV. The data quality was not affected. No further corrective action was necessary.

The detection limits were elevated for all analytes in sample Biosolids due to less than optimal sample mass extracted for analysis.

The detection limits were elevated for all analytes in sample Biosolids due to significant matrix interference with the surrogate, Decachlorobiphenyl, present in the undiluted analysis. The matrix interference was so severe that the calculated concentration of the surrogate in the undiluted analysis exceeded the range of the calibration on the primary column. The sample was reanalyzed at a dilution; the surrogate in question was in control in the diluted analysis. All results are reported from the diluted analysis.

**Metals:**

No significant anomalies were noted with this analysis.

**General Chemistry:**

No significant anomalies were noted with this analysis.

**Volatiles by GC/MS:**

Method 8260C, 08/08/2023: Sample Biosolids was received past holding time. The analysis was performed as soon as possible after receipt by the laboratory. The data was flagged to indicate the holding time violation.

Several analytes were flagged as outside the control criterion for Continuing Calibration Verification (CCV) KQ2313832-01. In accordance with the EPA Method, 80% or more of the CCV analytes must have passed within 20% of the true value. The remaining analytes are allowed a 40% difference as per the ALS SOP. The CCV met these criteria. No further corrective action was required.

The internal standard recovery of 1,4-Dichlorobenzene-d4 and Chlorobenzene-d5 in sample Biosolids was outside the lower control criterion due to suspected matrix interference, based on historical analysis of similar matrices. The low internal standard result equated to a potential high bias in the calculated concentrations of the associated analytes. One or more associated target analytes was detected in the affected sample. The data was flagged to indicate the issue. No further corrective action was taken.

The results for Acetone in sample Biosolids exceeded the range of the calibration for the unpreserved analysis; see the MeOH preserved analysis for accurate results.
Method 8260C, 08/08/2023: The upper control criterion was exceeded for Acetone in Continuing Calibration Verification (CCV) KQ2314218-02. The field sample analyzed in this sequence did contain the analyte in question. The bias in the CCV equated to a potential slight high bias in the associated samples. No further corrective action was taken.

Method 8260C, 08/10/2023: The advisory criterion was exceeded for Acetone in the replicate Laboratory Control Samples (LCS/DLCS) KQ2314218-03/-04. As per the ALS/Kelso Standard Operating Procedure (SOP) for this method, this compound is not included in the subset of analytes used to control the analysis. The recovery information reported for this analyte is for advisory purposes only (i.e. to provide additional detail related to the performance of each individual compound). No further

Approved by Noe D. Oaxaca Date 10/17/2023

corrective action was required.

Approved by Noe D. Davis Date 10/17/2023

# 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
132446 1317 South 13th Ave, Kelso, WA 98626 | 360-577-7222 | 360-636-1068 (fax)

SR# K2308760

COC Set _____ of _____

# CHAIN OF CUSTODY

Page 1 of 1 COC # _____

| | |
|---|---|
| Project Name: | LOTTBSAUG23 |
| Project Number: | |
| Project Manager | Mark Petrie |
| Company Name: | LOTT Clean Water Alliance |
| Company Address: | 500 Adams St. NE |
| City/State/Zip | Olympia, WA 98501 |
| E-mail Address | markpetrie@lottcleanwater.org |
| Phone # | 360-528-5749 Fax # |
| Sampler Signature: | |

| Sample ID | Date | Time | Lab ID | Matrix | Number of Containers | 7D: SM 2540 G / Total Solids | 28D: 350.1M / Ammonia, as N | 28D: 350.1M / Ammonium, as N | 28D: 353.2M / Nitrate, as N Calc. | 28D: 353.2 M/ Nitrite, as N | 28D: 353.2 M / Nitrate+Nitrite, as N | 28D: ASTM D1426-93B Mod. / TKN | 28D: Total Nitrogen (Calc) | 28D: Nitrogen, Organic (Calc) | 28D: 9065 Modified / Phenolics | 28D: 7471B / Hg | 180D: 6020A / Sb, As, Be, Cd, Cr, Cu, Pb | 180D: 6020A / Mo, Ni, Se, Ag, Tl, Zn | 180D: 6010C / P, K, S, | 14D: 4500-CN-E Mod / Cyanide | 14D: 5035A / 8260C, Volatiles | 14D / 40D: 3541 / 8270C, Semi-Volatiles | 14D / 40D: 3541 / 8081B – Pesticides | 14D / 365D: 3541 / 8082A – PCBs | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 Biosolids | 08/03/23 | Comp | | S | 3 | X | X | X | | | | X | | | X | X | X | X | X | X | X | X | X | X | 1 0800 - 1330 |
| 2 | | | | | | | | | | | | | | | | | | | | | | | | | 2 |
| 3 | | | | | | | | | | | | | | | | | | | | | | | | | 3 |
| 4 | | | | | | | | | | | | | | | | | | | | | | | | | 4 |
| 5 | | | | | | | | | | | | | | | | | | | | | | | | | 5 |
| 6 | | | | | | | | | | | | | | | | | | | | | | | | | 6 |
| 7 | | | | | | | | | | | | | | | | | | | | | | | | | 7 |
| 8 | | | | | | | | | | | | | | | | | | | | | | | | | 8 |
| 9 | | | | | | | | | | | | | | | | | | | | | | | | | 9 |
| 10 | | | | | | | | | | | | | | | | | | | | | | | | | 10 |

**Report Requirements**

- ___ I. Routine Report: Method Blank, Surrogate, as required
- X II. Report Dup., MS, MSD as required
- ___ III. Data Validation Report (includes all raw data)
- ___ IV. CLP Deliverable Report
- ___ V. EDD

**Invoice Information**

PO# 65

Bill to: see above

**Turnaround Requirements**

___ 24 hr. ___ 48 hr.

___ 5 Day

X Standard (10-15 working days)

___ Provide Fax Results

Circle which metals are to be analyzed

Total Metals: (Sb) (As) Ba (Be) B Ca (Cd) Co (Cr) (Cu) Fe (Pb) Mg Mn (Mo) (Ni) (K) (P) (Ag) Na (Se) Sr (S) (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_____

☐ Sample Shipment contains USDA regulated soil samples (check box if applicable)

| Relinquished By: | Received By: | Relinquished By: | Received By: |
|---|---|---|---|
| Signature | Signature | Signature | Signature |
| 8/4/23 1015 | 8/4/23 10:15 | 11:30 | 8/4/23 1130 |
| Date/Time | Date/Time | Date/Time | Date/Time |
| John Damitio | Rob Tinsley | Rob Tinsley | Diane Price |
| Printed Name | Printed Name | Printed Name | Printed Name |
| LOTT | LOTT | | ALS |
| Firm | Firm | Firm | Firm |



Make a copy for LOTT driver

PM MH

# Cooler Receipt and Preservation Form

Client LOTT Service Request K23 08760

Received: 8/4/23 Opened: 8/4/23 By: VM Unloaded: 8/4/23 By: VM

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

| Temp Blank | Sample Temp | IR Gun | Cooler #/COC ID / NA | Out of temp indicate with "X" | PM Notified If out of temp | Tracking Number NA | Filed |
|---|---|---|---|---|---|---|---|
| 3.4 | | IR02 | Cooler 1 | | | | |
| 4.8 | | | Cooler 2 | | | | |
| 5.6 | | | Cooler 3 | | | | |
| 9.0 | 5.9 | | Cooler 4 | | | | |
| 8.7 | 6.0 | ↓ | Cooler 5 | | | | |

4. Was a Temperature Blank present in cooler? NA Y N If yes, notate the temperature in the appropriate column above:
   If no, take the temperature of a representative sample bottle contained within the cooler; notate in the column "Sample Temp":
5. Were samples received within the method specified temperature ranges? NA Y N
   If no, were they received on ice and same day as collected? If not, notate the cooler # above and notify the PM. NA Y N

If applicable, tissue samples were received: *Frozen* *Partially Thawed* *Thawed*

6. Packing material: *Inserts* *Baggies* *Bubble Wrap* *Gel Packs* *Wet Ice* *Dry Ice* *Sleeves* _____
7. Were custody papers properly filled out (ink, signed, etc.)? NA Y N
8. Were samples received in good condition (unbroken) NA Y N
9. Were all sample labels complete (ie, analysis, preservation, etc.)? NA Y N
10. Did all sample labels and tags agree with custody papers? NA Y N
11. Were appropriate bottles/containers and volumes received for the tests indicated? NA Y N
12. Were the pH-preserved bottles (*see SMO GEN SOP*) received at the appropriate pH? *Indicate in the table below* NA Y N
13. Were VOA vials received without headspace? *Indicate in the table below.* NA Y N
14. Was C12/Res negative? NA Y N
15. Were samples received within the method specified time limit? If not, notate the error below and notify the PM NA Y N
16. Were 100ml sterile microbiology bottles filled exactly to the 100ml mark? NA Y N Underfilled Overfilled

| Sample ID on Bottle | Sample ID on COC | Identified by: |
|---|---|---|
| | | |
| | | |
| | | |

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

Notes, Discrepancies, Resolutions: _____

# Total Solids

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

Analytical Report

| | | | |
|---|---|---|---|
| **Client:** | LOTT Clean Water Alliance | **Service Request:** | K2308760 |
| **Project:** | LOTTBSAUG23 | **Date Collected:** | 08/3/23 |
| **Sample Matrix:** | Sludge | **Date Received:** | 08/4/23 |
| **Analysis Method:** | SM 2540 G | **Units:** | Percent |
| **Prep Method:** | None | **Basis:** | Dry |

**Solids, Total**

| Sample Name | Lab Code | Result | MRL | MDL | Dil. | Date Analyzed | Q |
|---|---|---|---|---|---|---|---|
| Biosolids | K2308760-001 | **31.8** | - | - | 1 | 08/10/23 15:30 | |
| Method Blank | K2308760-MB | ND U | - | - | 1 | 08/10/23 15:30 | |

**ALS Group USA, Corp.**

**dba ALS Environmental**

QA/QC Report

| | | | |
|---|---|---|---|
| **Client:** | LOTT Clean Water Alliance | **Service Request:** | K2308760 |
| **Project** | LOTTBSAUG23 | **Date Collected:** | 08/03/23 |
| **Sample Matrix:** | Sludge | **Date Received:** | 08/04/23 |
| | | **Date Analyzed:** | 08/10/23 |

## Replicate Sample Summary
## General Chemistry Parameters

| | | | |
|---|---|---|---|
| **Sample Name:** | Biosolids | **Units:** | Percent |
| **Lab Code:** | K2308760-001 | **Basis:** | Dry |

| Analyte Name | Analysis Method | MRL | MDL | Sample Result | Duplicate Sample K2308760-001DUP Result | Average | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|
| Solids, Total | SM 2540 G | - | - | 31.8 | 20.0 | 25.9 | 46 * | 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.

# General Chemistry

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

Analytical Report

| | | | |
|---|---|---|---|
| **Client:** | LOTT Clean Water Alliance | **Service Request:** | K2308760 |
| **Project:** | LOTTBSAUG23 | **Date Collected:** | 08/3/23 |
| **Sample Matrix:** | Sludge | **Date Received:** | 08/4/23 |
| **Analysis Method:** | 350.1M | **Units:** | mg/Kg |
| **Prep Method:** | ALS SOP | **Basis:** | Dry |

**Ammonia as Nitrogen**

| Sample Name | Lab Code | Result | MRL | MDL | Dil. | Date Analyzed | Date Extracted | Q |
|---|---|---|---|---|---|---|---|---|
| Biosolids | K2308760-001 | **7540** | 310 | 30 | 200 | 08/11/23 14:47 | 8/9/23 | |
| Method Blank | K2308760-MB | **0.05 J** | 0.50 | 0.04 | 1 | 08/11/23 14:47 | 8/9/23 | |

**ALS Group USA, Corp.**
**dba ALS Environmental**

QA/QC Report

| | | | |
|---|---|---|---|
| **Client:** | LOTT Clean Water Alliance | **Service Request:** | K2308760 |
| **Project:** | LOTTBSAUG23 | **Date Analyzed:** | 08/11/23 |
| **Sample Matrix:** | Sludge | **Date Extracted:** | 08/09/23 |

**Lab Control Sample Summary**
**Ammonia as Nitrogen**

| | | | |
|---|---|---|---|
| **Analysis Method:** | 350.1M | **Units:** | mg/Kg |
| **Prep Method:** | ALS SOP | **Basis:** | Dry |
| | | **Analysis Lot:** | 813703 |

| Sample Name | Lab Code | Result | Spike Amount | % Rec | % Rec Limits |
|---|---|---|---|---|---|
| Lab Control Sample | K2308760-LCS2 | 3.80 | 3.79 | 100 | 86-114 |

Analytical Report

| | | | |
|---|---|---|---|
| **Client:** | LOTT Clean Water Alliance | **Service Request:** | K2308760 |
| **Project:** | LOTTBSAUG23 | **Date Collected:** | 08/3/23 |
| **Sample Matrix:** | Sludge | **Date Received:** | 08/4/23 |
| **Analysis Method:** | 350.1M | **Units:** | mg/Kg |
| **Prep Method:** | ALS SOP | **Basis:** | Dry |

## Ammonium

| Sample Name | Lab Code | Result | MRL | MDL | Dil. | Date Analyzed | Date Extracted | Q |
|---|---|---|---|---|---|---|---|---|
| Biosolids | K2308760-001 | **7560** | 310 | - | 200 | 08/11/23 14:47 | 8/9/23 | |
| Method Blank | K2308760-MB | ND U | 0.50 | - | 1 | 08/11/23 14:47 | 8/9/23 | |

**ALS Group USA, Corp.**
**dba ALS Environmental**

QA/QC Report

| | | | |
|---|---|---|---|
| **Client:** | LOTT Clean Water Alliance | **Service Request:** | K2308760 |
| **Project:** | LOTTBSAUG23 | **Date Analyzed:** | 08/11/23 |
| **Sample Matrix:** | Sludge | **Date Extracted:** | 08/09/23 |

**Lab Control Sample Summary**
**Ammonium**

| | | | |
|---|---|---|---|
| **Analysis Method:** | 350.1M | **Units:** | mg/Kg |
| **Prep Method:** | ALS SOP | **Basis:** | Dry |
| | | **Analysis Lot:** | 813703 |

| Sample Name | Lab Code | Result | Spike Amount | % Rec | % Rec Limits |
|---|---|---|---|---|---|
| Lab Control Sample | K2308760-LCS2 | 3.80 | 3.79 | 100 | 86-114 |

**ALS Group USA, Corp.**
**dba ALS Environmental**

Analytical Report

| | | | |
|---|---|---|---|
| **Client:** | LOTT Clean Water Alliance | **Service Request:** | K2308760 |
| **Project:** | LOTTBSAUG23 | **Date Collected:** | 08/3/23 |
| **Sample Matrix:** | Sludge | **Date Received:** | 08/4/23 |
| **Analysis Method:** | 9065 Modified | **Units:** | mg/Kg |
| **Prep Method:** | Method | **Basis:** | Dry |

**Phenolics, Total**

| Sample Name | Lab Code | Result | MRL | MDL | Dil. | Date Analyzed | Date Extracted | Q |
|---|---|---|---|---|---|---|---|---|
| Biosolids | K2308760-001 | **0.74** | 0.62 | 0.25 | 1 | 08/17/23 14:40 | 8/16/23 | |
| Method Blank | K2308760-MB | ND U | 0.20 | 0.08 | 1 | 08/17/23 14:40 | 8/16/23 | |

**ALS Group USA, Corp.**

**dba ALS Environmental**

QA/QC Report

| | | | |
|---|---|---|---|
| **Client:** | LOTT Clean Water Alliance | **Service Request:** | K2308760 |
| **Project** | LOTTBSAUG23 | **Date Collected:** | 08/03/23 |
| **Sample Matrix:** | Sludge | **Date Received:** | 08/04/23 |
| | | **Date Analyzed:** | 08/17/23 |

## Replicate Sample Summary
## General Chemistry Parameters

| | | | |
|---|---|---|---|
| **Sample Name:** | Biosolids | **Units:** | mg/Kg |
| **Lab Code:** | K2308760-001 | **Basis:** | Dry |

| Analyte Name | Analysis Method | MRL | MDL | Sample Result | Duplicate Sample K2308760-001DUP Result | Average | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|
| Phenolics, Total | 9065 Modified | 0.63 | 0.26 | 0.74 | 0.75 | 0.748 | <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.

| | | | |
|---|---|---|---|
| **Client:** | LOTT Clean Water Alliance | **Service Request:** | K2308760 |
| **Project:** | LOTTBSAUG23 | **Date Collected:** | 08/03/23 |
| **Sample Matrix:** | Sludge | **Date Received:** | 08/04/23 |
| | | **Date Analyzed:** | 08/17/23 |
| | | **Date Extracted:** | 08/16/23 |

## Duplicate Matrix Spike Summary
## Phenolics, Total

| | | | |
|---|---|---|---|
| **Sample Name:** | Biosolids | **Units:** | mg/Kg |
| **Lab Code:** | K2308760-001 | **Basis:** | Dry |
| **Analysis Method:** | 9065 Modified | | |
| **Prep Method:** | Method | | |

| | | Matrix Spike | | | Duplicate Matrix Spike | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | K2308760-001MS | | | K2308760-001DMS | | | | | |
| **Analyte Name** | **Sample Result** | **Result** | **Spike Amount** | **% Rec** | **Result** | **Spike Amount** | **% Rec** | **% Rec Limits** | **RPD** | **RPD Limit** |
| Phenolics, Total | 0.74 | 22.2 | 23.3 | 92 | 22.4 | 24.0 | 90 | 75-125 | 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.

**Matrix Spike and Matrix Spike Duplicate Data is presented for information purposes only. The matrix may or may not be relevant to samples reported in this report. The laboratory evaluates system performance based on the LCS and LCSD control limits.**

**ALS Group USA, Corp.**
**dba ALS Environmental**

QA/QC Report

| | | | |
|---|---|---|---|
| **Client:** | LOTT Clean Water Alliance | **Service Request:** | K2308760 |
| **Project:** | LOTTBSAUG23 | **Date Analyzed:** | 08/17/23 |
| **Sample Matrix:** | Sludge | **Date Extracted:** | 08/16/23 |

**Lab Control Sample Summary**
**Phenolics, Total**

| | | | |
|---|---|---|---|
| **Analysis Method:** | 9065 Modified | **Units:** | mg/Kg |
| **Prep Method:** | Method | **Basis:** | Dry |
| | | **Analysis Lot:** | 814175 |

| Sample Name | Lab Code | Result | Spike Amount | % Rec | % Rec Limits |
|---|---|---|---|---|---|
| Lab Control Sample | K2308760-LCS2 | 11.6 | 12.0 | 97 | 85-115 |

**ALS Group USA, Corp.**
**dba ALS Environmental**

Analytical Report

| | | | |
|---|---|---|---|
| **Client:** | LOTT Clean Water Alliance | **Service Request:** | K2308760 |
| **Project:** | LOTTBSAUG23 | **Date Collected:** | 08/3/23 |
| **Sample Matrix:** | Sludge | **Date Received:** | 08/4/23 |
| **Analysis Method:** | ASTM D3590 Mod | **Units:** | mg/Kg |
| **Prep Method:** | Method | **Basis:** | Dry |

**Nitrogen, Total Kjeldahl (TKN)**

| Sample Name | Lab Code | Result | MRL | MDL | Dil. | Date Analyzed | Date Extracted | Q |
|---|---|---|---|---|---|---|---|---|
| Biosolids | K2308760-001 | **42200** | 130 | 20 | 1 | 08/11/23 09:45 | 8/9/23 | |
| Method Blank | K2308760-MB | ND U | 40 | 6 | 1 | 08/11/23 09:45 | 8/9/23 | |

| | | | |
|---|---|---|---|
| **Client:** | LOTT Clean Water Alliance | **Service Request:** | K2308760 |
| **Project:** | LOTTBSAUG23 | **Date Analyzed:** | 08/11/23 |
| **Sample Matrix:** | Sludge | **Date Extracted:** | 08/09/23 |

## Lab Control Sample Summary
## Nitrogen, Total Kjeldahl (TKN)

| | | | |
|---|---|---|---|
| **Analysis Method:** | ASTM D3590 Mod | **Units:** | mg/Kg |
| **Prep Method:** | Method | **Basis:** | Dry |
| | | **Analysis Lot:** | 813686 |

| Sample Name | Lab Code | Result | Spike Amount | % Rec | % Rec Limits |
|---|---|---|---|---|---|
| Lab Control Sample | K2308760-LCS2 | 959 | 772 | 124 | 82-131 |

Analytical Report

| | | | |
|---|---|---|---|
| **Client:** | LOTT Clean Water Alliance | **Service Request:** | K2308760 |
| **Project:** | LOTTBSAUG23 | **Date Collected:** | 08/3/23 |
| **Sample Matrix:** | Sludge | **Date Received:** | 08/4/23 |
| **Analysis Method:** | SM 4500-CN- E Modified | **Units:** | mg/Kg |
| **Prep Method:** | SM 4500-CN-C Modified | **Basis:** | Dry |

**Cyanide, Total**

| Sample Name | Lab Code | Result | MRL | MDL | Dil. | Date Analyzed | Date Extracted | Q |
|---|---|---|---|---|---|---|---|---|
| Biosolids | K2308760-001 | **0.94** | 0.30 | 0.19 | 1 | 08/12/23 18:17 | 8/12/23 | |
| Method Blank | K2308760-MB | ND U | 0.10 | 0.06 | 1 | 08/12/23 18:17 | 8/12/23 | |

QA/QC Report

| | | | |
|---|---|---|---|
| **Client:** | LOTT Clean Water Alliance | **Service Request:** | K2308760 |
| **Project:** | LOTTBSAUG23 | **Date Analyzed:** | 08/12/23 |
| **Sample Matrix:** | Sludge | **Date Extracted:** | 08/12/23 |

## Duplicate Lab Control Sample Summary
## General Chemistry Parameters

| | | | |
|---|---|---|---|
| **Analysis Method:** | SM 4500-CN- E Modified | **Units:** | mg/Kg |
| **Prep Method:** | Method | **Basis:** | Dry |
| | | **Analysis Lot:** | 813717 |

| | Lab Control Sample K2308760-LCS1 | | | Duplicate Lab Control Sample K2308760-DLCS1 | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **Analyte Name** | **Result** | **Spike Amount** | **% Rec** | **Result** | **Spike Amount** | **% Rec** | **% Rec Limits** | **RPD** | **RPD Limit** |
| Cyanide, Total | 1.60 | 1.50 | 107 | 1.58 | 1.50 | 105 | 62-128 | 2 | 20 |

# Metals

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

Analytical Report

| | | | |
|---|---|---|---|
| **Client:** | LOTT Clean Water Alliance | **Service Request:** | K2308760 |
| **Project:** | LOTTBSAUG23 | **Date Collected:** | 08/03/23 08:00 |
| **Sample Matrix:** | Sludge | **Date Received:** | 08/04/23 11:30 |
| **Sample Name:** | Biosolids | **Basis:** | Dry |
| **Lab Code:** | K2308760-001 | | |

## Total Metals

| Analyte Name | Analysis Method | Result | Units | MRL | MDL | Dil. | Date Analyzed | Date Extracted | Q |
|---|---|---|---|---|---|---|---|---|---|
| Antimony | 6020A | **1.51** | mg/Kg | 0.27 | 0.05 | 5 | 08/17/23 11:00 | 08/15/23 | |
| Arsenic | 6020A | **2.8** | mg/Kg | 1.4 | 0.2 | 5 | 08/17/23 11:00 | 08/15/23 | |
| Beryllium | 6020A | **0.048** | mg/Kg | 0.054 | 0.016 | 5 | 08/17/23 11:00 | 08/15/23 | J |
| Cadmium | 6020A | **0.624** | mg/Kg | 0.054 | 0.019 | 5 | 08/17/23 11:00 | 08/15/23 | |
| Chromium | 6020A | **11.3** | mg/Kg | 0.54 | 0.16 | 5 | 08/17/23 11:00 | 08/15/23 | |
| Copper | 6020A | **284** | mg/Kg | 0.27 | 0.11 | 5 | 08/17/23 11:00 | 08/15/23 | |
| Lead | 6020A | **7.84** | mg/Kg | 0.14 | 0.05 | 5 | 08/17/23 11:00 | 08/15/23 | |
| Mercury | 7471B | **0.425** | mg/Kg | 0.060 | 0.006 | 1 | 08/17/23 09:35 | 08/14/23 | |
| Molybdenum | 6020A | **6.69** | mg/Kg | 0.14 | 0.05 | 5 | 08/17/23 11:00 | 08/15/23 | |
| Nickel | 6020A | **12.2** | mg/Kg | 0.54 | 0.08 | 5 | 08/17/23 11:00 | 08/15/23 | |
| Phosphorus | 6010C | **14400** | mg/Kg | 54 | 8 | 2 | 08/18/23 09:33 | 08/15/23 | |
| Potassium | 6010C | **1100** | mg/Kg | 110 | 30 | 2 | 08/18/23 09:33 | 08/15/23 | |
| Selenium | 6020A | **4.5** | mg/Kg | 2.7 | 0.2 | 5 | 08/17/23 11:00 | 08/15/23 | |
| Silver | 6020A | **1.74** | mg/Kg | 0.054 | 0.011 | 5 | 08/17/23 11:00 | 08/15/23 | |
| Sulfur | 6010C | **7020** | mg/Kg | 43 | 5 | 2 | 08/18/23 09:33 | 08/15/23 | |
| Thallium | 6020A | **0.033** | mg/Kg | 0.054 | 0.011 | 5 | 08/17/23 11:00 | 08/15/23 | J |
| Zinc | 6020A | **459** | mg/Kg | 1.4 | 0.5 | 5 | 08/17/23 11:00 | 08/15/23 | |

**ALS Group USA, Corp.**
**dba ALS Environmental**

Analytical Report

| | | | |
|---|---|---|---|
| **Client:** | LOTT Clean Water Alliance | **Service Request:** | K2308760 |
| **Project:** | LOTTBSAUG23 | **Date Collected:** | NA |
| **Sample Matrix:** | Sludge | **Date Received:** | NA |
| **Sample Name:** | Method Blank | **Basis:** | Dry |
| **Lab Code:** | KQ2313786-03 | | |

## Total Metals

| Analyte Name | Analysis Method | Result | Units | MRL | MDL | Dil. | Date Analyzed | Date Extracted | Q |
|---|---|---|---|---|---|---|---|---|---|
| Antimony | 6020A | ND U | mg/Kg | 0.10 | 0.02 | 5 | 08/17/23 10:54 | 08/15/23 | |
| Arsenic | 6020A | ND U | mg/Kg | 0.5 | 0.06 | 5 | 08/17/23 10:54 | 08/15/23 | |
| Beryllium | 6020A | ND U | mg/Kg | 0.020 | 0.006 | 5 | 08/17/23 10:54 | 08/15/23 | |
| Cadmium | 6020A | ND U | mg/Kg | 0.020 | 0.007 | 5 | 08/17/23 10:54 | 08/15/23 | |
| Chromium | 6020A | **0.13 J** | mg/Kg | 0.20 | 0.06 | 5 | 08/17/23 10:54 | 08/15/23 | |
| Copper | 6020A | ND U | mg/Kg | 0.10 | 0.04 | 5 | 08/17/23 10:54 | 08/15/23 | |
| Lead | 6020A | ND U | mg/Kg | 0.05 | 0.020 | 5 | 08/17/23 10:54 | 08/15/23 | |
| Molybdenum | 6020A | **0.046 J** | mg/Kg | 0.05 | 0.020 | 5 | 08/17/23 10:54 | 08/15/23 | |
| Nickel | 6020A | **0.22** | mg/Kg | 0.20 | 0.03 | 5 | 08/17/23 10:54 | 08/15/23 | |
| Phosphorus | 6010C | **5 J** | mg/Kg | 20 | 3 | 2 | 08/18/23 09:28 | 08/15/23 | |
| Potassium | 6010C | ND U | mg/Kg | 40 | 10 | 2 | 08/18/23 09:28 | 08/15/23 | |
| Selenium | 6020A | ND U | mg/Kg | 1.0 | 0.09 | 5 | 08/17/23 10:54 | 08/15/23 | |
| Silver | 6020A | ND U | mg/Kg | 0.020 | 0.004 | 5 | 08/17/23 10:54 | 08/15/23 | |
| Sulfur | 6010C | ND U | mg/Kg | 16 | 2 | 2 | 08/18/23 09:28 | 08/15/23 | |
| Thallium | 6020A | ND U | mg/Kg | 0.020 | 0.004 | 5 | 08/17/23 10:54 | 08/15/23 | |
| Zinc | 6020A | ND U | mg/Kg | 0.5 | 0.20 | 5 | 08/17/23 10:54 | 08/15/23 | |

Analytical Report

| | | | |
|---|---|---|---|
| **Client:** | LOTT Clean Water Alliance | **Service Request:** | K2308760 |
| **Project:** | LOTTBSAUG23 | **Date Collected:** | NA |
| **Sample Matrix:** | Sludge | **Date Received:** | NA |
| **Sample Name:** | Method Blank | **Basis:** | Dry |
| **Lab Code:** | KQ2313896-03 | | |

## Total Metals

| Analyte Name | Analysis Method | Result | Units | MRL | MDL | Dil. | Date Analyzed | Date Extracted | Q |
|---|---|---|---|---|---|---|---|---|---|
| Mercury | 7471B | ND U | mg/Kg | 0.02 | 0.002 | 1 | 08/17/23 09:31 | 08/14/23 | |

**ALS Group USA, Corp.**

**dba ALS Environmental**

QA/QC Report

| | | | |
|---|---|---|---|
| **Client:** | LOTT Clean Water Alliance | **Service Request:** | K2308760 |
| **Project** | LOTTBSAUG23 | **Date Collected:** | 08/03/23 |
| **Sample Matrix:** | Sludge | **Date Received:** | 08/04/23 |
| | | **Date Analyzed:** | 08/17/23 - 08/18/23 |

**Replicate Sample Summary**

**Total Metals**

| | | | |
|---|---|---|---|
| **Sample Name:** | Biosolids | **Units:** | mg/Kg |
| **Lab Code:** | K2308760-001 | **Basis:** | Dry |

| Analyte Name | Analysis Method | MRL | MDL | Sample Result | Duplicate Sample KQ2313786-01 Result | Average | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|
| Antimony | 6020A | 0.31 | 0.06 | 1.51 | 1.80 | 1.66 | 18 | 20 |
| Arsenic | 6020A | 1.5 | 0.2 | 2.8 | 3.0 | 2.9 | 6 | 20 |
| Beryllium | 6020A | 0.061 | 0.018 | 0.048 J | 0.050 J | 0.049 | 6 | 20 |
| Cadmium | 6020A | 0.061 | 0.021 | 0.624 | 0.668 | 0.646 | 6 | 20 |
| Chromium | 6020A | 0.61 | 0.18 | 11.3 | 11.1 | 11.2 | 2 | 20 |
| Copper | 6020A | 0.31 | 0.12 | 284 | 279 | 282 | 2 | 20 |
| Lead | 6020A | 0.15 | 0.06 | 7.84 | 8.06 | 7.95 | 3 | 20 |
| Molybdenum | 6020A | 0.15 | 0.06 | 6.69 | 6.95 | 6.82 | 4 | 20 |
| Nickel | 6020A | 0.61 | 0.09 | 12.2 | 10.6 | 11.4 | 14 | 20 |
| Phosphorus | 6010C | 61 | 9 | 14400 | 14400 | 14400 | <1 | 20 |
| Potassium | 6010C | 120 | 30 | 1100 | 1110 | 1110 | <1 | 20 |
| Selenium | 6020A | 3.1 | 0.3 | 4.5 | 4.3 | 4.4 | 4 | 20 |
| Silver | 6020A | 0.061 | 0.012 | 1.74 | 1.97 | 1.86 | 12 | 20 |
| Sulfur | 6010C | 49 | 6 | 7020 | 6900 | 6960 | 1 | 20 |
| Thallium | 6020A | 0.061 | 0.012 | 0.033 J | 0.025 J | 0.029 | 32 # | 20 |
| Zinc | 6020A | 1.5 | 0.6 | 459 | 458 | 459 | <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.

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**ALS Group USA, Corp.**
**dba ALS Environmental**

QA/QC Report

**Client:** LOTT Clean Water Alliance
**Project:** LOTTBSAUG23
**Sample Matrix:** Sludge

**Service Request:**K2308760
**Date Collected:**08/03/23
**Date Received:**08/04/23
**Date Analyzed:**08/17/23 - 08/18/23

## Matrix Spike Summary
## Total Metals

**Sample Name:** Biosolids
**Lab Code:** K2308760-001

**Units:**mg/Kg
**Basis:**Dry

### Matrix Spike
KQ2313786-02

| Analyte Name | Method | Sample Result | Result | Spike Amount | % Rec | % Rec Limits |
|---|---|---|---|---|---|---|
| Antimony | 6020A | 1.51 | 260 | 281 | 92 | 75-125 |
| Arsenic | 6020A | 2.8 | 289 | 281 | 102 | 75-125 |
| Beryllium | 6020A | 0.048 J | 29.6 | 28.1 | 105 | 75-125 |
| Cadmium | 6020A | 0.624 | 28.9 | 28.1 | 100 | 75-125 |
| Chromium | 6020A | 11.3 | 126 | 113 | 101 | 75-125 |
| Copper | 6020A | 284 | 426 | 141 | 101 | 75-125 |
| Lead | 6020A | 7.84 | 294 | 281 | 102 | 75-125 |
| Molybdenum | 6020A | 6.69 | 306 | 281 | 106 | 75-125 |
| Nickel | 6020A | 12.2 | 289 | 281 | 98 | 75-125 |
| Phosphorus | 6010C | 14400 | 15600 | 1410 | 89 # | 75-125 |
| Potassium | 6010C | 1100 | 3990 | 2810 | 103 | 75-125 |
| Selenium | 6020A | 4.5 | 293 | 281 | 102 | 75-125 |
| Silver | 6020A | 1.74 | 29.2 | 28.1 | 98 | 75-125 |
| Sulfur | 6010C | 7020 | 8250 | 1410 | 87 # | 75-125 |
| Thallium | 6020A | 0.033 J | 56.8 | 56.3 | 101 | 75-125 |
| Zinc | 6020A | 459 | 742 | 281 | 101 | 75-125 |

**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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Superset Reference:

**Client:** LOTT Clean Water Alliance
**Project:** LOTTBSAUG23
**Sample Matrix:** Sludge

**Service Request:** K2308760
**Date Analyzed:** 08/18/23

## Lab Control Sample Summary
## Total Metals

**Units:**mg/Kg
**Basis:**Dry

### Lab Control Sample
KQ2313786-04

| Analyte Name | Analytical Method | Result | Spike Amount | % Rec | % Rec Limits |
|---|---|---|---|---|---|
| Phosphorus | 6010C | 490 | 500 | 98 | 80-120 |
| Potassium | 6010C | 965 | 1000 | 97 | 80-120 |
| Sulfur | 6010C | 475 | 500 | 95 | 80-120 |

**ALS Group USA, Corp.**
**dba ALS Environmental**

QA/QC Report

**Client:** LOTT Clean Water Alliance
**Project:** LOTTBSAUG23
**Sample Matrix:** Sludge

**Service Request:** K2308760
**Date Analyzed:** 08/17/23

## Lab Control Sample Summary
## Total Metals

**Units:**mg/Kg
**Basis:**Dry

**Lab Control Sample**
KQ2313786-04

| Analyte Name | Analytical Method | Result | Spike Amount | % Rec | % Rec Limits |
|---|---|---|---|---|---|
| Antimony | 6020A | 103 | 100 | 103 | 80-120 |
| Arsenic | 6020A | 105 | 100 | 105 | 80-120 |
| Beryllium | 6020A | 10.4 | 10.0 | 104 | 80-120 |
| Cadmium | 6020A | 10.2 | 10.0 | 102 | 80-120 |
| Chromium | 6020A | 42.4 | 40.0 | 106 | 80-120 |
| Copper | 6020A | 50.8 | 50.0 | 102 | 80-120 |
| Lead | 6020A | 98.1 | 100 | 98 | 80-120 |
| Molybdenum | 6020A | 111 | 100 | 111 | 80-120 |
| Nickel | 6020A | 104 | 100 | 104 | 80-120 |
| Selenium | 6020A | 102 | 100 | 102 | 80-120 |
| Silver | 6020A | 10.3 | 10.0 | 103 | 80-120 |
| Thallium | 6020A | 20.2 | 20.0 | 101 | 80-120 |
| Zinc | 6020A | 104 | 100 | 104 | 80-120 |

**Client:** LOTT Clean Water Alliance
**Project:** LOTTBSAUG23
**Sample Matrix:** Sludge

**Service Request:** K2308760
**Date Analyzed:** 08/17/23

## Lab Control Sample Summary
## Total Metals

**Units:**mg/Kg
**Basis:**Dry

### Lab Control Sample
KQ2313896-04

| Analyte Name | Analytical Method | Result | Spike Amount | % Rec | % Rec Limits |
|---|---|---|---|---|---|
| Mercury | 7471B | 0.535 | 0.500 | 107 | 80-120 |

# Low Level Organochlorine Pesticides by GC

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

| | | | |
|---|---|---|---|
| **Client:** | LOTT Clean Water Alliance | **Service Request:** | K2308760 |
| **Project:** | LOTTBSAUG23 | **Date Collected:** | 08/03/23 08:00 |
| **Sample Matrix:** | Sludge | **Date Received:** | 08/04/23 11:30 |
| **Sample Name:** | Biosolids | **Units:** | ug/Kg |
| **Lab Code:** | K2308760-001 | **Basis:** | Dry |

## Low Level Organochlorine Pesticides by GC

**Analysis Method:** 8081B
**Prep Method:** EPA 3546

| Analyte Name | Result | MRL | Dil. | Date Analyzed | Date Extracted | Q |
|---|---|---|---|---|---|---|
| Aldrin | ND U | 5.7 | 1 | 09/22/23 04:08 | 8/10/23 | * |
| alpha-BHC | ND U | 2.9 | 1 | 09/22/23 04:08 | 8/10/23 | * |
| beta-BHC | ND U | 2.9 | 1 | 09/22/23 04:08 | 8/10/23 | * |
| delta-BHC | ND U | 2.9 | 1 | 09/22/23 04:08 | 8/10/23 | * |
| gamma-BHC (Lindane) | ND Ui | 21 | 1 | 09/22/23 04:08 | 8/10/23 | * |
| cis-Chlordane | ND U | 2.9 | 1 | 09/22/23 04:08 | 8/10/23 | * |
| trans-Chlordane | ND U | 2.9 | 1 | 09/22/23 04:08 | 8/10/23 | * |
| 4,4'-DDD | ND U | 5.7 | 1 | 09/22/23 04:08 | 8/10/23 | * |
| 4,4'-DDE | ND U | 2.9 | 1 | 09/22/23 04:08 | 8/10/23 | * |
| 4,4'-DDT | ND U | 5.7 | 1 | 09/22/23 04:08 | 8/10/23 | * |
| Dieldrin | ND U | 2.9 | 1 | 09/22/23 04:08 | 8/10/23 | * |
| Endosulfan I | ND U | 2.9 | 1 | 09/22/23 04:08 | 8/10/23 | * |
| Endosulfan II | ND U | 5.7 | 1 | 09/22/23 04:08 | 8/10/23 | * |
| Endosulfan Sulfate | ND U | 5.7 | 1 | 09/22/23 04:08 | 8/10/23 | * |
| Endrin | ND U | 2.9 | 1 | 09/22/23 04:08 | 8/10/23 | * |
| Endrin Aldehyde | ND U | 5.7 | 1 | 09/22/23 04:08 | 8/10/23 | * |
| Endrin Ketone | ND U | 2.9 | 1 | 09/22/23 04:08 | 8/10/23 | * |
| Heptachlor | ND U | 2.9 | 1 | 09/22/23 04:08 | 8/10/23 | * |
| Heptachlor Epoxide | ND U | 5.7 | 1 | 09/22/23 04:08 | 8/10/23 | * |
| Methoxychlor | ND U | 5.7 | 1 | 09/22/23 04:08 | 8/10/23 | * |
| Toxaphene | ND U | 290 | 1 | 08/19/23 03:58 | 8/10/23 | |

| Surrogate Name | % Rec | Control Limits | Date Analyzed | Q |
|---|---|---|---|---|
| Decachlorobiphenyl | 120 | 10 - 134 | 09/22/23 04:08 | |
| Tetrachloro-m-xylene | 66 | 10 - 121 | 09/22/23 04:08 | |

**Client:** LOTT Clean Water Alliance **Service Request:** K2308760
**Project:** LOTTBSAUG23
**Sample Matrix:** Sludge

## SURROGATE RECOVERY SUMMARY
## Low Level Organochlorine Pesticides by GC

**Analysis Method:** 8081B
**Extraction Method:** EPA 3546

| Sample Name | Lab Code | Decachlorobiphenyl 10 - 134 | Tetrachloro-m-xylene 10 - 121 |
|---|---|---|---|
| Biosolids | K2308760-001 | 120 | 66 |
| Lab Control Sample | KQ2313841-01 | 63 | 66 |
| Duplicate Lab Control Sample | KQ2313841-02 | 64 | 67 |
| Lab Control Sample | KQ2313841-03 | 71 | 76 |
| Duplicate Lab Control Sample | KQ2313841-04 | 71 | 79 |
| Method Blank | KQ2313841-05 | 72 | 75 |

Analytical Report

| | | | |
|---|---|---|---|
| **Client:** | LOTT Clean Water Alliance | **Service Request:** | K2308760 |
| **Project:** | LOTTBSAUG23 | **Date Collected:** | NA |
| **Sample Matrix:** | Sludge | **Date Received:** | NA |
| **Sample Name:** | Method Blank | **Units:** | ug/Kg |
| **Lab Code:** | KQ2313841-05 | **Basis:** | Dry |

## Low Level Organochlorine Pesticides by GC

**Analysis Method:** 8081B
**Prep Method:** EPA 3546

| Analyte Name | Result | MRL | Dil. | Date Analyzed | Date Extracted | Q |
|---|---|---|---|---|---|---|
| Aldrin | ND U | 2.0 | 1 | 08/19/23 01:25 | 8/10/23 | |
| alpha-BHC | ND U | 1.0 | 1 | 08/19/23 01:25 | 8/10/23 | |
| beta-BHC | ND U | 1.0 | 1 | 08/19/23 01:25 | 8/10/23 | |
| delta-BHC | ND U | 1.0 | 1 | 08/19/23 01:25 | 8/10/23 | |
| gamma-BHC (Lindane) | ND U | 1.0 | 1 | 08/19/23 01:25 | 8/10/23 | |
| cis-Chlordane | ND U | 1.0 | 1 | 08/19/23 01:25 | 8/10/23 | |
| trans-Chlordane | ND U | 1.0 | 1 | 08/19/23 01:25 | 8/10/23 | |
| 4,4'-DDD | ND U | 2.0 | 1 | 08/19/23 01:25 | 8/10/23 | |
| 4,4'-DDE | ND U | 1.0 | 1 | 08/19/23 01:25 | 8/10/23 | |
| 4,4'-DDT | ND U | 2.0 | 1 | 08/19/23 01:25 | 8/10/23 | |
| Dieldrin | ND U | 0.91 | 1 | 08/19/23 01:25 | 8/10/23 | |
| Endosulfan I | ND U | 1.0 | 1 | 08/19/23 01:25 | 8/10/23 | |
| Endosulfan II | ND U | 2.0 | 1 | 08/19/23 01:25 | 8/10/23 | |
| Endosulfan Sulfate | ND U | 2.0 | 1 | 08/19/23 01:25 | 8/10/23 | |
| Endrin | ND U | 1.0 | 1 | 08/19/23 01:25 | 8/10/23 | |
| Endrin Aldehyde | ND U | 2.0 | 1 | 08/19/23 01:25 | 8/10/23 | |
| Endrin Ketone | ND U | 1.0 | 1 | 08/19/23 01:25 | 8/10/23 | |
| Heptachlor | ND U | 1.0 | 1 | 08/19/23 01:25 | 8/10/23 | |
| Heptachlor Epoxide | ND U | 2.0 | 1 | 08/19/23 01:25 | 8/10/23 | |
| Methoxychlor | ND U | 2.0 | 1 | 08/19/23 01:25 | 8/10/23 | |
| Toxaphene | ND U | 100 | 1 | 08/19/23 01:25 | 8/10/23 | |

| Surrogate Name | % Rec | Control Limits | Date Analyzed | Q |
|---|---|---|---|---|
| Decachlorobiphenyl | 72 | 10 - 134 | 08/19/23 01:25 | |
| Tetrachloro-m-xylene | 75 | 10 - 121 | 08/19/23 01:25 | |

| | | | |
|---|---|---|---|
| **Client:** | LOTT Clean Water Alliance | **Service Request:** | K2308760 |
| **Project:** | LOTTBSAUG23 | **Date Analyzed:** | 09/22/23 |
| **Sample Matrix:** | Sludge | **Date Extracted:** | 08/10/23 |

## Duplicate Lab Control Sample Summary
## Low Level Organochlorine Pesticides by GC

| | | | |
|---|---|---|---|
| **Analysis Method:** | 8081B | **Units:** | ug/Kg |
| **Prep Method:** | EPA 3546 | **Basis:** | Dry |
| | | **Analysis Lot:** | 818352 |

| | Lab Control Sample KQ2313841-01 | | | Duplicate Lab Control Sample KQ2313841-02 | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **Analyte Name** | **Result** | **Spike Amount** | **% Rec** | **Result** | **Spike Amount** | **% Rec** | **% Rec Limits** | **RPD** | **RPD Limit** |
| 4,4'-DDD | 16.9 | 25.0 | 68 | 18.0 | 25.0 | 72 | 10-180 | 7 | 40 |
| 4,4'-DDE | 15.1 | 25.0 | 60 | 15.5 | 25.0 | 62 | 17-94 | 3 | 40 |
| 4,4'-DDT | 15.9 | 25.0 | 64 | 16.8 | 25.0 | 67 | 17-104 | 5 | 40 |
| Aldrin | 15.2 | 25.0 | 61 | 16.3 | 25.0 | 65 | 18-89 | 7 | 40 |
| alpha-BHC | 15.0 | 25.0 | 60 | 16.1 | 25.0 | 64 | 16-96 | 7 | 40 |
| beta-BHC | 15.4 | 25.0 | 61 | 16.6 | 25.0 | 66 | 16-106 | 8 | 40 |
| cis-Chlordane | 14.6 | 25.0 | 58 | 15.1 | 25.0 | 60 | 20-93 | 4 | 40 |
| delta-BHC | 15.0 | 25.0 | 60 | 16.0 | 25.0 | 64 | 20-95 | 7 | 40 |
| Dieldrin | 14.5 | 25.0 | 58 | 15.3 | 25.0 | 61 | 19-88 | 6 | 40 |
| Endosulfan I | 14.7 | 25.0 | 59 | 15.1 | 25.0 | 61 | 16-87 | 3 | 40 |
| Endosulfan II | 14.6 | 25.0 | 58 | 15.9 | 25.0 | 64 | 15-117 | 9 | 40 |
| Endosulfan Sulfate | 13.3 | 25.0 | 53 | 14.3 | 25.0 | 57 | 17-98 | 8 | 40 |
| Endrin | 14.5 | 25.0 | 58 | 16.0 | 25.0 | 64 | 10-107 | 10 | 40 |
| Endrin Aldehyde | 15.3 | 25.0 | 61 | 15.9 | 25.0 | 64 | 21-94 | 4 | 40 |
| Endrin Ketone | 16.7 | 25.0 | 67 | 17.9 | 25.0 | 72 | 19-97 | 7 | 40 |
| gamma-BHC (Lindane) | 15.1 | 25.0 | 60 | 15.9 | 25.0 | 64 | 17-97 | 5 | 40 |
| Heptachlor | 15.3 | 25.0 | 61 | 16.1 | 25.0 | 64 | 13-111 | 5 | 40 |
| Heptachlor Epoxide | 14.4 | 25.0 | 58 | 15.1 | 25.0 | 60 | 18-92 | 4 | 40 |
| Methoxychlor | 16.1 | 25.0 | 65 | 15.6 | 25.0 | 63 | 17-122 | 3 | 40 |
| trans-Chlordane | 15.4 | 25.0 | 62 | 16.1 | 25.0 | 64 | 10-103 | 4 | 40 |

| | | | |
|---|---|---|---|
| **Client:** | LOTT Clean Water Alliance | **Service Request:** | K2308760 |
| **Project:** | LOTTBSAUG23 | **Date Analyzed:** | 08/19/23 |
| **Sample Matrix:** | Sludge | **Date Extracted:** | 08/10/23 |

## Duplicate Lab Control Sample Summary
## Low Level Organochlorine Pesticides by GC

| | | | |
|---|---|---|---|
| **Analysis Method:** | 8081B | **Units:** | ug/Kg |
| **Prep Method:** | EPA 3546 | **Basis:** | Dry |
| | | **Analysis Lot:** | 814449 |

| | Lab Control Sample KQ2313841-03 | | | Duplicate Lab Control Sample KQ2313841-04 | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **Analyte Name** | **Result** | **Spike Amount** | **% Rec** | **Result** | **Spike Amount** | **% Rec** | **% Rec Limits** | **RPD** | **RPD Limit** |
| Toxaphene | 859 | 1000 | 86 | 954 | 1000 | 95 | 16-114 | 11 | 40 |

Confirmation Results

**Client:** LOTT Clean Water Alliance
**Project:** LOTTBSAUG23
**Matrix:** Sludge

**Service Request:** K2308760
**Date Collected:** NA
**Date Received:**

**Sample Name:** Lab Control Sample
**Lab Code:** KQ2313841-01

**Units:** ug/Kg
**Basis:** Dry

## Low Level Organochlorine Pesticides by GC

**Analytical Method:** 8081B
**Prep Method:** EPA 3546

| Analyte Name | MRL | Primary Result | Confirmation Result | RPD | Q | Dilution Factor | Date Analyzed |
|---|---|---|---|---|---|---|---|
| 4,4'-DDD | 2.0 | 16.9 | 17.4 | 3 | | 1 | 09/22/23 02:06 |
| 4,4'-DDE | 1.0 | 15.1 | 15.3 | 1 | | 1 | 09/22/23 02:06 |
| 4,4'-DDT | 2.0 | 15.9 | 17.0 | 7 | | 1 | 09/22/23 02:06 |
| Aldrin | 2.0 | 15.2 | 15.8 | 4 | | 1 | 09/22/23 02:06 |
| Dieldrin | 1.0 | 14.5 | 15.1 | 4 | | 1 | 09/22/23 02:06 |
| Endosulfan I | 1.0 | 14.7 | 15.3 | 4 | | 1 | 09/22/23 02:06 |
| Endosulfan II | 2.0 | 14.6 | 15.5 | 6 | | 1 | 09/22/23 02:06 |
| Endosulfan Sulfate | 2.0 | 13.3 | 17.0 | 24 | | 1 | 09/22/23 02:06 |
| Endrin | 1.0 | 14.5 | 21.2 | 38 | | 1 | 09/22/23 02:06 |
| Endrin Aldehyde | 2.0 | 15.3 | 16.7 | 9 | | 1 | 09/22/23 02:06 |
| Endrin Ketone | 1.0 | 16.7 | 17.1 | 2 | | 1 | 09/22/23 02:06 |
| Heptachlor | 1.0 | 15.3 | 18.6 | 19 | | 1 | 09/22/23 02:06 |
| Heptachlor Epoxide | 2.0 | 14.4 | 14.6 | 1 | | 1 | 09/22/23 02:06 |
| Methoxychlor | 2.0 | 16.1 | 17.5 | 8 | | 1 | 09/22/23 02:06 |
| alpha-BHC | 1.0 | 15.0 | 15.1 | <1 | | 1 | 09/22/23 02:06 |
| beta-BHC | 1.0 | 15.4 | 15.7 | 2 | | 1 | 09/22/23 02:06 |
| cis-Chlordane | 1.0 | 14.6 | 14.7 | <1 | | 1 | 09/22/23 02:06 |
| delta-BHC | 1.0 | 15.0 | 15.3 | 2 | | 1 | 09/22/23 02:06 |
| gamma-BHC (Lindane) | 1.0 | 15.1 | 16.5 | 9 | | 1 | 09/22/23 02:06 |
| trans-Chlordane | 1.0 | 15.4 | 16.4 | 6 | | 1 | 09/22/23 02:06 |

Confirmation Results

**Client:** LOTT Clean Water Alliance
**Project:** LOTTBSAUG23
**Matrix:** Sludge

**Service Request:** K2308760
**Date Collected:** NA
**Date Received:**

**Sample Name:** Duplicate Lab Control Sample
**Lab Code:** KQ2313841-02

**Units:** ug/Kg
**Basis:** Dry

## Low Level Organochlorine Pesticides by GC

**Analytical Method:** 8081B
**Prep Method:** EPA 3546

| Analyte Name | MRL | Primary Result | Confirmation Result | RPD | Q | Dilution Factor | Date Analyzed |
|---|---|---|---|---|---|---|---|
| 4,4'-DDD | 2.0 | 18.0 | 19.3 | 7 | | 1 | 09/22/23 02:37 |
| 4,4'-DDE | 1.0 | 15.5 | 15.8 | 2 | | 1 | 09/22/23 02:37 |
| 4,4'-DDT | 2.0 | 16.8 | 17.9 | 6 | | 1 | 09/22/23 02:37 |
| Aldrin | 2.0 | 16.3 | 16.7 | 2 | | 1 | 09/22/23 02:37 |
| Dieldrin | 1.0 | 15.3 | 15.6 | 2 | | 1 | 09/22/23 02:37 |
| Endosulfan I | 1.0 | 15.1 | 16.6 | 9 | | 1 | 09/22/23 02:37 |
| Endosulfan II | 2.0 | 15.9 | 18.3 | 14 | | 1 | 09/22/23 02:37 |
| Endosulfan Sulfate | 2.0 | 14.3 | 17.9 | 22 | | 1 | 09/22/23 02:37 |
| Endrin | 1.0 | 16.0 | 24.0 | 40 | | 1 | 09/22/23 02:37 |
| Endrin Aldehyde | 2.0 | 15.9 | 20.7 | 26 | | 1 | 09/22/23 02:37 |
| Endrin Ketone | 1.0 | 17.9 | 18.4 | 3 | | 1 | 09/22/23 02:37 |
| Heptachlor | 1.0 | 16.1 | 21.5 | 29 | | 1 | 09/22/23 02:37 |
| Heptachlor Epoxide | 2.0 | 15.1 | 15.2 | <1 | | 1 | 09/22/23 02:37 |
| Methoxychlor | 2.0 | 15.6 | 19.1 | 20 | | 1 | 09/22/23 02:37 |
| alpha-BHC | 1.0 | 16.1 | 16.2 | <1 | | 1 | 09/22/23 02:37 |
| beta-BHC | 1.0 | 16.6 | 16.7 | <1 | | 1 | 09/22/23 02:37 |
| cis-Chlordane | 1.0 | 15.1 | 15.5 | 3 | | 1 | 09/22/23 02:37 |
| delta-BHC | 1.0 | 16.0 | 16.4 | 2 | | 1 | 09/22/23 02:37 |
| gamma-BHC (Lindane) | 1.0 | 15.9 | 16.2 | 2 | | 1 | 09/22/23 02:37 |
| trans-Chlordane | 1.0 | 16.1 | 17.1 | 6 | | 1 | 09/22/23 02:37 |

Confirmation Results

**Client:** LOTT Clean Water Alliance
**Project:** LOTTBSAUG23
**Matrix:** Sludge

**Service Request:** K2308760
**Date Collected:** NA
**Date Received:**

**Sample Name:** Lab Control Sample
**Lab Code:** KQ2313841-03

**Units:** ug/Kg
**Basis:** Dry

## Low Level Organochlorine Pesticides by GC

**Analytical Method:** 8081B
**Prep Method:** EPA 3546

| Analyte Name | MRL | Primary Result | Confirmation Result | RPD | Q | Dilution Factor | Date Analyzed |
|---|---|---|---|---|---|---|---|
| Toxaphene | 100 | 859 | 941 | 9 | | 1 | 08/19/23 02:56 |

Confirmation Results

**Client:** LOTT Clean Water Alliance
**Project:** LOTTBSAUG23
**Matrix:** Sludge

**Service Request:** K2308760
**Date Collected:** NA
**Date Received:**

**Sample Name:** Duplicate Lab Control Sample
**Lab Code:** KQ2313841-04

**Units:** ug/Kg
**Basis:** Dry

## Low Level Organochlorine Pesticides by GC

**Analytical Method:** 8081B
**Prep Method:** EPA 3546

| Analyte Name | MRL | Primary Result | Confirmation Result | RPD | Q | Dilution Factor | Date Analyzed |
|---|---|---|---|---|---|---|---|
| Toxaphene | 100 | 954 | 1030 | 8 | | 1 | 08/19/23 03:27 |

Confirmation Results

**Client:** LOTT Clean Water Alliance
**Project:** LOTTBSAUG23
**Matrix:** Sludge

**Service Request:** K2308760
**Date Collected:** NA
**Date Received:**

**Sample Name:** Continuing Calibration Blank
**Lab Code:** KQ2316854-03

**Units:** ug/Kg
**Basis:** Dry

## Low Level Organochlorine Pesticides by GC

**Analytical Method:** 8081B
**Prep Method:** None

| Analyte Name | MRL | Primary Result | Confirmation Result | RPD | Q | Dilution Factor | Date Analyzed |
|---|---|---|---|---|---|---|---|
| beta-BHC | 1.0 | 1.7 | 1.8 | 6 | | 1 | 09/21/23 22:31 |

# Polychlorinated Biphenyls (PCBs)

**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:** | LOTT Clean Water Alliance | **Service Request:** | K2308760 |
| **Project:** | LOTTBSAUG23 | **Date Collected:** | 08/03/2023 |
| **Sample Matrix:** | Sludge | **Date Received:** | 08/04/2023 |

## Polychlorinated Biphenyls (PCBs)

| | | | |
|---|---|---|---|
| **Sample Name:** | Biosolids | **Units:** | ug/Kg |
| **Lab Code:** | K2308760-001 | **Basis:** | Dry |
| **Extraction Method:** | EPA 3546 | **Level:** | Low |
| **Analysis Method:** | 8082A | | |

| Analyte Name | Result | Q | MRL | MDL | Dilution Factor | Date Extracted | Date Analyzed | Extraction Lot | Note |
|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1016 | ND | U | 160 | 38 | 10 | 08/10/23 | 10/10/23 | KWG2301380 | |
| Aroclor 1221 | ND | U | 160 | 38 | 10 | 08/10/23 | 10/10/23 | KWG2301380 | |
| Aroclor 1232 | ND | U | 160 | 38 | 10 | 08/10/23 | 10/10/23 | KWG2301380 | |
| Aroclor 1242 | ND | U | 160 | 38 | 10 | 08/10/23 | 10/10/23 | KWG2301380 | |
| Aroclor 1248 | ND | U | 160 | 38 | 10 | 08/10/23 | 10/10/23 | KWG2301380 | |
| Aroclor 1254 | ND | U | 160 | 38 | 10 | 08/10/23 | 10/10/23 | KWG2301380 | |
| Aroclor 1260 | ND | U | 160 | 38 | 10 | 08/10/23 | 10/10/23 | KWG2301380 | |

| Surrogate Name | %Rec | Control Limits | Date Analyzed | Note |
|---|---|---|---|---|
| Decachlorobiphenyl | 125 | 20-155 | 10/10/23 | Acceptable |

**Comments:**

Analytical Results

| | | | |
|---|---|---|---|
| **Client:** | LOTT Clean Water Alliance | **Service Request:** | K2308760 |
| **Project:** | LOTTBSAUG23 | **Date Collected:** | NA |
| **Sample Matrix:** | Solid | **Date Received:** | NA |

## Polychlorinated Biphenyls (PCBs)

| | | | |
|---|---|---|---|
| **Sample Name:** | Method Blank | **Units:** | ug/Kg |
| **Lab Code:** | KWG2301380-4 | **Basis:** | Dry |
| **Extraction Method:** | EPA 3546 | **Level:** | Low |
| **Analysis Method:** | 8082A | | |

| Analyte Name | Result | Q | MRL | MDL | Dilution Factor | Date Extracted | Date Analyzed | Extraction Lot | Note |
|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1016 | ND | U | 1.9 | 0.50 | 1 | 08/08/23 | 08/22/23 | KWG2301380 | |
| Aroclor 1221 | ND | U | 1.9 | 0.50 | 1 | 08/08/23 | 08/22/23 | KWG2301380 | |
| Aroclor 1232 | ND | U | 1.9 | 0.50 | 1 | 08/08/23 | 08/22/23 | KWG2301380 | |
| Aroclor 1242 | ND | U | 1.9 | 0.50 | 1 | 08/08/23 | 08/22/23 | KWG2301380 | |
| Aroclor 1248 | ND | U | 1.9 | 0.50 | 1 | 08/08/23 | 08/22/23 | KWG2301380 | |
| Aroclor 1254 | ND | U | 1.9 | 0.50 | 1 | 08/08/23 | 08/22/23 | KWG2301380 | |
| Aroclor 1260 | ND | U | 1.9 | 0.50 | 1 | 08/08/23 | 08/22/23 | KWG2301380 | |

| Surrogate Name | %Rec | Control Limits | Date Analyzed | Note |
|---|---|---|---|---|
| Decachlorobiphenyl | 101 | 20-155 | 08/22/23 | Acceptable |

**Comments:**

QA/QC Report

**Client:** LOTT Clean Water Alliance **Service Request:** K2308760
**Project:** LOTTBSAUG23
**Sample Matrix:** Sludge

## Surrogate Recovery Summary
## Polychlorinated Biphenyls (PCBs)

**Extraction Method:** EPA 3546 **Units:** Percent
**Analysis Method:** 8082A **Level:** Low

| Sample Name | Lab Code | Sur1 |
|---|---|---|
| Biosolids | K2308760-001 | 125 D # |
| Method Blank | KWG2301380-4 | 101 |
| Lab Control Sample | KWG2301380-3 | 93 |

**Surrogate Recovery Control Limits (%)**

Sur1 = Decachlorobiphenyl 20-155

**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:** | LOTT Clean Water Alliance | **Service Request:** | K2308760 |
| **Project:** | LOTTBSAUG23 | **Date Extracted:** | 08/08/2023 |
| **Sample Matrix:** | Solid | **Date Analyzed:** | 08/22/2023 |

## Lab Control Spike Summary
## Polychlorinated Biphenyls (PCBs)

| | | | |
|---|---|---|---|
| **Extraction Method:** | EPA 3546 | **Units:** | ug/Kg |
| **Analysis Method:** | 8082A | **Basis:** | Dry |
| | | **Level:** | Low |
| | | **Extraction Lot:** | KWG2301380 |

Lab Control Sample
KWG2301380-3
**Lab Control Spike**

| Analyte Name | Result | Spike Amount | %Rec | %Rec Limits |
|---|---|---|---|---|
| Aroclor 1016 | 11.8 | 20.0 | 59 | 44-119 |
| Aroclor 1260 | 14.3 | 20.0 | 72 | 56-130 |

**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 by GC/MS

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

Analytical Report

| | | | |
|---|---|---|---|
| **Client:** | LOTT Clean Water Alliance | **Service Request:** | K2308760 |
| **Project:** | LOTTBSAUG23 | **Date Collected:** | 08/03/23 08:00 |
| **Sample Matrix:** | Sludge | **Date Received:** | 08/04/23 11:30 |
| **Sample Name:** | Biosolids | **Units:** | mg/Kg |
| **Lab Code:** | K2308760-001 | **Basis:** | Dry |

## Volatile Organic Compounds by GC/MS

**Analysis Method:** 8260C
**Prep Method:** None

| Analyte Name | Result | MRL | Dil. | Date Analyzed | Q |
|---|---|---|---|---|---|
| Acetone | **11** | 8.3 | 1 | 08/10/23 00:45 | * |

| Surrogate Name | % Rec | Control Limits | Date Analyzed | Q |
|---|---|---|---|---|
| 4-Bromofluorobenzene | 101 | 64 - 132 | 08/10/23 00:45 | |
| Dibromofluoromethane | 92 | 55 - 132 | 08/10/23 00:45 | |
| Toluene-d8 | 98 | 81 - 124 | 08/10/23 00:45 | |

**Client:** LOTT Clean Water Alliance **Service Request:** K2308760
**Project:** LOTTBSAUG23
**Sample Matrix:** Sludge

## SURROGATE RECOVERY SUMMARY
## Volatile Organic Compounds by GC/MS

**Analysis Method:** 8260C
**Extraction Method:** None

| Sample Name | Lab Code | 4-Bromofluorobenzene 64 - 132 | Dibromofluoromethane 55 - 132 | Toluene-d8 81 - 124 |
|---|---|---|---|---|
| Biosolids | K2308760-001 | 101 | 92 | 98 |
| Lab Control Sample | KQ2314218-03 | 107 | 104 | 106 |
| Duplicate Lab Control Sample | KQ2314218-04 | 107 | 103 | 105 |
| Method Blank | KQ2314218-05 | 99 | 97 | 103 |

Analytical Report

| | | | |
|---|---|---|---|
| **Client:** | LOTT Clean Water Alliance | **Service Request:** | K2308760 |
| **Project:** | LOTTBSAUG23 | **Date Collected:** | NA |
| **Sample Matrix:** | Sludge | **Date Received:** | NA |
| **Sample Name:** | Method Blank | **Units:** | mg/Kg |
| **Lab Code:** | KQ2314218-05 | **Basis:** | Dry |

## Volatile Organic Compounds by GC/MS

**Analysis Method:** 8260C
**Prep Method:** None

| Analyte Name | Result | MRL | Dil. | Date Analyzed | Q |
|---|---|---|---|---|---|
| Acetone | ND U | 1.0 | 1 | 08/09/23 19:02 | |

| Surrogate Name | % Rec | Control Limits | Date Analyzed | Q |
|---|---|---|---|---|
| 4-Bromofluorobenzene | 99 | 64 - 132 | 08/09/23 19:02 | |
| Dibromofluoromethane | 97 | 55 - 132 | 08/09/23 19:02 | |
| Toluene-d8 | 103 | 81 - 124 | 08/09/23 19:02 | |

| | | | |
|---|---|---|---|
| **Client:** | LOTT Clean Water Alliance | **Service Request:** | K2308760 |
| **Project:** | LOTTBSAUG23 | **Date Analyzed:** | 08/09/23 |
| **Sample Matrix:** | Sludge | **Date Extracted:** | NA |

## Duplicate Lab Control Sample Summary
## Volatile Organic Compounds by GC/MS

| | | | |
|---|---|---|---|
| **Analysis Method:** | 8260C | **Units:** | mg/Kg |
| **Prep Method:** | None | **Basis:** | Dry |
| | | **Analysis Lot:** | 813600 |

| | Lab Control Sample KQ2314218-03 | | | Duplicate Lab Control Sample KQ2314218-04 | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **Analyte Name** | **Result** | **Spike Amount** | **% Rec** | **Result** | **Spike Amount** | **% Rec** | **% Rec Limits** | **RPD** | **RPD Limit** |
| Acetone | 7.74 | 5.00 | 155 * | 7.51 | 5.00 | 150 * | 47-142 | 3 | 40 |

# Volatile Organic Compounds by GC/MS, Unpreserved

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

Analytical Report

| | | | |
|---|---|---|---|
| **Client:** | LOTT Clean Water Alliance | **Service Request:** | K2308760 |
| **Project:** | LOTTBSAUG23 | **Date Collected:** | 08/03/23 08:00 |
| **Sample Matrix:** | Sludge | **Date Received:** | 08/04/23 11:30 |
| **Sample Name:** | Biosolids | **Units:** | ug/Kg |
| **Lab Code:** | K2308760-001 | **Basis:** | Dry |

## Volatile Organic Compounds by GC/MS, Unpreserved

**Analysis Method:** 8260C
**Prep Method:** None

| Analyte Name | Result | | MRL | MDL | Dil. | Date Analyzed | Q |
|---|---|---|---|---|---|---|---|
| 1,1,1,2-Tetrachloroethane | ND | U | 15 | 0.35 | 1 | 08/08/23 17:53 | * |
| 1,1,1-Trichloroethane (TCA) | ND | U | 15 | 0.35 | 1 | 08/08/23 17:53 | * |
| 1,1,2,2-Tetrachloroethane | ND | U | 15 | 0.41 | 1 | 08/08/23 17:53 | * |
| 1,1,2-Trichloroethane | ND | U | 15 | 0.47 | 1 | 08/08/23 17:53 | * |
| 1,1-Dichloroethane | ND | U | 15 | 0.38 | 1 | 08/08/23 17:53 | * |
| 1,1-Dichloroethene | ND | U | 15 | 0.78 | 1 | 08/08/23 17:53 | * |
| 1,1-Dichloropropene | ND | U | 15 | 0.41 | 1 | 08/08/23 17:53 | * |
| 1,2,3-Trichlorobenzene | ND | U | 62 | 0.59 | 1 | 08/08/23 17:53 | * |
| 1,2,3-Trichloropropane | ND | U | 15 | 1.4 | 1 | 08/08/23 17:53 | * |
| 1,2,4-Trichlorobenzene | ND | U | 62 | 0.41 | 1 | 08/08/23 17:53 | * |
| 1,2,4-Trimethylbenzene | **9.8** | **J** | 62 | 0.17 | 1 | 08/08/23 17:53 | * |
| 1,2-Dibromo-3-chloropropane | ND | U | 62 | 1.3 | 1 | 08/08/23 17:53 | * |
| 1,2-Dibromoethane (EDB) | ND | U | 62 | 0.30 | 1 | 08/08/23 17:53 | * |
| 1,2-Dichlorobenzene | ND | U | 15 | 0.24 | 1 | 08/08/23 17:53 | * |
| 1,2-Dichloroethane (EDC) | ND | U | 15 | 0.22 | 1 | 08/08/23 17:53 | * |
| 1,2-Dichloropropane | ND | U | 15 | 0.41 | 1 | 08/08/23 17:53 | * |
| 1,3,5-Trimethylbenzene | ND | U | 62 | 0.29 | 1 | 08/08/23 17:53 | * |
| 1,3-Dichlorobenzene | ND | U | 15 | 0.30 | 1 | 08/08/23 17:53 | * |
| 1,3-Dichloropropane | ND | U | 15 | 0.38 | 1 | 08/08/23 17:53 | * |
| 1,4-Dichlorobenzene | **17** | | 15 | 0.27 | 1 | 08/08/23 17:53 | * |
| 2,2-Dichloropropane | ND | U | 15 | 0.31 | 1 | 08/08/23 17:53 | * |
| 2-Butanone (MEK) | **930** | | 62 | 2.8 | 1 | 08/08/23 17:53 | * |
| 2-Chlorotoluene | ND | U | 62 | 0.38 | 1 | 08/08/23 17:53 | * |
| 2-Hexanone | ND | U | 62 | 2.9 | 1 | 08/08/23 17:53 | * |
| 4-Chlorotoluene | ND | U | 62 | 0.28 | 1 | 08/08/23 17:53 | * |
| 4-Isopropyltoluene | **370** | | 62 | 0.20 | 1 | 08/08/23 17:53 | * |
| 4-Methyl-2-pentanone (MIBK) | **15** | **J** | 62 | 5.6 | 1 | 08/08/23 17:53 | * |
| Acetone | **4000** | **E** | 62 | 9.0 | 1 | 08/08/23 17:53 | * |
| Acrolein | ND | U | 310 | 5.3 | 1 | 08/08/23 17:53 | * |
| Acrylonitrile | ND | U | 62 | 1.4 | 1 | 08/08/23 17:53 | * |
| Benzene | ND | U | 15 | 0.17 | 1 | 08/08/23 17:53 | * |
| Bromobenzene | ND | U | 15 | 0.28 | 1 | 08/08/23 17:53 | * |
| Bromochloromethane | ND | U | 15 | 0.75 | 1 | 08/08/23 17:53 | * |
| Bromodichloromethane | ND | U | 15 | 0.50 | 1 | 08/08/23 17:53 | * |
| Bromoform | ND | U | 15 | 0.44 | 1 | 08/08/23 17:53 | * |
| Bromomethane | ND | U | 15 | 0.62 | 1 | 08/08/23 17:53 | * |
| Carbon Disulfide | **46** | | 15 | 0.29 | 1 | 08/08/23 17:53 | * |
| Carbon Tetrachloride | ND | U | 15 | 0.30 | 1 | 08/08/23 17:53 | * |
| Chlorobenzene | ND | U | 15 | 0.21 | 1 | 08/08/23 17:53 | * |
| Chloroethane | ND | U | 15 | 2.3 | 1 | 08/08/23 17:53 | * |
| Chloroform | ND | U | 15 | 0.35 | 1 | 08/08/23 17:53 | * |

Analytical Report

| | | | |
|---|---|---|---|
| **Client:** | LOTT Clean Water Alliance | **Service Request:** | K2308760 |
| **Project:** | LOTTBSAUG23 | **Date Collected:** | 08/03/23 08:00 |
| **Sample Matrix:** | Sludge | **Date Received:** | 08/04/23 11:30 |
| **Sample Name:** | Biosolids | **Units:** | ug/Kg |
| **Lab Code:** | K2308760-001 | **Basis:** | Dry |

## Volatile Organic Compounds by GC/MS, Unpreserved

**Analysis Method:** 8260C
**Prep Method:** None

| Analyte Name | Result | | MRL | MDL | Dil. | Date Analyzed | Q |
|---|---|---|---|---|---|---|---|
| Chloromethane | ND | U | 15 | 0.56 | 1 | 08/08/23 17:53 | * |
| Dibromochloromethane | ND | U | 15 | 0.56 | 1 | 08/08/23 17:53 | * |
| Dibromomethane | ND | U | 15 | 0.87 | 1 | 08/08/23 17:53 | * |
| Dichlorodifluoromethane | ND | U | 15 | 0.38 | 1 | 08/08/23 17:53 | * |
| Ethylbenzene | **3.3** | **J** | 15 | 0.30 | 1 | 08/08/23 17:53 | * |
| Hexachlorobutadiene | ND | U | 62 | 1.3 | 1 | 08/08/23 17:53 | * |
| Isopropylbenzene | ND | U | 62 | 0.26 | 1 | 08/08/23 17:53 | * |
| Methylene Chloride | ND | U | 31 | 0.50 | 1 | 08/08/23 17:53 | * |
| Naphthalene | **370** | | 62 | 0.41 | 1 | 08/08/23 17:53 | * |
| Styrene | ND | U | 15 | 0.44 | 1 | 08/08/23 17:53 | * |
| Tetrachloroethene (PCE) | ND | U | 15 | 0.50 | 1 | 08/08/23 17:53 | * |
| Toluene | **30** | | 15 | 0.47 | 1 | 08/08/23 17:53 | * |
| Trichloroethene (TCE) | ND | U | 15 | 0.47 | 1 | 08/08/23 17:53 | * |
| Trichlorofluoromethane | ND | U | 15 | 0.27 | 1 | 08/08/23 17:53 | * |
| Vinyl Chloride | ND | U | 15 | 0.56 | 1 | 08/08/23 17:53 | * |
| cis-1,2-Dichloroethene | ND | U | 15 | 0.38 | 1 | 08/08/23 17:53 | * |
| cis-1,3-Dichloropropene | ND | U | 15 | 0.41 | 1 | 08/08/23 17:53 | * |
| m,p-Xylenes | **8.2** | **J** | 15 | 0.31 | 1 | 08/08/23 17:53 | * |
| n-Butylbenzene | ND | U | 62 | 0.22 | 1 | 08/08/23 17:53 | * |
| n-Propylbenzene | **0.99** | **J** | 62 | 0.41 | 1 | 08/08/23 17:53 | * |
| o-Xylene | **3.9** | **J** | 15 | 0.26 | 1 | 08/08/23 17:53 | * |
| sec-Butylbenzene | ND | U | 62 | 0.23 | 1 | 08/08/23 17:53 | * |
| tert-Butylbenzene | ND | U | 62 | 0.44 | 1 | 08/08/23 17:53 | * |
| trans-1,2-Dichloroethene | ND | U | 15 | 0.38 | 1 | 08/08/23 17:53 | * |
| trans-1,3-Dichloropropene | ND | U | 15 | 0.35 | 1 | 08/08/23 17:53 | * |

| Surrogate Name | % Rec | Control Limits | Date Analyzed | Q |
|---|---|---|---|---|
| 4-Bromofluorobenzene | 83 | 61 - 133 | 08/08/23 17:53 | |
| Dibromofluoromethane | 88 | 59 - 134 | 08/08/23 17:53 | |
| Toluene-d8 | 87 | 77 - 122 | 08/08/23 17:53 | |

**Client:** LOTT Clean Water Alliance **Service Request:** K2308760
**Project:** LOTTBSAUG23
**Sample Matrix:** Sludge

## SURROGATE RECOVERY SUMMARY
## Volatile Organic Compounds by GC/MS, Unpreserved

**Analysis Method:** 8260C
**Extraction Method:** None

| Sample Name | Lab Code | 4-Bromofluorobenzene 61 - 133 | Dibromofluoromethane 59 - 134 | Toluene-d8 77 - 122 |
|---|---|---|---|---|
| Biosolids | K2308760-001 | 83 | 88 | 87 |
| Lab Control Sample | KQ2313832-02 | 94 | 91 | 103 |
| Duplicate Lab Control Sample | KQ2313832-03 | 94 | 92 | 102 |
| Method Blank | KQ2313832-04 | 92 | 80 | 100 |

Analytical Report

| | | | |
|---|---|---|---|
| **Client:** | LOTT Clean Water Alliance | **Service Request:** | K2308760 |
| **Project:** | LOTTBSAUG23 | **Date Collected:** | NA |
| **Sample Matrix:** | Sludge | **Date Received:** | NA |
| **Sample Name:** | Method Blank | **Units:** | ug/Kg |
| **Lab Code:** | KQ2313832-04 | **Basis:** | Dry |

## Volatile Organic Compounds by GC/MS, Unpreserved

**Analysis Method:** 8260C
**Prep Method:** None

| Analyte Name | Result | MRL | MDL | Dil. | Date Analyzed | Q |
|---|---|---|---|---|---|---|
| 1,1,1,2-Tetrachloroethane | ND U | 5.0 | 0.11 | 1 | 08/08/23 17:29 | |
| 1,1,1-Trichloroethane (TCA) | ND U | 5.0 | 0.11 | 1 | 08/08/23 17:29 | |
| 1,1,2,2-Tetrachloroethane | ND U | 5.0 | 0.13 | 1 | 08/08/23 17:29 | |
| 1,1,2-Trichloroethane | ND U | 5.0 | 0.15 | 1 | 08/08/23 17:29 | |
| 1,1-Dichloroethane | ND U | 5.0 | 0.12 | 1 | 08/08/23 17:29 | |
| 1,1-Dichloroethene | ND U | 5.0 | 0.25 | 1 | 08/08/23 17:29 | |
| 1,1-Dichloropropene | ND U | 5.0 | 0.13 | 1 | 08/08/23 17:29 | |
| 1,2,3-Trichlorobenzene | ND U | 20 | 0.19 | 1 | 08/08/23 17:29 | |
| 1,2,3-Trichloropropane | ND U | 5.0 | 0.45 | 1 | 08/08/23 17:29 | |
| 1,2,4-Trichlorobenzene | ND U | 20 | 0.13 | 1 | 08/08/23 17:29 | |
| 1,2,4-Trimethylbenzene | ND U | 20 | 0.054 | 1 | 08/08/23 17:29 | |
| 1,2-Dibromo-3-chloropropane | ND U | 20 | 0.40 | 1 | 08/08/23 17:29 | |
| 1,2-Dibromoethane (EDB) | ND U | 20 | 0.094 | 1 | 08/08/23 17:29 | |
| 1,2-Dichlorobenzene | ND U | 5.0 | 0.077 | 1 | 08/08/23 17:29 | |
| 1,2-Dichloroethane (EDC) | ND U | 5.0 | 0.070 | 1 | 08/08/23 17:29 | |
| 1,2-Dichloropropane | ND U | 5.0 | 0.13 | 1 | 08/08/23 17:29 | |
| 1,3,5-Trimethylbenzene | ND U | 20 | 0.092 | 1 | 08/08/23 17:29 | |
| 1,3-Dichlorobenzene | ND U | 5.0 | 0.094 | 1 | 08/08/23 17:29 | |
| 1,3-Dichloropropane | ND U | 5.0 | 0.12 | 1 | 08/08/23 17:29 | |
| 1,4-Dichlorobenzene | ND U | 5.0 | 0.086 | 1 | 08/08/23 17:29 | |
| 2,2-Dichloropropane | ND U | 5.0 | 0.098 | 1 | 08/08/23 17:29 | |
| 2-Butanone (MEK) | ND U | 20 | 0.90 | 1 | 08/08/23 17:29 | |
| 2-Chlorotoluene | ND U | 20 | 0.12 | 1 | 08/08/23 17:29 | |
| 2-Hexanone | ND U | 20 | 0.93 | 1 | 08/08/23 17:29 | |
| 4-Chlorotoluene | ND U | 20 | 0.088 | 1 | 08/08/23 17:29 | |
| 4-Isopropyltoluene | ND U | 20 | 0.064 | 1 | 08/08/23 17:29 | |
| 4-Methyl-2-pentanone (MIBK) | ND U | 20 | 1.8 | 1 | 08/08/23 17:29 | |
| Acetone | ND U | 20 | 2.9 | 1 | 08/08/23 17:29 | |
| Acrolein | ND U | 100 | 1.7 | 1 | 08/08/23 17:29 | |
| Acrylonitrile | ND U | 20 | 0.43 | 1 | 08/08/23 17:29 | |
| Benzene | ND U | 5.0 | 0.054 | 1 | 08/08/23 17:29 | |
| Bromobenzene | ND U | 5.0 | 0.088 | 1 | 08/08/23 17:29 | |
| Bromochloromethane | ND U | 5.0 | 0.24 | 1 | 08/08/23 17:29 | |
| Bromodichloromethane | ND U | 5.0 | 0.16 | 1 | 08/08/23 17:29 | |
| Bromoform | ND U | 5.0 | 0.14 | 1 | 08/08/23 17:29 | |
| Bromomethane | ND U | 5.0 | 0.20 | 1 | 08/08/23 17:29 | |
| Carbon Disulfide | ND U | 5.0 | 0.092 | 1 | 08/08/23 17:29 | |
| Carbon Tetrachloride | ND U | 5.0 | 0.094 | 1 | 08/08/23 17:29 | |
| Chlorobenzene | ND U | 5.0 | 0.065 | 1 | 08/08/23 17:29 | |
| Chloroethane | ND U | 5.0 | 0.74 | 1 | 08/08/23 17:29 | |
| Chloroform | ND U | 5.0 | 0.11 | 1 | 08/08/23 17:29 | |

Analytical Report

| | | | |
|---|---|---|---|
| **Client:** | LOTT Clean Water Alliance | **Service Request:** | K2308760 |
| **Project:** | LOTTBSAUG23 | **Date Collected:** | NA |
| **Sample Matrix:** | Sludge | **Date Received:** | NA |
| **Sample Name:** | Method Blank | **Units:** | ug/Kg |
| **Lab Code:** | KQ2313832-04 | **Basis:** | Dry |

## Volatile Organic Compounds by GC/MS, Unpreserved

**Analysis Method:** 8260C
**Prep Method:** None

| Analyte Name | Result | MRL | MDL | Dil. | Date Analyzed | Q |
|---|---|---|---|---|---|---|
| Chloromethane | ND U | 5.0 | 0.18 | 1 | 08/08/23 17:29 | |
| Dibromochloromethane | ND U | 5.0 | 0.18 | 1 | 08/08/23 17:29 | |
| Dibromomethane | ND U | 5.0 | 0.28 | 1 | 08/08/23 17:29 | |
| Dichlorodifluoromethane | ND U | 5.0 | 0.12 | 1 | 08/08/23 17:29 | |
| Ethylbenzene | ND U | 5.0 | 0.094 | 1 | 08/08/23 17:29 | |
| Hexachlorobutadiene | ND U | 20 | 0.40 | 1 | 08/08/23 17:29 | |
| Isopropylbenzene | ND U | 20 | 0.081 | 1 | 08/08/23 17:29 | |
| Methylene Chloride | ND U | 10 | 0.16 | 1 | 08/08/23 17:29 | |
| Naphthalene | ND U | 20 | 0.13 | 1 | 08/08/23 17:29 | |
| Styrene | ND U | 5.0 | 0.14 | 1 | 08/08/23 17:29 | |
| Tetrachloroethene (PCE) | ND U | 5.0 | 0.16 | 1 | 08/08/23 17:29 | |
| Toluene | ND U | 5.0 | 0.15 | 1 | 08/08/23 17:29 | |
| Trichloroethene (TCE) | ND U | 5.0 | 0.15 | 1 | 08/08/23 17:29 | |
| Trichlorofluoromethane | ND U | 5.0 | 0.085 | 1 | 08/08/23 17:29 | |
| Vinyl Chloride | ND U | 5.0 | 0.18 | 1 | 08/08/23 17:29 | |
| cis-1,2-Dichloroethene | ND U | 5.0 | 0.12 | 1 | 08/08/23 17:29 | |
| cis-1,3-Dichloropropene | ND U | 5.0 | 0.13 | 1 | 08/08/23 17:29 | |
| m,p-Xylenes | ND U | 5.0 | 0.10 | 1 | 08/08/23 17:29 | |
| n-Butylbenzene | ND U | 20 | 0.069 | 1 | 08/08/23 17:29 | |
| n-Propylbenzene | ND U | 20 | 0.13 | 1 | 08/08/23 17:29 | |
| o-Xylene | ND U | 5.0 | 0.081 | 1 | 08/08/23 17:29 | |
| sec-Butylbenzene | ND U | 20 | 0.074 | 1 | 08/08/23 17:29 | |
| tert-Butylbenzene | ND U | 20 | 0.14 | 1 | 08/08/23 17:29 | |
| trans-1,2-Dichloroethene | ND U | 5.0 | 0.12 | 1 | 08/08/23 17:29 | |
| trans-1,3-Dichloropropene | ND U | 5.0 | 0.11 | 1 | 08/08/23 17:29 | |

| Surrogate Name | % Rec | Control Limits | Date Analyzed | Q |
|---|---|---|---|---|
| 4-Bromofluorobenzene | 92 | 61 - 133 | 08/08/23 17:29 | |
| Dibromofluoromethane | 80 | 59 - 134 | 08/08/23 17:29 | |
| Toluene-d8 | 100 | 77 - 122 | 08/08/23 17:29 | |

| | | | |
|---|---|---|---|
| **Client:** | LOTT Clean Water Alliance | **Service Request:** | K2308760 |
| **Project:** | LOTTBSAUG23 | **Date Analyzed:** | 08/08/23 |
| **Sample Matrix:** | Sludge | **Date Extracted:** | NA |

## Duplicate Lab Control Sample Summary
## Volatile Organic Compounds by GC/MS, Unpreserved

| | | | |
|---|---|---|---|
| **Analysis Method:** | 8260C | **Units:** | ug/Kg |
| **Prep Method:** | None | **Basis:** | Dry |
| | | **Analysis Lot:** | 813228 |

| | Lab Control Sample KQ2313832-02 | | | Duplicate Lab Control Sample KQ2313832-03 | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **Analyte Name** | **Result** | **Spike Amount** | **% Rec** | **Result** | **Spike Amount** | **% Rec** | **% Rec Limits** | **RPD** | **RPD Limit** |
| 1,1,1,2-Tetrachloroethane | 44.7 | 50.0 | 89 | 46.4 | 50.0 | 93 | 71-119 | 4 | 40 |
| 1,1,1-Trichloroethane (TCA) | 45.7 | 50.0 | 91 | 46.2 | 50.0 | 92 | 59-146 | 1 | 40 |
| 1,1,2,2-Tetrachloroethane | 39.3 | 50.0 | 79 | 41.0 | 50.0 | 82 | 60-128 | 4 | 40 |
| 1,1,2-Trichloroethane | 42.2 | 50.0 | 84 | 43.2 | 50.0 | 86 | 72-118 | 2 | 40 |
| 1,1-Dichloroethane | 44.9 | 50.0 | 90 | 46.2 | 50.0 | 92 | 59-137 | 3 | 40 |
| 1,1-Dichloroethene | 47.3 | 50.0 | 95 | 48.1 | 50.0 | 96 | 64-152 | 2 | 40 |
| 1,1-Dichloropropene | 47.9 | 50.0 | 96 | 48.4 | 50.0 | 97 | 52-142 | 1 | 40 |
| 1,2,3-Trichlorobenzene | 51.0 | 50.0 | 102 | 49.4 | 50.0 | 99 | 52-138 | 3 | 40 |
| 1,2,3-Trichloropropane | 43.3 | 50.0 | 87 | 44.6 | 50.0 | 89 | 53-134 | 3 | 40 |
| 1,2,4-Trichlorobenzene | 50.5 | 50.0 | 101 | 48.7 | 50.0 | 97 | 57-136 | 4 | 40 |
| 1,2,4-Trimethylbenzene | 46.3 | 50.0 | 93 | 45.6 | 50.0 | 91 | 65-132 | 2 | 40 |
| 1,2-Dibromo-3-chloropropane | 44.3 | 50.0 | 89 | 45.3 | 50.0 | 91 | 55-127 | 2 | 40 |
| 1,2-Dibromoethane (EDB) | 44.4 | 50.0 | 89 | 45.8 | 50.0 | 92 | 71-116 | 3 | 40 |
| 1,2-Dichlorobenzene | 45.1 | 50.0 | 90 | 45.1 | 50.0 | 90 | 67-124 | <1 | 40 |
| 1,2-Dichloroethane (EDC) | 41.0 | 50.0 | 82 | 42.8 | 50.0 | 86 | 65-121 | 4 | 40 |
| 1,2-Dichloropropane | 42.2 | 50.0 | 84 | 43.2 | 50.0 | 86 | 71-121 | 2 | 40 |
| 1,3,5-Trimethylbenzene | 46.1 | 50.0 | 92 | 45.7 | 50.0 | 91 | 66-132 | <1 | 40 |
| 1,3-Dichlorobenzene | 47.4 | 50.0 | 95 | 46.3 | 50.0 | 93 | 69-128 | 2 | 40 |
| 1,3-Dichloropropane | 41.9 | 50.0 | 84 | 43.5 | 50.0 | 87 | 72-118 | 4 | 40 |
| 1,4-Dichlorobenzene | 47.9 | 50.0 | 96 | 46.7 | 50.0 | 93 | 69-125 | 3 | 40 |
| 2,2-Dichloropropane | 37.4 | 50.0 | 75 | 34.2 | 50.0 | 68 | 50-138 | 9 | 40 |
| 2-Butanone (MEK) | 261 | 250 | 105 | 269 | 250 | 108 | 54-116 | 3 | 40 |
| 2-Chlorotoluene | 45.3 | 50.0 | 91 | 45.0 | 50.0 | 90 | 65-129 | <1 | 40 |
| 2-Hexanone | 265 | 250 | 106 | 272 | 250 | 109 | 67-121 | 3 | 40 |
| 4-Chlorotoluene | 45.4 | 50.0 | 91 | 44.8 | 50.0 | 90 | 51-134 | 1 | 40 |
| 4-Isopropyltoluene | 49.7 | 50.0 | 99 | 49.1 | 50.0 | 98 | 61-132 | 1 | 40 |
| 4-Methyl-2-pentanone (MIBK) | 245 | 250 | 98 | 255 | 250 | 102 | 69-126 | 4 | 40 |
| Acetone | 230 | 250 | 92 | 243 | 250 | 97 | 32-135 | 6 | 40 |
| Acrolein | 80.6 J | 100 | 81 | 80.3 J | 100 | 80 | 10-218 | <1 | 40 |
| Acrylonitrile | 121 | 130 | 93 | 126 | 130 | 97 | 18-179 | 4 | 40 |
| Benzene | 46.4 | 50.0 | 93 | 47.5 | 50.0 | 95 | 68-122 | 2 | 40 |
| Bromobenzene | 44.7 | 50.0 | 89 | 45.6 | 50.0 | 91 | 71-124 | 2 | 40 |
| Bromochloromethane | 40.8 | 50.0 | 82 | 42.4 | 50.0 | 85 | 65-131 | 4 | 40 |
| Bromodichloromethane | 41.1 | 50.0 | 82 | 42.4 | 50.0 | 85 | 61-143 | 3 | 40 |
| Bromoform | 44.6 | 50.0 | 89 | 44.8 | 50.0 | 90 | 62-134 | <1 | 40 |
| Bromomethane | 33.2 | 50.0 | 66 | 37.9 | 50.0 | 76 | 22-180 | 13 | 40 |
| Carbon Disulfide | 91.2 | 100 | 91 | 92.3 | 100 | 92 | 55-141 | 1 | 40 |
| Carbon Tetrachloride | 44.3 | 50.0 | 89 | 43.5 | 50.0 | 87 | 51-135 | 2 | 40 |
| Chlorobenzene | 48.4 | 50.0 | 97 | 49.0 | 50.0 | 98 | 70-116 | 1 | 40 |
| Chloroethane | 47.2 | 50.0 | 94 | 47.7 | 50.0 | 95 | 51-122 | <1 | 40 |
| Chloroform | 44.5 | 50.0 | 89 | 46.2 | 50.0 | 92 | 61-137 | 4 | 40 |

QA/QC Report

| | | | |
|---|---|---|---|
| **Client:** | LOTT Clean Water Alliance | **Service Request:** | K2308760 |
| **Project:** | LOTTBSAUG23 | **Date Analyzed:** | 08/08/23 |
| **Sample Matrix:** | Sludge | **Date Extracted:** | NA |

## Duplicate Lab Control Sample Summary
## Volatile Organic Compounds by GC/MS, Unpreserved

| | | | |
|---|---|---|---|
| **Analysis Method:** | 8260C | **Units:** | ug/Kg |
| **Prep Method:** | None | **Basis:** | Dry |
| | | **Analysis Lot:** | 813228 |

| | Lab Control Sample KQ2313832-02 | | | Duplicate Lab Control Sample KQ2313832-03 | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **Analyte Name** | **Result** | **Spike Amount** | **% Rec** | **Result** | **Spike Amount** | **% Rec** | **% Rec Limits** | **RPD** | **RPD Limit** |
| Chloromethane | 41.4 | 50.0 | 83 | 43.8 | 50.0 | 88 | 37-146 | 6 | 40 |
| cis-1,2-Dichloroethene | 45.0 | 50.0 | 90 | 46.7 | 50.0 | 93 | 62-138 | 4 | 40 |
| cis-1,3-Dichloropropene | 41.5 | 50.0 | 83 | 42.8 | 50.0 | 86 | 58-138 | 3 | 40 |
| Dibromochloromethane | 42.9 | 50.0 | 86 | 43.7 | 50.0 | 87 | 69-120 | 2 | 40 |
| Dibromomethane | 42.6 | 50.0 | 85 | 44.2 | 50.0 | 88 | 68-125 | 4 | 40 |
| Dichlorodifluoromethane | 30.6 | 50.0 | 61 | 30.7 | 50.0 | 61 | 38-160 | <1 | 40 |
| Ethylbenzene | 49.0 | 50.0 | 98 | 49.6 | 50.0 | 99 | 70-118 | 1 | 40 |
| Hexachlorobutadiene | 51.0 | 50.0 | 102 | 47.6 | 50.0 | 95 | 54-140 | 7 | 40 |
| Isopropylbenzene | 50.6 | 50.0 | 101 | 50.4 | 50.0 | 101 | 67-133 | <1 | 40 |
| m,p-Xylenes | 99.8 | 100 | 100 | 98.1 | 100 | 98 | 69-127 | 2 | 40 |
| Methylene Chloride | 43.2 | 50.0 | 86 | 45.4 | 50.0 | 91 | 65-122 | 5 | 40 |
| Naphthalene | 46.1 | 50.0 | 92 | 47.1 | 50.0 | 94 | 54-134 | 2 | 40 |
| n-Butylbenzene | 47.4 | 50.0 | 95 | 46.4 | 50.0 | 93 | 53-139 | 2 | 40 |
| n-Propylbenzene | 47.0 | 50.0 | 94 | 46.7 | 50.0 | 93 | 57-143 | <1 | 40 |
| o-Xylene | 48.4 | 50.0 | 97 | 48.2 | 50.0 | 96 | 69-124 | <1 | 40 |
| sec-Butylbenzene | 48.3 | 50.0 | 97 | 47.7 | 50.0 | 95 | 55-146 | 1 | 40 |
| Styrene | 49.3 | 50.0 | 99 | 49.1 | 50.0 | 98 | 62-135 | <1 | 40 |
| tert-Butylbenzene | 46.3 | 50.0 | 93 | 46.3 | 50.0 | 93 | 67-131 | <1 | 40 |
| Tetrachloroethene (PCE) | 52.3 | 50.0 | 105 | 51.5 | 50.0 | 103 | 66-126 | 2 | 40 |
| Toluene | 47.3 | 50.0 | 95 | 47.9 | 50.0 | 96 | 75-117 | 1 | 40 |
| trans-1,2-Dichloroethene | 48.2 | 50.0 | 96 | 49.5 | 50.0 | 99 | 63-127 | 3 | 40 |
| trans-1,3-Dichloropropene | 39.6 | 50.0 | 79 | 40.7 | 50.0 | 81 | 63-121 | 3 | 40 |
| Trichloroethene (TCE) | 47.6 | 50.0 | 95 | 48.2 | 50.0 | 96 | 67-126 | 1 | 40 |
| Trichlorofluoromethane | 46.8 | 50.0 | 94 | 46.6 | 50.0 | 93 | 51-140 | <1 | 40 |
| Vinyl Chloride | 46.3 | 50.0 | 93 | 47.0 | 50.0 | 94 | 54-127 | 2 | 40 |

# Semi-Volatile Organic Compounds by GC/MS

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

Analytical Report

| | | | |
|---|---|---|---|
| **Client:** | LOTT Clean Water Alliance | **Service Request:** | K2308760 |
| **Project:** | LOTTBSAUG23 | **Date Collected:** | 08/03/23 08:00 |
| **Sample Matrix:** | Sludge | **Date Received:** | 08/04/23 11:30 |
| **Sample Name:** | Biosolids | **Units:** | mg/Kg |
| **Lab Code:** | K2308760-001 | **Basis:** | Dry |

## Semivolatile Organic Compounds by GC/MS

**Analysis Method:** 8270D
**Prep Method:** EPA 3541

| Analyte Name | Result | MRL | MDL | Dil. | Date Analyzed | Date Extracted | Q |
|---|---|---|---|---|---|---|---|
| Acenaphthene | ND U | 30 | 0.86 | 5 | 08/28/23 23:42 | 8/10/23 | |
| Acenaphthylene | ND U | 30 | 0.65 | 5 | 08/28/23 23:42 | 8/10/23 | |
| Aniline | ND U | 91 | 1.1 | 5 | 08/28/23 23:42 | 8/10/23 | |
| Anthracene | ND U | 30 | 0.79 | 5 | 08/28/23 23:42 | 8/10/23 | |
| Benz(a)anthracene | ND U | 30 | 0.84 | 5 | 08/28/23 23:42 | 8/10/23 | |
| Benzo(b)fluoranthene | ND U | 30 | 1.1 | 5 | 08/28/23 23:42 | 8/10/23 | |
| Benzo(k)fluoranthene | ND U | 30 | 1.3 | 5 | 08/28/23 23:42 | 8/10/23 | |
| Benzoic Acid | **21 J** | 180 | 13 | 5 | 08/28/23 23:42 | 8/10/23 | |
| Benzo(g,h,i)perylene | ND U | 30 | 1.1 | 5 | 08/28/23 23:42 | 8/10/23 | * |
| Benzo(a)pyrene | ND U | 30 | 1.5 | 5 | 08/28/23 23:42 | 8/10/23 | |
| Benzyl Alcohol | ND U | 30 | 0.67 | 5 | 08/28/23 23:42 | 8/10/23 | |
| Bis(2-chloroethyl) Ether | ND U | 30 | 0.75 | 5 | 08/28/23 23:42 | 8/10/23 | |
| Bis(2-ethylhexyl) Phthalate | **5.7 J** | 30 | 0.65 | 5 | 08/28/23 23:42 | 8/10/23 | |
| Bis(2-chloroethoxy)methane | ND U | 30 | 0.86 | 5 | 08/28/23 23:42 | 8/10/23 | |
| 4-Bromophenyl Phenyl Ether | ND U | 30 | 1.2 | 5 | 08/28/23 23:42 | 8/10/23 | |
| Butyl Benzyl Phthalate | ND U | 30 | 1.4 | 5 | 08/28/23 23:42 | 8/10/23 | |
| 4-Chloro-3-methylphenol | ND U | 30 | 15 | 5 | 08/28/23 23:42 | 8/10/23 | |
| 4-Chloroaniline | ND U | 30 | 0.65 | 5 | 08/28/23 23:42 | 8/10/23 | |
| 2-Chloronaphthalene | ND U | 30 | 0.92 | 5 | 08/28/23 23:42 | 8/10/23 | |
| 2-Chlorophenol | ND U | 30 | 0.79 | 5 | 08/28/23 23:42 | 8/10/23 | |
| 4-Chlorophenyl Phenyl Ether | ND U | 30 | 0.78 | 5 | 08/28/23 23:42 | 8/10/23 | |
| Chrysene | ND U | 30 | 1.3 | 5 | 08/28/23 23:42 | 8/10/23 | |
| Di-n-butyl Phthalate | ND U | 30 | 1.4 | 5 | 08/28/23 23:42 | 8/10/23 | |
| Di-n-octyl Phthalate | ND U | 30 | 0.92 | 5 | 08/28/23 23:42 | 8/10/23 | |
| Dibenz(a,h)anthracene | ND U | 30 | 1.3 | 5 | 08/28/23 23:42 | 8/10/23 | |
| Dibenzofuran | ND U | 30 | 0.90 | 5 | 08/28/23 23:42 | 8/10/23 | |
| 1,2-Dichlorobenzene | ND U | 30 | 0.72 | 5 | 08/28/23 23:42 | 8/10/23 | |
| 1,3-Dichlorobenzene | ND U | 30 | 0.77 | 5 | 08/28/23 23:42 | 8/10/23 | |
| 1,4-Dichlorobenzene | ND U | 30 | 0.76 | 5 | 08/28/23 23:42 | 8/10/23 | |
| 3,3'-Dichlorobenzidine | ND U | 30 | 2.5 | 5 | 08/28/23 23:42 | 8/10/23 | |
| 2,4-Dichlorophenol | ND U | 30 | 0.71 | 5 | 08/28/23 23:42 | 8/10/23 | |
| Diethyl Phthalate | ND U | 30 | 0.73 | 5 | 08/28/23 23:42 | 8/10/23 | |
| Dimethyl Phthalate | ND U | 30 | 0.70 | 5 | 08/28/23 23:42 | 8/10/23 | |
| 2,4-Dimethylphenol | ND U | 30 | 3.3 | 5 | 08/28/23 23:42 | 8/10/23 | |
| 2,4-Dinitrophenol | ND U | 180 | 13 | 5 | 08/28/23 23:42 | 8/10/23 | |
| 2,4-Dinitrotoluene | ND U | 30 | 1.4 | 5 | 08/28/23 23:42 | 8/10/23 | |
| 2,6-Dinitrotoluene | ND U | 30 | 0.67 | 5 | 08/28/23 23:42 | 8/10/23 | |
| Fluoranthene | ND U | 30 | 1.1 | 5 | 08/28/23 23:42 | 8/10/23 | |
| Fluorene | ND U | 30 | 1.2 | 5 | 08/28/23 23:42 | 8/10/23 | |
| Hexachlorobenzene | ND U | 30 | 1.5 | 5 | 08/28/23 23:42 | 8/10/23 | |
| Hexachlorobutadiene | ND U | 30 | 1.1 | 5 | 08/28/23 23:42 | 8/10/23 | |

Analytical Report

| | | | |
|---|---|---|---|
| **Client:** | LOTT Clean Water Alliance | **Service Request:** | K2308760 |
| **Project:** | LOTTBSAUG23 | **Date Collected:** | 08/03/23 08:00 |
| **Sample Matrix:** | Sludge | **Date Received:** | 08/04/23 11:30 |
| **Sample Name:** | Biosolids | **Units:** | mg/Kg |
| **Lab Code:** | K2308760-001 | **Basis:** | Dry |

## Semivolatile Organic Compounds by GC/MS

**Analysis Method:** 8270D
**Prep Method:** EPA 3541

| Analyte Name | Result | MRL | MDL | Dil. | Date Analyzed | Date Extracted | Q |
|---|---|---|---|---|---|---|---|
| Hexachlorocyclopentadiene | ND U | 30 | 2.2 | 5 | 08/28/23 23:42 | 8/10/23 | |
| Hexachloroethane | ND U | 30 | 0.73 | 5 | 08/28/23 23:42 | 8/10/23 | |
| Indeno(1,2,3-cd)pyrene | ND U | 30 | 1.1 | 5 | 08/28/23 23:42 | 8/10/23 | |
| Isophorone | ND U | 30 | 1.1 | 5 | 08/28/23 23:42 | 8/10/23 | |
| 2-Methyl-4,6-dinitrophenol | ND U | 180 | 3.0 | 5 | 08/28/23 23:42 | 8/10/23 | |
| 2-Methylnaphthalene | ND U | 30 | 1.1 | 5 | 08/28/23 23:42 | 8/10/23 | |
| 2-Methylphenol | ND U | 30 | 1.4 | 5 | 08/28/23 23:42 | 8/10/23 | |
| 4-Methylphenol | ND U | 30 | 0.92 | 5 | 08/28/23 23:42 | 8/10/23 | |
| Naphthalene | ND U | 30 | 1.1 | 5 | 08/28/23 23:42 | 8/10/23 | |
| 2-Nitroaniline | ND U | 30 | 3.9 | 5 | 08/28/23 23:42 | 8/10/23 | |
| 3-Nitroaniline | ND U | 30 | 0.73 | 5 | 08/28/23 23:42 | 8/10/23 | |
| 4-Nitroaniline | ND U | 180 | 0.91 | 5 | 08/28/23 23:42 | 8/10/23 | |
| Nitrobenzene | ND U | 30 | 1.1 | 5 | 08/28/23 23:42 | 8/10/23 | |
| 2-Nitrophenol | ND U | 30 | 1.3 | 5 | 08/28/23 23:42 | 8/10/23 | |
| 4-Nitrophenol | ND U | 180 | 4.5 | 5 | 08/28/23 23:42 | 8/10/23 | |
| N-Nitrosodi-n-propylamine | ND U | 30 | 1.1 | 5 | 08/28/23 23:42 | 8/10/23 | |
| N-Nitrosodimethylamine | ND U | 180 | 28 | 5 | 08/28/23 23:42 | 8/10/23 | |
| N-Nitrosodiphenylamine | ND U | 30 | 0.69 | 5 | 08/28/23 23:42 | 8/10/23 | |
| 2,2'-Oxybis(1-chloropropane) | ND U | 30 | 0.73 | 5 | 08/28/23 23:42 | 8/10/23 | |
| Pentachlorophenol | ND U | 180 | 5.8 | 5 | 08/28/23 23:42 | 8/10/23 | |
| Phenanthrene | **1.5 J** | 30 | 1.1 | 5 | 08/28/23 23:42 | 8/10/23 | |
| Phenol | ND U | 30 | 1.8 | 5 | 08/28/23 23:42 | 8/10/23 | |
| Pyrene | ND U | 30 | 0.88 | 5 | 08/28/23 23:42 | 8/10/23 | |
| 1,2,4-Trichlorobenzene | ND U | 30 | 1.1 | 5 | 08/28/23 23:42 | 8/10/23 | |
| 2,4,5-Trichlorophenol | ND U | 30 | 0.76 | 5 | 08/28/23 23:42 | 8/10/23 | |
| 2,4,6-Trichlorophenol | ND U | 30 | 1.3 | 5 | 08/28/23 23:42 | 8/10/23 | |

| Surrogate Name | % Rec | Control Limits | Date Analyzed | Q |
|---|---|---|---|---|
| 2-Fluorobiphenyl | 44 | 37 - 103 | 08/28/23 23:42 | |
| 2-Fluorophenol | 35 | 30 - 98 | 08/28/23 23:42 | |
| Nitrobenzene-d5 | 41 | 36 - 112 | 08/28/23 23:42 | |
| Phenol-d6 | 43 | 31 - 103 | 08/28/23 23:42 | |
| Terphenyl-d14 | 45 | 18 - 127 | 08/28/23 23:42 | |
| 2,4,6-Tribromophenol | 45 | 35 - 118 | 08/28/23 23:42 | |

**Analyte Comments:**

| | |
|---|---|
| Benzo(b)fluoranthene | This analyte cannot be separated from Benzo(j)fluoranthene. |

**Client:** LOTT Clean Water Alliance **Service Request:** K2308760
**Project:** LOTTBSAUG23
**Sample Matrix:** Sludge

## SURROGATE RECOVERY SUMMARY
## Semivolatile Organic Compounds by GC/MS

**Analysis Method:** 8270D
**Extraction Method:** EPA 3541

| Sample Name | Lab Code | 2,4,6-Tribromophenol 35 - 118 | 2-Fluorobiphenyl 37 - 103 | 2-Fluorophenol 30 - 98 |
|---|---|---|---|---|
| Biosolids | K2308760-001 | 45 | 44 | 35 |
| Lab Control Sample | KQ2313839-01 | 71 | 65 | 63 |
| Duplicate Lab Control Sample | KQ2313839-02 | 78 | 68 | 61 |
| Method Blank | KQ2313839-03 | 64 | 66 | 62 |

**Client:** LOTT Clean Water Alliance **Service Request:** K2308760
**Project:** LOTTBSAUG23
**Sample Matrix:** Sludge

## SURROGATE RECOVERY SUMMARY
## Semivolatile Organic Compounds by GC/MS

**Analysis Method:** 8270D
**Extraction Method:** EPA 3541

| Sample Name | Lab Code | Nitrobenzene-d5 36 - 112 | Phenol-d6 31 - 103 | Terphenyl-d14 18 - 127 |
|---|---|---|---|---|
| Biosolids | K2308760-001 | 41 | 43 | 45 |
| Lab Control Sample | KQ2313839-01 | 79 | 68 | 68 |
| Duplicate Lab Control Sample | KQ2313839-02 | 75 | 66 | 74 |
| Method Blank | KQ2313839-03 | 75 | 68 | 83 |

Analytical Report

| | | | |
|---|---|---|---|
| **Client:** | LOTT Clean Water Alliance | **Service Request:** | K2308760 |
| **Project:** | LOTTBSAUG23 | **Date Collected:** | NA |
| **Sample Matrix:** | Sludge | **Date Received:** | NA |
| **Sample Name:** | Method Blank | **Units:** | mg/Kg |
| **Lab Code:** | KQ2313839-03 | **Basis:** | Dry |

## Semivolatile Organic Compounds by GC/MS

**Analysis Method:** 8270D
**Prep Method:** EPA 3541

| Analyte Name | Result | MRL | MDL | Dil. | Date Analyzed | Date Extracted | Q |
|---|---|---|---|---|---|---|---|
| Acenaphthene | ND U | 1.9 | 0.055 | 1 | 08/28/23 22:45 | 8/10/23 | |
| Acenaphthylene | ND U | 1.9 | 0.042 | 1 | 08/28/23 22:45 | 8/10/23 | |
| Aniline | ND U | 5.8 | 0.070 | 1 | 08/28/23 22:45 | 8/10/23 | |
| Anthracene | ND U | 1.9 | 0.051 | 1 | 08/28/23 22:45 | 8/10/23 | |
| Benz(a)anthracene | ND U | 1.9 | 0.053 | 1 | 08/28/23 22:45 | 8/10/23 | |
| Benzo(b)fluoranthene | ND U | 1.9 | 0.070 | 1 | 08/28/23 22:45 | 8/10/23 | |
| Benzo(k)fluoranthene | ND U | 1.9 | 0.082 | 1 | 08/28/23 22:45 | 8/10/23 | |
| Benzoic Acid | ND U | 12 | 0.82 | 1 | 08/28/23 22:45 | 8/10/23 | |
| Benzo(g,h,i)perylene | ND U | 1.9 | 0.064 | 1 | 08/28/23 22:45 | 8/10/23 | |
| Benzo(a)pyrene | ND U | 1.9 | 0.094 | 1 | 08/28/23 22:45 | 8/10/23 | |
| Benzyl Alcohol | ND U | 1.9 | 0.043 | 1 | 08/28/23 22:45 | 8/10/23 | |
| Bis(2-chloroethyl) Ether | ND U | 1.9 | 0.048 | 1 | 08/28/23 22:45 | 8/10/23 | |
| Bis(2-ethylhexyl) Phthalate | ND U | 1.9 | 0.042 | 1 | 08/28/23 22:45 | 8/10/23 | |
| Bis(2-chloroethoxy)methane | ND U | 1.9 | 0.055 | 1 | 08/28/23 22:45 | 8/10/23 | |
| 4-Bromophenyl Phenyl Ether | ND U | 1.9 | 0.076 | 1 | 08/28/23 22:45 | 8/10/23 | |
| Butyl Benzyl Phthalate | ND U | 1.9 | 0.088 | 1 | 08/28/23 22:45 | 8/10/23 | |
| 4-Chloro-3-methylphenol | ND U | 1.9 | 0.94 | 1 | 08/28/23 22:45 | 8/10/23 | |
| 4-Chloroaniline | ND U | 1.9 | 0.041 | 1 | 08/28/23 22:45 | 8/10/23 | |
| 2-Chloronaphthalene | ND U | 1.9 | 0.059 | 1 | 08/28/23 22:45 | 8/10/23 | |
| 2-Chlorophenol | ND U | 1.9 | 0.051 | 1 | 08/28/23 22:45 | 8/10/23 | |
| 4-Chlorophenyl Phenyl Ether | ND U | 1.9 | 0.050 | 1 | 08/28/23 22:45 | 8/10/23 | |
| Chrysene | ND U | 1.9 | 0.082 | 1 | 08/28/23 22:45 | 8/10/23 | |
| Di-n-butyl Phthalate | ND U | 1.9 | 0.088 | 1 | 08/28/23 22:45 | 8/10/23 | |
| Di-n-octyl Phthalate | ND U | 1.9 | 0.059 | 1 | 08/28/23 22:45 | 8/10/23 | |
| Dibenz(a,h)anthracene | ND U | 1.9 | 0.082 | 1 | 08/28/23 22:45 | 8/10/23 | |
| Dibenzofuran | ND U | 1.9 | 0.057 | 1 | 08/28/23 22:45 | 8/10/23 | |
| 1,2-Dichlorobenzene | ND U | 1.9 | 0.046 | 1 | 08/28/23 22:45 | 8/10/23 | |
| 1,3-Dichlorobenzene | ND U | 1.9 | 0.049 | 1 | 08/28/23 22:45 | 8/10/23 | |
| 1,4-Dichlorobenzene | ND U | 1.9 | 0.049 | 1 | 08/28/23 22:45 | 8/10/23 | |
| 3,3'-Dichlorobenzidine | ND U | 1.9 | 0.16 | 1 | 08/28/23 22:45 | 8/10/23 | |
| 2,4-Dichlorophenol | ND U | 1.9 | 0.045 | 1 | 08/28/23 22:45 | 8/10/23 | |
| Diethyl Phthalate | ND U | 1.9 | 0.046 | 1 | 08/28/23 22:45 | 8/10/23 | |
| Dimethyl Phthalate | ND U | 1.9 | 0.045 | 1 | 08/28/23 22:45 | 8/10/23 | |
| 2,4-Dimethylphenol | ND U | 1.9 | 0.21 | 1 | 08/28/23 22:45 | 8/10/23 | |
| 2,4-Dinitrophenol | ND U | 12 | 0.82 | 1 | 08/28/23 22:45 | 8/10/23 | |
| 2,4-Dinitrotoluene | ND U | 1.9 | 0.088 | 1 | 08/28/23 22:45 | 8/10/23 | |
| 2,6-Dinitrotoluene | ND U | 1.9 | 0.043 | 1 | 08/28/23 22:45 | 8/10/23 | |
| Fluoranthene | ND U | 1.9 | 0.070 | 1 | 08/28/23 22:45 | 8/10/23 | |
| Fluorene | ND U | 1.9 | 0.076 | 1 | 08/28/23 22:45 | 8/10/23 | |
| Hexachlorobenzene | ND U | 1.9 | 0.094 | 1 | 08/28/23 22:45 | 8/10/23 | |
| Hexachlorobutadiene | ND U | 1.9 | 0.064 | 1 | 08/28/23 22:45 | 8/10/23 | |

Analytical Report

| | | | |
|---|---|---|---|
| **Client:** | LOTT Clean Water Alliance | **Service Request:** | K2308760 |
| **Project:** | LOTTBSAUG23 | **Date Collected:** | NA |
| **Sample Matrix:** | Sludge | **Date Received:** | NA |
| **Sample Name:** | Method Blank | **Units:** | mg/Kg |
| **Lab Code:** | KQ2313839-03 | **Basis:** | Dry |

## Semivolatile Organic Compounds by GC/MS

**Analysis Method:** 8270D
**Prep Method:** EPA 3541

| Analyte Name | Result | MRL | MDL | Dil. | Date Analyzed | Date Extracted | Q |
|---|---|---|---|---|---|---|---|
| Hexachlorocyclopentadiene | ND U | 1.9 | 0.14 | 1 | 08/28/23 22:45 | 8/10/23 | |
| Hexachloroethane | ND U | 1.9 | 0.046 | 1 | 08/28/23 22:45 | 8/10/23 | |
| Indeno(1,2,3-cd)pyrene | ND U | 1.9 | 0.064 | 1 | 08/28/23 22:45 | 8/10/23 | |
| Isophorone | ND U | 1.9 | 0.064 | 1 | 08/28/23 22:45 | 8/10/23 | |
| 2-Methyl-4,6-dinitrophenol | ND U | 12 | 0.19 | 1 | 08/28/23 22:45 | 8/10/23 | |
| 2-Methylnaphthalene | ND U | 1.9 | 0.064 | 1 | 08/28/23 22:45 | 8/10/23 | |
| 2-Methylphenol | ND U | 1.9 | 0.088 | 1 | 08/28/23 22:45 | 8/10/23 | |
| 4-Methylphenol | ND U | 1.9 | 0.059 | 1 | 08/28/23 22:45 | 8/10/23 | |
| Naphthalene | ND U | 1.9 | 0.064 | 1 | 08/28/23 22:45 | 8/10/23 | |
| 2-Nitroaniline | ND U | 1.9 | 0.25 | 1 | 08/28/23 22:45 | 8/10/23 | |
| 3-Nitroaniline | ND U | 1.9 | 0.046 | 1 | 08/28/23 22:45 | 8/10/23 | |
| 4-Nitroaniline | ND U | 12 | 0.058 | 1 | 08/28/23 22:45 | 8/10/23 | |
| Nitrobenzene | ND U | 1.9 | 0.064 | 1 | 08/28/23 22:45 | 8/10/23 | |
| 2-Nitrophenol | ND U | 1.9 | 0.082 | 1 | 08/28/23 22:45 | 8/10/23 | |
| 4-Nitrophenol | ND U | 12 | 0.29 | 1 | 08/28/23 22:45 | 8/10/23 | |
| N-Nitrosodi-n-propylamine | ND U | 1.9 | 0.064 | 1 | 08/28/23 22:45 | 8/10/23 | |
| N-Nitrosodimethylamine | ND U | 12 | 1.8 | 1 | 08/28/23 22:45 | 8/10/23 | |
| N-Nitrosodiphenylamine | ND U | 1.9 | 0.044 | 1 | 08/28/23 22:45 | 8/10/23 | |
| 2,2'-Oxybis(1-chloropropane) | ND U | 1.9 | 0.046 | 1 | 08/28/23 22:45 | 8/10/23 | |
| Pentachlorophenol | ND U | 12 | 0.37 | 1 | 08/28/23 22:45 | 8/10/23 | |
| Phenanthrene | ND U | 1.9 | 0.064 | 1 | 08/28/23 22:45 | 8/10/23 | |
| Phenol | ND U | 1.9 | 0.12 | 1 | 08/28/23 22:45 | 8/10/23 | |
| Pyrene | ND U | 1.9 | 0.056 | 1 | 08/28/23 22:45 | 8/10/23 | |
| 1,2,4-Trichlorobenzene | ND U | 1.9 | 0.064 | 1 | 08/28/23 22:45 | 8/10/23 | |
| 2,4,5-Trichlorophenol | ND U | 1.9 | 0.049 | 1 | 08/28/23 22:45 | 8/10/23 | |
| 2,4,6-Trichlorophenol | ND U | 1.9 | 0.082 | 1 | 08/28/23 22:45 | 8/10/23 | |

| Surrogate Name | % Rec | Control Limits | Date Analyzed | Q |
|---|---|---|---|---|
| 2-Fluorobiphenyl | 66 | 37 - 103 | 08/28/23 22:45 | |
| 2-Fluorophenol | 62 | 30 - 98 | 08/28/23 22:45 | |
| Nitrobenzene-d5 | 75 | 36 - 112 | 08/28/23 22:45 | |
| Phenol-d6 | 68 | 31 - 103 | 08/28/23 22:45 | |
| Terphenyl-d14 | 83 | 18 - 127 | 08/28/23 22:45 | |
| 2,4,6-Tribromophenol | 64 | 35 - 118 | 08/28/23 22:45 | |

**Analyte Comments:**

| | |
|---|---|
| Benzo(b)fluoranthene | This analyte cannot be separated from Benzo(j)fluoranthene. |

**ALS Group USA, Corp.**
**dba ALS Environmental**

QA/QC Report

| | | | |
|---|---|---|---|
| **Client:** | LOTT Clean Water Alliance | **Service Request:** | K2308760 |
| **Project:** | LOTTBSAUG23 | **Date Analyzed:** | 08/28/23 - 08/30/23 |
| **Sample Matrix:** | Sludge | **Date Extracted:** | 08/10/23 |

**Duplicate Lab Control Sample Summary**
**Semivolatile Organic Compounds by GC/MS**

| | | | |
|---|---|---|---|
| **Analysis Method:** | 8270D | **Units:** | mg/Kg |
| **Prep Method:** | EPA 3541 | **Basis:** | Dry |
| | | **Analysis Lot:** | 815580 |

| | Lab Control Sample KQ2313839-01 | | | Duplicate Lab Control Sample KQ2313839-02 | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **Analyte Name** | **Result** | **Spike Amount** | **% Rec** | **Result** | **Spike Amount** | **% Rec** | **% Rec Limits** | **RPD** | **RPD Limit** |
| 1,2,4-Trichlorobenzene | 12.8 | 20.0 | 64 | 12.7 | 20.0 | 63 | 43-98 | <1 | 40 |
| 1,2-Dichlorobenzene | 13.2 | 20.0 | 66 | 12.8 | 20.0 | 64 | 42-96 | 3 | 40 |
| 1,3-Dichlorobenzene | 12.9 | 20.0 | 64 | 12.5 | 20.0 | 63 | 39-93 | 3 | 40 |
| 1,4-Dichlorobenzene | 13.1 | 20.0 | 65 | 12.7 | 20.0 | 63 | 40-93 | 3 | 40 |
| 2,2'-Oxybis(1-chloropropane) | 14.7 | 20.0 | 73 | 13.3 | 20.0 | 67 | 37-102 | 10 | 40 |
| 2,4,5-Trichlorophenol | 13.6 | 20.0 | 68 | 14.1 | 20.0 | 71 | 46-117 | 4 | 40 |
| 2,4,6-Trichlorophenol | 13.9 | 20.0 | 70 | 14.4 | 20.0 | 72 | 50-114 | 4 | 40 |
| 2,4-Dichlorophenol | 13.3 | 20.0 | 67 | 13.0 | 20.0 | 65 | 52-106 | 2 | 40 |
| 2,4-Dimethylphenol | 10.1 | 20.0 | 50 | 9.37 | 20.0 | 47 | 18-94 | 7 | 40 |
| 2,4-Dinitrophenol | 19.4 | 20.0 | 97 | 22.2 | 20.0 | 111 | 22-136 | 14 | 40 |
| 2,4-Dinitrotoluene | 14.6 | 20.0 | 73 | 15.7 | 20.0 | 78 | 44-120 | 7 | 40 |
| 2,6-Dinitrotoluene | 14.4 | 20.0 | 72 | 15.3 | 20.0 | 76 | 47-116 | 6 | 40 |
| 2-Chloronaphthalene | 13.2 | 20.0 | 66 | 13.5 | 20.0 | 67 | 48-102 | 2 | 40 |
| 2-Chlorophenol | 13.4 | 20.0 | 67 | 12.8 | 20.0 | 64 | 49-102 | 4 | 40 |
| 2-Methyl-4,6-dinitrophenol | 17.5 | 20.0 | 87 | 19.5 | 20.0 | 98 | 36-132 | 11 | 40 |
| 2-Methylnaphthalene | 13.5 | 20.0 | 67 | 13.4 | 20.0 | 67 | 47-102 | <1 | 40 |
| 2-Methylphenol | 13.8 | 20.0 | 69 | 12.9 | 20.0 | 65 | 46-109 | 6 | 40 |
| 2-Nitroaniline | 15.4 | 20.0 | 77 | 15.8 | 20.0 | 79 | 53-106 | 3 | 40 |
| 2-Nitrophenol | 15.1 | 20.0 | 75 | 14.7 | 20.0 | 74 | 50-111 | 2 | 40 |
| 3,3'-Dichlorobenzidine | 12.5 | 20.0 | 62 | 13.3 | 20.0 | 67 | 28-90 | 6 | 40 |
| 3-Nitroaniline | 14.5 | 20.0 | 73 | 14.9 | 20.0 | 74 | 45-108 | 3 | 40 |
| 4-Bromophenyl Phenyl Ether | 13.7 | 20.0 | 69 | 14.9 | 20.0 | 74 | 54-113 | 8 | 40 |
| 4-Chloro-3-methylphenol | 14.5 | 20.0 | 72 | 14.1 | 20.0 | 71 | 53-109 | 2 | 40 |
| 4-Chloroaniline | 12.9 | 20.0 | 64 | 12.5 | 20.0 | 63 | 43-100 | 3 | 40 |
| 4-Chlorophenyl Phenyl Ether | 13.9 | 20.0 | 69 | 14.6 | 20.0 | 73 | 52-106 | 5 | 40 |
| 4-Methylphenol | 14.2 | 20.0 | 71 | 13.2 | 20.0 | 66 | 48-114 | 7 | 40 |
| 4-Nitroaniline | 14.0 | 20.0 | 70 | 14.7 | 20.0 | 73 | 44-113 | 5 | 40 |
| 4-Nitrophenol | 14.5 | 20.0 | 73 | 14.7 | 20.0 | 74 | 41-135 | 2 | 40 |
| Acenaphthene | 13.5 | 20.0 | 67 | 13.8 | 20.0 | 69 | 51-102 | 3 | 40 |
| Acenaphthylene | 13.3 | 20.0 | 66 | 13.6 | 20.0 | 68 | 48-103 | 2 | 40 |
| Aniline | 12.0 | 20.0 | 60 | 8.73 | 20.0 | 44 | 30-95 | 32 | 40 |
| Anthracene | 13.3 | 20.0 | 67 | 14.3 | 20.0 | 71 | 53-101 | 7 | 40 |
| Benz(a)anthracene | 13.6 | 20.0 | 68 | 14.3 | 20.0 | 72 | 55-106 | 5 | 40 |
| Benzo(a)pyrene | 13.6 | 20.0 | 68 | 14.5 | 20.0 | 73 | 52-104 | 6 | 40 |
| Benzo(b)fluoranthene | 13.9 | 20.0 | 69 | 14.8 | 20.0 | 74 | 50-107 | 6 | 40 |
| Benzo(g,h,i)perylene | 9.07 | 20.0 | 45 * | 10.4 | 20.0 | 52 | 50-111 | 14 | 40 |
| Benzo(k)fluoranthene | 13.9 | 20.0 | 69 | 14.9 | 20.0 | 75 | 52-107 | 7 | 40 |
| Benzoic Acid | 14.3 | 20.0 | 71 | 12.6 | 20.0 | 63 | 31-125 | 12 | 40 |
| Benzyl Alcohol | 14.4 | 20.0 | 72 | 12.1 | 20.0 | 60 | 48-107 | 18 | 40 |
| Bis(2-chloroethoxy)methane | 14.4 | 20.0 | 72 | 13.9 | 20.0 | 69 | 51-102 | 4 | 40 |
| Bis(2-chloroethyl) Ether | 14.8 | 20.0 | 74 | 14.0 | 20.0 | 70 | 47-104 | 5 | 40 |

**ALS Group USA, Corp.**
**dba ALS Environmental**

QA/QC Report

| | | | |
|---|---|---|---|
| **Client:** | LOTT Clean Water Alliance | **Service Request:** | K2308760 |
| **Project:** | LOTTBSAUG23 | **Date Analyzed:** | 08/28/23 - 08/30/23 |
| **Sample Matrix:** | Sludge | **Date Extracted:** | 08/10/23 |

**Duplicate Lab Control Sample Summary**
**Semivolatile Organic Compounds by GC/MS**

| | | | |
|---|---|---|---|
| **Analysis Method:** | 8270D | **Units:** | mg/Kg |
| **Prep Method:** | EPA 3541 | **Basis:** | Dry |
| | | **Analysis Lot:** | 815580 |

| | Lab Control Sample KQ2313839-01 | | | Duplicate Lab Control Sample KQ2313839-02 | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **Analyte Name** | **Result** | **Spike Amount** | **% Rec** | **Result** | **Spike Amount** | **% Rec** | **% Rec Limits** | **RPD** | **RPD Limit** |
| Bis(2-ethylhexyl) Phthalate | 14.8 | 20.0 | 74 | 16.2 | 20.0 | 81 | 49-114 | 9 | 40 |
| Butyl Benzyl Phthalate | 15.1 | 20.0 | 76 | 16.1 | 20.0 | 81 | 51-114 | 6 | 40 |
| Chrysene | 13.3 | 20.0 | 67 | 14.1 | 20.0 | 71 | 51-102 | 6 | 40 |
| Dibenz(a,h)anthracene | 13.5 | 20.0 | 68 | 14.9 | 20.0 | 74 | 56-109 | 10 | 40 |
| Dibenzofuran | 13.5 | 20.0 | 68 | 14.1 | 20.0 | 71 | 48-100 | 4 | 40 |
| Diethyl Phthalate | 13.6 | 20.0 | 68 | 14.6 | 20.0 | 73 | 52-105 | 7 | 40 |
| Dimethyl Phthalate | 13.8 | 20.0 | 69 | 14.7 | 20.0 | 74 | 53-104 | 7 | 40 |
| Di-n-butyl Phthalate | 14.4 | 20.0 | 72 | 15.7 | 20.0 | 78 | 53-107 | 9 | 40 |
| Di-n-octyl Phthalate | 14.4 | 20.0 | 72 | 15.5 | 20.0 | 78 | 44-119 | 8 | 40 |
| Fluoranthene | 13.6 | 20.0 | 68 | 14.9 | 20.0 | 74 | 53-111 | 9 | 40 |
| Fluorene | 13.8 | 20.0 | 69 | 14.5 | 20.0 | 72 | 51-100 | 5 | 40 |
| Hexachlorobenzene | 13.8 | 20.0 | 69 | 15.2 | 20.0 | 76 | 54-110 | 9 | 40 |
| Hexachlorobutadiene | 12.7 | 20.0 | 63 | 12.6 | 20.0 | 63 | 36-101 | <1 | 40 |
| Hexachlorocyclopentadiene | 6.54 | 20.0 | 33 | 7.02 | 20.0 | 35 | 10-50 | 7 | 40 |
| Hexachloroethane | 13.6 | 20.0 | 68 | 13.0 | 20.0 | 65 | 35-94 | 5 | 40 |
| Indeno(1,2,3-cd)pyrene | 13.0 | 20.0 | 65 | 14.1 | 20.0 | 71 | 56-108 | 9 | 40 |
| Isophorone | 14.5 | 20.0 | 72 | 14.1 | 20.0 | 71 | 44-105 | 2 | 40 |
| Naphthalene | 13.4 | 20.0 | 67 | 13.1 | 20.0 | 66 | 46-98 | 2 | 40 |
| Nitrobenzene | 15.6 | 20.0 | 78 | 14.7 | 20.0 | 73 | 51-109 | 6 | 40 |
| N-Nitrosodimethylamine | 13.9 | 20.0 | 69 | 12.9 | 20.0 | 64 | 43-116 | 8 | 40 |
| N-Nitrosodi-n-propylamine | 15.3 | 20.0 | 76 | 14.5 | 20.0 | 73 | 51-107 | 5 | 40 |
| N-Nitrosodiphenylamine | 13.4 | 20.0 | 67 | 14.2 | 20.0 | 71 | 38-106 | 6 | 40 |
| Pentachlorophenol | 13.8 | 20.0 | 69 | 15.3 | 20.0 | 76 | 35-113 | 10 | 40 |
| Phenanthrene | 13.6 | 20.0 | 68 | 14.4 | 20.0 | 72 | 54-102 | 6 | 40 |
| Phenol | 14.1 | 20.0 | 70 | 13.4 | 20.0 | 67 | 46-99 | 5 | 40 |
| Pyrene | 13.6 | 20.0 | 68 | 14.5 | 20.0 | 72 | 47-113 | 6 | 40 |

November 06, 2023 Service Request No:K2311765

Mark Petrie
Lott Clean Water Alliance
500 Adams Street NE
Olympia, WA 98501

**Laboratory Results for: LOTTBSOCT23**

Dear Mark,

Enclosed are the results of the sample(s) submitted to our laboratory October 13, 2023
For your reference, these analyses have been assigned our service request number **K2311765.**

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 3376. You may also contact me via email at Mark.Harris@alsglobal.com.

Respectfully submitted,

**ALS Group USA, Corp. dba ALS Environmental**

Mark Harris
Project Manager

ADDRESS 1317 S. 13th Avenue, Kelso, WA 98626
PHONE +1 360 577 7222 | FAX +1 360 636 1068
ALS Group USA, Corp.
dba ALS Environmental

# Narrative Documents

**ALS Environmental—Kelso Laboratory**
1317 South 13th Avenue, Kelso, WA 98626
Phone (360) 577-7222 Fax (360) 425-9096
www.alsglobal.com

**Client:** LOTT Clean Water Alliance
**Project:** LOTTBSOCT23
**Sample Matrix:** Sludge

**Service Request:** K2311765
**Date Received:** 10/13/2023

## CASE NARRATIVE

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

**Sample Receipt:**

One sludge sample was received for analysis at ALS Environmental on 10/13/2023. Any discrepancies upon initial sample inspection are annotated on the sample receipt and preservation form included within this report. The sample was stored at minimum in accordance with the analytical method requirements.

**Semivolatiles by GC/MS:**

No significant anomalies were noted with this analysis.

**Semivoa GC:**

No significant anomalies were noted with this analysis.

**Metals:**

No significant anomalies were noted with this analysis.

**General Chemistry:**

No significant anomalies were noted with this analysis.

**Volatiles by GC/MS:**

No significant anomalies were noted with this analysis.

Approved by  Date 11/06/2023

## SAMPLE DETECTION SUMMARY

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

| CLIENT ID: Biosolids | | | Lab ID: K2311765-001 | | | |
|---|---|---|---|---|---|---|
| **Analyte** | **Results** | **Flag** | **MDL** | **MRL** | **Units** | **Method** |
| Ammonia as Nitrogen | 13900 | | 50 | 500 | mg/Kg | 350.1M |
| Ammonium | 13900 | | 50 | 500 | mg/Kg | 350.1M |
| Antimony | 2.60 | | 0.10 | 0.25 | mg/Kg | 6020A |
| Arsenic | 5.1 | | 0.3 | 2.5 | mg/Kg | 6020A |
| Beryllium | 0.090 | J | 0.029 | 0.098 | mg/Kg | 6020A |
| Cadmium | 0.882 | | 0.034 | 0.098 | mg/Kg | 6020A |
| Chromium | 17.6 | | 0.29 | 0.98 | mg/Kg | 6020A |
| Copper | 454 | | 0.20 | 0.49 | mg/Kg | 6020A |
| Cyanide, Total | 1.49 | | 0.31 | 0.51 | mg/Kg | SM 4500-CN- E Modified |
| Lead | 13.6 | | 0.10 | 0.25 | mg/Kg | 6020A |
| Mercury | 0.545 | | 0.009 | 0.093 | mg/Kg | 7471B |
| Molybdenum | 10.9 | | 0.10 | 0.25 | mg/Kg | 6020A |
| Nickel | 17.3 | | 0.15 | 0.98 | mg/Kg | 6020A |
| Nitrogen, Total Kjeldahl (TKN) | 20800 | | 30 | 200 | mg/Kg | ASTM D3590 Mod |
| Phenolics, Total | 1.88 | | 0.40 | 0.99 | mg/Kg | 9065 Modified |
| Phosphorus | 22800 | | 15 | 98 | mg/Kg | 6010C |
| Potassium | 1590 | | 50 | 200 | mg/Kg | 6010C |
| Selenium | 6.8 | | 0.4 | 4.9 | mg/Kg | 6020A |
| Silver | 2.46 | | 0.020 | 0.098 | mg/Kg | 6020A |
| Solids, Total | 19.6 | | | | Percent | SM 2540 G |
| Sulfur | 10700 | | 10 | 39 | mg/Kg | 6010C |
| Thallium | 0.057 | J | 0.020 | 0.098 | mg/Kg | 6020A |
| Zinc | 761 | | 1.0 | 2.5 | mg/Kg | 6020A |

# Sample Receipt Information

**ALS Environmental—Kelso Laboratory**
1317 South 13th Avenue, Kelso, WA 98626
Phone (360) 577-7222 Fax (360) 425-9096
www.alsglobal.com

**Client:** LOTT Clean Water Alliance **Service Request:**K2311765
**Project:** LOTTBSOCT23

## SAMPLE CROSS-REFERENCE

| SAMPLE # | CLIENT SAMPLE ID | DATE | TIME |
|---|---|---|---|
| K2311765-001 | Biosolids | 10/12/2023 | 1530 |

ALS Environmental
133707 1317 South 13th Ave, Kelso, WA 98626 | 360-577-7222 | 360-636-1068 (fax)

SR# K23117765

COC Set _____ of _____

# CHAIN OF CUSTODY

Page 1 of 1 COC # _____

| | |
|---|---|
| Project Name: | **LOTTBSOCT23** |
| Project Number: | |
| Project Manager | Mark Petrie |
| Company Name: | LOTT Clean Water Alliance |
| Company Address: | 500 Adams St. NE |
| City/State/Zip | Olympia, WA 98501 |
| E-mail Address | markpetrie@lottcleanwater.org |
| Phone # | 360-528-5749 Fax # |
| Sampler Signature: | |

| Sample ID | Date | Time | Lab ID | Matrix | Number of Containers | 999D: SM 2540 G / Total Solids | 28D: 350.1M / Ammonia, as N | 28D: ASTM D1426-93B Mod. / TKN | 28D: 9065 Modified / Phenolics | 28D: 7471B / Hg | 28D | 28D | 28D | 28D | 28D | 28D | 180D: 6020A / Sb, As, Be, Cd, Cr, Cu, Pb | 180D: 6020A / Mo, Ni, Se, Ag, Tl, Zn | 180D: 6010C / P, K, S, | 14D: 4500-CN-E Mod / Cyanide | 14D: 5035A / 8260C, Volatiles | 14D / 40D: 3541 / 8270C, Semi-Volatiles | 14D / 40D: 3541 / 8081B – Pesticides | 14D / 365D: 3541 / 8082A – PCBs | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 Biosolids | 10/12/23 | Comp. | | S | 1 | X | X | X | X | X | | | | | | | X | X | X | X | | | | | 1 0930 – 1530 |
| 2 | | | | | | | | | | | | | | | | | | | | | | | | | 2 |
| 3 | | | | | | | | | | | | | | | | | | | | | | | | | 3 |
| 4 | | | | | | | | | | | | | | | | | | | | | | | | | 4 |
| 5 | | | | | | | | | | | | | | | | | | | | | | | | | 5 |
| 6 | | | | | | | | | | | | | | | | | | | | | | | | | 6 |
| 7 | | | | | | | | | | | | | | | | | | | | | | | | | 7 |
| 8 | | | | | | | | | | | | | | | | | | | | | | | | | 8 |
| 9 | | | | | | | | | | | | | | | | | | | | | | | | | 9 |
| 10 | | | | | | | | | | | | | | | | | | | | | | | | | 10 |

**Report Requirements**

___ I. Routine Report: Method Blank, Surrogate, as required
X II. Report Dup., MS, MSD as required
___ III. Data Validation Report (includes all raw data)
___ IV. CLP Deliverable Report
___ V. EDD

**Invoice Information**

PO# 65
Bill to: see above

**Turnaround Requirements**

___ 24 hr. ___ 48 hr.
___ 5 Day
X Standard (10-15 working days)
___ Provide Fax Results

Circle which metals are to be analyzed

Total Metals: (Sb) (As) Ba (Be) B Ca (Cd) Co (Cr) (Cu) Fe (Pb) Mg Mn (Mo) (Ni) (K) (P) (Ag) Na (Se) Sr (S) (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_____

☐ Sample Shipment contains USDA regulated soil samples (check box if applicable)

| Relinquished By: | Received By: | Relinquished By: | Received By: |
|---|---|---|---|
| T:30 | T:30 | 10:50 | 1050 |
| 10/13/23 | 10/13/23 | 10/13/23 | 10/13/23 |
| Signature | Signature | Signature | Signature / Date/Time |
| John Damitio | Colby Bradshaw | Colby Bradshaw | M. Mellgan HCC |
| Printed Name | Printed Name | Printed Name | Printed Name / Firm |
| LOTT | LOTT | LOTT | |
| Firm | Firm | Firm | |



Make a copy for LOTT driver

PM_____

# Cooler Receipt and Preservation Form

Client LOTT Service Request K23 11765

Received: 10/13/23 Opened: 10/13/23 By: VM Unloaded: 10/13/23 By: VM

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

| Temp Blank | Sample Temp | IR Gun | Cooler #/COC ID / NA | Out of temp indicate with "X" | PM Notified If out of temp | Tracking Number NA | Filed |
|---|---|---|---|---|---|---|---|
| 2.6 | | IR02 | 1 of 2 | | | | |
| 5.4 | | 1 | 2 of 2 | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |

4. Was a Temperature Blank present in cooler? NA (Y) N If yes, notate the temperature in the appropriate column above:
   If no, take the temperature of a representative sample bottle contained within the cooler; notate in the column "Sample Temp":
5. Were samples received within the method specified temperature ranges? NA (Y) N
   If no, were they received on ice and same day as collected? If not, notate the cooler # above and notify the PM. (NA) Y N

If applicable, tissue samples were received: *Frozen* *Partially Thawed* *Thawed*

6. Packing material: *Inserts* *Baggies* *Bubble Wrap* *Gel Packs* *Wet Ice* *Dry Ice* *Sleeves* _____
7. Were custody papers properly filled out (ink, signed, etc.)? NA (Y) N
8. Were samples received in good condition (unbroken) NA (Y) N
9. Were all sample labels complete (ie, analysis, preservation, etc.)? NA (Y) N
10. Did all sample labels and tags agree with custody papers? NA (Y) N
11. Were appropriate bottles/containers and volumes received for the tests indicated? NA (Y) N
12. Were the pH-preserved bottles (*see SMO GEN SOP*) received at the appropriate pH? *Indicate in the table below* (NA) Y N
13. Were VOA vials received without headspace? *Indicate in the table below.* (NA) Y N
14. Was C12/Res negative? (NA) Y N
15. Were samples received within the method specified time limit? If not, notate the error below and notify the PM (NA) Y N
16. Were 100ml sterile microbiology bottles filled exactly to the 100ml mark? (NA) Y N Underfilled Overfilled

| Sample ID on Bottle | Sample ID on COC | Identified by: |
|---|---|---|
| | | |
| | | |
| | | |

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

Notes, Discrepancies, Resolutions: _____

# Miscellaneous Forms

**ALS Environmental—Kelso Laboratory**
1317 South 13th Avenue, Kelso, WA 98626
Phone (360) 577-7222 Fax (360) 425-9096
www.alsglobal.com

## Inorganic Data Qualifiers

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

## Metals Data Qualifiers

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

## Organic Data Qualifiers

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

## Additional Petroleum Hydrocarbon Specific Qualifiers

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

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

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

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. A complete listing of specific NELAP-certified analytes, can be found in the certification section at www.ALSGlobal.com or at the accreditation bodies web site.
Please refer to the certification and/or accreditation body's web site if samples are submitted for compliance purposes. The states highlighted above, require the analysis be listed on the state certification if used for compliance purposes and if the method/anlayte is offered by that state.

## Acronyms

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

| | | | |
|---|---|---|---|
| **Client:** | LOTT Clean Water Alliance | **Service Request:** | K2311765 |
| **Project:** | LOTTBSOCT23/ | | |

| | | | |
|---|---|---|---|
| **Sample Name:** | Biosolids | **Date Collected:** | 10/12/23 |
| **Lab Code:** | K2311765-001 | **Date Received:** | 10/13/23 |
| **Sample Matrix:** | Sludge | | |

| Analysis Method | Extracted/Digested By | Analyzed By |
|---|---|---|
| 350.1M | SPATTERSON | ESCHLOSS |
| 6010C | MCHATTICK | JCHAN |
| 6020A | MCHATTICK | JCHAN |
| 7471B | SSOLADEY | SSOLADEY |
| 8260C | | OTILLEY |
| 9065 Modified | MSPECHT | MSPECHT |
| ASTM D3590 Mod | ACHEATLEY | ACHEATLEY |
| SM 2540 G | | TRICKMAN |
| SM 4500-CN- E Modified | MRICH | MRICH |

# Sample Results

**ALS Environmental—Kelso Laboratory**
1317 South 13th Avenue, Kelso, WA 98626
Phone (360) 577-7222 Fax (360) 425-9096
www.alsglobal.com

# Metals

**ALS Environmental—Kelso Laboratory**
1317 South 13th Avenue, Kelso, WA 98626
Phone (360) 577-7222 Fax (360) 425-9096
www.alsglobal.com

Analytical Report

| | | | |
|---|---|---|---|
| **Client:** | LOTT Clean Water Alliance | **Service Request:** | K2311765 |
| **Project:** | LOTTBSOCT23 | **Date Collected:** | 10/12/23 15:30 |
| **Sample Matrix:** | Sludge | **Date Received:** | 10/13/23 10:50 |
| **Sample Name:** | Biosolids | **Basis:** | Dry |
| **Lab Code:** | K2311765-001 | | |

## Total Metals

| Analyte Name | Analysis Method | Result | Units | MRL | MDL | Dil. | Date Analyzed | Date Extracted | Q |
|---|---|---|---|---|---|---|---|---|---|
| Antimony | 6020A | **2.60** | mg/Kg | 0.25 | 0.10 | 5 | 11/02/23 08:23 | 10/18/23 | |
| Arsenic | 6020A | **5.1** | mg/Kg | 2.5 | 0.3 | 5 | 11/02/23 08:23 | 10/18/23 | |
| Beryllium | 6020A | **0.090** | mg/Kg | 0.098 | 0.029 | 5 | 11/02/23 08:23 | 10/18/23 | J |
| Cadmium | 6020A | **0.882** | mg/Kg | 0.098 | 0.034 | 5 | 11/02/23 08:23 | 10/18/23 | |
| Chromium | 6020A | **17.6** | mg/Kg | 0.98 | 0.29 | 5 | 11/02/23 08:23 | 10/18/23 | |
| Copper | 6020A | **454** | mg/Kg | 0.49 | 0.20 | 5 | 11/02/23 08:23 | 10/18/23 | |
| Lead | 6020A | **13.6** | mg/Kg | 0.25 | 0.10 | 5 | 11/02/23 08:23 | 10/18/23 | |
| Mercury | 7471B | **0.545** | mg/Kg | 0.093 | 0.009 | 1 | 10/18/23 18:14 | 10/17/23 | |
| Molybdenum | 6020A | **10.9** | mg/Kg | 0.25 | 0.10 | 5 | 11/02/23 08:23 | 10/18/23 | |
| Nickel | 6020A | **17.3** | mg/Kg | 0.98 | 0.15 | 5 | 11/02/23 08:23 | 10/18/23 | |
| Phosphorus | 6010C | **22800** | mg/Kg | 98 | 15 | 2 | 10/27/23 12:45 | 10/18/23 | |
| Potassium | 6010C | **1590** | mg/Kg | 200 | 50 | 2 | 10/27/23 12:45 | 10/18/23 | |
| Selenium | 6020A | **6.8** | mg/Kg | 4.9 | 0.4 | 5 | 11/02/23 08:23 | 10/18/23 | |
| Silver | 6020A | **2.46** | mg/Kg | 0.098 | 0.020 | 5 | 11/02/23 08:23 | 10/18/23 | |
| Sulfur | 6010C | **10700** | mg/Kg | 39 | 10 | 2 | 10/27/23 12:45 | 10/18/23 | |
| Thallium | 6020A | **0.057** | mg/Kg | 0.098 | 0.020 | 5 | 11/02/23 08:23 | 10/18/23 | J |
| Zinc | 6020A | **761** | mg/Kg | 2.5 | 1.0 | 5 | 11/02/23 08:23 | 10/18/23 | |

# General Chemistry

**ALS Environmental—Kelso Laboratory**
1317 South 13th Avenue, Kelso, WA 98626
Phone (360) 577-7222 Fax (360) 425-9096
www.alsglobal.com

Analytical Report

| | | | |
|---|---|---|---|
| **Client:** | LOTT Clean Water Alliance | **Service Request:** | K2311765 |
| **Project:** | LOTTBSOCT23 | **Date Collected:** | 10/12/23 15:30 |
| **Sample Matrix:** | Sludge | **Date Received:** | 10/13/23 10:50 |
| **Sample Name:** | Biosolids | **Basis:** | Dry |
| **Lab Code:** | K2311765-001 | | |

## General Chemistry Parameters

| Analyte Name | Analysis Method | Result | Units | MRL | MDL | Dil. | Date Analyzed | Date Extracted | Q |
|---|---|---|---|---|---|---|---|---|---|
| Ammonia as Nitrogen | 350.1M | **13900** | mg/Kg | 500 | 50 | 200 | 10/26/23 16:14 | 10/16/23 | |
| Ammonium | 350.1M | **13900** | mg/Kg | 500 | 50 | 200 | 10/26/23 16:14 | 10/16/23 | |
| Cyanide, Total | SM 4500-CN- E Modified | **1.49** | mg/Kg | 0.51 | 0.31 | 1 | 10/17/23 17:43 | 10/17/23 | |
| Nitrogen, Total Kjeldahl (TKN) | ASTM D3590 Mod | **20800** | mg/Kg | 200 | 30 | 1 | 10/18/23 09:05 | 10/17/23 | |
| Phenolics, Total | 9065 Modified | **1.88** | mg/Kg | 0.99 | 0.40 | 1 | 10/25/23 15:05 | 10/24/23 | |
| Solids, Total | SM 2540 G | **19.6** | Percent | - | - | 1 | 10/17/23 11:05 | NA | |

# QC Summary Forms

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www.alsglobal.com

# Metals

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

Analytical Report

| | | | |
|---|---|---|---|
| **Client:** | LOTT Clean Water Alliance | **Service Request:** | K2311765 |
| **Project:** | LOTTBSOCT23 | **Date Collected:** | NA |
| **Sample Matrix:** | Sludge | **Date Received:** | NA |
| **Sample Name:** | Method Blank | **Basis:** | Dry |
| **Lab Code:** | KQ2318327-03 | | |

## Total Metals

| Analyte Name | Analysis Method | Result | Units | MRL | MDL | Dil. | Date Analyzed | Date Extracted | Q |
|---|---|---|---|---|---|---|---|---|---|
| Mercury | 7471B | ND U | mg/Kg | 0.02 | 0.002 | 1 | 10/18/23 18:04 | 10/17/23 | |

Analytical Report

| | | | |
|---|---|---|---|
| **Client:** | LOTT Clean Water Alliance | **Service Request:** | K2311765 |
| **Project:** | LOTTBSOCT23 | **Date Collected:** | NA |
| **Sample Matrix:** | Sludge | **Date Received:** | NA |
| **Sample Name:** | Method Blank | **Basis:** | Dry |
| **Lab Code:** | KQ2318329-03 | | |

## Total Metals

| Analyte Name | Analysis Method | Result | Units | MRL | MDL | Dil. | Date Analyzed | Date Extracted | Q |
|---|---|---|---|---|---|---|---|---|---|
| Antimony | 6020A | ND U | mg/Kg | 0.05 | 0.020 | 5 | 11/02/23 08:17 | 10/18/23 | |
| Arsenic | 6020A | ND U | mg/Kg | 0.5 | 0.06 | 5 | 11/02/23 08:17 | 10/18/23 | |
| Beryllium | 6020A | ND U | mg/Kg | 0.020 | 0.006 | 5 | 11/02/23 08:17 | 10/18/23 | |
| Cadmium | 6020A | ND U | mg/Kg | 0.020 | 0.007 | 5 | 11/02/23 08:17 | 10/18/23 | |
| Chromium | 6020A | ND U | mg/Kg | 0.20 | 0.06 | 5 | 11/02/23 08:17 | 10/18/23 | |
| Copper | 6020A | ND U | mg/Kg | 0.10 | 0.04 | 5 | 11/02/23 08:17 | 10/18/23 | |
| Lead | 6020A | ND U | mg/Kg | 0.05 | 0.020 | 5 | 11/02/23 08:17 | 10/18/23 | |
| Molybdenum | 6020A | ND U | mg/Kg | 0.05 | 0.020 | 5 | 11/02/23 08:17 | 10/18/23 | |
| Nickel | 6020A | ND U | mg/Kg | 0.20 | 0.03 | 5 | 11/02/23 08:17 | 10/18/23 | |
| Phosphorus | 6010C | **4 J** | mg/Kg | 20 | 3 | 2 | 10/27/23 12:40 | 10/18/23 | |
| Potassium | 6010C | ND U | mg/Kg | 40 | 10 | 2 | 10/27/23 12:40 | 10/18/23 | |
| Selenium | 6020A | ND U | mg/Kg | 1.0 | 0.09 | 5 | 11/02/23 08:17 | 10/18/23 | |
| Silver | 6020A | ND U | mg/Kg | 0.020 | 0.004 | 5 | 11/02/23 08:17 | 10/18/23 | |
| Sulfur | 6010C | ND U | mg/Kg | 8 | 2.0 | 2 | 10/27/23 12:40 | 10/18/23 | |
| Thallium | 6020A | ND U | mg/Kg | 0.020 | 0.004 | 5 | 11/02/23 08:17 | 10/18/23 | |
| Zinc | 6020A | ND U | mg/Kg | 0.5 | 0.20 | 5 | 11/02/23 08:17 | 10/18/23 | |

| | | | |
|---|---|---|---|
| **Client:** | LOTT Clean Water Alliance | **Service Request:** | K2311765 |
| **Project:** | LOTTBSOCT23 | **Date Collected:** | 10/12/23 |
| **Sample Matrix:** | Sludge | **Date Received:** | 10/13/23 |
| | | **Date Analyzed:** | 10/18/23 |
| | | **Date Extracted:** | 10/17/23 |

## Matrix Spike Summary
## Total Metals

| | | | |
|---|---|---|---|
| **Sample Name:** | Biosolids | **Units:** | mg/Kg |
| **Lab Code:** | K2311765-001 | **Basis:** | Dry |
| **Analysis Method:** | 7471B | | |
| **Prep Method:** | Method | | |

### Matrix Spike
KQ2318327-02

| Analyte Name | Sample Result | Result | Spike Amount | % Rec | % Rec Limits |
|---|---|---|---|---|---|
| Mercury | 0.545 | 2.36 | 2.19 | 83 | 80-120 |

**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.

**Matrix Spike and Matrix Spike Duplicate Data is presented for information purposes only. The matrix may or may not be relevant to samples reported in this report. The laboratory evaluates system performance based on the LCS and LCSD control limits.**

**ALS Group USA, Corp.**
**dba ALS Environmental**

QA/QC Report

**Client:** LOTT Clean Water Alliance
**Project:** LOTTBSOCT23
**Sample Matrix:** Sludge

**Service Request:**K2311765
**Date Collected:**10/12/23
**Date Received:**10/13/23
**Date Analyzed:**10/27/23 - 11/02/23

## Matrix Spike Summary
## Total Metals

**Sample Name:** Biosolids
**Lab Code:** K2311765-001

**Units:**mg/Kg
**Basis:**Dry

### Matrix Spike
KQ2318329-02

| Analyte Name | Method | Sample Result | Result | Spike Amount | % Rec | % Rec Limits |
|---|---|---|---|---|---|---|
| Antimony | 6020A | 2.60 | 458 | 488 | 93 | 75-125 |
| Arsenic | 6020A | 5.1 | 506 | 488 | 103 | 75-125 |
| Beryllium | 6020A | 0.090 J | 47.6 | 48.8 | 97 | 75-125 |
| Cadmium | 6020A | 0.882 | 49.1 | 48.8 | 99 | 75-125 |
| Chromium | 6020A | 17.6 | 216 | 195 | 102 | 75-125 |
| Copper | 6020A | 454 | 713 | 244 | 106 | 75-125 |
| Lead | 6020A | 13.6 | 508 | 488 | 101 | 75-125 |
| Molybdenum | 6020A | 10.9 | 505 | 488 | 101 | 75-125 |
| Nickel | 6020A | 17.3 | 511 | 488 | 101 | 75-125 |
| Phosphorus | 6010C | 22800 | 29400 | 2440 | 270 # | 75-125 |
| Potassium | 6010C | 1590 | 6720 | 4880 | 105 | 75-125 |
| Selenium | 6020A | 6.8 | 510 | 488 | 103 | 75-125 |
| Silver | 6020A | 2.46 | 49.7 | 48.8 | 97 | 75-125 |
| Sulfur | 6010C | 10700 | 14400 | 2440 | 152 # | 75-125 |
| Thallium | 6020A | 0.057 J | 105 | 97.4 | 108 | 75-125 |
| Zinc | 6020A | 761 | 1230 | 488 | 95 | 75-125 |

**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:** | LOTT Clean Water Alliance | **Service Request:** | K2311765 |
| **Project** | LOTTBSOCT23 | **Date Collected:** | 10/12/23 |
| **Sample Matrix:** | Sludge | **Date Received:** | 10/13/23 |
| | | **Date Analyzed:** | 10/18/23 |

## Replicate Sample Summary
## Total Metals

| | | | |
|---|---|---|---|
| **Sample Name:** | Biosolids | **Units:** | mg/Kg |
| **Lab Code:** | K2311765-001 | **Basis:** | Dry |

| Analyte Name | Analysis Method | MRL | MDL | Sample Result | Duplicate Sample KQ2318327-01 Result | Average | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|
| Mercury | 7471B | 0.099 | 0.010 | 0.545 | 0.482 | 0.514 | 12 | 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:** | LOTT Clean Water Alliance | **Service Request:** | K2311765 |
| **Project** | LOTTBSOCT23 | **Date Collected:** | 10/12/23 |
| **Sample Matrix:** | Sludge | **Date Received:** | 10/13/23 |
| | | **Date Analyzed:** | 10/27/23 - 11/02/23 |

**Replicate Sample Summary**

**Total Metals**

| | | | |
|---|---|---|---|
| **Sample Name:** | Biosolids | **Units:** | mg/Kg |
| **Lab Code:** | K2311765-001 | **Basis:** | Dry |

| Analyte Name | Analysis Method | MRL | MDL | Sample Result | Duplicate Sample KQ2318329-01 Result | Average | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|
| Antimony | 6020A | 0.24 | 0.09 | 2.60 | 2.64 | 2.62 | 1 | 20 |
| Arsenic | 6020A | 2.4 | 0.3 | 5.1 | 5.0 | 5.1 | 2 | 20 |
| Beryllium | 6020A | 0.095 | 0.028 | 0.090 J | 0.075 J | 0.083 | 18 | 20 |
| Cadmium | 6020A | 0.095 | 0.033 | 0.882 | 0.919 | 0.901 | 4 | 20 |
| Chromium | 6020A | 0.95 | 0.28 | 17.6 | 17.7 | 17.7 | <1 | 20 |
| Copper | 6020A | 0.47 | 0.19 | 454 | 468 | 461 | 3 | 20 |
| Lead | 6020A | 0.24 | 0.09 | 13.6 | 15.9 | 14.8 | 16 | 20 |
| Molybdenum | 6020A | 0.24 | 0.09 | 10.9 | 9.75 | 10.3 | 11 | 20 |
| Nickel | 6020A | 0.95 | 0.14 | 17.3 | 16.5 | 16.9 | 5 | 20 |
| Phosphorus | 6010C | 95 | 14 | 22800 | 26200 | 24500 | 14 | 20 |
| Potassium | 6010C | 190 | 50 | 1590 | 1760 | 1680 | 10 | 20 |
| Selenium | 6020A | 4.7 | 0.4 | 6.8 | 6.8 | 6.8 | <1 | 20 |
| Silver | 6020A | 0.095 | 0.019 | 2.46 | 2.58 | 2.52 | 5 | 20 |
| Sulfur | 6010C | 38 | 9 | 10700 | 11900 | 11300 | 11 | 20 |
| Thallium | 6020A | 0.095 | 0.019 | 0.057 J | 0.041 J | 0.049 | 32 # | 20 |
| Zinc | 6020A | 2.4 | 0.9 | 761 | 760 | 761 | <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.

**Client:** LOTT Clean Water Alliance
**Project:** LOTTBSOCT23
**Sample Matrix:** Sludge

**Service Request:** K2311765
**Date Analyzed:** 10/18/23

## Lab Control Sample Summary
## Total Metals

**Units:**mg/Kg
**Basis:**Dry

### Lab Control Sample
KQ2318327-04

| Analyte Name | Analytical Method | Result | Spike Amount | % Rec | % Rec Limits |
|---|---|---|---|---|---|
| Mercury | 7471B | 0.556 | 0.500 | 111 | 80-120 |

**Client:** LOTT Clean Water Alliance
**Project:** LOTTBSOCT23
**Sample Matrix:** Sludge

**Service Request:** K2311765
**Date Analyzed:** 10/27/23

## Lab Control Sample Summary
## Total Metals

**Units:**mg/Kg
**Basis:**Dry

### Lab Control Sample
KQ2318329-04

| Analyte Name | Analytical Method | Result | Spike Amount | % Rec | % Rec Limits |
|---|---|---|---|---|---|
| Phosphorus | 6010C | 550 | 500 | 110 | 80-120 |
| Potassium | 6010C | 1030 | 1000 | 103 | 80-120 |
| Sulfur | 6010C | 488 | 500 | 98 | 80-120 |

**Client:** LOTT Clean Water Alliance
**Project:** LOTTBSOCT23
**Sample Matrix:** Sludge

**Service Request:** K2311765
**Date Analyzed:** 11/02/23

## Lab Control Sample Summary
## Total Metals

**Units:**mg/Kg
**Basis:**Dry

### Lab Control Sample
KQ2318329-04

| Analyte Name | Analytical Method | Result | Spike Amount | % Rec | % Rec Limits |
|---|---|---|---|---|---|
| Antimony | 6020A | 111 | 100 | 111 | 80-120 |
| Arsenic | 6020A | 110 | 100 | 110 | 80-120 |
| Beryllium | 6020A | 11.0 | 10.0 | 110 | 80-120 |
| Cadmium | 6020A | 11.0 | 10.0 | 110 | 80-120 |
| Chromium | 6020A | 44.3 | 40.0 | 111 | 80-120 |
| Copper | 6020A | 53.8 | 50.0 | 108 | 80-120 |
| Lead | 6020A | 114 | 100 | 114 | 80-120 |
| Molybdenum | 6020A | 115 | 100 | 115 | 80-120 |
| Nickel | 6020A | 110 | 100 | 110 | 80-120 |
| Selenium | 6020A | 110 | 100 | 110 | 80-120 |
| Silver | 6020A | 11.2 | 10.0 | 112 | 80-120 |
| Thallium | 6020A | 22.5 | 20.0 | 112 | 80-120 |
| Zinc | 6020A | 107 | 100 | 107 | 80-120 |

# General Chemistry

**ALS Environmental—Kelso Laboratory**
1317 South 13th Avenue, Kelso, WA 98626
Phone (360) 577-7222 Fax (360) 425-9096
www.alsglobal.com

Analytical Report

| | | | |
|---|---|---|---|
| **Client:** | LOTT Clean Water Alliance | **Service Request:** | K2311765 |
| **Project:** | LOTTBSOCT23 | **Date Collected:** | NA |
| **Sample Matrix:** | Sludge | **Date Received:** | NA |
| **Sample Name:** | Method Blank | **Basis:** | Dry |
| **Lab Code:** | K2311765-MB | | |

## General Chemistry Parameters

| Analyte Name | Analysis Method | Result | | Units | MRL | MDL | Dil. | Date Analyzed | Date Extracted | Q |
|---|---|---|---|---|---|---|---|---|---|---|
| Ammonia as Nitrogen | 350.1M | ND | U | mg/Kg | 0.50 | 0.04 | 1 | 10/26/23 16:14 | 10/16/23 | |
| Ammonium | 350.1M | ND | U | mg/Kg | 0.50 | 0.04 | 1 | 10/26/23 16:14 | 10/16/23 | |
| Cyanide, Total | SM 4500-CN- E Modified | ND | U | mg/Kg | 0.10 | 0.06 | 1 | 10/17/23 17:43 | 10/17/23 | |
| Nitrogen, Total Kjeldahl (TKN) | ASTM D3590 Mod | ND | U | mg/Kg | 17 | 6.0 | 1 | 10/18/23 09:05 | 10/17/23 | |
| Phenolics, Total | 9065 Modified | **0.12** | **J** | mg/Kg | 0.20 | 0.08 | 1 | 10/25/23 15:05 | 10/24/23 | |
| Solids, Total | SM 2540 G | ND | U | Percent | - | - | 1 | 10/17/23 11:05 | NA | |

| | | | |
|---|---|---|---|
| **Client:** | LOTT Clean Water Alliance | **Service Request:** | K2311765 |
| **Project:** | LOTTBSOCT23 | **Date Collected:** | 10/12/23 |
| **Sample Matrix:** | Sludge | **Date Received:** | 10/13/23 |
| | | **Date Analyzed:** | 10/17/23 |
| | | **Date Extracted:** | 10/17/23 |

## Duplicate Matrix Spike Summary
## Cyanide, Total

| | | | |
|---|---|---|---|
| **Sample Name:** | Biosolids | **Units:** | mg/Kg |
| **Lab Code:** | K2311765-001 | **Basis:** | Dry |
| **Analysis Method:** | SM 4500-CN- E Modified | | |
| **Prep Method:** | SM 4500-CN-C Modified | | |

| | | **Matrix Spike** | | | **Duplicate Matrix Spike** | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | K2311765-001MS | | | K2311765-001DMS | | | | | |
| **Analyte Name** | **Sample Result** | **Result** | **Spike Amount** | **% Rec** | **Result** | **Spike Amount** | **% Rec** | **% Rec Limits** | **RPD** | **RPD Limit** |
| Cyanide, Total | 1.49 | 9.41 | 9.88 | 80 | 9.87 | 9.94 | 84 | 10-167 | 5 | 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.

**Matrix Spike and Matrix Spike Duplicate Data is presented for information purposes only. The matrix may or may not be relevant to samples reported in this report. The laboratory evaluates system performance based on the LCS and LCSD control limits.**

**ALS Group USA, Corp.**

**dba ALS Environmental**

QA/QC Report

| | | | |
|---|---|---|---|
| **Client:** | LOTT Clean Water Alliance | **Service Request:** | K2311765 |
| **Project** | LOTTBSOCT23 | **Date Collected:** | 10/12/23 |
| **Sample Matrix:** | Sludge | **Date Received:** | 10/13/23 |
| | | **Date Analyzed:** | 10/17/23 |

## Replicate Sample Summary
## General Chemistry Parameters

| | | | |
|---|---|---|---|
| **Sample Name:** | Biosolids | **Units:** | mg/Kg |
| **Lab Code:** | K2311765-001 | **Basis:** | Dry |

| Analyte Name | Analysis Method | MRL | MDL | Sample Result | Duplicate Sample K2311765-001DUP Result | Average | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|
| Cyanide, Total | SM 4500-CN- E Modified | 0.49 | 0.30 | 1.49 | 1.46 | 1.47 | 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:** | LOTT Clean Water Alliance | **Service Request:** | K2311765 |
| **Project** | LOTTBSOCT23 | **Date Collected:** | 10/12/23 |
| **Sample Matrix:** | Sludge | **Date Received:** | 10/13/23 |
| | | **Date Analyzed:** | 10/17/23 |

## Replicate Sample Summary
## General Chemistry Parameters

| | | | |
|---|---|---|---|
| **Sample Name:** | Biosolids | **Units:** | Percent |
| **Lab Code:** | K2311765-001 | **Basis:** | Dry |

| Analyte Name | Analysis Method | MRL | MDL | Sample Result | Duplicate Sample K2311765-001DUP Result | Average | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|
| Solids, Total | SM 2540 G | - | - | 19.6 | 19.1 | 19.4 | 3 | 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:** LOTT Clean Water Alliance
**Project:** LOTTBSOCT23
**Sample Matrix:** Sludge

**Service Request:** K2311765
**Date Analyzed:** 10/18/23 - 10/26/23

**Lab Control Sample Summary**
**General Chemistry Parameters**

**Units:**mg/Kg
**Basis:**Dry

**Lab Control Sample**
K2311765-LCS2

| Analyte Name | Analytical Method | Result | Spike Amount | % Rec | % Rec Limits |
|---|---|---|---|---|---|
| Ammonia as Nitrogen | 350.1M | 3.73 | 3.79 | 98 | 86-114 |
| Ammonium | 350.1M | 3.73 | 3.79 | 98 | 86-114 |
| Nitrogen, Total Kjeldahl (TKN) | ASTM D3590 Mod | 722 | 772 | 93 | 82-131 |
| Phenolics, Total | 9065 Modified | 11.3 | 12.0 | 94 | 85-115 |

**ALS Group USA, Corp.**
**dba ALS Environmental**

QA/QC Report

| | | | |
|---|---|---|---|
| **Client:** | LOTT Clean Water Alliance | **Service Request:** | K2311765 |
| **Project:** | LOTTBSOCT23 | **Date Analyzed:** | 10/17/23 |
| **Sample Matrix:** | Sludge | **Date Extracted:** | 10/17/23 |

## Duplicate Lab Control Sample Summary
## General Chemistry Parameters

| | | | |
|---|---|---|---|
| **Analysis Method:** | SM 4500-CN- E Modified | **Units:** | mg/Kg |
| **Prep Method:** | Method | **Basis:** | Dry |
| | | **Analysis Lot:** | 820906 |

| | Lab Control Sample K2311765-LCS1 | | | Duplicate Lab Control Sample K2311765-DLCS1 | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **Analyte Name** | **Result** | **Spike Amount** | **% Rec** | **Result** | **Spike Amount** | **% Rec** | **% Rec Limits** | **RPD** | **RPD Limit** |
| Cyanide, Total | 1.58 | 1.50 | 105 | 1.62 | 1.50 | 108 | 62-128 | 3 | 20 |

December 26, 2023 Service Request No:K2313799

Mark Petrie
Lott Clean Water Alliance
500 Adams Street NE
Olympia, WA 98501

**Laboratory Results for: LOTTBSDEC23**

Dear Mark,

Enclosed are the results of the sample(s) submitted to our laboratory December 08, 2023
For your reference, these analyses have been assigned our service request number **K2313799.**

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 3376. You may also contact me via email at Mark.Harris@alsglobal.com.

Respectfully submitted,

**ALS Group USA, Corp. dba ALS Environmental**

for Mark Harris
Project Manager

ADDRESS 1317 S. 13th Avenue, Kelso, WA 98626
PHONE +1 360 577 7222 | FAX +1 360 636 1068
ALS Group USA, Corp.
dba ALS Environmental

# Narrative Documents

**ALS Environmental—Kelso Laboratory**
1317 South 13th Avenue, Kelso, WA 98626
Phone (360) 577-7222 Fax (360) 425-9096
www.alsglobal.com

**Client:** LOTT Clean Water Alliance
**Project:** LOTTBSDEC23
**Sample Matrix:** Sludge

**Service Request:** K2313799
**Date Received:** 12/08/2023

## CASE NARRATIVE

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

**Sample Receipt:**
One sludge sample was received for analysis at ALS Environmental on 12/08/2023. Any discrepancies upon initial sample inspection are annotated on the sample receipt and preservation form included within this report. The sample was stored at minimum in accordance with the analytical method requirements.

**Semivolatiles by GC/MS:**
No significant anomalies were noted with this analysis.

**Semivoa GC:**
No significant anomalies were noted with this analysis.

**Metals:**
Method 6020A, 12/12/2023:The Relative Percent Difference (RPD) for the replicate analysis of Silver in sample Biosolids was outside the normal ALS control limits. The variability in the results was attributed to the heterogeneous character of the sample. Standard mixing techniques were used, but were not sufficient for complete homogenization of this sample.

**General Chemistry:**
No significant anomalies were noted with this analysis.

**Volatiles by GC/MS:**
No significant anomalies were noted with this analysis.

Approved by Noe D. Davis Date 12/26/2023

## SAMPLE DETECTION SUMMARY

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

| CLIENT ID: Biosolids | | | Lab ID: K2313799-001 | | | |
|---|---|---|---|---|---|---|
| **Analyte** | **Results** | **Flag** | **MDL** | **MRL** | **Units** | **Method** |
| Ammonia as Nitrogen | 11100 | | 50 | 520 | mg/Kg | 350.1M |
| Ammonium | 11100 | | | 520 | mg/Kg | 350.1M |
| Antimony | 2.23 | | 0.10 | 0.52 | mg/Kg | 6020A |
| Arsenic | 4.7 | | 0.3 | 2.6 | mg/Kg | 6020A |
| Beryllium | 0.08 | J | 0.03 | 0.10 | mg/Kg | 6020A |
| Cadmium | 0.90 | | 0.04 | 0.10 | mg/Kg | 6020A |
| Chromium | 18.6 | | 0.3 | 1.0 | mg/Kg | 6020A |
| Copper | 425 | | 0.21 | 0.52 | mg/Kg | 6020A |
| Cyanide, Total | 1.27 | | 0.31 | 0.51 | mg/Kg | SM 4500-CN- E Modified |
| Lead | 17.0 | | 0.10 | 0.26 | mg/Kg | 6020A |
| Magnesium | 5830 | | 1 | 10 | mg/Kg | 6010C |
| Mercury | 0.479 | | 0.010 | 0.099 | mg/Kg | 7471B |
| Molybdenum | 11.2 | | 0.10 | 0.26 | mg/Kg | 6020A |
| Nickel | 18.7 | | 0.2 | 1.0 | mg/Kg | 6020A |
| Nitrogen, Total Kjeldahl (TKN) | 60900 | | 40 | 210 | mg/Kg | ASTM D3590 Mod |
| Phenolics, Total | 0.9 | J | 0.5 | 1.0 | mg/Kg | 9065 Modified |
| Phosphorus | 20800 | | 20 | 100 | mg/Kg | 6010C |
| Potassium | 1640 | | 50 | 210 | mg/Kg | 6010C |
| Selenium | 6.3 | | 0.5 | 5.2 | mg/Kg | 6020A |
| Silver | 2.63 | | 0.02 | 0.10 | mg/Kg | 6020A |
| Solids, Total | 19.1 | | | | Percent | SM 2540 G |
| Sulfur | 9930 | | 10 | 83 | mg/Kg | 6010C |
| Thallium | 0.06 | J | 0.02 | 0.10 | mg/Kg | 6020A |
| Zinc | 690 | | 1.0 | 2.6 | mg/Kg | 6020A |

# Sample Receipt Information

**ALS Environmental—Kelso Laboratory**
1317 South 13th Avenue, Kelso, WA 98626
Phone (360) 577-7222 Fax (360) 425-9096
www.alsglobal.com

**Client:** LOTT Clean Water Alliance **Service Request:**K2313799
**Project:** LOTTBSDEC23

## SAMPLE CROSS-REFERENCE

| SAMPLE # | CLIENT SAMPLE ID | DATE | TIME |
|---|---|---|---|
| K2313799-001 | Biosolids | 12/7/2023 | |

ALS Environmental
134852 1317 South 13th Ave, Kelso, WA 98626 | 360-577-7222 | 360-636-1068 (fax)

SR# K2313799

COC Set _____ of _____

# CHAIN OF CUSTODY

Page 1 of 1 COC # _____

| | |
|---|---|
| Project Name: | LOTTBSDEC23 |
| Project Number: | |
| Project Manager | Mark Petrie |
| Company Name: | LOTT Clean Water Alliance |
| Company Address: | 500 Adams St. NE |
| City/State/Zip | Olympia, WA 98501 |
| E-mail Address | markpetrie@lottcleanwater.org |
| Phone # | 360-528-5749 Fax # |
| Sampler Signature: | |

| Sample ID | Date | Time | Lab ID | Matrix | Number of Containers | 999D | 28D | | | | | | | | | 180D | | | 14D | | 14D / 40D | | 14D / 365D | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | SM 2540 G / Total Solids | 350.1M / Ammonia, as N | ASTM D1426-93B Mod. / TKN | 9065 Modified / Phenolics | 7471B / Hg | | | | | | 6020A / Sb, As, Be, Cd, Cr, Cu, Pb | 6020A / Mo, Ni, Se, Ag, Tl, Zn | 6010C / P, K, S, | 4500-CN-E Mod / Cyanide | 5035A / 8260C, Volatiles | 3541 / 8270C, Semi-Volatiles | 3541 / 8081B – Pesticides | 3541 / 8082A – PCBs | |
| 1 Biosolids | 12/07/23 | Comp. | | S | 1 | X | X | X | X | X | | | | | | X | X | X | X | | | | | 1 0800 - 1400 |
| 2 | | | | | | | | | | | | | | | | | | | | | | | | 2 |
| 3 | | | | | | | | | | | | | | | | | | | | | | | | 3 |
| 4 | | | | | | | | | | | | | | | | | | | | | | | | 4 |
| 5 | | | | | | | | | | | | | | | | | | | | | | | | 5 |
| 6 | | | | | | | | | | | | | | | | | | | | | | | | 6 |
| 7 | | | | | | | | | | | | | | | | | | | | | | | | 7 |
| 8 | | | | | | | | | | | | | | | | | | | | | | | | 8 |
| 9 | | | | | | | | | | | | | | | | | | | | | | | | 9 |
| 10 | | | | | | | | | | | | | | | | | | | | | | | | 10 |

**Report Requirements**

- ___ I. Routine Report: Method Blank, Surrogate, as required
- X II. Report Dup., MS, MSD as required
- ___ III. Data Validation Report (includes all raw data)
- ___ IV. CLP Deliverable Report
- ___ V. EDD

**Invoice Information**

PO# 65

Bill to: see above

**Turnaround Requirements**

___ 24 hr. ___ 48 hr.

___ 5 Day

X Standard (10-15 working days)

___ Provide Fax Results

Circle which metals are to be analyzed

Total Metals: (Sb) (As) Ba (Be) B Ca (Cd) Co (Cr) (Cu) Fe (Pb) Mg Mn (Mo) (Ni) (K) (P) (Ag) Na (Se) Sr (S) (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_____

☐ Sample Shipment contains USDA regulated soil samples (check box if applicable)

| Relinquished By: | Received By: | Relinquished By: | Received By: |
|---|---|---|---|
| Signature | Signature | Signature | Signature |
| 12/08/23 0810 | 12/08/23 0810 | 12/08/23 0930 | 12/8/23 0930 |
| Date/Time | Date/Time | Date/Time | Date/Time |
| John Damitio | Quentin Gillespie | Quentin Gillespie | Naomi Pedersen |
| Printed Name | Printed Name | Printed Name | Printed Name |
| LOTT | LOTT | LOTT | ALS |
| Firm | Firm | Firm | Firm |

Make a copy for LOTT driver

PM MH

# Cooler Receipt and Preservation Form

Client LOTT Service Request K23 13799

Received: 12/8/23 Opened: 12/8/23 By: KM Unloaded: 12/8/23 By: KM

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

| Temp Blank | Sample Temp | IR Gun | Cooler #/COC ID / NA | Out of temp indicate with "X" | PM Notified If out of temp | Tracking Number NA | Filed |
|---|---|---|---|---|---|---|---|
| 5.1 | | 2201 | | | | | |
| 0.1 | | ↓ | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |

4. Was a Temperature Blank present in cooler? NA Y N If yes, notate the temperature in the appropriate column above:
   If no, take the temperature of a representative sample bottle contained within the cooler; notate in the column "Sample Temp":
5. Were samples received within the method specified temperature ranges? NA Y N
   If no, were they received on ice and same day as collected? If not, notate the cooler # above and notify the PM. NA Y N

If applicable, tissue samples were received: *Frozen* *Partially Thawed* *Thawed*

6. Packing material: *Inserts* *Baggies* *Bubble Wrap* *Gel Packs* *Wet Ice* *Dry Ice* *Sleeves* _____
7. Were custody papers properly filled out (ink, signed, etc.)? NA Y N
8. Were samples received in good condition (unbroken) NA Y N
9. Were all sample labels complete (ie, analysis, preservation, etc.)? NA Y N
10. Did all sample labels and tags agree with custody papers? NA Y N
11. Were appropriate bottles/containers and volumes received for the tests indicated? NA Y N
12. Were the pH-preserved bottles (*see SMO GEN SOP*) received at the appropriate pH? *Indicate in the table below* NA Y N
13. Were VOA vials received without headspace? *Indicate in the table below.* NA Y N
14. Was C12/Res negative? NA Y N
15. Were samples received within the method specified time limit? If not, notate the error below and notify the PM NA Y N
16. Were 100ml sterile microbiology bottles filled exactly to the 100ml mark? NA Y N Underfilled Overfilled

| Sample ID on Bottle | Sample ID on COC | Identified by: |
|---|---|---|
| | | |
| | | |
| | | |

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

Notes, Discrepancies, Resolutions: _____

# Miscellaneous Forms

**ALS Environmental—Kelso Laboratory**
1317 South 13th Avenue, Kelso, WA 98626
Phone (360) 577-7222 Fax (360) 425-9096
www.alsglobal.com

## Inorganic Data Qualifiers

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

## Metals Data Qualifiers

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

## Organic Data Qualifiers

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

## Additional Petroleum Hydrocarbon Specific Qualifiers

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

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

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

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. A complete listing of specific NELAP-certified analytes, can be found in the certification section at www.ALSGlobal.com or at the accreditation bodies web site.
Please refer to the certification and/or accreditation body's web site if samples are submitted for compliance purposes. The states highlighted above, require the analysis be listed on the state certification if used for compliance purposes and if the method/anlayte is offered by that state.

## Acronyms

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

**ALS Group USA, Corp.**
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Analyst Summary report

| | | | |
|---|---|---|---|
| **Client:** | LOTT Clean Water Alliance | **Service Request:** | K2313799 |
| **Project:** | LOTTBSDEC23/ | | |

| | | | |
|---|---|---|---|
| **Sample Name:** | Biosolids | **Date Collected:** | 12/7/23 |
| **Lab Code:** | K2313799-001 | **Date Received:** | 12/8/23 |
| **Sample Matrix:** | Sludge | | |

| Analysis Method | Extracted/Digested By | Analyzed By |
|---|---|---|
| 350.1M | ESCHLOSS | ESCHLOSS |
| 6010C | KLINN | AMCKORNEY |
| 6020A | KLINN | JCHAN |
| 7471B | SSOLADEY | SSOLADEY |
| 9065 Modified | MSPECHT | MSPECHT |
| ASTM D3590 Mod | ACHEATLEY | ACHEATLEY |
| SM 2540 G | | ZBIBI |
| SM 4500-CN- E Modified | MRICH | MRICH |

# Sample Results

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1317 South 13th Avenue, Kelso, WA 98626
Phone (360) 577-7222 Fax (360) 425-9096
www.alsglobal.com

# Metals

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Analytical Report

| | | | |
|---|---|---|---|
| **Client:** | LOTT Clean Water Alliance | **Service Request:** | K2313799 |
| **Project:** | LOTTBSDEC23 | **Date Collected:** | 12/07/23 |
| **Sample Matrix:** | Sludge | **Date Received:** | 12/08/23 09:30 |
| **Sample Name:** | Biosolids | **Basis:** | Dry |
| **Lab Code:** | K2313799-001 | | |

## Total Metals

| Analyte Name | Analysis Method | Result | Units | MRL | MDL | Dil. | Date Analyzed | Date Extracted | Q |
|---|---|---|---|---|---|---|---|---|---|
| Antimony | 6020A | **2.23** | mg/Kg | 0.52 | 0.10 | 5 | 12/12/23 10:43 | 12/11/23 | |
| Arsenic | 6020A | **4.7** | mg/Kg | 2.6 | 0.3 | 5 | 12/12/23 10:43 | 12/11/23 | |
| Beryllium | 6020A | **0.08** | mg/Kg | 0.10 | 0.03 | 5 | 12/12/23 10:43 | 12/11/23 | J |
| Cadmium | 6020A | **0.90** | mg/Kg | 0.10 | 0.04 | 5 | 12/12/23 10:43 | 12/11/23 | |
| Chromium | 6020A | **18.6** | mg/Kg | 1.0 | 0.3 | 5 | 12/12/23 10:43 | 12/11/23 | |
| Copper | 6020A | **425** | mg/Kg | 0.52 | 0.21 | 5 | 12/12/23 10:43 | 12/11/23 | |
| Lead | 6020A | **17.0** | mg/Kg | 0.26 | 0.10 | 5 | 12/12/23 10:43 | 12/11/23 | |
| Magnesium | 6010C | **5830** | mg/Kg | 10 | 1 | 2 | 12/14/23 11:48 | 12/11/23 | |
| Mercury | 7471B | **0.479** | mg/Kg | 0.099 | 0.010 | 1 | 12/13/23 13:50 | 12/12/23 | |
| Molybdenum | 6020A | **11.2** | mg/Kg | 0.26 | 0.10 | 5 | 12/12/23 10:43 | 12/11/23 | |
| Nickel | 6020A | **18.7** | mg/Kg | 1.0 | 0.2 | 5 | 12/12/23 10:43 | 12/11/23 | |
| Phosphorus | 6010C | **20800** | mg/Kg | 100 | 20 | 2 | 12/14/23 11:48 | 12/11/23 | |
| Potassium | 6010C | **1640** | mg/Kg | 210 | 50 | 2 | 12/14/23 11:48 | 12/11/23 | |
| Selenium | 6020A | **6.3** | mg/Kg | 5.2 | 0.5 | 5 | 12/12/23 10:43 | 12/11/23 | |
| Silver | 6020A | **2.63** | mg/Kg | 0.10 | 0.02 | 5 | 12/12/23 10:43 | 12/11/23 | |
| Sulfur | 6010C | **9930** | mg/Kg | 83 | 10 | 2 | 12/14/23 11:48 | 12/11/23 | |
| Thallium | 6020A | **0.06** | mg/Kg | 0.10 | 0.02 | 5 | 12/12/23 10:43 | 12/11/23 | J |
| Zinc | 6020A | **690** | mg/Kg | 2.6 | 1.0 | 5 | 12/12/23 10:43 | 12/11/23 | |

# General Chemistry

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| | | | |
|---|---|---|---|
| **Client:** | LOTT Clean Water Alliance | **Service Request:** | K2313799 |
| **Project:** | LOTTBSDEC23 | **Date Collected:** | 12/07/23 |
| **Sample Matrix:** | Sludge | **Date Received:** | 12/08/23 09:30 |
| **Sample Name:** | Biosolids | **Basis:** | Dry |
| **Lab Code:** | K2313799-001 | | |

## General Chemistry Parameters

| Analyte Name | Analysis Method | Result | Q | Units | MRL | MDL | Dil. | Date Analyzed | Date Extracted | Q |
|---|---|---|---|---|---|---|---|---|---|---|
| Ammonia as Nitrogen | 350.1M | **11100** | | mg/Kg | 520 | 50 | 200 | 12/13/23 16:53 | 12/11/23 | |
| Ammonium | 350.1M | **11100** | | mg/Kg | 520 | - | 200 | 12/13/23 16:53 | 12/11/23 | |
| Cyanide, Total | SM 4500-CN- E Modified | **1.27** | | mg/Kg | 0.51 | 0.31 | 1 | 12/19/23 16:27 | 12/19/23 | |
| Nitrogen, Total Kjeldahl (TKN) | ASTM D3590 Mod | **60900** | | mg/Kg | 210 | 40 | 1 | 12/12/23 10:45 | 12/11/23 | |
| Phenolics, Total | 9065 Modified | **0.9** | **J** | mg/Kg | 1.0 | 0.5 | 1 | 12/22/23 13:55 | 12/20/23 | |
| Solids, Total | SM 2540 G | **19.1** | | Percent | - | - | 1 | 12/12/23 14:45 | NA | |

# QC Summary Forms

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www.alsglobal.com

# Metals

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Phone (360) 577-7222 Fax (360) 425-9096
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Analytical Report

| | | | |
|---|---|---|---|
| **Client:** | LOTT Clean Water Alliance | **Service Request:** | K2313799 |
| **Project:** | LOTTBSDEC23 | **Date Collected:** | NA |
| **Sample Matrix:** | Sludge | **Date Received:** | NA |
| **Sample Name:** | Method Blank | **Basis:** | Dry |
| **Lab Code:** | KQ2321559-03 | | |

## Total Metals

| Analyte Name | Analysis Method | Result | Units | MRL | MDL | Dil. | Date Analyzed | Date Extracted | Q |
|---|---|---|---|---|---|---|---|---|---|
| Mercury | 7471B | **0.003 J** | mg/Kg | 0.02 | 0.002 | 1 | 12/13/23 13:42 | 12/12/23 | |

Analytical Report

| | | | |
|---|---|---|---|
| **Client:** | LOTT Clean Water Alliance | **Service Request:** | K2313799 |
| **Project:** | LOTTBSDEC23 | **Date Collected:** | NA |
| **Sample Matrix:** | Sludge | **Date Received:** | NA |
| **Sample Name:** | Method Blank | **Basis:** | Dry |
| **Lab Code:** | KQ2321560-03 | | |

## Total Metals

| Analyte Name | Analysis Method | Result | | Units | MRL | MDL | Dil. | Date Analyzed | Date Extracted | Q |
|---|---|---|---|---|---|---|---|---|---|---|
| Antimony | 6020A | ND | U | mg/Kg | 0.10 | 0.02 | 5 | 12/12/23 10:38 | 12/11/23 | |
| Arsenic | 6020A | ND | U | mg/Kg | 0.5 | 0.06 | 5 | 12/12/23 10:38 | 12/11/23 | |
| Beryllium | 6020A | ND | U | mg/Kg | 0.020 | 0.006 | 5 | 12/12/23 10:38 | 12/11/23 | |
| Cadmium | 6020A | ND | U | mg/Kg | 0.020 | 0.007 | 5 | 12/12/23 10:38 | 12/11/23 | |
| Chromium | 6020A | ND | U | mg/Kg | 0.20 | 0.06 | 5 | 12/12/23 10:38 | 12/11/23 | |
| Copper | 6020A | ND | U | mg/Kg | 0.10 | 0.04 | 5 | 12/12/23 10:38 | 12/11/23 | |
| Lead | 6020A | ND | U | mg/Kg | 0.05 | 0.020 | 5 | 12/12/23 10:38 | 12/11/23 | |
| Magnesium | 6010C | ND | U | mg/Kg | 2 | 0.2 | 2 | 12/14/23 11:35 | 12/11/23 | |
| Molybdenum | 6020A | ND | U | mg/Kg | 0.05 | 0.020 | 5 | 12/12/23 10:38 | 12/11/23 | |
| Nickel | 6020A | ND | U | mg/Kg | 0.20 | 0.03 | 5 | 12/12/23 10:38 | 12/11/23 | |
| Phosphorus | 6010C | **5** | **J** | mg/Kg | 20 | 3 | 2 | 12/14/23 11:35 | 12/11/23 | |
| Potassium | 6010C | ND | U | mg/Kg | 40 | 10 | 2 | 12/14/23 11:35 | 12/11/23 | |
| Selenium | 6020A | ND | U | mg/Kg | 1.0 | 0.09 | 5 | 12/12/23 10:38 | 12/11/23 | |
| Silver | 6020A | ND | U | mg/Kg | 0.020 | 0.004 | 5 | 12/12/23 10:38 | 12/11/23 | |
| Sulfur | 6010C | ND | U | mg/Kg | 16 | 2 | 2 | 12/14/23 11:35 | 12/11/23 | |
| Thallium | 6020A | ND | U | mg/Kg | 0.020 | 0.004 | 5 | 12/12/23 10:38 | 12/11/23 | |
| Zinc | 6020A | ND | U | mg/Kg | 0.5 | 0.20 | 5 | 12/12/23 10:38 | 12/11/23 | |

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QA/QC Report

| | | | |
|---|---|---|---|
| **Client:** | LOTT Clean Water Alliance | **Service Request:** | K2313799 |
| **Project:** | LOTTBSDEC23 | **Date Collected:** | 12/07/23 |
| **Sample Matrix:** | Sludge | **Date Received:** | 12/08/23 |
| | | **Date Analyzed:** | 12/13/23 |
| | | **Date Extracted:** | 12/12/23 |

**Matrix Spike Summary**
**Total Metals**

| | | | |
|---|---|---|---|
| **Sample Name:** | Biosolids | **Units:** | mg/Kg |
| **Lab Code:** | K2313799-001 | **Basis:** | Dry |
| **Analysis Method:** | 7471B | | |
| **Prep Method:** | Method | | |

**Matrix Spike**
KQ2321559-02

| Analyte Name | Sample Result | Result | Spike Amount | % Rec | % Rec Limits |
|---|---|---|---|---|---|
| Mercury | 0.479 | 2.49 | 2.25 | 90 | 80-120 |

**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.

**Matrix Spike and Matrix Spike Duplicate Data is presented for information purposes only. The matrix may or may not be relevant to samples reported in this report. The laboratory evaluates system performance based on the LCS and LCSD control limits.**

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QA/QC Report

**Client:** LOTT Clean Water Alliance
**Project:** LOTTBSDEC23
**Sample Matrix:** Sludge

**Service Request:**K2313799
**Date Collected:**12/07/23
**Date Received:**12/08/23
**Date Analyzed:**12/12/23 - 12/14/23

## Matrix Spike Summary
## Total Metals

**Sample Name:** Biosolids
**Lab Code:** K2313799-001

**Units:**mg/Kg
**Basis:**Dry

### Matrix Spike
KQ2321560-02

| Analyte Name | Method | Sample Result | Result | Spike Amount | % Rec | % Rec Limits |
|---|---|---|---|---|---|---|
| Antimony | 6020A | 2.23 | 420 | 483 | 86 | 75-125 |
| Arsenic | 6020A | 4.7 | 465 | 483 | 95 | 75-125 |
| Beryllium | 6020A | 0.081 J | 45.8 | 48.3 | 95 | 75-125 |
| Cadmium | 6020A | 0.898 | 46.1 | 48.3 | 93 | 75-125 |
| Chromium | 6020A | 18.6 | 208 | 193 | 98 | 75-125 |
| Copper | 6020A | 425 | 616 | 242 | 79 | 75-125 |
| Lead | 6020A | 17.0 | 472 | 483 | 94 | 75-125 |
| Magnesium | 6010C | 5830 | 9840 | 4830 | 83 | 75-125 |
| Molybdenum | 6020A | 11.2 | 494 | 483 | 100 | 75-125 |
| Nickel | 6020A | 18.7 | 494 | 483 | 98 | 75-125 |
| Phosphorus | 6010C | 20800 | 22000 | 2420 | 50 # | 75-125 |
| Potassium | 6010C | 1640 | 6130 | 4830 | 93 | 75-125 |
| Selenium | 6020A | 6.3 | 472 | 483 | 96 | 75-125 |
| Silver | 6020A | 2.63 | 46.5 | 48.3 | 91 | 75-125 |
| Sulfur | 6010C | 9930 | 11700 | 2420 | 72 # | 75-125 |
| Thallium | 6020A | 0.056 J | 89.3 | 96.9 | 92 | 75-125 |
| Zinc | 6020A | 690 | 1150 | 483 | 95 | 75-125 |

**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:** | LOTT Clean Water Alliance | **Service Request:** | K2313799 |
| **Project** | LOTTBSDEC23 | **Date Collected:** | 12/07/23 |
| **Sample Matrix:** | Sludge | **Date Received:** | 12/08/23 |
| | | **Date Analyzed:** | 12/13/23 |

## Replicate Sample Summary
## Total Metals

| | | | |
|---|---|---|---|
| **Sample Name:** | Biosolids | **Units:** | mg/Kg |
| **Lab Code:** | K2313799-001 | **Basis:** | Dry |

| Analyte Name | Analysis Method | MRL | MDL | Sample Result | Duplicate Sample KQ2321559-01 Result | Average | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|
| Mercury | 7471B | 0.088 | 0.009 | 0.479 | 0.572 | 0.526 | 18 | 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:** | LOTT Clean Water Alliance | **Service Request:** | K2313799 |
| **Project** | LOTTBSDEC23 | **Date Collected:** | 12/07/23 |
| **Sample Matrix:** | Sludge | **Date Received:** | 12/08/23 |
| | | **Date Analyzed:** | 12/12/23 - 12/14/23 |

## Replicate Sample Summary
## Total Metals

| | | | |
|---|---|---|---|
| **Sample Name:** | Biosolids | **Units:** | mg/Kg |
| **Lab Code:** | K2313799-001 | **Basis:** | Dry |

| Analyte Name | Analysis Method | MRL | MDL | Sample Result | Duplicate Sample KQ2321560-01 Result | Average | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|
| Antimony | 6020A | 0.52 | 0.10 | 2.23 | 1.98 | 2.11 | 12 | 20 |
| Arsenic | 6020A | 2.6 | 0.3 | 4.7 | 4.6 | 4.7 | 4 | 20 |
| Beryllium | 6020A | 0.10 | 0.03 | 0.08 J | 0.06 J | 0.07 | 22 # | 20 |
| Cadmium | 6020A | 0.10 | 0.04 | 0.90 | 0.94 | 0.92 | 4 | 20 |
| Chromium | 6020A | 1.0 | 0.3 | 18.6 | 18.7 | 18.7 | <1 | 20 |
| Copper | 6020A | 0.52 | 0.21 | 425 | 422 | 424 | <1 | 20 |
| Lead | 6020A | 0.26 | 0.10 | 17.0 | 15.0 | 16.0 | 13 | 20 |
| Magnesium | 6010C | 10 | 1 | 5830 | 5730 | 5780 | <1 | 20 |
| Molybdenum | 6020A | 0.26 | 0.10 | 11.2 | 10.8 | 11.0 | 3 | 20 |
| Nickel | 6020A | 1.0 | 0.2 | 18.7 | 17.9 | 18.3 | 4 | 20 |
| Phosphorus | 6010C | 100 | 20 | 20800 | 20900 | 20900 | <1 | 20 |
| Potassium | 6010C | 210 | 50 | 1640 | 1690 | 1670 | 3 | 20 |
| Selenium | 6020A | 5.2 | 0.5 | 6.3 | 6.3 | 6.3 | <1 | 20 |
| Silver | 6020A | 0.10 | 0.02 | 2.63 | 4.44 | 3.54 | 51 * | 20 |
| Sulfur | 6010C | 83 | 10 | 9930 | 9830 | 9880 | 1 | 20 |
| Thallium | 6020A | 0.10 | 0.02 | 0.06 J | 0.05 J | 0.06 | 20 | 20 |
| Zinc | 6020A | 2.6 | 1.0 | 690 | 689 | 690 | <1 | 20 |

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QA/QC Report

**Client:** LOTT Clean Water Alliance
**Project:** LOTTBSDEC23
**Sample Matrix:** Sludge

**Service Request:** K2313799
**Date Analyzed:** 12/13/23

## Lab Control Sample Summary
## Total Metals

**Units:**mg/Kg
**Basis:**Dry

### Lab Control Sample
KQ2321559-04

| Analyte Name | Analytical Method | Result | Spike Amount | % Rec | % Rec Limits |
|---|---|---|---|---|---|
| Mercury | 7471B | 0.497 | 0.500 | 99 | 80-120 |

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QA/QC Report

**Client:** LOTT Clean Water Alliance
**Project:** LOTTBSDEC23
**Sample Matrix:** Sludge

**Service Request:** K2313799
**Date Analyzed:** 12/14/23

## Lab Control Sample Summary
## Total Metals

**Units:**mg/Kg
**Basis:**Dry

### Lab Control Sample
KQ2321560-04

| Analyte Name | Analytical Method | Result | Spike Amount | % Rec | % Rec Limits |
|---|---|---|---|---|---|
| Magnesium | 6010C | 1010 | 1000 | 101 | 80-120 |
| Phosphorus | 6010C | 482 | 500 | 96 | 80-120 |
| Potassium | 6010C | 973 | 1000 | 97 | 80-120 |
| Sulfur | 6010C | 462 | 500 | 92 | 80-120 |

**Client:** LOTT Clean Water Alliance
**Project:** LOTTBSDEC23
**Sample Matrix:** Sludge

**Service Request:** K2313799
**Date Analyzed:** 12/12/23

## Lab Control Sample Summary
## Total Metals

**Units:**mg/Kg
**Basis:**Dry

### Lab Control Sample
KQ2321560-04

| Analyte Name | Analytical Method | Result | Spike Amount | % Rec | % Rec Limits |
|---|---|---|---|---|---|
| Antimony | 6020A | 101 | 100 | 101 | 80-120 |
| Arsenic | 6020A | 100 | 100 | 100 | 80-120 |
| Beryllium | 6020A | 10.4 | 10.0 | 104 | 80-120 |
| Cadmium | 6020A | 10.1 | 10.0 | 101 | 80-120 |
| Chromium | 6020A | 40.0 | 40.0 | 100 | 80-120 |
| Copper | 6020A | 49.5 | 50.0 | 99 | 80-120 |
| Lead | 6020A | 103 | 100 | 103 | 80-120 |
| Molybdenum | 6020A | 107 | 100 | 107 | 80-120 |
| Nickel | 6020A | 99.4 | 100 | 99 | 80-120 |
| Selenium | 6020A | 101 | 100 | 101 | 80-120 |
| Silver | 6020A | 10.1 | 10.0 | 101 | 80-120 |
| Thallium | 6020A | 18.5 | 20.0 | 92 | 80-120 |
| Zinc | 6020A | 97.6 | 100 | 98 | 80-120 |

# General Chemistry

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1317 South 13th Avenue, Kelso, WA 98626
Phone (360) 577-7222 Fax (360) 425-9096
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Analytical Report

| | | | |
|---|---|---|---|
| **Client:** | LOTT Clean Water Alliance | **Service Request:** | K2313799 |
| **Project:** | LOTTBSDEC23 | **Date Collected:** | NA |
| **Sample Matrix:** | Sludge | **Date Received:** | NA |
| **Sample Name:** | Method Blank | **Basis:** | Dry |
| **Lab Code:** | K2313799-MB | | |

## General Chemistry Parameters

| Analyte Name | Analysis Method | Result | | Units | MRL | MDL | Dil. | Date Analyzed | Date Extracted | Q |
|---|---|---|---|---|---|---|---|---|---|---|
| Ammonia as Nitrogen | 350.1M | **0.05** | **J** | mg/Kg | 0.50 | 0.04 | 1 | 12/13/23 16:53 | 12/11/23 | |
| Ammonium | 350.1M | ND | U | mg/Kg | 0.50 | - | 1 | 12/13/23 16:53 | 12/11/23 | |
| Cyanide, Total | SM 4500-CN- E Modified | ND | U | mg/Kg | 0.10 | 0.06 | 1 | 12/19/23 16:27 | 12/19/23 | |
| Nitrogen, Total Kjeldahl (TKN) | ASTM D3590 Mod | ND | U | mg/Kg | 40 | 6 | 1 | 12/12/23 10:45 | 12/11/23 | |
| Phenolics, Total | 9065 Modified | ND | U | mg/Kg | 0.20 | 0.08 | 1 | 12/22/23 13:55 | 12/20/23 | |
| Solids, Total | SM 2540 G | ND | U | Percent | - | - | 1 | 12/12/23 14:45 | NA | |

| | | | |
|---|---|---|---|
| **Client:** | LOTT Clean Water Alliance | **Service Request:** | K2313799 |
| **Project:** | LOTTBSDEC23 | **Date Collected:** | 12/07/23 |
| **Sample Matrix:** | Sludge | **Date Received:** | 12/08/23 |
| | | **Date Analyzed:** | 12/19/23 |
| | | **Date Extracted:** | 12/19/23 |

## Duplicate Matrix Spike Summary
## Cyanide, Total

| | | | |
|---|---|---|---|
| **Sample Name:** | Biosolids | **Units:** | mg/Kg |
| **Lab Code:** | K2313799-001 | **Basis:** | Dry |
| **Analysis Method:** | SM 4500-CN- E Modified | | |
| **Prep Method:** | SM 4500-CN-C Modified | | |

| | | Matrix Spike | | | Duplicate Matrix Spike | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | K2313799-001MS | | | K2313799-001DMS | | | | | |
| **Analyte Name** | **Sample Result** | **Result** | **Spike Amount** | **% Rec** | **Result** | **Spike Amount** | **% Rec** | **% Rec Limits** | **RPD** | **RPD Limit** |
| Cyanide, Total | 1.27 | 8.39 | 10.4 | 68 | 8.90 | 10.1 | 75 | 10-167 | 10 | 20 |

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**Matrix Spike and Matrix Spike Duplicate Data is presented for information purposes only. The matrix may or may not be relevant to samples reported in this report. The laboratory evaluates system performance based on the LCS and LCSD control limits.**

**ALS Group USA, Corp.**

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QA/QC Report

| | | | |
|---|---|---|---|
| **Client:** | LOTT Clean Water Alliance | **Service Request:** | K2313799 |
| **Project** | LOTTBSDEC23 | **Date Collected:** | 12/07/23 |
| **Sample Matrix:** | Sludge | **Date Received:** | 12/08/23 |
| | | **Date Analyzed:** | 12/19/23 |

## Replicate Sample Summary
## General Chemistry Parameters

| | | | |
|---|---|---|---|
| **Sample Name:** | Biosolids | **Units:** | mg/Kg |
| **Lab Code:** | K2313799-001 | **Basis:** | Dry |

| Analyte Name | Analysis Method | MRL | MDL | Sample Result | Duplicate Sample K2313799-001DUP Result | Average | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|
| Cyanide, Total | SM 4500-CN- E Modified | 0.52 | 0.32 | 1.27 | 1.20 | 1.24 | 6 | 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:** | LOTT Clean Water Alliance | **Service Request:** | K2313799 |
| **Project** | LOTTBSDEC23 | **Date Collected:** | 12/07/23 |
| **Sample Matrix:** | Sludge | **Date Received:** | 12/08/23 |
| | | **Date Analyzed:** | 12/12/23 |

## Replicate Sample Summary
## General Chemistry Parameters

| | | | |
|---|---|---|---|
| **Sample Name:** | Biosolids | **Units:** | Percent |
| **Lab Code:** | K2313799-001 | **Basis:** | Dry |

| Analyte Name | Analysis Method | MRL | MDL | Sample Result | Duplicate Sample K2313799-001DUP Result | Average | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|
| Solids, Total | SM 2540 G | - | - | 19.1 | 19.0 | 19.1 | <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.

**Client:** LOTT Clean Water Alliance
**Project:** LOTTBSDEC23
**Sample Matrix:** Sludge

**Service Request:** K2313799
**Date Analyzed:** 12/12/23 - 12/22/23

## Lab Control Sample Summary
## General Chemistry Parameters

**Units:**mg/Kg
**Basis:**Dry

### Lab Control Sample
K2313799-LCS2

| Analyte Name | Analytical Method | Result | Spike Amount | % Rec | % Rec Limits |
|---|---|---|---|---|---|
| Ammonia as Nitrogen | 350.1M | 3.82 | 3.79 | 101 | 86-114 |
| Ammonium | 350.1M | 3.82 | 3.79 | 101 | 86-114 |
| Nitrogen, Total Kjeldahl (TKN) | ASTM D3590 Mod | 1410 | 1690 | 83 | 82-131 |
| Phenolics, Total | 9065 Modified | 11.3 | 12.0 | 94 | 85-115 |

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QA/QC Report

| | | | |
|---|---|---|---|
| **Client:** | LOTT Clean Water Alliance | **Service Request:** | K2313799 |
| **Project:** | LOTTBSDEC23 | **Date Analyzed:** | 12/19/23 |
| **Sample Matrix:** | Sludge | **Date Extracted:** | 12/19/23 |

**Duplicate Lab Control Sample Summary**
**General Chemistry Parameters**

| | | | |
|---|---|---|---|
| **Analysis Method:** | SM 4500-CN- E Modified | **Units:** | mg/Kg |
| **Prep Method:** | SM 4500-CN-C Modified | **Basis:** | Dry |
| | | **Analysis Lot:** | 827692 |

| | **Lab Control Sample K2313799-LCS1** | | | **Duplicate Lab Control Sample K2313799-DLCS1** | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **Analyte Name** | **Result** | **Spike Amount** | **% Rec** | **Result** | **Spike Amount** | **% Rec** | **% Rec Limits** | **RPD** | **RPD Limit** |
| Cyanide, Total | 1.57 | 1.50 | 105 | 1.63 | 1.50 | 109 | 62-128 | 4 | 20 |