

# 2016

## City of Wilsonville

### Annual Biosolids Report



Submitted by:

Robert Watts  
CH2MHill  
Project Manager  
Wilsonville, Oregon  
Robert.watts@ch2m.com  
Ph: 971-219-5688





January 30, 2016

**Biosolids Program Coordinator**

Oregon DEQ Water Quality Division  
700 NE Multnomah Ave, Suite 600  
Portland, Oregon 97232

RE: City of Wilsonville 2016 Annual Biosolids Report  
Permit Number: 101888  
File Number: 97952

To Whom It May Concern,

Enclosed herein please find the City of Wilsonville 2016 Annual Biosolids Report.

All waste sludge generated at the Wilsonville WWTP is recorded on monthly Discharge Monitoring Reports that are submitted to the Department of Environmental Quality monthly. All Biosolids produced by the City of Wilsonville in 2016 were land applied for beneficial use and are included in the following report.

If you have any questions, you can reach me at 971.219.5688

Sincerely,

Robert Watts  
Project Manager  
City of Wilsonville WWTP  
PO Box 2988  
Wilsonville, Oregon 97070  
[Robert.watts@ch2m.com](mailto:Robert.watts@ch2m.com)

**Cc: Delora Kerber**

***FOR CLASS A, EXCEPTIONAL QUALITY BIOSOLIDS-BULK***

I certify, under penalty of law, that the information that will be used to determine compliance with the Class A pathogen requirements (PFRP #2, Heat Drying) and the vector attraction reduction requirement (In-plant alternatives #8, primary solids greater than or equal to 90% solids) was prepared under my direction and supervision in accordance with the system designed to ensure that qualified personnel properly gather and evaluate this information. I am aware that there are significant penalties for false certification including the possibility of fine and imprisonment.

The requirement states that the percent solids of sewage sludge that contains unstabilized solids generated in a primary wastewater treatment process shall be equal to or greater than 90% percent based on the moisture content and total solids prior to mixing with other materials.

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Robert Watts  
Project Manager  
CH2M  
PO Box 2988  
Wilsonville, OR 97070  
971-219-5688

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Date

# 1. Wastewater Treatment Facility

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## 1.1 Liquid Processing

CH2M operates an activated sludge WWTP, located at 9275 SW Tauchman Rd., Wilsonville, Oregon, in Clackamas County. Treated effluent is discharged year round to the Willamette River at river mile 38.6. The design dry weather average daily flow (DWADF) is 4.48 million gallons per day (MGD). Actual DWADF for the 2016 dry season (May 1 to November 1) was 1.927 MGD. The 2015-16 wet weather average daily flow (WWADF) was 2.652 MGD. The design peak flow rate (PFR) is 16.0 MGD.

Wastewater enters the facility from three gravity interceptors. From the headworks, raw influent flows to a three-cell, plug flow aeration basin. Mixed liquor effluent from the aeration process is directed to three secondary clarifiers. Secondary effluent is filtered by two disk filters and receives ultraviolet light disinfection prior to discharge to the Willamette River.

### 1.1.1 Unit Processes: Liquids

A liquid flow schematic and individual unit process capacities and other information is located in **Appendix A**. The following sub-sections describes the unit processes:

#### 1.1.1.1 Headworks

Raw sewage enters the plant through gravity interceptors and is measured by one of two flow meters. The annual average design flow is 4.48 million gallons per day (MGD) with a peak hour flow rate of 16.0 MGD. Two multi-rake bar screens with 3/8- inch openings screen rags and debris out of the flow stream. The screenings are washed by one of two washer/compactors to remove organic material from the screenings and wash it back into the wastewater. The screenings are then compacted and conveyed to a roll off container to be landfilled.

A manually-cleaned bar rack serves as a backup if both screens are offline. A grit basin removes grit from the flow stream. Grit slurry is pumped from the bottom of the grit basin to a cyclone and classifier where it is washed and dewatered prior to being deposited into the roll-off container. A bypass gate allows for screened raw sewage to bypass the grit basin when it is offline.

#### 1.1.1.2 Aeration Basins

Screened and de-gritted raw sewage enters the three aeration basins through an aeration basin influent splitter structure. Each basin is 170 feet long, 20 feet wide and 16 feet deep. The first 70 feet of each basin is provided with baffles that provide an anoxic mixing zone prior to aeration. This zone has a small amount of aeration, and is mixed with a vertical turbine blade mixer mounted on a bridge over the basin. The purpose of this virtually non-aerated zone is to selectively promote growth of bacteria with good settling characteristics.

Each aeration basin has membrane disc fine bubble diffusers along the floor of the basin. Air supplied by centrifugal blowers and high speed turbo blowers provide and regulate the amount of dissolved oxygen that is measured in each basin. The required air flow is provided by a control signal that automatically throttles the air flow control valves.

One of the basins may be taken out of service during dry weather low or average flows. The solids retention time will vary from 12 to 14 days during wet weather and 16 to 18 days during dry weather. This range is designed to maintain the mixed liquor suspended solids (MLSS) between 4,000 and 5,000 milligrams per liter (mg/L). Return activated sludge (RAS) pumps, located in the process gallery, will pump return sludge from the bottom of the Secondary Clarifiers to the Stabilization Basins. Waste activated sludge (WAS) is split off of the RAS pump discharge and directed to the thickening process.

#### **1.1.1.3 Secondary Clarification**

There are three 70-foot diameter circular-shaped secondary clarifiers. Flow enters the secondary clarifiers from the aeration basins. Effluent from the clarifiers flows either directly to ultraviolet (UV) disinfection or to the effluent pumping station via two tertiary disk filters, then to one or both UV disinfection systems, depending on the time of year. The filters are generally in service only during dry weather. However, the filters can be placed online during the winter months.

#### **1.1.1.4 Tertiary Filtration**

The filtration unit functions to reduce the quantity of suspended solids in the plant effluent. Filtration is required for permit compliance from May 1 to October 31. The tertiary filtration system consists of a flow control structure with three secondary effluent pumps and two disk filters. Filter backwash is drained to the plant drain pump station, and pumped to the aeration basin influent.

#### **1.1.1.5 Cooling Towers**

The cooling towers system consists of three cooling towers with associated pumps and fans. One tower is part of the Biosolids dryer system, and two towers are used to cool down the plant effluent. The cooling process functions to reduce the temperature of the plant effluent to achieve permit compliance from June 1 to October 31. During periods of the year that do not require cooling, this system may be bypassed. As a result, secondary effluent will flow directly to UV disinfection unit.

#### **1.1.1.6 UV Disinfection**

The UV disinfection system provides effluent disinfection before it is discharged to the Willamette River. The UV disinfection system inactivates pathogens and other microorganisms for public health protection. The system consists of two channels. The lead channel has three banks of low pressure UV lamps. The lag channel has two banks of medium pressure UV lamps. Flow

through the lead channel is measured with a magnetic flow meter. Flow through the lag channel is measured by monitoring the water level over the effluent weir. Effluent from the UV channels flows by gravity through the existing 24-inch outfall to the Willamette River.

### **1.1.2 Upgrades and Modifications**

The City of Wilsonville WWTP was first constructed in the early 1970s. The system was upgraded in 1981 with the addition of rotating biological contactors (RBCs). In 1993 a new headworks, odor control, and RBC blower improvements were added. The 1997 upgrade increase the design capacity to 2.25 MGD and included the addition of a new headworks fine drum screen, new primary clarifier mechanisms, a new secondary aeration process and clarification, a change from chlorine gas to UV disinfection, and additional sludge storage and pumping capabilities. The most recent upgrade occurred in 2012 and included demolition of the existing headworks, primary clarifiers/aerobic digesters and building a new headworks facility, a third aeration basin, contact stabilization basins, three additional aeration blowers, a third secondary clarifier, secondary effluent pumping, cooling towers, disk filters, a second UV disinfection channel, and a plant drain pump station. The solids removal unit's upgrade consisted of the construction of a dewatering and drying building to house two dewatering Centrifuges and a Dryer that utilizes indirect heat.

## **1.2 Solids Processing**

### **1.2.1 Unit Processes: Solids**

#### **1.2.1.1 Gravity Belt Thickeners**

Two tanks, each with a capacity of 49,500 gallons, store up to 99,000 gallons of Waste Activated Sludge (WAS). WAS is fed to the Gravity Belt Thickeners (GBT's). Two 1.7 meter GBT's with a through-put capacity of about 200 gpm thicken WAS from about 0.8% to 5% solids before it is pumped to the Thickened Waste Activated Sludge (TWAS) storage tank. A second gravity belt thickener is provided as a redundancy for thickening of WAS. Polymer is also added to sludge as a conditioner prior to thickening by one of two liquid polymer feed units. The second polymer feed unit allows for redundancy should one unit fail or lack the ability to run both belts simultaneously. The polymer system and gravity belt thickeners are located on the ground floor in the Process Gallery.

#### **1.2.1.2 TWAS Storage**

TWAS from GBTs is transferred to the aerated TWAS storage. TWAS storage capacity is 134,000 gallons and is comprised of two tanks, each with a capacity of 67,000 gallons.

### **1.2.1.3 Centrifuge**

Two Westfalia centrifuges are located in the Dewatering and Drying building. Each has through-put capacity of 50 gpm at 4% solids and is used to dewater TWAS. Polymer is added as a conditioner to TWAS prior to dewatering by one of two liquid polymer feed units. Solids at 18% from the centrifuges are stored in a hopper then fed to the Dryer system.

### **1.2.1.4 Dryer**

The Therma-Flite indirect heat drying system is a complex package system that consists of a centrifuge cake hopper with conveyors to transfer 18% dewatered cake to the Biosolids Dryer. After passing through the Dryer, the 92% to 99% dried material passes through a discharge conveyor to a cooling conveyor and distribution loadout conveyor. The Dryer system includes ancillary equipment, including a natural gas-fired thermal oil heating system, off-gas scrubber/condenser, and loadout chutes on the distribution loadout conveyor, and substantial electrical and control systems.







## Biosolids Annual Report Form

(e.g. truck splash plate, spray gun, manure spreader, etc.).

→

### Biosolids Quality

|    |   |         |   |         |  |
|----|---|---------|---|---------|--|
| EQ | X | Class A | X | Class B |  |
|----|---|---------|---|---------|--|

|                                     |          |             |                |            |           |
|-------------------------------------|----------|-------------|----------------|------------|-----------|
| <b>Testing frequency (times/yr)</b> | <b>1</b> | <b>4</b>    | <b>X</b>       | <b>6</b>   | <b>12</b> |
| [in Metric Tons]                    | [<290]   | [290>1,500] | [1,500>15,000] | [≥ 15,000] |           |
| [in U.S. Tons]                      | [<319]   | [319>1,650] | [1,650>16,500] | [≥ 16,500] |           |

[Choose one, based on dry weight of biosolids produced and land applied annually.]

### Test data

Use Tables below to record quarterly or annual testing results; use average column for annual test data. If testing more frequently (monthly), supply data on separate sheet.

#### Nutrient Monitoring

| Item               | 1 <sup>st</sup> quarter | 2 <sup>nd</sup> quarter | 3 <sup>rd</sup> quarter | 4 <sup>th</sup> quarter | Average |
|--------------------|-------------------------|-------------------------|-------------------------|-------------------------|---------|
| TKN                | 8.690                   | 8.630                   | 8.200                   | 8.200                   | 8.430   |
| NO <sup>3</sup> -N | <.0025                  | <.0025                  | <.0025                  | .0035                   | .0027   |
| NH <sup>4</sup> -N | 0.7450                  | 0.1450                  | 0.1400                  | 0.1770                  | 0.3018  |
| P                  | 0.4140                  | 0.3780                  | 0.6020                  | 0.3360                  | 0.4325  |
| K                  | 0.2500                  | 0.2500                  | 0.2300                  | 0.1400                  | 0.2175  |
| pH                 | 5.6                     | 5.2                     | 5.2                     | 5.6                     | 5.4     |
| Total Solids       | 96.0                    | 99.2                    | 99.6                    | 99.5                    | 99.6    |
| Vol. Solids        | 86.6                    | 88.6                    | 82.0                    | 78.2                    | 83.8    |

Test data is expressed in % dry weight (dw), except pH which is standard units.

#### Pollutant Monitoring

| Metals | 1 <sup>st</sup> quarter | 2 <sup>nd</sup> quarter | 3 <sup>rd</sup> quarter | 4 <sup>th</sup> quarter | Average    |
|--------|-------------------------|-------------------------|-------------------------|-------------------------|------------|
| As     | 1.92                    | <1.20                   | 3.24                    | 1.52                    | 1.97       |
| Cd     | <2.0                    | <2.0                    | 2.0                     | 3.0                     | 2.2        |
| Cr     | Not tested              | Not tested              | Not tested              | Not tested              | Not tested |
| Cu     | 161                     | 199                     | 159                     | 168                     | 172        |
| Pb     | 6.44                    | 5.72                    | 5.84                    | 6.48                    | 6.12       |
| Hg     | 0.383                   | 0.125                   | 0.329                   | 0.367                   | 0.301      |
| Mo     | 11.2                    | 12.1                    | 10.2                    | 11.7                    | 11.3       |
| Ni     | 15.4                    | 17.6                    | 17.0                    | 18.4                    | 17.1       |
| Se     | 3.72                    | 2.56                    | 3.76                    | 4.68                    | 3.68       |
| Zn     | 200                     | 205                     | 193                     | 267                     | 216        |

# **Biosolids Annual Report Form**

Test data is expressed in mg/kg (ppm) based on dry weight.

# Biosolids Annual Report Form

## Pathogen Reduction Monitoring & Records

Circle selected pathogen reduction alternative below and on a separate sheet:

- Describe process used to reduce pathogens
- State operational parameters met (e.g. time & temperature)
- Attach monitoring data and certification statement

### Part 503.32 Pathogen Reduction Alternatives

#### Class A Alternatives

[requires tests for fecal coliform &/or *Salmonella* sp.]

1. time & temperature
2. pH >12, 72 hr; @52°C, 12hr, >50%TS
3. pre- & post-testing for enteric virus & helminth ova
4. post-testing for enteric virus & helminth ova
5. PFRP:
  - 1 composting
  - 2 heat drying X
  - 3 heat treatment
  - 4 thermophilic aerobic
  - 5 beta ray irradiation
  - 6 gamma ray irradiation
  - 7 pasteurization
6. PFRP equivalent

#### Class B Alternatives

1. 7 samples, geometric mean < 2,000,000 MPN or CFU/g TS
2. PSRP:
  - 1 aerobic digestion
  - 2 air drying
  - 3 anaerobic digestion
  - 4 composting
  - 5 lime stabilization
3. PSRP equivalent

## Vector Attraction Reduction (VAR) Monitoring & Records

Circle selected alternative and on separate sheet:

- Describe VAR process used
- Describe operational parameters met (e.g. pH & time)
- Attach monitoring data and certification statement

### Part 503.33 Vector Reduction Alternatives

#### In-plant alternatives

1. 38% min. reduction of volatile solids
2. anaerobic bench scale digestion
3. aerobic bench scale digestion
4. SOUR aerobic 1.5mg O<sup>2</sup>/hr/g TS (dw)
5. aerobic 14 days >45°C average temp.
6. pH ≥ 12 for 2 hr, + 22 hr ≥ 11.5 pH
7. secondary solids ≥ 75% solids
8. primary solids ≥ 90% solids

#### Site management alternatives

9. subsoil injection within 8 hr
10. soil incorporation within 6-8 hr

#### Other alternatives

11. (for disposal units only)
12. septage only  
pH ≥ 12 for at least 30 min.

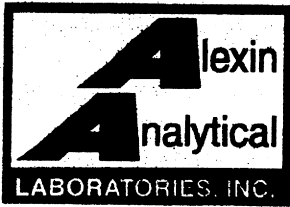


## 2016 CLASS A BIOSOLIDS LOG

City of Wilsonville WWTP/CH2MHILL, Operator

| DATE      | Wet Tons Hauled | % Solids | Dry Tons Hauled (DT) | Class A Biosolids Recipient Name | Recipient Mailing Address                | Recipient Daytime Phone Number | Site Address where Biosolids are to be applied    | Monthly Totals (DT) |
|-----------|-----------------|----------|----------------------|----------------------------------|--|--------------------------------|---|---------------------|
| 1/2/2016  | 15.77           | 96.60    | 15.23                | Kevin McCullough                 | PO Box 194 Wasco, Oregon 97065           | (541) 993-0195                 | 96865 Herin Ln Wasco, Oregon Sherman County 97065 |                     |
| 1/9/2016  | 16.19           | 98.00    | 15.87                | Kevin McCullough                 | PO Box 194 Wasco, Oregon 97066           | (541) 993-0195                 | 96865 Herin Ln Wasco, Oregon Sherman County 97065 |                     |
| 1/17/2016 | 14.29           | 94.60    | 13.52                | Kevin McCullough                 | PO Box 194 Wasco, Oregon 97066           | (541) 993-0195                 | 96865 Herin Ln Wasco, Oregon Sherman County 97065 |                     |
| 1/24/2016 | 12.81           | 98.50    | 12.62                | Kevin McCullough                 | PO Box 194 Wasco, Oregon 97067           | (541) 993-0195                 | 96865 Herin Ln Wasco, Oregon Sherman County 97065 |                     |
| 1/28/2016 | 13.48           | 97.00    | 13.08                | Kevin McCullough                 | PO Box 194 Wasco, Oregon 97068           | (541) 993-0195                 | 96865 Herin Ln Wasco, Oregon Sherman County 97065 | 70.31               |
| 2/5/2016  | 14.64           | 95.80    | 14.03                | Kevin McCullough                 | PO Box 194 Wasco, Oregon 97069           | (541) 993-0195                 | 96865 Herin Ln Wasco, Oregon Sherman County 97065 |                     |
| 2/15/2016 | 17.64           | 97.50    | 17.20                | Kevin McCullough                 | PO Box 194 Wasco, Oregon 97070           | (541) 993-0195                 | 96865 Herin Ln Wasco, Oregon Sherman County 97065 |                     |
| 2/19/2016 | 14.73           | 97.60    | 14.38                | Kevin McCullough                 | PO Box 194 Wasco, Oregon 97071           | (541) 993-0195                 | 96865 Herin Ln Wasco, Oregon Sherman County 97065 |                     |
| 2/26/2016 | 12.29           | 99.10    | 12.18                | Kevin McCullough                 | PO Box 194 Wasco, Oregon 97072           | (541) 993-0195                 | 96865 Herin Ln Wasco, Oregon Sherman County 97065 | 57.78               |
| 3/4/2016  | 5.63            | 98.00    | 5.52                 | Kevin McCullough                 | PO Box 194 Wasco, Oregon 97070           | (541) 993-0195                 | 96865 Herin Ln Wasco, Oregon Sherman County 97065 |                     |
| 3/11/2016 | 14.45           | 98.50    | 14.23                | Kevin McCullough                 | PO Box 194 Wasco, Oregon 97071           | (541) 993-0196                 | 96865 Herin Ln Wasco, Oregon Sherman County 97065 |                     |
| 3/18/2016 | 10.98           | 99.00    | 10.87                | Kevin McCullough                 | PO Box 194 Wasco, Oregon 97072           | (541) 993-0197                 | 96865 Herin Ln Wasco, Oregon Sherman County 97065 |                     |
| 3/26/2016 | 14.05           | 97.50    | 13.70                | Kevin McCullough                 | PO Box 194 Wasco, Oregon 97073           | (541) 993-0198                 | 96865 Herin Ln Wasco, Oregon Sherman County 97065 | 44.32               |
| 4/1/2016  | 14.33           | 98.60    | 14.13                | Kevin McCullough                 | PO Box 194 Wasco, Oregon 97074           | (541) 993-0199                 | 96865 Herin Ln Wasco, Oregon Sherman County 97065 |                     |
| 4/9/2016  | 17.70           | 99.50    | 17.61                | Jim Green                        | 7741 S Lone Elder Rd Canby, Oregon 97013 | (503) 333-0010                 | 7 acre "Upper Field"                              |                     |
| 4/16/2016 | 11.90           | 99.20    | 11.80                | Jim Green                        | 7741 S Lone Elder Rd Canby, Oregon 97013 | (503) 333-0010                 | 7 acre "Upper Field"                              |                     |
| 4/22/2016 | 9.00            | 97.80    | 8.80                 | Bob Kacalek                      | 13152 S New Era Rd Oregon City, OR 97045 | (503) 849-9559                 | 13152 S New Era Rd Oregon City, OR 97045          |                     |
| 4/30/2016 | 10.98           | 98.80    | 10.85                | Jim Green                        | 7741 S Lone Elder Rd Canby, Oregon 97013 | (503) 333-0010                 | 7 acre "Upper Field"                              | 63.2                |
| 5/7/2016  | 8.98            | 98.40    | 8.84                 | Jim Green                        | 7741 S Lone Elder Rd Canby, Oregon 97013 | (503) 333-0010                 | 6.4 acre "Lower Field"                            |                     |
| 5/14/2016 | 10.97           | 98.90    | 10.85                | Jim Green                        | 7742 S Lone Elder Rd Canby, Oregon 97013 | (503) 333-0011                 | 6.4 acre "Lower Field"                            |                     |
| 5/21/2016 | 8.4             | 98.40    | 8.27                 | Kevin McCullough                 | PO Box 194 Wasco, Oregon 97081           | (541) 993-0206                 | 96865 Herin Ln Wasco, Oregon Sherman County 97065 |                     |
| 5/27/2016 | 12.29           | 98.50    | 12.11                | Kevin McCullough                 | PO Box 194 Wasco, Oregon 97082           | (541) 993-0207                 | 96865 Herin Ln Wasco, Oregon Sherman County 97065 | 40.06               |
| 6/5/2016  | 10.80           | 96.00    | 10.37                | Kevin McCullough                 | PO Box 194 Wasco, Oregon 97083           | (541) 993-0208                 | 96865 Herin Ln Wasco, Oregon Sherman County 97065 |                     |
| 6/10/2016 | 12.2            | 98.1     | 11.97                | Kevin McCullough                 | PO Box 194 Wasco, Oregon 97084           | (541) 993-0209                 | 96865 Herin Ln Wasco, Oregon Sherman County 97065 |                     |
| 6/19/2016 | 9               | 97.2     | 8.75                 | Kevin McCullough                 | PO Box 194 Wasco, Oregon 97085           | (541) 993-0210                 | 96865 Herin Ln Wasco, Oregon Sherman County 97065 |                     |
| 6/24/2016 | 14.33           | 96.7     | 13.86                | Kevin McCullough                 | PO Box 194 Wasco, Oregon 97086           | (541) 993-0211                 | 96865 Herin Ln Wasco, Oregon Sherman County 97065 | 44.94               |
| 7/8/2016  | 10.98           | 98.9     | 10.86                | Kevin McCullough                 | PO Box 194 Wasco, Oregon 97087           | (541) 993-0212                 | 96865 Herin Ln Wasco, Oregon Sherman County 97065 |                     |
| 7/22/2016 | 12.6            | 98.6     | 12.42                | Kevin McCullough                 | PO Box 194 Wasco, Oregon 97088           | (541) 993-0213                 | 96865 Herin Ln Wasco, Oregon Sherman County 97065 |                     |
| 7/22/2016 | 14.3            | 98.6     | 14.10                | Kevin McCullough                 | PO Box 194 Wasco, Oregon 97088           | (541) 993-0213                 | 96865 Herin Ln Wasco, Oregon Sherman County 97065 | 37.38               |
| 8/5/2016  | 10.98           | 99       | 10.87                | Kevin McCullough                 | PO Box 194 Wasco, Oregon 97089           | (541) 993-0214                 | 96865 Herin Ln Wasco, Oregon Sherman County 97065 |                     |
| 8/19/2016 | 11.91           | 99.5     | 11.85                | Kevin McCullough                 | PO Box 194 Wasco, Oregon 97090           | (541) 993-0215                 | 96865 Herin Ln Wasco, Oregon Sherman County 97065 | 22.72               |
| 9/2/2016  | 12.2            | 99.2     | 12.10                | Kevin McCullough                 | PO Box 194 Wasco, Oregon 97091           | (541) 993-0216                 | 96865 Herin Ln Wasco, Oregon Sherman County 97065 |                     |
| 9/30/2016 | 14              | 98.5     | 13.79                | Kevin McCullough                 | PO Box 194 Wasco, Oregon 97092           | (541) 993-0217                 | 96865 Herin Ln Wasco, Oregon Sherman County 97065 | 25.89               |

|            |       |      |       |                  |  |                |  |          |
|------------|-------|------|-------|------------------|--|----------------|--|----------|
| 10/8/2016  | 18    | 96.9 | 17.44 | Bob Kacalek      | 13152 S New Era Rd<br>Oregon City, OR 97045      | (503) 849-9559 | 22421 Boones Ferry Rd NE Aurora, OR 97032            |          |
| 10/22/2016 | 18    | 97.2 | 17.50 | Bob Kacalek      | 13152 S New Era Rd<br>Oregon City, OR 97045      | (503) 849-9559 | 22421 Boones Ferry Rd NE Aurora, OR 97032            | 34.94    |
| 11/12/2016 | 10.5  | 92.9 | 9.75  | Bob Kacalek      | 13152 S New Era Rd<br>Oregon City, OR 97045      | (503) 849-9559 | 22421 Boones Ferry Rd NE Aurora, OR 97032            |          |
| 11/25/2016 | 19.5  | 98.3 | 19.17 | Kevin McCullough | PO Box 194 Wasco,<br>Oregon 97095                | (541) 993-0220 | 96865 Herin Ln Wasco, Oregon<br>97065 Sherman County | 28.92    |
| 12/1/2016  | 19.28 | 98.6 | 19.01 | Kevin McCullough | PO Box 194 Wasco,<br>Oregon 97094                | (541) 993-0219 | 96865 Herin Ln Wasco, Oregon<br>97065 Sherman County | A        |
| 12/3/2016  | 18.32 | 96.1 | 17.61 | Kevin McCullough | PO Box 194 Wasco,<br>Oregon 97095                | (541) 993-0220 | 96865 Herin Ln Wasco, Oregon<br>97065 Sherman County | A=36.62  |
| 12/13/2016 | 17.05 |      | 0.00  | Coffin Butte     | 28972 Coffin Butte Rd<br>Corvallis, Oregon 97339 | 541.745.2018   | Centrifuged Cake to Landfill                         | L        |
| 12/16/2016 | 10    |      | 0.00  | Coffin Butte     | 28973 Coffin Butte Rd<br>Corvallis, Oregon 97339 | 541.745.2019   | Centrifuged Cake to Landfill                         | L        |
| 12/22/2016 | 16.6  |      | 0.00  | Coffin Butte     | 28974 Coffin Butte Rd<br>Corvallis, Oregon 97339 | 541.745.2020   | Centrifuged Cake to Landfill                         | L        |
| 12/28/2016 | 18.11 |      | 0.00  | Coffin Butte     | 28975 Coffin Butte Rd<br>Corvallis, Oregon 97339 | 541.745.2021   | Centrifuged Cake to Landfill                         | CB=61.76 |
|            |       |      | 0.00  | Kevin McCullough | PO Box 194 Wasco,<br>Oregon 97094                | (541) 993-0219 | 96865 Herin Ln Wasco, Oregon<br>97065 Sherman County |          |
|            |       |      | 0.00  | Kevin McCullough | PO Box 194 Wasco,<br>Oregon 97095                | (541) 993-0220 | 96865 Herin Ln Wasco, Oregon<br>97065 Sherman County |          |



**Professional  
Laboratory  
Services**

13035 SW Pacific Hwy  
Tigard, OR 97223  
Tel.: (503) 639-9311 Fax: (503) 684-1588

**ANALYSIS REPORT**

ORELAP Accredited Lab#: OR-100013

Reported: 02/05/2016

Received: 01/14/16

Sampled By: Tom Walsh/Robert

Work Order: 6014009

**C** CH2MHIII - Wilsonville  
**L** Attn: Robert Watts  
**I** PO Box 2988  
**E** Wilsonville OR, 97070  
**N** Phone: 971-219-5688  
**T**

**Project:** -  
**Project #:** N/A  
**Permit #:** -  
**PO #:** -

**Sampling Location:** Thermoflite Dryer  
**Sample Matrix:** Solid

**Lab Number**      **Sample Name** **1 DR0111160800**      **Sampled** 1/11/2016 8:00

**6014009-01**

|                | Method            | Result | Units     | Analysis Date/ Time |
|----------------|-------------------|--------|-----------|---------------------|
| Total Solids   | SM 2540-B         | 98     | Weight %  | 01/18/2016 10:00    |
| Fecal Coliform | SM 9221E 21st Ed. | < 1.8  | MPN/g dry | 01/15/2016 9:30     |

**Lab Number**      **Sample Name** **2 DR0111160915**      **Sampled** 1/11/2016 9:15

**6014009-02**

|                | Method            | Result | Units     | Analysis Date/ Time |
|----------------|-------------------|--------|-----------|---------------------|
| Total Solids   | SM 2540-B         | 87     | Weight %  | 01/18/2016 10:00    |
| Fecal Coliform | SM 9221E 21st Ed. | < 2.1  | MPN/g dry | 01/15/2016 9:30     |

**Lab Number**      **Sample Name** **3 DR0111161350**      **Sampled** 1/11/2016 13:50

**6014009-03**

|                | Method            | Result | Units     | Analysis Date/ Time |
|----------------|-------------------|--------|-----------|---------------------|
| Total Solids   | SM 2540-B         | 98     | Weight %  | 01/18/2016 10:00    |
| Fecal Coliform | SM 9221E 21st Ed. | < 1.8  | MPN/g dry | 01/15/2016 9:30     |

**Lab Number**      **Sample Name** **4 DR0112160630**      **Sampled** 1/12/2016 6:30

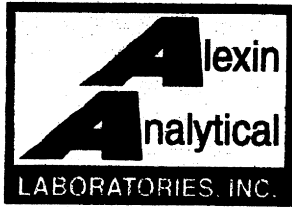
**6014009-04**

|                | Method            | Result | Units     | Analysis Date/ Time |
|----------------|-------------------|--------|-----------|---------------------|
| Total Solids   | SM 2540-B         | 98     | Weight %  | 01/18/2016 10:00    |
| Fecal Coliform | SM 9221E 21st Ed. | < 1.8  | MPN/g dry | 01/15/2016 9:30     |

**Lab Number**      **Sample Name** **5 DR0112161340**      **Sampled** 1/12/2016 13:40

**6014009-05**

|                | Method            | Result | Units     | Analysis Date/ Time |
|----------------|-------------------|--------|-----------|---------------------|
| Total Solids   | SM 2540-B         | 95     | Weight %  | 01/18/2016 10:00    |
| Fecal Coliform | SM 9221E 21st Ed. | < 1.9  | MPN/g dry | 01/15/2016 9:30     |



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Tel.: (503) 639-9311 Fax: (503) 684-1588

**ANALYSIS REPORT**

ORELAP Accredited Lab#: OR-100013

Reported: 02/05/2016

Received: 01/14/16

Sampled By: Tom Walsh/Robert

Work Order: 6014009

**C** CH2MHill - Wilsonville  
**L** Attn: Robert Watts  
**I** PO Box 2988  
**E** Wilsonville OR, 97070  
**N** Phone: 971-219-5688  
**T**

**Project:** -  
**Project #:** N/A  
**Permit #:** -  
**PO #:** -

**Sampling Location:** Thermoflite Dryer  
**Sample Matrix:** Solid

**Lab Number**      **Sample Name** **6 DR0112161442**      **Sampled** 1/12/2016 14:42

**6014009-06**

|                | Method            | Result | Units     | Analysis Date/ Time |
|----------------|-------------------|--------|-----------|---------------------|
| Total Solids   | SM 2540-B         | 100    | Weight %  | 01/18/2016 10:00    |
| Fecal Coliform | SM 9221E 21st Ed. | < 1.8  | MPN/g dry | 01/15/2016 9:30     |


**Lab Number**      **Sample Name** **7 DR0112161605**      **Sampled** 1/12/2016 16:05

**6014009-07**

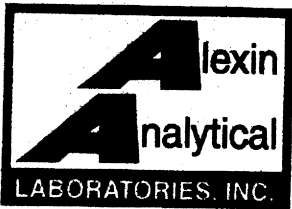
|                | Method            | Result | Units     | Analysis Date/ Time |
|----------------|-------------------|--------|-----------|---------------------|
| Total Solids   | SM 2540-B         | 97     | Weight %  | 01/18/2016 10:00    |
| Fecal Coliform | SM 9221E 21st Ed. | < 1.9  | MPN/g dry | 01/15/2016 9:30     |

MRL = Minimum Reporting Limit    MPN = Most Probable Number

Approved by:   
Adriana Gonzalez-Gray  
Laboratory Director

Approved by:   
Steve Williams  
Microbiology Technical Director





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**ANALYSIS REPORT**

ORELAP Accredited Lab#: OR-100013

Reported: 02/05/2016

Received: 01/14/16

Sampled By: Tom Walsh/Robert Watts

Sampled: 1/12/16 12:00 am

Work Order: 6014009

**C** CH2MHIII - Wilsonville  
**L** Attn: Robert Watts  
**I** PO Box 2988  
**E** Wilsonville OR, 97070  
**N** Phone: 971-219-5688  
**T**

**Project:** -  
**Project #:** N/A  
**Permit #:** -  
**PO #:** -

**Sampling Location:** Thermoflite Dryer  
**Sample Matrix:** Solid  
**Sample Matrix:** 8 DR01116-01216 COMP

**Lab Number 8 DR01116-01216 COMP**  
**6014009-08**

|            | Method    | Result | Units | dry<br>mg/kg | Analysis Date/ Time |
|------------|-----------|--------|-------|--------------|---------------------|
| Arsenic    | EPA 200.9 | 1.92   | mg/kg | 2.0          | 01/21/2016          |
| Cadmium    | SM 3111B  | <2.0   | mg/kg | < 2.1        | 02/03/2016          |
| Copper     | SM3111B   | 161    | mg/kg | 167.7        | 02/02/2016          |
| Lead       | EPA 200.9 | 6.44   | mg/kg | 6.7          | 01/27/2016          |
| Mercury    | EPA 245.1 | 0.383  | mg/kg | 0.4          | 01/27/2016          |
| Molybdenum | EPA 200.9 | 11.2   | mg/kg | 11.7         | 02/04/2016          |
| Nickel     | SM 3111B  | 15.4   | mg/kg | 16.0         | 02/02/2016          |
| Selenium   | EPA 200.9 | 3.72   | mg/kg | 3.9          | 02/02/2016          |
| Zinc       | SM 3111B  | 200    | mg/kg | 208.3        | 01/20/2016          |

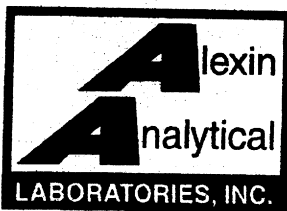
**Lab Number 8 DR01116-01216 COMP**  
**6014009-08**

|                         | Method       | Result | Units    |          | Analysis Date/ Time |
|-------------------------|--------------|--------|----------|----------|---------------------|
| pH                      | EPA 150.1    | 5.6    | pH Units |          | 01/20/2016          |
| Total Solids            | SM 2540-B    | 96     | Weight % |          | 01/18/2016          |
| Total Volatile Solids   | SM 2540-E    | 86.6   | Weight % |          | 01/18/2016          |
| Total Kjeldahl Nitrogen | EPA 351.3    | 86900  | mg/kg    | 9.052 %  | 01/21/2016          |
| Ammonia as N            | SM 4500-NH3F | 7450   | mg/kg    | 0.776 %  | 01/21/2016          |
| Nitrate as N            | SM4500-NO3 D | <25.0  | mg/kg    | <0.003 % | 01/15/2016          |
| Potassium               | SM 3111B     | 2500   | mg/kg    | 0.260 %  | 01/26/2016          |
| Phosphorus              | EPA 365.3    | 4140   | mg/kg    | 0.431 %  | 01/21/2016          |

MRL = Minimum Reporting Limit MPN = Most Probable Number

Approved by:   
Adriana Gonzalez-Gray  
Laboratory Director

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**ANALYSIS REPORT**

ORELAP Accredited Lab#: OR-100013

Reported: 03/01/2016

Received: 02/25/16

Sampled By: Robert Watts

Work Order: 6056002

**C** CH2MHill - Wilsonville  
**L** Attn: Robert Watts  
**I** PO Box 2988  
**E** Wilsonville OR, 97070  
**N** Phone: 971-219-5688  
**T**

**Project:** Wilsonville WWTP

Project # : N/A

Permit # : -

PO # : -

Sampling Location: Thermofite Dryer - D&D Building

Sample Matrix: Solid

**Lab Number**      **Sample Name** **1 0222161355**      **Sampled** 2/22/2016 13:55

**6056002-01**

|                | Method    | Result | Units     | Analysis Date/ Time |
|----------------|-----------|--------|-----------|---------------------|
| Total Solids   | SM 2540-B | 99     | Weight %  | 02/26/2016 9:00     |
| Fecal Coliform | SM 9221E  | < 1.8  | MPN/g dry | 02/26/2016 9:10     |

**Lab Number**      **Sample Name** **2 0222161710**      **Sampled** 2/22/2016 17:10

**6056002-02**

|                | Method    | Result | Units     | Analysis Date/ Time |
|----------------|-----------|--------|-----------|---------------------|
| Total Solids   | SM 2540-B | 99     | Weight %  | 02/26/2016 9:00     |
| Fecal Coliform | SM 9221E  | < 1.8  | MPN/g dry | 02/26/2016 9:10     |

**Lab Number**      **Sample Name** **3 0223161115**      **Sampled** 2/23/2016 11:15

**6056002-03**

|                | Method    | Result | Units     | Analysis Date/ Time |
|----------------|-----------|--------|-----------|---------------------|
| Total Solids   | SM 2540-B | 98     | Weight %  | 02/26/2016 9:00     |
| Fecal Coliform | SM 9221E  | < 1.8  | MPN/g dry | 02/26/2016 9:10     |

**Lab Number**      **Sample Name** **4 0223161510**      **Sampled** 2/23/2016 15:10

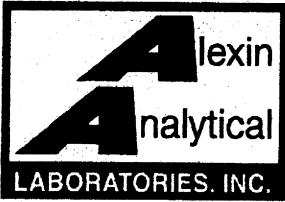
**6056002-04**

|                | Method    | Result | Units     | Analysis Date/ Time |
|----------------|-----------|--------|-----------|---------------------|
| Total Solids   | SM 2540-B | 99     | Weight %  | 02/26/2016 9:00     |
| Fecal Coliform | SM 9221E  | < 1.8  | MPN/g dry | 02/26/2016 9:10     |

**Lab Number**      **Sample Name** **5 0224160629**      **Sampled** 2/24/2016 6:29

**6056002-05**

|                | Method    | Result | Units     | Analysis Date/ Time |
|----------------|-----------|--------|-----------|---------------------|
| Total Solids   | SM 2540-B | 99     | Weight %  | 02/26/2016 9:00     |
| Fecal Coliform | SM 9221E  | < 1.8  | MPN/g dry | 02/26/2016 9:10     |



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**ANALYSIS REPORT**

ORELAP Accredited Lab#: OR-100013

Reported: 03/01/2016

Received: 02/25/16

Sampled By: Robert Watts

Work Order: 6056002

**C  
L  
I  
E  
N  
T**  
**CH2MHill - Wilsonville**  
Attn: Robert Watts  
PO Box 2988  
Wilsonville OR, 97070  
Phone: 971-219-5688

**Project:** Wilsonville WWTP

Project # : N/A

Permit # : -

PO # : -

Sampling Location: Thermoflited Dryer - D&D Building

Sample Matrix: Solid

**Lab Number**      **Sample Name** **6 0224160915**      **Sampled** 2/24/2016 9:15

**6056002-06**

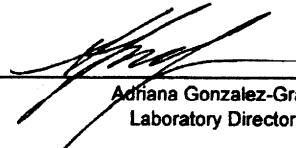
|                | Method    | Result | Units     | Analysis Date/ Time |
|----------------|-----------|--------|-----------|---------------------|
| Total Solids   | SM 2540-B | 97     | Weight %  | 02/26/2016 9:00     |
| Fecal Coliform | SM 9221E  | < 1.8  | MPN/g dry | 02/26/2016 9:10     |

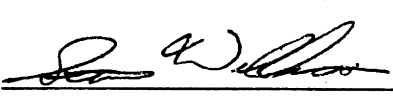
**Lab Number**      **Sample Name** **7 0225160710**      **Sampled** 2/25/2016 7:10

**6056002-07**

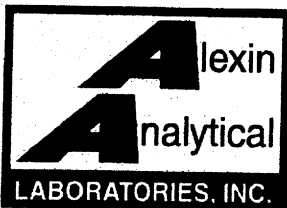
|                | Method    | Result | Units     | Analysis Date/ Time |
|----------------|-----------|--------|-----------|---------------------|
| Total Solids   | SM 2540-B | 99     | Weight %  | 02/26/2016 9:00     |
| Fecal Coliform | SM 9221E  | < 1.8  | MPN/g dry | 02/26/2016 9:10     |

MRL = Minimum Reporting Limit    MPN = Most Probable Number

Approved by:   
Adriana Gonzalez-Gray  
Laboratory Director

Approved by:   
Steve Williams  
Microbiology Technical Director

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**ANALYSIS REPORT**

ORELAP Accredited Lab#: OR-100013

Reported: 03/01/2016

Received: 02/25/16

Sampled By: Robert Watts

Sampled: 2/25/16 8:20 am

Work Order: 6056002

**C** CH2MHill - Wilsonville  
**L** Attn: Robert Watts  
**I** PO Box 2988  
**E** Wilsonville OR, 97070  
**N** Phone: 971-219-5688  
**T**

**Project:** Wilsonville WWTP

Project # : N/A

Permit # : -

PO # : -

Sampling Location: Thermoflite Dryer - D&D Building

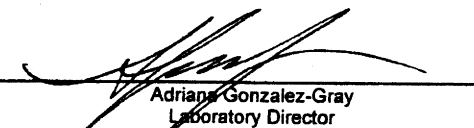
Sample Matrix: Solid

Sample Matrix: 8 02232425160820

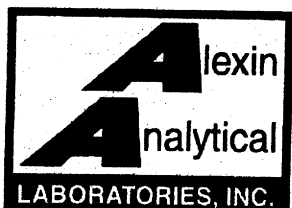
**Lab Number** **8 02232425160820**  
**6056002-08**

|                                | Method       | Result | Units    |          | Analysis Date/ Time |
|--------------------------------|--------------|--------|----------|----------|---------------------|
| <i>pH</i>                      | EPA 150.1    | 5.3    | pH Units |          | 02/25/2016          |
| <i>Total Solids</i>            | SM 2540-B    | 99     | Weight % |          | 02/26/2016          |
| <i>Total Volatile Solids</i>   | SM 2540-E    | 84.4   | Weight % |          | 02/26/2016          |
| <i>Total Kjeldahl Nitrogen</i> | EPA 351.3    | 84000  | mg/kg    | 8.485 %  | 02/26/2016          |
| <i>Ammonia as N</i>            | SM 4500-NH3F | 2360   | mg/kg    | 0.238 %  | 02/25/2016          |
| <i>Nitrate as N</i>            | SM4500-NO3 D | <25.0  | mg/kg    | <0.003 % | 02/26/2016          |
| <i>Potassium</i>               | SM 3111B     | 2500   | mg/kg    | 0.253 %  | 02/26/2016          |
| <i>Phosphorus</i>              | EPA 365.3    | 6150   | mg/kg    | 0.621 %  | 02/25/2016          |

MRL = Minimum Reporting Limit MPN = Most Probable Number

Approved by:   
Adriana Gonzalez-Gray  
Laboratory Director

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**ANALYSIS REPORT**

ORELAP Accredited Lab#: OR-100013

Reported: 03/16/2016  
Received: 03/10/16

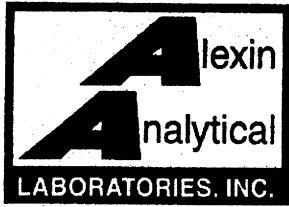
Sampled By: Robert Watts  
Work Order: 6070001

**C** CH2MHIII - Wilsonville  
**L** Attn: Robert Watts  
**I** PO Box 2988  
**E** Wilsonville OR, 97070  
**N** Phone: 971-219-5688  
**T**

**Project:** Wilsonville WWTP  
**Project # :** N/A  
**Permit # :**  
**PO # :** -

**Sampling Location:** Thermofite Dryer - D&D Building  
**Sample Matrix:** Solid

| Lab Number        | Method   | Result | Units     | Analysis Date/ Time |
|-------------------|--|--------|-----------|---------------------|
| <b>6070001-01</b> | Sample Name: 0307161130<br>Sampled: 3/7/2016 11:30 |        |           |                     |
| Total Solids      | SM 2540-B  | 99.4   | Weight %  | 03/15/2016 9:00     |
| Fecal Coliform    | SM 9221E   | < 1.8  | MPN/g dry | 03/11/2016 9:20     |
| <b>6070001-02</b> | Sample Name: 0307161420<br>Sampled: 3/7/2016 14:20 |        |           |                     |
| Total Solids      | SM 2540-B  | 99.5   | Weight %  | 03/15/2016 9:00     |
| Fecal Coliform    | SM 9221E   | < 1.8  | MPN/g dry | 03/11/2016 9:20     |
| <b>6070001-03</b> | Sample Name: 0308160641<br>Sampled: 3/8/2016 6:41  |        |           |                     |
| Total Solids      | SM 2540-B  | 98.2   | Weight %  | 03/15/2016 9:00     |
| Fecal Coliform    | SM 9221E   | < 1.8  | MPN/g dry | 03/11/2016 9:20     |
| <b>6070001-04</b> | Sample Name: 0308161214<br>Sampled: 3/8/2016 12:14 |        |           |                     |
| Total Solids      | SM 2540-B  | 98.5   | Weight %  | 03/15/2016 9:00     |
| Fecal Coliform    | SM 9221E   | < 1.8  | MPN/g dry | 03/11/2016 9:20     |
| <b>6070001-05</b> | Sample Name: 0309160629<br>Sampled: 3/9/2016 6:29  |        |           |                     |
| Total Solids      | SM 2540-B  | 98.8   | Weight %  | 03/15/2016 9:00     |
| Fecal Coliform    | SM 9221E   | < 1.8  | MPN/g dry | 03/11/2016 9:20     |
| <b>6070001-06</b> | Sample Name: 0309161213<br>Sampled: 3/9/2016 12:13 |        |           |                     |
| Total Solids      | SM 2540-B  | 97.3   | Weight %  | 03/15/2016 9:00     |
| Fecal Coliform    | SM 9221E   | < 1.8  | MPN/g dry | 03/11/2016 9:20     |



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**ANALYSIS REPORT**

ORELAP Accredited Lab#: OR-100013

Reported: 03/16/2016

Received: 03/10/16

Sampled By: Robert Watts

Work Order: 6070001

**C** CH2MHill - Wilsonville  
**L** Attn: Robert Watts  
**I** PO Box 2988  
**E** Wilsonville OR, 97070  
**N** Wilsonville OR, 97070  
**T** Phone: 971-219-5688

**Project:** Wilsonville WWTP

**Project # :** N/A

**Permit # :**

**PO # :** -

**Sampling Location:** Thermofite Dryer - D&D Building

**Sample Matrix:** Solid

| Lab Number            | Method                         | Result | Units     | Analysis Date/ Time |
|-----------------------|--------------------------------|--------|-----------|---------------------|
| <b>6070001-07</b>     | <b>Sample Name:</b> 0310160628 |        |           |                     |
|                       | <b>Sampled:</b> 3/10/2016 6:28 |        |           |                     |
| <i>Total Solids</i>   | SM 2540-B                      | 97.4   | Weight %  | 03/15/2016 9:00     |
| <i>Fecal Coliform</i> | SM 9221E                       | < 1.8  | MPN/g dry | 03/11/2016 9:20     |

MRL = Minimum Reporting Limit MPN = Most Probable Number

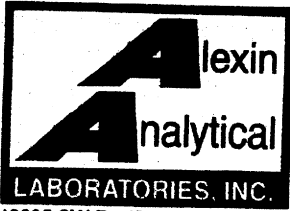
Approved by: \_\_\_\_\_

Adriana Gonzalez-Gray  
Laboratory Director

Approved by: \_\_\_\_\_

Steve Williams  
Microbiology Technical Director

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**ANALYSIS REPORT**

ORELAP Accredited Lab#: OR-100013

Reported: 03/24/2016  
Received: 03/10/16  
Sampled By: Robert Watts  
Sampled: 3/10/16 12:00 am  
Work Order: 6070001

**C** CH2MHII - Wilsonville  
**L** Attn: Robert Watts  
**I** PO Box 2988  
**E** Wilsonville OR, 97070  
**N** Phone: 971-219-5688  
**T**

**Project:** Wilsonville WWTP  
**Project # :** N/A  
**Permit # :**  
**PO # :** -

**Sampling Location:** Thermoflite Dryer - D&D Building  
**Sample Matrix:** Solid  
**Sample Matrix:** 0307080910160810

**Lab Number** **0307080910160810**  
**6070001-08**

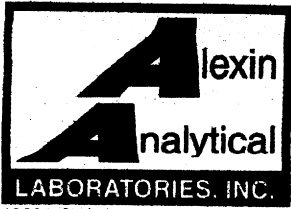
|                                | Method       | Result | Units         | Analysis Date/ Time |
|--------------------------------|--------------|--------|---------------|---------------------|
| <i>pH</i>                      | EPA 150.1    | 5.4    | pH Units      | 03/15/2016          |
| <i>Total Solids</i>            | SM 2540-B    | 97.7   | Weight %      | 03/15/2016          |
| <i>Total Volatile Solids</i>   | SM 2540-E    | 7.4    | Weight %      | 03/16/2016          |
| <i>Total Kjeldahl Nitrogen</i> | EPA 351.3    | 82400  | mg/kg 8.434 % | 03/15/2016          |
| <i>Ammonia as N</i>            | SM 4500-NH3F | 2220   | mg/kg 0.227 % | 03/10/2016          |
| <i>Nitrate as N</i>            | SM4500-NO3 D | 44.0   | mg/kg 0.005 % | 03/11/2016          |
| <i>Potassium</i>               | SM3111B      | 1830   | mg/kg 0.187 % | 03/16/2016          |
| <i>Phosphorus</i>              | EPA 365.3    | 1300   | mg/kg 0.133 % | 03/17/2016          |

MRL = Minimum Reporting Limit MPN = Most Probable Number

Approved by:

Adriana Gonzalez-Gray  
Laboratory Director

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Tigard, OR 97223  
Tel.: (503) 639-9311 Fax: (503) 684-1588

**ANALYSIS REPORT**

ORELAP Accredited Lab#: OR-100013

Reported: 04/19/2016

Received: 04/14/16

Sampled By: Robert Watts

Work Order: 6105003

**C** CH2MHill - Wilsonville  
**L** Attn: Robert Watts  
**I** PO Box 2988  
**E** Wilsonville OR, 97070  
**N** Phone: 971-219-5688  
**T**

**Project:** Wilsonville WWTP

**Project # :** N/A

**Permit # :**

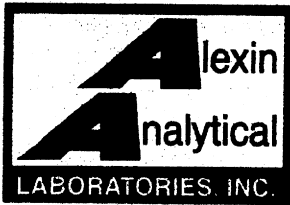
**PO # :** -

**Sampling Location:** Thermofite Dryer - D&D Building

**Sample Matrix:** Solid

| Lab Number   | Method            | Result | Units     | Analysis Date/ Time |
|--|-------------------|--------|-----------|---------------------|
| <b>6105003-01</b> Sample Name: 1. 0411161511<br>Sampled: 4/11/2016 15:11 |                   |        |           |                     |
| Total Solids   | SM 2540-B         | 98.2   | Weight %  | 04/18/2016 9:20     |
| Fecal Coliform   | SM 9221E 21st Ed. | < 1.8  | MPN/g dry | 04/15/2016 9:35     |
| <b>6105003-02</b> Sample Name: 2. 0412160705<br>Sampled: 4/12/2016 7:05  |                   |        |           |                     |
| Total Solids   | SM 2540-B         | 98.1   | Weight %  | 04/18/2016 9:20     |
| Fecal Coliform   | SM 9221E 21st Ed. | < 1.8  | MPN/g dry | 04/15/2016 9:35     |
| <b>6105003-03</b> Sample Name: 3. 0412161200<br>Sampled: 4/12/2016 12:00 |                   |        |           |                     |
| Total Solids   | SM 2540-B         | 99.0   | Weight %  | 04/18/2016 9:20     |
| Fecal Coliform   | SM 9221E 21st Ed. | < 1.8  | MPN/g dry | 04/15/2016 9:35     |
| <b>6105003-04</b> Sample Name: 4. 0413160900<br>Sampled: 4/13/2016 9:00  |                   |        |           |                     |
| Total Solids   | SM 2540-B         | 97.5   | Weight %  | 04/18/2016 9:20     |
| Fecal Coliform   | SM 9221E 21st Ed. | < 1.8  | MPN/g dry | 04/15/2016 9:35     |
| <b>6105003-05</b> Sample Name: 5. 0413161404<br>Sampled: 4/13/2016 14:04 |                   |        |           |                     |
| Total Solids   | SM 2540-B         | 97.8   | Weight %  | 04/18/2016 9:20     |
| Fecal Coliform   | SM 9221E 21st Ed. | < 1.8  | MPN/g dry | 04/15/2016 9:35     |





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**ANALYSIS REPORT**

ORELAP Accredited Lab#: OR-100013

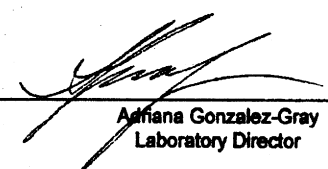
Reported: 04/19/2016  
Received: 04/14/16  
Sampled By: Robert Watts  
Work Order: 6105003

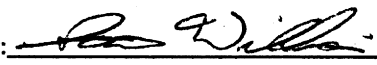
**C** CH2MHill - Wilsonville  
**L** Attn: Robert Watts  
**I** PO Box 2988  
**E** Wilsonville OR, 97070  
**N** Phone: 971-219-5688  
**T**

**Project:** Wilsonville WWTP  
**Project # :** N/A  
**Permit # :**  
**PO # :** -  
**Sampling Location:** Thermoflite Dryer - D&D Building  
**Sample Matrix:** Solid

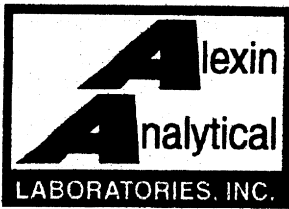
| Lab Number        | Method  | Result            | Units | Analysis Date/ Time |
|-------------------|---|-------------------|-------|---------------------|
| <b>6105003-06</b> | <b>Sample Name: 6. 0414160630</b><br><b>Sampled: 4/14/2016 6:30</b> |                   |       |                     |
|                   | Total Solids  | SM 2540-B         | 99.5  | Weight %            |
|                   | Fecal Coliform  | SM 9221E 21st Ed. | < 1.8 | MPN/g dry           |
|                   |   |                   |       | 04/18/2016 9:20     |
|                   |   |                   |       | 04/15/2016 9:35     |
| <b>6105003-07</b> | <b>Sample Name: 7. 0414180821</b><br><b>Sampled: 4/14/2016 8:21</b> |                   |       |                     |
|                   | Total Solids  | SM 2540-B         | 98.6  | Weight %            |
|                   | Fecal Coliform  | SM 9221E 21st Ed. | < 1.8 | MPN/g dry           |
|                   |   |                   |       | 04/18/2016 9:20     |
|                   |   |                   |       | 04/15/2016 9:35     |

MRL = Minimum Reporting Limit MPN = Most Probable Number

Approved by:   
Adriana Gonzalez-Gray  
Laboratory Director

Approved by:   
Steve Williams  
Microbiology Technical Director

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**ANALYSIS REPORT**

ORELAP Accredited Lab#: OR-100013

Reported: 05/02/2016

Received: 04/14/16

Sampled By: Robert Watts

Sampled: 4/14/16 8:21 am

Work Order: 6105003

**C** CH2MHill - Wilsonville  
**L** Attn: Robert Watts  
**I** PO Box 2988  
**E** Wilsonville OR, 97070  
**N** Phone: 971-219-5688  
**T**

**Project:** Wilsonville WWTP

Project # : N/A

Permit # : -

PO # : -

Sampling Location: Thermoflite Dryer - D&D Building

Sample Matrix: Solid

Sample Matrix: 8. 0411/12/13/14//160821

**Lab Number** **8. 0411/12/13/14//160821**  
**6105003-08**

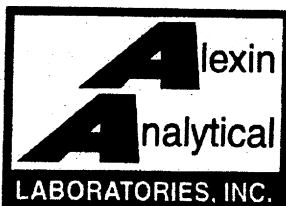
|                                | Method       | Result | Units    |          | Analysis Date/ Time |
|--------------------------------|--------------|--------|----------|----------|---------------------|
| <i>pH</i>                      | EPA 150.1    | 5.4    | pH Units |          | 04/14/2016          |
| <i>Total Solids</i>            | SM 2540-B    | 100.0  | Weight % |          | 04/18/2016          |
| <i>Total Volatile Solids</i>   | SM 2540-E    | 80.2   | Weight % |          | 04/18/2016          |
| <i>Total Kjeldahl Nitrogen</i> | EPA 351.3    | 82800  | mg/kg    | 8.280 %  | 04/15/2016          |
| <i>Ammonia as N</i>            | SM 4500-NH3F | 152    | mg/kg    | 0.015 %  | 04/27/2016          |
| <i>Nitrate as N</i>            | SM4500-NO3 D | <25.0  | mg/kg    | <0.003 % | 04/29/2016          |
| <i>Potassium</i>               | SM 3111B     | 2400   | mg/kg    | 0.240 %  | 04/22/2016          |
| <i>Phosphorus</i>              | EPA 365.3    | 2780   | mg/kg    | 0.278 %  | 04/27/2016          |

MRL = Minimum Reporting Limit MPN = Most Probable Number

Approved by: \_\_\_\_\_

  
Adriana Gonzalez-Gray  
Laboratory Director

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**ANALYSIS REPORT**

ORELAP Accredited Lab#: OR-100013

Reported: 05/17/2016  
Received: 05/12/16

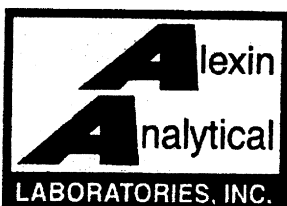
Sampled By: Robert Watts  
Work Order: 6133010

**C** CH2MHill - Wilsonville  
**L** Attn: Robert Watts  
**I** PO Box 2988  
**E** Wilsonville OR, 97070  
**N** Phone: 971-219-5688  
**T**

**Project:** Wilsonville WWTP  
Project # : N/A  
Permit # :  
PO # : -

Sampling Location: Thermoflite Dryer - D&D Building  
Sample Matrix: Solid

| Lab Number        | Method  | Result | Units     | Analysis Date/ Time |
|-------------------|---|--------|-----------|---------------------|
| <b>6133010-01</b> | Sample Name: 1 DR0509160941<br>Sampled: 5/9/2016 9:41   |        |           | Sample Type: Grab   |
| Total Solids      | SM 2540-B   | 99.6   | Weight %  | 05/16/2016 10:00    |
| Fecal Coliform    | SM 9221E 21st Ed.                                       | < 1.8  | MPN/g dry | 05/13/2016 8:58     |
| <b>6133010-02</b> | Sample Name: 2 DR0509161156<br>Sampled: 5/9/2016 11:56  |        |           | Sample Type: Grab   |
| Total Solids      | SM 2540-B   | 97.0   | Weight %  | 05/16/2016 10:00    |
| Fecal Coliform    | SM 9221E 21st Ed.                                       | < 1.8  | MPN/g dry | 05/13/2016 8:58     |
| <b>6133010-03</b> | Sample Name: 3 DR0510160854<br>Sampled: 5/10/2016 8:54  |        |           | Sample Type: Grab   |
| Total Solids      | SM 2540-B   | 99.9   | Weight %  | 05/16/2016 10:00    |
| Fecal Coliform    | SM 9221E 21st Ed.                                       | < 1.8  | MPN/g dry | 05/13/2016 8:58     |
| <b>6133010-04</b> | Sample Name: 4 DR0510161403<br>Sampled: 5/10/2016 14:03 |        |           | Sample Type: Grab   |
| Total Solids      | SM 2540-B   | 100.0  | Weight %  | 05/16/2016 10:00    |
| Fecal Coliform    | SM 9221E 21st Ed.                                       | < 1.8  | MPN/g dry | 05/13/2016 8:58     |
| <b>6133010-05</b> | Sample Name: 5 DR0511160640<br>Sampled: 5/11/2016 6:40  |        |           | Sample Type: Grab   |
| Total Solids      | SM 2540-B   | 100.0  | Weight %  | 05/16/2016 10:00    |
| Fecal Coliform    | SM 9221E 21st Ed.                                       | < 1.8  | MPN/g dry | 05/13/2016 8:58     |



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**ANALYSIS REPORT**

ORELAP Accredited Lab#: OR-100013

Reported: 05/17/2016

Received: 05/12/16

Sampled By: Robert Watts

Work Order: 6133010

**C** CH2MHill - Wilsonville  
**L** Attn: Robert Watts  
**I** PO Box 2988  
**E** Wilsonville OR, 97070  
**N** Phone: 971-219-5688  
**T**

**Project:** Wilsonville WWTP  
**Project # :** N/A  
**Permit # :**  
**PO # :** -  
**Sampling Location:** Thermoflote Dryer - D&D Building  
**Sample Matrix:** Solid

| Lab Number        | Method  | Result | Units     | Analysis Date/ Time |
|-------------------|---|--------|-----------|---------------------|
| <b>6133010-06</b> | Sample Name: 6 DR0511161219<br>Sampled: 5/11/2016 12:19 |        |           | Sample Type: Grab   |
| Total Solids      | SM 2540-B   | 98.8   | Weight %  | 05/16/2016 10:00    |
| Fecal Coliform    | SM 9221E 21st Ed.                                       | < 1.8  | MPN/g dry | 05/13/2016 8:58     |
| <b>6133010-07</b> | Sample Name: 7 DR0512160615<br>Sampled: 5/12/2016 6:15  |        |           | Sample Type: Grab   |
| Total Solids      | SM 2540-B   | 99.6   | Weight %  | 05/16/2016 10:00    |
| Fecal Coliform    | SM 9221E 21st Ed.                                       | < 1.8  | MPN/g dry | 05/13/2016 8:58     |

MRL = Minimum Reporting Limit MPN = Most Probable Number

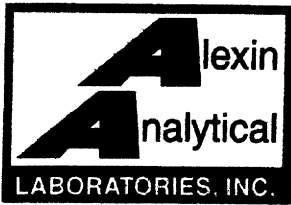
Approved by:

Adriana Gonzalez-Gray  
Laboratory Director

Approved by:

Steve Williams  
Microbiology Technical Director

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**ANALYSIS REPORT**

ORELAP Accredited Lab#: OR-100013

Reported: 06/09/2016

Received: 05/12/16

Sampled By: Robert Watts

Sampled: 5/12/16 12:00 am

Work Order: 6133010

**C** CH2MHill - Wilsonville  
**L** Attn: Robert Watts  
**I** PO Box 2988  
**E** Wilsonville OR, 97070  
**N** Phone: 971-219-5688  
**T**

**Project:** Wilsonville WWTP

Project # : N/A

Permit # :

PO # : -

Sampling Location: Thermoflite Dryer - D&D Building

Sample Matrix: Solid

Sample Matrix: 8 DR0509101112160806

**Lab Number** 8 DR0509101112160806  
**6133010-08**

|            | Method    | Result | Units | dry<br>mg/kg | Analysis Date/ Time |
|------------|-----------|--------|-------|--------------|---------------------|
| Arsenic    | EPA 200.9 | <1.20  | mg/kg | < 1.2        | 05/17/2016          |
| Cadmium    | SM 3111B  | <2.0   | mg/kg | < 2.0        | 05/25/2016          |
| Copper     | SM3111B   | 199    | mg/kg | 200.6        | 05/20/2016          |
| Lead       | EPA 200.9 | 5.72   | mg/kg | 5.8          | 05/18/2016          |
| Mercury    | EPA 245.1 | 0.125  | mg/kg | 0.1          | 05/26/2016          |
| Molybdenum | EPA 200.9 | 12.1   | mg/kg | 12.2         | 06/08/2016          |
| Nickel     | SM 3111B  | 17.6   | mg/kg | 17.7         | 05/25/2016          |
| Selenium   | EPA 200.9 | 2.56   | mg/kg | 2.6          | 05/17/2016          |
| Zinc       | SM 3111B  | 205    | mg/kg | 206.7        | 05/25/2016 B        |

**Lab Number** 8 DR0509101112160806  
**6133010-08**

|                         | Method       | Result | Units    | Analysis Date/ Time |
|-------------------------|--------------|--------|----------|---------------------|
| pH                      | EPA 150.1    | 5.2    | pH Units | 05/13/2016          |
| Total Solids            | SM 2540-B    | 99.2   | Weight % | 05/16/2016          |
| Total Volatile Solids   | SM 2540-E    | 88.6   | Weight % | 05/16/2016          |
| Total Kjeldahl Nitrogen | EPA 351.3    | 86300  | mg/kg    | 8.700 %             |
| Ammonia as N            | SM 4500-NH3F | 1450   | mg/kg    | 0.146 %             |
| Nitrate as N            | SM4500-NO3 D | <25.0  | mg/kg    | <0.003 %            |
| Potassium               | SM 3111B     | 2500   | mg/kg    | 0.252 %             |
| Phosphorus              | EPA 365.3    | 3780   | mg/kg    | 0.381 %             |

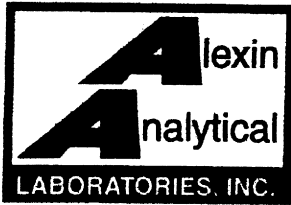
MRL = Minimum Reporting Limit MPN = Most Probable Number

B Analyte is found in the associated blank as well as in the sample (CLP B-flag).

Approved by:

  
Adriana Gonzalez-Gray  
Laboratory Director

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**ANALYSIS REPORT**

ORELAP Accredited Lab#: OR-100013

Reported: 06/18/2016

Received: 06/09/16

Sampled By: Robert Watts

Work Order: 6161004

**C** CH2MHill - Wilsonville  
**L** Attn: Robert Watts  
**I** PO Box 2988  
**E** Wilsonville OR, 97070  
**N** Phone: 971-219-5688  
**T**

**Project:** Wilsonville WWTP

Project # : N/A

Permit # :

PO # : -

Sampling Location: Thermoflute Dryer - D&D Building

Sample Matrix: Solid

| Lab Number        | Method   | Result | Units     | Analysis Date/ Time |
|-------------------|--|--------|-----------|---------------------|
| <b>6161004-01</b> | Sample Name: DR0607160530<br>Sampled: 6/7/2016 5:30  |        |           | Sample Type: Grab   |
| Total Solids      | SM 2540-B  | 99.7   | Weight %  | 06/15/2016 10:00    |
| Fecal Coliform    | SM 9221E 21st Ed.                                    | < 1.8  | MPN/g dry | 06/10/2016 10:00    |
| <b>6161004-02</b> | Sample Name: DR0606161402<br>Sampled: 6/6/2016 14:02 |        |           | Sample Type: Grab   |
| Total Solids      | SM 2540-B  | 99.6   | Weight %  | 06/15/2016 10:00    |
| Fecal Coliform    | SM 9221E 21st Ed.                                    | < 1.8  | MPN/g dry | 06/10/2016 10:00    |
| <b>6161004-03</b> | Sample Name: DR0607160903<br>Sampled: 6/7/2016 9:03  |        |           | Sample Type: Grab   |
| Total Solids      | SM 2540-B  | 99.6   | Weight %  | 06/15/2016 10:00    |
| Fecal Coliform    | SM 9221E 21st Ed.                                    | < 1.8  | MPN/g dry | 06/10/2016 10:00    |
| <b>6161004-04</b> | Sample Name: DR0607161604<br>Sampled: 6/7/2016 16:04 |        |           | Sample Type: Grab   |
| Total Solids      | SM 2540-B  | 99.1   | Weight %  | 06/15/2016 10:00    |
| Fecal Coliform    | SM 9221E 21st Ed.                                    | < 1.8  | MPN/g dry | 06/10/2016 10:00    |
| <b>6161004-05</b> | Sample Name: DR0608160621<br>Sampled: 6/8/2016 6:21  |        |           | Sample Type: Grab   |
| Total Solids      | SM 2540-B  | 100    | Weight %  | 06/15/2016 10:00    |
| Fecal Coliform    | SM 9221E 21st Ed.                                    | < 1.8  | MPN/g dry | 06/10/2016 10:00    |



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**ANALYSIS REPORT**

ORELAP Accredited Lab#: OR-100013

Reported: 06/18/2016

Received: 06/09/16

Sampled By: Robert Watts

Work Order: 6161004

**C** **CH2MHill - Wilsonville**  
**L** Attn: Robert Watts  
**I** PO Box 2988  
**E** Wilsonville OR, 97070  
**N** Phone: 971-219-5688  
**T**

**Project:** Wilsonville WWTP

Project # : N/A

Permit # :

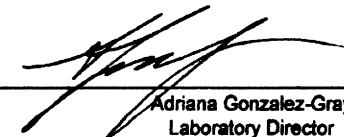
PO # : -

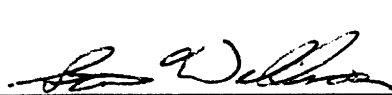
Sampling Location: Thermoflite Dryer - D&D Building

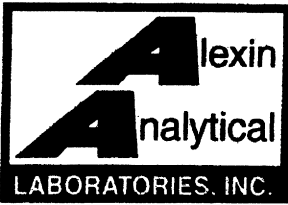
Sample Matrix: Solid

| Lab Number        | Method   | Result            | Units | Analysis Date/ Time |                  |
|-------------------|--|-------------------|-------|---------------------|------------------|
| <b>6161004-06</b> | Sample Name: DR0608161115<br>Sampled: 6/8/2016 11:15 |                   |       | Sample Type: Grab   |                  |
|                   | Total Solids   | SM 2540-B         | 99.3  | Weight %            | 06/15/2016 10:00 |
|                   | Fecal Coliform                                       | SM 9221E 21st Ed. | < 1.8 | MPN/g dry           | 06/10/2016 10:00 |
| <b>6161004-07</b> | Sample Name: DR0609160710<br>Sampled: 6/9/2016 7:10  |                   |       | Sample Type: Grab   |                  |
|                   | Total Solids   | SM 2540-B         | 99.8  | Weight %            | 06/15/2016 10:00 |
|                   | Fecal Coliform                                       | SM 9221E 21st Ed. | < 1.8 | MPN/g dry           | 06/10/2016 10:00 |

MRL = Minimum Reporting Limit MPN = Most Probable Number

Approved by:   
Adriana Gonzalez-Gray  
Laboratory Director

Approved by:   
Steve Williams  
Microbiology Technical Director



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**ANALYSIS REPORT**

ORELAP Accredited Lab#: OR-100013

Reported: 06/20/2016

Received: 06/09/16

Sampled By: Robert Watts

Sampled: 6/9/16 7:10 am

Work Order: 6161004

**C** CH2MHIII - Wilsonville  
**L** Attn: Robert Watts  
**I** PO Box 2988  
**E** Wilsonville OR, 97070  
**N** Phone: 971-219-5688  
**T**

**Project:** Wilsonville WWTP

Project # : N/A

Permit # :

PO # : -

Sampling Location: Thermoflute Dryer - D&D Building

Sample Matrix: Solid

Sample Matrix: DR0606070809160710

**Lab Number** **DR0606070809160710**  
**6161004-08**

|                                | Method       | Result | Units    |          | Analysis Date/ Time |
|--------------------------------|--------------|--------|----------|----------|---------------------|
| <i>pH</i>                      | EPA 150.1    | 5.5    | pH Units |          | 06/09/2016          |
| <i>Total Solids</i>            | SM 2540-B    | 98.4   | Weight % |          | 06/15/2016          |
| <i>Total Volatile Solids</i>   | SM 2540-E    | 80.7   | Weight % |          | 06/15/2016          |
| <i>Total Kjeldahl Nitrogen</i> | EPA 351.3    | 84000  | mg/kg    | 8.537 %  | 06/09/2016          |
| <i>Ammonia as N</i>            | SM 4500-NH3F | 1840   | mg/kg    | 0.187 %  | 06/16/2016          |
| <i>Nitrate as N</i>            | SM4500-NO3 D | <25.0  | mg/kg    | <0.003 % | 06/17/2016          |
| <i>Potassium</i>               | SM 3111B     | 2300   | mg/kg    | 0.234 %  | 06/13/2016          |
| <i>Phosphorus</i>              | EPA 365.3    | 3220   | mg/kg    | 0.327 %  | 06/16/2016          |

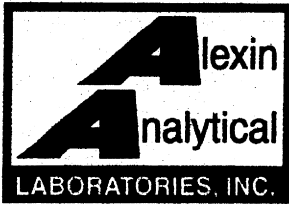
MRL = Minimum Reporting Limit MPN = Most Probable Number

Approved by: \_\_\_\_\_

  
Adriana Gonzalez-Gray  
Laboratory Director

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**ANALYSIS REPORT**

ORELAP Accredited Lab#: OR-100013

Reported: 07/07/2016

Received: 06/21/16

Sampled By: Chuck Edwards

Sampled: 6/21/16 8:30 am

Work Order: 6173005

**C** CH2MHIII - Wilsonville  
**L** Attn: Jim Nail  
**I** PO Box 2988  
**E** Wilsonville OR, 97070  
**N** Phone: (503) 689-1077  
**T**

**Project:**

Project # : N/A

Permit # :

PO # : -

Sampling Location:

Sample Matrix: Solid

Sample Matrix: Biosolid

**Lab Number**

**Biosolid**

**6173005-01**

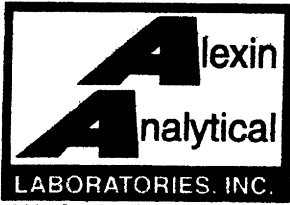
|                         | Method       | Result | Units    |          | Analysis Date/ Time |
|-------------------------|--------------|--------|----------|----------|---------------------|
| Total Solids            | SM 2540-B    | 62.2   | Weight % |          | 06/21/2016          |
| Total Kjeldahl Nitrogen | EPA 351.3    | 58000  | mg/kg    | 9.325 %  | 06/23/2016          |
| Ammonia as N            | SM 4500-NH3F | 5080   | mg/kg    | 0.817 %  | 06/23/2016          |
| Nitrate as N            | SM4500-NO3 D | <25.0  | mg/kg    | <0.004 % | 06/24/2016          |
| Potassium               | SM 3111B     | 1400   | mg/kg    | 0.225 %  | 07/06/2016          |
| Phosphorus              | EPA 365.3    | 2860   | mg/kg    | 0.460 %  | 06/30/2016          |

MRL = Minimum Reporting Limit MPN = Most Probable Number

Approved by: \_\_\_\_\_

Adriana Gonzalez-Gray  
Laboratory Director

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Tigard, OR 97223  
Tel.: (503) 639-9311 Fax: (503) 684-1588

**ANALYSIS REPORT**

ORELAP Accredited Lab#: OR-100013

Reported: 07/26/2016

Received: 07/21/16

Sampled By: Robert Watts

Work Order: 6203010

**C** CH2MHIII - Wilsonville  
**L** Attn: Robert Watts  
**I** PO Box 2988  
**E** Wilsonville OR, 97070  
**N** Phone: 971-219-5688  
**T**

**Project:** Wilsonville WWTP

Project # : N/A

Permit # :

PO # : -

Sampling Location: Thermoflite Dryer - D&D Building

Sample Matrix: Solid

| Lab Number        | Method  | Result | Units     | Analysis Date/ Time |
|-------------------|---|--------|-----------|---------------------|
| <b>6203010-01</b> | Sample Name: DR0719160800<br>Sampled: 7/19/2016 8:00  |        |           | Sample Type: Grab   |
| Total Solids      | SM 2540-B   | 99.2   | Weight %  | 07/25/2016 8:30     |
| Fecal Collform    | SM 9221E 21st Ed.                                     | < 1.8  | MPN/g dry | 07/22/2016 10:15    |
| <b>6203010-02</b> | Sample Name: DR0719160955<br>Sampled: 7/19/2016 9:55  |        |           | Sample Type: Grab   |
| Total Solids      | SM 2540-B   | 99.6   | Weight %  | 07/25/2016 8:30     |
| Fecal Collform    | SM 9221E 21st Ed.                                     | < 1.8  | MPN/g dry | 07/22/2016 10:15    |
| <b>6203010-03</b> | Sample Name: DR0719161202<br>Sampled: 7/19/2016 12:02 |        |           | Sample Type: Grab   |
| Total Solids      | SM 2540-B   | 98.9   | Weight %  | 07/25/2016 8:30     |
| Fecal Collform    | SM 9221E 21st Ed.                                     | < 1.8  | MPN/g dry | 07/22/2016 10:15    |
| <b>6203010-04</b> | Sample Name: DR0720161158<br>Sampled: 7/20/2016 11:58 |        |           | Sample Type: Grab   |
| Total Solids      | SM 2540-B   | 98.9   | Weight %  | 07/25/2016 8:30     |
| Fecal Collform    | SM 9221E 21st Ed.                                     | < 1.8  | MPN/g dry | 07/22/2016 10:15    |
| <b>6203010-05</b> | Sample Name: DR0721160548<br>Sampled: 7/21/2016 5:48  |        |           | Sample Type: Grab   |
| Total Solids      | SM 2540-B   | 99.5   | Weight %  | 07/25/2016 8:30     |
| Fecal Collform    | SM 9221E 21st Ed.                                     | < 1.8  | MPN/g dry | 07/22/2016 10:15    |



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**ANALYSIS REPORT**

ORELAP Accredited Lab#: OR-100013

Reported: 07/26/2016

Received: 07/21/16

Sampled By: Robert Watts


Work Order: 6203010


**C** CH2MHIII - Wilsonville  
**L** Attn: Robert Watts  
**I** PO Box 2988  
**E** Wilsonville OR, 97070  
**N** Phone: 971-219-5688  
**T**

**Project:** Wilsonville WWTP  
**Project # :** N/A  
**Permit # :**  
**PO # :** -  
**Sampling Location:** Thermofite Dryer - D&D Building  
**Sample Matrix:** Solid

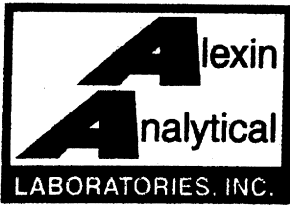
| Lab Number        | Method   | Result | Units     | Analysis Date/ Time |
|-------------------|--|--------|-----------|---------------------|
| <b>6203010-06</b> | Sample Name: DR0721160704<br>Sampled: 7/21/2016 7:04 |        |           | Sample Type: Grab   |
| Total Solids      | SM 2540-B  | 99.7   | Weight %  | 07/25/2016 8:30     |
| Fecal Coliform    | SM 9221E 21st Ed.                                    | < 1.8  | MPN/g dry | 07/22/2016 10:15    |
| <b>6203010-07</b> | Sample Name: DR0721160827<br>Sampled: 7/21/2016 8:27 |        |           | Sample Type: Grab   |
| Total Solids      | SM 2540-B  | 100    | Weight %  | 07/25/2016 8:30     |
| Fecal Coliform    | SM 9221E 21st Ed.                                    | < 1.8  | MPN/g dry | 07/22/2016 10:15    |

MRL = Minimum Reporting Limit MPN = Most Probable Number

Approved by:   
Adriana Gonzalez-Gray  
Laboratory Director

Approved by:   
Steve Williams  
Microbiology Technical Director

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**ANALYSIS REPORT**

ORELAP Accredited Lab#: OR-100013

Reported: 08/15/2016

Received: 07/21/16

Sampled By: Robert Watts

Sampled: 7/21/16 8:29 am

Work Order: 6203010

**C** CH2MHill - Wilsonville  
**L** Attn: Robert Watts  
**I** PO Box 2988  
**E** Wilsonville OR, 97070  
**N** Phone: 971-219-5688  
**T**

**Project:** Wilsonville WWTP

**Project # :** N/A

**Permit # :**

**PO # :** -

**Sampling Location:** Thermofite Dryer - D&D Building

**Sample Matrix:** Solid

**Sample Matrix:** DR07192021160829

**Lab Number** DR07192021160829  
**6203010-08**

|            | Method    | Result | Units | dry mg/kg | Analysis Date/ Time     |
|------------|-----------|--------|-------|-----------|-------------------------|
| Arsenic    | EPA 200.9 | 3.24   | mg/kg | 3.3       | 07/28/2016              |
| Cadmium    | SM 3111B  | 2.0    | mg/kg | 2.0       | 08/01/2016              |
| Copper     | SM3111B   | 159    | mg/kg | 159.6     | 07/29/2016              |
| Lead       | EPA 200.9 | 5.84   | mg/kg | 5.9       | 08/10/2016              |
| Mercury    | EPA 6020A | 0.329  | mg/kg | 0.3       | 08/04/2016 <b>SUB-4</b> |
| Molybdenum | EPA 200.9 | 10.2   | mg/kg | 10.2      | 08/09/2016              |
| Nickel     | SM 3111B  | 17.0   | mg/kg | 17.1      | 08/02/2016              |
| Selenium   | EPA 200.9 | 3.76   | mg/kg | 3.8       | 08/02/2016              |
| Zinc       | SM 3111B  | 193    | mg/kg | 193.8     | 08/02/2016              |

**Lab Number** DR07192021160829  
**6203010-08**

|                         | Method       | Result | Units    |          | Analysis Date/ Time |
|-------------------------|--------------|--------|----------|----------|---------------------|
| pH                      | EPA 150.1    | 5.2    | pH Units |          | 08/05/2016          |
| Total Solids            | SM 2540-B    | 99.6   | Weight % |          | 07/25/2016          |
| Total Volatile Solids   | SM 2540-E    | 82.0   | Weight % |          | 07/25/2016          |
| Total Kjeldahl Nitrogen | EPA 351.3    | 82000  | mg/kg    | 8.233 %  | 07/25/2016          |
| Ammonia as N            | SM 4500-NH3F | 1400   | mg/kg    | 0.141 %  | 07/28/2016          |
| Nitrate as N            | SM4500-NO3 D | <25.0  | mg/kg    | <0.003 % | 07/21/2016          |
| Potassium               | SM 3111B     | 2300   | mg/kg    | 0.231 %  | 07/29/2016          |
| Phosphorus              | EPA 365.3    | 6020   | mg/kg    | 0.604 %  | 07/28/2016          |

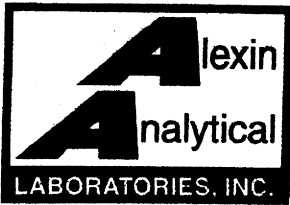
MRL = Minimum Reporting Limit MPN = Most Probable Number

**SUB-4** This analysis was subcontracted to APEX Laboratories ORELAP ID# OR100062

Approved by: \_\_\_\_\_

*Adriana Gonzalez-Gray*  
Adriana Gonzalez-Gray  
Laboratory Director

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**ANALYSIS REPORT**

ORELAP Accredited Lab#: OR-100013

Reported: 08/24/2016

Received: 08/18/16

Sampled By: Robert Watts

Work Order: 6231005

**C  
L  
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T**  
**CH2MHill - Wilsonville**  
Attn: Robert Watts  
PO Box 2988  
Wilsonville OR, 97070  
Phone: 971-219-5688

**Project:** Wilsonville WWTP

**Project # :** N/A

**Permit # :**

**PO # :** -

**Sampling Location:** Thermofite Dryer - D&D Building

**Sample Matrix:** Solid

| Lab Number            | Method                           | Result | Units     | Analysis Date/ Time      |
|-----------------------|----------------------------------|--------|-----------|--------------------------|
| <b>6231005-01</b>     | <b>Sample Name:</b> DR0816160622 |        |           | <b>Sample Type:</b> Grab |
|                       | <b>Sampled:</b> 8/16/2016 6:22   |        |           |                          |
| <b>Total Solids</b>   | SM 2540-B                        | 98.8   | Weight %  | 08/22/2016 9:00          |
| <b>Fecal Coliform</b> | SM 9221E                         | < 1.8  | MPN/g dry | 08/19/2016 9:05          |
| <b>6231005-02</b>     | <b>Sample Name:</b> DR0816160810 |        |           | <b>Sample Type:</b> Grab |
|                       | <b>Sampled:</b> 8/16/2016 8:10   |        |           |                          |
| <b>Total Solids</b>   | SM 2540-B                        | 99.8   | Weight %  | 08/22/2016 9:00          |
| <b>Fecal Coliform</b> | SM 9221E                         | < 1.8  | MPN/g dry | 08/19/2016 9:05          |
| <b>6231005-03</b>     | <b>Sample Name:</b> DR0816161440 |        |           | <b>Sample Type:</b> Grab |
|                       | <b>Sampled:</b> 8/16/2016 14:40  |        |           |                          |
| <b>Total Solids</b>   | SM 2540-B                        | 100.0  | Weight %  | 08/22/2016 9:00          |
| <b>Fecal Coliform</b> | SM 9221E                         | < 1.8  | MPN/g dry | 08/19/2016 9:05          |
| <b>6231005-04</b>     | <b>Sample Name:</b> DR0817160623 |        |           | <b>Sample Type:</b> Grab |
|                       | <b>Sampled:</b> 8/17/2016 6:23   |        |           |                          |
| <b>Total Solids</b>   | SM 2540-B                        | 100.0  | Weight %  | 08/22/2016 9:00          |
| <b>Fecal Coliform</b> | SM 9221E                         | < 1.8  | MPN/g dry | 08/19/2016 9:05          |
| <b>6231005-05</b>     | <b>Sample Name:</b> DR0817160838 |        |           | <b>Sample Type:</b> Grab |
|                       | <b>Sampled:</b> 8/17/2016 8:38   |        |           |                          |
| <b>Total Solids</b>   | SM 2540-B                        | 100.0  | Weight %  | 08/22/2016 9:00          |
| <b>Fecal Coliform</b> | SM 9221E                         | < 1.8  | MPN/g dry | 08/19/2016 9:05          |



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**ANALYSIS REPORT**

ORELAP Accredited Lab#: OR-100013

Reported: 08/24/2016  
Received: 08/18/16

Sampled By: Robert Watts  
Work Order: 6231005

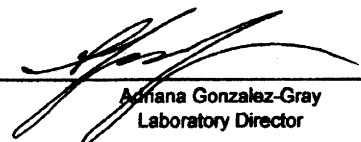
**C** CH2MHill - Wilsonville  
**L** Attn: Robert Watts  
**I** PO Box 2988  
**E** Wilsonville OR, 97070  
**N** Phone: 971-219-5688  
**T**


**Project:** Wilsonville WWTP  
Project # : N/A  
Permit # :  
PO # : -

Sampling Location: Thermofite Dryer - D&D Building  
Sample Matrix: Solid

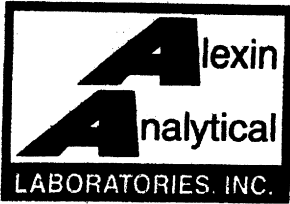
| Lab Number        | Method  | Result | Units     | Analysis Date/ Time |
|-------------------|---|--------|-----------|---------------------|
| <b>6231005-06</b> | Sample Name: DR0817161217<br>Sampled: 8/17/2016 12:17 |        |           | Sample Type: Grab   |
| Total Solids      | SM 2540-B   | 100.0  | Weight %  | 08/22/2016 9:00     |
| Fecal Coliform    | SM 9221E  | < 1.8  | MPN/g dry | 08/19/2016 9:05     |
| <b>6231005-07</b> | Sample Name: DR0818160713<br>Sampled: 8/18/2016 7:13  |        |           | Sample Type: Grab   |
| Total Solids      | SM 2540-B   | 100.0  | Weight %  | 08/22/2016 9:00     |
| Fecal Coliform    | SM 9221E  | < 1.8  | MPN/g dry | 08/19/2016 9:05     |

MRL = Minimum Reporting Limit MPN = Most Probable Number

Approved by:   
Adriana Gonzalez-Gray  
Laboratory Director

Approved by:   
Steve Williams  
Microbiology Technical Director

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**ANALYSIS REPORT**

ORELAP Accredited Lab#: OR-100013

Reported: 08/29/2016

Received: 08/18/16

Sampled By: Robert Watts

Sampled: 8/18/16 7:40 am

Work Order: 6231005

**C** CH2MHill - Wilsonville  
**L** Attn: Robert Watts  
**I** PO Box 2988  
**E** Wilsonville OR, 97070  
**N** Phone: 971-219-5688  
**T**

**Project:** Wilsonville WWTP  
**Project # :** N/A  
**Permit # :**  
**PO # :** -

**Sampling Location:** Thermoflite Dryer - D&D Building  
**Sample Matrix:** Solid  
**Sample Matrix:** DR08(16,17,18)160740

**Lab Number** **DR08(16,17,18)160740**  
**6231005-08**

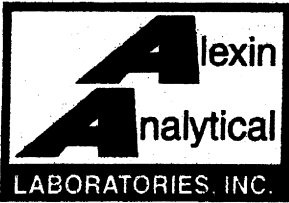
|                                | Method       | Result | Units          | Analysis Date/ Time |
|--------------------------------|--------------|--------|----------------|---------------------|
| <i>pH</i>                      | EPA 150.1    | 5.0    | pH Units       | 08/18/2016          |
| <i>Total Solids</i>            | SM 2540-B    | 100.0  | Weight %       | 08/22/2016          |
| <i>Total Volatile Solids</i>   | SM 2540-E    | 83.4   | Weight %       | 08/22/2016          |
| <i>Total Kjeldahl Nitrogen</i> | EPA 351.3    | 82000  | mg/kg 8.200 %  | 08/22/2016          |
| <i>Ammonia as N</i>            | SM 4500-NH3F | 645    | mg/kg 0.065 %  | 08/25/2016          |
| <i>Nitrate as N</i>            | SM4500-NO3 D | <25.0  | mg/kg <0.003 % | 08/26/2016          |
| <i>Potassium</i>               | SM 3111B     | 1600   | mg/kg 0.160 %  | 08/19/2016          |
| <i>Phosphorus</i>              | EPA 365.3    | 5540   | mg/kg 0.554 %  | 08/25/2016          |

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Approved by:

Adriana Gonzalez-Gray  
Laboratory Director

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**ANALYSIS REPORT**

ORELAP Accredited Lab#: OR-100013

Reported: 09/16/2016  
Received: 09/08/16

Sampled By: Robert Watts  
Work Order: 6252020

**C** CH2MHIII - Wilsonville  
**L** Attn: Robert Watts  
**I** PO Box 2988  
**E** Wilsonville OR, 97070  
**N** Phone: 971-219-5688  
**T**

**Project:** Wilsonville WWTP  
Project # : N/A  
Permit # :  
PO # : -

Sampling Location: Thermoflite Dryer - D&D Building  
Sample Matrix: Solid

| Lab Number   | Method            | Result | Units     | Analysis Date/ Time |
|--|-------------------|--------|-----------|---------------------|
| <b>6252020-01</b> Sample Name: DR0908160530<br>Sampled: 9/6/2016 5:30  |                   |        |           |                     |
| Total Solids   | SM 2540-B         | 99.8   | Weight %  | 09/13/2016 9:00     |
| Fecal Coliform   | SM 9221E 21st Ed. | < 1.8  | MPN/g dry | 09/09/2016 10:40    |
| <b>6252020-02</b> Sample Name: DR0907160652<br>Sampled: 9/7/2016 6:52  |                   |        |           |                     |
| Total Solids   | SM 2540-B         | 99.9   | Weight %  | 09/13/2016 9:00     |
| Fecal Coliform   | SM 9221E 21st Ed. | < 1.8  | MPN/g dry | 09/09/2016 10:40    |
| <b>6252020-03</b> Sample Name: DR0907160917<br>Sampled: 9/7/2016 9:17  |                   |        |           |                     |
| Total Solids   | SM 2540-B         | 99.9   | Weight %  | 09/13/2016 9:00     |
| Fecal Coliform   | SM 9221E 21st Ed. | < 1.8  | MPN/g dry | 09/09/2016 10:40    |
| <b>6252020-04</b> Sample Name: DR0907161226<br>Sampled: 9/7/2016 12:26 |                   |        |           |                     |
| Total Solids   | SM 2540-B         | 99.8   | Weight %  | 09/13/2016 9:00     |
| Fecal Coliform   | SM 9221E 21st Ed. | < 1.8  | MPN/g dry | 09/09/2016 10:40    |
| <b>6252020-05</b> Sample Name: DR090816712<br>Sampled: 9/8/2016 7:12   |                   |        |           |                     |
| Total Solids   | SM 2540-B         | 99.8   | Weight %  | 09/13/2016 9:00     |
| Fecal Coliform   | SM 9221E 21st Ed. | < 1.8  | MPN/g dry | 09/09/2016 10:40    |





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**ANALYSIS REPORT**

ORELAP Accredited Lab#: OR-100013

Reported: 09/16/2016  
Received: 09/08/16

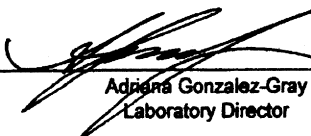
Sampled By: Robert Watts  
Work Order: 6252020

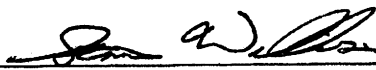
**C** CH2MHIII - Wilsonville  
**L** Attn: Robert Watts  
**I** PO Box 2988  
**E** Wilsonville OR, 97070  
**N** Phone: 971-219-5688  
**T**

**Project:** Wilsonville WWTP  
**Project # :** N/A  
**Permit # :**  
**PO # :** -  
**Sampling Location:** Thermoflite Dryer - D&D Building  
**Sample Matrix:** Solid

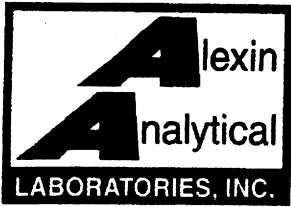
| Lab Number        | Method   | Result | Units     | Analysis Date/ Time |
|-------------------|--|--------|-----------|---------------------|
| <b>6252020-06</b> | <b>Sample Name:</b> DR090816800<br><b>Sampled:</b> 9/8/2016 8:00 |        |           |                     |
| Total Solids      | SM 2540-B  | 99.9   | Weight %  | 09/13/2016 9:00     |
| Fecal Coliform    | SM 9221E 21st Ed.  | < 1.8  | MPN/g dry | 09/09/2016 10:40    |
| <b>6252020-07</b> | <b>Sample Name:</b> DR090816902<br><b>Sampled:</b> 9/8/2016 9:02 |        |           |                     |
| Total Solids      | SM 2540-B  | 99.8   | Weight %  | 09/13/2016 9:00     |
| Fecal Coliform    | SM 9221E 21st Ed.  | < 1.8  | MPN/g dry | 09/09/2016 10:40    |

MRL = Minimum Reporting Limit MPN = Most Probable Number

Approved by:   
Adriana Gonzalez-Gray  
Laboratory Director

Approved by:   
Steve Williams  
Microbiology Technical Director

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**ANALYSIS REPORT**

ORELAP Accredited Lab#: OR-100013

Reported: 09/19/2016

Received: 09/08/16

Sampled By: Robert Watts

Sampled: 9/8/16 9:00 am

Work Order: 6252020

**C  
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T**  
**CH2MHill - Wilsonville**  
Attn: Robert Watts  
PO Box 2988  
Wilsonville OR, 97070  
Phone: 971-219-5688

**Project:** Wilsonville WWTP

Project # : N/A

Permit # :

PO # : -

Sampling Location: Thermofite Dryer - D&D Building

Sample Matrix: Solid

Sample Matrix: DR09060708160900

**Lab Number** **DR09060708160900**  
**6252020-08**

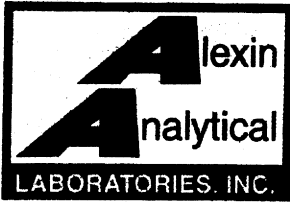
|                                | Method       | Result | Units    |          | Analysis Date/ Time |
|--------------------------------|--------------|--------|----------|----------|---------------------|
| <i>pH</i>                      | EPA 150.1    | 5.1    | pH Units |          | 09/12/2016          |
| <i>Total Solids</i>            | SM 2540-B    | 100    | Weight % |          | 09/13/2016          |
| <i>Total Volatile Solids</i>   | SM 2540-E    | 73.0   | Weight % |          | 09/13/2016          |
| <i>Total Kjeldahl Nitrogen</i> | EPA 351.3    | 84000  | mg/kg    | 8.400 %  | 09/13/2016          |
| <i>Ammonia as N</i>            | SM 4500-NH3F | 600    | mg/kg    | 0.060 %  | 09/08/2016          |
| <i>Nitrate as N</i>            | SM4500-NO3 D | <25.0  | mg/kg    | <0.003 % | 09/09/2016          |
| <i>Potassium</i>               | SM 3111B     | 1900   | mg/kg    | 0.190 %  | 09/19/2016          |
| <i>Phosphorus</i>              | EPA 365.3    | 8500   | mg/kg    | 0.850 %  | 09/15/2016          |

MRL = Minimum Reporting Limit MPN = Most Probable Number

Approved by: \_\_\_\_\_

Adriana Gonzalez-Gray  
Laboratory Director

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Tigard, OR 97223  
Tel.: (503) 639-9311 Fax: (503) 684-1588

**ANALYSIS REPORT**

ORELAP Accredited Lab#: OR-100013

Reported: 10/19/2016

Received: 10/13/16

Sampled By: Robert Watts

Work Order: 6287006

**C** CH2MHIII - Wilsonville  
**L** Attn: Robert Watts  
**I** PO Box 2988  
**E** Wilsonville OR, 97070  
**N** Phone: 971-219-5688  
**T**

**Project:** Wilsonville WWTP

**Project # :** N/A

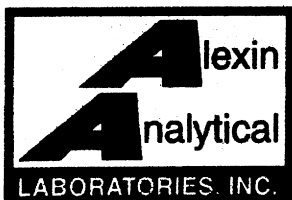
**Permit # :**

**PO # :** -

**Sampling Location:** Thermoflute Dryer - D&D Building

**Sample Matrix:** Solid

| Lab Number        | Method  | Result | Units     | Analysis Date/ Time |
|-------------------|---|--------|-----------|---------------------|
| <b>6287006-01</b> | Sample Name: DR 1010160522<br>Sampled: 10/10/2016 5:22  |        |           | Sample Type: Grab   |
| Total Solids      | SM 2540-B   | 99.9   | Weight %  | 10/17/2016 9:00     |
| Fecal Coliform    | SM 9221E  | < 1.8  | MPN/g dry | 10/14/2016 9:35     |
| <b>6287006-02</b> | Sample Name: DR 1010160807<br>Sampled: 10/10/2016 8:07  |        |           | Sample Type: Grab   |
| Total Solids      | SM 2540-B   | 99.4   | Weight %  | 10/17/2016 9:00     |
| Fecal Coliform    | SM 9221E  | < 1.8  | MPN/g dry | 10/14/2016 9:35     |
| <b>6287006-03</b> | Sample Name: DR 1011160458<br>Sampled: 10/11/2016 4:58  |        |           | Sample Type: Grab   |
| Total Solids      | SM 2540-B   | 99.8   | Weight %  | 10/17/2016 9:00     |
| Fecal Coliform    | SM 9221E  | < 1.8  | MPN/g dry | 10/14/2016 9:35     |
| <b>6287006-04</b> | Sample Name: DR 1011160802<br>Sampled: 10/11/2016 8:02  |        |           | Sample Type: Grab   |
| Total Solids      | SM 2540-B   | 99.3   | Weight %  | 10/17/2016 9:00     |
| Fecal Coliform    | SM 9221E  | < 1.8  | MPN/g dry | 10/14/2016 9:35     |
| <b>6287006-05</b> | Sample Name: DR 1011161104<br>Sampled: 10/11/2016 11:04 |        |           | Sample Type: Grab   |
| Total Solids      | SM 2540-B   | 99.1   | Weight %  | 10/17/2016 9:00     |
| Fecal Coliform    | SM 9221E  | < 1.8  | MPN/g dry | 10/14/2016 9:35     |



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**ANALYSIS REPORT**

ORELAP Accredited Lab#: OR-100013

Reported: 10/19/2016  
Received: 10/13/16  
Sampled By: Robert Watts  
Work Order: 6287006

**C** CH2MHill - Wilsonville  
**L** Attn: Robert Watts  
**I** PO Box 2988  
**E** Wilsonville OR, 97070  
**N** Phone: 971-219-5688  
**T**

**Project:** Wilsonville WWTP  
**Project # :** N/A  
**Permit # :**  
**PO # :** -  
**Sampling Location:** Thermoflite Dryer - D&D Building  
**Sample Matrix:** Solid

| Lab Number        | Method  | Result | Units     | Analysis Date/ Time |
|-------------------|---|--------|-----------|---------------------|
| <b>6287006-06</b> | Sample Name: DR1012160908<br>Sampled: 10/12/2016 9:08   |        |           | Sample Type: Grab   |
| Total Solids      | SM 2540-B   | 99.9   | Weight %  | 10/17/2016 9:00     |
| Fecal Coliform    | SM 9221E  | < 1.8  | MPN/g dry | 10/14/2016 9:35     |
| <b>6287006-07</b> | Sample Name: DR 1012161213<br>Sampled: 10/12/2016 12:13 |        |           | Sample Type: Grab   |
| Total Solids      | SM 2540-B   | 94.7   | Weight %  | 10/17/2016 9:00     |
| Fecal Coliform    | SM 9221E  | < 1.9  | MPN/g dry | 10/14/2016 9:35     |

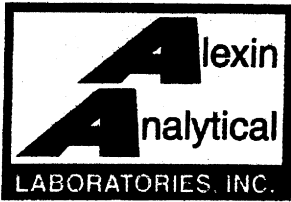
MRL = Minimum Reporting Limit MPN = Most Probable Number

Approved by: \_\_\_\_\_

Adriana Gonzalez-Gray  
Laboratory Director

Approved by: \_\_\_\_\_

Steve Williams  
Microbiology Technical Director



**Professional  
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Tel.: (503) 639-9311 Fax: (503) 684-1588

**ANALYSIS REPORT**

ORELAP Accredited Lab#: OR-100013

Reported: 10/28/2016

Received: 10/13/16

Sampled By: Robert Watts

Sampled: 10/13/16 6:23 am

Work Order: 6287006

**C  
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T**  
**CH2MHIII - Wilsonville**  
Attn: Robert Watts  
PO Box 2988  
Wilsonville OR, 97070  
Phone: 971-219-5688

**Project:** Wilsonville WWTP  
**Project # :** N/A  
**Permit # :**  
**PO # :** -

**Sampling Location:** Thermofite Dryer - D&D Building  
**Sample Matrix:** Solid  
**Sample Matrix:** DR 10(10-13)160623

**Lab Number DR 10(10-13)160623**

**6287006-08**

|                   | Method    | Result | Units | dry<br>mg/kg | Analysis Date/ Time |
|-------------------|-----------|--------|-------|--------------|---------------------|
| <i>Arsenic</i>    | EPA 200.9 | 1.52   | mg/kg | 1.5          | 10/20/2016          |
| <i>Cadmium</i>    | SM 3111B  | 3.0    | mg/kg | 3.0          | 10/26/2016          |
| <i>Copper</i>     | SM3111B   | 168    | mg/kg | 168.8        | 10/18/2016          |
| <i>Lead</i>       | EPA 200.9 | 6.48   | mg/kg | 6.5          | 10/21/2016          |
| <i>Mercury</i>    | EPA 245.1 | 0.367  | mg/kg | 0.4          | 10/26/2016          |
| <i>Molybdenum</i> | EPA 200.9 | 11.7   | mg/kg | 11.8         | 10/25/2016          |
| <i>Nickel</i>     | SM 3111B  | 18.4   | mg/kg | 18.5         | 10/20/2016          |
| <i>Selenium</i>   | EPA 200.9 | 4.68   | mg/kg | 4.7          | 10/25/2016          |
| <i>Zinc</i>       | SM 3111B  | 267    | mg/kg | 268.3        | 10/19/2016          |

**Lab Number DR 10(10-13)160623**

**6287006-08**

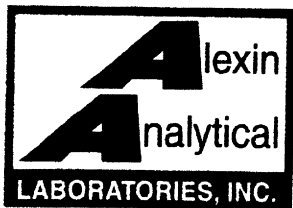
|                                | Method       | Result | Units    |         | Analysis Date/ Time |
|--------------------------------|--------------|--------|----------|---------|---------------------|
| <i>pH</i>                      | EPA 150.1    | 5.6    | pH Units |         | 10/14/2016          |
| <i>Total Solids</i>            | SM 2540-B    | 99.5   | Weight % |         | 10/17/2016          |
| <i>Total Volatile Solids</i>   | SM 2540-E    | 78.2   | Weight % |         | 10/17/2016          |
| <i>Total Kjeldahl Nitrogen</i> | EPA 351.3    | 82000  | mg/kg    | 8.241 % | 10/14/2016          |
| <i>Ammonia as N</i>            | SM 4500-NH3F | 1770   | mg/kg    | 0.178 % | 10/13/2016          |
| <i>Nitrate as N</i>            | SM4500-NO3 D | 35.0   | mg/kg    | 0.004 % | 10/14/2016          |
| <i>Potassium</i>               | SM 3111B     | 1400   | mg/kg    | 0.141 % | 10/21/2016          |
| <i>Phosphorus</i>              | EPA 365.3    | 3360   | mg/kg    | 0.338 % | 10/20/2016          |

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Approved by: \_\_\_\_\_

*Adriana Gonzalez-Gray*  
Laboratory Director

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**ANALYSIS REPORT**

ORELAP Accredited Lab#: OR-100013

Reported: 11/15/2016

Received: 11/10/16

Sampled By: Robert Watts

Work Order: 6315008

**C**  
**L**  
**I**  
**E**  
**N**  
**T**  
**CH2MHill - Wilsonville**  
Attn: Robert Watts  
PO Box 2988  
Wilsonville OR, 97070  
Phone: 971-219-5688

**Project:** Wilsonville WWTP

Project # : N/A

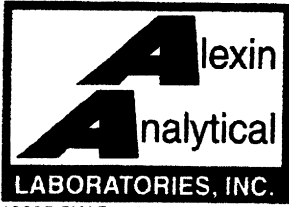
Permit # :

PO # : -

Sampling Location: Thermoflute Dryer - D&D Building

Sample Matrix: Solid

| Lab Number        | Method  | Result | Units     | Analysis Date/ Time |
|-------------------|---|--------|-----------|---------------------|
| <b>6315008-01</b> | <b>Sample Name:</b> DR1108160430<br><b>Sampled:</b> 11/8/2016 4:30  |        |           |                     |
| Total Solids      | SM 2540-B   | 98.6   | Weight %  | 11/14/2016 14:01    |
| Fecal Coliform    | SM 9221E 21st Ed.   | < 1.8  | MPN/g dry | 11/11/2016 9:20     |
| <b>6315008-02</b> | <b>Sample Name:</b> DR1108160732<br><b>Sampled:</b> 11/8/2016 7:32  |        |           |                     |
| Total Solids      | SM 2540-B   | 98.6   | Weight %  | 11/14/2016 14:01    |
| Fecal Coliform    | SM 9221E 21st Ed.   | < 1.8  | MPN/g dry | 11/11/2016 9:20     |
| <b>6315008-03</b> | <b>Sample Name:</b> DR1108161203<br><b>Sampled:</b> 11/8/2016 12:03 |        |           |                     |
| Total Solids      | SM 2540-B   | 98.5   | Weight %  | 11/14/2016 14:01    |
| Fecal Coliform    | SM 9221E 21st Ed.   | < 1.8  | MPN/g dry | 11/11/2016 9:20     |
| <b>6315008-04</b> | <b>Sample Name:</b> DR1109160410<br><b>Sampled:</b> 11/9/2016 4:10  |        |           |                     |
| Total Solids      | SM 2540-B   | 99.0   | Weight %  | 11/14/2016 14:01    |
| Fecal Coliform    | SM 9221E 21st Ed.   | < 1.8  | MPN/g dry | 11/11/2016 9:20     |
| <b>6315008-05</b> | <b>Sample Name:</b> DR1109160712<br><b>Sampled:</b> 11/9/2016 7:12  |        |           |                     |
| Total Solids      | SM 2540-B   | 98.8   | Weight %  | 11/14/2016 14:01    |
| Fecal Coliform    | SM 9221E 21st Ed.   | < 1.8  | MPN/g dry | 11/11/2016 9:20     |



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**ANALYSIS REPORT**

ORELAP Accredited Lab#: OR-100013

Reported: 11/15/2016

Received: 11/10/16

Sampled By: Robert Watts

Work Order: 6315008


**C  
L  
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T**  
**CH2MHill - Wilsonville**  
Attn: Robert Watts  
PO Box 2988  
Wilsonville OR, 97070  
Phone: 971-219-5688

**Project:** Wilsonville WWTP  
**Project # :** N/A  
**Permit # :**  
**PO # :** -  
**Sampling Location:** Thermoflite Dryer - D&D Building  
**Sample Matrix:** Solid

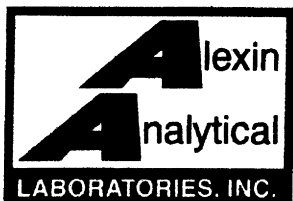
| Lab Number        | Method  | Result | Units     | Analysis Date/ Time |
|-------------------|---|--------|-----------|---------------------|
| <b>6315008-06</b> | <b>Sample Name:</b> DR111091303<br><b>Sampled:</b> 11/9/2016 13:03  |        |           |                     |
| Total Solids      | SM 2540-B   | 96.2   | Weight %  | 11/14/2016 14:01    |
| Fecal Coliform    | SM 9221E 21st Ed.   | < 1.9  | MPN/g dry | 11/11/2016 9:20     |
| <b>6315008-07</b> | <b>Sample Name:</b> DR1110160519<br><b>Sampled:</b> 11/10/2016 5:19 |        |           |                     |
| Total Solids      | SM 2540-B   | 99.4   | Weight %  | 11/14/2016 14:01    |
| Fecal Coliform    | SM 9221E 21st Ed.   | < 1.8  | MPN/g dry | 11/11/2016 9:20     |

MRL = Minimum Reporting Limit    MPN = Most Probable Number

Approved by:   
Adriana Gonzalez-Gray  
Laboratory Director

Approved by:   
Steve Williams  
Microbiology Technical Director

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**ANALYSIS REPORT**

ORELAP Accredited Lab#: OR-100013

Reported: 11/17/2016  
Received: 11/10/16  
Sampled By: Robert Watts  
Sampled: 11/10/16 12:00 am  
Work Order: 6315008

**C** CH2MHill - Wilsonville  
**L** Attn: Robert Watts  
**I** PO Box 2988  
**E** Wilsonville OR, 97070  
**N** Phone: 971-219-5688  
**T**

**Project:** Wilsonville WWTP  
Project # : N/A  
Permit # :  
PO # : -

Sampling Location: Thermofite Dryer - D&D Building  
Sample Matrix: Solid  
Sample Matrix: DR11080910160821

**Lab Number** **DR11080910160821**  
**6315008-08**

|                                | Method       | Result | Units    |          | Analysis Date/ Time |
|--------------------------------|--------------|--------|----------|----------|---------------------|
| <i>pH</i>                      | EPA 150.1    | 5.2    | pH Units |          | 11/11/2016          |
| <i>Total Solids</i>            | SM 2540-B    | 98.6   | Weight % |          | 11/14/2016          |
| <i>Total Volatile Solids</i>   | SM 2540-E    | 65.4   | Weight % |          | 11/15/2016          |
| <i>Total Kjeldahl Nitrogen</i> | EPA 351.3    | 88000  | mg/kg    | 8.925 %  | 11/14/2016          |
| <i>Ammonia as N</i>            | SM 4500-NH3F | 577    | mg/kg    | 0.059 %  | 11/10/2016          |
| <i>Nitrate as N</i>            | SM4500-NO3 D | <25.0  | mg/kg    | <0.003 % | 11/11/2016          |
| <i>Potassium</i>               | SM 3111B     | 2700   | mg/kg    | 0.274 %  | 11/14/2016          |
| <i>Phosphorus</i>              | EPA 365.3    | 2940   | mg/kg    | 0.298 %  | 11/10/2016          |

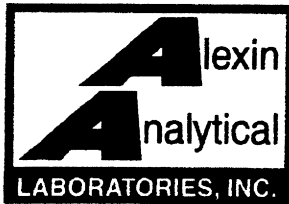
MRL = Minimum Reporting Limit MPN = Most Probable Number

Approved by: \_\_\_\_\_

  
Adriana Gonzalez-Gray  
Laboratory Director

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**ANALYSIS REPORT**

ORELAP Accredited Lab#: OR-100013

Reported: 12/14/2016  
Received: 12/08/16

Sampled By: Robert Watts  
Work Order: 6343003

**C** CH2MHill - Wilsonville  
**L** Attn: Jim Nail  
**I** PO Box 2988  
**E** Wilsonville OR, 97070  
**N** Phone: (503) 689-1077  
**T**

**Project:** Wilsonville WWTP  
**Project # :** N/A  
**Permit # :**  
**PO # :** -  
**Sampling Location:** Thermoflite Dryer - D&D Building  
**Sample Matrix:** Solid

| Lab Number        | Method  | Result    | Units | Analysis Date/ Time       |
|-------------------|---|-----------|-------|---------------------------|
| <b>6343003-01</b> | <b>Sample Name:</b> 1 DR1205160813<br><b>Sampled:</b> 12/5/2016 8:13  |           |       | <b>Sample Type:</b> Grab  |
|                   | Total Solids  | SM 2540-B | 95.0  | Weight % 12/13/2016 9:00  |
|                   | Fecal Coliform  | SM 9221E  | < 1.8 | MPN/g dry 12/09/2016 8:30 |
| <b>6343003-02</b> | <b>Sample Name:</b> 2 DR1205160700B<br><b>Sampled:</b> 12/5/2016 7:00 |           |       | <b>Sample Type:</b> Grab  |
|                   | Total Solids  | SM 2540-B | 91.3  | Weight % 12/13/2016 9:00  |
|                   | Fecal Coliform  | SM 9221E  | < 1.8 | MPN/g dry 12/09/2016 8:30 |
| <b>6343003-03</b> | <b>Sample Name:</b> 3 DR1205160701<br><b>Sampled:</b> 12/5/2016 7:01  |           |       | <b>Sample Type:</b> Grab  |
|                   | Total Solids  | SM 2540-B | 90.8  | Weight % 12/13/2016 9:00  |
|                   | Fecal Coliform  | SM 9221E  | < 1.8 | MPN/g dry 12/09/2016 8:30 |
| <b>6343003-04</b> | <b>Sample Name:</b> 4 DR1205160702<br><b>Sampled:</b> 12/5/2016 7:02  |           |       | <b>Sample Type:</b> Grab  |
|                   | Total Solids  | SM 2540-B | 91.1  | Weight % 12/13/2016 9:00  |
|                   | Fecal Coliform  | SM 9221E  | < 1.8 | MPN/g dry 12/09/2016 8:30 |
| <b>6343003-05</b> | <b>Sample Name:</b> 5 DR1205160703<br><b>Sampled:</b> 12/5/2016 7:03  |           |       | <b>Sample Type:</b> Grab  |
|                   | Total Solids  | SM 2540-B | 91.4  | Weight % 12/13/2016 9:00  |
|                   | Fecal Coliform  | SM 9221E  | < 1.8 | MPN/g dry 12/09/2016 8:30 |



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13035 SW Pacific Hwy  
Tigard, OR 97223  
Tel.: (503) 639-9311 Fax: (503) 684-1588

**ANALYSIS REPORT**  
ORELAP Accredited Lab#: OR-100013


Reported: 12/14/2016  
Received: 12/08/16  
Sampled By: Robert Watts  
Work Order: 6343003

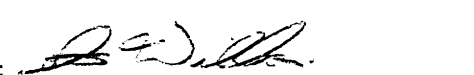
**C** CH2MHill - Wilsonville  
**L** Attn: Jim Nail  
**I** PO Box 2988  
**E** Wilsonville OR, 97070  
**N** Phone: (503) 689-1077  
**T**

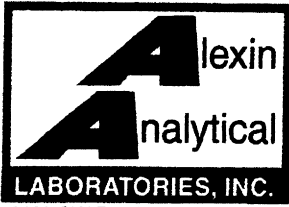
**Project:** Wilsonville WWTP  
**Project # :** N/A  
**Permit # :**  
**PO # :** -  
**Sampling Location:** Thermoflite Dryer - D&D Building  
**Sample Matrix:** Solid

| Lab Number        | Method   | Result    | Units | Analysis Date/ Time          |
|-------------------|--|-----------|-------|------------------------------|
| <b>6343003-06</b> | <b>Sample Name:</b> 6 DR1205160704<br><b>Sampled:</b> 12/5/2016 7:04 |           |       | <b>Sample Type:</b> Grab     |
|                   | <b>Total Solids</b>  | SM 2540-B | 91.4  | Weight %<br>12/13/2016 9:00  |
|                   | <b>Fecal Coliform</b>  | SM 9221E  | < 1.8 | MPN/g dry<br>12/09/2016 8:30 |
| <b>6343003-07</b> | <b>Sample Name:</b> 7 DR1205160705<br><b>Sampled:</b> 12/5/2016 7:05 |           |       | <b>Sample Type:</b> Grab     |
|                   | <b>Total Solids</b>  | SM 2540-B | 90.9  | Weight %<br>12/13/2016 9:00  |
|                   | <b>Fecal Coliform</b>  | SM 9221E  | < 1.8 | MPN/g dry<br>12/09/2016 8:30 |

MRL = Minimum Reporting Limit MPN = Most Probable Number

Approved by:   
Adriana Gonzalez-Gray  
Laboratory Director

Approved by:   
Steve Williams  
Microbiology Technical Director



**Professional  
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13035 SW Pacific Hwy  
Tigard, OR 97223  
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**ANALYSIS REPORT**

ORELAP Accredited Lab#: OR-100013

Reported: 12/14/2016

Received: 12/08/16

Sampled By: Robert Watts

Sampled: 12/5/16 7:00 am

Work Order: 6343003

**C** **CH2MHill - Wilsonville**  
**L** Attn: Jim Nail  
**I** PO Box 2988  
**E** Wilsonville OR, 97070  
**N** Phone: (503) 689-1077  
**T**

**Project:** Wilsonville WWTP  
Project # : N/A  
Permit # :  
PO # : -

Sampling Location: Thermoflite Dryer - D&D Building  
Sample Matrix: Solid  
Sample Matrix: 8 DR1205160700A

**Lab Number** **8 DR1205160700A**  
**6343003-08**

|                                | Method       | Result | Units    |          | Analysis Date/ Time |
|--------------------------------|--------------|--------|----------|----------|---------------------|
| <i>pH</i>                      | EPA 150.1    | 5.4    | pH Units |          | 12/12/2016          |
| <i>Total Solids</i>            | SM 2540-B    | 93.5   | Weight % |          | 12/13/2016          |
| <i>Total Volatile Solids</i>   | SM 2540-E    | 79.9   | Weight % |          | 12/13/2016          |
| <i>Total Kjeldahl Nitrogen</i> | EPA 351.3    | 78000  | mg/kg    | 8.342 %  | 12/12/2016          |
| <i>Ammonia as N</i>            | SM 4500-NH3F | 2820   | mg/kg    | 0.302 %  | 12/13/2016          |
| <i>Nitrate as N</i>            | SM4500-NO3 D | <25.0  | mg/kg    | <0.003 % | 12/09/2016          |
| <i>Potassium</i>               | SM 3111B     | 1300   | mg/kg    | 0.139 %  | 12/13/2016          |
| <i>Phosphorus</i>              | EPA 365.3    | 3870   | mg/kg    | 0.414 %  | 12/13/2016          |

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Approved by: \_\_\_\_\_

Adriana Gonzalez-Gray  
Laboratory Director

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