BOULDER PARK PROJECT

2019 Annual Report

King County
Department of
Natural Resources and Parks

BOULDER PARK
BPI
INC.

Photo by J. Finlinson

BOULDER PARK PROJECT

Beneficial Use Facility
DOUGLAS COUNTY, WASHINGTON
Est. 1992

28th ANNUAL REPORT
JANUARY - DECEMBER 2019

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King County
Department of
Natural Resources and Parks

BOULDER PARK BPI INC.

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EXECUTIVE SUMMARY

The Boulder Park Project Beneficial Use Facility (Boulder Park) enhances and enriches agricultural soils in Douglas County, Washington by applying biosolids, a nutrient-rich, organic soil amendment produced by the wastewater treatment system. Boulder Park is jointly permitted, operated, and managed by Boulder Park, Inc. (BPI) and King County Department of Natural Resources and Parks (King County). BPI provides project operations and application services; King County provides application equipment and project management. This report summarizes annual operational and monitoring information from January 1, 2019 to December 31, 2019.

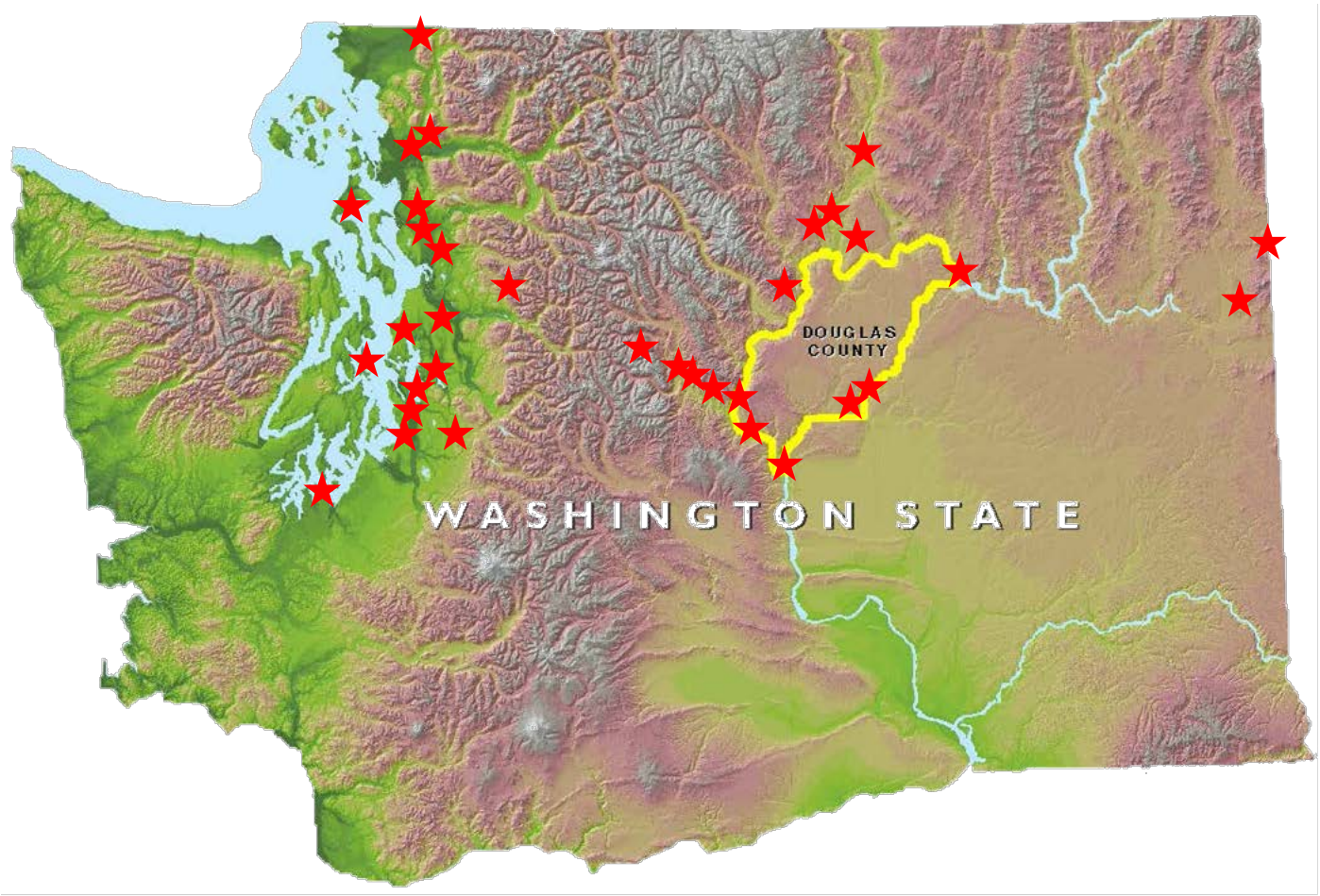
Three farmers started the Boulder Park Project in 1991 and it has grown to include over 90,000 permitted, tillable acres in primarily dryland wheat production on the Mansfield-Waterville plateau with smaller acreages of canola, sunflowers, oats, and hay. Farmers pay Boulder Park for the soil amendment value of biosolids delivered to their farm. In addition, over 70 wastewater facilities from across the state have participated since the project began. During 2019, Boulder Park worked with 37 wastewater facilities.

Over 25 years of research and field observations by University scientists at the project have shown biosolids applications are an effective alternative to synthetic fertilizers, increasing soil organic matter and moisture retention, improving soil structure, enhancing soil fertility, encouraging microbial activity, increasing crop yields and residues, and maintaining crop quality. Additionally, the project monitors soil, groundwater, and surface waters to help ensure that the project is protective of public health and the environment.

The Project's operations reflect the values and guiding principles promoted by Northwest Biosolids, as well as the principles of an Environmental Management System for biosolids. Boulder Park continually supports and works towards excellence in biosolids management practices, surpassing regulatory compliance obligations, and providing meaningful opportunities for public participation.

Recycling biosolids through land application returns a valuable resource to the land. Beneficial use of biosolids at Boulder Park is in-line with the State of Washington's rule that (1) "encourages the maximum beneficial use of biosolids" per Chapter 173-308-010(2)(a) WAC and (2) recognizes the *value* of biosolids stating "the State of Washington recognizes biosolids as a valuable commodity" per Chapter 173-308-060(1) WAC.

Map below shows the geographic distribution of Boulder Park Project participants in 2019.



2019 Participants of the Boulder Park Project Beneficial Use Facility

Alderwood Water & Wastewater District	Lynnwood
City of Bainbridge Island Wastewater Treatment Plant	Bainbridge Island
City of Brewster Wastewater Treatment Plant	Brewster
City of Bridgeport Wastewater Treatment Plant	Bridgeport
City of Cashmere Wastewater Treatment Plant	Cashmere
City of Chelan Wastewater Treatment Plant	Chelan
Chelan County Public Utility District #1, Peshastin WWTP	Wenatchee
Douglas County Sewer District	East Wenatchee
City of Enumclaw Wastewater Treatment Plant	Enumclaw
City of Ephrata Wastewater Treatment Plant	Ephrata
City of Grand Coulee Wastewater Treatment Plant	Grand Coulee
Hayden Area Regional Sewer Board WWTP	Hayden, ID
King County DNRP, WTD, Brightwater WWTP	Woodinville
King County DNRP, WTD, South Plant WWTP	Renton
King County DNRP, WTD, West Point WWTP	Seattle
Lakehaven Water and Sewer District, Lakota Plant	Federal Way
Lakehaven Water and Sewer District, Redondo Plant	Federal Way
City of Leavenworth Wastewater Treatment Plant	Leavenworth
Liberty Lake Sewer and Water District	Liberty Lake
LOTT Clean Water Alliance	Olympia
City of Lynden Wastewater Treatment Plant	Lynden
Midway Sewer District	Des Moines
City of Mount Vernon Wastewater Treatment Plant	Mount Vernon
Mukilteo Water and Wastewater District	Mukilteo
City of Oak Harbor Wastewater Treatment Plant	Oak Harbor
City of Okanogan Wastewater Treatment Plant	Okanogan
City of Pateros Wastewater Treatment Plant	Pateros
Pierce County Wastewater Treatment Plant	Pierce County
City of Quincy Wastewater Treatment Plant	Quincy
City of Rock Island Wastewater Treatment Plant	Rock Island
City of Sedro-Woolley Wastewater Treatment Plant	Sedro-Woolley
City of Soap Lake Wastewater Treatment Plant	Soap Lake
Southwest Suburban Sewer District, Miller Creek Plant	Normandy Park
Southwest Suburban Sewer District, Salmon Creek Plant	Normandy Park
Stevens Pass Sewer District	Stevens Pass
Tree Top Inc.	Wenatchee
Washington State Parks	Statewide

Notice

Project records pertaining to this project are kept by King County Department of Natural Resources and Parks and can be obtained upon request. Historical information can be found in the respective annual project reports. Records are kept of pre- and post-application soil and water monitoring data, application site records, biosolids quality data, application rate information, site maps, and any incidents. Annual reports are submitted to Ecology and project stakeholders and include information on application rates and methods, quantities, general site operations, soil and crop responses, monitoring data, and pertinent project communications.

Figure 1. Boulder Park Tour, May 2019.

1.0 Introduction

The Boulder Park Project Beneficial Use Facility (Boulder Park), jointly permitted, operated, and managed by Boulder Park Inc. (BPI) and King County Department of Natural Resources and Parks (King County), beneficially uses biosolids as a soil amendment on agricultural lands in Douglas County, Washington. Boulder Park is one of the largest farmer-owned and operated, multi-farmer biosolids projects in the United States. Since the first biosolids applications in 1992, the number of project participants has increased from three to over 100 landowners and farmers due to measurable benefits exhibited in their soils and crop yields they have witnessed either first-hand on their own farms or on their neighbors' farms.

Figure 2. Local high school classes visit Boulder Park to learn about beneficial use of biosolids, May 2019.

Why Biosolids?

Biosolids are nutrient-rich, organic material generated through the process of municipal wastewater treatment and are of such a quality they can be recycled and beneficially applied to the land. Biosolids contain organic matter, nutrients, microorganisms, metals, sand, and synthetic and naturally occurring trace organic compounds. The nutrient fraction contains all essential plant macro- and micro-nutrients, such as potassium, phosphorous, sulfur, copper, iron, manganese and zinc.

Biosolids are an excellent source of nitrogen for crops because microorganisms in the soil convert the nitrogen in the organic matter into plant-available nitrogen gradually over time. This slow release process minimizes the possibility of nitrates leaching out of the root zone because nitrogen is released at rates similar to plant uptake. Over 25 years of biosolids applications have demonstrated many benefits to soil tilth, crop quality, and increased yields (Cogger, 2013).

Figure 3. Touring the GP17 research plots in canola at Boulder Park, May 2019.

2.0 2019 Project Summary

In 2019, Boulder Park applied 125,299 wet tons of biosolids on 10,362 acres of farmland. Thirty-seven wastewater facilities participated at Boulder Park and 29 facilities delivering 120,585 wet tons of biosolids during the year (see Appendix B, Tables 1A and 2A for application and storage activities). To participate in the project, facilities enter into a three-party agreement with both King County and BPI to beneficially use their biosolids. All wastewater treatment facilities are required to ensure biosolids delivered to the project meet all state and federal requirements for land application, while King County and BPI ensure that delivered biosolids are managed and land applied in accordance to all applicable permits and regulations.

Biosolids Delivery and Storage

Temporary staging of biosolids occurs in designated areas within project sites that have been scheduled for applications. Staging areas are reviewed and approved by Washington State Department of Ecology (Ecology). Typically, biosolids are staged on site for a few days or weeks, except during the winter when biosolids can be stored several months or more until land application can resume. At year's end, there were 13,651 wet tons of biosolids stored in designated over-winter staging areas for spring applications in 2020 (refer to Appendix B, Table 2 and 2A for storage activities).

Figure 4. Trucks delivering biosolids to project sites.

The Right Amount of Nitrogen

Agronomic biosolids application rates are determined for each individual site by scientists from Washington State University (WSU) Cooperative Extension and are approved by Ecology. Site specific biosolids application rates are based on the crop's requirements for nitrogen needs, WSU fertilizer guides, historical yield potential, residual soil nitrogen, and the plant-available nitrogen from the biosolids.

The approved application rate is the desired or “target rate.” During applications, the number of spreader loads is tracked, along with periodic mass balance calculations, to ensure that the actual application rate is within ±15 percent of the target rate, which is an acceptable range for bulk fertilizer applications.

Project Operations

Operations occur year-round, 365 days a year at Boulder Park. Primary equipment used for land application of biosolids includes tractors, manure spreaders, wheeled front loaders, water tankers, a road grader, service trucks, dump trucks, a UTV soil sampler, and a subsoiler.

Figure 5. A tour group observes biosolids applications at Boulder Park.

Biosolids currently used at Boulder Park are classified by federal and state regulations as either Class A or Class B with respect to pathogens. Class A means biosolids are 100% pathogen free; Class B means that biosolids have been treated by a process designed to substantially reduce pathogen indicators to 95-99% pathogen free, but is not assured 100% pathogen-free. Both Class A and Class B biosolids must meet pollutant requirements for land application. Class B biosolids must meet additional requirements that include site management and access restrictions. For this project, biosolids are typically applied to wheat stubble 13-21 months prior to harvest. This ensures that crops are never harvested prior to the required 30-day public notice period per state and federal regulations. Additionally, access restriction signs are posted at the primary access to each application field stating the dates for access restriction beginning with the first delivery and extending until thirty days after completion of biosolids application.

Farmers may incorporate biosolids using a cultivator or other means appropriate for residue and soil conditions in the field. BPI personnel incorporate biosolids delivered to Boulder Park that do not meet vector attraction reduction requirements set forth in Chapter 173-308-180 WAC. BPI provides a 6-hour tillage service that ensures the incorporation requirement in Chapter 173-308-210(4)(b) WAC is met since the farmer may not be immediately available at the time of application.

Biosolids are applied by BPI personnel using standard farming practices. Large four-wheel drive tractors pull industrial manure spreaders across the site to uniformly apply biosolids at the approved agronomic rate. Equipment is regularly calibrated by BPI personnel to ensure application of biosolids is done as accurately as possible.

Research and Innovation

Boulder Park has been an enthusiastic partner in supplying equipment, labor, and suitable sites to assist Washington State University Cooperative Extension (WSU) and University of Washington (UW) scientists in dryland wheat and biosolids research over the last 25+ years. WSU scientists have been evaluating the effect of biosolids on nutrients, soil health, and crop quality since the project began. Through long-term research, we know that that biosolids have both short-term and long-lasting positive impacts on soil and crop health (Cogger et al., 2013; Sullivan et al., 2018).

Researchers have also been studying the impact biosolids application has on carbon storage in soils. WSU and UW scientists have found significant increases in soil carbon from biosolids applications at Boulder Park fields (Brown et al., 2011). Through carbon storage, biosolids applications can help reduce greenhouse gases and mitigate climate change.

GP17 Research Plots

The effectiveness of biosolids land application continues to be supported by results from ongoing research by WSU. The university has conducted research on the GP17 plots at Boulder Park since 1994, making it one of the oldest biosolids-focused research projects in the country.

Figure 6. WSU researchers collecting oat grain samples during GP17 harvest, August 2019.

GP17 was applied with biosolids and planted to oats in spring of 2019 for harvest in summer 2019. Treatments at this site consisted of three rates of biosolids (2, 3, 4.5, dry tons/acre) fertilized treatment (50 pounds/acre of Nitrogen) and an unfertilized control.

Overall, research plots applied with biosolids yielded more grain than the unfertilized control and commercial fertilizer plots in 2019 as shown in Figures 7 and 8 below.

Oat Grain Yield

LSD	lb/a	Treatment
C	615	Unfertilized
B	1293	Fertilized
A	1805	2 dt/a Biosolids
A	2019	3 dt/a Biosolids
A	1991	4.5 dt/a Biosolids

Figure 7. GP17 oat grain harvest results, August 2019.

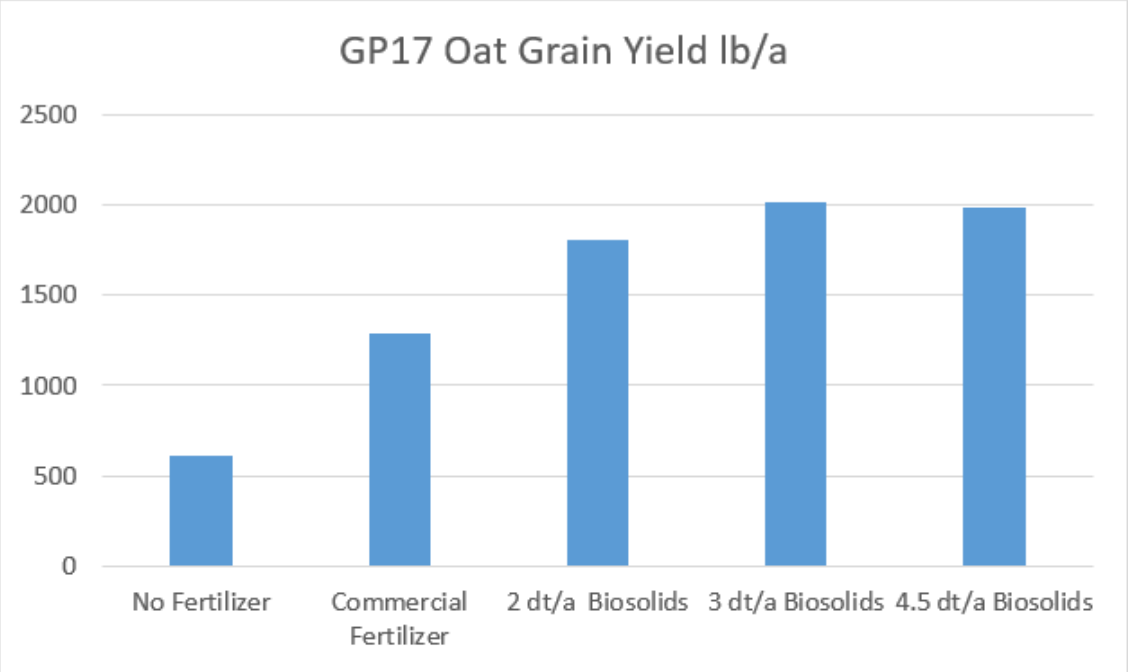


Figure 8. Oat grain yields on Washington State University GP17 Boulder Park research plots, August 2019.

In 2020, GP17 research plots will be planted to a cover crop in spring with sunflowers as the fall crop and triticale over-wintering as the spring crop. This cropping system represents a movement in farming practices to maintain soil cover and a living root in the soils year-round to minimize erosion effects and promote soil microbiology. The new systems also strive to reduce or eliminate herbicide and pesticide needs for growing healthy crops by promoting natural processes to work.

Soil Health

In 2018, the Soil Health Institute (SHI) selected the Boulder Park GP17 research plots for a new nation-wide study on soil health indicators. SHI scientists will be testing for over 50 soil health indicators over the next several years, beginning in spring 2019. The Boulder Park research plots are one of only two biosolids sites included in the study and results will be compared to 150 sites for soil health.

In addition to the SHI study, WSU research scientists have been funded to conduct further research looking at compaction, water retention and infiltration factors, carbon, and continued examination of micro-plastics and silver nanoparticles.

Precision Agriculture

Figure 9. Trimble GPS display in tractor

A significant number of Boulder Park farmers participate in the Conservation Stewardship Program (CSP), which is implemented by the U.S. Department of Agriculture, Natural Resource Conservation Service (NRCS) to promote conservation practices such as precision agriculture and conversation tillage farming practices. Boulder Park, NRCS, Ecology, and farmers agreed on a system to ensure that biosolids application meet the Nutrient Management (590) Standard and requirements of CSP. Although it is more complex to calculate agronomic rates for CSP fields, BPI continues to successfully meet CSP requirements.

Technological Advancements

A key part of implementing precision agriculture effectively is adopting technological advancements. All tractors at Boulder Park are equipped with Global Positioning Systems (GPS) and automatic steering systems to provide applications that are more precise and improved documentation and mapping capabilities. GPS technology increases the precision of biosolids applications by decreasing overlap between passes, which means more acreage can be applied with the same amount of biosolids. GPS can improve recordkeeping by accurately documenting the location and acreage applied for each facility. GPS technology allows Boulder Park to better serve farmers participating in CSP by having the

capability to apply varying rates of biosolids to different zones within a field (Figure 10).

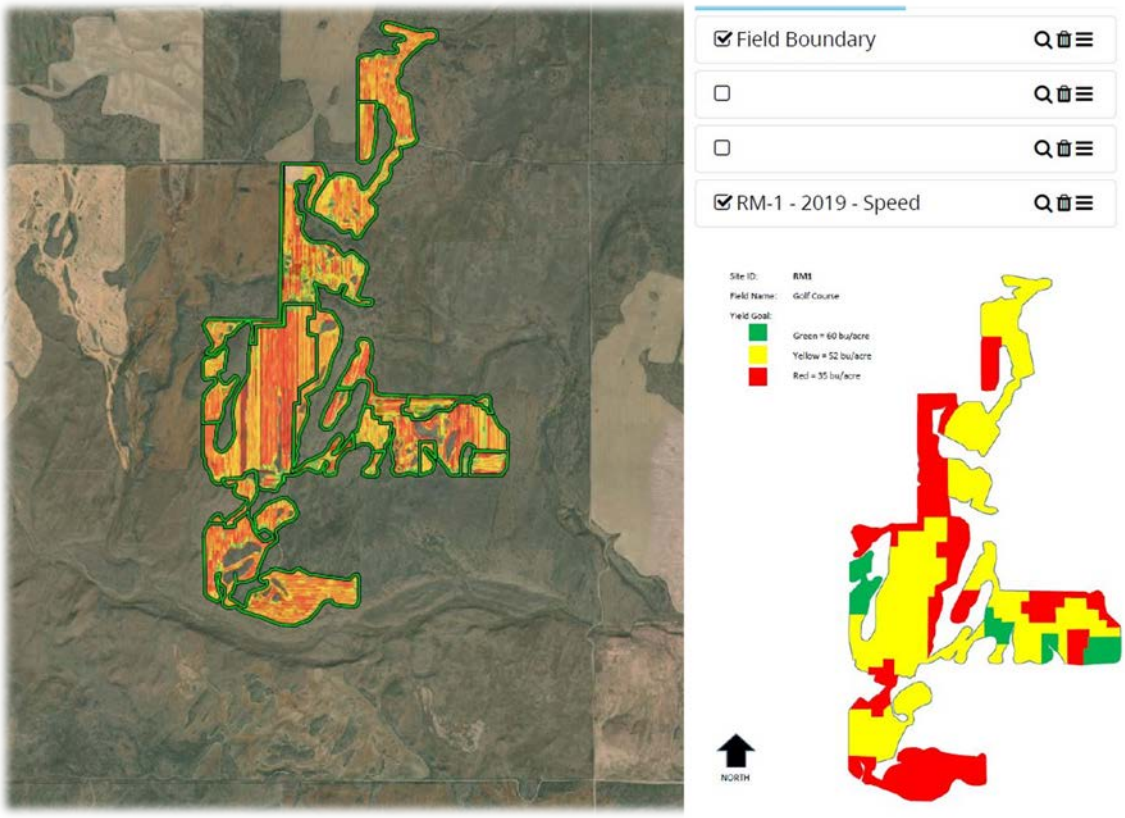


Figure 10. Example of as-applied zone map that prescribes different rates for CSP sites at Boulder Park.

3.0 Environmental Monitoring

Every year, Boulder Park goes beyond regulatory requirements for environmental monitoring. Throughout the lifetime of the project, we have collected:

- Biosolids quality data
- Pre-application soil samples for background nutrient and metals data
- Post-application soil samples to document any changes
- Groundwater well and surface water quality data pre- and post- application
- Periodic crop quality data

Our extensive monitoring efforts allow us to be proactive about managing biosolids applications. For instance, we were the first biosolids project to start self-regulating applications based not only on nitrogen, but also on phosphorus.

All sampling and analyses are conducted in accordance with approved field and laboratory methodologies. Raw laboratory data sheets, quality control/quality assurance tests, comprehensive data tables and weekly activity records are available by request from King County.

Monitoring data is provided in Appendix D of this report.

4.0 Public Involvement and Communication

Since the initiation of the Boulder Park Project, considerable effort has gone towards providing information to the general public and local agencies about the project and biosolids recycling in general. Public involvement has been encouraged by providing opportunities for public interaction with project participants via informal open houses and on project tours. Tours give interested persons the opportunity to learn about biosolids, biosolids-amended soils, and biosolids grown crops; to see the Boulder Park Project area; observe biosolids delivery, storage, and land applications operations; and ask questions. In addition to planned tours, BPI has an open door policy at their Mansfield office for visitors wishing to learn about the project.

Figure 14. Touring the Boulder Park GP17 research plots touring Boulder Park, August 2019.

Boulder Park is one of the largest agriculture biosolids recycling projects in the county and in 2019 the project was extra busy providing six tours to nearly 90 people. Tour attendees included a university Geography/Soils class, two local high school Natural Resource Management classes, participating wastewater agencies, employees from King County, and a lone visitor from New Zealand's

largest water and wastewater utility, Watercare. Boulder Park tours typically occur each spring providing a unique opportunity for attendees to learn all about biosolids and how biosolids benefit our eastern Washington farms. Attendees get to see firsthand how biosolids are delivered, managed, and applied to the land. The tours close the loop for people as they witness the final stage of our amazing wastewater treatment works. Keep an eye out next year for your opportunity to take the tour.

5.0 Regulatory Information and Permits

Boulder Park Project Beneficial Use Facility is jointly permitted, operated, and managed by BPI and King County. The project was granted Final Coverage under Chapter 173-308 WAC, the *General Permit for Biosolids Management* on January 26, 2016. Coverage under the General Permit is effective for five years expiring in 2020.

Ecology requires all sites obtain a landowner authorization for biosolids application and the site be posted for public notice for 30 days to allow for public comment before a site can be added to Boulder Park's permit coverage. Ecology inspects and approves application sites prior to biosolids applications. In addition, Ecology also approves site-specific biosolids application rates based on WSU's recommended nitrogen fertilizer needs of the crop, the amount of plant available nitrogen in the biosolids, and existing nitrogen content in the soil. The CDHD receives documents relative to the project for review and comment.

Please contact Jake Finlinson or Dave Ruud for questions about the Boulder Park Project Beneficial Use Facility.

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6.0 REFERENCES

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7.0 APPENDICES

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Figure 1: 2019 Boulder Park Activity Map
Figure 2: 2019 Boulder Park Well and Surface Water Monitoring Map

APPENDIX B: Operations
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Table 1A: Boulder Park 2019 Other Generators Application Activities
Table 2: Boulder Park 2019 King County Storage Activities
Table 2A: Boulder Park 2019 Other Generators Storage Activities

APPENDIX C: Environmental Monitoring Requirements
Table 3: Buffer Distances
Table 4: Monitoring Parameters/Frequencies for Drinking Wells
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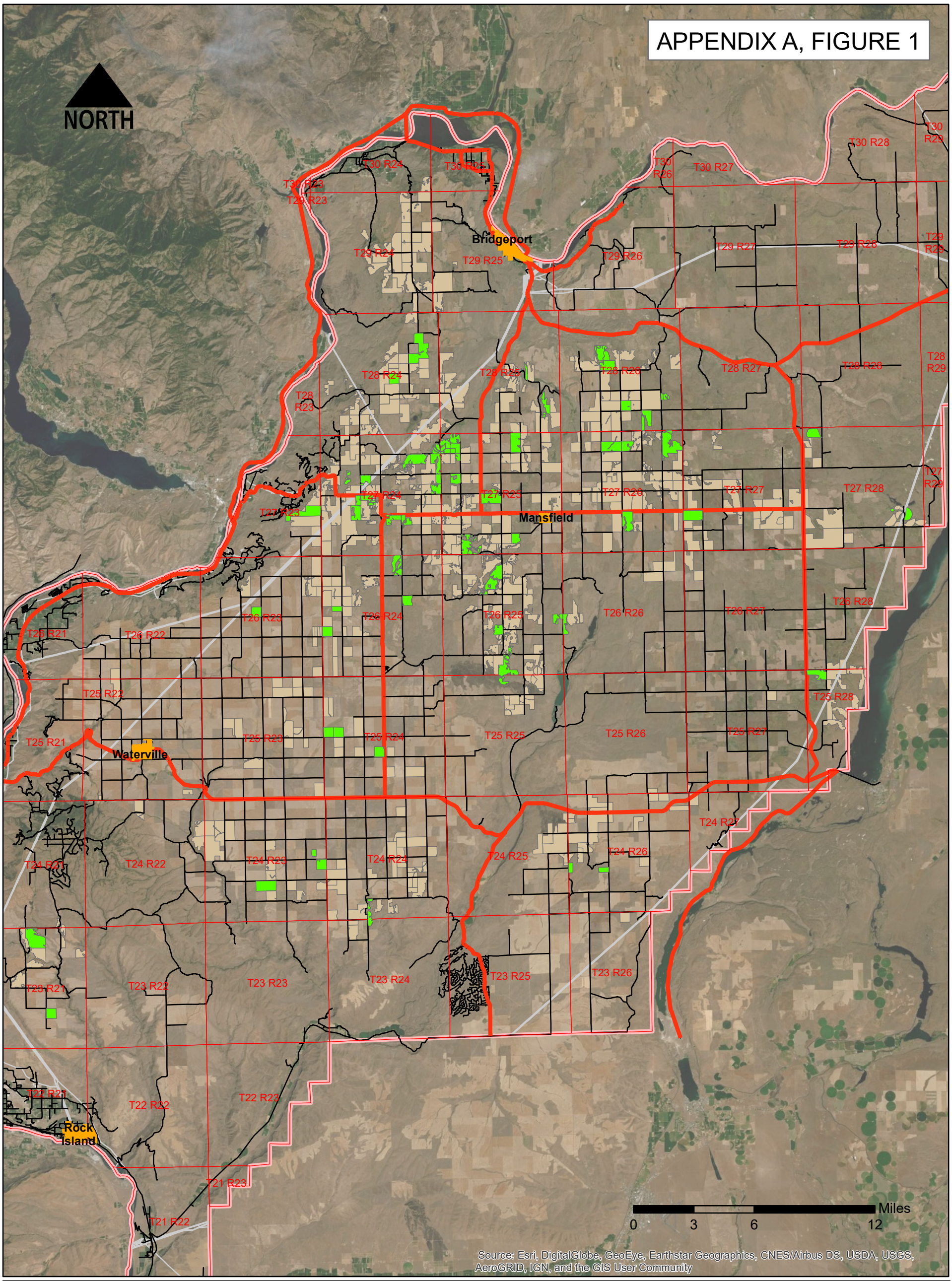
APPENDIX D: Monitoring Data
Table 8: 2019 Groundwater Bacteriological and Nutrient Data
Table 9: 2019 Groundwater Metals Data
Table 10: 2019 Surface Water Bacteriological and Nutrient Data
Table 11: 2019 Soil Nutrient Data
Table 12: 2019 Soil Metals Data

APPENDIX A

Site Descriptions and Maps

Figure 1: 2019 Boulder Park Biosolids Application Activity Map
Figure 2: 2019 Boulder Park Well and Surface Water Monitoring Map

APPENDIX A, FIGURE 1



Boulder Park Project Beneficial Use Facility

2019 Biosolids Application Activity Map

King County

BOULDER PARK BPI INC.

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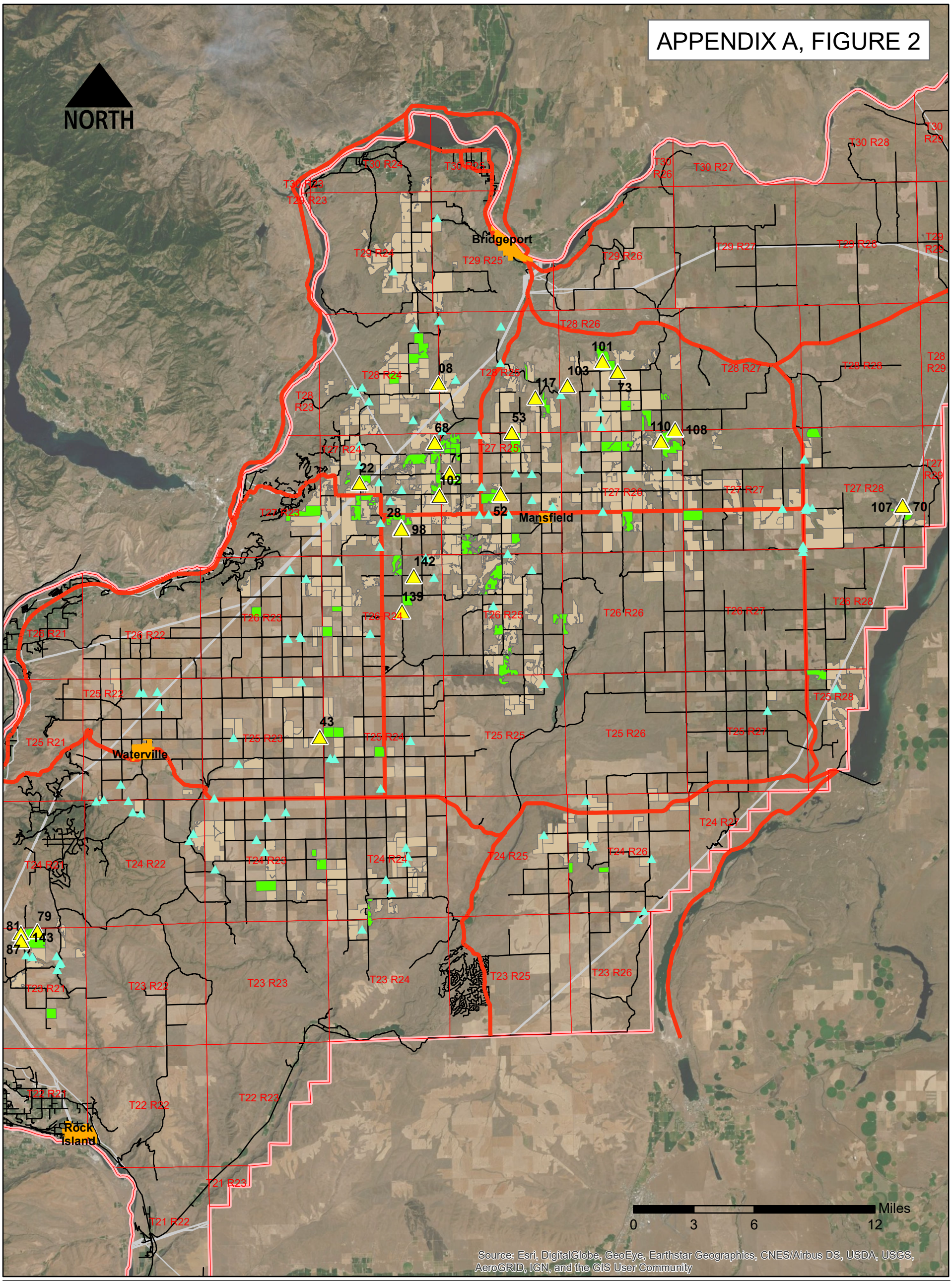
- Project Sites-Applied-2019
- City Limits
- Township Lines
- Major Roads
- Minor Roads
- Powerlines
- Boulder Park Project Site

APPENDIX A, FIGURE 2



Boulder Park Project Beneficial Use Facility

2019 Water Quality Monitoring Map

King County

BOULDER PARK BPI INC.

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- 2019 Monitoring Site-Sampled
- Project WQ Monitoring Site
- Project Sites-Applied-2019
- Boulder Park Project Site
- City Limits
- Township Lines
- Major Roads
- Minor Roads
- Powerlines

APPENDIX B

Operations

Table 1:	Boulder Park 2019 King County Application Activities
Table 1A:	Boulder Park 2019 Other Generators Application Activities
Table 2:	Boulder Park 2019 County Storage Activities
Table 2A:	Boulder Park 2019 Other Generators Storage Activities

BOULDER PARK PROJECT BENEFICIAL USE FACILITY

TABLE 1: 2019 King County Land Application Activity

Site	T-R-S Description	Year	Acres	BRIGHTWATER		SOUTH PLANT		WEST POINT		Total	Total
				Wet Tons	Dry Tons	Wet Tons	Dry Tons	Wet Tons	Dry Tons	Wet Tons	Dry Tons
CH4	27-26-4	2018	34	63.26	12.91	93.51	20.67	282.28	82.99	439.05	116.56
CH4	27-26-4	2019	86	221.82	45.03	724.30	155.00	282.79	76.07	1,228.91	276.10
CH5 & 6	28-26-25	2019	70	189.86	38.54	157.78	33.76	407.78	109.69	755.42	182.00
DM15	28-25-25; -36	2018	31	-	-	378.44	83.64	-	-	378.44	83.64
DM15	28-25-25; -36	2019	128.3	285.02	57.86	622.18	133.15	533.81	143.59	1,441.01	334.60
DM16B	28-25-14; -23	2019	51.4	126.92	25.76	158.15	33.84	376.01	101.15	661.08	160.76
DM7	27-25-21; -16	2018	42	31.37	6.40	-	-	316.12	92.94	347.49	99.34
DM7	27-25-21; -16	2019	300.5	62.09	12.60	1,209.69	258.87	1,206.34	324.51	2,478.12	595.98
DM9	27-25-34	2018	49.4	233.90	47.72	31.34	6.93	-	-	265.24	54.65
DM9	27-25-34	2019	47	-	-	471.49	100.90	-	-	471.49	100.90
DT21	27-23-22; -23; -26	2019	66	95.09	19.30	279.70	59.86	377.33	101.50	752.12	180.66
DT30	27-24-13	2019	135	-	-	618.47	132.35	576.62	155.11	1,195.09	287.46
GC4	28-25-34; 27-25-3	2018	31	31.22	6.37	31.00	6.85	251.00	73.79	313.22	87.01
GC4	28-25-34; 27-25-3	2019	257	372.74	75.67	1,036.10	221.73	1,407.40	378.59	2,816.24	675.98
GC7B	27-24-11; -12	2019	274	664.40	134.87	753.33	161.21	1,506.60	405.28	2,924.33	701.36
GC8	27-25-6	2019	114.31	221.17	44.90	218.01	46.65	810.27	217.96	1,249.45	309.51
GP17	28-24-22	2019	12	-	-	251.31	53.78	-	-	251.31	53.78
JA18	28-26-27	2019	158	317.05	64.36	188.81	40.41	1,094.61	294.45	1,600.47	399.22
JA19	28-26-35	2019	148.2	31.78	6.45	1,407.84	301.28	626.64	168.57	2,066.26	476.30
JL2	24-23-13	2019	48.8	94.85	19.25	188.89	40.42	251.25	67.59	534.99	127.26
JL3	24-23-24	2019	160	347.64	70.57	693.63	148.44	905.65	243.62	1,946.92	462.63
JL4	24-24-33; 23-24-04	2019	122.2	252.81	51.32	598.44	128.07	596.96	160.58	1,448.21	339.97
JL5	24-26-19	2019	70.3	126.57	25.69	220.70	47.23	345.77	93.01	693.04	165.94
JL7	24-26-20	2019	77.5	126.03	25.58	219.66	47.01	377.26	101.48	722.95	174.07
JP7	27-26-27	2019	268	410.45	83.32	882.95	188.95	1,568.50	421.93	2,861.90	694.20
JP9-10-11	28-26-8;-9;-16;-17	2018	21	31.66	6.46	31.27	6.91	220.80	64.92	283.73	78.29
JP9-10-11	28-26-8;-9;-16;-17	2019	167	404.54	82.12	751.18	160.75	1,154.72	310.62	2,310.44	553.49
JS11	27-24-8; -17	2019	60	219.46	44.55	346.42	74.13	188.06	50.59	753.94	169.27
JS12	27-24-16	2019	130	155.97	31.66	778.11	166.52	699.87	188.27	1,633.95	386.44

BOULDER PARK PROJECT BENEFICIAL USE FACILITY

TABLE 1: 2019 King County Land Application Activity

Site	T-R-S Description	Year	Acres	BRIGHTWATER		SOUTH PLANT		WEST POINT		Total	Total
				Wet Tons	Dry Tons	Wet Tons	Dry Tons	Wet Tons	Dry Tons	Wet Tons	Dry Tons
JT18	26-25-4; -8; -9	2018	197	308.22	62.88	778.57	172.06	954.80	280.71	2,041.59	515.65
JT18	26-25-4; -8; -9	2019	157	157.61	31.99	598.20	128.01	847.55	227.99	1,603.36	388.00
JT19	26-24-14	2019	150.4	285.19	57.89	283.40	60.65	815.99	219.50	1,384.58	338.04
LW5	26-23-16	2019	155	474.57	96.34	471.25	100.85	974.24	262.07	1,920.06	459.26
LW6	26-24-19	2019	8.75	31.68	6.43	31.63	6.77	62.64	16.85	125.95	30.05
LW8	26-24-18	2019	80	189.56	38.48	156.80	33.56	559.69	150.56	906.05	222.59
LW9	25-24-21	2019	154.4	283.84	57.62	598.19	128.01	848.42	228.22	1,730.45	413.86
MB28	27-26-01; -12	2018	40	125.95	25.69	188.79	41.72	-	-	314.74	67.41
MB28	27-26-01; -12	2019	90	126.63	25.71	125.51	26.86	533.86	143.61	786.00	196.18
MB5	27-27-30	2019	157	497.50	100.99	536.04	114.71	1,336.80	359.60	2,370.34	575.30
MB7	27-26-3	2019	89	379.03	76.94	-	-	433.94	116.73	812.97	193.67
MT1	27-28-6	2019	162	410.79	83.39	376.96	80.67	909.26	244.59	1,697.01	408.65
MT11	25-28-6	2019	162	346.42	70.32	691.07	147.89	1,035.82	278.64	2,073.31	496.85
RL2-3-4	27-24-20; 27-24-21; 27-24-29	2018	212.5	470.18	95.92	906.07	200.24	1,250.37	367.61	2,626.62	663.77
RL2-3-4	27-24-20; 27-24-21; 27-24-29	2019	371.5	158.13	32.10	756.29	161.85	1,033.45	278.00	1,947.87	471.94
RL6	26-25-21	2019	103	124.77	25.33	438.87	93.92	610.04	164.10	1,173.68	283.35
RL7	26-24-3	2018	9.5	125.67	25.56	-	-	-	-	125.67	25.64
RM1	25-25-3; -4; 26-25-33; 26-25-34	2018	213	-	-	717.04	158.47	819.82	241.03	1,536.86	399.50
RM1	25-25-3; -4; 26-25-33; 26-25-34	2019	118	-	-	156.92	33.58	610.09	164.11	767.01	197.70
RM4	26-26-19; 26-25-24	2018	210.5	-	-	877.73	193.98	880.33	258.82	1,758.06	452.80
RMG1	27-25-6	2019	163	-	-	16.80	3.60	-	-	16.80	3.60
RMG2	28-24-14; -13; -12; -11	2019	19.5	31.68	6.43	125.16	26.78	93.98	25.28	250.82	58.50
RMG3	27-25-7	2019	51	31.61	6.42	189.21	40.49	311.94	83.91	532.76	130.82
RMG4	27-25-6	2019	184							-	-
RMG6A	27-24-12	2019	23.5	63.03	12.80	188.71	40.38	-	-	251.74	53.18
RMG6B	27-24-1	2019	91.5	95.23	19.33	140.54	30.08	657.17	176.78	892.94	226.19
RMG7	27-24-13	2018	73	-	-	282.85	62.51	441.07	129.67	723.92	192.18
RP9	24-23-28; -27	2018	3	-	-	-	-	31.66	9.31	31.66	9.31

BOULDER PARK PROJECT BENEFICIAL USE FACILITY

TABLE 1: 2019 King County Land Application Activity

Site	T-R-S Description	Year	Acres	BRIGHTWATER Wet Tons	BRIGHTWATER Dry Tons	SOUTH PLANT Wet Tons	SOUTH PLANT Dry Tons	WEST POINT Wet Tons	WEST POINT Dry Tons	Total Wet Tons	Total Dry Tons
RP9	24-23-28; -27	2019	311	727.53	147.69	938.72	200.89	1,884.41	506.91	3,550.66	855.48
RT2	27-28-25	2019	104	252.18	51.19	595.31	127.40	625.65	168.30	1,473.14	346.89
RW1	27-24-26	2018	19	-	-	-	-	188.26	55.35	188.26	55.35
RW1	27-24-26	2019	33	63.57	12.90	31.71	6.79	251.10	67.55	346.38	87.24
RW14	27-25-18	2018	10.1	125.22	25.54	-	-	-	-	125.22	25.54
RW14	27-25-18	2019	89	407.01	82.62	500.81	107.17	186.49	50.17	1,094.31	239.96
ST1	27-25-32	2019	271	781.80	158.71	1,115.30	238.67	1,147.96	308.80	3,045.06	706.18
VB2	23-21-3	2019	364.3	727.56	147.69	1,322.81	283.08	2,011.15	541.00	4,061.52	971.78
VB4	23-21-26	2019	157.7	284.81	57.82	313.56	67.10	1,317.57	354.43	1,915.94	479.34
			TOTALS:	BRIGHTWATER Wet Tons	BRIGHTWATER Dry Tons	SOUTH PLANT Wet Tons	SOUTH PLANT Dry Tons	WEST POINT Wet Tons	WEST POINT Dry Tons	TOTAL Wet Tons	TOTAL Dry Tons
			TOTAL APPLIED IN 2019:	**13,204.64**	**2,682.01**	**27,793.52**	**5,978.03**	**40,029.96**	**10,908.99**	**81,028.12**	**19,569.11**
			TOTAL ACRES APPLIED IN 2019:	**1,098.8**		**2,380.5**		**3,929.3**		**7,580.7**	

[1] Dry Tons is calculated using the respective annual average for total percent solids.

BOULDER PARK PROJECT BENEFICIAL USE FACILITY

TABLE 1A. 2019 OTHER GENERATORS LAND APPLICATION ACTIVITY

Source[1]	Site	T-R-S Description	Year[2]	Acres	Wet Tons	Dry Tons[3]
ALDERWOOD	DT21	27-23-22; -23; -26	2018	20.0	61.05	59.65
ALDERWOOD	CH4	27-26-4	2019	3.0	8.47	8.32
ALDERWOOD	JP9-10-11	28-26-8; -9; -16; -17	2018	5.5	17.50	17.10
ALDERWOOD	JP9-10-11	28-26-8; -9; -16; -17	2019	50.0	170.06	167.00
ALDERWOOD	LW6	26-24-19	2019	16.0	54.86	53.87
ALDERWOOD	RL7	26-24-3	2019	3.0	8.02	7.88
ALDERWOOD	RMG1	27-25-6	2019	9.0	18.47	18.14
ALDERWOOD	RMG2	28-24-11; -12; -13; -14	2019	24.0	71.08	69.80
ALDERWOOD	RMG6A	27-24-12	2019	19.0	45.18	44.37
ALDERWOOD	RT7	27-28-26	2019	15.0	61.71	60.60
ALDERWOOD	RT7	27-28-26	2018	3.0	9.18	8.97
ALDERWOOD	RW14	27-25-18	2019	32.0	98.91	97.13
ALDERWOOD	TL10	25-24-18	2019	11.0	28.04	27.54
BREWSTER	DT21	27-23-22; -23; -26	2018	2.0	34.15	5.50
BREWSTER	CH4	27-26-4	2019	0.5	8.80	1.45
BREWSTER	JP9-10-11	28-26-8; -9; -16; -17	2019	1.3	24.55	4.05
BREWSTER	LW6	26-24-19	2019	0.5	8.90	1.47
BREWSTER	RL7	26-24-3	2019	2.0	35.20	5.81
BREWSTER	RMG1	27-25-6	2019	1.5	11.00	1.82
BREWSTER	RMG2	28-24-11; -12; -13; -14	2019	2.0	32.95	5.44
BREWSTER	RMG6A	27-24-12	2019	0.5	9.95	1.64
BREWSTER	RW6	27-24-26	2019	1.5	28.25	4.66
BREWSTER	TL10	25-24-18	2019	1.0	10.25	1.69
BREWSTER	TL12	25-24-18	2019	1.0	9.40	1.55
BRIDGEPORT	DT21	27-23-22; -23; -26	2018	12.0	69.05	19.06
BRIDGEPORT	RMG1	27-25-6	2019	10.0	65.99	36.36
CHELAN	DT21	27-23-22; -23; -26	2018	4.0	55.00	15.18
CHELAN	CH4	27-26-4	2019	1.0	10.00	3.08
CHELAN	JP9-10-11	28-26-8; -9; -16; -17	2019	1.3	18.00	5.54
CHELAN	LW6	26-24-19	2019	8.0	108.00	33.26
CHELAN	RL7	26-24-3	2019	1.0	10.00	3.08
CHELAN	RMG1	27-25-6	2019	4.5	48.00	12.48
CHELAN	RMG2	28-24-11; -12; -13; -14	2019	3.5	48.00	14.78
CHELAN	RMG6A	27-24-12	2019	5.0	50.00	15.40
CHELAN	RW6	27-24-26	2019	3.0	42.00	12.94
CHELAN	TL10	25-24-18	2019	2.8	32.00	9.86
CHELAN PUD #1	JP9-10-11	28-26-8; -9; -16; -17	2019	0.3	4.55	0.77
CHELAN PUD #1	RMG2	28-24-11; -12; -13; -14	2019	1.0	19.50	3.32
CHELAN PUD #1	RW6	27-24-26	2019	0.3	3.50	0.60
CHELAN PUD #1	TL10	25-24-18	2019	0.3	1.50	0.26
CASHMERE-WET	ST1	27-25-32	2019	44.0	992.37	83.36
CASHMERE-WET	RMG4	27-25-6	2019	22.0	56.51	48.15
CASHMERE-DRY	RMG4	27-25-6	2019	3.0	62.07	5.21
CASHMERE-DRY	RMG6A	27-24-12	2019	6.0	17.09	14.56
DOUGLAS COUNTY	DT21	27-23-22; -23; -26	2018	8.0	121.96	36.34
DOUGLAS COUNTY	CH4	27-26-4	2019	4.5	70.00	20.30
DOUGLAS COUNTY	JP9-10-11	28-26-8; -9; -16; -17	2018	0.5	11.07	3.30

BOULDER PARK PROJECT BENEFICIAL USE FACILITY

TABLE 1A. 2019 OTHER GENERATORS LAND APPLICATION ACTIVITY

Source[1]	Site	T-R-S Description	Year[2]	Acres	Wet Tons	Dry Tons[3]
DOUGLAS COUNTY	JP9-10-11	28-26-8; -9; -16; -17	2019	7.0	123.73	35.88
DOUGLAS COUNTY	LW6	26-24-19	2019	3.5	69.04	20.02
DOUGLAS COUNTY	RL7	26-24-3	2019	4.0	69.84	20.25
DOUGLAS COUNTY	RMG1	27-25-6	2019	8.0	79.50	23.06
DOUGLAS COUNTY	RMG2	28-24-11; -12; -13; -14	2019	9.0	154.52	44.81
DOUGLAS COUNTY	RMG6A	27-24-12	2019	6.0	76.33	22.14
DOUGLAS COUNTY	RW5	27-24-27	2019	2.5	40.69	11.80
DOUGLAS COUNTY	RW6	27-24-26	2019	2.8	45.23	13.12
DOUGLAS COUNTY	TL10	25-24-18	2019	4.0	54.94	15.93
DOUGLAS COUNTY	TL12	25-24-18	2019	1.0	10.40	3.02
ENUMCLAW	DT21	27-23-22; -23; -26	2018	11.0	221.55	33.23
ENUMCLAW	CH4	27-26-4	2019	7.0	141.88	21.42
ENUMCLAW	JP9-10-11	28-26-8; -9; -16; -17	2018	1.5	27.87	4.18
ENUMCLAW	JP9-10-11	28-26-8; -9; -16; -17	2019	9.0	222.46	33.59
ENUMCLAW	LW6	26-24-19	2019	6.0	141.75	21.40
ENUMCLAW	RL7	26-24-3	2019	10.0	204.64	30.90
ENUMCLAW	RMG1	27-25-6	2019	6.0	84.59	12.77
ENUMCLAW	RMG2	28-24-11; -12; -13; -14	2019	21.0	443.43	66.96
ENUMCLAW	RMG6A	27-24-12	2019	5.5	109.14	16.48
ENUMCLAW	RW5	27-24-27	2019	8.0	208.98	31.56
ENUMCLAW	TL10	25-24-18	2019	6.0	111.97	16.91
ENUMCLAW	TL12	25-24-18	2019	2.5	33.96	5.13
EPHRATA	MT1	27-28-6	2018	15.0	60.12	54.05
EPHRATA	MT11	25-28-6	2018	31.0	109.88	98.78
EPHRATA	RMG4	27-25-6	2019	58.0	169.51	145.61
GRAND COULEE	RMG1	27-25-6	2019	6.0	61.76	25.07
LAKOTA	DT21	27-23-22; -23; -26	2018	45.0	808.80	139.11
LAKOTA	CH4	27-26-4	2019	43.0	730.04	126.30
LAKOTA	JP9-10-11	28-26-8; -9; -16; -17	2018	7.5	134.95	23.21
LAKOTA	JP9-10-11	28-26-8; -9; -16; -17	2019	37.0	659.58	114.11
LAKOTA	LW6	26-24-19	2019	28.0	512.26	88.62
LAKOTA	RL7	26-24-3	2019	30.5	610.90	105.69
LAKOTA	RMG2	28-24-11; -12; -13; -14	2019	80.0	1,239.36	214.41
LAKOTA	RMG4	27-25-6	2019	48.0	729.39	126.18
LAKOTA	RMG6A	27-24-12	2019	31.0	458.60	79.34
LAKOTA	RW5	27-24-27	2019	24.5	507.43	87.79
LAKOTA	TL10	25-24-18	2019	19.0	270.86	46.86
LAKOTA	TL12	25-24-18	2019	20.0	188.49	32.61
LEAVENWORTH	DT21	27-23-22; -23; -26	2018	7.0	124.84	17.35
LEAVENWORTH	CH4	27-26-4	2019	3.0	54.62	7.54
LEAVENWORTH	JP9-10-11	28-26-8; -9; -16; -17	2018	1.0	22.46	3.12
LEAVENWORTH	JP9-10-11	28-26-8; -9; -16; -17	2019	6.0	123.55	17.05
LEAVENWORTH	LW6	26-24-19	2019	3.0	65.65	9.06
LEAVENWORTH	RL7	26-24-3	2019	3.0	57.31	7.91
LEAVENWORTH	RMG1	27-25-6	2019	3.0	43.46	6.00
LEAVENWORTH	RMG2	28-24-11; -12; -13; -14	2019	4.5	89.72	12.38
LEAVENWORTH	RMG6A	27-24-12	2019	3.0	55.20	7.62
LEAVENWORTH	RW6	27-24-26	2019	3.5	69.71	9.62
LEAVENWORTH	TL10	25-24-18	2019	3.0	54.83	7.57

TABLE 1A. 2019 OTHER GENERATORS LAND APPLICATION ACTIVITY

Source[1]	Site	T-R-S Description	Year[2]	Acres	Wet Tons	Dry Tons[3]
LEAVENWORTH	TL12	25-24-18	2019	2.5	32.69	4.51
LIBERTY LAKE	DT21	27-23-22; -23; -26	2018	7.5	235.86	30.90
LIBERTY LAKE	CH4	27-26-4	2019	7.5	206.85	27.72
LIBERTY LAKE	JP9-10-11	28-26-8; -9; -16; -17	2018	1.0	30.23	3.96
LIBERTY LAKE	JP9-10-11	28-26-8; -9; -16; -17	2019	8.0	242.42	32.48
LIBERTY LAKE	LW6	26-24-19	2019	5.5	146.42	19.62
LIBERTY LAKE	RL7	26-24-3	2019	6.5	210.78	28.24
LIBERTY LAKE	RMG1	27-25-6	2019	6.0	121.25	16.25
LIBERTY LAKE	RMG2	28-24-11; -12; -13; -14	2019	12.0	332.81	44.60
LIBERTY LAKE	RMG6A	27-24-12	2019	5.0	115.24	15.44
LIBERTY LAKE	RW5	27-24-27	2019	6.0	222.50	29.82
LIBERTY LAKE	TL10	25-24-18	2019	5.0	112.62	15.09
LOTT	DT21	27-23-22; -23; -26	2018	95.0	1,704.28	352.79
LOTT	CH4	27-26-4	2019	45.0	771.89	155.92
LOTT	JP9-10-11	28-26-8; -9; -16; -17	2019	53.0	1,053.51	212.81
LOTT	LW6	26-24-19	2019	28.0	545.83	110.26
LOTT	RL7	26-24-3	2019	55.0	1,048.07	211.71
LOTT	RMG2	28-24-11; -12; -13; -14	2019	99.0	1,617.35	326.70
LOTT	RMG4	27-25-6	2019	53.0	655.33	132.38
LOTT	RMG6A	27-24-12	2019	29.0	427.62	86.38
LOTT	RW5	27-24-27	2019	46.0	956.12	193.14
LOTT	TL10	25-24-18	2019	19.0	291.12	58.81
LOTT	TL12	25-24-18	2019	22.5	221.44	44.73
LYNDEN	DT21	27-23-22; -23; -26	2018	19.0	375.80	48.48
LYNDEN	CH4	27-26-4	2019	9.0	171.48	21.61
LYNDEN	JP9-10-11	28-26-8; -9; -16; -17	2018	6.0	112.78	14.55
LYNDEN	JP9-10-11	28-26-8; -9; -16; -17	2019	17.0	364.26	45.90
LYNDEN	LW6	26-24-19	2019	6.0	141.35	17.81
LYNDEN	RL7	26-24-3	2019	14.0	332.95	41.95
LYNDEN	RMG1	27-25-6	2019	17.0	265.96	33.51
LYNDEN	RMG2	28-24-11; -12; -13; -14	2019	14.0	311.45	39.24
LYNDEN	RMG6A	27-24-12	2019	7.0	131.89	16.62
LYNDEN	RW5	27-24-27	2019	2.5	55.98	7.05
LYNDEN	RW6	27-24-26	2019	9.0	253.07	31.89
LYNDEN	TL10	25-24-18	2019	9.0	179.62	22.63
MILLER CREEK	DT21	27-23-22; -23; -26	2018	13.0	209.24	41.43
MILLER CREEK	CH4	27-26-4	2019	11.0	158.64	35.06
MILLER CREEK	JP9-10-11	28-26-8; -9; -16; -17	2018	2.0	31.39	6.22
MILLER CREEK	JP9-10-11	28-26-8; -9; -16; -17	2019	9.0	155.67	34.40
MILLER CREEK	LW6	26-24-19	2019	8.5	127.55	28.19
MILLER CREEK	RL7	26-24-3	2019	9.5	159.20	35.18
MILLER CREEK	RMG1	27-25-6	2019	12.0	123.43	27.28
MILLER CREEK	RMG2	28-24-11; -12; -13; -14	2019	27.0	394.16	87.11
MILLER CREEK	RMG6A	27-24-12	2019	7.0	91.96	20.32
MILLER CREEK	RW5	27-24-27	2019	3.5	60.88	13.45
MILLER CREEK	RW6	27-24-26	2019	7.0	124.02	27.41
MILLER CREEK	TL10	25-24-18	2019	5.0	62.29	13.77
MILLER CREEK	TL12	25-24-18	2019	7.0	62.44	13.80
MIDWAY	DT21	27-23-22; -23; -26	2018	14.0	316.00	51.19

BOULDER PARK PROJECT BENEFICIAL USE FACILITY

TABLE 1A. 2019 OTHER GENERATORS LAND APPLICATION ACTIVITY

Source[1]	Site	T-R-S Description	Year[2]	Acres	Wet Tons	Dry Tons[3]
MIDWAY	CH4	27-26-4	2019	14.0	259.30	44.86
MIDWAY	JP9-10-11	28-26-8; -9; -16; -17	2018	1.5	29.32	4.75
MIDWAY	JP9-10-11	28-26-8; -9; -16; -17	2019	17.0	343.59	59.44
MIDWAY	LW6	26-24-19	2019	10.0	199.32	34.48
MIDWAY	RL7	26-24-3	2019	11.5	282.99	48.96
MIDWAY	RMG1	27-25-6	2019	15.0	198.66	34.37
MIDWAY	RMG2	28-24-11; -12; -13; -14	2019	32.0	543.04	93.95
MIDWAY	RMG6A	27-24-12	2019	9.0	141.18	24.42
MIDWAY	RW5	27-24-27	2019	8.0	214.42	37.09
MIDWAY	TL10	25-24-18	2019	7.0	112.75	19.51
MIDWAY	TL12	25-24-18	2019	11.0	115.03	19.90
MUKILTEO	DT21	27-23-22; -23; -26	2018	8.0	254.73	30.82
MUKILTEO	CH4	27-26-4	2019	10.0	201.86	26.65
MUKILTEO	JP9-10-11	28-26-8; -9; -16; -17	2018	1.0	28.18	3.41
MUKILTEO	JP9-10-11	28-26-8; -9; -16; -17	2019	11.0	249.08	32.88
MUKILTEO	LW6	26-24-19	2019	3.5	87.73	11.58
MUKILTEO	RL7	26-24-3	2019	8.5	313.64	41.40
MUKILTEO	RMG1	27-25-6	2019	12.0	175.50	23.17
MUKILTEO	RMG2	28-24-11; -12; -13; -14	2019	18.0	372.25	49.14
MUKILTEO	RMG6A	27-24-12	2019	7.0	112.60	14.86
MUKILTEO	RW5	27-24-27	2019	5.5	200.10	26.41
MUKILTEO	RW6	27-24-26	2019	1.0	28.40	3.75
MUKILTEO	TL10	25-24-18	2019	1.5	26.64	3.52
MUKILTEO	TL12	25-24-18	2019	7.0	87.80	11.59
MOUNT VERNON	DT21	27-23-22; -23; -26	2018	35.0	558.12	106.04
MOUNT VERNON	CH4	27-26-4	2019	13.0	230.96	37.65
MOUNT VERNON	JP9-10-11	28-26-8; -9; -16; -17	2018	6.0	112.87	19.75
MOUNT VERNON	JP9-10-11	28-26-8; -9; -16; -17	2019	18.5	399.32	65.09
MOUNT VERNON	LW6	26-24-19	2019	10.0	201.46	32.84
MOUNT VERNON	RL7	26-24-3	2019	22.0	400.04	65.21
MOUNT VERNON	RMG1	27-25-6	2019	25.5	316.63	51.61
MOUNT VERNON	RMG2	28-24-11; -12; -13; -14	2019	32.0	548.01	89.33
MOUNT VERNON	RMG6A	27-24-12	2019	14.0	230.92	37.64
MOUNT VERNON	RW5	27-24-27	2019	21.5	398.42	64.94
MOUNT VERNON	RW6	27-24-26	2019	1.5	28.15	4.59
MOUNT VERNON	TL10	25-24-18	2019	9.0	142.35	23.20
MOUNT VERNON	TL12	25-24-18	2019	8.5	85.51	13.94
OKANOGAN	DT21	27-23-22; -23; -26	2018	6.0	27.54	25.53
OKANOGAN	RMG1	27-25-6	2019	7.0	23.79	21.84
PATEROS	LW6	26-24-19	2019	0.3	24.93	3.29
PIERCE COUNTY	LW6	26-24-19	2019	1.0	21.62	3.89
PIERCE COUNTY	RMG2	28-24-11; -12; -13; -14	2019	37.0	541.91	97.54
PIERCE COUNTY	TL10	25-24-18	2019	2.5	31.52	5.67
PIERCE COUNTY	TL12	25-24-18	2019	59.0	528.55	95.14
QUINCY	RMG6A	27-24-12	2019	3.0	158.50	26.31
REDONDO	DT21	27-23-22; -23; -26	2018	1.5	27.14	5.21
REDONDO	CH4	27-26-4	2019	5.5	77.32	18.94

BOULDER PARK PROJECT BENEFICIAL USE FACILITY

TABLE 1A. 2019 OTHER GENERATORS LAND APPLICATION ACTIVITY

Source[1]	Site	T-R-S Description	Year[2]	Acres	Wet Tons	Dry Tons[3]
REDONDO	JP9-10-11	28-26-8; -9; -16; -17	2018	1.0	13.89	2.67
REDONDO	JP9-10-11	28-26-8; -9; -16; -17	2019	8.3	139.46	34.17
REDONDO	LW6	26-24-19	2019	4.5	68.53	16.79
REDONDO	RL7	26-24-3	2019	6.0	113.83	27.89
REDONDO	RMG1	27-25-6	2019	10.0	78.70	19.28
REDONDO	RMG2	28-24-11; -12; -13; -14	2019	28.0	370.36	90.74
REDONDO	RMG6A	27-24-12	2019	6.0	68.98	16.90
REDONDO	TL10	25-24-18	2019	3.0	35.54	8.71
REDONDO	TL12	25-24-18	2019	4.0	33.24	8.14
ROCK ISLAND	TL10	25-24-18	2019	2.0	45.86	39.49
SALMON CREEK	DT21	27-23-22; -23; -26	2018	11.0	190.40	40.94
SALMON CREEK	CH4	27-26-4	2019	8.0	127.03	27.82
SALMON CREEK	JP9-10-11	28-26-8; -9; -16; -17	2018	2.0	30.83	6.63
SALMON CREEK	JP9-10-11	28-26-8; -9; -16; -17	2019	8.0	126.47	27.70
SALMON CREEK	LW6	26-24-19	2019	2.0	30.52	6.68
SALMON CREEK	RL7	26-24-3	2019	7.0	126.03	27.60
SALMON CREEK	RMG2	28-24-11; -12; -13; -14	2019	18.0	295.32	64.68
SALMON CREEK	RW6	27-24-26	2019	6.5	122.01	26.72
SEDRO-WOOLLEY	DT21	27-23-22; -23; -26	2018	7.0	178.25	19.79
SEDRO-WOOLLEY	CH4	27-26-4	2019	3.0	72.30	8.03
SEDRO-WOOLLEY	JP9-10-11	28-26-8; -9; -16; -17	2019	4.0	117.81	13.08
SEDRO-WOOLLEY	LW6	26-24-19	2019	1.0	24.79	2.75
SEDRO-WOOLLEY	RL7	26-24-3	2019	3.0	86.82	9.64
SEDRO-WOOLLEY	RMG1	27-25-6	2019	1.0	22.39	2.49
SEDRO-WOOLLEY	RMG2	28-24-11; -12; -13; -14	2019	2.5	75.36	8.36
SEDRO-WOOLLEY	RMG6A	27-24-12	2019	3.0	81.75	9.07
SEDRO-WOOLLEY	RW5	27-24-27	2019	5.9	167.46	18.59
SEDRO-WOOLLEY	TL10	25-24-18	2019	3.0	52.40	5.82
TREE TOP	HT4	26-25-17	2018	13.0	525.33	42.03
TREE TOP	HT4	26-25-17	2019	13.0	529.58	41.31
TREE TOP	RMG1	27-25-6	2019	8.0	254.36	19.84
TREE TOP	RW5	27-24-27	2019	3.0	126.73	9.88
TREE TOP	RW6	27-24-26	2019	5.0	210.98	16.46
WARDEN	TL10	25-24-18	2019	45.0	486.17	335.46
			TOTALS:	**2,781.7**	**44,270.67**	**8,792.63**

[1] All biosolids stored and applied seperately.

[2] All biosolids applied in 2019 with carry-over indicated by year produced.

[3] Dry tons are calculated using the respective annual average for total percent solids.

BOULDER PARK PROJECT BENEFICIAL USE FACILITY

TABLE 2: 2019 King County Storage Activity

Site	T-R-S Description	Year	Acres	BRIGHTWATER Wet Tons	BRIGHTWATER Dry Tons	SOUTH PLANT Wet Tons	SOUTH PLANT Dry Tons	WEST POINT Wet Tons	WEST POINT Dry Tons	Total Wet Tons	Total Dry Tons
DM27	27-25-18	2019	CO	157.62	31.89	311.27	72.49	495.58	130.71	964.47	235.10
JA20	28-26-35	2019	CO	158.16	41.75	124.83	29.27	465.63	127.22	748.62	198.25
JS2	27-25-10	2019	CO	285.36	58.09	502.26	117.90	964.53	253.01	1,752.15	429.01
JS3	27-25-11	2019	CO	189.23	37.53	630.72	145.76	590.82	159.09	1,410.77	342.38
JS4	27-25-2	2019	CO	408.31	82.21	629.47	146.00	1,061.75	281.90	2,099.53	510.11
JS6	27-24-20	2019	CO	94.93	20.06	374.53	90.46	685.02	190.32	1,154.48	300.84
MB11	27-26-11	2019	CO	125.49	25.08	343.97	79.24	434.22	115.99	903.68	220.32
				BRIGHTWATER		SOUTH PLANT		WEST POINT		TOTAL	TOTAL
			TOTALS:	Wet Tons	Dry Tons	Wet Tons	Dry Tons	Wet Tons	Dry Tons	Wet Tons	Dry Tons
TOTAL 2019 CARRY-OVER TO 2020:				**1,419.10**	**296.61**	**2,917.05**	**681.13**	**4,697.55**	**1,258.26**	**9,033.70**	**2,235.99**

"CO" MEANS CARRY-OVER; PRODUCT DELIVERED IN 2019 AND STORED ON SITE FOR 2020 APPLICATION.

BOULDER PARK PROJECT BENEFICIAL USE FACILITY

TABLE 2A. 2019 OTHER GENERATORS STORAGE ACTIVITY

Source[1]	Site	T-R-S Description	Year[2]	Acres[3]	Wet Tons	Dry Tons[4]
ALDERWOOD	JD1	25-24-20	2019	NA	17.77	17.5
ALDERWOOD	RMG5	27-25-7	2019	NA	52.33	51.4
BREWSTER	RMG5	27-25-7	2019	NA	10.40	1.7
CHELAN	RMG5	27-25-7	2019	NA	9.00	2.3
DOUGLAS COUNTY	RMG5	27-25-7	2019	NA	20.53	3.5
ENUMCLAW	RMG5	27-25-7	2019	NA	29.81	4.5
LAKOTA	RMG5	27-25-7	2019	NA	108.36	18.7
LEAVENWORTH	RMG5	27-25-7	2019	NA	22.33	3.1
LIBERTY LAKE	RMG5	27-25-7	2019	NA	66.08	8.9
LOTT	RMG5	27-25-7	2019	NA	231.44	46.8
LYNDEN	RMG5	27-25-7	2019	NA	58.06	7.3
MIDWAY	RMG5	27-25-7	2019	NA	85.11	14.7
MILLER CREEK	RMG5	27-25-7	2019	NA	31.33	6.9
MOUNT VERNON	RMG5	27-25-7	2019	NA	114.14	18.6
MUKILTEO	RMG5	27-25-7	2019	NA	57.07	7.5
REDONDO	RMG5	27-25-7	2019	NA	16.32	4.0
SEDRO-WOOLLEY	RMG5	27-25-7	2019	NA	27.98	3.1
ALDERWOOD	GYP9	26-23-1	2019	NA	66.91	65.7
BREWSTER	GYP9	26-23-1	2019	NA	30.85	5.1
CHELAN	GYP9	26-23-1	2019	NA	10.00	2.6
CHELAN PUD #1	GYP9	26-23-1	2019	NA	7.50	1.3
DOUGLAS COUNTY	GYP9	26-23-1	2019	NA	58.85	17.1
ENUMCLAW	GYP9	26-23-1	2019	NA	176.73	26.7
LAKOTA	GYP9	26-23-1	2019	NA	790.63	136.8
LEAVENWORTH	GYP9	26-23-1	2019	NA	91.41	12.6
LIBERTY LAKE	GYP9	26-23-1	2019	NA	120.82	16.2
LOTT	GYP9	26-23-1	2019	NA	883.29	178.4
LYNDEN	GYP9	26-23-1	2019	NA	207.36	26.1
MIDWAY	GYP9	26-23-1	2019	NA	198.15	34.3
MILLER CREEK	GYP9	26-23-1	2019	NA	125.34	27.7
MOUNT VERNON	GYP9	26-23-1	2019	NA	315.16	51.4
MUKILTEO	GYP9	26-23-1	2019	NA	205.46	27.1
REDONDO	GYP9	26-23-1	2019	NA	110.35	27.0
SEDRO-WOOLLEY	GYP9	26-23-1	2019	NA	133.09	14.8
TREE TOP	GYP9	26-23-1	2019	NA	126.83	9.9
			TOTALS:	**0.00**	**4,616.79**	**901.26**

[1] All biosolids stored and applied seperately.

[2] All biosolids applied in 2019 with carry-over indicated by year produced.

[3] All biosolids provided in table will be land applied in 2020.

[4] Dry tons are calculated using the respective annual average for total percent solids.

APPENDIX C

Environmental Monitoring Requirements

Table 3:	Minimum Buffer Distances
Table 4:	Monitoring Parameters and Frequencies for Drinking Wells
Table 5:	Monitoring Parameters and Frequencies for Perennial Surface Waters
Table 6:	Monitoring Parameters and Frequencies for Soils
Table 7:	Domestic Well and Surface Water Sampling Locations

Table 3. Minimum Buffer Distances

Feature	Buffer Distance
State Rule WAC 173-308 specifies buffers for wells and waters of the State	
Domestic Wells	100 feet
Irrigation Wells	100 feet
Surface Waters	33 feet
Self-imposed buffers for dwellings, roads and property lines	
Dwellings or Occupied Residence	50 feet
Public Roadways	5 feet
Property line	0 to 50 feet

(Source: Site-Specific Land Application Plan, November 2015)

Table 4: Monitoring Parameters and Frequencies for Drinking Wells

Within One Quarter Mile (1,320 Ft) of the Application Area, excluding irrigation, deserted, and abandoned wells.

Parameter	Pre-Application	Annual Sampling[1]	1-yr. Post-Application[2]
Nutrients:			
NO_3+NO_2 (nitrate+nitrite-nitrogen)	**X**	**X**	**X**
Bacteria:			
Fecal Coliform	**X**	**X**	**X**
Enterococcus [3]			
Total Metals:			
As, Cd, Cr, Cu, Hg, Mo, Ni, Pb, Se, Zn	**X**		**X**
Other:			
Chloride	**X**		

[1] Samples will be collected from wells within 1,320 feet of application sites within one year of biosolids application.

[2] All water quality parameters will be repeated one year after biosolids are no longer actively applied within 1,320 feet of a well, whether due to discontinued use of individual fields or termination of the project.

[3] No Enterococcus samples collected in 2019. A discussion with Cascade Analytical Laboratory suggested that this analysis was unnecessary since fecal coliform testing could be used as an bacteriological indicator for water quality conditions that is used to determine additional testing needs.

Table 5: Monitoring Parameters and Frequencies for Perennial Surface Waters

Parameter	Pre-Application	Annual Sampling[1]	1-yr. Post-Application[2]
Nutrients:			
NH4-N (ammonia-nitrogen)	**X**	**X**	**X**
NO_3+NO_2 (nitrate+nitrite-nitrogen)	**X**	**X**	**X**
Bacteria:			
Fecal Coliform	**X**	**X**	**X**
Enterococcus[3]			
Total Metals:			
As, Cd, Cr, Cu, Hg, Mo, Ni, Pb, Se, Zn	**X**		**X**

[1] Samples will be collected from surface waters within 500 feet of application sites annually (if present) within one-year of biosolids application to the sites. During a significant storm event, samples for nutrient and bacteriological parameters may be collected when operationally possible.

[2] All water quality parameters will be repeated one year after biosolids are no longer actively applied to the application sites, whether due to discontinued use of individual fields or termination of the project.

[3] No Enterococcus samples collected in 2019. A discussion with Cascade Analytical Laboratory suggested that this analysis was unnecessary since fecal coliform testing could be used as an bacteriological indicator for water quality conditions that is used to determine additional testing needs.

Table 6: Monitoring Parameters and Frequencies for Soils[1]

Parameter[2]	Pre-Application[3]	Routine Sampling
Nutrients:		
NH_4-N (ammonia-nitrogen)	**X**	**X**
NO_3-N (nitrate-nitrogen)	**X**	**X**
P (phosphorus)	**X**	**X**
K (potassium)	**X**	**X**
SO_4-S (sulfate-sulfur)	**X**	**X**
Total Metals:		
As, Cd, Cr, Cu, Hg, Mo, Ni, Pb, Se, Zn	**X**	
Other:		
pH	**X**	**X**
Available Soil Moisture	**X**	**X**
Organic Matter	**X**	**X**

[1] Soils refers to the soil within each application project site or field

[2] Composite soil samples collected at a depth of 0-12" are analyzed for parameters as shown. Composite soil samples collected at soil depths greater than 1-foot are analyzed for nitrate-nitrogen, sulfate-sulfur and moisture only.

[3] Pre-application composite soil samples will be collected prior to initial biosolids application.

Table 7: Domestic Well, Irrigation Well, and Surface Water Sampling Locations

Site #	Name	Description	Location	Notes
1	Eric Petkoff	Domestic Well	T28N, R24E, S30	
2	Eric Petkoff	Spring	T28N, R24E, S30	
3	Patty Big Spring	Spring	T28N, R24E, S30	
4	Leroy Thomsen	Upper Spring	T28N, R24E, S29	Center SE1/4
5	Leroy Thomsen	Lower Spring	T28N, R24E, S20	NENE in trees
6	Sheldon Tanneberg	Domestic Well	T28N, R24E, S28	Metal Shed, Center N1/2
7	David Petersen	Domestic Well	T27N, R24E, S5	E edge, center
8	Gary Poole	Domestic Well	T28N, R24E, S24	
9	Alex McLean	Domestic Well	T28N, R25E, S19	
10	Howard Asmussen	Domestic Well	T28N, R25E, S31	
11	West Foster Creek	Creek	T28N, R25E, S15	NW1/4. @Culvert inlet
12	Peder Foged	Domestic Well	T27N, R25E, S29	
13	Larry Glessner	Domestic Well	T27N, R25E, S28	
14	Donald Love	Domestic Well	T27N, R25E, S27	
15	Marion Hill Spring	Spring	T26N, R24E, S1	NW
16	Tom Lassiter	Domestic Well	T26N, R24E, S12	
17	Rick Matthiesen	Domestic Well	T27N, R25E, S34	S. edge
18	Marry/Factney	Domestic Well	T27N, R24E, S33	
19	Cooper	Domestic Well	T27N, R24E, S28	On curve of HWY172
20	Downey Spring	Spring	T28N, R24E, S36	NE, E. edge, end Co rd.
21	Stuart Dezellem	Domestic Well	T29N, R25E, S7	NW1/4
22	G. Peterson	Domestic Well	T27N, R24E, S17	rental
23	Wittig (shop)	Domestic Well	T26N, R25E, S36	SE, NW corner of LK
24	J. Schmidt	Domestic Well	T27N, R25E, S15	
25	Alkali Wells	Spring	T27N, R25E, S14	N. edge, center
26	Middle Foster Creek	Spring	T27N, R25E, S12	NA - site omitted
27	McLean Spring	Spring	T28N, R25E, S3	W1/2SW, by house
28	Bert Glessner	Domestic Well	T27N, R24E, S27	Standpipe empty lot
29	Cornehl Lake	Lake	T28N, R24E, S35	NE
30	Paul Wittig	Irrigation Well	T25N, R25E, S2	E. edge center
31	Garold Daling	Domestic Well	T24N, R22E, S12	Drilled 7/97

Table 7: Domestic Well, Irrigation Well, and Surface Water Sampling Locations

Site #	Name	Description	Location	Notes
32	Dave Ruud	Spring	T24N, R22E, S4	Stand pipe in yard
33	Neil Peterson	Domestic Well	T24N, R22E, S4	N. edge, small lot
34	Ruud Canyon	Creek	T24N, R22E, S4	
35	Terry Ludeman	Domestic Well	T24N, R24E, S15	E. edge, middle
36	Marvin Ludeman	Domestic Well	T24N, R24E, S14	SW corner
37	Chapman Draw	Creek	T28N, R25E, S10	NA - site omitted
38	Larry Tupling	Domestic Well	T27N, R26E, S5	
39	Jameson Lake	Lake	T25N, R26E, S36	Near shop (see #23)
40	Douglas Creek (A)	Creek (downstream)	T24N, R23E, S19	Alstown bridge
41	O'Brien	Domestic Well	T23N, R24E, S5	
42	Calvin Diksen	Domestic Well	T28N, R26E, S32	
43	R. Osborn	Domestic Well	T25N, R23E, S13	JBS Farms
44	Dennis Hellie	Domestic Well	T27N, R26E, S21	
45	B. Matthiesen	Domestic Well	T25N, R24E, S33	#1corral, #2house
46	Douglas Creek (B)	Creek	T24N, R22E, S12	Daling ranch
47	R. Fila	Domestic Well	T25N, R24E, S23	
48	L. Thomsen	Spring (E. Draw)	T28N, R24E, S21	W edge, ponding in draw
49	C. Nordby	Domestic Well	T27N, R26E, S10	
50	N. Jacobsen	Domestic Well	T26N, R24E, S6	
51	C. Hansen	Domestic Well	T28N, R26E, S29	
52	R. Hansen	Domestic Well	T27N, R25E, S21	
53	G. Caille	Domestic Well	T28N, R25E, S34	
54	T. Dezellem	Domestic Well	T27N, R25E, S24	Mansfield area
55	David Adams (A)	Domestic Well	T24N, R26E, S23	Residence
56	John Danielson	Domestic Well	T25N, R24E, S30	Supplee area
57	Randy Uhrich	Domestic Well	T25N, R23E, S2	Supplee area
58	Jerry Tanneberg (Mary Humphreys)	Domestic Well	T25N, R27E, S11	S. of LDT1, SWSW
59	Rod Petersen	Domestic Well	T25N, R22E, S32	E. edge, center NE
60	Scott Hunt	Domestic Well	T27N, R28E, S30	
61	Rhett Wall	Domestic Well	T27N, R24E, S22	
62	Doug Tanneberg	Domestic Well	T27N, R24E, S14	

Table 7: Domestic Well, Irrigation Well, and Surface Water Sampling Locations

Site #	Name	Description	Location	Notes
63	Norman Cavadini	Domestic Well	T27N, R25E, S16	SW1/4. Kelsey's
64	Bob Matthiesen	Domestic Well	T26N, R25E, S2	
65	Norm Tupling	Domestic Well	T27N, R24E, S16	(formerly O. Holcomb)
66	Nick Smith	Domestic Well	T27N, R27E, S23	Spigot near front door
67	Ken Danielson	Domestic Well	T25N, R24E, S30	(W. of well 56)
68	Lois McGrath	Domestic Well	T27N, R24E, S1	Yard waste-stop
69	Kenny Greninger	Domestic Well	T28N, R26E, S33	
70	Rick Timm	Domestic Well	T27N, R28E, S23	Red spigot west side
71	Rex McGrath	Domestic Well	T27N, R25E, S7	
72	E. Breiler	Domestic Well	T23N, R21E, S10	NW ¼, 14' hand dug
73	L. Nordby	Domestic Well	T28N, R26E, S21	
74	R. Hursh	Domestic Well	T23N, R21E, S11	center of N1/2, 140'
75	R. Breiler	Domestic Well	T23N, R21E, S11	SE 1/4, 14' hand dug
76	Beaver Creek (A)	Creek	T23N, R21E, S11	
77	D. Sherill	Domestic Well	T23N, R21E, S14	center of N1/2, spring
78	J. Mitchell	Domestic Well	T23N, R21E, S10	NW ¼ mobiles, 15'
79	V. Breiler	Domestic Well	T23N, R21E, S3	NE ¼
80	R. Riggs	Domestic Well	T29N, R24E, S23	SW corner
81	Greg Johnson	Domestic Well	T23N, R21E, S4	At Pump house - IRR
82	G. J. Petersen (B)	Domestic Well	T27N, R24E, S8	residence
83	B. Bolyard	Domestic Well	T24N, R26E, S6	middle of E edge
84	D. Adams (B)	Domestic Well	T24N, R26E, S34	S edge, rental
85	P. Malone	Domestic Well	T23N, R26E, S3	NW ¼, 270'
86	J. W. Sprauer	Domestic Well	T26N, R24E, S21	SW ¼, residence, 50'
87	Robin Johnson	Domestic Well	T23N, R21E, S4	Chuck Wass. Decline 2019
88	Cheryl Johnson	Domestic Well	T23N, R21E, S4	Joe Marlow. House spigot
89	J. Painter	Domestic Well	T26N, R23E, S12	NW ¼
90	D. Jensen	Domestic Well	T27N, R24E, S30	Owen Miller Trust
91	D. Matthiesen	Domestic Well	T26N, R25E, S16	center, 526'
92	M. McLean	Domestic Well	T27N, R28E, S7	SW ¼
93	P. Laymance	Domestic Well	T27N, R25E, S23	middle

Table 7: Domestic Well, Irrigation Well, and Surface Water Sampling Locations

Site #	Name	Description	Location	Notes
94	G. Adams	Domestic Well	T25N, R28E, S5	N edge, middle
95	J. Haberman	Domestic Well	T24N, R24E, S22	E edge, middle NE
96	M. Hahn	Domestic Well	T24N, R26E, S18	E edge, middle
97	T. Tupling	Domestic Well	T27N, R26E, S7	Middle, E. side
98	L. Sweeney	Domestic Well	T27N, R24E, S27	SE1/4NESE
99	K. Dillon	Domestic Well	T24N, R26E, S17	NWSW
100	Harold Beard	Domestic Well	T27N, R24E, S20	W1/2NW
101	G.J. Poole (Randy's)	Domestic Well	T28N, R26E, S16	NWSW
102	D. Tanneburg (B)	Domestic Well	T27N, R25E, S20	NESE
103	N. Asmussen	Domestic Well	T28N, R26E, S19	NESW
104	R. Wainscott	Domestic Well	T28N, R25E, S6	East out building
105	J. Baity	Domestic Well	T28N, R26E, S28	Same as #6 S.T.
106	Wainscott Spring	Domestic Well	T28N, R25E, S6	from front yard tank
107	R. Timm-BLUE	Domestic Well	T27N, R28E, S23	House mud room
108	E. Preston	Domestic Well	T28N-R26E-S36	
109	L. Baldino	Domestic Well	T27N-R26E-S13	Kitchen sink
110	P. Cook (Davee Griere)	Domestic Well	T27N-R26E-S2	Kitchen sink
111	Terry Hunt	Domestic Well	T27N-R28E-S19	1805 RD 14 NE
112	Russell M. Hunt	Domestic Well	T27N-R28E-S19	1845 RD 14 NE
113	Derek J. Hunt	Domestic Well	T27N-R28E-S19	1803 RD 14 NE
114	Douglas Weimerskirch	Domestic Well	T26N R27E S1	11017 SR 17
115	Steven Weimerskirch	Domestic Well	T27N R27E S36	11035 SR 17
116	Eugene Weimerskirch	Domestic Well	T27N R27E S36	11031 SR 17
117	Brad Murison	Domestic Well	T28N R25E S26	1969 RD E NE
118	Daniel Buckingham	Domestic Well	T28N R26E S30	626 RD 20 NE
119	Ronald & Patricia Mason	Domestic Well	T24N R23E S16	255 RD I SW
120	Joel Cummings, MD	Domestic Well	T25N R23E S29	1030 RD 2 NW
121	Garold & Sharon Daling	Domestic Well	T25N R23E S17	1045 RD 3 NW
122	Darrell & Helen Mires	Domestic Well	T24N-R23E-S9	940 RD 2 SW
123	Randy & Susan Mittelstaedt	Domestic Well	T25N R23E S31	E of Douglas
124	Niel Nelson Family Farms L	Domestic Well	T26N R23E S23	711 RD 8 NW

Table 7: Domestic Well, Irrigation Well, and Surface Water Sampling Locations

Site #	Name	Description	Location	Notes
125	Kirk & Scott Schmidtman	Domestic Well	T26N R23E S26	799 RD G NW
126	C & M Thomsen Farms Inc	Domestic Well	T26N R23E S26	770 RD 8 NW
127	Steve & Terri Thomsen	Domestic Well	T24N R23E S3	100 RD I SW
128	Ron Lewis	Domestic Well	T28N R24E S2	N of RMG2 (Dyer Hill)
129	Bartley Schmidt	Domestic Well	T27N R25E S5	RD B & RD 18
130	Terry & Berty Besel	Domestic Well	T24N R24E S28	401 RD C SW
131	Grant & Susan Seim	Domestic Well	T24N R25E S14	478 RD 2 SE
132	Gloria Burton	Domestic Well	T24N R24E S27	
133	Sisters Jacobson LLC	Domestic Well	T26N R23E S2	1151 RD G NW
134	Sidney Viebrock	Domestic Well	T24N R23E S2	70 RD H SW
135	Philip & Kara Rock	Domestic Well	T25N R22E S10	455 RD N NW
136	K. Armstrong/P. Whitehall	Domestic Well	T25N R22E S3	
137	Alec & Eunice McKay	Domestic Well	T25N R22E S3	532 RD O NW
138	Barbara Stahl	Domestic Well	T25N R22E S4	531 RD O NW
139	Joseph & Gretta Davis	Domestic Well	T26N R24E S15	
140	Baseline Farms Inc	Domestic Well	T24N R22E S6	1740 W Baseline RD
141	Ogle Farms LLC	Domestic Well	T25N R22E S32	1685 W Baseline RD
142	T.J. Tupling	Domestic Well	T26N R24E S11	
143	Greg Johnson (2018)	Domestic Well	T23N R21E S4	New well Dec-18. House spigot

APPENDIX D

Monitoring Data

Table 8: 2019 Groundwater Bacteriological and Nutrient Data
Table 9: 2019 Groundwater Metals Data
Table 10: 2019 Surface Water Bacteriological and Nutrient Data
Table 11: 2019 Soil Nutrient Data
Table 12: 2019 Soil Metals Data

Table 8: 2019 GROUNDWATER BACTERIOLOGICAL AND NUTRIENT DATA
(For Wells Within One Quarter Mile (1,320 feet) of the Application Site)

Well Location	Well ID	Collection Date	Lab Sample #	Fecal Coliform *CFU/100 ml*	NH_3-N *mg/L*	NO_3+NO_2 *mg/L*	Cl *mg/L*
G. Johnson	81	10/16/19	19-E033966	1	<RL	0.5	ns
G. Johnson (B)	143	10/16/19	19-E033967	0	<RL	0.4	1.6
L. Nordby	73	10/15/19	19-E033776, 19-E033968	0	<RL	25.9	37.2
G. Davis	139	8/15/19	19-M027951	ns	<RL	13.8	ns
G. Davis	139	10/15/19	19-E033969	0	<RL	14.0	ns
R. Osborn	43	10/16/19	19-E033970	0	<RL	3.4	ns
V. Breiler	79	10/16/19	19-E033971	0	<RL	<0.07	ns
R. Johnson	87	10/16/19	19-E033972	0	<RL	1.4	ns
L. Sweeney	98	10/15/19	19-E033974	0	<RL	13.4	ns
B. Glessner	28	10/15/19	19-E033975	0	<RL	8.7	ns
T.J. Tupling	142	10/15/19	19-E033976	0	<RL	13.7	ns
J. Poole	101	10/14/19	19-E033774	0	0.23	16.6	ns
N. Asmussen	103	10/14/19	19-E033775	0	<RL	0.3	9.6
E. Preston	108	10/14/19	19-E033777	0	<RL	26.5	ns
P. Cook (D Greer-new)	110	10/14/19	19-E033778	0	<RL	7.4	19.4
R. Timm-RED (IRRIG)	70	10/14/19	19-E033779	0	<RL	0.3	ns
R. Timm-BLUE (DW)	107	10/14/19	19-E033780	0	<RL	19.6	ns
B. Murison	117	10/14/19	19-E033781	0	<RL	<0.07	7.1
G. Caille	53	10/14/19	19-E033782	0	<RL	5.2	11.1
G. Poole	8	10/14/19	19-E033784	0	<RL	0.6	ns
G. Peterson	22	10/14/19	19-E033785	0	<RL	7.9	ns
D. Tanneberg (B)	102	10/14/19	19-E033786	0	<RL	12.3	4.4
R. McGrath	71	10/14/19	19-E033787	0	<RL	13.4	ns
L. McGrath	68	10/14/19	19-E033788	0	<RL	8.7	ns
R. Hansen	52	10/14/19	19-E033789	0	<RL	9.2	ns
WA Dept. of Health Water Quality Criteria (MCL)				NC	10	10	250

"ns" means no sample result reported.

"<RL" means reported value is less than analytical Reporting Detection Limit.

Laboratory analysis conducted by Cascade Analytical, Inc., Wenatchee, WA

CFU/100 ml = colony forming units/100 milliliter

Cl = Chloride, only required pre-application sites

MCL = Maximum contaminant level as designated by WA State Department of Health

NC = No criteria (MCL) stated in WA Department of Health Chapter 246-290 WAC

Table 9: 2019 GROUNDWATER METALS DATA
(For Wells Within One Quarter Mile (1,320 feet) of the Application Site)

Well Location	Well ID	Collection Date	Lab Sample #	As	Cd	Cr	Cu	Hg	Mo	Ni	Pb	Se	Zn
				----------µg/L----------									
G. Johnson (B)	143	10/16/19	19-E033967	0.34	<RL	<RL	4.66	<RL	0.30	<RL	<RL	<RL	5.4
L. Nordby	73	10/15/19	19-E033776, 19-E033968	1.13	<RL	0.43	1.14	<RL	1.37	0.30	0.63	2.21	31.2
G. Davis	139	8/15/19	19-M027951	4.43	<RL	ns	2.75	<RL	5.61	<RL	<RL	3.69	36.8
N. Asmussen	103	10/14/19	19-E033775	1.16	<RL	1.19	186	<RL	6.32	0.96	<RL	1.66	12.2
P. Cook (D. Greer-new)	110	10/14/19	19-E033778	2.18	<RL	1.29	0.74	<RL	18.40	0.83	0.58	2.83	2851
B. Murison	117	10/14/19	19-E033781	<RL	<RL	1.11	<0.2	<RL	1.60	<RL	<RL	<RL	23.2
G. Caille	53	10/14/19	19-E033782	1.38	0.220	2.22	1.55	<RL	3.10	0.74	0.58	2.76	179.2
D. Tanneberg (B)	102	10/14/19	19-E033786	1.83	<RL	1.58	1.77	<RL	2.21	0.65	0.28	1.35	112.8
WA Dept. of Health Water Quality Criteria (MCL)				10	5	100	*(1300)**	2.0	--	100	*(15)**	50	500

"ns" means no sample result reported.

"<RL" means reported value is less than analytical Reporting Detection Limit.

Laboratory analysis conducted by Cascade Analytical, Inc., Wenatchee, WA

MCL means Maximum contaminant level as designated by WA State Department of Health

* No MCL criteria established for this parameter per WDOH Chapter 246-290 WAC. Criteria values used are called "action levels".

Table 10: 2019 SURFACE WATER BACTERIOLOGICAL AND NUTRIENT DATA
(For Surface Waters Within 500 Feet of Application Sites)

Location	Well ID	Collection Date	Lab Sample #	Fecal Coliform *CFU/100 ml*	NH_3-N *mg/L*	NO_3+NO_2 *mg/L*
West Foster Creek	11	10/14/19	19-E033783	97	<RL	<RL

"<RL" means reported value is less than analytical Reporting Detection Limit.
Laboratory analysis conducted by Cascade Analytical, Inc., Wenatchee, WA
CFU/100 ml = colony forming units/100 milliliter

Table 11: 2019 SOIL NUTRIENT DATA (0"-12" Soil Depth)

Site ID	Collection Date	Lab Sample #	NO_3-N *mg/kg*	NH_4-N *mg/kg*	Moisture *inches*	Exch. P *mg/kg*	pH	Org.Matter *%*	SO_4-S *mg/kg*	K_2O *mg/kg*
MT1	4/16/19	S19-04940	3.6	3.8	2.1	22	7.0	1.4	5	ns
RT2	4/16/19	S19-04942	3.9	10.1	2.3	12	8.1	2.4	13	ns
RT7	4/16/19	S19-04944	7.3	5.0	1.6	14	7.6	1.2	10	ns
JT18	4/18/19	S19-05368	2.8	3.1	1.9	7	7.2	1.4	6	512
GC4	4/18/19	S19-05370	2.1	2.6	1.3	24	6.5	1.2	6	214
GC7B	4/18/19	S19-05372	3.0	3.5	1.8	17	6.2	1.9	5	492
JL26	4/18/19	S19-05374	2.3	2.8	1.9	15	6.1	1.3	6	394
DT30 Z1	4/22/19	S19-05792	2.1	1.3	1.2	12	6.5	1.4	5	358
DT30 Z2	4/22/19	S19-05794	2.5	2.3	1.2	13	5.9	1.4	5	332
DT30 Z3	4/22/19	S19-05796	2.4	1.7	1.1	13	6	1.6	5	326
DT30 Z4	4/22/19	S19-05798	4.3	2.6	2.3	10	7.5	1.9	245	550
DT30 Z5	4/22/19	S19-05800	2.4	1.8	3.0	9	7.7	1.9	466	647
PW2	4/25/19	S19-06272	2.9	5.5	1.2	45	7.1	1.8	4	273
MB5	4/25/19	S19-06274	3.1	3.1	1.2	20	6.5	1.1	4	489
ST-1 Z1	5/1/19	S19-06479	2.8	3.6	1.4	20	8.1	1.1	7	464
ST-1 Z2	5/1/19	S19-06481	3.5	5.1	1.7	22	8.1	1.3	6	482
ST-1 Z3	5/1/19	S19-06483	3.3	4.6	1.5	22	7.6	1.4	6	543
ST-1 Z4	5/1/19	S19-06485	3.8	5.9	1.7	23	7.8	1.4	6	534
ST-1 Z5	5/1/19	S19-06487	3.8	4.7	1.8	23	7.6	1.3	6	508
RM-1 Z1 DARK RED	5/9/19	S19-07084	3.6	2.5	1.0	31	6.2	2.1	5	557
RM-1 Z2 ORANGE	5/9/19	S19-07086	2.8	2.1	0.8	26	6.2	1.4	4	517
RM-1 Z3 YELLOW	5/9/19	S19-07088	3.3	1.8	0.8	32	6.1	1.6	3	614
RM-1 Z4 GREEN	5/9/19	S19-07090	3.3	1.9	1.1	32	6.1	1.8	4	681
RM-1 Z5 DARK GREEN	5/9/19	S19-07092	3.9	2.1	1.1	34	6.3	1.8	5	658
RM-4 Z1	5/9/19	S19-07094	3.4	1.8	0.9	9	6.8	1.2	2	510
RM-4 Z2	5/9/19	S19-07096	3.8	2.7	1.0	9	6.2	1.4	2	518
RM-4 Z3	5/9/19	S19-07098	2.3	2.0	0.9	10	6.2	1.1	1	463
RM-4 Z4	5/9/19	S19-07100	2.7	1.5	0.8	8	6.2	1.0	1	445
RM-4 Z5	5/9/19	S19-07102	2.1	1.8	0.8	8	6.6	0.9	1	429
JP-7	5/24/19	S19-07894	6.6	3.9	0.9	22	5.9	1.3	6	475
JP-6	5/24/19	S19-07896	4.9	4.3	1.8	24	6.0	1.5	6	572

Table 11: 2019 SOIL NUTRIENT DATA (0"-12" Soil Depth)

Site ID	Collection Date	Lab Sample #	NO_3-N *mg/kg*	NH_4-N *mg/kg*	Moisture *inches*	Exch. P *mg/kg*	pH	Org.Matter *%*	SO_4-S *mg/kg*	K_2O *mg/kg*
CH-4	5/24/19	S19-07898	2.5	4.6	1.2	12	6.5	1.1	4	314
JA-19	5/24/19	S19-07900	3.0	4.3	1.7	13	6.8	1.2	3	481
RL-6	5/30/19	S19-08187	7.4	3.3	1.2	45	6.5	1.5	6	485
RL-6	5/30/19	S19-08742				40				
DM-9 DRK GREEN	6/18/19	S19-09648	6.6	1.3	1.3	20	6.6	1.4	4	541
DM-9 LHT GREEN	6/18/19	S19-09650	8.2	1.0	1.5	16	7.7	1.3	5	678
DM-9 YELLOW	6/18/19	S19-09652	15.5	1.8	1.3	26	6.9	1.4	10	504
DM-9 ORANGE	6/18/19	S19-09654	8.0	1.4	1.1	20	6.5	1.4	5	491
DM-9 RED	6/18/19	S19-09656	7.8	0.5	1.1	27	6.0	1.2	4	449
DM-15&24 DRK GREEN	6/18/19	S19-09658	6.5	0.2	0.6	15	6.2	1.1	2	213
DM-15&24 LHT GREEN	6/18/19	S19-09660	5.8	0.3	0.5	13	6.0	0.9	2	215
DM-15&24 YELLOW	6/18/19	S19-09662	5.0	0.2	0.5	9	6.7	0.9	2	173
DM-15&24 ORANGE	6/18/19	S19-09664	5.6	0.3	0.5	14	6.3	0.9	3	251
DM-15&24 RED	6/18/19	S19-09666	5.6	0.4	0.6	15	6.5	1.0	6	233
DM-16B	6/18/19	S19-09668	6.6	0.5	0.8	18	6.4	1.3	3	348
MB-28 Z1	6/19/19	S19-09730	13.5	4.0	1.0	18	6.5	1.3	8	569
MB-28 Z2	6/19/19	S19-09732	5.8	2.8	1.3	11	5.8	1.2	167	506
MB-28 Z3	6/19/19	S19-09734	5.0	2.0	0.8	12	6	1.0	6	450
DM7-21 RED	6/27/19	S19-10002	6.8	1.9	0.8	10	7.2	0.6	4	234
DM7-21 DARK GREEN	6/27/19	S19-10004	9.8	3.8	1.2	42	5.8	1.4	10	301
DM7-21 LIGHT GREEN	6/27/19	S19-10006	11.3	4.1	0.9	39	5.4	1.5	9	284
DM7-21 YELLOW	6/27/19	S19-10008	7.2	1.9	0.8	27	6	1.0	5	292
DM7-21 ORANGE	6/27/19	S19-10010	10.4	2.1	0.7	38	5.4	1.3	10	261
JA-18	6/27/19	S19-10012	6.0	19.2	1.0	10	7.4	1.0	3	312
LG21&22 Z1	7/1/19	S19-10075	15.8	3.7	1.4	42	9.4	1.9	6	468
LG21&22 Z2	7/1/19	S19-10077	14.6	4.0	1.6	60	6.3	1.9	6	519
LG21&22 Z3	7/1/19	S19-10079	15.4	2.5	1.4	54	6.0	1.8	7	488
LG21&22 Z4	7/1/19	S19-10081	14.2	0.7	1.2	47	5.9	1.5	4	555
LG21&22 Z5	7/1/19	S19-10083	14.1	4.2	1.3	47	5.5	1.5	4	412
MB-7 Z1	7/2/19	S19-10141	12.1	3.7	1.3	26	6.4	1.6	8	421
MB-7 Z1	7/2/19	S19-10143	9.2	2.0	1.3	22	6.5	1.6	6	416
MB-7 Z1	7/2/19	S19-10145	10.4	2.9	0.8	27	6.5	1.3	5	351

Table 11: 2019 SOIL NUTRIENT DATA (0"-12" Soil Depth)

Site ID	Collection Date	Lab Sample #	NO_3-N *mg/kg*	NH_4-N *mg/kg*	Moisture *inches*	Exch. P *mg/kg*	pH	Org.Matter *%*	SO_4-S *mg/kg*	K_2O *mg/kg*
LG-4&5 Z1	7/2/19	S19-10147	17.0	3.9	1.5	46	6.1	1.9	8	518
LG-4&5 Z2	7/2/19	S19-10149	15.9	4.5	1.5	51	6.2	2.1	6	522
LG-4&5 Z3	7/2/19	S19-10151	16.2	3.8	1.4	50	6	2.0	7	388
LG-4&5 Z4	7/2/19	S19-10153	17.2	2.2	1.2	55	5.9	1.8	8	367
LG-4&5 Z5	7/2/19	S19-10155	24.3	5.2	1.4	49	8.1	1.7	10	526
LT-16	7/3/19	S19-10294	19.3	3.6	1.2	70	6.1	2.2	9	497
LT-4	7/3/19	S19-10296	11.8	5.7	1.1	73	5.9	1.8	9	311
LT-5	7/3/19	S19-10298	13.9	5.7	1.1	76	5.5	1.5	10	347
LT-6	7/3/19	S19-10300	20.3	7.8	1.5	68	6.8	1.9	10	355
JA-1 Z1	7/5/19	S19-10350	25.9	7.6	2.0	43	6.2	1.5	19	671
JA-1 Z2	7/5/19	S19-10352	19.4	6.0	1.9	45	5.7	1.9	10	589
JA-1 Z3	7/5/19	S19-10354	12.0	4.3	1.7	45	6.2	1.5	7	506
JA-1 Z4	7/5/19	S19-10356	19.5	3.4	1.5	45	5.8	1.2	7	481
JA-1 Z5	7/5/19	S19-10358	22.2	6.6	1.8	42	5.9	1.3	8	668
PW-2	7/16/19	S19-10691	15.5	2.1	0.8	49	7	2.1	7	254
CH 6-5	7/24/19	S19-10971	8.2	2.5	1.2	23	5.9	1.1	5	486
LW-9	8/9/19	S19-12085	3.4	3.3	0.2	12	6.9	1.5	5	314
LW-6	8/9/19	S19-12087	2.0	2.5	0.1	8	6.6	1.4	4	281
LW-5	8/9/19	S19-12089	1.3	2.8	0.2	25	7.3	1.4	5	345
LT17 NBS RED	8/21/19	S19-13497	11.6	2.7	0.8	17	6.1	1.2	5	339
LT17 BS RED	8/21/19	S19-13497	27.1	3.7	0.8	38	6.9	1.1	22	378
LT17 BS GRAY	8/21/19	S19-13497	28.2	3.5	1.0	50	7	1.7	42	631
LT17 BS YELLOW	8/21/19	S19-13497	31.4	4.2	1.1	49	6.5	1.6	18	452
JL2	8/21/19	S19-13505	3.8	2.6	0.4	11	7.3	1.5	2	454
JL3	8/21/19	S19-13507	3.1	2.6	0.2	27	6.2	1.6	5	618
RMG6A	9/4/19	S19-15533	4.2	2.4	0.3	36	6.8	1.2	3	379
RMG 6B	9/4/19	S19-15535	5.3	1.8	0.4	41	5.9	1.5	64	433
TL12	9/4/19	S19-15537	9.6	2.1	0.6	33	7	1.2	6	161
GD5	9/4/19	S19-15539	5.4	4.0	0.7	73	5.5	1.7	11	547
GD1EV	9/4/19	S19-15541	11.5	4.9	0.3	89	5.2	2.2	22	440
JL5	9/4/19	S19-15543	13.2	1.8	0.3	19	6.7	1.4	2	473
RMG6B	9/16/19	S19-16936				39				

Table 11: 2019 SOIL NUTRIENT DATA (0"-12" Soil Depth)

Site ID	Collection Date	Lab Sample #	NO_3-N *mg/kg*	NH_4-N *mg/kg*	Moisture *inches*	Exch. P *mg/kg*	pH	Org.Matter *%*	SO_4-S *mg/kg*	K_2O *mg/kg*
VB2	9/16/19	S19-16937	3.6	1.6	0.9	26	6.1	2.2	6	500
VB4	9/16/19	S19-16939	2.9	2.5	0.4	20	6.3	2.1	3	390
LW8	9/16/19	S19-16941	2.1	1.3	0.8	5	7.5	1.2	2	283
JL8	9/16/19	S19-16943	3.4	1.4	0.6	15	6	1.6	3	537
JL4	9/16/19	S19-16945	5.1	1.6	0.6	17	7	1.2	6	550
JD-1	9/18/19	S19-17098	3.6	0.6	0.2	8	7.9	1.6	1	282
TL-10	9/18/19	S19-17100	4.3	2.7	0.3	16	7.7	2.4	2	310
RW2	9/27/19	S19-18365	12.0	22.5	1.1	50	6.1	1.6	8	315
RW9	9/27/19	S19-18367	8.2	12.2	1.5	51	7.1	1.4	14	425
RW7	9/27/19	S19-18369	5.4	4.4	1.1	45	6.5	1.4	6	335
RW10	9/27/19	S19-18371	7.0	6.3	1.1	62	6.6	1.3	8	334
RW12	9/27/19	S19-18373	7.0	4.8	1.0	49	6.8	1.1	6	287
JL7	9/30/19	S19-18497	10.4	1.7	0.9	13	7.1	1.5	1	555
JL24	9/30/19	S19-18499	6.5	2.5	1.1	18	7.3	1.5	4	647
JL17	9/30/19	S19-18501	7.3	2.8	0.9	14	6.3	1.7	2	599
RMG1	10/9/19	S19-19445	4.8	3.0	1.0	50	5.8	1.7	4	265
RMG3	10/9/19	S19-19447	4.1	2.6	1.1	35	6	1.4	3	268
JP5	10/9/19	S19-19449	5.5	2.3	0.8	36	6.2	1.5	5	546
RMG4	10/14/19	S19-19983	4.3	3.0	1.1	35	6.6	2.2	1	350
RMG1	10/14/19	S19-19985				36				
MB1 Z1	11/13/19	S19-23363	7.7	4.1	1.1	34	7.3	1.3	21	623
MB1 Z2	11/13/19	S19-23365	5.9	2.0	1.0	25	7.3	1.1	16	507
MB1 Z3	11/13/19	S19-23367	6.7	2.6	1.1	31	7.3	1.2	39	516
MB1 Z5	11/13/19	S19-23369	17.8	4.8	1.1	26	7.2	1.1	13	600
MB8	11/13/19	S19-23371	10.4	2.3	0.9	19	6.4	1.0	11	570
MB1 Z4	11/13/19	S19-23373	9.5	3.8	0.8	27	8.3	1.2	13	573
TJL1	11/13/19	S19-23375	4.2	1.9	1.2	7	7.4	1.1	3	354
JL18	11/13/19	S19-23377	6.1	1.2	1.1	8	7	1.5	1	542
JL16	11/13/19	S19-23379	5.6	1.1	1.2	10	6.9	1.3	2	477
GC8	11/13/19	S19-23381	1.8	1.9	1.3	28	6.5	1.7	6	417
JA20	11/13/19	S19-23383	2.5	1.2	1.3	11	6.6	1.1	2	504
RMG5	11/15/19	S19-23637	2.4	2.9	1.0	33	6	1.4	5	257

Table 11: 2019 SOIL NUTRIENT DATA (0"-12" Soil Depth)

Site ID	Collection Date	Lab Sample #	NO_3-N *mg/kg*	NH_4-N *mg/kg*	Moisture *inches*	Exch. P *mg/kg*	pH	Org.Matter *%*	SO_4-S *mg/kg*	K_2O *mg/kg*
JS5	11/15/19	S19-23639	2.7	4.8	1.4	29	6.4	1.8	4	499
DM27	11/15/19	S19-23641	4.6	2.6	0.9	19	6.4	1.3	5	336
JS2	11/15/19	S19-23643	2.4	2.2	1.1	26	6.1	1.3	4	285
JS3	11/15/19	S19-23645	2.3	2.7	1.2	27	6.7	1.4	4	360
JS4	11/15/19	S19-23647	1.8	3.1	1.2	23	7.3	1.2	4	372
JS6	11/15/19	S19-23649	4.0	2.4	1.1	28	6.3	1.2	4	381
JL15	11/18/19	S19-23708	6.3	1.6	1.2	19	6.8	1.0	3	346
JL10	11/18/19	S19-23710	10.7	3.0	1.1	23	7.1	1.2	13	409
GYP9	11/20/19	S19-23798	3.0	0.7	1.9	8	7.6	1.4	2	347
MB10	11/26/19	S19-23958	5.8	3.9	1.0	14	6.8	1.2	6	508
MB14 Z1	11/16/19	S19-23960	3.1	4.9	1.5	24	7.3	1.7	17	609
MB14 Z2	11/16/19	S19-23962	2.9	3.5	1.3	13	7.1	1.5	6	561
MB14 Z3	11/16/19	S19-23964	47.3	4.8	1.7	21	7.7	1.1	115	531

	NO_3-N	NH_4-N	Moisture	Exch. P	pH	Org.Matter	SO_4-S	K_2O
MIN	1.3	0.2	0.1	5.0	5.2	0.6	1.0	161.0
MAX	47.3	22.5	3.0	89.0	9.4	2.4	466.0	681.0
AVG	8.1	3.3	1.1	28.2	6.6	1.4	14.2	438.5
COUNT	137	137	137	140	137	137	137	134

"ns" means no sample result reported.

Soil analysis by Soiltest Farm Consultants, Moses Lake, WA

Table 12: 2019 SOIL METALS DATA (0"-12" Soil Depth)

Site ID	Collection Date	Lab Sample #	As	Cd	Cr	Cu	Hg	Mo	Ni	Pb	Se	Zn
			----------mg/kg----------									
RT7	4/16/19	S19-04944	4.0	<RL	6.4	13.4	0.0080	3.80	10.3	1.2	<RL	46.2
JL26	4/18/19	S19-05374	3.3	<RL	17.1	14.8	0.0150	0.20	14.8	3.1	<RL	34.8
DT30 Z1	4/22/19	S19-05792	3.9	<RL	10.3	13.4	0.0100	0.40	11.9	3.0	<RL	38.2
RM-4 Z1	5/9/19	S19-07094	5.1	<RL	10.0	12.9	0.0090	0.40	10.9	3.2	<RL	40.9
CH-4	5/24/19	S19-07898	3.6	<RL	7.7	11.3	<RL	0.20	7.9	1.8	<RL	33.6
JA-19	5/24/19	S19-07900	3.7	<RL	6.8	11.8	0.0090	0.10	7.5	1.5	<RL	37.4
DM-24	6/18/19	S19-9670	4.2	<RL	8.6	8.2	0.0060	0.20	8.5	1.8	<RL	21.5
JA-18	6/27/19	S19-10012	4.3	<RL	7.9	10.9	0.0070	0.40	8.4	1.8	<RL	31.9
CH 6-5	7/24/19	S19-10971	4.4	<RL	7.4	13.0	0.0850	0.10	8.1	2.2	<RL	42.1
JL2	8/21/19	S19-13505	4.4	<RL	13.7	16.1	0.0090	0.20	13.4	3.1	<RL	30.5
JL3	8/21/19	S19-13507	4.2	<RL	16.8	16.6	0.0150	0.30	13.2	4.0	<RL	34.6
JL5	9/4/19	S19-15543	4.5	0.100	15.3	17.3	0.1700	0.30	11.1	4.3	<RL	36.3
LW8	9/16/19	S19-16941	2.9	<RL	12.0	13.4	0.0090	0.10	11.7	2.2	<RL	26.5
JL8	9/16/19	S19-16943	3.4	<RL	18.9	16.7	0.0170	ns	14.7	3.5	<RL	36.0
JD-1	9/18/19	S19-17098	4.1	<RL	12.3	15.3	0.0160	0.30	12.8	2.6	<RL	28.8
JL7	9/30/19	S19-18497	5.0	<RL	14.2	16.9	0.0210	0.20	13.0	3.7	<RL	36.4
JL24	9/30/19	S19-18499	4.7	<RL	16.4	17.5	0.0140	<RL	14.2	4.4	<RL	37.6
JL17	9/30/19	S19-18501	4.0	<RL	15.7	17.2	0.0150	0.20	13.2	3.5	<RL	38.0
TJL1	11/13/19	S19-23375	3.5	<RL	9.4	13.3	0.0060	<RL	10.1	2.2	<RL	23.5
JL18	11/13/19	S19-23377	4.5	<RL	15.0	18.3	0.0140	0.10	14.0	3.9	<RL	32.7
JL16	11/13/19	S19-23379	5.1	<RL	16.9	19.7	0.0380	0.20	14.5	4.0	<RL	32.4
JA20	11/13/19	S19-23383	4.2	<RL	7.2	11.8	0.0140	0.10	7.8	2.0	<RL	35.0
JL15	11/18/19	S19-23708	5.3	<RL	16.7	18.4	0.0140	0.20	15.6	3.3	<RL	40.7
JL10	11/18/19	S19-23710	5.9	<RL	19.7	21.2	0.0180	0.20	18.3	3.5	<RL	39.6
GYP9	11/20/19	S19-23798	3.8	<RL	14.3	15.2	0.0110	ns	13.4	3.0	<RL	30.0

	As	Cd	Cr	Cu	Hg	Mo	Ni	Pb	Se	Zn
MIN	2.9	<RL	6.4	8.2	0.006	<RL	7.5	1.2	<RL	21.5
MAX	5.9	<RL	19.7	21.2	0.170	3.8	18.3	4.4	<RL	46.2
AVG	4.2	<RL	12.7	15.0	0.023	0.4	12.0	2.9	<RL	34.6
COUNT	25	25	25	25	25	23	25	25	25	25
RESULTS >RL	25	1	25	25	24	21	25	25	0	25

"ns" means no sample result reported.

"<RL" means reported value is less than analytical Reporting Detection Limit.

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