



STATE OF WASHINGTON
DEPARTMENT OF HEALTH
SOUTHWEST DRINKING WATER OPERATIONS
P.O. Box 47823 Olympia, Washington 98504-7823
PHONE (360) 236-3030 FAX (360) 236-3029

SANITARY SURVEY REPORT

Sanitary surveys are the Office of Drinking Water's (ODW) way to inspect public water systems through a field visit. We are also able to offer technical assistance to help improve system operations and ensure public health is protected.

This report documents the findings for the following water system.

January 12, 2022	Estates Inc. Water System ID #081669	
Dale Metzger Estates Inc. Post Office Box 92 Sequim, Washington 98382	County:	Clallam
	System Type:	Community
	Operating Permit Color:	Green
	Surveyor:	Jocelyne Gray
	Water System Attendees:	Dale Metzger Culley Lehman
	County Health Attendees:	Sue Waldrip Ben Majors
	Inspection Date:	December 8, 2021

Significant Deficiencies and Findings are assigned a due date. If you are not able to complete the work by the assigned date, you MUST submit a Corrective Action Plan describing how and when you will complete the work. Failure to respond by the date below will result in further compliance actions in accordance with WAC 246-290-050.

As you correct the items, send me documentation that demonstrates the items have been completed as directed. Include the system name, ID number, item #, and the date the deficiencies were corrected. You can send them to me by e-mail at jocelyne.gray@doh.wa.gov or by mail at PO Box 47823, Olympia, Washington 98504-7823.

SIGNIFICANT DEFICIENCIES* - COMPLETED DURING THE SURVEY

1. Electrical wires entering Well 1 needs to be sealed. Wires were sealed during inspection.

SIGNIFICANT FINDINGS - BY FEBRUARY 11, 2022**

2. Submit a corrective action plan for engineering design and construction of the proposed tank. Tank 2, the larger tank, has several locations on the north side and one on the east side that are leaking. ODW is aware Cascadia Water plans to replace both buried reservoirs with an above ground storage tank.

If a new tank is not proposed, hire a qualified structural inspector to evaluate the reservoir. Submit a copy of the inspection results and a corrective action plan describing how you will address the inspector's findings.

OBSERVATIONS

3. Update the Coliform Monitoring Plan to meet the Revised Total Coliform Rule and Ground Water Rule regulations, WAC 246-290-300 and -320. Contact Charese Gainor at (360) 236-3045 or by e-mail at Charese.gainor@doh.wa.gov for assistance.
4. Ensure cross connection control assemblies within the water system, including on the customer's side of the meter, are tested annually by a certified Backflow Assembly Tester, WAC 246-290-490. Ensure yard hydrants with weep holes have cross connection control assemblies.

RECOMMENDATIONS

5. Lead and copper regulations have changed. The water system is required to inventory all service line materials and determine if service lines were ever downstream of a lead component or lead water line. There are new tiering criteria from EPA so lead and copper sampling sites should be re-evaluated. See attached lead and copper documents.
6. If the water system does not expect to expand beyond the approved 480 connections, it can convert the Water System Plan (WSP) to a Small Water System Management Program (SWSMP). ODW is aware a WSP is under development. Please contact Mark Mazeski, Regional Planner, at mark.mazeski@doh.wa.gov or (360) 236-3038 to discuss planning requirements for this system.
7. Please develop an Operations & Maintenance Program along with an Emergency Response Plan.

SYSTEM INFORMATION

This is a community water system that currently serves 367 connections including one school and a park; the remaining connections are single-family residences. The system is approved to serve 480 connections. This approval was established through a water system plan in 1994 that defined the capacity-limiting factor as the available standby storage and the booster pump capacity.

The original water system was constructed in the 1970s to serve Mountain Park; and Well 2 was drilled. Dungeness Estates was later added. In 1982, the system expanded to serve Blue Ribbon Farms and County Park; and Well 1 was drilled. Well 2 was deepened in 1983. The two wells pump into the reservoirs that are intertied together. Booster pumps then move water to the distribution system. The distribution is made of 4- to 6-inch PVC and provides some fire flow.

SECTION 1: SOURCE

There are two wells that create a wellfield (S03). Well 1 (S01) is drilled to 607 feet deep with a 4-inch casing and located next to the small reservoir and access road. Well 2 (S02) is drilled to 436 feet deep and located behind Well 1 and next to the storage shed. A 6-inch casing from 0 to 437 feet below ground surface and a 5-inch casing from 433 feet to 436 feet below ground surface. Both wells pump into the reservoirs. Well 1 pumps into the smaller reservoir and Well 2 pumps into the larger reservoir. The access road is off Ridge View Drive and the site is not fenced. Each well has pump capacity of 180 gallons per minute (gpm).

There is a portable generator that can power either one of the submersible pumps or the fire pump or two of the distribution pumps. The operator manually switches it as needed.

The sanitary control area (SCA) includes a garage that houses various types of equipment, such as a lawnmower. The operator has moved all extra fuel to be stored somewhere else and is not storing any other chemicals in this garage for increased SCA protection. The homes in the area have septic systems.

Source ID #	Name	Description	Ecology Tag #	Listed on WFI		Approved by ODW	
				Yes	No	Yes	No
01	Well #1 WW	4-inch Casing Drilled In 1982 to 607 Feet, 180 GPM, Wellfield S03	ACA573	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
02	Well #2 WW	6-inch Casing Drilled In 1974, Deepened In 1983 to 436 Feet, 180 GPM, Wellfield S03, 7.5 HP	ACA574	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

WELLHEAD	Source ID #01	Source ID #02	Yes		No	
			Yes	No	Yes	No
*Wellcap sealed	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>		
*Openings sealed	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>		
*Vent screened	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>		
*Protected from flooding	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>		
**Raw water sample tap	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>		
**Protected from unauthorized access	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>		
Structure in good condition	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>		
Sanitary control area free of contaminants (*If no, is there an approved mitigation plan for the contaminant identified)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>		
**Protected from physical damage	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>		

Electrical wires entering Well 1 need to be sealed. Wires were sealed during inspection.

WELL PUMP EQUIPMENT	Source ID #01	Source ID #02	Yes		No	
			Yes	No	Yes	No
*Pump control valve or vacuum relief valve with a protected air gap at discharge	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>		
Generator available	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>		
Generator has automatic startup	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		

The generator is currently sized to run just the booster pumps for Tank 1, which requires water conservation during power outages. A larger generator is on order that can run both wells and booster pumps without conservation. This increases system reliability. Due to supply chain issues worldwide, delivery and installation are delayed.

SECTION 2: DISINFECTION

No long-term treatment is provided in this system. Chlorine bleach is available if the water system has a total coliform positive sample.

SECTION 3: OTHER TREATMENTS

There is no other treatment on this system. Cascadia Water is evaluating water quality to determine need for iron and manganese removal.

SECTION 4: DISTRIBUTION SYSTEM

The distribution consists of 4- to 6-inch PVC lines constructed in the 1970s and 1980s; the system provides limited fire flow. All customers are supplied by the booster pumps and there is only one pressure zone. The distribution has some looping. Pressures at the pump house vary between 40 and 60 pounds per square inch (psi). The highest distribution pressure is around 74 psi.

FEATURES	Yes	No
Service area and facility map	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Service meters (reading frequency)	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Water system leakage (%)	6.3%	

Annual water leakage has increased. The water operator repaired several leaks and a source meter this year so the 2021 leakage should decrease. The 3-year annual average is less than 10 percent, which meets the state standard.

CROSS CONNECTION CONTROL (Community Systems)	Yes	No
System has enabling authority	<input checked="" type="checkbox"/>	<input type="checkbox"/>
High hazards identified	<input type="checkbox"/>	<input checked="" type="checkbox"/>
High hazards protected	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Annual testing	<input type="checkbox"/>	<input checked="" type="checkbox"/>
CCS on staff or under contract	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Cross connections observed have been eliminated	NA	

Customer cross connection control survey is planned for 2022. All known non-sanitary (have a weep-hole drain) yard hydrants need backflow assemblies. Cascadia Water's cross connection control program allows for service disconnection if a customer does not have a backflow assembly tested annually. Testing is the responsibility of the customers.

SECTION 5: FINISHED WATER STORAGE

Two partially buried concrete tanks provide a total of 180,000 gallons of storage to the system. The tanks are tied together and have only one overflow. The tanks are connected to Cascadia Water's SCADA system, which allows for remote monitoring by the owner and operator.

Reservoir	Reservoir Name	Description	Year Built	Total Volume (Gal)
1	Tank 1	Partially Buried Concrete Tank	1972	30,000
2	Tank 2	Partially Buried Concrete Tank	1981	150,000

TOP OF RESERVOIR	Res #1		Res #2	
	Yes	No	Yes	No
**Hatch: Locked	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
*Hatch: Watertight seal or gasket	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Hatch: Over-lapping cover	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
*Screened air vent	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
*Openings sealed/protected	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

FEATURES	Res #1		Res #2	
	Yes	No	Yes	No
Protected drain outlet		None		None
*Protected overflow outlet		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>
*Overflow line discharges into a sanitary sewer with an air gap		NA		NA
**Protected from unauthorized entry		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>

According to the system drawings, the reservoirs have drains, but they have never been located. Only Tank 1 appears to have a drain. The tanks can be emptied down to about a foot from the bottom with the booster pumps and there is an internal sump where a sump pump can be placed for emptying most of the water out.

MAINTENANCE	Res #1		Res #2	
	Yes	No	Yes	No
Frequency of cleaning	6 Years		6 Years	
Frequency of routine site visit	3x/Week		3x/Week	
**Structure in good condition	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Tank 2, the larger tank, has several locations on the north side and one on the east side that are leaking. ODW is aware Cascadia Water plans to replace both buried reservoirs with an above ground storage tank. Submit a corrective action plan for engineering design and construction of the proposed tank. If a new tank is not proposed, hire a qualified structural inspector to evaluate the reservoir. Submit a copy of the inspection results and a corrective action plan describing how you will address the inspector's findings.

SECTION 6: PRESSURE TANKS

This system has two hydropneumatic tanks. One is 940 gallons and the other is 1300 gallons.

Site	Location	# and size of Hydropneumatic Tanks
1	Pump Station	1 – 940 gal, 1 – 1300 gal

HYDROPNEUMATIC	Site: 1	
	Yes	No
Pressure relief valve	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Pressure gauge	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Water level sight glass	<input type="checkbox"/>	<input checked="" type="checkbox"/>
**Oilless Air compressor	<input checked="" type="checkbox"/>	<input type="checkbox"/>

BUILDINGS/ENCLOSURE	Site: 1	
	Yes	No
**Facility secure	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Structure in good condition	<input checked="" type="checkbox"/>	<input type="checkbox"/>

SECTION 7: BOOSTER PUMPS AND FACILITIES

The pump house has three 5-horsepower (hp) service pumps and one 10-hp fire pump controlled by the distribution system pressure. The pumps are attached to the top of the reservoirs. Two pumps draw water from each reservoir and are alternated manually. Pumps 1 and 2 pull from Tank 1. Pumps 3 and 4 pull from Tank 2.

Facility	Name	Description	Total Capacity (gpm)
1	Pump Station	(3) 5 HP, 100 GPM Service Pumps; (1) 10 HP, 250 GPM Fire Pump	550

BOOSTER PUMPS	Facility 1	
	Yes	No
Number of pumps	4	
Pressure relief valve	<input checked="" type="checkbox"/>	<input type="checkbox"/>
*Functional pump and pump controls	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Equipment in good condition	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Generator available	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Generator has automatic startup	<input checked="" type="checkbox"/>	<input type="checkbox"/>

The existing generator only runs the booster pumps for Tank 1.

BUILDINGS/ENCLOSURE	Facility 1	
	Yes	No
**Facility secure	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Structure in good condition	<input checked="" type="checkbox"/>	<input type="checkbox"/>

SECTION 8: WATER QUALITY MONITORING AND REPORTING

Refer to the Water Quality Monitoring Schedule for your monitoring requirements and status. If you have any questions on source monitoring, please contact Sophia Petro at (360) 236-3046.

CHEMICAL	
Sample Point	Description
1	Wellfield S03 sample tap on the pressure tanks' inlet

CHEMICAL	Sample Point 1		
	Yes	No	
Monitoring adequate	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
ODW WQ data reviewed	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Sample collection sites correct	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
System has prior:			
<input type="checkbox"/> Nitrate results above 5 mg/L			
<input type="checkbox"/> Nitrite results above 0.5 mg/L			
<input type="checkbox"/> Primary MCL			
<input type="checkbox"/> Secondary MCL exceedance(s)			
<input type="checkbox"/> Organic detections			
<input type="checkbox"/> Other			

COLIFORM	Yes	No
Monitoring adequate	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Monitoring plan adequate	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Monitoring plan followed	<input checked="" type="checkbox"/>	<input type="checkbox"/>
# of Treatment Technique Violations (TTV)	0	
# of <i>E. coli</i> MCL Violations	0	

Update the Coliform Monitoring Plan to meet the Revised Total Coliform Rule and Ground Water Rule regulations. Contact Charese Gainor at (360) 236-3045 or by e-mail at charese.gainor@doh.wa.gov for assistance.

LEAD & COPPER	Yes	No
Monitoring adequate	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Monitoring plan adequate	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Monitoring plan followed	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Results below action level	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Lead and copper regulations have changed. The water system is required to inventory all service line materials and determine if service lines were ever downstream of a lead component or lead water line. There are new tiering criteria from EPA so lead and copper sampling sites should be re-evaluated. See attached lead and copper documents.

SECTION 9: SYSTEM MANAGEMENT AND OPERATIONS

The system is privately owned and managed by Cascadia Water. The ownership changed since the last survey.

If the water system does not expect to expand beyond the approved 480 connections, it can convert the WSP to a SWSMP. Please contact Mark Mazeski, Regional Planner, at mark.mazeski@doh.wa.gov or (360) 236-3038 to discuss planning requirements for this system. It is the understanding of ODW that a WSP is under development.

Please develop an Operations & Maintenance Program along with an Emergency Response Plan.

PROJECT/PLANNING	Yes	No
System approved	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Current WSP	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Year WSP approved	1994	

REPORTING	Yes	No	N/A
WFI reviewed and updated with purveyor	<input checked="" type="checkbox"/>	<input type="checkbox"/>	---
Consumer confidence report (Community only)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Water use efficiency report (Municipal Water Suppliers)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Cross connection control annual report (> 1000 conn)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

OPERATOR CERTIFICATION

This system is required to have one Water Distribution Manager (WDM1) certified operator. Dale Metzger fulfills this position. He assisted the previous owner with water system management. The current owners retained his services for system operations.

If you have any questions or this information is inaccurate, please contact Operator Certification at (800) 525-2536.

Name of Operator	Certification Number	Certifications	Mandatory Operator
Dale Metzger	011895	WDM2, CCS	<input checked="" type="checkbox"/>

WDS-Water Distribution Specialist; WDM-Water Distribution Manager; WTPO-Water Treatment Plant Operator, BTO-Basic Treatment Operator; CCS-Cross Connection Specialist; BAT-Backflow Assembly Tester

OPERATIONS	Yes	No
Operational records maintained	<input checked="" type="checkbox"/>	<input type="checkbox"/>

OPERATIONS	Yes	No
Current survey has significant deficiencies identified	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Previous survey deficiencies/findings corrected, if no list below	<input checked="" type="checkbox"/>	<input type="checkbox"/>

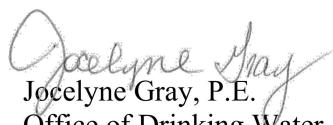
CLOSING

Your system has significant deficiencies identified in this current survey. You can qualify for the reduced frequency under WAC 246-290-416 of once every 5 years, if all the identified significant deficiencies are addressed by the due date in this report.

Regulations establishing a schedule of fees, including fees for sanitary surveys, were adopted March 18, 2012 (WAC 246-290-990). The amount due is \$714. An itemized worksheet is enclosed with the invoice.

If you have any questions, please contact me at (360) 236-3034 or by e-mail at jocelyne.gray@doh.wa.gov.

Sincerely,


Jocelyne Gray, P.E.
Office of Drinking Water, Acting Assistance Regional Manager

Enclosures

cc: Culley Lehman, Cascadia Water
Jeff Tasoff, DCG Engineers
Clallam County Health & Humans Services



Water Facilities Site



Large Storage Tank - Ponding



Large Storage Tank Vent



East Side Large Storage Tank



North Side Large Storage Tank



North Side Large Storage Tank



Well 1 With Sealed Wires



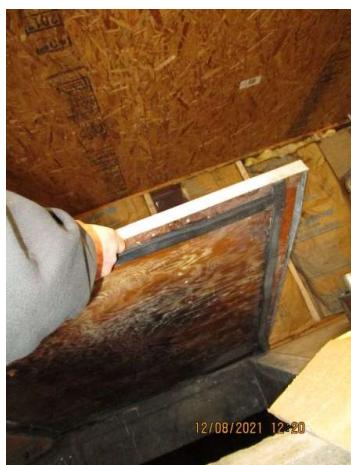
Well 2



Pressure Tanks



Small Storage Tank Vent



Small Storage Tank Hatch Gasket



Booster Pumps for Small Storage Tank



Large Storage Tank Hatch Gasket



Oilless Air Compressor for Pressure Tanks