Appendix J
Water Quality Monitoring

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SAMMAMISH PLATEAU WATER & SEWER DISTRICT
KING COUNTY, WASHINGTON

RESOLUTION NO. 4780

RESOLUTION OF THE BOARD OF COMMISSIONERS OF SAMMAMISH PLATEAU WATER AND SEWER DISTRICT, KING COUNTY, WASHINGTON, AUTHORIZING AND ADOPTING

DRINKING WATER QUALITY POLICY STATEMENT

WHEREAS, the Sammamish Plateau Water and Sewer District is an RCW Washington Title 57 Water-Sewer District serving potions of the Cities of Sammamish and Issaquah, and unincorporated King County; and

WHEREAS, the quality of the drinking water the District provides its customers is paramount; and

WHEREAS, the District Board of Commissioners has determined the need to adopt a Drinking Water Quality Policy Statement to establish Board policy in relation to drinking water standards, groundwater and aquifer protection, and outreach an transparency; and

WHEREAS, said Drinking Water Quality Policy Statement is attached to this Resolution as Exhibit A; now, therefore,

BE IT RESOLVED, by the Board of Commissioners of Sammamish Plateau Water & Sewer District, King County, Washington, as follows:

1. The Board of Commissioners of Sammamish Plateau Water and Sewer District hereby adopts the Drinking Water Quality Policy Statement (Exhibit A).

ADOPTED by the Board of Commissioners of Sammamish Plateau Water and Sewer District, King County, Washington, at a regular open public meeting held on the day 7th of May 2018.

Individual Commissioner's Vote on this Resolution:

Approved: ✓
Opposed:
Abstained:
Absent:

Approved: ✓
Opposed:
Abstained:
Absent:

Approved: ✓
Opposed:
Abstained:
Absent:

Approved: ✓
Opposed:
Abstained:
Absent:

Lloyd Warren, President and Commissioner

Mahbubul Islam, Vice President and Commissioner

Mary Shustov, Secretary and Commissioner

Tom Harman, Commissioner

EXHIBIT A

DRINKING WATER QUALITY POLICY STATEMENT

Sammamish Plateau Water and its customers derive its drinking water from a combination of surface water and groundwater resources. In 2017, the District provided approximately 1.9 billion gallons of water to meet the needs of its customers. Approximately 81% (1.54 billion gallons) were pumped from the District's independent groundwater wells, and approximately 19% (0.36 billion gallons) came from the regional (CWA/SPU) surface water supply. The District is fortunate to have secured a diverse and long term water supply for current and future needs. However, protecting the quality of the water provided to our customers is paramount to the District's Board of Commissioners. This is particularly relevant to our ground water resources which, unlike regional surface water, are directly under the purview of the District. In recognition of the District's responsibility to its customers, the Board has established the following policies in regards to managing and preserving drinking water quality on behalf of its ratepayers:

- Drinking Water Standards:

  Drinking water quality standards are established nationally by the United States Environmental Protection Agency (USEPA), and at the state level by the Washington Department of Health (WDOH). Standards are established on the basis of best available science, and may change over time. The District recognizes the authority of these agencies and is committed to conducting all testing and monitoring to ensure, where possible, that the quality of its water meets or exceeds state and federal standards. It is further recognized that water quality and standards evolve over time. An example is the EPA's unregulated contaminant monitoring reporting for compounds of an evolving nature which may impact drinking water. The District will defer to the USEPA and WDOH for evolving standards, while exercising diligence within this guidance to identify and mitigate adverse impacts to water quality which may pose health risks to its customers. It is anticipated that with advances in laboratory testing, and the further identification of potential contaminants, additional water sampling and treatment considerations may be required. It should also be noted that the District is solely responsible for maintaining compliance with water quality standards for its groundwater resources, and that the City of Seattle and the Cascade Water Alliance bear responsibility for policy and compliance as it relates to surface water from the regional supply system. As a matter of exercising ongoing diligence, the District will consider future exceeding state and/or federal drinking water standards after evaluating health impacts, treatment and/or mitigation options, and costs.

- Groundwater and Aquifer Protection

  The District recognizes the value of its groundwater resources and the need to preserve groundwater and the aquifer which supports it as sustainable resources. As such the District will engage in proactive aquifer and water quality monitoring. The District will maintain data on groundwater levels within the aquifer, and monitor the water quality background of raw groundwater. Understanding the fluctuations in groundwater levels provides informative data regarding seasonal changes in groundwater depth, and supports water rights management, and long term changes in the aquifer which may affect groundwater supply. Background water quality monitoring supports a proactive approach in assessing water quality trends, including supply management affecting water quality.

  Land use and development impacts, particularly stormwater management, pose unique risks to the long-term health of the aquifer. A lack of clearly aligned ordinances and administrative codes, meant to protect groundwater, pose unique challenges and political dynamics. Since land use and stormwater management fall under the jurisdiction of other units of government, the District will be an advocate for groundwater interests and sustainability with land use and stormwater management agencies. The District will monitor the codes and policies of the local land use agencies, and collaborate with those agencies on codes and initiatives which provide long term aquifer protection. The District will also collaborate with other water purveyors to advance county and state regulations and polices intended to protect groundwater and the aquifer from adverse impacts of development, stormwater management, and reclaimed water.

- Outreach and Transparency

  The District's efforts to protect the aquifer and its groundwater resources will be based upon full transparency, and will include regular outreach to inform its customers. Outreach will be implemented through the District's annual communications plan objectives, which has identified water stewardship and transparency as key message themes. In conjunction with its outreach program, the District will also engage its customers to solicit feedback and conversation regarding water quality, including enhancing the quality of drinking water above state and/or federal standards.

In adopting this Drinking Water Quality Policy Statement, the Board of Commissioners recognizes the evolving and dynamic environment within which a public water utility operates. In meeting the primary needs and interests of those it serves, the District will continue to be an advocate and steward for its customers and drinking water quality, while conducting business in an open, transparent, and engaging manner.

Sammamish Plateau Water

Coliform Monitoring Plan

Meets the requirements of the 2016 Revised Total Coliform Rule
Revised November 6, 2017

Introduction and Objectives

Sammamish Plateau Water and Sewer District (the District) developed this Coliform Monitoring Plan (Plan) as part of its most recent Water Comprehensive Plan Update. This Plan has been developed to meet requirements in the Washington Administrative Code (WAC) 246-290 that apply to Group A Public Water Systems.

On April 1, 2016, the U.S. Environmental Protection Agency (EPA) revised the 1989 Total Coliform Rule. The Washington Department of Health (DOH) will implement the rule, which will continue to protect public health by ensuring the quality of the drinking water distribution system by monitoring for the presence of bacteria. Group A water systems finding microbial contamination must find and fix problems that allow contamination to enter a system. Under the Revised Total Coliform Rule (RTCR), if a water system has unsatisfactory coliform sample results, water suppliers must submit a water system assessment report to DOH and immediately correct the problem.

While drinking water systems do not have the ability to evaluate the microbial quality of all water in all locations of their distribution system in a cost-effective manner, a coliform monitoring program allows systems to evaluate water quality in many locations throughout their system on a monthly basis.

This Plan has been developed to meet the following objectives:

- To meet the 2016 DOH Revised Total Coliform Rule (RTCR) standards.
- To ensure representative routine coliform sampling.
- To establish repeat sampling sites both upstream and downstream of the routine sites.
- To provide documentation of how the District conducts coliform sampling.

- To enhance the District's water quality monitoring.

System Information

Sammamish Plateau Water and Sewer District (Water System ID# 409009) is located in King County, Washington. This special purpose district public water supply system serves 63,148 customers (as of December 2016) via groundwater sources and interties, as well as surface water from regional and adjacent purveyors. Table 1 lists each source, type of use, treatment, and capacity, as presented in the Water Facilities Inventory. The District also has two interties with Northeast Sammamish Sewer and Water District and two interties with Cascade Water Alliance for the purposes of drinking water supply.

Table 1. The District's Groundwater Sources of Supply and Treatment

Groundwater Supply Source	Type	Treatment	Capacity (gpm)
Well 1R	Permanent	Corrosion Control, Fluoridation, Chlorination	500
Well 2.1	Permanent	Mn Filtration, Corrosion Control, Fluoridation, Chlorination	300
Well #2.2	Permanent	Mn Filtration, Corrosion Control, Fluoridation, Chlorination	500
Well #4R	Permanent	Mn Filtration, Ferric Chloride, Fluoridation, Chlorination	1450/1800
Well #7	Permanent	Corrosion Control, Fluoridation, Chlorination	2,000
Well #8	Permanent		3,200
Well #9	Seasonal		2,200
Well #10	Permanent	Corrosion Control, Fluoridation, Chlorination	500
Well #11.1	Permanent	Mn Filtration, Ferric Chloride, Fluoridation, Chlorination	389
Well #11.2	Permanent		1,450/1,600
Well #12R	Permanent	Mn Filtration, Fluoridation, Chlorination	200
Well #13R	Permanent	Mn Filtration, Fluoridation, Chlorination	260

The District's distribution system is separated into two hydraulically separate zones, the Plateau Zone and Cascade View Zone. No piping connects these zones.

Plateau Zone: As of 2016, this zone served 17,498 service connections. The District utilizes six storage tanks: a 3 million gallon (MG) tank, a 2 MG tank, two 4 MG tanks, a 7 MG tank, and a 2.25 MG tank. The Plateau Zone is divided into five major pressure zones that includes several smaller zones created to serve areas with variable topography. Additionally, 5 booster pump stations and 41 pressure-reducing valves serve this area.

Cascade View Zone: As of 2016, this zone served 705 service connections. The District utilizes two storage tanks: a 600,000-gallon tank and 275,000-gallon tank. The Cascade View Zone is divided into three primary pressure zones and two smaller zones. Additionally, two booster pump stations and five pressure-reducing valves serve this area.

The District also receives surface water from the Cascade Water Alliance (CWA) through two regional interties:

- CWA Regional North intertie located at 24398 NE 80th Street, Redmond in the Cascade View Zone (Sample Station 62.) Water is wheeled through the City of Redmond system.
- CWA Regional South connection located at 940 1st Avenue NE in Issaquah, serving the Plateau Zone (Sample Station 63.)

The District both provides water to and receives water from Northeast Sammamish Sewer and Water District (NESSWD) during typical operations. Both utilities share a 3 million gallon tank. The District will need to coordinate with that supply system during a contamination event. NESSWD does not currently chlorinate their water supply.

The District has emergency interties with the Northeast Sammamish Sewer and Water District, Union Hill Water Association, Ames Lake Water Association and the City of Issaquah.

Coliform Monitoring Requirements

The following subsections outline the coliform monitoring requirements that apply to the District.

Required Minimum Number of Samples

As of the end of 2016, the District served a population estimated to be around 63,148. According to WAC 246-290-300, the District is required to collect at least 70 coliform samples throughout their distribution system each month.

Routine Sample Locations and Schedule

The Revised Total Coliform Rule requires routine coliform samples be collected from representative points in the distribution system at regular weekly time intervals. The District collects coliform samples that are analyzed in a state certified laboratory for the presence or

absence of total coliform. A satisfactory test indicates that no coliform are present. An unsatisfactory test shows positive for the presence of coliform bacteria. Further testing is conducted on unsatisfactory samples to determine whether fecal coliform or *E. coli* are present.

The District collects a single sample at 70 unique sites each month. The District has developed a routine of sampling 17-18 coliform sites weekly. The District collects all routine monthly samples at its dedicated sampling stations. Table 2 in Section D and the maps in Section I both indicate which week of each month samples are collected at a given site. The samples in each weekly group are distributed geographically throughout the District's distribution system in order to provide a snapshot of bacterial and water quality conditions throughout the system on a weekly basis. In addition to coliform, the sites are sampled for chlorine residuals, and selected sites are sampled for disinfection by-products quarterly.

The sampling locations are shown on the attached map in Section I, "Overall TCR Sampling Map." Four additional maps are attached that show the coliform samples collected during each weekly routine.

Repeat Sample Site Selection

The District has designated specific sites for repeat sample collection. The District will attempt to use these locations for repeat collection. If one of these sites is unavailable, the District will use an alternate site that still meets the repeat sampling criteria. Upstream and downstream repeat sample locations for each coliform site are also listed in Table 2 and are presented on each weekly coliform monitoring map.

The District is required to take **three repeat samples** within 24 hours for every coliform-positive routine sample. The samples must come from the following locations:

- The same tap as the original unsatisfactory routine sample.
- An active service within five active connections upstream from the original routine sample location.
- An active service within five active connections downstream from the original routine sample location.

Triggered Groundwater Monitoring Plan

In the event of a positive coliform sample, the District will need to follow actions outlined in its Triggered Ground Water Monitoring Plan, revised in September 2017. The Groundwater Rule requires the collection of triggered source samples within 24 hours when a routine sample is unsatisfactory if all or a part of the water supply comes from a groundwater source. The Groundwater Rule requires operators to collect samples from every source that was in use when the routine sample was collected. If water suppliers continuously disinfect all of their groundwater sources and perform compliance monitoring as defined by the Groundwater Rule, they do not need to collect triggered source samples.

Triggered source water monitoring, either through triggered monitoring or state directed assessment monitoring, will be required to test for the presence of *E. coli*. Source water monitoring is required when one of the system's routine distribution samples collected under the RTCR is total coliform positive. See the District's Triggered Ground Water Monitoring Plan for more information.

Coliform MCL Violations

There are two types of maximum contaminant level (MCL) violations that can occur, as defined by the Revised Total Coliform Rule. These include non-acute and acute *(E. coli)* MCL violations.

Non-Acute Maximum Contaminant Level (MCL) Violations

The presence of total coliform bacteria in a water sample generally indicates contamination from the environment, particularly from the soil. It is possible that disease-causing organisms could be present as well. If only total coliform bacteria are detected in drinking water, the source is probably environmental, and fecal contamination is not likely. However, if environmental contamination can enter the system, there may also be a way for pathogens to enter the system.

Treatment Technique Trigger Assessments are now required whenever total coliform is found in a water sample. A Level 1 assessment must be completed and delivered to DOH within **30 days** after a treatment trigger occurs. A Level 1 Assessment is required when:

- Two or more total coliform-present samples are taken in one month
- A water system fails to collect three repeat samples for every total coliform-present routine sample

E. coli (Acute) Maximum Contaminant Level (MCL) Violations

An *E. coli* (Acute) Maximum Contaminant Level (MCL) violation occurs if a routine sample and at least one related repeat sample both have coliform bacteria present and one of the samples is positive for the presence of *E. coli* or fecal coliform bacteria. If this occurs, contamination is confirmed in the water supply.

There are four ways a water system can have an *E. coli* MCL:

1. A total coliform-positive repeat sample follows an *E. coli* positive routine sample.
2. An *E coli* positive repeat sample follows a total coliform-positive routine sample.
3. The lab fails to test a total coliform-positive repeat sample for *E. coli*.
4. The water utility fails to take three repeat samples following an *E. coli* positive routine sample.

If an *E coli* MCL violation occurs, the District needs to take the following actions:

- Contact the Department of Health regional office as soon as possible to discuss public notification, follow-up requirements, and steps to take to resolve the problem.

- Public notification is required within 24 hours. Due to the public health risk, a boil-water advisory will typically be issued in response to an acute MCL violation.

If the above conditions are met, a Level 2 Assessment must be completed along with public notification of an *E. coli* MCL violation.

Level Assessments

A treatment technique trigger is a situation that requires a water system to take action. The Revised Total Coliform Rule requires water systems to conduct an assessment to find and fix any sanitary defects whenever a treatment technique trigger occurs. There are two assessment levels based on the severity and frequency of the problem. Water suppliers must complete a Level 1 or Level 2 Assessment and send it to the Department of Health within 30 days of a treatment trigger. Both levels evaluate the entire system from the sample collection site to the source of supply. ***NOTE: Water system operators should not wait for DOH notification to begin an assessment.***

Level 1 Assessment Triggers

A Level 1 Assessment can be completed by any state certified water operator when one of these treatment techniques occurs:

- Two or more total coliform-present samples are taken in one month
- The public water system fails to collect three repeat samples for every total coliform-present routine sample

Level 2 Assessment Triggers

A Level 2 Assessment is more complex and requires a person with state-required qualifications, such as a certified operator with a Water Distribution Manager 2 certification or higher, a professional engineer, or a state or local health department staff member. Triggers include:

- An *E. coli* MCL violation
- A second Level 1 treatment trigger within a rolling 12-month period

Level Assessment Templates are provided as part of this Monitoring Plan. To use electronic versions of the Level 1 and Level 2 Assessment documents, go to the Washington Department of Health Revised Total Coliform Rule page.

Other Types of Violations

In addition to non-acute and acute violations, DOH indicates that there are two other violation types:

- Major Repeat Violation – Includes failing to collect repeat samples in response to an unsatisfactory routine sample. Tier 3 public notification is required. For this type of notification, the District must communicate the violation to customers within 12 months of the violation, which could be included in the Consumer Confidence Report, also known as the Water Quality Report, if it is issued within 12 months.

- Monitoring Violation – Includes neglecting to collect any coliform sample. Tier 3 public notification is required. For this type of notification, the District must communicate the violation to customers within 12 months of the violation, which could be included in the Consumer Confidence Report (if it is issued within 12 months).

Department of Health and Public Notification

Public notification timing and distribution requirements depend on the level of threat associated with the violation or event. Public notification rules, including the following, are in Group A Public Water Supplies: Chapter 246-290 WAC (DOH 331-010). See Part 7, Reporting, Subpart A. This section includes:

- A list of violations and situations that require 24-hour notification.
- Simplified health effects language.
- Standard language for monitoring violations.

Tier 1: Acute health concerns such as *E. coli* MCL violations require public notification within 24 hours. (See Emergency Publications for Water Systems.)

Tier 2: Chronic health concerns require public notification within 30 days (such as a failure to take corrective action within 120 days of notification).

Tier 3: Reporting and monitoring violations require public notification in the annual CCR or by another method.

E. coli (Acute) Tier 1 violation

Sammamish Plateau Water will notify DOH NW Office of Drinking Water Operations as soon as being told of positive fecal coliform or *E. coli* sample. When an acute MCL is detected, the District must provide public notice as soon as possible but within 24 hours to the customers served. The District will use one or more of the following methods to deliver notice to the customers.

1. Media releases to broadcast networks (radio and television)
2. District website
3. District social media sites
4. "Boil Water" sign panels posted on District water advisory signs at all entrances to the District's service area.
5. Post multilingual notices in various locations, including city halls, libraries and shopping centers. Notices are printed in the top seven languages spoken in Sammamish and an image of a boiling water kettle. See example in Section J.
6. Work with Seattle/King County Department of Health regarding informational postings at restaurants.

A copy of this notice and certification that all public notice requirements have been met shall be sent to DOH NW Drinking Water Operations within 10 days from the day notice was issued.

Public notification is also required within 30 days when a:

- Water system fails to conduct a required Level 1 or Level 2 Assessment within 30 days of learning about the treatment technique trigger.
- Water system fails to correct a sanitary defect identified in a Level 1 or Level 2

Assessment within 30 days of learning about the treatment technique trigger.
- Seasonal system fails to complete state-approved startup procedures before providing water to customers.

Source Water *E. coli* Response

Interaction with Wholesale Suppliers

Because the District provides water to and receives water from Northeast Sammamish Sewer and Water District during typical operations due to a shared tank, the District will need to coordinate with that supply system:

- The District will be required to report a positive RTCR sample to Northeast Sewer and Water District within 24 hours of being notified of the positive sample by the water quality laboratory.
- If the District is notified by Northeast Sewer and Water District that additional source water monitoring results are *E. coli* positive, Sammamish Plateau Water must:
    - Consult with DOH and follow their recommended corrective actions.
    - Notify District customers with a Tier 1 Public Notice within 24 hours.
    - Notify District customers with a special notice in the next Consumer Confidence Report.
- The District will sample all of the supply sources that were in operation on the date the positive RTCR sample(s) was collected. The connections with these systems are through the Plateau operating zone. The District will need to conduct triggered monitoring only at operating sources serving the Plateau zone. These include the following: Well 1 (SO1), Well 2.1/2.2 (S18), Well 4 (S17), Well 7 (SO6), Well 8 (SO7), Well 9 (S13), Well 10 (S11), Well 11.1 (S14), and Well 11.2 (S12).
- If results of triggered source water monitoring are positive for the presence of *E. coli*, the District must:
    - Notify all consecutive systems served by source(s) testing positive for *E. coli* within 24 hours of the sample result.
    - Conduct source sampling as directed by the Department of Health.
    - Notify the public with a Tier 1 Public Notice within 24 hours.
    - Notify the public with a special notice in the next Consumer Confidence Report.

Wholesale Suppliers Contact Information

The District may need to contact these utilities if coliform is detected in its system. This depends on where the positive sample was collected and what connections are active at the time of the contamination incident:

Northeast Sammamish Sewer and Water District: 425-868-1144 (24 hours per day)

City of Issaquah: 425-837-3470 (normal business hours); 425-837-3200 (after business hours)

Cascade Water Alliance: (425) 493-0930

Seattle Public Utilities (206) 386-1800 (24-hour emergency number)

City of Redmond Water Operations (425) 556-2800 (24-hour emergency number)

Union Hill Water Association (425) 497-1812 (24-hour emergency number)

Ames Lake Water Association (425) 222-7003 (24-hour emergency number)

If the District receives notification of a positive coliform sample experienced by a system served by an active emergency intertie, such as the Union Hill Water Association or Ames Lake Water Association in the Cascade View zone, the District will conduct sampling of sources serving the operating zone that is connected to the emergency intertie.

In the event that triggered source water monitoring is required, such as when a positive total coliform sample result is discovered, SPW personnel shall work closely with personnel from any affected agencies to take source water samples. Source (raw water) samples will be checked for *E. coli*. If *E. coli* is present in any source sample:

1. The District will immediately notify DOH and the agencies listed above.

2. Each agency will take action as per their procedures, which should include:
   - Securing and disinfection of the affected well,
   - Increasing chlorination throughout the system.
   - Public notification for all affected agencies to their customers within 24 hours.

3. District personnel will:
   - Initiate DOH and public notification for SPW customers within 24 hours.
   - Secure all active interties and pumping from SPW sources until the contaminated well is off line, and, chlorine levels can be checked.
   - Check and monitor free chlorine levels.
     - If free chlorine at the CWA interties and source connections is above 0.2 ppm, pumping may resume.
     - If free chlorine is below 0.2 ppm, install emergency portable chlorination equipment to raise chlorine levels to 0.2 ppm or higher before pumping or intertie operation is restored.
     - Continue checking chlorine levels and utilizing treatment plant chlorination until issues with the source water have been resolved and source water is verified to be satisfactory.

Month Following Unsatisfactory Samples

Per the WAC 246-290, the District is not required to collect additional samples during a month following positive coliform sample results.

Preparation Information

The Water Superintendent is responsible for overseeing preparation, review, and updates to the District's Coliform Monitoring Plan. This Plan will be reviewed and updated every six to ten years, coinciding with Water System Plan updates, or as needed if the District adds additional sampling sites due to an increase in the population served.

RTCR Level 1 Assessment Guidance Template

331-569, March 2016 **For an electronic version, go to DOH RTCR web page**

Send your assessment to:

Eastern Region	16201 East Indiana Avenue, Suite 1500 Spokane Valley, WA 99216	Phone: 509.329.2100 Fax: 509.329.2104 Email: mark.steward@doh.wa.gov
Northwest Region	20425 72nd Ave. South, Suite 310 Kent, WA 98032-2358	Phone: 253.395.6750 Fax: 253.395.6760 Email: dw.nwro@doh.wa.gov
Southwest Region	PO Box 47823 Olympia, WA 98504-7823	Phone: 360-236-3030 Fax: 360-664-8058 Email: swro.coli@doh.wa.gov

Water System Name: Sammamish Plateau Water & Sewer District County: King	Water System ID #: 409000
Operator in Responsible Charge (ORC): John Anderson ORC Phone: 425-392-6256	Water System Mailing Address: 1510 228th Avenue SE Sammamish, WA 98045
ORC Address, City, State: 1510 228th Avenue SE, Sammamish, WA 98075	
Assessor Name:	
Assessor Address, City, State, Zip:	
Date(s) Assessment Completed:	

Your water system exceeded a treatment technique trigger for the Revised Total Coliform Rule. Assess the water system's condition and operation using this *Level 1 Assessment Template* as a guide.

Part A: Respond to each item below. Identify corrective actions taken to address the issue(s) found.
Part B: Summarize your findings and include an action plan with timetable for corrective actions not yet taken.

For parts A and B, include additional information (photos or other documentation) as needed to depict assessment findings and corrective actions that have been completed. All assessment elements listed in this template must be addressed in your assessment. Systems with multiple facilities such as wells or storage tanks may need to provide additional pages.

Within 30 days of learning of the treatment technique trigger, submit completed assessment documentation to your regional office and keep a copy in your water system files.

Part A: Assessment		**Corrective action needed?**	**Corrective action(s) taken & date taken**
1. Site and Sampling Protocol 1a. Do you have a written **coliform monitoring plan** & **sampling procedure** that ensures samples are representative of the distribution system?	☐ Yes ☐ No	☐ Yes ☐ No	

Part A: Assessment		Corrective action needed?	Corrective action(s) taken & date taken
1b. Have there been any changes in sampling conditions or procedures that may have contributed to the treatment technique trigger? Describe:	☐ Yes ☐ No	☐ Yes ☐ No	
1c. Inspect the sampling sites: - Are the sampling locations free of potential sources of contamination? - Are the sampling taps in good condition? - Other: (describe) _____	☐ Yes ☐ No ☐ N/A ☐ Yes ☐ No ☐ N/A ☐ Yes ☐ No ☐ N/A	☐ Yes ☐ No ☐ Yes ☐ No ☐ Yes ☐ No	
2. Distribution 2a. Do you have procedures in place to ensure proper maintenance of the distribution system, including: - Appropriate pipe replacement and repair procedures - Replacement and repair of other distribution system components - Regular flushing program - Routine vault inspections - Fully implemented **cross connection control** program - Maintain positive pressure in all parts of the distribution system	☐ Yes ☐ No ☐ Yes ☐ No ☐ Yes ☐ No ☐ N/A ☐ Yes ☐ No ☐ N/A ☐ Yes ☐ No ☐ Yes ☐ No	☐ Yes ☐ No ☐ Yes ☐ No ☐ Yes ☐ No ☐ Yes ☐ No ☐ Yes ☐ No ☐ Yes ☐ No	
2b. Has there been any recently reported low pressure (<20 PSI) or **complete loss of pressure** in the distribution system?	☐ Yes ☐ No	☐ Yes ☐ No	
2c. Have there been any changes in distribution conditions or operations that may have contributed to the treatment technique trigger? Describe:	☐ Yes ☐ No	☐ Yes ☐ No	
2d. Inspect the distribution system: - Are there any visible line breaks or leaks? - Are there any observed unprotected cross connections? - Is there any evidence of **vandalism or other security breaches**? - Other: (describe) _____	☐ Yes ☐ No ☐ Yes ☐ No ☐ Yes ☐ No ☐ Yes ☐ No ☐ N/A	☐ Yes ☐ No ☐ Yes ☐ No ☐ Yes ☐ No ☐ Yes ☐ No	
3. Storage Facilities 3a. Does your water system have a water storage tank? *If no, skip to Section 4.*	☐ Yes ☐ No		
3b. Do you have procedures in place for periodic inspection and maintenance of the exterior and interior of each storage facility?	☐ Yes ☐ No	☐ Yes ☐ No	

Part A: Assessment		Corrective action needed?	Corrective action(s) taken & date taken
3c. Have there been any changes in storage conditions or operations that may have contributed to the treatment technique trigger? Describe:	☐ Yes ☐ No	☐ Yes ☐ No	
3d. Inspect the storage facilities: - Does the tank have any cracks or other openings? - Is the reservoir roof free of any unprotected openings? - Is the access hatch constructed and sealed to keep contaminants out? - If there is an **air vent on the storage tank**, is it constructed to prevent the entry of contaminants? - Is the overflow line constructed to prevent contaminants from entering the tank? - If the overflow line discharges into a storm drain, to surface water, or directly into a sanitary sewer, is it protected by a proper air gap? - Is there any evidence of vandalism or other security breaches? - Other: (describe) _____	☐ Yes ☐ No ☐ Yes ☐ No ☐ Yes ☐ No ☐ Yes ☐ No ☐ N/A ☐ Yes ☐ No ☐ Yes ☐ No ☐ N/A ☐ Yes ☐ No ☐ Yes ☐ No ☐ N/A	☐ Yes ☐ No ☐ Yes ☐ No ☐ Yes ☐ No ☐ Yes ☐ No ☐ Yes ☐ No ☐ Yes ☐ No ☐ Yes ☐ No ☐ Yes ☐ No	
4. Source--Groundwater 4a. Does your water system have a well or spring? If no, skip to Section 6.	☐ Yes ☐ No		
4b. Do you comply with **Sanitary Control Area** requirements (WAC 246-290-135(2)?	☐ Yes ☐ No	☐ Yes ☐ No	
4c. Have there been any changes in source conditions or operations that may have contributed to the treatment technique trigger? Describe:	☐ Yes ☐ No	☐ Yes ☐ No	
4d. Inspect the source facilities: - Is the sanitary control area free of all potential sources of contamination? - Is the wellhead or spring box above grade with no potential for flooding? - Is the **pressure tank** waterlogged? - Is the **well cap** sealed and watertight, and the well casing free of unprotected openings? - (For springs) Is the spring box (structure, hatch, and overflow) free of any unprotected openings? - Other: (describe) _____	☐ Yes ☐ No ☐ Yes ☐ No ☐ Yes ☐ No ☐ N/A ☐ Yes ☐ No ☐ N/A ☐ Yes ☐ No ☐ N/A ☐ Yes ☐ No ☐ N/A	☐ Yes ☐ No ☐ Yes ☐ No ☐ Yes ☐ No ☐ Yes ☐ No ☐ Yes ☐ No ☐ Yes ☐ No	

Part A: Assessment		Corrective action needed?	Corrective action(s) taken & date taken
5. Treatment--Groundwater 5a. Is any source **continuously treated with a disinfectant**? If no, skip to Section 6.	☐ Yes ☐ No		
5b. Do you have procedures in place for proper operation and maintenance of disinfection treatment facilities?	☐ Yes ☐ No	☐ Yes ☐ No	
5c. Have there been any changes in treatment equipment or process that may have contributed to the treatment technique trigger? Describe:	☐ Yes ☐ No	☐ Yes ☐ No	
5d. Inspect the treatment facilities: - Is the treatment system operating properly? - Is there any evidence of vandalism or other security breaches? - Other: (describe) _____	☐ Yes ☐ No ☐ N/A ☐ Yes ☐ No ☐ N/A ☐ Yes ☐ No ☐ N/A	☐ Yes ☐ No ☐ Yes ☐ No ☐ Yes ☐ No	
6. Source—Surface Water Supply (watershed) 6a. Does your water system have a surface water supply? If no, skip to Section 8.	☐ Yes ☐ No		
6b. Do you comply with Watershed Control Program requirements (WAC 246-290-135(4)?	☐ Yes ☐ No	☐ Yes ☐ No	
6c. Have there been any changes within the watershed or in raw water conditions that may have contributed to the treatment technique trigger? Describe:	☐ Yes ☐ No	☐ Yes ☐ No	
6d. Inspect the surface water intake/headworks: - Is there evidence of problems at the intake? - Is there evidence of vandalism or other security breaches at the intake? - Other: (describe) _____	☐ Yes ☐ No ☐ Yes ☐ No ☐ Yes ☐ No ☐ N/A	☐ Yes ☐ No ☐ Yes ☐ No ☐ Yes ☐ No	
7. Treatment—Surface Water 7a. Do you have procedures in place for proper operation and maintenance of surface water treatment facilities?	☐ Yes ☐ No	☐ Yes ☐ No	
7b. Have there been any changes in treatment equipment or process that may have contributed to the treatment technique trigger? Describe:	☐ Yes ☐ No	☐ Yes ☐ No	

Part A: Assessment		Corrective action needed?	Corrective action(s) taken & date taken
7c. Inspect the treatment facilities: - Is the treatment system operating properly? - Is there any evidence of vandalism or other security breaches? - Other: (describe) _____	☐ Yes ☐ No ☐ N/A ☐ Yes ☐ No ☐ N/A ☐ Yes ☐ No ☐ N/A	☐ Yes ☐ No ☐ Yes ☐ No ☐ Yes ☐ No	
8. Other assessment activities (describe):			

Part B. Assessment Summary and Action Plan with Timetable for corrective actions not yet taken

☐ ASSESSOR: CHECK HERE if you did not identify any issues that may have directly or indirectly caused or contributed to entry of coliform bacteria into the system.

Corrective Actions <u>Completed</u>: ASSESSOR: Summarize the issues found and the corrective actions that have been completed and date completed

Describe issue found	Describe corrective action taken and date completed

Corrective Actions <u>Not</u> Completed: ASSESSOR: Describe the issues for which corrective actions have <u>not</u> yet been completed. **Provide an action plan with timetable for completion.**

Describe issue found	Describe planned corrective action and timetable for completion.

Print Name of Assessor: _____ Signature of Assessor: _____ Date: _____

OFFICE OF DRINKING WATER USE ONLY

Regional Office Reviewer: _____ Date of Review: _____

Assessment sufficient? ☐ Yes ☐ No Likely cause determined? ☐ Yes ☐ No Sanitary defect(s) identified? ☐ Yes ☐ No

Corrective actions completed? ☐ Yes ☐ No Corrective action plan included? ☐ Yes ☐ No Corrective action plan approved? ☐ Yes ☐ No

Comments:

RTCR Level 2 Assessment Guidance Template

331-570, March 2016 For an electronic version go to DOH RTCR web page

Send your assessment to:

Eastern Region	16201 East Indiana Avenue, Suite 1500 Spokane Valley, WA 99216	Phone: 509.329.2100 Fax: 509.329.2104 Email: mark.steward@doh.wa.gov
Northwest Region	20425 72nd Ave. South, Suite 310 Kent, WA 98032-2358	Phone: 253.395.6750 Fax: 253.395.6760 Email: dw.nwro@doh.wa.gov
Southwest Region	PO Box 47823 Olympia, WA 98504-7823	Phone: 360-236-3030 Fax: 360-664-8058 Email: swro.coli@doh.wa.gov

Water System Name: Sammamish Plateau Water and Sewer District County: King	Water System ID #: 409009
Operator in Responsible Charge (ORC): John Anderson ORC Phone: (425) 392-6256	Water System Mailing Address: 1510 228th Avenue SE Sammamish, WA 98075
ORC Address, City, State: 1510 228th Avenue SE, Sammamish, WA 98075	
Assessor Name: Assessor is: ☐ WDM-2, 3, or 4 ☐ Engineer ☐	
Assessor Address, City, State, Zip:	
Date(s) Assessment Completed:	

Your water system exceeded a treatment technique trigger for the Revised Total Coliform Rule. Assess the water system's condition and operation using this *Level 2 Assessment Template* as a guide.

Part A: Respond to each item below. Identify corrective actions taken to address the issue(s) found.
Part B: Summarize your findings and include an action plan with timetable for corrective actions not yet taken.

For parts A and B, include additional information (photos or other documentation) as needed to depict assessment findings and corrective actions that have been completed. All assessment elements listed in this template must be addressed in your assessment. Systems with multiple facilities such as wells or storage tanks may need to provide additional pages.

Within 30 days of learning of the treatment technique trigger, submit completed assessment documentation to your regional office and keep a copy in your water system files.

Part A: Assessment		**Corrective action needed?**	**Corrective action(s) taken & date taken**
1. Site and Sampling Protocol 1a. Do you have a written **coliform monitoring plan** & **sampling procedure** that ensures samples are representative of the distribution system?	☐ Yes ☐ No	☐ Yes ☐ No	
1b. Do you have a program in place that ensures that all sample collectors are trained before being allowed to collect compliance samples?	☐ Yes ☐ No	☐ Yes ☐ No	

Part A: Assessment		Corrective action needed?	Corrective action(s) taken & date taken
1c. Do you regularly monitor the condition of each routine and repeat sample site to ensure that no site will contaminate the sample?	☐ Yes ☐ No	☐ Yes ☐ No	
1d. Was the sample collected by a trained, qualified person?	☐ Yes ☐ No	☐ Yes ☐ No	
1e. Did the sampler follow your monitoring plan and sampling procedure?	☐ Yes ☐ No	☐ Yes ☐ No	
1f. Was the sample collected representative of the water in the distribution system?	☐ Yes ☐ No	☐ Yes ☐ No	
1g. Have there been any changes in sampling conditions or procedures that may have contributed to the treatment technique trigger? Describe:	☐ Yes ☐ No	☐ Yes ☐ No	
1h. Inspect the sampling sites: - Are the sampling locations free of potential sources of contamination? - Are the sampling taps in good condition? - Other: (describe) _____	☐ Yes ☐ No ☐ Yes ☐ No ☐ Yes ☐ No	☐ Yes ☐ No ☐ Yes ☐ No ☐ Yes ☐ No	
2. Distribution 2a. Do you have procedures in place to ensure proper maintenance of the distribution system, including: - Appropriate pipe replacement and repair procedures - Replacement and repair of other distribution system components - Regular flushing program - Routine vault inspections - Fully implemented **cross connection control** program - Maintain positive pressure in all parts of the distribution system	☐ Yes ☐ No ☐ Yes ☐ No ☐ Yes ☐ No ☐ N/A ☐ Yes ☐ No ☐ N/A ☐ Yes ☐ No ☐ Yes ☐ No	☐ Yes ☐ No ☐ Yes ☐ No ☐ Yes ☐ No ☐ Yes ☐ No ☐ Yes ☐ No ☐ Yes ☐ No	
2b. Following work done on the water system and following any pressure loss event, do you collect investigative coliform samples?	☐ Yes ☐ No	☐ Yes ☐ No	
2b. Has there been any recently reported low pressure (<20 PSI) or **complete loss of pressure** in the distribution system?	☐ Yes ☐ No	☐ Yes ☐ No	
2c. Have there been any recent repairs or new construction in the distribution system?	☐ Yes ☐ No	☐ Yes ☐ No	
2d. Are there any known pipe leaks that have not yet been repaired?	☐ Yes ☐ No	☐ Yes ☐ No	

Part A: Assessment		Corrective action needed?	Corrective action(s) taken & date taken
2e. Has there been any recent use of fire hydrants such as hydrant maintenance or utility/FD flushing?	☐ Yes ☐ No ☐ N/A	☐ Yes ☐ No	
2f. If there are there any air-vacuum relief valve vaults in the distribution system, are any flooded?	☐ Yes ☐ No ☐ N/A	☐ Yes ☐ No	
2g. Has there been any recent report of a cross connection incident?	☐ Yes ☐ No	☐ Yes ☐ No	
2h. Have there been any off-normal events, such as discolored water, odd taste, or smell?	☐ Yes ☐ No	☐ Yes ☐ No	
2i. Have there been any other changes in distribution conditions or operations that may have contributed to the treatment technique trigger? Describe:	☐ Yes ☐ No	☐ Yes ☐ No	
2j. Inspect the distribution system: - Are there any visible line breaks or leaks? - Are there any observed unprotected cross connections? - Is there any evidence of **vandalism or other security breaches**? - Other: (describe) _____	☐ Yes ☐ No ☐ Yes ☐ No ☐ Yes ☐ No ☐ Yes ☐ No	☐ Yes ☐ No ☐ Yes ☐ No ☐ Yes ☐ No ☐ Yes ☐ No	
3. Storage Facilities 3a. Does your water system have a water storage tank? If no, skip to Section 4.	☐ Yes ☐ No		
3b. Do you have procedures in place for periodic inspection and cleaning of the interior of each storage facility including vent, roof hatch, and overflow?	☐ Yes ☐ No	☐ Yes ☐ No	
3c. Has there been any recent work done on a storage facility?	☐ Yes ☐ No	☐ Yes ☐ No	
3d. Are all storage facilities secured from unauthorized entry and vandalism?	☐ Yes ☐ No	☐ Yes ☐ No	
3e. Have there been any other changes in storage conditions or operations that may have contributed to the treatment technique trigger? Describe:	☐ Yes ☐ No	☐ Yes ☐ No	

Part A: Assessment		Corrective action needed?	Corrective action(s) taken & date taken
3f. Inspect the storage facilities: - Does the tank have any cracks or other openings? - Is the reservoir roof free of any unprotected openings? - Is the access hatch constructed and sealed to keep contaminants out? - If there is an **air vent on the storage tank**, is it constructed to prevent the entry of contaminants? - Is the overflow line constructed to prevent contaminants from entering the tank? - If the overflow line discharges into a storm drain, to surface water, or directly into a sanitary sewer, is it protected by a proper air gap? - Is there any evidence of vandalism or other security breaches? - Other: (describe) _____	☐ Yes ☐ No ☐ Yes ☐ No ☐ Yes ☐ No ☐ Yes ☐ No ☐ N/A ☐ Yes ☐ No ☐ Yes ☐ No ☐ N/A ☐ Yes ☐ No ☐ Yes ☐ No	☐ Yes ☐ No ☐ Yes ☐ No ☐ Yes ☐ No ☐ Yes ☐ No ☐ Yes ☐ No ☐ Yes ☐ No ☐ Yes ☐ No ☐ Yes ☐ No	
4. Source--Groundwater 4a. Does your water system have a well or spring? If no, skip to Section 6.	☐ Yes ☐ No		
4b. Do you comply with **Sanitary Control Area** requirements (WAC 246-290-135(2)?	☐ Yes ☐ No	☐ Yes ☐ No	
4c. Are all sources protected from fecal contamination by appropriate placement and construction?	☐ Yes ☐ No	☐ Yes ☐ No	
4d. Have any unapproved sources recently been used?	☐ Yes ☐ No	☐ Yes ☐ No	
4e. Have there been any recent land use changes observed within a source sanitary control area, such as construction, farming, or dumping in the last month?	☐ Yes ☐ No	☐ Yes ☐ No	
4f. Has there been any standing water, heavy precipitation, or flooding around a source in the last month?	☐ Yes ☐ No	☐ Yes ☐ No	
4g. Has there been any recent work done on a well or spring box?	☐ Yes ☐ No	☐ Yes ☐ No	
4h. Has there been any recent failure of a source pump?	☐ Yes ☐ No	☐ Yes ☐ No	
4i. Has there been any recent maintenance performed on a source pump or other source component?	☐ Yes ☐ No	☐ Yes ☐ No	
4j. Are the source facilities secured from unauthorized entry and vandalism?	☐ Yes ☐ No	☐ Yes ☐ No	
4k. Have there been any other changes in source conditions or operations that may have contributed to the treatment technique trigger? Describe:	☐ Yes ☐ No	☐ Yes ☐ No	

Part A: Assessment		Corrective action needed?	Corrective action(s) taken & date taken
4l. Inspect the source facilities: - Is the sanitary control area free of all potential sources of contamination? - Is the wellhead or spring box above grade with no potential for flooding? - Is the **pressure tank** water logged? - Is the **well cap** sealed and watertight, and the well casing free of unprotected openings? - (For springs) Is the spring box (structure, hatch, and overflow) free of any unprotected openings? - Is there any evidence of vandalism or other security breaches? - Other: (describe) _____	☐ Yes ☐ No ☐ Yes ☐ No ☐ Yes ☐ No ☐ N/A ☐ Yes ☐ No ☐ N/A ☐ Yes ☐ No ☐ N/A ☐ Yes ☐ No ☐ N/A ☐ Yes ☐ No ☐ N/A	☐ Yes ☐ No ☐ Yes ☐ No ☐ Yes ☐ No ☐ Yes ☐ No ☐ Yes ☐ No ☐ Yes ☐ No ☐ Yes ☐ No	
5. Treatment--Groundwater 5a. Is any source **continuously treated with a disinfectant**? If no, skip to Section 6.	☐ Yes ☐ No		
5b. Do you have procedures in place for proper operation and maintenance of disinfection treatment facilities?	☐ Yes ☐ No	☐ Yes ☐ No	
5c. If a disinfection residual should be continuously maintained throughout the distribution system, was the measured free chlorine residual at the time of coliform sample collection below 0.2 mg/L?	☐ Yes ☐ No	☐ Yes ☐ No	
5d. Have there been any recent interruptions in any treatment process?	☐ Yes ☐ No	☐ Yes ☐ No	
5e. Has there been any recent maintenance performed on any treatment component?	☐ Yes ☐ No	☐ Yes ☐ No	
5f. Have there been any other changes in treatment equipment or process that may have contributed to the treatment technique trigger? Describe:	☐ Yes ☐ No	☐ Yes ☐ No	
5g. Inspect the treatment facilities: - Is the treatment system operating properly? - Is there any evidence of vandalism or other security breaches? - Other: (describe) _____	☐ Yes ☐ No ☐ Yes ☐ No ☐ Yes ☐ No ☐ N/A	☐ Yes ☐ No ☐ Yes ☐ No ☐ Yes ☐ No	
6. Source—Surface Water Supply (watershed) 6a. Does your water system have a surface water supply? If no, skip to Section 8.	☐ Yes ☐ No		
6b. Do you comply with Watershed Control Program requirements (WAC 246-290-135(4)?	☐ Yes ☐ No	☐ Yes ☐ No	

Part A: Assessment		Corrective action needed?	Corrective action(s) taken & date taken
6c. Has there been any recent spikes in raw water turbidity?	☐ Yes ☐ No	☐ Yes ☐ No	
6d. Have there been any land use changes within the watershed, such as logging, construction, or different farming practices in the past month?	☐ Yes ☐ No	☐ Yes ☐ No	
6e. Have there been any other changes within the watershed or in raw water conditions that may have contributed to the treatment technique trigger? Describe:	☐ Yes ☐ No	☐ Yes ☐ No	
6f. Inspect the surface water intake/headworks: - Is there evidence of problems at the intake? - Is there evidence of vandalism or other security breaches at the intake? - Other: (describe) _____	☐ Yes ☐ No ☐ Yes ☐ No ☐ Yes ☐ No ☐ N/A	☐ Yes ☐ No ☐ Yes ☐ No ☐ Yes ☐ No	
7. Treatment—Surface Water 7a. Do you have procedures in place for proper operation and maintenance of surface water treatment facilities?	☐ Yes ☐ No	☐ Yes ☐ No	
7b. Have there been any recent interruptions in any part of the filtration or disinfection treatment process?	☐ Yes ☐ No	☐ Yes ☐ No	
7c. Are filtration and disinfection treatment facilities properly operated and maintained?	☐ Yes ☐ No	☐ Yes ☐ No	
7d. Has there been any maintenance performed on any treatment component in the past month?	☐ Yes ☐ No	☐ Yes ☐ No	
7e. Have there been any problems with a treatment process in the past month, such as high finished water turbidity, disinfection inactivation ratio <1, or changes in coagulation practices or filtration rate?	☐ Yes ☐ No	☐ Yes ☐ No	
7f. Have there been any other changes in treatment equipment or process that may have contributed to the treatment technique trigger? Describe:	☐ Yes ☐ No	☐ Yes ☐ No	

Part A: Assessment		Corrective action needed?	Corrective action(s) taken & date taken
7g. Inspect the treatment facilities: - Is the treatment system operating properly? - Is there any evidence of vandalism or other security breaches? - Other: (describe) _____	☐ Yes ☐ No ☐ Yes ☐ No ☐ Yes ☐ No ☐ N/A	☐ Yes ☐ No ☐ Yes ☐ No ☐ Yes ☐ No	
8. Other assessment activities (describe):			

Part B. Assessment Summary and Action Plan with Timetable for corrective actions not yet taken

☐ ASSESSOR: CHECK HERE if you did not identify any issues that may have directly or indirectly caused or contributed to entry of coliform bacteria into the system.

Corrective Actions <u>Completed</u>: ASSESSOR: Summarize the issues found and the corrective actions that have been completed and date completed.

A.

Describe issue found	Describe corrective action taken and date completed

Corrective Actions Not Completed: ASSESSOR: Describe the issues for which corrective actions have not yet been completed. **Provide an action plan with timetable for completion.**

Describe issue found	Describe planned corrective action and timetable for completion.

Print Name of Assessor: _____ Signature of Assessor: _____ Date: _____

OFFICE OF DRINKING WATER USE ONLY

Regional Office Reviewer: _____ Date of Review: _____

Assessment sufficient? ☐ Yes ☐ No Likely cause determined? ☐ Yes ☐ No Sanitary defect(s) identified? ☐ Yes ☐ No

Corrective actions completed? ☐ Yes ☐ No Corrective action plan included? ☐ Yes ☐ No Corrective action plan approved? ☐ Yes ☐ No

Comments:

Coliform Monitoring Plan for Sammamish Plateau Water and Sewer District

A. System Information

Water System Name Sammamish Plateau Water	**County** King	**System I.D. Number** 409009
Name of Plan Preparer John Anderson	**Position** Water Superintendent	**Daytime Phone** **425-392-6256**
Sources: DOH Source Number, Source Name, Well Depth, and Pumping Capacity (Note: only active sources are listed.)	S01, Well 1R, 128 feet, 500 gpm S06, Well 7, 83 feet, 2000 gpm S07, Well 8, 105 feet, 3200 gpm S11, Well 10, 135 feet, 500 gpm S12, Well 11.2, 785 feet, 1450/1600 gpm S13, Well 9, 222 feet, 2200 gpm S14, Well 11.1, 409 feet, 389 gpm S16, Well 12R, 138 feet, 200 gpm S17, Well 4R, 657 feet, 1450/1800 gpm S18, Well 2.1, 96 feet, 300 gpm S18, Well 2.2, 96 feet, 500 gpm S19, Cascade Water Alliance Interties (North and South) S20, NE Sammamish Intertie S21, Issaquah Intertie S22, Union Hill Intertie, Cascade View Zone S23, Ames Lake Intertie, Cascade View Zone S24, Well 13R, 795 feet, 260 gpm	

Storage: List and Describe	3 Million Gallon (MG) Tank, Plateau 700 Zone Section 36 East Tank, 4 MG, Plateau 550 Zone Section 36 West Tank, 4 MG, Plateau 550 Zone 2 MG Tank, Plateau 650 Zone 7 MG Tank, Plateau 650 Zone 297 Tank, 2.25 MG, Plateau 297 Zone Well 12 Tank, 600,000 gallons, Cascade View 730 Zone Well 13 Tank, 275,000 gallons, Cascade View 730 Zone
Treatment: Source Number & Process	S01: Well 1R, Sodium hydroxide, chlorination, fluoridation S02, S15, S18: Well 2.1 and 2.2, sodium hydroxide, chlorination, fluoridation, manganese filtration. S17, S14, and S12: Wells 4R, 11.1 and 11.2, manganese filtration, chlorination, fluoridation (to 650 zone only), ferric chloride for coagulation. S06, S07, S13: Wells 7, 8 and 9, sodium hydroxide, chlorination, fluoridation Section 36 tanks: chlorination and fluoridation S16: Well 12R, manganese filtration, chlorination, fluoridation. S24: Well 13R, manganese filtration, chlorination, fluoridation.
Pressure Zones: Number and name	Plateau Pressure Zones: 297, 310, 375, 390, 400 BROD, 400 WAV, 450, 450WAK, 466, 475, 475PH, 475 SAMSUN, 499, 510, 540, 550, 550 ALD, 566, 590, 650, 700, 700 SH, 700 BC. Cascade View Pressure Zones: 550 CV, 590 CV, 642, 650 CV, 730
Population by Pressure Zone	Plateau Zone: 61,105 Cascade View Zone: 2,043 Total Population Served: 63,148 (as of 12/31/2017)

Number of Routine Samples Required Monthly by Regulation:	70
Number of Sample Sites Needed to Represent the Distribution System:	70
***Request DOH Approval of Triggered Source Monitoring Plan?**	**Yes** ☒ **No** ☐

*If approval is requested a fee will be charged for the review.

B. Laboratory Information

Laboratory Name Seattle Public Utilities Water Quality Lab	**Office Phone: 206-684-7834** **After Hours Phone: 206-684-7407** Microbiology Lab
Address 800 South Stacy Street, Seattle, WA 98134	**Cell Phone - -** **Email**
Hours of Operation 8 am – 5 pm Monday – Friday	
Contact Name Winsome Robinson-Williams, Microbiology Supervisor, 206-615-1353 Wylie Harper, Division Director, 206-684-7880	
Emergency Laboratory Name Water Management Laboratories, Inc.	**Office Phone 253-531-3121** **After Hours Phone 253-841-0732**
Address 1515 80th Street E., Tacoma, WA 98404	**Emergency Cell Phone 1: 253-312-1651** **Emergency Cell Phone 2: 253-691-6691** **Email**
Hours of Operation 8 am – 5 pm Monday - Friday	
Contact Name Christa Garrettson	
Emergency Laboratory Name AmTest Laboratories	**Office Phone (also after hours number):** **425-885-1664**
Address 13600 NE 126th Place #C, Kirkland, WA 98034	**Emergency Cell Phone:** **Email** customerservice@amtestlab.com
Hours of Operation 7 am – 5 pm	
Contact Name Aaron Young, Lab/Project Manager, aarony@amtestlab.com	

C. Wholesaling of Groundwater

	Yes	No
We are a consecutive system and receive groundwater from another water system through a shared joint tank:	☒	☐
If yes, Water System Name: NE Sammamish Sewer and Water District Contact Name: Laura Keough Telephone Numbers Office **425-868-1144** After Hours **425-868-1144**		
We provide groundwater to another public water systems through a shared joint tank:	☒	☐
If yes, Water System Name: NE Sammamish Sewer and Water District Contact Name: Laura Keough Telephone Numbers Office **425-868-1144** After Hours **425-868-1144**		
If yes, Water System Name: Contact Name: Telephone Numbers Office - - After Hours - -		
If yes, Water System Name: Contact Name: Telephone Numbers Office - - After Hours - -		
If yes, Water System Name: Contact Name: Telephone Numbers Office - - After Hours - -		
Contact Name: Telephone Numbers Office - - After Hours - -		

D. Routine, Repeat, and Triggered Source Sample Locations

Table 2: Routine, Repeat and Triggered Source Sample Locations and Weekly Rotation Schedule						
Week		ID No.	Routine Sample Site Location	Upstream Repeat Site	Downstream Repeat Site	Groundwater Sources for Triggered Sample Sites
	1	3	25920 NE 29th Pl	25906 NE 29th Pl	25936 NE 29th Pl	Well 12 (S16), Well 13 (S24), CWA North Intertie (S19)
	1	6	1639 209th Pl NE	1651 209th Pl NE	1633 209th Pl NE	Well 1 (SO1), Well 2.1/2.2 (S18), Well 4 (S17), Well 7 (S06), Well 8 (S07), Well 9 (S13), Well 10 (S11), Well 11.1 (S14), Well 11.2 (S12), CWA South Intertie (S19)
	1	7	22202 NE 12th Pl	1139 NE 22nd Pl	22212 NE 12th Pl	Well 1 (SO1), Well 2.1/2.2 (S18), Well 4 (S17), Well 7 (S06), Well 8 (S07), Well 9 (S13), Well 10 (S11), Well 11.1 (S14), Well 11.2 (S12), CWA South Intertie (S19)
	1	11	407 238th Ave NE	421 238th Ave NE	408 238th Ave NE	Well 1 (SO1), Well 2.1/2.2 (S18), Well 4 (S17), Well 7 (S06), Well 8 (S07), Well 9 (S13), Well 10 (S11), Well 11.1 (S14), Well 11.2 (S12), CWA South Intertie (S19)
	1	21	19605 SE 23rd St	19615 SE 23rd St	19543 SE 23rd St	Well 1 (SO1), Well 2.1/2.2 (S18), Well 4 (S17), Well 7 (S06), Well 8 (S07), Well 9 (S13), Well 10 (S11), Well 11.1 (S14), Well 11.2 (S12), CWA South Intertie (S19)
	1	25	25005 SE 24th St	24640 SE 24th St	2322 SE 24th St	Well 1 (SO1), Well 2.1/2.2 (S18), Well 4 (S17), Well 7 (S06), Well 8 (S07), Well 9 (S13), Well 10 (S11), Well 11.1 (S14), Well 11.2 (S12), CWA South Intertie (S19)
	1	29	2214 275th Ct SE	2206 275th Ct SE	2228 275th Ct SE	Well 1 (SO1), Well 2.1/2.2 (S18), Well 4 (S17), Well 7 (S06), Well 8 (S07), Well 9 (S13), Well 10 (S11), Well 11.1 (S14), Well 11.2 (S12), CWA South Intertie (S19)
	1	34	4210 244th Pl SE	4187 244th Pl SE	4430 SE 42nd Pl	Well 1 (SO1), Well 2.1/2.2 (S18), Well 4 (S17), Well 7 (S06), Well 8 (S07), Well 9 (S13), Well 10 (S11), Well 11.1 (S14), Well 11.2 (S12), CWA South Intertie (S19)

Table 2: Routine, Repeat and Triggered Source Sample Locations and Weekly Rotation Schedule						
Week		ID No.	Routine Sample Site Location	Upstream Repeat Site	Downstream Repeat Site	Groundwater Sources for Triggered Sample Sites
	1	37	4708 227th Pl SE	4714 227th Pl SE	4702 227th Pl SE	Well 1 (SO1), Well 2.1/2.2 (S18), Well 4 (S17), Well 7 (S06), Well 8 (S07), Well 9 (S13), Well 10 (S11), Well 11.1 (S14), Well 11.2 (S12), CWA South Intertie (S19)
	1	38	5408 248th Pl SE	5420 247th Pl SE	5510 248th Pl SE	Well 1 (SO1), Well 2.1/2.2 (S18), Well 4 (S17), Well 7 (S06), Well 8 (S07), Well 9 (S13), Well 10 (S11), Well 11.1 (S14), Well 11.2 (S12), CWA South Intertie (S19)
	1	39	22664 SE 56th Ave	5218 229TH Ave SE	22621 SE 56th St	Well 1 (SO1), Well 2.1/2.2 (S18), Well 4 (S17), Well 7 (S06), Well 8 (S07), Well 9 (S13), Well 10 (S11), Well 11.1 (S14), Well 11.2 (S12), CWA South Intertie (S19)
	1	44	214th Ave SE & SE 5th Pl	530 214th Ave SE	21410 SE 5th Pl	Well 1 (SO1), Well 2.1/2.2 (S18), Well 4 (S17), Well 7 (S06), Well 8 (S07), Well 9 (S13), Well 10 (S11), Well 11.1 (S14), Well 11.2 (S12), CWA South Intertie (S19)
	1	54	1434 241st Pl SE	1428 242nd Ave SE	1610 242nd Ave SE	Well 1 (SO1), Well 2.1/2.2 (S18), Well 4 (S17), Well 7 (S06), Well 8 (S07), Well 9 (S13), Well 10 (S11), Well 11.1 (S14), Well 11.2 (S12), CWA South Intertie (S19)
	1	56	2637 231st Pl SE	2640 231st Pl SE	2631 231st Pl SE	Well 1 (SO1), Well 2.1/2.2 (S18), Well 4 (S17), Well 7 (S06), Well 8 (S07), Well 9 (S13), Well 10 (S11), Well 11.1 (S14), Well 11.2 (S12), CWA South Intertie (S19)
	1	65	4014 251st Pl SE	4002 252nd Ave SE	4019 251st Pl SE	Well 1 (SO1), Well 2.1/2.2 (S18), Well 4 (S17), Well 7 (S06), Well 8 (S07), Well 9 (S13), Well 10 (S11), Well 11.1 (S14), Well 11.2 (S12), CWA South Intertie (S19)
	1	66	3416 221st Ave SE	3400 221st Ave SE	3424 221st Ave SE	Well 1 (SO1), Well 2.1/2.2 (S18), Well 4 (S17), Well 7 (S06), Well 8 (S07), Well 9 (S13), Well 10 (S11), Well 11.1 (S14), Well 11.2 (S12), CWA South Intertie (S19)

Table 2: Routine, Repeat and Triggered Source Sample Locations and Weekly Rotation Schedule						
Week		ID No.	Routine Sample Site Location	Upstream Repeat Site	Downstream Repeat Site	Groundwater Sources for Triggered Sample Sites
	1	77	609 216th Ave NE	418 216th Ave NE	632 216th Ave NE	Well 1 (SO1), Well 2.1/2.2 (S18), Well 4 (S17), Well 7 (S06), Well 8 (S07), Well 9 (S13), Well 10 (S11), Well 11.1 (S14), Well 11.2 (S12), CWA South Intertie (S19)
	2	2	5524 264th Ave NE	5612 264th Ave NE	5510 264th Ave NE	Well 12 (S16), Well 13 (S24), CWA North Intertie (S19)
	2	4	24010 NE 30th Pl	24042 NE 30th Pl	24002 NE 30th Pl	Well 1 (SO1), Well 2.1/2.2 (S18), Well 4 (S17), Well 7 (S06), Well 8 (S07), Well 9 (S13), Well 10 (S11), Well 11.1 (S14), Well 11.2 (S12), CWA South Intertie (S19)
	2	8	1806 229th Ave NE	1812 229th Ave NE	1736 228th Ave NE	Well 1 (SO1), Well 2.1/2.2 (S18), Well 4 (S17), Well 7 (S06), Well 8 (S07), Well 9 (S13), Well 10 (S11), Well 11.1 (S14), Well 11.2 (S12), CWA South Intertie (S19)
	2	12	410 228th Ave NE	410 228th Ave NE	706 228th Ave NE	Well 1 (SO1), Well 2.1/2.2 (S18), Well 4 (S17), Well 7 (S06), Well 8 (S07), Well 9 (S13), Well 10 (S11), Well 11.1 (S14), Well 11.2 (S12), CWA South Intertie (S19)
	2	14	20928 SE 3rd Way	21009 SE 3rd Way	20920 SE 3rd Way	Well 1 (SO1), Well 2.1/2.2 (S18), Well 4 (S17), Well 7 (S06), Well 8 (S07), Well 9 (S13), Well 10 (S11), Well 11.1 (S14), Well 11.2 (S12), CWA South Intertie (S19)
	2	17	24415 SE 4th Pl	24416 SE 4th Pl	24421 SE 4th Pl	Well 1 (SO1), Well 2.1/2.2 (S18), Well 4 (S17), Well 7 (S06), Well 8 (S07), Well 9 (S13), Well 10 (S11), Well 11.1 (S14), Well 11.2 (S12), CWA South Intertie (S19)
	2	19	1510 228th Ave SE	1515 228th Ave SE	1517 228th Ave SE	Well 1 (SO1), Well 2.1/2.2 (S18), Well 4 (S17), Well 7 (S06), Well 8 (S07), Well 9 (S13), Well 10 (S11), Well 11.1 (S14), Well 11.2 (S12), CWA South Intertie (S19)
	2	23	2814 217th Ave SE	2808 217th Ave SE	2820 217th Ave SE	Well 1 (SO1), Well 2.1/2.2 (S18), Well 4 (S17), Well 7 (S06), Well 8 (S07), Well 9 (S13), Well 10 (S11), Well 11.1 (S14), Well 11.2 (S12), CWA South Intertie (S19)v

Table 2: Routine, Repeat and Triggered Source Sample Locations and Weekly Rotation Schedule						
Week		ID No.	Routine Sample Site Location	Upstream Repeat Site	Downstream Repeat Site	Groundwater Sources for Triggered Sample Sites
	2	24	2847 241st Ave SE	2837 241st Ave SE	2861 241st Ave SE	Well 1 (SO1), Well 2.1/2.2 (S18), Well 4 (S17), Well 7 (S06), Well 8 (S07), Well 9 (S13), Well 10 (S11), Well 11.1 (S14), Well 11.2 (S12), CWA South Intertie (S19)
	2	30	4138 205th Ave SE	4139 205th Ave SE	4130 205th Ave SE	Well 1 (SO1), Well 2.1/2.2 (S18), Well 4 (S17), Well 7 (S06), Well 8 (S07), Well 9 (S13), Well 10 (S11), Well 11.1 (S14), Well 11.2 (S12), CWA South Intertie (S19)
	2	35	4040 262nd Pl SE	26221 SE 40th Pl	4032 262nd Pl SE	Well 1 (SO1), Well 2.1/2.2 (S18), Well 4 (S17), Well 7 (S06), Well 8 (S07), Well 9 (S13), Well 10 (S11), Well 11.1 (S14), Well 11.2 (S12), CWA South Intertie (S19)
	2	41	2311 259th Pl SE	2317 259th Pl SE	2219 259th Pl SE	Well 1 (SO1), Well 2.1/2.2 (S18), Well 4 (S17), Well 7 (S06), Well 8 (S07), Well 9 (S13), Well 10 (S11), Well 11.1 (S14), Well 11.2 (S12), CWA South Intertie (S19)
	2	49	6503 E Lake Sammamish Pkwy SE	6415 E Lake Sammamish Pkwy SE	6420 East Lake Sammamish Pkwy SE	Well 1 (SO1), Well 2.1/2.2 (S18), Well 4 (S17), Well 7 (S06), Well 8 (S07), Well 9 (S13), Well 10 (S11), Well 11.1 (S14), Well 11.2 (S12), CWA South Intertie (S19)
	2	52	5150 236th Ave SE	4995 236th Ave SE	23590 SE 52nd St	Well 1 (SO1), Well 2.1/2.2 (S18), Well 4 (S17), Well 7 (S06), Well 8 (S07), Well 9 (S13), Well 10 (S11), Well 11.1 (S14), Well 11.2 (S12), CWA South Intertie (S19)
	2	67	2905 204th Ave SE	2829 204th Ave SE	2915 204th Ave SE	Well 1 (SO1), Well 2.1/2.2 (S18), Well 4 (S17), Well 7 (S06), Well 8 (S07), Well 9 (S13), Well 10 (S11), Well 11.1 (S14), Well 11.2 (S12), CWA South Intertie (S19)
	2	68	20621 NE 8th St	20627 NE 8th St	20609 NE 8th St	Well 1 (SO1), Well 2.1/2.2 (S18), Well 4 (S17), Well 7 (S06), Well 8 (S07), Well 9 (S13), Well 10 (S11), Well 11.1 (S14), Well 11.2 (S12), CWA South Intertie (S19)

Table 2: Routine, Repeat and Triggered Source Sample Locations and Weekly Rotation Schedule						
Week		ID No.	Routine Sample Site Location	Upstream Repeat Site	Downstream Repeat Site	Groundwater Sources for Triggered Sample Sites
	2	72	23944 SE 41st St	4054 239th Pl SE	4060 239th Pl SE	Well 1 (SO1), Well 2.1/2.2 (S18), Well 4 (S17), Well 7 (S06), Well 8 (S07), Well 9 (S13), Well 10 (S11), Well 11.1 (S14), Well 11.2 (S12), CWA South Intertie (S19)
	2	78	21214 SE 40th St	21219 SE 40th	21200 SE 40th PL	Well 1 (SO1), Well 2.1/2.2 (S18), Well 4 (S17), Well 7 (S06), Well 8 (S07), Well 9 (S13), Well 10 (S11), Well 11.1 (S14), Well 11.2 (S12), CWA South Intertie (S19)
	3	5	2404 NE 244th Pl	2403 245th Pl NE	2416 244th Pl NE	Well 1 (SO1), Well 2.1/2.2 (S18), Well 4 (S17), Well 7 (S06), Well 8 (S07), Well 9 (S13), Well 10 (S11), Well 11.1 (S14), Well 11.2 (S12), CWA South Intertie (S19)
	3	10	2575 E Plateau Dr SE	25855 NE 4th PL	25625 E Plateau Dr.	Well 1 (SO1), Well 2.1/2.2 (S18), Well 4 (S17), Well 7 (S06), Well 8 (S07), Well 9 (S13), Well 10 (S11), Well 11.1 (S14), Well 11.2 (S12), CWA South Intertie (S19)
	3	15	21828 SE 1st St	21838 SE 1st St	21827 SE 1st St	Well 1 (SO1), Well 2.1/2.2 (S18), Well 4 (S17), Well 7 (S06), Well 8 (S07), Well 9 (S13), Well 10 (S11), Well 11.1 (S14), Well 11.2 (S12), CWA South Intertie (S19)
	3	18	19820 SE 8th St	19818 SE 8th St	19824 SE 8th St	Well 1 (SO1), Well 2.1/2.2 (S18), Well 4 (S17), Well 7 (S06), Well 8 (S07), Well 9 (S13), Well 10 (S11), Well 11.1 (S14), Well 11.2 (S12), CWA South Intertie (S19)
	3	22	19636 SE 29th St	19640 SE 29th St	19632 SE 29th St	Well 1 (SO1), Well 2.1/2.2 (S18), Well 4 (S17), Well 7 (S06), Well 8 (S07), Well 9 (S13), Well 10 (S11), Well 11.1 (S14), Well 11.2 (S12), CWA South Intertie (S19)
	3	27	3030 E Beaver Lake Dr SE	2830 East Beaver Lake Dr SE	25704 SE 31st Pl SE	Well 1 (SO1), Well 2.1/2.2 (S18), Well 4 (S17), Well 7 (S06), Well 8 (S07), Well 9 (S13), Well 10 (S11), Well 11.1 (S14), Well 11.2 (S12), CWA South Intertie (S19)

Table 2: Routine, Repeat and Triggered Source Sample Locations and Weekly Rotation Schedule						
Week		**ID No.**	**Routine Sample Site Location**	**Upstream Repeat Site**	**Downstream Repeat Site**	**Groundwater Sources for Triggered Sample Sites**
	3	32	4126 220th Pl SE	4125 220th Pl SE	3727 220th Pl SE	Well 1 (SO1), Well 2.1/2.2 (S18), Well 4 (S17), Well 7 (S06), Well 8 (S07), Well 9 (S13), Well 10 (S11), Well 11.1 (S14), Well 11.2 (S12), CWA South Intertie (S19)
	3	45	270th Ave SE & SE 11th St	1101 270h Pl SE	1103 272th Pl SE	Well 1 (SO1), Well 2.1/2.2 (S18), Well 4 (S17), Well 7 (S06), Well 8 (S07), Well 9 (S13), Well 10 (S11), Well 11.1 (S14), Well 11.2 (S12), CWA South Intertie (S19)
	3	46	Trossachs Blvd. & SE 24th Ave.	27187 27th St.	2206 SE 22nd Way	Well 1 (SO1), Well 2.1/2.2 (S18), Well 4 (S17), Well 7 (S06), Well 8 (S07), Well 9 (S13), Well 10 (S11), Well 11.1 (S14), Well 11.2 (S12), CWA South Intertie (S19)
	3	47	1931 249th Pl SE	2002 249th Pl SE	1927 249th Pl SE	Well 1 (SO1), Well 2.1/2.2 (S18), Well 4 (S17), Well 7 (S06), Well 8 (S07), Well 9 (S13), Well 10 (S11), Well 11.1 (S14), Well 11.2 (S12), CWA South Intertie (S19)
	3	48	1537 E. Lk Samm Pkwy NE	1715 E. Lk Samm Pkwy. NE	1560 E. Lk Samm Pkwy NE	Well 1 (SO1), Well 2.1/2.2 (S18), Well 4 (S17), Well 7 (S06), Well 8 (S07), Well 9 (S13), Well 10 (S11), Well 11.1 (S14), Well 11.2 (S12), CWA South Intertie (S19)
	3	55	4644 238th Way SE	4634 238th Way SE	4652 238th Way SE	Well 1 (SO1), Well 2.1/2.2 (S18), Well 4 (S17), Well 7 (S06), Well 8 (S07), Well 9 (S13), Well 10 (S11), Well 11.1 (S14), Well 11.2 (S12), CWA South Intertie (S19)
	3	57	3609 212th Pl SE	3605 212th Pl SE	3606 212th Pl SE	Well 1 (SO1), Well 2.1/2.2 (S18), Well 4 (S17), Well 7 (S06), Well 8 (S07), Well 9 (S13), Well 10 (S11), Well 11.1 (S14), Well 11.2 (S12), CWA South Intertie (S19)
	3	58	21341 SE 13th Pl	21326 SE 13th Pl	21520 SE 13th Pl	Well 1 (SO1), Well 2.1/2.2 (S18), Well 4 (S17), Well 7 (S06), Well 8 (S07), Well 9 (S13), Well 10 (S11), Well 11.1 (S14), Well 11.2 (S12), CWA South Intertie (S19)

Table 2: Routine, Repeat and Triggered Source Sample Locations and Weekly Rotation Schedule						
Week		ID No.	Routine Sample Site Location	Upstream Repeat Site	Downstream Repeat Site	Groundwater Sources for Triggered Sample Sites
	3	59	1514 235th Ave SE	1630 235th Ave SE	1502 235th Ave SE	Well 1 (SO1), Well 2.1/2.2 (S18), Well 4 (S17), Well 7 (S06), Well 8 (S07), Well 9 (S13), Well 10 (S11), Well 11.1 (S14), Well 11.2 (S12), CWA South Intertie (S19)
	3	60	24213 SE 37th Pl	24207 SE 37th Pl	24303 SE 37th Pl	Well 1 (SO1), Well 2.1/2.2 (S18), Well 4 (S17), Well 7 (S06), Well 8 (S07), Well 9 (S13), Well 10 (S11), Well 11.1 (S14), Well 11.2 (S12), CWA South Intertie (S19)
	3	64	8513 255th Ave NE	8407 255th Ave NE	8535 255th Ave NE	Well 12 (S16), Well 13 (S24), CWA North Intertie (S19)
	3	71	1838 236th Ave NE	23530 NE 17th Pl	1911 236th Ave NE	Well 1 (SO1), Well 2.1/2.2 (S18), Well 4 (S17), Well 7 (S06), Well 8 (S07), Well 9 (S13), Well 10 (S11), Well 11.1 (S14), Well 11.2 (S12), CWA South Intertie (S19)
	4	1	2308 E Lake Sammamish Pl SE	2311 East Lake Sammamish Pl SE	2221 East Lake Sammamish Pl SE	Well 1 (SO1), Well 2.1/2.2 (S18), Well 4 (S17), Well 7 (S06), Well 8 (S07), Well 9 (S13), Well 10 (S11), Well 11.1 (S14), Well 11.2 (S12), CWA South Intertie (S19)
	4	9	823 258th Ave NE	815 258th Ave NE	1004 258th Ave NE	Well 1 (SO1), Well 2.1/2.2 (S18), Well 4 (S17), Well 7 (S06), Well 8 (S07), Well 9 (S13), Well 10 (S11), Well 11.1 (S14), Well 11.2 (S12), CWA South Intertie (S19)
	4	13	230 211th Pl NE	214 211th Pl NE	236 211th Pl NE	Well 1 (SO1), Well 2.1/2.2 (S18), Well 4 (S17), Well 7 (S06), Well 8 (S07), Well 9 (S13), Well 10 (S11), Well 11.1 (S14), Well 11.2 (S12), CWA South Intertie (S19)
	4	20	2030 212th Ave SE	2205 212th Ave SE	1904 212th Ave SE	Well 1 (SO1), Well 2.1/2.2 (S18), Well 4 (S17), Well 7 (S06), Well 8 (S07), Well 9 (S13), Well 10 (S11), Well 11.1 (S14), Well 11.2 (S12), CWA South Intertie (S19)
	4	26	3045 249th Ave SE	3044 249th Ave SE	3037 249th Ave SE	Well 1 (SO1), Well 2.1/2.2 (S18), Well 4 (S17), Well 7 (S06), Well 8 (S07), Well 9 (S13), Well 10 (S11), Well 11.1 (S14), Well 11.2 (S12), CWA South Intertie (S19)

Table 2: Routine, Repeat and Triggered Source Sample Locations and Weekly Rotation Schedule						
Week		ID No.	Routine Sample Site Location	Upstream Repeat Site	Downstream Repeat Site	Groundwater Sources for Triggered Sample Sites
	4	28	2917 266th Ave SE	2819 266th Ave SE	2922 266th Ave SE	Well 1 (SO1), Well 2.1/2.2 (S18), Well 4 (S17), Well 7 (S06), Well 8 (S07), Well 9 (S13), Well 10 (S11), Well 11.1 (S14), Well 11.2 (S12), CWA South Intertie (S19)
	4	33	3725 Providence Point Dr SE	3710 Providence Point Dr. SE	3727 Providence Point Dr. SE	Well 1 (SO1), Well 2.1/2.2 (S18), Well 4 (S17), Well 7 (S06), Well 8 (S07), Well 9 (S13), Well 10 (S11), Well 11.1 (S14), Well 11.2 (S12), CWA South Intertie (S19)
	4	36	4606 247th Pl SE	4561 247th Pl SE	4612 247th Pl SE	Well 1 (SO1), Well 2.1/2.2 (S18), Well 4 (S17), Well 7 (S06), Well 8 (S07), Well 9 (S13), Well 10 (S11), Well 11.1 (S14), Well 11.2 (S12), CWA South Intertie (S19)
	4	40	SE 44th and 232nd Ct SE	23209 SE 44th St	4305 SE Issaquah-Pine Lake Rd.	Well 1 (SO1), Well 2.1/2.2 (S18), Well 4 (S17), Well 7 (S06), Well 8 (S07), Well 9 (S13), Well 10 (S11), Well 11.1 (S14), Well 11.2 (S12), CWA South Intertie (S19)
	4	42	222 238th Ave SE	218 238th Ave SE	23808 SE 2nd Pl	Well 1 (SO1), Well 2.1/2.2 (S18), Well 4 (S17), Well 7 (S06), Well 8 (S07), Well 9 (S13), Well 10 (S11), Well 11.1 (S14), Well 11.2 (S12), CWA South Intertie (S19)
	4	43	21838 NE 18th Way	21903 NE 18th Way	21822 NE 18th St	Well 1 (SO1), Well 2.1/2.2 (S18), Well 4 (S17), Well 7 (S06), Well 8 (S07), Well 9 (S13), Well 10 (S11), Well 11.1 (S14), Well 11.2 (S12), CWA South Intertie (S19)
	4	50	23425 SE Black Nugget Rd	23205 SE Black Nugget Rd	23425 SE Black Nugget Rd (Club house)	Well 1 (SO1), Well 2.1/2.2 (S18), Well 4 (S17), Well 7 (S06), Well 8 (S07), Well 9 (S13), Well 10 (S11), Well 11.1 (S14), Well 11.2 (S12), CWA South Intertie (S19)
	4	51	NE 8th Pl & 233rd Ave NE	817 233rd Ave NE	23306 NE 8th Pl	Well 1 (SO1), Well 2.1/2.2 (S18), Well 4 (S17), Well 7 (S06), Well 8 (S07), Well 9 (S13), Well 10 (S11), Well 11.1 (S14), Well 11.2 (S12), CWA South Intertie (S19)
	4	53	25913 NE 27th Dr	25923 NE 27th Dr	25901 NE 25th St	Well 12 (S16), Well 13 (S24), CWA North Intertie (S19)

Table 2: Routine, Repeat and Triggered Source Sample Locations and Weekly Rotation Schedule						
Week		ID No.	Routine Sample Site Location	Upstream Repeat Site	Downstream Repeat Site	Groundwater Sources for Triggered Sample Sites
	4	69	265th Ave SE & Belvedere Way	1932 SE Belvedere Way	1901 264th Pl SE	Well 1 (SO1), Well 2.1/2.2 (S18), Well 4 (S17), Well 7 (S06), Well 8 (S07), Well 9 (S13), Well 10 (S11), Well 11.1 (S14), Well 11.2 (S12), CWA South Intertie (S19)
	4	70	21606 SE 16th Pl	21520 SE 16th Pl	21616 SE 16th Pl	Well 1 (SO1), Well 2.1/2.2 (S18), Well 4 (S17), Well 7 (S06), Well 8 (S07), Well 9 (S13), Well 10 (S11), Well 11.1 (S14), Well 11.2 (S12), CWA South Intertie (S19)
	4	73	23039 SE 37th St	23023 SE 37th St	23307 SE 37th St	Well 1 (SO1), Well 2.1/2.2 (S18), Well 4 (S17), Well 7 (S06), Well 8 (S07), Well 9 (S13), Well 10 (S11), Well 11.1 (S14), Well 11.2 (S12), CWA South Intertie (S19)

Important Notes for Sample Collector:

SPWSD STANDARD OPERATING PROCEDURE
COLLECTING MONTHLY BATERIOLOGICAL SAMPLES

1. Use the weekly sample schedule to determine for which week of the month you are taking samples.
2. It is best to collect routine samples at the beginning of the week. Many labs do not accept samples at the end of the week or on weekends. Even if your lab does accept samples, it is often hard for a water system to respond adequately to sample results on a Friday afternoon or weekend. Avoid collecting routine coliform samples during weeks that contain major holidays or staff vacations unless you know trained staff and your laboratory are able to respond to unsatisfactory sample results.
3. Access the monthly sample folder on one of the Tough-pads.
    - Ensure that all network drives are connected and synchronize updates in the monthly sample folder.
4. Collect all the necessary materials, paperwork and testing equipment you will need to complete the sampling process. The list includes the following:
    - Tough-pad with updated weekly sample folder
    - Cooler
    - Bac-t disinfectant spray
    - Chlorine testing kit (make sure that batteries are good and that you have sufficient total and free chlorine packets.)
    - 7-9 bacteriological sample bottles (250 Ml or 8 *oz.,* marked on bottom)
    - Water management paperwork for Water Bacteriological Analysis; should be pre-populated

with generic Sammamish Plateau Water information and have four carbon copies. (white, blue, green, yellow)
- Hand pump with hose and appropriate attachment to remove water after sample completion.
- 7-10 rubber bands
- Thin point sharpie (for writing on bottles)
- Ball point pen

5. Drive to appropriate sample location based on that week's testing sites. Make sure the sampling station is clear from obstructions such as shrubs. Make sure the station is clean. Unlock using the 2402 key and open the door, making sure that the number written on inside of door matches the number on corresponding sample site on tough-pad sample sheet.
6. If the weather is windy or rainy, ensure that the sample can be taken without potentially contaminating the sample (e.g. protect the station with your coat or an umbrella.)
7. Spray Bac-T disinfectant spray on the main spigot and copper line in the sample station.
8. Turn on the water and allow water to run hard for 5 minutes.
9. Turn down the water down and allow it to run smoothly so samples can be taken with no splashing.
10. Take chlorine (both total and free) samples to gather the complete distribution system chlorine sample and mark the numbers on the sample sheet on the Tough-pad. Rinse out the glass chlorine sample bottles to remove chemicals and keep the glass clear.
11. Fill out the label on the bottle with a Sharpie pen. Include date, time, sample location and that the sample is being done for SPWSD.
12. There is liquid in bottle to neutralize any chlorine that may be present. Do not rinse this out.
13. To avoid contamination while taking sample, follow these steps;
    - Hold bottle near the bottom with one hand while the other hand unscrews the cap.
    - Do not set the cap down, touch any part of cap that touches bottle, or let anything touch the rim or inside of the cap.
14. Hold the bottle under a smooth stream of water, being careful not to let bottle touch the sample tap. Fill to the shoulder of the bottle. DO NOT OVERFILL! Remove the bottle from the stream and immediately replace the cap.
15. Complete the water bacteriological analysis paperwork. Information needed will include:
    - Date sample was collected
    - Time collected **(the time on the bottle and paperwork must be the same!)**
    - Specific location where the sample was taken (example: Sample station # 00.)
    - Who collected the sample
    - Make sure the “Routine Drinking Water with Chlorinated” box is checked and include your total and free sample readings.
16. Dry off the bottle and review the information written on bottle and paperwork to ensure that the information is the same. Pay particular attention to where and when the sample was taken.
17. Roll paperwork around corresponding bottle and secure it with a rubber band.
18. Place the completed sample with paperwork attached into the cooler for safe keeping and to control the sample temperature.
19. During cold weather months, use a small hand pump to remove water from the copper line. This will prevent the line from freezing.

20. Close the door and make sure the lock is secure.
21. Clean up any mess around sample location and secure the truck.
22. Repeat step 4 and drive to the next sample location.
23. After completion of all weekly bacteriological samples, place all samples into one cooler and deliver the samples to the lab within 30 hours of collection.
24. Fill out your time in the Maintenance Connection software and include labor hours and truck used. In the task section of your work order, find the sample location by week, mark it off as completed, and write your initials.

Washington Department of Health Coliform Sampling Procedure

The following text provides general information on how to collect a coliform sample. The Department of Health recommends that you collect your sample using the following steps. If instructions from your laboratory are different, you should follow the steps listed here. Generally, the sample kit contains:

- A sample bottle
- A lab form
- A rubber band

The general sampling procedure for coliform monitoring is as follows:

Step One

Routine and repeat samples should be collected from sites throughout the distribution system in according with your Coliform Monitoring Plan.

Choose a sample tap that represent the water in your distribution system. Avoid poor sample sites such as swivel faucets, hot and cold mixing faucets with a single lever, leaky or spraying faucets, drinking fountains, janitorial sinks, frost-free hose bibs, and faucets below or near ground level

Step Two

Remove any attachments form the faucet, including aerators, screens, washers, hoses and water filters. If you choose to disinfect the sample site prior to sample collection, be sure to thoroughly flush until all disinfectant is removed.

Step Three

Turn on the cold water only and let it run with a steady stream for at least five minutes. Before collecting the sample, turn the water down to a thin stream (about the width of a pencil) then let the water run one minute. If the system is chlorinated, measure the chlorine residual and note the results on the lab slip. Water conservation tip: The flushed water may be saved in a bucket to be used later.

Step Four

There may be some liquid or powder in the sample bottle to neutralize any chlorine that may be present. Do not rinse it out.

Step Five

To avoid contamination while taking the sample, hold the bottle near the bottom with one hand, hold the top of the cap with the other, and then unscrew the cap. Do not set the cap down, touch any part of the cap that touches the bottle, or let anything touch the rim or inside the cap.

Correct Completion of a Washington State Department of Health Coliform Lab Slip

This information is a refresher for water system operators on the correct way to fill out the lab slip that is submitted with coliform samples.

Note: Use this information only when filling out the Washington Department of Health Water Bacteriological Analysis slips to send to Water Management Laboratories, Inc. If you are submitting samples to Seattle Public Utilities for bacteriological samples, use their form instead.

All parts of the lab slip are important. *The Department of Health will not accept the sample result if there is missing or incomplete information regarding date, time, system ID number, system name, or type of sample. Be sure to fill out every box.*

Date Collected and **Time Collected:** Refer to collection of the sample.

County Name: The county where the system is located.

Type of System: Check "Public."

If Public System, Complete: Include all six characters of System ID Number, in the correct order.

Circle Group: Circle if system is a "Group A" or "Group B" system.

Name of System: As it is shown on DOH records such as the Water Facilities Inventory (WFI) form for your system.

Specific Location Where Sample Was Collected: This should include the address and the type of faucet from which the sample was collected. For example: "Bathroom faucet at 123 Ivy Lane."

Telephone Number - Day and Evening: Day and evening phones where the sample collector or the system owner/manager can be contacted.

Sample Collected By: The name of the person collecting the sample.

Name of System Owner/Manager: The name of the person responsible for operating the system.

Source Type: Check which type of source supplies the water system.

Send Report To: Name and address where the lab should send the water system's copy of the results. *(Note: The lab also sends a copy of the results to DOH, so you generally don't have to.)*

Type of Sample: Check ONLY ONE box in the left hand column of this section. The different types of samples are:

- **Routine** samples are those collected for compliance with the monthly sampling requirements. To the right of the Routine box: If the system is serving treated water, check the appropriate boxes for indicate the type of treatment The chlorine residual should be recorded each time a coliform sample is collected form a system that treats its water with chlorine.
- **Repeat** samples are collected immediately after a Routine sample is found to be

unsatisfactory. To receive credit for repeat samples, you must enter the lab number of the original unsatisfactory Routine sample and the date the Routine sample was collected. The lab can give you this information when they notify you of the Routine sample results. Note: If your system is treated with chlorine, measure the chlorine residual when each repeat sample is collected and write the residual in the space adjacent to the Routine Box.

- **Raw source water** samples should include the two-digit source number that is found on your Water Facilities Inventory (WFI.) This type of sample is collected from the source prior to treatment and is required for systems using surface water sources.
- **New construction/repairs** or **Other** types of samples will not count for compliance. **Other** types should be used for investigative or engineering samples.

Remarks: Note any special instructions that you have for the lab.

(Lab Use Only) Drinking Water Results: Don't enter anything in this section.

Water Management Laboratories Bacteriological Sampling Procedure

How to Take a Water Sample

Always thoroughly clean the faucet and/ or tap with a solution of 10% bleach (unscented) to 90% water in a spray bottle. Avoid using a kitchen tap. If you must use one, remove the faucet aerator screen and disinfect the faucet with a bleach/water solution. When using an outside tap, make sure it is clean and not obstructed by shrubs or other plants. Never take a sample from a garden hose. Avoid sampling during strong winds. Do not remove the cap from the sample bottle until immediately before taking the sample.

1. Disinfect tap with the bleach/water mixture.
2. Turn on the water. Let it run hard for 5 minutes.
3. Repeat steps 1 and 2. Then turn the flow down until there is a smooth stream with no splashing. Let water run for 2 minutes.
4. Uncap the bottle and fill it to the shoulder. Place the cap back on the bottle.

Sample must be kept cold by placing in a cooler or a refrigerator. Deliver the sample to the lab within 30 hours from the time it is taken. The lab will not accept samples after 5:00 p.m. without prior arrangements.

Seattle Public Utilities Water Testing Protocol

District staff must use the Seattle Public Utilities Chain of Custody Record whenever submitting samples to Seattle's Water Quality Laboratory for analysis. A copy of this document is attached at the end of this document.

E. Reduced Triggered Source Monitoring Justification (add sheets as needed):

Refer to Sammamish Plateau Water and Sewer District's Triggered Ground Water Monitoring Plan for more information.

F. Routine Sample Rotation Schedule

See Section D, Table 2: Routine, Repeat and Triggered Source Sample Locations and Weekly Rotation Schedule

G. Level 1 and Level 2 Assessment Contact Information

Name **John Anderson, Water Superintendent**	**Office Phone 425-295-3226** **After Hours Phone 425-495-6527**
Address **1510 228th Avenue SE, Sammamish WA 98075**	**Email: john.anderson@spwater.org**
Name **Scott Jonas, Operations Manager**	**Office Phone 425-295-3226** **After Hours Phone 425-495-6528**
Address **1510 228th Avenue SE, Sammamish WA 98075**	**Email: scott.jonas@spwater.org**

H. *E. coli*-Present Response Plan

Distribution System *E. coli* Response Checklist				
Background Information	**Yes**	**No**	**N/A**	**To Do List**
We inform staff members about activities within the distribution system that could affect water quality.	☒	☐	☐	☐
We document all water main breaks, construction & repair activities, and low pressure and outage incidents.	☒	☐	☐	☐
We can easily access and review documentation on water main breaks, construction & repair activities, and low pressure and outage incidents.	☒	☐	☐	☐
Our Cross-Connection Control Program is up-to-date.	☒	☐	☐	☐
We test all cross-connection control devices annually as required, with easy access to the proper documentation.	☒	☐	☐	☐
We routinely inspect all treatment facilities for proper operation.	☒	☐	☐	☐
We identified one or more qualified individuals who are able to conduct a Level 2 assessment of our water system.	☒	☐	☐	☐

We have procedures in place for disinfecting and flushing the water system if it becomes necessary.	☒	☐	☐	☐
We can activate an emergency intertie with an adjacent water system in an emergency.	☒	☐	☐	☐
We have a map of our service area boundaries.	☒	☐	☐	☐
We have consumers who may not have access to bottled or boiled water.	☐	☒	☐	☐
There is a sufficient supply of bottled water immediately available to our customers who are unable to boil their water.	☒	☐	☐	☐
We have identified the contact person at each day care, school, medical facility, food service, and other customers who may have difficulty responding to a Health Advisory.	☐	☐	☐	☒
We have messages prepared and translated into different languages to ensure our consumers will understand them.	☒	☐	☐	☐
We have the capacity to print and distribute the required number of notices in a short time period.	☒	☐	☐	☐
Policy Direction	**Yes**	**No**	**N/A**	**To Do List**
We have discussed the issue of *E. coli*-present sample results with our policy makers.	☐	☐	☐	☒
If we find *E. coli* in a routine distribution sample, the policy makers want to wait until repeat test results are available before issuing advice to water system customers.	☐	☐	☐	☒
Potential Public Notice Delivery Methods	**Yes**	**No**	**N/A**	**To Do List**
It is feasible to deliver a notice going door-to-door.	☐	☒	☐	☐
We have a list of all of our customers' addresses.	☒	☐	☐	☐
We have a list of customer telephone numbers or access to a Reverse 9-1-1 system.	☐	☐	☐	☒
We have a list of customer email addresses.	☐	☒	☐	☐
We encourage our customers to remain in contact with us using social media.	☒	☐	☐	☐
We have an active website we can quickly update to include important messages.	☒	☐	☐	☐
Our customers drive by a single location where we could post an advisory and expect everyone to see it.	☐	☒	☐	☐
We need a news release to supplement our public notification process.	☐	☒	☐	☐

Distribution System *E. coli* Response Plan

If we have *E. coli* in our distribution system we will immediately:

1. Call DOH at the Northwest Regional Office in Kent.
   Coliform Program: 253-395-6775, Main Office: 253-395-6750.
2. Contact NE Sammamish Sewer and Water District at 425-868-1144 (24 hour emergency number); the City of Issaquah at 425-837-3470 (normal business hours) or 425-837-3200 (after business hours); Union Hill Water Association (425) 497-1812 (24-hour emergency number); Ames Lake Water Association (425) 222-7003 (24-hour emergency number); Redmond Water Operations (425) 556-2800 (24 hour emergency number); Cascade Water Alliance (425) 493-0930; and Seattle Public Utilities (206) 386-1800 (24-hour emergency number).
3. Collect three repeat and triggered source samples as outlined in Part D. Collect additional investigative samples as necessary.
4. Send the total coliform positive sample to a certified laboratory for analysis for fecal coliform or *E.coli.* Collect repeat samples as identified in part D. Collect additional investigative samples as necessary or as directed by DOH.
5. Inspect water system facilities, including treatment station for proper operation.
6. Interview staff to determine whether or not anything unusual was happening in the water system service area, especially since the previous month's samples.
7. Review Cross Connection Control Program status.
8. Review new construction activities, water main breaks and pressure outages that may have occurred during the previous months.
9. Wait for repeat sample results.
10. Discuss with DOH whether to issue a Public Health Advisory/Boil Water notice based on the findings of steps 3-6. If necessary, prepare and issue the Health Advisory (HA) and other public notification materials. Templates are available in the District's Emergency Response Plan.
11. Increase chlorine dose at treatment facilities throughout the system to 1.0 mg/l.
12. Flush affected portions of the distribution system.
13. Respond appropriately to satisfactory repeat results: Lift Health Advisory if one was issued.
14. If repeat sample is unsatisfactory, issue an HA if one has not already been issued. Host DOH staff for a water system inspection and respond accordingly to inspection findings.
15. Send media releases to broadcast networks (radio and television)
16. Post information on District website.
17. Post on District social media sites.
18. Post "Boil Water" sign panels on District water advisory signs at all entrances to the District's service area.
19. Post multilingual notices in various locations such as city halls, libraries and shopping centers. Notices are printed in the top seven languages spoken in Sammamish and an image of a boiling water kettle. See example in Section J.
20. Work with Seattle/King County Department of Health regarding informational postings at restaurants.

***E. coli*-Present Triggered Source Sample Response Checklist – All Sources**				
Background Information	**Yes**	**No**	**N/A**	**To Do List**
We review our sanitary survey results and respond to any recommendations affecting the microbial quality of our water supply.	☒	☐	☐	☐
We address any significant deficiencies identified during a sanitary survey.	☒	☐	☐	☐
There are contaminant sources within our Wellhead Protection Area that could affect the microbial quality of our source water, and if yes, we can eliminate them.	☒ ☐	☐ ☐	☐ ☐	☐ ☒
We routinely inspect our well site(s).	☒	☐	☐	☐
We have a good raw water sample tap installed at each source.	☒	☐	☐	☐
After we complete work on a source, we disinfect the source, flush, and collect an investigative sample.	☒	☐	☐	☐
Public Notice	**Yes**	**No**	**N/A**	**To Do List**
We discussed the requirement for immediate public notice of an *E. coli*-present source sample result with our water system's governing body (board of directors or commissioners) and received direction from them on our response plan.	☐	☐	☐	☒
We discussed the requirement for immediate public notice of an *E. coli*-present source sample result with our wholesale customers and encouraged them to develop a response plan.	☐	☐	☐	☒
We have prepared templates and a communications plan that will help us quickly distribute our messages.	☒	☐	☐	☐

***E. coli*-Present Triggered Source Sample Response Checklist – All Sources**				
Alternate Sources	**Yes**	**No**	**N/A**	**To Do List**
We can stop using this source and still provide reliable water service to our customers.	☒	☐	☐	☐
We have an emergency intertie with a neighboring water system that we can use until corrective action is complete (perhaps for several months).	☒	☐	☐	☐
We can provide bottled water to all or part of the distribution system for an indefinite period.	☐	☒	☐	☐
We can quickly replace our existing source of supply with a more protected new source.	☐	☒	☐	☐
Temporary Treatment	**Yes**	**No**	**N/A**	**To Do List**
This source is continuously chlorinated, and our existing facilities can provide 4-log virus treatment (CT = 6) before the first customer. If yes, at what concentration? 2.0 mg/L	☒	☐	☐	☐
We can quickly introduce chlorine into the water system and take advantage of the existing contact time to provide 4-log virus treatment to a large portion of the distribution system.	☐	☒	☐	☐
We can reduce the production capacity of our pumps or alter the configuration of our storage quantities (operational storage) to increase the amount of time the water stays in the system before the first customer to achieve CT = 6.	☐	☒	☐	☐
We can alter the demand for drinking water (maximum day or peak hour) through conservation messages to increase the time the water is in the system prior to the first customer in order to achieve 4-log virus treatment with chlorine.	☒	☐	☐	☐

E. coli-Present Triggered Source Sample Response Plan – Plateau Zone Sources (Wells 1R, 2.1, 2.2, 4R, 7, 8, 9, 10, 11.1 and 11.2)

If we have *E. coli* in a Plateau Zone source we will immediately:

1. Call DOH at the Northwest Regional Office in Kent.
   Coliform Program: 253-395-6775, Main Office: 253-395-6750.
2. Contact NE Sammamish Sewer and Water District at 425-868-1144 (24 hour emergency number); the City of Issaquah at 425-837-3470 (normal business hours) or 425-837-3200 (after business hours); Cascade Water Alliance (425) 493-0930, and Seattle Public Utilities (206) 386-1800 (24-hour emergency line.)
3. Collect additional repeat and triggered source samples as directed by DOH. Collect additional investigative samples as necessary.
4. Send the total coliform positive sample to a certified laboratory for analysis for fecal coliform or *E.coli.* Collect repeat samples as identified in Section D. Collect additional investigative samples as necessary or as directed by DOH.
5. Inspect water system facilities, including treatment station for proper operation.
6. Interview staff to determine whether or not anything unusual was happening in the water system service area, especially since the previous month's samples.
7. Review Cross Connection Control Program status.
8. Review new construction activities, water main breaks and pressure outages that may have occurred during the previous months.
9. Send media releases to broadcast networks (radio and television)
10. Post information on District website.
11. Post on District social media sites.
12. Post "Boil Water" sign panels on District water advisory signs at all entrances to the District's service area.
13. Post multilingual notices in various locations such as city halls, libraries and shopping centers. Notices are printed in the top seven languages spoken in Sammamish and an image of a boiling water kettle. See example in Section J.
14. Work with Seattle/King County Department of Health regarding informational postings at restaurants.

E. coli-Present Triggered Source Sample Response Plan – Cascade View Zone Sources(Wells 12R and 13R)

If we have *E. coli* in a Cascade View Zone source we will immediately:

1. Call DOH at the Northwest Regional Office in Kent.
   Coliform Program: 253-395-6775, Main Office: 253-395-6750.
2. Contact Union Hill Water Association (425) 497-1812 (24-hour emergency number); Ames Lake Water Association (425) 222-7003 (24-hour emergency number); Redmond Water Operations (425) 556-2800; Cascade Water Alliance (425) 493-0930, and Seattle Public Utilities (206) 386-1800 (24-hour emergency line.)
3. Collect additional repeat and triggered source samples as directed by DOH. Collect additional investigative samples as necessary.
4. Send the total coliform positive sample to a certified laboratory for analysis for fecal coliform or *E.coli.* Collect repeat samples as identified in Section D. Collect additional investigative samples as necessary or as directed by DOH.
5. Inspect water system facilities, including treatment station for proper operation.
6. Interview staff to determine whether or not anything unusual was happening in the water system service area, especially since the previous month's samples.
7. Review Cross Connection Control Program status.
8. Review new construction activities, water main breaks and pressure outages that may have occurred during the previous months.
9. Send media releases to broadcast networks (radio and television)
10. Post information on District website.
11. Post on District social media sites.
12. Post "Boil Water" sign panels on District water advisory signs at all entrances to the District's service area.
13. Post multilingual notices in various locations such as city halls, libraries and shopping centers. Notices are printed in the top seven languages spoken in Sammamish and an image of a boiling water kettle. See example in Section J.
14. Work with Seattle/King County Department of Health regarding informational postings at restaurants.

I. System Maps

- Overall TCR Sampling Map
- Week 1 Sample Stations, including Before (Upstream) and After (Downstream) Sampling Locations
- Week 2 Sample Stations, including Before (Upstream) and After (Downstream) Sampling Locations
- Week 3 Sample Stations, including Before (Upstream) and After (Downstream) Sampling Locations
- Week 4 Sample Stations, including Before (Upstream) and After (Downstream) Sampling Locations

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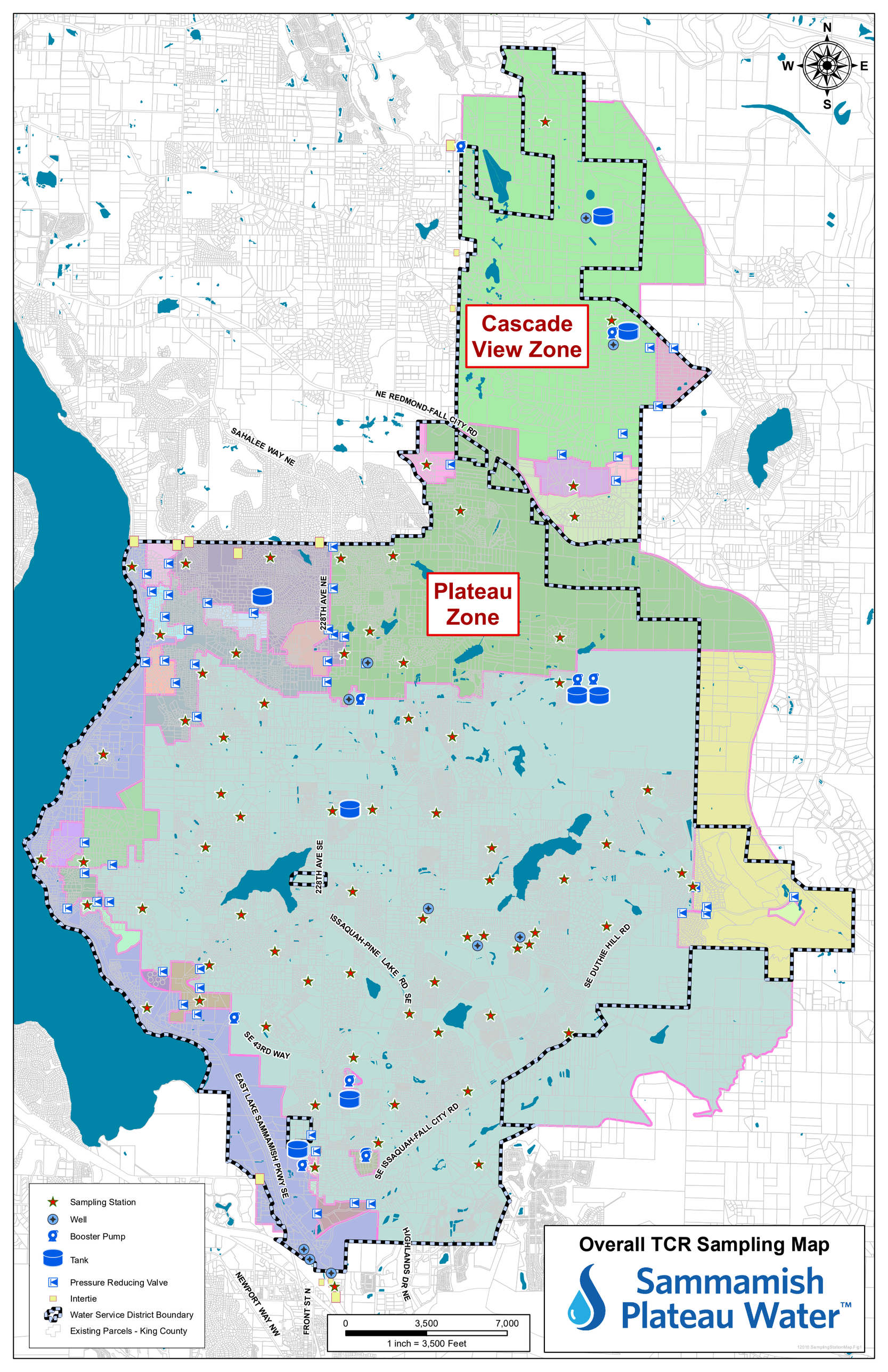
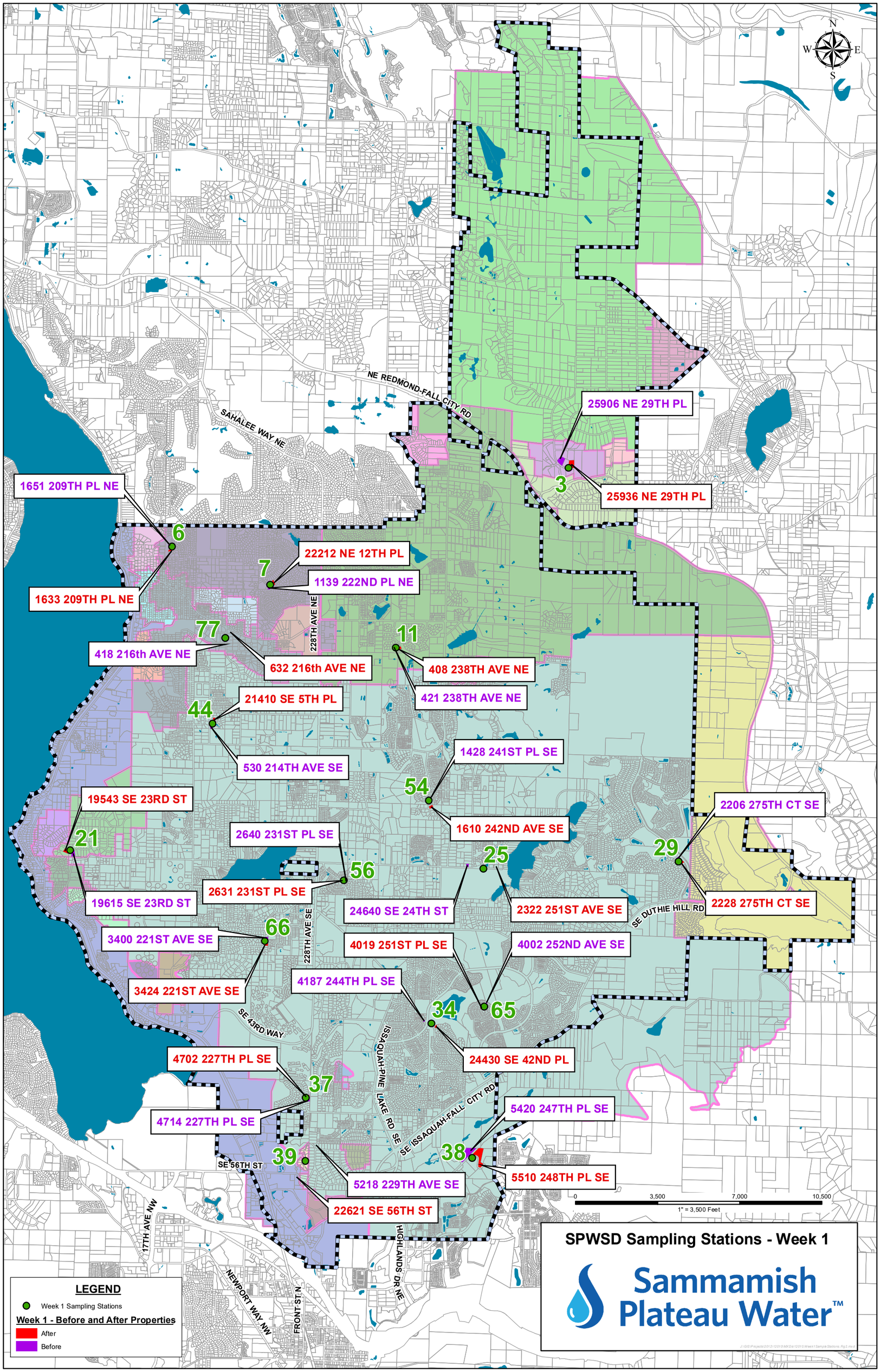

N
W
E
S
Cascade View Zone
Plateau Zone
NE REDMOND-FALL CITY RD
SAHALEE WAY NE
228TH AVE NE
228TH AVE SE
ISSAQUAH-PINE LAKE RD SE
SE DUTHIE HILL RD
SE 43RD WAY
EAST LAKE SAMMAMISH PKWY SE
SE ISSAQUAH-FALL CITY RD
HIGHLANDS DR NE
NEWPORT WAY NW
FRONT ST N
Sampling Station
Well
Booster Pump
Tank
Pressure Reducing Valve
Intertie
Water Service District Boundary
Existing Parcels - King County
0
3,500
7,000
1 inch = 3,500 Feet
Overall TCR Sampling Map
Sammamish Plateau Water™


N
W
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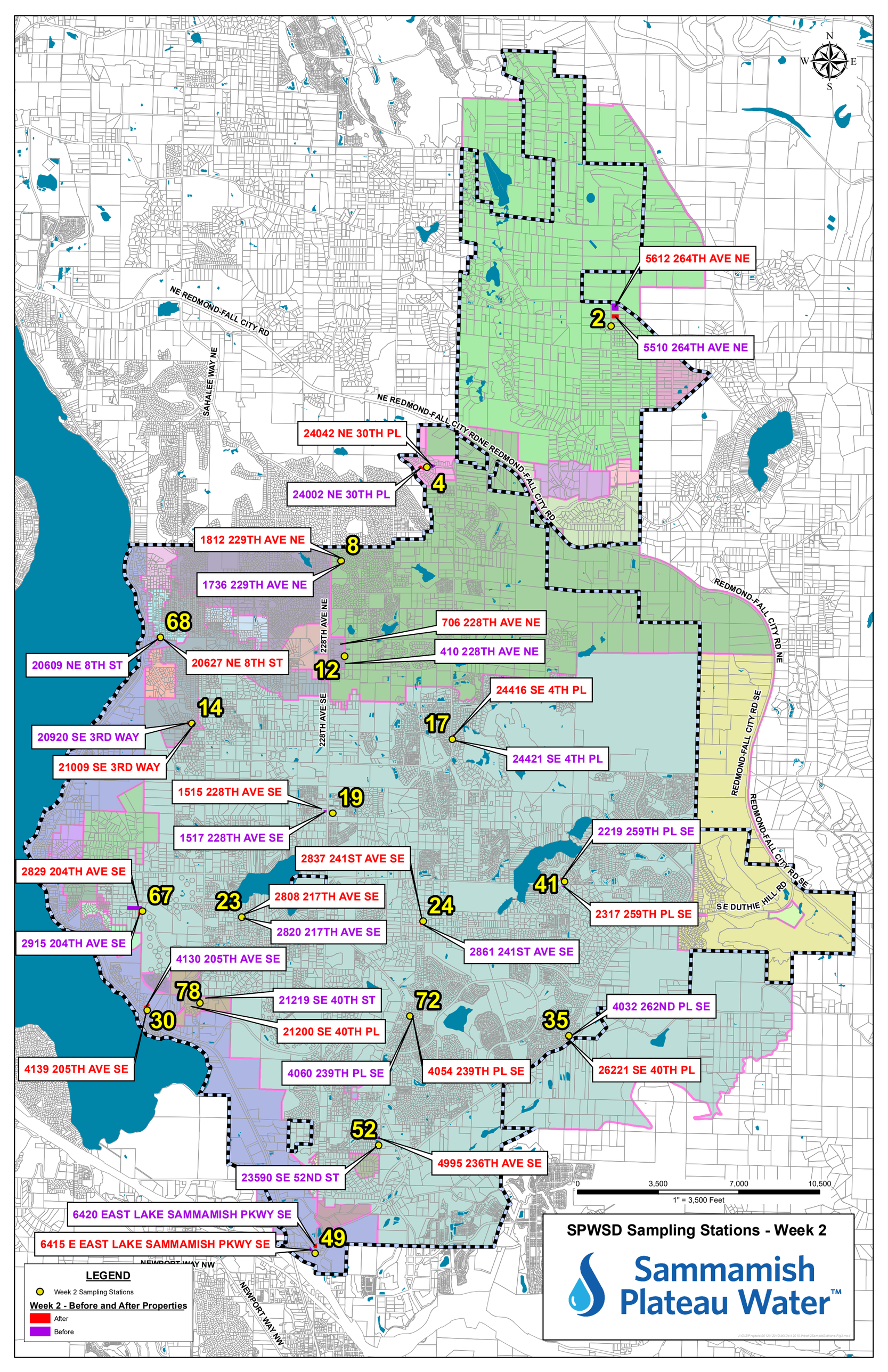
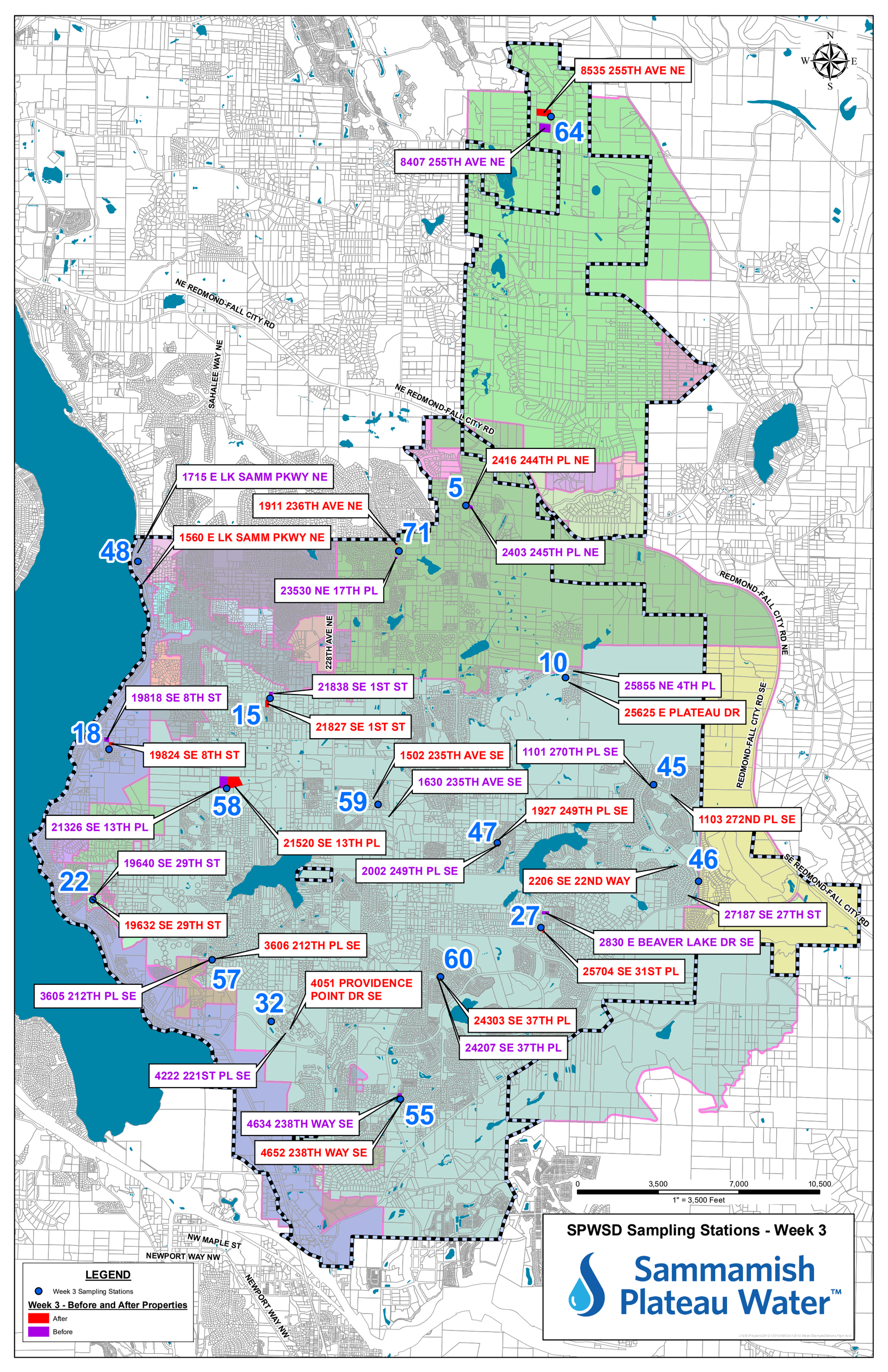
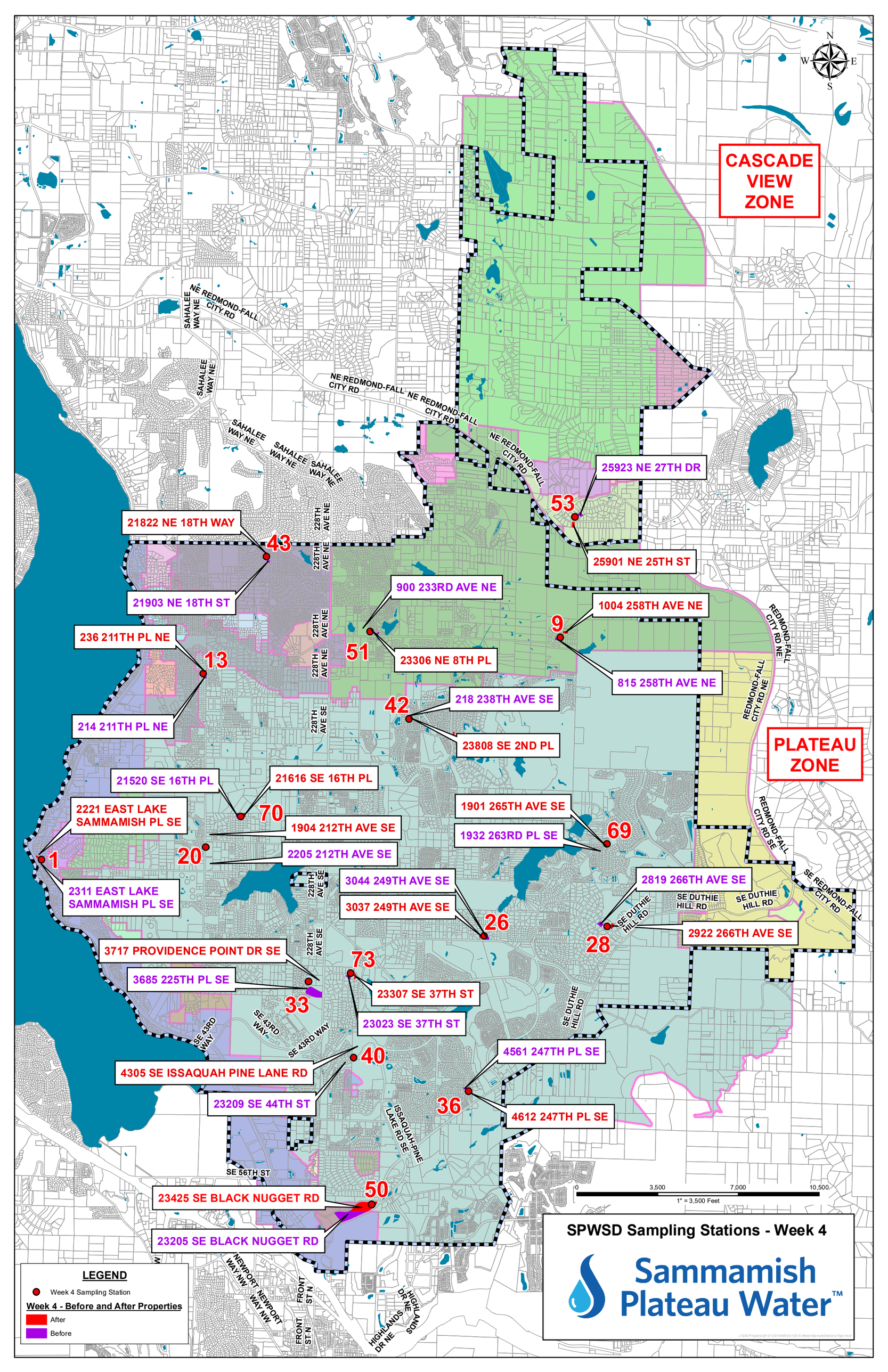
NE REDMOND-FALL CITY RD
SAHALEE WAY NE
25906 NE 29TH PL
3
25936 NE 29TH PL
1651 209TH PL NE
6
1633 209TH PL NE
7
22212 NE 12TH PL
1139 222ND PL NE
228TH AVE NE
77
418 216th AVE NE
632 216th AVE NE
11
408 238TH AVE NE
421 238TH AVE NE
44
21410 SE 5TH PL
530 214TH AVE SE
1428 241ST PL SE
54
1610 242ND AVE SE
19543 SE 23RD ST
21
2640 231ST PL SE
56
2631 231ST PL SE
19615 SE 23RD ST
24640 SE 24TH ST
25
2322 251ST AVE SE
2206 275TH CT SE
29
2228 275TH CT SE
SE DUTHIE HILL RD
66
3400 221ST AVE SE
228TH AVE SE
4019 251ST PL SE
4002 252ND AVE SE
3424 221ST AVE SE
4187 244TH PL SE
34
65
SE 43RD WAY
ISSAQUAH-PINE LAKE RD SE
24430 SE 42ND PL
4702 227TH PL SE
37
4714 227TH PL SE
SE ISSAQUAH-FALL CITY RD
5420 247TH PL SE
39
38
SE 56TH ST
5218 229TH AVE SE
5510 248TH PL SE
22621 SE 56TH ST
17TH AVE NW
HIGHLANDS DR NE
NEWPORT WAY NW
FRONT ST N
0
3,500
7,000
10,500
1" = 3,500 Feet
LEGEND
Week 1 Sampling Stations
Week 1 - Before and After Properties
After
Before
SPWSD Sampling Stations - Week 1
Sammamish Plateau Water™


5612 264TH AVE NE
2
5510 264TH AVE NE
NE REDMOND-FALL CITY RD
SAHALEE WAY NE
24042 NE 30TH PL
4
24002 NE 30TH PL
NE REDMOND-FALL CITY RDNE REDMOND-FALL CITY RD
1812 229TH AVE NE
8
1736 229TH AVE NE
228TH AVE NE
REDMOND-FALL CITY RD NE
68
706 228TH AVE NE
20609 NE 8TH ST
20627 NE 8TH ST
410 228TH AVE NE
12
24416 SE 4TH PL
14
17
20920 SE 3RD WAY
21009 SE 3RD WAY
24421 SE 4TH PL
228TH AVE SE
REDMOND-FALL CITY RD SE
1515 228TH AVE SE
19
1517 228TH AVE SE
2219 259TH PL SE
REDMOND-FALL CITY RD SE
2837 241ST AVE SE
2829 204TH AVE SE
41
67
23
2808 217TH AVE SE
24
2317 259TH PL SE
SE DUTHIE HILL RD
2820 217TH AVE SE
2915 204TH AVE SE
2861 241ST AVE SE
4130 205TH AVE SE
78
21219 SE 40TH ST
72
4032 262ND PL SE
35
30
21200 SE 40TH PL
4139 205TH AVE SE
4060 239TH PL SE
4054 239TH PL SE
26221 SE 40TH PL
52
4995 236TH AVE SE
23590 SE 52ND ST
0
3,500
7,000
10,500
1" = 3,500 Feet
6420 EAST LAKE SAMMAMISH PKWY SE
6415 E EAST LAKE SAMMAMISH PKWY SE
49
NEWPORT WAY NW
NEWPORT WAY NW
LEGEND
Week 2 Sampling Stations
Week 2 - Before and After Properties
After
Before
SPWSD Sampling Stations - Week 2
Sammamish Plateau Water™


8535 255TH AVE NE
64
8407 255TH AVE NE
NE REDMOND-FALL CITY RD
SAHALEE WAY NE
NE REDMOND-FALL CITY RD
2416 244TH PL NE
5
1715 E LK SAMM PKWY NE
1911 236TH AVE NE
71
48
1560 E LK SAMM PKWY NE
2403 245TH PL NE
23530 NE 17TH PL
228TH AVE NE
REDMOND-FALL CITY RD NE
10
25855 NE 4TH PL
25625 E PLATEAU DR
21838 SE 1ST ST
19818 SE 8TH ST
15
21827 SE 1ST ST
18
19824 SE 8TH ST
1502 235TH AVE SE
1101 270TH PL SE
45
1630 235TH AVE SE
58
59
REDMOND-FALL CITY RD SE
21326 SE 13TH PL
1927 249TH PL SE
1103 272ND PL SE
47
21520 SE 13TH PL
2002 249TH PL SE
19640 SE 29TH ST
46
22
2206 SE 22ND WAY
SE REDMOND-FALL CITY RD
19632 SE 29TH ST
27187 SE 27TH ST
27
3606 212TH PL SE
2830 E BEAVER LAKE DR SE
60
57
25704 SE 31ST PL
3605 212TH PL SE
4051 PROVIDENCE POINT DR SE
32
24303 SE 37TH PL
24207 SE 37TH PL
4222 221ST PL SE
55
4634 238TH WAY SE
4652 238TH WAY SE
NW MAPLE ST
NEWPORT WAY NW
NEWPORT WAY NW
0
3,500
7,000
10,500
1" = 3,500 Feet
N
S
E
W
LEGEND
Week 3 Sampling Stations
Week 3 - Before and After Properties
After
Before
SPWSD Sampling Stations - Week 3
Sammamish Plateau Water™


CASCADE VIEW ZONE
PLATEAU ZONE
N
W
E
S
NE REDMOND-FALL CITY RD
SAHALEE WAY NE
228TH AVE NE
228TH AVE SE
REDMOND-FALL CITY RD NE
REDMOND-FALL CITY RD SE
SE DUTHIE HILL RD
SE 43RD WAY
SE 56TH ST
ISSAQUAH-PINE LAKE RD SE
NEWPORT WAY NW
FRONT ST N
HIGHLANDS DR NE
25923 NE 27TH DR
53
25901 NE 25TH ST
21822 NE 18TH WAY
43
21903 NE 18TH ST
900 233RD AVE NE
51
23306 NE 8TH PL
1004 258TH AVE NE
9
815 258TH AVE NE
236 211TH PL NE
13
214 211TH PL NE
218 238TH AVE SE
42
23808 SE 2ND PL
21520 SE 16TH PL
21616 SE 16TH PL
70
2221 EAST LAKE SAMMAMISH PL SE
1904 212TH AVE SE
1901 265TH AVE SE
1932 263RD PL SE
69
1
20
2205 212TH AVE SE
2311 EAST LAKE SAMMAMISH PL SE
3044 249TH AVE SE
3037 249TH AVE SE
26
2819 266TH AVE SE
28
2922 266TH AVE SE
3717 PROVIDENCE POINT DR SE
3685 225TH PL SE
73
33
23307 SE 37TH ST
23023 SE 37TH ST
4561 247TH PL SE
40
4305 SE ISSAQUAH PINE LANE RD
23209 SE 44TH ST
36
4612 247TH PL SE
23425 SE BLACK NUGGET RD
50
23205 SE BLACK NUGGET RD
0
3,500
7,000
10,500
1" = 3,500 Feet
LEGEND
Week 4 Sampling Station
Week 4 - Before and After Properties
After
Before
SPWSD Sampling Stations - Week 4
Sammamish Plateau Water™

J. Additional information

- Seattle Public Utilities Water Quality Laboratory Routine Sampling Record (Week 1 shown as an example.)
- Sammamish Plateau Water Boil Water Advisory Notice

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Seattle Public Utilities

CHAIN OF CUSTODY RECORD
Microbiology

Week 1

SEATTLE PUBLIC UTILITIES

Water Quality Laboratory
800 S. Stacy St. Seattle, WA 98134

DATE
Phone: (206) 684-7834 FAX: (206) 684-4133

Name: Sammamish Plateau WSD
Address: 1510 228th Ave SE
Sammamish WA 98075
Telephone: 425-392-6256
Fax: 425-391-5389
Submitter: Signature(s):

PWS ID # 40900
Source # ___

Repeat ☐ New Main ☐
Routine ☒ Main Break ☐
Other ☐ Cust. Call ☐

Sample Date	Sample Time	Sampler	Location	Lab Sample #	Field Data: Field Chlorine	Field Data: Field Temperature	Field Data: Other	Testing Parameters (Check requested tests): P/A	MPN	FC	HPC	Other	Results: Total Coliform/ E. Coli: Presence/ Absence	Total Coliform/ E. Coli: Most Probable Number (MPN)	Results: Fecal Coliform (CFU/100mL)	Results: Heterotrophic Plate Count (CFU/ml)	Results: Other
			SPWSD-**3** 25920 NE 29TH PL					X									
			SPWSD-**6** 1639 209TH PL NE					X									
			SPWSD-**7** 22202 NE 12TH PL					X									
			SPWSD-**11** 407 238TH AVE NE					X									
			SPWSD-**21** 19605 SE 23RD ST					X									
			SPWSD-**25** 25005 SE 24TH ST					X									
			SPWSD-**29** 2214 275TH CT SE					X									
			SPWSD-**34** 4210 244TH PL SE					X									
			SPWSD-**37** 4708 227TH PL SE					X									
			SPWSD-**38** 5408 248TH PL SE					X									

COMMENTS:

Total # of containers: _____
Travel Temp: ___ C °

Relinquished by:			Received by:		
(signature)	*(printed name)*	Date/Time	*(signature)*	*(printed name)*	Date/Time

TC- Total Coliform
EC- E. Coli
FC- Fecal Coliform
HPC- Heterotrophic Plate
P/A- Presence/Absence
MPN- Most Probable Number

Faxed ☐ Results sent by:
E-mail ☐ Date/Time:

Seattle Public Utilities

CHAIN OF CUSTODY RECORD
Microbiology

Week 1

SEATTLE PUBLIC UTILITIES

Water Quality Laboratory
800 S. Stacy St. Seattle, WA 98134

Page 2 of 2
Phone: (206) 684-7834 FAX: (206) 684-4133

DATE

Name: Sammamish Plateau WSD
Address: 1510 228th Ave SE
Sammamish WA 98075
Telephone: 425-392-6256
Fax: 425-391-5389

PWS ID # 40900
Source # ___

Repeat ☐ New Main ☐
Routine ☒ Main Break ☐
Other ☐ Cust. Call ☐

Submitter: Signature(s):

Sample Date	Sample Time	Sampler	Location	Lab Sample #	Field Data: Field Chlorine	Field Data: Field Temperature	Field Data: Other	Testing Parameters (Check requested tests): P/A	MPN	FC	HPC	Other	Results: Total Coliform/ E. Coli: Presence/ Absence	Total Coliform/ E. Coli: Most Probable Number (MPN)	Fecal Coliform (CFU/100mL)	Heterotrophic Plate Count (CFU/ml)	Other
			SPWSD-**39** 22664 SE 56TH AVE					X									
			SPWSD-**44** 214TH AVE SE & SE 5TH PL					X									
			SPWSD-**54** 1434 241ST PL SE					X									
			SPWSD-**56** 2637 231ST PL SE					X									
			SPWSD-**65** 4014 251ST PL SE					X									
			SPWSD-**66** 3416 221ST AVE SE					X									
			SPWSD-**77** 609 216TH AVE SE					X									
								X									
								X									
								X									

COMMENTS:

Total # of containers: _____
Travel Temp: ___ C °

Relinquished by: (signature)	(printed name)	Date/Time	Received by: (signature)	(printed name)	Date/Time

TC- Total Coliform
EC- E. Coli
FC- Fecal Coliform
HPC- Heterotrophic Plate
P/A- Presence/Absence
MPN- Most Probable Number

Faxed ☐
E-mail ☐
Results sent by:
Date/Time:

BOIL WATER ADVISORY NOTICE

Date: _____

Contact: _____

Sammamish Plateau Water

BOIL YOUR WATER BEFORE USING!

WHAT HAPPENED? The staff at the Sammamish Plateau Water and Sewer District (state water system ID #409009) takes water samples from 70 sampling stations located throughout the service area. We took water samples on [insert date], and on [insert date] we received a test result from a water sample that showed fecal coliform bacteria, or *E. coli* in the water. We took follow up samples on [insert date) as required by the Washington Department of Health, and the test results on (insert date) still showed the bacteria in the water.

WHAT SHOULD YOU DO? DO NOT DRINK THE WATER WITHOUT BOILING IT FIRST. Bring all water to a full boil, let it boil for one minute, and let it cool before using, or use bottled water. Boiled or bottled water should be used for drinking, making ice, brushing teeth, washing dishes, and food preparation **until further notice**. Boiling kills bacteria and other organisms in the water.

Fecal coliforms and E. coli are bacteria whose presence indicates that the water may be contaminated with human or animal wastes. Microbes in these wastes can cause diarrhea, cramps, nausea, headaches, or other symptoms. They may pose a special health risk for infants, young children, and people with severely compromised immune systems. These bacteria can make you sick, especially for people with weakened immune systems. If you experience any of these symptoms and they persist, you may want to seek medical advice. People at increased risk should seek advice about drinking water from their health care providers.

WHAT CAUSED THE PROBLEM? We do not know the cause of the contamination at this time. [or identify cause if known.] Bacterial contamination can occur when increased runoff enters the drinking water source, for example, following heavy rains. It can also happen due to a break in the distribution system lines, damage during construction, a faulty backflow assembly or an issue during the water treatment process, among others.

WHAT IS THE DISTRICT DOING TO RESOLVE THE PROBLEM? We have flushed our water system and added additional chlorine to clear out the bacteria. We have increased the number of water samples as required by Department of Health regulations. [add any additional treatment information here.] We will inform you when tests are clear of bacteria and you no longer need to boil your water. We anticipate resolving the problem by [add estimated time frame].

For more information, please contact our Customer Service Department at (425) 392-6256 or visit our website at www.spwater.org**.** General guidelines on ways to lessen the risk of infection by microbes are available from the EPA Safe Drinking Water Hotline at (800) 426-4791.

Boil your water before using.

將水煮開後才使用。

Chinese

Haga hervir el agua antes de usarla.

Spanish

पानी इसतेमाल करने से पहिले उबाल लें।

Hindi

水は使用する前に煮沸してください。

Japanese

사용하기 전에 물을 끓이십시오.

Korean

Pakuluin ang inyong tubig bago gagamitin.

Tagalog (Filipino)

Please share this information with all the other people who drink this water, especially those who may not have received this notice directly (for example, people in apartments, nursing homes, schools, and businesses). You can do this by posting this notice in a public place or distributing copies by hand or mail.

Sammamish Plateau Water and Sewer District Triggered Ground Water Monitoring Plan

Revised 9/20/2017

1.0 INTRODUCTION AND OBJECTIVES

The United State Environmental Protection Agency (EPA) developed the Ground Water Rule (GWR) to increase protection for consumers of public drinking water systems that rely on ground water sources. The GWR ensures that these systems take corrective actions to eliminate sources of contamination or to remove or inactivate pathogens from drinking water sources. The major components of the GWR are:

- Periodic sanitary surveys of ground water systems addressing eight specific sanitary survey elements to evaluate the system for the presence of significant deficiencies.
- Source water monitoring either through triggered monitoring or State-directed assessment monitoring to test for the presence of one of three fecal indicators (in Washington State, the indicator is *E. coli*).
- Requirements to correct significant deficiencies and eliminate or treat for fecal contamination through specific corrective actions.
- Compliance monitoring to ensure that treatment technologies installed to treat drinking water reliably achieve at least 4-log treatment of viruses via inactivation, removal, or a combination of these.

The GWR requires ground water systems that provide less than 4-log removal or inactivation of viruses, or do not conduct compliance monitoring of treatment to demonstrate disinfection performance, to conduct monitoring for the presence of a fecal indicator at the source when total coliform bacteria are detected in the distribution system. Triggered monitoring is designed to allow systems and States to identify and correct any public health risks from fecal contamination found at the source.

This Triggered Ground Water Monitoring Plan (Plan) has been developed by Sammamish Plateau Water and Sewer District (District) to conduct triggered monitoring in a manner that meets the GWR requirements. This Plan establishes what sources will be monitored in response to notification that a positive coliform sample has occurred, and when consumers and consecutive or wholesale systems need to be notified. This Plan was revised in 2017 in conjunction with the revisions of the District's Coliform Monitoring Plan to meet the requirements of the Revised Total Coliform Rule (RTCR), updated by the U.S Environmental Protection Agency (EPA) and the Washington Department of Health in 2016.

2.0 APPROACH

As a water system with multiple ground water sources as well as surface water supplies, the District evaluated which GWR compliance strategy would work best: compliance monitoring or triggered monitoring. The District estimated the contact time obtained prior to the first customer's service connection, and reviewed this information and the logistics associated with meeting compliance

monitoring requirements. After review, the District determined that the optimal GWR compliance path is to plan to conduct triggered monitoring at representative sources when total coliform is found in bacterial samples collected under the Revised Total Coliform Rule (RTCR) promulgated by the Washington Department of Health in April 2016. The District's Coliform Monitoring Plan, documenting monthly monitoring in compliance with the RTCR, was updated in September 2017 to include the revisions.

This Plan details the District's representative, triggered monitoring approach. EPA regulations and guidelines, including the *Ground Water Rule Triggered and Representative Source Water Monitoring Guidance Manual* (2009) were used to develop this Plan.

3.0 SYSTEM INFORMATION

The District is located in King County, Washington. This special purpose district public water supply system serves 63,148 customers (as of December 2016) via ground water sources and interties with regional and adjacent purveyors. Table 1 lists each of the District's sources, type of use, treatment, and capacity, as presented in the 2016 Water Facilities Inventory. The District also has two interties with Northeast Sammamish Sewer and Water District, which is also a groundwater purveyor, and multiple emergency connections with adjacent water suppliers. The District has two interties with Cascade Water Alliance (North and South connections) that provide regional surface water from Seattle Public Utilities. Information on these connections is included in Table 2.

Table 1. The District's Sources of Supply and Treatment

Groundwater Supply Source	Type	Treatment	Capacity (gpm)
Well 1R	Permanent	Corrosion Control, Fluoridation, Chlorination	500
Well 2.1	Permanent	Mn Filtration, Corrosion Control, Fluoridation, Chlorination	300
Well #2.2	Permanent	Mn Filtration, Corrosion Control, Fluoridation, Chlorination	500
Well #4R	Permanent	Mn Filtration, Ferric Chloride, Fluoridation[1], Chlorination	1450/1800
Well #7	Permanent	Corrosion Control, Fluoridation, Chlorination	2,000
Well #8	Permanent	Corrosion Control, Fluoridation, Chlorination	3,200
Well #9	Seasonal	Corrosion Control, Fluoridation, Chlorination	2,200
Well #10	Permanent	Corrosion Control, Fluoridation, Chlorination	500
Well #11.1	Permanent	Mn Filtration, Ferric Chloride, Fluoridation[1], Chlorination	389

Well #11.2	Permanent	Mn Filtration, Ferric Chloride, Fluoridation[1], Chlorination	1,450/1,600
Well #12R	Permanent	Mn Filtration, Fluoridation, Chlorination	200
Well #13R	Permanent	Mn Filtration, Fluoridation, Chlorination	260

[1]No fluoride reaches the 500 or 700 Pressure Zones

Table 2. Interties and Regional Supply Connections to the District's Distribution System

Utility	Number of Connections	Does the District Provide and/or Receive Water?	Plateau or Cascade View Zone?	Reaches These Pressure Zones[1]	Most Likely Receives Water From…
Permanent Connections					
Cascade Water Alliance – North Regional Connection	1	Receiving	Cascade View	730 Zone	Surface water wheeled through City of Redmond system in Redmond Ridge
Cascade Water Alliance – South Regional Connection	1	Receiving	Plateau	297 Zone	Surface water wheeled through Bellevue-Issaquah Pipeline in Issaquah (surface water)
N.E. Sammamish Sewer and Water District	1	Either way	Plateau	700 Zone	Ground water wells
Emergency Connections					
N.E. Sammamish Sewer and Water District	1	Either way	Plateau	297 Zone	Ground water wells
N.E. Sammamish Sewer and Water District	3	Either way	Plateau	700 Zone	Ground water wells
Ames Lake Water Association	1	Providing	Cascade View	730 Zone	Ground water wells
Union Hill Water Association	2	Providing	Cascade View	730 Zone	Ground water wells

Utility	Number of Connections	Does the District Provide and/or Receive Water?	Plateau or Cascade View Zone?	Reaches These Pressure Zones[1]	Most Likely Receives Water From…
Issaquah	2	Either way	Plateau	297 Zone	Surface and well water

[1] From 2010 Draft Water System Plan, Table 6-5.
Note: Shading of rows denotes interties to surface only water supplies.

As shown in Table 1, the District provides some disinfection for each ground water source. While some sources may meet the criteria for conducting compliance monitoring, the District has determined that conducting representative, triggered monitoring was the best option for the District for compliance with the GWR.

For GWR compliance, the District will need to work with suppliers that provide ground water and consecutive systems receiving water from the District's ground water sources. As shown in Table 2, during typical operations, the District receives ground water from the Northeast Sammamish Sewer and Water District and provides ground water to the same system. Additionally, the District will need to take into account any active emergency connections when conducting triggered source water monitoring. Table 2 shows that Cascade Water Alliance connections provide only surface water to the District. During conversations with Seattle Public Utilities (SPU) about their Riverton Heights well field, both parties determined that there is no possibility of that well water getting into the District's distribution system through the Cascade Water Alliance connections.

3.1 Hydraulically Separate Zones

The District's distribution system is separated into two hydraulically separate zones, the Plateau Zone and Cascade View Zone.

Plateau Zone: As of 2016, this zone served nearly 61,105 people at about 17,498 service connections. There are six storage tanks present: 3.0 MG Tank, 2 MG Tank, two 4 MG tanks, 7.0 MG Tank, and 2.25 MG Tank. The Plateau Zone is divided into five major pressure zones that include several smaller zones created to serve areas with variable topography. Additionally, 5 booster pump stations and 41 pressure-reducing valves serve this area.

Cascade View Zone: As of 2016, this zone served about 2,043 people at about 705 service connections. Two storage tanks are in use: 600,000-gallon tank and 275,000-gallon tank. The Cascade View Zone is divided into three primary pressure zones and two smaller zones. Additionally, two booster pump stations and five pressure-reducing valves serve this area.

4.0 REPRESENTATIVE MONITORING

This section of the Plan establishes which sources will be considered representative of each RTCR monitoring location. Conducting representative monitoring allows the District to reduce the number of

samples collected for triggered monitoring. Additionally, this can minimize notification of other systems under GWR requirements.

4.1 Basic Requirements

These are the basic requirements for conducting representative triggered monitoring under the GWR:

- The plan outlining representative sources must be submitted and approved by DOH prior to implementation.
- Systems can reduce the number of sampling sites by:
    - Establishing which sources provide water to each RTCR sampling location (and to consecutive systems). As a result, when the system obtains a positive RTCR sample, the District would collect triggered monitoring samples only at the sources which provide water to the RTCR sampling site as described in the DOH-approved plan and which were in use during sampling. This same concept would be applied to connections to consecutive systems. If a consecutive system obtains a positive RTCR sample, the system would be required to monitor only those sources that provide water to the consecutive system and were operating when the sample was collected, instead of collecting samples at each source.
    - Determining that one or more wells represent multiple wells in the same hydrogeological setting. As a result, when the system obtains a positive RTCR sample, triggered monitoring samples would be collected only at wells representing different hydrogeological conditions, instead of collecting samples at each well source.

4.2 The District's Ground Water Sources Representing Coliform Monitoring Locations

With respect to developing this Plan, the District has determined that monitoring efforts would be most efficient if representative monitoring is used. To determine which sources to monitor at each coliform site, the following were considered:

- Map of the distribution system indicating points of entry and RTCR sampling sites
- Source types, level of treatment for each source (at the point of entry), type of supply (permanent, seasonal, emergency, etc.)
- Connections to other systems, indicating whether these feed water to other systems, accept water from other systems, or both
- Data linking RTCR monitoring locations to particular ground water sources (hydraulic, operational, water quality, etc.)
- Data linking connections to consecutive systems to particular ground water sources (hydraulic, operational, water quality, hydraulic model, etc.)

An analysis of movement of water through the District's drinking water supply system and operational flexibility has indicated that it is necessary to assume that water from each of the sources can move throughout many areas of the operating zone it supplies. However, as described above, the Cascade View and Plateau Zones are not connected hydraulically. Therefore, sources serving the Cascade View Zone will be monitored, and the District response to positive coliform samples in the Cascade View Zone distribution system will be conducted per GWR requirements for that zone. Additionally, sources serving

the Plateau Zone will be monitored, and the District response to positive coliform samples in the Plateau Zone distribution system will be conducted per GWR requirements for that specific zone. This will also be true with respect to wholesale and consecutive systems. The District will only issue public notifications to residents with systems linked to the operating zone serving the RTCR site that exhibit a positive coliform sample. Table 3 in Section 4.4 provides details.

4.3 The District's Wells Representing Other Wells in the Same Hydrogeological Setting

The following information was considered by the District and others to determine if a few of the District's sources could be combined according to hydrogeological properties:

- Well locations including proximity to other wells.
- Well construction details for each well, including depth, grouting, sanitary seal, and screened intervals.
- Water chemistry analysis results demonstrating similarities or differences among wells or vulnerability of wells to contamination.
- Aquifer information and other hydrogeological studies, as appropriate.

The following wells were identified as being in the same hydrogeological setting:

- Wells 2.1 and 2.2, which have been designated as a wellfield (S18) by DOH. In the technical review of these wells, the following were found (CDM, 2004):
    - Wells 2.1 and 2.2 meet requirements for DOH wellfield designation.
    - The wells share a water right certificate and meet requirements pertaining to construction or replacement of wells.
    - 24-hour pumping test data indicate that Wells 2.1 and 2.2 are hydraulically connected.
    - With the exception of manganese, water quality data indicate a relative homogeneity of water quality constituents in samples drawn from each well.

This GWR Plan treats Wells 2.1 and 2.2 as a single source. When the system experiences a positive RTCR sample in the Plateau Zone of their system, one sample will be collected to represent Wells 2.1 and 2.2 before treatment. It should be noted, however, that if a significant deficiency is found, it is probable that all wells within a designated wellfield will require treatment/corrective action.

4.4 Identification of Which Sources Contribute to Each RTCR Site

Table 3 details the sources that serve each RTCR site.

Table 3. Sources of Supply Associated with the RTCR

Source of Supply	RTCR Sampling Sites Served by Source	Operating Zone
Well Sources		
Well 1 (SO1), Wells 2.1 and 2.2 (S18), Well 4 (S17), Well 7 (S06), Well 8 (S07), Well 9 (S13), Well 10 (S11), Well 11.1 (S14), Well 11.2 (S12)	1, 4, 5, 6, 7, 8, 9, 10, 11, 12,13, 14, 15, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 54, 55, 56, 57, 58, 59, 60, 65, 66, 67, 68, 69, 70, 71, 72, 73	Plateau Zone
Well 12 (S16), Well 13 (S24)	2, 3, 53, 64	Cascade View Zone
Ground Water Interties		
N.E. Sammamish Sewer and Water District[1]	1, 4, 5, 6, 7, 8, 9, 10, 11, 12,13, 14, 15, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 54, 55, 56, 57, 58, 59, 60, 65, 66, 67, 68, 69, 70, 71, 72, 73	Plateau Zone
Surface Water Supply Sources		
Cascade Water Alliance – North Regional Connection (wheeled through City of Redmond system)	2, 3, 53, 64	Cascade View Zone
Cascade Water Alliance – South Regional Connection	1, 4, 5, 6, 7, 8, 9, 10, 11, 12,13, 14, 15, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 54, 55, 56, 57, 58, 59, 60, 65, 66, 67, 68, 69, 70, 71, 72, 73	Plateau Zone
Emergency Interties		
N.E. Sammamish Sewer and Water District[1]	1, 4, 5, 6, 7, 8, 9, 10, 11, 12,13, 14, 15, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 54, 55, 56, 57, 58, 59, 60, 65, 66, 67, 68, 69, 70, 71, 72, 73	Plateau Zone
Ames Lake Water Association[2]	2, 3, 53, 64	Cascade View Zone
Union Hill Water Association[2]	2, 3, 53, 64	Cascade View Zone
City of Issaquah[1]	1, 4, 5, 6, 7, 8, 9, 10, 11, 12,13, 14, 15, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 54, 55, 56, 57, 58, 59, 60, 65, 66, 67, 68, 69, 70, 71, 72, 73	Plateau Zone

[1] Provides water to and receives water from the District.

[2] Receives water from the District.

5.0 TRIGGERED GROUND WATER MONITORING

This section of the plan details the District's implementation of triggered monitoring as required by the GWR.

5.1 Basic Requirements

These are the basic requirements for triggered monitoring in the GWR:

- Within 24 hours of notification of a positive RTCR sample by the laboratory, the District must collect a source water sample at each representative source that was in operation when the RTCR sample was collected.
- In Washington State, source water triggered monitoring samples are collected to test for the presence of *E. coli*.
- Samples must be collected at each source (assuming the source is accessible) prior to treatment. The District will collect samples at sample taps that have been installed at each source prior to treatment for triggered sample collection.
- The District must conduct triggered monitoring in response to notification of positive RTCR samples within the distribution system of consecutive systems served by the District.

5.2 RTCR Sample Invalidation

It is possible for DOH to invalidate RTCR sample results or *E. coli* samples on a case-by-case basis. The District may be interested in this option if it appears clear to the District that, for example, the positive RTCR result was caused by distribution system conditions. However, it is important to note that the 24-hour deadline does not leave much time for invalidation to occur prior to collecting triggered monitoring samples. The District will most likely need to plan to conduct triggered sampling and other actions regardless of an appearance that the sample result was not caused by source water conditions.

5.3 Follow-up if a triggered monitoring sample tests positive for the presence of *E. coli*

The following actions will be implemented if the District receives a triggered monitoring sample that tests positive for *E. coli*:

- As determined by DOH, the District will be required to implement corrective action or to collect three additional samples at each source that sampled positive for *E. coli* (or as described in the Representative Triggered Monitoring Plan) within 24 hours of positive *E. coli* sample.
- The District must issue a Tier 1 Public Notice to customers within 24 hours.
- The District must notify DOH within 24 hours.
- The District must include a special notice in their next Consumer Confidence (Water Quality) Report.

5.4 Interaction with Wholesale Suppliers

Because the District both provides water to and receives water from Northeast Sammamish Sewer and Water District (NESSWD) during typical operations due to a shared tank, the District will need to coordinate with that supply system:

- The District will be required to report a positive RTCR sample to NESSWD within 24 hours of being notified of the positive sample by the water quality laboratory.
- If the District is notified by NESSWD that additional source water monitoring results are *E. coli* positive, the District must:
    - Notify SPWSD customers with a Tier 1 Public Notice within 24 hours.
    - Notify SPWSD customers with a special notice in the next Consumer Confidence Report.
    - Consult with DOH and follow their recommended corrective actions.

Additionally, if an emergency intertie is online and the District is receiving ground water from another system during RTCR sampling, that system will also be notified. See Table 3 for details on emergency interties.

5.4.1 Wholesale Suppliers Contact Information

The District may need to contact these utilities if they detect coliform in their system. This depends on where the positive sample was collected (detailed below) and what connections are active:

Northeast Sammamish Sewer and Water District: 425-868-1144 (24 hours per day)

City of Issaquah: 425-837-3470 (normal business hours); 425-837-3200 (after business hours)

Cascade Water Alliance: (425) 493-0930

Seattle Public Utilities (206) 386-1800 (24-hour emergency number)

City of Redmond Water Operations (425) 556-2800 (24-hour emergency number)

Union Hill Water Association (425) 497-1812 (24-hour emergency number)

Ames Lake Water Association (425) 222-7003 (24-hour emergency number)

5.5 Interaction with Consecutive Systems

Because the District provides ground water to Northeast Sammamish Sewer and Water District during typical operations, the District will be notified by this system if they observe a positive RTCR sample. In response, the District will need to:

- Sample all of the supply sources that were in operation on the date the positive RTCR sample(s) was collected. As shown in Table 3, the connections with these systems are through the Plateau operating zone. The District will need to conduct triggered monitoring only at operating sources serving the Plateau zone (also shown in Table 3).
- If results of triggered source water monitoring are positive for the presence of *E. coli*, the District must:

- Notify all consecutive systems served by source(s) testing positive for *E. coli* within 24 hours of the sample result.
- Notify DOH, and if not required to take corrective action, collect three additional source water samples within 24 hours.
- Notify the public with a Tier 1 Public Notice within 24 hours.
- The District must notify the public with a special notice in the next Consumer Confidence Report.

Additionally, if the District receives notification of a positive coliform sample experienced by a system served by an active emergency intertie, the District will conduct sampling of sources serving the operating zone that is connected to the emergency intertie (see Table 3).

5.6 The District's Triggered Monitoring Plan

Table 4 provides details for triggered monitoring the District will need to conduct in response to a positive RTCR sample.

Table 4. GWR Triggered Monitoring Details

RTCR site	Operating Zone	Conduct Triggered Monitoring at these Sources….	Consecutive/Wholesale System Involved
1 2308 E Lk Samm Pl SE	Plateau	Well 1 (SO1), Well 2.1/2.2 (S18), Well 4 (S17), Well 7 (S06), Well 8 (S07), Well 9 (S13), Well 10 (S11), Well 11.1 (S14), Well 11.2 (S12), CWA South Intertie (S19)	N.E. Sammamish Sewer and Water District *Emergency: N.E. Sammamish Sewer and Water District, Issaquah, CWA South Intertie*
2 5524 264th Ave NE	Cascade View	Well 12 (S16), Well 13 (S24), CWA North Intertie (S19)	*Emergency: Union Hill Water Association, Ames Lake Water Association, CWA North Intertie, Redmond*
3 25920 NE 29th Pl	Cascade View	Well 12 (S16), Well 13 (S24), CWA North Intertie (S19)	*Emergency: Union Hill Water Association, Ames Lake Water Association, CWA North Intertie, Redmond*
4 24010 NE 30th Pl	Plateau	Well 1 (SO1), Well 2.1/2.2 (S18), Well 4 (S17), Well 7 (S06), Well 8 (S07), Well 9 (S13), Well 10 (S11), Well 11.1 (S14), Well 11.2 (S12), CWA South Intertie (S19)	N.E. Sammamish Sewer and Water District *Emergency: N.E. Sammamish Sewer and Water District, Issaquah, CWA South Intertie*

RTCR site	Operating Zone	Conduct Triggered Monitoring at these Sources….	Consecutive/Wholesale System Involved
5 2404 NE 244th Pl	Plateau	Well 1 (SO1), Well 2.1/2.2 (S18), Well 4 (S17), Well 7 (S06), Well 8 (S07), Well 9 (S13), Well 10 (S11), Well 11.1 (S14), Well 11.2 (S12), CWA South Intertie (S19)	N.E. Sammamish Sewer and Water District *Emergency: N.E. Sammamish Sewer and Water District, Issaquah, CWA South Intertie*
6 1639 209th Pl NE	Plateau	Well 1 (SO1), Well 2.1/2.2 (S18), Well 4 (S17), Well 7 (S06), Well 8 (S07), Well 9 (S13), Well 10 (S11), Well 11.1 (S14), Well 11.2 (S12), CWA South Intertie (S19)	N.E. Sammamish Sewer and Water District *Emergency: N.E. Sammamish Sewer and Water District, Issaquah, CWA South Intertie*
7 22202 NE 12th Pl	Plateau	Well 1 (SO1), Well 2.1/2.2 (S18), Well 4 (S17), Well 7 (S06), Well 8 (S07), Well 9 (S13), Well 10 (S11), Well 11.1 (S14), Well 11.2 (S12), CWA South Intertie (S19)	N.E. Sammamish Sewer and Water District *Emergency: N.E. Sammamish Sewer and Water District, Issaquah, CWA South Intertie*
8 1806 229th Ave NE	Plateau	Well 1 (SO1), Well 2.1/2.2 (S18), Well 4 (S17), Well 7 (S06), Well 8 (S07), Well 9 (S13), Well 10 (S11), Well 11.1 (S14), Well 11.2 (S12), CWA South Intertie (S19)	N.E. Sammamish Sewer and Water District *Emergency: N.E. Sammamish Sewer and Water District, Issaquah, CWA South Intertie*
9 823 258th Ave NE	Plateau	Well 1 (SO1), Well 2.1/2.2 (S18), Well 4 (S17), Well 7 (S06), Well 8 (S07), Well 9 (S13), Well 10 (S11), Well 11.1 (S14), Well 11.2 (S12), CWA South Intertie (S19)	N.E. Sammamish Sewer and Water District *Emergency: N.E. Sammamish Sewer and Water District, Issaquah, CWA South Intertie*
10 2575 E. Plateau Dr. SE	Plateau	Well 1 (SO1), Well 2.1/2.2 (S18), Well 4 (S17), Well 7 (S06), Well 8 (S07), Well 9 (S13), Well 10 (S11), Well 11.1 (S14), Well 11.2 (S12), CWA South Intertie (S19)	N.E. Sammamish Sewer and Water District *Emergency: N.E. Sammamish Sewer and Water District, Issaquah, CWA South Intertie*
11 407 238th Ave NE	Plateau	Well 1 (SO1), Well 2.1/2.2 (S18), Well 4 (S17), Well 7 (S06), Well 8 (S07), Well 9 (S13), Well 10 (S11), Well 11.1 (S14), Well 11.2 (S12), CWA South Intertie (S19)	N.E. Sammamish Sewer and Water District *Emergency: N.E. Sammamish Sewer and Water District, Issaquah, CWA South Intertie*

RTCR site	Operating Zone	Conduct Triggered Monitoring at these Sources….	Consecutive/Wholesale System Involved
12 410 228th Ave NE	Plateau	Well 1 (SO1), Well 2.1/2.2 (S18), Well 4 (S17), Well 7 (S06), Well 8 (S07), Well 9 (S13), Well 10 (S11), Well 11.1 (S14), Well 11.2 (S12), CWA South Intertie (S19)	N.E. Sammamish Sewer and Water District *Emergency: N.E. Sammamish Sewer and Water District, Issaquah, CWA South Intertie*
13 230 211th Pl NE	Plateau	Well 1 (SO1), Well 2.1/2.2 (S18), Well 4 (S17), Well 7 (S06), Well 8 (S07), Well 9 (S13), Well 10 (S11), Well 11.1 (S14), Well 11.2 (S12), CWA South Intertie (S19)	N.E. Sammamish Sewer and Water District *Emergency: N.E. Sammamish Sewer and Water District, Issaquah, CWA South Intertie*
14 20928 SE 3rd Way	Plateau	Well 1 (SO1), Well 2.1/2.2 (S18), Well 4 (S17), Well 7 (S06), Well 8 (S07), Well 9 (S13), Well 10 (S11), Well 11.1 (S14), Well 11.2 (S12), CWA South Intertie (S19)	N.E. Sammamish Sewer and Water District *Emergency: N.E. Sammamish Sewer and Water District, Issaquah, CWA South Intertie*
15 21828 SE 1st St	Plateau	Well 1 (SO1), Well 2.1/2.2 (S18), Well 4 (S17), Well 7 (S06), Well 8 (S07), Well 9 (S13), Well 10 (S11), Well 11.1 (S14), Well 11.2 (S12), CWA South Intertie (S19)	N.E. Sammamish Sewer and Water District *Emergency: N.E. Sammamish Sewer and Water District, Issaquah, CWA South Intertie*
16 Sample Station not assigned at this time			
17 24415 SE 4th Pl	Plateau	Well 1 (SO1), Well 2.1/2.2 (S18), Well 4 (S17), Well 7 (S06), Well 8 (S07), Well 9 (S13), Well 10 (S11), Well 11.1 (S14), Well 11.2 (S12), CWA South Intertie (S19)	N.E. Sammamish Sewer and Water District *Emergency: N.E. Sammamish Sewer and Water District, Issaquah, CWA South Intertie*
18 19820 SE 8th St	Plateau	Well 1 (SO1), Well 2.1/2.2 (S18), Well 4 (S17), Well 7 (S06), Well 8 (S07), Well 9 (S13), Well 10 (S11), Well 11.1 (S14), Well 11.2 (S12), CWA South Intertie (S19)	N.E. Sammamish Sewer and Water District *Emergency: N.E. Sammamish Sewer and Water District, Issaquah, CWA South Intertie*

RTCR site	Operating Zone	Conduct Triggered Monitoring at these Sources….	Consecutive/Wholesale System Involved
19 1510 228th Ave SE	Plateau	Well 1 (SO1), Well 2.1/2.2 (S18), Well 4 (S17), Well 7 (S06), Well 8 (S07), Well 9 (S13), Well 10 (S11), Well 11.1 (S14), Well 11.2 (S12), CWA South Intertie (S19)	N.E. Sammamish Sewer and Water District *Emergency: N.E. Sammamish Sewer and Water District, Issaquah, CWA South Intertie*
20 2030 212th Ave. SE	Plateau	Well 1 (SO1), Well 2.1/2.2 (S18), Well 4 (S17), Well 7 (S06), Well 8 (S07), Well 9 (S13), Well 10 (S11), Well 11.1 (S14), Well 11.2 (S12), CWA South Intertie (S19)	N.E. Sammamish Sewer and Water District *Emergency: N.E. Sammamish Sewer and Water District, Issaquah, CWA South Intertie*
21 19605 SE 23rd St	Plateau	Well 1 (SO1), Well 2.1/2.2 (S18), Well 4 (S17), Well 7 (S06), Well 8 (S07), Well 9 (S13), Well 10 (S11), Well 11.1 (S14), Well 11.2 (S12), CWA South Intertie (S19)	N.E. Sammamish Sewer and Water District *Emergency: N.E. Sammamish Sewer and Water District, Issaquah, CWA South Intertie*
22 19636 SE 29th St	Plateau	Well 1 (SO1), Well 2.1/2.2 (S18), Well 4 (S17), Well 7 (S06), Well 8 (S07), Well 9 (S13), Well 10 (S11), Well 11.1 (S14), Well 11.2 (S12), CWA South Intertie (S19)	N.E. Sammamish Sewer and Water District *Emergency: N.E. Sammamish Sewer and Water District, Issaquah, CWA South Intertie*
23 2814 217th Ave SE	Plateau	Well 1 (SO1), Well 2.1/2.2 (S18), Well 4 (S17), Well 7 (S06), Well 8 (S07), Well 9 (S13), Well 10 (S11), Well 11.1 (S14), Well 11.2 (S12), CWA South Intertie (S19)	N.E. Sammamish Sewer and Water District *Emergency: N.E. Sammamish Sewer and Water District, Issaquah, CWA South Intertie*
24 2847 241st Ave SE	Plateau	Well 1 (SO1), Well 2.1/2.2 (S18), Well 4 (S17), Well 7 (S06), Well 8 (S07), Well 9 (S13), Well 10 (S11), Well 11.1 (S14), Well 11.2 (S12), CWA South Intertie (S19)	N.E. Sammamish Sewer and Water District *Emergency: N.E. Sammamish Sewer and Water District, Issaquah, CWA South Intertie*
25 25005 SE 24th St	Plateau	Well 1 (SO1), Well 2.1/2.2 (S18), Well 4 (S17), Well 7 (S06), Well 8 (S07), Well 9 (S13), Well 10 (S11), Well 11.1 (S14), Well 11.2 (S12), CWA South Intertie (S19)	N.E. Sammamish Sewer and Water District *Emergency: N.E. Sammamish Sewer and Water District, Issaquah, CWA South Intertie*

RTCR site	Operating Zone	Conduct Triggered Monitoring at these Sources….	Consecutive/Wholesale System Involved
26 3045 249th Ave SE	Plateau	Well 1 (SO1), Well 2.1/2.2 (S18), Well 4 (S17), Well 7 (S06), Well 8 (S07), Well 9 (S13), Well 10 (S11), Well 11.1 (S14), Well 11.2 (S12), CWA South Intertie (S19)	N.E. Sammamish Sewer and Water District *Emergency: N.E. Sammamish Sewer and Water District, Issaquah, CWA South Intertie*
27 3030 E Beaver Lake Dr SE	Plateau	Well 1 (SO1), Well 2.1/2.2 (S18), Well 4 (S17), Well 7 (S06), Well 8 (S07), Well 9 (S13), Well 10 (S11), Well 11.1 (S14), Well 11.2 (S12), CWA South Intertie (S19)	N.E. Sammamish Sewer and Water District *Emergency: N.E. Sammamish Sewer and Water District, Issaquah, CWA South Intertie*
28 2917 266th Ave Se	Plateau	Well 1 (SO1), Well 2.1/2.2 (S18), Well 4 (S17), Well 7 (S06), Well 8 (S07), Well 9 (S13), Well 10 (S11), Well 11.1 (S14), Well 11.2 (S12), CWA South Intertie (S19)	N.E. Sammamish Sewer and Water District *Emergency: N.E. Sammamish Sewer and Water District, Issaquah, CWA South Intertie*
29 2214 275th Ct SE	Plateau	Well 1 (SO1), Well 2.1/2.2 (S18), Well 4 (S17), Well 7 (S06), Well 8 (S07), Well 9 (S13), Well 10 (S11), Well 11.1 (S14), Well 11.2 (S12), CWA South Intertie (S19)	N.E. Sammamish Sewer and Water District *Emergency: N.E. Sammamish Sewer and Water District, Issaquah, CWA South Intertie*
30 4138 205th Ave SE	Plateau	Well 1 (SO1), Well 2.1/2.2 (S18), Well 4 (S17), Well 7 (S06), Well 8 (S07), Well 9 (S13), Well 10 (S11), Well 11.1 (S14), Well 11.2 (S12), CWA South Intertie (S19)	N.E. Sammamish Sewer and Water District *Emergency: N.E. Sammamish Sewer and Water District, Issaquah, CWA South Intertie*
31 Sample Station not assigned at this time			
32 4126 220th Pl SE	Plateau	Well 1 (SO1), Well 2.1/2.2 (S18), Well 4 (S17), Well 7 (S06), Well 8 (S07), Well 9 (S13), Well 10 (S11), Well 11.1 (S14), Well 11.2 (S12), CWA South Intertie (S19)	N.E. Sammamish Sewer and Water District *Emergency: N.E. Sammamish Sewer and Water District, Issaquah, CWA South Intertie*

RTCR site	Operating Zone	Conduct Triggered Monitoring at these Sources….	Consecutive/Wholesale System Involved
33 3725 Providence Point Dr SE	Plateau	Well 1 (SO1), Well 2.1/2.2 (S18), Well 4 (S17), Well 7 (S06), Well 8 (S07), Well 9 (S13), Well 10 (S11), Well 11.1 (S14), Well 11.2 (S12), CWA South Intertie (S19)	N.E. Sammamish Sewer and Water District *Emergency: N.E. Sammamish Sewer and Water District, Issaquah, CWA South Intertie*
34 4210 244th Pl SE	Plateau	Well 1 (SO1), Well 2.1/2.2 (S18), Well 4 (S17), Well 7 (S06), Well 8 (S07), Well 9 (S13), Well 10 (S11), Well 11.1 (S14), Well 11.2 (S12), CWA South Intertie (S19)	N.E. Sammamish Sewer and Water District *Emergency: N.E. Sammamish Sewer and Water District, Issaquah, CWA South Intertie*
35 4040 262nd Pl SE	Plateau	Well 1 (SO1), Well 2.1/2.2 (S18), Well 4 (S17), Well 7 (S06), Well 8 (S07), Well 9 (S13), Well 10 (S11), Well 11.1 (S14), Well 11.2 (S12), CWA South Intertie (S19)	N.E. Sammamish Sewer and Water District *Emergency: N.E. Sammamish Sewer and Water District, Issaquah, CWA South Intertie*
36 4606 247th Pl SE	Plateau	Well 1 (SO1), Well 2.1/2.2 (S18), Well 4 (S17), Well 7 (S06), Well 8 (S07), Well 9 (S13), Well 10 (S11), Well 11.1 (S14), Well 11.2 (S12), CWA South Intertie (S19)	N.E. Sammamish Sewer and Water District *Emergency: N.E. Sammamish Sewer and Water District, Issaquah, CWA South Intertie*
37 4708 227th Ave SE	Plateau	Well 1 (SO1), Well 2.1/2.2 (S18), Well 4 (S17), Well 7 (S06), Well 8 (S07), Well 9 (S13), Well 10 (S11), Well 11.1 (S14), Well 11.2 (S12), CWA South Intertie (S19)	N.E. Sammamish Sewer and Water District *Emergency: N.E. Sammamish Sewer and Water District, Issaquah, CWA South Intertie*
38 5408 248th Pl SE	Plateau	Well 1 (SO1), Well 2.1/2.2 (S18), Well 4 (S17), Well 7 (S06), Well 8 (S07), Well 9 (S13), Well 10 (S11), Well 11.1 (S14), Well 11.2 (S12), CWA South Intertie (S19)	N.E. Sammamish Sewer and Water District *Emergency: N.E. Sammamish Sewer and Water District, Issaquah, CWA South Intertie*
39 22664 SE 56th Ave.	Plateau	Well 1 (SO1), Well 2.1/2.2 (S18), Well 4 (S17), Well 7 (S06), Well 8 (S07), Well 9 (S13), Well 10 (S11), Well 11.1 (S14), Well 11.2 (S12), CWA South Intertie (S19)	N.E. Sammamish Sewer and Water District *Emergency: N.E. Sammamish Sewer and Water District, Issaquah, CWA South Intertie*

RTCR site	Operating Zone	Conduct Triggered Monitoring at these Sources….	Consecutive/Wholesale System Involved
40 SE 44th and 232nd Ct. SE	Plateau	Well 1 (SO1), Well 2.1/2.2 (S18), Well 4 (S17), Well 7 (S06), Well 8 (S07), Well 9 (S13), Well 10 (S11), Well 11.1 (S14), Well 11.2 (S12), CWA South Intertie (S19)	N.E. Sammamish Sewer and Water District *Emergency: N.E. Sammamish Sewer and Water District, Issaquah, CWA South Intertie*
41 2311 259th Pl SE	Plateau	Well 1 (SO1), Well 2.1/2.2 (S18), Well 4 (S17), Well 7 (S06), Well 8 (S07), Well 9 (S13), Well 10 (S11), Well 11.1 (S14), Well 11.2 (S12), CWA South Intertie (S19)	N.E. Sammamish Sewer and Water District *Emergency: N.E. Sammamish Sewer and Water District, Issaquah, CWA South Intertie*
42 222 238th Ave SE	Plateau	Well 1 (SO1), Well 2.1/2.2 (S18), Well 4 (S17), Well 7 (S06), Well 8 (S07), Well 9 (S13), Well 10 (S11), Well 11.1 (S14), Well 11.2 (S12), CWA South Intertie (S19)	N.E. Sammamish Sewer and Water District *Emergency: N.E. Sammamish Sewer and Water District, Issaquah, CWA South Intertie*
43 21838 NE 18th Way	Plateau	Well 1 (SO1), Well 2.1/2.2 (S18), Well 4 (S17), Well 7 (S06), Well 8 (S07), Well 9 (S13), Well 10 (S11), Well 11.1 (S14), Well 11.2 (S12), CWA South Intertie (S19)	N.E. Sammamish Sewer and Water District *Emergency: N.E. Sammamish Sewer and Water District, Issaquah, CWA South Intertie*
44 214th and SE 5th	Plateau	Well 1 (SO1), Well 2.1/2.2 (S18), Well 4 (S17), Well 7 (S06), Well 8 (S07), Well 9 (S13), Well 10 (S11), Well 11.1 (S14), Well 11.2 (S12), CWA South Intertie (S19)	N.E. Sammamish Sewer and Water District *Emergency: N.E. Sammamish Sewer and Water District, Issaquah, CWA South Intertie*
45 270th Ave SE and SE 11th	Plateau	Well 1 (SO1), Well 2.1/2.2 (S18), Well 4 (S17), Well 7 (S06), Well 8 (S07), Well 9 (S13), Well 10 (S11), Well 11.1 (S14), Well 11.2 (S12), CWA South Intertie (S19)	N.E. Sammamish Sewer and Water District *Emergency: N.E. Sammamish Sewer and Water District, Issaquah, CWA South Intertie*
46 Trossachs Blvd. & SE 24th Ave.	Plateau	Well 1 (SO1), Well 2.1/2.2 (S18), Well 4 (S17), Well 7 (S06), Well 8 (S07), Well 9 (S13), Well 10 (S11), Well 11.1 (S14), Well 11.2 (S12), CWA South Intertie (S19)	N.E. Sammamish Sewer and Water District *Emergency: N.E. Sammamish Sewer and Water District, Issaquah, CWA South Intertie*

RTCR site	Operating Zone	Conduct Triggered Monitoring at these Sources….	Consecutive/Wholesale System Involved
47 1931 249th Pl SE	Plateau	Well 1 (SO1), Well 2.1/2.2 (S18), Well 4 (S17), Well 7 (S06), Well 8 (S07), Well 9 (S13), Well 10 (S11), Well 11.1 (S14), Well 11.2 (S12), CWA South Intertie (S19)	N.E. Sammamish Sewer and Water District *Emergency: N.E. Sammamish Sewer and Water District, Issaquah, CWA South Intertie*
48 1537 E. Lk. Samm. Pkwy SE	Plateau	Well 1 (SO1), Well 2.1/2.2 (S18), Well 4 (S17), Well 7 (S06), Well 8 (S07), Well 9 (S13), Well 10 (S11), Well 11.1 (S14), Well 11.2 (S12), CWA South Intertie (S19)	N.E. Sammamish Sewer and Water District *Emergency: N.E. Sammamish Sewer and Water District, Issaquah, CWA South Intertie*
49 6503 E Lk Samm Pkwy SE	Plateau	Well 1 (SO1), Well 2.1/2.2 (S18), Well 4 (S17), Well 7 (S06), Well 8 (S07), Well 9 (S13), Well 10 (S11), Well 11.1 (S14), Well 11.2 (S12), CWA South Intertie (S19)	N.E. Sammamish Sewer and Water District *Emergency: N.E. Sammamish Sewer and Water District, Issaquah, CWA South Intertie*
50 23425 SE Black Nugget Rd	Plateau	Well 1 (SO1), Well 2.1/2.2 (S18), Well 4 (S17), Well 7 (S06), Well 8 (S07), Well 9 (S13), Well 10 (S11), Well 11.1 (S14), Well 11.2 (S12), CWA South Intertie (S19)	N.E. Sammamish Sewer and Water District *Emergency: N.E. Sammamish Sewer and Water District, Issaquah, CWA South Intertie*
51 NE 8th Pl and 233rd Ave NE	Plateau	Well 1 (SO1), Well 2.1/2.2 (S18), Well 4 (S17), Well 7 (S06), Well 8 (S07), Well 9 (S13), Well 10 (S11), Well 11.1 (S14), Well 11.2 (S12), CWA South Intertie (S19)	N.E. Sammamish Sewer and Water District *Emergency: N.E. Sammamish Sewer and Water District, Issaquah, CWA South Intertie*
52 5150 236th Ave SE	Plateau	Well 1 (SO1), Well 2.1/2.2 (S18), Well 4 (S17), Well 7 (S06), Well 8 (S07), Well 9 (S13), Well 10 (S11), Well 11.1 (S14), Well 11.2 (S12), CWA South Intertie (S19)	N.E. Sammamish Sewer and Water District *Emergency: N.E. Sammamish Sewer and Water District, Issaquah, CWA South Intertie*
53 25913 NE 27th Dr	Cascade View	Well 12 (S16), Well 13 (S24), CWA North Intertie (S19)	*Emergency: Union Hill Water Association, Ames Lake Water Association, CWA North Intertie, Redmond*

RTCR site	Operating Zone	Conduct Triggered Monitoring at these Sources….	Consecutive/Wholesale System Involved
54 1434 241st Pl SE	Plateau	Well 1 (SO1), Well 2.1/2.2 (S18), Well 4 (S17), Well 7 (S06), Well 8 (S07), Well 9 (S13), Well 10 (S11), Well 11.1 (S14), Well 11.2 (S12), CWA South Intertie (S19)	N.E. Sammamish Sewer and Water District *Emergency: N.E. Sammamish Sewer and Water District, Issaquah, CWA South Intertie*
55 4644 238th Way SE	Plateau	Well 1 (SO1), Well 2.1/2.2 (S18), Well 4 (S17), Well 7 (S06), Well 8 (S07), Well 9 (S13), Well 10 (S11), Well 11.1 (S14), Well 11.2 (S12), CWA South Intertie (S19)	N.E. Sammamish Sewer and Water District *Emergency: N.E. Sammamish Sewer and Water District, Issaquah, CWA South Intertie*
56 2637 231st Pl SE	Plateau	Well 1 (SO1), Well 2.1/2.2 (S18), Well 4 (S17), Well 7 (S06), Well 8 (S07), Well 9 (S13), Well 10 (S11), Well 11.1 (S14), Well 11.2 (S12), CWA South Intertie (S19)	N.E. Sammamish Sewer and Water District *Emergency: N.E. Sammamish Sewer and Water District, Issaquah, CWA South Intertie*
57 3609 212th Pl SE	Plateau	Well 1 (SO1), Well 2.1/2.2 (S18), Well 4 (S17), Well 7 (S06), Well 8 (S07), Well 9 (S13), Well 10 (S11), Well 11.1 (S14), Well 11.2 (S12), CWA South Intertie (S19)	N.E. Sammamish Sewer and Water District *Emergency: N.E. Sammamish Sewer and Water District, Issaquah, CWA South Intertie*
58 21341 SE 13th Pl	Plateau	Well 1 (SO1), Well 2.1/2.2 (S18), Well 4 (S17), Well 7 (S06), Well 8 (S07), Well 9 (S13), Well 10 (S11), Well 11.1 (S14), Well 11.2 (S12), CWA South Intertie (S19)	N.E. Sammamish Sewer and Water District *Emergency: N.E. Sammamish Sewer and Water District, Issaquah, CWA South Intertie*
59 1514 235th Ave. SE	Plateau	Well 1 (SO1), Well 2.1/2.2 (S18), Well 4 (S17), Well 7 (S06), Well 8 (S07), Well 9 (S13), Well 10 (S11), Well 11.1 (S14), Well 11.2 (S12), CWA South Intertie (S19)	N.E. Sammamish Sewer and Water District *Emergency: N.E. Sammamish Sewer and Water District, Issaquah, CWA South Intertie*
60 24213 SE 37th Pl	Plateau	Well 1 (SO1), Well 2.1/2.2 (S18), Well 4 (S17), Well 7 (S06), Well 8 (S07), Well 9 (S13), Well 10 (S11), Well 11.1 (S14), Well 11.2 (S12), CWA South Intertie (S19)	N.E. Sammamish Sewer and Water District *Emergency: N.E. Sammamish Sewer and Water District, Issaquah, CWA South Intertie*

RTCR site	Operating Zone	Conduct Triggered Monitoring at these Sources….	Consecutive/Wholesale System Involved
61 Sample Station not assigned at this time			
62 Sample Station not assigned at this time			
63 Sample Station not assigned at this time			
64 8513 255th Ave NE	Cascade View	Well 12 (S16), Well 13 (S24), CWA North Intertie (S19)	*Emergency: Union Hill Water Association, Ames Lake Water Association, CWA North Intertie, Redmond*
65 4014 251st Pl SE	Plateau	Well 1 (SO1), Well 2.1/2.2 (S18), Well 4 (S17), Well 7 (S06), Well 8 (S07), Well 9 (S13), Well 10 (S11), Well 11.1 (S14), Well 11.2 (S12), CWA South Intertie (S19)	N.E. Sammamish Sewer and Water District *Emergency: N.E. Sammamish Sewer and Water District, Issaquah, CWA South Intertie*
66 3416 221st Ave SE	Plateau	Well 1 (SO1), Well 2.1/2.2 (S18), Well 4 (S17), Well 7 (S06), Well 8 (S07), Well 9 (S13), Well 10 (S11), Well 11.1 (S14), Well 11.2 (S12), CWA South Intertie (S19)	N.E. Sammamish Sewer and Water District *Emergency: N.E. Sammamish Sewer and Water District, Issaquah, CWA South Intertie*
67 2905 204th Ave SE	Plateau	Well 1 (SO1), Well 2.1/2.2 (S18), Well 4 (S17), Well 7 (S06), Well 8 (S07), Well 9 (S13), Well 10 (S11), Well 11.1 (S14), Well 11.2 (S12), CWA South Intertie (S19)	N.E. Sammamish Sewer and Water District *Emergency: N.E. Sammamish Sewer and Water District, Issaquah, CWA South Intertie*
68 20621 NE 8th St	Plateau	Well 1 (SO1), Well 2.1/2.2 (S18), Well 4 (S17), Well 7 (S06), Well 8 (S07), Well 9 (S13), Well 10 (S11), Well 11.1 (S14), Well 11.2 (S12), CWA South Intertie (S19)	N.E. Sammamish Sewer and Water District *Emergency: N.E. Sammamish Sewer and Water District, Issaquah, CWA South Intertie*
69 265th Ave Se and Belvedere Way	Plateau	Well 1 (SO1), Well 2.1/2.2 (S18), Well 4 (S17), Well 7 (S06), Well 8 (S07), Well 9 (S13), Well 10 (S11), Well 11.1 (S14), Well 11.2 (S12), CWA South Intertie (S19)	N.E. Sammamish Sewer and Water District *Emergency: N.E. Sammamish Sewer and Water District, Issaquah, CWA South Intertie*

RTCR site	Operating Zone	Conduct Triggered Monitoring at these Sources….	Consecutive/Wholesale System Involved
70 21606 SE 16th Pl	Plateau	Well 1 (SO1), Well 2.1/2.2 (S18), Well 4 (S17), Well 7 (S06), Well 8 (S07), Well 9 (S13), Well 10 (S11), Well 11.1 (S14), Well 11.2 (S12), CWA South Intertie (S19)	N.E. Sammamish Sewer and Water District *Emergency: N.E. Sammamish Sewer and Water District, Issaquah, CWA South Intertie*
71 1838 236th Ave NE	Plateau	Well 1 (SO1), Well 2.1/2.2 (S18), Well 4 (S17), Well 7 (S06), Well 8 (S07), Well 9 (S13), Well 10 (S11), Well 11.1 (S14), Well 11.2 (S12), CWA South Intertie (S19)	N.E. Sammamish Sewer and Water District *Emergency: N.E. Sammamish Sewer and Water District, Issaquah, CWA South Intertie*
72 23944 SE 41st St	Plateau	Well 1 (SO1), Well 2.1/2.2 (S18), Well 4 (S17), Well 7 (S06), Well 8 (S07), Well 9 (S13), Well 10 (S11), Well 11.1 (S14), Well 11.2 (S12), CWA South Intertie (S19)	N.E. Sammamish Sewer and Water District *Emergency: N.E. Sammamish Sewer and Water District, Issaquah, CWA South Intertie*
73 23039 SE 37th St	Plateau	Well 1 (SO1), Well 2.1/2.2 (S18), Well 4 (S17), Well 7 (S06), Well 8 (S07), Well 9 (S13), Well 10 (S11), Well 11.1 (S14), Well 11.2 (S12), CWA South Intertie (S19)	N.E. Sammamish Sewer and Water District *Emergency: N.E. Sammamish Sewer and Water District, Issaquah, CWA South Intertie*
74 Sample Station not assigned at this time			
75 Sample Station not assigned at this time			
76 Sample Station not assigned at this time			
77 609 216th Ave NE	Plateau	Well 1 (SO1), Well 2.1/2.2 (S18), Well 4 (S17), Well 7 (S06), Well 8 (S07), Well 9 (S13), Well 10 (S11), Well 11.1 (S14), Well 11.2 (S12), CWA South Intertie (S19)	N.E. Sammamish Sewer and Water District *Emergency: N.E. Sammamish Sewer and Water District, Issaquah, CWA South Intertie*

RTCR site	Operating Zone	Conduct Triggered Monitoring at these Sources….	Consecutive/Wholesale System Involved
78 21214 SE 40th St.	Plateau	Well 1 (SO1), Well 2.1/2.2 (S18), Well 4 (S17), Well 7 (S06), Well 8 (S07), Well 9 (S13), Well 10 (S11), Well 11.1 (S14), Well 11.2 (S12), CWA South Intertie (S19)	N.E. Sammamish Sewer and Water District *Emergency: N.E. Sammamish Sewer and Water District, Issaquah, CWA South Intertie*

6.0 PREPARATION INFORMATION

The Water Superintendent is responsible for overseeing preparation, review, and updates to the District's Triggered Ground Water Monitoring Plan. This Plan will be reviewed and updated every 6 years, coinciding with updates to the Revised Total Coliform Monitoring Plan.

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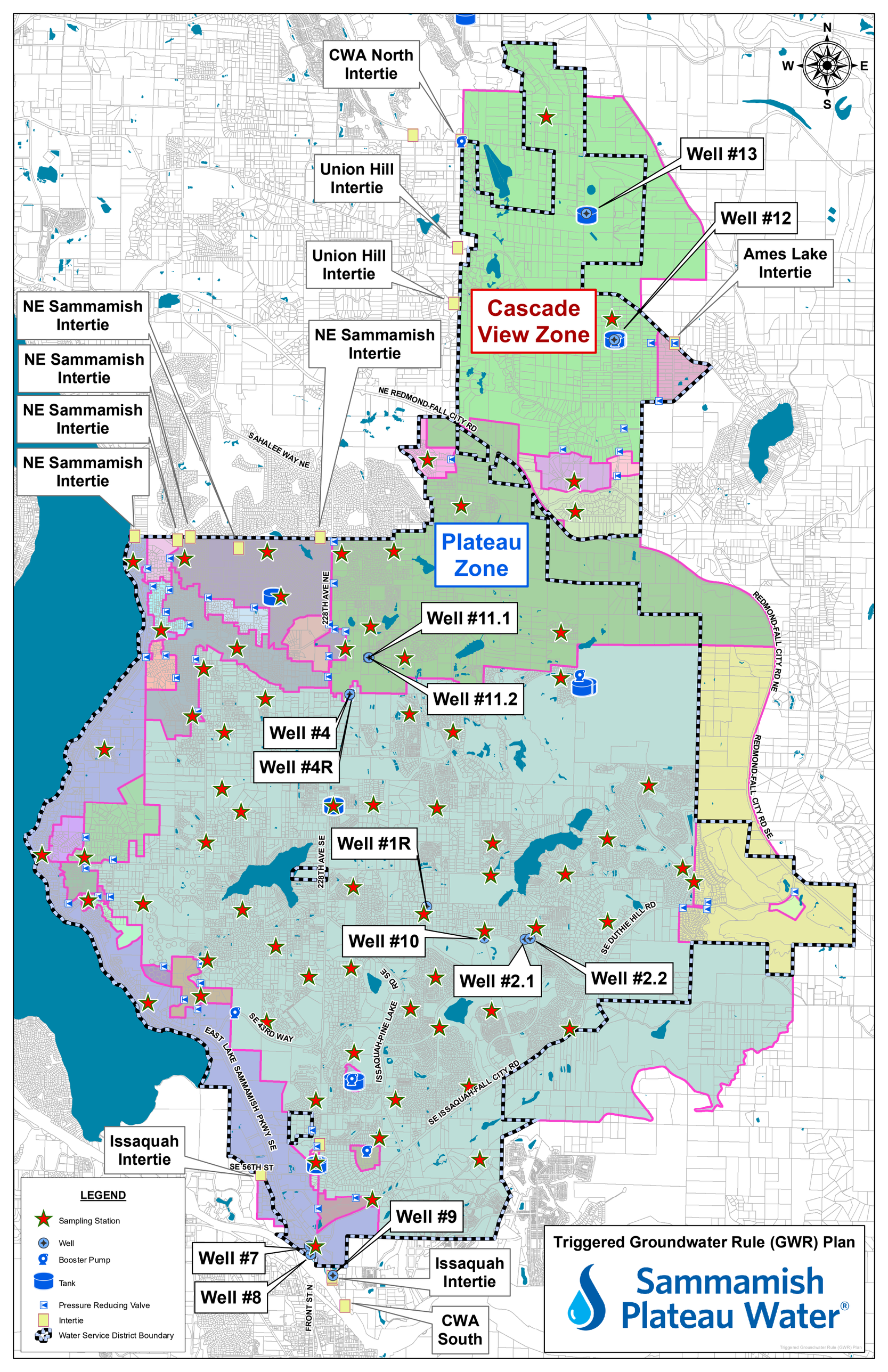

CWA North Intertie
Union Hill Intertie
Union Hill Intertie
NE Sammamish Intertie
NE Sammamish Intertie
NE Sammamish Intertie
NE Sammamish Intertie
NE Sammamish Intertie
Well #13
Well #12
Ames Lake Intertie
Cascade View Zone
Plateau Zone
NE REDMOND-FALL CITY RD
SAHALEE WAY NE
228TH AVE NE
Well #11.1
Well #11.2
Well #4
Well #4R
Well #1R
228TH AVE SE
REDMOND-FALL CITY RD NE
REDMOND-FALL CITY RD SE
SE DUTHIE HILL RD
Well #10
Well #2.1
Well #2.2
SE 43RD WAY
EAST LAKE SAMMAMISH PKWY SE
ISSAQUAH-PINE LAKE RD SE
SE ISSAQUAH-FALL CITY RD
Issaquah Intertie
SE 56TH ST
Well #9
Well #7
Well #8
Issaquah Intertie
FRONT ST N
CWA South
N
W
E
S
LEGEND
Sampling Station
Well
Booster Pump
Tank
Pressure Reducing Valve
Intertie
Water Service District Boundary
Triggered Groundwater Rule (GWR) Plan
Sammamish Plateau Water®

Standard Monitoring Plan Entry

I. IDSE General Information

*PWS ID	WA5340900
*PWS Name	SAMMAMISH PLATE
*PWS Address	1510 228TH AVE SE
*City	SAMMAMISH
*State	WA
*Zip	98075
*Population Served	55128
*System Type	CWS
*Source Water Type	SWP
*Buying / Selling Relationships	Consecutive System

C. PWS Operations

Residual Disinfectant Type	☑ Chlorine	■ Chloramines	■ Other		
Number of Disinfected Sources	Surface		GWUDI		
	Ground	1	Purchased	2	

D. Contact Person

*Contact Name	John Anderson	
Title	Water Team Manager	
Phone Number	(425) 392-6256	ext.
Fax	(425) 391-5389	
E-mail Address	wqcompliance@sammplat.wa.org	

Standard Monitoring Plan Entry

II. IDSE Requirements

A. Number of Required Standard Monitoring Sites

High TTHM	5
High HAA5	4
Near Entry Point Sites	3
Average Residence Time Sites	4
Total	16

Note: If you have fewer entry points than required near entry point sites, you will sample at more TTHM and/or HAA5 sites, but your total number of sites will not change. See chapter 7 step 2 of the IDSE Guidance Manual for more information.

B. Schedule

Schedule 1

C. Required Standard Monitoring Frequency

☒ During peak historical month (1 monitoring period)

☒ Every 90 days (4 monitoring periods)

⊡ Every 60 days (6 monitoring periods)

Standard Monitoring Plan Entry

III. Selecting Standard Monitoring Sites

A. Data Evaluated Check each box corresponding to the data that you used to select each type of standard monitoring site.

Data Type	Type of Site			
	Near Entry Point	Average Residence Time	High TTHM	High HAA5
System Configuration:				
Pipe layout, locations of storage facilities	☐	☑	☑	☑
Locations of sources and consecutive system entry points	☑	☐	☐	☐
Pressure zones	☐	☑	☑	☑
Information on population density	☐	☐	☑	☐
Locations of large customers	☐	☐	☐	☐
Water Quality and Operational Data:				
Disinfectant residual data	☐	☑	☑	☑
Stage 1 DBP data	☐	☐	☑	☑
Other DBP data	☐	☐	☐	☐
Microbial monitoring data	☐	☐	☐	☐
Tank levels data, pump run times	☐	☑	☑	☑
Customer billing records	☐	☐	☐	☐
Advanced Tools:				
Water distribution system model	☐	☐	☐	☐
Tracer study	☐	☐	☐	☐

B. Summary of Data.* Provide a summary of data you relied on to justify standard monitoring site selection.

District sources include groundwater, year round, from 12 currently operating groundwater wells and treated surface water from a regional wholesaler (Cascade Water Alliance) that is used seasonally from November 1- April 30. Currently, treated surface water only enters the District's northern service area called the Cascade View Zone, but in the near future the District plans to operate a south intertie with the regional wholesaler and introduce treated surface water into their southern service area called the Plateau Zone. IDSE site selection relied on two years (2004-2005) of monthly disinfection residual data from 60 disinfection sampling sites established for Stage 1 monitoring. These sites are dedicated and secure sample collection stations that tap the District's distribution system throughout their service area. Population density, 2005 Stage 1 DDBP data, pipe layout, locations of our wholesaler system entry points, and pressure zones were also evaluated. Chlorine residual data from June, July and August were tabulated and evaluated for system range (0.0 to 0.24 mg/l) and system average (0.08 mg/l). During selection, sites were identified with levels close to this average for average residence time sites and with high rediduals (elevated above 0.1 mg/L) for high HAA5. For high TTHM, site selections were based primarily on population and distribution system knowledge to determine older pipes with dead end lines where longer residence times are expected in addition to Stage 1 TTHM data. During the selection process, a plot was prepared of all candidate sites and system pressure zone boundaries, including existing Stage 1 sites, to ensure that Stage 2 IDSE sites were spatially distributed and hydraulically diverse.

Standard Monitoring Plan Entry

IV. Justification of Standard Monitoring Sites *

You are required to complete this section in its entirety before submitting the Plan.

#	Standard Monitoring Site ID (from map)1	Site Type	Justification
1	Station #62	Near Entry Point	This is the entry point of regional wholesale surface water from Cascade Water Alliance/Seattle Public Utilities (CWA/SPU) into the northern part of the distribution system referred to as the Cascade View Zone. This station is located prior to the first group of customers. Entry of surface water into the distribution system is normally seasonal (November 1 through April 30). As result of this seasonal use, sample collection from this station will represent a blend of groundwater/surface water during the early part of May, becoming predominantly groundwater in the summer/fall months prior to November 1st.
2	Station #16	Near Entry Point	This is an entry point into three major pressure distribution zones from the District's deep wellfield treatment facility. The sample station will be located downstream of treatment. The deep groundwater source has a greater amount of organic content compared to the District's shallower aquifer sources.
3	Station #63	Near Entry Point	This is the entry point of regional wholesale surface water (CWA/SPU) into the southern part of the distribution system. This station is located prior to the first group of customers. Entry of surface water will initially be seasonal (November 1 throught April 30). As a result of this seasonal use, sample collection from this station will represent a blend of groundwater/surface water during the early part of May, becoming predominantly groundwater in the summer/fall months prior to November 1st. To-date, this regional intertie has been dormant, but is expected to be active in 2006.
4	Station #44	Average Residence Time	Represents average residence time in the northwestern part of the plateau system. In the summer months, this station has chlorine residuals that are close to our calculated system-wide average of 0.08mg/l. The sample station site taps an 8-inch water main.
5	Station #59	Average Residence Time	Represents average residence time in the central part of the plateau system. In the summer months, this station has chlorine residuals that are close to our calculated system-wide average of 0.08mg/l. This sample site taps an 8-inch ductile iron water main.
6	Station #34	Average Residence Time	Represents average residence time in the southern part of the plateau system. In the summer months, this station has chlorine residuals that are close to our calculated system-wide average of 0.08 mg/l. The sample station site taps an 8-inch ductile iron water main.
7	Station #31	Average Residence Time	Represents average residence time in the southwestern part of the plateau system. In the summer months, this station has chlorine residuals that are close to our calculated system-wide average of 0.08 mg/l. The site is located near and upstream of a booster station and an emergency operated PRV. This sample site taps an 8" ductile-iron water main.

8	Station #64	High TTHM	This station represents high TTHM levels in the northern service area (Cascade View). It is located at a dead end line with low customer population. This is a new station but it is expected to have low chlorine residuals and high TTHM levels due to its location within a distribution system dead end, and within a sparsely populated area. The site receives seasonal surface water from the north regional intertie and close to consistently recorded high TTHM Stage 1 sampling sites.
9	Station #7	High TTHM	This station represents high TTHM levels in the northwestern portion of the Plateau system. Summer chlorine residuals at this location are generally very low. It is located near a 3 million gallon storage tank. The site is in a location of older distribution pipe within the 700 pressure zone.
10	Station #13	High TTHM	This station represents high TTHM levels. Summer chlorine residuals at this location are generally low. The site is also at the dead end location of the 650 pressure zone and receives some water from deep groundwater sources that have greater organic content than the shallower aquifer sources.
11	Station #47	High TTHM	This station represents high TTHM levels in the central portion of the Plateau system. Summer chlorine residuals at this location are generally low. The site is located in an area under construction that is planned to be built out and populated in two to three years. Until then, distribution in this area is expected to have longer residence times.
12	Station #29	High TTHM	This station represents high TTHM levels in the eastern portion of the Plateau system. Summer chlorine residuals at this location are generally very low. It is located in a service area with older distribution pipe. The site is also located at a dead end in the distribution. The area occasionally receives booster chlorinated water (during the summer) from two 4 million gallon storage tanks.
13	Station #10	High HAA5	This station represents high HAA5 levels in the northeastern portion of the Plateau system. It is located in a service area with older distribution pipe. Summer chlorine residuals at this location are generally above the system average of 0.08mg/L. The site is also located near a booster chlorination site and two 4 million gallon tanks.
14	Station #20	High HAA5	This station represents high HAA5 levels in the western portion of the Plateau system. Summer chlorine residuals at this location are generally well above the system average of 0.08 mg/L. The site is located along a main north-south transmission pipeline for the plateau service area. Water in this main line is expected to have low residence time.
15	Station #33	High HAA5	This station represents high HAA5 levels in the central portion of the Plateau system. Summer chlorine residuals at this location are generally well above the system average of 0.08 mg/ L. The site is located along a main north-system transmission pipeline and in an area of dense population for the service area. Water in this main line is expected to have a low residence time.
16	Station #39	High HAA5	This station represents high HAA5 levels in the southern portion of the Plateau system. Summer chlorine residuals at this location are generally well above the system average of 0.08 mg/l. The site is located near a major transmission tank for the plateau service area. Water in this area is expected to have a low residence time.

1 Verify that site IDs match IDs in Section IV and on your distribution system schematic (See Section VII of this form).

Standard Monitoring Plan Entry

V. Peak Historical Month and Standard Monitoring Dates

A. *Peak Historical Month November

B. If multiple Sources, Source Used to Determine Peak Historical Month (enter "N/A" if only one source in your system):

Based on Stage 1 TTHM data.

C. *Peak Historical Month Based On (check all that apply):

☑ High TTHM

☐ Warmest water temperature

☐ High HAA5

If you used other information to select your peak historical month, explain here:

D. Proposed Standard Monitoring Dates

You are required to complete this section in its entirety before submitting the Plan.

Standard Monitoring Site ID (from map)*	Projected Sampling Date (day or week)**					
	Period 1	Period 2	Period 3	Period 4	Period 5	Period 6
Station #62	week of 11/12/07	week of 1/14/08	week of 3/10/08	week of 5/12/08	week of 7/14/08	week of 9/8/08
Station #16	week of 11/12/07	week of 1/14/08	week of 3/10/08	week of 5/12/08	week of 7/14/08	week of 9/8/08
Station #63	week of 11/12/07	week of 1/14/08	week of 3/10/08	week of 5/12/08	week of 7/14/08	week of 9/8/08
Station #44	week of 11/12/07	week of 1/14/08	week of 3/10/08	week of 5/12/08	week of 7/14/08	week of 9/8/08
Station #59	week of 11/12/07	week of 1/14/08	week of 3/10/08	week of 5/12/08	week of 7/14/08	week of 9/8/08
Station #34	week of 11/12/07	week of 1/14/08	week of 3/10/08	week of 5/12/08	week of 7/14/08	week of 9/8/08
Station #31	week of 11/12/07	week of 1/14/08	week of 3/10/08	week of 5/12/08	week of 7/14/08	week of 9/8/08
Station #64	week of 11/12/07	week of 1/14/08	week of 3/10/08	week of 5/12/08	week of 7/14/08	week of 9/8/08
Station #7	week of 11/12/07	week of 1/14/08	week of 3/10/08	week of 5/12/08	week of 7/14/08	week of 9/8/08
Station #13	week of 11/12/07	week of 1/14/08	week of 3/10/08	week of 5/12/08	week of 7/14/08	week of 9/8/08
Station #47	week of 11/12/07	week of 1/14/08	week of 3/10/08	week of 5/12/08	week of 7/14/08	week of 9/8/08
Station #29	week of 11/12/07	week of 1/14/08	week of 3/10/08	week of 5/12/08	week of 7/14/08	week of 9/8/08
Station #10	week of 11/12/07	week of 1/14/08	week of 3/10/08	week of 5/12/08	week of 7/14/08	week of 9/8/08
Station #20	week of 11/12/07	week of 1/14/08	week of 3/10/08	week of 5/12/08	week of 7/14/08	week of 9/8/08
Station #33	week of 11/12/07	week of 1/14/08	week of 3/10/08	week of 5/12/08	week of 7/14/08	week of 9/8/08
Station #39	week of 11/12/07	week of 1/14/08	week of 3/10/08	week of 5/12/08	week of 7/14/08	week of 9/8/08

*** Site IDs should match IDs on your distribution system schematic (See Section VII).**

**** period = monitoring period. Complete for the number of periods from Section II.C.**

Standard Monitoring Plan Entry

VI. Planned Stage 1 DBPR Compliance Monitoring Schedule

If you are a consecutive system that is not required to conduct Stage 1 DBPR compliance monitoring, enter none under Stage 1 DBPR Monitoring Site ID and none under Period 1.

Stage 1 DBPR Monitoring Site ID (from map)1	Projected Sampling Date (date or week)2			
	Period 1	Period 2	Period 3	Period 4
SS #2	week of 11/12/07	week of 2/11/08	week of 5/12/08	week of 8/11/08
SS #3	week of 11/12/07	week of 2/11/08	week of 5/12/08	week of 8/11/08
SS #53	week of 11/12/07	week of 2/11/08	week of 5/12/08	week of 8/11/08
SS #6	week of 11/12/07	week of 2/11/08	week of 5/12/08	week of 8/11/08
SS #48	week of 11/12/07	week of 2/11/08	week of 5/12/08	week of 8/11/08
SS #17	week of 11/12/07	week of 2/11/08	week of 5/12/08	week of 8/11/08
SS #18	week of 11/12/07	week of 2/11/08	week of 5/12/08	week of 8/11/08
SS #1	week of 11/12/07	week of 2/11/08	week of 5/12/08	week of 8/11/08
SS #24	week of 11/12/07	week of 2/11/08	week of 5/12/08	week of 8/11/08
SS #26	week of 11/12/07	week of 2/11/08	week of 5/12/08	week of 8/11/08
SS #27	week of 11/12/07	week of 2/11/08	week of 5/12/08	week of 8/11/08
SS #30	week of 11/12/07	week of 2/11/08	week of 5/12/08	week of 8/11/08
SS #46	week of 11/12/07	week of 2/11/08	week of 5/12/08	week of 8/11/08

1 Verify that site IDs match IDs on your distribution system schematic (See Section VII of this form). Add additional monitoring sites if you are required to monitor at more than 8 Stage 1 DBPR sites.
2 period = monitoring period. Complete for the number of periods in which you must conduct Stage 1 DBPR monitoring during IDSE monitoring. Can list exact date or week (e.g., week of 7/9/07)

Standard Monitoring Plan Entry

VII & VIII Schematic & Attachments

The following is a list of attachments that have already been submitted.

File Name	Date Uploaded
Distribution System Schematic	2006-09-27 10:58:12.0

If you prefer to send attachments via mail or e-mail, please check the box for "Sending attachments by mail". You may mail your attachments to one of the following addresses:

Mailing Address:
STAGE2 DBPR
US EPA-IPMC
PO Box 98
Dayton, OH 45401-0098

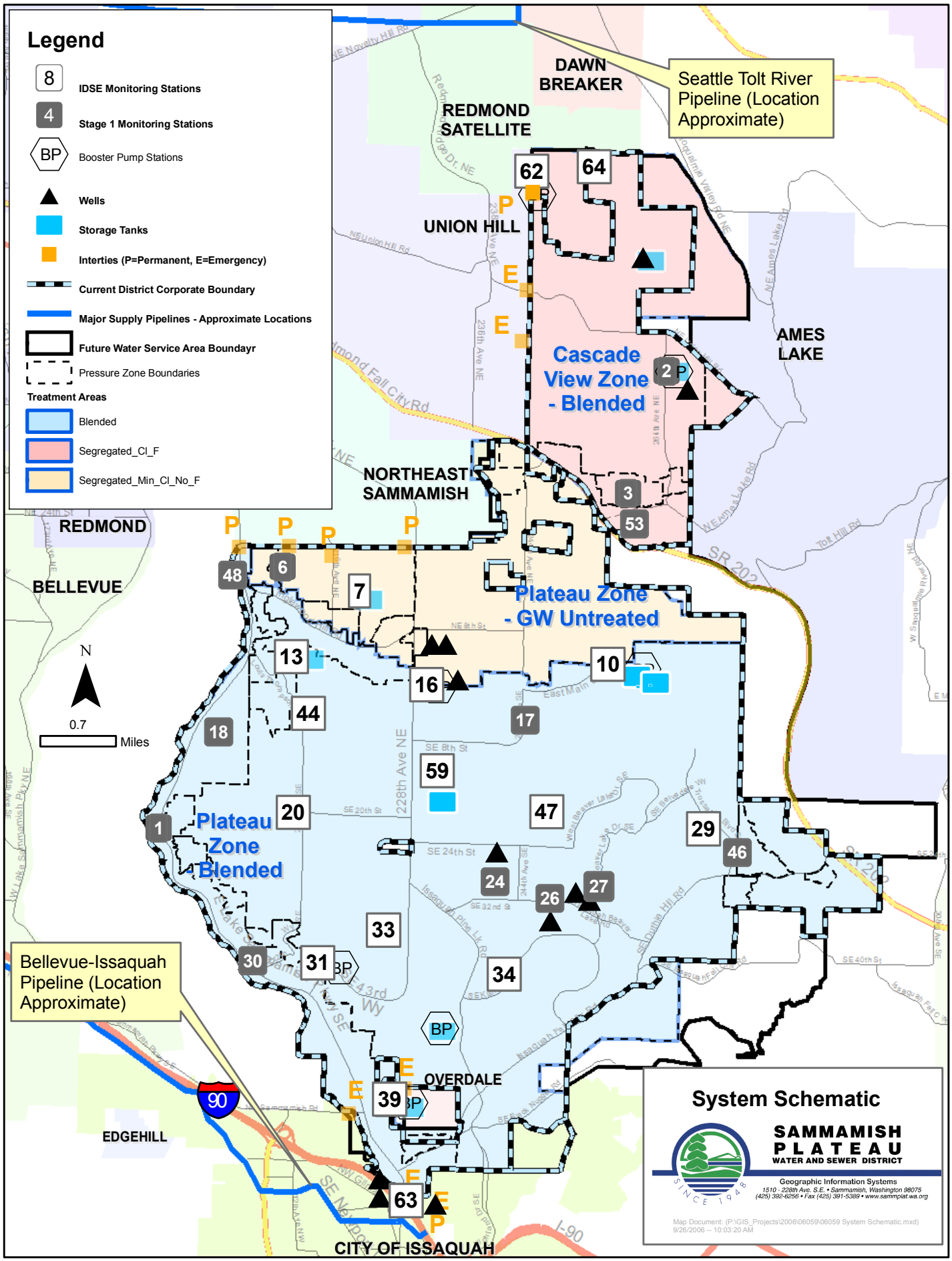
E-mail Address:

stage2mdbp@epa.gov

☐

Sending Attachments by Mail

Enter a description of the items that will be mailed.


Legend
8
IDSE Monitoring Stations
4
Stage 1 Monitoring Stations
BP
Booster Pump Stations
Wells
Storage Tanks
Interties (P=Permanent, E=Emergency)
Current District Corporate Boundary
Major Supply Pipelines - Approximate Locations
Future Water Service Area Boundayr
Pressure Zone Boundaries
Treatment Areas
Blended
Segregated_Cl_F
Segregated_Min_Cl_No_F
Seattle Tolt River Pipeline (Location Approximate)
Bellevue-Issaquah Pipeline (Location Approximate)
DAWN BREAKER
REDMOND SATELLITE
UNION HILL
AMES LAKE
NORTHEAST SAMMAMISH
REDMOND
BELLEVUE
OVERDALE
EDGEHILL
CITY OF ISSAQUAH
Cascade View Zone - Blended
Plateau Zone - GW Untreated
Plateau Zone Blended
N
0.7
Miles
System Schematic
SAMMAMISH PLATEAU
WATER AND SEWER DISTRICT
Geographic Information Systems
1510 - 228th Ave. S.E. • Sammamish, Washington 98075
(425) 392-6256 • Fax (425) 391-5389 • www.sammplat.wa.org
Map Document: (P:\GIS_Projects\2006\06059\06059 System Schematic.mxd)
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Stage 1 Disinfectants and Disinfection Byproducts Rule Identified Treatment Plants and Monitoring Plan Sammamish Plateau Water and Sewer District Sammamish, Washington

May 16, 2005

Prepared For:

Washington State Department of Health

Northwest Regional Office

Prepared By:

SAMMAMISH PLATEAU WATER AND SEWER DISTRICT

and

CDM

11811 NE 1st Street, Suite 201

Bellevue, Washington 98005

CDM Project No. 19936-42969

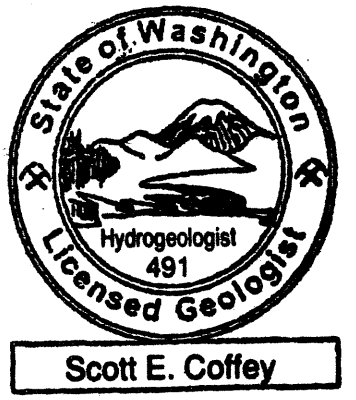
A Report Prepared For:

Sammamish Plateau Water and Sewer District

Stage 1 Disinfectants and Disinfection Byproducts Rule
Identified Treatment Plants and Monitoring Plan
Sammamish Plateau Water and Sewer District
Sammamish, Washington

May 16, 2005

Scott E. Coffey, L.H.G
Project Hydrologist



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11811 N.E. 1st Street, Suite 201
Bellevue, Washington 98005

CDM Project No. 19936-42969

Contents

Tables

Figures

Section 1
Introduction

This report presents information for Sammamish Plateau Water and Sewer District (System ID No. 409009) as required under the Federal Stage I Disinfectants and Disinfection Byproducts (DDBP) Rule and incorporated into Washington State Department of Health (DOH) drinking water regulations on April 27, 2003. The report is divided into two parts:

Part 1 – Identification of Treatment Plants

Part 2 – DDBP Monitoring Plan

Part 1
Identification of Treatment Plants

Part 1 of this report provides a brief overview of the regulatory framework of the Stage 1 DDBP rule, Sammamish Plateau Water and Sewer District's (District) water supply system, and a presentation of parameters as specified in DOH publication #331-235 used to demonstrate the grouping of individual wells within selected treatment plants.

Regulatory Overview

The Safe Drinking Water Act (SDWA), now administered by the Environmental Protection Agency (EPA), was enacted over 25 years ago to regulate the public water industry and to safeguard the public health. Many of the waterborne diseases common over 100 years ago have been eliminated with the introduction of chemical disinfection. Disinfectants such as chlorine and ozone are effective in inactivating many microorganisms in our public drinking water.

Despite the numerous benefits of disinfection, several studies have indicated there is an association between the byproducts created when disinfectants combine with organic matter in water and the development of cancer in laboratory animals. In 1996 amendments to the SDWA direct the EPA to regulate the creation of disinfection byproducts.

The District's identification of Treatment Plants and DDBP Monitoring Plan presented in this report is in compliance with the Code of Federal Regulations, Title 40, Chapter 1, Section 132, Paragraph (f).

System Overview

The District's water supply system is experiencing considerable growth and change. At the time of this report, the system is currently comprised of 14 operating groundwater wells that tap four distinct aquifer zones. The wells are over 100 feet in depth and, as demonstrated through pumping tests and water quality sampling, are out of the direct influence of surface water.

Figure 1 shows the locations of the District's active production wells and service area boundary.

Recently, the District became a member of the Cascade Water Alliance (CWA), a group comprised of eight municipalities and districts that have joined together to provide water supply to meet current and future demands. In the near future, the District is preparing to purchase water from CWA in order to meet peak demand in the summer months. The source of this water will be from Seattle Public Utilities (SPU) Tolt Reservoir Supply (System ID No. 77050Y, Source No. S02). Tolt water is surface water that SPU treats through the process of ozone disinfection, filtration, and

chlorination. SPU adds fluoride for dental health and Lime/CO_2 for pH adjustment to minimize corrosion.

When connected to this source, the District will blend it with their existing groundwater sources. **Figure 1** shows the locations of the north and south connections to this regional surface water source. The connections are currently under construction and expected to be online around spring of 2005.

Until recently, the District operated their production wells without any treatment. In 2004, the District began chlorinating their groundwater sources and adding fluoride, regardless of the well's depth, quality and separation from surface water influence. The District currently implements this in an effort to maintain consistency in taste and quality within the distribution system when the treated surface water blends with the groundwater sources in 2005.

The multiple groundwater sources each have their own treatment system. **Table 1** provides a summary of treatment at each of the District's ground and surface water sources. The table indicates that, apart from the low chlorine & fluoride free area supplied by District wells 4, 4R, 11.1, and 11.2, the treatment process will be similar at all of the groundwater sources. **Appendix A** presents the DOH source treatment forms detailing the treatment processes in place at each production well.

Table 1 – District Source Treatment Summary

Well	DOH Source #	Source Treatment				
		Chlorination	pH adjustment	Fluoridation	Filtration	Ozonation
1R	S01	x	x	x		
2.1(1)	S02	x	x	x	x	
2.2(1)	S15	x	x	x	x	
10	S11	x	x	x		
7(1)	S06	x	x	x		
8(1)	S07	x	x	x		
9(1)	S13	x	x	x		
SPU South	77050Y - S02	x	x	x	x	x
4	S04	x(2)				
4R	S17	x(2)	x			
11.1(1)	S14	x(2)				
11.2(1)	S12	x(2)				
12R	S16	x		x	x	
13	S09	x		x	x	
14	S10	x		x		
SPU North	77050Y - S02	x	x	x	x	x

Notes:

(1) - Sources are blended and treated at one treatment plant location prior to distribution

(2) - Low chlorine dose for taste and odor control

Source Grouping

Although the District has 14 actively treated groundwater sources, many of these wells tap the same aquifer and can expect to present similar reactions to disinfection and the formation of Disinfection Byproducts (DBPs). The text below presents DOH criteria used to group these 14 wells and future blending of SPU Tolt surface water into the following three Treatment Plants:

Treatment Plant 1 (TP1) Plateau and Cascade View Shallow/Zone II Aquifer blended with SPU water

Treatment Plant 2 (TP2) Intermediate Zone III/Deep Zone IV Aquifers blended with SPU water

Treatment Plant 3 (TP3) Valley Aquifer System blended with SPU water

Well Construction

Table 2 provides a summary of well construction information for each of the District production wells in addition to the designated aquifer (discussed below) each well taps. Complete well log reports for each of the District's wells are included in **Appendix B**.

Table 2 - District Production Well Construction Data

Well	Location	Year Constructed	Wellhead Elevation (ft-msl)	Completion Depth (ft)	Screen Diameter (inches)	Pumping Capacity (gpm)	Aquifer Zone
1R	24100 SE 28th Street	1984	465	137-147	12	500	II
2	25400 SE 31st Place	1968	414	96-116	12	500	II
2.2	25401 SE 31st Place	1996	414	150-175	16	500	II
4	23050 Main Street	1970	352	390-400	12	750	IV
4R	23050 Main Street	2004	352	710-845	12	- (1)	IV
7	6503 East Lake Sammamish Parkway	1984	70	83-147	14	2,000	Valley B
8	6651 East Lake Sammamish Parkway	1984	73	105-179	14	3,500	Valley B
9	940 1st AVE NE	1991	75.5	194-219	24	2,300	Valley C
10	25025 SE 32nd Street	1993	418	135-183	10	700	II
11.1	400 228th AVE SE	1993	355	409-486	6	500	III
11.2	400 228th AVE SE	1993	355	655-880	8	2000	IV
12R	26410 NE 50th Street	1999	645	135-169	12	220	II
13	26002 NE 70th Street	1990	665	865-944	6	170	IV
14	26120 NE 36th Place	1990	475	305-328	8	100	III

Notes;

1 - Pump not installed yet. Pumping test indicates well can sustain a yield of 2,000gpm

Hydrogeology

Several geologic maps and reports describe the surface and subsurface geology tapped by the District's production wells. The USGS Water Resources Investigation Report 94-4082 (USGS, 1995) Geohydrology and Ground-Water Quality of East King County, describes the study area to consist primarily of unconsolidated glacial and interglacial deposits.

The USGS report and investigations conducted by the District indicate the District wells tap the following two distinct aquifer systems:

1 – Plateau & Cascade View Aquifer System

2 – Issaquah Valley Aquifer System

Plateau & Cascade View Aquifer System

Figure 2 is a schematic cross section showing hydrostratigraphic units for the Plateau and Cascade View aquifer system.

Four of the units are designated aquifer zones. These zones are comprised of saturated to partially saturated permeable sand and gravel deposits designated by Roman Numerals, with "I" being the shallowest and "IV" the deepest. Separating these aquifer units are three intervening aquitards of lower permeable sediments that are predominantly clay and silt. These units overlie Tertiary Bedrock comprised predominantly of siltstone, sandstone, and conglomerate. **Table 3** describes these aquifers and the intervening aquitards in detail.

The two uplands (Plateau and Cascade View) share similar stratigraphy, but are separated topographically by Evans and Patterson Creek valleys. The schematic illustrates where these stream valleys truncate the shallower aquifer zones designated I and II.

The District's production wells in this aquifer system tap zones II, III, and IV. There are no District wells completed in Zone I because the aquifer is unconfined in areas, and locally in direct hydraulic connection to Plateau wetlands and surface waters. The aquifer and aquitard geometries are shown with District well locations by east-west **(Figure 3**) and northwest-southeast (**Figure 4**) cross sections through the District's Plateau and Cascade View areas.

Hydraulic Connection

Water level records from monitoring wells completed with multiple piezometers, such as those in PT-3, indicate a significant hydraulic separation between Aquifer Zone II and the deeper zones III and IV (**Figure 5)**. Water level records in monitoring wells completed in both zone III and IV, such as Well 6 show some hydraulic connection (**Figure 6**).

Table 3 - Characteristics of Geohydrologic Units in the Plateau and Cascade View Aquifer System

Geohydrologic Unit	Geohydrologic Unit Label	Aquifer/ Aquitard Zone	Lithologic Characteristics	Location	Hydrologic Characteristics
Alluvium	Qal	-	Consists of unconsolidated silt, sand, and gravel deposited by streams and along lake shores since the end of the Vashon Glaciation. These deposits may range from 1 to 30 or more feet thick.	Snoqualmie and Evans/Patterson Creek Valley and along the Lake Sammamish shoreline.	Highly variable permeability, ranging from moderate to high.
Vashon Recessional Outwash	Qvr	Zone I	Comprises highly permeable unconsolidated sand and gravel deposited by retreating ice of the Vashon Glaciation. These deposits may be up to 70 feet thick in some areas of the Plateau.	Inglewood Channel, North Fork Valley, Central Portions of the Sammamish Plateau and Ames Lake area	Aquifer where saturated, mostly unconfined. Perched conditions occur locally. Examples - Ames, Beaver, Pine &Yellow Lakes
Vashon Till	Qvt	Aquitard	Low permeable, highly consolidated, silty gravel and sandy silt, locally referred to as hardpan. Deposited at the base of the Vashon Ice sheet and compressed by the weight of the overlying glacier. This unit is typically 10 to 30 feet thick and rarely more than 50 feet thick.	It is present at ground surface across much of the upland areas in the model and underlies the recessional outwash in some places on the Plateau.	Confining bed, but can slowly transmit some water vertically and horizontally
Vashon Advance Outwash	Qva	Zone II	Moderately permeable, highly consolidated, silty sand and gravel deposited by meltwater of the advancing Vashon Ice Sheet. The Advance Outwash was compacted after deposition by the overlying glacier. It is commonly 100 to 200 feet thick and can be separated by a discontinuous blue-gray silt that ranges between 10 to 30 feet thick.	Vashon Advance Outwash underlies most of the uplands including, the Plateau and Cascade View/Ames Lake areas. This unit outcrops along the steep slopes around the margins of the upland areas.	Principal aquifer in terms of use. Groundwater mostly confined by the overlying Till

Table 3 - Characteristics of Geohydrologic Units in the Plateau and Cascade View Aquifer System (cont.)

Geohydrologic Unit	Geohydrologic Unit Label	Aquifer/ Aquitard Zone	Lithologic Characteristics	Location	Hydrologic Characteristics
Transitional Beds	Q(A)f / Qtb	Aquitard	Low permeable silt and clay beds typically deposited in lakes prior to the Vashon Glaciation. The transition beds are as thick as 150 feet in the model area.	The transition beds outcrop on the steep slopes along the upland areas where they underlie the Vashon Advance Outwash.	Confining bed, but can yield and transmit water
Olympia Beds	Q(A)c / Qol	Zone III	Moderately permeable sands and gravels interbedded with silt and were deposited by streams during non-glacial times. Formation thickness, where exposed in the upland edges, can be greater than 100 feet.	They outcrop on the steep slopes of the upland areas and extend beneath the uplands and alluvium in the valleys. Known in some areas as the "Sea Level" aquifer because it is commonly present at this elevation	Principal aquifer in terms of use. Groundwater is confined.
Lower fine-grained unit	Q(B)f	Aquitard	Clay, silt, and till with some sand and gravel. Formation thickness can be greater than 200 feet thick	Present beneath the sea level aquifer (Zone III). Believed to underlie Lake Sammamish in most areas.	Confining bed, but can yield and transmit water
Lower coarse-grained unit	Q(B)c	Zone IV upper	Sand and gravel with minor clay and silt. Formation thickness is between 100 and 200 feet in most areas.	Present under central portions of the Sammamish Plateau and north to Union Hill, Cascade View, and Ames Lake areas.	An aquifer where saturated. Groundwater is confined. Tapped by few wells. Known wells are SPWSD 4, and 5
Deepest unconsolidated and undifferentiated deposits	Q(C)	Zone IV lower	Unconsolidated deposits of largely unknown lithology. Formation thickness where found is greater than 200 feet thick	Present under central portions of the Sammamish Plateau and north to Union Hill, Cascade View, and Ames Lake areas.	Hydraulically connected to Zone IV upper. Unit encountered in few wells - NE Samm TW-1, SPWSD 6.2 and 11.2,
Tertiary Bedrock	Br	Base/Boundary	Adesite with minor amounts of basalt and diorite, and some sandstone, siltstone, and conglomerate.	Present at the surface along the eastern (Cascade foothills) and southern (Grand Ridge) boundaries	Water contained in fractures and joints, but most well yields are relatively small.

Table modified from USGS Water Resources Investigations Report 94-4082

Due to the significant hydraulic separation between Zone II and the deeper aquifer zones (III & IV), Zone II wells are grouped into one treatment plant (TP1) for DBP monitoring. Because of their demonstrated hydraulic connection and water quality similarities (demonstrated below), district wells completed in aquifer Zones III and IV will be included into Treatment Plant 2 (TP2) for DBP monitoring.

Valley Aquifer System

During the last glacial advance (between 20,000 and 10,000 years ago), ice entered the Sammamish Valley from the north, reversed the drainage and enlarged ancestral Lake Sammamish. High-energy streams seasonally entered the valley from the east through meltwater channels, such as Inglewood and North Fork channels, and built coarse-grained sand and gravel deltas into the lake. These sediments are interbedded with finer-grained lake silts deposited during cold-season low runoff. These silt layers confine groundwater, acting as aquitards that separate the coarse-grained highly productive aquifers of the valley aquifer system.

The District wells completed in the Issaquah Valley Aquifer System tap zones designated A, B and C. **Figure 7** shows these zones and the District's well completions in a north-south cross section.

The aquitard layers within the Valley Aquifer System are not as thick or extensive as those within the Plateau and Cascade View Aquifer System. As a result, the aquitards provide some hydraulic separation, but allow a greater degree of communication between each of the three zones.

Hydraulic Connection

Figure 8 shows over ten years of water level records for monitoring well VT-1 which the cross-section (**Figure 7**) illustrates has completions in all three valley aquifer zones.

Seasonal water level fluctuations recorded for all three aquifer zones are similar which verify their hydraulic connection. Because of this hydraulic connection and the water quality similarities between each of the aquifer zones (demonstrated below), all three zones are considered as one aquifer and will be represented by Treatment Plant 3 (TP3) for DBP sampling purposes.

Water Quality

The following tables (**Tables 4 through 6**) show water quality parameters specific to those outlined in DOH PUB #331-235 used to support grouping the District's groundwater wells into the three treatment plants identified above. Parameters showing similar levels between the well groupings are highlighted in yellow.

Table 4 - Water Quality Data for Sources Included in Treatment Plant 1

Well	DOH Source #	Aquifer Zone	Temperature Annual Range (Celcius)	pH range	Specific Conductivity (umhos/cm)	Calcium (mg/L)	Magnesium (mg/L)	Iron (mg/L)	Manganese (mg/L)	Sodium (mg/L)	Sulfate (mg/L)	Hardness (mg/L as $CaCO_3$)	Chloride (mg/L)	TOC (mg/L)
1R	S01	II	10.0 - 11.1	6.6-7.1	155	19.2	11	ND	ND	6.5	ND	82	ND	0.7
2.1	S02	II	10.2 - 11.1	6.6-7.1	160	21.6	10	ND	0.034	8.1	7.9	65	5.7	NA
2.2	S15	II	9.8 - 11.1	6.6-7.1	165.5	15	4.8	ND	0.086	5	8	70	3	NA
10	S11	II	10.2 - 11.1	7.0-8.3	130	15.2	5.4	ND	ND	4.3	ND	60	ND	NA
12R	S16	II	9.7-11.0	6.6-7.0	154	23	8.5	ND	0.135	8.2	26.3	90	ND	NA
SPU	?	-	5.0-20	7.9-8.3	67.3	28.2	0.4	0.014	ND	1.11	1.4	29.9	2.5	1.08

Notes

1 - Water Quality results collected from Table 3-5 of SPWSD Comprehensive Plan and additional samples collectedf from 1994 through 2004 for ASR pilot testing.

- Water Quality results showing similarities within designated treatment plant group

NA - Not Analyzed

Table 5 – Water Quality Data for Sources Included in Treatment Plant 2

Well	DOH Source #	Aquifer Zone	Temperature Annual Range (Celcius)	pH	Specific Conductivity (umhos/cm)	Calcium (mg/L)	Magnesium (mg/L)	Iron (mg/L)	Manganese (mg/L)	Sodium (mg/L)	Sulfate (mg/L)	Hardness (mg/L as $CaCO_3$)	Chloride (mg/L)	TOC (mg/L)
4	S04	IV	9.2 - 11.7	7.3-8.2	146	18	4.2	ND	0.05	7.4	ND	61	ND	NA
4R	S17	IV	9.2 - 11.7	7.3-8.2	156	18	3.8	ND	0.03	6	ND	61	ND	NA
11.1	S14	III	10.1-12	7.0-7.8	162	19	5.7	0.25	ND	6.7	3.6	77	2.3	NA
11.2	S12	IV	10-11.7	7.5-8.6	148	18	6	ND	0.03	6.7	1	70	2	NA
13	S09	IV	NA	7.8-8.4	155	17	5.8	ND	0.05	9.6	ND	67.5	ND	NA
14	S10	III	NA	7.6	140	11	4.4	ND	0.05	6.8	21	45	ND	NA
SPU	?	-	5.0-20	7.9-8.3	67.3	28.2	0.4	0.014	ND	1.11	1.4	29.9	2.5	1.08

Notes

1 - Water Quality results collected from Table 3-5 of SPWSD Comprehensive Plan and additional samples collectedf from 1994 through 2004 for ASR pilot testing.

- Water Quality results showing similarities within designated treatment plant group

NA - Not Analyzed

Table 6 – Water Quality Data for Sources Included in Treatment Plant 3

Well	DOH Source #	Aquifer Zone	Temperature Annual Range (Celcius)	pH	Specific Conductivity (umhos/cm)	Calcium (mg/L)	Magnesium (mg/L)	Iron (mg/L)	Manganese (mg/L)	Sodium (mg/L)	Sulfate (mg/L)	Hardness (mg/L as $CaCO_3$)	Chloride (mg/L)	TOC (mg/L)
7	S06	Valley B	9.8-13.9	6.5-6.9	170	15	6.5	ND	ND	8.2	8.7	73	ND	NA
8	S07	Valley B	10.1-13.9	6.4-7.0	180	15	7	ND	ND	9.7	7.7	76	ND	NA
9	S13	Valley C	10.1-13.9	6.5-7.1	160	16	5.4	ND	ND	8.5	7	68	ND	NA
SPU	?	-	5.0-20	7.9-8.3	67.3	28.2	0.4	0.014	ND	1.11	1.4	29.9	2.5	1.08

Notes

1 - Water Quality results collected from Table 3-5 of SPWSD Comprehensive Plan and additional samples collectedf from 1994 through 2004 for ASR pilot testing.

- Water Quality results showing similarities within designated treatment plant group

NA - Not Analyzed

The tables generally indicate the wells grouped into the three treatment plants draw from the same aquifer, or aquifers with similar water characteristics. Given the similarities shown in natural water quality it is likely that the grouped wells will have similar reaction to treatment and blending with SPU surface water in the formation of DBPs. [1]

Treatment Plant Identification

Table 7 lists the District's production wells that currently supply their service area including the SPU connection proposed to blend with these sources in the future. Based on the District's distribution system and the criteria addressed above, the table identifies the source groups for each of the three identified Treatment Plants. DDBP monitoring for these treatment plants is describe in the following section and will provide the best representation of DBP formation from the treated groundwater and

[1] Some exceptions are due to localized water quality characteristics.

surface water sources managed by the District under the Stage I DDBP rule (40 CFR 141.132(b)).

Table 7 – SPWSD System Sources and Associated Treatment Plants

Well	DOH Source #	Aquifer Zone [2]	Treatment Plant [3]
1R	S01	Shallow (Zone II)	TP-1
2.1	S02		
2.2	S15		
10	S11		
12R	S16		
4	S04	Deep (Zone IV)	TP-2
4R	S17		
11.1[1]	S14	Intermediate (Zone III)	
11.2[1]	S12	Deep (Zone IV)	
13	S09		
14[4]	S10	Intermediate (Zone III)	
7[2]	S06	Valley Aquifer System	TP-3
8[2]	S07		
9[2]	S13		
SPU South	(77050Y-S02)		TP-1 & TP-2 [5]
SPU North	(77050Y-S02)		TP-1 & TP-3 [5]

Notes:

(1) - Sources are blended and treated at one treatment plant location prior to distribution

(2) - Known productive hydrostratigraphic zones that comprise the Plateau and Valley Aquifer systems

(3) - Designated Treatment Plants based on similarities in Well Construction, Geology and Water Quality

(4) - Well 14 is rarely pumped, a majority of it's water rights were transferred to other nearby, more productive wells

(5) - SPU water will be blended with groundwater sources grouped into the identified treatment plants

Part 2
DDBP Monitoring Plan

System Name: **Sammamish Plateau Water & Sewer District**
PWSID#: **409009**
Type of System: **Groundwater and future SPU Tolt Surface Water**
Population of System: **>10,000**
Date: **12/22/04**
Completed by: **SPWSD & CDM**

The District' DDBP monitoring plan is maintained and available for review by DOH and the general public. The plan complies with the requirements outlined in the Code of Federal Regulations, Title 40, Chapter 1, Section 132, Paragraph (f) which includes the following:

- Specific locations and schedules for collecting the DDBP parameters that represent the entire distribution system.

- A description on how the compliance is calculated with regard to treatment technique, maximum contaminant levels (MCLs) and maximum residual disinfectant levels (MRDLs).

Part 1 above presents the information and analysis for grouping District well sources and future SPU surface water blending into three identified treatment plants. **Table 8** presents a summary of these treatment plants and associated wells. Treated SPU Tolt surface water will blend with all of the well groups and shows as a source for all three treatment plants.

Table 8 - Treatment Plant Sources

Treatment Plant	Sources
TP1	1(S01), 2.1(S02), 2.2 (S15), 10 (S11), 12R (S16) & SPU Tolt Water
TP2	4(S04), 4R(S17), 11.1(S14), 11.2(S12), 13(S09), 14(S10) & SPU Tolt Water
TP3	7(S06), 8(S07), 9(S13) & SPU Tolt Water

Disinfection Monitoring and Compliance

- The District and CWA/SPU, when connected, will work together to ensure compliance with sample collection, analysis, and report submittal to DOH. SPU will continue to analyze and report sampling results to DOH before the Tolt water is delivered to the District's service connection.

- **Figure 9** shows the locations of the District's current coliform sampling stations. The District will monitor the 60 stations over a one month period. Each week the District samples a select group of the 60 stations based on the following color code on the map:

  Green – Week 1
  Yellow – Week 2
  Blue – Week 3
  Red – Week 4

As shown, the station groups are widely distributed throughout the District's service area for representative system sampling every week.

For disinfection monitoring, the District will analyze chlorine residuals and pH levels in the field when each of the coliform samples are collected. The District will tabulate and submit this field data using the DOH Distribution System Report Form with the laboratory coliform results to DOH within 10 days of the end of the reporting month. An example of this form is included in **Appendix B**.

Maximum contaminant level (MCL) compliance of disinfection residuals will be based on a running annual average (RAA) over the past 12 months. MRDL for chlorine and chloramines is 4.0 mg/L. However, the District expects to maintain a residual no more than 0.2 mg/L.

Byproduct Monitoring and Compliance

As with the Disinfection monitoring, SPU will continue to analyze and report sampling results to DOH for MCL compliance of Total Trihalomethanes (TTHM), the five Haloacetic Acids (HAA5), and Bromate formation before delivering Tolt water to the District's service connection. The District will sample for TTHM, HAA5, Bromide, and TOC quarterly at the sampling stations shown on **Figure 9** for each treatment plant. **Table 9** lists the Treatment plants and the representative sample stations where DBP monitoring will occur.

Table 9 – DBP Monitoring Stations and Schedule

Treatment Plant	TTHM & HAA5 Sampling Station (1)	Residence	Sampling Schedule
TP1	24	Average	Quarterly - Jan, April, July, Oct
	26	Average	Quarterly - Jan, April, July, Oct
	27	Average	Quarterly - Jan, April, July, Oct
	46	Maximum	Quarterly - Jan, April, July, Oct
	2	Maximum	Quarterly - Jan, April, July, Oct
TP2	6	Average	Quarterly - Jan, April, July, Oct
	3	Average	Quarterly - Jan, April, July, Oct
	17	Average	Quarterly - Jan, April, July, Oct
	53	Maximum	Quarterly - Jan, April, July, Oct
TP3	1	Average	Quarterly - Jan, April, July, Oct
	18	Average	Quarterly - Jan, April, July, Oct
	30	Average	Quarterly - Jan, April, July, Oct
	48	Maximum	Quarterly - Jan, April, July, Oct

Notes:
1 - See figure 9 for sampling station location

As discussed in Part 1, the District expects DBP formation for Well 12, completed in the shallow aquifer in the Cascade View area, to be similar and represented by the stations supplied by wells completed in the shallow aquifer on the Plateau. However, the District will collect an extra sample representing maximum residence time (MRT) for Treatment Plant 1 (TP1) in this area to cover possible differences in reaction to treatment and future blending of SPU surface water from the north connection. The sampling station (Station #2) is located at the Well 12R storage tank.

The District will summarize and submit analytical results of the 13 samples to DOH in quarterly reports that will include:

- Sample date and location for DBP results
- Quarterly arithmetic average
- Running annual averages for HAA5 and TTHM based on the previous four quarters for each source (RAA of quarterly averages that exceed the MCL are in violation)
- Whether or not results exceed the MCL for each DDBP parameter as shown on **Table 10**.

Table 10 – MRDLs and MCLs for the Stage 1 D/DBP Rule

Disinfectant	MRDL	MCL	MCLGs	Based on
Chlorine	4.0 mg/L			**Running Annual Average**
Disinfectant Byproduct				
HAA5		**0.060 mg/L**		**Running Annual Average**
Monochloroacetic acid			-	
Dichloroacetic acid			0.00	
Trichloroacetic acid			0.30 mg/L	
Monobromoacetic acid			-	
Dibromoacetic acid			-	
TTHM		**0.080 mg/L**		**Running Annual Average**
Bromodichloromethance				
Dibromochloromethane				
Tribromomethane (Bromoform)				
Trichloromethane (Chloroform)				
Bromate		**0.010 mg/L**	0.00	**Running Annual Average**

Notes:
MRDL - Maximum Residual Disinfectant Level
MCL - Maximum Contaminant Level
MCLGs - Maximum Contaminant Level Goals

Reduced Monitoring Qualifications

For conservative purposes and until more sophisticated modeling of the distribution system is performed, the District will consider surface water to be present within the system to some degree throughout the year and will comply with the reduced monitoring criteria for surface water sources, even though the source water present in the Distribution system during the late spring, summer and early fall seasons will be mainly groundwater.

Table 11 shows the criteria necessary for the Department of Health to consider the District qualified for reduced monitoring. If the District meets these criteria they may apply to reduce DBP monitoring to 1 sample, per treatment plant, per year. This will reduce monitoring efforts from 52 samples collected annually for both THM and HAA5 to 13.

Table 11 also shows TOC monitoring and reduction criteria. The District will collect monthly treated source water TOC (a DBP precursor) and Bromate, a potential DBP contaminant created from SPU ozone treatment. The District will obtain both TOC and Bromide levels from Seattle Public Utilities for calculating running annual averages and quarterly samples at each of the two interties to determine if they qualify for reduced TOC and Bromate monitoring.

Table 11 – Reduced Monitoring

Parameter	Criteria	Standard Monitoring Frequency	Reduced Frequency
Chlorine Residuals	No Reductions Allowed	Monthly	Not Applicable
TTHM and HAA5	< or = 50% MCLs (RAA) & TOC < or = 4.0 mg/L (RAA)	4/plant/QTR (TTHM & HAA5)	1/plant/QTR
TOC	TOC < 1.0 mg/L 1YR TOC < 2.0 mg/L 2 YRS	Monthly (RAA) (obtained from SPU) Checked Quarterly at Interties	1/plant/QTR
Bromate	Bromide < 0.05 mg/L 1YR	Monthly (RAA) (obtained from SPU) Checked Quarterly at Interties	1/plant/QTR

Distribution

2 Copies	Office of Drinking Water - NW Regional Office Washington State Department of Health 20435 72nd Ave S Kent, WA 98032 Attention: Jolyn Leslie, PE, Regional Engineer
2 Copies	Sammamish Plateau Water and Sewer District 1510 228th Ave SE Sammamish, WA 98027 Attention: Ron Little, PE, Manager

Figures

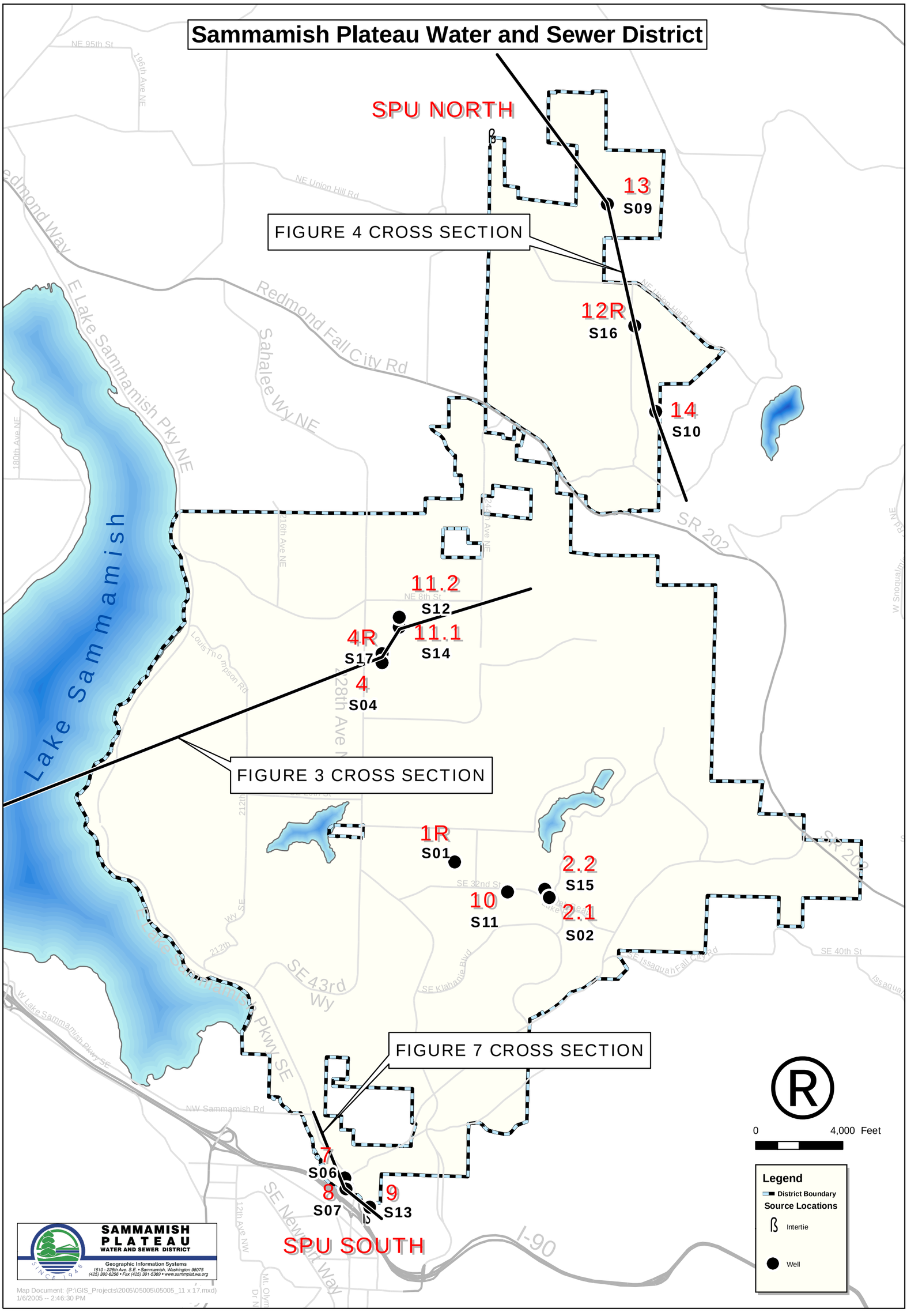


Figure 1
District Sources Treatment Locations

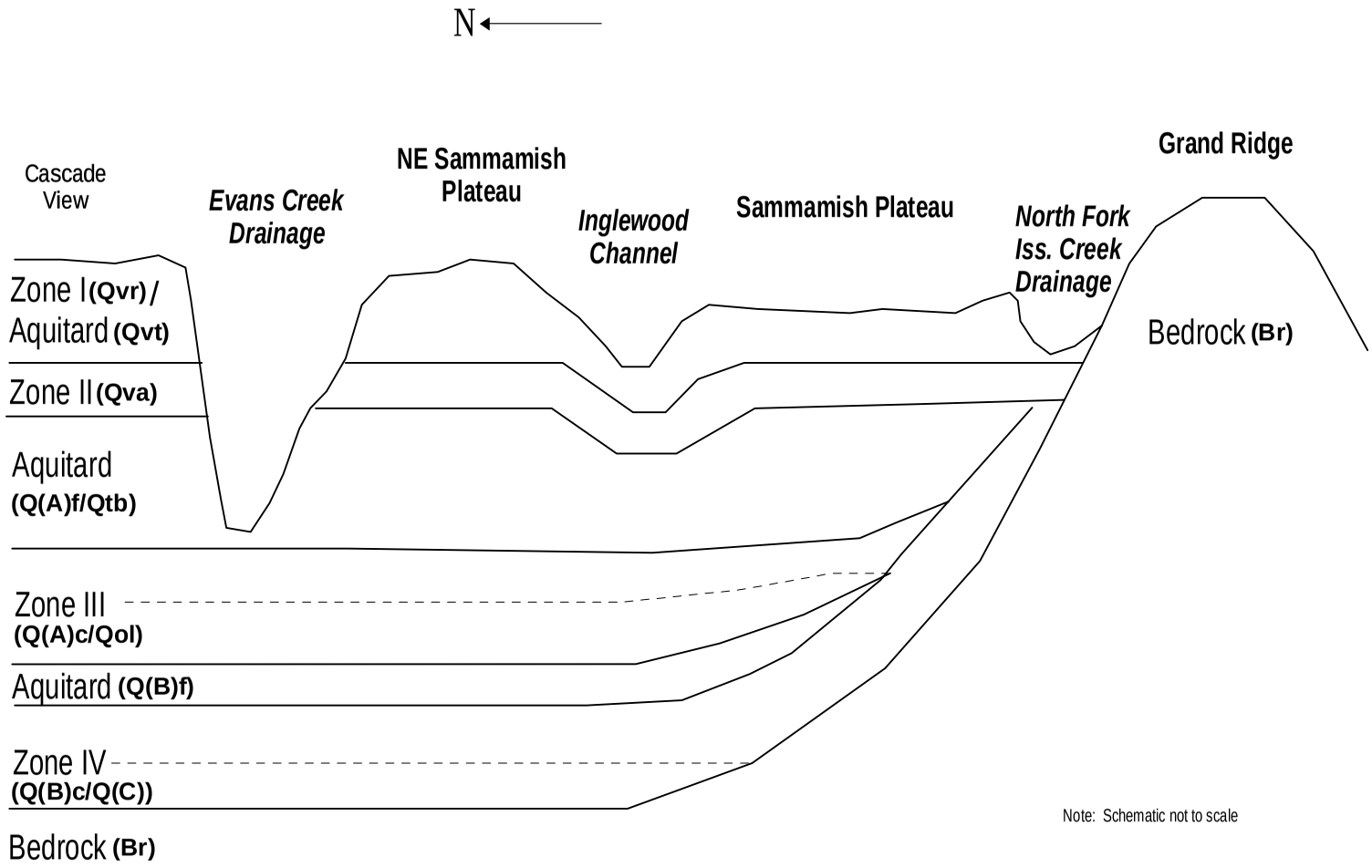
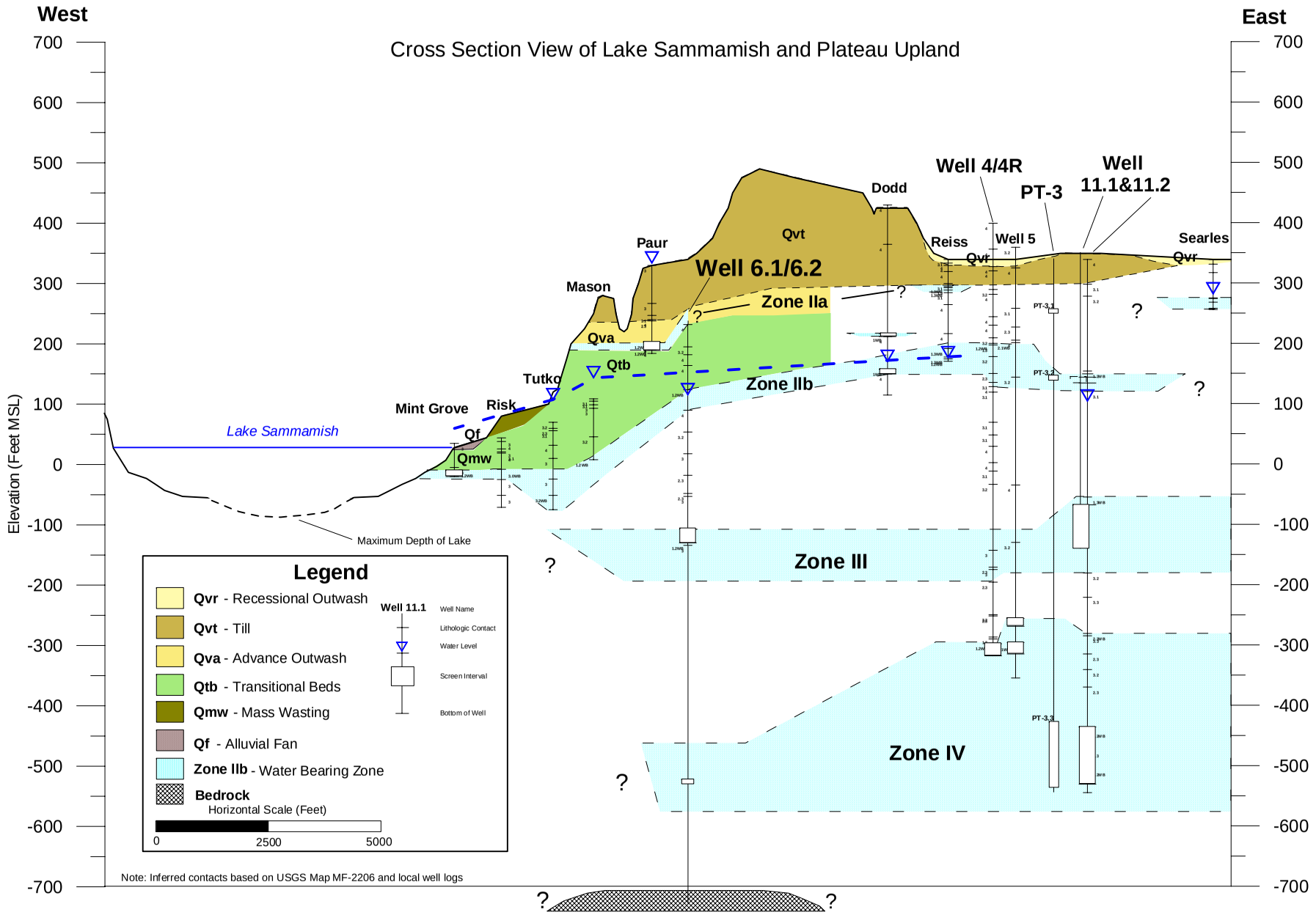


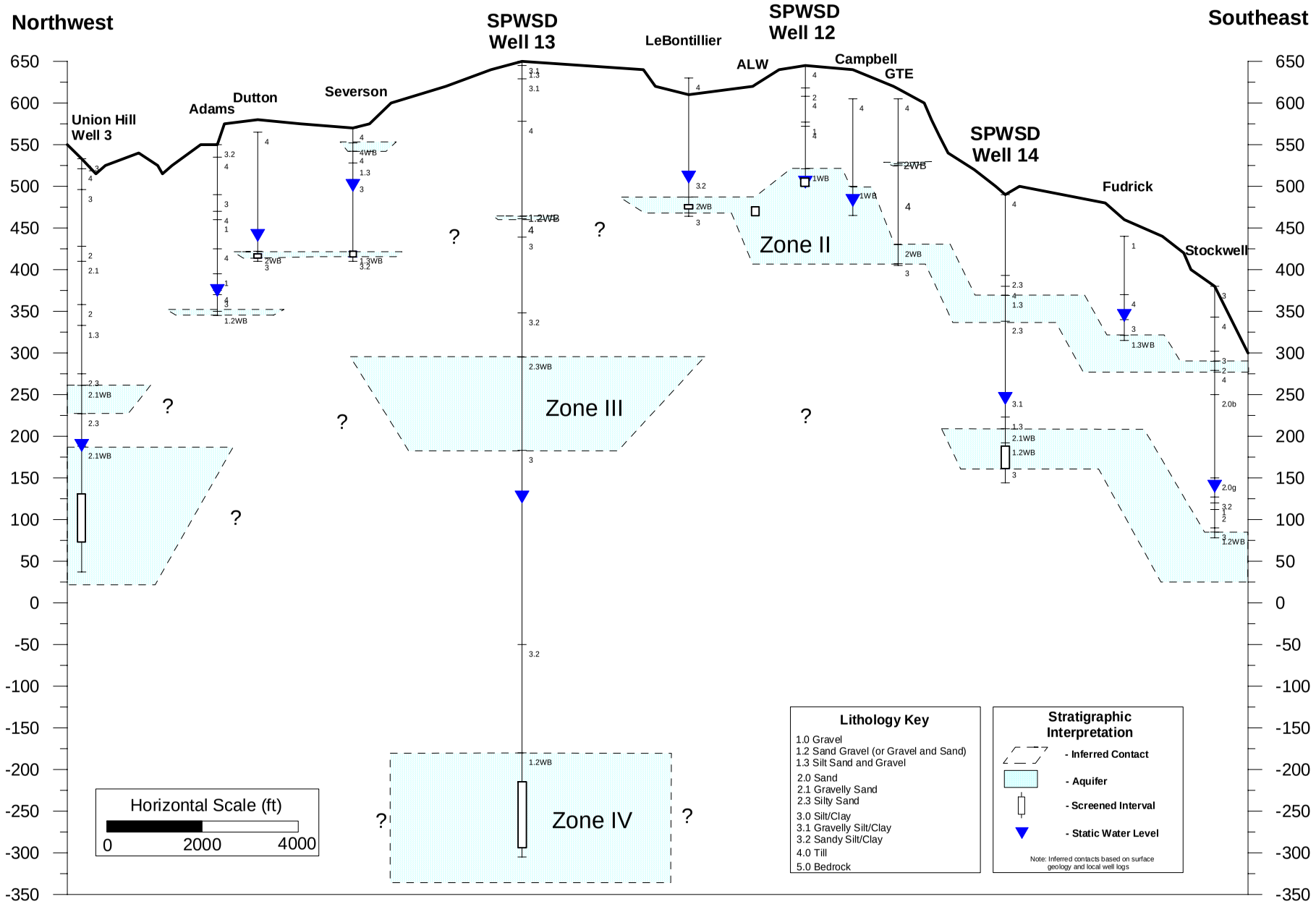
Figure 2
Schematic Cross Section
Plateau and Cascade View Aquifer System

CDM



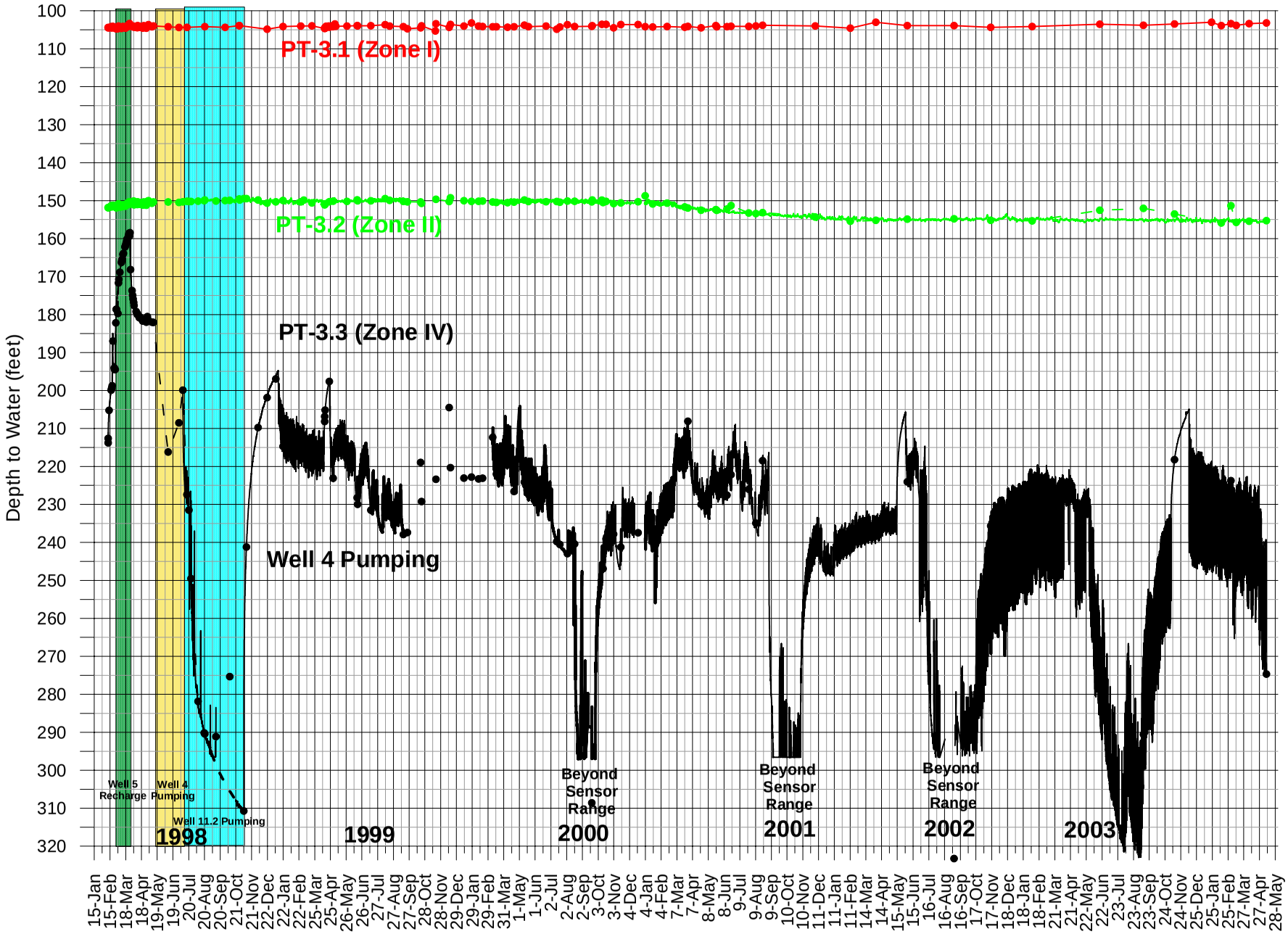
CDM

Figure 3
West - East Plateau Cross Section



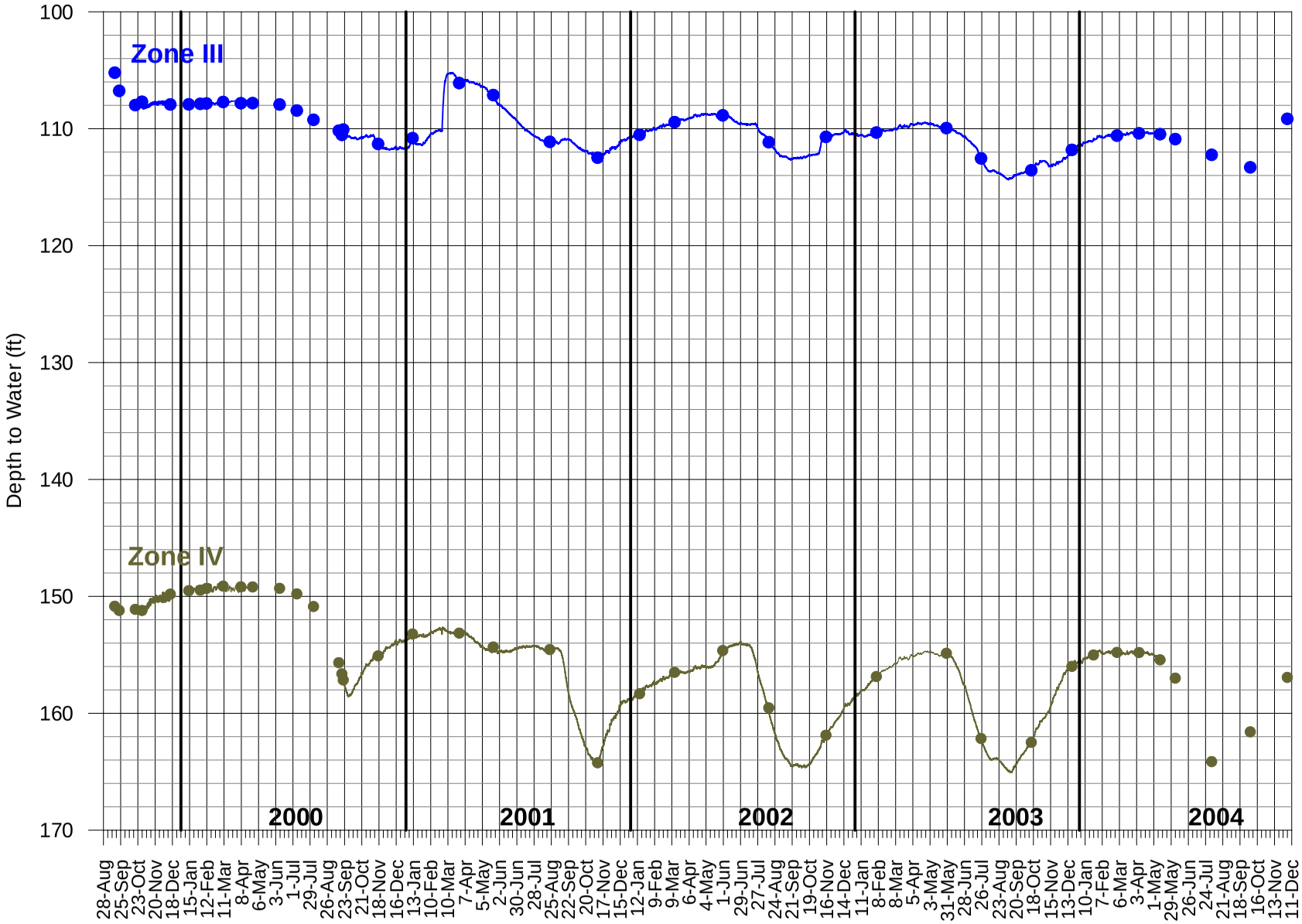
CDM

Figure 4
Northwest-Southeast
Cascade View Cross Section



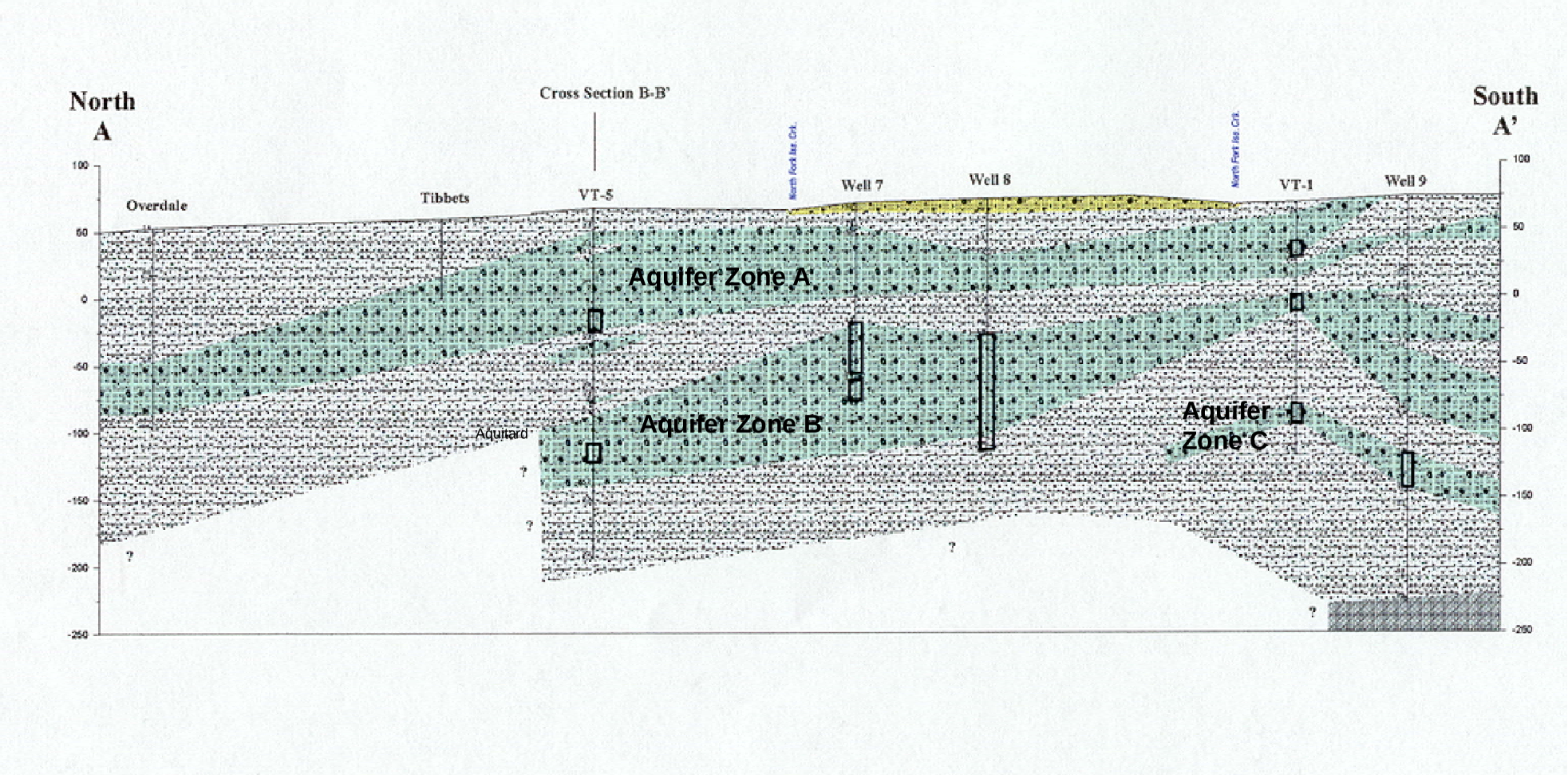
CDM

Figure 5
PT-3 Long-Term Hydrograph



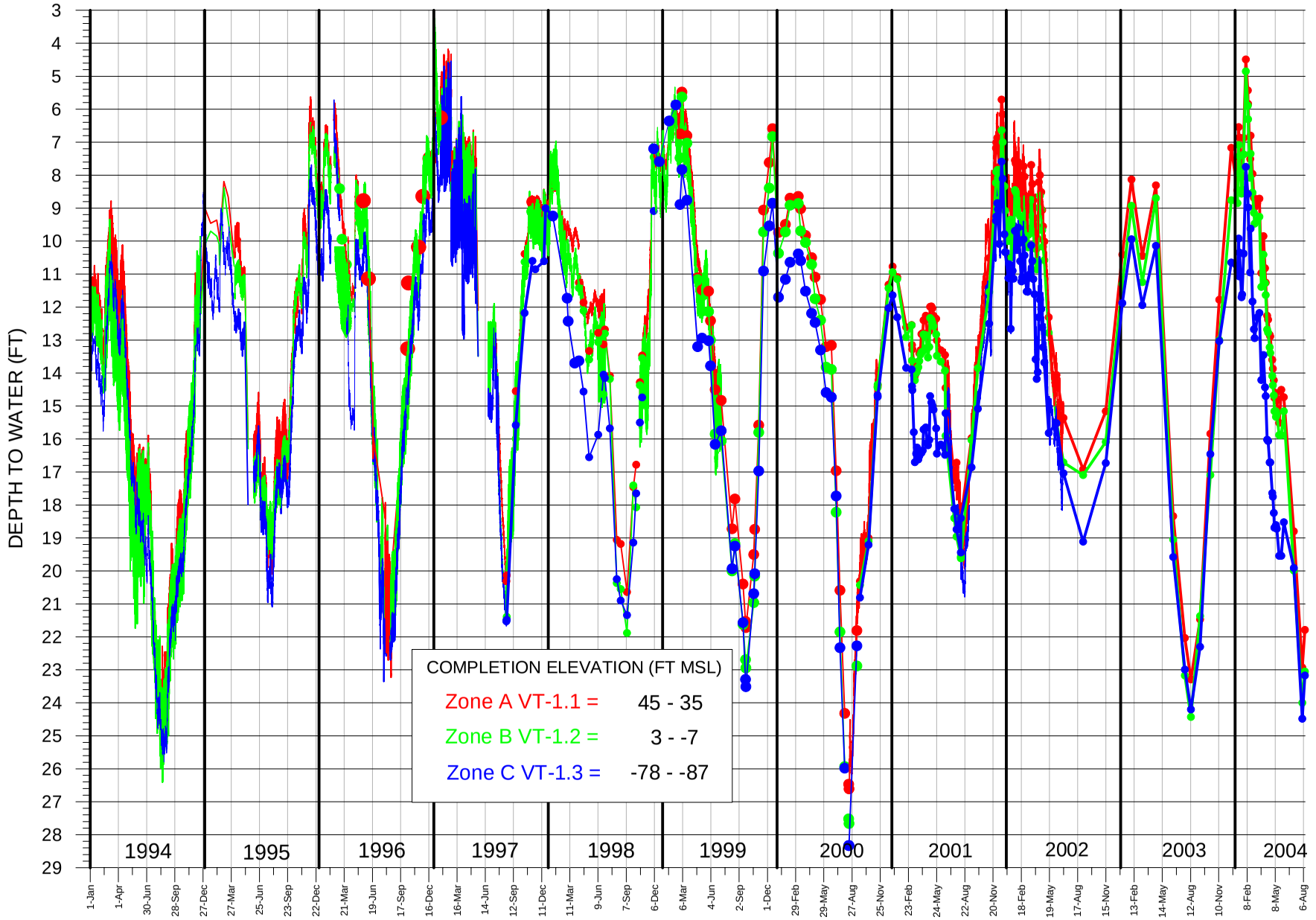
CDM

Figure 6
Well 6 Long-Term Hydrograph



CDM

Figure 7
North-South
Valley Aquifer System Cross Section



CDM

Figure 8
VT-1 Long-Term Hydrograph

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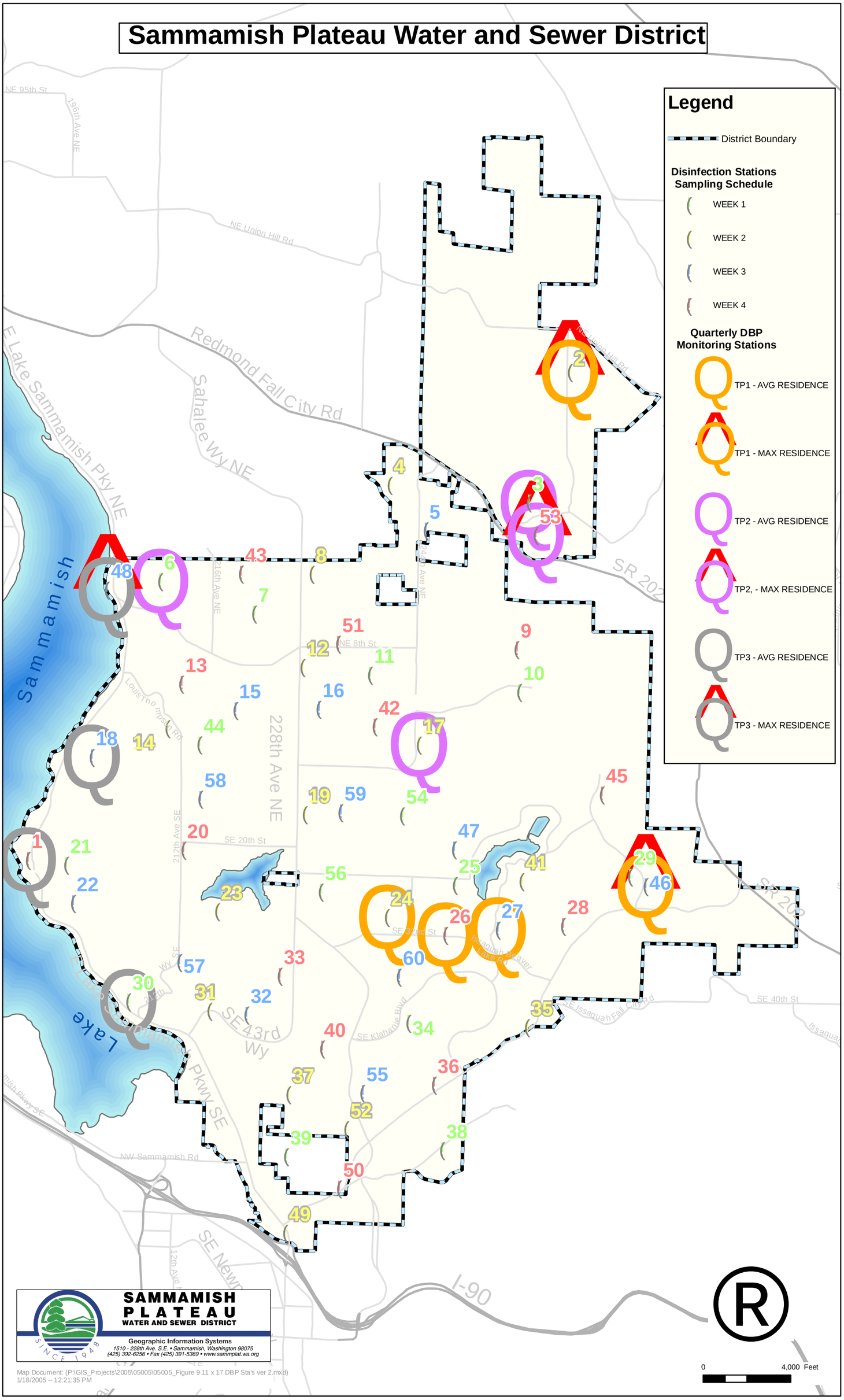
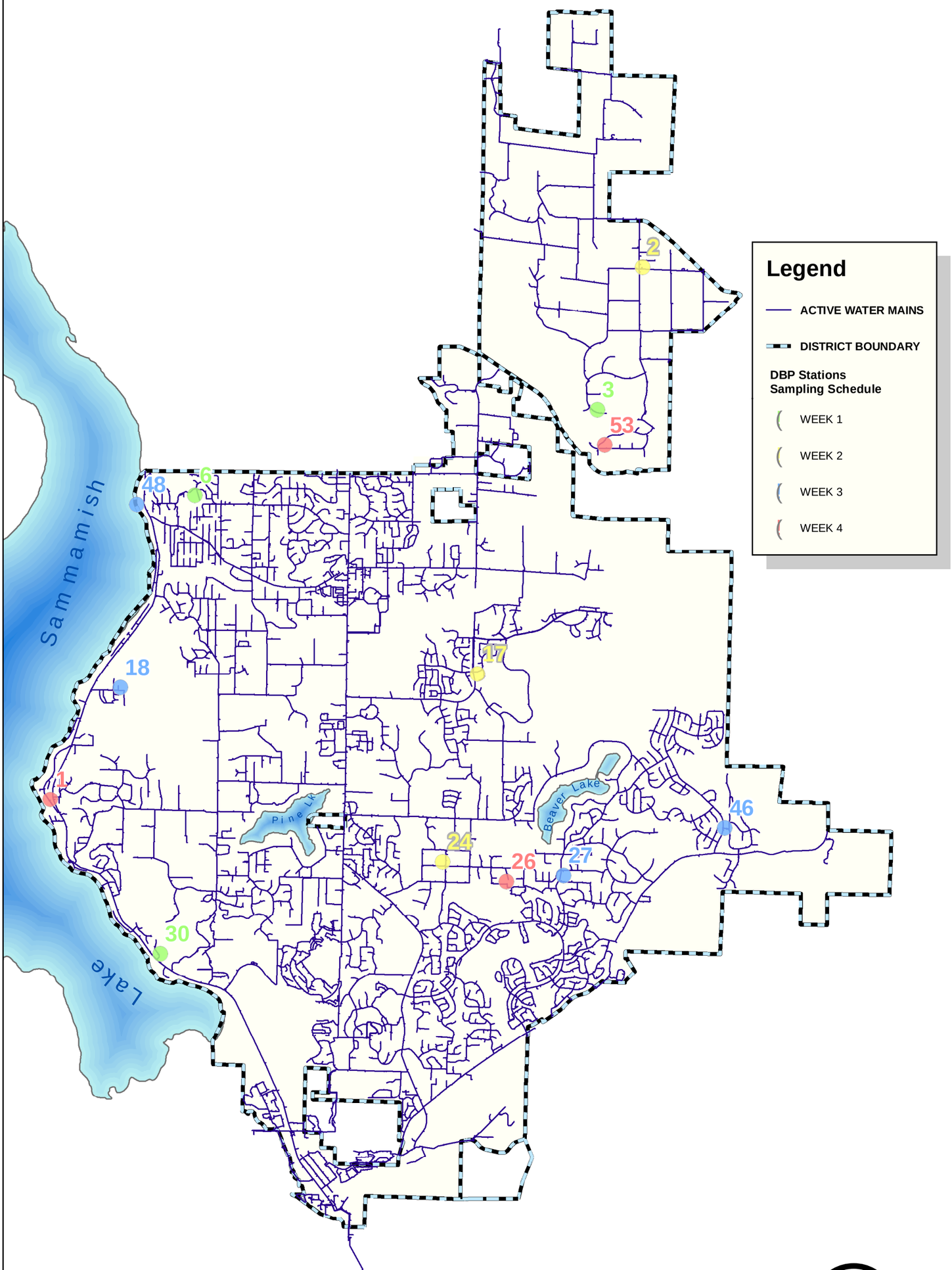


Figure 9
DBP Monitoring Stations and Schedules

Sammamish Plateau Water and Sewer District



SAMMAMISH PLATEAU WATER AND SEWER DISTRICT
SINCE 1948
Geographic Information Systems
1510 - 228th Ave. S.E. • Sammamish, Washington 98075
(425) 392-6256 • Fax (425) 391-5389 • www.sammplat.wa.org

Map Document: (P:\GIS_Projects\2005\05005\05005_Figure 10 11 x 17 DBP Sta's ver2.mxd)
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0 4,000 Feet

Figure 10
DBP Monitoring Stations and Water Mains

Appendix A
DOH Source Treatment Forms

Source Treatment – Sammamish Plateau

Source Name: Well 1R
Source Number: (S01)

Process	A	B	C	D	E	F	G	H	I	J	
CHLORAMINES											
CHLORINATION, GASEOUS											
CHLORINATION, HYPOCHLORITE	x										On-Site Electrolytic Chlorination up to 0.8%
CHLORINE DIOXIDE											
IODINATION											
OZONATION											
ULTRAVIOLET RADIATION											
RAPID MIX/IN-LINE BLENDER											
COAGULATION											
FLOCCULATION											
SEDIMENTATION											
FILTRATION, CARTRIDGE											
FILTRATION, DIATOMACEOUS EARTH											
FILTRATION, GREENSAND											
FILTRATION, PRESSURE SAND											
FILTRATION, RAPID SAND											
FILTRATION, SLOW SAND											
PH ADJUSTMENT									x		NaOH
ION EXCHANGE											
LIME-SODA SOFTENING											
AERATION/AIR STRIPPING											
PERMANGANATE											
ACTIVATED CARBON, GRANULAR											
ACTIVATED CARBON, POWDERED											
REVERSE OSMOSIS											
DISTILLATION											
ELECTRODIALYSIS											
SEQUESTRATION											
CORROSION INHIBITORS - PHOSP/SILICA											
FLUORIDATION									x		Operating last quarter of 2004
REDUCING AGENTS - SULFUR COMPOUNDS											
SLUDGE TREATMENT											
OTHER PROCESSES/OBJECTIVES											

A = DISINFECTION
B = PARTICULATE (TURBIDITY) REMOVAL
C = SOFTENING (HARDNESS REMOVAL)
D = IRON & MANGANESE REMOVAL
E = ORGANICS AND COLOR REMOVAL
F = TASTE/ODOR CONTROL & DECHLORINATION
G = DISINFECTON BY-PRODUCTS CONTROL
H = INORGANICS REMOVAL
I = CORROSION CONTROL
J = DENTAL HEALTH

Source Treatment – Sammamish Plateau

Source Name: Well 2
Source Number: (S02)

Process	A	B	C	D	E	F	G	H	I	J	
CHLORAMINES											
CHLORINATION, GASEOUS											
CHLORINATION, HYPOCHLORITE	X		X								On-Site Electrolytic Chlorination up to 0.8%
CHLORINE DIOXIDE											
IODINATION											
OZONATION											
ULTRAVIOLET RADIATION											
RAPID MIX/IN-LINE BLENDER											
COAGULATION											
FLOCCULATION											
SEDIMENTATION											
FILTRATION, CARTRIDGE											
FILTRATION, DIATOMACEOUS EARTH											
FILTRATION, GREENSAND											
FILTRATION, PRESSURE SAND			X								Post Chlorination
FILTRATION, RAPID SAND											
FILTRATION, SLOW SAND											
PH ADJUSTMENT									X		NaOH
ION EXCHANGE											
LIME-SODA SOFTENING											
AERATION/AIR STRIPPING											
PERMANGANATE											
ACTIVATED CARBON, GRANULAR											
ACTIVATED CARBON, POWDERED											
REVERSE OSMOSIS											
DISTILLATION											
ELECTRODIALYSIS											
SEQUESTRATION											
CORROSION INHIBITORS - PHOSP/SILICA											
FLUORIDATION									X		Operating Last Quarter of 2004
REDUCING AGENTS - SULFUR COMPOUNDS											
SLUDGE TREATMENT											
OTHER PROCESSES/OBJECTIVES											

A = DISINFECTION
B = PARTICULATE (TURBIDITY) REMOVAL
C = SOFTENING (HARDNESS REMOVAL)
D = IRON & MANGANESE REMOVAL
E = ORGANICS AND COLOR REMOVAL
F = TASTE/ODOR CONTROL & DECHLORINATION
G = DISINFECTON BY-PRODUCTS CONTROL
H = INORGANICS REMOVAL

Source Treatment – Sammamish Plateau

Source Name: Well 2.2 (a.k.a. 2R)
Source Number: (S14)

Process	A	B	C	D	E	F	G	H	I	J	
CHLORAMINES											
CHLORINATION, GASEOUS											
CHLORINATION, HYPOCHLORITE	X			X							On-Site Electrolytic Chlorination up to 0.8%
CHLORINE DIOXIDE											
IODINATION											
OZONATION											
ULTRAVIOLET RADIATION											
RAPID MIX/IN-LINE BLENDER											
COAGULATION											
FLOCCULATION											
SEDIMENTATION											
FILTRATION, CARTRIDGE											
FILTRATION, DIATOMACEOUS EARTH											
FILTRATION, GREENSAND											
FILTRATION, PRESSURE SAND				X							Post Chlorination
FILTRATION, RAPID SAND											
FILTRATION, SLOW SAND											
PH ADJUSTMENT									X		NaOH
ION EXCHANGE											
LIME-SODA SOFTENING											
AERATION/AIR STRIPPING											
PERMANGANATE											
ACTIVATED CARBON, GRANULAR											
ACTIVATED CARBON, POWDERED											
REVERSE OSMOSIS											
DISTILLATION											
ELECTRODIALYSIS											
SEQUESTRATION											
CORROSION INHIBITORS - PHOSP/SILICA											
FLUORIDATION										X	Operating Last Quarter of 2004
REDUCING AGENTS - SULFUR COMPOUNDS											
SLUDGE TREATMENT											
OTHER PROCESSES/OBJECTIVES											

A = DISINFECTION
B = PARTICULATE (TURBIDITY) REMOVAL
C = SOFTENING (HARDNESS REMOVAL)
D = IRON & MANGANESE REMOVAL
E = ORGANICS AND COLOR REMOVAL
F = TASTE/ODOR CONTROL & DECHLORINATION
G = DISINFECTON BY-PRODUCTS CONTROL
H = INORGANICS REMOVAL

Source Treatment – Sammamish Plateau

Source Name: Well 10
Source Number: (S11)

Process	A	B	C	D	E	F	G	H	I	J	
CHLORAMINES											
CHLORINATION, GASEOUS											
CHLORINATION, HYPOCHLORITE	X										On-Site Electrolytic Chlorination up to 0.8%
CHLORINE DIOXIDE											
IODINATION											
OZONATION											
ULTRAVIOLET RADIATION											
RAPID MIX/IN-LINE BLENDER											
COAGULATION											
FLOCCULATION											
SEDIMENTATION											
FILTRATION, CARTRIDGE											
FILTRATION, DIATOMACEOUS EARTH											
FILTRATION, GREENSAND											
FILTRATION, PRESSURE SAND											
FILTRATION, RAPID SAND											
FILTRATION, SLOW SAND											
PH ADJUSTMENT									X		NaOH
ION EXCHANGE											
LIME-SODA SOFTENING											
AERATION/AIR STRIPPING											
PERMANGANATE											
ACTIVATED CARBON, GRANULAR											
ACTIVATED CARBON, POWDERED											
REVERSE OSMOSIS											
DISTILLATION											
ELECTRODIALYSIS											
SEQUESTRATION											
CORROSION INHIBITORS - PHOSP/SILICA											
FLUORIDATION										X	Operating Last Quarter of 2004
REDUCING AGENTS - SULFUR COMPOUNDS											
SLUDGE TREATMENT											
OTHER PROCESSES/OBJECTIVES											

A = DISINFECTION
B = PARTICULATE (TURBIDITY) REMOVAL
C = SOFTENING (HARDNESS REMOVAL)
D = IRON & MANGANESE REMOVAL
E = ORGANICS AND COLOR REMOVAL
F = TASTE/ODOR CONTROL & DECHLORINATION
G = DISINFECTON BY-PRODUCTS CONTROL
H = INORGANICS REMOVAL
I = CORROSION CONTROL
J = DENTAL HEALTH

Source Treatment – Sammamish Plateau

Source Name: Well 4
Source Number: (S04)

Process	A	B	C	D	E	F	G	H	I	J	
CHLORAMINES											
CHLORINATION, GASEOUS											
CHLORINATION, HYPOCHLORITE	X				X						H2S Removal Sodium Hypochlorite 12.5%
CHLORINE DIOXIDE											
IODINATION											
OZONATION											
ULTRAVIOLET RADIATION											
RAPID MIX/IN-LINE BLENDER											
COAGULATION											
FLOCCULATION											
SEDIMENTATION											
FILTRATION, CARTRIDGE											
FILTRATION, DIATOMACEOUS EARTH											
FILTRATION, GREENSAND											
FILTRATION, PRESSURE SAND											
FILTRATION, RAPID SAND											
FILTRATION, SLOW SAND											
PH ADJUSTMENT											
ION EXCHANGE											
LIME-SODA SOFTENING											
AERATION/AIR STRIPPING											
PERMANGANATE											
ACTIVATED CARBON, GRANULAR											
ACTIVATED CARBON, POWDERED											
REVERSE OSMOSIS											
DISTILLATION											
ELECTRODIALYSIS											
SEQUESTRATION											
CORROSION INHIBITORS - PHOSP/SILICA											
FLUORIDATION											
REDUCING AGENTS - SULFUR COMPOUNDS											
SLUDGE TREATMENT											
OTHER PROCESSES/OBJECTIVES											

A = DISINFECTION
B = PARTICULATE (TURBIDITY) REMOVAL
C = SOFTENING (HARDNESS REMOVAL)
D = IRON & MANGANESE REMOVAL
E = ORGANICS AND COLOR REMOVAL
F = TASTE/ODOR CONTROL & DECHLORINATION
G = DISINFECTON BY-PRODUCTS CONTROL
H = INORGANICS REMOVAL
I = CORROSION CONTROL
J = DENTAL HEALTH

Source Treatment – Sammamish Plateau

Source Name: Well 4R
Source Number: (S15)

Process	A	B	C	D	E	F	G	H	I	J	
CHLORAMINES											
CHLORINATION, GASEOUS											
CHLORINATION, HYPOCHLORITE	X			X							On-Site Electrolytic Chlorination up to 0.8%
CHLORINE DIOXIDE											
IODINATION											
OZONATION											
ULTRAVIOLET RADIATION											
RAPID MIX/IN-LINE BLENDER											
COAGULATION											
FLOCCULATION											
SEDIMENTATION											
FILTRATION, CARTRIDGE											
FILTRATION, DIATOMACEOUS EARTH											
FILTRATION, GREENSAND											
FILTRATION, PRESSURE SAND				X				X			Post Chlorination
FILTRATION, RAPID SAND											
FILTRATION, SLOW SAND											
PH ADJUSTMENT											
ION EXCHANGE											
LIME-SODA SOFTENING											
AERATION/AIR STRIPPING											
PERMANGANATE											
ACTIVATED CARBON, GRANULAR											
ACTIVATED CARBON, POWDERED											
REVERSE OSMOSIS											
DISTILLATION											
ELECTRODIALYSIS											
SEQUESTRATION											
CORROSION INHIBITORS - PHOSP/SILICA											
FLUORIDATION											
REDUCING AGENTS - SULFUR COMPOUNDS											
SLUDGE TREATMENT											
OTHER PROCESSES/OBJECTIVES											

A = DISINFECTION
B = PARTICULATE (TURBIDITY) REMOVAL
C = SOFTENING (HARDNESS REMOVAL)
D = IRON & MANGANESE REMOVAL
E = ORGANICS AND COLOR REMOVAL
F = TASTE/ODOR CONTROL & DECHLORINATION
G = DISINFECTON BY-PRODUCTS CONTROL
H = INORGANICS REMOVAL
I = CORROSION CONTROL
J = DENTAL HEALTH

Source Treatment – Sammamish Plateau

Source Name: Well 11.1
Source Number: (S17)

Process	A	B	C	D	E	F	G	H	I	J	
CHLORAMINES											
CHLORINATION, GASEOUS											
CHLORINATION, HYPOCHLORITE			X								For H2S Removal; On-Site Electrolytic Chlorination up to 0.8%
CHLORINE DIOXIDE											
IODINATION											
OZONATION											
ULTRAVIOLET RADIATION											
RAPID MIX/IN-LINE BLENDER											
COAGULATION											
FLOCCULATION											
SEDIMENTATION											
FILTRATION, CARTRIDGE											
FILTRATION, DIATOMACEOUS EARTH											
FILTRATION, GREENSAND											
FILTRATION, PRESSURE SAND											
FILTRATION, RAPID SAND											
FILTRATION, SLOW SAND											
PH ADJUSTMENT											
ION EXCHANGE											
LIME-SODA SOFTENING											
AERATION/AIR STRIPPING											
PERMANGANATE											
ACTIVATED CARBON, GRANULAR											
ACTIVATED CARBON, POWDERED											
REVERSE OSMOSIS											
DISTILLATION											
ELECTRODIALYSIS											
SEQUESTRATION											
CORROSION INHIBITORS - PHOSP/SILICA											
FLUORIDATION											
REDUCING AGENTS - SULFUR COMPOUNDS											
SLUDGE TREATMENT											
OTHER PROCESSES/OBJECTIVES											

A = DISINFECTION
B = PARTICULATE (TURBIDITY) REMOVAL
C = SOFTENING (HARDNESS REMOVAL)
D = IRON & MANGANESE REMOVAL
E = ORGANICS AND COLOR REMOVAL
F = TASTE/ODOR CONTROL & DECHLORINATION
G = DISINFECTON BY-PRODUCTS CONTROL
H = INORGANICS REMOVAL
I = CORROSION CONTROL
J = DENTAL HEALTH

Source Treatment – Sammamish Plateau

Source Name: Well 11.2
Source Number: (S12)

Process	A	B	C	D	E	F	G	H	I	J	
CHLORAMINES											
CHLORINATION, GASEOUS											
CHLORINATION, HYPOCHLORITE							X				For H2S removal; On-Site Electrolytic Chlorination up to 0.8%
CHLORINE DIOXIDE											
IODINATION											
OZONATION											
ULTRAVIOLET RADIATION											
RAPID MIX/IN-LINE BLENDER											
COAGULATION											
FLOCCULATION											
SEDIMENTATION											
FILTRATION, CARTRIDGE											
FILTRATION, DIATOMACEOUS EARTH											
FILTRATION, GREENSAND											
FILTRATION, PRESSURE SAND											
FILTRATION, RAPID SAND											
FILTRATION, SLOW SAND											
PH ADJUSTMENT											
ION EXCHANGE											
LIME-SODA SOFTENING											
AERATION/AIR STRIPPING											
PERMANGANATE											
ACTIVATED CARBON, GRANULAR											
ACTIVATED CARBON, POWDERED											
REVERSE OSMOSIS											
DISTILLATION											
ELECTRODIALYSIS											
SEQUESTRATION											
CORROSION INHIBITORS - PHOSP/SILICA											
FLUORIDATION											
REDUCING AGENTS - SULFUR COMPOUNDS											
SLUDGE TREATMENT											
OTHER PROCESSES/OBJECTIVES											

A = DISINFECTION
B = PARTICULATE (TURBIDITY) REMOVAL
C = SOFTENING (HARDNESS REMOVAL)
D = IRON & MANGANESE REMOVAL
E = ORGANICS AND COLOR REMOVAL
F = TASTE/ODOR CONTROL & DECHLORINATION
G = DISINFECTON BY-PRODUCTS CONTROL
H = INORGANICS REMOVAL
I = CORROSION CONTROL
J = DENTAL HEALTH

Source Treatment – Sammamish Plateau

Source Name: Well 7
Source Number: (S06)

Process	A	B	C	D	E	F	G	H	I	J	
CHLORAMINES											
CHLORINATION, GASEOUS											
CHLORINATION, HYPOCHLORITE	X										On-Site Electrolytic Chlorination up to 0.8%
CHLORINE DIOXIDE											
IODINATION											
OZONATION											
ULTRAVIOLET RADIATION											
RAPID MIX/IN-LINE BLENDER											
COAGULATION											
FLOCCULATION											
SEDIMENTATION											
FILTRATION, CARTRIDGE											
FILTRATION, DIATOMACEOUS EARTH											
FILTRATION, GREENSAND											
FILTRATION, PRESSURE SAND											
FILTRATION, RAPID SAND											
FILTRATION, SLOW SAND											
PH ADJUSTMENT									X		NaOH
ION EXCHANGE											
LIME-SODA SOFTENING											
AERATION/AIR STRIPPING											
PERMANGANATE											
ACTIVATED CARBON, GRANULAR											
ACTIVATED CARBON, POWDERED											
REVERSE OSMOSIS											
DISTILLATION											
ELECTRODIALYSIS											
SEQUESTRATION											
CORROSION INHIBITORS - PHOSP/SILICA											
FLUORIDATION									X		Operating Last Quarter of 2004
REDUCING AGENTS - SULFUR COMPOUNDS											
SLUDGE TREATMENT											
OTHER PROCESSES/OBJECTIVES											

A = DISINFECTION
B = PARTICULATE (TURBIDITY) REMOVAL
C = SOFTENING (HARDNESS REMOVAL)
D = IRON & MANGANESE REMOVAL
E = ORGANICS AND COLOR REMOVAL
F = TASTE/ODOR CONTROL & DECHLORINATION
G = DISINFECTON BY-PRODUCTS CONTROL
H = INORGANICS REMOVAL
I = CORROSION CONTROL
J = DENTAL HEALTH

Source Treatment – Sammamish Plateau

Source Name: Well 8
Source Number: (S07)

Process	A	B	C	D	E	F	G	H	I	J	
CHLORAMINES											
CHLORINATION, GASEOUS											
CHLORINATION, HYPOCHLORITE	X										On-Site Electrolytic Chlorination up to 0.8%
CHLORINE DIOXIDE											
IODINATION											
OZONATION											
ULTRAVIOLET RADIATION											
RAPID MIX/IN-LINE BLENDER											
COAGULATION											
FLOCCULATION											
SEDIMENTATION											
FILTRATION, CARTRIDGE											
FILTRATION, DIATOMACEOUS EARTH											
FILTRATION, GREENSAND											
FILTRATION, PRESSURE SAND											
FILTRATION, RAPID SAND											
FILTRATION, SLOW SAND											
PH ADJUSTMENT									X		NaOH
ION EXCHANGE											
LIME-SODA SOFTENING											
AERATION/AIR STRIPPING											
PERMANGANATE											
ACTIVATED CARBON, GRANULAR											
ACTIVATED CARBON, POWDERED											
REVERSE OSMOSIS											
DISTILLATION											
ELECTRODIALYSIS											
SEQUESTRATION											
CORROSION INHIBITORS - PHOSP/SILICA											
FLUORIDATION										X	Operating Last Quarter of 2004
REDUCING AGENTS - SULFUR COMPOUNDS											
SLUDGE TREATMENT											
OTHER PROCESSES/OBJECTIVES											

A = DISINFECTION
B = PARTICULATE (TURBIDITY) REMOVAL
C = SOFTENING (HARDNESS REMOVAL)
D = IRON & MANGANESE REMOVAL
E = ORGANICS AND COLOR REMOVAL
F = TASTE/ODOR CONTROL & DECHLORINATION
G = DISINFECTON BY-PRODUCTS CONTROL
H = INORGANICS REMOVAL
I = CORROSION CONTROL
J = DENTAL HEALTH

Source Treatment – Sammamish Plateau

Source Name: Well 9
Source Number: (S13)

Process	A	B	C	D	E	F	G	H	I	J	
CHLORAMINES											
CHLORINATION, GASEOUS											
CHLORINATION, HYPOCHLORITE	X										On-Site Electrolytic Chlorination up to 0.8%
CHLORINE DIOXIDE											
IODINATION											
OZONATION											
ULTRAVIOLET RADIATION											
RAPID MIX/IN-LINE BLENDER											
COAGULATION											
FLOCCULATION											
SEDIMENTATION											
FILTRATION, CARTRIDGE											
FILTRATION, DIATOMACEOUS EARTH											
FILTRATION, GREENSAND											
FILTRATION, PRESSURE SAND											
FILTRATION, RAPID SAND											
FILTRATION, SLOW SAND											
PH ADJUSTMENT									X		NaOH
ION EXCHANGE											
LIME-SODA SOFTENING											
AERATION/AIR STRIPPING											
PERMANGANATE											
ACTIVATED CARBON, GRANULAR											
ACTIVATED CARBON, POWDERED											
REVERSE OSMOSIS											
DISTILLATION											
ELECTRODIALYSIS											
SEQUESTRATION											
CORROSION INHIBITORS - PHOSP/SILICA											
FLUORIDATION										X	Operating Last Quarter of 2004
REDUCING AGENTS - SULFUR COMPOUNDS											
SLUDGE TREATMENT											
OTHER PROCESSES/OBJECTIVES											

A = DISINFECTION
B = PARTICULATE (TURBIDITY) REMOVAL
C = SOFTENING (HARDNESS REMOVAL)
D = IRON & MANGANESE REMOVAL
E = ORGANICS AND COLOR REMOVAL
F = TASTE/ODOR CONTROL & DECHLORINATION
G = DISINFECTON BY-PRODUCTS CONTROL
H = INORGANICS REMOVAL
I = CORROSION CONTROL
J = DENTAL HEALTH

Source Treatment – Sammamish Plateau

Source Name: Well 12R
Source Number: (S16)

Process	A	B	C	D	E	F	G	H	I	J	
CHLORAMINES											
CHLORINATION, GASEOUS											
CHLORINATION, HYPOCHLORITE	X			X							On-Site Electrolytic Chlorination up to 0.8%
CHLORINE DIOXIDE											
IODINATION											
OZONATION											
ULTRAVIOLET RADIATION											
RAPID MIX/IN-LINE BLENDER											
COAGULATION											
FLOCCULATION											
SEDIMENTATION											
FILTRATION, CARTRIDGE											
FILTRATION, DIATOMACEOUS EARTH											
FILTRATION, GREENSAND											
FILTRATION, PRESSURE SAND				X				X			Post Chlorination
FILTRATION, RAPID SAND											
FILTRATION, SLOW SAND											
PH ADJUSTMENT											
ION EXCHANGE											
LIME-SODA SOFTENING											
AERATION/AIR STRIPPING											
PERMANGANATE											
ACTIVATED CARBON, GRANULAR											
ACTIVATED CARBON, POWDERED											
REVERSE OSMOSIS											
DISTILLATION											
ELECTRODIALYSIS											
SEQUESTRATION											
CORROSION INHIBITORS - PHOSP/SILICA											
FLUORIDATION										X	
REDUCING AGENTS - SULFUR COMPOUNDS											
SLUDGE TREATMENT											
OTHER PROCESSES/OBJECTIVES											

A = DISINFECTION
B = PARTICULATE (TURBIDITY) REMOVAL
C = SOFTENING (HARDNESS REMOVAL)
D = IRON & MANGANESE REMOVAL
E = ORGANICS AND COLOR REMOVAL
F = TASTE/ODOR CONTROL & DECHLORINATION
G = DISINFECTON BY-PRODUCTS CONTROL
H = INORGANICS REMOVAL
I = CORROSION CONTROL
J = DENTAL HEALTH

Source Treatment – Sammamish Plateau

Source Name: Well 13
Source Number: (S09)

Process	A	B	C	D	E	F	G	H	I	J	
CHLORAMINES											
CHLORINATION, GASEOUS											
CHLORINATION, HYPOCHLORITE	X			X							Sodium Hypochlorite 12.5%; Will Change to 0.8% during last quarter of 2004
CHLORINE DIOXIDE											
IODINATION											
OZONATION											
ULTRAVIOLET RADIATION											
RAPID MIX/IN-LINE BLENDER											
COAGULATION											
FLOCCULATION											
SEDIMENTATION											
FILTRATION, CARTRIDGE											
FILTRATION, DIATOMACEOUS EARTH											
FILTRATION, GREENSAND											
FILTRATION, PRESSURE SAND				X				X			Post Chlorination
FILTRATION, RAPID SAND											
FILTRATION, SLOW SAND											
PH ADJUSTMENT											
ION EXCHANGE											
LIME-SODA SOFTENING											
AERATION/AIR STRIPPING											
PERMANGANATE											
ACTIVATED CARBON, GRANULAR											
ACTIVATED CARBON, POWDERED											
REVERSE OSMOSIS											
DISTILLATION											
ELECTRODIALYSIS											
SEQUESTRATION											
CORROSION INHIBITORS - PHOSP/SILICA											
FLUORIDATION										X	
REDUCING AGENTS - SULFUR COMPOUNDS											
SLUDGE TREATMENT											
OTHER PROCESSES/OBJECTIVES											

A = DISINFECTION
B = PARTICULATE (TURBIDITY) REMOVAL
C = SOFTENING (HARDNESS REMOVAL)
D = IRON & MANGANESE REMOVAL
E = ORGANICS AND COLOR REMOVAL
F = TASTE/ODOR CONTROL & DECHLORINATION

Source Treatment – Sammamish Plateau

Source Name: Well 14
Source Number: (S10)

Process	A	B	C	D	E	F	G	H	I	J	
CHLORAMINES											
CHLORINATION, GASEOUS											
CHLORINATION, HYPOCHLORITE	X										Sodium Hypochlorite 12.5%
CHLORINE DIOXIDE											
IODINATION											
OZONATION											
ULTRAVIOLET RADIATION											
RAPID MIX/IN-LINE BLENDER											
COAGULATION											
FLOCCULATION											
SEDIMENTATION											
FILTRATION, CARTRIDGE											
FILTRATION, DIATOMACEOUS EARTH											
FILTRATION, GREENSAND											
FILTRATION, PRESSURE SAND											
FILTRATION, RAPID SAND											
FILTRATION, SLOW SAND											
PH ADJUSTMENT											
ION EXCHANGE											
LIME-SODA SOFTENING											
AERATION/AIR STRIPPING											
PERMANGANATE											
ACTIVATED CARBON, GRANULAR											
ACTIVATED CARBON, POWDERED											
REVERSE OSMOSIS											
DISTILLATION											
ELECTRODIALYSIS											
SEQUESTRATION											
CORROSION INHIBITORS - PHOSP/SILICA											
FLUORIDATION										X	
REDUCING AGENTS - SULFUR COMPOUNDS											
SLUDGE TREATMENT											
OTHER PROCESSES/OBJECTIVES											

A = DISINFECTION
B = PARTICULATE (TURBIDITY) REMOVAL
C = SOFTENING (HARDNESS REMOVAL)
D = IRON & MANGANESE REMOVAL
E = ORGANICS AND COLOR REMOVAL
F = TASTE/ODOR CONTROL & DECHLORINATION
G = DISINFECTON BY-PRODUCTS CONTROL
H = INORGANICS REMOVAL
I = CORROSION CONTROL
J = DENTAL HEALTH

Appendix B
Well Logs & Distribution System Report Form

File Original and First Copy with Department of Ecology
Second Copy—Owner's Copy
Third Copy—Driller's Copy

WATER WELL REPORT

STATE OF WASHINGTON

Start Card No. _____

UNIQUE WELL I.D. #AAD 358

Water Right Permit No. G1-00342C

(1) OWNER: Name Sammamish Plateau Water and Sewer District Address 1510 228th ave SE, Issaquah, WA 98027

(2) LOCATION OF WELL: County King NE ¼ NE ¼ Sec 10 T 24 N., R 6E W.M.

(2a) STREET ADDDRESS OF WELL (or nearest address) 2810 241st Ave SE

(3) PROPOSED USE: ☐ Domestic ☐ Irrigation ☐ DeWater ☐ Industrial ☐ Test Well ☒ Municipal ☐ Other

(4) TYPE OF WORK: Owner's number of well (if more than one) 1R

Abandoned ☐ New well ☐ Deepened ☐ Reconditioned ☐ Method: Dug ☐ Cable ☒ Rotary ☐ Bored ☐ Driven ☐ Jetted ☐

(5) DIMENSIONS: Diameter of well 12 inches. Drilled 159 feet. Depth of completed well 155 ft.

(6) CONSTRUCTION DETAILS:

Casing installed: 12 " Diam. from +2.2 ft. to 136 ft.
Welded ☐ Liner installed ☐ Threaded ☐ _____ " Diam. from _____ ft. to _____ ft.
_____ " Diam. from _____ ft. to _____ ft.

Perforations: Yes ☐ No ☒
Type of perforator used _____
SIZE of perforations _____ in. by _____ in.
_____ perforations from _____ ft. to _____ ft.
_____ perforations from _____ ft. to _____ ft.
_____ perforations from _____ ft. to _____ ft.

Screens: Yes ☒ No ☐
Manufacturer's Name UOP Johnson
Type Telescopic Model No. 304 SS
Diam. 12 in. Slot size .100 from 137 ft. to 147 ft.
Diam. _____ Slot size _____ from _____ ft. to _____ ft.

Gravel packed: Yes ☐ No ☒ Size of gravel _____
Gravel placed from _____ ft. to _____ ft.

Surface seal: Yes ☒ No ☐ To what depth? 33 ft.
Material used in seal Cement
Did any strata contain unusable water? Yes ☐ No ☒
Type of water? _____ Depth of strata _____
Method of sealing strata off _____

(7) PUMP: Manufacturer's Name _____
Type: _____ H.P. _____

(8) WATER LEVELS: Land-surface elevation above mean sea level 471.57 ft.
Static level 117.8 ft. below top of well Date 3/14/84
Artesian pressure _____ lbs. per square inch Date _____
Artesian water is controlled by _____ (Cap, valve, etc.)

(9) WELL TESTS: Drawdown is amount water level is lowered below static level
Was a pump test made? Yes ☒ No ☐ If yes, by whom? Carr/Associates
Yield: 610 gal./min. with 12.2 ft. drawdown after 6 hrs.
" " " "
" " " "

Recovery data (time taken as zero when pump turned off) (water level measured from well top to water level)

Time	Water Level	Time	Water Level	Time	Water Level

Date of test 3/14/84

Bailer test _____ gal./min. with _____ ft. drawdown after _____ hrs.
Airtest _____ gal./min. with stem set at _____ ft. for _____ hrs.
Artesian flow _____ g.p.m. Date _____
Temperature of water _____ Was a chemical analysis made? Yes ☒ No ☐

(10) WELL LOG or ABANDONMENT PROCEDURE DESCRIPTION

Formation: Describe by color, character, size of material and structure, and show thickness of aquifers and the kind and nature of the material in each stratum penetrated, with at least one entry for each change of information.

MATERIAL	FROM	TO
Topsoil, Brown sand, Gravel, cobbles, clay silt	0	3
Gravel, Brown Sand, Clay	3	17
Brwon Sand, Gravel, Clay	17	23
Gravel, Sand, Clay	23	25
Gravel, Sand, Clay Layers	25	27
Gravel, Sand, Cobbles, Grey Clay, minor silt	27	70
Sand, Gravel, Grey Clay, Minor Silt	70	80
Cemented Gravel and Sand, Grey Clay, some cobbes, minor silt	80	118
Sand, Gravel, cobbles, Clean, water bearing	118	128
Sand, Gravle, Cobbles, Clay, Silt, Dirty	128	138
Sand, Gravel, Minor Clay, Silt, Clean	138	143
Gravel, Sand, Cobbles, Clean	143	149
Gravel, Sand, Blue Clay Layers	149	150
Blue Clay, Silt, Sand	150	159

Work started 2/23/84, 19. Completed March, 1984

WELL CONSTRUCTOR CERTIFICATION:

I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief.

NAME Armstrong Drilling Inc.
(PERSON, FIRM, OR CORPORATION) (TYPE OR PRINT)

Address Puyallup, Washington

(Signed) _____ License No. _____
(WELL DRILLER)

Contractor's Registration No. _____ Date _____, 19__

(USE ADDITIONAL SHEETS IF NECESSARY)

ECY 050-1-20 (10/87) -1329-

File Original and First Copy with Department of Ecology
Second Copy—Owner's Copy
Third Copy—Driller's Copy

WATER WELL REPORT

STATE OF WASHINGTON

Start Card No. _____

UNIQUE WELL I.D. # AAD361

Water Right Permit No. 06802A

(1) **OWNER:** Name Sammamish Plateau Water and Sewer District Address 1510 228th Ave SE, Issaquah, WA 98027

(2) **LOCATION OF WELL:** County King NW ¼ SE ¼ Sec 11 T 24 N., R 6E W.M.

(2a) **STREET ADDDRESS OF WELL** (or nearest address) 3401 East Beaver Lake Drive

(3) **PROPOSED USE:** ☐ Domestic ☐ Industrial ☐ Municipal ☐ ☐ Irrigation ☐ Test Well ☐ Other ☐ ☐ DeWater

(4) **TYPE OF WORK:** Owner's number of well (if more than one) 2

Abandoned ☐ New well ☐ Method: Dug ☐ Bored ☐ Deepened ☐ Cable ☒ Driven ☐ Reconditioned ☐ Rotary ☐ Jetted ☐

(5) **DIMENSIONS:** Diameter of well 12 inches. Drilled 132 feet. Depth of completed well 116 ft.

(6) **CONSTRUCTION DETAILS:**

Casing installed: 12 " Diam. from 0 ft. to 97 ft.

Welded ☐ Liner installed ☐ Threaded ☐ _____ " Diam. from _____ ft. to _____ ft.

_____ " Diam. from _____ ft. to _____ ft.

Perforations: Yes ☐ No ☒

Type of perforator used _____

SIZE of perforations _____ in. by _____ in.

_____ perforations from _____ ft. to _____ ft.

_____ perforations from _____ ft. to _____ ft.

_____ perforations from _____ ft. to _____ ft.

Screens: Yes ☒ No ☐

Manufacturer's Name JOP Johnson

Type Stainless Model No. _____

Diam 12 in. Slot size .080 from 96 ft. to 116 ft.

Diam _____ Slot size _____ from _____ ft. to _____ ft.

Gravel packed: Yes ☐ No ☒ Size of gravel _____

Gravel placed from _____ ft. to _____ ft.

Surface seal: Yes ☒ No ☐ To what depth? 20 ft.

Material used in seal Concrete

Did any strata contain unusable water? Yes ☐ No ☒

Type of water? _____ Depth of strata _____

Method of sealing strata off _____

(7) **PUMP:** Manufacturer's Name _____

Type: _____ H.P. _____

(8) **WATER LEVELS:** Land-surface elevation above mean sea level 416.55 ft.

Static level 62 ft. below top of well Date 10/10/68

Artesian pressure _____ lbs. per square inch Date _____

Artesian water is controlled by _____ (Cap, valve, etc.)

(9) **WELL TESTS:** Drawdown is amount water level is lowered below static level

Was a pump test made? Yes ☒ No ☐ If yes, by whom? _____

Yield: 500 gal./min. with 36 ft. drawdown after 12 hrs.

" " " "

" " " "

Recovery data (time taken as zero when pump turned off) (water level measured from well top to water level)

Time	Water Level	Time	Water Level	Time	Water Level

Date of test _____

Bailer test _____ gal./min. with _____ ft. drawdown after _____ hrs.

Airtest _____ gal./min. with stem set at _____ ft. for _____ hrs.

Artesian flow _____ g.p.m. Date _____

Temperature of water _____ Was a chemical analysis made? Yes ☐ No ☐

(10) **WELL LOG or ABANDONMENT PROCEDURE DESCRIPTION**

Formation: Describe by color, character, size of material and structure, and show thickness of aquifers and the kind and nature of the material in each stratum penetrated, with at least one entry for each change of information.

MATERIAL	FROM	TO
Clay, yellow, sandy	0	18
Hardpan	18	69
Sand, coarse gravel, water	69	72
Sand, coarse small gravel	72	75
Gravel, Sand, coarse	75	78
Hardpan	78	90
Hardpan, light brown	90	94
Sand Coarse gravel, water	94	101
Sand, caorse gravel	101	102
Sand, clay coated gravel	102	105
Gravel, large grain sand, coarse	105	111
Gravel, large grain sand, coarse	111	112
Sand, coarse, small gravel	112	113
Sand, coarse and small pea gravel	113	119
Sand, coarse and small gravel	119	122
Sand, coarse and some gravel	122	126
Sand, Clay coated and gravel	126	132

Work started _____, 19. Completed October 30, 1968

WELL CONSTRUCTOR CERTIFICATION:

I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief.

NAME Richardson Well Drilling Co. Inc.
(PERSON, FIRM, OR CORPORATION) (TYPE OR PRINT)

Address 219 So. 115th St., Tacoma, WA 98444

(Signed) _____ License No. _____
(WELL DRILLER)

Contractor's Registration No. _____ Date _____, 19____

(USE ADDITIONAL SHEETS IF NECESSARY)

ECY 050-1-20 (10/87) -1329-

File Original and First Copy with Department of Ecology
Second Copy—Owner's Copy
Third Copy—Driller's Copy

WATER WELL REPORT

STATE OF WASHINGTON

Start Card No. W 16281

UNIQUE WELL I.D. #AAD383

Water Right Permit No.

(1) **OWNER:** Name Sammamish Plateau Water and Sewer District Address 1510 228th Avenue SE, Issaquah, WA 98029

(2) **LOCATION OF WELL:** County King NW ¼ SE ¼ Sec. 11 T. 24 N., R. 6E W.M.

(2a) **STREET ADDDRESS OF WELL** (or nearest address) 3401 East Beaver Lake Drive

(3) **PROPOSED USE:** ☐ Domestic ☐ Irrigation ☐ DeWater Industrial ☐ Test Well ☐ Municipal ☒ Other ☐

(4) **TYPE OF WORK:** Owner's number of well (if more than one) 2.2

Abandoned ☐ New well ☒ Deepened ☐ Reconditioned ☐ Method: Dug ☐ Cable ☒ Rotary ☐ Bored ☐ Driven ☐ Jetted ☐

(5) **DIMENSIONS:** Diameter of well 16 inches. Drilled 182 feet. Depth of completed well 180 ft.

(6) **CONSTRUCTION DETAILS:**

Casing installed: 16 " Diam. from +2 ft. to 149 ft.

Welded ☒ Liner installed ☐ Threaded ☐ _____ " Diam. from _____ ft. to _____ ft.

_____ " Diam. from _____ ft. to _____ ft.

Perforations: Yes ☐ No ☒

Type of perforator used _____

SIZE of perforations _____ in. by _____ in.

_____ perforations from _____ ft. to _____ ft.

_____ perforations from _____ ft. to _____ ft.

_____ perforations from _____ ft. to _____ ft.

Screens: Yes ☒ No ☐

Manufacturer's Name Johnson

Type 304 Stainless Model No. TS

Diam. 16" Slot size Variable 0.030 to 0.050 from 150 ft. to 155 ft.

Diam. 16" Slot size 0.050 from 155 ft. to 170 ft.

Diam. 16" Slot size 0.040 from 170 ft. to 175 ft.

Gravel packed: Yes ☐ No ☒ Size of gravel _____

Gravel placed from _____ ft. to _____ ft.

Surface seal: Yes ☒ No ☐ To what depth? 32 ft.

Material used in seal Cement/Bentonite

Did any strata contain unusable water? Yes ☐ No ☒

Type of water? _____ Depth of strata _____

Method of sealing strata off _____

(7) **PUMP:** Manufacturer's Name _____

Type: _____ H.P. _____

(8) **WATER LEVELS:** Land-surface elevation above mean sea level approx. 417 ft.

Static level 63.8 ft. below top of well Date 5-9-96

Artesian pressure _____ lbs. per square inch Date _____

Artesian water is controlled by _____ (Cap, valve, etc.)

(9) **WELL TESTS:** Drawdown is amount water level is lowered below static level

Was a pump test made? Yes ☒ No ☐ If yes, by whom? AGI

Yield: 500 gal./min. with 44.59 ft. drawdown after 24 hrs.

" " " "

" " " "

Recovery data (time taken as zero when pump turned off) (water level measured from well top to water level)

Time	Water Level	Time	Water Level	Time	Water Level
1 min	84.65	5 min	80.50	60 min	66.67
2 min	83.10	10 min	77.32	125 min	64.98
3 min	82.18	20 min	73.11	203 min	64.56

Date of test 5-20 to 21-96

Bailer test _____ gal./min. with _____ ft. drawdown after _____ hrs.

Airtest _____ gal./min. with stem set at _____ ft. for _____ hrs.

Artesian flow _____ g.p.m. Date _____

Temperature of water 51°F Was a chemical analysis made? Yes ☒ No ☐

(10) **WELL LOG or ABANDONMENT PROCEDURE DESCRIPTION**

Formation: Describe by color, character, size of material and structure, and show thickness of aquifers and the kind and nature of the material in each stratum penetrated, with at least one entry for each change of information.

MATERIAL	FROM	TO
Fill material	0	8
Yellow silty sand grading from fill-clay	8	23
Tan-gray silt-bound sand and gravel	23	68
Brown coarse sand w/gravel increasing w/dth	68	78
Gray-tan Till	78	96
Gray sand & grvl w/large cobbles, w-bearing	96	103
Gray Till	103	114
Gray to brwn coarse sand & grvl, w-bearing	114	132
Gray fine to medium coarse sand w/silt	132	147
Gray coarse sand & gravel, water-bearing	147	175
Gray silty clay w/little gravel	175	182

Work started April 16, 1996 19. Completed May 9, 19 96

WELL CONSTRUCTOR CERTIFICATION:

I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief.

NAME Holt Drilling 10621 Todd Road East
(PERSON, FIRM, OR CORPORATION) (TYPE OR PRINT)

Address Puyallup, WA 98372

(Signed) Randy Holt (WELL DRILLER) License No. 1099

Contractor's Registration No. HOLTIV087OJ Date 7-9 19 96

(USE ADDITIONAL SHEETS IF NECESSARY)

File Original and First Copy with Department of Ecology
Second Copy—Owner's Copy
Third Copy—Driller's Copy

WATER WELL REPORT

STATE OF WASHINGTON

Start Card No. _____

UNIQUE WELL I.D. # ABR035

Water Right Permit No. G1-23022C

(1) OWNER: Name Issaquah Plateau Water District Address 1510 228th AVE SE, Issaquah WA 98027

LOCATION OF WELL: County King NW ¼ SW ¼ Sec 34 T 25 N., R 6 E WM.

(2a) STREET ADDDRESS OF WELL (or nearest address) _____

(3) PROPOSED USE: ☐ Domestic ☐ Irrigation ☐ DeWater ☐ Industrial ☐ Test Well ☐ Municipal ☐ Other ☐

(4) TYPE OF WORK: Owner's number of well (if more than one) 4

Abandoned ☐ New well ☐ Deepened ☐ Reconditioned ☐ Method: Dug ☐ Cable ☐ Rotary ☐ Bored ☐ Driven ☐ Jetted ☐

(5) DIMENSIONS: Diameter of well 12 inches. Drilled 717 feet. Depth of completed well 717 ft.

(6) CONSTRUCTION DETAILS:

Casing installed: 12 " Diam. from 0 ft. 650 ft.

Welded ☐ Liner installed ☐ Threaded ☐ _____ " Diam. from _____ ft. to _____ ft.

Perforations: Yes ☐ No ☒

Type of perforator used _____

SIZE of perforations _____ in. by _____ in.

_____ perforations from _____ ft. to _____ ft.

_____ perforations from _____ ft. to _____ ft.

_____ perforations from _____ ft. to _____ ft.

Screens: Yes ☒ No ☐

Manufacturer's Name UOP Johnson

Type Stainless Steel Model No. _____

Diam. 7 in Slot size 100 from 650 ft. to 717 ft.

Diam. _____ Slot size _____ from _____ ft. to _____ ft.

Gravel packed: Yes ☐ No ☒ Size of gravel _____

Gravel placed from _____ ft. to _____ ft.

Surface seal: Yes ☒ No ☐ To what depth? 20 ft.

Material used in seal Cement

Did any strata contain unusable water? Yes ☐ No ☒

Type of water? _____ Depth of strata _____

Method of sealing strata off _____

(7) PUMP: Manufacturer's Name _____

Type: _____ H.P. _____

(8) WATER LEVELS: Land-surface elevation above mean sea level 349 ft.

Static level 200 ft. below top of well Date 1/25/95

Artesian pressure _____ lbs. per square inch Date _____

Artesian water is controlled by _____ (Cap, valve, etc.)

(9) WELL TESTS: Drawdown is amount water level is lowered below static level

Was a pump test made? Yes ☒ No ☐ If yes, by whom? AGI

Yield: 400 gal./min. with 71 ft. drawdown after 4 hrs.

" " " "

" " " "

Recovery data (time taken as zero when pump turned off) (water level measured from well top to water level)

Time	Water Level	Time	Water Level	Time	Water Level
1.5 min	229.66	4	223.04	10	220.25
2	227.50	5	222.62	15	219.57
3	224.54	7	220.95	30	218.79

Date of test _____

Bailer test _____ gal./min. with _____ ft. drawdown after _____ hrs.

Airtest _____ gal./min. with stem set at _____ ft. for _____ hrs.

Artesian flow _____ g.p.m. Date _____

Temperature of water _____ Was a chemical analysis made? Yes ☐ No ☒

(10) WELL LOG or ABANDONMENT PROCEDURE DESCRIPTION

Formation: Describe by color, character, size of material and structure, and show thickness of aquifers and the kind and nature of the material in each stratum penetrated, with at least one entry for each change of information.

MATERIAL	FROM	TO
Top Soil	0	3
Hardpan & Boulders	3	43
Sand Cemented & Gravel	43	72
Clay, yellow, gravel & Sand	72	79
Hardpan Brown	79	110
clay & sand, yellow	110	118
Hardpan, Brown	118	155
clay, bn, gravel & Sand	155	169
gravel, Sand & grey clay	169	190
clay (bn) fine sand & gravel	190	199
gravel, course sand & some water	199	202
gravel, Sand & clay grey	202	221
Clay, grey & fine Sand	221	249
Sand course to fine & grey clay	249	264
Rock, gravel & grey clay	264	271
Clay, Sand & gravel	330	351
Clay, grey sand & gravel	351	370
Sand, Cemented & gravel	370	380
grey clay & gravel	380	397
Sand, cemented & gravel	397	411
Grey clay, some sand & gravel	411	433
Clay, grey & fine Sand	433	542
Clay, dry, grey	542	570
Sand, fine and grey clay	570	574
grey clay	574	595
fine to course sand and grey clay	595	649
Clay, grey sand	649	657
Sand, grey clay	657	686
Gravel, gray clay & Sand	686	689
Sand, cemented & gravelly clay	689	696
Sand and Gravel, WB	696	717
Sand, gravel, cemented	271	280
Rock, gravel, grey clay	280	330

Work started _____ 19. Completed March 23 1970

WELL CONSTRUCTOR CERTIFICATION:

I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief.

NAME Richardson Well Drilling Co. Inc. (PERSON, FIRM, OR CORPORATION) (TYPE OR PRINT)

Address P.O. Box 2266, Tacoma WA 98444

(Signed) _____ (WELL DRILLER) License No. _____

Contractor's Registration No. _____ Date _____, 19__

(USE ADDITIONAL SHEETS IF NECESSARY)

Please print, sign and return to the Department of Ecology

Water Well Report

Original – Ecology, 1st copy – owner, 2nd copy – driller

STATE OF WASHINGTON DEPARTMENT OF ECOLOGY

Construction/Decommission

☑ Construction

☐ Decommission *ORIGINAL INSTALLATION Notice of Intent Number* _____

Current Notice of Intent No. W07244

Unique Ecology Well ID Tag No. AAS 270

Water Right Permit No. _____

Property Owner Name Sammamish Plateau Water & Sewer District

Well Street Address 23001 Main St

City Sammamish, WA County King

Location NW 1/4-1/4 SW 1/4 Sec 34 Twn 25N R 6 EWM ☑ or WWM ☐ circle one

Lat/Long (s, t, r still REQUIRED) Lat Deg _____ Lat Min/Sec _____ Long Deg _____ Long Min/Sec _____

Tax Parcel No. 1241100011

PROPOSED USE: ☐ Domestic ☐ Industrial ☑ Municipal ☐ DeWater ☐ Irrigation ☐ Test Well ☐ Other _____

TYPE OF WORK: Owner's number of well (if more than one) 4R

☑ New well ☐ Reconditioned ☐ Deepened *Method:* ☐ Dug ☐ Bored ☐ Driven ☐ Cable ☑ Rotary ☐ Jetted

DIMENSIONS: Diameter of well 20x12 inches, drilled 1207 ft. Depth of completed well 854 ft.

CONSTRUCTION DETAILS

Casing Installed: ☑ Welded 20 " Diam from +3.5 ft. to 695 ft.; ☐ Liner installed " Diam from ft. to ft.; ☐ Threaded " Diam from ft. to ft.

Perforations: ☐ Yes ☑ No

Type of perforator used _____

SIZE of perfs _____ in. by _____ in. and no. of perfs _____ from _____ ft. to _____ ft.

Screens: ☑ Yes ☐ No ☐ K-Pac Location _____

Manufacturer's Name Alloy

Type 304SS Model No _____

Diam. 12PS Slot size .050 from ** ft. to ** ft.

Diam. _____ Slot size _____ from _____ ft. to _____ ft.

Gravel/Filter packed: ☑ Yes ☐ No ☑ Size of gravel/sand CSSI 8x12

Materials placed from 636 ft. to 858 ft.

Surface Seal: ☑ Yes ☐ No To what depth? 695 ft.

Material used in seal cement grout

Did any strata contain unusable water? ☐ Yes ☐ No

Type of water? _____ Depth of strata _____

Method of sealing strata off _____

PUMP: Manufacturer's Name _____

Type _____ H.P. _____

WATER LEVELS: Land-surface elevation above mean sea level ~350 ft.

Static level 217 ft. below top of well Date 3/18/04

Artesian pressure _____ lbs. per square inch Date _____

Artesian water is controlled by _____ (cap, valve, etc.)

WELL TESTS: Drawdown is amount water level is lowered below static level

Was a pump test made? ☑ Yes ☐ No If yes, by whom? SEI

Yield 2000 gal./min. with 60 ft. drawdown after 1 hrs.

Yield 2000 gal./min. with 75 ft. drawdown after 4 hrs.

Yield 2000 gal./min. with 75 ft. drawdown after 7 hrs.

Recovery data (time taken as zero when pump turned off) (water level ~~measured from well top to water level~~) is residual drawdown)

Time	Water Level	Time	Water Level	Time	Water Level
2	29	10	18	20	13
5	23	15	15	30	11

Date of test 3/8/04

Bailer test _____ gal./min. with _____ ft. drawdown after _____ hrs.

Airtest _____ gal./min. with stem set at _____ ft. for _____ hrs.

Artesian flow _____ g.p.m. Date _____

Temperature of water ~53F Was a chemical analysis made? ☑ Yes ☐ No

CONSTRUCTION OR DECOMMISSION PROCEDURE

Formation: Describe by color, character, size of material and structure, and the kind and nature of the material in each stratum penetrated, with at least one entry for each change of information indicate all water encountered (USE ADDITIONAL SHEETS IF NECESSARY)

MATERIAL	FROM	TO
See attached formation log		
**Screen Assembly:		
12" x .250 SS blank w/MNPT on top	636	657
12" screen	657	667
12" x .250 SS blank	667	709
12" screen	709	729
12" x .250 SS blank	729	779
12" screen	779	844
12" x .250 SS blank w/SS plate bottom	844	854
Non-producing 8" pilot borehole below filter pack		
and screen assembly was backfilled with pea gravel		

Start Date 10/20/03 Completed Date 3/18/04

WELL CONSTRUCTION CERTIFICATION: I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief.

Driller/Engineer/Trainee Name (Print) Stephen J Schneider

Driller/Engineer/Trainee Signature _____

Driller or trainee License No. 0643

Drilling Company Schneider Equipment, Inc

Address 21881 River Road NE

City, State, Zip St. Paul, OR 97137

Contractor's Registration No. SCHNEI*226LG Date 4/14/04

IF TRAINEE,

Driller's Licensed No. _____

Driller's Signature _____

Ecology is an Equal Opportunity Employer ECY 050-1-20 (Rev 2/03)

Samammish Plateau Water & Sewer District - Well 4R

by Schneider Drilling Co.

Start Card #W07244 Label #AAS 270

FM	TO	DESCRIPTION
0	11	Brown sand & gravel w/ cobbles and silt
11	27	Orange-brown (oxidized) sand & gravel w/ trace silt
27	79	Brown gravel & sand w/ cobbles
79	91	Brown-yellow, silty gravel w/ sand
91	102	Black-gray, coarse gravel and cobbles
102	119	Brown-orange (oxidized), silty sand & gravel
119	126	Tan-yellow, silty clay w/ coarse gravel & sand
126	135	Brown-tan sand & gravel w/ some silt & trace clay
135	138	Tan-yellow, silty clay w/ coarse gravel & sand
138	155	Brown-tan sand & gravel w/ some silt & clay
155	168	Tan-yellow, silty, clayey gravel w/ coarse sand
168	191	Brown-tan gravel w/ sand, silt, & trace clay, basalt
191	208	Dark yellow-brown, clayey gravel w/ sand
208	214	Gray-brown sand & gravel w/ silt & trace clay
214	219	Tan-yellow, silty clay w/ gravel & sand
219	237	Gray-drk gray-brown, silty sand & gravel w/ clay & wood chips
237	263	Gray, silty sand & gravel w/ dark brown silty clay
263	334	Gray, coarse gravel & sand w/ some silt
334	356	Brown-yellow, silty gravel w/ sand
356	375	Gray-green, silty sand w/ gravel, trace clay
375	395	Olive-gray, silty gravel w/ sand & some clay
395	405	Brown-yellow, silty gravel w/ sand & clay
405	421	Gray gravel & some sand w/ clay
421	438	Brown, silty gravel w/ sand
438	445	Brown-yellow, silt w/ gravel & sand
445	455	Dark gray-green, silty gravel
455	545	Dark gray, silt w/ gravel & clay
545	606	Brown-gray clay w/ silt
606	642	Gray clay w/ sand
642	678	Gray, clayey, sand
678	695	Gray-green, clayey gravel w/ sand & silt

File Original and First Copy with Department of Ecology
Second Copy — Owner's Copy
Third Copy — Driller's Copy

WATER WELL REPORT
STATE OF WASHINGTON

Application No. .....
Permit No. G1-25428

(1) **OWNER:** Name KING COUNTY WATER DISTRICT 82 Address 1510 228th SE

(2) **LOCATION OF WELL:** County KING — NE ¼ NE ¼ Sec. 28 T. 24 N., R. 6 W.M.
Bearing and distance from section or subdivision corner — Unique ID # AAD371

(3) **PROPOSED USE:** Domestic ☐ Industrial ☐ Municipal ☒
Irrigation ☐ Test Well ☐ Other ☐

(4) **TYPE OF WORK:** Owner's number of well (if more than one) 7
New well ☒ Method: Dug ☐ Bored ☐
Deepened ☐ Cable ☒ Driven ☐
Reconditioned ☐ Rotary ☐ Jetted ☐

(5) **DIMENSIONS:** Diameter of well 16 inches.
Drilled 151 ft. Depth of completed well 151 ft.

(6) **CONSTRUCTION DETAILS:**
Casing installed: 16 " Diam. from 0 ft. to 82.6 ft.
Threaded ☐ ..... " Diam. from ..... ft. to ..... ft.
Welded ☒ ..... " Diam. from ..... ft. to ..... ft.

Perforations: Yes ☐ No ☒
Type of perforator used .....
SIZE of perforations ..... in. by ..... in.
..... perforations from ..... ft. to ..... ft.
..... perforations from ..... ft. to ..... ft.
..... perforations from ..... ft. to ..... ft.

Screens: Yes ☒ No ☐
Manufacturer's Name UOP * JOHNSON
Type 304 SS Model No .....
Diam. 14 PS Slot size .100 from 82.6 ft. to 103 ft.
Diam. ..... Slot size .100 from 103 ft. to 123.6 ft.

Gravel packed: Yes ☐ No .060 Size of gravel: 136.7-146.9
Gravel placed from XX ft. to ..... ft.

Surface seal: Yes ☒ No ☐ To what depth? 80 ft.
Material used in seal .....
Did any strata contain unusable water? Yes ☐ No ☒
Type of water? ..... Depth of strata .....
Method of sealing strata off .....

(7) **PUMP:** Manufacturer's Name .....
Type: ..... H.P. .....

(8) **WATER LEVELS:** Land-surface elevation above mean sea level .... ft.
Static level 6.17 ft. below top of well Date 3/17/84
Artesian pressure ..... lbs. per square inch Date .....
Artesian water is controlled by ..... (Cap, valve, etc.)

(9) **WELL TESTS:** Drawdown is amount water level is lowered below static level
Was a pump test made? Yes ☒ No ☐ If yes, by whom? Driller
Yield: 1952 gal./min. with 37.9 ft. drawdown after 24 hrs.
" " " "
" " " "

Recovery data (time taken as zero when pump turned off) (water level measured from well top to water level)

Time	Water Level	Time	Water Level	Time	Water Level

Date of test 3/17/84
Bailer test ..... gal./min. with ..... ft. drawdown after ..... hrs.
Artesian flow ..... g.p.m. Date .....
Temperature of water 56 F Was a chemical analysis made? Yes ☒ No ☐

(10) **WELL LOG:**
Formation: *Describe by color, character, size of material and structure, and show thickness of aquifers and the kind and nature of the material in each stratum penetrated, with at least one entry for each change of formation.*

MATERIAL	FROM	TO
Fill, wood, clay, gravel, silt	0	6
Gravel, sand, clay, silt	6	17
Gravel, brown sand	17	20
Brown clay, sand	20	24
Brown sand, gravel, clay, silt	24	65
Brown sand, clay, silt	65	69
Brown sand, gravel, clay, silt	69	85
Brown sand, gravel, clay, silt, WATER BEARING	85	90
Gravel, cobbles, brown sand clay, silt	90	130
Brown sand, gravel	130	133
Brown sand, gravel, layers clay	133	136
Sand, gravel, clay, silt, WATER BEARING	136	148
Brown clay, sand, some gravel	148	151

Work started Feb. 28, 19 84 Completed Mar. 18, 19 84

WELL DRILLER'S STATEMENT:

This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

NAME Hokkaido Drilling & Dev. Corp.
(Person, firm, or corporation) (Type or print)

Address P.O. Box 100 Graham, WA

[Signed] ..... (Well Driller)

License No. 0492 Date April 10, 19 84

(USE ADDITIONAL SHEETS IF NECESSARY)

ECY 050-1-20

Department of Ecology
Second Copy — Owner's Copy
Third Copy — Driller's Copy

WATER WELL REPORT
STATE OF WASHINGTON

Permit No. .....

(1) OWNER: Name KING COUNTY WATER DISTRICT #82 Address 1510 228 th SE

(2) LOCATION OF WELL: County KING NE ¼ NE ¼ Sec 28 T 24 N. R 6 E W
Unique ID # AAD373
aring and distance from section or subdivision corner

(3) PROPOSED USE: Domestic ☐ Industrial ☐ Municipal ☒
Irrigation ☐ Test Well ☐ Other ☐

(4) TYPE OF WORK: Owner's number of well (if more than one) 8
New well ☒ Method: Dug ☐ Bored ☐
Deepened ☐ Cable ☒ Driven ☐
Reconditioned ☐ Rotary ☐ Jetted ☐

(5) DIMENSIONS: Diameter of well 16 inches.
Drilled 190 ft. Depth of completed well 189 ft.

(6) CONSTRUCTION DETAILS:
Casing installed: 16 " Diam. from +2.0 ft. to 105 ft.
Threaded ☐ " Diam. from 120 ft. to 125 ft.
Welded ☐ " Diam. from 135 ft. to 145 ft.
165 - 170
Perforations: Yes ☐ No ☒ 179 - 189
Type of perforator used
SIZE of perforations in. by in.
perforations from ft. to ft.
perforations from ft. to ft.
perforations from ft. to ft.

Screens: Yes ☒ No ☐
Manufacturer's Name uop-JOHNSON 304-SS
Type 16T Model No.
Diam. Slot size .060 from 105 ft. to 120 ft.
Diam. Slot size from 125 ft. to 135 ft.
145-165, 170-179

Gravel packed: Yes ☐ No ☒ Size of gravel:
Gravel placed from ft. to ft.

Surface seal: Yes ☒ No ☐ To what depth? 80 ft.
Material used in seal Cement/Bentonite
Did any strata contain unusable water? Yes ☐ No ☒
Type of water? Depth of strata
Method of sealing strata off

(7) PUMP: Manufacturer's Name
Type: H.P.

(8) WATER LEVELS: Land-surface elevation above mean sea level .... +- 72 ft.
Static level 12.6 ft. below top of well Date 8/27/84
Artesian pressure lbs. per square inch Date
Artesian water is controlled by (Cap, valve, etc.)

(9) WELL TESTS: Drawdown is amount water level is lowered below static level
Was a pump test made? Yes ☒ No ☐ If yes, by whom? Driller
Yield: 1977 gal./min. with 22 ft. drawdown after 4 hrs.
" " " "
" " " "

Recovery data (time taken as zero when pump turned off) (water level measured from well top to water level)

Time	Water Level	Time	Water Level	Time	Water Level

Date of test
Bailer test gal./min. with ft. drawdown after hrs.
Artesian flow g.p.m. Date
Temperature of water Was a chemical analysis made? Yes ☒ No ☐

(10) WELL LOG:

Formation: Describe by color, character, size of material and structure, c show thickness of aquifers and the kind and nature of the material in ec stratum penetrated, with at least one entry for each change of formati

MATERIAL	FROM	TO
Fill, w/bark,roots,sand,cbls	0	11
D.Brown sand,gravel,silt,clay	11	14
D.Brown clay, minor gravel	14	17
Brown sand, gravel,silt,clay	17	32
Grey clay	32	34
Brown-blue sand,gravel,silt	34	42
wood,peat		
Clean sand, gravel	42	69
Dirty sand, gravel, layers	69	79
grey clay		
Grey silty clay	79	95
Sand, gravel, in brown clay	95	102
binder		
Sand, gravel, some cobbles	102	178
varying amounts	of fines	
Brown silty sand, gravel	178	190

RECEIVED
MAY 2 1985
DEPARTMENT OF ECOLOGY
NORTHWEST REGION

Work started 8/6/84 19..... Completed 8/29/84 19.

WELL DRILLER'S STATEMENT:

This well was drilled under my jurisdiction and this repor true to the best of my knowledge and belief.

NAME Hokkaido Drilling & Developing
(Person, firm, or corporation) (Type or prin)

Address Graham, WA

[Signed] Bob Capen
(Well Driller)

License No. 1239 Date 9/12, 19.

(USE ADDITIONAL SHEETS IF NECESSARY)

Department of Ecology
Second Copy—Owner's Copy
Third Copy—Driller's Copy

WATER WELL REPORT

STATE OF WASHINGTON

Unique ID# AAD365

Water Right Permit No. G1-26014 980

(1) OWNER: Name Sammamish Plateau Water District Address 1510-228th St SE, Issaquah, WA

(2) LOCATION OF WELL: County King SW ¼ NW ¼ Sec 27 T 24 N., R 6E W.M.

(2a) STREET ADDDRESS OF WELL (or nearest address) 930 1st Avenue NE, Issaquah, WA 98027

(3) PROPOSED USE: ☐ Domestic ☐ Industrial ☐ Municipal ☒ ☐ Irrigation ☐ Test Well ☐ Other ☐ ☐ DeWater

(4) TYPE OF WORK: Owner's number of well (if more than one) Well 9

Abandoned ☐ New well ☒ Method: Dug ☐ Bored ☐ Deepened ☐ Cable ☒ Driven ☐ Reconditioned ☐ Rotary ☐ Jetted ☐

(5) DIMENSIONS: Diameter of well 24 inches. Drilled 303 feet. Depth of completed well 222 ft.

(6) CONSTRUCTION DETAILS:

Casing installed: 24 " Diam. from +2.0 ft. to 194 ft.

Welded ☐ Liner installed ☐ Threaded ☐ " Diam. from ft. to ft.

" Diam. from ft. to ft.

Perforations: Yes ☐ No ☒

Type of perforator used

SIZE of perforations in. by in.

perforations from ft. to ft.

perforations from ft. to ft.

perforations from ft. to ft.

Screens: Yes ☒ No ☐

Manufacturer's Name UOP Johnsons

Type WW 304 Stainless Model No.

Diam. 24T Slot size 080 from 194 ft. to 209 ft.

Diam. 24T Slot size 060 from 209 ft. to 219 ft.

Gravel packed: Yes ☐ No ☒ Size of gravel

Gravel placed from ft. to ft.

Surface seal: Yes ☒ No ☐ To what depth? 64 ft.

Material used in seal Cement, 5% bentonite

Did any strata contain unusable water? Yes ☐ No ☒

Type of water? Depth of strata

Method of sealing strata off

(7) PUMP: Manufacturer's Name

Type: H.P.

(8) WATER LEVELS: Land-surface elevation above mean sea level 75.05 ft.

Static level 20.16 ft. below top of well Date 7/15/91

Artesian pressure lbs. per square inch Date

Artesian water is controlled by (Cap, valve, etc.)

(9) WELL TESTS: Drawdown is amount water level is lowered below static level

Was a pump test made? Yes ☒ No ☐ If yes, by whom? Carr/Assoc.

Yield: 2340 gal./min. with 22.45 ft. drawdown after 229 hrs.

" " " "

" " " "

Recovery data (time taken as zero when pump turned off) (water level measured from well top to water level)

Time	Water Level	Time	Water Level	Time	Water Level
0	41.95	11	22.17	127	21.72
1	22.52	17	22.14	365	21.34
2	22.40	35	22.04	1375	20.62

Date of test 7/12-22/92

Bailer test gal./min. with ft. drawdown after hrs.

Airtest gal./min. with stem set at ft. for hrs.

Artesian flow g.p.m. Date

Temperature of water 11.6 Was a chemical analysis made? Yes X No

(10) WELL LOG or ABANDONMENT PROCEDURE DESCRIPTION

Formation: Describe by color, character, size of material and structure, and show thickness of aquifers and the kind and nature of the material in each stratum penetrated, with at least one entry for each change of information.

MATERIAL	FROM	TO
Fill	0	3
Gravel,sand,silt,brn	3	19
Gravel, sand,silt,brn	19	22
Sand,grvl,silt,brn,w-brng	22	30
Gravel,sand,cobbles,clean,brn	30	34
Gravel,sand,silt,minor w-brng	34	56
Sand,silty,grvl,peat,gray	56	60
Silt,sand,gravel,gray,lyrs	60	69
Sand,gravel,cobbles,clean,wb	69	71
Sand,gravel,silt,brn,w-brng	71	80
Sand,gravel,cobbles,brn,wb	80	108
Silt,sandy,gravel,brn	108	112
Silt,sand,grvl,brn,layered	112	115
Gravel,sand,cobbles,brn,wood	115	142
Gravel,sand,cobbles,brn,wb	142	160
Silt,sandy,clay,gry-brn,stick	160	165
Clay,silty,gravel,gray	165	185
Gravel,sand,silt,brn,m-wb	185	193
Sand,grvl,cobbles,cln,silt	193	209
Sand,gravel,silt,clay,w-brng	209	213
Sand,gravel,clean,brn,w-brng	213	219
Sand,silty,grvl,red-brn,wb	219	233
Silt,sandy,grvl,fine,gray	233	260
Silt,sandy,gravel,gray	260	262
Silt,sandy,grvl,brn-gray	262	270
Silt,sandy,gray	270	283
Silt,clayey,sticky	283	287
Sand,silty,gray,peat,wood	287	301
Sandstone,gray	301	303

7/15/91-Devel

Work started 4/30/91 19. Completed 19

WELL CONSTRUCTOR CERTIFICATION:

I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief.

NAME Hokkaido Drilling & Develop. Corp (PERSON, FIRM, OR CORPORATION) (TYPE OR PRINT)

P.O. Box 100

Address Graham, WA 98408

(Signed) (WELL DRILLER) License No. 1239

Contractor's Registration No. HOKKADD178D3 Date January 31, 19 92

(USE ADDITIONAL SHEETS IF NECESSARY)

File Original and First Copy with Department of Ecology
Second Copy—Owner's Copy
Third Copy—Driller's Copy

WATER WELL REPORT

STATE OF WASHINGTON

Start Card No. 064368

Water Right Permit No. G1-27166

(1) OWNER: Name Sammamish Plateau Water Dist. Address 1510 228th Ave SE, Issaquah, WA 980

(2) LOCATION OF WELL: County King NE ¼ SW ¼ Sec 11 T 24 N, R 6E W.M.

(2a) STREET ADDDRESS OF WELL (or nearest address)

(3) PROPOSED USE: ☐ Domestic ☐ Industrial ☐ Municipal ☒ ☐ Irrigation ☐ DeWater ☐ Test Well ☐ Other ☐

(4) TYPE OF WORK: Owner's number of well (if more than one) 10

Abandoned ☐ New well ☒ Method: Dug ☐ Bored ☐ Deepened ☐ Cable ☒ Driven ☐ Reconditioned ☐ Rotary ☐ Jetted ☐

(5) DIMENSIONS: Diameter of well 12 inches. Drilled 194 feet. Depth of completed well 193 ft.

(6) CONSTRUCTION DETAILS:

Casing installed: 12 " Diam. from +2.5 ft. to 135 ft.
Welded ☒ _____ " Diam. from _____ ft. to _____ ft.
Liner installed ☐
Threaded ☐ _____ " Diam. from _____ ft. to _____ ft.

Perforations: Yes ☐ No ☒
Type of perforator used
SIZE of perforations _____ in. by _____ in.
_____ perforations from _____ ft. to _____ ft.
_____ perforations from _____ ft. to _____ ft.
_____ perforations from _____ ft. to _____ ft.

Screens: Yes ☒ No ☐
Manufacturer's Name
Type 304 Stainless Model No.
Diam 10 Slot size 0.030 from 135 ft. to 155 ft.
Diam. Slot size from 173 ft. to 183 ft.

Gravel packed: Yes ☐ No ☒ Size of gravel
Gravel placed from ft. to ft.

Surface seal: Yes ☒ No ☐ To what depth? 65 ft.
Material used in seal Bent/Grvl 65-55;Cmnt 55-0
Did any strata contain unusable water? Yes ☐ No ☒
Type of water? Depth of strata
Method of sealing strata off

(7) PUMP: Manufacturer's Name
Type: H.P.

(8) WATER LEVELS: Land-surface elevation above mean sea level Approx 420 ft.
Static level 67.23 BGS ft. below top of well Date 8/23/93
Artesian pressure lbs. per square inch Date
Artesian water is controlled by (Cap, valve, etc.)

(9) WELL TESTS: Drawdown is amount water level is lowered below static level
Was a pump test made? Yes ☒ No ☐ If yes, by whom? Carr/AGI
Yield: 508 gal./min. with 38 ft. drawdown after 24 hrs.
" " " "
" " " "

Recovery data (time taken as zero when pump turned off) (water level measured from well top to water level)

	Time	Water Level	Time	Water Level	Time	Water Level
1		79.20	10	83.27	30	80.30
2		85.00	15	82.36	60	77.70
3		84.37	20	81.58	90	76.07

Date of test 8/24-25/93

Bailer test gal./min. with ft. drawdown after hrs.
Airtest gal./min. with stem set at ft. for hrs.
Artesian flow g.p.m. Date
Temperature of water 8°C Was a chemical analysis made? Yes ☐ No ☐

(10) WELL LOG or ABANDONMENT PROCEDURE DESCRIPTION

Formation: Describe by color, character, size of material and structure, and show thickness of aquifers and the kind and nature of the material in each stratum penetrated, with at least one entry for each change of information.

MATERIAL	FROM	TO
Topsoil	0	5
Sand & Gravel, gray-tan, cmnt	5	34
Sand & Gravel, Loose, dry	34	36
Till, Cemented Silt & Cbls	36	70
Sand, brown, claybound	70	75
Sand & Grvl, Brn-Gry, W-B	75	97
Clay w/sand, bluish-gry, lean	97	123
Sandy Gravel, olive-gry, W-B	123	160
Silt w/peat & grvl, olive-gry	160	169
Grvl w/sand-peat-silt, ol-gry	169	175
Sand w/silt, grvly, olive-blk	175	193

Work started 7/5/93 19. Completed 8/26 19 93

WELL CONSTRUCTOR CERTIFICATION:

I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief.

NAME Armstrong Drilling, Inc. (PERSON, FIRM, OR CORPORATION) (TYPE OR PRINT)
Address 10715 66th Avenue East Puyallup, WA 98371
(Signed) [signature] (WELL DRILLER) License No. 0012
Contractor's Registration No. ARMSTDI135NC Date 9-16 19 93

(USE ADDITIONAL SHEETS IF NECESSARY)

ECY 050-1-20 (10/87) -1329- 3

File Original and First Copy with Department of Ecology
Second Copy—Owner's Copy
Third Copy—Driller's Copy

WATER WELL REPORT

STATE OF WASHINGTON

Start Card No. _____

UNIQUE WELL I.D. # AAD381

Water Right Permit No. G1-26573

(1) OWNER: Name Sammamish Plateau Water and Sewer District Address 1510 228th Ave SE, Issaquah, WA 98027

(2) LOCATION OF WELL: County King NW ¼ NW ¼ Sec 34 T 25 N., R 6E W.M.

(2a) STREET ADDDRESS OF WELL (or nearest address) Lake Washington School Dist.#414, Redmond, WA

(3) PROPOSED USE: ☐ Domestic ☐ Irrigation ☐ DeWater Industrial ☐ Test Well ☐ Municipal ☒ Other ☐

(4) TYPE OF WORK: Owner's number of well (if more than one) 11.1

Abandoned ☐ New well ☒ Deepened ☐ Reconditioned ☐ Method: Dug ☐ Cable ☒ Rotary ☐ Bored ☐ Driven ☐ Jetted ☐

(5) DIMENSIONS: Diameter of well 10 inches. Drilled 499 feet. Depth of completed well 491 ft.

(6) CONSTRUCTION DETAILS:

Casing Installed: 16 " Diam. from 0 ft. to 186 ft.

Welded ☒ Liner installed ☐ Threaded ☐ 16 " Diam. from 212 ft. to 219 ft.

10 " Diam. from +2.2 ft. to 409 ft.

Perforations: Yes ☐ No ☒

Type of perforator used _____

SIZE of perforations _____ in. by _____ in.

_____ perforations from _____ ft. to _____ ft.

_____ perforations from _____ ft. to _____ ft.

_____ perforations from _____ ft. to _____ ft.

Screens: Yes ☒ No ☐

Manufacturer's Name Johnson

Type 304 Stainless Model No. P.S.

Diam. 6 inch Slot size 0.35 from 409 ft. to 419 ft.

Diam. _____ Slot size _____ from 426 ft. to 431 ft.

from 461 ft. to 486 ft.

Gravel packed: Yes ☒ No ☐ Size of gravel CSS 8-12

Gravel placed from 377 ft. to 491 ft.

Surface seal: Yes ☒ No ☐ To what depth? 43 ft.

Material used in seal Cement

Did any strata contain unusable water? Yes ☐ No ☒

Type of water? _____ Depth of strata _____

Method of sealing strata off _____

(7) PUMP: Manufacturer's Name _____

Type: _____ H.P. _____

(8) WATER LEVELS: Land-surface elevation above mean sea level 360 ft.

Static level 230 ft. below top of well Date 7/21/93

Artesian pressure _____ lbs. per square inch Date _____

Artesian water is controlled by _____ (Cap, valve, etc.))

(9) WELL TESTS: Drawdown is amount water level is lowered below static level

Was a pump test made? Yes ☐ No ☐ If yes, by whom? _____

Yield: _____ gal./min. with _____ ft. drawdown after _____ hrs.

" " " "

" " " "

Recovery data (time taken as zero when pump turned off) (water level measured from well top to water level)

Time	Water Level	Time	Water Level	Time	Water Level

Date of test _____

Bailer test _____ gal./min. with _____ ft. drawdown after _____ hrs.

Airtest _____ gal./min. with stem set at _____ ft. for _____ hrs.

Artesian flow _____ g.p.m. Date _____

Temperature of water _____ Was a chemical analysis made? Yes ☐ No ☐

(10) WELL LOG or ABANDONMENT PROCEDURE DESCRIPTION

Formation: Describe by color, character, size of material and structure, and show thickness of aquifers and the kind and nature of the material in each stratum penetrated, with at least one entry for each change of information.

MATERIAL	FROM	TO
Hard-pan	0	41
Brown Siltbound Sands and Gravels	41	90
Brownish-Orange Siltbound sands and Gravels	90	112
Brown Siltbound Sands and Gravels	112	115
Brown Siltbound Sands and Gravels with Cobbles	115	137
Brown Siltbound Sands and Gravels	137	156
Brown sands and Gravels with Silt, WB	156	180
Brown sands and Gravels, Water Bearing	180	201
Brown Sands and Gravels with Silt	201	204
Brown sands and Gravels with trace Silt	204	210
Brown Siltbound Sands and Gravels	210	220
Gray Silty Sands with few Gravels	220	241
Silty Sands and Gravels	241	251
Brownish-Gray Silty Sands and Gravels	251	291
Silty sands, Gravels and Cobbles	291	305
Silty Sands, Gravels and with few Cobbles	305	321
Tan Silty Sands and Gravels, Water Bearing	321	351
Tan Silty Sands and Gravels	351	363
Tan Siltbound sands and Gravels	363	375
Tan Siltbound Sands and Gravels with Cobbles	375	390
Tan Silty sands, Gravels and Cobbles; WB	390	410
Tannish Sands and Gravels	410	423
Tan Silty sands and Gravels	423	429
Tannish Sands and Gravels	429	434
Tan Silty Sands, Gravels and Cobbles	434	464
Tannish Sands and Gravels	464	489
Gray Sands and Cobbles	489	499
Note: Final development and testing has not been done as of the completion date.		

Work started 4/28/93, 19. Completed 8/9/93, 19

WELL CONSTRUCTOR CERTIFICATION:

I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief.

NAME Holt Drilling, Inc. (PERSON, FIRM, OR CORPORATION) (TYPE OR PRINT)

Address 10621 Todd Road East, Puyallup, WA 98372

(Signed) _____ (WELL DRILLER) License No. _____

Contractor's Registration No. HOLTDI*13606 Date _____, 19

(USE ADDITIONAL SHEETS IF NECESSARY)

File Original and First Copy with Department of Ecology
Second Copy—Owner's Copy
Third Copy—Driller's Copy

WATER WELL REPORT

STATE OF WASHINGTON

Start Card No. _____

UNIQUE WELL I.D. # AAD382

Water Right Permit No. G1-26572

(1) OWNER: Name Sammamish Plateau Water and Sewer District Address 1510 228th Ave SE, Issaquah, WA 98027

(2) LOCATION OF WELL: County King NW ¼ NW ¼ Sec 34 T 25 N., R 6E W.M.

(2a) STREET ADDDRESS OF WELL (or nearest address) Lake Washington School Dist. No. 414, Redmond, WA

(3) PROPOSED USE: ☐ Domestic ☐ Industrial ☐ Municipal ☒ ☐ Irrigation ☐ Test Well ☐ Other ☐ ☐ DeWater

(4) TYPE OF WORK: Owner's number of well (if more than one) 11.2

Abandoned ☐ New well ☒ Method: Dug ☐ Bored ☐ Deepened ☐ Cable ☒ Driven ☐ Reconditioned ☐ Rotary ☒ Jetted ☐

(5) DIMENSIONS: Diameter of well 16 inches. Drilled 885 feet. Depth of completed well 884 ft.

(6) CONSTRUCTION DETAILS:

Casing Installed: 24 " Diam. from 0 ft. to 352 ft.

Welded ☒ 20 " Diam. from 0 ft. to 630 ft.

Liner installed ☐

Threaded ☐ 16 " Diam. from +2.0 ft. to 705 ft.

Perforations: Yes ☐ No ☒

Type of perforator used _____

SIZE of perforations _____ in. by _____ in.

_____ perforations from _____ ft. to _____ ft.

_____ perforations from _____ ft. to _____ ft.

_____ perforations from _____ ft. to _____ ft.

Screens: Yes ☒ No ☐

Manufacturer's Name Johnson

Type 304 Stainless Model No. PS

Diam. 8 inch Slot size .030 from 785 ft. to 821 ft.

Diam. 8 inch Slot size .030 from 839 ft. to 880 ft.

Gravel packed: Yes ☒ No ☐ Size of gravel CSS 8-12

Gravel placed from 648 ft. to 884 ft.

Surface seal: Yes ☒ No ☐ To what depth? 43 ft.

Material used in seal Cement

Did any strata contain unusable water? Yes ☐ No ☐

Type of water? _____ Depth of strata _____

Method of sealing strata off _____

(7) PUMP: Manufacturer's Name _____

Type: _____ H.P. _____

(8) WATER LEVELS: Land-surface elevation above mean sea level 360 ft.

Static level 235 ft. below top of well Date 8/6/93

Artesian pressure _____ lbs. per square inch Date _____

Artesian water is controlled by _____ (Cap, valve, etc.)

(9) WELL TESTS: Drawdown is amount water level is lowered below static level

Was a pump test made? Yes ☐ No ☐ If yes, by whom? _____

Yield: _____ gal./min. with _____ ft. drawdown after _____ hrs.

" " " "

" " " "

Recovery data (time taken as zero when pump turned off) (water level measured from well top to water level)

Time	Water Level	Time	Water Level	Time	Water Level

Date of test _____

Bailer test _____ gal./min. with _____ ft. drawdown after _____ hrs.

Airtest _____ gal./min. with stem set at _____ ft. for _____ hrs.

Artesian flow _____ g.p.m. Date _____

Temperature of water _____ Was a chemical analysis made? Yes ☐ No ☐

(10) WELL LOG or ABANDONMENT PROCEDURE DESCRIPTION

Formation: Describe by color, character, size of material and structure, and show thickness of aquifers and the kind and nature of the material in each stratum penetrated, with at least one entry for each change of information.

MATERIAL	FROM	TO
Hardpan	0	41
Siltbound Gravels, Brown	41	61
Siltbound Sands and Gravels, Brown	61	82
Siltbound Sands and Gravels, Redish-Brown	82	112
Siltbound Sands and Gravels, Brown	112	170
Siltbound Sands and Gravels, Brown; WB	170	185
Loose Sands and Gravels, WB	185	200
Sands and Gravels with trace Silt	200	205
Sands and Gravels with Silt	205	212
Sands, Gravels, and Cobbles	212	219
Silty Clay with Peat and Gravels	219	228
Siltbound Sands	228	233
Siltbound Sands and Gravels	233	278
Siltbound Gravels and Cobbles	278	296
Siltbound Sands, Gravels and Cobbles	296	323
Siltbound Sands and Gravels	323	358
Siltbound Sands, Gravels and Cobbles	358	369
Siltbound Sands and Gravels	369	394
Silty Sands, Gravels and Cobbles	394	417
Sands and Gravels with trace of Silt	417	434
Silty Sands, Gravels and Cobbles	434	465
Sands and Gravels	465	471
Siltbound Sands and Gravels	471	475
Loose Sands with trace Gravels	475	494
Fine Sands with Trace Gravels and Cobbles	494	505
Fine Silty Sands with trace Gravels and Cobbles	505	520
Siltbound Sands, Grey	520	560
Continued on next form pages		
Note: Final development and testing has not been done as of completion date.		

Work started 4/7/93, 19. Completed 8/6/93, 19

WELL CONSTRUCTOR CERTIFICATION:

I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief.

NAME Holt Drilling, Inc. (PERSON, FIRM, OR CORPORATION) (TYPE OR PRINT)

Address 10621 Todd Road East, Puyallup, WA 98372

(Signed) _____ (WELL DRILLER) License No. _____

Contractor's Registration No. HOLTDI*13606 Date _____, 19

(USE ADDITIONAL SHEETS IF NECESSARY)

File Original and First Copy with Department of Ecology
Second Copy—Owner's Copy
Third Copy—Driller's Copy

WATER WELL REPORT

STATE OF WASHINGTON

Start Card No. _____

UNIQUE WELL I.D. # AAD382

Water Right Permit No. G1-26572

(1) OWNER: Name ~~Sammamish Plateau Water and Sewer District~~ Address 1510 228th Ave SE, Issaquah, WA 98027

(2) LOCATION OF WELL: County King NW ¼ NW ¼ Sec 34 T 25 N., R 6E W.M.

(2a) STREET ADDDRESS OF WELL (or nearest address) Lake Washington School District No. 414, Redmond, Washington

(3) PROPOSED USE: ☐ Domestic ☐ Industrial ☐ Municipal ☒ ☐ Irrigation ☐ Test Well ☐ Other ☐ ☐ DeWater

(4) TYPE OF WORK: Owner's number of well (if more than one) 11.2

Abandoned ☐ New well ☒ Method: Dug ☐ Bored ☐ Deepened ☐ Cable ☒ Driven ☐ Reconditioned ☐ Rotary ☒ Jetted ☐

(5) DIMENSIONS: Diameter of well 16 inches. Drilled 885 feet. Depth of completed well 884 ft.

(6) CONSTRUCTION DETAILS:

Casing installed: _____ " Diam. from _____ ft. to _____ ft.

Welded ☐ Liner installed ☐ Threaded ☐ _____ " Diam. from _____ ft. to _____ ft.

_____ " Diam. from _____ ft. to _____ ft.

Perforations: Yes ☐ No ☐

Type of perforator used _____

SIZE of perforations _____ in. by _____ in.

_____ perforations from _____ ft. to _____ ft.

_____ perforations from _____ ft. to _____ ft.

_____ perforations from _____ ft. to _____ ft.

Screens: Yes ☐ No ☐

Manufacturer's Name _____

Type _____ Model No. _____

Diam. _____ Slot size _____ from _____ ft. to _____ ft.

Diam. _____ Slot size _____ from _____ ft. to _____ ft.

Gravel packed: Yes ☐ No ☐ Size of gravel _____

Gravel placed from _____ ft. to _____ ft.

Surface seal: Yes ☐ No ☐ To what depth? _____ ft.

Material used in seal _____

Did any strata contain unusable water? Yes ☐ No ☐

Type of water? _____ Depth of strata _____

Method of sealing strata off _____

(7) PUMP: Manufacturer's Name _____

Type: _____ H.P. _____

(8) WATER LEVELS: Land-surface elevation above mean sea level _____ ft.

Static level _____ ft. below top of well Date _____

Artesian pressure _____ lbs. per square inch Date _____

Artesian water is controlled by _____ (Cap, valve, etc.)

(9) WELL TESTS: Drawdown is amount water level is lowered below static level

Was a pump test made? Yes ☐ No ☐ If yes, by whom? _____

Yield: _____ gal./min. with _____ ft. drawdown after _____ hrs.

" " " "

" " " "

Recovery data (time taken as zero when pump turned off) (water level measured from well top to water level)

Time	Water Level	Time	Water Level	Time	Water Level

Date of test _____

Bailer test _____ gal./min. with _____ ft. drawdown after _____ hrs.

Airtest _____ gal./min. with stem set at _____ ft. for _____ hrs.

Artesian flow _____ g.p.m. Date _____

Temperature of water _____ Was a chemical analysis made? Yes ☐ No ☐

(10) WELL LOG or ABANDONMENT PROCEDURE DESCRIPTION

Formation: Describe by color, character, size of material and structure, and show thickness of aquifers and the kind and nature of the material in each stratum penetrated, with at least one entry for each change of information.

MATERIAL	FROM	TO
Continued from previous form		
~~Silty, Clay Grey~~	~~560~~	~~620~~
~~Sands, WB~~	~~620~~	~~624~~
Silty, Clay, Gray	624	654
Sandy Silt, Gray	654	661
Silty Sands with trace Wood	661	680
Silt, Gray	680	688
Sandy Silt, some Gravels and wood, Gray	688	709
Silty Sands and Gravels, some Cobbles, Gray	709	729
Silty sands and Gravels, Gray	729	740
Silty Sands, some Gravels and wood, Gray	740	749
Silty Sands, and Grav els, Gray	749	781
Sands and Gravels, Gray	781	790
Sands, Gravels and Cobbles, Gray	790	814
Clay, few Gravels, Gray	814	819
Silty sands, some Gravels and wood, Gray	819	825
Silty Sands and Gravels, Gray	825	845
S ands, Gravels and Cobbles, Gray	845	884

Work started 4/7/93, 19. Completed 8/6/93, 19

WELL CONSTRUCTOR CERTIFICATION:

I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief.

NAME Holt Drilling, Inc. (PERSON, FIRM, OR CORPORATION) (TYPE OR PRINT)

Address 10621 Todd Road East, Puyallup, WA 98372

(Signed) _____ License No. _____ (WELL DRILLER)

Contractor's Registration No. HOLTDI*13606 Date _____, 19

(USE ADDITIONAL SHEETS IF NECESSARY)

SPWSD well 12

X - 576,245
Y - 5,277,882
Z - 650

Owner Lake Water Co.
Address 920 Miller St., Seattle 2

Material	Thickness (feet)	Depth (feet)	
Fill & top soil	2	2	5
Hardpan & some gravel	21	23	
Fine gravel & some sand	4	27	4400
Clay	1	28	
Gr. sand with very little sediment	9	37	2000
Gravel, sand clay in alternating layers, grey-brn.	31	68	1230
Gravel, very hard	5	73	↑
Gravel with blue clay mix.	35	108	
Very hard hardpan & gravel	3	111	4400
" " " " "	13	124	↓
Very coarse gravel	21	145	1000
PUMP TEST:			
Dim. 145'x8"			
SWL: 120 ft.			
DD: 5 ft.			

Turn up (over) Sheet ____ of ____ sheets

File Original and First Copy with Department of Ecology
Second Copy – Owner's Copy
Third Copy – Driller's Copy

SPWSD well 13

WATER WELL REPORT

STATE OF WASHINGTON

Application No. ....

Permit No. ....

(1) OWNER: Name Cascade View Developers Assoc. Address 16 Wembley Lane, Mercer Island, WA

(2) LOCATION OF WELL: County KING SW ¼ NW ¼ Sec. 12E T. 25 N., R. 6E W.M.

Bearing and distance from section or subdivision corner 2540'S, 100'E of NW corner of Section 12

(3) PROPOSED USE: Domestic ☐ Industrial ☐ Municipal ☒
Irrigation ☐ Test Well ☐ Other ☐

(4) TYPE OF WORK: Owner's number of well (if more than one) ....
New well ☒ Method: Dug ☐ Bored ☐
Deepened ☐ 0-787' Cable ☒ Driven ☐
Reconditioned ☐ 787-955' Rotary ☒ Jetted ☐

(5) DIMENSIONS: Diameter of well 6 inches.
Drilled 955 ft. Depth of completed well 954 ft.

(6) CONSTRUCTION DETAILS:
Casing installed: 12" Diam. from +1 ft. to 477 ft.
Threaded ☐ 8" Diam. from +1 ft. to 787 ft.
Welded ☒ 6" Diam. from +2.7 ft. to 865 ft.

Perforations: Yes ☐ No ☒
Type of perforator used ....
SIZE of perforations .... in. by .... in.
.... perforations from .... ft. to .... ft.
.... perforations from .... ft. to .... ft.
.... perforations from .... ft. to .... ft.

Screens: Yes ☒ No ☐ Manufacturer's Name Johnson
Type Stainless Steel Model No. ....
Diam. 6" Slot size 20 from 865 ft. to 875 ft.
Diam. 6" Slot size 20 from 882.5 ft. to 887.5 ft.
Diam. 6" Slot size 20 from 917 ft. to 925 ft.
60 929 944

Gravel packed: Yes ☐ No ☒ Size of gravel ....
Gravel placed from .... ft. to .... ft.

Surface seal: Yes ☒ No ☐ To what depth? 20 ft.
Material used in seal bentonite
Did any strata contain unusable water? Yes ☐ No ☐
Type of water? .... Depth of strata ....
Method of sealing strata off ....

(7) PUMP: Manufacturer's Name .... H.P. ....
Type: ....

(8) WATER LEVELS: Land-surface elevation above mean sea level ~640 ft. topo
Static level 523.0 ft. below top of well Date 7/30/90
Artesian pressure .... lbs per square inch Date ....
Artesian water is controlled by .... (Cap, valve, etc.)

(9) WELL TESTS: Drawdown is amount water level is lowered below static level R=N
Was a pump test made? Yes ☒ No ☐ If yes, by whom? ....
Yield: 150 gal/min with 52.35 ft drawdown after 24 hrs.
.... gal/min with .... ft drawdown after .... hrs.

Recovery data (time taken as zero when pump turned off) (water level measured from well top to water level)

Time	Water Level	Time	Water Level	Time	Water Level
1	533.9	12	529.6	82	527.8
3	531.2	25	528.85	120	527.55
6	530.4	42	528.4	1660	524.63

Date of test 7/30 - 7/31/90
Bailer test .... gal/min with .... ft drawdown after .... hrs.
Artesian flow .... g p m Date ....
Temperature of water 51.5° Was a chemical analysis made? Yes ☒ No ☐

(10) WELL LOG:

Formation: Describe by color, character, size of material and structure, and show thickness of aquifers and the kind and nature of the material in each stratum penetrated, with at least one entry for each change of formation.

MATERIAL		FROM	TO
Brn silt with gravel	3100	0	5
Brn silty sand and gvl	2130	5	11
Lt. brn silty sand and gvl		11	21
Gravelly gray silt	1300	21	40
Sand and gvl in gray silt matrix		40	72
V. compact sand, gvl, cobbles, boulders in silt and clay matrix, till	4000	72	186
Sand and gvl, water	2100	186	189
Sand and gravel in silt matrix, till	72139	189	211 27
Gray silt and silty clay	3000	211	302
Silt with sand seams, seepage	320W	302	355
Silt and sand, minor water, laminated		355	467
Gray silt	3000	467	520
Silt with sandy silt layers, seepage	320	520	600
Sandy silt, becomes clayey + gvl downward		600	640
Gray silt and clay	3000	640	700
Sandy silt, seepage	320W	700	790
Silty sand, woody, minor water		790	830
Sand and gvl, silty, woody, water		830	870
Sand and gvl	2130		
Gravelly sand layered with sand + gvl, occ. matrix, water	2130	870	910
Gravelly sand with silt matrix, woody, water		910	925
Sand + gvl to sandy gvl, water	2100	925	955
To be sold to King County WD 122 in late 1990			
Prepared by Robinson & Noble, Inc.			

RECEIVED
AUG 16 1990
DEPT. OF ECOLOGY

Work started May 3, 19 90 Completed July 31, 19 90

WELL DRILLER'S STATEMENT:

This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

NAME OELKE DRILLING INC. (Person, firm, or corporation) (Type or print)

Address 4312-166th Ave E, Sumner 983

[Signed] .... (Well Driller)

License No. 0837 Date 8/14 19 90

(USE ADDITIONAL SHEETS IF NECESSARY)

SPWSD
12

SPWSD well 14

RECEIVED
SEP 24 1990

File Original and First Copy with Department of Ecology
Second Copy—Owner's Copy
Third Copy—Driller's Copy

WATER WELL REPORT
STATE OF WASHINGTON

Start Card No. [redacted]

Water Right Permit No. _____

(1) OWNER: Name CASCADE MELODY WATER DISTRICT Address 33015 SE 43rd, FALL CITY, WA 98024

(2) LOCATION OF WELL: County KING NE ¼ NW ¼ Sec 24 T 25 N., R 06E W.M.

(2a) STREET ADDRESS OF WELL (or nearest address) 1400'N AND 100'W OF CENTER OF SECTION 24

(3) PROPOSED USE: Domestic ☐ Industrial ☐ Municipal ☒ Irrigation ☐ Test Well ☐ Other ☐ DeWater ☐

(4) TYPE OF WORK: Owner's number of well (if more than one) 2
Abandoned ☐ New well ☒ Method: Dug ☐ Bored ☐ Deepened ☐ Cable ☒ Driven ☐ Reconditioned ☐ Rotary ☐ Jetted ☐

(5) DIMENSIONS: Diameter of well 8 inches. Drilled 346 feet. Depth of completed well 333 ft.

(6) CONSTRUCTION DETAILS:
Casing Installed: 12" Diam. from 0 ft. to 176.5 ft.
Welded ☒ Liner installed ☐ Threaded ☐ 8" Diam. from +2.0 ft. to 305 ft.
" Diam. from ft. to ft.

Perforations: Yes ☐ No ☒
Type of perforator used
SIZE of perforations in. by in.
perforations from ft. to ft.
perforations from ft. to ft.
perforations from ft. to ft.

Screens: Yes ☒ No ☐
Manufacturer's Name HOWARD SMITH
Type STAINLESS WIREWRAP Model No.
Diam. 8" TS Slot size 100 from 305 ft. to 314.25 ft.
Diam. 8" TS Slot size 10+20 from 314.25 ft. to 328.5 ft.

Gravel packed: Yes ☐ No ☒ Size of gravel
Gravel placed from ft. to ft.

Surface seal: Yes ☒ No ☐ To what depth? 24.5 ft.
Material used in seal CEMENT GROUT
Did any strata contain unusable water? Yes ☐ No ☒
Type of water? Depth of strata
Method of sealing strata off

(7) PUMP: Manufacturer's Name N/A
Type: H.P.

(8) WATER LEVELS: Land-surface elevation above mean sea level 480 ft.
Static level 244.5 ft. below top of well Date 8/30/90
Artesian pressure lbs. per square inch Date
Artesian water is controlled by (Cap, valve, etc.)

(9) WELL TESTS: Drawdown is amount water level is lowered below static level
Was a pump test made? Yes ☒ No ☐ If yes, by whom? Hokkaido/RAN
Yield: 105 gal./min. with 38.6 ft. drawdown after 12.5 hrs.

Recovery data (time taken as zero when pump turned off) (water level measured from well top to water level)

Time	Water Level	Time	Water Level	Time	Water Level
10min	246.3	100	255.45		
15	264.5	270	251.8		
60	257.7	960	248.9		

Date of test 8/30-31/90
Bailer test gal./min. with ft. drawdown after hrs.
Airlest gal./min. with stem set at ft. for hrs.
Artesian flow g.p.m. Date
Temperature of water 48 Was a chemical analysis made? Yes ☒ No ☐

(10) WELL LOG or ABANDONMENT PROCEDURE DESCRIPTION

Formation: Describe by color, character, size of material and structure, and show thickness of aquifers and the kind and nature of the material in each stratum penetrated, with at least one entry for each change of information.

MATERIAL	FROM	TO
BROWN FILL W/ GRAVEL 9	0	8
BROWN TIGHT GRAVEL 1000	8	12
TAN CEMENTED SAND + GRAVEL W/ BOULDERS	12	35
GOLDEN BROWN SILTBOUND SAND + GRAVEL	35	42.5
TAN COARSE SAND + GRAVEL, W/ SILT BINDER	42.5	46
GOLD/BROWN COARSE SAND + GRAVEL, W/ BINDER	46	52
TAN CEMENTED GRAVEL, TILL-LIKE 4000	52	78
GOLDEN BROWN SILTY GRAVEL 1300	78	80
" " SILTY SANDY CLAY W/ WATER-BEARING	80	84 321c
" " SILTY SANDY CLAY W/ MINOR GVL	84	97
BROWN SAND W/ GRAVEL IN SILT MATRIX	97	110 213c
TAN/GRAY CEMENTED GRAVEL	110	121
BROWN GRAVEL, COBBLES, W/ SAND + SILT	121	152
" DIRTY SAND + SOME GRAVEL	152	157 40c
" TIGHT SAND + GRAVEL, TRACE BINDER	157	240
BLUE/GRAY CEMENTED GRAVEL	240	246
SAND + GRAVEL, TIGHT, TRACE WATER	246	248 210
BLUE/GRAY CEMENTED SAND + GRAVEL	248	256
" SAND + GRAVEL, BINDER LAYERS, TRACE WATER	256	267 321 c
" DIRTY SAND + GRAVEL	267	269
" MEDIUM-COARSE SILTY SAND	269	271 230
" FINE-MED SAND, SOME GVL, TRACE WATER	271	275 210
GRAY SILTY SAND + GRAVEL	275	278 213
" CLAY W/ PEAT	278	281 56c
" F-M SILTY SAND, MINOR GRAVEL, W.B.	281	285
" F-M SAND	285	290 230
" F-M SILTY SAND W/ PEAT	290	298
" F-M SAND + GRAVEL, W.B.	298	302
" SAND + GRAVEL, W.B.	302	316 210
" M-C SAND 'N GVL W.B.	316	328
GRAY CLAY	328	346 56c

X - 576,597
Y - 5277,039
Z - 480

Prepared by Joel N. Purdy
Robinson + Noble, Inc

Work started 7/24 19. Completed 8/31 1990

WELL CONSTRUCTOR CERTIFICATION:
I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief.

NAME Hokkaido Drilling + Developing Corp.
(PERSON, FIRM, OR CORPORATION) (TYPE OR PRINT)

Address 10416 244th St E GRAHAM, WA 98338

(Signed) [signature] (WELL DRILLER) License No. 1146

Contractor's Registration No HOKKADD776D3 Date Sept 14 19 90

(USE ADDITIONAL SHEET

SPWSD
well 14

Washington State Department of Health

DOH DISTRIBUTION SYSTEM REPORT FORM

Instructions on back

1. System Name : _____ System ID# _____

Reporting Month/Year ____/____

Date	Disinfection Residuals			Lead/Copper Water Quality Parameters		
	2. # Sites Sampled	3. Lowest residual (mg/l)	4. # Samples Residual Not Detected	5. Sites Sampled (1-10)	6. Sites with daily pH values[1] below	7. Notes
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						
21						
22						
23						
24						
25						
26						
27						
28						
29						
30						
31						
Totals						

[1]The daily value is calculated by averaging all of the results measured at the sampling site during the day.

8. Reported By _____ Date _____

Title _____ Operator Certification # _____

Signature _____

Return completed report to DOH Regional Office within 10 days of the end of the reporting month.

consulting • engineering • construction • operations