APPENDIX A

Service Area Agreements

STANDARD SERVICE AGREEMENT ESTABLISHING WATER UTILITY SERVICE AREA BOUNDARIES

PREAMBLE

THIS AGREEMENT establishing water utility service area boundaries is entered into this day for purposes of identifying the external boundaries of the service area for which this water purveyor has assumed water service responsibility.

WHEREAS, service area agreements are required by WAC 246-293-250 to help assure that water reserved for public water supply purposes within Pierce County will be utilized in the future in an efficient and planned manner; and

WHEREAS, the designation of retail water service area and future service planning areas, together with the cooperation of other utilities, will help assure efficient planning to accommodate growth, avoid duplication of service, and facilitate the best use of resources; and

WHEREAS, The responsibilities applicable to water purveyors are outlined in the Pierce County Coordinated Water System Plan (CWSP) and by the adopted rules and regulations of the Washington State Department of Health (DOH); and

WHEREAS, It is not the intent of this Agreement to give new authority or responsibilities to the water purveyor or to the County or State regulatory agencies, in addition to those requirements imposed by law; and

NOW, THEREFORE, the undersigned party, having entered into this Agreement by its signature, concur with and will abide by the following provisions:

Section 1. The terms used within the contract shall be as defined in the implementing regulations of Chapter 70.116 RCW, except as identified below.

A. Lead Agency shall mean the department or organization within Pierce County that has been designated by the Pierce County Executive as being administratively responsible for the coordination and filing of the Pierce County Water Service Area map, Standard Service Agreement Establishing Water Utility Service Area Boundaries, Agreements for Retail Service Areas, Utility Service Policies, and other administrative documents necessary for the implementation of the Pierce County CWSP.

B. Pierce County Coordinated Water System Plan (CWSP) shall mean the plan adopted by the Pierce County Council for public water systems within critical water supply service areas within Pierce County which identifies the present and future needs of the systems and sets forth means for meeting those needs in the most efficient manner possible.

C. Pierce County Water Service Area Map shall mean the map referenced in this Agreement for the retail service area signed by the water purveyor, except as amended in accordance with the CWSP procedures and with the concurrence of the affected water purveyors.

D. Retail Service Area shall mean the designated geographical area within Pierce County in which the undersigned water purveyor assumes full responsibility for providing water service to individual customers.

E. Utility Service Policies shall mean those policies and conditions of service that are attached to the provision of water service for individual customers. The identified policies and conditions of service are those conditions incorporated within the water purveyor's water system improvement and expansion plans required under the provisions of the Public Water Systems Coordination Act and DOH.

Section 2. Lead Agency. The lead agency for administering the Pierce County Water Utility service area agreements shall be the Pierce County Department of Public Works and Utilities unless otherwise established by the Pierce County Executive. The lead agency shall function only as a coordination center. The lead agency will maintain the original documents and will be responsible for updating the water system map and agreements as provided for in the CWSP.

Section 3. Authority The authority for this Agreement is granted by the Public Water Systems Coordination Act of 1977, Chapter 70.116 RCW.

Section 4. Service Area Boundaries. The undersigned Water Purveyor acknowledges that the Pierce County Water Service Area Maps identifying its retail service area boundaries, dated 10/08/04 and included as Attachment A to this Agreement, identify the Water purveyor's present and future service area. The undersigned further acknowledges that there are no service area conflicts with an adjacent water utility or purveyor, or, if such a conflict exists, agrees that no new water service will be extended within disputed areas except as stipulated in an adjudication by DOH.

This agreement shall apply to service areas existing as of August, 1994, and to the service area boundaries identified in the above referenced maps, or as shown on current revisions thereof, provided that no revisions of service areas shown on these maps shall be made without prior written concurrence of the water utilities/purveyors involved and such written concurrence is filed with the Lead Agency. Revisions may also require an amendment to the purveyor's or utility's service plans.

Section 5. Boundary Adjustments. If, at some time in the future it is in the best interest of the undersigned parties to make service area boundary adjustments, such modifications must be by written concurrence of all involved utilities and the proper legislative authority(ies), and must be noted and filed with the designated Pierce County lead agency and DOH. It is understood by the undersigned utility that it may decline to provide service within its designated service area boundary, but in that case, an applicant may be referred to

other adjacent purveyors or utilities or a new utility may be created and the original service area boundary will be adjusted accordingly.

Section 6. System Extension Policies. The undersigned utility agrees that in order to expand its existing water service area, (other than by addition of retail customers to existing water mains), or to serve in the capacity of a prequalified satellite system management agency (SSMA), it shall have adopted design standards and Utility Service extension policies. The design standards shall meet or exceed the Pierce County Water System Minimum Standards and Specifications.

A water utility anticipating expansion of retail service in unincorporated areas of Pierce County, or intending to operate as an SSMA, shall identify utility service policies in its updated water system plan. The undersigned utility agrees to identify, for information, its utility service policies or provide a copy of the updated water system plan to the Lead Agency prior to application for extension of its existing water system into new service areas within the unincorporated areas of Pierce County.

Municipalities further agree that if they identify a service area outside of their existing municipal corporate boundaries, the municipality will assume full responsibility for providing water service equivalent to the level of service provided for their customers inside the city limits with similar service requirements, and must also meet or exceed Pierce County's minimum design standards.

Section 7. Special Working Agreements. Special working agreements, if they exist and are relevant, between this water purveyor and an adjacent water purveyor shall be attached to this Agreement as Attachment B and incorporated herein by this reference.

Section 8. Compliance with the CWSP. Nothing in this Agreement shall waive any requirement of the state, federal or local government regarding the provision of water service. This Agreement shall comply with the interlocal agreement requirement of the CWSP.

IN WITNESS WHEREOF, the undersigned party has executed this Agreement as of 1-22-07

City of Sumner
Water Purveyor

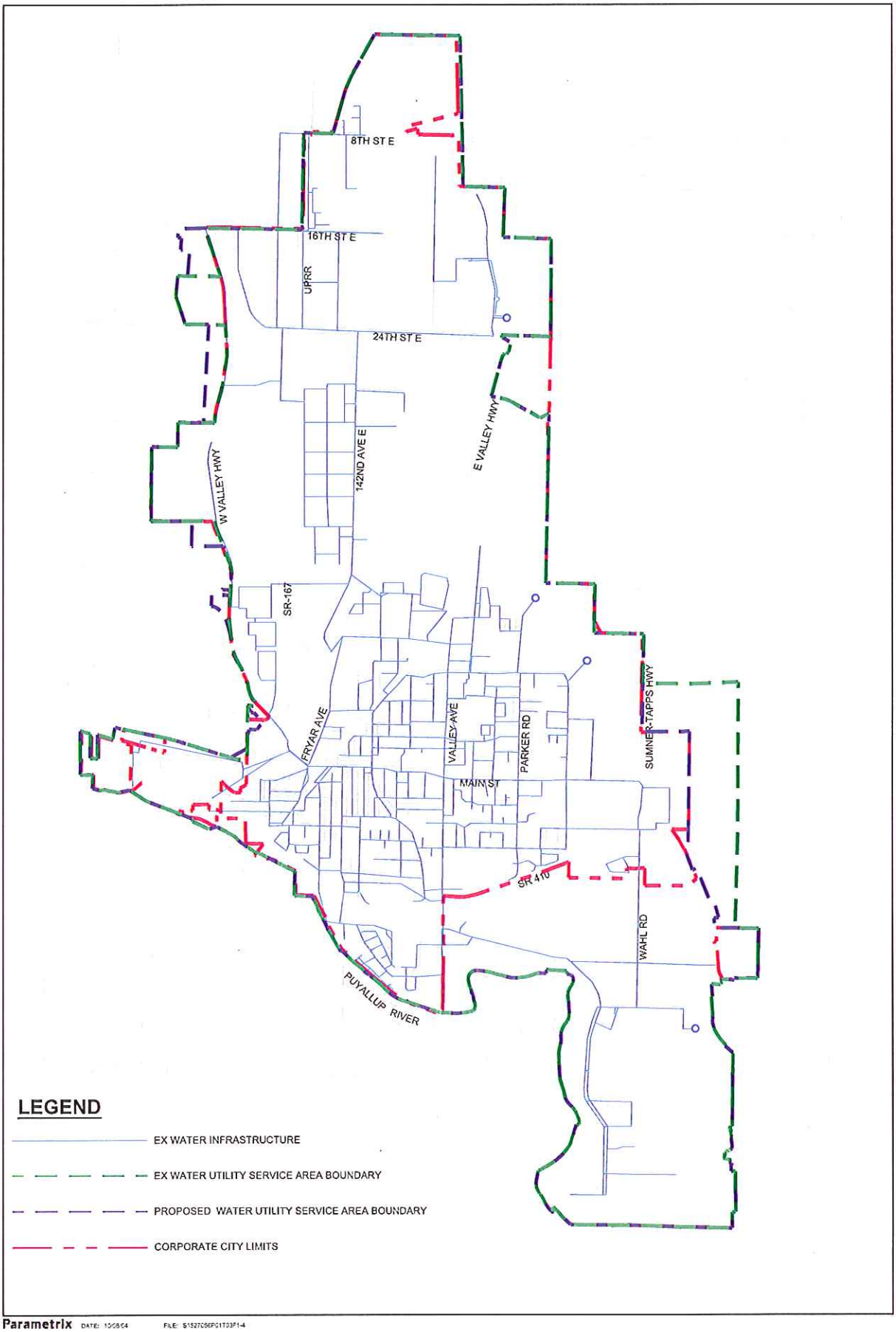
William J Shoemaker
Representative

Title Public Works Director

Receipt Acknowledged:

Pierce County Public Works and Utilities Department
Date

ATTACHMENT A



Parametrix DATE: 10/08/04 FILE: S1527C56PG1T03F1-4

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SCALE IN FEET

Figure 1-4
City of Sumner
Proposed Water Utility
Service Area Boundary

STANDARD SERVICE AGREEMENT
ATTACHMENT B

Utility shall include copies of separate agreements, relating to common service areas, transfer arrangements, special working agreements, and/or retail service agreements with adjacent utilities. These agreements will be included by reference in this Interlocal Agreement.

INTERLOCAL AGREEMENT
ATTACHMENT C

DESCRIPTION OF NEW WATER SERVICE REFERRAL
IN SATELLITE MANAGEMENT AREAS

The following is a description of the process to be utilized by Pierce County in identifying the responsible water purveyor for providing new water service in Satellite Management Areas as identified in the Pierce County Water Service Area Maps. These Satellite Management areas are of two types: "Interim Satellite System Management Areas", in which several purveyors may have proposed expansion of existing systems into commons areas, and a "Satellite System Management Area", in which there is not presently a water system nor the likelihood of extending an existing system in the near future. In these areas the following priorities shall be applied by Pierce County and DOH:

Interim Satellite System Management Areas - Extension of Service

1. When a need for new public water service is identified in an area for which the assignment of a designated future service area is pending; the Lead Agency shall identify the purveyors having a declared interest in future service in that geographical area either through an extension of an existing system or through temporary satellite system operation, and which have a written plan to extend service to an area from an adjacent system.

2. The Applicant for service shall be provided a list of qualified purveyors.

3. The Applicant shall obtain, from the qualified purveyors, proposals which include description of new facilities, fire flow compliance, schedule, and cost.

4. The Applicant shall select from the proposals and notify the Lead Agency and DOH, in writing, attaching a copy of the selected proposal. If the Lead Agency or DOH determines that the proposal does not meet the requirements of State law, County ordinance, the Coordinated Water System Plan, or the Comprehensive Land Use Plan it may be rejected by written notice and the Applicant will be referred to the qualified purveyors for revised proposals.

5. If a purveyor and applicant notify the Lead Agency, in writing, that the purveyor is in a position to begin construction of capital facilities and that a designation of future service area is required, the Lead Agency shall notify adjacent purveyors and determine if a service are agreement can be reached. If not, the matter will be referred to the Water Utility Coordinating Committee (WUCC). The WUCC shall determine whether the need is valid and shall take one of the following actions:

    a. Direct the Lead Agency to continue negotiations to reach an agreement with adjacent purveyors.

b. Establish a process within the Committee to resolve the service area among the purveyors.

c. Refer the request to DOH for formal resolution.

6. If the proposal is approved, the Applicant shall enter into a contract for water service with the selected purveyor.

7. A new water system is installed only if this alternative is approved by DOH.

Satellite System Management Areas

1. The County Lead Agency determines adjacent utilities and prequalified Satellite System Management Agencies and provides a list of theses to the applicant for service.

2. The applicant shall obtain proposal for water service from the list of prequalified purveyors, select the preferred alternative and submit a notice of selection to the County's Lead Agency for filing.

3. The applicant shall enter into a contract with the selected purveyor.

4. The County Lead Agency shall modify the service area records in accordance with Step 3.

WATER SERVICE AREA AGREEMENT

This agreement made and entered into this 21st day of February 19 91, by and between the City of Sumner, Washington, a municipal corporation for and in behalf of its Water Utility and the Mountain View-Edgewood Water Company, witnesseth, that;

WHEREAS, the City of Sumner and the Mountain View-Edgewood Water Company, are both in the business of providing water service to customers within their respective service areas or/as authorized by the Pierce County Coordinate Water System Plan, and:

The authority for this Agreement is granted by the Public Water System Coordination Act of 1977, Chapter 70.116 RCW.

WHEREAS, Such an Agreement is required in WAC 248-56-730, Service Area Agreements-Requirement, of the Public Water System Coordination Act; and,

WHEREAS, Designation of retail water service area, together with the cooperation of utilities, will help assure that time, effort, and money are best used by avoiding unnecessary duplication of service; and,

WHEREAS, Definite future service areas will facilitate efficient planning for, and provision of, water system improvements within Pierce County as growth occurs; and,

WHEREAS, Definite retail and wholesale utility planning areas will help assure that water reserved for public water supply purposes within Pierce County will be utilized in the future in an efficiently planned manner,

NOW THEREFORE, in consideration of the mutual benefits to be derived,

The undersigned utilities acknowledge that the map(s) identifying their service area boundaries, dated December 4, 1990, and included as Attachment A to this Agreement, identify the water system's future service area.

It is understood that utilities may initally continue existing water service within the boundaries of neighboring utilities, service area boundary hereof. Such common service areas, if they exist, are described in Attachment B to this Agreement. The undersigned parties agree that any water line for retail service extending outside of the retail service area boundary,. shall ultimately be phased out and service transferred to the designated adjacent utility on an economic basis or by mutual agreement. The terms of the transfer of a common service area shall be established in a seperate agreement.

If, at some time in the future it is in the best interest of the undersigned parties to make service area boundary adjustments, such modifications must be by written concurrence of all involved utilities and the proper legislative authority(ies), and must be noted and filed with the designated Pierce County lead agency and the Washington State Department of Health.

IT IS FURTHER AGREED that both the City of Sumner and the Mountain View-Edgewood Water Company have or will have, water system facilities near or adjacent to the above described boundary. The facilities, if compatable, may be interconnected so as to be mutually beneficial to both parties of this Agreement. The City of Sumner agrees that after the completion of such interconnection, if the Mountain View-Edgewood Water Company needs additional water in the Mountain View-Edgewood Water Company service area that can be supplied by the Fife system, the City of Sumner will make water available to the Mountain View-Edgewood Water Company. The Mountain View-Edgewood Water Company agrees that after the completion of such interconnection, if the City of Sumner needs additional water in the Sumner service area that can be supplied by the Mountain View-Edgewood Water Company system, the Mountain View-Edgewood Water Company will make water available to the City of Sumner.

IT IS FURTHER AGREED that if either the Mountain View-Edgewood Water Company or the City of Sumner requests water from the other Water Purveyor, water will be made available only to the extent that water is available and at rates to be established at the time of connection. It is understood that only excess water from either system will be available to the other Water Purveyor and only for emergency conditions. Neither the City of Sumner, nor the Mountain View-Edgewood Water Company will be liable to the other for the failure to supply water pursuant to this agreement at any point in time.

IT IS FURTHER AGREED that each party in this agreement shall prepare, at its own cost, or by the costs established in a seperate agreement, the facilities necessary to provide the interconnection, but the interconnection shall not be made operative until each party agrees to the final operating procedures. This agreement shall remain in full force and effect until terminated by either party upon not less than one year advance written notice to the other party.

IN WITNESS WHEREOF, the parties hereto have executed this agreement as of the date and year first herein stated.

MOUNTAIN VIEW-EDGEWOOD WATER CO.

by James A. Wilson
Title President

Attest:
Edward L. Barth
Title Vice Pres.

Approved:
Beverly H. Strodtz
Title Secretary

Approved:
Robert S. Taylor
Manager

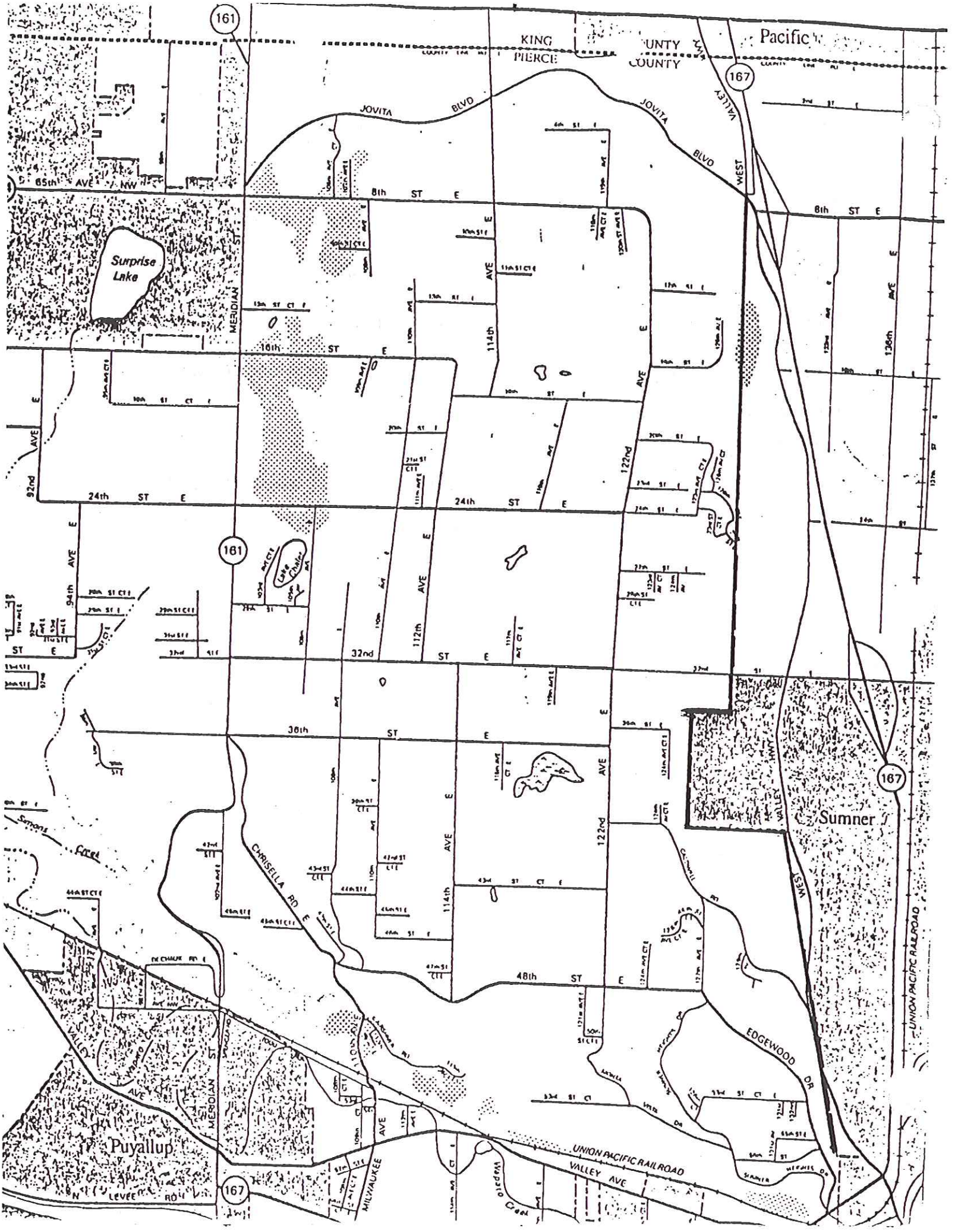
CITY OF SUMNER

by
Mayor

Julie E. McKee
City Clerk

Director-Public Works

Approved as to form & legality
City Attorney


KING
COUNTY
PIERCE
COUNTY
Pacific
161
167
JOVITA BLVD
JOVITA BLVD
VALLEY
WEST
65th AVE NW
8th ST E
8th ST E
Surprise Lake
MERIDIAN ST
16th ST E
114th AVE E
122nd AVE E
136th AVE E
92nd AVE E
24th ST E
24th ST E
161
Lake Charles
94th AVE E
112th AVE E
32nd ST E
36th ST E
122nd AVE E
VALLEY HWY
Sumner
Simons Road
CARISELLA RD E
114th AVE E
48th ST E
EDGEWOOD DR
WEST
UNION PACIFIC RAILROAD
Puyallup
MERIDIAN ST
VALLEY AVE
N LEVEE RD
167
MILWAUKEE
UNION PACIFIC RAILROAD
VALLEY AVE

AGREEMENT

THIS AGREEMENT made and entered into this 3rd day of October, 1989, by and between the CITY OF SUMNER, a Municipal Corporation, hereinafter referred to as "City", and WEBSTONE WATER DISTRICT, hereinafter referred to as "Webstone",

WITNESSETH:

WHEREAS, the City is the owner and operator of a water system and is engaged in the distribution of water to consumers in the City of Sumner and areas adjacent thereto; and

WHEREAS, Webstone is the owner and operator of a water system in Pierce County and is engaged in supplying water to consumers in Pierce County in an areas adjacent to the City; and

WHEREAS, Webstone desires to obtain a source of water, and the City is willing to furnish the requirements of Webstone, subject to the terms, conditions and limitations hereinafter set forth.

NOW, THEREFORE, for and in consideration of the mutual benefits to be derived therefrom, it is now mutually agreed as follows:

1) This Agreement shall be effective upon completion of construction of a water main connecting the Webstone Water District to the City of Sumner Water System.

2) The term of this Agreement shall be ten (10) years commencing January, 1990, and reviewed on an annual basis. The City shall be the primary source of water for the duration of the contract.

3) The water to be furnished hereunder shall be delivered by the City to Webstone at the meter located on the intersection of 136th Avenue East and 16th Street East and/or any other future location agreed to, by both parties. Webstone shall own and maintain the meter. The City, at the expense of Webstone, shall periodically inspect and test the meter.

4) There shall be no cost to Webstone for the extension of the City water mains to the intersection of 136th Avenue East and 16th Street East and the connection to the meter at that location. There will be a one time connection fee, which will be paid as a surcharge to the bill, from the time of connection for a period of 60 months at $375.00 each month.

5) The City agrees to furnish emergency services to Webstone at cost plus 25% for overhead.

6) Water rates charged to Webstone shall not be in excess of the rate charged to any water customer of the City water system. The City shall bill Webstone on or before the 1st day of each month for all water delivered hereunder for the preceding calendar month for the water meter reading period ending during the preceding month. Payment shall be made by Webstone on or before the 15th day of each following month.

7) During the term of this Agreement, the City agrees not to disconnect the water supply of Webstone so long as Webstone complies with Chapter 13.24 (Water System) of the Sumner Municipal Code.

8) All water purchased and delivered hereunder may be used or resold by Webstone for whatever purpose it deems fit or proper; provided, that without the prior written consent of the City, Webstone shall not sell or distribute such water to customers outside of Webstone's present service area.

9) The amount of water supplied to Webstone shall not exceed 0.75 million cubic feet per month and/or 6 million cubic feet per year without written authorization from the City. The City shall use reasonable diligence and care to provide a regular and uninterrupted supply of water to Webstone, and to avoid any shortage of water, or any loss or damage resulting therefrom, occasioned in whole or in part by any cause beyond the reasonable control of the City.

10) The City will endeavor to maintain a pressure of not less than seventy (70) pounds per square inch at the point of delivery specified herein, but assumes no responsibility or obligation with respect thereto.

11) Webstone shall be exempt from maintenance and repair costs on all supply lines (mains) between the City water system and the Webstone meters.

12) Without the prior written consent of the City, neither this Agreement nor any interest therein, nor any claim arising hereunder, shall be transferred or assigned by Webstone. Subject to the foregoing, this Agreement shall bind and inure to the benefit of the successors and assigns of the parties hereto.

13) All new hook-ups to the Webstone System shall be charged a General Facility Charge, as outlined in Chapter 13.24 (Water System) of Sumner Municipal Code and forthwith pay the same to the City of Sumner.

14) All plans for new commercial and industrial hook-up to the Webstone System, shall be reviewed and approved by the City of Sumner Public Works Department for compliance of cross connection control requirement.

IN WITNESS WHEREOF the parties have set their hands and seals the day and year first above written.

CITY OF SUMNER

By: _____
Mayor

Attest:

By: Kathleen L. Clayton
City Clerk

WEBSTONE WATER DISTRICT

By: _____
Commissioner

By: _____
Commissioner

By: _____
Commissioner

Approved as to form:

By: _____
City Attorney

NW052007

AGREEMENT

THIS AGREEMENT made and entered in this 1st day of December, 2003, by and between GARY G. PETERSEN and ARLENE J. PETERSEN, husband and wife (hereafter referred to as "PETERSEN") and the CITY OF SUMNER, a municipal corporation (hereinafter referred to as "CITY").

WHEREAS, PETERSEN is the owner of property which contains a water well which produces a sufficient amount of water available for municipal use; and

WHEREAS, the CITY annexed portions of its Urban Growth Area in North Sumner in 1995 and 1997 that encompasses properties owned by PETERSEN and were in need of adequate water infrastructure to allow development of said properties; and

WHEREAS, the CITY constructed a 2.0 million gallon reservoir north of Forest Canyon Road and east of the East Valley Highway together with transmission mains to make available adequate fire flows for development of properties in North Sumner; and

WHEREAS, the CITY owns a water utility and is in need of acquiring a water well and water rights for long term water production; and

WHEREAS, PETERSEN desires to sell and CITY desires to purchase the above-described water well and water rights;

NOW, THEREFORE, IN CONSIDERATION OF THE MUTUAL PROMISES AND THE MUTUAL BENEFITS TO BE DERIVED THEREFROM, it is hereby agreed as follows:

1. PETERSEN represent that they are the owners of the water rights, Certificate record No. Vol. 5, Page 2151-A a 408 ft. deep well with a 12-inch steel casing together with pump, piping, valves, electrical service, pressure tank and well house, commonly known as the Dieringer School Well and the property identified as Lot 11 of White River Garden Tracts, Section 7, Township 20 North, Range 5 East W.M.

2. CITY represents that it has constructed a new 2.0 million gallon reservoir off Forest Canyon Road above the East Valley Highway together with transmission mains that provide domestic potable water and adequate flow rates and quantities to provide sufficient fire flows to allow development of properties owned in North Sumner.

3. PETERSEN agrees to sell to the CITY the Dieringer School well, herein described together with pump, well house and appurtenances and to execute the bill of sale for said transfer as attached hereto as Exhibit "A". PETERSEN further agrees to execute an ingress/egress agreement allowing the CITY access to and use of the well. Said ingress/egress and permanent easements are attached hereto as Exhibits "B1" and "B2". The boundary of the permanent easement around the well corresponds with the boundary of the well head protection

area described in the Restrictive Covenant executed by PETERSEN in March, 1998 and recorded in Pierce County, State of Washington, Recording No. 9803090067, Book 1459, Page 1046-1048. Said covenant shall remain in effect as long as the well is used as a supply of potable water by the CITY. The Dieringer School well is currently being serviced by electrical power charged on Petersen's meter. Within thirty (30) days of the date of this Agreement the CITY agrees to arrange for a separate meter (or deduct meter) so that the power needed for the subject well may be charged to and paid for by the CITY and the CITY shall hold Petersen harmless from all charges for power for the subject well. The CITY shall also reimburse Petersen for all power used by the City to date for water pumped from the well.

4. PETERSEN represents that they are the owner of the 8-inch ductile iron water main that served as the fire line for the Dieringer School and PETERSEN sells this water main with appurtenances to the CITY for use as a water supply main for the Dieringer School well being purchased by the CITY to convey this water supply to the CITY's new 2.0 million gallon water reservoir. A copy of said sales agreement is attached hereto as Exhibit "A".

5. In consideration of the purchases stated in paragraphs No. 3 and No. 4 above, the CITY waives permit fees, system development charges and service line and water meter costs relating to water service for development of the property owned by and being developed by PETERSEN, their direct descendants, or entities of which a majority of the shares or units are owned by PETERSEN or their direct descendants (the Petersen Controlled Group), as listed and shown in Exhibit "C" to this agreement.

6. As final consideration for the purchase of said well with well house and appurtenances, water rights, and permanent easement around said facilities, the CITY shall supply water free of charge, not to exceed 6 acre-feet of water annually, to certain properties described in Exhibit "D" as long as they are owned by PETERSEN, their direct descendants, or entities of which a majority of the shares or units are owned by PETERSEN or their direct descendants (the Petersen Controlled Group). This consideration shall begin as of the date of this agreement and shall terminate on December 31, 2040. Water consumed that exceeds 6 acre-feet per year will be charged at the rates in effect at that time.

7. If the CITY finds it in their best interest to build a new well house, it shall notify PETERSEN of their intent and CITY shall give the right of final approval to PETERSEN as to the architectural character, size and orientation of the building prior to completing any design. Such approval shall not be unreasonably withheld.

8. PETERSEN shall neither conduct nor permit any activity on PETERSEN'S property that impairs the CITY's rights and use of these facilities under this agreement or damages the well and it is understood by the parties that PETERSEN will continue to make use of its existing property.

9. PETERSEN has allowed the CITY full access and use of the facility to determine its value and use. PETERSEN makes no representations or warranties concerning the quality, quantity, nature of or suitability of the water right, well, well water or real property for the purposes contemplated by this agreement.

10. CITY shall indemnify and hold PETERSEN and its Controlled Group harmless from any and all liability that may be occasioned by or arise out of this agreement, or any use to which the well, water or water right may be put as a result of this agreement.

11. This agreement shall be binding on the heirs, assigns and successors in interest of the parties hereto, and the obligations hereunder shall run with land.

12. Arbitration.

(a) Any dispute arising out of this Agreement shall be settled by arbitration by the Washington Arbitration and Mediation Service (WAMS), using a single arbitrator. The fact or and content of any arbitration proceeding (including any award thereon) shall be confidential and neither party may disclose the same without the consent of all parties to the arbitration, except that judgment on the award my be filed as provided in WAMS' rules or those of the courts of the State of Washington. Prior to arbitration the parties shall mediate the dispute in good faith with a mediator chosen by them or, in the absence of agreement, chosen by the arbitrator.

(b) The prevailing party in any arbitration proceeding or related legal proceeding shall recover its reasonable attorneys' fees and other costs incurred in that action or proceeding, in addition to any other relief to which it may be entitled, to include without limitation its share of the arbitrator's fees, WAMS' administrative fees and any other amounts incurred in connection therewith. The venue for any proceeding hereunder shall be Pierce County, Washington.

(c) No demand for arbitration may be made after the date when institution of legal or equitable proceedings based on such claim, dispute or other matter in question would be barred by the applicable statute of limitations.

(d) All questions relating to the arbitrability of any dispute shall be decided by arbitration in the same manner and with the same effect as all other controversies that may arise hereunder.

(e) No suit at law or in equity based on a dispute subject to arbitration may be instituted by any party except to enforce the arbitrator's award. Any party bringing a suit barred by this provision shall pay all fees and costs incurred therein (or in any appeal, etc.) by all other parties to such suit, including without limitation, reasonable attorneys' fees and costs.

IN WITNESS WHEREOF, the parties have executed this agreement the day and year first above written.

CITY OF SUMNER

Barbara, Skinner, Mayor

Gary G. Petersen

Andrew Neiditz, City Administrator

Arlene J. Petersen

Attest:

Susan Clary, City Clerk

As to Form:

Patricia Bosmans, City Attorney

STATE OF WASHINGTON)
)ss.
COUNTY OF PIERCE)

On this day personally appeared before me GARY G. PETERSEN and ARLENE J. PETERSEN, to me known to be the individuals described in and who executed the within foregoing instrument, and acknowledged that they signed the same as their free and voluntary act and deed, for the uses and purposes therein mentioned.

GIVEN under my hand and official seal this 5 day of December, 2003.

NOTARY PUBLIC in and for the State of Washington, residing as Puyallup
Commission Expires: 9-7-05

AGREEMENT

THIS AGREEMENT made and entered into this 16th day of June, 1989, by and between the CITY OF SUMNER, a Municipal Corporation, hereinafter referred to as "City", and FOWLER MUTUAL WATER COMPANY, hereinafter referred to as "Fowler",

WITNESSETH:

WHEREAS, the City is the owner and operator of a water system and is engaged in the distribution of water to consumers in the City of Sumner and areas adjacent hereto; and

WHEREAS, Fowler is the owner and operator of a water system in Pierce County and is engaged in supplying water to consumers in Pierce County in an area adjacent to the City; and

WHEREAS, Fowler desires to obtain a source of water to supplement its supply, and the City is willing to furnish the requirements of Fowler, subject to the terms, conditions and limitations hereinafter set forth.

NOW, THEREFORE, for and in consideration of the mutual benefits to be derived therefrom, it is now mutually agreed as follows:

1) This Agreement shall be effective upon completion of construction of a water main connecting the Webstone Water District to the City of Sumner water system. This Agreement shall be null and void if the connection is not made or approval of a grant by DSHS is not received before June 1, 1991.

2) The term of this Agreement shall be seven (7) years commencing June 1, 1991.

3) The water to be furnished hereunder shall be delivered by the City to Fowler at the meter located on 136th Avenue East and 16th Street East. Fowler shall own and maintain the pressure valve and meter. The City, at the expense of Fowler, shall periodically inspect and test the meter not more often than once every two years.

4) There shall be no cost to Fowler for the extension of City water mains. Fowler shall be exempt from City ordinances except those affecting the water rate of supplemental supply. There shall be no expense to Fowler for the extension of City water mains and the connection to the meter specified in Paragraph 3.

5) Water rates charged to Fowler shall not be in excess of the rate charged to any water customer of the City water system.

The City shall bill Fowler on or before the 1st day of each month for all water delivered hereunder for the preceding calendar month for the meter reading period ending during the preceding month. Payment shall be made by Fowler on or before the 20th day of each billing month.

6) During the term of this Agreement, the City agrees not to disconnect the water supply of Fowler so long as Fowler complies with Chapter 13.24 (Water System) of the Sumner Municipal Code.

7) All water purchased and delivered hereunder may be used or resold by Fowler for whatever purpose it deems fit or proper; provided, that, without the prior written consent of the City, Fowler shall not sell or distribute such water to customers outside of Fowler's present service area.

8) Fowler shareholders who desire to connect to the City water system shall be charged the hookup fees in effect on the date of the connection.

9) The amount of water supply shall not unfairly be limited by the City. The City shall use reasonable diligence and care to provide a regular and uninterrupted supply of water to Fowler, and to avoid any shortage or interruption of delivery thereof. The City shall not be liable for any failure, interruption or shortage of water, or any loss or damage resulting therefrom, occasioned in whole or in part by any cause beyond the reasonable control of the City.

10) The City will endeavor to maintain a pressure of not less than seventy (70) pounds per square inch at the point of delivery specified herein, but assumes no responsibility or obligation with respect thereto.

11) In the event Fowler chooses to sell and receives a bona fide offer to purchase the water system during the term of this Agreement, if such offer to purchase shall be satisfactory to Fowler, Fowler agrees to give to the City the privilege of purchasing the water system at the price and on the terms of the offer so made, said privilege to be given by a written notice sent to the City by registered or certified mail requiring the City to accept it in writing and to sign a suitable form of contract of purchase within the period of thirty (30) days after the mailing of such notice. In the event of the failure of the City to accept such offer to purchase or sign such contract within the said period, then and in that event, the privilege to the City herein shall thereupon be null and void and Fowler shall be at liberty to sell the water system to another person, firm or corporation.

12) Fowler shall be exempt from maintenance and repair

costs on all supply lines (mains) between the City water system and the Fowler meter on 16th Street East and 136th Avenue East.

13) Without the prior written consent of the City, neither this Agreement nor any interest therein, nor any claim arising hereunder, shall be transferred or assigned by Fowler. Subject to the foregoing, this Agreement shall bind and inure to the benefit of the successors and assigns of the parties hereto.

IN WITNESS WHEREOF the parties have set their hands and seals the day and year first above written.

CITY OF SUMNER

By: _____
Mayor

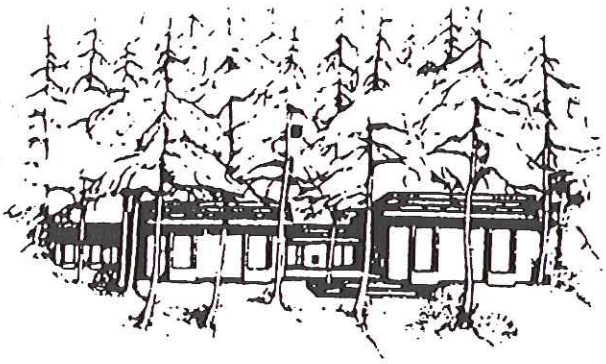
Attest:

_____
City Clerk

FOWLER MUTUAL WATER COMPANY

By: _____
President

By: _____
Secretary



The City of Bonney Lake

P.O. Box 7380
19306 Bonney Lake Boulevard
Bonney Lake, Washington 98390
(206) 862-8602

January 7, 1991

JAN 8 1991

Mr. Kenneth W. Kinared, Vice President
Land Acquisition/Development
Henderson Homes
2223 - 112th Avenue N E
P. O. Box 3866
Bellevue, WA 98009

RE: Lakeland Hills Development Water Service

Dear Mr. Kinared:

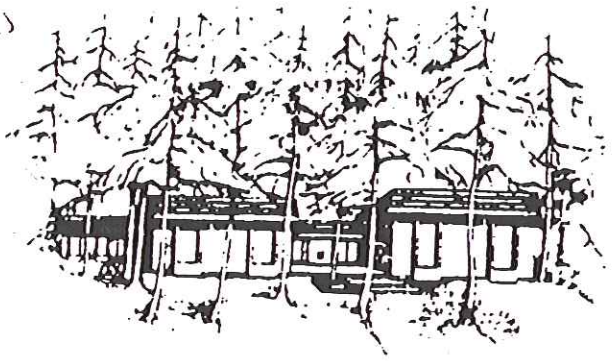
I am writing this letter to confirm that the City of Bonney Lake is willing to serve the areas of your proposed development that lie within our water service area. Areas of your development that are outside our service area could be served by Bonney Lake if the service area boundary lines are adjusted.

The conditions for service from Bonney Lake would be per the findings in the study titled "Water System Master Plan for Future Development of Lakeland Hills North and Vicinity" dated May 21, 1990, revised June 29, 1990, revised September 5, 1990, performed by Gray and Osborne, Inc.

I hope that this addresses your concerns.

Sincerely,

Richard A. Meuschke
Public Works Director



The City of Bonney Lake

P.O. Box 7380
19306 Bonney Lake Boulevard
Bonney Lake, Washington 98390
(206) 862-8602

January 5, 1990

Terry W. Ward
Gray & Osborne, Inc.
P. O. Box 2069
Yakima, WA 98907

Dear Terry:

We have an executed Developer Agreement for the Lakeland Hills South which authorizes the City to proceed with the development of a Master Plan for Water Service to Lakeland Hills So., as well as an intertie with the City of Auburn.

The scope of work is as outlined in your letter of January 2, 1990, at a cost of $9,515.69.

This letter will serve as your authority to proceed with this work on behalf of the City.

Sincerely,

Vern Strong
Mayor

Attachment: G. & O. Letter of 1-2-90

cc: Ken Kinared/Henderson Homes

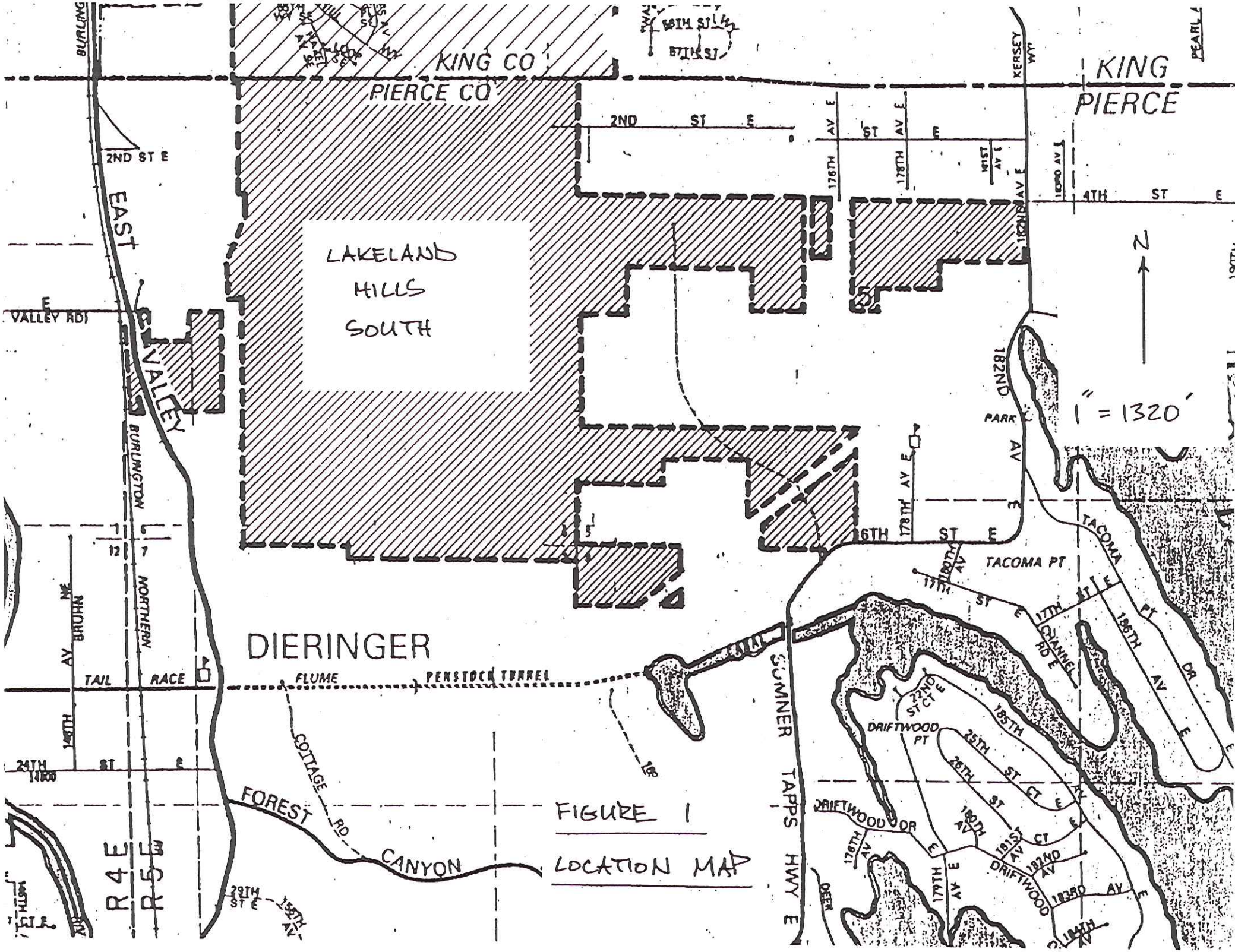


FIGURE 1

LOCATION MAP

WATER SERVICE AGREEMENT
Between
FOWLER MUTAL WATER COMPANY
And
CITY OF SUMNER, WASHINGTON

THIS AGREEMENT, entered into this 2nd day of July, 2001 by and between **FOWLER MUTUAL WATER COMPANY** a non-profit corporation formed under the laws of the State of Washington (hereinafter, Fowler), and the **CITY OF SUMNER,** a municipal corporation organized under the laws of the State of Washington, (hereinafter, the City).

WITNESSETH; that

WHEREAS, Fowler is a mutual water company governed by the provisions of RCW 24.06 with approximately 34 members located in Pierce County, Washington, which serves the area legally described in **Exhibit "A"** which is attached hereto and incorporated herein by reference, said area and boundary is also set forth on the map attached hereto marked **Exhibit "B"** and by this reference incorporated herein; and

WHEREAS, Fowler incorporated on May 6, 1949 and filed articles of incorporation with the Secretary of State of the State of Washington and said articles are recorded in said office in book 447 at pages 314-318, Domestic Corporations. The purpose of the corporation is to provide adequate water service to its members and in so doing, to have the power to acquire all necessary facilities for the furnishing of water to its members, and

WHEREAS, the by-laws of the Fowler Mutual Water company provided for 80 shares. The source of water is a spring on the hillside above the West Valley Highway. This spring produces 15 gallons per minute that translates into 270 gallons per day per share, and

WHEREAS, The Fowler Mutual Water Company entered into an agreement with the City of Sumner, dated June 16, 1989, with a term of seven years from the effective date of June 1, 1991 for the City of Sumner to supply water to Fowler under certain conditions, and whereas Sumner has continued service to this date under the terms of the agreement, and

WHEREAS, the City of Sumner annexed the north Sumner area in 1995 that includes all of the service area of the Fowler Mutual Water Company except the area west of the West Valley Highway and the shareholders and customers living on the north side of 16th Street East, east of Manke Lumber, that lie within the Urban Growth Area (UGA) of Sumner. The area west of the West Valley Highway lies within the incorporated limits of Edgewood, and

WHEREAS, all the parcels within the Fowler Mutual Water Company and within the city limits and the UGA of Sumner are zoned M-1, industrial and many of these property owners

desire to develop their property and the existing water service is inadequate to meet the needs of that development,

WHEREAS, the Board of directors of Fowler believe it to be in the best interest of Fowler's members to receive direct water service from the City which will improve their fire protection service and respond to the concerns that will arise in the future, including meeting supply and storage needs and addressing new water quality standards, and

WHEREAS, the City has conducted a study of the water service needs, which survey indicated that it is feasible for the City to provide such service within the framework of the City's exiting ordinances for water service; and the City has evaluated the existing distribution system of Fowler and finds it has no value as a part of the City's water distribution system and that all new mains and services need to installed to serve the Fowler service area.

NOW, THEREFORE, for and in consideration of the mutual benefits to be derived, it is now agreed as follows:

1.) Fowler will transfer by bill of sale its water system with appurtenances, and transfer its records, billing accounts, and plans/drawings of the system.

2. All accounts receivable of Fowler shall by this agreement be assigned to the City on the date of closing. Any adjustments to an account based on credits due a member shall be the responsibility of Fowler. Fowler shall provide the city with its membership account information

3.) Fowler will take whatever action is appropriate and permitted by law to transfer its easements, permits and franchises to the City.

4.) The City shall provide service in accordance with Chapter 13.24 of the Sumner Municipal Code (herein "SMC") as now enacted or as may be later amended, subject to all terms and conditions thereof, within the area described in **Exhibit B.**

5.) Sumner has issued permits to developers of land within Fowler, with Fowler's permission, east of the Union Pacific Railroad between 24th Street E. and 16th Street E. to the Stuck River. As a condition of development, new water mains will be installed to serve these developments and the existing customers of Fowler. Services will be installed to the property line for all properties and customers of Fowler and their services will be reconnected to the new system.

6.) Sumner has formed Utility Local Improvement District No. 73 by Ordinance 1948, on March 19, 2001 to finance the installation of new water mains to all properties located west of the UPRR. Upon completion of this project, all existing customers of Fowler will be reconnected to the new mains.

7.) The City shall furnish water to the members of Fowler in accordance with the rates set from time to time by ordinance for all customers directly served inside or outside the City.

8.) In consideration for the expense of constructing new water services and meters for 54 customers, Fowler will deed to the City the one-acre parcel of land, parcel No. 04-20-11-5-001 by warranty deed together with any structures and improvements and the water rights to the spring. The warranty deed is attached as **Exhibit "C"**. The ingress/egress easement to access the property from West Valley Highway is attached as **Exhibit "D".**

9.) Sumner shall furnish each Fowler customer a packet of information at the time of transfer that includes the current water rates and the terms of service and general information such as names and phone number of people within the city to call regarding water service questions.

10.) Sumner and Fowler mutually agree to execute a, "Change in Service Area Boundary" and file said agreement with the Water Programs Division of the Department of Public Works of Pierce County for a change in the Coordinated Water System Plan. Said agreement letter and map are attached as **Exhibit "E"** and incorporated herein by this reference.

11.) The City's Water Utility operating personnel and equipment shall be made available to render ordinary and emergency and repair on the same basis and to the same standards enjoyed by all other customers of the utility.

12.) Any future water connections to properties within the Fowler service area and/or to shareholders of Fowler after execution of this agreement, except as set forth in paragraph 8 of this agreement, shall be in accordance with the SMC including the cost of permits, construction of services and system development fees.

13.) Members of Fowler shall not be subjected to special charges or assessments for upgrading the system, provided that the City is not precluded from creating local improvement districts in accordance with State Law.

14.) The transfer of Fowler's water system and properties is governed by the provisions of Chapter 24.06 RCW. In authorizing its officers to enter into this agreement, the Board of Directors of Fowler agrees to approve of this agreement and to submit it to a vote of its members. This agreement shall not be effective unless and until approved by the membership of Fowler.

15.) It is understood that at such time as Fowler transfers its assets to City as set forth in paragraph 1 and 8, it may not have any assets to respond to any claims or liabilities except those cover by insurance. Fowler will carry general comprehensive liability insurance coverage (with occurrence type coverage) up to the transfer effective date (assuming transfer is approved by its membership), and will continue to carry directors and officers insurance coverage (a claim made type policy) until such time as the

applicable statutes of limitations has run on any potential claims. It is the City's position that this being strictly as asset transfer, City is not liable of any claims against Fowler or its officers or employees that resulted from any action or occurrence prior to the transfer effective date. Any and all claims of potential claims (in access of $1,000 and $10,000 aggregate) against Fowler shall be identified in its financial statement, a copy of which shall be provided to City at least 10 days prior to City's taking this agreement to the Sumner City Council for approval.

16.) The City shall not be responsible for the application of any funds or assets of Fowler from whatever source derived, except as otherwise expressly stated in this agreement from whatever source derived, except as otherwise expressly stated in this agreement, nor for any tax liability or any sort assessed or levied thereon or arising out of the transactions and/or conveyances contemplated or required by this agreement except as provided herein.

17.) Parties agree and stipulate that in the event any litigation should occur concerning or arising out of this contract, the sole venue of any legal action shall be the Superior Court of the State of Washington for Pierce County and the interpretation of the terms of the contract shall be governed by the laws of the State of Washington.

18.) Fowler shall, upon closing this agreement, permanently discontinue business and service to said area as a water company, and dissolve as may be appropriate. This agreement shall take effect on the next ensuing business day after closing.

19.) In consideration for repair work and general operation of the Fowler system in 2001, Fowler will submit to the City all remaining funds after all bill s are paid, but no later than 90 days after execution of this agreement.

20.) Each party will designate two persons to be a part of a Transition Team whose duties will be as follows: monitor the implementation process, deal with any unanticipated infrastructure issues, and facilitate customer communications.

21.) Closing shall be no later than **June 29, 2001,** unless extended by agreement of the parties.

Date this 7th day of JUNE, 2001

Fowler Mutual Water Company

By: Carl J Hertsteiman
President, Fowler Mutual Water Company

ATTEST:

City of Sumner

By: Barbara Skinner
Barbara Skinner, Mayor of the City of Sumner

Andrew Heiditz, City Administrator

Pat Bosman
City Attorney

Notary for President of Fowler

7th of June 2001
Arlene J. Petersen
State of Washington
City of Sumner

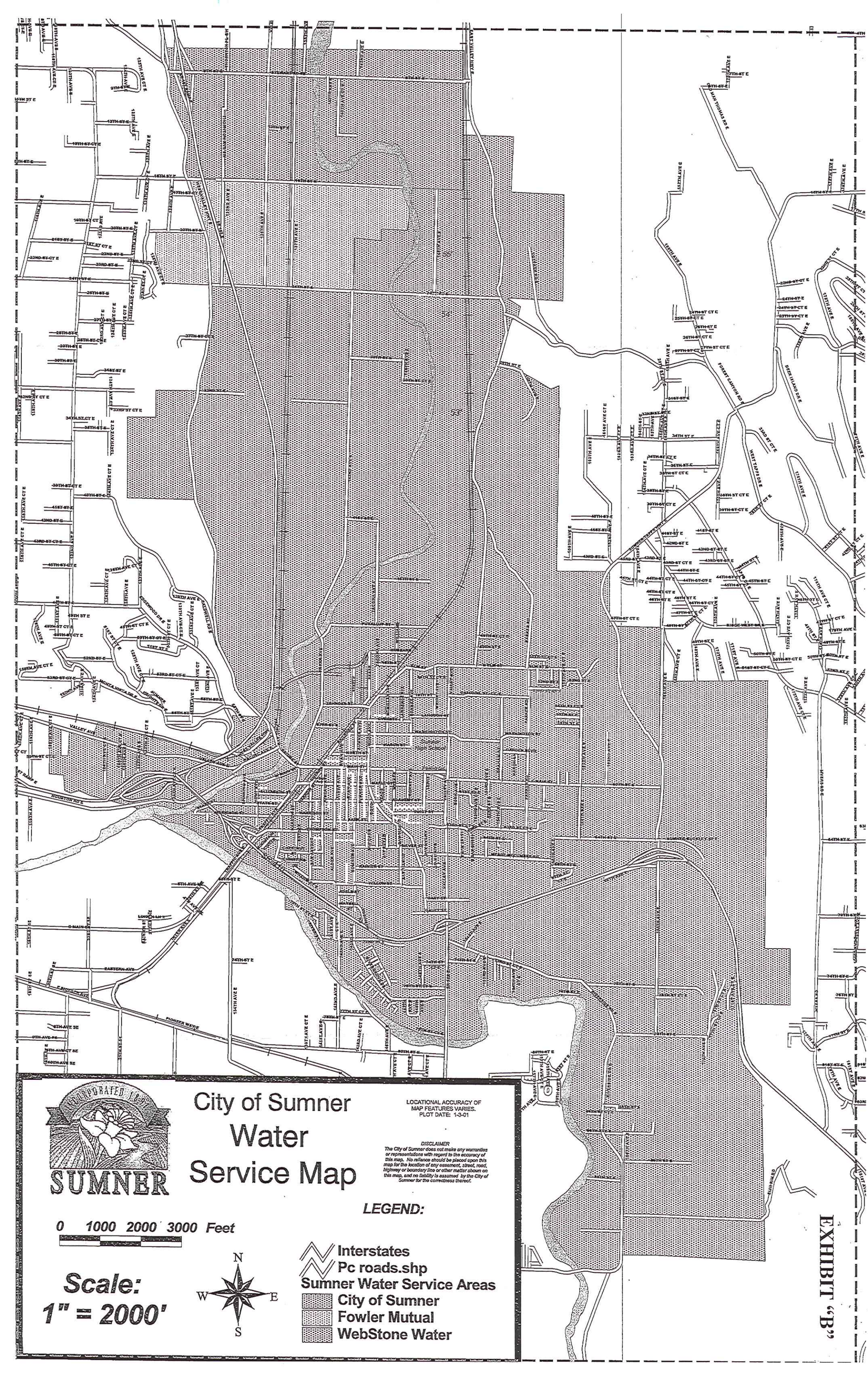
EXHIBIT A

FOWLER MUTUAL WATER COMPANY LEGAL DESCRIPTION

THOSE PORTIONS OF THE NORTHWEST AND NORTHEAST QUARTERS OF SECTION 12 AND THE NORTHEAST QUARTER OF SECTION 11, TOWNSHIP 20 NORTH, RANGE 05 EAST OF THE WILLAMETTE MERIDIAN, DESCRIBED AS FOLLOWS:

BEGINNING AT THE INTERSECTION OF THE NORTH RIGHT-OF-WAY LINE OF 16TH STREET EAST AND THE WEST BANK OF THE WHITE/STUCK RIVER, THENCE SOUTHERLY ALONG THE SAID WEST BANK TO SOUTH RIGHT-OF-WAY LINE OF 24TH STREET EAST, THENCE WESTERLY ALONG THE SAID SOUTH RIGHT-OF-WAY LINE TO THE WEST RIGHT-OF-WAY LINE OF WEST VALLEY HIGHWAY, THENCE NORTHERLY ALONG THE SAID WEST RIGHT-OF-WAY LINE TO THE TO THE SOUTH LINE OF THE NORTHEAST QUARTER OF SAID SECTION 11, THENCE WESTERLY ALONG THE SAID SOUTH LINE TO THE SOUTHWEST CORNER OF LOT 2 OF SHORT PLAT # 8103040136, THENCE NORTHERLY ALONG THE WEST LINE OF SAID LOT 2 TO THE NORTHWEST CORNER OF SAID LOT 2, THENCE EASTERLY ALONG THE NORTH LINE OF SAID LOT 2 ALSO BEING THE SOUTH RIGHT-OF-WAY LINE OF 20TH STREET EAST EXTENDED TO THE WEST RIGHT-OF-WAY LINE OF WEST VALLEY HIGHWAY, THENCE NORTHERLY ALONG THE SAID WEST RIGHT-OF-WAY LINE TO THE NORTH RIGHT-OF-WAY LINE OF 16TH STREET EAST, THENCE EASTERLY ALONG THE SAID NORTH RIGHT-OF-WAY LINE TO THE POINT OF BEGINNING.

SUBJECT TO EASEMENTS, RESTRICTIONS AND RESERVATIONS OF RECORD.


City of Sumner
Water
Service Map
LOCATIONAL ACCURACY OF MAP FEATURES VARIES.
PLOT DATE: 1-3-01
DISCLAIMER
The City of Sumner does not make any warranties or representations with regard to the accuracy of this map. No reliance should be placed upon this map for the location of any easement, street, road, highway or boundary line or other matter shown on this map, and no liability is assumed by the City of Sumner for the correctness thereof.
LEGEND:
0 1000 2000 3000 Feet
Scale:
1" = 2000'
N
W
E
S
Interstates
Pc roads.shp
Sumner Water Service Areas
City of Sumner
Fowler Mutual
WebStone Water
SUMNER
EXHIBIT "B"

RESOLUTION NO. 1045

CITY OF SUMNER, WASHINGTON

A RESOLUTION DECLARING INTENT TO SUPPORT THE CITY OF PACIFIC'S ASSUMPTION OF THE WEBSTONE WATER DISTRICT AND THE SUBSEQUENT TRANSFER OF THE DISTRICT'S SERVICE AREA IN SUMNER AND SUMNER'S URBAN GROWTH AREA TO THE CITY OF SUMNER.

WHEREAS, the Webstone Water District currently provides water utility service to property within the City of Pacific, within portions of unincorporated Pierce County, and within the City of Sumner; and

WHEREAS, the City of Pacific has annexed at least sixty percent (60%) of the assessed valuation of the real property lying within the service area of the Webstone Water District; and

WHEREAS, the City of Pacific is authorized by Chapter 35.13A RCW to assume jurisdiction and ownership of a water district's responsibilities, properties, facilities and equipment, and

WHEREAS, the City of Pacific is authorized by Chapter 35.13A RCW to assume that portion of a water district within another city's boundaries with the approval of the other city containing part of such district; and

WHEREAS, the City of Sumner will support the City of Pacific serving those Webstone connections within the City of Sumner at the time the City of Pacific assumes the entire Webstone Water District; with the understanding that the area in Sumner's UGA will be subsequently transferred upon Sumner's annexation of that area, and

WHEREAS, Webstone Water District has been unable to secure sufficient supply to serve additional connections within its service areas, and

WHEREAS, it is in the best interest of the City of Sumner to provide its own water service to the entire City of Sumner and its urban growth area,

NOW THEREFORE,

BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF SUMNER, WASHINGTON

SECTION 1. Declaration of Intent. The City Council finds that it is in the best interests of the citizens of the City of Sumner that, pursuant to Chapter 35.13A RCW, the City of Pacific assumes jurisdiction and ownership over the entire Webstone Water District's service area, and dissolves the District, with the understanding as outlined in the attached Memorandum of Agreement that the areas in Sumner and its urban growth area be subsequently transferred to the City of Sumner. The City Council hereby

declares Sumner's intent to assume such jurisdiction after the City of Pacific has assumed the entire water district and the Webstone Water District is dissolved..

SECTION 2. Authorization. The City Council authorizes the Mayor to sign the attached Memorandum of Agreement outlining the provisions of the distribution of the Webstone Water District service area between the City of Sumner and the City of Pacific.

ADOPTED AND APPROVED this 4th day of September, 2001.

Barbara A. Sumner
Mayor
City of Sumner

Attest:

Susan R. Clary
City Clerk

Approved as to form:

Pat Bosmans
Patricia Bosmans, City Attorney

SUMNER

CITY HALL
1104 Maple Street • Sumner, Washington 98390-1423
253.863.8300 • Fax: 253.863.2850 • www.ci.sumner.wa.us

MEMORANDUM OF AGREEMENT

In the matter of the City of Pacific's intention to assume the Webstone Water District as set forth in Ordinance No. 1506 adopted by the City of Pacific on August 13, 2001, the City of Pacific and the City of Sumner agree to the following:

The City of Sumner agrees as follows:

1. Sumner will continue to serve the Webstone Water System under the same terms and conditions as it does presently after the City of Pacific assumes the District until Sumner annexes its North Urban Growth Area and completes the physical disconnection of the systems and constructs emergency interties between the two systems. (Time Frame - January,2002 to March, 2002)

2. Sumner will drop its lawsuit against the Webstone Water District upon the assumption of the Webstone Water District by the City of Pacific and forego any claims Sumner may have against Webstone except any outstanding water bills for water delivered to the system by Sumner. Sumner shall keep Pacific informed of any delinquency of payment to Sumner by Webstone in the interim.(Time Frame - October, 2001)

3. The interconnection at 16th Street E. (Nyberg) and 136th Ave. E. (Valentine) shall remain as an emergency intertie. Any improvements made to the intertie as mutually agreed to by both party shall be borne equally by the parties. (Time Frame - January, 2001)

4. Sumner shall be responsible and bear all costs incurred in separating the systems in the vicinity of Stewart (8th Street E.) and Butte upon assuming that portion of the Webstone Water District system from Pacific lying within the newly annexed area (North Sumner UGA) including the construction of additional mains to reconnect loops of that portion of the system owned and operated by Pacific. (Time Frame - December, 2001 to February, 2002)

5. An 8-inch emergency intertie shall be constructed in the vicinity of Stewart (8th St. E.) and Butte Avenue. All costs associated with the intertie shall be borne equally by both parties. (Time Frame - January, 2002 to March, 2002)

The City of Pacific agrees as follows:

1. Pacific shall pursue the assumption of the Webstone Water District. (Time Frame - August, 2001 to October, 2001)

2. Pacific shall, by resolution, transfer that portion of the Webstone Water system and the service area lying within the Sumner North UGA to Sumner upon Sumner's annexation of its UGA. at no cost.(Time Frame - November, 2001 to February, 2002)

3. Pacific agrees to relinquish the service area and customers lying south of 16th Street E. and presently served by Webstone to Sumner at no cost when Sumner has completed construction of new water mains under U.L.I.D. No. 74. (Time Frame - December 2001, to January, 2002)

Both parties to this agreement fully support the efforts of the other in assuming the Webstone Water District system and their responsiblity in providing a full service water utility to their respective residents/property owners.

Barbara Skinner

Mayor Barbara Skinner
City of Sumner

9-5-01
Date

Mayor Howard Erickson
City of Pacific

Date

EXHIBIT "G"

MEMORANDUM OF AGREEMENT

In the matter of the City of Pacific and the City of Sumner supplying water and serving their respective customers of the assumed Webstone Water District system the parties agree to the following upon dissolution of the Webstone Water District as provided in Chapter 35.13A.080 RCW:

The City of Pacific will transfer by bill of sale that portion of the water distribution system of Webstone that lies within the boundaries of the City of Sumner and provide a list of the customers, service meter information, As-Builts and other documents of the dissolved District that pertain to the Sumner portion of the system within 10 days after dissolution.

Upon dissolution of the District, Sumner and Pacific shall begin the actual construction work of disconnecting the system into two system as set forth in the Memorandum of Agreement, dated September 5, 2001, within 15 days and shall complete the work within 90 calendar days.

Until the above process of separating the system is complete, Sumner shall read the service meters of its new customers and deduct the amount consumed by their customers from the amount billed Pacific as set forth in Item No. 1 of the September 5, 2001 Memorandum of Agreement.

Upon completion of the separation of the system, the two emergency interties will be metered and used to supply water, and particularly fire flows to Pacific until Pacific has completed construction of its new water reservoir, but for a term not to exceed two years. For this service, Sumner shall be paid $1.25 per each hundred cubic feet of water delivered and a monthly fee of $2,000 for standby fire flow. These rates will be increased by 4% on January 1st of each year. When the new Pacific water reservoir is on-line, the two connections will revert to emergency interties as required by the Department of Health.

CITY OF PACIFIC,

WASHINGTON

ORDINANCE NO. 1518

AN ORDINANCE ASSUMING JURISDICTION AND OWNERSHIP OVER THE WEBSTONE WATER DISTRICT'S SERVICE AREA, ASSETS, FACILITIES, RESPONSIBILITIES, PROPERTY, AND EQUIPMENT AND TO DISSOLVE THE DISTRICT; AUTHORIZING THE MAYOR TO SEEK TO ENJOIN THE DISTRICT FROM DISSIPATION OF ASSETS; AND DIRECTING THE MAYOR TO TAKE THE NECESSARY STEPS TO PROCEED WITH DISSOLUTION OF THE DISTRICT.

WHEREAS, the Webstone Water District currently provides water utility service to property within the corporate limits of the City of Pacific, within portions of unincorporated Pierce County, and within the City of Sumner; and

WHEREAS, at least sixty percent (60%) of the assessed valuation of the real property lying within the service area of the Webstone Water District is within the City of Pacific; and

WHEREAS, the City of Pacific is authorized by Chapter 35.13A RCW to assume jurisdiction and ownership of a water district's responsibilities, properties, facilities and equipment within or without of the City's boundaries, and to contract with respect to the rights, powers, duties and obligations of the City and a water district with regard to the use and ownership of property, the provision of services, the maintenance and operation of facilities, the application and use of assets, the disposition of liabilities and debts, the performance of contractual obligations, and other matters arising out of the inclusion, in whole or in part, of the water district within the City; and

WHEREAS, the City of Pacific is authorized by Chapter 35.13A RCW to assume that portion of a water district within another city's boundaries with the approval of the other city containing part of such district; and

WHEREAS, the City of Pacific has determined it has sufficient capacity and infrastructure to serve additional connections within the Webstone Water District; and

WHEREAS, the City of Pacific conducted an environmental review of the proposal as required by the State Environmental Policy Act and issued a Determination of Nonsignificance ("DNS") which became final upon August 7, 2001; and

WHEREAS, the Cities of Pacific and Sumner have entered into a Memorandum of Agreement for the service of those Webstone connections with the City of Sumner's corporate limits upon the City of Pacific's assumption of the Webstone Water District; and

WHEREAS, the City Council has reviewed these analyses and the DNS, and has determined to proceed with the assumption and dissolution of the Webstone Water District pursuant to Chapter 35.13A RCW; and

WHEREAS, the City filed an Intent to Assume the Webstone Water District with the Pierce County Boundary Review Board as required by RCW 36.93.090(2); and

WHEREAS, after public hearing on the matter, the Pierce County Boundary Review Board by unanimous opinion approved the proposal by oral vote on February 25, 2002; now, therefore,

THE CITY COUNCIL OF THE CITY OF PACIFIC, WASHINGTON, DOES ORDAIN AS FOLLOWS:

SECTION 1. Declaration of Intent. The City Council finds that it is in the best interests of the citizens of the City of Pacific that, pursuant to Chapter 35.13A RCW, the City assume jurisdiction and ownership over the entire Webstone Water District's service area, assets, facilities, responsibilities, property, and equipment, and dissolve the District.

SECTION 2. Assumption. Pacific hereby assumes jurisdiction and ownership of the Webstone Water District's service area, assets, facilities, responsibilities, property, and equipment, all pursuant to its authority under Chapter 35.13A RCW. Such assumption shall include, but not be limited to, the rights, powers, duties and obligations of the District with regard to the use and ownership of property, the provision of services, the maintenance and operation of

facilities, the application and use of assets, the disposition of liabilities and debts, and the performance of contractual obligations.

SECTION 3. Authorization to File an Injunction & Restraining Order. The Mayor or his designee is authorized to seek an injunction in Superior Court for Pierce County, seeking to enjoin Webstone Water District, and agents and employees, from taking any action which would result in the District incurring additional liabilities or dissipating existing assets, other than those actions required in the normal course of district operations, pending a final written decision by the Pierce County Boundary Review Board.

SECTION 4. Dissolution. Upon receipt of final written approval for the assumption from the Pierce County Boundary Review Board, the Mayor or his designee is directed to initiate dissolution of the Webstone Water District and to execute any necessary documents, petitions and court pleadings required to accomplish dissolution pursuant to RCW 35.13A.080.

SECTION 5. Effective Date. This ordinance, as a public emergency ordinance necessary for the protection of the public health, safety, and welfare, shall take effect and be in full force immediately upon its adoption.

ADOPTED BY THE CITY COUNCIL AT A REGULAR MEETING THEREOF ON THE 4TH DAY OF MARCH, 2002.

CITY OF PACIFIC

Howard Erickson

Howard Erickson, Mayor

City of Pacific

ATTEST/AUTHENTICATED:

Cathy Harstad-Everett

Cathy Harstad-Everett, City Clerk

Approved as to form:

_____

Bruce Disend, City Attorney

Filed with the City Clerk: 2.26.02

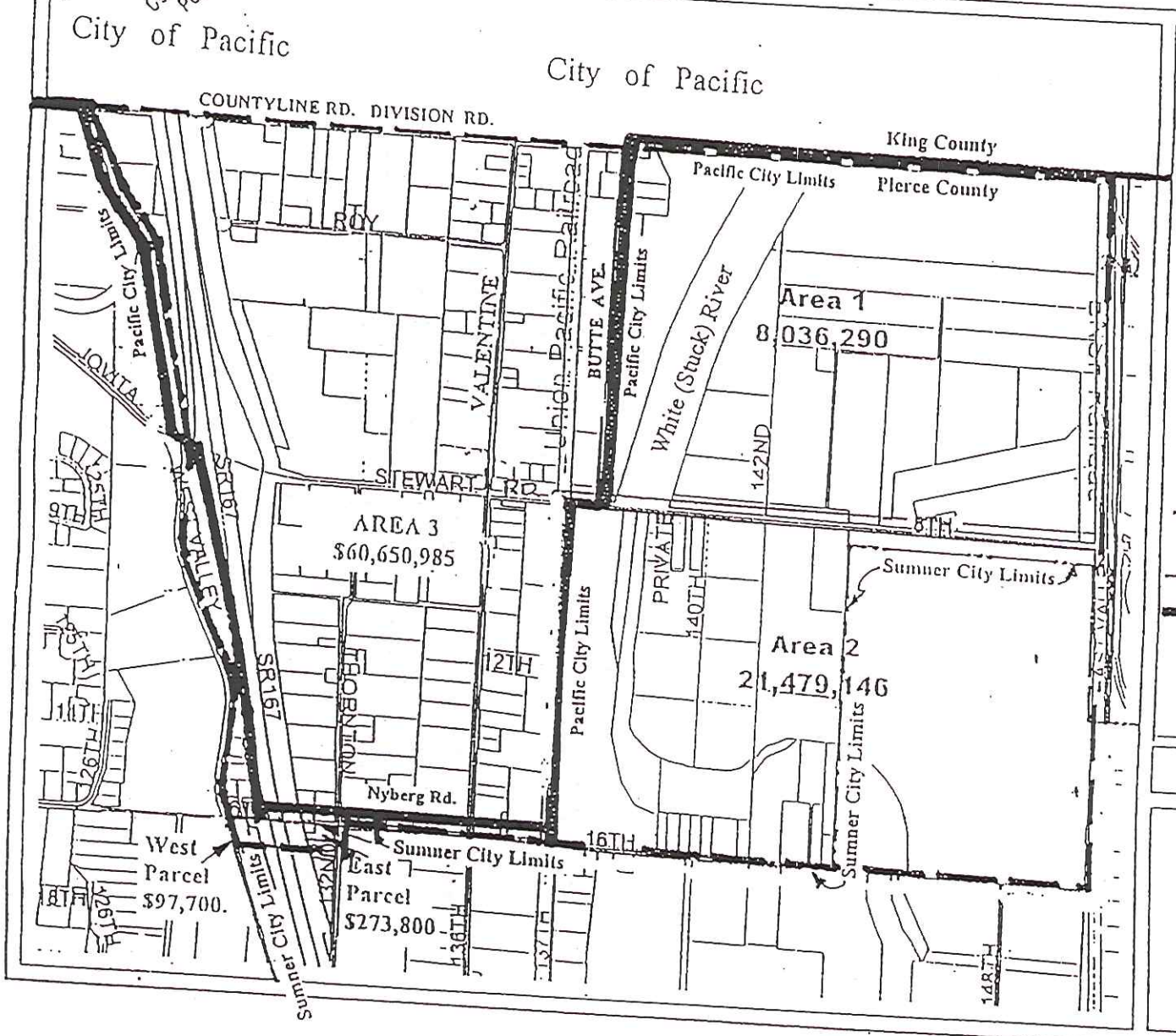
Passed by the City Council: 3.4.02

Ordinance No. 1518

Date of Publication:

Beginning at the intersection of the north line of Section 1, Township 20 North, Range 4 East, W. M. and the west line of Northern Pacific Railroad right-of-way; thence south along said west line of right-of-way to the east line of Section 1; thence south along said east line to the southeast corner of said Section 1, thence west along the south line of Section 1 and Section 2 to the northerly extension of the east line of Block 67, Pacific City Division No. 4; thence south to the southeast corner of Lot 1 of said Block 67, thence west to the southwest corner of Lot 2, Block 67; thence northerly along the east margin of Valley Avenue to the north line of Section 2, Township 20 North, Range 4 East, W.M.; thence east along the north line of Section 2 and Section 1 to the point of beginning.

CITY OF PACIFIC / WEBSTONE WATER DISTRICT ASSESSED VALUATIONS



MAP LEGEND

	$	%
AREA 1	8,036,290	8.9
AREA 2	21,479,146	23.8
AREA 3	60,560,985	67.2
TOTAL AREA	90,076,421	99.9

Railroads
Street Centerline
Public
Private
Parcels (Polygon)
Webstone Water District Boundary
Sumner City Limits
Pacific City Limits

N

7/19/01

Scale 1:14000

THIS IS NOT A SURVEY
We assume no liability.
Assessor's use only.

17:21 Jul 17, 2001

Pierce County
Assessor-Treasurer

CITY OF SUMNER AND MOUNTAIN VIEW – EDGEWOOD WATER COMPANY WATER SERVICE AREA AGREEMENT

This agreement made and entered into this 5TH day of MARCH, 2009, by and between the City of Sumner, Washington, a municipal corporation for and in behalf of its Water Utility and the Mountain View-Edgewood Water Company, witnesseth, that;

WHEREAS, the City of Sumner and the Mountain View-Edgewood Water Company are both in the business of providing water service to customers within their respective service areas or/as authorized by the Pierce County Coordinate Water System Plan, and:

The authority for this Agreement is granted by the Public Water System Coordination Act of 1977, Chapter 70.116 RCW.

WHEREAS, such an Agreement is required in WAC 246-293-250, Service Area Agreements-Requirement, of the Public Water System Coordination Act; and,

WHEREAS, designation of retail water service area, together with the cooperation of utilities, will help assure that time, effort, and money are best used by avoiding unnecessary duplication of service; and,

WHEREAS, definite future service areas will facilitate efficient planning for, and provision of, water system improvements within Pierce County as growth occurs; and,

WHEREAS, definite retail and wholesale utility planning areas will help assure that water reserved for public water supply purposes within Pierce County will be utilized in the future in an efficiently planned manner,

NOW THEREFORE, in consideration of the mutual benefits to be derived,

The undersigned utilities acknowledge that the map(s) identifying their service area boundaries, dated MARCH 4TH, 2009, and included as Attachment A to this Agreement, identify the water system's future service area.

IT IS FURTHER UNDERSTOOD that both the City of Sumner and the Mountain View-Edgewood Water Company have or will have, water system facilities near or adjacent to the boundary shown in Attachment A. The facilities, if compatible, may be interconnected so as to be mutually beneficial to both parties of this Agreement. The City of Sumner agrees that after the completion of such interconnection, if the Mountain View-Edgewood Water Company needs additional water in the Mountain View-Edgewood Water Company service area that can be supplied by the Sumner system, the City of Sumner will make water available to the Mountain View-Edgewood Water Company. The Mountain View-Edgewood Water Company agrees that after the completion of such interconnection, if the City of Sumner needs additional water in the Sumner service area that can be supplied by the Mountain View-Edgewood Water Company system, the Mountain View-Edgewood Water Company will make water available to the City of Sumner.

IT IS FURTHER AGREED that if either the Mountain View-Edgewood Water Company or the City of Sumner requests water from the other Water Purveyor, water will be made available only to the extent that water is available and at rates to be established at the time of connection. It is understood that only excess water from either system will be available to the other Water Purveyor and only for emergency conditions. Neither the City of Sumner, nor the Mountain View-Edgewood Water Company will be liable to the other for the failure to supply water pursuant to this agreement at any point in time.

IT IS FURTHER AGREED that each party in this agreement shall construct, at its own cost, or by the costs established in a separate agreement, the facilities necessary to provide the interconnection, but the interconnection shall not be made operative until each party agrees to the final operating procedures. This agreement shall remain in full force and in effect until terminated by either party upon not less than one year advance written notice to the other party.

IN WITNESS WHEREOF, the parties hereto have executed this agreement as of the date and year first herein stated.

MOUNTAIN VIEW-EDGEWOOD WATER CO.

by: Marc Marcantonio
Title GENERAL MANAGER

Attest:

Title FIELD MANAGER

CITY OF SUMNER

By: David L. Enslow
Mayor

Terri Berry
City Clerk

Director, Public Works

Approved as to form and legality:

City Attorney

ATTACHMENT A

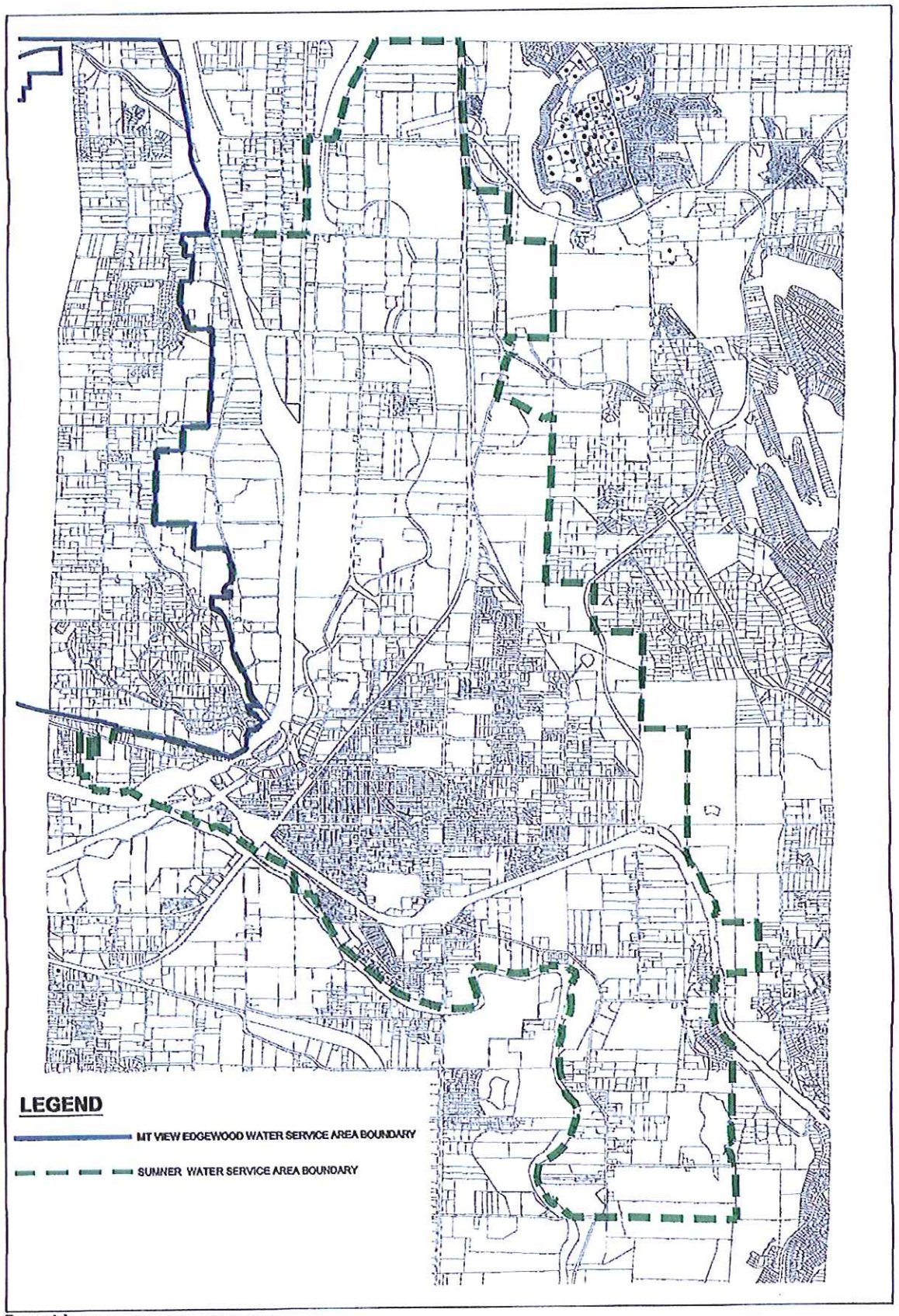


Figure 1
City of Sumner - Mt. View Edgewood Water Co.
Common Water Service Area Boundary

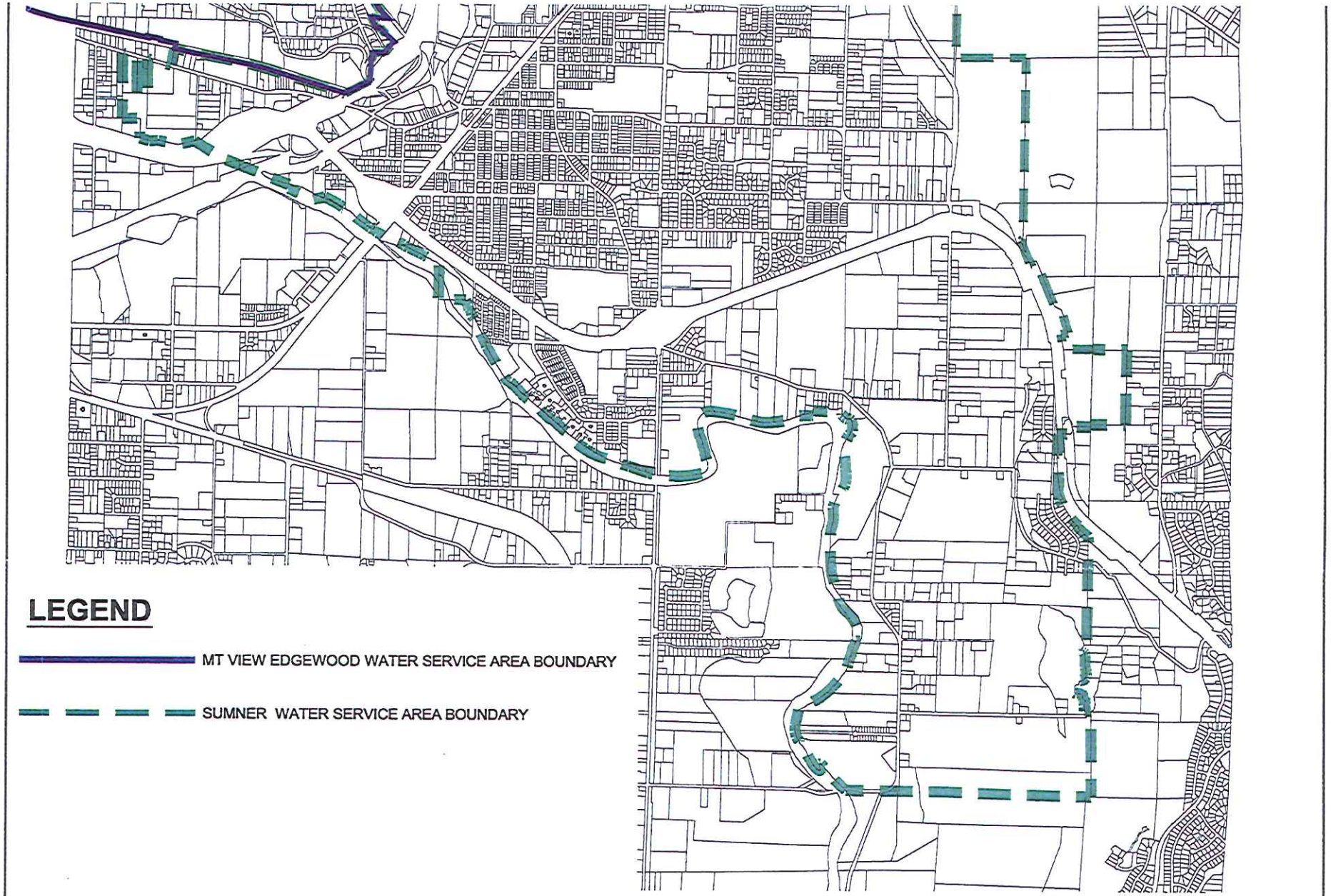


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Figure 1
City of Sumner - Mt. View Edgewood Water Co.
Common Water Service Area Boundary

WATER SERVICE AREA AGREEMENT

This agreement made and entered into this 21st day of July, 1987, by and between the City of Puyallup, Washington, a municipal corporation for and in behalf of its Water Utility and the City of Sumner, Washington, a Municipal Corporation for and in behalf of its Water Utility, witnesseth, that;

WHEREAS, the City of Puyallup and the City of Sumner, are both in the business of providing water service to customers within their respective service areas or/as authorized by the Pierce County Coordinate Water System Plan, and;

The authority for this Agreement is granted by the Public Water System Coordination Act of 1977, Chapter 70.116 RCW.

WHEREAS, Such an Agreement is required in WAC 248-56-730, Service Area Agreements-Requirement, of the Public Water System Coordination Act; and,

WHEREAS, Designation of retail water service area, together with the cooperation of utilities, will help assure that time, effort, and money are best used by avoiding unnecessary duplication of service; and,

WHEREAS, Definite future service areas will facilitate efficient planning for, and provision of, water system improvements within Pierce County as growth occurs; and,

WHEREAS, Definite retail and wholesale utility planning areas will help assure that water reserved for public water supply purposes within Pierce County will be utilized in the future in an efficiently planned manner,

NOW THEREFORE, in consideration of the mutual benefits to be derived,

The undersigned utilities acknowledge that the maps identifying their retail service area boundaries, dated June 25, 1987, and included as Attachment A to this Agreement, identify the water system's future service area.

It is understood that utilities may initially continue existing water service within the boundaries of neighboring utilities, service area boundary hereof. Such common service areas, if they exist, are described in Attachment B to this agreement. The undersigned parties agree that any water line for retail service extending outside of the retail service area boundary, shall ultimately be phased out and service transferred to the designated adjacent utility on an economic basis or by mutual agreement. The terms of the transfer of a common service area shall be established in a separate agreement.

If, at some time in the future it is in the best interest of the undersigned parties to make service area boundary adjustments, such modifications must be by written concurrence of all involved utilities and the proper legislative authority(ies), and must be noted and filed with the designated Pierce County lead agency and D.S.H.S.

IT IS FURTHER AGREED that both the City of Puyallup and the City of Sumner have or will have, water system facilities near or adjacent to the above described boundary. The facilities, if compatible, may be interconnected so as to be mutually beneficial to both parties of this agreement. The City of Puyallup agrees that after the completion of such interconnection, if the City of Sumner needs additional water in the City of Sumner service area that can be supplied by the Puyallup system, the City of Puyallup will make water available to the City of Sumner. The City of Sumner agrees that after the completion of such interconnection, if the City of Puyallup needs additional water in the Puyallup service area that can be supplied by the City of Sumner system, the City of Sumner will make water available to the City of Puyallup.

IT IS FURTHER AGREED that if either the City of Sumner or the City of Puyallup requests water from the other Water Purveyor, water will be made available only to the extent that water is available and at rates to be established at the time of the connection. It is understood that only excess water from either system will be available to the other Water Purveyor and only for emergency conditions. Neither the City of Puyallup, nor the City of Sumner will be liable to the other for failure to supply water pursuant to this agreement at any point in time.

IT IS FURTHER AGREED that each party in this agreement shall prepare, at its own cost, or by costs established in a separate agreement, the facilities necessary to provide the interconnection, but the interconnection shall not be made operative until each party agrees to the final operating procedures. This agreement shall remain in full force and effect until terminated by either Party upon not less than one year advance written notice to the other party.

IN WITNESS WHEREOF, the parties hereto have executed this agreement as of the date and year first herein stated.

CITY OF SUMNER

by _____
Title Mayor

CITY OF PUYALLUP

by _____
Mayor

Attest:

_____
Title City Clerk

_____
City Clerk

Approved:

_____
Title City Attorney

_____
Director of Public Works

Approved:

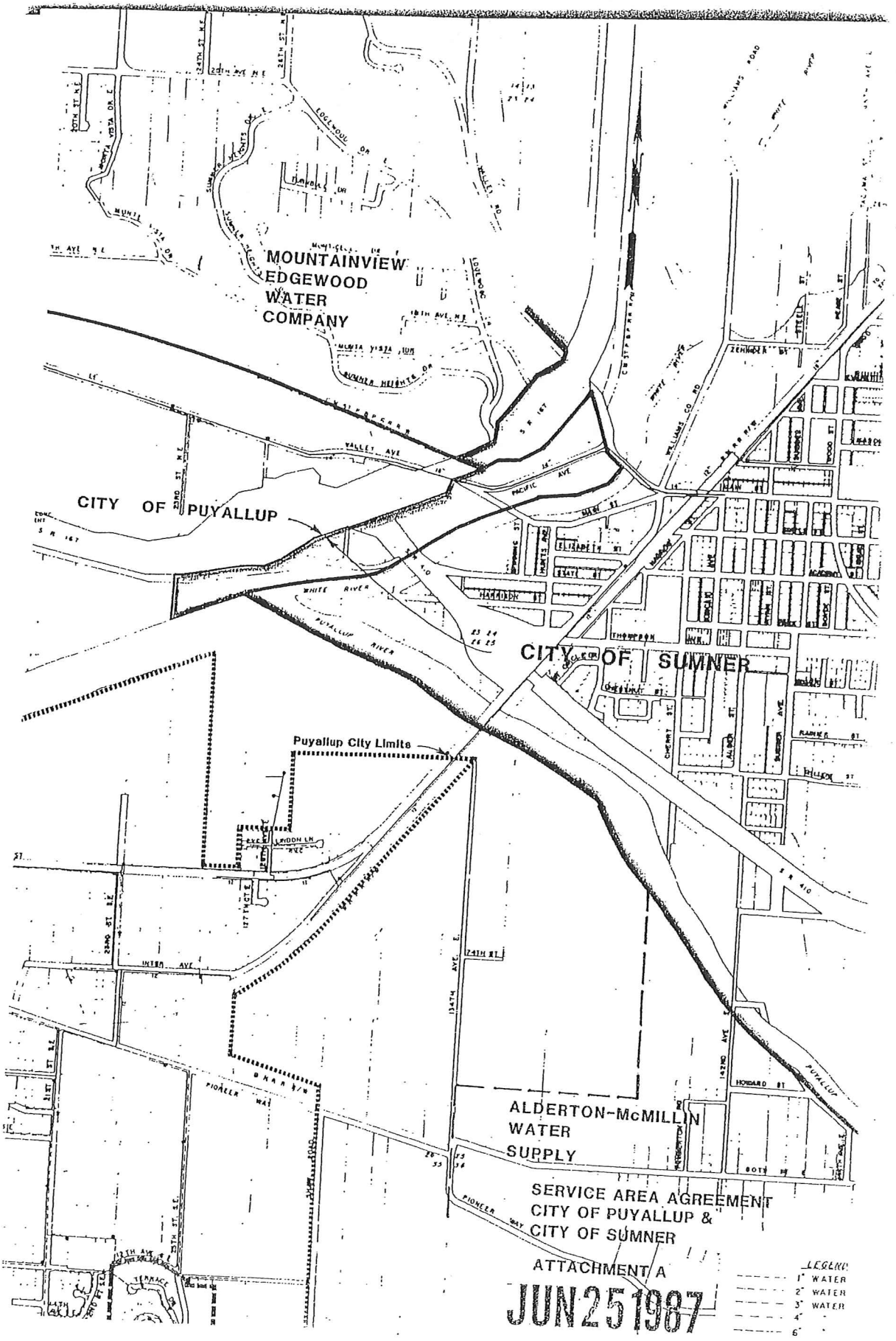
_____
Superintendent
Water Division

Approved as to form & legality:

_____
City Attorney

Approved by Puyallup City Council
April 18, 1988

no attach B
per P.W. Dept.
5/88



APPENDIX B

Sumner Municipal Code Chapters

Chapter 13.24
WATER SYSTEM

Sections:

13.24.010 Regulations and rates established.

The rates and regulations set forth in this chapter are established for the control of the municipal water supply system of the city. (Ord. 1051 § 1, 1977. Prior code § 10.12.010)

13.24.020 Definitions.

For the purpose of this chapter, the words or phrases defined in this section shall have the following meanings:

1. "City" means the city of Sumner, Washington, or as indicated by the context, may mean the water department, water superintendent, clerk-treasurer, engineer or other employee or agent representing the city in the discharge of his duties.

2. "City engineer" means the city engineer of the city. Any act in this chapter required or authorized to be done by the city engineer may be done on behalf of the city engineer by an authorized employee of the engineering department.

3. "Council" means the city council of the city.

4. "Mains" means lines designed or used to serve more than one premises.

5. "Person," "customer," "owner," "occupant," "agent," wherever used in this chapter, means and includes natural persons of either sex, associations, copartnerships and corporations whether acting by themselves or by a servant, agent or employee; the singular number shall be held to include the plural and the masculine pronoun to include the feminine.

6. "Premises" means a continuous tract of land, building or group of adjacent buildings under a single control with respect to use of water and responsibility for payment therefor. Subdivisions of such use or responsibility shall constitute a division into separate premises as defined in this section.

7. "Service connection" means that portion of the city water supply system connecting the supply system on a premises to the city water distribution main including the tap into the main, the water meter and appurtenances and the service line from the main to the meter and from the meter to the property line. The definition of service connections shall include connections for fire protection as well as for domestic, commercial and industrial uses.

a. A regular service includes all material, pipe, valves, meter, meter box, meter yoke and stop from the water main to the right-of-way line of the street or alley.

b. A duplex service is the same as a regular service described in subsection 7a of this section, except that the service will terminate with two meters, two yokes and accessories.

c. A pretapped and preplumbed service includes a service for which only a meter is required to complete the installation of the service; the balance of the service being previously constructed by the owner of the premises in his behalf.

d. A pretapped service includes a service for which a yoke and accessories plus a meter and meter box are required to complete the installation of the service.

8. "Standard or permanent mains" means mains conforming to the standard specifications of the city with respect to materials and minimum diameter.

9. "Standard specifications" means those standard specifications for public works construction which have been adopted by the city council of the city.

10. "Substandard or temporary mains" means mains which do not conform to the standard specifications of the city with respect to materials and/or minimum diameter.

11. "Superintendent" means the superintendent of the water department of the city. Any act in this chapter required or authorized to be done by the superintendent may be done on behalf of the superintendent by an authorized employee of the water department. (Ord. 1051 § 2, 1977. Prior code § 10.12.020)

13.24.030 Application for service – Procedures.

All applications for the use of water must be made at the office of the water department on printed forms to be furnished by the department for that purpose; the applications must be made by the owner of the property, or his agent duly authorized to make the same, to whom the water is to be furnished. The applicant shall state fully all purposes for which the water may be required and must agree to conform to the rules and regulations and any modifications thereof that may be established from time to time as a condition for the use of the water. (Ord. 1051 § 3, 1977. Prior code § 10.12.030)

13.24.040 Accounting and charges – Change of ownership.

All accounts for water shall be kept in the name of the owner of the property when known and all charges shall be made against the property, as well as the owner thereof. No change of ownership or occupancy shall affect the application of this section. Upon application, the owner may have the utility account placed in the name of a tenant, however, all charges shall be made against the property and the owner shall remain liable for all charges not paid by the tenant. (Ord. 1720 § 1, 1995: Ord. 1051 § 4, 1977. Prior code § 10.12.040)

13.24.045 Rendering and payment of bills.

A. Bills for service will be rendered to each customer on a monthly basis, in sequence by geographical location, unless otherwise approved by the council.

B. Bills for metered service will show the reading of the meter at the end of the period for which the bill was rendered, the number of units, and the date of the current meter reading.

C. If, for reasons beyond its control, the city is unable to read the customer's meter on the scheduled reading date, the city may bill the customer for estimated consumption during the billing period, subject to adjustment at the time the meter is next read.

D. Water bills will be estimated if one or more of the following conditions exist:

1. Severe weather;
2. Deposits of heavy snow or ice;
3. Vicious dog;
4. Some unusual circumstance which makes it impossible to read the meter, such as a vehicle parked over the meter box.

E. Each meter on a customer's property will be considered separately, and the readings of two or more meters will not be combined.

F. The monthly service charge applicable to opening periods, closing bills and bills rendered for periods less than 55 days will be prorated to the nearest half month. The measured amount of water actually served will not be prorated.

G. Bills for service are due and payable upon presentation, and payment may be made through the mail or presented in person to the city's utility billing office. Payment of closing bills shall be made at the time of presentation. Failure of the mail service to deliver payment in a timely manner shall not be cause for waiver of penalties or for waiver of discontinuance of service as provided in this chapter.

H. Protests to Rates and Charges and Meter Tests.

1. If any customer shall be dissatisfied with any water charge imposed, the customer may file a written protest with the utilities/recycling division setting forth the customer's objections provided such protest is filed within 15 days of receipt of the bill being protested.

2. Upon receipt of any such protest, the city shall within 15 days make a determination in writing as to the correctness of the bill.

3. If the customer is dissatisfied with the city's decision, the customer may appeal to the city council provided such appeal is filed within 10 days of receipt of the city's decision. A condition precedent to such appeal is the payment to the city of the amount of the disputed bill.

4. A customer may request that the city test the meter at the service address in question. The customer or his representative must be present at the time of the test which shall be set at the time and date mutually agreed upon. In any case, the test shall be

performed within 10 days of the request. A report showing the results of the test will be furnished within 15 days after completion of the test, a copy of which will be mailed to the customer. At no point will the billing adjustments go back any further than six months.

a. Nonregistering Meters. When, upon a test, a meter is found to be nonregistering, the city may bill the customer for water consumed while the meter was nonregistering for a period not exceeding three months at an estimate of the consumption based upon the customer's prior use during the same season of the previous year or upon another customer of the same class. In all cases, if it is found that the error in a meter is due to some cause, the date of which can be fixed, the overcharge or undercharge will be computed back to, but not beyond, such date. (Ord. 1832 § 1, 1998)

13.24.050 Payment of bills – Penalties.

A. The billing date is defined as the last day of the prior month.

B. Any bill not paid within 20 days of the billing date is delinquent. A delinquent notice will be mailed to the billing address and owner if different.

C. Any bill not paid within 20 days of the billing date shall be assessed a penalty of one percent of the total outstanding balance, with a minimum penalty of $2.50, unless the past due balance is less than $10.00, in which case the penalty shall be waived. A delinquent notice will be mailed to the billing address and owner if different.

D. Any customer who has a bill or portion of a bill not paid within 40 days of the billing date shall have water service disconnected pursuant to SMC 13.08.010, and a lien may be placed upon the property being served by filing a notice with the city attorney. The city attorney shall send a written notice of filing to the recorded owner of the property.

E. Partial payments shall be applied to the oldest charges, and remaining charges shall continue to accrue time and penalties. (Ord. 1832 § 2, 1998: Ord. 1150 § 1, 1981: Ord. 1051 § 5, 1977. Prior code § 10.12.050)

13.24.060 Alteration of use.

No person supplied with water from the city main shall be entitled to use it for any purpose other than that stated in the application, nor add any fixtures or supply in any way or for any purpose other persons or families without first securing a permit for the same from the water superintendent. (Ord. 1051 § 6, 1977. Prior code § 10.12.060)

13.24.070 Comprehensive water system plan.

The city engineer is authorized and directed to prepare a comprehensive plan for the city water supply and distribution system and to recommend to the city council the standards for development and improvement of the system to provide adequate water supply for domestic and industrial consumption and fire protection. The plans shall be on file at the offices of the city engineer and shall include:

A. Main sizes required on all existing city streets;

B. Main sizes required outside the corporate limits in those areas which are being served by city water;

C. Main sizes and approximate location for future major distribution mains in areas in which public streets do not presently exist;

D. The location and construction standards for all water works facilities including, but not limited to, mains and appurtenances, reservoirs and pump stations;

E. Such other information as may be deemed necessary by the city engineer or the city council;

F. The comprehensive plan will encompass the design of all water works facilities in the city. The city council shall cause the plan to be updated every five years or as required to keep the plan current and ahead of the development of the city. (Ord. 1051 § 7, 1977. Prior code § 10.12.070)

13.24.080 Standard specifications.

The standard specifications for the city shall be the current "Standard Specifications for Municipal Public Works Construction" (APWA) prepared by Washington State Chapter, American Public Works Association. (Ord. 1051 § 8, 1977. Prior code § 10.12.080)

13.24.090 Design standards.

The design standards shall be those developed by the city engineer and approved by the mayor and city council. (Ord. 1051 § 9, 1977. Prior code § 10.12.090)

13.24.100 Depth of pipes.

All pipe hereafter laid leading from the city stopcock shall be laid not less than 18 inches below the surface of the ground, and no work shall be covered up until it has been inspected and accepted by the superintendent. (Ord. 1051 § 10, 1977. Prior code § 10.12.100)

13.24.110 Ownership of mains and service connections.

A. The ownership of all mains, service connections and appurtenances in public streets or utility rights-of-way shall be

vested fully in the city and the person responsible for the construction of such mains shall relinquish by bill of sale, all interest in the ownership of such mains upon acceptance by the city; provided, however, that all private systems existing at the time of the passage of the ordinance codified in this chapter shall remain under private ownership unless dedicated to the city under the provisions of this chapter.

B. The city shall own, operate, control and maintain all approved accepted mains in public streets or utility rights-of-way up to and including meter, but shall not be responsible beyond the meter. The owner of the property served shall be responsible for maintenance for all pipe and fittings from the meter to his premises; provided, however, that any payment or partial payment that may be made by the applicant according to the rates in this chapter shall not in any manner affect the city's ownership to the pipe, fittings and meter, or its right to handle the same in any manner deemed advisable. In no case shall an owner, agent, officer or employee of any premises have the right to remove or change any part thereof without the approval of the superintendent. (Ord. 1051 § 11, 1977. Prior code § 10.12.110)

13.24.120 Renewal of service.

Any connection through which service is discontinued for five years shall be considered abandoned and a new connection shall be applied for when renewal of service is requested. Where such services require reconstruction from property line to main, but remain in previous location, the connection fee for such service reconstruction shall be the cost of all material, equipment rental and labor plus 15 percent for overhead. (Ord. 1051 § 12, 1977. Prior code § 10.12.120)

13.24.130 Discontinuance of service – Fee.

Should it be desired to discontinue the use of water supplied to vacant premises for a period of not less than 30 days, notice in writing must be given to the city finance officer, upon which the water shall be turned off and a charge of $15.00 shall be made. The water shall be turned on again on written application and a charge of $15.00 shall be made. No remission of charges will be made for a period less than 30 days, or without the notice prescribed in this section. (Ord. 1832 § 3, 1998: Ord. 1150 § 2, 1981: Ord. 1051 § 13, 1977. Prior code § 10.12.130)

13.24.140 Suspension of service.

The mayor of the city shall have the right in case of a shortage of water to make an order forbidding, suspending or regulating the use of water for irrigation and sprinkling purposes, and may at his

discretion at any time make such an order by giving notice through the official paper of the city or other news media. (Ord. 1051 § 14, 1977. Prior code § 10.12.140)

13.24.150 Administration and enforcement.

The superintendent will have the authority to administer and enforce this chapter. Any infraction or abridgement of this chapter shall be brought to the attention of the city council and at their recommendation corrective measures shall be taken. Failure to correct any deficiencies or defects shall result in termination of water service until corrections are made. (Ord. 1051 § 15, 1977. Prior code § 10.12.150)

13.24.160 Access to premises for inspection.

Authorized employees of the water department properly identified shall have free access at reasonable hours of the day to all parts or premises or within buildings thereon to which water is supplied from the city water system for the purpose of checking conformity to these regulations. Wherever the owner of any premises supplied by the city water system restrains authorized city employees from making necessary inspections, water service may be immediately discontinued. (Ord. 1051 § 16, 1977. Prior code § 10.12.160)

13.24.170 Service connection – General requirements.

Except as provided in this section, no premises shall hereafter be connected to the water supply system of the city unless there is an adjacent standard main under the ownership and exclusive control of the city.

A. When a permit has been obtained for the installation of water service, the superintendent shall cause the premises described in the application to be connected with the water system by a service pipe extending at right angles from the main to the property line, and including a stopcock and water meter placed within the right-of-way, which connection shall thereafter be maintained by and kept within the exclusive control of the city.

B. Except as provided in SMC 13.24.190, every separate premises supplied by the city water system must have its own separate meter and the premises so supplied will not be allowed to supply water to any other premises. The superintendent may require individual buildings on any premises to be separately metered.

C. All persons connecting to city service shall be required to use only materials conforming to the standard specifications and regulations of the city. Plumbing on premises shall conform to the uniform plumbing code of the city.

D. Before water will be turned on to the premises connected to city mains, the service pipes must be so located that the supply for each separate building shall be controlled by a separate stop and waste cock of standard make with extension handle, inspected and approved by the superintendent, properly protected from the frost and so placed within the premises that all service pipes and fixtures may be thoroughly drained to prevent damage from freezing. All pipes placed underground between the stop and waste valve and the city meter shall be installed at least 18 inches below finished grade. The connection between the city's pipes at the property line and the service pipes on the premises shall be made with a union. All installations must be inspected and approved by the superintendent. (Ord. 1051 § 17, 1977. Prior code § 10.12.170)

13.24.180 Permit and system development charges.

Prior to any water service construction, the owner shall pay to the city permit and construction fees as established by the following schedules:

A. Permit and Inspection Fees. The city sets the following schedule for a nonrefundable permit and inspection fee:

1. Residential water service permit: $62.50;
2. Commercial or industrial water service permit: $125.00;
3. Fire hydrant: $187.50;
4. Sprinkler system connection: $187.50;
5. Cross-Connection Control.
    a. Residential irrigation system: $62.50,
    b. All other systems: $187.50.

All permit and inspection fees shall be paid to the city treasurer at the time the permit application is filed.

B. System Development Charges. It is the policy of the city that all property owners seeking to connect to the city water system shall bear their equitable share of the cost of the general facilities of such system. The city therefore sets the following schedule for system development charges (SDC):

1. Single-family dwellings and the first unit per building for multiple-family dwellings, $1,610;

2. Each and every additional unit per building in multifamily dwellings, $1,175;

3. Each commercial establishment per building:

Meter Size (in inches)	Fee
3/4	$ 1,610
1	4,025
1-1/2	8,050
2	12,880

3	24,150
4	40,250
6	80,500

4. Each industrial customer (based on 3.31 ERUs per acre), $5,330 per acre.

In the event the amount of water needed by the industrial customer should exceed 3.31 ERUs per acre, the city shall calculate and charge the SDC based on actual anticipated water use;

5. Outside the city charges for service shall be 25 percent higher than those tabulated above;

6. The general facilities funds collected under this chapter shall be deposited in the utilities reserve fund and used only for utility system improvements;

7. On October 1st of each year, the system development charge shall be adjusted according to the Seattle Construction Index (SCI).

C. Service Connection Fee. Service connection shall be installed at the expense of the property owner, the same to be installed by the city and the cost to the city charged therefor.

The property owner in applying for service shall pay to the city the prevailing cost to cover the expense for the installation plus 25 percent for overhead. All services shall be constructed by the city from the main to the property line and shall include a suitable water meter and appurtenances. This rule shall also apply where exchanges in size of service are made at the request of the property owner. In case of replacement or new services, no service smaller than three-fourths of an inch shall be installed. (Ord. 1820 § 1, 1997: Ord. 1499 § 1, 1991: Ord. 1269 § 1, 1984: Ord. 1051 § 18, 1977. Prior code § 10.12.180)

13.24.190 Temporary service connections.

A. Water service may be supplied to a premises on a temporary basis during construction of a building on the premises or during the construction of a standard main to serve such premises. Application for temporary service shall only be approved upon payment of all fees and assessments required by this chapter. This application shall state fully the purposes for which temporary service is necessary. All cost necessary to install and remove such temporary service shall be paid by the applicant.

B. Upon completion of the work for which the temporary service was necessary, the owner shall immediately apply for permanent service to such premises and the temporary service shall be removed. Failure to obtain permanent service shall be cause for immediate discontinuance of water supply to the premises. (Ord. 1051 § 19, 1977. Prior code § 10.12.190)

13.24.200 Service connection – Wholesale consumers.

A. The city council may, at its discretion, authorize water service to a community or a number of individual users to be furnished through a common master meter upon finding that service through individual meters is not practical. Where communities or a group of individuals are granted, installed, maintained and kept within the exclusive control of the city, the cost of such installation, including the meter, shall be at the expense of the consumer.

B. When, in the opinion of the superintendent, the condition or operation of such wholesale consumer system has deteriorated to a point of repair, the superintendent shall notify the consumer in writing and repairs shall be undertaken immediately by the consumer. If the consumer does not diligently undertake to repair the system, the city shall have the option to discontinue service.

1. Where water meter service is supplied through a master meter, a company, association or other form of organization which is acceptable to the city shall be responsible for the rates and charges set forth in this chapter.

2. Application for water service under the provisions of this section shall be made on the forms furnished for that purpose. The application shall include a detailed description of the premises to be served, the name and nature of the organization which is to be responsible for the service charges, the conditions or circumstances precluding service by individual meters and such other information as the city council may deem necessary.

3. Such consumers shall file detailed plans with the engineering department of their systems in such form as specified by the city engineer. Such consumer shall, prior to commencement of work, submit for the approval of the city engineer similar information with respect to all construction or modifications which add to, reduce or alter the water system.

4. Water service, under the terms of this section, shall be limited to those premises described in the application. Service to additional premises, not included in the original application, shall require a separate application and approval.

5. The ownership of the water system beyond the common meter shall be vested in the consumer and the operation, repair, expansion and renewal of such system shall be the responsibility of the consumer. The city's responsibility shall terminate with the common meter.

6. Any violation of the procedures required by this section shall be cause for immediate discontinuance of service to such system by the city. (Ord. 1051 § 20, 1977. Prior code § 10.12.200)

13.24.210 Service to other governmental units.

The city council may, in its discretion, enter into an agreement with any other municipal corporations or governmental units for the purpose of obtaining or providing any service relating to water supply as provided by law. The terms of each agreement shall be established by the city council. (Ord. 1051 § 21, 1977. Prior code § 10.12.210)

13.24.220 Construction charge – Water main extension.

Each parcel of property to be served by the city water supply system shall be assessed its proportionate share of the cost of construction of a standard main in the street or streets abutting the property. Prior to approval of an application for water service the city clerk shall ascertain if the property in question has previously contributed or been assessed its proportionate share of the construction costs. If such assessment or contribution has not previously been satisfied, the applicant shall pay the assessment as provided in this chapter prior to the approval of the application for water service. (Ord. 1051 § 22, 1977. Prior code § 10.12.220)

13.24.230 Main extension charge.

Whenever a main is installed within the corporate limits of the city under the provisions of this section through SMC 13.24.260, the main extension charge to be paid shall be determined by the city engineer and approved by the city council on the basis of the current average costs for six-inch diameter asbestos cement class 150 water mains including all valves, fittings, hydrants, blow-offs, looping of grid, excavation, backfilling and street restoration in accordance with current practice and the comprehensive water plan, and proportioned into pro rata shares on the acreage or front footage of property to be served or a combination of acreage and front footage. It shall be the responsibility of the city engineer to determine the front footage and/or acreage upon which main extension charges will be made, and to recommend the appropriate combinations of front footage and/or acreage to be used therefor. (Ord. 1051 § 23, 1977. Prior code § 10.12.230)

13.24.240 Property not previously assessed.

Property abutting upon a street containing an adjacent standard main, but not previously assessed or not having previously contributed its proportionate share of construction costs for such standard main, may be connected to such abutting main upon payment of a construction charge as prescribed in SMC 13.24.220. The charge may be paid either in cash at the time of application or on a deferred payment plan in accordance with the provisions of this section. Such special construction charge is in addition to the other applicable charges required by this chapter.

A. If the applicant elects to take advantage of the deferred payment plan, the owner of the premises shall execute a contract with the city in such form as prescribed by the city council to pay the construction charge with the provision that any unpaid balance may be paid in full on the date any payment is due. The contract shall be a covenant running with the land and shall provide that the unpaid balance of the construction charge shall be a lien upon the property to which such connection is made superior to all other liens and encumbrances except those for general taxes and special assessments, which may be foreclosed in the same manner provided by law for the foreclosure of delinquent local improvement district assessment liens. The contract shall be recorded in the office of the county auditor at the expense of the property owner and upon payment in full a release of such lien shall be executed by the city. The contract shall further provide that in the event of a delinquency in payment of such construction charges the superintendent may disconnect the city's water service and refuse to supply water to the premises in default, until the delinquent payments are paid in full. This remedy to be concurrent with and in addition to the city's right to foreclosure of such lien as provided in this chapter.

B. Provided, that nothing in this section shall be deemed to prevent the city, upon order of the city council as part of a street improvement program, from replacing any existing mains with new mains of any size to prevent future street destruction for water main repairs, and such replacement may be made without cost to the abutting property owner or upon such apportionment of cost as the city council shall deem reasonable. (Ord. 1051 § 24, 1977. Prior code § 10.12.240)

13.24.250 Substandard mains.

No substandard or temporary mains shall hereafter be installed and connected to the water supply system of the city. (Ord. 1051 § 25, 1977. Prior code § 10.12.250)

13.24.260 Service connection – No main in street.

Whenever an applicant requests water service to premises with no main in the adjacent street, a standard main must be installed as a prerequisite to connection to the city water supply system. The standard main must be installed along the complete street frontage of the premises to be served in accordance with the comprehensive plan. A standard main may be installed by any of the following methods:

A. The main may be installed at the expense of the owner by a competent person under the supervision and approval of the city engineer, in which case the city will contract with the owner to

provide for the reimbursement of such owner and his assigns for a period of 15 years by any owner of real estate who did not contribute to the original cost of such main and who subsequently taps onto said main for service of a fair pro rata share of the cost of construction of such main. The contract shall be recorded in the office of the county auditor upon acceptance of construction of such main by the city council. All main extension charges after the expiration of such contract shall revert directly to the city.

B. If the premises lie within the corporate limits of the city, the owner may elect to have such main installed upon making payment to the city of the appropriate main extension charges as provided in SMC 13.24.230 plus a special main extension charge in accordance with the provisions of SMC 13.24.270 for each lineal foot of main necessary to be installed to reach the nearest point of such premises; provided, however, that the availability of this option is contingent upon a sufficient appropriation in the current water department budget to provide the necessary funds for the extension. Upon payment of the above main extension charges and special main extension charge, the city will undertake to have the main installed and connect the premises to such main. There shall be no reimbursement to the original application for subsequent connections to the main, except as provided for in subsection A of this section.

C. If the premises lie within the corporate limits of the city, the owner may elect to have the main installed by the formation of a local improvement district as prescribed by state law and the ordinances of the city. (Ord. 1051 § 26, 1977. Prior code § 10.12.260)

13.24.270 All services to be metered.

All service connections to the city water system shall be metered and all meters shall remain the property of the city and when deemed necessary by the superintendent, any meter may be exchanged with another meter of similar kind.

A. Water meters shall be sized to provide adequate domestic water to the customer. Minimum water meter sizes shall ordinarily be determined from the number of units served as follows:

1. One unit, three-quarter-inch meter;
2. Two through five units, inclusive, one-inch meter;
3. Six through 10 meters, inclusive, one and one-quarter-inch meter;
4. Eleven through 20 units, inclusive, one and one-half-inch meter.

B. All requests for service to 10 or more units through a single meter shall be subject to review and approval of the city engineer.

C. Water meters for services larger than 20 units shall be sized by the city engineer.

D. Provisions for on-site flow shall include a valve with indicator post. Drawings for and installation of such on-site fire flow system shall be subject to approval of the city engineer.

E. Replacement of existing water meters shall comply with minimum sizes listed in this section. (Ord. 1051 § 27, 1977. Prior code § 10.12.270)

13.24.280 Connection and turn-on, turn-off – Permission.

No plumber or other person will be allowed to make a connection with the city mains or make a connection with any conduits, pipes or any fixtures connected therewith, or to connect pipes that have been disconnected, or to turn water on or off of premises without the permission of the superintendent. (Ord. 1051 § 28, 1977. Prior code § 10.12.280)

13.24.290 Service reconnection, other than provided in SMC 13.24.120.

When new buildings are to be erected on the site of the old ones, and it is desired to increase the size of, or the owner desires to change the location of, the old service connection, the superintendent may cut out or remove such service connection after which, should a service connection be required for such premises, a new service shall be placed only upon the owner's making an application and paying for a new tap in the regular manner. When the service connection of any premises does not come from a main in front of such premises, the superintendent shall, when a main is laid in front of the premises, after notifying the owner or tenant thereof, transfer the service connection to the new main without charge, and at the same time cut out the old service connection. (Ord. 1051 § 29, 1977. Prior code § 10.12.290)

13.24.300 Backflow prevention devices.

Backflow prevention devices shall be installed by the owner of the property being served when in the judgment of the city engineer the nature and extent of activities on the premises, or the materials used in connection with the activities, or materials stored on the premises would present an immediate and dangerous hazard to health should a cross-connection occur, even though such cross-connection does not exist at the time the backflow prevention device is required to be installed. The type of protection device, its installation and periodic testing, shall conform to the provisions of the rules and regulations of the State Board of Health regarding public water supplies as set forth in WAC 248-54-500. (Ord. 1051 § 30, 1977. Prior code § 10.12.300)

13.24.310 Illegal turn-on – Penalty.

Should the owner or occupant of the premises turn on the water or suffer or cause it to be turned on after it has been turned off at the meter by a city representative, it may be turned off by a representative of the superintendent and an additional charge of $35.00 shall be made for the penalty of turning it off and a charge of $35.00 shall be made for the penalty of turning it on. If the owner or occupant of the premises turns on the water service themselves a second time, without approval by the city, a charge of $50.00 shall be made for the penalty of turning it off and a charge of $50.00 shall be made for the penalty of turning it on. (Ord. 1832 § 4, 1998: Ord. 1150 § 3, 1981: Ord. 1051 § 31, 1977. Prior code § 10.12.310)

13.24.320 Discontinuance and restoration of service.

A. Discontinuance of Service by Customer – Nonemergency.

1. A customer may have service discontinued by giving not less than five days' advance notice thereof to the city. Charges for service shall be required to be paid until the requested date of discontinuance or such later date as will provide not less than the required five days' advance notice.

2. When such notice is not given, the customer may be required to pay for service until five days after the city has knowledge that the customer has vacated the premises or has otherwise discontinued water service.

B. Discontinuance of Service by Customer – Emergency. When an emergency discontinuance is requested by the customer for such reasons as leaks, burst pipes, etc., the city will make every effort to shut off the service as quickly as possible. In an emergency situation, charges will not be made for one visit to shut off the service and one visit to restore the service. Each return visit to the customer's premises will require payment of $15.00 per visit, which the city will add to the monthly bill.

C. Discontinuance of Service by City.

1. Noncompliance with Chapter. The city may discontinue service to any customer for violation of this chapter after it has given the customer at least five days' written notice of such intention. Where the safety of water supply is endangered, service may be discontinued immediately without notice.

2. Waste of Water. Where negligent or wasteful use of water exists on or from a customer's premises, the city may discontinue the service if such practices are not remedied within five days after it has given the customer written notice of such effect.

3. Unsafe Apparatus or Where Service Is Detrimental to the City or its Customers. If any unsafe or hazardous condition is found to exist on the customer's premises, or if the use of water thereon

by apparatus, appliances, equipment or otherwise is found to be detrimental or damaging to the city or its customers, the service may be discontinued without notice. The city will notify the customer immediately of the reasons for the discontinuance and the corrective action to be taken by the customer before service can be restored.

4. Fraudulent Use of Service. When the city has discovered that a customer has obtained service by fraudulent means, or has diverted the water service for unauthorized use, the service to that customer may be discontinued without notice. The city will not restore service to such customer until that customer has complied with all ordinances and reasonable requirements of the city and the city has been reimbursed for the full amount of the service rendered and the actual cost to the city incurred by reason of the fraudulent use.

D. Restoration of Service.

1. Reconnection Charge. Where service has been discontinued for violation of this chapter or for nonpayment of bills, the city may charge $15.00 for reconnection of service during regular working hours, or $15.00 plus the actual cost incurred by the city for reconnection of service at other than regular working hours when the customer has requested that the reconnection be made at other than working hours. For restoration of service that has been discontinued for reasons other than those detailed above, the restoration charge shall be $15.00 for reconnection made during regular working hours, or $15.00 plus the actual cost incurred by the city for reconnection of service at other than regular working hours. Regular working hours and conditions of pay at other than regular working hours are defined in the current bargaining unit contract.

2. To Be Made During Regular Working Hours. The city will endeavor to make reconnections during regular working hours on the day of the request, if conditions permit; otherwise, reconnections will be made on the regular working day following the day the request is made.

3. To Be Made at Other Than Regular Working Hours. When a customer has requested that the reconnection be made at other than regular working hours, the city will reasonably endeavor to so make the reconnection if practicable under the circumstances but will be under no obligation to do so, unless an emergency exists.

4. If for any reason the meter or city equipment is damaged due to the negligence or willful destruction of property, the owner will be responsible for any penalty as described in SMC 13.24.310, plus the cost of any replacement of damaged equipment and actual cost incurred by the city to do the repair.

E. Conditions for Refusal. The city may refuse to serve an applicant for service under any of the following conditions:

1. If the applicant fails to comply with this chapter;

2. If the intended use of the service is of such a nature that it will be detrimental or injurious to existing customers;

3. If, in the judgment of the city, the applicant's installation for utilizing the service is unsafe or hazardous or subject to freezing, or of such a nature that satisfactory service cannot be rendered;

4. Where service has been discontinued for fraudulent use, the city will not serve an applicant until it is determined that all conditions of fraudulent use or practice have been discontinued.

F. Notice to Customer. When an applicant has been refused service under the provisions of this section, the city will notify the applicant promptly of the reason for the refusal to serve and of the right of the applicant to appeal the decision to the council.

G. Continuity of Service.

1. Emergency Interruptions.

a. The city will make reasonable efforts, in accordance with prudent utility practice, to prevent interruptions to service, and, when such interruptions occur, will endeavor to establish service without unreasonable delay, consistent with the safety of its customers and the general public.

b. The city will not be liable for interruptions or shortage or insufficiency of supply or any loss or damage of any kind or character occasioned thereby, if same is caused by act of God, fire, strike, riot, war, accident, breakdown, action by governmental agency or other cause beyond the control of the city.

2. Scheduled Interruptions. Whenever the city finds it necessary to schedule an interruption to its service, it will, within 24 hours, where feasible, notify all customers to be affected by the interruption, stating the approximate time and anticipated duration of the interruption. Scheduled interruptions will be made at such hours as will provide the least inconvenience to the customers consistent with reasonable city operations.

3. Apportionment of Supply During Times of Shortage. During time of threatened or actual water shortage, the city will apportion its available water supply among its customers as directed by the mayor. In any event, it will apportion the supply in the manner that appears most equitable under the circumstances then prevailing, and with due regard to public health and safety. (Ord. 1832 § 5, 1998: Ord. 1150 § 4, 1981: Ord. 1051 § 32, 1977. Prior code § 10.12.320)

13.24.330 Rates for metered service within the city.

A. The following schedule of rates for the water facilities and service furnished by or through or for the use of the city water system, which rates are found and declared to be reasonable and just, taking into account and consideration the cost and value of the system and cost of maintaining and operating the system, and the proper and necessary allowances for the depreciation thereof and reserves therefor, are fixed, established, levied, imposed, and otherwise prescribed in this section, except that the rates for water supplied outside the city limits shall be an additional 15 percent of the computed inside rate. The monthly rate for each customer shall be the applicable monthly service charge, plus the commodity charge:

Meter Size	Monthly Charge
3/4"	$ 6.65
1"	16.11
1-1/4"	24.15
1-1/2"	32.22
2"	51.55
3"	96.65
4"	161.08
6"	322.16
8"	515.46
10"	740.97
12"	1,087.30

plus the metered rate of $0.60 per 100 cubic feet for water consumed up to 1,000 cubic feet per month for single-family residences, commercial, industrial, schools, and churches; and a metered rate of $0.60 per 100 cubic feet for water consumed up to 800 cubic feet per month for each multi-residential unit. Water consumed between 1,000 cubic feet and 2,000 cubic feet per month shall be charged a metered rate of $0.75 per 100 cubic feet of water consumed and water consumed in excess of 2,000 cubic feet shall be charged a metered rate of $0.90 per 100 cubic feet of water consumed for residential, commercial, industrial, schools and churches; and water consumed in excess of 800 cubic feet per month per multi-residential unit shall be charged a metered rate of $0.75 per 100 cubic feet of water consumed and water consumed in excess of 1,600 cubic feet shall be charged a metered rate of $0.90 per 100 cubic feet of water consumed.

B. The building official shall determine the meter size for commercial users and motels by applying the Uniform Building Code, Section 2200, to determine the number of fixtures required by the Uniform Plumbing Code, and shall apply the Uniform

Plumbing Code, Chapter 10 and Table 10-2, to determine the meter size.

C. The city shall place a meter on every service and charge the metered rate as provided herein.

D. On January 1st of each year, the rates established in this section shall be adjusted according to the CPI-U Index for the previous year for the Seattle-Puget Sound area. (Ord. 1832 § 6, 1998: Ord. 1720 § 2, 1995: Ord. 1657 § 1, 1994; Ord. 1518 § 1, 1991: Ord. 1437 § 1, 1989: Ord. 1194 § 1, 1982: Ord. 1103 § 2, 1979: Ord. 1051 § 34, 1977. Prior code § 10.12.340)

13.24.340 Water consumption outside city – Rates.

The rates for water consumption outside of the city shall be those rates stated in this chapter for consumption within the city, plus 15 percent. All billings for water shall be made to the nearest five cents. (Ord. 1051 §§ 35, 36, 1977. Prior code §§ 10.12.350,10.12.360)

13.24.350 Charges to become lien.

The city shall have a lien against the premises to which water has been furnished, which lien shall be in the amount and to the extent set forth in RCW 35.21.290 as the same now exists or may hereafter be amended. The lien shall be enforced in the manner set forth in RCW 35.21.300 as it now exists or may hereafter be amended. (Ord. 1051 § 37, 1977. Prior code § 10.12.370)

13.24.360 Violation – Notice.

Any persons known to be violating any provisions of this chapter shall be served by the city with written notice stating the nature of the violation and providing a reasonable time limit for the satisfactory correction thereof. The offender shall, within the period of time stated in such notice, permanently cease all violations. (Ord. 1051 § 38, 1977. Prior code § 10.12.380)

13.24.370 Violation – Penalty.

Any person who continues any violation beyond the time limit provided for in SMC 13.24.360 of this chapter, is guilty of a misdemeanor and upon conviction thereof shall be fined in an amount not exceeding $1,000 for each violation. Each day in which any such violation continues shall be deemed a separate offense. (Ord. 1309 § 1, 1985: Ord. 1051 § 39, 1977. Prior code § 10.12.390)

13.24.380 Violation – Liability to city.

Any person violating any of the provisions of this chapter shall become liable to the city for any expense, loss or damage

occasioned by the city by reason of such violation. (Ord. 1051 § 40, 1977. Prior code § 10.12.400)

Chapter 13.28
WATER AND SEWER MAINS IN NEW DEVELOPMENTS

Sections:

13.28.010 Size and expense of water mains and sewer trunk lines.

Any person, firm or corporation desiring to develop an area where water and sewer services are presently not available, shall be required to install at his sole cost and expense a six-inch water main and an eight-inch sewer trunk line from the existing mains of the city to the property which is to be developed. The city reserves the right to increase the size of the water main and the sewer trunk line over and above the diameters specified in this chapter. However, in the event the city elects to increase the size of the lines, then and in that event, the city shall pay the cost of the increase over and above the cost of the six-inch and eight-inch pipe respectively. (Ord. 785 § 1, 1965. Prior code § 10.16.010)

13.28.020 Installation charges.

The charges to be made per front foot, which do not include the connection fees, are as follows:

A. For installation of a six-inch water main the charge shall be $2.00 per front foot for each side of the street when construction is located in an unpaved street.

B. For installation of a six-inch water main the charge shall be $2.50 per front foot for each side of the street when construction is located in a paved street.

C. For installation of an eight-inch sewer trunk line the charge shall be $2.00 per front foot for each side of the street when construction is located in an unpaved street.

D. For installation of an eight-inch sewer trunk line the charge shall be $2.50 per front foot for each side of the street when construction is located in a paved street. (Ord. 785 § 2, 1965. Prior code § 10.16.020)

13.28.030 Installation by licensed contractor.

Any person, firm or corporation desiring to make installation of a water main and/or a sewer trunk line may engage the services of a licensed contractor to make such installation, which shall be

according to city plans and specifications. (Ord. 785 § 3, 1965. Prior code § 10.16.030)

13.28.040 Additional cost provision.

Any individual hereafter desiring to hook on to the extension of the water main or sewer trunk line, and whose property has not been assessed for such improvements, shall, in addition to paying the regular hook up fee to the city, pay the additional front foot cost as set forth in SMC 13.28.020 of this chapter, which the city in turn may repay to the person, firm or corporation who paid for such extension. (Ord. 785 § 4, 1965. Prior code § 10.16.040)

Chapter 13.30
WATER MAIN INSTALLATION

Sections:

13.30.010 Pressure requirement.

Water systems shall be designed to maintain a minimum residual pressure of 30 psi in water mains under maximum demand flow conditions, excluding fire demand. For water systems requiring fire flow capability, the design shall be adequate to maintain, under fire flow conditions, positive pressure throughout the system and a 20 psi residual pressure in mains supplying fire hydrants in use (c.f. WAC 248-54[4]). (Ord. 1403 § 1, 1987)

13.30.020 Pipe sizing.

A. Water mains shall be sized using the current edition of "Sizing Guidelines for Public Water Supplies" prepared by DSHS. For sizes six inches and above, minimum main size may be established by a licensed engineer using recognized hydraulic analysis techniques. Water main size shall be adequate to deliver fire flow, if required, and to maintain the pressure requirement defined in SMC 13.30.010.

B. Water mains serving fire hydrants, either as part of new construction or planned phased improvements, shall be not less than eight inches diameter for a dead-end line, nor less than six inches diameter if looped. Hydrant leads extending less than 50 feet or across a street shall be of a suitable size to carry the required fire flow, but shall not be less than six inches in diameter. In a dead-end cul-de-sac, normal domestic mains may be installed from the last hydrant to remaining residences. (Ord. 1403 § 2, 1987)

13.30.030 Isolation valving.

Valving shall be installed in a configuration which permits isolation of lines. A valve is not generally required for short block lines of less than 100 feet. In addition, unvalved lengths of pipe should not exceed 400 feet in school, commercial or multifamily

areas. Valve length spacing may be changed by the city engineer. (Ord. 1403 § 3, 1987)

13.30.040 Air and air-vacuum relief valves.

In order to minimize problems associated with air entrapment, the purveyor shall provide for installation of air or combined air-vacuum relief valves at appropriate points of high elevation in the system. (Ord. 1403 § 4, 1987)

13.30.050 Blow-off valves.

A blow-off assembly shall be installed on all dead-end runs and at designated points of low elevation within the distribution system. The blow-off assembly shall be installed in the utility right-of-way, except where an access and construction easement is provided for in writing by the water utility. In no case shall the location be such that there is a possibility of back-siphonage into the distribution system. (Ord. 1403 § 5, 1987)

13.30.060 Storage.

A. Storage requirements are based upon three components:

1. Equalizing storage, required to supplement production from water sources during high-demand periods;

2. Standby storage, required as backup supply in case the largest source is out of service; and

3. Fire storage, required in order to deliver the level of fire flow service identified in the utility's approved plan (see fire flow requirements in chapter 15.28 SMC) for the required duration.

B. Sizing of storage facilities shall be adequate to provide for equalizing storage plus the larger of standby or fire storage requirements. Equalizing and standby storage volumes shall be determined using "Sizing Guidelines for Public Water Supplies," DSHS. Fire storage volumes shall be determined using the fire flow and duration as provided in levels of service requirements or municipal ordinance and the utility's approved plan. Siting of storage facilities should consider locations which provide gravity flow. (Ord. 1403 § 6, 1987)

13.30.070 General facility placement.

A. Below-ground facilities shall be located in accordance with applicable municipal or county ordinance. Where no ordinance applies, water mains shall be installed at a location which is compatible with the existing water system, the terrain, and the location of other utilities. In new subdivisions, wherever practical, water mains should be installed on the north or west sides of the street. It is recommended that the Pierce County utility committee coordinating council be notified of water system expansions.

B. In addition, all piping, pumping, source, storage and other facilities shall be located on public rights-of-way or dedicated utility easements. Utility easements must be a minimum of 15 feet in width, and piping shall be installed no closer than five feet from the easement's edge. Exceptions to this minimum easement may be approved by the operating water utility. Unrestricted access shall be provided to all public water system lines and their appurtenances and public fire hydrants that are maintained by public agencies or utilities. (Ord. 1403 § 7, 1987)

13.30.080 Pipe cover.

The depth of trenching, installation of pipes, and backfill shall be such as to give a minimum cover of 36 inches over the top of the pipe. This standard shall apply to transmission, distribution and service piping. Backfilling up to 12 inches over the top of the pipe shall be evenly and carefully placed. The remaining depth of trench is to be filled in accordance with applicable construction standards identified in the general provisions of the "Standard Specifications for Road, Bridge, and Municipal Construction," 1984 edition, as prepared by the Washington State Department of Transportation and the American Public Works Association, Washington State Chapter. Materials capable of damaging the pipe or its coating shall be removed from the backfill material. (Ord. 1403 § 8, 1987)

13.30.090 Separation distances.

Whenever possible, transmission and distribution water piping shall be separated at least 10 feet horizontally from on-site waste disposal piping, drainfields and/or wastewater gravity or force mains. At a minimum, the bottom of the water main shall be 18 inches above the top of the sewer. Closer spacing may be permissible where the sewer piping is constructed to water main standards and has been pressure-tested to ensure watertightness prior to backfilling. (Ord. 1403 § 9, 1987)

Chapter 13.40
WATER AND SEWER REIMBURSEMENT AGREEMENTS[7]

Sections:

13.40.010 Purpose.

This chapter is intended to implement and thereby make available to the public the provisions of chapter 35.91 RCW as the same now exists, or may hereafter be amended. (Ord. 1573 § 1, 1992)

13.40.020 Contracts with real estate owners authorized.

The city is authorized to contract with the owners of real property in the manner provided for in chapter 35.91 RCW, the Municipal Water and Facilities Act. (Ord. 1573 § 2, 1992)

13.40.030 First required prerequisite to contracts with the city.

The owner desiring to contract with the city shall notify the public works director, in writing, at least 30 days prior to construction of the facilities of his intent to enter into a latecomer agreement with the city. The notice shall contain the following information:

A. Description of the facilities to be installed;

B. Description of the area where the facilities are to be installed and a map showing the location thereof;

C. The cost estimate of the facilities. (Ord. 1573 § 3, 1992)

13.40.040 Ownership of system.

A. To be eligible a system must comply with all city ordinances, rules and regulations pertaining to the design and construction of water and/or sewer systems.

B. Upon approval of the latecomer agreement the constructed system shall become the property of the city. The city shall charge and receive fees for use according to the city's established water and sewer rates. Maintenance and operation costs of the system shall be borne by the city. (Ord. 1573 § 4, 1992)

13.40.050 Procedures upon submission for approval.

A. The owner shall submit the final construction costs to the public works director within 60 days from the date of final approval of a construction by the city. The matter shall then be submitted to the city council which shall determine whether or not to enter into a latecomer agreement with the owner. If the project is approved for a latecomer agreement by the city council, the city shall have 90 days thereafter to finalize the agreement.

B. In the event the owner fails to comply with the time limitations set forth in SMC 13.40.020, and subsection A of this section, then and in that event, the owner shall have waived his right to enter into a latecomer agreement with the city. (Ord. 1573 § 5, 1992)

13.40.060 Form approved by city attorney.

A latecomer agreement shall be approved as to form by the city attorney and shall contain the following provisions:

A. The agreement shall be in effect for a period of not to exceed 15 years from the date thereof.

B. The city shall charge a sum up to 15 percent of the agreed amount, collected on behalf of the owner to defray the cost of labor, bookkeeping and accounting, which charge shall be deducted from the amount collected before remitting said amount to the owner.

C. Ownership of all water and sewer mainlines installed on private property shall be conveyed to the city and the owner shall grant the city an easement therefor. All deed and easements for said mainline shall be submitted to the city within 60 days from the completion of construction.

D. The agreement shall provide that the developer of the facilities waives and releases the city from all claims arising from the establishment, administration and enforcement of the latecomer agreement.

E. In no event shall the city be considered a guarantor of any project or improvement by virtue of this chapter or any agreement made pursuant to this chapter. (Ord. 1616 § 1, 1994; Ord. 1573 § 6, 1992)

13.40.070 Restrictions on connection.

A. Under the terms of the latecomer agreement the city shall not allow any person to tap into the system without prior payment, or assurance of payment, to the applicant or the applicant's successor(s) or assign(s), herein referred to collectively as "beneficiary," of the latecomer charge, including interest and costs of administration.

B. The latecomer agreement shall obligate the city to exercise its best efforts to assure compliance with this section, but the city

shall not incur liability for an unauthorized tap. (Ord. 1573 § 7, 1992)

13.40.080 Payment of charge.

A. Payment of the latecomer charge shall be made to the city in accordance with the city's rules.

B. Payment to the city shall be by one lump sum including administrative costs. The city shall pay the amounts due the beneficiary within 60 days of receipt.

C. Throughout the term of the agreement the beneficiary must in writing certify annually in January the name(s) and address(es) of the beneficiary. The city shall not be responsible for locating any person who may be entitled to benefits under any agreement. Failure to receive the annual certification required under this subsection, shall give the city cause to refuse to make payment under the agreement and money received may become the sole and exclusive property of the city.

D. The city may exempt existing single-family homes. (Ord. 1573 § 8, 1992)

13.40.090 Recording of agreement and releases.

A. The public works director shall record each latecomer agreement, or a notice thereof, including the legal description of all properties, subject to the latecomer charge, in the office of the auditor of Pierce County.

B. In addition to recording, the public works director shall mail a copy of the agreement, or a summary thereof, to each owner of record of all properties subject to the latecomer charge.

C. When the latecomer charge for a particular lot or parcel has been paid, the public works director shall furnish proof of payment to the owner of the lot or parcel and within 30 days record a release in the office of the auditor of Pierce County, giving the legal description of the lot or parcel. (Ord. 1596 § 1, 1993: Ord. 1573 § 9, 1992)

APPENDIX C

WAC 173-510 – Instream Resources Protection Program (WRIA 10)

Chapter 173-510 WAC

INSTREAM RESOURCES PROTECTION PROGRAM—PUYALLUP RIVER BASIN, WATER RESOURCE INVENTORY AREA (WRIA) 10

WAC

WAC 173-510-010 General provision. These rules apply to waters within the Puyallup River basin, WRIA 10, as defined in WAC 173-500-040. This chapter is promulgated pursuant to chapter 90.54 RCW (Water Resources Act of 1971), chapter 90.22 RCW (minimum water flows and levels), and in accordance with chapter 173-500 WAC (water resources management program).

[Statutory Authority: Chapters 90.22 and 90.54 RCW. 80-04-047 (Order DE 79-31), § 173-510-010, filed 3/21/80.]

WAC 173-510-020 Purpose. The purpose of this chapter is to retain perennial rivers, streams, and lakes in the Puyallup River basin with instream flows and levels necessary to provide protection for wildlife, fish, scenic-aesthetic, environmental values, recreation, navigation, and to preserve high water quality standards.

[Statutory Authority: Chapters 90.22 and 90.54 RCW. 80-04-047 (Order DE 79-31), § 173-510-020, filed 3/21/80.]

WAC 173-510-030 Establishment of instream flows. (1) Stream management units and associated control stations are established as follows:

STREAM MANAGEMENT UNIT INFORMATION

Control Station No. Stream Management Unit Name	Control Station by River Mile and Section, Township, and Range	Affected Stream Reach(es)
12-0965.00 Upper Puyallup River	12.2 25-20-4E	Confluence with Puyallup River to the headwaters including all tributaries
12-0957.00 Carbon River	0.1 13-19-4E	From the confluence with the White River to the headwaters including all tributaries, excluding the Carbon River.
12-1015.00 Lower Puyallup River	6.6 20-20N-R4E	From the influence of mean annual high tide at low base flow levels to the confluence with the White River including all tributaries and excluding the White River.

(2) Instream flows are established for the stream management units in WAC 173-510-030(1) as follows:

INSTREAM FLOWS IN THE PUYALLUP RIVER BASIN

(cubic feet per second)

Month	Day	12-0965.00 Puyallup River (At Alderton)	12-1015.00 Puyallup River	12-0957.00 Carbon River
Jan	1	700	1400	600
	15	700	1400	550
Feb	1	750	1400	550
	15	800	1500	550
Mar	1	800	1600	550
	15	850	1700	550
Apr	1	900	1800	600
	15	950	1900	700
May	1	950	2000	900
	15	1000	2000	900
Jun	1	1050	2000	600
	15	1050	2000	500
Jul	1	1050	2000	450
	15	1050	1750	400
Aug	1	900	1500	350
	15	800	1300	350
Sep	1	600	1150	350
	15	500	1000	350
Oct	1	500	1000	350
	15	500	1000	550
Nov	1	600	1000	550
	15	700	1100	600
Dec	1	700	1200	700
	15	700	1300	700

(3) Instream flow hydrographs, as represented in the document entitled "Puyallup River basin instream resource protection program," shall be used for definition of instream flows on those days not specifically identified in WAC 173-510-030(2).

(4) All consumptive water rights hereafter established shall be expressly, subject to instream flows established in WAC 173-510-030(1) through (3).

(5) At such time as the department of fisheries and/or department of wildlife and the department of ecology shall agree that additional stream management units should be identified other than those specified in WAC 173-510-030(1), the department of ecology shall identify additional control stations and management units on streams and tributaries within the basin and shall further protect instream flows where possible for those stations as provided in chapters 90.22 and 90.54 RCW.

[Statutory Authority: Chapters 43.21B, 43.27A, 90.22 and 90.54 RCW. 88-13-037 (Order 88-11), § 173-510-030, filed 6/9/88. Statutory Authority: Chapters 90.22 and 90.54 RCW. 80-04-047 (Order DE 79-31), § 173-510-030, filed 3/21/80.]

WAC 173-510-040 Surface water source limitations to further consumptive appropriations. (1) The department of ecology, having determined unlimited consumptive appropriations would harmfully impact instream values, adopts instream flows as follows confirming surface water source limitations previously established administratively under the authority of chapter 90.03 RCW and RCW 75.20.050.

LOW FLOW LIMITATIONS

Stream Number Stream Name Section, Township, Range of Stream Mouth or Lake Outlet	Limitation
10.0594 Unnamed stream, tributary to Puyallup River NE1/4SE1/4, Sec. 8, T.18N, R.5E	No diversion when flow falls to 0.10 cfs.
10.0415 Unnamed stream, (Taylor Creek) tributary of Carbon River NW1/4SW1/4, Sec. 33, T.19N., R.5E	No diversion when flow falls to 1.0 cfs.

LOW FLOW LIMITATIONS

Stream Number Stream Name Section, Township, Range of Stream Mouth or Lake Outlet	Limitation
10.0402 Unnamed stream, (Van Ogle Creek) tributary to Puyallup River NW1/4SE1/4, Sec. 30, T.20N, R.5E	No diversion when discharge into the Puyallup River drops to 1.0 cfs.
Unnamed stream, (Canyon Creek) tributary to Puyallup River SE1/4NE1/4, Sec. 24, T. 20N, R.3E	No diversion when flow falls to 1.0 cfs.

(2) The following stream and lake closures are adopted confirming surface water source limitations previously established administratively under the authority of chapter 90.03 RCW and RCW 75.20.050.

EXISTING SURFACE WATER CLOSURES

Stream Number Stream Name Section, Township, Range	Date of Closure	Period of Closure
10.0414 Voight Creek, tributary to Carbon River NW1/4SW1/4, Sec. 33, T.19N., R.5E	2/26/75	All year
10.0589 Unnamed stream (Lawrence Creek), tributary to Puyallup River NW1/4NE1/4, Sec. 25, T.19N, R.4E	2/26/75	All year
Unnamed springs, tributary to Puyallup River SE1/4,NE1/4, Sec. 35, T.20N, R.4E	12/14/64	All year
10. 0006 Hylebos Creek Hylebos Creek, drains into Commencement Bay and Puget Sound NW1/4NE1/4, Sec. 27, T.21N, R.3E	4/26/76	All year
10.0406 Fennel Creek, tributary to Puyallup River SE1/4SE1/4, Sec. 6, T.19N, R.SE	2/26/75	All year
North Lake Sec. 15, T.21N, R.4E	8/19/47	All year

(3) The department, having determined that further consumptive appropriations would harmfully impact instream values, closes the following streams and lakes in WRIA 10 to further consumptive appropriations.

NEW SURFACE WATER CLOSURES

Stream Number Stream or Lake Name Section, Township, Range of Stream Mouth or Lake Outlet	Period of Closure
10.0429 South Prairie Creek and all tributaries, tributary to Carbon River SW1/4SE1/4, Sec. 27, T.19N, R.5E	All year
10.0027 Clarks Creek and all tributaries, tributary to Puyallup River NE1/4NE1/4, Sec. 19, T.20N, R.4E	All year
10.0600 Kapowsin Creek and all tributaries, tributary to Puyallup River SW1/4SW1/4, Sec. 20, T.18N, R.5E	All year

NEW SURFACE WATER CLOSURES

Stream Number Stream or Lake Name Section, Township, Range of Stream Mouth or Lake Outlet	Period of Closure
10.0031-.0397 White River and all tributaries SW1/4SE1/4, Sec 23, T.20N, R.4E	All year
Kapowsin Lake SE1/4NE1/4, Sec. 5, T.17N., R.5E	All year
10.0603-.0607 Ohop Creek and all tributaries source of Kapowsin Lake SE1/4NW1/4, Sec. 18, T.17N., R.3E	All year
10.0022 Clear Creek and all tributaries, tributary to Puyallup River NW1/4SW1/4, Sec. 11, T.20N., R.3E	All year
10.0410 Canyon Falls Creek and all tributaries, tributary to Puyallup River Sec. 7, T.19N., R.5E	All year
10.0596 Fiske Creek and all tributaries, tributary to Puyallup River SW1/4SW1/4, Sec. 17, T.18N., R.5E	All year
10.0006 Hylebos Creek and all tributaries, tributary to Commencement Bay NW1/4NE1/4, Sec. 27, T.21N., R.3E	All year
10.0620 Le Dout Creek and all tributaries, tributary to Puyallup River NW1/4NW1/4, Sec. 28, T.17N., R.6E	All year
10.0622 Niesson Creek and all tributaries, tributary to Puyallup River NE1/4SE1/4, Sec. 33, T.17N., R.6E	All year
10.0017 Wapato Creek and all tributaries, tributary to Commencement Bay NW1/4SW1/4, Sec. 27, T.21N., R.3E	All year
10.0035 Unnamed Stream (Strawberry Creek), (Salmon Creek) and all tributaries, tributary to White River NE1/4SE1/4, Sec. 13, T.20N., R.4E	All year
10.0621 Kellogg Creek and all tributaries, tributary to Puyallup River SE1/4SW1/4, Sec. 28, T.17N., R.6E	All year

[Statutory Authority: Chapters 90.22 and 90.54 RCW. 80-04-047 (Order DE 79-31), § 173-510-040, filed 3/21/80.]

WAC 173-510-050 Ground water. In future permitting actions relating to ground water withdrawals, particularly from shallow aquifers, a determination shall be made as to whether the proposed withdrawal will have a direct, and measurable, impact on stream flows in streams for which closures and instream flows have been adopted (WAC 173-510-040). If the determination affirms such interrelationship, the provisions of WAC 173-510-040 shall apply.

[Statutory Authority: Chapters 90.22 and 90.54 RCW. 80-04-047 (Order DE 79-31), § 173-510-050, filed 3/21/80.]

WAC 173-510-060 Lakes. In future permitting actions relating to withdrawal of lake waters, lakes and ponds shall be retained substantially in their natural condition. Withdrawals of water which would conflict

therewith shall be authorized only in those situations where it is clear that overriding considerations of the public interest will be served.

[Statutory Authority: Chapters 90.22 and 90.54 RCW. 80-04-047 (Order DE 79-31), § 173-510-060, filed 3/21/80.]

WAC 173-510-070 Exemptions. (1) Nothing in this chapter shall affect water rights, riparian, appropriative, or otherwise existing on the effective date of this chapter, nor shall it affect existing rights relating to the operation of any navigation, hydroelectric, or water storage reservoir or related facilities.

(2) Domestic in-house use for a single residence and stock watering shall be exempt except that use related to feedlots.

[Statutory Authority: Chapters 90.22 and 90.54 RCW. 80-04-047 (Order DE 79-31), § 173-510-070, filed 3/21/80.]

WAC 173-510-080 Future rights. No rights to divert or store public surface waters of the Puyallup WRIA 10 shall hereafter be granted which shall conflict with the purpose of this chapter as stated in WAC 173-510-02 [WAC 173-510-020].

[Statutory Authority: Chapters 90.22 and 90.54 RCW. 80-04-047 (Order DE 79-31), § 173-510-080, filed 3/21/80.]

WAC 173-510-090 Enforcement. In enforcement of this chapter, the department of ecology may impose such sanctions as appropriate under authorities vested in it, including but not limited to the issuance of regulatory orders under RCW 43.27A.190 and civil penalties under RCW 90.03.600.

[Statutory Authority: Chapters 43.21B, 43.27A, 90.22 and 90.54 RCW. 88-13-037 (Order 88-11), § 173-510-090, filed 6/9/88. Statutory Authority: Chapters 90.22 and 90.54 RCW. 80-04-047 (Order DE 79-31), § 173-510-090, filed 3/21/80.]

WAC 173-510-095 Appeals. All final written decisions of the department of ecology pertaining to permits, regulatory orders, and related decisions made pursuant to this chapter shall be subject to review by the pollution control hearings board in accordance with chapter 43.21B RCW.

[Statutory Authority: Chapters 43.21B, 43.27A, 90.22 and 90.54 RCW. 88-13-037 (Order 88-11), § 173-510-095, filed 6/9/88.]

WAC 173-510-100 Regulation review. The department of ecology shall initiate a review of the rules established in this chapter whenever new information, changing conditions, or statutory modifications make it necessary to consider revisions.

[Statutory Authority: Chapters 43.21B, 43.27A, 90.22 and 90.54 RCW. 88-13-037 (Order 88-11), § 173-510-100, filed 6/9/88. Statutory Authority: Chapters 90.22 and 90.54 RCW. 80-04-047 (Order DE 79-31), § 173-510-100, filed 3/21/80.]

APPENDIX D

Sumner Water Rights Certificates and Claims

City of Sumner

1104 Maple Street
Sumner, Washington 98390

(206) 863-8300

July 27, 1992

Mr. Paul Gilligan
Parametrix, Inc
P.O. Box 460
Sumner, WA 98390

RE: City of Sumner
Water System Comprehensive Plan

Dear Mr. Gilligan,

Please find attached a report on the current status of water rights for the City of Sumner. This report is for use in preparing the update to the Water System Comprehensive Plan.

If you have any questions please contact us.

Very truly yours,

Lois Wilson

Lois Wilson, P.E.
City Engineer

LW:so

enclosure

cc: Project File

SHERWOOD ENGINEERING
1315 ACADEMY STREET
SUMNER, WA 98390

July 23, 1992

Marwan Salloum, P.E.
Director of Public Works
City of Sumner
1104 Maple St.
Sumner, WA 98390

Dear Sir:

Enclosed please find a copy of my Report on the current status of water rights for the City of Sumner. I have some additional research on-going which may make an addendum to this report necessary.

Thank you for this opportunity to be of service to the City.

Please contact me if you have any questions.

Very truly yours,

Glen W. Sherwood

Glen W. Sherwood, P.E.

Enclosure

REPORT

ON

CITY OF SUMNER WATER RIGHTS

Pursuant to your Notice to Proceed, I have conducted a search of the City records and received a tabulation from the Department of Ecology records regarding water rights currently held by the City of Sumner, and find that the City has properly filed and recorded water rights to four sources as follows:

	Name	Location
1.	Salmon Springs Cert. 7838	SW1/4, SE1/4, and the E1/2, SE1/4, SW1/4 Sec. 18, T20N, R5E, WM
2.	Salmon Springs (Sumner Springs) Cert. S2-21979C	Govt. Lot 8 and the SW1/4 of the SE1/4 Sec 18, T20N, R5E, WM
3.	South Well Cert. G2-23281C	SE1/4 of SE1/4 Sec 30,T20N, R5E, WM
4.	Cemetery Well Cert. G2-21980C	SE1/4 of SW1/4 Sec 23, T20N, R4E, WM

The City also has water rights on two spring sources which it acquired by purchase of the Weber-Ritter Co. in 1968. These are:

	Name	Location
5.	Crystal Springs Cert. 02266 (S2-04931C)	NW1/4 of NE1/4 Sec 19, T20N, R5E, WM
6.	Unnamed Springs (North of Crystal Springs) Cert. 02267 (S2-04932C)	NW1/4 of NE1/4 Sec 19, T20N, R5E, WM

These sources and the Certificate limits are tabulated in Table 1. Copies of the Water Rights Certificates are attached to this report.

The City also acquired Elhi Springs from the Weber-Ritter Co. in 1968 but the Dept. of Ecology has no record of a water rights filing on that source in the NE1/4 of the SW1/4 and the NW1/4 of the SE1/4 of Sec 29, T20N, R5E, WM. The City of Bonney Lake filed an application for water rights on

this source in 1949 but the Elhi Water Co. (Weber-Ritter) protested on the basis that the source had been used by the Elhi Water Co. and its predecessors since before 1900 for domestic supply, and water rights had been filed by Mark Maynard and recorded June 19, 1907 at 12:18 P.M. with the Pierce Co. Auditor. The application by Bonney Lake was rejected by the Dept. of Conservation and Development.

In a Valuation Report dated June 1964 Livingston & Moore, Consulting Engineers, estimated that on April 29, 1964, 153 gpm flowed into the reservoir at Elhi Springs and that 153 gpm flowed around it. They also estimated that a spring adjacent to the reservoir flowed 62 gpm.

RECOMMENDATIONS:

1. File for a change of Purpose and Place of use for the Weber-Ritter rights, Certificates 02266 (S2-04931C) and 02267 (S2-4932C), to municipal supply and to area served by the City of Sumner.

2. File for an increase in the maximum annual usage for the South Well Certificate (G2-23281C) from 2450 ac ft/yr to at least 2770 ac ft/yr, or possibly to 3030 ac ft/yr.

3. File for water rights to a portion of the flow (probably 50%) from Elhi Springs depending on a determination of the flow from the springs.

4. File for increased water rights from the Cemetery Well Certificate (G2-21980C).

Attachments

Report Prepared By:
Glen W. Sherwood
Professional Engineer
Sherwood Engineering
1315 Academy St.
Sumner, WA 98390

Dated: July 22, 1992

Table 1

CITY OF SUMNER

WATER RIGHTS TABULATION

Source With Water Rights	Water Right Certificate #	Maximum Q_I Daily(cfs)	Maximum Yearly Q_A (ac-ft/yr)	Theoretical Q_A (ac-ft/yr)
Salmon Springs	7838	5.0	1008*	3620
Salmon Springs	S2-21979C	1.25	900	900
South Well	G2-23281C	2.23	800	1615
emetery Well	G2-21980C	0.56	100	805
Crystal Springs (Weber-Ritter)	02266(S2-04931C)	0.25	180	180
Unnamed Springs (Weber-Ritter)	02267(S2-04932C)	0.20	142	142
TOTAL		9.49	3030	7262

* Limit appears in Report of Examination - not in Certificate

NOTE:

In the Certificate on the South Well G2-23281C, the DOE stated "In no instance shall the total annual quantity withdrawn/diverted under all existing and/or claimed rights exceed 2450 acre-feet for municipal supply". The Weber-Ritter sources were not noted as being a factor in the DOE statement.

STATE OF WASHINGTON, COUNTY OF Pierce

CERTIFICATE OF SURFACE WATER RIGHT

(In accordance with the provisions of Chapter 117, Laws of Washington for 1917, and amendments thereto, and the rules and regulations of the State Supervisor of Water Resources thereunder.)

This is to certify that CITY OF SUMNER

of Sumner, State of Washington, has made proof to the satisfaction of the State Supervisor of Water Resources of Washington, of a right to the use of the waters of Salmon Springs, a tributary of Salmon Creek, with point or points of diversion within the SW¼, SE¼ AND E½, SE¼, SW¼ Sec. 18, Twp. 20 N., R. 5 E. W. M., under and subject to provisions contained in Appropriation Permit No. 11361 issued by the State Supervisor of Water Resources, and that said right to the use of said waters has been perfected in accordance with the laws of Washington, and is hereby confirmed by the State Supervisor of Water Resources of Washington and entered of record in Volume 16, at Page 7838, on the 21st day of July, 19 60, that the priority date of the right hereby confirmed is August 18, 1958; that the amount of water under the right hereby confirmed, for the following purposes is limited to an amount actually beneficially used and shall not exceed 5.0 cubic feet per second for Municipal Supply

A description of the lands under such right to which the water right is appurtenant, and the place where such water is put to beneficial use, is as follows:

City of Sumner

The right to the use of the water aforesaid hereby confirmed is restricted to the lands or place of use herein described, except as provided in Sections 6 and 7, Chapter 122, Laws of 1929.

WITNESS the seal and signature of the State Supervisor of Water Resources affixed this 21st day of July, 19 60.

M. Walker
State Supervisor of Water Resources.

2829026

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY

CERTIFICATE OF WATER RIGHT

[X] Surface Water (Issued in accordance with the provisions of Chapter 117, Laws of Washington for 1917, and amendments thereto, and the rules and regulations of the Department of Ecology.)

[ ] Ground Water (Issued in accordance with the provisions of Chapter 263, Laws of Washington for 1945, and amendments thereto, and the rules and regulations of the Department of Ecology.)

PRIORITY DATE	APPLICATION NUMBER	PERMIT NUMBER	CERTIFICATE NUMBER
February 22, 1974	S 2-21979	S 2-21979 P	S 2-21979 C

NAME
CITY OF SUMNER

ADDRESS (STREET)	(CITY)	(STATE)	(ZIP CODE)
1104 Maple St	Sumner	Washington	98390

This is to certify that the herein named applicant has made proof to the satisfaction of the Department of Ecology of a right to the use of the public waters of the State of Washington as herein defined, and under and specifically subject to the provisions contained in the Permit issued by the Department of Ecology, and that said right to the use of said waters has been perfected in accordance with the laws of the State of Washington, and is hereby confirmed by the Department of Ecology and entered of record as shown.

PUBLIC WATER TO BE APPROPRIATED

SOURCE
Salmon Springs

TRIBUTARY OF (IF SURFACE WATERS)
Salmon Creek

MAXIMUM CUBIC FEET PER SECOND	MAXIMUM GALLONS PER MINUTE	MAXIMUM ACRE-FEET PER YEAR
1.25		900

QUANTITY, TYPE OF USE, PERIOD OF USE
900 acre-feet per year — municipal supply — continuously

LOCATION OF DIVERSION/WITHDRAWAL

APPROXIMATE LOCATION OF DIVERSION—WITHDRAWAL
Along the hillside between a point 850 feet north and 200 feet west from the south quarter corner of Sec. 18; and a point 500 feet east and 500 feet north from the south quarter corner of Sec. 18

LOCATED WITHIN (SMALLEST LEGAL SUBDIVISION)	SECTION	TOWNSHIP N.	RANGE, (E. OR W.) W.M.	W.R.I.A.	COUNTY
Government Lot 8 and SW¼SE¼	18	20	5 E	10	Pierce

RECORDED PLATTED PROPERTY

LOT	BLOCK	OF (GIVE NAME OF PLAT OR ADDITION)

LEGAL DESCRIPTION OF PROPERTY ON WHICH WATER IS TO BE USED

Area served by City of Sumner within T. 20 N., R. 4 E.W.M. and T. 20 N., R. 5 E.W.M.

(SEE REVERSE SIDE)

CERTIFICATE

2543560

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY

CERTIFICATE OF WATER RIGHT

☐ Surface Water (Issued in accordance with the provisions of Chapter 117, Laws of Washington for 1917, and amendments thereto, and the rules and regulations of the Department of Ecology.)

☒ Ground Water (Issued in accordance with the provisions of Chapter 263, Laws of Washington for 1945, and amendments thereto, and the rules and regulations of the Department of Ecology.)

PRIORITY DATE	APPLICATION NUMBER	PERMIT NUMBER	CERTIFICATE NUMBER
October 11, 1974	G 2-23281	G 2-23281P	G 2-23281 C

NAME
CITY OF SUMNER

ADDRESS (STREET)	(CITY)	(STATE)	(ZIP CODE)
1104 Maple St	Sumner	Washington	98390

This is to certify that the herein named applicant has made proof to the satisfaction of the Department of Ecology of a right to the use of the public waters of the State of Washington as herein defined, and under and specifically subject to the provisions contained in the Permit issued by the Department of Ecology, and that said right to the use of said waters has been perfected in accordance with the laws of the State of Washington, and is hereby confirmed by the Department of Ecology and entered of record as shown.

PUBLIC WATER TO BE APPROPRIATED

SOURCE
well

TRIBUTARY OF (IF SURFACE WATERS)

MAXIMUM CUBIC FEET PER SECOND	MAXIMUM GALLONS PER MINUTE	MAXIMUM ACRE-FEET PER YEAR
	1,000	800

QUANTITY, TYPE OF USE, PERIOD OF USE
800 acre-feet per year municipal supply continuously

LOCATION OF DIVERSION/WITHDRAWAL

XIMATE LOCATION OF DIVERSION—WITHDRAWAL
500 feet west and 480 feet north of the southeast corner of Sec. 30

LOCATED WITHIN (SMALLEST LEGAL SUBDIVISION)	SECTION	TOWNSHIP N.	RANGE, (E. OR W.) W.M.	W.R.I.A.	COUNTY
SE¼SE¼	30	20	5 E	10	Pierce

RECORDED PLATTED PROPERTY

LOT	BLOCK	OF (GIVE NAME OF PLAT OR ADDITION)

LEGAL DESCRIPTION OF PROPERTY ON WHICH WATER IS TO BE USED

Area served by City of Sumner within T. 20 N., R. 4 E.W.M. and T. 20 N., R. 5 E.W.M.

(SEE REVERSE SIDE)

CERTIFICATE

2543853

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY

CERTIFICATE OF WATER RIGHT

☐ Surface Water (Issued in accordance with the provisions of Chapter 117, Laws of Washington for 1917, and amendments thereto, and the rules and regulations of the Department of Ecology.)

☒ Ground Water (Issued in accordance with the provisions of Chapter 263, Laws of Washington for 1945, and amendments thereto, and the rules and regulations of the Department of Ecology.)

PRIORITY DATE	APPLICATION NUMBER	PERMIT NUMBER	CERTIFICATE NUMBER
February 22, 1974	G 2-21980	G 2-21980 P	G 2-21980 C

NAME
CITY OF SUMNER

ADDRESS (STREET) 1104 Maple St (CITY) Sumner (STATE) Washington (ZIP CODE) 98390

This is to certify that the herein named applicant has made proof to the satisfaction of the Department of Ecology of a right to the use of the public waters of the State of Washington as herein defined, and under and specifically subject to the provisions contained in the Permit issued by the Department of Ecology, and that said right to the use of said waters has been perfected in accordance with the laws of the State of Washington, and is hereby confirmed by the Department of Ecology and entered of record as shown.

PUBLIC WATER TO BE APPROPRIATED

SOURCE
well

TRIBUTARY OF (IF SURFACE WATERS)

MAXIMUM CUBIC FEET PER SECOND	MAXIMUM GALLONS PER MINUTE	MAXIMUM ACRE-FEET PER YEAR
	250	100

QUANTITY, TYPE OF USE, PERIOD OF USE		
100 acre-feet per year	irrigation of 50 acres	May 1 to October 1

LOCATION OF DIVERSION/WITHDRAWAL

APPROXIMATE LOCATION OF DIVERSION—WITHDRAWAL
.eet west and 600 feet north from the south quarter corner of Sec. 23

LOCATED WITHIN (SMALLEST LEGAL SUBDIVISION)	SECTION	TOWNSHIP N.	RANGE (E. OR W.) W.M.	W.R.I.A.	COUNTY
SW¼	23	20	4 E	10	Pierce

RECORDED PLATTED PROPERTY

LOT	BLOCK	OF (GIVE NAME OF PLAT OR ADDITION)

LEGAL DESCRIPTION OF PROPERTY ON WHICH WATER IS TO BE USED

In Sec. 23, T. 20 N., R. 4 E.W.M.:

Tract 1 (Old Cemetery)

Commencing at stone monument on inside corner of ell of the I. Wollery D.L.C.; thence south 89°01' west 227.20 feet to the true point of beginning; thence north 0°14'20" east 69.80 feet to southerly line of C.M. and St. P. right of way; thence north 78°50' west 126 feet; thence north 79°32' west 386.84 feet; thence north 79°36'50" west 776.94 feet; thence south 10°45'30" west 292.40 feet, more or less, to the northerly line of county road; thence easterly along said line 319.80 feet, more or less, to Woodlawn Abbey; thence north 09°28' east 196.42 feet; thence south 87°14'02" east 150.10 feet; thence south 0°34'34" west 232.76 feet to northerly line of county road; thence south 75°02' east 854.66 feet; thence north 0°14'20" east 329.95 feet to true point of beginning.

Tract 2 (New Cemetery)

Commencing at stone monument at northeast corner of the I. Wollery D.L.C.; thence south 89° 47'30" west 728.40 feet; thence south 0°14'20" west 1386 feet; thence south 89°47'30" west 431.84 feet to the true point of beginning; thence south 0°14'20" west 626.50 feet; thence north 89°47'30" east 432.17 feet; thence south 71°41' east 397.70 feet to a point in the west line of Creso Road; thence south 0°14'20" west 642.65 feet to a point in the north line of the Inter-County River Improvement Easement of June 5, 1913; thence south 67°06'20" w 383.37 feet; thence south 65°08'45" west 321.40 feet; thence south 82°30' west 250 f thence south 61°46'30" west 491.47 feet; thence north 0°53'22" west 1646.81 feet; thence south 89°33'42" west 338.54 feet to a pipe monument; thence north 0°39'54" west 1174.93 feet more or less, to southerly line of county road; thence south 75°11' east 257.85 feet; thence south 0°14'20" east 672.50 feet; thence north 89°47'30" east 191 feet, more or less, to a stone monument; thence north 0°14'02" east 610.40 feet to the southerly line of county road; thence south 75°11' east 817.67 feet, more or less, to the easterly line of Roseli Road; thence south 0°14'22" west 372.50 feet to true point of beginning;
EXCEPT that portion thereof lying southwesterly of the northern line of State Highway SR-167.

(SEE REVERSE SIDE)

CERTIFICATE

STATE OF WASHINGTON, COUNTY OF Pierce

CERTIFICATE OF WATER RIGHT

(In accordance with the provisions of Chapter 117, Laws of Washington for 1917, and amendments thereto, and the rules and regulations of the State Supervisor of Hydraulics thereunder.)

This is to certify, that WEBER & RITTER, INC. *of* Sumner, *State of* Washington, *has made proof to the satisfaction of the State Supervisor of Hydraulics of Washington, of a right to the use of the waters of* Crystal Springs, *a tributary of* Salmon Creek, *with point or points of diversion within the* NW¼ of NE¼ Sec. 19, Twp. 20 N., Range 5 E., W. M., *for the purposes of* domestic supply for community *under* Appropriation *Permit No.* 2847 *issued by the State Supervisor of Hydraulics, and that said right to the use of said waters has been perfected in accordance with the laws of Washington, and is hereby confirmed by the State Supervisor of Hydraulics of Washington and entered of record in Volume* 5, *at Page* 2266, *on the* 23rd *day of* July, *19*45; *that the right hereby confirmed dates from* August 3, 1939; *that the amount of water to which such right is entitled and hereby confirmed, for the purposes aforesaid, is limited to an amount actually beneficially used for said purposes, and shall not exceed* 0.25 of a cubic foot per second.

A description of the lands under such right to which the water hereby confirmed is appurtenant, and the place where such water is put to beneficial use, is as follows:

PLACE OF USE			LEGAL SUBDIVISION	FOR IRRIGATION	
Section	Township	Range		No. Acres Described in Permit	No. Acres Actually Irrigated

LOCATION OF POWER PLANT			LEGAL SUBDIVISION	FOR POWER	
Section	Township	Range		H. P. Described in Permit	H. P. Actually Developed

Section	Township	Range	LEGAL SUBDIVISION	FOR OTHER USES
19	20 N.	5 E.W.M.	Van Tassell Garden Tracts E½ of NW¼; E½ of SW¼	Domestic supply for community use.

The right to the use of the water aforesaid hereby confirmed is restricted to the lands or place of use herein described, except as provided in Sections 6 and 7, Chapter 122, Laws of 1929.

WITNESS the seal and signature of the State Supervisor of Hydraulics affixed this 23rd *day of* July, *19*45

Clarence D. Klein
State Supervisor of Hydraulics.

ENGINEERING DATA

MUNICIPAL SUPPLY—

16. To supply the ~~city of~~ community in Van Trassell Garden Tracts & adjoining (Name)
land, in Pierce County, having a present population of .....
and an estimated population of ..... in 19.....

(a) Estimated present requirement 200 families

(b) Estimated future requirement .....

17. Construction work will begin on or before .....

18. Construction work will be completed on or before .....

Duplicate maps of the proposed ditch or other works, prepared in accordance with the rules of the State Supervisor of Hydraulics accompany this application.

WERNER & RITTER, INC.
(Name of applicant)

BY: James W. Bainbridge
Agent

Signed in the presence of us as witnesses:

(1) B. L. Robertson (Name), Olympia, Wn. (Address of witness)

(2) ..... (Name) ..... (Address of witness)

Remarks: Water has been used before 1917 for slaughter house.

STATE OF WASHINGTON, } ss.
COUNTY OF THURSTON.

This is to certify that I have examined the foregoing application together with the accompanying maps and data, and return the same for correction or completion, as follows: .....

.....

.....

.....

In order to retain its priority, this application must be returned to the State Supervisor of Hydraulics, with corrections, on or before ....., 19..

WITNESS my hand this ..... day of ....., 19.

State Supervisor of Hydraulics.

G. S. No. 500—11-44—1M. Wash.

CERTIFICATE RECORD NO. 5, PAGE NO. 2267

STATE OF WASHINGTON, COUNTY OF Pierce

CERTIFICATE OF WATER RIGHT

(In accordance with the provisions of Chapter 117, Laws of Washington for 1917, and amendments thereto, and the rules and regulations of the State Supervisor of Hydraulics thereunder.)

This is to certify, that WEBER & RITTER, INC., *of* Sumner, *State of* Washington, *has made proof to the satisfaction of the State Supervisor of Hydraulics of Washington, of a right to the use of the waters of* unnamed spring, *a tributary of* Salmon Creek, *with point or points of diversion within the* northwest quarter of Northeast quarter of *Sec.* 19, *Twp.* 20 N *Range* 5 E., W. M., *for the purposes of* domestic supply for community *under* Appropriation *Permit No.* 2348 *issued by the State Supervisor of Hydraulics, and that said right to the use of said waters has been perfected in accordance with the laws of Washington, and is hereby confirmed by the State Supervisor of Hydraulics of Washington and entered of record in Volume* 5, *at Page* 2267, *on the* 23rd *day of* July, *19*45; *that the right hereby confirmed dates from* August 3, 1939; *that the amount of water to which such right is entitled and hereby confirmed, for the purposes aforesaid, is limited to an amount actually beneficially used for said purposes, and shall not exceed* 0.2 of a cubic foot per second.

A description of the lands under such right to which the water hereby confirmed is appurtenant, and the place where such water is put to beneficial use, is as follows:

PLACE OF USE			LEGAL SUBDIVISION	FOR IRRIGATION	
Section	Township	Range		No. Acres Described in Permit	No. Acres Actually Irrigated

LOCATION OF POWER PLANT			LEGAL SUBDIVISION	FOR POWER	
Section	Township	Range		H. P. Described in Permit	H. P. Actually Developed

Section	Township	Range	LEGAL SUBDIVISION	FOR OTHER USES
19	20 N.	5 E.W.M.	Van Tassell Garden Tracts	Domestic use for
			E½ of NW¼; E½ of SW¼	community

The right to the use of the water aforesaid hereby confirmed is restricted to the lands or place of use herein described, except as provided in Sections 6 and 7, Chapter 122, Laws of 1929.

WITNESS the seal and signature of the State Supervisor of Hydraulics affixed this 23rd *day*

MUNICIPAL SUPPLY—

16. To supply the ~~city of~~ community in Tassell Garden Tracts and land (Name) adjoining, in Pierce County, having a present population of ..... and an estimated population of ..... in 19.....

(a) Estimated present requirement .....

(b) Estimated future requirement 200 families

17. Construction work will begin on or before .....

18. Construction work will be completed on or before .....

Duplicate maps of the proposed ditch or other works, prepared in accordance with the rules of the State Supervisor of Hydraulics accompany this application.

Webber & Ritter, Inc.
(Name of applicant)

By James W. Bainbridge
Agent

Signed in the presence of us as witnesses:

(1) B. L. Robertson (Name), Olympia, Wash. (Address of witness)

(2) ..... (Name), ... (Address of witness)

Remarks: Was used before 1917 for slaughter house.

STATE OF WASHINGTON,
COUNTY OF THURSTON. } ss.

This is to certify that I have examined the foregoing application together with the accompanying maps and data, and return the same for correction or completion, as follows: .....

In order to retain its priority, this application must be returned to the State Supervisor of Hydraulics, with corrections, on or before ....., 19.

WITNESS my hand this ..... day of ....., 19.....

State Supervisor of Hydraulics.

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY
P.O. Box 47600 • Olympia, Washington 98504-7600
(360) 407-6000 • TDD Only (Hearing Impaired) (360) 407-6006

July 13, 1998

City of Sumner
1104 Maple St
Sumner WA 98390-1423

Dear City of Sumner:

Your claim to the use of historic water has been accepted in the 1997 claims registration. The registration number is on the bottom left hand side of the form. The law requires that we include the following language after registration of your claim:

> "The filing of a statement of claim does not constitute an adjudication of any claim to the right to use of waters as between the water use claimant and the state, or as between one or more water use claimants and another or others."

The acceptance of this statement of claim by the Department **does not** give you the right to use the water if you can't prove, in a superior court the historic use of the water.

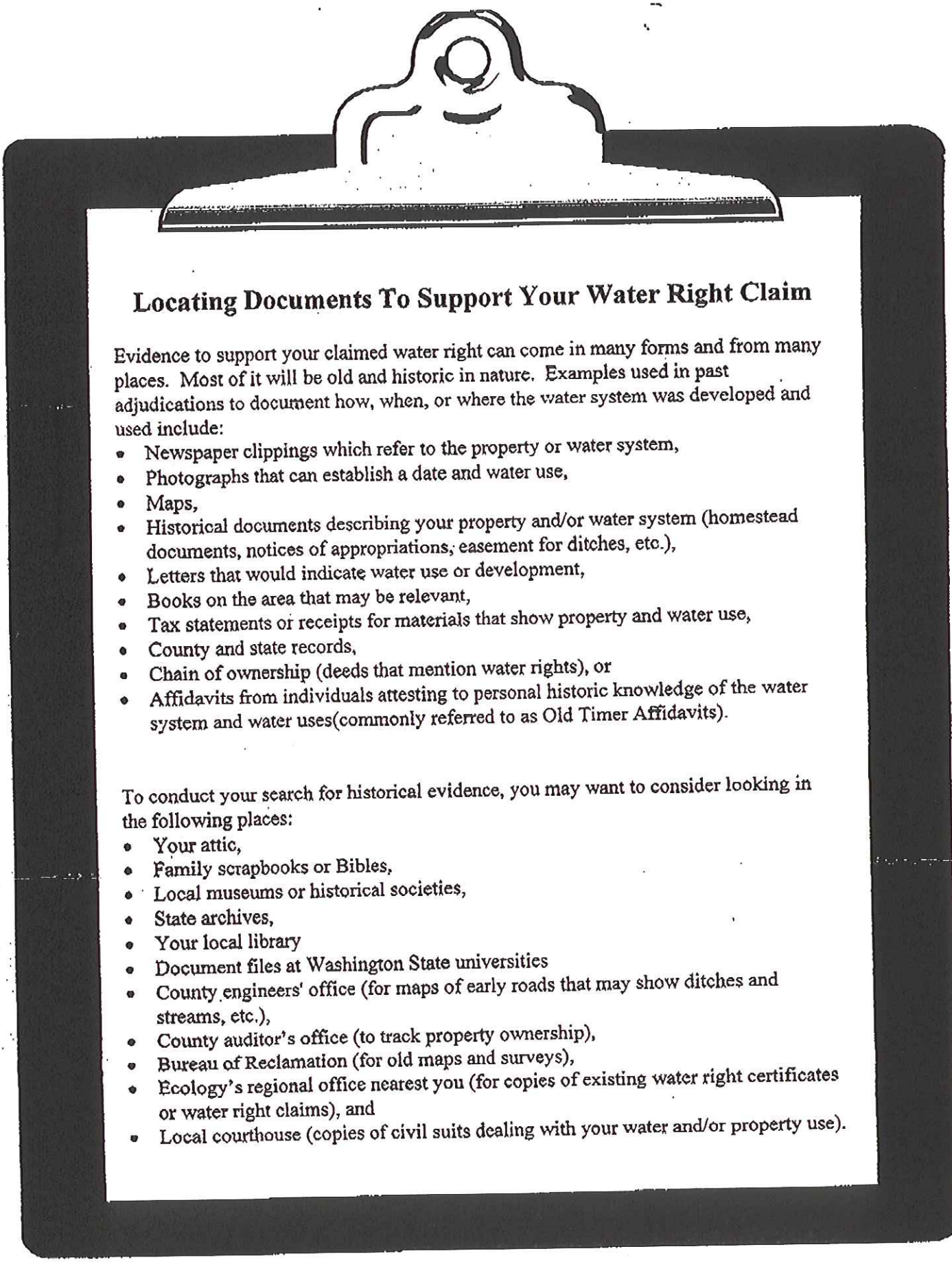
Please be aware under Chapter 90.14.068 RCW

> ....This reopening of the period for filing statements of claim shall not affect or impair in any respect whatsoever any water right existing prior to July 27, 1997. A water right embodied in a statement of claim filed under this section is subordinate to any water right embodied in a permit or certificate issued under Chapter 90.03 or 90.44 RCW prior to the date the statement of claim is filed with the Department and is subordinate to any water right embodied in a statement of claim filed in the water rights claims registry before July 27, 1997.

Sincerely,

Candy Pittman
Water Resources Program

Enclosure
Claim No. 300,571-572



Locating Documents To Support Your Water Right Claim

Evidence to support your claimed water right can come in many forms and from many places. Most of it will be old and historic in nature. Examples used in past adjudications to document how, when, or where the water system was developed and used include:

- Newspaper clippings which refer to the property or water system,
- Photographs that can establish a date and water use,
- Maps,
- Historical documents describing your property and/or water system (homestead documents, notices of appropriations, easement for ditches, etc.),
- Letters that would indicate water use or development,
- Books on the area that may be relevant,
- Tax statements or receipts for materials that show property and water use,
- County and state records,
- Chain of ownership (deeds that mention water rights), or
- Affidavits from individuals attesting to personal historic knowledge of the water system and water uses(commonly referred to as Old Timer Affidavits).

To conduct your search for historical evidence, you may want to consider looking in the following places:

- Your attic,
- Family scrapbooks or Bibles,
- Local museums or historical societies,
- State archives,
- Your local library
- Document files at Washington State universities
- County engineers' office (for maps of early roads that may show ditches and streams, etc.),
- County auditor's office (to track property ownership),
- Bureau of Reclamation (for old maps and surveys),
- Ecology's regional office nearest you (for copies of existing water right certificates or water right claims), and
- Local courthouse (copies of civil suits dealing with your water and/or property use).

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY

STATEMENT OF WATER RIGHT CLAIM

FOR OFFICE USE ONLY
10/53
WRIA

1. Name: CITY OF SUMNER
Mailing Address: 1104 Maple Street
City: Sumner State: WA Zip: 98390-1423
Phone No. (253) 863-8300

2. Date water was first put to use on your property *(see Instructions)* Month Jan and Year 1907

3. COMPLETE ONLY ONE BOX BELOW *(please read the instructions)*

3a. GROUND WATER

- ☐ Well
- ☐ Infiltration Trench
- ☐ Other _____ Give Name

4a. INSTANTANEOUS QUANTITY _____ gpm
(See instructions 10 gpm=0.02 cfs ; 1 cfs=450 gpm)

5a. ANNUAL QUANTITY OF WATER _____ afy
(One acre foot = 325,581 gallons)

3b. SURFACE WATER (Give name if known)

- ☐ _____ River ☐ _____ Lake
- ☐ _____ Creek ☒ Elbi Spring
- ☐ _____ Ditch ☐ _____ Pond
- ☐ Other _____

4b. INSTANTANEOUS QUANTITY 0.80 cfs
(See instructions 10 gpm=0.02 cfs ; 1 cfs=450 gpm)

5b. ANNUAL QUANTITY OF WATER 100 afy
(One acre foot = 325,581 gallons)

6. PURPOSE OF USE:

- ☐ Irrigation *(Number of acres irrigated)* _____
- ☐ Domestic Use *(Number of units)* _____
- ☐ Commercial *(Description)* _____
- ☐ Stockwater
- ☒ Municipal
- ☐ Other *(List all)* _____

7. PERIOD OF USE: ☒ Continuous or ☐ Seasonal From 1907 To Present

8. LOCATION OF THE POINT OF DIVERSION/WITHDRAWAL:
Approximately 2100 Feet (north, south) and 2300 Feet (east, west) From The S W Corner of Section 29
Being Within The N E 1/4 S W 1/4 of Section 29 T. 20 N., R. 5 (E.) or W.) W.M.

9. IF THE POINT OF DIVERSION/WITHDRAWAL IS LOCATED ON PLATTED PROPERTY:
Lot _____ Block _____ of _____ (Plat or Addition)
Section _____ T. _____ N., R. _____ (E. or W.) W.M.

10. LEGAL DESCRIPTION OF PROPERTY WHERE WATER IS USED:
City of Sumner Water Service Area Sections 12, 13, 24, & 25 T 20N, R 4E, W.M.
Pierce County
Within Section 18,19,29,30 31 & 32 T. 5 N., R. 5 (E. or W.) W.M., County Pierce

11. TAX PARCEL NUMBER: _____

12. LEGAL DOCTRINE: ☒ Appropriation ☐ Riparian ☐ Other _____

REGISTRATION NUMBER
300571

THIS IS NOT A WATER RIGHT

If this form is not fully completed, it will be returned.
I hereby swear that the above information is true and accurate to the best of my knowledge.

Signature: _____
Date: January 16, 1997

Ecology is an equal opportunity and affirmative

ECY 040-57 (7/97)

STATE O ASHINGTON
DEPARTMEN OF ECOLOGY

STATEMENT OF WATER RIGHT CLAIM

FOR OFFICE USE ONLY
17/53
WRIA 98009965

1. CITY OF SUMNER
Name
1104 Maple Street
Mailing Address
Sumner WA 98390-1423
City State Zip
Phone No. (253) 863-8300

2. Date water was first put to use on your property *(see instructions)* Month April and Year 1916

3. COMPLETE ONLY ONE BOX BELOW *(please read the instructions)*

3a. GROUND WATER	3b. SURFACE WATER (Give name if known)
☐ Well ☐ Infiltration Trench ☐ Other _____ Give Name	☐ _____ River ☐ _____ Lake ☐ _____ Creek ☒ County Spring ☐ _____ Ditch ☐ _____ Pond ☐ Other _____
4a. INSTANTANEOUS QUANTITY _____ gpm *(See instructions 10 gpm=0.02 cfs ; 1 cfs=450 gpm)*	4b. INSTANTANEOUS QUANTITY 1.78 cfs *(See instructions 10 gpm=0.02 cfs ; 1 cfs=450 gpm)*
5a. ANNUAL QUANTITY OF WATER _____ af/y *(One acre foot = 325,581 gallons)*	5b. ANNUAL QUANTITY OF WATER 575 af/y *(One acre foot = 325,581 gallons)*

6. PURPOSE OF USE:
☐ Irrigation *(Number of acres irrigated)* _____
☐ Domestic Use *(Number of units)* _____
☐ Commercial *(Description)* _____
☐ Stockwater
☒ Municipal
☐ Other *(List all)* _____

7. PERIOD OF USE: ☒ Continuous or ☐ Seasonal From 1916 To Present

8. LOCATION OF THE POINT OF DIVERSION/WITHDRAWAL:
Approximately 4510 Feet (north) south) and 1500 Feet (east, (west) From The S E. Corner of Section 19
Being Within The N W 1/4 N E 1/4 of Section 19 T. 20 N., R. 5 (E.) or W.) W.M.

9. IF THE POINT OF DIVERSION/WITHDRAWAL IS LOCATED ON PLATTED PROPERTY:
Lot _____ Block _____ of _____ (Plat or Addition)
Section _____ T. _____ N., R. _____ (E. or W.) W.M.

10. LEGAL DESCRIPTION OF PROPERTY WHERE WATER IS USED:
City of Sumner Water Service Area Sections 12, 13, 24 & 25 T20N, R4E, W.M.
Pierce County
Within Section 18,19,29,30 31 & 32 T. 5 N., R. 5 (E.) or W.) W.M., County Pierce

11. TAX PARCEL NUMBER: _____

12. LEGAL DOCTRINE: ☒ Appropriation ☐ Riparian ☐ Other _____

REGISTRATION NUMBER
300572

THIS IS NOT A WATER RIGHT

If this form is not fully completed, it will be returned.
I hereby swear that the above information is true and accurate to the best of my knowledge.

Signature: William J. Hamilton
Date: June 16, 1998

ECY 040-57 (7/97)

Ecology is an equal opportunity and affirmative action employer.

RE 1

RECEIVED
NOV 8 1965
STATE DEPT. OF HEALTH
ENGINEERING DIVISION

REPORT OF EXAMINATION

Date of application April 23, 1965 Date of Examination June 14, 1965 Appli. No. 18973

Name Robert N. Grainger, Inc. Address 9018 - 181st Ave. E., Sumner, Wash.

Quantity applied for 0.28 c.f.s. Use Community domestic supply

Source of appropriation Unnamed springs Tributary of Elhi Creek

Legal sub. NE¼SE¼ Sec. 32 Twp. 20 N., Rge. 5 E. County Pierce

~~Measured~~ estimated quantity 0.35 c.f.s. Probable low flow 0.35 c.f.s.

Quantity previously appropriated: W.T. 1.29 c.f.s. CWT. 1.29 c.f.s. E.T. 0.22 c.f.s.

Other use made of water Domestic supply

Diversion works contemplated ~~xxxxxxxxxx~~ Concrete catch basin at headwaters of springs, pump and pipeline to homes

Other equipment

Irrigable acreage: Planned Present Feasible

Other water rights appurtenant to this land None recorded

Progress of project Not started

Protests None

Quantity recommended (total) 0.28 c.f.s., 26.9 acre-feet per year Irrig. Comm. Dom. 0.28 c.f.s., 26.9 acre-feet per year

Power Municipal Other uses

Department of Fisheries and Game report Approved

Special remarks and provisions:

Use of the waters to be appropriated under this application will be for a public water supply. State Board of Health rules require every owner of a public water supply to obtain written approval from the State Director of Health prior to any new construction or alterations of a public water supply. The applicant is advised to contact the Washington State Department of Health, Fourth Floor, Public Health Building, Olympia; with regard to the need for compliance.

over

An analysis of water use in western Washington has shown the average water requirement for domestic supply to be 140 gallons per capita per day. Allowing for an increase in the water requirement, the recommended annual diversion for community domestic supply for this system is based on an average daily requirement per person of 150 gallons. Therefore, for the estimated population of 160 (4 persons per home for 40 homes) to be served by this system, it is recommended that the annual diversion for community domestic supply be limited to 26.9 acre-feet per year.

As provided under RCW 43.21.130 and RCW 90.03.360, a master meter, individual service meters, or other suitable measuring devices shall be installed in this system to measure the total amount of the diversion. Records of the total monthly diversion shall be maintained by an official responsible for the management and operation of this water system, and this information shall be reported each year to the Supervisor of the Division of Water Resources. A standard form for reporting such information shall be sent annually to the manager of the system.

Applicant is advised that notice of proof of appropriation of water (under which the final certificate of water right issues) should not be filed until the permanent diversion facilities have been installed together with a distribution system of main line piping capable of furnishing water for domestic supply to all lots which are intended to be supplied under this application.

In accordance with section 90.03.290 R.C.W., I find that there is water available for appropriation from the source in question and that the diversion proposed in the application will not impair existing rights or be detrimental to the public welfare. Therefore, permit should issue as recommended above, subject to existing rights and indicated provisions.

Signed this 26 day of August, 1965

Dean Wood

DEAN WOOD, Engineer
Division of Water Resources

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY
APPLICATION FOR CHANGE
REPORT OF EXAMINATION
TO APPROPRIATE PUBLIC WATERS OF THE STATE OF WASHINGTON

☐ Surface Water (Issued in accordance with the provisions of Chapter 117, Laws of Washington for 1917, and amendments thereto, and the rules and regulations of the Department of Ecology.)

☒ Ground Water (Issued in accordance with the provisions of Chapter 263, Laws of Washington for 1945, and amendments thereto, and the rules and regulations of the Department of Ecology.)

PRIORITY DATE	APPLICATION NUMBER	PERMIT NUMBER	CERTIFICATE NUMBER
March 18, 1954	3584	8391	2151

NAME
City of Sumner

ADDRESS (STREET)	(CITY)	(STATE)	(ZIP CODE)
1104 Maple Street Ste 260	Sumner	Washington	98390

PUBLIC WATERS TO BE APPROPRIATED

SOURCE
Dieringer Well
TRIBUTARY OF (IF SURFACE WATERS)

MAXIMUM CUBIC FEET PER SECOND	MAXIMUM GALLONS PER MINUTE	MAXIMUM ACRE FEET PER YEAR
	95	6.25

QUANTITY, TYPE OF USE, PERIOD OF USE		
6.25 Acre-feet per year	Municipal supply	Year-round, as needed

LOCATION OF DIVERSION/WITHDRAWAL

APPROXIMATE LOCATION OF DIVERSION--WITHDRAWAL
700 feet South and 700 feet East of the Northwest corner of Section 7.

LOCATED WITHIN (SMALLEST LEGAL SUBDIVISION)	SECTION	TOWNSHIP N.	RANGE, (E. OR W.) W.M.	W.R.I.A.	COUNTY
Lot 11, NW¼ NW¼	7	20	5E	10	Pierce

RECORDED PLATTED PROPERTY

LOT	BLOCK	OF (GIVE NAME OF PLAT OR ADDITION)

LEGAL DESCRIPTION OF PROPERTY ON WHICH WATER IS TO BE USED

The place of use (POU) of this water right is the service area described in the most recent Water System Plan/Small Water System Management Program approved by the Washington State Department of Health, so long as City of Sumner is and remains in compliance with the criteria in RCW 90.03.386(2). RCW 90.03.386 may have the effect of revising the place of use of this water right.

DESCRIPTION OF PROPOSED WORKS

Well

DEVELOPMENT SCHEDULE

BEGIN PROJECT BY THIS DATE:	COMPLETE PROJECT BY THIS DATE:	WATER PUT TO FULL USE BY THIS DATE:
Started	Completed	In-use

REPORT

BACKGROUND:

On September 20, 2005 Bill Shoemaker on behalf of the City of Sumner filed an *Application for Change* to change the purpose and place of use to Ground Water Certificate 2151. The water source and service area of the City of Sumner are situated within Water Resource Inventory Area 10, the Puyallup-White River Watershed.

The intent of this request is to formally integrate this well with the rest of the City of Sumner's municipal system.

Under RCW 90.44.100, Ecology is permitted to change an existing ground water certificate. Ecology may issue such a change only after publication of a notice of the application and investigations as prescribed in the case of an original application.

A public notice detailing this proposed change was published in the Tacoma News Tribute on January 5th and 12th of 2006, and no protests were received as a result of the public notice.

In evaluating a request to change a water right under RCW 90.44.100 and RCW 90.03.380, Ecology must find that the proposed change does not alter the original finding, i.e. that: (1) water is available for appropriation; (2) the appropriation/change is for a beneficial use; (3) the change will not impair existing water rights; and (4) the change will not be detrimental to the public interest.

Based on my investigation, I recommend the approval of this request and the issuance of a superseding certificate.

INVESTIGATION:

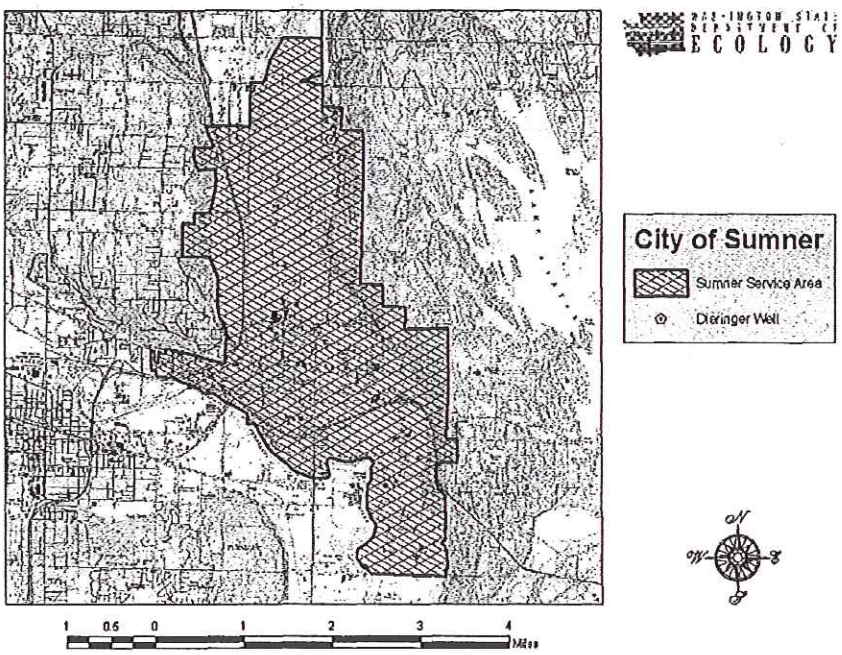
In consideration of this application I reviewed the information submitted with the application, area well logs, water right records, applicable geological reports, Water System plans, and maps.

Project Site

The City of Sumner and surrounding valley is situated in the ancient floodplain of the Puyallup and White Rivers in north Central Pierce County. Sumner is located eleven miles southeast of Tacoma and three miles northeast of Puyallup.

The subject well is referred to as the Dieringer School Well. Withdrawals from this well are authorized by water right certificate 2151 in the amount of 250 gpm, and 22 acre-feet per year. The water right was issued for domestic supply and fire protection for the Dieringer School District No. 343.

Sumner intends to use this source as presently constructed. This well provides a direct source of water to the City's North tank which supplies fire flow needs of the North Sumner Industrial Park.



Attributes of the Original Certificate 2151

Name on Certificate:	Dieringer School District No. 363
Priority Date:	March 18, 1954
Instantaneous Quantity:	250 gpm
Annual Quantity:	22 acre-feet per year (afy)
Point of Withdrawal:	Section 7, Township 20 North, Range 5 East
Purpose of Use:	Domestic Supply and fire protection
Period of Use:	Year-round as needed
Place of Use:	*Lot 11 of White River Garden Tracts Section 7, T. 20 N., R. 5 E.W.M.,*

Proposed Change

Name of Applicant:	City of Sumner
Date of Application for Change:	September 20, 2005
Point of Withdrawal:	Same
Period of Use	Same
Purpose of Use	Municipal Supply
Place of Use:	Area served by the City of Sumner as Described in a Department of Health Water System Plan

City of Sumner Water System

The City of Sumner water system consists of three sets of springs and two wells and consists of two pressure zones. The main zone is supplied by three springs (Sumner, Weber and County Springs), and two wells (South and Cemetery Well). A much smaller pressure zone, consisting of approximately 25 houses around South Tank is supplied by Elhi Spring.

The City of Sumner owns and exercises control over two protected watersheds. The northern watershed encompasses Sumner, Weber and Country Springs, the southern watershed encompasses Elhi Springs. Both watersheds are steeply sloped.

The Sumner water system draws about 1,700 acre-feet of water each year. Water demand is expected to double in 20 years. The new Water Comprehensive Plan estimates that in the year 2023 approximately 3,150 acre-feet will be needed.

The City of Sumner's water system plan (WSP) is currently being reviewed by the State Department of Health and Ecology. The final WSP will include a detailed inventory of the City's current water rights.

Historic Water Use

Applications for Change to ground water rights are governed by RCW 90.44.100, which states in part that: Water rights which have been put to full beneficial use may be transferred to another place of use without loss of priority if such change can be made without detriment or injury to other existing rights.

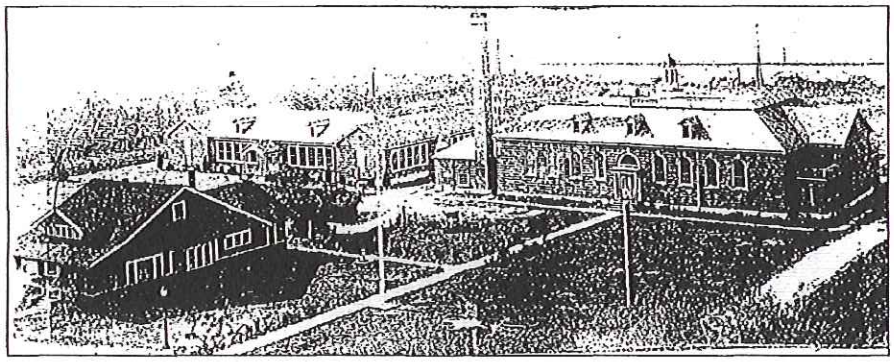
Ecology is required by law to perform a tentative determination of the extent and validity of a water right when making a change. This involves looking at the history of the original water right and determining how much water has been put to full beneficial use.

The purpose of use originally authorized by the existing certificate is domestic supply and fire protection. The system was operated as a Class A water system from 1955 to the closing of the school in 1994. The original allocation of 22 acre-feet per year is based on total demand for this large school complex which included domestic requirement for students, staff, a shop building as well as two homes, minor lawn irrigation, and maintenance of a swimming pool\gym complex. However, the rational that the original allocation of 22 acre-feet was based on appears to be overly generous.

Meter records are not available during the time that the school was operated. Accordingly, I have estimated water use on the following criteria:

Use	Calculation	Source	Annual Use
Students and staff	280 @ 10 gal/day	Estimated	3.0 acre-feet
Swimming Pool/gym	40,000	Estimated	1.0 acre-foot
Other Domestic (2 homes, and shop and club house)		City records	.75 acre-feel
Sumner Golf Clubhouse		City records	0.5 acre-feet
Irrigation (lawn)	½ acre	WA Irrigation Guide.	1.0 acre-foot
Total			6.25

The well has historically produced 95 gallons per minute, at least since the 1970's until recently conducted rehabilitation work.



The first two building in the historical Dieringer School complex were built between 1921 and 1928.

Sumner entered into an agreement to acquire the source/system in 1995, operating it as a stand-alone system, with the primary domestic recipient of water being the Sumner Meadows Golf course. The City has utilized the well as an addition source of water for the northern portions of its system, especially in the summer to peaking demands.

It appears that the quantities of 95 gpm, and 6.25 acre-feet can be reasonable documented as having been put to beneficial use and are eligible to be changed. Use of the well has increased since the City acquired it; however the right is limited by the historical usage.

This request will not change the quantities of water historically used, but will change the purpose of use to municipal to reflect the current use of this well. This water right is fully perfected, has not been abandoned or relinquished.

The Dieringer Well

The Dieringer Well is located in the White River Valley, within the city limits of Sumner. The geological materials underlying the White River valley consist of several hundred feel of unconsolidated alluvial sediment and semi-consolidated glacial and lacustrine deposits.

The City of Sumner rehabilitated the well in 1994. The results of the testing and construction efforts have been documented in the report entitled: *Dieringer Well Rehabilitation and Testing, Sumner, Washington, September 28, 2004, Prepared for Parametrix, Inc., Submitted by SLR International Corp.*

The hydrostratigraphy of the Dieringer wells site is complex and the sources of recharge to the water bearing units and direction of ground water flow within the units are uncertain. Ground water occurring within deeper (greater than 100 feet) coarse-grained aquifers beneath the White River valley typically yields several hundred to a few thousand gallons per minute, and artesian pressure in the aquifers results in flowing wells.

The 408 foot deep Dieringer Well is completed in a deep confined sand and gravel aquifer and is flowing at the surface. Water quality is excellent. The well was originally constructed in April 1954. The surface elevation is approximately 75 feet above sea level.

Before rehabilitation, the Dieringer well consisted of 237 feet of 12-inch diameter steel casing and 171 feet of 10-inch diameter steel casing. The 12-inch casing was perforated at depths of 210 to 235 feet below ground surface. At the time of construction in 1954, the well reportedly yielded 500 gpm with 16 feet of drawdown.

Affects to Neighboring Water Users

This change will not result in an enlargement or increased use of this source, accordingly it is not anticipated that neighboring water users will be affected by this request. Water will remain in use for primarily domestic purposes, but this water right certificate will be formally modified to reflect the municipal use of the water within a larger regional service area.

The City currently has 5 other pending Applications for Change – they have requested that this one be processed prior to their other competing application.

Affects to Instream Resources

As the actual operation of this well is not being changed, it is not anticipated that the change in purpose of use will exacerbate impacts to instream flows in the basin.

Service Area/Place of Use

I recommend the issuance of superseding water right documents that describe the purpose of use as "municipal supply", and describe the place of use as:

> The place of use (POU) of this water right is the service area described in the most recent Water System Plan approved by the Washington State Department of Health, so long as the City of Sumner remains in compliance with the criteria in RCW 90.03.386(2). RCW 90.03.386 may have the effect of revising the place of use of this water right.

FINDINGS AND CONCLUSIONS:

Applications for change of water rights are governed by RCW 90.44.100, which states, in part, that the holder of a valid right to withdraw public ground waters may, without losing his priority of right, change the manner or the place of use of the water.

Such amendment shall be issued by the Department of Ecology only on the condition that the change will not enlarge the quantity of water used or impair other rights. It is my conclusion that these criteria are satisfied and this change will not be detrimental to the public welfare.

- It appears that the quantities of 95 gpm, and 6.25 acre-feet can be reasonably documented as having been put to beneficial use and are eligible to be changed.

- The City of Sumner has operated this well as a stand-alone source for several years prior to physically connecting it with the rest of their system. Water from this well will continue to be put to beneficial use public water supply purposes, but the purpose of use will be classified as "municipal supply" so as to capture the full range of potential uses.

- Because the original well is being utilized, and this request will be authorized in the quantities historically used, this Application for Change is not anticipated to have any greater impacts to the instream flows of the White River than prior to the change. This change will not cause any detrimental environmental affect on the natural environment.

- No detriment to the public interest could be identified during the investigation of this *Application for Change*. This transfer will be beneficial to the public interest by providing a reliable drinking water source. The Department of Ecology encourages the development of public water supply systems to provide water to regional areas and developments (RCW 90.54.020 (8)). Ecology recognizes the access to a reliable source of public water to benefit the public living within the central Pierce County region.

In accordance with Chapters 90.03 and 90.44 RCW, I find that changing the place and purpose of use authorized by this certificate is not detrimental to the public welfare.

RECOMMENDATIONS:

I recommend approval of this Application for Change and issuance of a superseding certificate in the amount of 95 gpm, and 6.25 acre-feet from the Dieringer School Production Well.

This decision is subject to the following provisions.

PROVISIONS:

This certificate supersedes that of same number issued on February 15, 1955, and is subject to the following provisions.

The water appropriated under this application will be used for public water supply. The State Board of Health rules require public water supply owners to obtain written approval from the Office of Water Supply, Department of Health, 1112 SE Quince Street, PO Box 47890, Olympia, Washington 98504-7890, prior to any new construction or alterations of a public water supply system.

An approved measuring device shall be installed and maintained for each of the sources identified by this water right in accordance with the rule "Requirements for Measuring and Reporting Water Use", Chapter 173-173 WAC.

Water use data shall be recorded weekly. The maximum rate of diversion/withdrawal and the annual total volume shall be submitted to Ecology by January 31st of each calendar year.

The following information shall be included with each submittal of water use data: owner, contact name if different, mailing address, daytime phone number, WRIA, Permit/Certificate/Claim No., source name, annual quantity used including units, maximum rate of diversion including units, monthly meter readings including units, monthly meter readings including units, peak monthly flow including units, Department of Health WFI water system number and source number(s), purpose of use, well tag number, pressurized diversion and period of use. In the future, Ecology may require additional parameters to be reported or more frequent reporting. Ecology prefers web based data entry, but does accept hard copies. Ecology will provide forms and electronic data entry information.

Chapter 173-173 WAC describes the requirements for data accuracy, device installation and operation, and information reporting. It also allows a water user to petition Ecology for modifications to some of the requirements. Installation, operation and maintenance requirements are enclosed as a document entitled "Water Measurement Device Installation and Operation Requirements".

Department of Ecology personnel, upon presentation of proper credentials, shall have access at reasonable times, to the records of water use that are kept to meet the above conditions, and to inspect at reasonable times any measuring device used to meet the above conditions.

The Water Resources Act of 1971, Chapter 90.54 RCW specifies certain criteria regarding utilization and management of the waters of the State in the best public interest. Favorable consideration of this application has been based on sufficient waters available, at least during portions of the year. However, it is pointed out to the applicant that this use of water may be subject to regulation at certain times, based on the necessity to maintain water quantities sufficient for preservation of the natural environment.

"Water System Planning and Conservation - Issuance of this approval is subject to implementation of all required conservation and planning standards. The Department of Health (DOH), Office of Drinking Water is directed by the legislature to adopt water use efficiency rules. These new rules (Chapter 246-290 WAC) are a requirement of the Municipal Water Supply – Efficiency Requirements Act, Chapter 5, Laws of 2003, First Special Session. The water right holder is specifically required to address Water Use Efficiency Planning Requirements, Distribution Leakage Standards, and Water Use Efficiency Goal Setting and Performance Reporting."

REPORTED BY: Jim E Wahl Date: 4/12/06

FINDINGS OF FACT AND DECISION

Upon reviewing the above report, I find all facts, relevant and material to the requested Application for Change have been thoroughly investigated. Furthermore, I find water is available for appropriation and the appropriation as recommended is a beneficial use and will not be detrimental to existing rights or the public welfare.

Therefore, I ORDER a superseding certificate be issued under Water Right Number 2151, subject to existing rights and indicated provisions, to allow appropriation of public water for the amount and uses specified in the foregoing report.

Signed at Olympia, Washington, this 12th day of April, 2006.

Thomas Loranger
Water Resources Section Manager
Southwest Regional Office

APPENDIX E

Table 3 – Existing Water Right(s) Status
Table 4 – Forecasted Water Right(s) Status

Table 3 Existing Water Right(s) Status

	Permit Certificate or Claim #	Name of Rightholder or Claimant	Priority Date	Source Number - Name	Primary or Supplementary	Existing Water Rights		Existing Consumption		Current Water Right Status Excess/(Deficiency)	
						Maximum Instantaneous Flow Rate (gpm) (Qi)	Maximum Annual Acre-Feet (Qa) Prim/Supp	Maximum Instantaneous Flow Rate (gpm) (Qi)	Maximum Annual Acre-Feet (Qa)	Maximum Instantaneous Flow Rate (gpm) (Qi)	Maximum Annual Acre-Feet (Qa)
Permits/ Certificates											
1	7838	City of Sumner	August 18, 1958	SO1-Sumner Springs	Primary	2,244	1,008				
2	S2-21979C	City of Sumner	February 22, 1974	SO1-Sumner Springs	Primary	561	900	800	1213	2,005	695
3	2266	Weber & Ritter, Inc.	August 3, 1939	SO2-Weber Springs	Primary	112	181	(a)	(a)	112	181
4	2267	Weber & Ritter, Inc.	August 3, 1939	SO2-Weber Springs	Primary	90	145	(a)	(a)	90	145
5	G2-21980C	City of Sumner	February 22, 1974	SO5-West Well [b]	Primary	250	100	250	36	0	64
6	G2-23281C	City of Sumner	October 11, 1974	SO6-South Well	Primary/Supp	1,000	542/258	700	66	300	476
7	2151	City of Sumner	March 18,. 1954	SO7-Dieringer Well	Primary	95	6.25	250	65	(155)	(59)
Claims											
1	300571	City of Sumner		SO3-Elhi Springs	Primary	360	100	92	21	268	(21)
2	300572	City of Sumner		SO4-County Springs	Primary	799	675	493	764	306	(764)
3											
4											
TOTAL						5,511	2882.25/1033	2,585	2,165	2,926	717

	Intertie Name/Identifier	Name of Purveyor Providing Water	Existing Limits on Intertie Water Use		Existing Consumption Through Intertie		Current Intertie Supply Status Excess/(Deficiency)	
			Maximum Instantaneous Flow Rate (gpm) (Qi)	Maximum Annual Acre Feet (Qa)	Maximum Instantaneous Flow Rate (gpm) (Qi)	Maximum Annual Acre Feet (Qa)	Maximum Instantaneous Flow Rate (gpm) (Qi)	Maximum Annual Acre Feet (Qa)
1	City of Pacific	City of Pacific	(c)	(c)	(c)	(c)	(c)	(c)
2	City of Puyallup	City of Puyallup	(c)	(c)	(c)	(c)	(c)	(c)
3								
4								
TOTAL			N/A	N/A	N/A	N/A	N/A	N/A

	Pending Water Right Application	Name on Permit	Date Submitted	Primary or Supplemental	Pending Water Rights	
					Maximum Instantaneous Flow Rate (Qi) Requested	Maximum Annual Volume (Qa) Requested
1						
2						
3						
4						

(a) Weber Springs flow is directed to both Sumner Springs and County Springs and is not metered as an individual source. Therefore, maximum instantaneous flow rates and maximum annual volume data are not available.

(b) This well meets the definition of a "municipal water supply purpose" in RCW 90.03.015(4), but a constitutional challenge is pending before the Washington Supreme Court.

(c) Interties are for emergency only and have not been used in recent years.

Table 4 Forecasted Water Right(s) Status

	Permit Certificate or Claim #	Name of Rightholder or Claimant	Priority Date	Source Number - Name	Primary or Supplementary	Existing Water Rights		Forecasted Water Use From Sources - 20 Year Demand		Forecasted Water Right Status Excess/(Deficiency) - 20 Yr Demand Projection	
						Maximum Instantaneous Flow Rate (gpm) (Qi)	Maximum Annual Acre Feet (Qa)	Maximum Instantaneous Flow Rate (gpm) (Qi)	Maximum Annual Acre Feet (Qa)	Maximum Instantaneous Flow Rate (gpm) (Qi)[c]	Maximum Annual Acre Feet (Qa)[c]
Permits/ Certificates											
1	7838	City of Sumner	August 18, 1958	SO1-Sumner Springs	Primary	2,244	1,008				
2	S2-21979C	City of Sumner	February 22, 1974	SO1-Sumner Springs	Primary	561	900	1300	2,100	1505	(192)
3	2266	Weber & Ritter, Inc.	August 3, 1939	SO2-Weber Springs	Primary	112	181	(a)	(a)	112	181
4	2267	Weber & Ritter, Inc.	August 3, 1939	SO2-Weber Springs	Primary	90	145	(a)	(a)	90	145
5	G2-21980C	City of Sumner	February 22, 1974	SO5-West Well	Primary	250	100	250	115	0	(15)
6	G2-23281C	City of Sumner	October 11, 1974	SO6-South Well	Primary	1,000	542/258	1,000	542	0	0
7	2151	City of Sumner	March 18,. 1954	SO7-Dieringer Well	Primary	95	6.25	250	200	(155)	(194)
Claims											
1	300571	City of Sumner		SO3-Elhi Springs	Primary	360	100	92	21	268	(21)
2	300572	City of Sumner		SO4-County Springs	Primary	799	675	493	764	306	(764)
3											
4											
TOTAL						5,511	2882.25/1033	3,123 gpm	3,137 ac-ft/yr	2126	(860)

	Intertie Name/Identifier	Name of Purveyor Providing Water	Existing Limits on Intertie Water Use		Existing Consumption Through Intertie		Current Intertie Supply Status Excess/(Deficiency)	
			Maximum Instantaneous Flow Rate (gpm) (Qi)	Maximum Annual Acre Feet (Qa)	Maximum Instantaneous Flow Rate (gpm) (Qi)	Maximum Annual Acre Feet (Qa)	Maximum Instantaneous Flow Rate (gpm) (Qi)	Maximum Annual Acre Feet (Qa)
1	City of Pacific	City of Pacific	0	0	450	240	(450)	(240)
2	Montain View - Edgewood	Mountain View - Edgewood	0	0	347	190	(347)	(190)
3	City of Puyallup	City of Puyallup	(b)	(b)	(b)	(b)	(b)	(b)
4								
TOTAL			N/A	N/A	N/A	N/A	(797)	(430)

	Pending Water Right Application	Name on Permit	Date Submitted	Primary or Supplemental	Pending Water Rights	
					Maximum Instantaneous Flow Rate (gpm) (Qi) Requested	Maximum Annual Acre Feet (Qa) Requested
1		City of Sumner - Well	TBD (~ Fall 2010/ Spring 2011)	Primary	1000	1600
2						
3						
4						

(a) Weber Springs flow is directed to both Sumner Springs and County Springs and is not metered as an individual source. Therefore, maximum instantaneous flow rates and maximum annual volume data are not available.

(b) Intertie is for emergency only. It is not anticipated that it will be used day to day.

(c) Negative Qi and Qa inputs assume that the change of use applications submitted by the City are approved.

APPENDIX F

Robinson Noble
Hydrogeologic Report

EFFECT OF PROPOSED COUNTY ROAD ON THE SUMNER SPRINGS AND NEARBY SPRINGS TO THE SOUTH

By

John W. Robinson
and
John B. Noble

ROBINSON, ROBERTS & ASSOCIATES, INC.
Ground-Water Geologists
Tacoma, Washington 98408

April 1965

EFFECT OF PROPOSED COUNTY ROAD ON THE SUMNER SPRINGS AND NEARBY SPRINGS TO THE SOUTH

April 1965

Introduction

We were authorized by the City of Sumner to make a hydrogeologic study of the area near the proposed County Road to anticipate the effect of road building and potential land development on the City's present and possibly future spring supply.

Field Work

The area was examined during parts of February 17, March 2, 3, 4, 17, and 25, 1965 by John B. Noble and John W. Robinson. From the results of the field examination, and with the aid of a topographic map and aerial photographs, a generalized geologic map and section was prepared (Figures A-624.1 - 624.3). This map and section are meant to be a diagrammatic representation of the geologic conditions. Because of limited areal control and sparse geologic exposures, the data depicted must not be interpreted as being exact. However, accuracy is within the limits of the information required.

Geology

The Salmon Springs area has been intensely studied because of its exposures of older glacial deposits. However, the younger deposits, not as well exposed, have been essentially unrecorded. For the purposes of this study, the geology has been condensed into five units.

Older Drift: This unit consists of deposits of at least two glacial and one intervening nonglacial episodes. For the most part, these deposits are oxidized sand, or gravel and sand. Considerable fine-grained material deposited either originally or as a post-depositional weathering product occupies much of the void space. Consequently, the deposits have very low permeabilities.

Younger Gravel: The Younger Gravel unit was deposited by streams during the advancing stages of the latest (Vashon) glaciation. This unit lies on the Older Drift and is exposed immediately behind and above the spring line. The Younger Gravel is a gray to slightly oxidized "dirty" sand and gravel. The size distribution of the materials is very large, ranging from silt to boulders. Where seen in outcrops, this deposit appears to have only a moderate permeability. However, the existence of the springs attests to, at least locally, a higher permeability.

Younger Till: Glacial till is a compact, unsorted mixture of clay, silt, sand, and gravel. It is frequently called "hardpan". Till is deposited directly beneath actively flowing ice. The Younger Till was deposited by the latest (Vashon) glacier. The till is generally of very low permeability and impedes ground-water inflow.

On the flatter upland surfaces the till is covered by a thick forest soil. It was seen in only a few exposures within the mapped area but it is certain to underlie much of the area.

Younger Drift: Because of the dense forest and thick soil cover, no exposures were seen in this area. Therefore, the undifferentiated Younger Drift includes deposits of the Younger Gravel, Younger Till, and possible unrecognized deposits above the Younger Till.

Alluvium: This recent floodplain unit is found only on the valley floor. It has no relevance to the subjects of this report.

Ground Water

The source of ground water in the area is precipitation on the upland east of the springs and possibly partly from Lake Tapps. The water percolates downward through permeable zones to the water table in the Younger Gravel. Much of the water is prevented from percolating deeper because its flow is impeded by the relatively impermeable Older Drift deposits. The springs issue from this contact where the Older Drift transects the scarp (see Drawing A-624.3). The general direction of water movement is westerly, probably about normal to the scarp.

The observed developed springs are shown on the map. Symbols are "S" for Sumner springs and "W/R" for springs on the Webber and Ritter property. The numbers of the Webber and Ritter springs are arbitrarily assigned. Springs W/R1 through W/R4 supply water to a Pierce County system. Note that all of the springs except W/R5 occur in the Younger Gravel immediately above the Older Drift. Spring W/R5 apparently issues from the Older Drift in a more permeable zone. This development is small and apparently is not tied in to any distribution system, thus, indicating a meager supply. A rough elevation survey of the springs by means of aneroid altimeter indicated the elevations to range from about 260 feet (W/R6) to 240 feet (W/R1). An exception is W/R5 at about 235 feet. Thus, the main springs all occur approximately at the same elevation which is to be expected if their control is based on a gently undulating geologic contact.

Potential Effects of Construction

The planned County Road will climb the scarp east of the gas line. Here it will be cut into materials of the Older Drift. Where the road approaches the east-west electric lines it passes over the Younger Till which acts as a protective cap on the aquifer materials. As the road climbs northerly, it enters the undifferentiated Younger Drift which may or may not have a protective cover of till. In many places the till is expected to be very thin or absent. In these places, surface drainage would easily penetrate to the Younger Gravel and run off as ground water. No well established surface streams were noted in this area, indicating that much of the drainage may be internal.

Drainage that does enter the aquifer from the road site must travel at least 300 feet horizontally and 150 feet vertically before it emanates from the springs. (See Drawing A-624.3.) Farther north the travel distance is much greater. The observed parts of the aquifer beds are poorly enough sorted and contain enough sand that complete natural filtration is expected. Water made turbid by road construction should be completely cleared by this amount of filtration.

The completed road should have properly constructed ditches that are maintained in good working order. The ditches should ideally be designed to drain continuously from the north end of the mapped area to at least the electric transmission line. Farther south, the road drainage will have no effect on the springs.

Any development between the proposed road and the gas line, north of the transmission lines, should be preceded by a careful consideration of soil and drainage conditions.

Water-Supply Evaluation

The present spring system constructed under the W.P. A. program has been an inexpensive source of water for the City. Further development of these springs or additional springs may be much more expensive due to difficulties of access and the amount of labor required.

Before major improvements are made in the system a comprehensive study of the hydraulics of the springs should be made. At least two test wells should be drilled above the spring outcrops to determine the head and thickness of the water-bearing zone and to determine the most feasible method of development.

The recommendations given in our report of February, 1959 should be carefully considered before any large sums of money are spent on the existing springs.

We heartily endorse the plan under consideration to acquire the already developed springsnearby which would augment the existing supply and prolong the time before a new source would be required.

Elhi Springs

On March 17, the springs at the Elhi Reservoir were visited. Only two small springs were noted, yielding approximately 15 and 40 gpm. More water is probably flowing beneath the Alluvial Gravel but it is dobtful if the total yield available would exceed 150 gpm except during times of heavy runoff.

These springs are probably fed by a fair aquifer as indicated by the record of the Lake Tapps Development Company well, located approximately 4,000 feet east and 1,500 feet north of the Elhi reservoir. This well, at an altitude of about 600 feet, is 335 feet deep and yields water from various zones from 200 to 335 feet deep, probably in the Younger Gravel. It produces 185 gpm with a drawdown of 26 feet for a specific capacity of 7 gpm per foot of drawdown.

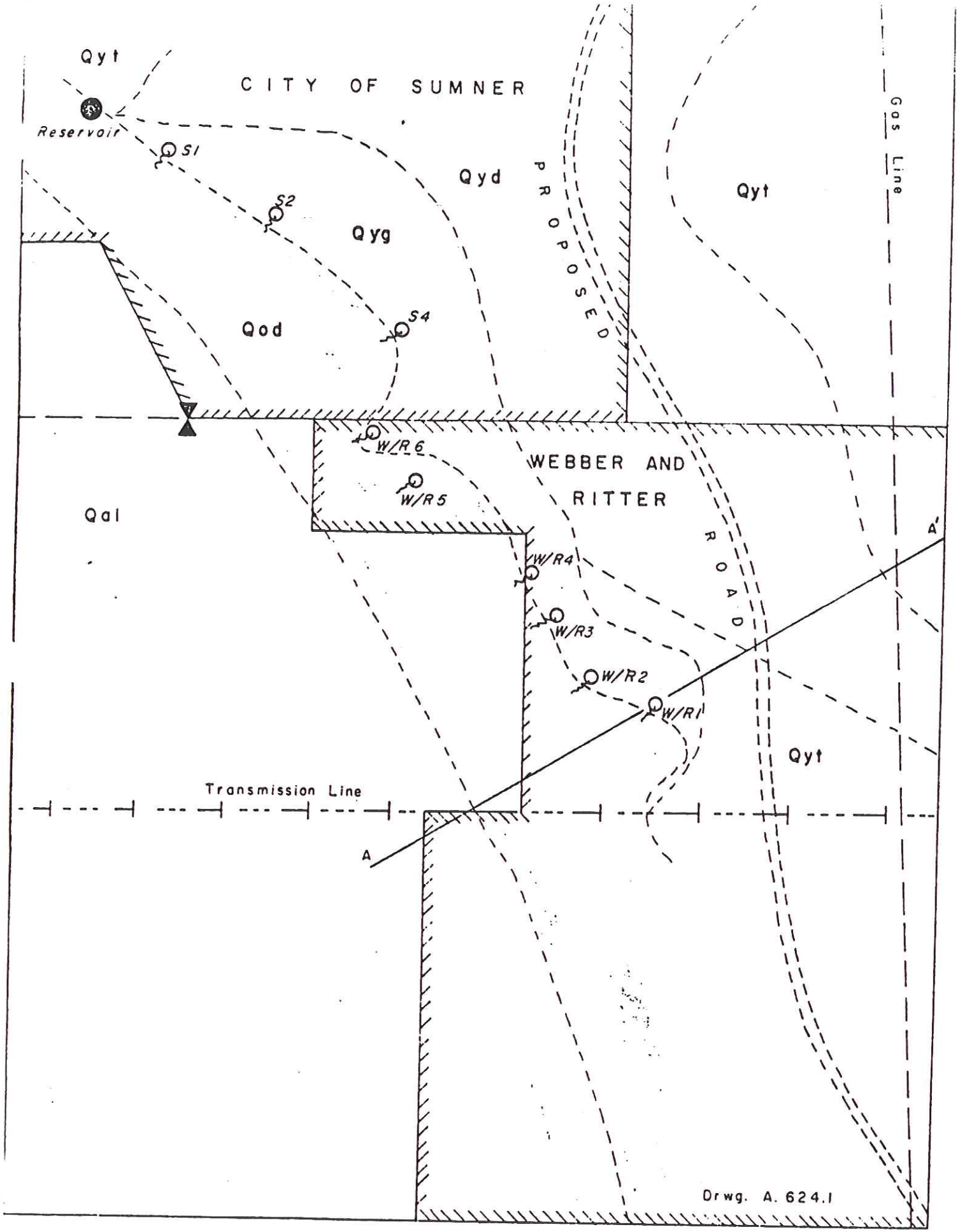
These springs are too remote from the Sumner area to consider their use at this time.

Respectfully submitted,

ROBINSON, ROBERTS & ASSOCIATES, INC.
Ground-Water Geologists

By John W. Robinson
John W. Robinson

By John B. Noble
John B. Noble



GENERALIZED GEOLOGIC MAP OF

PARTS OF SECS. 18, 19, T. 20 N., R. 5 E.

EXPLANATION

Qal

Alluvium

R[illegible] fl[illegible] deposition on [illegible]

Qyt

[illegible] Till

O[illegible] s[illegible] till [illegible] from [illegible]. Low [illegible].

Qyg

[illegible]

S[illegible] deposited during [illegible] of [illegible]. Form [illegible].

Qod

Older D[illegible]

De[illegible] from earlier glac- [illegible]. Low [illegible]. Form "[illegible]" of [illegible].

Qyd

Younger D[illegible]

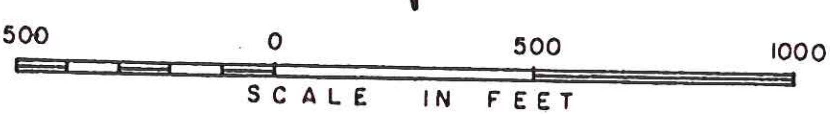
[illegible] C[illegible] by [illegible]

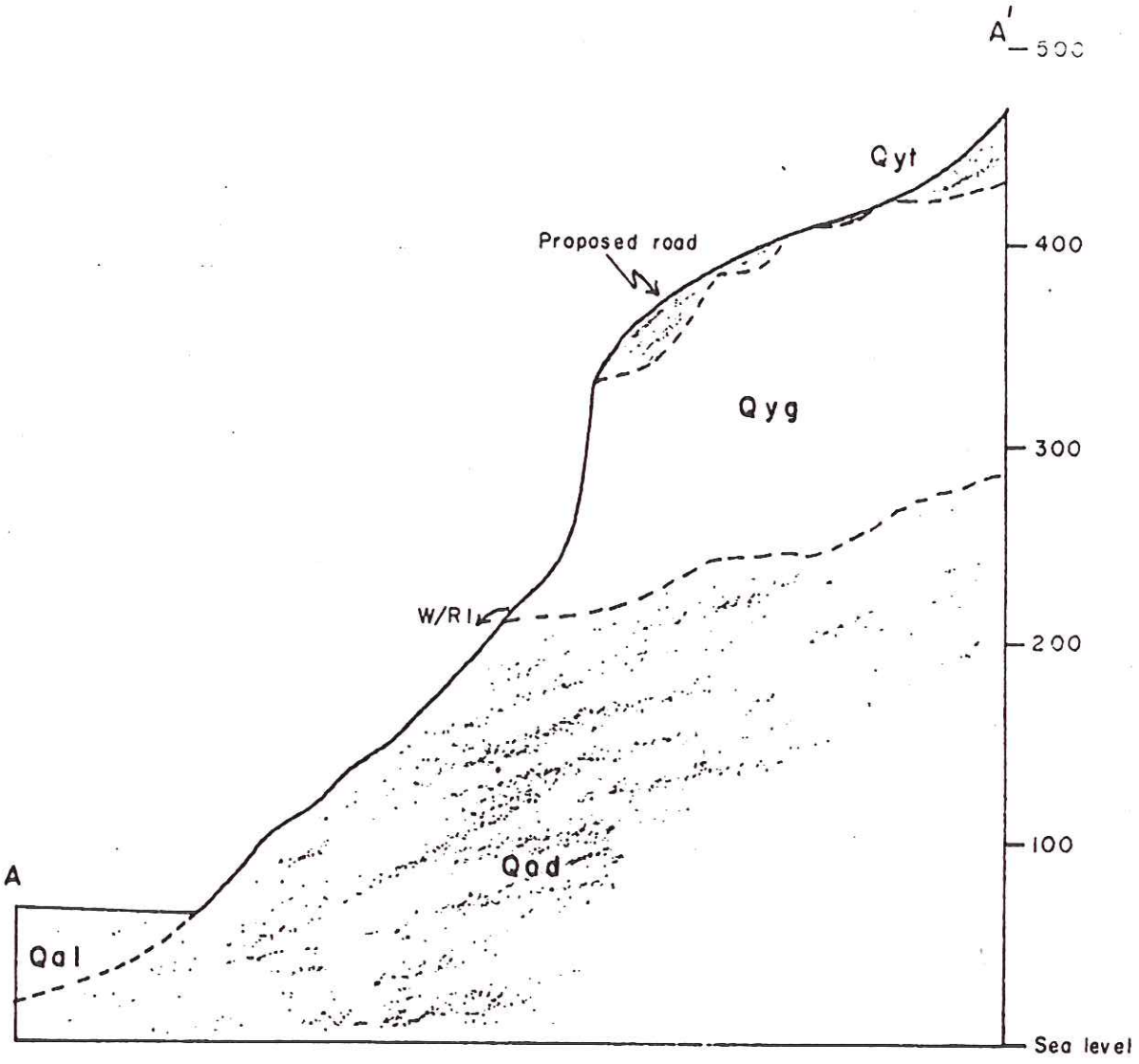
[illegible] contact, approximate

Q_{S2} Spring, approximate location

A — A′ [illegible] Section

Dr[illegible]





GENERALIZED GEOLOGIC SECTION

CITY OF SUMNER	PATTISON, LOMBARD & ASSOCIATES Ground-Water Geologists Seattle, Washington	J. B. Noble Drawing No. 1-4.3 April 6, 1964

BENNETTS CHEMICAL LABORATORY, INC.

ANALYTICAL CHEMISTS & ASSAYERS

901 SOUTH 9th STREET TACOMA, WASHINGTON 98405

(206) 272-4507 or 272-7969

REPORT OF ANALYSIS February 25, 1975

Our analysis of the sample of Well Water

From Robinson and Noble
Received sample on February 21, 1975

Marked: Sumner Cemetary Well #1 2/21/75

p H - 7.1

Total Hardness as Calcium Carbonate	91.5 mg/liter
Bicarbonate Alkalinity as Calcium Carbonate	119.0 mg/liter
Carbonate Alkalinity as Calcium Carbonate	0.0 mg/liter
Free Carbon Dioxide	4.1 mg/liter
Calcium	23.0 mg/liter
Magnesium	8.0 mg/liter
Aluminum	Less than 0.01 mg/liter
Sodium	9.5 mg/liter
Iron	0.14 mg/liter
Manganese	0.10 mg/liter
Chloride	4.8 mg/liter
Sulfate	1.0 mg/liter
Nitrate	Less than 0.1 mg/liter
Phosphate	0.52 mg/liter
Fluoride	0.27 mg/liter
Silica	38.6 mg/liter
Turbidity	0.5 F.T.U.
Color	2 Units
Total Residue	154.8 mg/liter

To Robinson and Noble
12828 Gravelly Lake Drive, S.W.
Tacoma, WA 98499

BENNETTS CHEMICAL LABORATORY, Inc.

By Galen B. Bennetts

Samples held for 90 days

APPENDIX G

Wellhead Protection Program and Water System Sanitary Survey Report

T.20N.R.5E.W.M.

SHOP. NO1

LAKE TAPPS

SUMNER

BONNEY LAKE

SCOUT ISLAND

INDIAN RESERVATION

KING COUNTY

PIERCE COUNTY

LAKE TAPPS TACOMA PT.

LAKE TAPPS ORCHARD ADDITION NO. 2

ORCHARD LAKE

LAKE TAPPS DRIFTWOOD PT. DIV. 1-4

TAPPS ISLAND No1 (Pvt Rd)

ISLAND "A"

DIV. 2

DIV. 3

ISLAND "B"

LAKE TAPPS DEER ISLAND

LAKE TAPPS BANKERS ISLAND NO. 1

LAKE TAPPS LAKERIDGE NOS. 1,2,3 AND 8

LAKE TAPPS LAKERIDGE NOS. 4 AND 5

LAKE TAPPS EVERGREEN NO. 1

LAKE TAPPS EVERGREEN PT.

LAKE TAPPS CEDAR ADD

SUNSET RIDGE 1&2

TAPADERA

MORTENSON & DAHL DRIVE

RYAN ADD.

LEWIS ADD.

KELLY CREEK GARDEN TRACTS

KELLY CREEK VISTA

GREENWOOD VISTA

JENNIFER GRES

HILLSIDE VIEW

WOOLERY D.L.C.

A.S. Perham D.L.C.

James Williamson D.L.C.

MICHAEL CONNEL D.L.C.

SANDHILL

FENNEL HEIGHTS (PVT RD)

PUYALLUP RIVER

WHITE RIVER

SUMNER BUCKLEY HIGHWAY

CONNELLS PRAIRIE ROAD

R-328 R-345 DIERINGER R-324 R-326 R-341 R-343 R-350 R-353 R-351 R-352 R-159 R-189 R-336 R-359 R-367 T-103

u-468 u-470 u-98 u-466 u-461 u-453 u-454 u-94 u-448 u-89 u-428 u-95 u-434 u-457 u-431 u-87 u-432 u-456 u-464 u-91

SECTION 15

A FOREST HILL ESTATES (Pvt)
B TIMBERLINE TERRACE
C ANN ADARE WOODS
D KYLEE DAWN HEIGHTS

T. 20 N. R. 4 E. W.M.

SHOP NO

KING CO.
PIERCE CO.

HAMILTON

FIFE

SUMNER

TACOMA

NE DIV.

E

SR 99 (INTERURBAN)

SR 5 (INTERSTATE)

SR 167

SR 512

SR 161

SR 410

FAM 3260

FAM 3250

FAM 3240

FAM 3230

FAM 3220

FAM 3210

FAM 3200

FAM 3190

FAM 3180

FAM 3170

FAM 3160

FAM 3158

FAM 3156

FAM 3154

FAM 3152

FAM 3150

FAM 3140

FAM 3130

FAM 3120

FAM 3110

FAM 3100

FAM 3090

FAM 3080

FAM 3070

FAM 3060

FAM 3050

FAM 3040

FAM 3030

FAM 3020

FAM 3010

FAM 3000

FAM 2990

FAM 2980

FAM 2970

FAM 2960

FAM 2950

FAM 2940

FAM 2930

FAM 2920

FAM 2910

FAM 2900

FAM 2890

FAM 2880

FAM 2870

FAM 2860

FAM 2850

FAM 2840

FAM 2830

FAM 2820

FAM 2810

FAM 2800

FAM 2790

FAM 2780

FAM 2770

FAM 2760

FAM 2750

FAM 2740

FAM 2730

FAM 2720

FAM 2710

FAM 2700

FAM 2690

FAM 2680

FAM 2670

FAM 2660

FAM 2650

FAM 2640

FAM 2630

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LISTING OF UNDERGROUND STORAGE TANKS REPORTED IN WASHINGTON STATE, BY ZIP CODE (MATCHED TO REPORTED OWNER NAME, IN FOLLOWING LISTING, BY SITE NUMBER)

COUNTY		SITE CITY	SITE ADDRESS	ZIP	SITE NUMBER	SITE NAME	TANK CODE	CUR AGE	GAL X1000	PMT ST	STATUS	SUBSTANCE
PIERCE	U-86	TACOMA U-765	10310 STEILACOOM BLVD	98388	101284	SEVEN ELEVEN/CLOSED	SUPER 4	6	10-20	P	OPERATIO	UNLEADED G
							UNLEAD 2	6	10-20	P	OPERATIO	UNLEADED G
							UNLEAD 3	6	10-20	P	OPERATIO	UNLEADED G
							1	UK			REMOVED	
							2	UK			REMOVED	
KING		FEDERAL WAY	35126 16 AVE. SO	98390	008245	AMERICAN CONCRETE	1	UK	5-10		REMOVED	DIESEL FUE
KING		SUMNER	18115 HWY 410	98390	008433	UNOCAL 4547	1	UK	10-20		REMOVED	UNLEADED G
							2	UK	10-20		REMOVED	LEADED GAS
							4	UK	<1100		REMOVED	USED OIL/W
PIERCE	U-87	BONNEY LAKE	18311 OLD BUCKLEY HWY	98390	011400	J B BONNEY LAKE MART	1	11	10-20	V	CLOSURE	LEADED GAS
							2	11	10-20	V	CLOSURE	UNLEADED G
							3	11	5-10	V	CLOSURE	UNLEADED G
							4	11	5-10	V	CLOSURE	DIESEL FUE
PIERCE	U-88	BONNEY LAKE	19510 HWY 410 E	98390	000984	CEDAR GROVE TEXACO	REGULAR	1	10-20	P	OPERATIO	LEADED GAS
							SUPER/D	1	5-10	P	OPERATIO	UNLEADED G
							UNLEADED	1	10-20	P	OPERATIO	UNLEADED G
							1	UK	10-20		CLOSURE	UNLEADED G
							2	UK	10-20		CLOSURE	LEADED GAS
							3	UK	5-10		CLOSURE	DIESEL FUE
							4	UK	5-10		CLOSURE	UNLEADED G
PIERCE	U-89	SUMNER	16602 SUMNER-BUCKLEY HWY	98390	005002	DARRELL E. NORDYKE	1	UK			REMOVED	UNLEADED G
							2	UK			REMOVED	UNLEADED G
							3	UK			REMOVED	LEADED GAS
							4	UK			REMOVED	LEADED GAS
PIERCE	U-90	SUMNER	18929 9TH STREET EAST	98390	100675	LAKE TAPPS GROCERY	1	24	<1100	P	OPERATIO	LEADED GAS
							2	24	<1100	P	OPERATIO	UNLEADED G
							3	17	11-20	P	OPERATIO	UNLEADED G
PIERCE	U-91	SUMNER	21105 N TAPPS HWY	98390	007639	FIRE STATION 2	#2	15	<1100	P	REMOVED	DIESEL FUE
PIERCE	U-92	SUMNER	23RD AND VALLEY AVENUE	98390	009116	CEMETERY DEPARTMENT	1	UK	<1100		REMOVED	DIESEL FUE
			Part of 123 + Valley - this is where the Sumner Cemetery is located				2	UK			REMOVED	LEADED GAS
							3	UK			REMOVED	LEADED GAS
PIERCE	U-93	SUMNER	4107 142ND AVE E	98390	100797	OTA FARMS INC	1	UK			EXEMPT	LEADED GAS
							2	UK			EXEMPT	LEADED GAS
							3	UK			EXEMPT	LEADED GAS
							4	11	2- 5	P	OPERATIO	DIESEL FUE

COUNTY		SITE CITY	SITE ADDRESS	ZIP	SITE NUMBER	SITE NAME	TANK CODE	CUR AGE	GAL X1000	PMT ST	STATUS	SUBSTANCE
PIERCE	U-94	SUMNER	6015 160TH AVENUE EAST	98390	012123	G & W CUSTOM CABINETS	NONE	17	<1100	P	EXEMPT	HEATING FU
PIERCE	U-95	SUMNER	6601 166 AVE EAST	98390	100573	RONACO INC	1	10	10-20	P	OPERATIO	UNLEADED G
							2	10	10-20	P	OPERATIO	UNLEADED G
							3	10	10-20	P	OPERATIO	LEADED GAS
PIERCE	U-96	SUMNER	810 ALDER AVENUE	98390	000937	SUMNER TOWING	1	UK			CLOSED I	UNLEADED G
							2	UK			CLOSED I	LEADED GAS
							3	UK			CLOSED I	UNLEADED G
PIERCE	U-97	SUMNER (R-348)	NO 1 STEELE AVENUE	98390	001366	SONOCO PRODUCTS COMPANY	1	UK	<1100		CLOSED I	KEROSENE
PIERCE		SUMNER	ORTING HWY (BOWMAN-HILTON ROAD)	98390	097288	FARM NUMBER FIVE	1	33	<1100	P	EXEMPT	LEADED GAS
							2	30	<1100		EXEMPT	DIESEL FUE
PIERCE		SUMNER	SR 162 MILE POST .34	98390	101499	ABANDONED GAS STATION	1	UK			CLOSED I	
PIERCE	U-98	SUMNER	17008 FOREST CANYON RD	98390	101022	LAKE TAPPS DELI & GAS	1R	11	10-20	P	OPERATIO	LEADED GAS
							2U	11	10-20	P	OPERATIO	LEADED GAS
							3S	11	10-20	P	OPERATIO	LEADED GAS
							4D	11	10-20	P	OPERATIO	LEADED GAS
PIERCE	U-99	TACOMA T-93	1 SITCOM PLAZA	98401	006043	PORT OF TACOMA	BLDG 8326-1	UK	<1100		EXEMPT	USED OIL/W
							BLDG 9602-3	UK	<1100		EXEMPT	
							P-1	13	<1100	P	OPERATIO	DIESEL FUE
							P-10	UK			CLOSED I	DIESEL FUE
							P-11	UK	<1100		CLOSED I	LEADED GAS
							P-12	UK			CLOSED I	LEADED GAS
							P-13	UK	<1100		CLOSED I	
							P-14	UK	<1100		CLOSED I	
							P-15	UK			CLOSED I	HEATING FU
							P-16	UK			CLOSED I	LEADED GAS
							P-17	UK			EXEMPT	HEATING FU
							P-18	UK			CLOSED I	DIESEL FUE
							P-19	UK			CLOSED I	DIESEL FUE
							P-2	19	11-20	P	CLOSURE	UNLEADED G
							P-20	UK		X	CLOSURE	LEADED GAS
							P-21	UK			CLOSED I	LEADED GAS
							P-22	UK	5-10		CLOSED I	HEATING FU
							P-23	UK	5-10		CLOSED I	HEATING FU
							P-24	UK	10-20		CLOSED I	LEADED GAS
							P-25	UK	10-20		CLOSED I	DIESEL FUE

TY		SITE CITY	SITE ADDRESS	ZIP	SITE NUMBER	SITE NAME	TANK CODE	CUR AGE	GAL X1000	PMT ST	STATUS	SUBSTANCE
							2	UK	10-20		CLOSURE	LEADED GAS
							3	UK	5-10		CLOSURE	LEADED GAS
							4	UK	<1100		CLOSURE	LEADED GAS
							5	UK	<1100		CLOSURE	LEADED GAS
							6	UK			CLOSURE	LEADED GAS
							7	UK	<1100		CLOSURE	USED OIL/W
:E	u-181	TACOMA	4714 192CD ST EAST	98446	008544	FREDERICKSON GEN ST	163	UK	<1100	P	EXEMPT	DIESEL FUE
							164	UK	<1100	P	EXEMPT	DIESEL FUE
:E	u-182	TACOMA	5210-131ST COURT E	98446	000705	CHARLES E. SAWYER	#1	UK	<1100		UNRESOLV	LEADED GAS
							#2	UK			UNRESOLV	DIESEL FUE
							#3	UK	<1100		UNRESOLV	UNLEADED G
:E	u-183	TACOMA	5317 131 ST CT E	98446	007023	J. H. LARGE TRUCKING INC.	1	UK	<1100		REMOVED	UNLEADED G
							2	UK			REMOVED	DIESEL FUE
:E	u-184	TACOMA	5318 128TH ST E	98446	101075	PDQ DELI	1	10	10-20	P	OPERATIO	LEADED GAS
							2	10	10-20	P	OPERATIO	UNLEADED G
							3	10	5-10	P	OPERATIO	UNLEADED G
:E	u-185	TACOMA	5324 182ND STREET E	98446	003863	RANDLES SAND & GRAVEL INC	1	UK			OPERATIO	DIESEL FUE
:E	u-186	TACOMA	2305 MILDRED STREET W	98466	101518	LELAND M MCARTHUR	1-8000	UK			REMOVED	LEADED GAS
							2-4000	UK			REMOVED	LEADED GAS
							3-8000	UK			REMOVED	LEADED GAS
							1	UK			CLOSED I	LEADED GAS
:E	u-187	TACOMA	2912 69TH AVE WEST	98466	100906	SPARE SPACE	1	UK	<1100		UNRESOLV	DIESEL FUE
:E	u-188	TACOMA	3801-6TH AVE	98466	007009	LESLIE'S AUTO WORKS &DETAILING INC	2	UK	<1100		UNRESOLV	USED OIL/W
							3	UK			UNRESOLV	UNLEADED G
							4	UK			UNRESOLV	UNLEADED G
							5	UK	5-10		UNRESOLV	LEADED GAS
							6	UK	5-10		UNRESOLV	LEADED GAS
:E	u-189	TACOMA	6904 27TH ST. WEST	98466	100905	SPARE SPACE	1	UK	<1100		CLOSED I	LEADED GAS
:E	u-190	TACOMA	7202 35TH ST. WEST	98466	100904	SPARE SPACE	1	UK			CLOSED I	LEADED GAS
:E	u-191	TACOMA	8425 WEST 27TH STREET	98466	101747	OLD SERVICE STATION	1	UK	10-20		REMOVED	
							2	UK	10-20		REMOVED	DIESEL FUE
:E	u-192	TACOMA	94TH SOUTH TACOMA WAY	98466	007042	GENE'S TOWING	2	UK	5-10		TEMP OUT	UNLEADED G
							3	UK	5-10		TEMP OUT	UNLEADED G
:E	u-193	TACOMA (R-678)	7502 CUSTER ROAD WEST	98467	007702	CUSTER ROAD GULL #258	1	45	2- 5		REMOVED	UNLEADED G

	SITE CITY	SITE ADDRESS	ZIP	SITE NUMBER	SITE NAME	TANK CODE	CUR AGE	GAL X1000	PMT ST	STATUS	SUBSTANCE
						111	22	11-20	P	OPERATIO	DIESEL FUE
						114	22	10-20	P	OPERATIO	UNLEADED G
						115	39	11-20	P	OPERATIO	DIESEL FUE
U-335	PUYALLUP	426 - 4TH AVE. NE	98372	007781	STEWART ELEMENTARY SCHOOL	1	UK			EXEMPT	DIESEL FUE
						2	UK			EXEMPT	HEATING FU
						3	UK	<1100		EXEMPT	DIESEL FUE
U-336	PUYALLUP	1504 E MAIN	98372	000415	MR SUDSY CAR WASH INC	1	25	10-20	P	OPERATIO	LEADED GAS
						2	25	10-20	P	OPERATIO	DIESEL FUE
						3	24	10-20	P	OPERATIO	UNLEADED G
						4	24	10-20	P	OPERATIO	UNLEADED G
						5	24	10-20	P	OPERATIO	UNLEADED G
						6	24	10-20	P	OPERATIO	UNLEADED G
U-337	PUYALLUP (R-160)	1501 EAST MAIN STREET	98372	011704	SAM'S TIRE STORE #306	1	UK	<1100		CLOSURE	USED OIL/W
U-338	PUYALLUP	1618 E MAIN	98372	002006	SHOPE CONCRETE PRODUCTS INC	1	UK			REMOVED	LEADED GAS
U-339	PUYALLUP	1812 E MAIN ST	98372	009014	BUNCE U RENT	1	21	<1100	P	OPERATIO	KEROSENE
						2	16	<1100	P	OPERATIO	DIESEL FUE
						3	11	11-20	P	OPERATIO	LEADED GAS
U-340	PUYALLUP	2519 E MAIN	98372	010299	LINDEN GOLF & COUNTRY CLUB	1	UK	<1100		CLOSED I	LEADED GAS
						2	UK		P	REMOVED	LEADED GAS
U-341	PUYALLUP	2722 EAST MAIN	98372	012471	LINDEN DRIVE BRANCH #1019	5. LINDEN	UK			CLOSED I	DIESEL FUE
U-342	PUYALLUP	515 - 3RD ST SE	98372	007775	KALLES JR. HIGH SCHOOL	1	UK	10-20		EXEMPT	DIESEL FUE
						2	UK	<1100		EXEMPT	DIESEL FUE
U-343	PUYALLUP Just North of U-313	109 EAST PIONEER	98372	007769	PUYALLUP SCHOOL DISTRICT NO. 3	1	UK			REMOVED	LEADED GAS
						2	UK			REMOVED	LEADED GAS
U-344	PUYALLUP	622 4TH AVE SE	98372	007603	WA 115	WA115-1	UK			REMOVED	UNLEADED G
						WA115-2	UK	<1100		REMOVED	HEATING FU
						WA115-3	UK	<1100		REMOVED	HEATING FU
U-345	PUYALLUP	1306 EAST PIONEER	98372	007780	SPINNING ELEMENTARY SCHOOL	1	UK			EXEMPT	DIESEL FUE
U-346	PUYALLUP (R-212)	13615 EAST PIONEER	98372	007881	PASQUIER PANEL PRODUCTS INC	1	UK			CLOSURE	HAZARDOUS
U-347	PUYALLUP (U-348)	14503 EAST PIONEER	98372	007883	PASQUIER PANEL PRODUCTS INC	1	UK	5-10		CLOSED I	
						2	UK	5-10		CLOSED I	
						3	UK	5-10		CLOSED I	
						4	UK	5-10		CLOSED I	
						5	UK	10-20		CLOSED I	
						6	UK	10-20		CLOSED I	

UNTY		SITE CITY	SITE ADDRESS	ZIP	SITE NUMBER	SITE NAME	TANK CODE	CUR AGE	GAL X1000	PMT ST	STATUS	SUBSTANCE
ERCE	U-348	PUYALLUP Same Site as U-347	14503 PIONEER WAY EAST	98372	012063	FORMER ADHESIVE PLANT	7	UK	10-20		CLOSED I	
							WP1	UK	10-20		CLOSED I	
							WP2	UK	10-20		CLOSED I	
							WP3	UK	10-20		CLOSED I	
							WP4	UK	10-20		CLOSED I	
							WP5	UK	10-20		CLOSED I	
ERCE	U-349	PUYALLUP (R-205)	407 14TH AVE S.E.	98372	011968	GOOD SAMARITAN HOSPITAL	1	17	11-20	P	OPERATIO	LEADED GAS
							2	17	11-20	P	OPERATIO	UNLEADED G
							3	13	2- 5	P	OPERATIO	DIESEL FUE
ERCE	U-350	PUYALLUP (R-170)	828 13TH SE	98372	002748	TOTEM ELECTRIC OF TACOMA INC	4	UK	<1100		CLOSED I	LEADED GAS
							2	17	<1100	P	OPERATIO	DIESEL FUE
							3	17		P	OPERATIO	LEADED GAS
ERCE	U-351	PUYALLUP	15207 96TH ST E	98372	010935	DAVID & IVAN MATLOCK	4	31	11-20	V	REMOVED	LEADED GAS
							5	31	11-20	V	REMOVED	LEADED GAS
							6	31	<1100	V	REMOVED	DIESEL FUE
ERCE	U-352	PUYALLUP (R-124)	11403 VALLEY AVE E	98372	007336	DENNYS VALLEY AUTOBODY INC	1	UK			CHANGE I	LEADED GAS
ERCE	U-353	PUYALLUP	10324 CANYON RD E	98373	000543	DICK CLARKS SUMMIT UNION 76	2	UK	10-20		CHANGE I	LEADED GAS
							1	UK	<1100		CLOSED I	UNLEADED G
							1-CLARK	UK	10-20		REMOVED	UNLEADED G
							2	UK			REMOVED	UNLEADED G
							3	UK			REMOVED	UNLEADED G
							4	UK			REMOVED	DIESEL FUE
ERCE	U-354	PUYALLUP	10401 MERIDIAN SOUTH	98373	012157	WILLOWS MAINTENANCE SITE	5	UK	<1100		REMOVED	USED OIL/W
							66C01005	24	<1100	V	TEMP OUT	DIESEL FUE
ERCE	U-355	PUYALLUP (R-230)	12119 MERIDIAN SO				66C01006	24	<1100	V	TEMP OUT	UNLEADED G
ERCE	U-356	PUYALLUP (R-231)	11904 MERIDIAN SOUTH	98373	000588	FIRESTONE STORE 31W6	1	UK	<1100	V	REMOVED	USED OIL/W
ERCE	U-357	PUYALLUP	11802 SOUTH MERIDIAN	98373	009296	GOODYEAR GASC 8827	1	UK	<1100	P	OPERATIO	USED OIL/W
				98373	004037	JACKPOT FOOD MART 318	221	UK	5-10	P	REMOVED	UNLEADED G
							237	UK	5-10	P	REMOVED	UNLEADED G
							238	UK	10-20	P	REMOVED	LEADED GAS
							419	4	5-10	P	OPERATIO	LEADED GAS
							473	4	10-20	P	OPERATIO	LEADED GAS
							474	4	10-20	P	OPERATIO	UNLEADED G
RCE	U-358	PUYALLUP (R-225)	11722 MERIDIAN SOUTH	98373	097214	PDQ OIL CO #1102	#1-6893	8	5-10	P	OPERATIO	UNLEADED G
							#2-6885	8	5-10	P	OPERATIO	LEADED GAS

COUNTY		SITE CITY	SITE ADDRESS	ZIP	SITE NUMBER	SITE NAME	TANK CODE	CUR AGE	GAL X1000	PMT ST	STATUS	SUBSTANCE
PIERCE	u-423	SPANAWAY	14905 BRESEMAN BLVD S	98387	011998	SPANAWAY PARK	1 GAS	10	2- 5	P	OPERATIO	UNLEADED G
							2 DIESEL	27	<1100	P	OPERATIO	DIESEL FUE
PIERCE	u-424	SPANAWAY	215 SO 166TH ST	98387	007865	SPANAWAY ELEMENTARY SCHOOL	#1	UK	<1100		EXEMPT	DIESEL FUE
							#2	UK	5-10		EXEMPT	HEATING FU
PIERCE	u-425	SPANAWAY	16215 S PARK	98387	005943	STATION 73	5	UK	<1100		CLOSED I	HEATING FU
PIERCE	u-426	STEILACOOM (R-320)	1030 ROE STREET	98388	100036	TOWN OF STEILACOOM	1	7	11-20	P	OPERATIO	UNLEADED G
PIERCE	u-427	SUMNER (R-340)	805 140TH AVENUE COURT EAST	98390	101698	METRO HAULING INC	2	7	<1100	P	OPERATIO	DIESEL FUE
PIERCE	u-428	SUMNER	PO BOX 487 /16805 SUMNER-BUCKLEY HW	98390	008257	TIM CORLISS SON	1	3	10-20	P	OPERATIO	DIESEL FUE
							1	UK	<1100		REMOVED	USED OIL/W
PIERCE	u-429	SUMNER (R-365)	1313 ZEHNDER STREET PO BOX 1250	98390	002886	WESTERN WOOD PRESERVING CO.	2	UK			REMOVED	DIESEL FUE
PIERCE	u-430	SUMNER (R-339) ?	PO BOX 1690	98390	000016	J M MC CONKEY &CO INC/CLOSED	3	UK	5-10		REMOVED	UNLEADED G
							1	9	<1100	V	REMOVED	DIESEL FUE
							1-REG	UK			CLOSED I	LEADED GAS
							2-DSL	UK			CLOSED I	DIESEL FUE
							3-USEDOIL	UK			REMOVED	USED OIL/W
IERCE	u-431	BONNEY LAKE	18421 OLD BUCKLEY HWY.	98390	003770	CITY OF BONNEY LAKE POLICE STATION	1	UK			REMOVED	LEADED GAS
							2	UK			REMOVED	LEADED GAS
IERCE	u-432	BONNEY LAKE	9301 ANGELINE ROAD	98390	101523	CITY OF BONNEY LAKE	1	8	<1100	P	OPERATIO	DIESEL FUE
IERCE	u-433	SUMNER	111 ZEHNDER STREET	98390	010539	NABISCO BRANDS INC. YEAST & VINEGAR	1	UK	10-20		EXEMPT	HEATING FU
							2	UK	10-20		EXEMPT	HEATING FU
IERCE	u-434	BONNEY LAKE	19306 BONNEY LAKE BLVD. PO BOX 7380	98390	003771	CITY OF BONNEY LAKE	1	UK			REMOVED	LEADED GAS
							2	UK			REMOVED	UNLEADED G
IERCE	u-435	SUMNER	711 NARROW STREET	98390	009004	CITY SHOP	3	UK			REMOVED	DIESEL FUE
							1	UK	<1100		REMOVED	UNLEADED G
IERCE	u-436	SUMNER (R-323)	809 MAIN ST	98390	002933	ARCO 5509	2	UK	<1100		REMOVED	LEADED GAS
							3	UK			REMOVED	DIESEL FUE
IERCE	u-437	SUMNER (R-355)	910 TRAFFIC AVE	98390	002873	SUNSET CHEVROLET INC.	1	7	10-20	P	OPERATIO	LEADED GAS
							2	7	10-20	P	OPERATIO	UNLEADED G
IERCE	u-438	SUMNER (R-360)	905 KINCAID	98390	010024	SUMNER CO 070360	3	7	10-20	P	OPERATIO	UNLEADED G
							1	UK			REMOVED	UNLEADED G
IERCE	u-439	SUMNER (R-346)	1229 EAST MAIN STREET	98390	008279	ERNEST M ENDRESS/QUALITY CLEANERS	2	17	<1100	P	OPERATIO	USED OIL/W
							1-POWER	26	2- 5	V	REMOVED	DIESEL FUE
							2-STDBY	1	<1100	P	OPERATIO	DIESEL FUE
							1	UK	<1100		REMOVED	
							2	UK	<1100		REMOVED	

ITY		SITE CITY		SITE ADDRESS	ZIP	SITE NUMBER	SITE NAME	TANK CODE	CUR AGE	GAL X1000	PMT ST	STATUS	SUBSTANCE
								3	UK	<1100		REMOVED	
								4	UK	<1100		EXEMPT	HEATING FU
								5	UK	<1100		EXEMPT	HEATING FU
ICE	U-440	SUMNER		1313 MAIN ST	98390	010226	DAY AND NIGHT GROCERY 102	1 REGULAR	UK			REMOVED	LEADED GAS
								2 REGULAR	UK			REMOVED	UNLEADED G
								3 UNLEADED	UK	5-10		REMOVED	UNLEADED G
								4 PREMIUM	UK			REMOVED	UNLEADED G
ICE	U-441	SUMNER		1104 MAPLE STREET	98390	008956	CITY OF SUMNER	1	UK			REMOVED	LEADED GAS
								2	UK			REMOVED	UNLEADED G
ICE	U-442	SUMNER		13114 63RD STREET E	98390	101439	WASTEWATER TREATMENT	3	9	<1100	P	OPERATIO	DIESEL FUE
ICE	U-443	SUMNER		914 KINCAID	98390	000022	SUMNER TEXACO KENNETH H KAUTH	1	UK			REMOVED	LEADED GAS
								2	UK			REMOVED	UNLEADED G
								3	UK			REMOVED	UNLEADED G
								4	UK			REMOVED	
ICE	U-444	SUMNER		1616 FRYAR	98390	005275	MELLOW TRUCK EXPRESS CO INC.	1	UK	5-10		REMOVED	DIESEL FUE
								2	UK	5-10		REMOVED	DIESEL FUE
								3	UK	<1100		REMOVED	USED OIL/W
CE	U-445	SUMNER		1504 FRYAR AVENUE	98390	003958	HANSEN, HANSEN & JOHNSON, GEN.CONT.	1.	UK	<1100		UNRESOLV	LEADED GAS
								2.	UK	5-10		UNRESOLV	LEADED GAS
CE	U-446	SUMNER		1111 FRYAR AVE	98390	003928	MC LENDON HARDWARE INC	#1	UK			REMOVED	UNLEADED G
								#2	UK			REMOVED	DIESEL FUE
CE	U-447	SUMNER	R-334	1409 PUYALLUP AVE.	98390	001776	GOLDEN STATE FOODS CORP.	FBR//GLS	5	10-20	P	OPERATIO	DIESEL FUE
								MOTOR OIL	UK	<1100		REMOVED	
								NORTH	UK	10-20		REMOVED	DIESEL FUE
								SOUTH	UK	10-20		REMOVED	DIESEL FUE
								WASTE OIL	14	<1100	P	REMOVED	USED OIL/W
CE	U-448	SUMNER		901 VALLEY AVE	98390	002921	O D SNIDER & SON INC	1	UK	5-10		REMOVED	LEADED GAS
								2	UK			REMOVED	UNLEADED G
								3	UK			REMOVED	LEADED GAS
								4	UK	<1100		EXEMPT	HEATING FU
								5	UK	<1100		CLOSED I	
								6	UK			REMOVED	
CE	U-449	BONNEY LAKE		19701 104TH ST E	98390	102303	SUMNER SUPPORT SVCS CENTER	1	2	<1100		EXEMPT	DIESEL FUE
								2	2	10-20	P	OPERATIO	UNLEADED G
								3	2	10-20	P	OPERATIO	DIESEL FUE

COUNTY		SITE CITY	SITE ADDRESS	ZIP	SITE NUMBER	SITE NAME	TANK CODE	CUR AGE	GAL X1000	PMT ST	STATUS	SUBSTANCE
							2	UK			OPERATIO	DIESEL FUE
PIERCE	U-462	SUMNER (R-350)	4224 SUMNER TAPPS HWY	98390	097472	STOWE CONSTRUCTION INC	TANK 1	8	10-20	P	OPERATIO	DIESEL FUE
PIERCE	U-463	SUMNER	13223 HOUSTON ROAD EAST	98390	000919	SUMNER TRACTOR & EQUIPMENT CO., INC	1	23	<1100		TEMP OUT	LEADED GAS
PIERCE	U-464	SUMNER	1715 198TH AVE E	98390	011996	LAKE TAPPS COUNTY PARK	1-GAS	26	<1100	P	OPERATIO	UNLEADED G
							2-GAS	17	11-20	P	OPERATIO	LEADED GAS
PIERCE	U-465	SUMNER (R-328)	1320 178TH AVE EAST	98390	001494	DIERINGER SCHOOL DISTRICT #343	1.	UK	2- 5	V	REMOVED	DIESEL FUE
							2.	UK	<1100	V	REMOVED	UNLEADED G
PIERCE	U-466	SUMNER	3104 - 166 AVE. EAST	98390	007302	SUMNER COMPRESSOR STATION	1	UK	<1100		CLOSED I	LEADED GAS
PIERCE	U-467	SUMNER (R-326)	2720 E VALLEY HWY	98390	100722	CITY TRANSFER OF KENT	138257	6	<1100	P	OPERATIO	USED OIL/W
							138260	6	<1100	P	OPERATIO	USED OIL/W
							144970	6	10-20	P	OPERATIO	DIESEL FUE
PIERCE	U-468	SUMNER	2008 EAST VALLEY HIGHWAY	98390	009745	GARY PETERSEN/PETERSEN BROTHERS, IN	1-P3	UK	5-10	P	CLOSED I	
							1	10	10-20	P	OPERATIO	DIESEL FUE
PIERCE	U-469	SUMNER (R-345)	2111 E VALLEY HIGHWAY	98390	008524	WHITERIVER GEN STA	2	10	5-10	P	OPERATIO	LEADED GAS
							3	10	<1100	P	OPERATIO	USED OIL/W
PIERCE	U-470	SUMNER	2300 EAST VALLEY ROAD	98390	000388	ID # P3	253	8	<1100	P	OPERATIO	UNLEADED G
PIERCE	U-471	SUMNER	13122 8TH STREET EAST	98390	100871	DELTA PLUMBING & HEATING CO INC	254	8	<1100	P	OPERATIO	DIESEL FUE
							1	UK	5-10		CLOSURE	DIESEL FUE
PIERCE	U-472	SUMNER (R-335)	13315 8TH STREET EAST	98390	007087	GORDON TRUCKING INC	1GAS	7	<1100	P	OPERATIO	UNLEADED G
PIERCE	U-473	SUMNER	13602 8TH ST. E	98390	003603	EDWARD R MELCHER K&M GROCERY & DELI	2DIESEL	UK	<1100		TEMP OUT	DIESEL FUE
							1	UK			EXEMPT	USED OIL/W
PIERCE	U-474	SUMNER (R-356)	13702 8TH ST E	98390	008129	MANKE LUMBER CO	1	UK			CLOSURE	UNLEADED G
							2	UK	<1100		CLOSURE	UNLEADED G
PIERCE	U-475	SUMNER	14103 8TH STREET EAST	98390	010869	POTELCO INC.	1	20	2- 5	P	REMOVED	DIESEL FUE
							2	20	2- 5	P	REMOVED	UNLEADED G
PIERCE	U-476	SUMNER	13410 8TH ST E	98390	009203	PERSON & PERSON INC.	1	13	2- 5	V	REMOVED	LEADED GAS
							2	13	2- 5	V	REMOVED	DIESEL FUE
PIERCE	U-477	SUMNER	716 138TH EAST	98390	097218	CORLISS COMPANY	1	UK	<1100		REMOVED	UNLEADED G
PIERCE	U-478	SUMNER	610 WEST VALLEY HWY	98390	100891	DAY'S CORNER	2	UK	<1100		REMOVED	DIESEL FUE
							(1)	UK	10-20		REMOVED	DIESEL FUE
							1	12	5-10	P	OPERATIO	UNLEADED G
PIERCE	U-479	SUMNER	13401 VALLEY AVE	98390	002922	O D SNIDER & SON INC	2	12	5-10	P	OPERATIO	DIESEL FUE
							3	12	5-10	P	OPERATIO	LEADED GAS
							1	34	20-30	P	OPERATIO	OTHER
							10	17	10-20	P	OPERATIO	DIESEL FUE

	SITE CITY	SITE ADDRESS	ZIP	SITE NUMBER	SITE NAME	TANK CODE	CUR AGE	GAL X1000	PMT ST	STATUS	SUBSTANCE
						4	2	<1100	P	OPERATIO	USED OIL/W
U-450	SUMNER	1005 WOOD AVE	98390	006995	JOHNSON'S CHEVRON INC/ROGER JOHNSON	5	2	<1100		EXEMPT	OTHER
						1SUP UNLEAD	3	10-20	P	OPERATIO	UNLEADED G
						2REG UNLEAD	3	10-20	V	UNRESOLV	UNLEADED G
						3REGULAR	3	10-20	P	OPERATIO	LEADED GAS
U-451	SUMNER	1710 WASHINGTON STREET	98390	003899	SUMNER SCHOOL DISTRICT #320	5DRAIN OIL	UK	<1100	P	CLOSURE	USED OIL/W
						1	15	10-20	V	REMOVED	LEADED GAS
						2	15	10-20	V	REMOVED	DIESEL FUE
						3	UK	<1100		CLOSURE	USED OIL/W
U-452	SUMNER	1510 PUYALLUP ST	98390	007882	PASQUIER PANEL PRODUCTS INC	4	UK	<1100		CLOSURE	
U-453	SUMNER	2509 MAIN STREET	98390	007089	SMITHCO MEATS,INC.	PPP-1	UK	<1100		REMOVED	HAZARDOUS
						1	UK			REMOVED	LEADED GAS
U-454	SUMNER	2608 E MAIN	98390	007159	HESS TEXACO CAR CENTER	2	UK			REMOVED	UNLEADED G
						1	UK			REMOVED	UNLEADED G
						2	UK			REMOVED	UNLEADED G
						3	UK			REMOVED	LEADED GAS
						4	UK			REMOVED	LEADED GAS
						5	UK			REMOVED	UNLEADED G
U-455	SUMNER	11617 214TH AVE E	98390	010999	214TH AVE E PUMP STATION	6	UK	<1100		REMOVED	USED OIL/W
U-456	SUMNER	16819 92ND ST E	98390	001821	BUCKLEY NURSERY COMPANY	1	14	11-20	P	OPERATIO	DIESEL FUE
						DIESEL	20	2- 5	P	OPERATIO	DIESEL FUE
U-457	SUMNER	7405 WEST TAPPS HWY.	98390	004668	MORIARTY LOGGING CO.	GASOLINE	20	2- 5	P	OPERATIO	UNLEADED G
						1	16	<1100	P	OPERATIO	UNLEADED G
						2	16	<1100	P	OPERATIO	LEADED GAS
						3	16	<1100	P	OPERATIO	DIESEL FUE
U-458	SUMNER (R-359)	19504 BONNEY LAKE BLVD	98390	010478	BONNEY LAKE CO 070921	1 STANDBY	UK		P	REMOVED	KEROSENE
						2	3	<1100	P	OPERATIO	DIESEL FUE
U-459	SUMNER	18215 9TH ST E	98390	010957	LAKE TAPPS MINI MARKET	001	4	10-20	P	OPERATIO	UNLEADED G
						002	4	5-10	P	OPERATIO	LEADED GAS
						003	4	5-10	P	OPERATIO	UNLEADED G
						1	4	5-10	P	REMOVED	UNLEADED G
						2	UK	5-10		REMOVED	UNLEADED G
U-460	SUMNER (R-343)	3206 W TAPPS DRIVE E	98390	007638	FIRE STATION 1	3	4	10-20	P	REMOVED	UNLEADED G
U-461	SUMNER	4318 166 AVE.	98390	008253	OELKE DRILLING & PUMP CO.	1	UK	<1100	P	CLOSURE	LEADED GAS
						1	UK			OPERATIO	LEADED GAS

JNTY		SITE CITY		SITE ADDRESS	ZIP	SITE NUMBER	SITE NAME	TANK CODE	CUR AGE	GAL X1000	PMT ST	STATUS	SUBSTANCE
								11	UK			REMOVED	KEROSENE
								12	UK			REMOVED	
								2	34	20-30	P	OPERATIO	UNLEADED G
								3	34	20-30	P	OPERATIO	DIESEL FUE
								4	22	20-30	P	OPERATIO	KEROSENE
								5	UK			EXEMPT	HEATING FU
								6	13	5-10	P	OPERATIO	LEADED GAS
								7	13	2- 5	P	OPERATIO	DIESEL FUE
								8	13	2- 5	P	OPERATIO	UNLEADED G
								9	13	5-10	P	OPERATIO	UNLEADED G
ERCE	U-480	WILKESON		209 CHURCH STREET PO BOX 87	98396	006218	CHUCKS SERVICE INC	1	UK	<1100		REMOVED	USED OIL/W
								2	UK	10-20		REMOVED	UNLEADED G
								3	22	2- 5	V	REMOVED	UNLEADED G
								4	22	5-10	P	REMOVED	LEADED GAS
								5	13	5-10	P	REMOVED	DIESEL FUE
								6	13	5-10	V	REMOVED	UNLEADED G
								7	UK	<1100		REMOVED	KEROSENE
								8	2	10-20	P	OPERATIO	UNLEADED G
								9	2	10-20	P	OPERATIO	LEADED GAS
ERC	U-481	WILKESON						1	UK	<1100		REMOVED	
ERCE	U-482	SUMNER	T-84	1812 PEASE	98401	101916	SUMNER CEDAR	1	UK	<1100		REMOVED	LEADED GAS
ERCE	U-483	STEILACOOM		FIRST & CHAMPION PO BOX 876	98401	007028	SUNRISE MARINE, INC	1	UK			REMOVED	LEADED GAS
ERCE	U-484	STEILACOOM		PO BOX 900 (N122 42'W47 13')	98401	005280	MCNEIL ISLAND CORRECTION CENTER	ANNEX	UK			REMOVED	HEATING FU
								EMER GEN	10	2- 5	P	OPERATIO	DIESEL FUE
								GENERATORS	UK			EXEMPT	HEATING FU
								ISL ASSN	6	2- 5	P	OPERATIO	UNLEADED G
								ISL. ASSN. 2	UK			EXEMPT	
								MOTOR POOL	6	10-20	P	OPERATIO	UNLEADED G
								PIGGERY	UK			EXEMPT	HEATING FU
ERCE	U-485	STEILACOOM		1201 RAINIER STREET	98401	002559	CONNIE J SCANNELL	#1	UK			OPERATIO	UNLEADED G
								#2	UK	5-10		OPERATIO	UNLEADED G
								#3	UK			OPERATIO	LEADED GAS
								#4	UK	<1100		REMOVED	USED OIL/W
								#5	UK	<1100		REMOVED	USED OIL/W

RCRIS and CERCLIS Sites

R-101	WAD988474201	WDOE SRO MILTON MOBILE DRUG LAB	700 20TH AVE	MILTON	PIERCE	WA 98354	RCRIS
R-102	WAD988517413	LEASE NORTHWEST INC	405 B PORTER WAY	MILTON	PIERCE	WA 98354-9639	RCRIS
R-103	WA0000379347	MILTON MILLWORK	1203 PORTER WAY	MILTON	PIERCE	WA 98354-9644	RCRIS
R-104	WAD097819205	CHAMPION INTERNATIONAL CORP ORTI	31716 CAMP 1 RD	ORTING	PIERCE	WA 98360	RCRIS U-267
R-105	WAD000618033	CHAMPION INTL CORP	25312 BROOKS RD	ORTING	PIERCE	WA 98360	RCRIS
R-106	WAD981766785	DREXLER RAMCOR	21716 ORVILLE RD E	ORTING	PIERCE	WA 98360	RCRIS T-70
							CRCLIS
R-107	WAD089943591	MARLEY ELECTRIC HEATING CO	18410 PIONEER WAY	ORTING	PIERCE	WA 98360	RCRIS
R-108	WAD988479010	NORTHWEST PIPELINE CORP S TACOMA	T19N R4E S31 NE NW	ORTING	PIERCE	WA 98360	RCRIS
R-109	WAD000711994	PUGET SOUND POWER & LIGHT CO ELE	19318 ELECTRON RD	ORTING	PIERCE	WA 98360	RCRIS U-268, T-69
							CRCLIS
C-7	WAD009254368	RENO MFG	21716 ORVILE RD E	ORTING	PIERCE	WA 98360	CRCLIS
R-110	WAT540011988	USWCOM ORTING RPTR BLDG	T18N R5E S15 WM S1/2	ORTING	PIERCE	WA 98360	RCRIS
R-111	WAD980383574	WASHINGTON SOLDIERS HOME	1301 ORTING KAPOWSIN HWY	ORTING	PIERCE	WA 98360	RCRIS U-36
R-112	WAD988490751	ZIRKLE FRANK	20211 PATTERSON RD E	ORTING	PIERCE	WA 98360	RCRIS
R-113	WAD982654915	A & G COLLISION	7619 48TH ST E	PUYALLUP	PIERCE	WA 98371	RCRIS
R-114	WAD988486973	ALL STATE INDUSTRIAL & MARINE	5112 85TH AVE E	PUYALLUP	PIERCE	WA 98371	RCRIS
R-115	WAD988515219	ARCO PRODUCTS CO 5877 PRESTIGE S	1502 S MERIDIAN ST	PUYALLUP	PIERCE	WA 98371	RCRIS U-47
R-116	WAD988486239	BARRETTS COLLISION	8312 CANYON RD E	PUYALLUP	PIERCE	WA 98371	RCRIS
R-117	WAD988487369	BP OIL SITE 11085	728 E MERIDIAN	PUYALLUP	PIERCE	WA 98371	RCRIS
R-118	WAD988487492	BP OIL SITE 11257	7206 CANYON RD E	PUYALLUP	PIERCE	WA 98371	RCRIS U-115
R-119	WAD980836373	CHEMICAL WASTE TRANS	608 7TH AVE NW	PUYALLUP	PIERCE	WA 98371	RCRIS
R-120	WAD988486270	CHEVRON USA INC SS 97618	516 S MERIDIAN	PUYALLUP	PIERCE	WA 98371	RCRIS U-315
R-121	WAD988471629	CHIEF SUPPLY CORP	4624 RIVER RD E	PUYALLUP	PIERCE	WA 98371	RCRIS
							PADS
R-122	WAD988501847	COLLINS TRANSPORT	4310 70TH AVE E UNIT C	PUYALLUP	PIERCE	WA 98371	RCRIS
R-123	WAD988475836	DATA PRINT	300 MERIDIAN E	PUYALLUP	PIERCE	WA 98371	RCRIS
R-124	WAD980986020	DENNYS VALLEY AUTOBODY INC	11403 VALLEY AVE E	PUYALLUP	PIERCE	WA 98371	RCRIS U-352
R-125	WA0000568832	DOCUPRINT	300 E MERIDIAN STE 102	PUYALLUP	PIERCE	WA 98371	RCRIS
R-126	WAD988484564	EDGEWOOD DRY CLEANERS	725 MERIDIAN E	PUYALLUP	PIERCE	WA 98371	RCRIS
R-127	WA0000085191	FANTASTIC CLEANERS	1100 MERIDIAN AVE N	PUYALLUP	PIERCE	WA 98371	RCRIS
R-128	WAD980983167	FRANKS WASTE OIL PICKUP	1211 9TH AVE SW	PUYALLUP	PIERCE	WA 98371	RCRIS
R-129	WAD034724625	GEORGE RICHTER FARM INC PUYALLUP	4512 70TH AVE E	PUYALLUP	PIERCE	WA 98371	RCRIS U-270
R-130	WAD009252602	GIRARD WOOD PRODUCTS INC	127 SE 8TH ST	PUYALLUP	PIERCE	WA 98371	RCRIS
R-131	WAD981772429	HARNISH LINCOLN MERCURY INC	800 RIVER RD	PUYALLUP	PIERCE	WA 98371	CRCLIS U-37 T-113
C-8	WAD980511539	HIDDEN VALLEY LANDFILL (THUN FIE	THUN FLD 17975 MERIDIAN S	PUYALLUP	PIERCE	WA 98371	RCRIS
R-132	WAD988487922	INTERIOR FORM TOPS INC	1420 MERIDIAN E	PUYALLUP	PIERCE	WA 98371	RCRIS U-298
R-133	WAD988484598	KEN PARKS CHEVROLET SUBARU	400 RIVER RD	PUYALLUP	PIERCE	WA 98371	RCRIS U-327
R-134	WAD027391002	KORUM FORD	812 MERIDIAN AVE N	PUYALLUP	PIERCE	WA 98371	RCRIS U-295
R-135	WAD980987341	KORUM MOTORS INC DBA KORUM MITSU	514 RIVER RD E	PUYALLUP	PIERCE	WA 98371	RCRIS U-275
R-136	WAD027391101	LARSON MOTORS INC	300 RIVER RD E	PUYALLUP	PIERCE	WA 98371	RCRIS U-297
R-137	WAD988472296	MILAM OLDSMOBILE INC	608 RIVER RD	PUYALLUP	PIERCE	WA 98371	RCRIS U-274
R-138	WAD980738694	MURREYS DSPL CO INC	4622 70TH AVE E	PUYALLUP	PIERCE	WA 98371	RCRIS
R-139	WAD047077623	NORTH HILL SAND & GRAVEL INC	2801 MERIDIAN ST N	PUYALLUP	PIERCE	WA 98371	RCRIS
R-140	WAD988479143	NORTHWEST PIPELINE CORP PUYALLUP	T19N R4E S16 NW NE	PUYALLUP	PIERCE	WA 98371	RCRIS
R-141	WAD988491072	PETES AUTOBODY SUPPLY INC	323 MERIDIAN ST S	PUYALLUP	PIERCE	WA 98371	RCRIS
R-142	WAD035893734	PIERCE CO HERALD 822 E MAIN	822 E MAIN	PUYALLUP	PIERCE	WA 98371	RCRIS
R-143	WAD988480844	PIERCE CO PUBLIC WKS MELROY BRG	66TH AVE E BETWEEN N LEVEE RD	PUYALLUP	PIERCE	WA 98371	RCRIS
R-144	WAD988483608	PIERCE CO UTILITIES DEPT	10TH AVE SE & MERIDIAN S	PUYALLUP	PIERCE	WA 98371	RCRIS
R-145	WA0000230516	PREMIUM TUNE N LUBE PUYALLUP	940 MERIDIAN E	PUYALLUP	PIERCE	WA 98371	RCRIS
R-146	WAD988521787	PUYALLUP CHRISLER PLYMOUTH	401 RIVER RD	PUYALLUP	PIERCE	WA 98371	RCRIS U-271
R-147	WA0000062836	PUYALLUP CHRYSLER PLYMOUTH	1021 4TH ST NW	PUYALLUP	PIERCE	WA 98371	RCRIS — OK! - had wrong address.
R-148	WAD980980726	PUYALLUP CHRYSLER PLYMOUTH COLLI	1109 4TH ST NW	PUYALLUP	PIERCE	WA 98371	RCRIS
C-9	WAD081488736	PUYALLUP CY OF OLD PUYALLUP	PUYALLUP RIV OFF MAIN AVE	PUYALLUP	PIERCE	WA 98371	CRCLIS
R-149	WAD980836035	PUYALLUP CY OF PARKS DEPT	601 MERIDIAN AVE N	PUYALLUP	PIERCE	WA 98371	RCRIS
R-150	WAD982651473	PUYALLUP CY OF SHOPS	1201 4TH ST NW	PUYALLUP	PIERCE	WA 98371	RCRIS U-322
R-151	WAD981774102	PUYALLUP CY OF WWTP	2028 RIVER RD	PUYALLUP	PIERCE	WA 98371	RCRIS U-292
R-152	WAD063341358	PUYALLUP LINCOLN MERCURY	815 MERIDIAN AVE N	PUYALLUP	PIERCE	WA 98371	RCRIS U-328
R-153	WAD083358002	PUYALLUP NISSAN INC	711 MERIDIAN ST N	PUYALLUP	PIERCE	WA 98371	RCRIS U-326
R-154	WAD981765316	PUYALLUP SD 003	324 9TH ST NW	PUYALLUP	PIERCE	WA 98371	RCRIS
R-155	WAD988467387	PUYALLUP SD 003 PUPIL SVCS	323 12TH ST NW	PUYALLUP	PIERCE	WA 98371	RCRIS
R-156	WAD100567460	PUYALLUP SD 3 AYLEN JR HIGH	101 15TH ST SW	PUYALLUP	PIERCE	WA 98371	RCRIS
R-157	WAD988467346	PUYALLUP SR HIGH	105 7TH ST SW	PUYALLUP	PIERCE	WA 98371	RCRIS

WAD079272332	RAMCO ENTERPRISES INC	6926 N MERIDIAN	PUYALLUP	PIERCE	WA 98371	RCRIS	
R-158 WAD980985816	RIVER ROAD AUTO BODY	826 RIVER RD E	PUYALLUP	PIERCE	WA 98371	RCRIS	
R-159 WAD988522249	S & J TRUCKING INC	7823 VALLEY AVE E	PUYALLUP	PIERCE	WA 98371	RCRIS	
R-160 WAD988468450	SAMS TIRE 306	1501 E MAIN ST	PUYALLUP	PIERCE	WA 98371	RCRIS	U-337
R-161 WAD988467288	SOUTHLAND CORP THE 7 11 STORE NO	817 E MERIDIAN AVE	PUYALLUP	PIERCE	WA 98371	RCRIS	
R-162 WAD070402854	SPECIALIZED TRANSPORT SVC	5111 85TH AVE E	PUYALLUP	PIERCE	WA 98371	RCRIS	
						PADS	
R-163 WAD043183771	STILES HOLLOW METAL	2511 INTER AVE	PUYALLUP	PIERCE	WA 98371	RCRIS	
R-164 WAD981772023	SUREWAY COLLISION CTR	823 B RIVER RD	PUYALLUP	PIERCE	WA 98371	RCRIS	
R-165 WAD988503256	TEXACO SS 632321445	347 MERIDIAN ST S	PUYALLUP	PIERCE	WA 98371	RCRIS	
R-166 WAD988503140	TEXACO SS 63232168	2325 MERIDIAN E	PUYALLUP	PIERCE	WA 98371	RCRIS	
R-167 WAD980987929	TEXACO SS 63232296	905 MERIDIAN ST N	PUYALLUP	PIERCE	WA 98371	RCRIS	U-302
R-168 WAD988503868	TEXACO SS 63232493	708 MERIDIAN ST N	PUYALLUP	PIERCE	WA 98371	RCRIS	
R-169 WAD988502035	TOTEM COACHES INC	2724 MERIDIAN E	PUYALLUP	PIERCE	WA 98371	RCRIS	
R-170 WAD988513925	TOTEM ELECTRIC OF TACOMA INC	828 1/2 13TH SE	PUYALLUP	PIERCE	WA 98371	RCRIS	U-350
R-171 WAD988505590	TOYOTA OF PUYALLUP	615 MERIDIAN ST N	PUYALLUP	PIERCE	WA 98371	RCRIS	U-325
R-172 WAD980974893	U S G INTERIORS INC PUYALLUP SIT	925 RIVER RD E	PUYALLUP	PIERCE	WA 98371	RCRIS	T-97
C-10 WAD980835185	USG CO PUYALLUP	925 RIVER RD	PUYALLUP	PIERCE	WA 98371	CRCLIS	
R-173 WAT540012671	USWCOM PUYALLUP CO	317 3RD ST SW	PUYALLUP	PIERCE	WA 98371	RCRIS	
R-174 WAD052582418	VALLEY PRINTING INC DBA VALLEY P	207 STEWART AVE W	PUYALLUP	PIERCE	WA 98371	RCRIS	Just South of U-301
R-175 WAD061676052	VANCOUVER DOOR CO INC	203 5TH ST NW	PUYALLUP	PIERCE	WA 98371	RCRIS	
R-176 WAD988498960	WDOE SRO HERBS TOWING DRUG LAB C	823 A RIVER RD	PUYALLUP	PIERCE	WA 98371	RCRIS	
R-177 WAD982659336	WDOE SRO PUYALLUP DRUG LAB	1617 5TH SW	PUYALLUP	PIERCE	WA 98371	RCRIS	
WAD981763212	WDOE SRO PUYALLUP OIL SPILL	MEEKER DITCH AT 5TH AVE	PUYALLUP	PIERCE	WA 98371	RCRIS	
R-178 WAD980976468	WESTERN WASH RESEARCH & EXTENSIO	7612 PIONEER WAY E	PUYALLUP	PIERCE	WA 98371	RCRIS	
R-179 WAD071852545	WESTERN WASHINGTON FAIR ASSN	110 9TH AVE SW	PUYALLUP	PIERCE	WA 98371	RCRIS	U-42
R-180 WAD988523684	WSDA PIERCE 1	7611 PIONEER WAY E LOT 1104	PUYALLUP	PIERCE	WA 98371	RCRIS	
R-181 WAD988495180	B & B AUTO	328 MERIDIAN E	PUYALLUP	PIERCE	WA 98371-1034	RCRIS	
R-182 WAD988497335	COUNTRY MOUNTAIN AUTOMOTIVE	2828 MERIDIAN E	PUYALLUP	PIERCE	WA 98371-2109	RCRIS	
WAD009271750	SEAFIRST FORMERLY ACCURATE PLAST	4609 70TH AVE E	PUYALLUP	PIERCE	WA 98371-2465	TRIS	
						RCRIS	
R-183 WA0000073098	SUN GRO HORTICULTURE INC	3719 70TH AVE E	PUYALLUP	PIERCE	WA 98371-2475	RCRIS	U-284
R-184 WA0000258426	B & B AUTO SALES INC	1830 RIVER RD	PUYALLUP	PIERCE	WA 98371-3892	RCRIS	
R-185 WAD981764459	CHRIS REPAIR	727 6TH AVE NW	PUYALLUP	PIERCE	WA 98371-4247	RCRIS	U-316 Just North
R-186 WAD988493060	BP OIL SITE 11082	401 S MERIDIAN	PUYALLUP	PIERCE	WA 98371-5911	RCRIS	U-55
R-187 WA0000062331	ARCO PRODUCTS CO 5898	102 VALLEY AVE NE	PUYALLUP	PIERCE	WA 98372	RCRIS	
R-188 WAD988506317	B G PAINT CO INC	MERIDIAN N INTERSECT SR 167	PUYALLUP	PIERCE	WA 98372	RCRIS	
R-189 WAD988480513	BLOOMINGVALE APARTMENTS	307 VALLEY AVE NE	PUYALLUP	PIERCE	WA 98372	RCRIS	
R-190 WAD988492666	BOBS AUTOMOTIVE	121 23RD ST SE	PUYALLUP	PIERCE	WA 98372	RCRIS	
R-191 WAD005791165	BROOKS TRUCK LINE INC	1405 7TH AVE SE	PUYALLUP	PIERCE	WA 98372	RCRIS	
R-192 WAD027392810	CORNFORTH CAMPBELL MOTORS INC	115 2ND ST SE	PUYALLUP	PIERCE	WA 98372	RCRIS	
R-193 WAD981774722	GRANTS COMPLETE COLLISION SVC	5205 CHRISELLA RD E	PUYALLUP	PIERCE	WA 98372	RCRIS	
R-194 WAD980987226	K D AUTO BODY	407 MAIN AVE E	PUYALLUP	PIERCE	WA 98372	RCRIS	
R-195 WAD032935272	KEN SHIR INC DBA KD AUTO BODY	407 MAIN AVE E	PUYALLUP	PIERCE	WA 98372	RCRIS	
R-196 WAD009482894	KIRK CO	615 E PIONEER	PUYALLUP	PIERCE	WA 98372	RCRIS	
R-197 WAD027391226	MAHAFFIES INC DBA DELUXE CLEANER	111 STEWART AVE E	PUYALLUP	PIERCE	WA 98372	RCRIS	
R-198 WA0001013333	PAYLESS 2520	1323 E MAIN AVE	PUYALLUP	PIERCE	WA 98372	RCRIS	
R-199 WAD067529024	PUGET SOUND POWER & LIGHT PUYALL	5807 MILWAUKEE AVE E	PUYALLUP	PIERCE	WA 98372	RCRIS	U-334, T-68
R-200 WAD988505475	PUYALLUP SD PRINT SHOP	211 10TH ST SE	PUYALLUP	PIERCE	WA 98372	RCRIS	
R-201 WAD988467395	PUYALLUP SD 3 EDGEMONT JR HIGH	10909 24TH ST E	PUYALLUP	PIERCE	WA 98372	RCRIS	U-69
R-202 WAD988467379	PUYALLUP SD 3 KALLES JR HIGH	515 3RD ST SE	PUYALLUP	PIERCE	WA 98372	RCRIS	
R-203 WAD988475398	RAYMAN NORTHWEST TRANSMISSION	1134 E MAIN	PUYALLUP	PIERCE	WA 98372	RCRIS	
WAD067154880	RONJO MFG INC	1190 63RD AVE NE	PUYALLUP	PIERCE	WA 98372	RCRIS	
WAD095722229	S & W SAND & GRAVEL CO INC	2821 9TH ST NE	PUYALLUP	PIERCE	WA 98372	RCRIS	
R-204 WAD988489449	TEXACO STA PUYALLUP	1724 E MAIN	PUYALLUP	PIERCE	WA 98372	RCRIS	U-49
R-205 WAD988484796	WDOE SRO GOOD SAMARITAN HOSPITAL	407 14TH AVE SE	PUYALLUP	PIERCE	WA 98372	RCRIS	U-349
R-206 WAD980979553	WILEN CORNFORTH MOTORS INC	200 PIONEER WAY E	PUYALLUP	PIERCE	WA 98372	RCRIS	
R-207 WAD988474037	WSU FARM 5	HWY 162 & PIONEER WAY E	PUYALLUP	PIERCE	WA 98372	RCRIS	
R-208 WAD988496527	BAKERS AUTOMOTIVE	10206 16TH ST E	PUYALLUP	PIERCE	WA 98372-1334	RCRIS	
R-209 WAD982657033	ADVANCED FILTER SVC INC	516 VALLEY AVE NE	PUYALLUP	PIERCE	WA 98372-2503	RCRIS	
R-210 WAD988495362	L M D METAL RESOURCES	6601 114TH AVE CT E	PUYALLUP	PIERCE	WA 98372-3239	RCRIS	
R-211 WA0000148247	JUNCTION INDUSTRIAL PARK	2323A E PIONEER AVE	PUYALLUP	PIERCE	WA 98372-3527	RCRIS	
R-212 WAD988477303	PASQUIER PANEL PRODUCTS INC BREW	13615 E PIONEER WAY	PUYALLUP	PIERCE	WA 98372-3659	RCRIS	U-346

R-272	WAD045732740	40 RENTALS	16623 MERIDIAN E	PUYALLUP	PIERCE	WA	98374	RCRIS
R-273	WAD988508396	PIERCE CO RD MAINT	10411 159TH ST E	PUYALLUP	PIERCE	WA	98374-9644	RCRIS u-76
R-274	WAD053825832	HILLSTROM CABINETS INC	102 EMERY AVE N	SOUTH PRAIRIE	PIERCE	WA	98385	RCRIS
	WAD980511802	STARVATION VALLEY	EVERGREEN ST END OF	SOUTH PRAIRIE	PIERCE	WA	98385	CRCLIS
R-275	WAD982658122	BETHEL PUBLIC SCHOOLS	22215 38TH AVE E	SPANAWAY	PIERCE	WA	98387	RCRIS u-403
R-276	WAD988471439	BETHEL SD	4015 E 224TH ST	SPANAWAY	PIERCE	WA	98387	RCRIS u-404
R-277	WAD085196053	BETHEL SD 403	516 E 176TH ST	SPANAWAY	PIERCE	WA	98387	RCRIS u-419
R-278	WAD988487344	BP OIL SITE 11080	17410 PACIFIC AVE	SPANAWAY	PIERCE	WA	98387	RCRIS u-417
R-279	WAD988522868	CECCANTI INC	15411 SPANAWAY LP RD	SPANAWAY	PIERCE	WA	98387	RCRIS u-399
R-280	WAD988482154	CHEVRON USA INC SS 95851	17519 PACIFIC AVE	SPANAWAY	PIERCE	WA	98387	RCRIS u-413
R-281	WAD071828255	FASHION TRENDS	22220 30TH AVE E	SPANAWAY	PIERCE	WA	98387	RCRIS
R-282	WAD988472239	GRAHAM PLYWOOD CO	8220 EASTIS HUNT RD	SPANAWAY	PIERCE	WA	98387	RCRIS u-400
R-283	WAD988522132	GREASE MONKEY SPANAWAY	17901 PACIFIC AVE	SPANAWAY	PIERCE	WA	98387	RCRIS
R-284	WA0000979773	KENNEDYS AUTOMOTIVE CTR	23403 STE C MOUNTAIN HWY E	SPANAWAY	PIERCE	WA	98387	RCRIS
R-285	WAD988492286	LES SCHWAB TIRE CTR	16819 PACIFIC AVE	SPANAWAY	PIERCE	WA	98387	RCRIS
R-286	WAD981765308	M L C INC	16204 PACIFIC AVE	SPANAWAY	PIERCE	WA	98387	RCRIS
R-287	WAD980982797	MARY JOHANSEN CRESCENT REALTY IN	1526 MILITARY RD S	SPANAWAY	PIERCE	WA	98387	RCRIS
R-288	WAD069558336	RENU PLATING CO	16822 PACIFIC AVE	SPANAWAY	PIERCE	WA	98387	RCRIS
R-289	WAD982652604	TEXACO REFINING & MARKETING INC	15905 PACIFIC AVE S	SPANAWAY	PIERCE	WA	98387	RCRIS u-173
R-290	WAT540011004	USWCOM GRAHAM CO	3802 224TH E	SPANAWAY	PIERCE	WA	98387	RCRIS u-31
R-291	WAD988481917	WDOE SRO AQUADUCT DRUG DUMP	99TH & AQUADUCT	SPANAWAY	PIERCE	WA	98387	RCRIS
R-292	WAD988486742	WDOE SRO BIG FOOT DRUG LAB	3010 232ND ST E LOT 1	SPANAWAY	PIERCE	WA	98387	RCRIS
R-293	WAD988483434	WDOE SRO BIRDS DRUG LAB	26003 70TH AVE E	SPANAWAY	PIERCE	WA	98387	RCRIS
R-294	WAD988482014	WDOE SRO BROOKDALE RD DRUMS	4509 BROOKDALE RD E	SPANAWAY	PIERCE	WA	98387	RCRIS
R-295	WAD988488474	WDOE SRO CANNON RD DRUG LAB	SE COR OF 192ND & CANNON RD	SPANAWAY	PIERCE	WA	98387	RCRIS
R-296	WAD988513453	WDOE SRO FIELD DRUG LAB	405 FIELD RD	SPANAWAY	PIERCE	WA	98387	RCRIS
R-297	WA0000652081	WDOE SRO MINI STORAGE DRUG LAB	20715 8TH AVE E UNIT 65 - shared with R-305	SPANAWAY	PIERCE	WA	98387	RCRIS
R-298	WAD988504510	WDOE SRO PACIFIC AVE S SPANAWAY	14715 PACIFIC AVE	SPANAWAY	PIERCE	WA	98387	RCRIS
R-299	WA0000550475	WDOE SRO PARK AVE DRUG LAB	16820 PARK AVE	SPANAWAY	PIERCE	WA	98387	RCRIS
R-300	WAD988477121	WDOE SRO RAINIER TOWING DRUM	126 E 173RD	SPANAWAY	PIERCE	WA	98387	RCRIS
R-301	WAD988496949	WDOE SRO RICK BROWN DRUG LAB	1817 192ND ST E	SPANAWAY	PIERCE	WA	98387	RCRIS
R-302	WAD988482865	WDOE SRO ROY DRUG LAB	20710 SR7	SPANAWAY	PIERCE	WA	98387	RCRIS
R-303	WAD982657025	WDOE SRO SPANAWAY DERELICT DRUMS	14TH AVE & 294TH E OFF HWY 7	SPANAWAY	PIERCE	WA	98387	RCRIS
R-304	WAD988474367	WDOE SRO SPANAWAY DRUG LAB	20114 58TH AVE E	SPANAWAY	PIERCE	WA	98387	RCRIS
R-305	WAD988486957	WDOE SRO SPANAWAY MINI STORAGE	20715 8TH AVE E - shared with R-297	SPANAWAY	PIERCE	WA	98387	RCRIS
R-306	WAD988469987	WDOE SRO WATSON DRUG LAB	111 163RD ST S	SPANAWAY	PIERCE	WA	98387	RCRIS
R-307	WAD988486718	WDOE SRO WOODBROOK DRUG LAB	7301 1/2 150TH ST SW	SPANAWAY	PIERCE	WA	98387	RCRIS
R-308	WAD988477196	WDOE SRO 14TH AVE DRUG LAB	16807 14TH AVE S - shared with H-1	SPANAWAY	PIERCE	WA	98387	RCRIS
R-309	WA0000109496	WDOE SRO 173RD ST DRUG LAB	242 173RD ST S	SPANAWAY	PIERCE	WA	98387	RCRIS
R-310	WAD988504528	WDOE SRO 174TH ST E SPANAWAY	230 174TH ST E	SPANAWAY	PIERCE	WA	98387	RCRIS
R-311	WAD988492054	WDOE SRO 196TH & 8TH AVE	19915 14TH AVE E	SPANAWAY	PIERCE	WA	98387	RCRIS
R-312	WAD988522306	WINCHELLS AUTO BODY INC	16120 PACIFIC AVE	SPANAWAY	PIERCE	WA	98387	RCRIS u-416
R-313	WAD980983290	ALS AUTO SUPPLY SPANAWAY	14926 PACIFIC AVE S	SPANAWAY	PIERCE	WA	98387-4657	RCRIS
R-314	WAD988509352	DON LEONARD & SONS INC	1335 192ND ST E	SPANAWAY	PIERCE	WA	98387-8021	RCRIS u-412
R-315	WA0000049205	P C CLEANERS	17707 A PACIFIC AVE S	SPANAWAY	PIERCE	WA	98387-8334	RCRIS
R-316	WA0000141515	VINTAGE MOTORCYCLES NORTHWEST	309 E 196TH ST	SPANAWAY	PIERCE	WA	98387-8417	RCRIS
R-317	WA0000242669	WDOE SRO SAFE PLACE STORAGE UNIT	304 FIELD RD	SPANAWAY	PIERCE	WA	98387-8441	RCRIS
R-797	WAD988545128	ARCO PRODUCTS CO 5642 PRESTIGE S	3025 STEILACOOM BLVD	STEILACOOM	PIERCE	WA	98388	RCRIS u-85
R-798	WAD076634633	BOISE CASCADE CORP WEST TACOMA	4302 CHAMBERS CRK RD	STEILACOOM	PIERCE	WA	98388	RCRIS
								TRIS
R-799	WAD988466116	CONTRACT APPLICATIONS INC	4302 CHAMBER CRK	STEILACOOM	PIERCE	WA	98388	RCRIS
R-800	WAD982657499	DUNKIN & BUSH INC	4302 CHAMBERS CRK PAINT SHOP	STEILACOOM	PIERCE	WA	98388	RCRIS
C-12	WAD980834543	MCNEIL ISLAND CORRECTION CTR	MCNEIL IS	STEILACOOM	PIERCE	WA	98388	CRCLIS
								RCRIS
R-318	WAD988500658	STEILACOOM SD 1	601 CHAMBERS ST	STEILACOOM	PIERCE	WA	98388	RCRIS
R-319	WAD980981500	STEILACOOM TOWN OF	1100 DEGGS	STEILACOOM	PIERCE	WA	98388	RCRIS u-84
R-320	WAD988468914	STEILACOOM TOWN OF PUBLIC WKS	1030 ROE ST	STEILACOOM	PIERCE	WA	98388	RCRIS u-426
R-321	WAD040179715	WDSHS WESTERN STATE HOSPITAL	9601 STEILACOOM BLVD	STEILACOOM	PIERCE	WA	98388	RCRIS u-756
R-322	WAD988484242	ALEASCO INC	1106 140TH AVE CT E	SUMNER	PIERCE	WA	98390	RCRIS
R-323	WAD988515516	ARCO PRODUCTS CO 5509 PRESTIGE S	809 W MAIN ST	SUMNER	PIERCE	WA	98390	RCRIS u-436
R-324	WAD988515193	ARCO PRODUCTS CO 5781 PRESTIGE S	18116 SR 410	SUMNER	PIERCE	WA	98390	RCRIS u-208
R-325	WA0000097691	ARNIE DAHL FORD	603 HARRISON ST	SUMNER	PIERCE	WA	98390	RCRIS
	WAD988503504	BEATRICE CHEESE INC	1515 PUYALLUP ST	SUMNER	PIERCE	WA	98390	TRIS

R-326 WAD988504338	CITY TRANSFER OF KENT INC	2720 E VALLEY HWY	SUMNER	PIERCE	WA 98390	RCRIS	u - 467
R-327 WAD988519039	CORLISS CO TRUCK SHOP	314 138TH AVE E	SUMNER	PIERCE	WA 98390	RCRIS	
R-328 WAD100080381	DIERINGER SD 343	1320 178TH AVE E	SUMNER	PIERCE	WA 98390	RCRIS	u - 465
R-329 WAD988496618	EMERALD TURFGRASS FARMS	13826 16TH ST E	SUMNER	PIERCE	WA 98390	RCRIS	
R-330 WAD009242041	FLEISCHMANN YEAST INC	1115 ZEHNDER ST	SUMNER	PIERCE	WA 98390	RCRIS	
						TRIS	
R-331 WAD988475190	FREEDOM METAL MANUFACTURING INC	400 142ND AVE E	SUMNER	PIERCE	WA 98390	RCRIS	
R-332 WA0000963405	FRYAR PUYALLUP PARTNERSHIP PHASE	1812 PEASE AVE	SUMNER	PIERCE	WA 98390	RCRIS	
R-333 WAD980975759	GENERAL BATTERY CORP	2005 FRYAR AVE	SUMNER	PIERCE	WA 98390	RCRIS	
R-334 WAD988506705	GOLDEN STATE FOODS	1409 PUYALLUP ST	SUMNER	PIERCE	WA 98390	RCRIS	u - 447
R-335 WAD067715391	GORDON TRUCKING INC	13315 8TH ST E	SUMNER	PIERCE	WA 98390	RCRIS	u - 472
R-336 WAD980980973	JIMS WASTE OIL SVC	18815 65TH ST E	SUMNER	PIERCE	WA 98390	RCRIS	
R-337 WAD980983027	JOHNS AAA WASTE OIL	10206 ANGELINE RD E	SUMNER	PIERCE	WA 98390	RCRIS	
R-338 WAD099042525	KIRK CO THE	520 PACIFIC HWY S	SUMNER	PIERCE	WA 98390	RCRIS	
C-13 WAD980511828	MANKE LUMBER CO SUMNER PLT	13702 8TH ST E	SUMNER	PIERCE	WA 98390	CRCLIS	T - 45
R-339 WAD988479614	MCCONKEY CO INC	1615 PUYALLUP ST	SUMNER	PIERCE	WA 98390	RCRIS	u - 430
R-340 WAD988506812	METRO HAULING INC	805 140TH AVE CT E	SUMNER	PIERCE	WA 98390	RCRIS	u - 427
R-341 WAD000642157	NORTHWEST PIPELINE CORP SUMNER C	T20N R5E S7 SE1/4	SUMNER	PIERCE	WA 98390	RCRIS	
R-342 WAD982655243	PENSKE TRUCK LEASING CO L P SUMN	2222 TACOMA AVE	SUMNER	PIERCE	WA 98390	RCRIS	
R-343 WAD988507141	PIERCE CO FIRE STA 1	3206 W TAPPS DR E	SUMNER	PIERCE	WA 98390	RCRIS	u - 460
C-14 WAD988485983	POTELCO INC	1410 8TH ST E	SUMNER	PIERCE	WA 98390	CRCLIS	
R-344 WAD982821332	PRECISION AEROSPACE & COMPOSIT	1516 FRYAR AVE	SUMNER	PIERCE	WA 98390	RCRIS	
						TRIS	
R-345 WAD982659385	PUGET SOUND POWER & LIGHT	2111 E VALLEY RD	SUMNER	PIERCE	WA 98390	RCRIS	u - 469
R-346 WAD981771439	QUALITY CLEANERS	1229 MAIN ST	SUMNER	PIERCE	WA 98390	RCRIS	u - 349 439
R-347 WAD988484085	ROBISON CONST INC	1217 140TH AVE CT	SUMNER	PIERCE	WA 98390	RCRIS	
R-348 WAD021828207	SONOCO PRODUCTS CO SUMNER	1802 STEELE AVE	SUMNER	PIERCE	WA 98390	RCRIS	u - 97
						TRIS	
R-349 WAD988475323	SPENCER ENVIRONMENTAL SVCS	1517 PEASE ST	SUMNER	PIERCE	WA 98390	RCRIS	T - 63
R-350 WAD988499711	STOWE CONSTRUCTION INC	4224 SUMNER TAPPS HWY E	SUMNER	PIERCE	WA 98390	RCRIS	u - 462
R-351 WAD988480133	SUMNER CLEANERS	6005 PARKER	SUMNER	PIERCE	WA 98390	RCRIS	
R-352 WAD982653230	SUMNER NATIONAL AUTO PARTS INC	16008 60TH ST	SUMNER	PIERCE	WA 98390	RCRIS	T - 85
R-353 WAD988471827	SUMNER SD	1710 WASHINGTON ST	SUMNER	PIERCE	WA 98390	RCRIS	
R-354 WA0000998575	SUMNER SD BUS GARAGE	19605 104TH ST E	SUMNER	PIERCE	WA 98390	RCRIS	
R-355 WAD046689444	SUNSET CHEVROLET INC	910 TRAFFIC AVE	SUMNER	PIERCE	WA 98390	RCRIS	u - 437
R-356 WAD981764434	SUPERIOR WOOD TREATING	13702 8TH ST E	SUMNER	PIERCE	WA 98390	RCRIS	u - 474
						TRIS	
R-357 WA0000062927	TOP DRYCLEANING & SHOE REPAIR	21271 SR 410	BONNEY LAKE	PIERCE	WA 98390	RCRIS	
R-358 WAD988518445	USDOJ DEA VALLEY AVE S	12325 VALLEY AVE S	SUMNER	PIERCE	WA 98390	RCRIS	
R-359 WAT540012093	USWCOM BONNEY LAKE CO	19504 BONNEY LAKE BLVD	BONNEY LAKE	PIERCE	WA 98390	RCRIS	u - 458
R-360 WAT540011434	USWCOM SUMNER CO	905 KINCAID AVE	SUMNER	PIERCE	WA 98390	RCRIS	u - 438
R-361 WAD981760838	VALLEY FREIGHTLINER INC	13313 8TH ST E	SUMNER	PIERCE	WA 98390	RCRIS	
R-362 WAD988480059	VALLEY REFINISHING	8422 214TH ST E	BONNEY LAKE	PIERCE	WA 98390	RCRIS	- Maybe miss mapped
R-363 WAD988507570	WDOE SRO PRAIRIE RIDGE DRUG LAB	12209 PRAIRIE RIDGE DR E	BONNEY LAKE	PIERCE	WA 98390	RCRIS	
R-364 WAD982653875	WDOE SRO RHODES LAKE RD DRUMS	T19N R5E S8 WM N1/4 COR 1025	BONNEY LAKE	PIERCE	WA 98390	RCRIS	
R-365 WAD055498232	WESTERN WOOD PRESERVING CO	PEASE & ZEHNDER STS	SUMNER	PIERCE	WA 98390	RCRIS	u - 429
						TRIS	
WAD980978167	WIDGEN ENTERPRISES DBA WIDGEN WA	900 FT E & 1000 FT S OF WHITE	SUMNER	PIERCE	WA 98390	RCRIS	
R-366 WAD134728088	PERKS SUNSET BODY SHOP	714 W MAIN ST	SUMNER	PIERCE	WA 98390-0160	RCRIS	
R-367 WA0000073114	TECHNIC MACHINE CO INC	21917 34TH ST CT E	SUMNER	PIERCE	WA 98390-0359	RCRIS	
R-368 WA0000149237	TINYS TIRE OF SUMNER CARLDAN INC	1215 MAIN ST	SUMNER	PIERCE	WA 98390-1416	RCRIS	
R-369 WA0000258384	A VICTORIAN STRIPPER	1012 RYAN AVE	SUMNER	PIERCE	WA 98390-1910	RCRIS	
R-370 WAD988506390	WDOE SRO .7 MI E OF 144 KEY PENI	T22N R1W S24 NE 1/4	VAUGHN	PIERCE	WA 98394	RCRIS	
R-371 WAD980978316	WDOE RAS HENDERSON BAY DRUM	ON BEACH NEAR WAUNA	WAUNA	PIERCE	WA 98395	RCRIS	
R-372 WA0000461871	WDOE SRO PURDY PAINT DUMP	149TH ST NW 150 YDS E OF 94TH	WAUNA	PIERCE	WA 98395	RCRIS	
R-373 WAD988473831	WDOE SRO WILKESON CRK DRUMS	T19N R6E S29 1 MI W OF TWN	WILKESON	PIERCE	WA 98396	RCRIS	
R-374 WA4141707154	USDOI NPS MOUNT RAINIER NATION	T15N R8E NE COR S32	LONGMIRE	PIERCE	WA 98397	RCRIS	
C-15 WAD980639900	COMMENCEMENT BAY DEEP WATERS	MIDDLE OF BAY	TACOMA	PIERCE	WA 98400	CRCLIS	
C-16 WAD980514483	ATLAS FOUNDRY DUMP	S MADISON & 52ND ST	TACOMA	PIERCE	WA 98401	CRCLIS	
C-17 WAD060053121	BILLIKENS TV CTR	12515 PACIFIC HWY SW	TACOMA	PIERCE	WA 98401	CRCLIS	
R-375 WAD009258229	COAST CRAFT	1002 E F ST	TACOMA	PIERCE	WA 98401	RCRIS	
R-376 WAD981769813	EXXON CO USA MARKETING DEPT	3001 MARSHALL AVE	TACOMA	PIERCE	WA 98401	RCRIS	u - 495
WA0000203950	INDUSTRIAL YARD	401 ALEXANDER AVE	TACOMA	PIERCE	WA 98401	PADS	

Record #: 10708 Act: Y
ID#: 10929
DATE RECD: 08/29/94
WATER WAY: WHITE RIVER
COUNTY: PIERCE
INCIDENT CITY: nn
INCID LOCATION: SOUTHBOUND SR 167 - NORTH OF SR 410
AV MEDIUM: SURFACE WATER
AV MATERIAL: OIL/PETROLEUM
AV MAT2:
AV SOURCE: AUTO/TRUCK INCIDENT
AV QTY: 10 GALLONS
COMMENTS: JEANETTE (DEM): PICKUP TRUCK IN DITCH RELEASING GAS INTO WATER. APPROX. 10 GALLONS RELEASED. TOW TRUCK ON SCENE. MIKE DAVIS: TPCHD (206) 863-6384-OPERATOR 4. F.D. HAS LAYED DOWN PADS. MIKE IS GOING TO CALL F.D. NOW.
NARRATIVE: 8/29/94 TOM POST/SUMER F.D. (206) 863-5451 CONTACTED - GAVE MR. POST VARIOUS OPTIONS FOR DISPOSAL OF APPROX BALE OF GASOLINE SOAKED PADS. (E.G. ENERGY RECOVERY. ASPHALT KILN. OR LANDFILL?). WILL CALL BACK IF OPTIONS DON'T PAN OUT.
ECOL REF: SPILLS

Record #: 10919 Act: Y
ID#: 10942
DATE RECD: 08/30/94
WATER WAY:
COUNTY: PIERCE
INCIDENT CITY: TACOMA
INCID LOCATION: 5408 HYADA BLVD NE - TACOMA
AV MEDIUM: SOIL
AV MATERIAL: OIL/PETROLEUM
AV MAT2:
AV SOURCE: CONSTRUCTION ACTIVITY
AV QTY: 15 GALLONS
COMMENTS: CONTRACTOR DIGGING HIT APPARENTLY, MISMARKED UTILITIES CAUSING A TRANSFORMER FIRE. THE FIRE RESULTED IN A 15 GALLON SPILL OF OIL CONTAINING 59.0 PPM PCB'S. INCIDENT OCCURRED AT 3:30 PM. BUT SPILL WAS DISCOVERED LATER. TACOMA PUBLIC UTILITES IS CONDUCTING SOIL CLEAN-UP & WILL DRUM CONTAMINATED SOIL. SPILL WAS TO GROUND & NO DRAINAGE WAS IN THE VICINITY.
NARRATIVE: A CITIZEN WHO WANTED TO REMAIN ANONYMOUS CALLED IN AT 11:45 PM TO REPORT CLEANUP ACTIVITY AT THIS LOCATION. I INFORMED HIM THAT THE SPILL HAD BEEN REPORTED TO WDOE.
ECOL REF: SPILLS

Record #: 10924 Act: Y
ID#: 10947
DATE RECD: 08/31/94
WATER WAY:
COUNTY: PIERCE
INCIDENT CITY: SUMNER
INCID LOCATION: WESTERN WOOD - SUMNER - 1313 ZENHDER STREET
AV MEDIUM: SOIL
AV MATERIAL: HAZ MATERIAL
AV MAT2:
AV SOURCE: COMMERCIAL
AV QTY: UNKNOWN
COMMENTS: CHEMICALS BEING BURIED INTO GROUND. PENTA & CREOSOTE.
NARRATIVE: LAST USED PENTA - 1980. HAVE DIMANTLED OLD TANK AREA. CLEARED TOP LAYER OFF CONCRETE. DRUMMED UP FOR DISPOSAL. CONCRETE STORED ON-SITE. WILL TEST FOR DISPOSAL. WILL HIRE INDEPENDENT CONTRACTOR TO SAMPLE & REMEDIATE SOIL UNDER TANK AREA. SEE ALSO # 10948
ECOL REF: SPILLS

H-45

Hazardous Matl. Spills

Record #: 11038 Act: Y
ID#: 11186
DATE RECD: 09/21/94
WATER WAY:
COUNTY: PIERCE
INCIDENT CITY:
INCID LOCATION: UNIVERSITY PLACE F.D. - 3609 40TH STREET WEST -*564-1623
AV MEDIUM:
AV MATERIAL: HAZ MATERIAL
AV MAT2: MURIATIC ACID
AV SOURCE: RELEASE-ILLEGAL DISPOSING
AV QTY:
COMMENTS: A DUMP TRUCK AT UNIVERSITY PLACE F.D. PICKED UP GARBAGE AT A MEDICAL/MEDICAL LAB FACILITY AND NOW A YELLOW MILKISH LIQUID OOZING OUT OF TRUCK / DUMPSTER (?), CREATING A VAPOR CLOUD.
NARRATIVE: CONTACT - MEDICAL PLACE, CYNTHIA WORKING W/F.D. BELIEVE IT WAS (HCL) MURIATIC ACID FROM A POOL SUPPLY WAREHOUSE. WILL NEUTRALIZE W/BAKING SODA, SOME CONTAINERS - HAD RESIDUAL IN IT.
ECOL REF: SPILLS

Record #: 11041 Act: Y
ID#: 11184
DATE RECD: 09/30/94
WATER WAY:
COUNTY: PIERCE
INCIDENT CITY: FIFE
INCID LOCATION: 3410 PACIFIC HWY EAST - FIFE
AV MEDIUM: ROADWAY
AV MATERIAL: HAZ MATERIAL
AV MAT2: THINNER OR LAQUER
AV SOURCE: DRUM LEAK/ABANDONED
AV QTY: (1) 55 GALLON DRUM
COMMENTS: OPEN 55 GALLON DRUM DROPPED IN THEIR PARKING LOT,*STRONG ODORS. SAFETY?
NARRATIVE: REQUESTED SHE SECURE AREA & CALL FIFE FIRE AS WELL AS BRETT MANNING/WDOE WILL RESPOND. --- RESPONDED W/OLYMPUS ENVIORONMENTAL (AARON ALDERSON, JIM BONTER), THEY SAMPLED DRUM IN LEVEL B - DRUM CONTAINED MINERAL SPIRTS (30 GALLONS). OLYMPUS JOB #94-5363 - STATE/EPA I.D. # WA0000857136.
ECOL REF: SPILLS

Record #: 11042 Act: Y
ID#: 11185
DATE RECD: 09/24/94
WATER WAY:
COUNTY: PIERCE
INCIDENT CITY: SUMNER
INCID LOCATION: PUB WKS. BUILDING - 711 NARROW STREET
AV MEDIUM: SOIL
AV MATERIAL: HERBICIDE
AV MAT2:
AV SOURCE: DRUM LEAK/ABANDONED
AV QTY: (1) 55 GALLON
COMMENTS: CHIEF JOINER REPORTS LOCATING A DUMPED 55 GALLON DRUM LABELED BOND BRAKER LEFT ON SIDE OF ROAD, 25 TO 30 GALLONS IN DRUM. SOME SPILLED TO SOIL, FIRE CREW/HAZ MAT TEAM SUITED UP TO INVESTIGATED.
NARRATIVE: I REQUESTED TEAM TO OVER PACK AND TO HOLD TILL MONDAY, FIRE CREW MOVED TO CITY SHOP TO HOLD, 9/30/94 OLYMPUS ON-SITE 9:12 A.M. 1-85 GALLON OVERPACK FOR 55 GALLON DRUM - HERBICIDE, ONE 55 GALLON DRUM OF HERBICIDE DEBRIS, OFF-SITE 10:03 AM JIM BONTER, AARON ALDERSON, LEVEL D, OLYMPUS JOB #94-5361.
ECOL REF: SPILLS

H-47

Table 1. List of Closed Dumpsites and Landfills in Pierce County

L-1 1. Anderson Island

L-2 2. Ashford/ National

L-3 3. Buck Creek

L-4 4. Buckley

L-5 5. Carbonado

L-6 6. Cascade Demolition

L-7 7. Eatonville

L-8 8. Elbe

L-9 9. Fox Island

L-10 10. Key Center

L-11 11. LaGrande

L-12 12. Lime Waste

L-13-1 (old)
L-13-2 (current) 13. McNeil Island

L-14 14. Orting

L-15 15. Purdy T-71

L-16 (1st)
L-16 (2nd) 16. Puyallup/ Sumner

L-17 17. Rhine Demolition

L-18 18. Roy

L-19 19. Ruston

L-20 20. South Prairie

L-21 21. Spanaway

L-22 22. Starvation Valley

L-23 23. Tacoma Tideflats T-42

24. Tahoma Woods (not mapped)

2.16 PUYALLUP/SUMNER

The Puyallup/Sumner dump was opened prior to 1945 and closed in 1976. This site consisted of approximately ten acres and was located near the Puyallup River in the NW1/4 of Sec 26, T 20N, R 4E.

2.16.1 PAST AND PRESENT USE

This dump is actually two dumpsites approximately 100 yards apart separated by woods. One dumpsite is about seven acres and the other about three acres. This open face dump was jointly operated by Sumner, Puyallup, and Pierce County in 1948. Records indicate that this dumpsite was used by residents in Sumner and Puyallup as well as surrounding Pierce County.

The larger of the two landfills is currently bordered by the Puyallup River and a golf course. There seems to be little activity on this site. The roads that were used for access are presently being maintained by the County for flood control purposes along the river. The vegetation on the site is mostly thick grass with some shrubs and trees.

Presently, the area around the smaller dumpsite has been developed with the construction of Riverside Park Apartments which is a multi-building, multi-unit complex. These apartments are within twenty-five feet of the old landfill. The majority of vegetation on the landfill is grass.

Before these apartments were constructed in 1986, the Health Department required that the apartment owner address the methane production and migration issue. The owner installed a passive system that consisted of a trench dug about 20 feet from the apartments which was vented to a stand pipe. The trench was lined with heavy plastic in an effort to prevent methane migration into the dwellings. In theory, the methane was to migrate to the plastic barrier and follow the path of least resistance to the stand pipe which vents the gas to ambient air.

However, the Health Department discovered that this passive system did not prevent methane migration into some of these dwellings. As a result, the city of Puyallup hired a private firm to construct an active methane collection system with a flare station. This system consists of several methane wells connected to a blower with the gases vented through a hidden flare station. The flare station was completed and operational during the summer of 1990.

2.16.2 WASTE DISPOSAL PRACTICES

These sites collected refuse from Puyallup, Sumner, and Pierce County. All types of waste were deposited including household garbage, rubbish, ashes, bulky wastes, demolition, construction, street refuse, litter, and agricultural waste. Treatment for rat infestation was conducted by the Health Department. This was a common practice by the Health Department at open face dumps.

2.16.3 SUSPECTED PROBLEMS

With the construction of apartments so close to the landfill, methane migration into these dwellings will continue to be a threat if not properly controlled. In addition, the proximity of these landfills to the river increases the potential for leachate contamination into the river.

2.16.4 FIELD RESULTS

Since the construction of the apartments, the Health Department has monitored the ground level apartments for methane at least once a month and as frequently as twice weekly. There is active decomposition of the material in the landfills which is indicated by the high readings that were recorded.

The Health Department has been in contact with a representative from the City of Puyallup frequently regarding the methane levels noted at the site. This information is used by the City of Puyallup in making adjustments on the flare. A brief history of some of the testing recorded at this site is presented in Table 10 and Figure 16.

Table 10. Brief history of methane monitoring at Puyallup Landfill and Riverside Park Apartments

Sample Location	Methane Reading on 8/28/92	Methane Reading on 7/17/92	Methane Reading on 6/17/92
1 E. side of Bldg. N	ND	550 ppm	800 ppm
2 W. side of Bldg. N	1% LEL	1000 ppm	40% LEL
3 E. side of Bldg. M	ND	245 ppm	200 ppm
4 W. side of Bldg. M	ND	200 ppm	250 ppm
5 E. side of Bldg. L	ND	100 ppm	150 ppm
6 W. side of Bldg. L	ND	75 ppm	50 ppm
7 E. side of Bldg. K	ND	100 ppm	125 ppm
8 W. side of Bldg. K	ND	150 ppm	100 ppm
9 Probe by E. end of Bldg. M	ND	ND	ND
10 Probe by W. end of Bldg. M	ND	ND	ND
11 Probe by E. end of Bldg. L	ND	ND	ND
12 Probe by W. end of Bldg. L	ND	ND	ND

ND = no detection
ppm = parts per million
LEL = lower explosive limit

2.16.5 RECOMMENDATIONS

Since the apartments are in such close vicinity of the landfill, routine methane monitoring should continue.

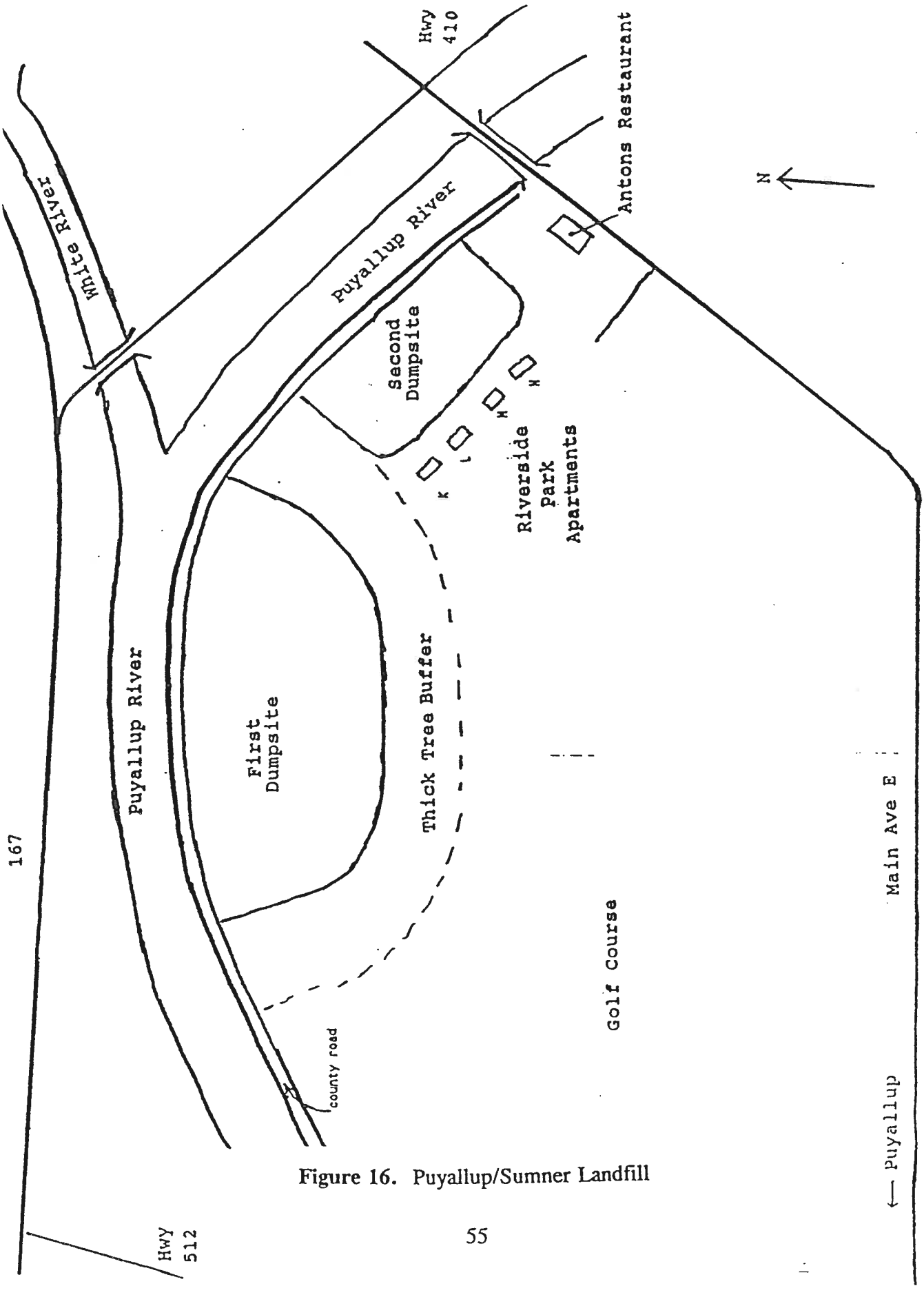


Figure 16. Puyallup/Sumner Landfill

Tacoma-Pierce County Health Department
Wellhead Protection Program Update
December 18, 1996

Even though you may not have heard from us for a while, the Tacoma-Pierce County Health Department (TPCHD) is continuing to help Group A water systems with their Wellhead Protection Programs. The original grant project has been completed, and a copy of the final report is available for the copying cost. However, there are many additional tasks that would be beneficial for purveyors of Group A systems. These tasks include: 1) identifying the regulatory agencies for particular contaminant sources; 2) mapping all Group A wells and Wellhead Protection Areas in the Pierce County Geographic Information System (GIS) database; 3) mapping all potential sources of contamination in the GIS database; and, 4) modifying an existing Pierce County Ordinance to provide legal recognition of, and additional protection for, Wellhead Protection Areas.

The first task, that of identifying the regulatory agencies for each type of potential contaminant source, has been finished and the list is enclosed with this update. The list provides the agency, the contact person, and the agency address along with the potential contaminant sources that are within the agency's jurisdiction.

For the task of mapping all Group A wells and Wellhead Protection Areas, we have been working with Pierce County 911 and Emergency Management and have developed a draft map that includes approximately 70% of the Wellhead Protection Areas in Pierce County. The next step is to more accurately locate the wells by parcel. Much of this information will come from the recent survey done by Pierce County Public Works and Utilities. For those water systems that don't fill out the survey, TPCHD staff may be able to locate the parcels with wells. This GIS map will be available to Pierce County government and emergency response personnel, partly fulfilling the requirements that purveyors notify local government of the Wellhead Protection Areas and coordinate with emergency response personnel. To take advantage of this assistance, please call Ray Hanowell, Environmental Health Specialist II, 596-2845, to make sure that your Wellhead Protection Area(s) are mapped.

For the third task, that of mapping all potential contaminant sources, no work has been accomplished beyond the development of the hard copy map. Further work on this task may need to wait until the TPCHD is able to input data into the GIS.

Work is slowly proceeding on the final task, to allow legal recognition and protection of Wellhead Protection Areas. TPCHD staff have proposed numerous changes to the existing Aquifer Recharge Area Ordinance that would require additional protective measures for most new development in Wellhead Protection Areas. A presentation on the draft modified ordinance has been given to a subcommittee of the Pierce County Council and the modified ordinance is expected to be taken to the full council in 1997.

If you have any questions or comments, please call Ray Hanowell, Environmental Health Specialist II, at 596-2845.

TACOMA-PIERCE COUNTY HEALTH DEPARTMENT
WELLHEAD PROTECTION PROGRAM
AGENCY NOTIFICATION LIST

Washington Department of Agriculture (Dept. of Ag.)

Pesticide Applicators
Silviculture Application Areas

CONTACT: ATTN: Lee Faulconer
Pesticide Management
WA Department of Agriculture
P.O. Box 42589
Olympia, WA 98504-2589

Washington State Department of Ecology (Ecology)

Airport - if RCRA regulated
Animal feedlot (need to differentiate from "agricultural, livestock - confined")
Asphalt plant - if RCRA regulated
Auto repair, auto salvage - if RCRA regulated
Boat yard/boat repair - if RCRA regulated
Car/truck dealer - if RCRA regulated
Chemical manufacturing
Dry cleaners - if RCRA regulated
Electroplating - if RCRA regulated
Food processing plant - if NPDES permit or SWD permit required or if RCRA regulated
Furniture manufacture or repair - if RCRA regulated
Paint and sign shops - if RCRA regulated
Printing establishment - if RCRA regulated
Roofing/sheet metal facilities - if RCRA regulated
Service stations
Underground storage tanks*
Vehicle/truck storage - if RCRA regulated
Wood products - if RCRA regulated
Other facilities w/ HM - if RCRA regulated

CONTACT: ATTN: Kirk Cook
Water Quality Program
WA Department of Ecology
P.O. Box 47600
Olympia, WA 98504-7600

Washington State Department of Natural Resources (DNR)

Mines/gravel pits - mines with working faces of more than 3 acres.

CONTACT: ATTN: Bill Lingley
Geological and Earth Resources
P.O. Box 47007
Olympia, WA 98504-7007

Washington State Department of Transportation (DOT)

Highway transportation corridors (Pest. spraying) - state highways and interstate highways. Marie Mills has requested as much information as possible from each purveyor, and would prefer to receive full Wellhead Protection Programs.

CONTACT: ATTN: Marie Mills
WA Department of Transportation
P.O. Box 47331
Olympia, WA 98504-7331

Pierce County Conservation District (PCCD)

Agricultural, crops
Agricultural (open pasture), livestock**
Agricultural (confined), livestock**
Animal waste spreading**

CONTACT: Brian Abbott
Pierce County Conservation District
Puyallup Executive Park
1011 East Main, Suite 106
Puyallup, WA 98372

Pierce County Office of Fire Prevention (PCFP)

Above ground tanks - except home heating oil

CONTACT: Wayne Wienholz
Pierce County Fire Prevention
2401 South 35th Street
Tacoma, WA 98409-7494

Pierce County Planning and Land Services (PCPALS)

Mines/gravel pits - all mines (see also DNR)

CONTACT: David Rosenkranz
Pierce County Planning and Land Services
2401 South 35th Street
Tacoma, WA 98409-7490

Pierce County Public Works and Utilities Department (PCPW&U)
Highway transportation corridors - county roads only

CONTACT: Marty Whitman
Pierce County Public Works and Utilities
Road Maintenance
3619 Pacific Avenue
Tacoma, WA 98408

Pierce County Public Works and Utilities, Water Programs (PCPW&U-WP)
Stormwater drywell/infiltration

CONTACT: ATTN: Jerry Hendricks
Pierce County Public Works and Utilities
Water Programs
4910 Bristonwood Dr. W.
Tacoma, WA 98467-1299

Tacoma-Pierce County Health Department (TPCHD)
Abandoned wells
Airport
Auto repair, auto salvage
Boat yard/boat repair
Car/truck dealer
Car wash
Dry cleaners
Electroplating
Furniture manufacture or repair
Landfills
Landscape supplier
Nurseries
Paint and sign shops
Paint, retail sales - if mixing and repackaging
Photo processing
Printing establishment
Rendering plant - if surface impoundment at plant
Roofing/sheet metal facilities
On-site sewage systems***
Sewage plant biosolids disposal
Vehicle/truck storage
Water well
Wood products
Other facilities with hazardous materials

CONTACT: ATTN: Ray Hanowell
Tacoma-Pierce County Health Department
3629 So. "D" St. MS 021
Tacoma, WA 98408

Sources with no responsible jurisdictional authority

Cemetery
Golf Courses
Parks and recreation
Railroad Right-of-Ways

* Underground storage tanks should be tallied on Form 1, the *Potential Sources of Contamination Summary Sheet and Coding System Key*, but individually reported on Form 3, *Underground Storage Tank Information*. This will create overlap because some facilities that will be listed on Form 2, *Specific Contaminant Source Information*, will also be listed separately under the underground storage tank reporting form. Reporting is being conducted in this manner because some facilities with underground storage tanks create risks unrelated to those posed by the tanks, such as above ground storage, use, or disposal of hazardous materials. Responsibility for managing above ground risks and below ground risks may not be vested with the same agency. Thus, notification of one agency may not assure notification of other jurisdictional agencies.

** Ecology will consider enforcement of water quality violations if voluntary compliance efforts undertaken by PCCD prove unsuccessful.

*** Depending on capacity as determined by daily common point flow, on-site sewage systems may be governed by TPCHD, the Washington Department of Health, or Ecology; however, TPCHD will act as a notification clearinghouse for on-site sewage systems.

WELLHEAD PROTECTION PLAN - RISK SITES

R-187 WA0000062331	Arco Products Co 5898	102 Valley Avenue NE	Puyallup WA 98372
R-189 WAD988480513	Bloomingvale Apartments	*307 Valley Avenue NE*	Puyallup WA 98372
R-323 WAD988515516	Arco Products	809 W. Main	Sumner
R-325 WAD000097691	Arnie Dahl Ford	*603 Harrison Street*	Sumner
R-330 WAD009242041	Fleischmann Yeast Inc.(Integrated Ingred)	1115 Zehnder Street	Sumner
R-332 WAS988475190	Fryar Puyallup Partnership Phase	1812 Pease Ave.	Sumner
R-333 WAD980975759	General Battery Corp.	*2005 Fryar Ave.*	Sumner
R-334 WAD 988506705	Golden State Foods	1409 Puyallup Street	Sumner
R-339 WAD988479614	McConkey Company Inc.	1615 Puyallup Street	Sumner
R-341 WAD000642157	Northwest Pipeline Corp.	*T20N R5# S7 SE1/4*	Sumner
R-342 WAD982655243	Penske Truck Leasing Co. L P	2222 Tacoma Ave.	Sumner
R-343 WAD988507141	Pierce County Fire Station 1	3206 W. Tapps Drive E	Sumner
R-344 WAD982821332	Precision Aerospace & Composit	1516 Fryar Avenue	Sumner
R-345 WAD982659385	Puget Sound Power & Light	2111 E Valley Road	Sumner
R-346 WAD981771439	Quality Cleaners	1229 Main Street	Sumner
R-348 WAD021828207	Sonoco Products Company	*1802 Steele Avenue*	Sumner
R-349 WAD988475323	Spencer Environmental Svcs.	*1517 Pease Street*	Sumner
R-350 WAD988499711	Stowe Construction Inc.	4224 Sumner Tapps Hwy. E	Sumner
R-351 WAD988480133	Sumner Cleaners	6005 Parker	Sumner
R-352 WAD982653230	Sumner National Auto Parts Inc.	16008 - 60th St.	Sumner
R-353 WAD988471827	Sumner SD	1720 Washington St.	Sumner
R-355 WAD046689444	Sunset Chevrolet Inc.	910 Traffic Ave.	Sumner
R-360 WAT540011434	USWCOM Sumner Co.	905 Kincaid Ave.	Sumner
R-365 WAD055498232	Western Wood Preserving Co	*1701 Pease Avenue*	Sumner
R-366 WAD134728088	Perks Sunset Body Shop	*714 W. Main Street*	Sumner
R-368 WAD000149237	Tiny's Tire of Sumner Carldan Inc.	1215 Main Street	Sumner
R-369 WAD000258384	A Victorian Stripper	1012 Ryan Avenue	Sumner

Addresses in italics are incorrect

WELLHEAD PROTECTION PLAN
UNDERGROUND STORAGE TANKS

U-89	Darrell E. Nordyke	*16602 Sumner-Buckley Highway*	Sumner	Removed - Unleaded Gas
U-92	Cemetery Department	123rd & Valley Avenue E	Sumner	Removed - Diesel Fuel
U-93	Ota Farms, Inc.	4107 - 142nd Avenue E	Sumner	Exempt-Leaded Gas/Diesel Fuel
U-94	G & W Custom Cabinets	6015 - 160th Avenue E	Sumner	Exempt - Heating Fuel
U-95	Ronaco Inc.	6601 - 166th Avenue E	Sumner	Operational - Unleaded Gas
U-96	Sumner Towing	810 Alder Avenue	Sumner	Closed - Leaded/Unleaded
U-98	Lake Tapps Deli & Gas	17008 Forest Canyon Road	Sumner	Operational - Leaded Gas
U-428	Tim Corliss & Son	*16805 Sumner-Buckley Highway*	Sumner	Removed-Used Oil/Diesel/Unleaded Gas
U-433	Nabisco Brands Inc.	*111 Zehnder Street*	Sumner	Exempt - Heating Fuel
U-435	City Shops	711 Narrow Street	Sumner	Removed - Diesel/Unleaded/Leaded Gas
U-436	Arco 5509	809 Main Street	Sumner	Operational - Leaded/Unleaded Gas
U-440	Day & Night Grocery 102	1313 Main Street	Sumner	Removed - Leaded/Unleaded Gas
U-441	City of Sumner	1104 Maple Street	Sumner	Removed - Leaded/Unleaded Gas
U-442	Wastewater Treatment Plant	13114 - 63rd Street E	Sumner	Operational - Diesel Fuel
U-443	Sumner Texaco	*914 Kincaid--City Park*	Sumner	Removed - Leaded/Unleaded Gas
U-444	Mellow Truck Express Co. Inc.	1616 Fryar	Sumner	Removed - Diesel Fuel
U-445	Hansen, Hansen & Johnson,	*1504 Fryar Ave.*	Sumner	Unresolved - Leaded Gas
U-446	McLendon Hardware Inc.	*1111 Fryar Avenue*	Sumner	Removed - Diesel/Unleaded Gas
U-448	O D Snider & Son Inc.	*901 Valley Avenue*	Sumner	Removed - Leaded/Unleaded Gas
U-450	Johnson's Chevron	1005 Wood Avenue	Sumner	Operational:Unleaded/Leaded - Unresolved:Unleaded
U-451	Sumner School District #320	1710 Washington Street	Sumner	Removed - Leaded/Diesel - Closed - Used Oil
U-452	Pasquier Panel Products Inc.	*1510 Puyallup Street*	Sumner	Removed:Hazardous
U-453	Smithco Meats, Inc	*2509 E. Main*	Sumner	Removed: Leaded/Unleaded Gas
U-454	Hess Texaco Car Center	*2608 E. Main*	Sumner	Removed: Leaded/Unleaded Gas/Used Oil/W
U-461	Oelke Drilling & Pump Co	4318 - 166th Avenue	Sumner	Operational: Leaded Gas
U-463	Sumner Tractor & Equipment C	13223 Houston Road E	Sumner	Temp Out - Leaded Gas
U-466	Sumner Compressor Station	*3104 - 166th Avenue E*	Sumner	Closed - Leaded Gas
U-468	Gary Petersen/Petersen Brothers	2008 E. Valley Highway	Sumner	Operational:Diesel Oil/Leaded Gas/Used Oil/W
U-470	ID # P3	*2300 East Valley Road*	Sumner	Closure - Diesel Fuel
U-479	O D Snider & Son Inc.	13401 Valley Ave.	Sumner	Operational - Diesel Fuel/Other
U-482	Sumner Cedar	*1812 Pease Avenue*	Sumner	Removed - Leaded Gas

WELLHEAD PROTECTION PLAN
CLOSED DUMPSITES & LANDFILLS

L16 1 & 2	Approx. ten acres near Puyallup River NW1/4 of Section 26, T 20N, R 4E	Sumner	Closed in 1976

WELLHEAD PROTECTION PLAN
INCIDENT AREAS - HAZARDOUS MATERIAL SPILLS

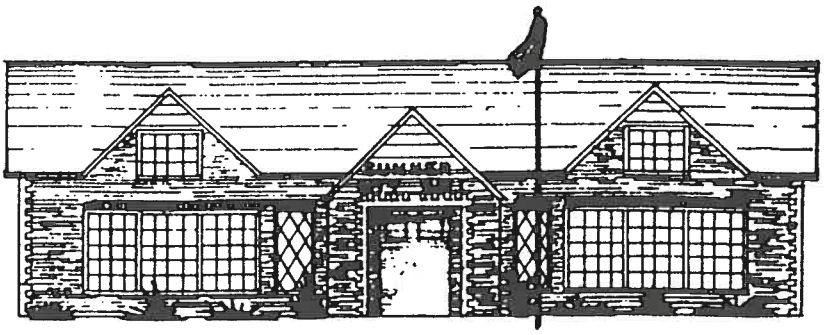
H-45 08/31/94: Western Wood - 1313 Zehnder Street, Sumner. Chemicals buried into ground - Penta and Creosote. Last used Penta in 1980. Have dismantled old tank area, cleared top layer off concrete, drummed up for disposal. Concrete stored on-site. Will test for disposal, will hire independent contractor to sample and remediate soil under tank area.

H-47 09/24/94: Public Works Building - 711 Narrow Street, Sumner. 55 gallon drum labeled "bond braker" left on side of road, 25-30 gallons in drum, some spilled into soil. Fire Crew/Haz-Mat team investigated. Team was requested to over-pack and hold at City shop. One 85 gallon over-pack for 55 gallon drum of herbicide

City of Sumner

1104 Maple Street
Sumner, Washington 98390

(206) 863-8300
Fax (206) 863-2850



August 9, 1996

Sumner Cemetery
1104 Maple Street
Sumner WA 98390

Dear Business Owner:

In order to protect the drinking water supply for the customers of the Sumner Water System, we are developing a Wellhead Protection Program in accordance with Washington State requirements (WAC 246-290-135). As part of our Wellhead Protection Program, we mapped the area overlying the short-term recharge zone of our drinking water supply wells. This is called our Wellhead Protection Area.

Following the mapping of the Wellhead Protection Area, we conducted an inventory of **potential** sources of ground water contamination within the area. The nature of your business, and its location within our Wellhead Protection Area, means that your activities have the potential to affect our customers' drinking water supply.

We hope that informing you of your location in our Wellhead Protection Area will result in an increase in precautions to ensure that your activities will not impact our drinking water quality. For further information, please call us at 863-8300.

Sincerely,

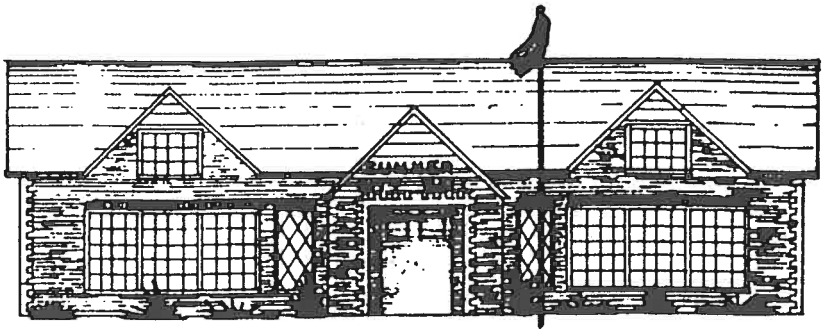
Les MacDonald
Public Works Director

P:Pworks\Wellhead\WPALetter

City of Sumner

1104 Maple Street
Sumner, Washington 98390

(206) 863-8300
Fax (206) 863-2850



August 9, 1996

Sumner WWTP
13114-63rd Street E
Sumner WA 98390

Dear Business Owner:

In order to protect the drinking water supply for the customers of the Sumner Water System, we are developing a Wellhead Protection Program in accordance with Washington State requirements (WAC 246-290-135). As part of our Wellhead Protection Program, we mapped the area overlying the short-term recharge zone of our drinking water supply wells. This is called our Wellhead Protection Area.

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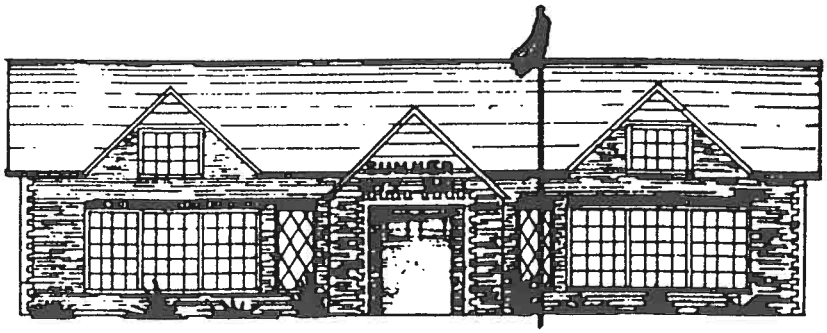
Sincerely,

Les MacDonald
Public Works Director

City of Sumner

1104 Maple Street
Sumner, Washington 98390

(206) 863-8300
Fax (206) 863-2850



August 9, 1996

City Hall of Sumner
1104 Maple Street
Sumner WA 98390

Dear Business Owner:

In order to protect the drinking water supply for the customers of the Sumner Water System, we are developing a Wellhead Protection Program in accordance with Washington State requirements (WAC 246-290-135). As part of our Wellhead Protection Program, we mapped the area overlying the short-term recharge zone of our drinking water supply wells. This is called our Wellhead Protection Area.

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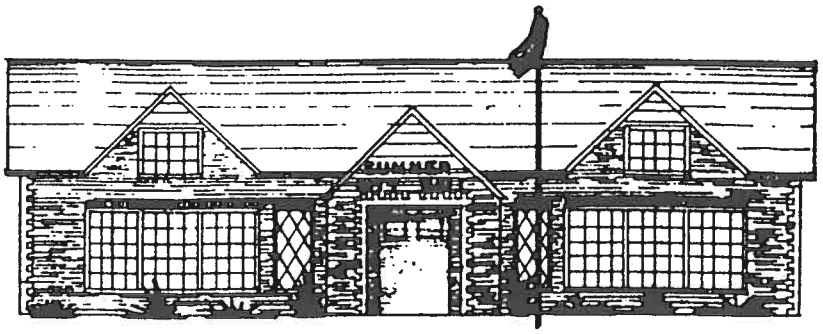
Sincerely,

Les MacDonald
Public Works Director

City of Sumner

1104 Maple Street
Sumner, Washington 98390

(206) 863-8300
Fax (206) 863-2850



August 9, 1996

Sumner City Shops
711 Narrow Street
Sumner WA 98390

Dear Business Owner:

In order to protect the drinking water supply for the customers of the Sumner Water System, we are developing a Wellhead Protection Program in accordance with Washington State requirements (WAC 246-290-135). As part of our Wellhead Protection Program, we mapped the area overlying the short-term recharge zone of our drinking water supply wells. This is called our Wellhead Protection Area.

Following the mapping of the Wellhead Protection Area, we conducted an inventory of **potential** sources of ground water contamination within the area. The nature of your business, and its location within our Wellhead Protection Area, means that your activities have the potential to affect our customers' drinking water supply.

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Sincerely,

Les MacDonald
Public Works Director

P:Pworks\Wellhead\WPALetter

CONTAMINANT SOURCE INVENTORY APPLICATION
(FORM 1)

System ID Number:	851207
Water System Name:	City of Sumner
WRIA:	10
DOH Source Number:	S01
Source Name:	Sumner Springs
County:	Pierce
Contact Person:	Les MacDonald - Director, Public Works
Owner Number:	5743
Mailing Address:	1104 Maple Street - Sumner WA 98390
Telephone Number:	(206) 863-8300
Date Inventory Completed:	7-25-96

Instructions for completing the Contaminant Source Inventory:

Following delineation of your Wellhead Protection Area (WHPA), complete the contaminant source inventory by following the instructions below:

1. A portion of the information necessary to complete the contaminant source inventory may be obtained from the Tacoma-Pierce County Health Department (TPCHD). Maps are available that have several types of contaminant sources identified, along with lists of source names and addresses. To obtain this information: transfer the information to, or make a photocopy of, the portions of the maps and lists encompassed by your WHPA. Contact Ray Hanowell at (206) 596-2845 to arrange a time to view the maps at TPCHD, located at 3629 South "D" Street, Tacoma, between the hours of 8:00 a.m. and 4:30 p.m., Monday through Friday.

2. Copies of sewer and storm drainage location maps are also available at TPCHD. Determine which portions of your WHPA are served by sewers, and determine the locations of storm drainage services (i.e., dry wells, infiltration facilities) within your WHPA. Map the location of these utilities on your WHPA contaminant source map.

FORM 2
POTENTIAL SOURCES OF CONTAMINATION
SUMMARY SHEET AND CODING SYSTEM KEY

On the form below, indicate the number of each source present within the Wellhead areas. Information should be gathered from personal knowledge, windshield surveys, and TPCHD data. Fill in all blanks. If a source is absent, place a 0 in the number column. If information is unavailable, place N/A in the number column. Use the coding system enumerated below to fill out Form 3.

** A description of the source is provided on the back of this sheet.*

No.	Source - Code	No.	Source - Code
N/A	Abandoned Water Well* - **AWW**	N/A	Surface Water Holding Systems - **SHS**
N/A	Above Ground Storage Tanks* - **AST**	0	Landfills* - **LDF**
2	Agricultural, Crops - **AGC**	0	Landscape Supplier - **LSS**
2	Agricultural, Livestock (open pasture)- **ALO**	3	Mines/Gravel Pits - **MGP**
0	Agricultural, Livestock (confined)- **ALC**	2	Nurseries - **NRS**
N/A	Animal Waste Spreading - **AWS**	0	Paint and Sign Shops - **PSS**
0	Airport - **ARP**	1	Paint, retail sales - **PRS**
0	Animal Feedlot - **AFL**	4	Parks/Recreation Areas - **PRA**
0	Asphalt Plant - **ASP**	0	Pesticide Applicator's Facility - **PAF**
3	Auto Repair (Body, Transmission) - **ABR**	0	Photo Processing Facility - **PPF**
0	Auto Salvage Yard - **ASY**	0	Printing Establishment - **PRE**
N/A	Boat Yard/Boat Repair - **BYR**	2	Railroad Right-of-Ways - **RRW**
2	Car Dealer - **CRD**	0	Rendering Plants - **RNP**
1	Car Wash - **CRW**	1	Roofing/Sheet Metal Facilities- **RSM**
0	Cemetery - **CEM**	N/A	Indiv. on-site sewage systems*(septic tanks) - **IOS**
0	Chemical Manufacture Facility - **CMF**	N/A	Community on-site sewage systems* - **COS**
2	Drainage Canal* - **DRN**	3	Service Stations - **SVS**
1	Dry Cleaners - **DRC**	0	Sewage Plant Biosolids Disposal Site (sludge) - **SLU**
0	Electroplating - **ETP**	0	Silviculture Application Areas - **SAA**
N/A	Fertilizer/Pesticide Application Areas* - **FPA**	N/A	Underground Storage Tanks* (not inc. service station)- **UST**
2	Food Processing Plants - **FPP**	0	Vehicle/Truck Storage - **VEH**
1	Furniture, manufacture, repair - **FMR**	4	Water Body (stream, lake)* - **WTR**
1	Golf Course - **GOL**	N/A	Water Well* (non-public water supply) - **WEL**
N/A	Drywell/Stormwater Subsurface Infiltration Systems* - **SSD**	1	Wood Products (manufacture, preservatives*) - **WDP**
2	Highways/Transportation Corridors* - **COR**	N/A	Other facilities with Hazardous Materials* - **HAZ**

FORM 2

UNSEWERED AREAS
POTENTIAL SOURCES OF CONTAMINATION
SUMMARY SHEET AND CODING SYSTEM KEY

On the form below, indicate the number of each source present within the UNSEWERED portions of the WHPAs. Fill in all blanks. If a source is absent, place a 0 in the number column. If information is unavailable, place N/A in the number column. Use the coding system enumerated below to fill out Form 3.

No.	Source - Code	No.	Source - Code
N/A	Day Care Facility - **DAY**	N/A	Self-Service Laundry Facility - **LAU**
N/A	Dental Office - **DEN**	N/A	Schools - **SCH**
N/A	Doctor Office - **DOC**	N/A	Nursing Home - **NHO**
N/A	Hospital - **HOS**	N/A	Veterinary Clinic/Hospital - **VET**
N/A	Hair Salon - **HAR**	N/A	Other - **OTH**

NOTE: These sources have been broken out because they only represent a potential threat to ground water in unsewered areas. The other sources represent a potential threat in sewered as well as unsewered areas.

SPECIFIC CONTAMINANT SOURCE INFORMATION (FORM 3)

System ID Number:	**851207**
Water System Name:	**City of Sumner**
DOH Source Number:	**S01**
Source Name:	**Sumner Springs**

Code: 1-year Travel Time	Business/Source Name	Address	On TPCHD Map?
R-350 WAD988499711	Stowe Construction Inc	4224 Sumner Tapps Hwy. E.	T20N.R4&5E.W.M.
U-461	Oelke Drilling & Pump Co.	4318-166th Avenue	T20N.R4&5E.W..M.

Code: 5-Year Travel Time	Business/Source Name	Address	On TPCHD Map?
H-45	Western Wood	1313 Zehnder Street	T20 R 4 & 5 E W.M.
U-89	Darrell E. Nordyke	16602-Sumner/Buckley Hwy	All as above
U-93	Ota Farms, Inc	4107-142nd Avenue E	
U-94	G & W Custom Cabinets	6015-260th Avenue E	
U-98	Lake Tapps Deli & Gas	17008 Forest Canyon Road	
U-428	Tim Corliss & Son	16805 Sumner/Buckley Hwy	
U-433	Nabisco Brands Inc	111 Zehnder Street	
U-444	Mellow Truck Express Co. Inc	1616 Fryar Ave	
U-448	O D Snider & Son Inc	901 Valley Ave	
U-450	Johnson's Chevron	1005 Wood Avenue	
U-451	Sumner School District	1710 Washington Street	
U-452	Pasquier Panel Products Inc	1510 Puyallup Street	
U-453	Smithco Meats, Inc.	2509 Main Street	
U-454	Hess Texaco Car Center	2608 E. Main	
U-466	Sumner Compressor Station	3104-166th Avenue E	
U-482	Sumner Cedar	1812 Pease Avenue	
R-330 WAD009242041	Fleischmann Yeast Inc	1115 Zehnder Street	
R-332 WAD988475190	Fryar Puyallup Partnership	1812 Pease Avenue	
R-333 WAD980975759	General Battery Corp	2005 Fryar Avenue	
R-334 WAD988506705	Golden State Foods	1409 Puyallup Street	
R-339 WAD988479614	McConkey Company Inc	1615 Puyallup Street	

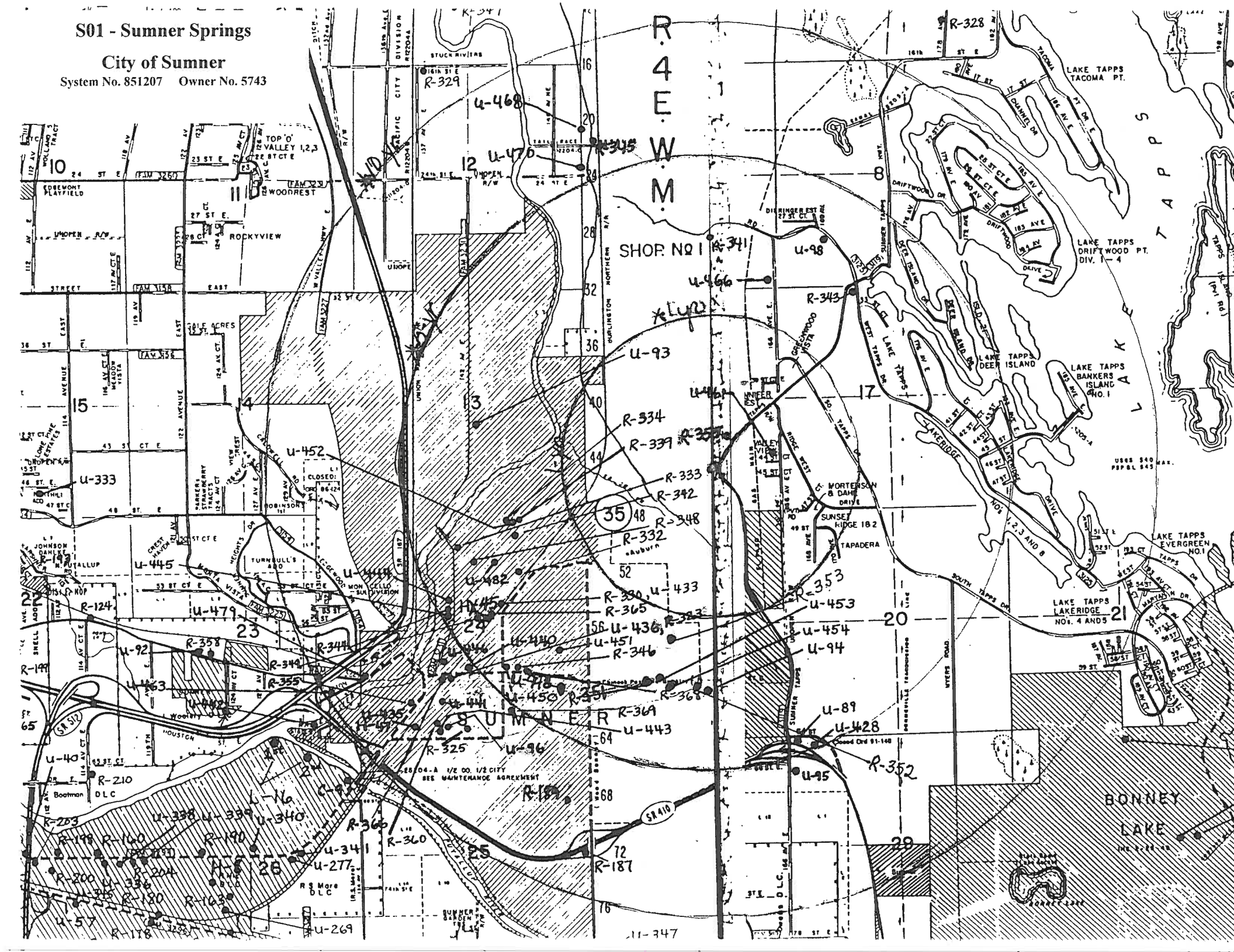
WELLHEAD PROTECTION PLAN - CITY OF SUMNER
S01 - SUMNER SPRINGS

Code: 5-Year Travel	Business/Source Name	Address	On TPCHD Map?
R-341 WAD0006421057	Northwest Pipeline Corp.	T20N R5E S7 SE1/4	T20N R 4&5E W.M.
R-342 WAD982655243	Penske Truck Leasing Co. LP	2222 Tacoma Avenue	All same as above
R-343 WAD988507141	Pierce County Fire Station 1	3206 W. Tapps Drive E	
R-344 WAD982821332	Precision Aerospace & Composit	1516 Fryar Avenue	
R-346 WAD981771439	Quality Cleaners	1229 Main Street	
R-348 WAD021828207	Sonoco Products Co	1802 Steele Avenue	
R-349 WAD988475323	Spencer Environment Services	1517 Pease Avenue	
R-351 WAD988480133	Sumner Cleaners	6005 Parker Road	
R-352 WAD982653230	Sumner National Auto Parts Inc	16008-60th Street	
R-353 WAD988471827	Sumner School District	1720 Washington Street	
R-365 WAD055498232	Western Wood Preserving Co	Pease & Zehnder Streets	
R-368 WAD000149237	Tiny's Tire of Sumner Carldan Inc	1215 Main Street	

Code: 10-Year Travel	Business/Source Name	Address	On TPCHD Map?
H-47	Sumner Public Works Bldg	711 Narrow Street	T20N R 4&5E W.M.
U-95	Ronaco Inc	6601-166th Avenue E	All same as above
U-96	Sumner Towing	810 Alder Avenue	
U-435	Sumner City Shops	711 Narrow Street	
U-436	Arco 5509	809 Main Street	
U-440	Day & ight Grocery 102	1313 Main Street	
U-441	City of Sumner	1104 Maple Street	
U-443	Sumner Texaco	914 Kincaid	
U-446	McLendon Hardware Inc	1111 Fryar Avenue	
U-463	Sumner Tractor & Equipment Co	13223 Houston Road E	
U-468	Petersen Brothers	2008 E. Valley Highway	
U-470	ID #P3	2300 E. Valley Hwy	
R-187 WA0000062331	Arco Products Co 5898	102 Valley Ave NE	
R-189 WAD988480513	Bloomingvale Apts	307 Valley Ave NE	
R-323 WAD988515516	Arco Products 5509	809 W. Main Street	
R-325 WA0000097691	Arnie Dahl Ford	603 Harrison St	

WELLHEAD PROTECTION PLAN - CITY OF SUMNER
S01 - SUMNER SPRINGS

Code: 10-Year Travel	Business/Source Name	Address	On TPCHD Map?
R-345 WAD982659385	Puget Sound Power & Light	2111 E. Valley Road	T20N R 4&5E W.M.
R-355 WAD046689444	Sunset Chevrolet Inc	910 Traffic Avenue	All same as above
R-360 WAT540011434	USWCO Sumner Co	905 Kincaid Avenue	
R-366 WAD134728088	Perks Sunset Body Shop	714 W. Main Street	
R-369 WAD000258384	A Victorian Stripper	1012 Ryan Avenue	


S01 - Sumner Springs
City of Sumner
System No. 851207 Owner No. 5743
R 4 E W M
SUMNER
SHOP NO 1
LAKE TAPPS
LAKE TAPPS TACOMA PT.
LAKE TAPPS DRIFTWOOD PT. DIV. 1-4
LAKE TAPPS DEER ISLAND
LAKE TAPPS BANKERS ISLAND NO. 1
LAKE TAPPS LAKERIDGE NOS. 4 AND 5
LAKE TAPPS EVERGREEN NO. 1
BONNEY LAKE
R-328
R-329
R-345
R-341
R-343
R-334
R-339
R-333
R-342
R-348
R-332
R-353
R-352
R-124
R-358
R-344
R-355
R-346
R-369
R-325
R-210
R-187
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u-94
u-89
u-428
u-95
u-96
u-443
u-40
u-338
u-339
u-340
u-341
u-277
u-269
u-347
SR 512
SR 410
Auburn
Bootman DLC
R.S. Moore DLC

Sol-Salmon Spring Source
T20N R4E WM

CONTAMINANT SOURCE INVENTORY APPLICATION
(FORM 1)

System ID Number:	851207
Water System Name:	City of Sumner
WRIA:	10
DOH Source Number:	S02
Source Name:	Weber Springs (previously called Crystal Springs)
County:	Pierce
Contact Person:	Les MacDonald - Director, Public Works
Owner Number:	5743
Mailing Address:	1104 Maple Street - Sumner WA 98390
Telephone Number:	(206) 863-8300
Date Inventory Completed:	7-23-96

Instructions for completing the Contaminant Source Inventory:

Following delineation of your Wellhead Protection Area (WHPA), complete the contaminant source inventory by following the instructions below:

1. A portion of the information necessary to complete the contaminant source inventory may be obtained from the Tacoma-Pierce County Health Department (TPCHD). Maps are available that have several types of contaminant sources identified, along with lists of source names and addresses. To obtain this information: transfer the information to, or make a photocopy of, the portions of the maps and lists encompassed by your WHPA. Contact Ray Hanowell at (206) 596-2845 to arrange a time to view the maps at TPCHD, located at 3629 South "D" Street, Tacoma, between the hours of 8:00 a.m. and 4:30 p.m., Monday through Friday.

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FORM 2
POTENTIAL SOURCES OF CONTAMINATION
SUMMARY SHEET AND CODING SYSTEM KEY

On the form below, indicate the number of each source present within the Wellhead areas. Information should be gathered from personal knowledge, windshield surveys, and TPCHD data. Fill in all blanks. If a source is absent, place a 0 in the number column. If information is unavailable, place N/A in the number column. Use the coding system enumerated below to fill out Form 3.

** A description of the source is provided on the back of this sheet.*

No.	Source - Code	No.	Source - Code
N/A	Abandoned Water Well* - AWW	N/A	Surface Water Holding Systems - SHS
N/A	Above Ground Storage Tanks* - AST	0	Landfills* - LDF
1	Agricultural, Crops - AGC	0	Landscape Supplier - LSS
1	Agricultural, Livestock (open pasture)- ALO	2	Mines/Gravel Pits - MGP
0	Agricultural, Livestock (confined)- ALC	1	Nurseries - NRS
N/A	Animal Waste Spreading - AWS	0	Paint and Sign Shops - PSS
0	Airport - ARP	0	Paint, retail sales - PRS
0	Animal Feedlot - AFL	2	Parks/Recreation Areas - PRA
0	Asphalt Plant - ASP	0	Pesticide Applicator's Facility - PAF
0	Auto Repair (Body, Transmission) - ABR	0	Photo Processing Facility - PPF
0	Auto Salvage Yard - ASY	0	Printing Establishment - PRE
N/A	Boat Yard/Boat Repair - BYR	1	Railroad Right-of-Ways - RRW
0	Car Dealer - CRD	0	Rendering Plants - RNP
0	Car Wash - CRW	0	Roofing/Sheet Metal Facilities- RSM
0	Cemetery - CEM	N/A	Indiv. on-site sewage systems*(septic tanks) - IOS
0	Chemical Manufacture Facility - CMF	N/A	Community on-site sewage systems* - COS
0	Drainage Canal* - DRN	0	Service Stations - SVS
0	Dry Cleaners - DRC	0	Sewage Plant Biosolids Disposal Site (sludge) - SLU
0	Electroplating - ETP	0	Silviculture Application Areas - SAA
N/A	Fertilizer/Pesticide Application Areas* - FPA	N/A	Underground Storage Tanks* (not inc. service station)- UST
0	Food Processing Plants - FPP	0	Vehicle/Truck Storage - VEH
0	Furniture, manufacture, repair - FMR	2	Water Body (stream, lake)* - WTR
0	Golf Course - GOL	N/A	Water Well* (non-public water supply) - WEL
N/A	Drywell/Stormwater Subsurface Infiltration Systems* - SSD	0	Wood Products (manufacture, preservatives*) - WDP
0	Highways/Transportation Corridors* - COR	N/A	Other facilities with Hazardous Materials* - HAZ

FORM 2

UNSEWERED AREAS
POTENTIAL SOURCES OF CONTAMINATION
SUMMARY SHEET AND CODING SYSTEM KEY

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No.	Source - **Code**	No.	Source - **Code**
N/A	Day Care Facility - **DAY**	N/A	Self-Service Laundry Facility - **LAU**
N/A	Dental Office - **DEN**	N/A	Schools - **SCH**
N/A	Doctor Office - **DOC**	N/A	Nursing Home - **NHO**
N/A	Hospital - **HOS**	N/A	Veterinary Clinic/Hospital - **VET**
N/A	Hair Salon - **HAR**	N/A	Other - **OTH**

NOTE: These sources have been broken out because they only represent a potential threat to ground water in unsewered areas. The other sources represent a potential threat in sewered as well as unsewered areas.

SPECIFIC CONTAMINANT SOURCE INFORMATION (FORM 3)

System ID Number:	**851207**
Water System Name:	**City of Sumner**
DOH Source Number:	**S02**
Source Name:	**Weber Springs**

Code: 1-Year Travel Time	Business/Source Name	Address	On TPCHD Map?
NONE			

Code: 5-Year Travel Time	Business/Source Name	Address	On TPCHD Map?
R-350 WAD988499711	Stowe Construction Inc	4224 Sumner Tapps Hwy E	T20 R 4&5E W.M.

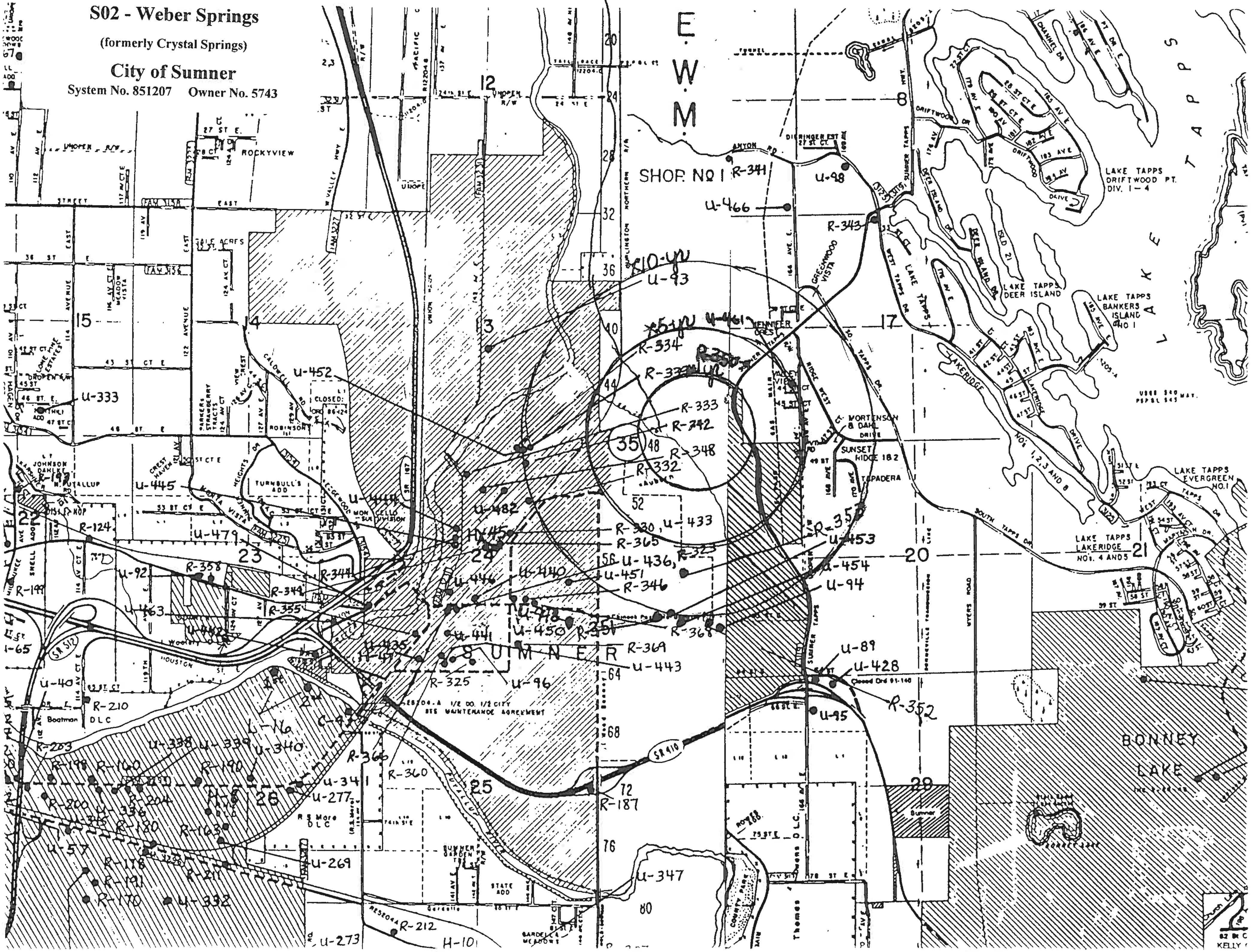
Code: 10-Year Travel Time	Business/Source Name	Address	On TPCHD Map?
U-452	Pasquier Panel Products	1510 Puyallup Street	T20 R 4&5E W.M.
U-453	Hess Texaco Car Center	2608 E. Main Street	All same as above
R-339 WAD988479614	McConkey Company Inc	1615 Puyallup Street	
R-342 WAD982655243	Penske Truck Leasing Co LP	2222 Tacoma Avenue	
R-353 WAD988471827	Sumner School District	1720 Washington Street	

S02 - Weber Springs

(formerly Crystal Springs)

City of Sumner

System No. 851207 Owner No. 5743



UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

7.5 MINU

SO2 = WEBER SPRING SOURCE

A = SALMON CREEK

B = LOW DENSITY RESIDENCE
WITH SEPTIC SYSTEMS

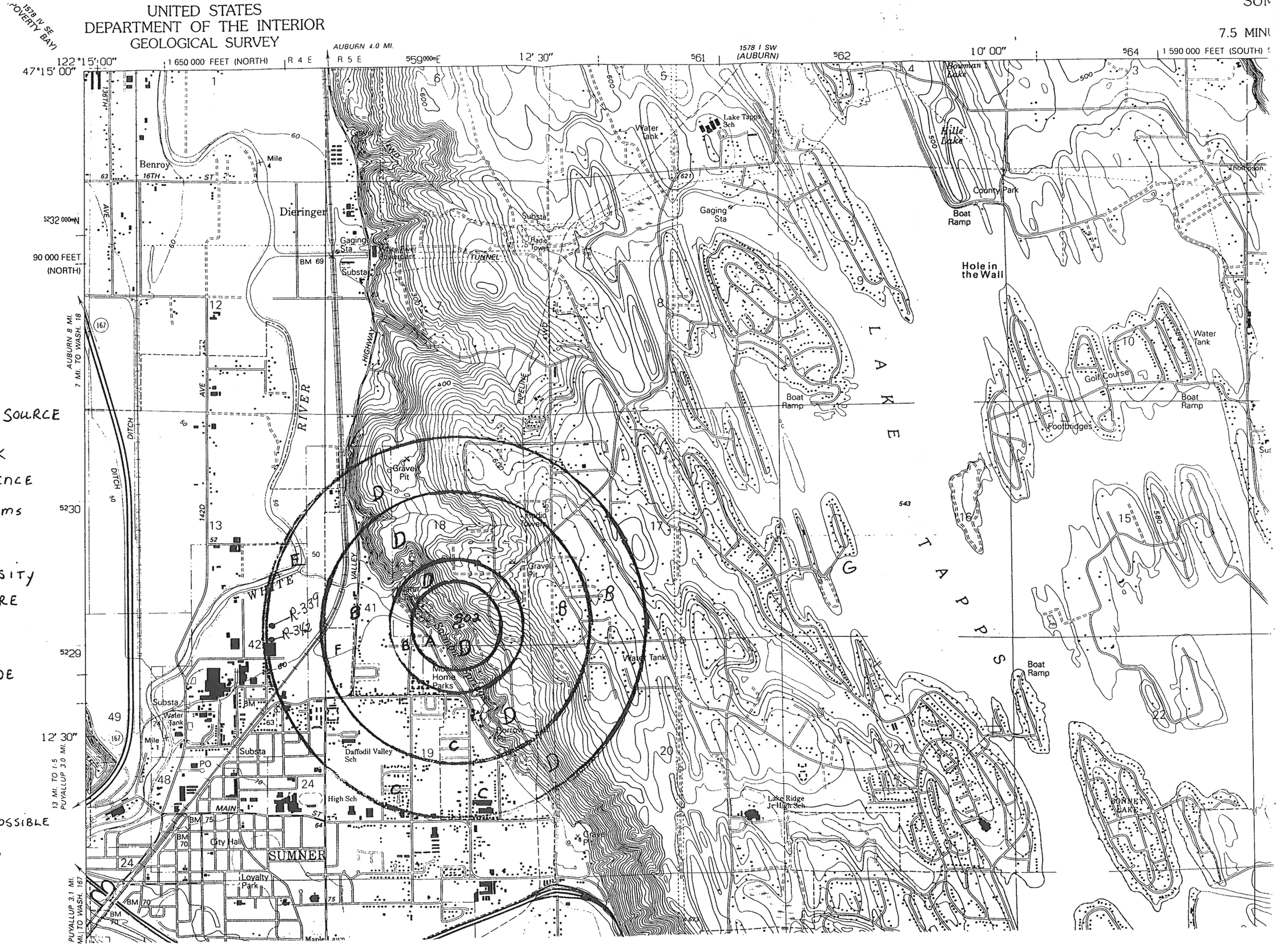
C = POPULATION DENSITY
> 1 HOUSE PER ACRE

D = STEEP HILL SIDE

E = WHITE RIVER

F = SMALL AREA USED
AS AGRICULTURE, POSSIBLE
PESTICIDE APPLICATION

G = LAKE TAPPS



CONTAMINANT SOURCE INVENTORY APPLICATION
(FORM 1)

System ID Number:	851207
Water System Name:	City of Sumner
WRIA:	10
DOH Source Number:	S03
Source Name:	Elhi Springs
County:	Pierce
Contact Person:	Les MacDonald - Public Works Director
Owner Number:	5743
Mailing Address:	1104 Maple Street - Sumner WA 98390
Telephone Number:	(206) 863-8300
Date Inventory Completed:	7-16-96

Instructions for completing the Contaminant Source Inventory:

Following delineation of your Wellhead Protection Area (WHPA), complete the contaminant source inventory by following the instructions below:

1. A portion of the information necessary to complete the contaminant source inventory may be obtained from the Tacoma-Pierce County Health Department (TPCHD). Maps are available that have several types of contaminant sources identified, along with lists of source names and addresses. To obtain this information: transfer the information to, or make a photocopy of, the portions of the maps and lists encompassed by your WHPA. Contact Ray Hanowell at (206) 596-2845 to arrange a time to view the maps at TPCHD, located at 3629 South "D" Street, Tacoma, between the hours of 8:00 a.m. and 4:30 p.m., Monday through Friday.

2. Copies of sewer and storm drainage location maps are also available at TPCHD. Determine which portions of your WHPA are served by sewers, and determine the locations of storm drainage services (i.e., dry wells, infiltration facilities) within your WHPA. Map the location of these utilities on your WHPA contaminant source map.

FORM 2
POTENTIAL SOURCES OF CONTAMINATION
SUMMARY SHEET AND CODING SYSTEM KEY

On the form below, indicate the number of each source present within the Wellhead areas. Information should be gathered from personal knowledge, windshield surveys, and TPCHD data. Fill in all blanks. If a source is absent, place a 0 in the number column. If information is unavailable, place N/A in the number column. Use the coding system enumerated below to fill out Form 3.

** A description of the source is provided on the back of this sheet.*

No.	Source - Code	No.	Source - Code
N/A	Abandoned Water Well* - AWW	N/A	Surface Water Holding Systems - SHS
N/A	Above Ground Storage Tanks* - AST	0	Landfills* - LDF
3	Agricultural, Crops - AGC	0	Landscape Supplier - LSS
1	Agricultural, Livestock (open pasture)- ALO	1	Mines/Gravel Pits - MGP
0	Agricultural, Livestock (confined)- ALC	1	Nurseries - NRS
N/A	Animal Waste Spreading - AWS	0	Paint and Sign Shops - PSS
0	Airport - ARP	0	Paint, retail sales - PRS
0	Animal Feedlot - AFL	1	Parks/Recreation Areas - PRA
0	Asphalt Plant - ASP	0	Pesticide Applicator's Facility - PAF
1	Auto Repair (Body, Transmission) - ABR	0	Photo Processing Facility - PPF
0	Auto Salvage Yard - ASY	0	Printing Establishment - PRE
0	Boat Yard/Boat Repair - BYR	0	Railroad Right-of-Ways - RRW
0	Car Dealer - CRD	0	Rendering Plants - RNP
0	Car Wash - CRW	0	Roofing/Sheet Metal Facilities- RSM
0	Cemetery - CEM	N/A	Indiv. on-site sewage systems*(septic tanks) - IOS
0	Chemical Manufacture Facility - CMF	N/A	Community on-site sewage systems* - COS
0	Drainage Canal* - DRN	1	Service Stations - SVS
0	Dry Cleaners - DRC	0	Sewage Plant Biosolids Disposal Site (sludge) - SLU
0	Electroplating - ETP	0	Silviculture Application Areas - SAA
N/A	Fertilizer/Pesticide Application Areas* - FPA	N/A	Underground Storage Tanks* (not inc. service station)- UST
0	Food Processing Plants - FPP	0	Vehicle/Truck Storage - VEH
0	Furniture, manufacture, repair - FMR	3	Water Body (stream, lake)* - WTR
0	Golf Course - GOL	N/A	Water Well* (non-public water supply) - WEL
N/A	Drywell/Stormwater Subsurface Infiltration Systems* - SSD	0	Wood Products (manufacture, preservatives*) - WDP
1	Highways/Transportation Corridors* - COR	N/A	Other facilities with Hazardous Materials* - HAZ

FORM 2

UNSEWERED AREAS
POTENTIAL SOURCES OF CONTAMINATION
SUMMARY SHEET AND CODING SYSTEM KEY

On the form below, indicate the number of each source present within the UNSEWERED portions of the WHPAs. Fill in all blanks. If a source is absent, place a 0 in the number column. If information is unavailable, place N/A in the number column. Use the coding system enumerated below to fill out Form 3.

No.	Source - Code	No.	Source - Code
N/A	Day Care Facility - **DAY**	N/A	Self-Service Laundry Facility - **LAU**
N/A	Dental Office - **DEN**	N/A	Schools - **SCH**
N/A	Doctor Office - **DOC**	N/A	Nursing Home - **NHO**
N/A	Hospital - **HOS**	N/A	Veterinary Clinic/Hospital - **VET**
N/A	Hair Salon - **HAR**	N/A	Other - **OTH**

NOTE: These sources have been broken out because they only represent a potential threat to ground water in unsewered areas. The other sources represent a potential threat in sewered as well as unsewered areas.

SPECIFIC CONTAMINANT SOURCE INFORMATION (FORM 3)

System ID Number:	**851207**
Water System Name:	**City of Sumner**
DOH Source Number:	**S03**
Source Name:	**Elhi Springs**

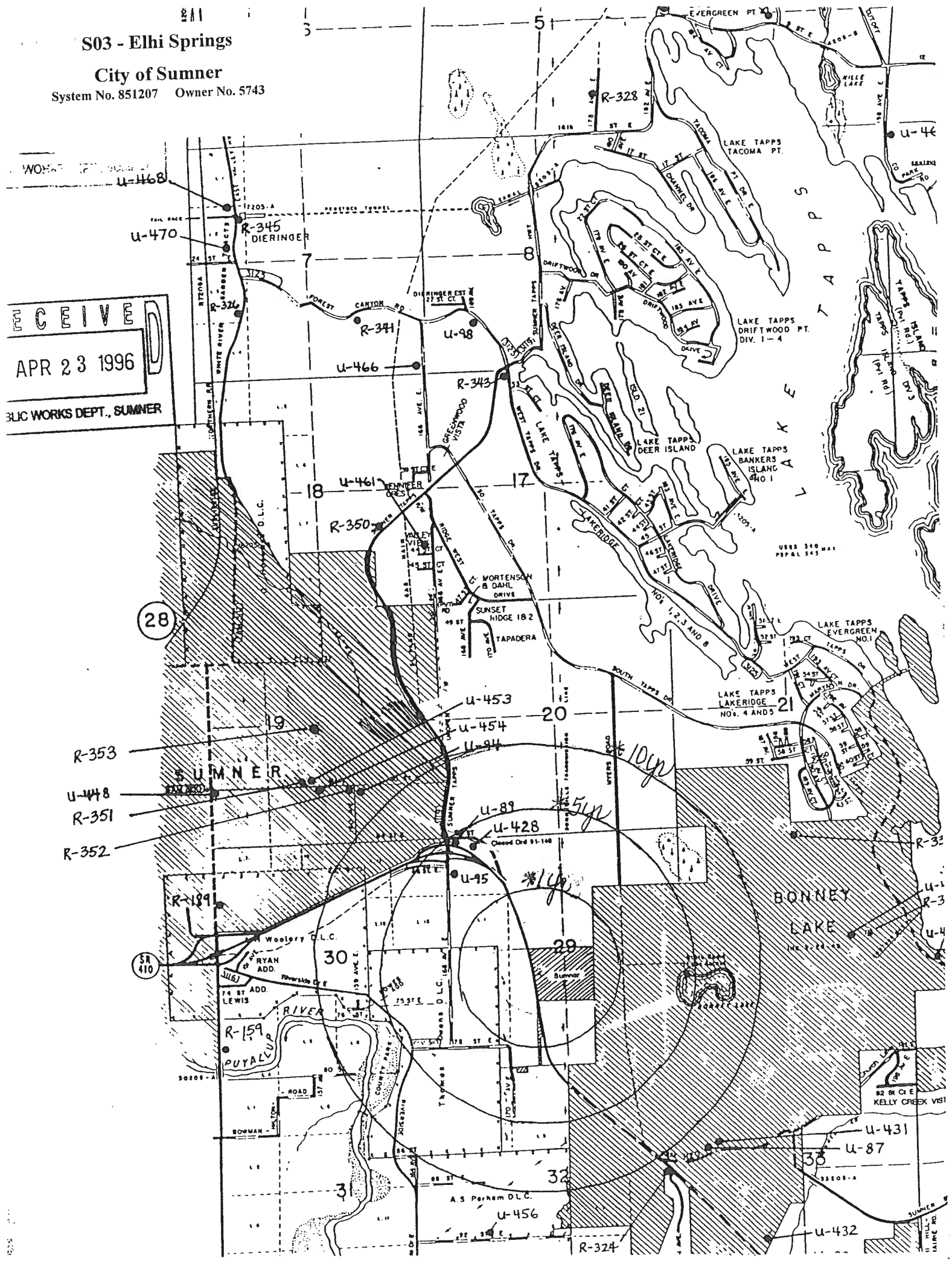
Code: 1-year Travel Time	Business/Source Name	Address	On TPCHD Map?

NONE

Code: 5-year Travel Time	Business/Source Name	Address	On TPCHD Map?
U-89	Darrell E. Nordyke	16602 Sumner/Buckley Hwy	T20 R 4&5 E W.M.
U-95	Ronaco Inc	6601-166th Avenue E	Same
U-428	Tim Corliss & Son	16805 Sumner/Buckley Hwy	Same

Code: 10-year Travel Time	Business/Source Name	Address	On TPCHD Map?

NONE


S03 - Elhi Springs
City of Sumner
System No. 851207 Owner No. 5743
RECEIVED
APR 23 1996
PUBLIC WORKS DEPT., SUMNER
U-468
R-345
DIERINGER
U-470
R-326
U-466
R-343
U-98
R-341
U-461
R-350
U-453
U-454
U-94
R-353
SUMNER
U-448
R-351
R-352
U-89
U-428
U-95
R-189
R-159
PUYALLUP
RIVER
R-328
LAKE TAPPS
LAKE TAPPS TACOMA PT.
LAKE TAPPS DRIFTWOOD PT. DIV. 1-4
LAKE TAPPS DEER ISLAND
LAKE TAPPS BANKERS ISLAND 4NO 1
LAKE TAPPS EVERGREEN NO.1
LAKE TAPPS LAKERIDGE NOs. 4 AND 5
LAKERIDGE NOs 1,2,3 AND 8
SUNSET RIDGE 182
TAPADERA
MORTENSON & DAHL DRIVE
BONNEY LAKE
KELLY CREEK
U-431
U-87
U-432
U-456
R-324
A.S. Parham D.L.C.
W. Woolery D.L.C.
RYAN ADD.
LEWIS ADD.
SR 410
28
29
30
31
32
33
10yr
5yr
1/2

SO3: ELHI SPRINGS

A: PUYALLUP RIVER

B: BONNEY LAKE

C: STEEP HILLSIDE

D: LIKELY PESTICIDE APPLICATION

E: LOW DENSITY RESIDENCES WITH SEPTIC SYSTEMS

F: LAKE TAPPS

CONTAMINANT SOURCE INVENTORY APPLICATION
(FORM 1)

System ID Number:	851207
Water System Name:	City of Sumner
WRIA:	10
DOH Source Number:	S04
Source Name:	County Springs
County:	Pierce
Contact Person:	Les MacDonald - Public Works Director
Owner Number:	5743
Mailing Address:	1104 Maple Street; Sumner WA 98390
Telephone Number:	(206) 863-8300
Date Inventory Completed:	7-18-96

Instructions for completing the Contaminant Source Inventory:

Following delineation of your Wellhead Protection Area (WHPA), complete the contaminant source inventory by following the instructions below:

1. A portion of the information necessary to complete the contaminant source inventory may be obtained from the Tacoma-Pierce County Health Department (TPCHD). Maps are available that have several types of contaminant sources identified, along with lists of source names and addresses. To obtain this information: transfer the information to, or make a photocopy of, the portions of the maps and lists encompassed by your WHPA. Contact Ray Hanowell at (206) 596-2845 to arrange a time to view the maps at TPCHD, located at 3629 South "D" Street, Tacoma, between the hours of 8:00 a.m. and 4:30 p.m., Monday through Friday.

2. Copies of sewer and storm drainage location maps are also available at TPCHD. Determine which portions of your WHPA are served by sewers, and determine the locations of storm drainage services (i.e., dry wells, infiltration facilities) within your WHPA. Map the location of these utilities on your WHPA contaminant source map.

FORM 2
POTENTIAL SOURCES OF CONTAMINATION
SUMMARY SHEET AND CODING SYSTEM KEY

On the form below, indicate the number of each source present within the Wellhead areas. Information should be gathered from personal knowledge, windshield surveys, and TPCHD data. Fill in all blanks. If a source is absent, place a 0 in the number column. If information is unavailable, place N/A in the number column. Use the coding system enumerated below to fill out Form 3.

** A description of the source is provided on the back of this sheet.*

No.	Source - Code	No.	Source - Code
N/A	Abandoned Water Well* - AWW	N/A	Surface Water Holding Systems - SHS
N/A	Above Ground Storage Tanks* - AST	0	Landfills* - LDF
4	Agricultural, Crops - AGC	0	Landscape Supplier - LSS
1	Agricultural, Livestock (open pasture)- ALO	3	Mines/Gravel Pits - MGP
1	Agricultural, Livestock (confined)- ALC	2	Nurseries - NRS
N/A	Animal Waste Spreading - AWS	0	Paint and Sign Shops - PSS
0	Airport - ARP	1	Paint, retail sales - PRS
0	Animal Feedlot - AFL	5	Parks/Recreation Areas - PRA
0	Asphalt Plant - ASP	0	Pesticide Applicator's Facility - PAF
3	Auto Repair (Body, Transmission) - ABR	0	Photo Processing Facility - PPF
0	Auto Salvage Yard - ASY	0	Printing Establishment - PRE
N/A	Boat Yard/Boat Repair - BYR	2	Railroad Right-of-Ways - RRW
2	Car Dealer - CRD	0	Rendering Plants - RNP
1	Car Wash - CRW	1	Roofing/Sheet Metal Facilities- RSM
0	Cemetery - CEM	N/A	Indiv. on-site sewage systems*(septic tanks) - IOS
0	Chemical Manufacture Facility - CMF	N/A	Community on-site sewage systems* - COS
2	Drainage Canal* - DRN	3	Service Stations - SVS
1	Dry Cleaners - DRC	0	Sewage Plant Biosolids Disposal Site (sludge) - SLU
0	Electroplating - ETP	0	Silviculture Application Areas - SAA
N/A	Fertilizer/Pesticide Application Areas* - FPA	N/A	Underground Storage Tanks* (not inc. service station)- UST
2	Food Processing Plants - FPP	0	Vehicle/Truck Storage - VEH
1	Furniture, manufacture, repair - FMR	4	Water Body (stream, lake)* - WTR
0	Golf Course - GOL	N/A	Water Well* (non-public water supply) - WEL
N/A	Drywell/Stormwater Subsurface Infiltration Systems* - SSD	1	Wood Products (manufacture, preservatives*) - WDP
2	Highways/Transportation Corridors* - COR	N/A	Other facilities with Hazardous Materials* - HAZ

FORM 2

UNSEWERED AREAS
POTENTIAL SOURCES OF CONTAMINATION
SUMMARY SHEET AND CODING SYSTEM KEY

On the form below, indicate the number of each source present within the UNSEWERED portions of the WHPAs. Fill in all blanks. If a source is absent, place a 0 in the number column. If information is unavailable, place N/A in the number column. Use the coding system enumerated below to fill out Form 3.

No.	Source - Code	No.	Source - Code
N/A	Day Care Facility - **DAY**	N/A	Self-Service Laundry Facility - **LAU**
N/A	Dental Office - **DEN**	N/A	Schools - **SCH**
N/A	Doctor Office - **DOC**	N/A	Nursing Home - **NHO**
N/A	Hospital - **HOS**	N/A	Veterinary Clinic/Hospital - **VET**
N/A	Hair Salon - **HAR**	N/A	Other - **OTH**

NOTE: These sources have been broken out because they only represent a potential threat to ground water in unsewered areas. The other sources represent a potential threat in sewered as well as unsewered areas.

SPECIFIC CONTAMINANT SOURCE INFORMATION (FORM 3)

System ID Number:	**851207**
Water System Name:	**City of Sumner**
DOH Source Number:	**S04**
Source Name:	**County Springs**

Code: 1-year Travel Time	Business/Source Name	Address	On TPCHD Map?
U-461	Oelke Drilling & Pump Co	4318-166th Avenue	T20 R 4&5E W.M.
R-350 WAD988499711	Stowe Construction Inc	4224 Sumner Tapps Hwy E	Same
R-353 WAD988471827	Sumner School District	1720 Washington Street	Same

Code: 5-year Travel Time	Business/Source Name	Address	On TPCHD Map?
H-45	Western Wood	1313 Zehnder Street	T20 R 4&5E W.M.
U-89	Darrell E. Nordyke	16602 Sumner/Buckley Hwy	All same as above
U-93	Ota Farms	4107-142nd Avenue E	
U-94	G & W Custom Cabinets	6015 - 160th Avenue E	
U-95	Ronaco Inc	6601-166th Avenue E	
U-433	Nabisco Branks	111 Zehnder Street	
U-440	Day & ight Grocery 102	1313 Main Street	
U-444	Mellow Truck Express Co. *nc*	1616 Fryar Avenue	
U-445	Hansen, Hansen, & ohnson	1504 Fryar Avenue	
U-446	McLendon Hardware Inc	1111 Fryar Avenue	
U-448	O D Snider & Son Inc	901 Valley Avenu	
U-450	Johnson's Chevron	1005 Wood Avenue	
U-451	Sumner School District #320	1710 Washington Street	
U-452	Pasquier Panel Products	1510 Puyallup Street	
U-453	Smithco Meats, Inc	2509 Main Street	
U-454	Hess Texaco Car Center	2608 E. Main	
U-466	Sumner Compressor Station	3104-166th Avenue E	
U-482	Sumner Cedar	1812 Pease Avenue	

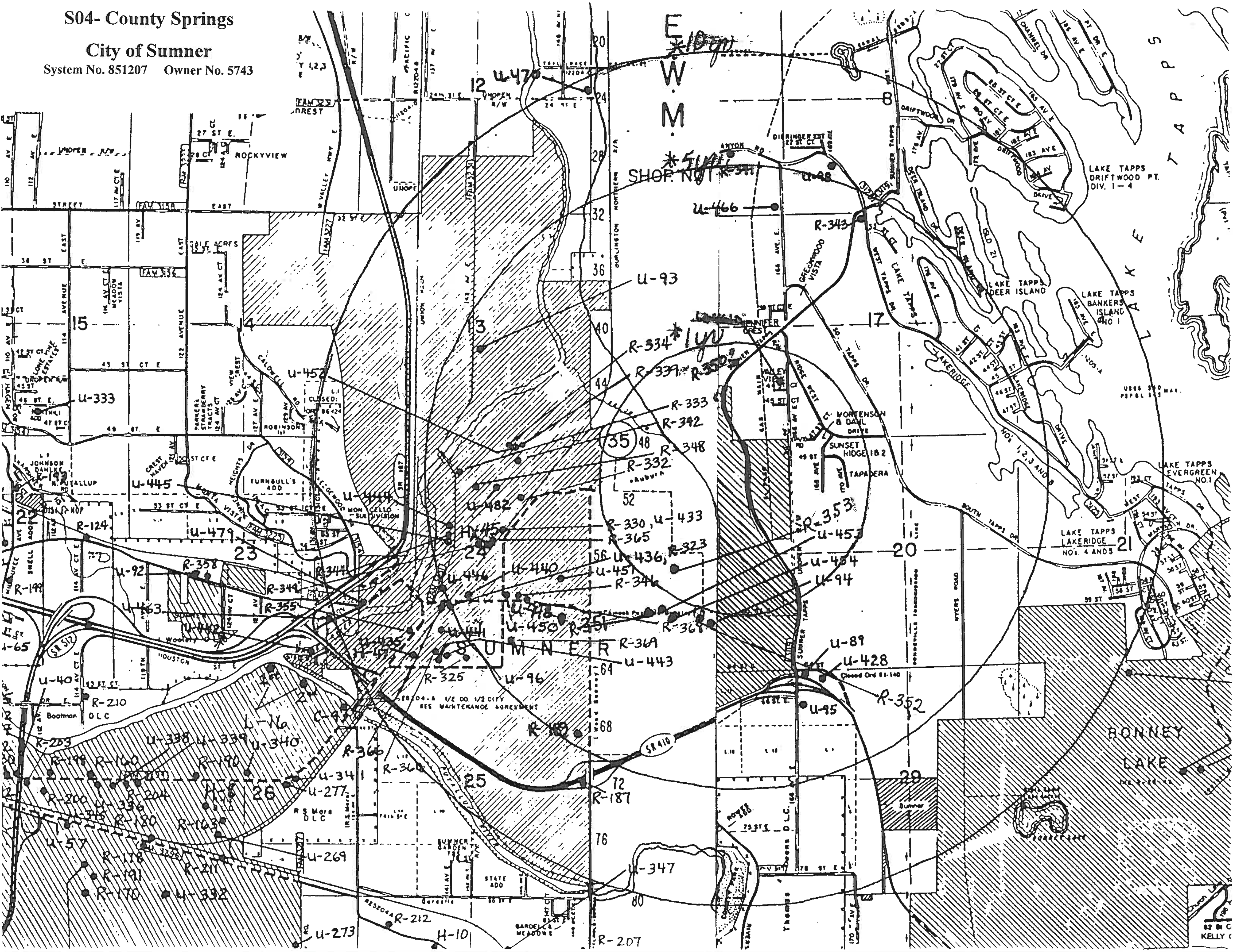
Code: 5-year Travel Time	Business/Source Name	Address	On TPCHD Map?
R-189 WAD988480513	Bloomingvale Apartments	307 Valley Avenue NE	T20 R 4&5E W.M.
R-330 WAD009242041	Fleischmann Yeast Inc	1115 Zehnder Street	All same
R-333 WAD980975759	General Battery Corp.	2005 Fryar Avenue	
R-334 WAD988506705	Golden State Foods	1409 Puyallup Street	
R-342 WAD982655243	Penske Truck Leasing Co. LP	2222 Tacoma Avenue	
R-343 WAD988507141	Pierce County Fire Station 1	3206 W. Tapps Drive E	
R-344 WAD982821332	Precision Aerospace & Composit	1516 Fryar Avenue	
R-346 WAD 981771439	Quality Cleaners	1229 Main Street	
R-348 WAD021828207	Sonoco Products Company	1802 Steele Avenue	
R-349 WAD988475323	Spencer Environmental Services	1517 Pease Street	
R-351 WAD988480133	Sumner Cleaners	6005 Parker	
R-352 WAD982653230	Sumner National Auto Parts Inc	16008 - 60th Street	
R-365 WAD055498232	Western Wood Preserving Co	Pease & Zehnder Streets	
R-369 WAD000258384	A Victorian Stripper	1012 Ryan Avenue	

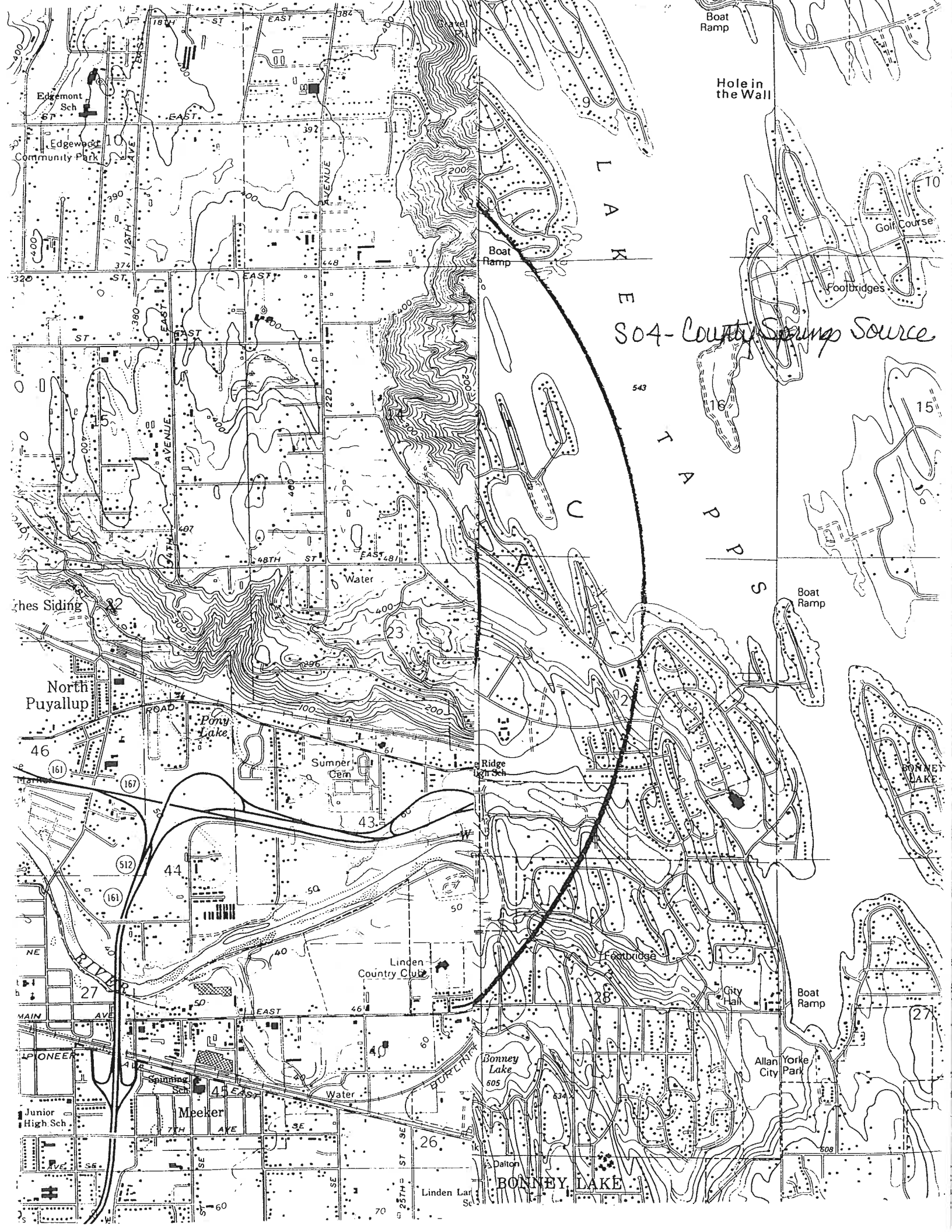
Code: 10-year Travel Time	Business/Source Name	Address	On TPCHD Map?
H-47	City Public Works Building	711 Narrow Street	T20 R 4&5E W.M.
U-98	Lake Tapps Deli & Gas	17008 Forest Canyon Road	All same as above
U-96	Sumner Towing	810 Alder Avenue	
U-435	City Shops	711 Narrow Street	
U-436	Arco 5509	809 Main Street	
U-441	Sumner City Hall	1104 Maple Street	
U-443	Sumner Texaco	914 Kincaid	
U-470	ID #P3	2300 East Valley Road	
U-479	O D Snider & Son Inc	13401 Valley Avenue	
R-187 WA0000062331	Arco Products Co 5898	102 Valley Avenue NE	
R-323 WAD988515516	Arco Products	809 W. Main	
R-325 WAD000097691	Arnie Dahl Ford	603 Harrison Street	
R-355 WAD046689444	Sunset Chevrolet Inc	910 Traffic Avenue	
R-360 WAT540011434	USWCOM Sumner Co	905 Kincaid Avenue	
R-366 WAD055498232	Western Wood Preserving Co	Pease & Zehnder Streets	

S04- County Springs

City of Sumner

System No. 851207 Owner No. 5743




S04- County Springs Source
LAKE TAPPS
Boat Ramp
Hole in the Wall
Golf Course
Footbridges
Edgemont Sch
Edgewood Community Park
North Puyallup
Pony Lake
Sumner Cem
Ridge
Water
Linden Country Club
Footbridge
City Hall
Boat Ramp
Bonney Lake
Allan Yorke Park
Spinning Sch
Meeker
Junior High Sch
Dalton
BONNEY LAKE
Linden Lar Sch
RIVER
BURLINGTON
PIONEER
MAIN AVE
EAST
48TH ST
112TH AVE
122D AVENUE

CONTAMINANT SOURCE INVENTORY APPLICATION
(FORM 1)

System ID Number:	851207
Water System Name:	City of Sumner
WRIA:	10
DOH Source Number:	505
Source Name:	Cemetery Well - emergency use only
County:	Pierce
Contact Person:	Les MacDonald - Public Works Director
Owner Number:	5743
Mailing Address:	1104 Maple St. - Sumner WA 98390
Telephone Number:	(206) 863-8300
Date Inventory Completed:	7-26-96

Instructions for completing the Contaminant Source Inventory:

Following delineation of your Wellhead Protection Area (WHPA), complete the contaminant source inventory by following the instructions below:

1. A portion of the information necessary to complete the contaminant source inventory may be obtained from the Tacoma-Pierce County Health Department (TPCHD). Maps are available that have several types of contaminant sources identified, along with lists of source names and addresses. To obtain this information: transfer the information to, or make a photocopy of, the portions of the maps and lists encompassed by your WHPA. Contact Ray Hanowell at (206) 596-2845 to arrange a time to view the maps at TPCHD, located at 3629 South "D" Street, Tacoma, between the hours of 8:00 a.m. and 4:30 p.m., Monday through Friday.

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SUMMARY SHEET AND CODING SYSTEM KEY

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** A description of the source is provided on the back of this sheet.*

No.	Source - Code	No.	Source - Code
N/A	Abandoned Water Well* - AWW	N/A	Surface Water Holding Systems - SHS
N/A	Above Ground Storage Tanks* - AST	0	Landfills* - LDF
0	Agricultural, Crops - AGC	0	Landscape Supplier - LSS
1	Agricultural, Livestock (open pasture)- ALO	0	Mines/Gravel Pits - MGP
0	Agricultural, Livestock (confined)- ALC	0	Nurseries - NRS
N/A	Animal Waste Spreading - AWS	0	Paint and Sign Shops - PSS
0	Airport - ARP	0	Paint, retail sales - PRS
0	Animal Feedlot - AFL	0	Parks/Recreation Areas - PRA
0	Asphalt Plant - ASP	N/A	Pesticide Applicator's Facility - PAF
	Auto Repair (Body, Transmission) - ABR	0	Photo Processing Facility - PPF
0	Auto Salvage Yard - ASY	0	Printing Establishment - PRE
0	Boat Yard/Boat Repair - BYR	0	Railroad Right-of-Ways - RRW
0	Car Dealer - CRD	0	Rendering Plants - RNP
0	Car Wash - CRW	0	Roofing/Sheet Metal Facilities- RSM
1	Cemetery - CEM	N/A	Indiv. on-site sewage systems*(septic tanks) - IOS
0	Chemical Manufacture Facility - CMF	N/A	Community on-site sewage systems* - COS
1	Drainage Canal* - DRN	0	Service Stations - SVS
0	Dry Cleaners - DRC	0	Sewage Plant Biosolids Disposal Site (sludge) - SLU
0	Electroplating - ETP	0	Silviculture Application Areas - SAA
N/A	Fertilizer/Pesticide Application Areas* - FPA	N/A	Underground Storage Tanks* (not inc. service station)- UST
0	Food Processing Plants - FPP	0	Vehicle/Truck Storage - VEH
0	Furniture, manufacture, repair - FMR	0	Water Body (stream, lake)* - WTR
0	Golf Course - GOL	N/A	Water Well* (non-public water supply) - WEL
N/A	Drywell/Stormwater Subsurface Infiltration Systems* - SSD	0	Wood Products (manufacture, preservatives*) - WDP
1	Highways/Transportation Corridors* - COR	N/A	Other facilities with Hazardous Materials* - HAZ

FORM 2

UNSEWERED AREAS
POTENTIAL SOURCES OF CONTAMINATION
SUMMARY SHEET AND CODING SYSTEM KEY

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No.	Source - Code	No.	Source - Code
N/A	Day Care Facility - **DAY**	N/A	Self-Service Laundry Facility - **LAU**
N/A	Dental Office - **DEN**	N/A	Schools - **SCH**
N/A	Doctor Office - **DOC**	N/A	Nursing Home - **NHO**
N/A	Hospital - **HOS**	N/A	Veterinary Clinic/Hospital - **VET**
N/A	Hair Salon - **HAR**	N/A	Other - **OTH**

NOTE: These sources have been broken out because they only represent a potential threat to ground water in unsewered areas. The other sources represent a potential threat in sewered as well as unsewered areas.

SPECIFIC CONTAMINANT SOURCE INFORMATION (FORM 3)

System ID Number:	**851207**
Water System Name:	**City of Sumner**
DOH Source Number:	**S05**
Source Name:	**Cemetery Well**

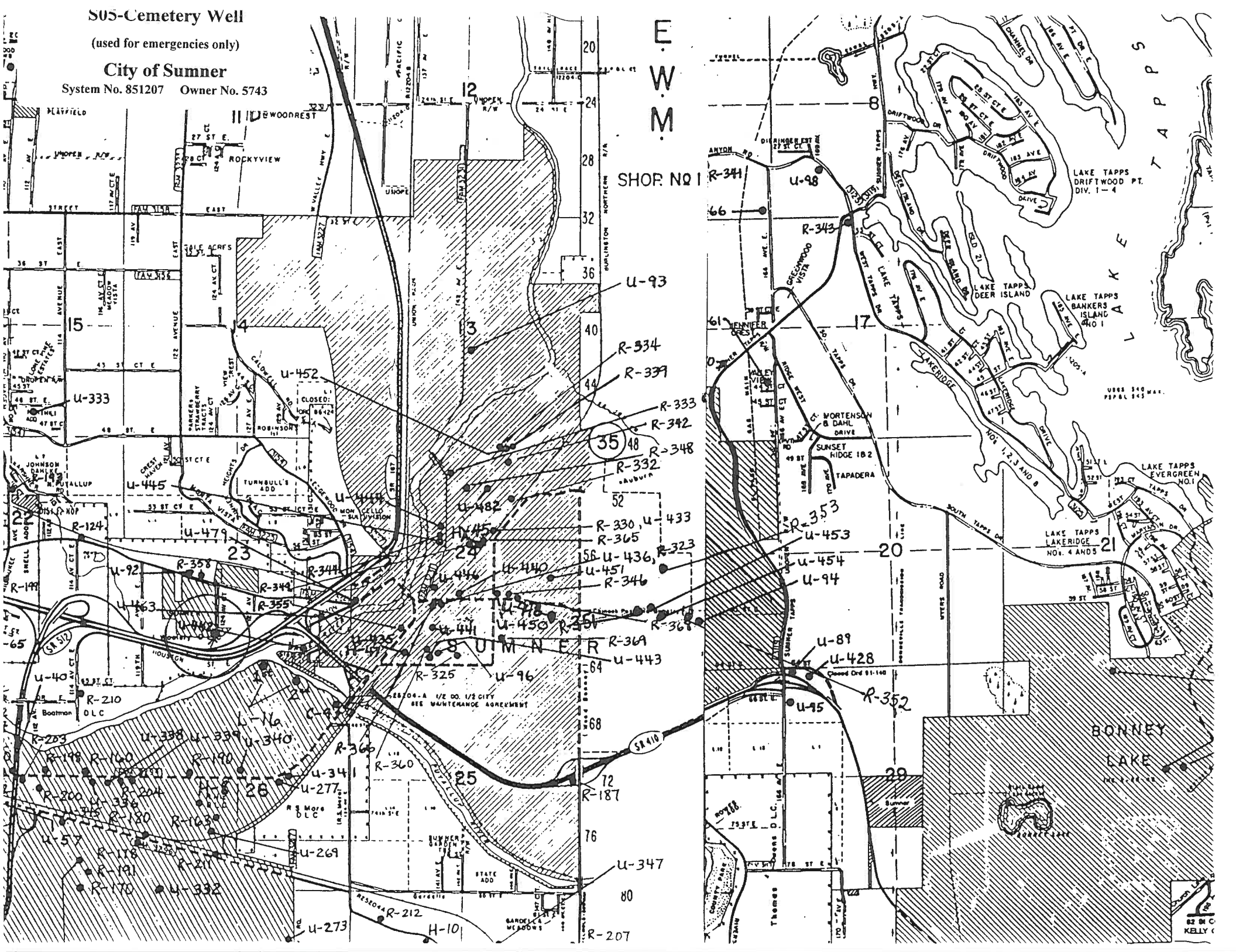
Code:	Business/Source Name	Address	On TPCHD Map?

This well used as emergency source only.

1-Year Time of Travel - None

5-Year Time of Travel - None

10-Year Time of Travel - None


S05-Cemetery Well
(used for emergencies only)
City of Sumner
System No. 851207 Owner No. 5743
SHOP NO 1
LAKE TAPPS
LAKE TAPPS DRIFTWOOD PT. DIV. 1-4
LAKE TAPPS DEER ISLAND
LAKE TAPPS BANKERS ISLAND NO 1
LAKE TAPPS EVERGREEN NO.1
LAKE TAPPS LAKERIDGE NOs. 4 AND 5
SUNSET RIDGE 1&2
LAKERIDGE NOs. 1, 2, 3 AND 8
BONNEY LAKE
SUMNER
R-341
R-343
R-334
R-339
R-333
R-342
R-348
R-332
R-330, U-433
R-365
R-323
R-353
R-358
R-344
R-349
R-355
R-351
R-369
R-325
R-210
R-203
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R-170
R-366
R-360
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R-212
R-207
R-352
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U-452
U-333
U-445
U-447
U-482
U-479
U-92
U-463
U-442
U-435
U-497
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U-339
U-340
U-341
U-277
U-336
U-57
U-269
U-392
U-273
U-98
U-453
U-454
U-94
U-89
U-428
U-95
U-347
U-436, U-451
U-446
U-440
U-448
U-450
U-441
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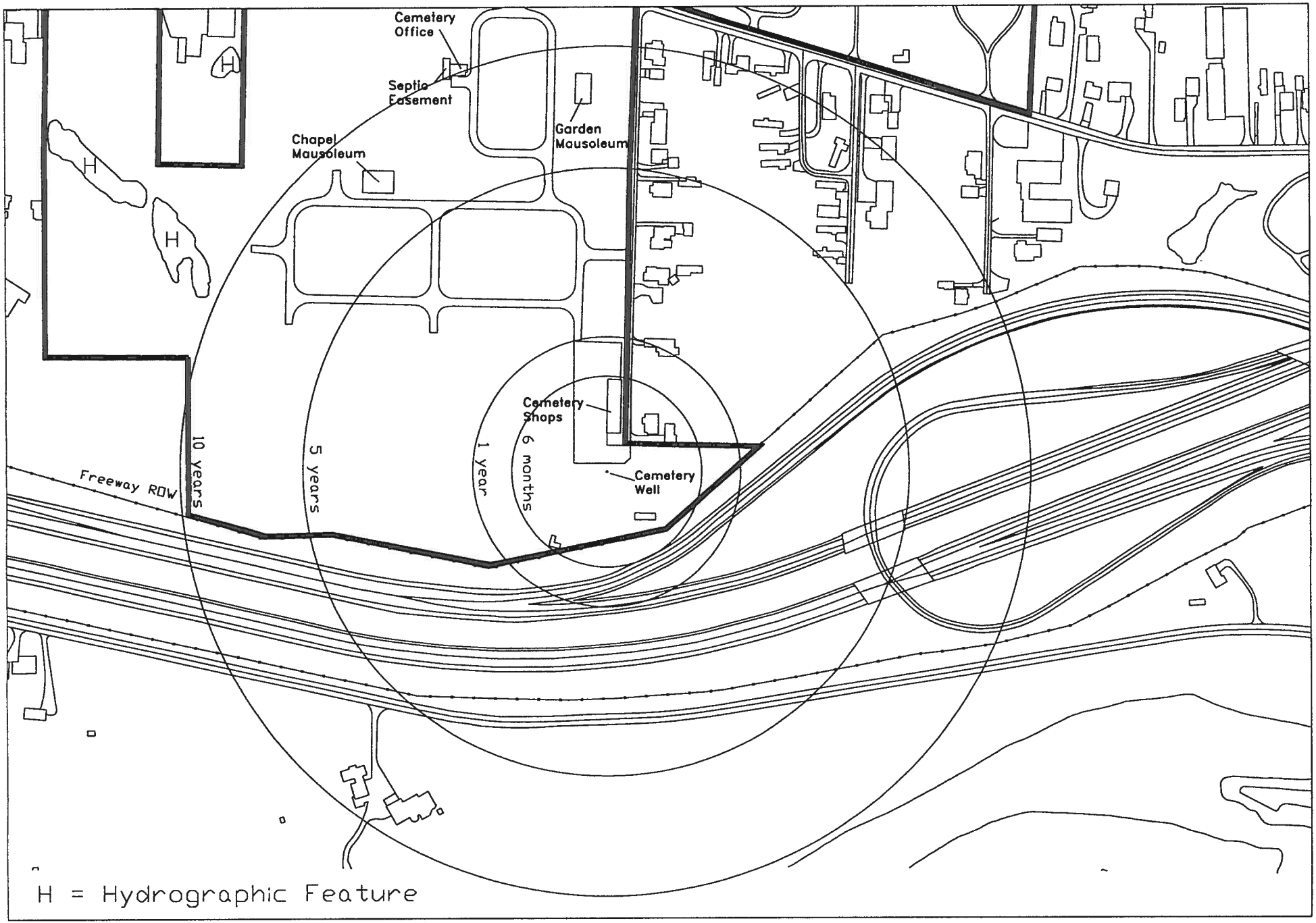
H-10
C-9
L-16
SR 512
SR 410



Scale 1" = 300'

Source:

Time of Travel
Sumner Cemetery Well

Figure:

City of Sumner

CONTAMINANT SOURCE INVENTORY APPLICATION
(FORM 1)

System ID Number:	851207
Water System Name:	City of Sumner
WRIA:	10
DOH Source Number:	S06
Source Name:	South Well
County:	Pierce
Contact Person:	Les MacDonald - Public Works Director
Owner Number:	5743
Mailing Address:	1104 Maple Street - Sumner WA 98390
Telephone Number:	(206) 863-8300
Date Inventory Completed:	7-11-96

Instructions for completing the Contaminant Source Inventory:

Following delineation of your Wellhead Protection Area (WHPA), complete the contaminant source inventory by following the instructions below:

1. A portion of the information necessary to complete the contaminant source inventory may be obtained from the Tacoma-Pierce County Health Department (TPCHD). Maps are available that have several types of contaminant sources identified, along with lists of source names and addresses. To obtain this information: transfer the information to, or make a photocopy of, the portions of the maps and lists encompassed by your WHPA. Contact Ray Hanowell at (206) 596-2845 to arrange a time to view the maps at TPCHD, located at 3629 South "D" Street, Tacoma, between the hours of 8:00 a.m. and 4:30 p.m., Monday through Friday.

2. Copies of sewer and storm drainage location maps are also available at TPCHD. Determine which portions of your WHPA are served by sewers, and determine the locations of storm drainage services (i.e., dry wells, infiltration facilities) within your WHPA. Map the location of these utilities on your WHPA contaminant source map.

FORM 2
POTENTIAL SOURCES OF CONTAMINATION
SUMMARY SHEET AND CODING SYSTEM KEY

On the form below, indicate the number of each source present within the Wellhead areas. Information should be gathered from personal knowledge, windshield surveys, and TPCHD data. Fill in all blanks. If a source is absent, place a 0 in the number column. If information is unavailable, place N/A in the number column. Use the coding system enumerated below to fill out Form 3.

** A description of the source is provided on the back of this sheet.*

No.	Source - Code	No.	Source - Code
N/A	Abandoned Water Well* - AWW	N/A	Surface Water Holding Systems - SHS
N/A	Above Ground Storage Tanks* - AST	0	Landfills* - LDF
3	Agricultural, Crops - AGC	0	Landscape Supplier - LSS
1	Agricultural, Livestock (open pasture)- ALO	0	Mines/Gravel Pits - MGP
0	Agricultural, Livestock (confined)- ALC	1	Nurseries - NRS
N/A	Animal Waste Spreading - AWS	0	Paint and Sign Shops - PSS
0	Airport - ARP	0	Paint, retail sales - PRS
0	Animal Feedlot - AFL	1	Parks/Recreation Areas - PRA
0	Asphalt Plant - ASP	0	Pesticide Applicator's Facility - PAF
0	Auto Repair (Body, Transmission) - ABR	0	Photo Processing Facility - PPF
0	Auto Salvage Yard - ASY	0	Printing Establishment - PRE
0	Boat Yard/Boat Repair - BYR	0	Railroad Right-of-Ways - RRW
0	Car Dealer - CRD	0	Rendering Plants - RNP
0	Car Wash - CRW	0	Roofing/Sheet Metal Facilities- RSM
0	Cemetery - CEM	N/A	Indiv. on-site sewage systems*(septic tanks) - IOS
0	Chemical Manufacture Facility - CMF	N/A	Community on-site sewage systems* - COS
0	Drainage Canal* - DRN	0	Service Stations - SVS
0	Dry Cleaners - DRC	0	Sewage Plant Biosolids Disposal Site (sludge) - SLU
0	Electroplating - ETP	0	Silviculture Application Areas - SAA
N/A	Fertilizer/Pesticide Application Areas* - FPA	N/A	Underground Storage Tanks* (not inc. service station)- UST
0	Food Processing Plants - FPP	0	Vehicle/Truck Storage - VEH
0	Furniture, manufacture, repair - FMR	3	Water Body (stream, lake)* - WTR
0	Golf Course - GOL	N/A	Water Well* (non-public water supply) - WEL
N/A	Drywell/Stormwater Subsurface Infiltration Systems* - SSD	0	Wood Products (manufacture, preservatives*) - WDP
1	Highways/Transportation Corridors* - COR	N/A	Other facilities with Hazardous Materials* - HAZ

FORM 2

UNSEWERED AREAS
POTENTIAL SOURCES OF CONTAMINATION
SUMMARY SHEET AND CODING SYSTEM KEY

On the form below, indicate the number of each source present within the UNSEWERED portions of the WHPAs. Fill in all blanks. If a source is absent, place a 0 in the number column. If information is unavailable, place N/A in the number column. Use the coding system enumerated below to fill out Form 3.

No.	Source - **Code**	No.	Source - **Code**
N/A	Day Care Facility - **DAY**	N/A	Self-Service Laundry Facility - **LAU**
N/A	Dental Office - **DEN**	N/A	Schools - **SCH**
N/A	Doctor Office - **DOC**	N/A	Nursing Home - **NHO**
N/A	Hospital - **HOS**	N/A	Veterinary Clinic/Hospital - **VET**
N/A	Hair Salon - **HAR**	N/A	Other - **OTH**

NOTE: These sources have been broken out because they only represent a potential threat to ground water in unsewered areas. The other sources represent a potential threat in sewered as well as unsewered areas.

SPECIFIC CONTAMINANT SOURCE INFORMATION (FORM 3)

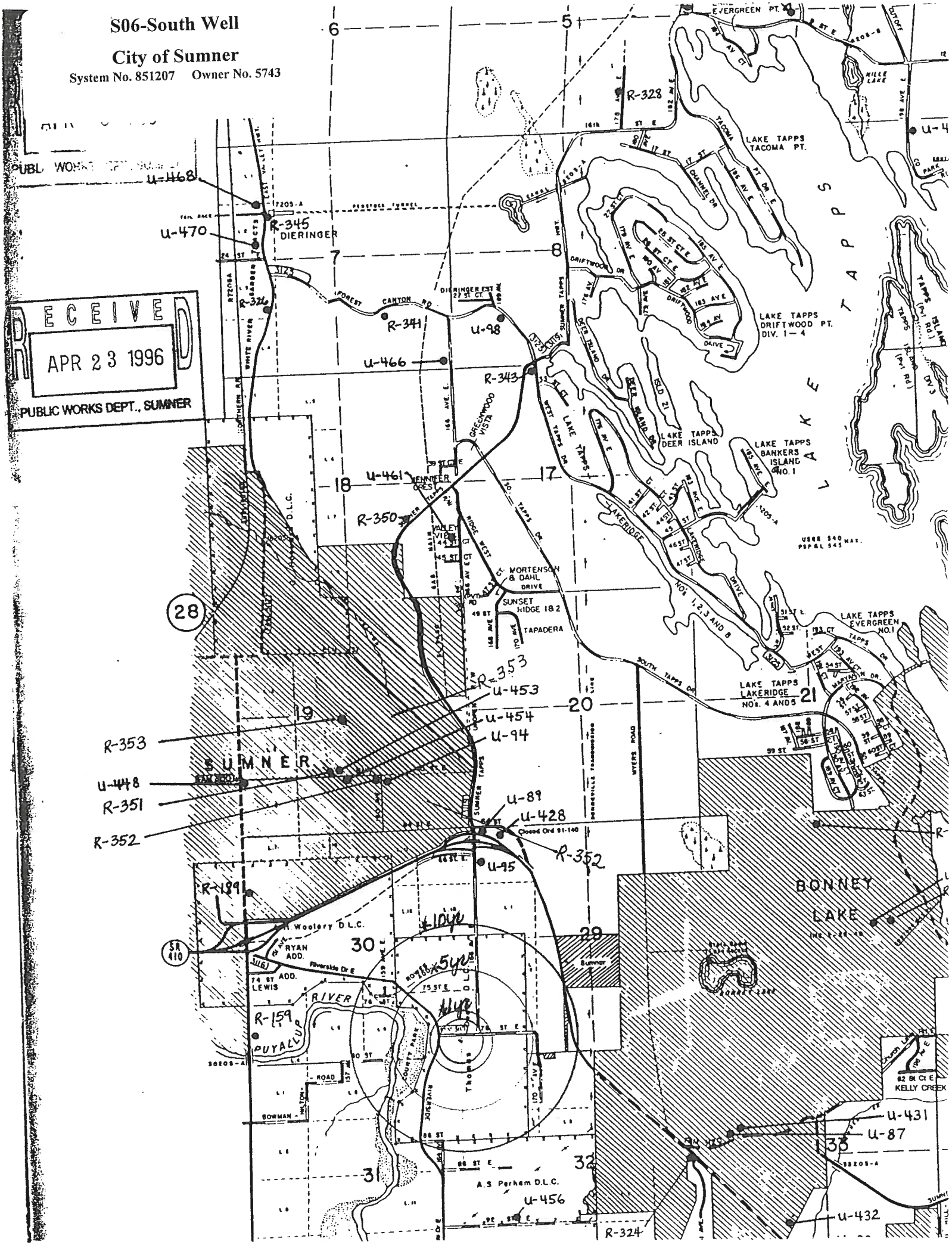
System ID Number:	**851207**
Water System Name:	**City of Sumner**
DOH Source Number:	**S06**
Source Name:	**South Well**

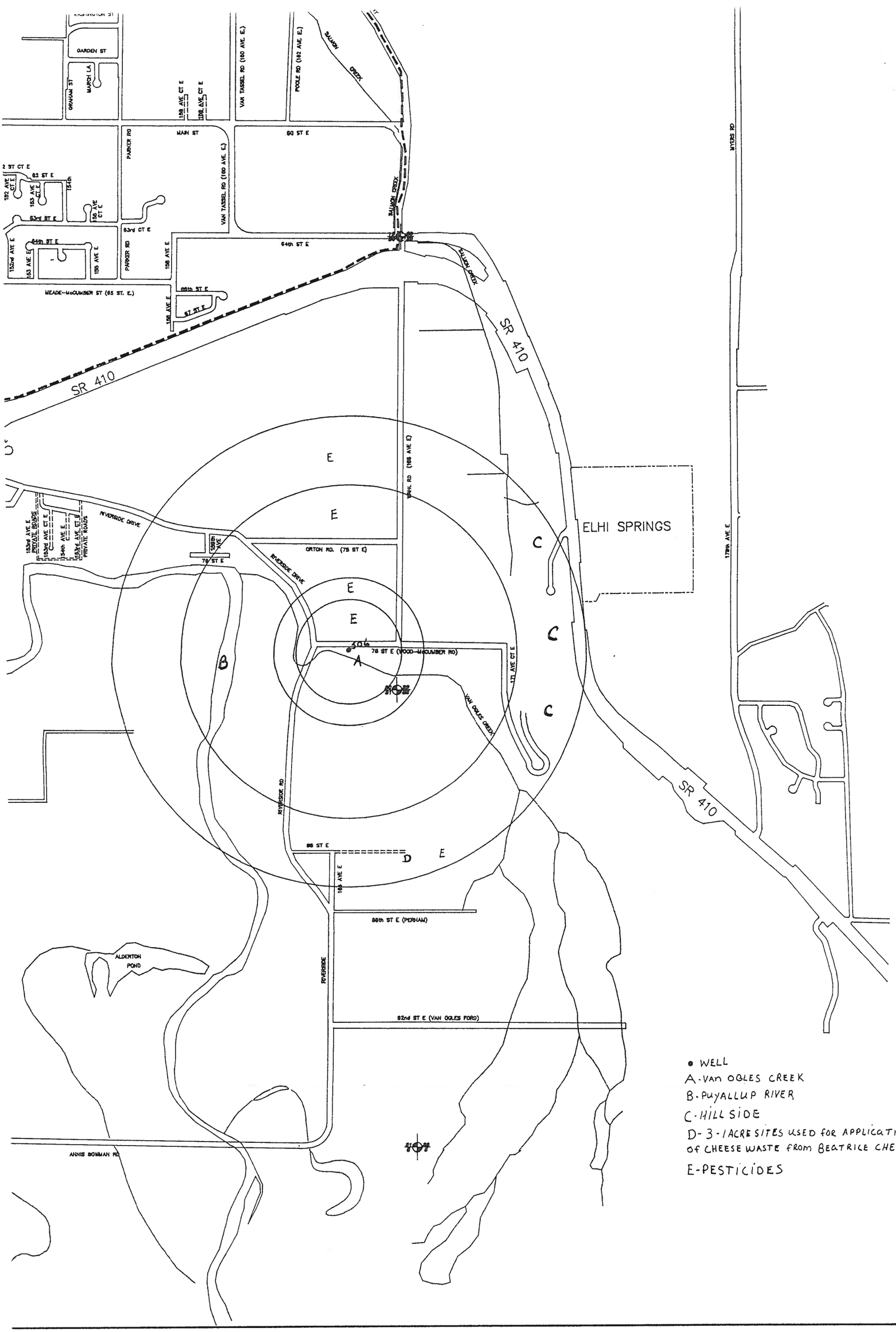
Code:	Business/Source Name	Address	On TPCHD Map?

1-Year Time of Travel - None

5-Year Time of Travel - None

10-Year Time of Travel - None


S06-South Well
City of Sumner
System No. 851207 Owner No. 5743
RECEIVED
APR 23 1996
PUBLIC WORKS DEPT., SUMNER
U-1168
R-345
DIERINGER
U-470
R-328
LAKE TAPPS TACOMA PT.
LAKE TAPPS DRIFTWOOD PT. DIV. 1-4
LAKE TAPPS DEER ISLAND
LAKE TAPPS BANKERS ISLAND NO. 1
LAKE TAPPS EVERGREEN NO. 1
LAKE TAPPS LAKERIDGE NOS. 4 AND 5
LAKERIDGE NOS. 1, 2, 3 AND 8
SUNSET RIDGE 182
TAPADERA
MORTENSON & DAHL DRIVE
FOREST CANYON RD
R-341
U-98
U-466
R-343
U-461
R-350
R-353
U-453
U-454
U-94
R-353
SUMNER
U-448
R-351
R-352
U-89
U-428
Closed Ord 91-140
R-352
U-95
R-189
SR 410
RIVER
PUYALLUP
R-159
BONNEY LAKE
U-431
U-87
U-432
R-324
A.S. Perham D.L.C.
U-456
KELLY CREEK



• WELL
A-Van OGLES CREEK
B-PUYALLUP RIVER
C-HILL SIDE
D-3-1ACRE SITES USED FOR APPLICATION OF CHEESE WASTE FROM BEATRICE CHEESE
E-PESTICIDES

**LIST OF OWNERS/OPERATORS NOTIFIED OF THEIR LOCATION IN THE WHPA Letter attached

Arco Products Co 5898
102 Valley Avenue N E
Puyallup WA 98372

Bloomingvale Apartments
307 Valley Avenue N E
Puyallup WA 98372

Arco Products
809 W. Main
Sumner WA 98390

Arnie Dahl Ford
603 Harrison Street
Sumner WA 98390

Fleischmann Yeast Inc.
1115 Zehnder Street
Sumner WA 98390

Fryar Puyallup Partnership
1812 Pease Avenue
Sumner WA 98390

General Battery Corp
2005 Fryar Avenue
Sumner WA 98390

Golden State Foods
1409 Puyallup Street
Sumner WA 98390

McConkey Company Inc
1615 Puyallup Street
Sumner WA 98390

Northwest Pipeline Corp.
Conrad-Johnson & N. Tapps Hiway
Sumner WA 98390

Penske Truck Leasing Co. LP
2222 Tacoma Avenue
Sumner WA 98390

Precision Aerospace & Composit
1516 Fryar Avenue
Sumner WA 98390

Puget Sound Power & Light
2111 E. Valley Road
Sumner WA 98390

Quality Cleaners
1229 Main Street
Sumner WA 98390

Sonoco Products Company
1802 Steele Avenue
Sumner WA 98390

Spencer Environmental Services
1517 Pease Street
Sumner WA 98390

Stowe Construction Inc
4224 Sumner Tapps Hwy E
Sumner WA 98390

Sumner Cleaners
6005 Parker
Sumner WA 98390

Sumner National Auto Parts Inc
16008 - 60th Street
Sumner WA 98390

Sumner School District
1720 Washington Street
Sumner WA 98390

USWCO Sumner Co
905 Kincaid Avenue
Sumner WA 98390

Western Wood Preserving Co
1701 Pease Avenue
Sumner WA 98390

Perk's Sunset Body Shop
714 W. Main Street
Sumner WA 98390

Tiny's Tire of Sumner
1215 Main Street
Sumner WA 98390

A Victorian Stripper
1012 Ryan Avenue
Sumner WA 98390

Darrell E. Nordyke
16602 Sumner-Buckley Highway
Sumner WA 98390

Sumner Cemetery
1104 Maple Street
Sumner WA 98390

Ota Farms, Inc
4107 - 142nd Avenue E
Sumner WA 98390

G & W Custom Cabinets
6015 - 160th Avenue E
Sumner WA 98390

Ronaco Inc
6601-166th Avenue E
Sumner WA 98390

Sumner Towing
810 Alder Avenue
Sumner WA 98390

Lake Tapps Deli & Gas
17008 Forest Canyon Road
Sumner WA 98390

Tim Corliss & Son
16805 Sumner-Buckley Highway
Sumner WA 98390

Nabisco Brands Inc
111 Zehnder Street
Sumner WA 98390

Sumner City Shops
711 Narrow Street
Sumner WA 98390

Arco 5509
809 Main Street
Sumner WA 98390

Day & Night Grocery 102
1313 Main Street
Sumner WA 98390

City Hall of Sumner
1104 Maple Street
Sumner WA 98390

Sumner WWTP
13114-63rd Street E
Sumner WA 98390

Sumner Texaco
914 Kincaid
Sumner WA 98390

Mellow Truck Express Co, Inc
1616 Fryar
Sumner WA 98390

Hansen, Hansen & Johnson
1504 Fryar Avenue
Sumner WA 98390

McLendon Hardware Inc
901 Valley Avenue
Sumner WA 98390

O D Snider & Son Inc
901 Valley Avenue
Sumner WA 98390

Johnson's Chevron
1005 Wood Avenue
Sumner WA 98390

Pasquier Panel Products Inc
1510 Puyallup Street
Sumner WA 98390

Hess Texaco Car Center
2608 E. Main
Sumner WA 98390

Oelke Drilling & Pump Co.
4318 - 166th Avenue
Sumner WA 98390

Sumner Tractor & Equipment Co
13223 Houston Road E
Sumner WA 98390

Sumner Compressor Station
3104 - 166th Avenue E
Sumner WA 98390

Petersen Brothers
2008 E. Valley Highway
Sumner WA 98390

ID #P3
2300 E. Valley Road
Sumner WA 98390

Smithco Meats Inc
2509 Main Street
Sumner WA 98390

O D Snider & Son Inc
13401 Valley Avenue
Sumner WA 98390

Sumner Cedar
1812 Pease Avenue
Sumner WA 98390

Pierce County Fire Station No. 1
3206 W. Tapps Drive E
Sumner WA 98390

Sunset Chevrolet Inc.
910 Traffic Avenue
Sumner WA 98390

City of Sumner

1104 Maple Street
Sumner, Washington 98390

(206) 863-8300
Fax (206) 863-2850

August 9, 1996

Nabisco Brands Inc
111 Zehnder Street
Sumner WA 98390

Dear Business Owner:

In order to protect the drinking water supply for the customers of the Sumner Water System, we are developing a Wellhead Protection Program in accordance with Washington State requirements (WAC 246-290-135). As part of our Wellhead Protection Program, we mapped the area overlying the short-term recharge zone of our drinking water supply wells. This is called our Wellhead Protection Area.

Following the mapping of the Wellhead Protection Area, we conducted an inventory of **potential** sources of ground water contamination within the area. The nature of your business, and its location within our Wellhead Protection Area, means that your activities have the potential to affect our customers' drinking water supply.

We hope that informing you of your location in our Wellhead Protection Area will result in an increase in precautions to ensure that your activities will not impact our drinking water quality. For further information, please call us at 863-8300.

Sincerely,

Les MacDonald
Public Works Director

P:Pworks\Wellhead\WPALetter

Businesses With Potential to Pollute by Water System

SUMNER, CITY OF

PAT CLERGET STREET/UTILITY FOREMAN 2538913322
1104 MAPLE ST
SUMNER WA 98390

SOURCE	DESCRIPTION	NAME	ADDRESS	CITY	STATE	ZIP_CODE	PHONE
01	Equipment Rental and Leasing, n.e.c.	M & M TRACTOR RENTAL	13223 HOUSTON RD E	SUMNER	WA	98390-9208	253-863-4436
01	Farm and Garden Machinery and	SUMNER TRACTOR & EQUIPMENT CO	13223 HOUSTON RD E	SUMNER	WA	98390-9208	253-863-4436
01	Metal Stampings, n.e.c.	QUALITY STAMPING & MACHINING	1907 137TH AVE E	SUMNER	WA	98390-9644	253-863-0657
01	Reupholstery and Furniture Repair	STARCRAFT UPHOLSTERY	1706 E VALLEY HWY E	SUMNER	WA	98390-9511	253-863-0288
01	Shoe Repair Shops and Shoeshine Parlors	BUSY SHOES/INSTANT SHOE REPAIR	12926 51ST ST E	SUMNER	WA	98390-9220	253-863-5958
01	Subdividers and Developers, n.e.c.	TARRAGON	2824 142ND AVE E	SUMNER	WA	98390-9615	253-863-1122
01	Warm Air Heating and Air-Conditioning	SWARTHOUTS NATURAL GAS SVC	2414 179TH AVE E	SUMNER	WA	98390-9481	253-891-9286
03	Arrangement of Transportation of Freight	NORWEST EXPRESS INC	16501 64TH ST E	SUMNER	WA	98390-3073	253-863-8528
03	Beauty Shops	SASSY SALLYS STYLING	8204 179TH AVE E	SUMNER	WA	98390-8585	253-862-9470
03	Beauty Shops	PATS STYLING SALON	7210 MYERS RD	SUMNER	WA	98390-8535	253-863-1207
03	Brick, Stone, and Related Construction	TIM CORLISS & SON	16805 64TH ST E	SUMNER	WA	98390-7001	253-863-4445
03	Building Cleaning and Maintenance	SUNRISE MOBILE SHADE & BLIND	7733 176TH AVE E	SUMNER	WA	98390-7106	253-863-4540
03	Carpet and Upholstery Cleaning	PFEIFFERS CARPET & UPHOSTERY	7621 171ST AVENUE CT E	SUMNER	WA	98390-7169	253-863-9403
03	Concrete Work	KWIK KERB BONNEY LAKE	7209 MYERS RD	SUMNER	WA	98390-8535	253-863-4992
03	Equipment Rental and Leasing, n.e.c.	BUNCE RENTAL INC	18701 OLD SUMNER BUCKLEY	SUMNER	WA	98390-7184	253-863-6964
03	Farm Supplies	PUGET SOUND BULB EXCHANGE	7905 RIVERSIDE RD E	SUMNER	WA	98390	253-863-4477
03	Floor Covering Stores	SUMNER FLOORS & MORE	16501 64TH ST E	SUMNER	WA	98390-3073	253-863-9100
03	General Automotive Repair Shops	HILLSTOP-DARRELLS GARAGE	16602 64TH ST E	SUMNER	WA	98390-7021	253-863-2524
03	General Farms, Primarily Crop	KNUTSON FARMS INC	16405 75TH ST E	SUMNER	WA	98390-2517	253-863-5107
03	General Warehousing and Storage	MOR-STOR SUMNER STORAGE	16504 64TH ST E	SUMNER	WA	98390-3003	253-863-0139
03	General Warehousing and Storage	STOR-N-LOK	8413 MYERS RD	SUMNER	WA	98390-7043	253-863-5544

SUMNER, CITY OF

03	Lumber and Other Building Materials	LAKE SIDE DOORS	8205 179TH AVE E	SUMNER	WA	98390-8585	206-840-0332
03	Meat and Fish Markets	VALLEY MEATS	16406 66TH ST E	SUMNER	WA	98390-2524	253-863-8586
03	Medical, Dental, and Hospital Equipment	AMERICAN AUTOCLAVE CO	7819 RIVERSIDE RD E	SUMNER	WA	98390-8104	253-863-5000
03	Plastering, Dry Wall, and Insulation	LEES DRYWALL CO	6515 MYERS RD	SUMNER	WA	98390-8803	253-939-2855
03	Plumbing, Heating, and Air Conditioning	AUBURN SHEET METAL INC	6519 MYERS RD	SUMNER	WA	98390-8803	253-863-3500
03	Racing, Including Track Operation	RIVER VALLEY BMX	7800 RIVERSIDE RD E	SUMNER	WA	98390-8104	253-863-1608
03	Repair Shops and Related Services, n.e.c.	SNYDERS PIANO SVC	6809 LOCUST AVE E	SUMNER	WA	98390-6875	253-863-0068
03	Truck Rental and Leasing, Without Drivers	RYDER TRUCK RENTAL INC	18701 OLD SUMNER BUCKLEY	SUMNER	WA	98390-7184	253-863-4075
04	Aircraft Parts and Equipment, n.e.c.	PRECISION AEROSPACE & CMPSTS	1516 FRYAR AVE	SUMNER	WA	98390-1514	253-863-7868
04	Apartment Building Operators	RAINIER VIEW APARTMENTS	6123 PARKER RD BLDG E # B	SUMNER	WA	98390-3620	253-891-0800
04	Apartment Building Operators	RIVER GROVE APARTMENTS	7413 142ND AVE E	SUMNER	WA	98390-8231	253-863-5934
04	Apartment Building Operators	TREASURE PARK APARTMENTS	15712 50THSTREEET CT E	SUMNER	WA	98390-3203	253-863-1569
04	Apartment Building Operators	ELM VALLEY APARTMENTS	1715 VALLEY AVE E	SUMNER	WA	98390-2768	253-863-2476
04	Apartment Building Operators	KINCAID COURT APARTMENTS	6210 PARKER RD ER	SUMNER	WA	98390-2645	253-863-8818
04	Apartment Building Operators	POMONA VILLA APARTMENTS	15817 64TH ST E	SUMNER	WA	98390-3094	253-863-8048
04	Auto and Home Supply Stores	SUMNER AUTO & TRUCK	1312 MAIN ST	SUMNER	WA	98390-1419	253-863-6306
04	Auto and Home Supply Stores	TINYS TIRE OF SUMNER	1215 MAIN ST	SUMNER	WA	98390-1416	253-863-4415
04	Auto and Home Supply Stores	NATIONAL AUTO PARTS	16008 60TH ST E	SUMNER	WA	98390-3055	253-863-5178
04	Auto Exhaust System Repair Shops	SUMNERS TOP GUN MUFFLER & BRK	15608 MAIN ST EN	SUMNER	WA	98390-3045	253-863-3011
04	Automotive Repair Shops, n.e.c.	VALLEY RADIATOR	15525 MAIN ST EN	SUMNER	WA	98390-2643	253-863-4269
04	Barber Shops	ROYAL IMAGE OF SUMNER	916 ALDER AVE	SUMNER	WA	98390-1406	253-891-0190
04	Barber Shops	DOUGS BARBER SHOP	821 VALLEY AVE E	SUMNER	WA	98390-1833	253-863-1654
04	Beauty Shops	HAIR AFFAIR-SUMNER	1220 MAIN ST	SUMNER	WA	98390-1417	253-863-1217
04	Beauty Shops	FRANK PERRY SALON	914 CHERRY AVE	SUMNER	WA	98390-1408	253-891-8908
04	Beauty Shops	COSMO NAILS	919 KINCAID AVE	SUMNER	WA	98390-1409	253-862-9126
04	Beauty Shops	DELTAN SALONS	1014 NORTH ST	SUMNER	WA	98390-1908	253-863-1075
04	Beauty Shops	TOTALLY HAIR	16202 64TH ST E	SUMNER	WA	98390-3028	253-891-2681
04	Beauty Shops	JANS HAIR & NAILS	17306 46THSTREEET CT E	SUMNER	WA	98390-9163	253-863-3689
04	Beauty Shops	MAMAINES BEAUTY SALON	7417 STATE ROUTE 162 E	SUMNER	WA	98390-1206	253-863-2606
04	Beauty Shops	FRANCIES HAIR & NAIL SALON	15309 MAIN ST EN	SUMNER	WA	98390-2639	253-863-3037

SUMNER, CITY OF

04	Beauty Shops	MARGES STYLING SALON	926 MAIN ST	SUMNER	WA	98390-1400	253-863-2538
04	Beauty Shops	STYLING REVUE	926 MAIN ST	SUMNER	WA	98390-1400	253-891-0455
04	Beauty Shops	LYNAES FASHION HAIR DESIGN	1014 NORTH ST	SUMNER	WA	98390-1908	253-891-1863
04	Beauty Shops	LOVING TOUCH	909 MAIN ST	SUMNER	WA	98390-1410	253-863-9877
04	Beauty Shops	LAKE TAPPS FAMILY SALON	17008 FOREST CANYON RD E	SUMNER	WA	98390-9516	253-862-9659
04	Beauty Shops	APPEARANCES STYLING SALON	6017 PARKER RD ER	SUMNER	WA	98390-2646	253-863-5372
04	Brick, Stone, and Related Construction	CITY TRANSFER OF KENT	2720 E VALLEY HWY E	SUMNER	WA	98390-9510	253-863-4556
04	Building Cleaning and Maintenance	RELIABLE JANITOR SVC	4806 168TH AVE E	SUMNER	WA	98390-9107	206-833-0945
04	Camera and Photographic Supply Stores	WASHINGTON SCIENTIFIC CAMERA	615 WOOD AVE	SUMNER	WA	98390-2324	253-863-2854
04	Carpentry Work	TRIM CRAFT CONSTRUCTION	1804 164TH ST ST	SPANAWAY	WA	98387-9150	253-531-3656
04	Carpentry Work	SUMNER WOODWORKER STORE	908 CHERRY AVE	SUMNER	WA	98390-1408	253-891-9413
04	Carpet and Upholstery Cleaning	DANS CARPET & UPHOLSTERY INC	16412 35THSTREEET CT E	SUMNER	WA	98390-9517	253-863-2692
04	Carwashes	LAKE TAPPS DETAILING	6315 160TH AVE E	SUMNER	WA	98390-3022	253-863-1744
04	Cheese, Natural and Processed	BEATRICE CHEESE INC	1515 PUYALLUP ST	SUMNER	WA	98390-2234	253-863-3857
04	Chemicals and Allied Products, n.e.c.	UNITED HORTICULTURAL SUPPLY	12714 VALLEY AVE E # B	SUMNER	WA	98390-1522	253-863-6327
04	Child Day Care Services	LAKE TAPPS MONTESSORI	4118 W TAPPS DR E	SUMNER	WA	98390-9133	253-862-6556
04	Child Day Care Services	KIDDIE KORRAL	1504 MAIN ST	SUMNER	WA	98390-1812	253-891-9271
04	Child Day Care Services	KIDS WORLD DAYCARE	725 NARROW AVE	SUMNER	WA	98390-1001	253-863-7316
04	Child Day Care Services	STEPPING STONES MONTESSORI	309 VALLEY AVE E	SUMNER	WA	98390-2334	253-863-3680
04	Commercial Printing, Lithographic	R & S PRINTING	926 MAIN ST	SUMNER	WA	98390-1400	253-891-9566
04	Concrete Work	SUNSET CEMENT FINISHING	16105 64TH ST E	SUMNER	WA	98390-3069	253-863-5447
04	Construction Materials, n.e.c.	BROTHERS CONSTRUCTION	6215 BOCK AVE	SUMNER	WA	98390-2661	253-863-9337
04	Courier Services, Except Air	RJ2 CO	16511 39THSTREEET CT E	SUMNER	WA	98390-9599	206-949-4555
04	Disinfecting and Pest Control Services	BUGMAN TERMITE & PEST CONTROL	7310 ORTING HWY E	SUMNER	WA	98390-1205	253-891-8141
04	Drapery and Upholstery Stores	JANS INTERIOR DESIGN	1718 16TH ST	SUMNER	WA	98390-2118	253-863-3122
04	Durable Goods, n.e.c.	SEATAC PACKAGING MFG	1901 FRYAR AVE	SUMNER	WA	98390-1526	253-863-8788
04	Electric Services	PUGET SOUND ENERGY INC	2111 E VALLEY HWY E	SUMNER	WA	98390-9580	253-863-4058
04	Electrical Apparatus/Equipment, Wiring	EXIDE CORP	2005 FRYAR AVE	SUMNER	WA	98390-1523	253-863-5134
04	Electrical Work	ELECTRICAL CONNECTION	725 W MAIN ST	SUMNER	WA	98390-1112	253-863-6078
04	Elementary and Secondary Schools	CRESTWOOD ELEMENTARY SCHOOL	3914 W TAPPS DR E	SUMNER	WA	98390-9176	253-863-0479

SUMNER, CITY OF

04	Elementary and Secondary Schools	LAKERIDGE JUNIOR HIGH SCHOOL	5909 MYERS RD	SUMNER	WA	98390-6863	253-863-8164
04	Elementary and Secondary Schools	CHILD DEVELOPMENT CTR	432 WOOD AVE	SUMNER	WA	98390-2341	253-863-8800
04	Elementary and Secondary Schools	LAKE JANE POOL	6801 185TH AVE E	SUMNER	WA	98390-8871	253-863-1250
04	Elementary and Secondary Schools	ERA REAL ESTATE SCHOOL	614 HARRISON ST	SUMNER	WA	98390-1131	253-862-7800
04	Elementary and Secondary Schools	SUMNER SCHOOL DISTRICT ADM	1202 WOOD AVE	SUMNER	WA	98390-1926	253-863-2201
04	Elementary and Secondary Schools	SUMNER SENIOR HIGH SCHOOL	1707 MAIN ST	SUMNER	WA	98390-1815	253-891-5500
04	Elementary and Secondary Schools	MAPLE LAWN ELEMENTARY SCHOOL	230 WOOD AVE	SUMNER	WA	98390-1279	253-863-0477
04	Elementary and Secondary Schools	SUMNER JUNIOR HIGH SCHOOL	1508 WILLOW ST	SUMNER	WA	98390-1271	253-863-4438
04	Excavation Work	STOWE CONSTRUCTION INC	4224 SUMNER TAPPS HWY E	SUMNER	WA	98390-6719	253-862-1199
04	Excavation Work	STONACK CONSTRUCTION	5222 W TAPPS DR E	SUMNER	WA	98390-8934	253-862-7175
04	Farm and Garden Machinery and	MOSBY BROTHERS FARM & TRACTOR	4919 W VALLEY HWY E	SUMNER	WA	98390-9210	253-863-9733
04	Farm Supplies	MC CONKEY CO	1615 PUYALLUP ST	SUMNER	WA	98390-2203	253-863-8111
04	Farm Supplies	SUMNER ANIMAL GRUB	800 TRAFFIC ST	SUMNER	WA	98390-1137	253-863-5511
04	Floor Covering Stores	TAYLORS INTERIORS	909 ALDER AVE # D	SUMNER	WA	98390-1405	253-863-6149
04	Forestry Services	EVERGREEN ARBORIST	324 SUMNER AVE	SUMNER	WA	98390-1732	253-863-7469
04	Funeral Service and Crematories	POWERS FUNERAL HOME	15124 MAIN ST EN	SUMNER	WA	98390-2636	253-863-1443
04	Funeral Service and Crematories	SUMNER VOILES FUNERAL HOME	15124 MAIN ST EN	SUMNER	WA	98390-2636	253-863-6332
04	Furniture and Fixtures, n.e.c.	ALLEN RANDALL DESIGNS	13608 VALLEY AVE E # B	SUMNER	WA	98390-1535	253-863-0816
04	Garment Pressing, and Agents for	QUALITY CLEANERS	1229 MAIN ST	SUMNER	WA	98390-1416	253-863-4404
04	Garment Pressing, and Agents for	SUMNER CLEANERS	6005 PARKER RD ER	SUMNER	WA	98390-2646	253-863-5560
04	Gasoline Service Stations	JOHNSONS CHEVRON	1005 WOOD AVE	SUMNER	WA	98390-1931	253-863-4367
04	General Automotive Repair Shops	SUMNER AUTO REPAIR	15006 MAIN ST EN	SUMNER	WA	98390-2634	253-863-6357
04	General Automotive Repair Shops	R V MEDIC	12915 VALLEY AVE E	SUMNER	WA	98390-1524	253-863-1622
04	General Automotive Repair Shops	BUILT-RIGHT ENGINES	6022 PARKER RD ER	SUMNER	WA	98390-2600	253-863-2474
04	General Automotive Repair Shops	TOMS SERVICE & REPAIR	1108 ACADEMY ST	SUMNER	WA	98390-1402	253-863-3701
04	General Automotive Repair Shops	SUMNER TOWING	810 ALDER AVE	SUMNER	WA	98390-1404	253-863-4466
04	General Automotive Repair Shops	SUMNER RV CTR	4309 E VALLEY HWY E	SUMNER	WA	98390-9512	253-863-5644
04	General Farms, Primarily Crop	LESLIE & SON FARM	16623 88TH ST E	SUMNER	WA	98390-8149	253-863-4973
04	General Warehousing and Storage	A & M SELF STORAGE	7406 RIVERSIDE RD E	SUMNER	WA	98390-2534	253-863-6513
04	General Warehousing and Storage	C & M DRY STORAGE	5222 W TAPPS DR E	SUMNER	WA	98390-8934	253-862-7175

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04	General Warehousing and Storage	MOBIL MINI-STORAGE	15125 MAIN ST EN	SUMNER	WA	98390-2635	206-841-2935
04	Hardwood Veneer and Plywood	PASQUIER PANEL PRODS INC	1510 PUYALLUP ST	SUMNER	WA	98390-2233	253-863-6323
04	Highway and Street Construction	A A ASPHALTING	2518 E VALLEY HWY E	SUMNER	WA	98390-9510	253-863-4759
04	Highway and Street Construction	B & D PAVING INC	7476 RIVERSIDE RD E	SUMNER	WA	98390-2535	253-863-7009
04	Hotels and motels	BAVARIAN CHALET MOTEL	15007 MAIN ST EN	SUMNER	WA	98390-2633	253-863-2243
04	Hotels and motels	SUMNER MOTOR INN	15506 MAIN ST EN	SUMNER	WA	98390-2644	253-863-3250
04	Industrial Machinery and Equipment	PARXAIR	12714 VALLEY AVE E	SUMNER	WA	98390-1522	253-863-1844
04	Industrial Machinery and Equipment	FELDMAN NC MACHINE TOOL INC	16720 31ST ST E	SUMNER	WA	98390-9270	253-862-3761
04	Industrial Supplies	SPUNSTRAND INC	16409 44THSTREEET CT E	SUMNER	WA	98390-6753	253-891-0320
04	Lawn and Garden Services	R D LANDSCAPE & CONSTRUCTION	3105 DEER ISLAND DR E	SUMNER	WA	98390-9491	253-939-0865
04	Lawn and Garden Services	LANDSCAPE SUPPORT SVC	1519 16TH ST	SUMNER	WA	98390-2113	253-863-3012
04	Lawn and Garden Services	SOUND TURF FARMS	4073 142ND AVE E	SUMNER	WA	98390-9657	253-863-8873
04	Lawn and Garden Services	NOLAN LANDSCAPE MAINTENANCE	3513 142ND AVE E	SUMNER	WA	98390-9619	253-863-1319
04	Lawn and Garden Services	ALL SEASONS GARDENING	1411 WOOD AVE	SUMNER	WA	98390-1929	253-863-7310
04	Local Passenger Transportation, n.e.c.	BRYLYNS	18614 65TH ST E	SUMNER	WA	98390-6879	253-863-8229
04	Local Trucking With Storage	HILL MOVING SVC	238 VALLEY AVE E	SUMNER	WA	98390-1239	253-863-5125
04	Logging Camps and Logging Contractors	STEVE HAZELWOOD & SON TRUCKING	4703 RIDGEWEST DR E	SUMNER	WA	98390-9181	253-863-5721
04	Malt Beverages	TAPP BREWING INC	15625 MAIN ST EN	SUMNER	WA	98390-3044	253-863-8438
04	Meat and Fish Markets	MELS MEAT WEBER PACK	5221 160TH AVE E	SUMNER	WA	98390-3134	253-863-2155
04	Meat and Fish Markets	ARTS SUMNER FROZEN FOOD LCKRS	1406 MAIN ST	SUMNER	WA	98390-1810	253-863-3362
04	Meat and Meat Products	SMITHCO MEATS INC	15509 MAIN ST EN	SUMNER	WA	98390-2643	253-863-5157
04	Meat Packing Plants	WEBERS MEAT PACKING	5221 160TH AVE E	SUMNER	WA	98390-3134	253-863-6334
04	Medical, Dental, and Hospital Equipment	MOBILITY SYSTEMS INC	6015 160TH AVE E	SUMNER	WA	98390-3027	253-863-4744
04	Metal Coating and Allied Services	ADHESIVE SYSTEMS INC	5018 170TH AVE E	SUMNER	WA	98390-9147	206-735-8854
04	Metals Service Centers and Offices	CASCADE METALS SUPPLY	3519 142ND AVE E	SUMNER	WA	98390-9619	253-863-5152
04	Motor Vehicle Parts and Accessories	EQUIPMENT UNLIMITED	18108 45TH ST E	SUMNER	WA	98390-6725	253-862-7342
04	New and Used Car Dealers	RIVERSIDE FORD INC	603 HARRISON ST	SUMNER	WA	98390-1136	253-863-2211
04	New and Used Car Dealers	SUNSET SUMNER CHEVROLET GEO	910 TRAFFIC ST	SUMNER	WA	98390-1142	253-863-8144
04	Nonresidential Construction, n.e.c.	ALL PURPOSE STRUCTURES INC	1408 HUBBARD ST	SUMNER	WA	98390-2207	206-926-0461
04	Offices & Clinics of Health Practitioners,	SUMNER PHYSIOTHERAPY ASSOC	15328 MAIN ST EN	SUMNER	WA	98390-2640	253-863-0404

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04	Offices & Clinics of Health Practitioners,	ENGELHARDT, JEAN	208 SUMNER AVE	SUMNER	WA	98390-1255	253-863-9241
04	Offices and Clinics of Dentists	PLAZA 410 DENTAL CLINIC	16202 64TH ST E	SUMNER	WA	98390-3028	253-891-0977
04	Offices and Clinics of Dentists	MORALES, L CARLOS DDS	15208 MAIN ST EN	SUMNER	WA	98390-2638	253-891-9100
04	Offices and Clinics of Dentists	DELIVERING MOBILE DENTISTRY	1006 FRYAR AVE # B	SUMNER	WA	98390-1501	253-863-5575
04	Offices and Clinics of Dentists	MORIYASU, VICTOR I DDS	1211 MAIN ST	SUMNER	WA	98390-1416	253-863-7005
04	Offices and Clinics of Dentists	EDLUND, ROLF M DDS	1006 FRYAR AVE # C	SUMNER	WA	98390-1501	253-863-0444
04	Offices and Clinics of Dentists	MOLEN, BRUCE R DDS	16202 64TH ST E	SUMNER	WA	98390-3028	253-863-0978
04	Offices and Clinics of Dentists	RAINIER DENTAL GROUP	15208 MAIN ST EN	SUMNER	WA	98390-2638	253-891-9100
04	Offices and Clinics of Dentists	WAGGONER, THOMAS W DDS	15324 MAIN ST EN # A	SUMNER	WA	98390-2640	253-863-7500
04	Offices and Clinics of Dentists	COLTON, D RICHARD DDS	16202 64TH ST E	SUMNER	WA	98390-3028	253-891-0977
04	Offices and Clinics of Dentists	VANDERSCHELDEN, DALE DDS	15208 MAIN ST EN	SUMNER	WA	98390-2638	253-891-9100
04	Offices and Clinics of Dentists	SUMNER DENTAL CARE	15324 MAIN ST EN # A	SUMNER	WA	98390-2640	253-863-7500
04	Offices and Clinics of Dentists	TRACY, RONALD J DDS	1006 FRYAR AVE # B	SUMNER	WA	98390-1501	253-863-5575
04	Offices and Clinics of Dentists	DECKER, RICHARD M DDS	15324 MAIN ST EN # A	SUMNER	WA	98390-2640	253-863-7500
04	Offices and Clinics of Dentists	BOODY, CURTIS J DDS	15208 MAIN ST EN	SUMNER	WA	98390-2638	253-891-9100
04	Offices and Clinics of Dentists	SCHUSTER, GREGORY M DDS	1006 FRYAR AVE # A	SUMNER	WA	98390-1501	253-863-8138
04	Offices and Clinics of Dentists	FABER, ROBERT K DDS	15208 MAIN ST EN	SUMNER	WA	98390-2638	253-891-9100
04	Offices and Clinics of Doctors of Medicine	DUFFY, JAMES P MD	15324 MAIN ST EN # B	SUMNER	WA	98390-2640	253-863-4474
04	Offices and Clinics of Doctors of Medicine	WEBER, DONALD C MD	3920 W TAPPS DR E	SUMNER	WA	98390-9176	253-862-8001
04	Offices and Clinics of Doctors of Medicine	CORLISS, ROBERT W MD	15324 MAIN ST EN # B	SUMNER	WA	98390-2640	253-863-4474
04	Offices and Clinics of Doctors of Medicine	COMMUNITY HEALTH CARE DELIVERY	1110 FRYAR AVE	SUMNER	WA	98390-1512	253-863-0406
04	Offices and Clinics of Doctors of Medicine	LEITZ, FRED MD	15324 MAIN ST EN # B	SUMNER	WA	98390-2640	253-863-4474
04	Offices and Clinics of Doctors of Medicine	SUMNER FAMILY MEDICINE	1518 MAIN ST	SUMNER	WA	98390-1812	253-863-6338
04	Offices and Clinics of Doctors of Medicine	BILJAN, WILLIAM E MD	15324 MAIN ST EN # B	SUMNER	WA	98390-2640	253-863-4474
04	Offices and Clinics of Doctors of Medicine	CYR, MARY MD	1518 MAIN ST	SUMNER	WA	98390-1812	253-863-6338
04	Offices and Clinics of Doctors of Medicine	SINGH, TEJINDERPAL MD	1518 MAIN ST	SUMNER	WA	98390-1812	253-863-6338
04	Offices and Clinics of Doctors of Medicine	LAKE TAPPS FAMILY MEDICINE	3920 W TAPPS DR E	SUMNER	WA	98390-9176	253-862-8001
04	Offices and Clinics of Doctors of Medicine	AARO, KENITH MD	1518 MAIN ST	SUMNER	WA	98390-1812	253-863-6338
04	Ornamental Shrub and Tree Services	LAMPERS TREE SVC	1718 LANGDON ST	SUMNER	WA	98390-2137	253-891-0488
04	Ornamental Shrub and Tree Services	STEWART TREE CARE	1718 LANGDON ST	SUMNER	WA	98390-2137	206-486-6104

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04	Ornamental Shrub and Tree Services	STONACK STUMP HAULING	5222 W TAPPS DR E	SUMNER	WA	98390-8934	253-862-7175
04	Paint, Glass, and Wallpaper Stores	GLASS MASTER	1105 MAIN ST	SUMNER	WA	98390-1414	253-863-2297
04	Paint, Glass, and Wallpaper Stores	WINDSHIELD PROFESSIONALS INC	18009 42NDSTREEET CT E	SUMNER	WA	98390-9101	253-891-4070
04	Paperboard Mills	SONOCO PRODUCTS CO	1802 STEELE AVE	SUMNER	WA	98390	253-863-6366
04	Photographic Studios, Portrait	ACTION SPORTS PHOTOGRAPHY	631 W MAIN ST	SUMNER	WA	98390-1110	253-863-6898
04	Plastering, Dry Wall, and Insulation	ALLSTATE DRYWALL SYSTEMS INC	1405 WRIGHT AVE	SUMNER	WA	98390-2110	253-863-7779
04	Plastering, Dry Wall, and Insulation	GEORGES DRYWALL	5607 162ND AVE E	SUMNER	WA	98390-3103	253-863-7976
04	Plastering, Dry Wall, and Insulation	FLASH INTERIORS INC	3309 160TH AVE E	SUMNER	WA	98390-9513	253-863-0077
04	Plumbing, Heating, and Air Conditioning	PACKWEST PLUMBING	6315 182ND AVE E	SUMNER	WA	98390-6830	253-863-1679
04	Plumbing, Heating, and Air Conditioning	COLUMBIA SHEET METAL INC	1525 108TH ST ST	TACOMA	WA	98444-2699	253-537-8320
04	Public Golf Courses	SUMNER MEADOWS GOLF LINKS	14802 8TH ST E	SUMNER	WA	98390-9623	253-863-8198
04	Radio and Television Repair Shops	NORMS RADIO & TV SALES & SVC	815 VALLEY AVE E	SUMNER	WA	98390-1833	253-863-4521
04	Repair Shops and Related Services, n.e.c.	FANTASY MOTORCYCLES	1510 HUBBARD ST	SUMNER	WA	98390-2209	253-863-5445
04	Repair Shops and Related Services, n.e.c.	VALLEY SAW SHOP	15402 ELM ST E	SUMNER	WA	98390-2742	253-841-1563
04	Repair Shops and Related Services, n.e.c.	PUGET SOUND COMPRESSOR & HEAVY	5414 EDGEWOOD DR E	SUMNER	WA	98390-9219	253-863-5008
04	Repair Shops and Related Services, n.e.c.	SUMNER MOTORCYCLES	16208 60TH ST E	SUMNER	WA	98390-3015	253-891-9435
04	Repair Shops and Related Services, n.e.c.	NORTHWEST BMX	16704 75THSTREEET CT E	SUMNER	WA	98390-2540	253-279-8736
04	Retail Nurseries and Garden Stores	WOODLAND PARK FLORAL CO	16102 64TH ST E	SUMNER	WA	98390-3010	253-863-4664
04	Retail Nurseries and Garden Stores	WINDMILL GREENHOUSE & NURSERY	5823 160TH AVE E	SUMNER	WA	98390-3121	253-863-5843
04	Retail Nurseries and Garden Stores	SUMNER LAWN N SAW	7441 RIVERSIDE RD E	SUMNER	WA	98390-2535	253-863-2528
04	Reupholstery and Furniture Repair	A VICTORIAN STRIPPER	1012 RYAN AVE	SUMNER	WA	98390-1910	253-891-0545
04	Roofing, Siding, and Sheet Metal Work	RIMBEY METALS	1411 WOOD AVE	SUMNER	WA	98390-1929	253-891-2733
04	Roofing, Siding, and Sheet Metal Work	PROCIW CONSTRUCTION & ROOFING	18008 46TH ST E	SUMNER	WA	98390-8902	253-891-9369
04	Roofing, Siding, and Sheet Metal Work	TRUSS CO & BUILDING SUPPLY INC	2802 142ND AVE E	SUMNER	WA	98390-9615	206-865-5555
04	Roofing, Siding, and Sheet Metal Work	GRIFFITH CONSTRUCTION	5606 MYERS RD	SUMNER	WA	98390-8818	253-863-0471
04	Schools and Educational Services, n.e.c.	SUMNER DRIVING SCHOOL	1310 ZEHNDER ST	SUMNER	WA	98390-1618	253-863-7964
04	Scrap and Waste Materials	SPENCER ENVIRONMENTAL SVC	1517 PEASE AVE	SUMNER	WA	98390-1627	253-863-3310
04	Structural Steel Erection	EQUIPMENT N FABRICATION SVC	1812 PEASE AVE	SUMNER	WA	98390-1608	253-891-9550
04	Subdividers and Developers, n.e.c.	SUMMERVILLE ESTATES MOBILE	15911 55TH ST E	SUMNER	WA	98390-3135	253-863-2562
04	Truck Rental and Leasing, Without Drivers	PENSKE TRUCK LEASING CO	2222 TACOMA AVE	SUMNER	WA	98390-2226	253-863-5558

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04	Veterinary Services, Specialties	SUMNER VETERINARY HOSPITAL	15215 MAIN ST EN	SUMNER	WA	98390-2637	253-863-0881
04	Veterinary Services, Specialties	UHLER, STEPHEN DVM	15215 MAIN ST EN	SUMNER	WA	98390-2637	253-863-2258
04	Veterinary Services, Specialties	SHEERAN, KATHY DVM	15215 MAIN ST EN	SUMNER	WA	98390-2637	253-863-0881
04	Warm Air Heating and Air-Conditioning	BUNTING HEAT & AIR	15209 ELM ST E	SUMNER	WA	98390-2737	253-863-3509
04	Warm Air Heating and Air-Conditioning	MAC DONALD MECHANICAL	16903 S TAPPS DR E	SUMNER	WA	98390-9187	253-863-5255
04	Water Well Drilling	OELKE DRILLING INC	4312 166TH AVE E	SUMNER	WA	98390-9120	253-863-7272
04	Water, Sewer, and Utility Lines	HOME SEWER CONSTRUCTION	5806 160TH AVE E	SUMNER	WA	98390-3122	253-863-3994
04	Wood Preserving	WESTERN WOOD PRESERVING CO	1310 ZEHNDER ST	SUMNER	WA	98390-1618	253-863-8191
06	Retail Nurseries and Garden Stores	CHRISTINES NURSERY	8409 STATE ROUTE 162 E	PUYALLUP	WA	98372-4312	253-845-5196

Notes:
Businesses were chosen by SIC Industrial Code Description using an extremely conservative approach. Any business type that might have a potential polluting substance on site was included. Many of these businesses may not have any actual substances on site that could pollute the groundwater. Also, a number of these business types are primarily a concern if they are served by on-site sewage systems. For example, apartments, dentist clinics, veterinary clinics, and doctors offices should not be likely sources of contamination if they are on the sanitary sewer system.

The source number represents the well (or one of the wells) in whose wellhead protection zone this business falls.

Washington State Department of Health

WATER SYSTEM SANITARY SURVEY REPORT

STATE OF WASHINGTON DEPARTMENT OF HEALTH (DOH)

-- NORTHWEST DRINKING WATER OPERATIONS --

WATER SYSTEM:	**Sumner, City of**	**SYSTEM MANAGER / OPERATOR:**	Anthony Utanis, Water Quality Operator, (253) 299-5740
COUNTY:	Pierce	**SYSTEM OWNER:**	City of Sumner
PWS ID#:	**85120 7**	**INSPECTED BY:**	John Ryding
SYSTEM TYPE:	Group A - Community	**INSPECTION DATE:**	**3/23/2006**

APPROVAL STATUS:	The System is served by six permanent and 1 seasonal groundwater sources. The groundwater sources consist of 4 springs and 3 wells. The System's Water Facilities Inventory (WFI) lists approximately 2,666 active residential connections and 303 non-residential services. The System serves a full-time residential population of approximately 8,940. The System has approved capacity to serve an unspecified number of Equivalent Residential Units.
OPERATING PERMIT STATUS:	Yellow – The System is substantially in compliance with drinking water regulations, except that it has been notified of the water system planning provisions of WAC 246-290-100 and has failed to satisfy the requirements. A draft Water System Plan is currently under review.

		ADEQUATE (YES/NO)	OBSERVATIONS / RECOMMENDATIONS
CAPACITY	**Source capacity**	Yes	The System's sources have a total capacity of approximately 4.5 MGD. The Maximum Day Demand of the system in 2006 is approximately 3.4 MGD. The System appears to have adequate source capacity as reported and as documented in the Water System Plan (WSP) update.

		ADEQUATE (YES/NO)	OBSERVATIONS / RECOMMENDATIONS
	Storage capacity	Yes	There is a combined total storage capacity of approximately 5 million gallons which serves a single pressure zone. The City maintains 4 reservoirs throughout the distribution system (2 x 2 MGal, 1 x 1 MGal, and 1 60 KGal). It was reported that there appeared to be adequate storage for daily operations. The System's reservoir capacity was documented in the Water System Plan (WSP) update and appears to be adequate.
	Distribution	Yes	It was reported that 30 psi can be maintained in the distribution system at all times. The WSP update included a hydraulic model. It appears that the distribution system is adequate, however, there are some clarifications that have not yet been submitted to DOH.
WATER QUALITY MONITORING	→	→	In general, the System has kept up well with source monitoring requirements. The nitrate levels are good with all sources less than 2 mg/L. It also appears that all sources will meet the new arsenic standard of 10 ug/L. The highest concentration found was 5 ug/L in the West Well (S05, seasonal). Only the West Well has detectable iron and manganese. The manganese level in the well (0.11 mg/L) exceeds the Secondary MCL of 0.05 mg/L. Please consult with your current Water Quality Monitoring Report for the most recent source monitoring requirements. Coliform – The system has a very good coliform history for the last two years. There was one positive routine sample and one positive repeat sample collected in August, 2004. There was a total of 40 routine samples collected that month and there was no non-acute MCL violation. The System has a coliform monitoring plan (CMP) with a map. This CMP includes routine and repeat sample locations. **It is recommended that the rotation schedule for the sample site locations be documented in the plan**. Lead/Copper – The System meets the lead and copper action levels and is due to collect 20 samples by the end of 2007. DBPs – The System typically collects two quarterly DBP samples with more samples collected in the summer period when seasonal sources are used. The System is well within DBP MCLs. The highest HAA sample in the last year was collected in February 2005 at 3.6 ug/L (MCL – 60 ug/L). The highest TTHM sample was collected in August

		ADEQUATE (YES/NO)	OBSERVATIONS / RECOMMENDATIONS
			2006 at 15.3 ug/L (MCL – 80 ug/L).
SURFACE WATER TREATMENT RULE / GWI		Yes	The wells are more than 50 feet deep and more than 200 feet from any apparent surface water source. The wells do not appear to have characteristics of groundwater under the influence of surface water (GWI). The spring sources have undergone evaluation as potential GWI sources. The sources were found to be groundwater and hydraulically connected to surface water. Therefore, the disinfection systems for the spring sources are required to provide a minimum CT of 6.
OPERATIONS & MANAGEMENT	**Routine O & M**	Yes	The System appears to be fairly maintained, however, there are some recommended improvements to distribution system maintenance. Reservoirs are cleaned and expected every three years. Service meters are typically replaced as needed or when they exceed a lifespan of 10 to 15 years depending on manufacturer. Valves are only exercised sporadically. **It is recommended that a valve exercising program be developed which would have the distribution system valves exercised on an annual or biannual basis.** Mains are flushed as needed, primarily on dead end lines, for water quality purposes. It appears that hydrants are not tested or maintained on a routine basis. **It is recommended that hydrants receive regular maintenance to ensure that they are in good working condition**.
	Complaints	Yes	There have been no complaints registered with DOH in the last five years. Complaints that come into the City are typically addressed by Mr. Utanis or Simon Calis.
	Operator Certification	Yes	The System has one mandatory water system operator position and 7 other positions where there is a minimum certification requirement identified. The mandatory position is required to be filled by an operator certified at the Water Distribution Manager 2 (WDM 2) level. Anthony Utanis (#4224) is listed as the lead operator and is certified as a WDM 3 and a cross connection control specialist (CCS). It appears that the System has operators that fulfill the minimum operator certification requirements.
	Consumption/ Production Data	Yes	All sources and services are metered. Source meters are read daily. Service meters are read bimonthly. Service meters are gradually being replaced with touch read meters. New water use efficiency standards are being developed and are expected to be

		ADEQUATE (YES/NO)	OBSERVATIONS / RECOMMENDATIONS
			effective this year. It was indicated that the lost and unaccounted for water was approximately 12%. The efficiency standards are expected to require leakage to be less than or equal to 10%.
	Water Rights	Uncertain	The City is currently addressing several water right issues with the Department of Ecology. It appears that there are adequate rights for the present and near future but the status of water rights for long term growth is unclear at the time.
	Cross-Connection Control	Uncertain	The System has a CCS approved cross connection control program, which has been adopted by ordinance. However, it appears that, while the City has several operators certified as cross connection control specialists (CCS), there is not a CCS in responsible charge of implementing the program. **It is very strongly recommended that a certified CCS be placed in responsible charge of program implementation and oversight.**
FACILITIES	**Source**	Yes	All of the springs visited (Elhi Springs (S03) was not visited during the survey) appeared to be in very good condition. The springs appeared to be well protected. All of the wells visited were metered, had sample taps, and were protected with check valves. The following are site-specific recommendations. **Dieringer Well** (S07) – The artesian well overflow was not screened or protected with a check valve. When the well is being pumped this opening is an unprotected opening into the well. The overflow must be screened or protected with a check valve. **West Well** (S05) – The well is in fair condition and lacked a screened vent. Installation of a screened vent is recommended.
	Sanitary Control Area / Wellhead Protection	Yes	The Sanitary Control Areas (SCAs) of the springs appeared to be adequate and mostly adequate for the West and South Wells. The SCA for the Dieringer well is heavily impacted by parking lots and buildings. However, there appears to be minimum impacts since the well is under artesian pressure. There is a source water protection plan in the WSP update, however, it has not yet been approved.
	Storage	Yes	The reservoirs appeared to be in good condition. None of the reservoirs were climbed during the survey. All of the tanks were reported to have screened vents and locked hatches with gasketed seals. Reservoir roofs are accessed annually at a minimum.

		ADEQUATE (YES/NO)	OBSERVATIONS / RECOMMENDATIONS
			The following are site-specific recommendations. **Country and Crystal Springs Tank** – Locate and check the condition of the flapper gate on the tank overflow. Narrow the opening on the mechanical gauge to reduce the potential for access to the tank by insects. **North Reservoir** – Narrow the opening on the mechanical gauge to reduce the potential for access to the tank by insects.
	Distribution	Yes	The distribution system was reported to be in acceptable condition. The WSP update documents the age and composition of the distribution system as well as any needed improvements.
	Pumping	Yes	There is a single booster pump station that serves approximately 8 homes. The station uses bladder tanks to maintain pressure to the very small pressure zone. The booster station is maintained by the homeowners. The hydraulic grade line of the remainder of the System's distribution system is determined by the water level in the North and South Reservoirs.
	Treatment	Yes	The System practices chlorine disinfection at all of their sources. Gas chlorine is used at the spring sources and sodium hypochlorite is used at the well sources. A minimum CT of 6 is required from the spring sources due to their hydraulic connection with surface water. The System typically maintains a chlorine residual of 0.5 mg/L in the distribution system. The treatment appears to be adequate. Spring Disinfection – The County and Crystal Springs system requires a minimum free chlorine residual of 0.45 mg/L into the distribution system to achieve a minimum CT of 6. At the time of the survey the chlorine residual into distribution was 0.6 mg/L. This was measured by a continuous read chlorine analyzer. The Sumner Springs system requires a minimum free chlorine residual of less than 0.2 mg/L to achieve a CT of 6. There is a chlorine analyzer located at the springs but it is located in front of the 1 MGal storage reservoir located at the springs. It was placed there during the construction of the City's fluoride injection system (which is currently not in use). The operators realize that the sample point of the analyzer must be changed to the reservoir discharge line in order for it to be used as a CT compliance measurement. Daily grab samples are collected at the master meter on the discharge of the 1 MGal reservoir. Elhi Springs currently requires a 2.2 mg/L residual to maintain a CT of 6.

		ADEQUATE (YES/NO)	OBSERVATIONS / RECOMMENDATIONS
			The System is planning on relocating a service connection to a winery this year after which it is expected that a chlorine residual of 0.55 mg/L will be needed to meet a CT of 6. Chlorine Sources – Chlorine is occasionally added by hand to the North Tank when chlorine residuals are noted to drop in the tank due to potential stagnation or higher than anticipated chlorine demand. There is a chlorine analyzer on the inlet/outlet of the North Tank. Chlorine is added using calcium hypochlorite. In addition sodium hypochlorite is used at the wells. **It was not clear from the labels of either source of chlorine that they were certified under NSF Standard 60. Verify that these chlorine sources are certified under NSF Standard 60. If either or both are not certified, discontinue their use and use a certified source of chlorine.**
	Reliability	Yes	There are multiple sources, and the main sources supply the distribution system via gravity flow. In addition there is 4 million gallons of gravity storage. There appears to be adequate reliability.

APPENDIX H

Sumner Coliform Monitoring Plan

CITY OF SUMNER
COLIFORM MONITORING PLAN
SYSTEM ID #851207

A. SYSTEM INFORMATION

POPULATION SERVED

Permanent residents on distribution system: 9085
Total number of metered connections: 3629

SYSTEM SOURCES

The City of Sumner water system consists of four sets of springs and three wells.
The primary sources are the Sumner Springs, County Springs, Crystal Springs and Elhi Springs that provide water to all City of Sumner customers. The South Well and Dieringer Well are used when customer usage exceeds springs production or if maintenance or repairs interfere with the normal supply from the primary sources. The West Well is for emergency use only. It is currently used for irrigation, and is isolated from the distribution system by a valve that remains in the **"closed"** position until an emergency requires the use of this source.

DOH Source #	Source Name	Capacity GPM	Treatment
SO1	Sumner Springs	1100	Gas Chlorination
SO2	Crystal Springs	182	Gas Chlorination
SO3	Elhi Springs	90	Sodium Hypochlorite
SO4	County Springs	867	Gas Chlorination
SO5	West Well	500	Sodium Hypochlorite
SO6	South Well	1000	Gas Chlorination
SO7	Dieringer Well	250	Sodium Hypochlorite

System Treatment:

Sumner Springs, County Springs, Crystal Springs and South Well disinfect the water with 100% gas chlorine. Elhi Springs, Dieringer Well and West Well disinfect the water with 12% sodium hypochlorite.

System Storage:

Sumner Springs Tank	(Res. #1)	1,000,000 gal
County Springs Tank	(Res. #2)	66,000 gal
South Tank	(Res. #3)	2,000,000 gal
North Tank	(Res. #4)	2,000,000 gal
Sumner Viewpoint Tank*	(Res. #5)	330,000 gal
	Total Capacity	**5,396,000 gal**

Pressure Zones:

Zone #1. Sumner Springs, County Springs and Crystal Springs gravity flow into reservoirs #1 and #2. Reservoirs #3 & #4 are filled from the distribution system. All four reservoirs are on the same hydraulic grade line. South Well pumps directly into the distribution system when there is an inadequate water supply from primary sources. Dieringer Well pumps into reservoir #4.

Zone #2. Elhi Springs pumps directly into the distribution system. There is an inter-tie between zones #1 and #2 that is separated by a valve. The valve remains in the **"open"** position unless maintenance or repairs are needed.

Zone #3. *Sumner Viewpoint reservoir #5 is supplied by the South Tank reservoir #3 via booster pump station and serves only the Sumner Viewpoint development. Sumner Viewpoint is at a higher hydraulic grade line than the rest of the Sumner water distribution system and is not connected back to the system.

B. SAMPLING INFORMATION

The routine sampling requirement by DOH is ten samples per month. Samples are split into two groups and each group is taken on a biweekly basis. Sample site rotation is recommended by the DOH; therefore sample sites are rotated on a monthly basis. Should service area, sources or other conditions change which cause the selected sites to no longer represent the system adequately, the sites will be changed to better represent the system. Repeat samples are available upstream and downstream of all routine sample sites.
Routine and repeat sample sites are outlined below and shown on the attached map.

1. **Routine site – 4700 154th Ave Ct E sample station**
   Repeat upstream – 15406 47th St Ct E
   Repeat downstream – 4822 154th Ave Ct E **sample station**

2. **Routine site – 15304 Daffodil St Ct E sample station**
   Repeat upstream – 5303 Parker Rd **sample station.**
   Repeat downstream – 15231 151St Ave Ct E **sample station.**

3. **Routine site - Valley Ave sample station**
   Repeat upstream – 1600 blk Valley Ave
   Repeat downstream – 800 blk Valley Ave

4. **Routine site - Loyalty Park sample station**
   Repeat upstream – 700 blk. Sumner Ave.
   Repeat downstream – 400 blk. Sumner Ave.

5. **Routine site - 7473 Riverside Dr. sample station**
   Repeat upstream – 7400 blk Riverside Dr.
   Repeat downstream – 740 blk 154th Ave Ct E

6. **Routine site - 602 West Main sample station**
   Repeat upstream – 701 West Main
   Repeat downstream – 803 Hunt Ave.

7. **Routine site – 75th & Village Dr. sample station**
   Repeat upstream – 146th Ave E. **sample station**
   Repeat downstream – 7222 Village Dr **sample station**

8. **Routine site - 158th St sample station**
   Repeat upstream – 15600 blk 67th St Ct E
   Repeat downstream – 15900 blk 67th St Ct E.

9. **Routine site - 84th St & Riverside Dr. sample station**
   Repeat upstream – 16300 blk Riverside Dr.
   Repeat downstream – 8700 blk Riverside Dr.

10. **Routine site – White River Power Station sample station**
    Repeat upstream – Hydrant @ 24th St E & E. Valley
    Repeat downstream – 1808 E. Valley **sample station**

11. **Routine site – 1705 Wood Ave sample station**
    Repeat upstream – Hydrant @ 1700 blk Bonney Ave
    Repeat downstream – 1600 blk Wood Ave

12. **Routine site – 1800 140th Ave E sample station**
    Repeat upstream – Hydrant South
    Repeat downstream – Hydrant North

13. **Routine site – 6020 154th Ave Ct E sample station**
    Repeat upstream – Hydrant 15422 Main St
    Repeat downstream – Hydrant 6110 154th Ave Ct E

14. **Routine site – 4000 142nd Ave E sample station**
    Repeat upstream – 4711 142nd Ave E
    Repeat downstream – 3100 blk 142nd Ave E

15. **Routine site – 14304 75th St Ct E sample station**
    Repeat upstream – Hydrant – 14805 74th St Ct E
    Repeat downstream – Hydrant 7311 147th Ave E

16. **Routine site – 136th & 24th St E sample station**
    Repeat upstream – Hydrant 24th St E & 138th Ave
    Repeat downstream – Hydrant 2100 blk 136th Ave

17. **Routine site – 3005 145th Ave Ct E sample station**
    Repeat upstream – Hydrant 2929 146th Ave E
    Repeat downstream – Hydrant 145th Ave Ct E & 29th St E

Routine and repeat sampling sites may change due to leaking faucets or other factors that may contaminate the sample during collection.
Each of the monitoring points represents a significant source, storage, pressure zone, major arterial or supply point to another water purveyor for resale.

Plan Preparation Information:

Prepared February 21, 1992

Updated June 26, 2009 by:
Tony Utanis
City of Sumner Water Operations
(253) 299 - 5740

_____

_____
Date:

Reviewed by:
Bill Pugh, Director of Public Works
(253) 299 - 5701

_____

_____
Date:

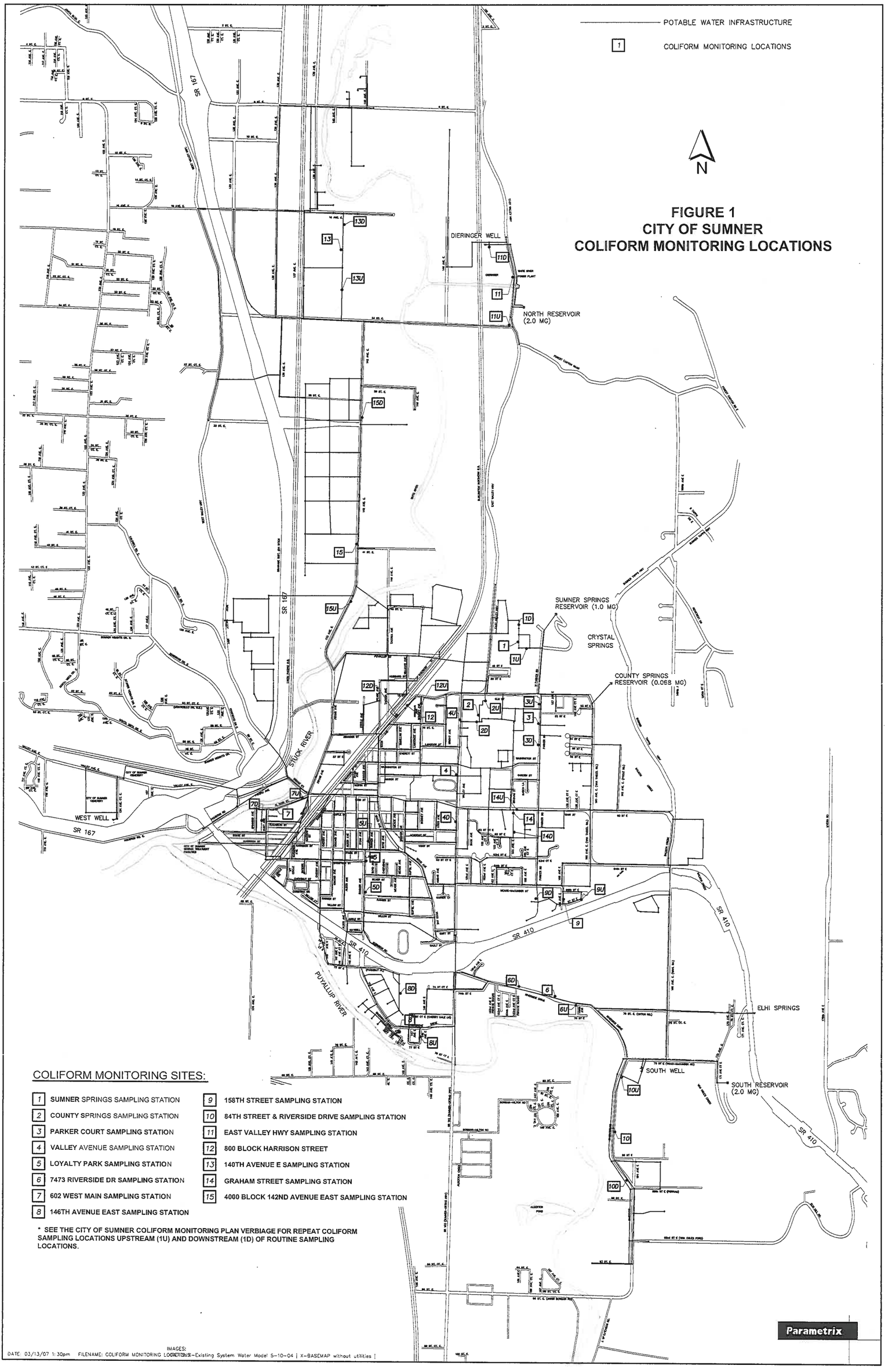


FIGURE 1
CITY OF SUMNER
COLIFORM MONITORING LOCATIONS

COLIFORM MONITORING SITES:

1. SUMNER SPRINGS SAMPLING STATION
2. COUNTY SPRINGS SAMPLING STATION
3. PARKER COURT SAMPLING STATION
4. VALLEY AVENUE SAMPLING STATION
5. LOYALTY PARK SAMPLING STATION
6. 7473 RIVERSIDE DR SAMPLING STATION
7. 602 WEST MAIN SAMPLING STATION
8. 146TH AVENUE EAST SAMPLING STATION
9. 158TH STREET SAMPLING STATION
10. 84TH STREET & RIVERSIDE DRIVE SAMPLING STATION
11. EAST VALLEY HWY SAMPLING STATION
12. 800 BLOCK HARRISON STREET
13. 140TH AVENUE E SAMPLING STATION
14. GRAHAM STREET SAMPLING STATION
15. 4000 BLOCK 142ND AVENUE EAST SAMPLING STATION

* SEE THE CITY OF SUMNER COLIFORM MONITORING PLAN VERBIAGE FOR REPEAT COLIFORM SAMPLING LOCATIONS UPSTREAM (1U) AND DOWNSTREAM (1D) OF ROUTINE SAMPLING LOCATIONS.

Parametrix

IMAGES:
DATE: 03/13/07 1:30pm FILENAME: COLIFORM MONITORING LOCATIONS-Existing System Water Model 5-10-04 | X-BASEMAP without utilities |

WHY IS MY WATER TESTED FOR COLIFORMS?

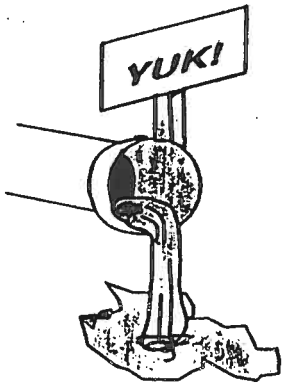
Some diseases are spread through drinking water. Cholera, typhoid, hepatitis, giardiasis, and epidemic dysentery are a few of these waterborne diseases. Disease results when microorganisms (such as protozoa, bacteria, and viruses) infect our bodies in numbers great enough to over-power our natural defenses.

Sanitary procedures and water treatment methods can limit the spread of waterborne diseases. Fortunately, many steps are taken in this country to ensure the public is provided with safe drinking water. One of these methods is to test water for coliform bacteria.

WHAT ARE COLIFORMS AND WHAT DO THEY INDICATE?

Coliforms are a large group of bacteria which commonly live in the digestive tracts of humans and animals. For this reason, coliform bacteria are found in sewage and animal wastes. However, many coliforms are harmless and can be found in other places such as soil. Unfortunately, the tests for coliform bacteria do not indicate their source.

The presence of coliforms in drinking water indicates a possible contamination by sewage or animal wastes. Sewage and animal wastes contain many disease causing organisms in addition to coliforms. For this reason, disease causing organisms may be present whenever coliforms are found in drinking water.



Some of the particular types of coliform bacteria that are often tested for are "fecal coliforms" and *Escherichia coli (E. coli)*. The presence of these organisms can help in the investigation of possible contamination.

WHY NOT TEST DIRECTLY FOR DISEASE CAUSING ORGANISMS?

Many different organisms can cause diseases. Unfortunately, almost as many tests would be needed to check drinking water for all of them. Instead, health officials test water for coliform bacteria to see if disease causing organisms could be present. The advantages of using coliform bacteria are:

- In general, coliforms are longer living and easier to find than disease causing organisms.
- Disease causing organisms are usually more susceptible to some treatment methods than are coliform bacteria.

If coliform bacteria are not present, there is good reason to believe that the water system is free of disease causing organisms.

NOTICE TO WATER SYSTEM USERS

COLIFORM MAXIMUM CONTAMINANT LEVEL (MCL) EXCEEDED - NON-ACUTE MCL

The _____ Water System, I.D. _____, located in _____ County submitted coliform drinking water samples to a certified laboratory for the month of _____. The test results indicated that at the time of the sampling there was a contamination problem in the system.

The United States Environmental Protection Agency (EPA) sets water standards and has determined that the presence of total coliforms is a possible health concern. Total coliforms are common in the environment and are generally not harmful themselves. The presence of these bacteria in drinking water, however, generally is a result of a problem with water treatment or the pipes which distribute the water, and indicates that the water may be contaminated with organisms that can cause disease. Disease symptoms may include diarrhea, cramps, nausea, and possibly jaundice, and any associated headaches and fatigue. These symptoms, however, are not just associated with disease causing organisms in drinking water, but may also be caused by a number of other factors other than your drinking water. EPA has set an enforceable drinking water standard for total coliforms to reduce the risk of these adverse health effects. Drinking water which meets this standard is usually not associated with a health risk from disease-causing bacteria and should be considered safe.

The problem has been under investigation and the following steps have been or are being taken at this time:

At this time:

☐ The problem is under control and no action is required by the users.

☐ Until further notice, water users should boil water for consumption at a rolling boil for ten minutes.

☐ (Other) _____.

_____ (manager's name) _____ (day phone) _____ (date)

(To be completed by Water System)

This notice was:

☐ Mailed to all water users on _____ (date).

☐ Hand delivered to all water users on _____ (date).

☐ Verbally given to all water users on _____ (date).

☐ Published in newspaper. (copy attached).

☐ Posted at _____ on _____ (date). *(BY DEPARTMENT APPROVAL ONLY).*

☐ (Other) _____.

SIGNATURE _____ DATED _____.

(SEND A COPY OF THIS COMPLETED PUBLIC NOTIFICATION TO: SOUTHWEST DRINKING WATER OPERATIONS; P. O. BOX 47823; OLYMPIA, WA 98504-7823; TO BE CREDITED FOR THIS ACTION.)

NOTICE TO WATER SYSTEM USERS

FECAL COLIFORM & E. COLI MAXIMUM CONTAMINANT LEVEL (MCL) EXCEEDED - ACUTE MCL

The _____ Water System, I.D. _____, located in _____ County submitted coliform drinking water samples to a certified laboratory for the month of _____. The test results indicated that at the time of the sampling there was a contamination problem in the system.

The United States Environmental Protection Agency (EPA) sets water standards and has determined that the presence of fecal coliforms or E. coli is a serious health concern. Fecal coliforms and E. coli are generally not harmful themselves, but their presence in drinking water is serious because they are usually associated with sewage or animal wastes. The presence of these bacteria in drinking water is generally a result of a problem with water treatment or the pipes which distribute the water, and indicates that the water may be contaminated with organisms that can cause disease. Disease symptoms may include diarrhea, cramps, nausea, and possibly jaundice, and any associated headaches and fatigue. These symptoms, however, are not just associated with disease causing organisms in drinking water. EPA has set an enforceable drinking water standard for fecal coliforms and E. coli to reduce the risk of these adverse health effects. Drinking water which meets this standard is usually associated with little or none of the risk and should be considered safe.

The problem has been under investigation and the following steps have been or are being taken at this time:

At this time:

☐ The problem is under control and no action is required by the users.

☐ Until further notice, water users should boil water for consumption at a rolling boil for ten minutes.

☐ (Other) _____.

_____ *(manager's name)* _____ *(day phone)* _____ *(date)*

(To be completed by Water System)

This notice was:

☐ Mailed to all water users on _____ *(date)*.

☐ Hand delivered to all water users on _____ *(date)*.

☐ Verbally given to all water users on _____ *(date)*.

☐ Published in newspaper. (copy attached).

☐ Posted at _____ on _____ *(date)*. *(BY DEPARTMENT APPROVAL ONLY).*

☐ (Other) _____.

SIGNATURE _____ DATED _____.

(SEND A COPY OF THIS COMPLETED PUBLIC NOTIFICATION TO: SOUTHWEST DRINKING WATER OPERATIONS; P. O. BOX 47823; OLYMPIA, WA 98504-7823; TO BE CREDITED FOR THIS ACTION.)

APPENDIX I

Sumner Disinfectants and Disinfection By-Products Monitoring Plan

Disinfectants and Disinfection By-Products Monitoring Plan

Prepared for

City of Sumner
1104 Maple Street
Sumner, Washington 98390

Prepared by

Parametrix
1231 Fryar Avenue
P.O. Box 460
Sumner, Washington 98390-1516

www.parametrix.com

June 2004
Project No. 216-1527-056 (03)

TABLE OF CONTENTS

KEY TERMS

CT	Chlorine Contact Time
DDBPR	Disinfectants and Disinfection By-Products Rule
DOH	Washington State Department of Health
HAA5	Haloacetic Acids
MCL	Maximum Contaminant Levels
MCLG	Maximum Contaminant Level Goals
MPA	Microscopic Particulate Analysis
MRDL	Maximum Residual Disinfectant Level
MRDLG	Maximum Residual Disinfectant Level Goal
TTMH	Total Trihalomethanes
WAC	Washington Administrative Code

1. SUMNER WATER SYSTEM OVERVIEW

1.1 SUMNER WATER SYSTEM SOURCE INFORMATION

The City of Sumner's water sources consist of three wells and four spring fields (see Table 1-1). The Washington State Department of Health (DOH) collected Microscopic Particulate Analysis (MPA) samples from the City of Sumner spring sources throughout 1999 to determine whether the spring sources were under the influence of surface water. In January 2000, DOH released a statement to the City of Sumner notifying the City that all of the spring sources are considered to be groundwater sources. A description of each source is provided below. Source locations are shown on Figure 2-1 (page 2-3).

Table 1-1. Sumner Water Source Identification

DOH Source No.	Source Name	Source Category	Associated Reservoir[a]		
			Primary Function	Total Volume (million gallons)	Dimensions
SO 1	Sumner Springs	Spring	Storage, CT[b]	1.0	81 feet (diam.)
SO 2	Crystal Springs	Spring	N/A	N/A	N/A
SO 3	Elhi Springs	Spring	CT	N/A	2–4 feet (diam.)
SO 4	County Springs	Spring	CT	0.07	20 feet (diam.)
SO 5	West Well	Artesian Well	N/A	N/A	N/A
SO 6	South Well	Artesian Well	N/A	N/A	N/A
SO 7	Dieringer Well	Artesian Well	Storage	2.0	104 feet (diam.)

[a] The South Tank is a floating reservoir and is not associated with any one particular source.

[b] CT = Chlorine Contact Time.

1.1.1 Sumner Springs

Sumner Springs is Source Number SO 1, consisting of five separate spring taps. The Sumner Springs site is located in east-central Sumner, east of North Parker Road. The spring taps feed into collection boxes, which pass the flow to the downstream collection box through a common header pipe. All collection boxes may be manually bypassed in the event of a single spring tap becoming contaminated or otherwise undesirable. Surface water is collected and diverted away from the spring taps via perforated pipes and culverts. From the header pipe, the spring flow passes into a metering vault where the flow is split between wastage to Salmon Creek and water for distribution.

Water from the header pipe is routed to a 1.0-million-gallon reservoir. Conveyance from the reservoir routes flow from the Sumner Springs southwest from the site to piping on North Parker Road. Chlorine gas is employed for disinfection at the Sumner Springs source. Source water is chlorinated between the metering/overflow structure and the reservoir.

1.1.2 Crystal Springs

Crystal Springs is Source Number SO 2, located in east-central Sumner, east of Van Tassel Road. Although classified as a single source, Crystal Springs actually functions as two separate sources, with Crystal Springs No. 1 flowing to the Sumner Springs system, and Crystal Springs No. 2 flowing to the County Springs system.

There is one spring tap at Crystal Springs No. 1 and three spring taps at Crystal Springs No. 2. As with Sumner Springs, the spring taps feed into collection boxes, which pass the flow downstream to the next collection box through a common header pipe. All tap boxes may be manually bypassed in the event a single spring tap becomes contaminated or otherwise undesirable. Surface water is collected and diverted away from the spring taps via perforated pipes and culverts.

Flow from Crystal Springs is combined with the Sumner Springs and County Springs flow prior to chlorination. Therefore, Crystal Springs is not considered a separate "water treatment plant" for the purposes of this monitoring plan.

1.1.3 Elhi Springs

Elhi Springs is Source Number SO 3, and is located southeast of Sumner on the east side of SR 410. The Elhi Springs source consists of five separate collection vaults. Groundwater collected in the vaults is combined via manifold piping, chlorinated with sodium hypochlorite, and then routed through two chlorine contact vaults. A booster pump station located just downstream of the chlorine contact vaults routes flow to the Sumner water system at 75th Street East. The booster station acts to increase the hydraulic grade line of the Elhi Springs source to the 234 elevation level to match the remainder of the Sumner potable water sources.

1.1.4 County Springs

County Springs is Source Number SO 4, located in east-central Sumner, east of North Parker Road, southeast of Sumner and Crystal Springs. One spring tap flows into the metering vault, where it merges with the flow from Crystal Springs No. 2. The metering vault may be manually bypassed in the event of contamination of either Crystal Springs No. 2 or County Springs. Surface water is collected and diverted away from the spring tap via perforated pipes, culverts, and walls.

Spring flow from the metering vault is split between wastage to Salmon Creek and water for distribution. Flow from the metering vault is routed to an approximate 0.07-million-gallon reservoir. Flow from the reservoir is routed southwest from the site to a potable-water conveyance located in 160th Avenue East. Flow from County Springs is disinfected using chlorine gas. Disinfection occurs between the metering/overflow structure and the reservoir.

1.1.5 West (Cemetery) Well

The West Well is Source Number SO 5, located west of Sumner on the south side of Valley Avenue East. The West Well, installed with a 10-inch-diameter casing to a depth of approximately 285 feet, was developed in 1975.

The West Well is primarily used for irrigation at the Sumner Cemetery and as a supplemental source during drought or emergency conditions. When used to supplement the domestic supply, water pumped from the West Well directly enters the Sumner potable water distribution system via an 8-inch-diameter pipe. Water pumped from the West Well is chlorinated using sodium hypochlorite before it enters the distribution system.

1.1.6 South Well

The South Well is Source Number SO 6, located south of Sumner city limits south of Wood-McCumber Road (78th Street East). The South Well was developed in 1975, with a 16-inch-diameter casing installed to an approximate depth of 285 feet.

The South Well is primarily used during heavy use periods (i.e., summer months), being automatically activated when the total system demand exceeds spring source production and when the storage tanks are less than two-thirds full. Water from the well is pumped directly to the Sumner potable water system on Wood-McCumber Road. Water pumped from the South Well is disinfected using chlorine gas before entering the Sumner potable water system.

1.1.7 Dieringer Well

The Dieringer Well is Source Number SO 7. This well is located in northeast Sumner, west of East Valley Highway. The Dieringer Well was developed in 1954 with a 10-inch diameter casing installed to a depth of approximately 408 feet.

The Dieringer Well is used to fill the North Tank, a 2.0-million-gallon reservoir located in northeast Sumner, east of East Valley Highway. Water pumped from the Dieringer Well is currently disinfected with sodium hypochlorite.

1.2 SUMNER WATER SOURCE DISINFECTION

The City of Sumner conducts disinfection treatment for potable water at the source. Table 1-2 outlines the treatment provided at each potable water source.

Table 1-2. Sumner Water Source Treatment

DOH Source No.	Source Name	Disinfection Treatment	Additional Treatment
SO 1	Sumner Springs	Chlorine Gas	Fluoridation
SO 2	Crystal Springs	Chlorine Gas	Fluoridation
SO 3	Elhi Springs	Sodium Hypochlorite	Fluoridation
SO 4	County Springs	Chlorine Gas	Fluoridation
SO 5	West Well	Sodium Hypochlorite	N/A
SO 6	South Well	Chlorine Gas	Fluoridation
SO 7	Dieringer Well	Sodium Hypochlorite	Fluoridation

2. DISINFECTANTS AND DISINFECTION BY-PRODUCT MONITORING

Washington Administrative Code (WAC) requires water systems using only groundwater sources to add a chemical disinfectant and to comply with the requirements of the Stage 1 Disinfectants and Disinfection By-Products Rule (Stage 1 DDBPR) as outlined in the applicable sections of WAC Chapter 246-290-300(7) by January 1, 2004.

The City of Sumner is a community water system utilizing chlorine to disinfect its groundwater sources. Therefore, Sumner is required to begin sampling for disinfection by-products and disinfectant residuals in January of 2004.

2.1 DISINFECTION BY-PRODUCTS

Water systems using only groundwater not under the direct influence of surface water, utilizing chemical disinfectant, and serving a population of at least 10,000, are required to collect one sample for Total Trihalomethanes (TTMH) and Haloacetic Acids (HAA5) per quarter per "treatment plant" (40 CFR 141.132). Samples for each "treatment plant" need to be collected at the point in the system representing the maximum residence time for that particular plant.

The disinfection by-products to be sampled and their associated maximum contaminant levels (MCL) allowable and maximum contaminant level goals (MCLG) are shown in Table 2-1.

Table 2-1. Disinfection By-Products[a]

Disinfection By-Product	MCL (mg/l)	MCLG (mg/l)
Total Trihalomethanes (TTHMs)	**0.080**	
Chloroform	–	–
Bromodichloromethane	–	Zero
Dibromochloromethane	–	0.060
Bromoform	–	Zero
Haloacetic Acids (five) (HAA5)	**0.060**	–
Monochloroacetic Acid	–	–
Dichloroacetic Acid	–	Zero
Trichloroacetic Acid	–	0.300
Bromoacetic Acid	–	–
Dibromoacetic Acid	–	–

[a] Per WAC 246-290-310.

Multiple sources that draw water from a single aquifer can be considered a single "treatment plant" in determining the minimum number of TTHM and HAA5 samples required to be collected. The City of Sumner currently operates six individual "treatment plants." A summary of these plants and the proposed TTHM and HAA5 sampling frequency for each plant is presented in Table 2-2.

Table 2-2. Disinfection By-Product Plant Identification and Sampling Requirements

Treatment Plant	Source(s)	Sampling Location	Sampling Frequency
Sumner Springs			1 sample per quarter
	SO 1 Sumner Springs		
	SO 2 Crystal Springs		
Elhi Springs	SO 3 Elhi Springs		1 sample per quarter
County Springs			1 sample per quarter
	SO 4 County Springs		
	SO 2 Crystal Springs		
West Well	SO 5 West Well		1 sample per quarter[a]
South Well	SO 6 South Well		1 sample per quarter[a]
Dieringer Well	SO 7 Dieringer Well		1 sample per quarter[a]

[a] Per discussion with DOH personnel, disinfection by-products sampling is required for a particular source only if that source has been utilized for 15 days or more during the quarter sampling period.

The proposed disinfection by-product monitoring locations are shown on Figure 2-1.

2.1.1 TTMH/HAA5 MCL Compliance

Compliance with Stage 1 DDBPR requirements for TTHMs and HAA5s is demonstrated by calculating a running annual average of the sampling results for TTHMs and HAA5s. A system is in compliance if the running annual average of all TTHM and HAA5 samples collected by the system for any consecutive four-quarter period does not exceed the MCLs listed in Table 2-1. The system is in violation of the MCL if the running annual arithmetic average of any consecutive four-quarter samples covering any consecutive four-quarter period exceeds the MCL. Systems in violation of the TTMH or HAA5 MCLs are required notify the public per 40 CFR 141.201 through 207 and WAC 246-290 Part 7, Subpart A, report the exceedance to DOH in conformance with WAC 246-290-480, and complete follow-up action as outlined in WAC 246-290-320. Applicable CFR and WAC sections are included in Appendix A.

Appendix B contains a worksheet to record and calculate the running annual average for TTHM and HAA5 sampling results.

DOH may allow reduced disinfection by-product monitoring if the annual average for TTHM and HAA5 is equal to or less than 0.040 mg/l and 0.030 mg/l, respectively. If allowed by DOH, reduced TTHM and HAA5 monitoring will consist of one sample per treatment plant per year. Reduced monitoring samples shall be collected during the month of warmest source water temperature (40 CFR 141.132).

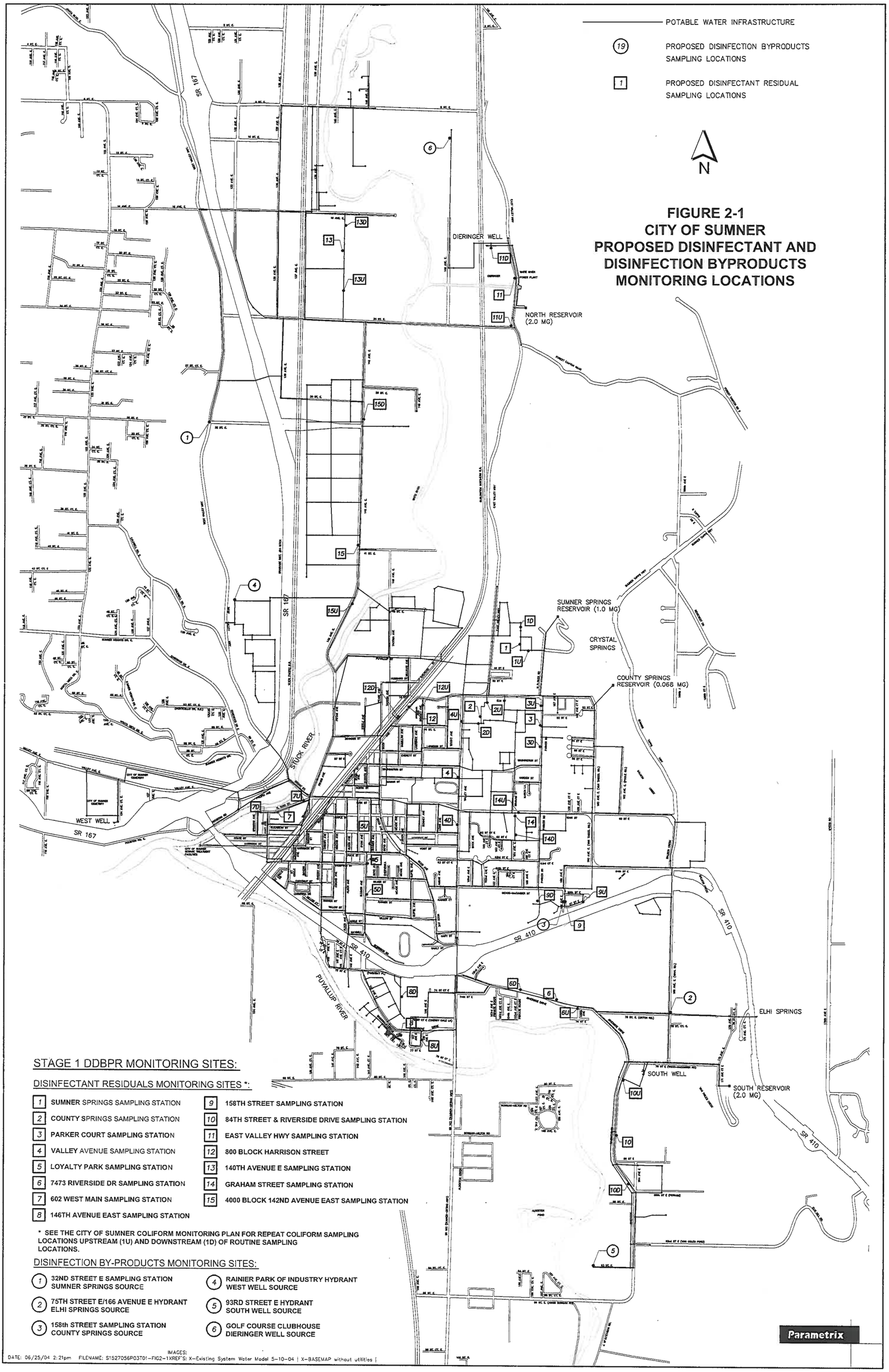


FIGURE 2-1
CITY OF SUMNER
PROPOSED DISINFECTANT AND DISINFECTION BYPRODUCTS MONITORING LOCATIONS

STAGE 1 DDBPR MONITORING SITES:

DISINFECTANT RESIDUALS MONITORING SITES *:

1	SUMNER SPRINGS SAMPLING STATION	9	158TH STREET SAMPLING STATION
2	COUNTY SPRINGS SAMPLING STATION	10	84TH STREET & RIVERSIDE DRIVE SAMPLING STATION
3	PARKER COURT SAMPLING STATION	11	EAST VALLEY HWY SAMPLING STATION
4	VALLEY AVENUE SAMPLING STATION	12	800 BLOCK HARRISON STREET
5	LOYALTY PARK SAMPLING STATION	13	140TH AVENUE E SAMPLING STATION
6	7473 RIVERSIDE DR SAMPLING STATION	14	GRAHAM STREET SAMPLING STATION
7	602 WEST MAIN SAMPLING STATION	15	4000 BLOCK 142ND AVENUE EAST SAMPLING STATION
8	146TH AVENUE EAST SAMPLING STATION		

* SEE THE CITY OF SUMNER COLIFORM MONITORING PLAN FOR REPEAT COLIFORM SAMPLING LOCATIONS UPSTREAM (1U) AND DOWNSTREAM (1D) OF ROUTINE SAMPLING LOCATIONS.

DISINFECTION BY-PRODUCTS MONITORING SITES:

(1)	32ND STREET E SAMPLING STATION SUMNER SPRINGS SOURCE	(4)	RAINIER PARK OF INDUSTRY HYDRANT WEST WELL SOURCE
(2)	75TH STREET E/166 AVENUE E HYDRANT ELHI SPRINGS SOURCE	(5)	93RD STREET E HYDRANT SOUTH WELL SOURCE
(3)	158th STREET SAMPLING STATION COUNTY SPRINGS SOURCE	(6)	GOLF COURSE CLUBHOUSE DIERINGER WELL SOURCE

Parametrix

IMAGES:
DATE: 06/25/04 2:21pm FILENAME: S1527056P03T01-FIG2-1XREF'S: X-Existing System Water Model 5-10-04 | X-BASEMAP without utilities |

2.2 DISINFECTANT RESIDUAL

The City of Sumner uses sodium hypochlorite and chlorine gas for disinfection. Therefore, in addition to the daily chlorine residual monitoring currently conducted by the City, compliance with Stage 1 DDBPR requires that additional chlorine residual samples be collected at the same time and location as routine and repeat coliform sampling collection. The allowable Maximum Residual Disinfectant Level (MRDL) and Maximum Residual Disinfectant Level Goal (MRDLG) for free chlorine residual are shown in Table 2-3.

Table 2-3. Disinfectant Residuals

Disinfectant Residual	MRDL (mg/l)	MRDLG (mg/l)
Chlorine	4.0 as Cl2	4

The City of Sumner currently collects 15 routine coliform samples per month. Figure 2-1 shows the routine and repeat coliform monitoring locations currently utilized by the City. The coliform monitoring schedule and routine/repeat sampling addresses are listed in the City of Sumner Coliform Monitoring Plan. A copy of the Coliform Monitoring Plan can be found in Appendix C.

2.2.1 Disinfectant Residual MRDL Compliance

Compliance with the Stage 1 DDBPR chlorine residual MRDL is based on a running annual arithmetic average, computed quarterly, of monthly averages of all samples collected (in conjunction with coliform sampling) by the system. The system is in violation if the average of any four consecutive quarters exceeds the MRDL listed in Table 2-3 above. If found to be in violation of the chlorine residual MRDL, the City will be required notify the public per 40 CFR 141.201 through 207 and WAC 246-290 Part 7, Subpart A, report the exceedance to DOH in conformance with WAC 246-290-480, and complete follow-up action as outlined in WAC 246-290-320. Applicable WAC and CFR sections are located in Appendix A.

Appendix B contains a worksheet to record the disinfectant residual monitoring results and compute the running annual average.

3. SUMMARY

Beginning January 1, 2004, the City of Sumner is required to conduct additional monitoring to satisfy the requirements of the Stage 1 DDBPR, including annual TTHM and HAA5 sampling for each source "treatment plant" and chlorine residual sampling at the same time and location as routine and repeat coliform sampling.

Table 3-1 summarizes the monitoring requirements needed to comply with the Stage 1 DDBPR.

Table 3-1. Stage 1 DDBPR Monitoring Requirements

Constituent	MCL/MRDL (mg/l)	Monitoring Frequency	Monitoring Location
TTHM	0.080 mg/l (MCL)	One sample per plant per quarter	Point in system representing maximum residence time (see Figure 2 1).
HAA5	0.060 mg/l (MCL)	One sample per plant per quarter	Point in system representing maximum residence time (see Figure 2 1).
Chlorine	4.0 mg/l as Cl2 (MRDL)	Biweekly (during coliform sampling) (typically 15 samples per month)	Routine and repeat coliform sampling sites (see Coliform Monitoring Plan).

APPENDIX A

Public Notification, Agency Notification, and Follow-Up Action Requirements

40 CFR 141.201 – 207
WAC 246-290 Part 7, Subpart A
"Public Notification Requirements"

WAC 246-29-480
"Agency Notification Requirements"

WAC 246-290-480 Recordkeeping and reporting. (1) Records. The purveyor shall keep the following records of operation and water quality analyses:

(a) Bacteriological and turbidity analysis results shall be kept for five years. Chemical analysis results shall be kept for as long as the system is in operation. Records of daily source meter readings shall be kept for ten years. Other records of operation and analyses required by the department shall be kept for three years. All records shall bear the signature of the operator in responsible charge of the water system or his or her representative. Systems shall keep these records available for inspection by the department and shall send the records to the department if requested. Actual laboratory reports may be kept or data may be transferred to tabular summaries, provided the following information is included:

(i) The date, place, and time of sampling, and the name of the person collecting the sample;

(ii) Identification of the sample type (routine distribution system sample, repeat sample, source or finished water sample, or other special purpose sample);

(iii) Date of analysis;

(iv) Laboratory and person responsible for performing analysis;

(v) The analytical method used; and

(vi) The results of the analysis.

(b) Records of action taken by the system to correct violations of primary drinking water standards. For each violation, records of actions taken to correct the violation, and copies of public notifications shall be kept for no less than three years after the last corrective action taken.

(c) Copies of any written reports, summaries, or communications relating to sanitary surveys or SPIs of the system conducted by system personnel, by a consultant or by any local, state, or federal agency, shall be kept for ten years after completion of the sanitary survey or SPI involved.

(d) Copies of project reports, construction documents and related drawings, inspection reports and approvals shall be kept for the life of the facility.

(e) Where applicable, daily records of the following shall be kept for a minimum of three years:

(i) Chlorine residual;

(ii) Fluoride level;

(iii) Water treatment plant performance including, but not limited to:

(A) Type of chemicals used and quantity;

(B) Amount of water treated; and

(C) Results of analyses.

(iv) Turbidity;

(v) Source meter readings; and

(vi) Other information as specified by the department.

(f) The purveyor shall retain copies of public notices made in accordance with Part 7, Subpart A of this chapter and certifications made to the department under 40 CFR 141.33(e) for a period of at least three years after issuance.

(g) Purveyors using conventional, direct, or in-line filtration that recycle spent filter backwash water, thickener supernatant, or liquids from dewatering processes within their treatment plant shall, beginning no later than June 8, 2004, collect and retain on file the following information for review and evaluation by the department:

(i) A copy of the recycle notification and information submitted to the department in accordance with WAC 246-290-660 (4)(a)(i).

(ii) A list of all recycle flows and the frequency with which they are returned.

(iii) Average and maximum backwash flow rate through the filters and the average and maximum duration of the filter backwash process in minutes.

(iv) Typical filter run length and a written summary of how filter run length is determined.

(v) The type of treatment provided for the recycle flow.

(vi) Data on the physical dimensions of the equalization and/or treatment units, typical and maximum hydraulic loading rates, type of treatment chemicals used and average dose and frequency of use, and frequency at which solids are removed, if applicable.

(h) Purveyors required to conduct disinfection profiling and benchmarking in accordance with 40 CFR 141.530 through 141.544 shall retain the results on file indefinitely.

(2) Reporting.

(a) Unless otherwise specified in this chapter, the purveyor shall report to the department within forty-eight hours the failure to comply with any national primary drinking water regulation (including failure to comply with any monitoring requirements) as set forth in this chapter. For violations assigned to Tier 1 in WAC 246-290-71001, the department must be notified as soon as possible, but no later than twenty-four hours after the violation is known.

(b) The purveyor shall submit to the department reports required by this chapter, including tests, measurements, and analytic reports. Monthly reports are due before the tenth day of the following month, unless otherwise specified in this chapter.

(c) The purveyor shall submit to the department copies of any written summaries or communications relating to the status of monitoring waivers during each monitoring cycle or as directed by the department.

(d) Source meter readings shall be made available to the department.

(e) Water facilities inventory form (WFI).

(i) Purveyors of **community** and **NTNC** systems shall submit an annual WFI update to the department;

(ii) Purveyors of **TNC** systems shall submit an updated WFI to the department as requested;

(iii) Purveyors shall submit an updated WFI to the department within thirty days of any change in name, category, ownership, or responsibility for management of the water system, or addition of source or storage facilities; and

(iv) At a minimum the completed WFI shall provide the current names, addresses, and telephone numbers of the owners, operators, and emergency contact persons for the system.

(v) Purveyors shall provide in the WFI total annual water production and use, including:

(i) Total annual water production for each source;

(ii) Monthly and annual totals for water purchased from or sold to other purveyors; and

(iii) For purveyors with more than one thousand service connections, monthly and annual totals for purveyor consumer classes. Monthly data may be estimated if the water system bills less frequently than monthly.

(f) Bacteriological.

(i) The purveyor shall notify the department of the presence of:

(A) Coliform in a sample, within ten days of notification by the laboratory; and

(B) Fecal coliform or E. coli in a sample, by the end of the business day in which the purveyor is notified by the laboratory. If the purveyor is notified of the results after normal close of business, then the purveyor shall notify the department before the end of the next business day.

(g) Systems monitoring for unregulated contaminants in accordance with WAC 246-290-300(9), shall send a copy of the results of such monitoring to the department within thirty days of receipt of analytical results.

(h) Systems monitoring for disinfection by-products in accordance with WAC 246-290-300(7) shall report information to the department as specified in 40 CFR 141.134.

(i) Systems monitoring for disinfectant residuals in accordance with WAC 246-290-300(7) shall report information to the department as specified in subsection (2)(a) of this section, and 40 CFR 141.134(c).

(j) Systems required to monitor for disinfection by-product precursor removal in accordance with WAC 246-290-300(7) shall report information to the department as specified in 40 CFR 141.134(d).

(k) Systems shall submit to the department, in accordance with 40 CFR 141.31(d), a certification that the system has complied with the public notification regulations (Part 7, Subpart A of this chapter) when a public notification is required. Along with the certification, the system shall submit a representative copy of each type of notice.

[Statutory Authority: RCW 43.20.050 and 70.119A.080. 04-04-056, § 246-290-480, filed 1/30/04, effective 3/1/04. Statutory Authority: RCW 43.20.050 (2) and (3) and70.119A.080 . 03-08-037, § 246-290-480, filed 3/27/03, effective 4/27/03. Statutory Authority: RCW 43.02.050 [43.20.050]. 99-07-021, § 246-290-480, filed 3/9/99, effective 4/9/99. Statutory Authority: RCW 43.20.050. 94-14-001, § 246-290-480, filed 6/22/94, effective 7/23/94; 93-08-011 (Order 352B), § 246-290-480, filed 3/25/93, effective 4/25/93; 92-04-070 (Order 241B), § 246-290-480, filed 2/4/92, effective 3/6/92; 91-02-051 (Order 124B), recodified as § 246-290-480, filed 12/27/90, effective 1/31/91. Statutory Authority: P.L. 99-339. 89-21-020 (Order 336), § 248-54-265, filed 10/10/89, effective 11/10/89. Statutory Authority: RCW 34.04.045. 88-05-057 (Order 307), § 248-54-265, filed 2/17/88. Statutory Authority: RCW 43.20.050. 83-19-002 (Order 266), § 248-54-265, filed 9/8/83.]

WAC 246-290-320
"Follow-Up Action Requirements"

WAC 246-290-320 Follow-up action. (1) General.

(a) When an MCL or MRDL violation or exceedance occurs, the purveyor shall take follow-up action as described in this section.

(b) When a primary standard violation occurs, the purveyor shall:

(i) Notify the department in accordance with WAC 246-290-480;

(ii) Notify the consumers served by the system and the owner or operator of any consecutive system served in accordance with 40 CFR 141.201 through 208, and Part 7, Subpart A of this chapter;

(iii) Determine the cause of the contamination; and

(iv) Take action as directed by the department.

(c) When a secondary standard violation occurs, the purveyor shall notify the department and take action as directed by the department.

(d) The department may require additional sampling for confirmation of results.

(2) Bacteriological.

(a) When coliform bacteria are present in any sample and the sample is not invalidated under (d) of this subsection, the purveyor shall ensure the following actions are taken:

(i) The sample is analyzed for fecal coliform or E. coli. When a sample with a coliform presence is not analyzed for E. coli or fecal coliforms, the sample shall be considered as having a fecal coliform presence for MCL compliance purposes;

(ii) Repeat samples are collected in accordance with (b) of this subsection;

(iii) The department is notified in accordance with WAC 246-290-480; and

(iv) The cause of the coliform presence is determined and corrected.

(b) Repeat samples.

(i) The purveyor shall collect repeat samples in order to confirm the original sample results and to determine the cause of the coliform presence. Additional treatment, such as batch or shock chlorination, shall not be instituted prior to the collection of repeat samples unless prior authorization by the department is given. Following collection of repeat samples, and before the analytical results are known, there may be a need to provide interim precautionary treatment or other means to insure public health protection. The purveyor shall contact the department to determine the best interim approach in this

situation.

(ii) The purveyor shall collect and submit for analysis a set of repeat samples for every sample in which the presence of coliforms is detected. A set of repeat coliform samples consists of:

(A) Four repeat samples for systems collecting one routine coliform sample each month; or

(B) Three repeat samples for all systems collecting more than one routine coliform sample each month.

(iii) The purveyor shall collect repeat sample sets according to Table 7;

(iv) The purveyor shall collect one set of repeat samples for each sample with a coliform presence. All samples in a set of repeat samples shall be collected on the same day and submitted for analysis within twenty-four hours after notification by the laboratory of a coliform presence, or as directed by the department.

(v) When repeat samples have coliform presence, the purveyor shall:

(A) Contact the department and collect a minimum of one additional set of repeat samples as directed by the department; or

(B) Collect one additional set of repeat samples for each sample where coliform presence was detected.

(vi) The purveyor of a system providing water to consumers via a single service shall collect repeat samples from the same location as the sample with a coliform presence. The set of repeat samples shall be collected:

(A) On the same collection date;

(B) Over consecutive days with one sample collected each day until the required samples in the set of repeat samples are collected; or

(C) As directed by the department.

(vii) If a sample with a coliform presence was collected from the first two or last two active services, the purveyor shall monitor as directed by the department;

(viii) The purveyor may change a previously submitted routine sample to a sample in a set of repeat samples when the purveyor:

(A) Collects the sample within five adjacent service connections of the location from which the initial sample with a coliform presence was collected;

(B) Collects the sample after the initial sample with a coliform presence was submitted for analysis;

(C) Collects the sample on the same day as other samples in the set of repeat samples, except under (b)(iv) of this subsection; and

(D) Requests and receives approval from the department for the change.

(ix) The department may determine that sets of repeat samples specified under this subsection are not necessary during a month when a nonacute coliform MCL violation is determined for the system.

Table 7

REPEAT SAMPLE REQUIREMENTS

# OF ROUTINE SAMPLES COLLECTED EACH MONTH	# OF SAMPLES IN A SET OF REPEAT SAMPLES	LOCATIONS FOR REPEAT SAMPLES (COLLECT AT LEAST ONE SAMPLE PER SITE)
1	4	♦ Site of previous sample with a coliform presence ♦ Within 5 active services upstream of site of sample with a coliform presence ♦ Within 5 active services downstream of site of sample with a coliform presence ♦ At any other active service or from a location most susceptible to contamination (i.e., well or reservoir)
more than 1	3	♦ Site of previous sample with a coliform presence ♦ Within 5 active services upstream of site of sample with a coliform presence ♦ Within 5 active services downstream of site of sample with a coliform presence

(c) Monitoring frequency following a coliform presence. Systems having one or more coliform presence samples that were not invalidated during the previous month shall collect and submit for analysis the minimum number of samples shown in the last column of Table 2.

(i) The purveyor may obtain a reduction in the monitoring frequency requirement when one or more samples with a coliform presence were collected during the previous month, if the purveyor proves to the satisfaction of the department;

(A) The cause of the sample with a coliform presence; and

(B) The problem is corrected before the end of the next month the system provides water to the public.

(ii) If the monitoring frequency requirement is reduced, the purveyor shall collect and submit at least the minimum number of samples required when no samples with a coliform presence were collected during the previous month.

(d) Invalid samples. Coliform samples may be determined to be invalid under any of the following conditions:

(i) A certified laboratory determines that the sample results show:

(A) Multiple tube technique cultures that are turbid without appropriate gas production;

(B) Presence-absence technique cultures that are turbid in the absence of an acid reaction;

(C) Occurrence of confluent growth patterns or growth of TNTC (too numerous to count) colonies without a surface sheen using a membrane filter analytic technique;

(ii) The analyzing laboratory determines there is excess debris in the sample.

(iii) The analyzing laboratory establishes that improper sample collection or analysis occurred;

(iv) The department determines that a nondistribution system problem has occurred as indicated by:

(A) All samples in the set of repeat samples collected at the same location, including households, as the original coliform presence sample also are coliform presence; and

(B) All other samples from different locations (households, etc.) in the set of repeat samples are free of coliform.

(v) The department determines a coliform presence result is due to a circumstance or condition that does not reflect water quality in the distribution system.

(e) Follow-up action when an invalid sample is determined. The purveyor shall take the following action when a coliform sample is determined to be invalid:

(i) Collect and submit for analysis an additional coliform sample from the same location as each invalid sample within twenty-four hours of notification of the invalid

sample; or

(ii) In the event that it is determined that the invalid sample resulted from circumstances or conditions not reflective of distribution system water quality, collect a set of samples in accordance with Table 7; and

(iii) Collect and submit for analysis samples as directed by the department.

(f) Invalidated samples shall not be included in determination of the sample collection requirement for compliance with this chapter.

(3) Inorganic chemical and physical follow-up monitoring shall be conducted in accordance with the following:

(a) For nonnitrate/nitrite primary inorganic chemicals, 40 CFR 141.23 (a)(4), 141.23 (b)(8), 141.23 (c)(7), 141.23 (c)(9), 141.23 (f)(1), 141.23(g), 141.23(m) and 141.23(n);

(b) For nitrate, 40 CFR 141.23 (a)(4), 141.23 (d)(2), 141.23 (d)(3), 141.23 (f)(2), 141.23(g), 141.23(m), 141.23(n), and 141.23(o);

(c) For nitrite, 40 CFR 141.23 (a)(4), 141.23 (e)(3), 141.23 (f)(2), and 141.23(g); or

(d) The purveyor of any public water system providing service that has secondary inorganic MCL exceedances shall take follow-up action as required by the department. Follow-up action shall be commensurate with the degree of consumer acceptance of the water quality and their willingness to bear the costs of meeting the secondary standard. For new community water systems and new nontransient noncommunity water systems without active consumers, treatment for secondary contaminant MCL exceedances will be required.

(4) Lead and copper follow-up monitoring shall be conducted in accordance with 40 CFR 141.85(d), 141.86 (d)(2), 141.86 (d)(3), 141.87(d) and 141.88(b) through 141.88(d).

(5) Turbidity.

Purveyors monitoring turbidity in accordance with Part 6 of this chapter shall provide follow-up in accordance with WAC 246-290-634.

(6) Trihalomethanes. For public water systems subject to WAC 246-290-300(6):

(a) When the average of all samples taken during any twelve-month period exceeds the MCL for total trihalomethanes as referenced in WAC 246-290-310 (4)(b), the violation is confirmed and the purveyor shall take corrective action as required by the department, and consistent with 40 CFR 141.30 (b)(3). When the maximum trihalomethane potential (MTTP) result is equal to or greater than 0.10 mg/L and the result is confirmed by a promptly collected repeat sample, the purveyor shall provide for

additional monitoring and take action as directed by the department.

(7) Organic chemicals. Follow-up monitoring shall be conducted in accordance with the following:

(a) For VOCs, 40 CFR 141.24 (f)(11) through 141.24 (f)(15), and 141.24 (f)(22); or

(b) For SOCs, 40 CFR 141.24(b), 141.24(c) and 141.24 (h)(7) through 141.24 (h)(11), and 141.24 (h)(20).

(8) Unregulated inorganic and organic chemicals.

(a) Follow-up monitoring shall be conducted in accordance with 40 CFR 141.40 (n)(8) and 141.40 (n)(9).

(b) When an unregulated chemical is verified at a concentration above the detection limit, the purveyor shall:

(i) Submit the sample analysis results to the department within seven days of receipt from the laboratory; and

(ii) Sample the source a minimum of once every three months for one year and then annually thereafter during the three-month period when the highest previous measurement occurred.

(c) If the department determines that an unregulated chemical is verified at a level greater than a SAL, the department shall notify the purveyor in writing. The purveyor shall repeat sample the source as soon as possible after initial department notice that a SAL has been exceeded. The purveyor shall submit the analysis results to the department within seven days of receipt from the laboratory. If any repeat sample confirms that a SAL has been exceeded, the purveyor shall:

(i) Provide consumer information in accordance with Part 7, Subpart A of this chapter;

(ii) Investigate the cause of the contamination; and

(iii) Take follow-up or corrective action as required by the department.

(d) The department may reduce the purveyor's monitoring requirement for a source detecting an unregulated chemical if the source has been monitored annually for at least three years, and all analysis results are less than the SAL.

(9) Radionuclide follow-up monitoring shall be conducted in accordance with 40 CFR 141.26 (a)(2)(iv), 141.26 (a)(3)(ii) through (v), 141.26 (a)(4), 141.26 (b)(6), and 141.26 (c)(5).

(10) The department shall determine the purveyor's follow-up action when a substance not included in this chapter is detected.

[Statutory Authority: RCW 43.20.050 and 70.119A.080. 04-04-056, § 246-290-320, filed 1/30/04, effective 3/1/04. Statutory Authority: RCW 43.20.050 (2) and (3) and70.119A.080 . 03-08-037, § 246-290-320, filed 3/27/03, effective 4/27/03. Statutory Authority: RCW 43.02.050 [43.20.050]. 99-07-021, § 246-290-320, filed 3/9/99, effective 4/9/99. Statutory Authority: RCW 43.20.050. 94-14-001, § 246-290-320, filed 6/22/94, effective 7/23/94; 93-08-011 (Order 352B), § 246-290-320, filed 3/25/93, effective 4/25/93; 92-04-070 (Order 241B), § 246-290-320, filed 2/4/92, effective 3/6/92. Statutory Authority: Chapter 43.20 RCW. 91-07-031 (Order 150B), § 246-290-320, filed 3/15/91, effective 4/15/91. Statutory Authority: RCW 43.20.050. 91-02-051 (Order 124B), recodified as § 246-290-320, filed 12/27/90, effective 1/31/91. Statutory Authority: P.L. 99-339. 89-21-020 (Order 336), § 248-54-185, filed 10/10/89, effective 11/10/89. Statutory Authority: RCW 34.04.045. 88-05-057 (Order 307), § 248-54-185, filed 2/17/88. Statutory Authority: RCW 43.20.050. 83-19-002 (Order 266), § 248-54-185, filed 9/8/83.]

APPENDIX B

Disinfection By-Products and Disinfectant Residual Monitoring Worksheets

CITY OF SUMNER

Disinfection By-Products Monitoring
Year 2004 Monitoring Period

TTHM MCL = 0.080 mg/l
HAA5 MCL = 0.060 mg/l

First Quarter

Treatment Plant	Monitoring Location	Monitoring Date	TTHM (mg/l)	HAA5 (mg/l)
Sumner Springs				
Elhi Springs				
County Springs				
West Well				
South Well				
Dieringer Well				
		First Quarter Average	**#DIV/0!**	**#DIV/0!**

Second Quarter

Treatment Plant	Monitoring Location	Monitoring Date	TTHM (mg/l)	HAA5 (mg/l)
Sumner Springs				
Elhi Springs				
County Springs				
West Well				
South Well				
Dieringer Well				
		Second Quarter Average	**#DIV/0!**	**#DIV/0!**

* DBP Monitoring is not required for sources utilized less than 15 days during the quarter. Attach source production records for sources not monitored for TTHM/HAA5 to verify that this requirement is being met.

CITY OF SUMNER

Disinfection By-Products Monitoring
Year 2004 Monitoring Period

TTHM MCL = 0.080 mg/l
HAA5 MCL = 0.060 mg/l

Third Quarter

Treatment Plant	Monitoring Location	Monitoring Date	TTHM (mg/l)	HAA5 (mg/l)
Sumner Springs				
Elhi Springs				
County Springs				
West Well				
South Well				
Dieringer Well				
		Third Quarter Average	**#DIV/0!**	**#DIV/0!**

Fourth Quarter

Treatment Plant	Monitoring Location	Monitoring Date	TTHM (mg/l)	HAA5 (mg/l)
Sumner Springs				
Elhi Springs				
County Springs				
West Well				
South Well				
Dieringer Well				
		Fourth Quarter Average	**#DIV/0!**	**#DIV/0!**
		RUNNING ANNUAL AVERAGE	**#DIV/0!**	**#DIV/0!**

* DBP Monitoring is not required for sources utilized less than 15 days during the quarter. Attach source production records for sources that were not monitored for TTHM/HAA5 to verify that this requirement is being met.

CITY OF SUMNER

Disinfection By-Products Monitoring
Year 2005 Monitoring Period

TTHM MCL = 0.080 mg/l
HAA5 MCL = 0.060 mg/l

First Quarter

Treatment Plant	Monitoring Location	Monitoring Date	TTHM (mg/l)	HAA5 (mg/l)
Sumner Springs				
Elhi Springs				
County Springs				
West Well				
South Well				
Dieringer Well				
		First Quarter Average	**#DIV/0!**	**#DIV/0!**
		RUNNING ANNUAL AVERAGE	**#DIV/0!**	**#DIV/0!**

Second Quarter

Treatment Plant	Monitoring Location	Monitoring Date	TTHM (mg/l)	HAA5 (mg/l)
Sumner Springs				
Elhi Springs				
County Springs				
West Well				
South Well				
		Second Quarter Average	**#DIV/0!**	**#DIV/0!**
		RUNNING ANNUAL AVERAGE	**#DIV/0!**	**#DIV/0!**

* DBP Monitoring is not required for sources utilized less than 15 days during the quarter. Attach source production records for sources not monitored for TTHM/HAA5 to verify that this requirement is being met.

CITY OF SUMNER

Disinfection By-Products Monitoring
Year 2005 Monitoring Period

TTHM MCL = 0.080 mg/l
HAA5 MCL = 0.060 mg/l

Third Quarter

Treatment Plant	Monitoring Location	Monitoring Date	TTHM (mg/l)	HAA5 (mg/l)
Sumner Springs				
Elhi Springs				
County Springs				
West Well				
South Well				
Dieringer Well				
		Third Quarter Average	**#DIV/0!**	**#DIV/0!**
		RUNNING ANNUAL AVERAGE	**#DIV/0!**	**#DIV/0!**

Fourth Quarter

Treatment Plant	Monitoring Location	Monitoring Date	TTHM (mg/l)	HAA5 (mg/l)
Sumner Springs				
Elhi Springs				
County Springs				
West Well				
South Well				
Dieringer Well				
		Fourth Quarter Average	**#DIV/0!**	**#DIV/0!**
		RUNNING ANNUAL AVERAGE	**#DIV/0!**	**#DIV/0!**

* DBP Monitoring is not required for sources utilized less than 15 days during the quarter. Attach source production records for sources not monitored for TTHM/HAA5 to verify that this requirement is being met.

CITY OF SUMNER

Disinfectant Residual Monitoring
Monitoring Period 2004

Chlorine MTDL = 4.0 mg/l (as Cl_2)

First Quarter

Month	Week	Monitoring Location	Monitoring Date	Cl_2 (mg/l)
January	Week 1	x		
		x		
		x		
		x		
		x		
		x		
		x		
		x		
	Week 3	x		
		x		
		x		
		x		
		x		
		x		
		x		
			Monthly Average	**#DIV/0!**

Month	Week	Monitoring Location	Monitoring Date	Cl_2 (mg/l)
February	Week 1	x		
		x		
		x		
		x		
		x		
		x		
		x		
		x		
	Week 3	x		
		x		
		x		
		x		
		x		
		x		
		x		
			Monthly Average	**#DIV/0!**

CITY OF SUMNER

Disinfectant Residual Monitoring
Monitoring Period 2004

Chlorine MTDL = 4.0 mg/l (as Cl_2)

Month	Week	Monitoring Location	Monitoring Date	Cl_2 (mg/l)
March	Week 1	x		
		x		
		x		
		x		
		x		
		x		
		x		
		x		
	Week 3	x		
		x		
		x		
		x		
		x		
		x		
		x		
			Monthly Average	#DIV/0!

First Quarter Average #DIV/0!

Second Quarter

Month	Week	Monitoring Location	Monitoring Date	Cl_2 (mg/l)
April	Week 1	x		
		x		
		x		
		x		
		x		
		x		
		x		
		x		
	Week 3	x		
		x		
		x		
		x		
		x		
		x		
		x		
			Monthly Average	#DIV/0!

CITY OF SUMNER

Disinfectant Residual Monitoring

Monitoring Period 2004

Chlorine MTDL = 4.0 mg/l (as Cl_2)

Month	Week	Monitoring Location	Monitoring Date	Cl_2 (mg/l)
May	Week 1	x		
		x		
		x		
		x		
		x		
		x		
		x		
		x		
	Week 3	x		
		x		
		x		
		x		
		x		
		x		
		x		
			Monthly Average	#DIV/0!

Month	Week	Monitoring Location	Monitoring Date	Cl_2 (mg/l)
June	Week 1	x		
		x		
		x		
		x		
		x		
		x		
		x		
		x		
	Week 3	x		
		x		
		x		
		x		
		x		
		x		
		x		
			Monthly Average	#DIV/0!

Second Quarter Average #DIV/0!

CITY OF SUMNER

Disinfectant Residual Monitoring
Monitoring Period 2004

Chlorine MTDL = 4.0 mg/l (as Cl_2)

Third Quarter

Month	Week	Monitoring Location	Monitoring Date	Cl_2 (mg/l)
July	Week 1	x		
		x		
		x		
		x		
		x		
		x		
		x		
		x		
	Week 3	x		
		x		
		x		
		x		
		x		
		x		
		x		
			Monthly Average	**#DIV/0!**

Month	Week	Monitoring Location	Monitoring Date	Cl_2 (mg/l)
August	Week 1	x		
		x		
		x		
		x		
		x		
		x		
		x		
		x		
	Week 3	x		
		x		
		x		
		x		
		x		
		x		
		x		
			Monthly Average	**#DIV/0!**

CITY OF SUMNER

Disinfectant Residual Monitoring
Monitoring Period 2004

Chlorine MTDL = 4.0 mg/l (as Cl_2)

Month	Week	Monitoring Location	Monitoring Date	Cl_2 (mg/l)
September	Week 1	x		
		x		
		x		
		x		
		x		
		x		
		x		
		x		
	Week 3	x		
		x		
		x		
		x		
		x		
		x		
		x		
			Monthly Average	#DIV/0!

Third Quarter Average #DIV/0!

Fourth Quarter

Month	Week	Monitoring Location	Monitoring Date	Cl_2 (mg/l)
October	Week 1	x		
		x		
		x		
		x		
		x		
		x		
		x		
		x		
	Week 3	x		
		x		
		x		
		x		
		x		
		x		
		x		
			Monthly Average	#DIV/0!

CITY OF SUMNER

Disinfectant Residual Monitoring
Monitoring Period 2004

Chlorine MTDL = 4.0 mg/l (as Cl_2)

Month	Week	Monitoring Location	Monitoring Date	Cl_2 (mg/l)
November	Week 1	x		
		x		
		x		
		x		
		x		
		x		
		x		
		x		
	Week 3	x		
		x		
		x		
		x		
		x		
		x		
		x		
			Monthly Average	#DIV/0!

Month	Week	Monitoring Location	Monitoring Date	Cl_2 (mg/l)
December	Week 1	x		
		x		
		x		
		x		
		x		
		x		
		x		
		x		
	Week 3	x		
		x		
		x		
		x		
		x		
		x		
		x		
			Monthly Average	#DIV/0!

Fourth Quarter Average **#DIV/0!**

RUNNING ANNUAL AVERAGE **#DIV/0!**

CITY OF SUMNER

Disinfectant Residual Monitoring
Monitoring Period 2005

Chlorine MTDL = 4.0 mg/l (as Cl_2)

First Quarter

Month	Week	Monitoring Location	Monitoring Date	Cl_2 (mg/l)
January	Week 1	x		
		x		
		x		
		x		
		x		
		x		
		x		
		x		
	Week 3	x		
		x		
		x		
		x		
		x		
		x		
		x		
			Monthly Average	**#DIV/0!**

Month	Week	Monitoring Location	Monitoring Date	Cl_2 (mg/l)
February	Week 1	x		
		x		
		x		
		x		
		x		
		x		
		x		
		x		
	Week 3	x		
		x		
		x		
		x		
		x		
		x		
		x		
			Monthly Average	**#DIV/0!**

CITY OF SUMNER

Disinfectant Residual Monitoring
Monitoring Period 2005

Chlorine MTDL = 4.0 mg/l (as Cl_2)

Month	Week	Monitoring Location	Monitoring Date	Cl_2 (mg/l)
March	Week 1	x		
		x		
		x		
		x		
		x		
		x		
		x		
		x		
	Week 3	x		
		x		
		x		
		x		
		x		
		x		
		x		
			Monthly Average	#DIV/0!

First Quarter Average #DIV/0!

RUNNING ANNUAL AVERAGE #DIV/0!

Second Quarter

Month	Week	Monitoring Location	Monitoring Date	Cl_2 (mg/l)
April	Week 1	x		
		x		
		x		
		x		
		x		
		x		
		x		
		x		
	Week 3	x		
		x		
		x		
		x		
		x		
		x		
		x		
			Monthly Average	#DIV/0!

CITY OF SUMNER

Disinfectant Residual Monitoring
Monitoring Period 2005

Chlorine MTDL = 4.0 mg/l (as Cl_2)

Month	Week	Monitoring Location	Monitoring Date	Cl_2 (mg/l)
May	Week 1	x		
		x		
		x		
		x		
		x		
		x		
		x		
		x		
	Week 3	x		
		x		
		x		
		x		
		x		
		x		
		x		
			Monthly Average	#DIV/0!

Month	Week	Monitoring Location	Monitoring Date	Cl_2 (mg/l)
June	Week 1	x		
		x		
		x		
		x		
		x		
		x		
		x		
		x		
	Week 3	x		
		x		
		x		
		x		
		x		
		x		
		x		
			Monthly Average	#DIV/0!

Second Quarter Average **#DIV/0!**

RUNNING ANNUAL AVERAGE **#DIV/0!**

CITY OF SUMNER
Disinfectant Residual Monitoring
Monitoring Period 2005

Chlorine MTDL = 4.0 mg/l (as Cl_2)

Third Quarter

Month	Week	Monitoring Location	Monitoring Date	Cl_2 (mg/l)
July	Week 1	x		
		x		
		x		
		x		
		x		
		x		
		x		
		x		
	Week 3	x		
		x		
		x		
		x		
		x		
		x		
		x		
			Monthly Average	#DIV/0!

Month	Week	Monitoring Location	Monitoring Date	Cl_2 (mg/l)
August	Week 1	x		
		x		
		x		
		x		
		x		
		x		
		x		
		x		
	Week 3	x		
		x		
		x		
		x		
		x		
		x		
		x		
			Monthly Average	#DIV/0!

CITY OF SUMNER
Disinfectant Residual Monitoring
Monitoring Period 2005

Chlorine MTDL = 4.0 mg/l (as Cl_2)

Month	Week	Monitoring Location	Monitoring Date	Cl_2 (mg/l)
September	Week 1	x		
		x		
		x		
		x		
		x		
		x		
		x		
		x		
	Week 3	x		
		x		
		x		
		x		
		x		
		x		
		x		
			Monthly Average	#DIV/0!

Third Quarter Average #DIV/0!

RUNNING ANNUAL AVERAGE #DIV/0!

Fourth Quarter

Month	Week	Monitoring Location	Monitoring Date	Cl_2 (mg/l)
October	Week 1	x		
		x		
		x		
		x		
		x		
		x		
		x		
		x		
	Week 3	x		
		x		
		x		
		x		
		x		
		x		
		x		
			Monthly Average	#DIV/0!

CITY OF SUMNER
Disinfectant Residual Monitoring
Monitoring Period 2005

Chlorine MTDL = 4.0 mg/l (as Cl_2)

Month	Week	Monitoring Location	Monitoring Date	Cl_2 (mg/l)
November	Week 1	x		
		x		
		x		
		x		
		x		
		x		
		x		
		x		
	Week 3	x		
		x		
		x		
		x		
		x		
		x		
		x		
			Monthly Average	#DIV/0!

Month	Week	Monitoring Location	Monitoring Date	Cl_2 (mg/l)
December	Week 1	x		
		x		
		x		
		x		
		x		
		x		
		x		
		x		
	Week 3	x		
		x		
		x		
		x		
		x		
		x		
		x		
			Monthly Average	#DIV/0!

Fourth Quarter Average **#DIV/0!**

RUNNING ANNUAL AVERAGE **#DIV/0!**

APPENDIX C

City of Sumner
Coliform Monitoring Plan

CITY OF SUMNER
COLIFORM MONITORING PLAN
SYSTEM ID #851207

A. SYSTEM INFORMATION

POPULATION SERVED

Permanent residents on distribution system: 9085
Total number of metered connections: 3629

SYSTEM SOURCES

The City of Sumner water system consists of four sets of springs and three wells.
The primary sources are the Sumner Springs, County Springs, Crystal Springs and Elhi Springs that provide water to all City of Sumner customers. The South Well and Dieringer Well are used when customer usage exceeds springs production or if maintenance or repairs interfere with the normal supply from the primary sources. The West Well is for emergency use only. It is currently used for irrigation, and is isolated from the distribution system by a valve that remains in the **"closed"** position until an emergency requires the use of this source.

DOH Source #	Source Name	Capacity GPM	Treatment
SO1	Sumner Springs	1100	Gas Chlorination
SO2	Crystal Springs	182	Gas Chlorination
SO3	Elhi Springs	90	Sodium Hypochlorite
SO4	County Springs	867	Gas Chlorination
SO5	West Well	500	Sodium Hypochlorite
SO6	South Well	1000	Gas Chlorination
SO7	Dieringer Well	250	Sodium Hypochlorite

System Treatment:

Sumner Springs, County Springs, Crystal Springs and South Well disinfect the water with 100% gas chlorine. Elhi Springs, Dieringer Well and West Well disinfect the water with 12% sodium hypochlorite.

System Storage:

Sumner Springs Tank	(Res. #1)	1,000,000 gal
County Springs Tank	(Res. #2)	66,000 gal
South Tank	(Res. #3)	2,000,000 gal
North Tank	(Res. #4)	2,000,000 gal
Sumner Viewpoint Tank*	(Res. #5)	330,000 gal
	Total Capacity	**5,396,000 gal**

Pressure Zones:

Zone #1. Sumner Springs, County Springs and Crystal Springs gravity flow into reservoirs #1 and #2. Reservoirs #3 & #4 are filled from the distribution system. All four reservoirs are on the same hydraulic grade line. South Well pumps directly into the distribution system when there is an inadequate water supply from primary sources. Dieringer Well pumps into reservoir #4.

Zone #2. Elhi Springs pumps directly into the distribution system. There is an inter-tie between zones #1 and #2 that is separated by a valve. The valve remains in the **"open"** position unless maintenance or repairs are needed.

Zone #3. *Sumner Viewpoint reservoir #5 is supplied by the South Tank reservoir #3 via booster pump station and serves only the Sumner Viewpoint development. Sumner Viewpoint is at a higher hydraulic grade line than the rest of the Sumner water distribution system and is not connected back to the system.

B. SAMPLING INFORMATION

The routine sampling requirement by DOH is ten samples per month. Samples are split into two groups and each group is taken on a biweekly basis. Sample site rotation is recommended by the DOH; therefore sample sites are rotated on a monthly basis. Should service area, sources or other conditions change which cause the selected sites to no longer represent the system adequately, the sites will be changed to better represent the system. Repeat samples are available upstream and downstream of all routine sample sites.
Routine and repeat sample sites are outlined below and shown on the attached map.

1. **Routine site – 4700 154th Ave Ct E sample station**
   Repeat upstream – 15406 47th St Ct E
   Repeat downstream – 4822 154th Ave Ct E **sample station**

2. **Routine site – 15304 Daffodil St Ct E sample station**
   Repeat upstream – 5303 Parker Rd **sample station.**
   Repeat downstream – 15231 151St Ave Ct E **sample station.**

3. **Routine site - Valley Ave sample station**
   Repeat upstream – 1600 blk Valley Ave
   Repeat downstream – 800 blk Valley Ave

4. **Routine site - Loyalty Park sample station**
   Repeat upstream – 700 blk. Sumner Ave.
   Repeat downstream – 400 blk. Sumner Ave.

5. **Routine site - 7473 Riverside Dr. sample station**
   Repeat upstream – 7400 blk Riverside Dr.
   Repeat downstream – 740 blk 154th Ave Ct E

6. **Routine site - 602 West Main sample station**
   Repeat upstream – 701 West Main
   Repeat downstream – 803 Hunt Ave.

7. **Routine site – 75th & Village Dr. sample station**
   Repeat upstream – 146th Ave E. **sample station**
   Repeat downstream – 7222 Village Dr **sample station**

8. **Routine site - 158th St sample station**
   Repeat upstream – 15600 blk 67th St Ct E
   Repeat downstream – 15900 blk 67th St Ct E.

9. **Routine site - 84th St & Riverside Dr. sample station**
   Repeat upstream – 16300 blk Riverside Dr.
   Repeat downstream – 8700 blk Riverside Dr.

10. **Routine site – White River Power Station sample station**
    Repeat upstream – Hydrant @ 24th St E & E. Valley
    Repeat downstream – 1808 E. Valley **sample station**

11. **Routine site – 1705 Wood Ave sample station**
    Repeat upstream – Hydrant @ 1700 blk Bonney Ave
    Repeat downstream – 1600 blk Wood Ave

12. **Routine site – 1800 140th Ave E sample station**
    Repeat upstream – Hydrant South
    Repeat downstream – Hydrant North

13. **Routine site – 6020 154th Ave Ct E sample station**
    Repeat upstream – Hydrant 15422 Main St
    Repeat downstream – Hydrant 6110 154th Ave Ct E

14. **Routine site – 4000 142nd Ave E sample station**
    Repeat upstream – 4711 142nd Ave E
    Repeat downstream – 3100 blk 142nd Ave E

15. **Routine site – 14304 75th St Ct E sample station**
    Repeat upstream – Hydrant – 14805 74th St Ct E
    Repeat downstream – Hydrant 7311 147th Ave E

16. **Routine site – 136th & 24th St E sample station**
    Repeat upstream – Hydrant 24th St E & 138th Ave
    Repeat downstream – Hydrant 2100 blk 136th Ave

17. **Routine site – 3005 145th Ave Ct E sample station**
    Repeat upstream – Hydrant 2929 146th Ave E
    Repeat downstream – Hydrant 145th Ave Ct E & 29th St E

Routine and repeat sampling sites may change due to leaking faucets or other factors that may contaminate the sample during collection.
Each of the monitoring points represents a significant source, storage, pressure zone, major arterial or supply point to another water purveyor for resale.

Plan Preparation Information:

Prepared February 21, 1992

Updated June 26, 2009 by:
Tony Utanis
City of Sumner Water Operations
(253) 299 - 5740

_____

_____
Date:

Reviewed by:
Bill Pugh, Director of Public Works
(253) 299 - 5701

_____

_____
Date:

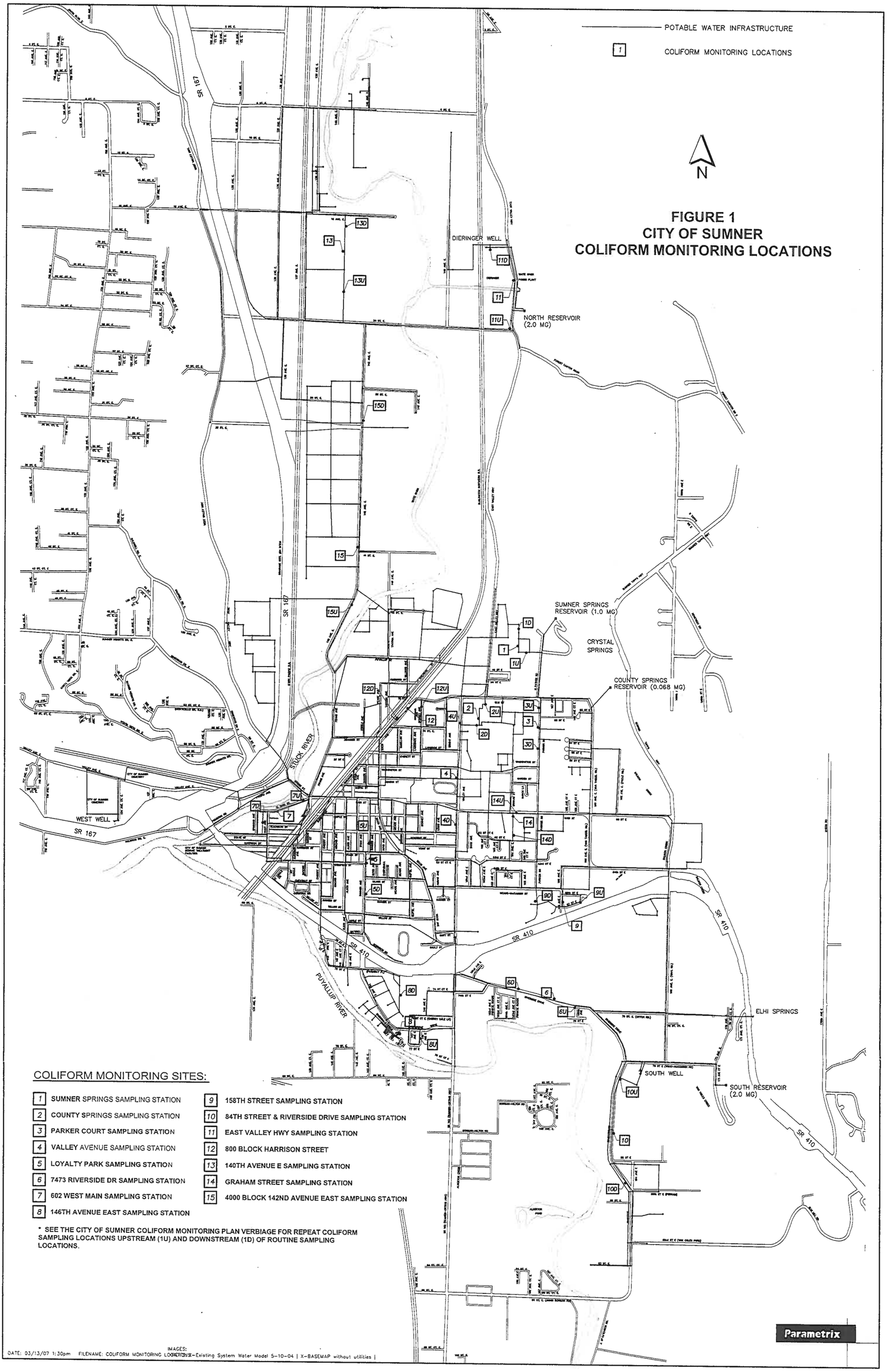


FIGURE 1
CITY OF SUMNER
COLIFORM MONITORING LOCATIONS

COLIFORM MONITORING SITES:

1. SUMNER SPRINGS SAMPLING STATION
2. COUNTY SPRINGS SAMPLING STATION
3. PARKER COURT SAMPLING STATION
4. VALLEY AVENUE SAMPLING STATION
5. LOYALTY PARK SAMPLING STATION
6. 7473 RIVERSIDE DR SAMPLING STATION
7. 602 WEST MAIN SAMPLING STATION
8. 146TH AVENUE EAST SAMPLING STATION
9. 158TH STREET SAMPLING STATION
10. 84TH STREET & RIVERSIDE DRIVE SAMPLING STATION
11. EAST VALLEY HWY SAMPLING STATION
12. 800 BLOCK HARRISON STREET
13. 140TH AVENUE E SAMPLING STATION
14. GRAHAM STREET SAMPLING STATION
15. 4000 BLOCK 142ND AVENUE EAST SAMPLING STATION

* SEE THE CITY OF SUMNER COLIFORM MONITORING PLAN VERBIAGE FOR REPEAT COLIFORM SAMPLING LOCATIONS UPSTREAM (1U) AND DOWNSTREAM (1D) OF ROUTINE SAMPLING LOCATIONS.

IMAGES:
DATE: 03/13/07 1:30pm FILENAME: COLIFORM MONITORING LOCATIONS-Existing System Water Model 5-10-04 | X-BASEMAP without utilities |

Parametrix

WHY IS MY WATER TESTED FOR COLIFORMS?

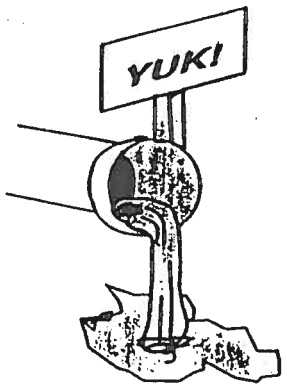
Some diseases are spread through drinking water. Cholera, typhoid, hepatitis, giardiasis, and epidemic dysentery are a few of these waterborne diseases. Disease results when microorganisms (such as protozoa, bacteria, and viruses) infect our bodies in numbers great enough to over-power our natural defenses.

Sanitary procedures and water treatment methods can limit the spread of waterborne diseases. Fortunately, many steps are taken in this country to ensure the public is provided with safe drinking water. One of these methods is to test water for coliform bacteria.

WHAT ARE COLIFORMS AND WHAT DO THEY INDICATE?

Coliforms are a large group of bacteria which commonly live in the digestive tracts of humans and animals. For this reason, coliform bacteria are found in sewage and animal wastes. However, many coliforms are harmless and can be found in other places such as soil. Unfortunately, the tests for coliform bacteria do not indicate their source.

The presence of coliforms in drinking water indicates a possible contamination by sewage or animal wastes. Sewage and animal wastes contain many disease causing organisms in addition to coliforms. For this reason, disease causing organisms may be present whenever coliforms are found in drinking water.



Some of the particular types of coliform bacteria that are often tested for are "fecal coliforms" and *Escherichia coli (E. coli)*. The presence of these organisms can help in the investigation of possible contamination.

WHY NOT TEST DIRECTLY FOR DISEASE CAUSING ORGANISMS?

Many different organisms can cause diseases. Unfortunately, almost as many tests would be needed to check drinking water for all of them. Instead, health officials test water for coliform bacteria to see if disease causing organisms could be present. The advantages of using coliform bacteria are:

- In general, coliforms are longer living and easier to find than disease causing organisms.
- Disease causing organisms are usually more susceptible to some treatment methods than are coliform bacteria.

If coliform bacteria are not present, there is good reason to believe that the water system is free of disease causing organisms.

NOTICE TO WATER SYSTEM USERS

COLIFORM MAXIMUM CONTAMINANT LEVEL (MCL) EXCEEDED - NON-ACUTE MCL

The _____ Water System, I.D. _____, located in _____ County submitted coliform drinking water samples to a certified laboratory for the month of _____. The test results indicated that at the time of the sampling there was a contamination problem in the system.

The United States Environmental Protection Agency (EPA) sets water standards and has determined that the presence of total coliforms is a possible health concern. Total coliforms are common in the environment and are generally not harmful themselves. The presence of these bacteria in drinking water, however, generally is a result of a problem with water treatment or the pipes which distribute the water, and indicates that the water may be contaminated with organisms that can cause disease. Disease symptoms may include diarrhea, cramps, nausea, and possibly jaundice, and any associated headaches and fatigue. These symptoms, however, are not just associated with disease causing organisms in drinking water, but may also be caused by a number of other factors other than your drinking water. EPA has set an enforceable drinking water standard for total coliforms to reduce the risk of these adverse health effects. Drinking water which meets this standard is usually not associated with a health risk from disease-causing bacteria and should be considered safe.

The problem has been under investigation and the following steps have been or are being taken at this time:

At this time:

☐ The problem is under control and no action is required by the users.

☐ Until further notice, water users should boil water for consumption at a rolling boil for ten minutes.

☐ (Other) _____.

_____ *(manager's name)* _____ *(day phone)* _____ *(date)*

(To be completed by Water System)

This notice was:

☐ Mailed to all water users on _____ *(date)*.

☐ Hand delivered to all water users on _____ *(date)*.

☐ Verbally given to all water users on _____ *(date)*.

☐ Published in newspaper. (copy attached).

☐ Posted at _____ on _____ *(date)*. *(BY DEPARTMENT APPROVAL ONLY).*

☐ (Other) _____.

SIGNATURE _____ DATED _____.

(SEND A COPY OF THIS COMPLETED PUBLIC NOTIFICATION TO: SOUTHWEST DRINKING WATER OPERATIONS: P. O. BOX 47823; OLYMPIA, WA 98504-7823; TO BE CREDITED FOR THIS ACTION.)

NOTICE TO WATER SYSTEM USERS

FECAL COLIFORM & E. COLI MAXIMUM CONTAMINANT LEVEL (MCL) EXCEEDED - ACUTE MCL

The _____ Water System, I.D. _____, located in _____ County submitted coliform drinking water samples to a certified laboratory for the month of _____. The test results indicated that at the time of the sampling there was a contamination problem in the system.

The United States Environmental Protection Agency (EPA) sets water standards and has determined that the presence of fecal coliforms or E. coli is a serious health concern. Fecal coliforms and E. coli are generally not harmful themselves, but their presence in drinking water is serious because they are usually associated with sewage or animal wastes. The presence of these bacteria in drinking water is generally a result of a problem with water treatment or the pipes which distribute the water, and indicates that the water may be contaminated with organisms that can cause disease. Disease symptoms may include diarrhea, cramps, nausea, and possibly jaundice, and any associated headaches and fatigue. These symptoms, however, are not just associated with disease causing organisms in drinking water. EPA has set an enforceable drinking water standard for fecal coliforms and E. coli to reduce the risk of these adverse health effects. Drinking water which meets this standard is usually associated with little or none of the risk and should be considered safe.

The problem has been under investigation and the following steps have been or are being taken at this time:

At this time:

☐ The problem is under control and no action is required by the users.

☐ Until further notice, water users should boil water for consumption at a rolling boil for ten minutes.

☐ (Other) _____.

_____ (manager's name) _____ (day phone) _____ (date)

(To be completed by Water System)

This notice was:

☐ Mailed to all water users on _____ (date).

☐ Hand delivered to all water users on _____ (date).

☐ Verbally given to all water users on _____ (date).

☐ Published in newspaper. (copy attached).

☐ Posted at _____ on _____ (date). *(BY DEPARTMENT APPROVAL ONLY).*

☐ (Other) _____.

SIGNATURE _____ DATED _____.

(SEND A COPY OF THIS COMPLETED PUBLIC NOTIFICATION TO: SOUTHWEST DRINKING WATER OPERATIONS; P. O. BOX 47823; OLYMPIA, WA 98504-7823; TO BE CREDITED FOR THIS ACTION.)

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 10
1200 Sixth Avenue
Seattle, WA 98101

September 20, 2007

Reply to
Attn Of: OWW-136

William J. Shoemaker, P.E.
Public Works Director
City of Sumner
1104 Maple Street, Suite 260
Sumner, Washington 98390

RE: Approval of Stage 2 Disinfectants and Disinfection Byproducts Rule (Stage 2 DBPR) 40/30 Certification
City of Sumner ID # 851207 - Pierce County

Dear Mr. Shoemaker:

This letter is to provide confirmation that your 40/30 certification, submitted to meet the Initial Distribution System Evaluation (IDSE) requirement of the Stage 2 DBPR, has been approved.

Your next step will be to prepare a monitoring plan for Stage 2 DBPR compliance monitoring. This plan must be completed before you are required to begin Stage 2 DBPR compliance monitoring during the period starting October 2013. The Department of Health will provide guidance pertaining to the preparation of this monitoring plan as your compliance date approaches. Until Stage 2 DBPR compliance monitoring begins, you must continue to conduct Stage 1 DBPR monitoring as required by the state.

Additional information pertaining to choosing Stage 2 DBPR monitoring locations and preparing the Stage 2 DBPR monitoring plan is enclosed for your use. If you have questions regarding this letter, please contact me at (206) 553-1890 or marshall.wendy@epa.gov. For more information regarding this rule visit the Stage 2 DBPR website at www.epa.gov/safewater/disinfection/stage2.

Sincerely,

Wendy Marshall

Wendy Marshall
Environmental Scientist

Enclosure

cc: Ethan Moseng – DOH

4.4 Selecting Stage 2 Compliance Monitoring Sites

The required number and type of sites for Stage 2 DBPR compliance monitoring are based on your source water type and the population served by your system. Monitoring requirements are summarized on the second page of your ***Requirements Summary Sheet*** in Chapter 2 and presented again here in Exhibit 4.2. Keep in mind that even if you qualify for reduced monitoring under Stage 2 compliance monitoring, you must still select the required number of monitoring sites as shown in Exhibit 4.2 and include them in your Stage 2 compliance monitoring plan (see Section 4.5 for a summary of compliance monitoring plan requirements).

Due to the change from plant-based monitoring under the Stage 1 DBPR to population-based monitoring for the Stage 2 DBPR, you may have **the same number, more, or fewer** monitoring sites for Stage 2 compared to Stage 1. Compare your required number of Stage 2 DBPR sites to the total number of Stage 1 DBPR monitoring sites for all plants in your system. Depending on your findings, go to the appropriate subsection (4.4.1, 4.4.2, or 4.4.3) for guidance on selecting Stage 2 DBPR compliance monitoring sites.

Exhibit 4.2 Stage 2 Compliance Monitoring Requirements

Source Water Type	Population Size Category	Monitoring Frequency[1]	Total Number of Distribution System Monitoring Locations[2]
Subpart H	<500	per year	2
	500-3,300	per quarter	2
	3,301-9,999	per quarter	2
	10,000-49,999	per quarter	4
	50,000-249,999	per quarter	8
	250,000-999,999	per quarter	12
	1,000,000-4,999,999	per quarter	16
	≥5,000,000	per quarter	20
Ground Water	<500	per year	2
	500-9,999	per year	2
	10,000-99,999	per quarter	4
	100,000-499,999	per quarter	6
	≥500,000	per quarter	8

[1] All systems must monitor during the month of highest DBP concentration.
[2] Systems on quarterly monitoring must take dual sample sets every 90 days at each monitoring location, except for subpart H systems serving 500-3,300. Systems on annual monitoring and subpart H systems serving 500-3,300 are required to take individual TTHM and HAA5 samples (instead of a dual sample set) at the locations with the highest TTHM and HAA5 concentrations, respectively. Only one location with a dual sample set per monitoring period is needed if highest TTHM and HAA5 concentrations occur at the same location (and month, if monitored annually).

4.4.1 You Have THE SAME Number of Stage 1 Sites as Required by the Stage 2 DBPR

If the number of Stage 1 DBPR monitoring locations in your system is exactly the same as the required number of Stage 2 DBPR monitoring locations, continue to use all of your Stage 1 DBPR sites for Stage 2 DBPR compliance monitoring.

4.4.2 You Have MORE Stage 1 Sites than Required by the Stage 2 DBPR

If you have more Stage 1 sites than you need for Stage 2 DBPR monitoring (this could be the case if you have multiple treated entry points in your system), you **must** select the sites with highest DBP levels for Stage 2 monitoring. You must alternate your site selection between locations representing high TTHM levels and high HAA5 levels, starting with high TTHM.

To identify locations representing high TTHM levels and high HAA5 levels, EPA recommends that you use Stage 1 DBPR monitoring results. Specifically, you can use the 4-Step process outlined below:

Step 1: Calculate the locational running annual average (LRAA) TTHM and HAA5 concentrations at each Stage 1 DBPR monitoring site. You should use data for the most recent calendar year, as long as this year is generally representative of typical system conditions.

> For systems collecting quarterly data:
> LRAA = (Q1 + Q2+ Q3 + Q4) / 4
>
> For systems collecting annual data (once/year):
> LRAA = result for warmest temperature month

Step 2: Select the site with the highest TTHM LRAA as your first high TTHM site

Step 3: Select the site with the highest HAA5 LRAA not previously selected as your first high HAA5 site

Step 4: Repeat Steps 2 and 3, selecting the next highest sites for TTHM and HAA5 respectively, until the total number of selected sites equals the number of sites required for Stage 2 DBPR compliance monitoring (as shown in Exhibit 4.2)

You can use the site selection Worksheet 4.1 to organize your Stage 1 DBPR data and select Stage 2 DBPR monitoring sites. If you use this form, you should consider keeping it as part of your Stage 2 DBPR monitoring plan (see Section 4.5).

Worksheet 4.1 Stage 2 DBPR Site Selection for Systems Getting the 40/30 Certification

Instructions: *Enter the site ID and LRAAs for each Stage 1 DBPR monitoring location. You may want to sort your entries in order by TTHM LRAA or HAA5 LRAA values.*

As you work through the site selection protocol, fill in the "Stage 2 Site Type" column each time you select a site to indicate whether the site is a high TTHM or high HAA5 site. This will help you to track which sites have already been selected and can help you ensure that you select the required number of each type of site.

Stage 1 DBPR Monitoring Site ID	LRAA		Stage 2 Site Type*
	TTHM (mg/L)	HAA5 (mg/L)	
Example	0.032	0.025	1st high TTHM

* Enter high TTHM or high HAA5 site

4.4.3 You Have FEWER Stage 1 Sites than Required by the Stage 2 DBPR

If you do not have enough Stage 1 sites to meet Stage 2 DBPR monitoring requirements (this could be the case if you are a large system with very few treatment plants), you **must** select additional sites. You must identify additional locations by alternating selection of locations representing high TTHM and high HAA5. Remember that you will need to provide a justification for the new site selection in your Stage 2 compliance monitoring plan discussed in Section 4.5 below.

General guidelines for selecting candidate locations for high TTHM and high HAA5 sites are provided below. Guidance for final site selection considering other factors follows. If you would like more information about formation of disinfection by-products, refer to Appendix A. In addition, Chapter 7 provides a more in-depth discussion of how to select sites that represent high levels of TTHM or HAA5.

High TTHM sites

In general, **higher water temperatures** and **increased water age** lead to higher TTHM concentrations. Exhibit 4.3 provides typical characteristics of high TTHM sites. Storage facilities in a distribution system typically increase water age. Therefore, if your system has storage tanks or reservoirs, you should locate high TTHM sites downstream of those tanks. In addition, sites near dead ends and sparsely populated residential areas can be likely sites for high TTHM. Be sure to locate the sites before or at the last group of customers on a dead end line. Samples taken at the very end of a dead end line are not representative of the water received by customers.

Exhibit 4.3 Typical Characteristics of High TTHM Sites

High TTHM sites are often located:
- hydraulically downstream of storage facilities
- near the ends of the distribution system, at or before the last group of customers
- in hydraulic dead-ends, where flow of water is low or stagnant
- prior to the last fire hydrant

Sample sites should not be located:
- at a dead-end where there are no customers.
- prior to booster disinfection with chlorine

High HAA5 Sites

As with TTHM, higher temperatures and increased residence time can lead to higher HAA5 concentrations. However, ***HAA5 can biodegrade*** where biological activity is present and disinfectant residual levels are low or non-existent. Therefore, you should consider locating high HAA5 sites where disinfectant residuals are significantly less than the system average (indicating a long residence time), but **avoid areas that have very low or no residual**. When booster disinfection is applied, the disinfectant residual will increase despite advanced water age. HAA5 levels are likely to increase after a booster disinfectant is applied due to the greater concentration of disinfectant available to react with DBP precursors and the lack of biological activity in these areas. Therefore, if your system practices booster disinfection, you should locate high HAA5 sites after booster disinfection is applied.

You should ***not*** select high HAA5 sites in locations that regularly or in the summer months have free chlorine residuals less than 0.2 mg/L or with chloramine residuals less than 0.5 mg/L.

Final Site Selection

Once you have considered the likely high TTHM and HAA5 locations in your distribution system, you will choose the best locations for monitoring. Consider the following issues when making these choices.

- Select sites that provide the best geographic and hydraulic representation.
- Make sure that you have located sites in as many key areas as possible. These would include isolated portions of the distribution system, areas downstream of tanks, areas downstream of booster chlorination, and within each pressure zone.
- Consider site access issues as each selected site must remain accessible over the long term.

4.5 Next Steps: Preparing the Stage 2 DBPR Compliance Monitoring Plan

As the final step before you can begin compliance monitoring for the Stage 2 DBPR, you must develop a **Stage 2 DBPR compliance monitoring plan**. The plan will be similar to your Stage 1 DBPR monitoring plan in that it will identify how you intend to sample for compliance with Stage 2. You must keep your plan on file for state and public review. If you are a subpart H system serving > 3,300 people, you **must** also submit your plan to EPA or your state prior to when you are required to start monitoring.

Exhibit 4.4 contains the minimum requirements for what must be included in your Stage 2 DBPR compliance monitoring plan. Because compliance monitoring plans are not addressed as part of the IDSE provisions of the Stage 2 DBPR, ***EPA has not included detailed guidance for developing Stage 2 compliance monitoring plans in this guidance manual.*** EPA plans to develop other manuals and training that specifically address the compliance monitoring provisions of the Stage 2 DBPR.

See EPA's website at http://www.epa.gov/safewater/disinfection/stage2 for an up-to-date inventory of Stage 2 DBPR guidance manuals and training materials, or call the Safe Drinking Water Hotline at 1-800-426-4791.

Exhibit 4.4 Required Contents of Stage 2 DBPR Compliance Monitoring Plans

All Systems	Additional Requirements for Systems Getting the 40/30 Certification	Additional Requirements for Consecutive and Wholesale Systems [1]
• Monitoring locations • Monitoring dates • Compliance calculation procedures	• If you had FEWER Stage 1 DBPR compliance monitoring sites than required by the Stage 2 DBPR, you must include the rationale for identifying locations as having high levels of TTHM or HAA5	• If your state has used its special primacy authority to modify your monitoring requirements, you must include monitoring plans for other systems in your combined distribution system

1. See Appendix D of this manual for guidance specifically for consecutive and wholesale systems.

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TITLE 40--PROTECTION OF ENVIRONMENT

CHAPTER I--ENVIRONMENTAL PROTECTION AGENCY (CONTINUED)

PART 141_NATIONAL PRIMARY DRINKING WATER REGULATIONS--Table of Contents

Subpart Q_Public Notification of Drinking Water Violations

Source: 65 FR 26035, May 4, 2000, unless otherwise noted.

Public water systems in States with primacy for the public water system supervision (PWSS) program must comply with the requirements in this subpart no later than May 6, 2002 or on the date the State-adopted rule becomes effective, whichever comes first. Public water systems in jurisdictions where EPA directly implements the PWSS program must comply with the requirements in this subpart on October 31, 2000. Prior to these dates, public water systems must continue to comply with the public notice requirements in Sec. 141.32 of this part. The term ``primacy agency'' is used in this subpart to refer to either EPA or the State or the Tribe in cases where EPA, the State, or the Tribe exercises primary enforcement responsibility for this subpart.

(a) Who must give public notice? Each owner or operator of a public water system (community water systems, non-transient non-community water systems, and transient non-community water systems) must give notice for all violations of national primary drinking water regulations (NPDWR) and for other situations, as listed in Table 1. The term ``NPDWR violations'' is used in this subpart to include violations of the maximum contaminant level (MCL), maximum residual disinfection level (MRDL), treatment technique (TT), monitoring requirements, and testing procedures in this part 141. Appendix A to this subpart identifies the tier assignment for each specific violation or situation requiring a public notice.

Table 1 to Sec. 141.201--Violation Categories and Other Situations Requiring a Public Notice

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(1) NPDWR violations:
(i) Failure to comply with an applicable maximum contaminant level (MCL) or maximum residual disinfectant level (MRDL).
(ii) Failure to comply with a prescribed treatment technique (TT).
(iii) Failure to perform water quality monitoring, as required by the drinking water regulations.
(iv) Failure to comply with testing procedures as prescribed by a drinking water regulation.
(2) Variance and exemptions under sections 1415 and 1416 of SDWA:
(i) Operation under a variance or an exemption.
(ii) Failure to comply with the requirements of any schedule that has been set under a variance or exemption.
(3) Special public notices:
(i) Occurrence of a waterborne disease outbreak or other waterborne emergency.
(ii) Exceedance of the nitrate MCL by non-community water systems (NCWS), where granted permission by the primacy agency under 141.11(d) of this part.

(iii) Exceedance of the secondary maximum contaminant level (SMCL) for fluoride.
(iv) Availability of unregulated contaminant monitoring data.
(v) Other violations and situations determined by the primacy agency to require a public notice under this subpart, not already listed in Appendix A.

(b) What type of public notice is required for each violation or situation? Public notice requirements are divided into three tiers, to take into account the seriousness of the violation or situation and of any potential adverse health effects that may be involved. The public notice requirements for each violation or situation listed in Table 1 of this section are determined by the tier to which it is assigned. Table 2 of this section provides the definition of each tier. Appendix A of this part identifies the tier assignment for each specific violation or situation.

Table 2 to Sec. 141.201--Definition of Public Notice Tiers

(1) Tier 1 public notice--required for NPDWR violations and situations

with significant potential to have serious adverse effects on human health as a result of short-term exposure.
(2) Tier 2 public notice--required for all other NPDWR violations and situations with potential to have serious adverse effects on human health.
(3) Tier 3 public notice--required for all other NPDWR violations and situations not included in Tier 1 and Tier 2.

(c) Who must be notified?

(1) Each public water system must provide public notice to persons served by the water system, in accordance with this subpart. Public water systems that sell or otherwise provide drinking water to other public water systems (i.e., to consecutive systems) are required to give public notice to the owner or operator of the consecutive system; the consecutive system is responsible for providing public notice to the persons it serves.

(2) If a public water system has a violation in a portion of the distribution system that is physically or hydraulically isolated from other parts of the distribution system, the primacy agency may allow the system to limit distribution of the public notice to only persons served by that portion of the system which is out of compliance. Permission by the primacy agency for limiting distribution of the notice must be granted in writing.

(3) A copy of the notice must also be sent to the primacy agency, in accordance with the requirements under Sec. 141.31(d).

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TITLE 40--PROTECTION OF ENVIRONMENT

CHAPTER I--ENVIRONMENTAL PROTECTION AGENCY (CONTINUED)

PART 141_NATIONAL PRIMARY DRINKING WATER REGULATIONS--Table of Contents

Subpart Q_Public Notification of Drinking Water Violations

Sec. 141.202 Tier 1 Public Notice--Form, manner, and frequency of notice.

(a) Which violations or situations require a Tier 1 public notice? Table 1 of this section lists the violation categories and other situations requiring a Tier 1 public notice. Appendix A to this subpart identifies the tier assignment for each specific violation or situation.

Table 1 to Sec. 141.202--Violation Categories and Other Situations Requiring a Tier 1 Public Notice

(1) Violation of the MCL for total coliforms when fecal coliform or E. coli are present in the water distribution system (as specified in Sec. 141.63(b)), or when the water system fails to test for fecal coliforms or E. coli when any repeat sample tests positive for coliform (as specified in Sec. 141.21(e));
(2) Violation of the MCL for nitrate, nitrite, or total nitrate and nitrite, as defined in Sec. 141.62, or when the water system fails to take a confirmation sample within 24 hours of the system's receipt of the first sample showing an exceedance of the nitrate or nitrite MCL, as specified in Sec. 141.23(f)(2);
(3) Exceedance of the nitrate MCL by non-community water systems, where permitted to exceed the MCL by the primacy agency under Sec. 141.11(d), as required under Sec. 141.209;

(4) Violation of the MRDL for chlorine dioxide, as defined in Sec. 141.65(a), when one or more samples taken in the distribution system

the day following an exceedance of the MRDL at the entrance of the distribution system exceed the MRDL, or when the water system does not take the required samples in the distribution system, as specified inSec. 141.133(c)(2)(i);

(5) Violation of the turbidity MCL underSec. 141.13(b), where the primacy agency determines after consultation that a Tier 1 notice is required or where consultation does not take place within 24 hours after the system learns of the violation;

(6) Violation of the Surface Water Treatment Rule (SWTR), Interim Enhanced Surface Water Treatment Rule (IESWTR) or Long Term 1 Enhanced Surface Water Treatment Rule (LT1ESWTR) treatment technique requirement resulting from a single exceedance of the maximum allowable turbidity limit (as identified in Appendix A), where the primacy agency determines after consultation that a Tier 1 notice is required or where consultation does not take place within 24 hours after the system learns of the violation;

(7) Occurrence of a waterborne disease outbreak, as defined inSec. 141.2, or other waterborne emergency (such as a failure or significant interruption in key water treatment processes, a natural disaster that disrupts the water supply or distribution system, or a chemical spill or unexpected loading of possible pathogens into the source water that significantly increases the potential for drinking water contamination);

(8) Other violations or situations with significant potential to have serious adverse effects on human health as a result of short-term exposure, as determined by the primacy agency either in its regulations or on a case-by-case basis.

(b) When is the Tier 1 public notice to be provided? What additional steps are required? Public water systems must:

(1) Provide a public notice as soon as practical but no later than 24 hours after the system learns of the violation;

(2) Initiate consultation with the primacy agency as soon as practical, but no later than 24 hours after the public water system learns of the violation or situation, to determine additional public notice requirements; and

(3) Comply with any additional public notification requirements (including any repeat notices or direction on the duration of the posted notices) that are established as a result of the consultation with the primacy agency. Such requirements may include the timing, form, manner, frequency, and content of repeat notices (if any) and other actions designed to reach all persons served.

(c) What is the form and manner of the public notice? Public water systems must provide the notice within 24 hours in a form and manner reasonably calculated to reach all persons served. The form and manner used by the public water system are to fit the specific situation, but must be designed to reach residential, transient, and non-transient users of the water system. In order to reach all persons served, water systems are to use, at a minimum, one or more of the following forms of delivery:

(1) Appropriate broadcast media (such as radio and television);

(2) Posting of the notice in conspicuous locations throughout the area served by the water system;

(3) Hand delivery of the notice to persons served by the water system; or

(4) Another delivery method approved in writing by the primacy agency.

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TITLE 40--PROTECTION OF ENVIRONMENT

CHAPTER I--ENVIRONMENTAL PROTECTION AGENCY (CONTINUED)

PART 141_NATIONAL PRIMARY DRINKING WATER REGULATIONS--Table of Contents

Subpart Q_Public Notification of Drinking Water Violations

Sec. 141.203 Tier 2 Public Notice--Form, manner, and frequency of notice.

(a) Which violations or situations require a Tier 2 public notice? Table 1 of this section lists the violation categories and other situations requiring a Tier 2 public notice. Appendix A to this subpart identifies the tier assignment for each specific violation or situation.

Table 1 to Sec. 141.203--Violation Categories and Other Situations Requiring a Tier 2 Public Notice

(1) All violations of the MCL, MRDL, and treatment technique requirements, except where a Tier 1 notice is required under Sec. 141.202(a) or where the primacy agency determines that a Tier 1 notice is required;
(2) Violations of the monitoring and testing procedure requirements, where the primacy agency determines that a Tier 2 rather than a Tier 3 public notice is required, taking into account potential health impacts and persistence of the violation; and
(3) Failure to comply with the terms and conditions of any variance or exemption in place.

(b) When is the Tier 2 public notice to be provided?

(1) Public water systems must provide the public notice as soon as practical, but no later than 30 days after the system learns of the violation. If the public notice is posted, the notice must remain in place for as long as the violation or situation persists, but in no case for less than seven days, even if the violation or situation is resolved. The primacy agency may, in appropriate circumstances, allow additional time for the initial notice of up to three months from the date the system learns of the violation. It is not appropriate for the

primacy agency to grant an extension to the 30-day deadline for any unresolved violation or to allow across-the-board extensions by rule or policy for other violations or situations requiring a Tier 2 public notice. Extensions granted by the primacy agency must be in writing.

(2) The public water system must repeat the notice every three months as long as the violation or situation persists, unless the primacy agency determines that appropriate circumstances warrant a different repeat notice frequency. In no circumstance may the repeat notice be given less frequently than once per year. It is not appropriate for the primacy agency to allow less frequent repeat notice for an MCL violation under the Total Coliform Rule or a treatment technique violation under the Surface Water Treatment Rule or Interim Enhanced Surface Water Treatment Rule. It is also not appropriate for the primacy agency to allow through its rules or policies across-the-board reductions in the repeat notice frequency for other ongoing violations requiring a Tier 2 repeat notice. Primacy agency determinations allowing repeat notices to be given less frequently than once every three months must be in writing.

(3) For the turbidity violations specified in this paragraph, public water systems must consult with the primacy agency as soon as practical but no later than 24 hours after the public water system learns of the violation, to determine whether a Tier 1 public notice under Sec. 141.202(a) is required to protect public health. When consultation does not take place within the 24-hour period, the water system must distribute a Tier 1 notice of the violation within the next 24 hours (i.e., no later than 48 hours after the system learns of the violation), following the requirements under Sec. 141.202(b) and (c). Consultation with the primacy agency is required for:

(i) Violation of the turbidity MCL under Sec. 141.13(b); or

(ii) Violation of the SWTR, IESWTR or LT1ESWTR treatment technique requirement resulting from a single exceedance of the maximum allowable turbidity limit.

(c) What is the form and manner of the Tier 2 public notice? Public water systems must provide the initial public notice and any repeat notices in a form and manner that is reasonably calculated to reach persons served in the required time period. The form and manner of the public notice may vary based on the specific situation and type of water system, but it must at a minimum meet the following requirements:

(1) Unless directed otherwise by the primacy agency in writing, community water systems must provide notice by:

(i) Mail or other direct delivery to each customer receiving a bill and to other service connections to which water is delivered by the public water system; and

(ii) Any other method reasonably calculated to reach other persons regularly served by the system, if they would not normally be reached by the notice required in paragraph (c)(1)(i) of

this section. Such persons may include those who do not pay water bills or do not have service connection addresses (e.g., house renters, apartment dwellers, university students, nursing home patients, prison inmates, etc.). Other methods may include: Publication in a local

newspaper; delivery of multiple copies for distribution by customers that provide their drinking water to others (e.g., apartment building owners or large private employers); posting in public places served by the system or on the Internet; or delivery to community organizations.

(2) Unless directed otherwise by the primacy agency in writing, non-community water systems must provide notice by:

(i) Posting the notice in conspicuous locations throughout the distribution system frequented by persons served by the system, or by mail or direct delivery to each customer and service connection (where known); and

(ii) Any other method reasonably calculated to reach other persons served by the system if they would not normally be reached by the notice required in paragraph (c)(2)(i) of this section. Such persons may include those served who may not see a posted notice because the posted notice is not in a location they routinely pass by. Other methods may include: Publication in a local newspaper or newsletter distributed to customers; use of E-mail to notify employees or students; or, delivery of multiple copies in central locations (e.g., community centers).

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CHAPTER I--ENVIRONMENTAL PROTECTION AGENCY (CONTINUED)

PART 141_NATIONAL PRIMARY DRINKING WATER REGULATIONS--Table of Contents

Subpart Q_Public Notification of Drinking Water Violations

Sec. 141.204 Tier 3 Public Notice--Form, manner, and frequency of notice.

(a) Which violations or situations require a Tier 3 public notice? Table 1 of this section lists the violation categories and other situations requiring a Tier 3 public notice. Appendix A to this subpart identifies the tier assignment for each specific violation or situation.

Table 1 to Sec. 141.204--Violation Categories and Other Situations Requiring a Tier 3 Public Notice

(1) Monitoring violations under 40 CFR part 141, except where a Tier 1 notice is required under Sec. 141.202(a) or where the primacy agency determines that a Tier 2 notice is required;
(2) Failure to comply with a testing procedure established in 40 CFR part 141, except where a Tier 1 notice is required under Sec. 141.202(a)) or where the primacy agency determines that a Tier 2 notice is required;
(3) Operation under a variance granted under Section 1415 or an exemption granted under Section 1416 of the Safe Drinking Water Act;
(4) Availability of unregulated contaminant monitoring results, as required under Sec. 141.207; and
(5) Exceedance of the fluoride secondary maximum contaminant level (SMCL), as required under Sec. 141.208.

(b) When is the Tier 3 public notice to be provided?

(1) Public water systems must provide the public notice not later than one year after the public water system learns of the violation or situation or begins operating under a variance or exemption. Following the initial notice, the public water system must repeat the notice annually for as long as the violation, variance, exemption, or other

situation persists. If the public notice is posted, the notice must remain in place for as long as the violation, variance, exemption, or other situation persists, but in no case less than seven days (even if the violation or situation is resolved).

(2) Instead of individual Tier 3 public notices, a public water system may use an annual report detailing all violations and situations that occurred during the previous twelve months, as long as the timing requirements of paragraph (b)(1) of this section are met.

(c) What is the form and manner of the Tier 3 public notice? Public water systems must provide the initial notice and any repeat notices in a form and manner that is reasonably calculated to reach persons served in the required time period. The form and manner of

the public notice may vary based on the specific situation and type of water system, but it must at a minimum meet the following requirements:

(1) Unless directed otherwise by the primacy agency in writing, community water systems must provide notice by:

(i) Mail or other direct delivery to each customer receiving a bill and to other service connections to which water is delivered by the public water system; and

(ii) Any other method reasonably calculated to reach other persons regularly served by the system, if they would not normally be reached by the notice required in paragraph (c)(1)(i) of this section. Such persons may include those who do not pay water bills or do not have service connection addresses (e.g., house renters, apartment dwellers, university students, nursing home patients, prison inmates, etc.). Other methods may include: Publication in a local newspaper; delivery of multiple copies for distribution by customers that provide their drinking water to others (e.g., apartment building owners or large private employers); posting in public places or on the Internet; or delivery to community organizations.

(2) Unless directed otherwise by the primacy agency in writing, non-community water systems must provide notice by:

(i) Posting the notice in conspicuous locations throughout the distribution system frequented by persons served by the system, or by mail or direct delivery to each customer and service connection (where known); and

(ii) Any other method reasonably calculated to reach other persons served by the system, if they would not normally be reached by the notice required in paragraph (c)(2)(i) of this section. Such persons may include those who may not see a posted notice because the notice is not in a location they routinely pass by. Other methods may include: Publication in a local newspaper or newsletter distributed to customers; use of E-mail to notify employees or students; or, delivery of multiple copies in central locations (e.g., community centers).

(d) In what situations may the Consumer Confidence Report be used to meet the Tier 3 public notice requirements? For community water systems,

the Consumer Confidence Report (CCR) required under Subpart O of this part may be used as a vehicle for the initial Tier 3 public notice and all required repeat notices, as long as:

(1) The CCR is provided to persons served no later than 12 months after the system learns of the violation or situation as required under Sec. 141.204(b);

(2) The Tier 3 notice contained in the CCR follows the content requirements under Sec. 141.205; and

(3) The CCR is distributed following the delivery requirements under Sec. 141.204(c).

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PART 141_NATIONAL PRIMARY DRINKING WATER REGULATIONS--Table of Contents

Subpart Q_Public Notification of Drinking Water Violations

Sec. 141.205 Content of the public notice.

(a) What elements must be included in the public notice for violations of National Primary Drinking Water Regulations (NPDWR) or other situations requiring a public notice? When a public water system violates a NPDWR or has a situation requiring public notification, each public notice must include the following elements:

(1) A description of the violation or situation, including the contaminant(s) of concern, and (as applicable) the contaminant level(s);

(2) When the violation or situation occurred;

(3) Any potential adverse health effects from the violation or situation, including the standard language under paragraph (d)(1) or (d)(2) of this section, whichever is applicable;

(4) The population at risk, including subpopulations particularly vulnerable if exposed to the contaminant in their drinking water;

(5) Whether alternative water supplies should be used;

(6) What actions consumers should take, including when they should seek medical help, if known;

(7) What the system is doing to correct the violation or situation;

(8) When the water system expects to return to compliance or resolve
the situation;

(9) The name, business address, and phone number of the water system

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owner, operator, or designee of the public water system as a source of additional information concerning the notice; and

(10) A statement to encourage the notice recipient to distribute the
public notice to other persons served, using the standard language under
paragraph (d)(3) of this section, where applicable.

(b) What elements must be included in the public notice for public water systems operating under a variance or exemption?

(1) If a public water system has been granted a variance or an exemption, the public notice must contain:

(i) An explanation of the reasons for the variance or exemption;

(ii) The date on which the variance or exemption was issued;

(iii) A brief status report on the steps the system is taking to install treatment, find alternative sources of water, or otherwise comply with the terms and schedules of the variance or exemption; and

(iv) A notice of any opportunity for public input in the review of the variance or exemption.

(2) If a public water system violates the conditions of a variance or exemption, the public notice must contain the ten elements listed in paragraph (a) of this section.

(c) How is the public notice to be presented?

(1) Each public notice required by this section:

(i) Must be displayed in a conspicuous way when printed or posted;

(ii) Must not contain overly technical language or very small print;

(iii) Must not be formatted in a way that defeats the purpose of the notice;

(iv) Must not contain language which nullifies the purpose of the notice.

(2) Each public notice required by this section must comply with multilingual requirements, as follows:

(i) For public water systems serving a large proportion of non-English speaking consumers, as determined by the primacy agency, the public notice must contain information in the appropriate language(s) regarding the importance of the notice or contain a telephone number or address where persons served may contact the water system to obtain a translated copy of the notice or to request assistance in the appropriate language.

(ii) In cases where the primacy agency has not determined what constitutes a large proportion of non-English speaking consumers, the public water system must include in the public notice the same information as in paragraph (c)(2)(i) of this section, where appropriate to reach a large proportion of non-English speaking persons served by the water system.

(d) What standard language must public water systems include in their public notice? Public water systems are required to include the following standard language in their public notice:

(1) Standard health effects language for MCL or MRDL violations, treatment technique violations, and violations of the condition of a variance or exemption. Public water systems must include in each public notice the health effects language specified in Appendix B to this subpart corresponding to each MCL, MRDL, and treatment technique violation listed in Appendix A to this subpart, and for each violation of a condition of a variance or exemption.

(2) Standard language for monitoring and testing procedure violations. Public water systems must include the following language in their notice, including the language necessary to fill in the blanks, for all monitoring and testing procedure violations listed in Appendix A to this subpart:

We are required to monitor your drinking water for specific contaminants on a regular basis. Results of regular monitoring are an indicator of whether or not your drinking water meets health standards. During [compliance period], we ``did not monitor or test'' or ``did not complete all monitoring or testing'' for [contaminant(s)], and therefore

cannot be sure of the quality of your drinking water during that time.

(3) Standard language to encourage the distribution of the public notice to all persons served. Public water systems must include in their notice the following language (where applicable):

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.

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[Code of Federal Regulations]
[Title 40, Volume 20]
[Revised as of July 1, 2003]
From the U.S. Government Printing Office via GPO Access
[CITE: 40CFR141.206]

TITLE 40--PROTECTION OF ENVIRONMENT

CHAPTER I--ENVIRONMENTAL PROTECTION AGENCY (CONTINUED)

PART 141_NATIONAL PRIMARY DRINKING WATER REGULATIONS--Table of Contents

Subpart Q_Public Notification of Drinking Water Violations

Sec. 141.206 Notice to new billing units or new customers.

(a) What is the requirement for community water systems? Community water systems must give a copy of the most recent public notice for any continuing violation, the existence of a variance or exemption, or other ongoing situations requiring a public notice to all new billing units or new customers prior to or at the time service begins.

(b) What is the requirement for non-community water systems? Non-community water systems must continuously post the public notice in conspicuous locations in order to inform new consumers of any continuing violation, variance or exemption, or other situation requiring a public notice for as long as the violation, variance, exemption, or other situation persists.

[Code of Federal Regulations]
[Title 40, Volume 20]
[Revised as of July 1, 2003]
From the U.S. Government Printing Office via GPO Access
[CITE: 40CFR141.207]

TITLE 40--PROTECTION OF ENVIRONMENT

CHAPTER I--ENVIRONMENTAL PROTECTION AGENCY (CONTINUED)

PART 141_NATIONAL PRIMARY DRINKING WATER REGULATIONS--Table of Contents

Subpart Q_Public Notification of Drinking Water Violations

Sec. 141.207 Special notice of the availability of unregulated contaminant monitoring results.

(a) When is the special notice to be given? The owner or operator of a community water system or non-transient, non-community water system required to monitor under Sec. 141.40 must notify persons served by the system of the availability of the results of such sampling no later than 12 months after the monitoring results are known.

(b) What is the form and manner of the special notice? The form and manner of the public notice must follow the requirements for a Tier 3 public notice prescribed in Sec. Sec. 141.204(c), (d)(1), and (d)(3). The notice must also identify a person and provide the telephone number to contact for information on the monitoring results.

WAC 246-290-71001 Public notification. (1) The purveyor shall notify the water system users and the owner or operator of any consecutive water system served in accordance with 40 CFR 141.201 through 208. Notice is to be provided when the system violates a National Primary Drinking Water Regulation and when any of the situations listed in Table 1 of 40 CFR 141.201 occur, except for (3)(b). Public notifications for violations and other situations are categorized into Tiers in accordance with the following:

(a) Tier 1 as described in Table 1 of 40 CFR 141.202(a);

(b) Tier 2 as described in Table 1 of 40 CFR 141.203(a); or

(c) Tier 3 as described in Table 1 of 40 CFR 141.204(a).

(2) The purveyor shall initiate consultation with the department as soon as possible, but no later than twenty-four hours after they learn their system has a Tier 1 violation or situation in order to determine if additional public notice is required. The purveyor shall comply with any additional public notification requirements established as a result of the consultation.

(3) The purveyor shall notify the water system users when the system:

(a) Is issued a departmental order;

(b) Fails to comply with a departmental order; or

(c) Is issued a category red operating permit.

[Statutory Authority: RCW 43.20.050 (2) and (3) and70.119A.080 . 03-08-037, § 246-290-71001, filed 3/27/03, effective 4/27/03.]

WAC 246-290-71002 Public notice content. (1) Public notices required under WAC 246-290-71001(1) shall contain the elements and standard language required under 40 CFR 141.205 (a), (b), and (d) and be presented in accordance with 40 CFR 141.205 (c), except that notification of the availability of unregulated contaminant results and notification of an exceedance of the secondary MCL for fluoride shall be in accordance with WAC 246-290-71005.

(2) Public notices required under WAC 246-290-71001 (3)(a) and (c) for the issuance of a departmental order or category red operating permit shall include:

(a) A clear, concise, and simple explanation of the violation;

(b) Discussion of potential adverse health effects and any segments of the population that may be at higher risk;

(c) Mandatory health effects information in accordance with WAC 246-290-71004(2);

(d) A list of steps the purveyor has taken or is planning to take to remedy the situation;

(e) A list of steps the consumer should take, including advice on seeking an alternative water supply if necessary;

(f) The purveyor's name and telephone number; and

(g) When appropriate, notices shall be bilingual or multilingual.

Note: The purveyor may provide additional information to further explain the situation.

[Statutory Authority: RCW 43.20.050 (2) and (3) and70.119A.080 . 03-08-037, § 246-290-71002, filed 3/27/03, effective 4/27/03.]

WAC 246-290-71003 Public notification distribution. (1) Purveyors must provide public notice as required under WAC 246-290-71001(1) according to Tier designation generally described in 40 CFR 141.201. The form, manner, timing and frequency for each Tier of public notice, as defined in Table 2 of 40 CFR 141.201 shall be in accordance with:

(a) 40 CFR 141.202 for Tier 1 public notice.

(b) 40 CFR 141.203 for Tier 2 public notice.

(c) 40 CFR 141.204 for Tier 3 public notice.

(2) In addition, notice to new billing units and consumers must be given in accordance with 40 CFR 141.206.

(3) Purveyors of community, NTNC and TNC systems shall provide notice as described in this subsection, or as described in a departmental order within three months of receipt of a departmental order, or a category red operating permit. The purveyor shall provide the department with a copy of the notice at the time the purveyor notifies the public.

(a) Purveyors of community and NTNC systems shall provide newspaper notice to water system users.

(i) "Newspaper notice," as used above, means publication in a daily newspaper of general circulation or in a weekly newspaper of general circulation if a daily newspaper does not serve the area. The purveyor may substitute a community or homeowner's association newsletter or similar periodical publication if the newspaper reaches all affected consumers within the specified time.

(ii) The purveyor shall substitute a posted notice in the absence of a newspaper of general circulation or homeowner's association newsletter or similar periodical publication. The purveyor shall post the notice within the time frame specified in this subsection.

(b) Purveyors of TNC systems shall post a notice or notify consumers by other methods authorized by the department for receipt of a red operating permit.

(c) The purveyor shall place posted notices in conspicuous locations and present the notices in a manner making them easy to read. Notices shall remain posted until the violation is corrected.

(d) The purveyor of a community or NTNC water system shall give a copy of the most recent public notice for all outstanding violations to all new billing units or new hookups before or at the time water service begins.

[Statutory Authority: RCW 43.20.050 (2) and (3) and70.119A.080 . 03-08-037, § 246-290-71003, filed 3/27/03, effective 4/27/03.]

WAC 246-290-71004 Public notification mandatory language. (1) Public notice required under WAC 246-290-71001(1) shall contain any specific health effects language set forth in WAC 246-290-72012 in accordance with 40 CFR 141.205 (d)(1) and other standard language in accordance with 40 CFR 141.205 (d)(2) and (3), except that notification of the availability of unregulated contaminant results and notification of the exceedance of the secondary MCL for fluoride shall be in accordance with WAC 246-290-71005.

(2) The purveyor shall provide specific mandatory language, contained in department guidance, in its notification when the purveyor is issued a category red operating permit.

[Statutory Authority: RCW 43.20.050 (2) and (3) and70.119A.080 . 03-08-037, § 246-290-71004, filed 3/27/03, effective 4/27/03.]

WAC 246-290-71005 Special public notification requirements. (1) The purveyor of community or NTNC water systems required to monitor under WAC 246-290-300(8) shall notify the water system users of the availability of the results of monitoring for unregulated contaminants no later than twelve months after the monitoring results are known. The form and manner of the public notice to the water system users shall be in accordance with 40 CFR 141.204 (c), (d)(1), and (d)(3). The notice must also identify a person and provide the telephone number to contact for information on the monitoring results.

(2) The purveyor of a community water system that experiences a secondary MCL violation for fluoride shall provide notice, in accordance with the form, manner, timing and content requirements of 40 CFR 141.208.

[Statutory Authority: RCW 43.20.050 (2) and (3) and70.119A.080 . 03-08-037, § 246-290-71005, filed 3/27/03, effective 4/27/03.]

WAC 246-290-71006 Consumer information. The purveyor shall provide consumer information to the water system users within twenty-one days of receipt of confirmation sample results when the department determines that a substance not included in this chapter is confirmed at a level greater than a SAL.

(1) Consumer information shall include:

(a) Name and level of chemical detected;

(b) Location where the chemical was detected;

(c) Any health effects that the chemical could cause at its present concentration;

(d) Plans for follow-up activities; and

(e) The purveyor's name and telephone number.

(2) Consumer information shall be distributed by any of the following methods:

(a) Notice placed in a daily newspaper of general circulation or in a weekly newspaper of general circulation if a daily newspaper does not serve the affected area;

(b) Direct mail to consumers;

(c) Posting for at least one week if a NTNC system; or

(d) Any other method approved by the department.

[Statutory Authority: RCW 43.20.050 (2) and (3) and70.119A.080 . 03-08-037, § 246-290-71006, filed 3/27/03, effective 4/27/03.]

WAC 246-290-71007 Public notification special provisions. (1) When circumstances dictate, the purveyor shall give a broader or more immediate notice to protect public health. The department may require the purveyor's notification by whatever means necessary.

(2) When the state board of health grants a public water system a waiver, the purveyor shall notify consumers and new billing units or new customers before water service begins. The purveyor shall provide a notice annually and send a copy to the department.

(3) The department may give notice to the water system users and the owner or operator of any consecutive water system served as required by this section on behalf of the water purveyor. However, the purveyor remains responsible for ensuring Part 7, Subpart A requirements are met.

[Statutory Authority: RCW 43.20.050 (2) and (3) and70.119A.080 . 03-08-037, § 246-290-71007, filed 3/27/03, effective 4/27/03.]

APPENDIX J

Sumner Water System
Hydraulic Model Data

FlexTable: 2009 PHD Junction Table (PHD.wtg)

Current Time: 0.000 hours

Label	Elevation (ft)	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
J-3192	288.00	8.07	386.30	42.6
J-3191	288.00	8.07	386.30	42.6
J-3008	290.00	0.00	391.42	44.0
J-3155	290.00	0.00	395.26	45.6
J-3195	105.00	0.00	211.50	46.2
J-3156	105.00	8.07	226.32	52.6
J-80	105.00	8.07	228.21	53.4
J-3063	90.00	8.07	225.58	58.8
J-3061	90.00	8.07	225.58	58.8
J-3062	90.00	8.07	225.58	58.8
J-3059	90.00	8.07	225.58	58.8
J-10	86.00	8.07	226.75	61.0
J-5	86.00	8.07	226.76	61.0
J-3002	86.00	8.07	226.79	61.0
J-354	86.00	8.07	226.85	61.1
J-353	86.00	8.07	226.85	61.1
J-344	86.00	8.07	227.09	61.2
J-37	86.00	8.07	227.10	61.2
J-366	86.00	8.07	227.10	61.2
J-20	84.00	8.07	227.10	62.0
J-15	84.00	8.07	227.11	62.0
J-25	83.00	8.07	227.10	62.5
J-30	83.00	8.07	227.12	62.5
J-35	83.00	8.07	227.16	62.5
J-364	83.00	8.07	227.17	62.5
J-3193	240.00	8.07	386.30	63.4
J-3183	80.00	8.07	227.30	63.9
J-3005	80.00	8.07	227.31	63.9
J-3004	80.00	8.07	227.31	63.9
J-1260	76.00	8.07	224.16	64.2
J-75	80.00	8.07	228.20	64.2
J-110	76.00	8.07	224.47	64.4
J-14	76.00	8.07	224.63	64.4
J-70	79.00	8.07	228.20	64.7
J-115	75.00	8.07	224.52	64.8
J-3179	75.00	8.07	224.59	64.9
J-8	75.00	8.07	224.62	64.9
J-105	75.00	8.07	225.09	65.1
J-1195	74.00	8.07	224.18	65.1
J-65	78.00	8.07	228.18	65.1
J-1160	73.00	8.07	223.94	65.4
J-1200	73.00	8.07	224.17	65.5
J-3182	77.00	8.07	228.18	65.5
J-1155	72.00	8.07	223.82	65.8
J-363	76.00	8.07	227.88	65.8
J-3000	72.00	8.07	223.88	65.8

FlexTable: 2009 PHD Junction Table (PHD.wtg)

Current Time: 0.000 hours

Label	Elevation (ft)	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
J-40	76.00	8.07	227.88	65.8
J-1130	72.00	8.07	223.91	65.9
J-45	76.00	8.07	228.03	65.9
J-1180	72.00	8.07	224.11	65.9
J-50	76.00	8.07	228.26	66.0
J-55	76.00	8.07	228.29	66.0
J-3180	74.00	8.07	226.71	66.2
J-100	74.00	8.07	226.73	66.2
J-90	75.00	8.07	227.75	66.2
J-1060	71.00	8.07	223.93	66.3
J-1065	71.00	8.07	223.93	66.3
J-900	71.00	8.07	223.97	66.3
J-895	71.00	8.07	223.99	66.3
J-890	71.00	8.07	223.99	66.3
J-1250	71.00	8.07	224.06	66.4
J-725	71.00	2.97	224.37	66.5
J-3223	71.00	0.00	224.37	66.5
J-720	71.00	2.97	224.39	66.5
J-710	71.00	2.97	224.41	66.5
J-705	71.00	2.97	224.41	66.5
J-278	70.00	8.07	223.46	66.5
J-570	71.00	2.97	224.50	66.5
J-565	71.00	2.97	224.66	66.6
J-535	71.00	8.07	224.67	66.6
J-1125	70.00	8.07	223.83	66.7
J-362	74.00	8.07	227.90	66.7
J-60	74.00	8.07	227.90	66.7
J-277	70.00	8.07	223.97	66.7
J-885	70.00	8.07	223.99	66.8
J-4	70.00	8.07	224.00	66.8
J-95	73.00	8.07	227.06	66.8
J-950	70.00	2.97	224.12	66.8
J-905	70.00	8.07	224.13	66.8
J-6	70.00	8.07	224.18	66.8
J-850	70.00	8.07	224.20	66.8
J-810	70.00	8.07	224.26	66.9
J-120	70.00	8.07	224.33	66.9
J-585	70.00	2.97	224.40	66.9
J-715	70.00	2.97	224.40	66.9
J-130	70.00	8.07	224.48	67.0
J-3055	70.00	8.07	224.48	67.0
J-3054	70.00	8.07	224.48	67.0
J-125	70.00	8.07	224.49	67.0
J-9	70.00	8.07	224.49	67.0
J-11	70.00	8.07	224.49	67.0
J-12	70.00	8.07	224.49	67.0
J-13	70.00	8.07	224.51	67.0

FlexTable: 2009 PHD Junction Table (PHD.wtg)

Current Time: 0.000 hours

Label	Elevation (ft)	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
J-875	69.00	8.07	223.87	67.1
J-880	69.00	8.07	223.98	67.2
J-28	69.00	2.97	224.28	67.3
J-7	69.00	8.07	224.50	67.4
J-575	69.00	2.97	224.50	67.4
J-1070	69.00	8.07	224.50	67.4
J-210	69.00	8.07	224.52	67.4
J-24	69.00	2.97	224.70	67.5
J-1055	68.00	8.07	223.83	67.6
J-870	68.00	8.07	223.85	67.6
J-935	68.00	8.07	224.08	67.7
J-26	68.00	8.07	224.08	67.7
J-840	68.00	2.97	224.12	67.7
J-845	68.00	2.97	224.13	67.7
J-930	68.00	8.07	224.14	67.7
J-925	68.00	8.07	224.17	67.7
J-860	68.00	2.97	224.23	67.7
J-910	68.00	8.07	224.23	67.7
J-920	68.00	8.07	224.23	67.7
J-915	68.00	8.07	224.24	67.7
J-815	68.00	8.07	224.26	67.7
J-825	68.00	8.07	224.28	67.7
J-820	68.00	8.07	224.29	67.8
J-3066	68.00	8.07	224.32	67.8
J-855	68.00	2.97	224.41	67.8
J-205	68.00	8.07	224.54	67.9
J-314	67.00	2.97	223.61	67.9
J-317	67.00	2.97	223.61	67.9
J-313	67.00	2.97	223.61	67.9
J-540	68.00	8.07	224.74	67.9
J-955	67.00	8.07	223.75	68.0
J-800	68.00	2.97	224.78	68.0
J-505	68.00	8.07	224.79	68.0
J-510	68.00	8.07	224.80	68.0
J-785	68.00	2.97	224.80	68.0
J-865	67.00	8.07	223.84	68.0
J-1245	67.00	8.07	224.03	68.1
J-374	68.00	0.61	225.07	68.1
J-775	67.00	2.97	224.38	68.2
J-297	67.00	2.97	224.41	68.2
J-780	67.00	2.97	224.47	68.3
J-990	67.00	2.97	224.52	68.3
J-590	67.00	2.97	224.53	68.3
J-525	67.00	2.97	224.53	68.3
J-332	66.00	8.07	223.55	68.3
J-530	67.00	2.97	224.57	68.3
J-316	66.00	2.97	223.61	68.3

FlexTable: 2009 PHD Junction Table (PHD.wtg)

Current Time: 0.000 hours

Label	Elevation (ft)	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
J-312	66.00	2.97	223.61	68.3
J-318	66.00	2.97	223.61	68.3
J-311	66.00	2.97	223.61	68.3
J-735	67.00	2.97	224.61	68.3
J-1050	66.00	8.07	223.64	68.3
J-730	67.00	2.97	224.72	68.4
J-1030	66.00	8.07	223.75	68.4
J-1035	66.00	8.07	223.75	68.4
J-1040	66.00	8.07	223.75	68.4
J-1025	66.00	8.07	223.75	68.4
J-965	66.00	8.07	223.76	68.4
J-286	65.00	8.07	222.76	68.4
J-805	67.00	8.07	224.78	68.4
J-283	65.00	8.07	222.79	68.4
J-288	65.00	8.07	222.79	68.4
J-1020	66.00	8.07	223.79	68.4
J-790	67.00	2.97	224.80	68.4
J-945	66.00	2.97	223.80	68.4
J-1120	66.00	8.07	223.81	68.4
J-291	65.00	8.07	222.93	68.5
J-600	67.00	2.97	224.93	68.5
J-356	67.00	8.07	224.93	68.5
J-18	67.00	2.97	224.93	68.5
J-970	66.00	8.07	223.96	68.5
J-940	66.00	2.97	224.04	68.5
J-1000	66.00	2.97	224.05	68.5
J-276	65.00	8.07	223.08	68.5
J-835	66.00	2.97	224.14	68.6
J-387	67.00	0.61	225.15	68.6
J-388	67.00	0.61	225.16	68.6
J-389	67.00	0.61	225.16	68.6
J-245	67.00	2.97	225.29	68.6
J-960	66.00	8.07	224.32	68.6
J-765	66.00	2.97	224.36	68.7
J-3217	68.00	0.00	226.37	68.7
J-750	66.00	2.97	224.41	68.7
J-580	66.00	2.97	224.49	68.7
J-341	65.00	2.97	223.55	68.7
J-329	65.00	2.97	223.55	68.7
J-339	65.00	2.97	223.55	68.7
J-337	65.00	2.97	223.55	68.7
J-200	66.00	8.07	224.56	68.7
J-234	65.00	2.97	223.59	68.8
J-322	65.00	2.97	223.59	68.8
J-307	65.00	2.97	223.59	68.8
J-32	66.00	2.97	224.60	68.8
J-321	65.00	2.97	223.60	68.8

FlexTable: 2009 PHD Junction Table (PHD.wtg)

Current Time: 0.000 hours

Label	Elevation (ft)	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
J-308	65.00	2.97	223.60	68.8
J-309	65.00	2.97	223.61	68.8
J-331	65.00	2.97	223.61	68.8
J-1115	65.00	8.07	223.62	68.8
J-700	66.00	2.97	224.62	68.8
J-319	65.00	2.97	223.63	68.8
J-287	65.00	8.07	223.64	68.8
J-284	65.00	8.07	223.64	68.8
J-289	65.00	8.07	223.65	68.8
J-282	65.00	8.07	223.68	68.8
J-560	66.00	2.97	224.70	68.8
J-500	66.00	8.07	224.79	68.8
J-615	66.00	2.97	224.79	68.8
J-27	65.00	8.07	223.83	68.9
J-610	66.00	2.97	224.84	68.9
J-620	66.00	2.97	224.84	68.9
J-304	66.00	2.97	224.85	68.9
J-302	66.00	2.97	224.85	68.9
J-303	66.00	2.97	224.86	68.9
J-1005	65.00	8.07	223.87	68.9
J-605	66.00	2.97	224.91	68.9
J-470	66.00	8.07	225.01	68.9
J-1240	65.00	8.07	224.01	68.9
J-3112	66.00	2.97	225.07	69.0
J-3111	66.00	2.97	225.07	69.0
J-457	66.00	0.61	225.09	69.0
J-465	66.00	8.07	225.28	69.1
J-230	65.00	8.07	224.30	69.1
J-371	67.00	2.97	226.32	69.1
J-830	65.00	8.07	224.32	69.1
J-369	67.00	2.97	226.32	69.1
J-269	66.00	2.97	225.33	69.1
J-460	66.00	8.07	225.38	69.1
J-755	65.00	8.07	224.41	69.1
J-216	68.00	1.32	227.43	69.1
J-33	65.00	8.07	224.44	69.1
J-34	65.00	2.97	224.45	69.1
J-745	65.00	2.97	224.46	69.1
J-995	65.00	8.07	224.51	69.2
J-220	65.00	8.07	224.52	69.2
J-215	65.00	8.07	224.54	69.2
J-338	64.00	2.97	223.57	69.2
J-327	64.00	2.97	223.59	69.2
J-326	64.00	2.97	223.59	69.2
J-323	64.00	2.97	223.59	69.2
J-324	64.00	2.97	223.59	69.2
J-306	64.00	2.97	223.59	69.2

FlexTable: 2009 PHD Junction Table (PHD.wtg)

Current Time: 0.000 hours

Label	Elevation (ft)	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
J-185	65.00	8.07	224.61	69.2
J-244	68.00	1.32	227.61	69.2
J-22	65.00	2.97	224.63	69.2
J-298	65.00	8.07	224.72	69.2
J-231	65.00	8.07	224.72	69.2
J-545	65.00	8.07	224.75	69.3
J-3119	65.00	2.97	224.79	69.3
J-3120	65.00	2.97	224.79	69.3
J-495	65.00	8.07	224.79	69.3
J-3116	65.00	2.97	224.79	69.3
J-3115	65.00	2.97	224.80	69.3
J-2167	68.00	0.61	227.80	69.3
J-242	68.00	0.61	227.80	69.3
J-3157	68.00	0.61	227.80	69.3
J-475	65.00	8.07	224.86	69.3
J-145	65.00	8.07	224.93	69.3
J-675	65.00	0.61	224.94	69.3
J-3205	65.00	2.97	225.11	69.4
J-458	65.00	0.61	225.11	69.4
J-372	65.00	0.61	225.11	69.4
J-382	65.00	0.61	225.12	69.4
J-685	65.00	0.61	225.36	69.5
J-223	66.00	2.97	226.38	69.5
J-985	64.00	2.97	224.52	69.6
J-975	64.00	2.97	224.53	69.6
J-17	65.00	2.97	225.55	69.6
J-305	64.00	2.97	224.57	69.6
J-980	64.00	2.97	224.58	69.6
J-16	65.00	2.97	225.58	69.6
J-31	64.00	8.07	224.58	69.6
J-3058	65.00	8.07	225.59	69.6
J-140	65.00	2.97	225.60	69.6
J-3057	65.00	8.07	225.62	69.6
J-3056	65.00	2.97	225.62	69.6
J-41	64.00	8.07	224.64	69.6
J-39	64.00	8.07	224.65	69.6
J-38	64.00	8.07	224.65	69.6
J-43	64.00	8.07	224.65	69.6
J-42	64.00	8.07	224.65	69.6
J-165	64.00	8.07	224.66	69.6
J-175	64.00	8.07	224.66	69.6
J-160	64.00	8.07	224.67	69.7
J-155	64.00	8.07	224.72	69.7
J-490	64.00	8.07	224.80	69.7
J-690	64.00	8.07	224.81	69.7
J-135	65.00	2.97	225.85	69.7
J-450	64.00	8.07	224.86	69.7

FlexTable: 2009 PHD Junction Table (PHD.wtg)

Current Time: 0.000 hours

Label	Elevation (ft)	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
J-3036	64.00	8.07	224.88	69.7
J-3037	64.00	8.07	224.89	69.7
J-3039	64.00	8.07	224.92	69.8
J-3161	64.00	8.07	224.93	69.8
J-3040	64.00	8.07	224.93	69.8
J-3034	64.00	8.07	224.94	69.8
J-3033	64.00	8.07	224.94	69.8
J-670	64.00	0.61	224.96	69.8
J-3032	64.00	2.97	224.97	69.8
J-3030	64.00	2.97	225.20	69.9
J-3203	65.00	2.97	226.27	69.9
J-378	65.00	0.61	226.27	69.9
J-240	64.00	8.07	225.35	69.9
J-247	65.00	271.75	226.37	70.0
J-270	64.00	8.07	225.37	70.0
J-3065	64.00	8.07	225.37	70.0
J-3064	64.00	8.07	225.37	70.0
J-107	65.00	2.97	226.38	70.0
J-103	65.00	2.97	226.38	70.0
J-213	65.00	0.61	226.38	70.0
J-104	65.00	2.97	226.39	70.0
J-99	65.00	2.97	226.39	70.0
J-226	65.00	2.97	226.39	70.0
J-235	64.00	8.07	225.40	70.0
J-229	64.00	8.07	225.42	70.0
J-268	64.00	8.07	225.46	70.0
J-267	64.00	2.97	225.46	70.0
J-281	63.00	8.07	224.55	70.0
J-228	64.00	2.97	225.55	70.0
J-195	63.00	8.07	224.56	70.0
J-279	63.00	8.07	224.56	70.0
J-190	63.00	8.07	224.58	70.0
J-3060	64.00	8.07	225.58	70.0
J-300	63.00	2.97	224.65	70.1
J-23	63.00	2.97	224.66	70.1
J-170	63.00	8.07	224.66	70.1
J-310	63.00	2.97	224.66	70.1
J-249	65.00	8.07	226.80	70.1
J-3070	65.00	8.07	226.81	70.1
J-3069	65.00	8.07	226.81	70.1
J-238	65.00	8.07	226.83	70.2
J-455	63.00	8.07	224.86	70.2
J-3050	63.00	2.97	224.86	70.2
J-315	63.00	2.97	224.86	70.2
J-3038	63.00	8.07	224.89	70.2
J-3209	65.00	0.00	226.90	70.2
J-251	65.00	8.07	226.93	70.2

FlexTable: 2009 PHD Junction Table (PHD.wtg)

Current Time: 0.000 hours

Label	Elevation (ft)	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
J-445	63.00	8.07	224.94	70.2
J-3127	63.00	0.61	224.96	70.2
J-180	63.00	8.07	224.98	70.2
J-179	63.00	8.07	224.98	70.2
J-376	63.00	0.61	224.98	70.2
J-3092	63.00	8.07	224.99	70.2
J-3090	63.00	8.07	224.99	70.2
J-425	63.00	0.61	224.99	70.2
J-3089	63.00	8.07	225.00	70.2
J-426	63.00	0.61	225.01	70.2
J-423	63.00	0.61	225.02	70.2
J-424	63.00	0.61	225.03	70.2
J-422	63.00	0.61	225.03	70.2
J-3110	63.00	0.61	225.07	70.3
J-3113	63.00	0.61	225.07	70.3
J-3184	63.00	0.61	225.07	70.3
J-177	63.00	8.07	225.17	70.3
J-250	63.00	2.97	225.21	70.3
J-239	65.00	8.07	227.22	70.3
J-3221	64.00	0.00	226.38	70.4
J-3219	64.00	0.00	226.38	70.4
J-1355	64.00	0.61	226.38	70.4
J-3220	64.00	0.61	226.38	70.4
J-202	64.00	0.61	226.38	70.4
J-3197	64.00	0.61	226.38	70.4
J-212	64.00	0.61	226.38	70.4
J-328	61.00	8.07	223.51	70.5
J-3017	61.00	8.07	223.51	70.5
J-334	61.00	2.97	223.55	70.5
J-29	62.00	8.07	224.58	70.5
J-299	62.00	8.07	224.68	70.5
J-252	62.00	8.07	224.70	70.5
J-3188	62.00	2.97	224.75	70.6
J-301	62.00	8.07	224.75	70.6
J-3051	62.00	2.97	224.77	70.6
J-295	62.00	8.07	224.77	70.6
J-555	62.00	2.97	224.78	70.6
J-3186	62.00	2.97	224.79	70.6
J-3105	62.00	2.97	224.79	70.6
J-3108	62.00	2.97	224.81	70.6
J-480	62.00	8.07	224.82	70.6
J-150	62.00	8.07	224.83	70.6
J-290	62.00	8.07	224.84	70.6
J-3164	63.00	8.07	225.84	70.6
J-3048	62.00	8.07	224.87	70.6
J-3086	62.00	8.07	224.87	70.6
J-52	62.00	2.97	224.89	70.6

FlexTable: 2009 PHD Junction Table (PHD.wtg)

Current Time: 0.000 hours

Label	Elevation (ft)	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
J-51	62.00	2.97	224.89	70.6
J-49	62.00	2.97	224.89	70.6
J-48	62.00	8.07	224.89	70.6
J-261	62.00	0.61	224.96	70.6
J-19	62.00	0.61	224.97	70.7
J-280	62.00	8.07	225.00	70.7
J-47	62.00	2.97	225.04	70.7
J-3185	62.00	0.61	225.07	70.7
J-260	62.00	2.97	225.09	70.7
J-199	62.00	8.07	225.19	70.7
J-3163	62.00	2.97	225.20	70.8
J-3046	62.00	2.97	225.21	70.8
J-3189	62.00	2.97	225.21	70.8
J-3043	62.00	2.97	225.21	70.8
J-3042	62.00	2.97	225.21	70.8
J-272	61.00	8.07	224.24	70.8
J-21	62.00	0.61	225.28	70.8
J-263	62.00	8.07	225.30	70.8
J-262	62.00	8.07	225.32	70.8
J-259	62.00	0.61	225.35	70.8
J-660	62.00	0.61	225.38	70.8
J-655	62.00	0.61	225.39	70.8
J-258	62.00	0.61	225.39	70.8
J-3168	60.00	2.97	223.52	70.9
J-3169	60.00	2.97	223.52	70.9
J-3026	60.00	2.97	223.52	70.9
J-3167	60.00	2.97	223.52	70.9
J-3166	60.00	2.97	223.52	70.9
J-3025	60.00	2.97	223.52	70.9
J-336	60.00	2.97	223.55	70.9
J-440	62.00	8.07	225.67	71.0
J-285	61.00	8.07	224.68	71.0
J-435	62.00	2.97	225.73	71.0
J-2073	64.00	2.97	227.74	71.0
J-2070	64.00	2.97	227.74	71.0
J-3104	61.00	2.97	224.79	71.0
J-485	61.00	8.07	224.82	71.0
J-293	60.00	8.07	223.84	71.0
J-550	61.00	2.97	224.84	71.0
J-358	61.00	2.97	224.85	71.0
J-3	61.00	8.07	224.85	71.0
J-3187	61.00	2.97	224.85	71.0
J-74	61.00	2.97	224.85	71.0
J-76	61.00	8.07	224.85	71.0
J-79	61.00	8.07	224.86	71.0
J-359	61.00	2.97	224.87	71.0
J-3088	61.00	8.07	224.87	71.0

FlexTable: 2009 PHD Junction Table (PHD.wtg)

Current Time: 0.000 hours

Label	Elevation (ft)	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
J-357	61.00	2.97	224.87	71.0
J-1010	60.00	8.07	223.88	71.0
J-361	61.00	2.97	224.89	71.0
J-161	64.00	0.61	227.89	71.0
J-78	61.00	8.07	224.89	71.0
J-77	61.00	8.07	224.89	71.0
J-3097	61.00	2.97	224.90	71.1
J-3098	61.00	2.97	224.90	71.1
J-3099	61.00	2.97	224.90	71.1
J-3101	61.00	2.97	224.90	71.1
J-3100	61.00	2.97	224.90	71.1
J-3102	61.00	2.97	224.90	71.1
J-3103	61.00	2.97	224.90	71.1
J-73	61.00	2.97	224.90	71.1
J-370	62.00	8.07	225.90	71.1
J-72	61.00	8.07	224.90	71.1
J-69	61.00	8.07	224.91	71.1
J-335	61.00	2.97	224.91	71.1
J-71	61.00	8.07	224.91	71.1
J-296	60.00	2.97	223.91	71.1
J-68	61.00	8.07	224.91	71.1
J-345	61.00	2.97	224.92	71.1
J-67	61.00	8.07	224.92	71.1
J-1	61.00	8.07	224.93	71.1
J-3096	61.00	8.07	224.94	71.1
J-66	61.00	8.07	224.94	71.1
J-3091	61.00	8.07	224.99	71.1
J-275	61.00	8.07	225.00	71.1
J-3095	61.00	8.07	225.03	71.1
J-3093	61.00	8.07	225.03	71.1
J-181	64.00	0.61	228.05	71.1
J-365	62.00	8.07	226.05	71.1
J-625	61.00	0.61	225.13	71.2
J-1015	60.00	2.97	224.14	71.2
J-271	61.00	8.07	225.18	71.2
J-330	61.00	8.07	225.18	71.2
J-198	61.00	8.07	225.19	71.2
J-265	61.00	2.97	225.20	71.2
J-196	61.00	8.07	225.34	71.2
J-243	68.00	0.00	232.35	71.2
J-325	61.00	8.07	225.36	71.3
J-740	60.00	8.07	224.52	71.3
J-340	61.00	8.07	225.57	71.3
J-58	61.00	8.07	225.64	71.4
J-57	61.00	8.07	225.64	71.4
J-56	61.00	8.07	225.64	71.4
J-59	61.00	8.07	225.64	71.4

FlexTable: 2009 PHD Junction Table (PHD.wtg)

Current Time: 0.000 hours

Label	Elevation (ft)	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
J-54	61.00	8.07	225.64	71.4
J-53	61.00	8.07	225.66	71.4
J-2	60.00	8.07	224.82	71.5
J-350	61.00	8.07	225.83	71.5
J-3049	60.00	2.97	224.88	71.5
J-2135	60.00	2.97	224.88	71.5
J-3162	60.00	2.97	224.93	71.5
J-3085	60.00	2.97	224.99	71.5
J-3094	60.00	8.07	225.03	71.5
J-192	60.00	8.07	225.04	71.5
J-62	61.00	8.07	226.14	71.6
J-61	61.00	8.07	226.14	71.6
J-194	60.00	8.07	225.17	71.6
J-193	60.00	8.07	225.17	71.6
J-236	61.00	0.61	226.36	71.7
J-64	61.00	8.07	226.36	71.7
J-63	61.00	8.07	226.37	71.7
J-203	61.00	0.61	226.42	71.7
J-1350	61.00	0.61	226.44	71.7
J-232	61.00	0.61	226.46	71.7
J-246	68.00	0.00	233.49	71.7
J-343	58.00	8.07	223.51	71.8
J-3175	58.00	2.97	223.51	71.8
J-3174	58.00	2.97	223.51	71.8
J-342	58.00	2.97	223.51	71.8
J-3212	58.00	0.00	223.51	71.8
J-3024	58.00	2.97	223.53	71.8
J-333	58.00	2.97	223.55	71.8
J-1140	58.00	8.07	223.58	71.8
J-385	60.00	8.07	225.72	71.8
J-3121	59.00	2.97	224.76	71.9
J-82	60.00	2.97	225.77	71.9
J-347	60.00	2.97	225.85	71.9
J-346	60.00	2.97	225.85	71.9
J-81	60.00	2.97	225.86	71.9
J-3084	60.00	8.07	225.90	71.9
J-3083	60.00	2.97	225.90	71.9
J-3082	60.00	2.97	225.90	71.9
J-355	60.00	8.07	225.95	71.9
J-395	61.00	8.07	227.01	72.0
J-390	61.00	8.07	227.09	72.0
J-197	60.00	8.07	226.10	72.0
J-360	60.00	8.07	226.19	72.0
J-3068	61.00	8.07	227.26	72.1
J-405	61.00	8.07	227.27	72.1
J-430	61.00	8.07	227.27	72.1
J-3194	220.00	8.07	386.30	72.1

FlexTable: 2009 PHD Junction Table (PHD.wtg)

Current Time: 0.000 hours

Label	Elevation (ft)	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
J-92	60.00	0.61	226.38	72.1
J-93	60.00	0.61	226.38	72.1
J-94	60.00	0.61	226.38	72.1
J-98	60.00	0.61	226.38	72.1
J-96	60.00	0.61	226.38	72.1
J-91	60.00	0.61	226.38	72.1
J-97	60.00	0.61	226.38	72.1
J-89	60.00	0.61	226.38	72.1
J-3222	60.00	0.00	226.38	72.1
J-101	60.00	2.97	226.40	72.1
J-87	60.00	0.61	226.40	72.1
J-241	60.00	0.61	226.40	72.1
J-102	60.00	2.97	226.40	72.1
J-436	60.00	0.61	226.41	72.1
J-2130	60.00	8.07	226.41	72.1
J-233	60.00	0.61	226.41	72.1
J-3216	60.00	0.00	226.42	72.1
J-434	60.00	0.61	226.44	72.2
J-3226	60.00	0.00	226.44	72.2
J-446	60.00	0.61	226.44	72.2
J-1145	57.00	8.07	223.58	72.2
J-1150	57.00	8.07	223.61	72.2
J-3122	58.00	2.97	224.70	72.3
J-400	59.00	2.97	225.88	72.3
J-264	59.00	2.97	225.90	72.4
J-380	60.00	8.07	227.45	72.6
J-1225	56.00	2.97	223.54	72.6
J-1215	56.00	2.97	223.54	72.6
J-1165	56.00	8.07	223.56	72.6
J-410	60.00	8.07	227.59	72.7
J-1170	56.00	8.07	223.61	72.7
J-3165	58.00	0.61	225.84	72.8
J-348	58.00	2.97	225.85	72.8
J-352	58.00	2.97	225.85	72.8
J-368	58.00	0.61	226.34	73.0
J-3196	58.00	0.61	226.41	73.0
J-3153	58.00	0.61	226.43	73.0
J-444	58.00	0.61	226.44	73.0
J-1220	55.00	2.97	223.53	73.1
J-1235	55.00	2.97	223.54	73.1
J-1185	55.00	8.07	223.55	73.1
J-292	55.00	8.07	223.56	73.1
J-1190	55.00	8.07	223.56	73.1
J-1135	55.00	8.07	223.56	73.1
J-111	55.00	8.07	223.58	73.1
J-1175	55.00	8.07	223.58	73.1
J-1110	55.00	8.07	223.65	73.1

FlexTable: 2009 PHD Junction Table (PHD.wtg)

Current Time: 0.000 hours

Label	Elevation (ft)	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
J-1045	55.00	8.07	223.80	73.2
J-349	57.00	2.97	225.85	73.2
J-351	57.00	2.97	225.85	73.2
J-159	57.00	8.07	225.99	73.3
J-3072	57.00	8.07	226.17	73.3
J-3125	55.00	8.07	224.30	73.4
J-3124	55.00	8.07	224.30	73.4
J-3123	55.00	8.07	224.32	73.4
J-760	55.00	8.07	224.39	73.4
J-3225	57.00	0.00	226.40	73.4
J-630	56.00	0.61	225.42	73.4
J-633	56.00	0.61	225.43	73.5
J-3128	56.00	0.61	225.43	73.5
J-367	55.00	8.07	224.44	73.5
J-375	58.00	8.07	227.46	73.5
J-640	56.00	0.61	225.48	73.5
J-645	56.00	0.61	225.48	73.5
J-635	56.00	0.61	225.48	73.5
J-1210	54.00	2.97	223.54	73.5
J-3019	54.00	2.97	223.54	73.5
J-2120	56.00	2.97	225.80	73.6
J-3081	56.00	0.61	225.81	73.6
J-3080	56.00	0.61	225.82	73.6
J-2125	56.00	0.61	225.83	73.6
J-3079	56.00	0.61	225.84	73.6
J-3078	56.00	0.61	225.85	73.6
J-3076	56.00	8.07	225.86	73.6
J-3075	56.00	8.07	225.86	73.6
J-3077	56.00	0.61	225.86	73.6
J-3074	56.00	8.07	225.87	73.6
J-3073	56.00	8.07	225.87	73.6
J-2095	56.00	8.07	225.87	73.6
J-2170	56.00	8.07	225.87	73.6
J-152	56.00	8.07	225.87	73.6
J-153	56.00	8.07	225.99	73.7
J-396	55.00	0.61	225.16	73.8
J-391	55.00	0.61	225.17	73.8
J-394	55.00	0.61	225.18	73.8
J-392	55.00	0.61	225.18	73.8
J-397	55.00	0.61	225.18	73.8
J-402	55.00	0.61	225.18	73.8
J-401	55.00	0.61	225.18	73.8
J-398	55.00	0.61	225.18	73.8
J-399	55.00	0.61	225.18	73.8
J-393	55.00	0.61	225.18	73.8
J-403	55.00	0.61	225.19	73.8
J-381	56.00	2.97	226.21	73.8

FlexTable: 2009 PHD Junction Table (PHD.wtg)

Current Time: 0.000 hours

Label	Elevation (ft)	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
J-154	56.00	8.07	226.24	73.8
J-379	56.00	2.97	226.25	73.8
J-411	55.00	0.61	225.29	73.8
J-377	56.00	2.97	226.30	73.8
J-3071	56.00	8.07	226.32	73.8
J-406	55.00	0.61	225.35	73.9
J-407	55.00	0.61	225.39	73.9
J-3022	53.00	2.97	223.54	73.9
J-156	56.00	8.07	226.57	73.9
J-650	55.00	0.61	225.62	74.0
J-157	56.00	8.07	226.68	74.0
J-158	56.00	8.07	226.75	74.0
J-415	57.00	8.07	227.79	74.0
J-294	53.00	8.07	223.79	74.0
J-456	55.00	0.61	226.22	74.2
J-437	55.00	0.61	226.22	74.2
J-454	55.00	0.61	226.49	74.3
J-3023	52.00	2.97	223.54	74.4
J-3021	52.00	2.97	223.54	74.4
J-3020	52.00	2.97	223.54	74.4
J-1205	52.00	2.97	223.55	74.4
J-1295	54.00	0.61	225.58	74.4
J-147	54.00	0.61	225.60	74.4
J-448	55.00	0.61	226.60	74.4
J-3129	54.00	0.61	225.63	74.4
J-1105	52.00	8.07	223.63	74.4
J-149	54.00	0.61	225.67	74.4
J-151	54.00	0.61	225.68	74.4
J-1075	52.00	8.07	223.73	74.4
J-420	53.00	0.61	225.05	74.6
J-418	53.00	0.61	225.06	74.6
J-414	53.00	0.61	225.06	74.6
J-416	53.00	0.61	225.06	74.6
J-3208	54.00	8.07	226.14	74.6
J-1340	54.00	8.07	226.14	74.6
J-254	54.00	0.61	226.41	74.7
J-2065	54.00	0.61	226.41	74.7
J-408	53.00	0.61	225.45	74.8
J-404	53.00	0.61	225.46	74.8
J-447	54.00	0.61	226.47	74.8
J-449	54.00	0.61	226.48	74.8
J-453	54.00	0.61	226.49	74.8
J-1345	54.00	0.61	226.50	74.8
J-452	54.00	0.61	226.50	74.8
J-1100	51.00	8.07	223.68	74.9
J-1095	51.00	8.07	223.68	74.9
J-1090	51.00	8.07	223.70	74.9

FlexTable: 2009 PHD Junction Table (PHD.wtg)

Current Time: 0.000 hours

Label	Elevation (ft)	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
J-3131	52.00	0.61	225.48	75.2
J-3130	52.00	0.61	225.48	75.2
J-2075	53.00	271.75	226.90	75.4
J-127	52.00	0.61	225.92	75.4
J-128	52.00	0.61	225.93	75.4
J-129	52.00	0.61	225.98	75.4
J-413	51.00	0.61	225.08	75.5
J-123	52.00	0.61	226.09	75.5
J-417	51.00	0.61	225.09	75.5
J-412	51.00	0.61	225.10	75.5
J-122	52.00	0.61	226.12	75.5
J-119	52.00	0.61	226.12	75.5
J-3151	52.00	0.61	226.12	75.5
J-133	52.00	0.61	226.13	75.5
J-3149	52.00	0.61	226.13	75.5
J-3207	52.00	8.07	226.14	75.5
J-124	52.00	0.61	226.14	75.5
J-1335	52.00	0.61	226.14	75.5
J-3147	52.00	0.61	226.14	75.5
J-3148	52.00	0.61	226.15	75.5
J-126	52.00	0.61	226.15	75.5
J-3146	52.00	0.61	226.15	75.5
J-131	52.00	0.61	226.16	75.5
J-136	52.00	0.61	226.16	75.5
J-237	52.00	0.61	226.17	75.5
J-441	52.00	0.61	226.21	75.5
J-439	52.00	0.61	226.22	75.5
J-443	52.00	0.61	226.22	75.5
J-442	52.00	0.61	226.25	75.5
J-438	52.00	0.61	226.29	75.6
J-1270	50.00	8.07	224.33	75.6
J-3141	51.00	0.61	226.08	75.9
J-3142	51.00	0.61	226.08	75.9
J-3143	51.00	0.61	226.08	75.9
J-3144	51.00	0.61	226.08	75.9
J-3140	51.00	0.61	226.08	75.9
J-3139	51.00	0.61	226.08	75.9
J-451	51.00	0.61	226.50	76.1
J-174	50.00	0.61	225.52	76.1
J-137	50.00	0.61	225.54	76.1
J-139	50.00	0.61	225.55	76.1
J-138	50.00	0.61	225.55	76.1
J-141	50.00	0.61	225.55	76.1
J-142	50.00	0.61	225.55	76.1
J-143	50.00	0.61	225.55	76.1
J-144	50.00	0.61	225.55	76.1
J-83	50.00	0.61	225.55	76.1

FlexTable: 2009 PHD Junction Table (PHD.wtg)

Current Time: 0.000 hours

Label	Elevation (ft)	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
J-85	50.00	0.61	225.55	76.1
J-146	50.00	0.61	225.55	76.1
J-1280	50.00	0.61	225.55	76.1
J-162	50.00	0.61	225.55	76.1
J-1310	50.00	0.61	225.55	76.1
J-84	50.00	0.61	225.55	76.1
J-163	50.00	0.61	225.56	76.1
J-166	50.00	0.61	225.57	76.1
J-164	50.00	0.61	225.57	76.1
J-1300	50.00	0.61	225.58	76.1
J-1290	50.00	0.61	225.58	76.1
J-112	50.00	0.61	225.65	76.1
J-2160	57.00	8.07	232.66	76.2
J-3132	50.00	0.61	225.71	76.2
J-3133	50.00	0.61	225.71	76.2
J-3134	50.00	0.61	225.71	76.2
J-3135	50.00	0.61	225.71	76.2
J-117	50.00	0.61	225.78	76.2
J-433	50.00	0.61	225.85	76.2
J-432	50.00	0.61	225.88	76.2
J-3136	50.00	0.61	225.89	76.3
J-431	50.00	0.61	225.89	76.3
J-172	50.00	0.61	225.89	76.3
J-429	50.00	0.61	225.90	76.3
J-3137	50.00	0.61	225.91	76.3
J-3138	50.00	0.61	225.91	76.3
J-428	50.00	0.61	225.91	76.3
J-167	50.00	0.61	225.91	76.3
J-171	50.00	0.61	225.92	76.3
J-173	50.00	0.61	225.92	76.3
J-3145	50.00	0.61	226.08	76.3
J-86	50.00	0.61	226.08	76.3
J-1325	50.00	0.61	226.08	76.3
J-383	49.00	0.61	225.12	76.4
J-384	49.00	0.61	225.12	76.4
J-386	49.00	0.61	225.13	76.4
J-1285	49.00	0.61	225.58	76.5
J-257	49.00	0.61	225.71	76.6
J-1315	49.00	0.61	225.71	76.6
J-1305	48.00	0.61	225.58	77.0
J-1275	48.00	0.61	225.58	77.0

FlexTable: 2009 Fire Flow Node Table (MDD.wtg)

Current Time: 0.000 hours

Label	Satisfies Fire Flow Constraints?	Fire Flow (Needed) (gpm)	Fire Flow (Available) (gpm)	Pressure (Residual Lower Limit) (psi)	Pressure (Calculated Residual) (psi)
J-2160	(N/A)	1,000.00	(N/A)	20.0	(N/A)
J-216	(N/A)	1,000.00	(N/A)	20.0	(N/A)
J-243	(N/A)	1,000.00	(N/A)	20.0	(N/A)
J-244	(N/A)	1,000.00	(N/A)	20.0	(N/A)
J-246	(N/A)	1,000.00	(N/A)	20.0	(N/A)
J-3008	(N/A)	1,000.00	(N/A)	20.0	(N/A)
J-3121	(N/A)	1,500.00	(N/A)	20.0	(N/A)
J-3122	(N/A)	1,500.00	(N/A)	20.0	(N/A)
J-3123	(N/A)	1,000.00	(N/A)	20.0	(N/A)
J-3124	(N/A)	1,000.00	(N/A)	20.0	(N/A)
J-3125	(N/A)	1,000.00	(N/A)	20.0	(N/A)
J-3155	(N/A)	1,000.00	(N/A)	20.0	(N/A)
J-3195	(N/A)	1,000.00	(N/A)	20.0	(N/A)
J-3221	(N/A)	1,000.00	(N/A)	20.0	(N/A)
J-5	False	1,000.00	550.74	20.0	20.0
J-1300	False	3,500.00	2,302.36	20.0	20.0
J-950	False	1,500.00	1,345.90	20.0	20.0
J-945	False	1,500.00	1,342.37	20.0	20.0
J-115	False	1,000.00	826.35	20.0	20.0
J-10	False	1,000.00	510.22	20.0	20.0
J-8	False	1,000.00	896.71	20.0	20.0
J-28	False	4,500.00	4,320.94	20.0	20.0
J-37	False	1,000.00	884.03	20.0	20.0
J-41	False	1,000.00	920.33	20.0	20.0
J-98	False	3,500.00	2,667.95	20.0	20.0
J-213	False	3,500.00	2,710.19	20.0	20.0
J-258	False	3,500.00	3,415.57	20.0	20.0
J-259	False	3,500.00	87.16	20.0	20.6
J-263	False	1,000.00	770.31	20.0	20.0
J-272	False	1,000.00	134.99	20.0	20.3
J-276	False	1,000.00	80.93	20.0	20.6
J-277	False	1,000.00	639.41	20.0	20.0
J-278	False	1,000.00	116.59	20.0	20.2
J-281	False	1,000.00	982.82	20.0	20.0
J-283	False	1,000.00	105.59	20.0	20.5
J-286	False	1,000.00	106.59	20.0	20.5
J-288	False	1,000.00	108.76	20.0	20.5
J-291	False	1,000.00	119.53	20.0	20.2
J-299	False	1,000.00	747.92	20.0	20.0
J-301	False	1,000.00	783.34	20.0	20.0
J-314	False	1,500.00	892.06	20.0	20.0
J-316	False	1,500.00	998.18	20.0	20.0
J-317	False	1,500.00	974.97	20.0	20.0
J-318	False	1,500.00	1,006.51	20.0	20.0

FlexTable: 2009 Fire Flow Node Table (MDD.wtg)

Current Time: 0.000 hours

Label	Satisfies Fire Flow Constraints?	Fire Flow (Needed) (gpm)	Fire Flow (Available) (gpm)	Pressure (Residual Lower Limit) (psi)	Pressure (Calculated Residual) (psi)
J-321	False	1,500.00	1,003.21	20.0	20.0
J-322	False	1,500.00	971.28	20.0	20.0
J-323	False	1,500.00	1,039.01	20.0	20.0
J-326	False	1,500.00	935.11	20.0	20.0
J-327	False	1,500.00	922.97	20.0	20.0
J-344	False	1,000.00	735.65	20.0	20.0
J-353	False	1,000.00	763.74	20.0	20.0
J-354	False	1,000.00	724.08	20.0	20.0
J-366	False	1,000.00	899.69	20.0	20.0
J-383	False	3,500.00	3,115.37	20.0	20.0
J-384	False	3,500.00	3,204.40	20.0	20.0
J-388	False	3,500.00	3,312.64	20.0	20.0
J-401	False	3,500.00	2,734.56	20.0	20.0
J-402	False	3,500.00	1,991.57	20.0	20.0
J-407	False	3,500.00	2,865.11	20.0	20.0
J-446	False	3,500.00	1,718.67	20.0	20.0
J-3002	False	1,000.00	632.47	20.0	20.0
J-3046	False	1,500.00	1,213.53	20.0	20.0
J-3110	False	3,500.00	2,667.95	20.0	21.3
J-3113	False	3,500.00	3,141.92	20.0	21.3
J-3130	False	3,500.00	3,257.77	20.0	20.0
J-3131	False	3,500.00	2,718.40	20.0	20.0
J-3179	False	1,000.00	538.18	20.0	20.0
J-3180	False	1,000.00	727.42	20.0	20.0
J-3183	False	1,000.00	813.03	20.0	20.0
J-633	True	3,500.00	4,000.00	20.0	60.4
J-2073	True	1,500.00	4,000.00	20.0	67.8
J-2135	True	1,500.00	4,000.00	20.0	59.4
J-2130	True	1,000.00	4,000.00	20.0	67.9
J-2120	True	1,000.00	4,000.00	20.0	67.7
J-2125	True	3,500.00	4,000.00	20.0	67.4
J-2095	True	1,000.00	4,000.00	20.0	62.6
J-2170	True	1,000.00	4,000.00	20.0	35.0
J-2065	True	3,500.00	4,000.00	20.0	55.3
J-2167	True	3,500.00	4,000.00	20.0	44.5
J-2070	True	1,500.00	4,000.00	20.0	67.8
J-2075	True	1,000.00	4,000.00	20.0	69.3
J-260	True	1,500.00	4,000.00	20.0	54.9
J-75	True	1,000.00	4,000.00	20.0	62.0
J-1355	True	3,500.00	4,000.00	20.0	52.3
J-1350	True	3,500.00	4,000.00	20.0	49.9
J-1345	True	3,500.00	4,000.00	20.0	65.2
J-1340	True	1,000.00	3,079.23	20.0	20.0
J-1335	True	3,500.00	3,584.08	20.0	20.0

FlexTable: 2009 Fire Flow Node Table (MDD.wtg)

Current Time: 0.000 hours

Label	Satisfies Fire Flow Constraints?	Fire Flow (Needed) (gpm)	Fire Flow (Available) (gpm)	Pressure (Residual Lower Limit) (psi)	Pressure (Calculated Residual) (psi)
J-1325	True	3,500.00	4,000.00	20.0	64.8
J-1315	True	3,500.00	4,000.00	20.0	66.6
J-1310	True	3,500.00	4,000.00	20.0	68.0
J-1305	True	3,500.00	4,000.00	20.0	50.4
J-1295	True	3,500.00	4,000.00	20.0	43.6
J-1290	True	3,500.00	4,000.00	20.0	55.8
J-1285	True	3,750.00	4,000.00	20.0	61.3
J-1280	True	3,500.00	4,000.00	20.0	67.0
J-1275	True	3,500.00	4,000.00	20.0	66.5
J-1270	True	1,000.00	3,959.28	20.0	28.7
J-1260	True	1,000.00	2,448.63	20.0	20.0
J-1250	True	1,000.00	3,499.22	20.0	20.0
J-1245	True	1,000.00	3,082.53	20.0	20.0
J-1240	True	1,000.00	3,638.42	20.0	20.0
J-1235	True	1,500.00	3,344.64	20.0	20.0
J-1225	True	1,500.00	3,527.19	20.0	20.0
J-1220	True	1,500.00	3,042.35	20.0	20.0
J-1215	True	1,500.00	3,054.88	20.0	20.0
J-1210	True	1,500.00	2,794.52	20.0	20.0
J-1205	True	1,500.00	3,368.86	20.0	20.0
J-1200	True	1,000.00	1,379.44	20.0	20.0
J-1195	True	1,000.00	2,639.60	20.0	20.0
J-1190	True	1,000.00	2,541.72	20.0	20.0
J-1185	True	1,000.00	3,544.35	20.0	20.0
J-1180	True	1,000.00	3,727.34	20.0	20.0
J-1175	True	1,000.00	2,752.39	20.0	20.0
J-1170	True	1,000.00	3,078.39	20.0	20.0
J-1165	True	1,000.00	2,821.96	20.0	20.0
J-1160	True	1,000.00	2,967.16	20.0	20.0
J-1155	True	1,000.00	2,569.29	20.0	20.0
J-1150	True	1,000.00	3,606.91	20.0	20.0
J-1145	True	1,000.00	3,324.72	20.0	20.0
J-1140	True	1,000.00	3,163.32	20.0	20.0
J-1135	True	1,000.00	3,370.37	20.0	20.0
J-1130	True	1,000.00	2,911.72	20.0	20.0
J-1125	True	1,000.00	2,827.61	20.0	20.0
J-1120	True	1,000.00	1,076.91	20.0	20.0
J-1115	True	1,000.00	2,384.22	20.0	20.0
J-1110	True	1,000.00	2,286.46	20.0	20.0
J-1105	True	1,000.00	3,110.38	20.0	20.0
J-1100	True	1,000.00	2,972.03	20.0	20.0
J-1095	True	1,000.00	2,215.84	20.0	20.0
J-1090	True	1,000.00	2,064.59	20.0	20.0
J-1075	True	1,000.00	2,100.18	20.0	20.0

FlexTable: 2009 Fire Flow Node Table (MDD.wtg)

Current Time: 0.000 hours

Label	Satisfies Fire Flow Constraints?	Fire Flow (Needed) (gpm)	Fire Flow (Available) (gpm)	Pressure (Residual Lower Limit) (psi)	Pressure (Calculated Residual) (psi)
J-1070	True	1,000.00	4,000.00	20.0	55.6
J-1065	True	1,000.00	3,682.33	20.0	20.0
J-1060	True	1,000.00	3,659.32	20.0	20.0
J-1055	True	1,000.00	3,517.32	20.0	20.0
J-1050	True	1,000.00	2,816.31	20.0	20.0
J-1045	True	1,000.00	2,496.98	20.0	20.0
J-1040	True	1,000.00	3,802.37	20.0	20.0
J-1035	True	1,000.00	4,000.00	20.0	27.2
J-1030	True	1,000.00	4,000.00	20.0	23.2
J-1025	True	1,000.00	3,899.66	20.0	20.0
J-1020	True	1,000.00	3,355.87	20.0	20.0
J-1015	True	1,500.00	3,528.59	20.0	20.0
J-1010	True	1,000.00	3,793.69	20.0	20.0
J-1005	True	1,000.00	3,707.16	20.0	20.0
J-1000	True	1,500.00	2,800.67	20.0	20.0
J-995	True	1,000.00	4,000.00	20.0	56.2
J-990	True	1,500.00	4,000.00	20.0	55.2
J-985	True	1,500.00	4,000.00	20.0	56.3
J-980	True	1,500.00	4,000.00	20.0	55.4
J-975	True	1,500.00	4,000.00	20.0	55.8
J-970	True	1,000.00	2,189.40	20.0	20.0
J-965	True	1,000.00	1,902.53	20.0	20.0
J-960	True	1,000.00	3,223.30	20.0	20.0
J-955	True	1,000.00	1,893.87	20.0	20.0
J-940	True	1,500.00	1,952.66	20.0	20.0
J-935	True	1,000.00	3,886.69	20.0	20.0
J-930	True	1,000.00	3,722.72	20.0	20.0
J-925	True	1,000.00	4,000.00	20.0	25.3
J-920	True	1,000.00	3,415.97	20.0	20.0
J-915	True	1,000.00	3,363.17	20.0	20.0
J-910	True	1,000.00	3,427.41	20.0	20.0
J-905	True	1,000.00	3,695.58	20.0	20.0
J-900	True	1,000.00	4,000.00	20.0	26.5
J-895	True	1,000.00	4,000.00	20.0	31.6
J-890	True	1,000.00	4,000.00	20.0	29.7
J-885	True	1,000.00	4,000.00	20.0	24.5
J-880	True	1,000.00	4,000.00	20.0	24.9
J-875	True	1,000.00	3,872.40	20.0	20.0
J-870	True	1,000.00	2,602.09	20.0	20.0
J-865	True	1,000.00	2,952.40	20.0	20.0
J-860	True	1,500.00	3,323.02	20.0	20.0
J-855	True	1,500.00	4,000.00	20.0	49.6
J-850	True	1,000.00	2,498.43	20.0	20.0
J-845	True	1,500.00	2,824.90	20.0	20.0

FlexTable: 2009 Fire Flow Node Table (MDD.wtg)

Current Time: 0.000 hours

Label	Satisfies Fire Flow Constraints?	Fire Flow (Needed) (gpm)	Fire Flow (Available) (gpm)	Pressure (Residual Lower Limit) (psi)	Pressure (Calculated Residual) (psi)
J-840	True	1,500.00	2,616.60	20.0	20.9
J-835	True	1,500.00	3,487.55	20.0	20.0
J-830	True	1,000.00	2,943.50	20.0	20.0
J-825	True	1,000.00	3,384.73	20.0	20.0
J-820	True	1,000.00	3,606.65	20.0	20.0
J-815	True	1,000.00	3,567.66	20.0	20.0
J-810	True	1,000.00	3,193.06	20.0	20.0
J-805	True	1,000.00	1,418.48	20.0	20.0
J-800	True	1,500.00	2,084.79	20.0	20.0
J-790	True	1,500.00	4,000.00	20.0	38.3
J-785	True	1,500.00	4,000.00	20.0	43.8
J-780	True	1,500.00	4,000.00	20.0	21.9
J-775	True	1,500.00	3,559.29	20.0	20.0
J-765	True	1,500.00	3,933.64	20.0	20.0
J-760	True	1,000.00	1,066.34	20.0	20.0
J-755	True	1,000.00	2,907.07	20.0	20.0
J-750	True	1,500.00	4,000.00	20.0	21.2
J-745	True	1,500.00	4,000.00	20.0	25.3
J-740	True	1,000.00	4,000.00	20.0	28.9
J-735	True	1,500.00	4,000.00	20.0	40.4
J-730	True	1,500.00	4,000.00	20.0	48.5
J-725	True	1,500.00	4,000.00	20.0	23.6
J-720	True	1,500.00	4,000.00	20.0	43.2
J-715	True	1,500.00	4,000.00	20.0	46.8
J-710	True	1,500.00	4,000.00	20.0	48.9
J-705	True	1,500.00	4,000.00	20.0	49.8
J-700	True	1,500.00	3,620.68	20.0	20.0
J-690	True	1,000.00	1,125.39	20.0	20.0
J-685	True	3,500.00	4,000.00	20.0	55.0
J-675	True	3,500.00	4,000.00	20.0	30.3
J-670	True	3,500.00	4,000.00	20.0	28.2
J-660	True	3,500.00	4,000.00	20.0	38.5
J-655	True	3,500.00	4,000.00	20.0	56.5
J-650	True	4,500.00	5,000.00	20.0	59.5
J-645	True	3,500.00	4,000.00	20.0	61.0
J-640	True	4,500.00	5,000.00	20.0	56.7
J-635	True	3,500.00	4,000.00	20.0	63.0
J-630	True	4,500.00	5,000.00	20.0	52.8
J-625	True	3,500.00	4,000.00	20.0	24.9
J-620	True	1,500.00	4,000.00	20.0	24.8
J-615	True	1,500.00	4,000.00	20.0	47.2
J-610	True	1,500.00	4,000.00	20.0	48.2
J-605	True	1,500.00	4,000.00	20.0	51.9
J-600	True	1,500.00	4,000.00	20.0	55.4

FlexTable: 2009 Fire Flow Node Table (MDD.wtg)

Current Time: 0.000 hours

Label	Satisfies Fire Flow Constraints?	Fire Flow (Needed) (gpm)	Fire Flow (Available) (gpm)	Pressure (Residual Lower Limit) (psi)	Pressure (Calculated Residual) (psi)
J-590	True	1,500.00	2,498.48	20.0	20.0
J-585	True	1,500.00	4,000.00	20.0	20.6
J-580	True	1,500.00	3,061.72	20.0	20.0
J-575	True	1,500.00	3,169.75	20.0	20.0
J-570	True	1,500.00	4,000.00	20.0	50.3
J-565	True	1,500.00	4,000.00	20.0	44.6
J-560	True	1,500.00	4,000.00	20.0	26.3
J-555	True	1,500.00	4,000.00	20.0	51.5
J-550	True	1,500.00	4,000.00	20.0	58.9
J-545	True	1,000.00	4,000.00	20.0	26.6
J-540	True	1,000.00	3,306.27	20.0	20.0
J-535	True	1,000.00	4,000.00	20.0	43.5
J-530	True	1,500.00	3,340.61	20.0	20.0
J-525	True	1,500.00	2,551.95	20.0	20.0
J-510	True	1,000.00	4,000.00	20.0	56.4
J-505	True	1,000.00	4,000.00	20.0	20.6
J-500	True	1,000.00	3,412.36	20.0	20.0
J-495	True	1,000.00	3,756.92	20.0	20.0
J-490	True	1,000.00	3,627.00	20.0	20.0
J-485	True	1,000.00	3,274.22	20.0	21.3
J-480	True	1,000.00	3,482.60	20.0	20.0
J-475	True	1,000.00	3,824.62	20.0	20.0
J-470	True	1,000.00	4,000.00	20.0	58.7
J-465	True	1,000.00	4,000.00	20.0	58.8
J-460	True	1,000.00	4,000.00	20.0	58.3
J-455	True	1,000.00	4,000.00	20.0	50.3
J-450	True	1,000.00	3,483.15	20.0	20.0
J-445	True	1,000.00	3,102.83	20.0	20.0
J-440	True	1,000.00	4,000.00	20.0	63.7
J-435	True	1,500.00	4,000.00	20.0	65.1
J-430	True	1,000.00	4,000.00	20.0	69.5
J-415	True	1,000.00	4,000.00	20.0	72.4
J-410	True	1,000.00	4,000.00	20.0	70.5
J-405	True	1,000.00	2,650.86	20.0	20.0
J-400	True	1,500.00	4,000.00	20.0	67.3
J-395	True	1,000.00	4,000.00	20.0	69.1
J-390	True	1,000.00	4,000.00	20.0	69.3
J-385	True	1,000.00	1,795.43	20.0	20.0
J-380	True	1,000.00	3,654.60	20.0	20.0
J-375	True	1,000.00	4,000.00	20.0	53.9
J-370	True	1,000.00	2,348.15	20.0	20.0
J-365	True	1,000.00	2,356.41	20.0	20.0
J-360	True	1,000.00	4,000.00	20.0	20.3
J-355	True	1,000.00	3,848.16	20.0	20.0

FlexTable: 2009 Fire Flow Node Table (MDD.wtg)

Current Time: 0.000 hours

Label	Satisfies Fire Flow Constraints?	Fire Flow (Needed) (gpm)	Fire Flow (Available) (gpm)	Pressure (Residual Lower Limit) (psi)	Pressure (Calculated Residual) (psi)
J-350	True	1,000.00	3,727.01	20.0	20.0
J-345	True	1,500.00	4,000.00	20.0	61.6
J-340	True	1,000.00	4,000.00	20.0	60.0
J-335	True	1,500.00	4,000.00	20.0	61.2
J-330	True	1,000.00	4,000.00	20.0	43.7
J-325	True	1,000.00	4,000.00	20.0	59.7
J-315	True	1,500.00	4,000.00	20.0	48.3
J-310	True	1,500.00	4,000.00	20.0	47.5
J-305	True	1,500.00	2,470.22	20.0	20.0
J-300	True	1,500.00	3,128.49	20.0	20.0
J-295	True	1,000.00	3,394.87	20.0	20.0
J-290	True	1,000.00	4,000.00	20.0	45.2
J-285	True	1,000.00	2,269.78	20.0	20.0
J-280	True	1,000.00	1,279.94	20.0	20.0
J-275	True	1,000.00	4,000.00	20.0	49.1
J-265	True	1,500.00	4,000.00	20.0	57.4
J-250	True	1,500.00	4,000.00	20.0	21.0
J-245	True	1,500.00	4,000.00	20.0	37.3
J-240	True	1,000.00	3,692.20	20.0	20.0
J-235	True	1,000.00	3,177.24	20.0	20.0
J-220	True	1,000.00	3,973.53	20.0	20.0
J-215	True	1,000.00	3,560.77	20.0	20.0
J-210	True	1,000.00	4,000.00	20.0	54.0
J-205	True	1,000.00	4,000.00	20.0	53.4
J-200	True	1,000.00	4,000.00	20.0	52.5
J-195	True	1,000.00	4,000.00	20.0	24.4
J-190	True	1,000.00	4,000.00	20.0	24.4
J-185	True	1,000.00	4,000.00	20.0	51.7
J-175	True	1,000.00	4,000.00	20.0	51.9
J-170	True	1,000.00	2,245.15	20.0	20.0
J-165	True	1,000.00	3,705.40	20.0	20.0
J-160	True	1,000.00	3,833.89	20.0	20.0
J-155	True	1,000.00	4,000.00	20.0	50.1
J-150	True	1,000.00	4,000.00	20.0	49.8
J-145	True	1,000.00	4,000.00	20.0	48.3
J-140	True	1,500.00	4,000.00	20.0	45.0
J-135	True	1,500.00	4,000.00	20.0	44.4
J-130	True	1,000.00	2,418.63	20.0	20.0
J-125	True	1,000.00	4,000.00	20.0	50.2
J-120	True	1,000.00	3,200.92	20.0	20.0
J-110	True	1,000.00	4,000.00	20.0	33.2
J-105	True	1,000.00	4,000.00	20.0	41.6
J-100	True	1,000.00	4,000.00	20.0	44.5
J-95	True	1,000.00	4,000.00	20.0	47.3

FlexTable: 2009 Fire Flow Node Table (MDD.wtg)

Current Time: 0.000 hours

Label	Satisfies Fire Flow Constraints?	Fire Flow (Needed) (gpm)	Fire Flow (Available) (gpm)	Pressure (Residual Lower Limit) (psi)	Pressure (Calculated Residual) (psi)
J-90	True	1,000.00	4,000.00	20.0	52.5
J-80	True	1,000.00	4,000.00	20.0	52.6
J-70	True	1,000.00	4,000.00	20.0	62.0
J-65	True	1,000.00	4,000.00	20.0	61.1
J-60	True	1,000.00	4,000.00	20.0	54.2
J-55	True	1,000.00	4,000.00	20.0	56.2
J-50	True	1,000.00	4,000.00	20.0	57.0
J-45	True	1,000.00	4,000.00	20.0	25.4
J-40	True	1,000.00	4,000.00	20.0	40.4
J-35	True	1,000.00	1,591.52	20.0	21.4
J-30	True	1,000.00	1,168.83	20.0	20.0
J-25	True	1,000.00	1,071.91	20.0	20.0
J-20	True	1,000.00	1,107.51	20.0	20.0
J-15	True	1,000.00	1,416.66	20.0	20.9
J-1	True	1,000.00	4,000.00	20.0	40.4
J-2	True	1,000.00	4,000.00	20.0	26.4
J-3	True	1,000.00	3,118.58	20.0	20.1
J-4	True	1,000.00	3,091.25	20.0	20.0
J-6	True	1,000.00	3,065.00	20.0	20.1
J-7	True	1,000.00	4,000.00	20.0	55.5
J-9	True	1,000.00	4,000.00	20.0	50.1
J-11	True	1,000.00	4,000.00	20.0	49.8
J-12	True	1,000.00	4,000.00	20.0	49.6
J-13	True	1,000.00	4,000.00	20.0	48.8
J-14	True	1,000.00	4,000.00	20.0	43.8
J-16	True	1,500.00	4,000.00	20.0	45.1
J-17	True	1,500.00	4,000.00	20.0	44.7
J-18	True	1,500.00	4,000.00	20.0	58.2
J-19	True	3,500.00	4,000.00	20.0	53.3
J-21	True	3,500.00	4,000.00	20.0	44.4
J-22	True	1,500.00	4,000.00	20.0	54.5
J-23	True	1,500.00	4,000.00	20.0	56.1
J-24	True	1,500.00	4,000.00	20.0	54.8
J-26	True	1,000.00	3,995.97	20.0	20.0
J-27	True	1,000.00	3,541.74	20.0	20.0
J-29	True	1,000.00	4,000.00	20.0	32.1
J-31	True	1,000.00	4,000.00	20.0	32.3
J-32	True	1,500.00	2,997.53	20.0	20.0
J-33	True	1,000.00	1,869.64	20.0	20.0
J-34	True	1,500.00	4,000.00	20.0	24.5
J-38	True	1,000.00	4,000.00	20.0	22.4
J-39	True	1,000.00	2,283.07	20.0	20.0
J-42	True	1,000.00	3,683.79	20.0	20.0
J-43	True	1,000.00	2,889.93	20.0	20.0

FlexTable: 2009 Fire Flow Node Table (MDD.wtg)

Current Time: 0.000 hours

Label	Satisfies Fire Flow Constraints?	Fire Flow (Needed) (gpm)	Fire Flow (Available) (gpm)	Pressure (Residual Lower Limit) (psi)	Pressure (Calculated Residual) (psi)
J-47	True	1,500.00	4,000.00	20.0	54.4
J-48	True	1,000.00	4,000.00	20.0	47.3
J-49	True	1,500.00	4,000.00	20.0	27.5
J-51	True	1,500.00	3,695.86	20.0	20.0
J-52	True	1,500.00	2,177.93	20.0	20.0
J-53	True	1,000.00	3,544.77	20.0	20.0
J-54	True	1,000.00	2,689.24	20.0	20.0
J-56	True	1,000.00	2,343.68	20.0	20.0
J-57	True	1,000.00	2,238.13	20.0	20.0
J-58	True	1,000.00	1,699.68	20.0	20.0
J-59	True	1,000.00	1,784.82	20.0	20.0
J-61	True	1,000.00	4,000.00	20.0	60.5
J-62	True	1,000.00	2,998.88	20.0	20.0
J-63	True	1,000.00	4,000.00	20.0	61.5
J-64	True	1,000.00	2,771.10	20.0	20.0
J-66	True	1,000.00	4,000.00	20.0	59.4
J-67	True	1,000.00	4,000.00	20.0	53.4
J-68	True	1,000.00	4,000.00	20.0	43.5
J-69	True	1,000.00	4,000.00	20.0	48.2
J-71	True	1,000.00	4,000.00	20.0	46.8
J-72	True	1,000.00	4,000.00	20.0	53.0
J-73	True	1,500.00	4,000.00	20.0	61.4
J-74	True	1,500.00	4,000.00	20.0	60.0
J-76	True	1,000.00	4,000.00	20.0	47.0
J-77	True	1,000.00	4,000.00	20.0	38.9
J-78	True	1,000.00	3,675.70	20.0	20.0
J-79	True	1,000.00	4,000.00	20.0	46.7
J-81	True	1,500.00	4,000.00	20.0	65.9
J-82	True	1,500.00	4,000.00	20.0	65.0
J-83	True	3,500.00	4,000.00	20.0	67.7
J-84	True	3,500.00	4,000.00	20.0	67.6
J-85	True	3,500.00	4,000.00	20.0	67.7
J-86	True	3,500.00	4,000.00	20.0	43.9
J-87	True	3,500.00	4,000.00	20.0	51.8
J-89	True	3,500.00	4,000.00	20.0	33.6
J-91	True	3,500.00	4,000.00	20.0	26.1
J-92	True	3,500.00	3,752.78	20.0	20.0
J-93	True	3,500.00	3,764.69	20.0	20.0
J-94	True	3,500.00	4,000.00	20.0	21.8
J-96	True	3,500.00	4,000.00	20.0	26.3
J-97	True	3,500.00	4,000.00	20.0	39.9
J-99	True	1,500.00	4,000.00	20.0	29.0
J-101	True	1,500.00	4,000.00	20.0	37.0
J-102	True	1,500.00	4,000.00	20.0	39.5

FlexTable: 2009 Fire Flow Node Table (MDD.wtg)

Current Time: 0.000 hours

Label	Satisfies Fire Flow Constraints?	Fire Flow (Needed) (gpm)	Fire Flow (Available) (gpm)	Pressure (Residual Lower Limit) (psi)	Pressure (Calculated Residual) (psi)
J-103	True	1,500.00	1,728.29	20.0	20.5
J-104	True	1,500.00	4,000.00	20.0	23.8
J-107	True	1,500.00	1,714.97	20.0	20.5
J-111	True	1,000.00	2,048.28	20.0	20.0
J-112	True	3,500.00	4,000.00	20.0	66.8
J-117	True	3,500.00	4,000.00	20.0	65.7
J-119	True	3,500.00	4,000.00	20.0	63.1
J-122	True	3,500.00	4,000.00	20.0	63.2
J-123	True	3,500.00	4,000.00	20.0	63.6
J-124	True	3,500.00	4,000.00	20.0	59.8
J-126	True	3,500.00	4,000.00	20.0	56.1
J-127	True	3,500.00	4,000.00	20.0	59.4
J-128	True	3,500.00	4,000.00	20.0	61.9
J-129	True	3,500.00	4,000.00	20.0	64.2
J-131	True	3,500.00	4,000.00	20.0	56.0
J-133	True	3,500.00	4,000.00	20.0	62.5
J-136	True	3,500.00	4,000.00	20.0	63.0
J-137	True	3,500.00	4,000.00	20.0	66.6
J-138	True	3,500.00	4,000.00	20.0	28.7
J-139	True	3,500.00	4,000.00	20.0	21.3
J-141	True	3,500.00	4,000.00	20.0	27.4
J-142	True	3,500.00	4,000.00	20.0	45.8
J-143	True	3,500.00	4,000.00	20.0	50.0
J-144	True	3,500.00	4,000.00	20.0	57.9
J-146	True	3,500.00	4,000.00	20.0	67.7
J-147	True	3,500.00	4,000.00	20.0	63.8
J-149	True	3,500.00	4,000.00	20.0	58.7
J-151	True	3,500.00	4,000.00	20.0	65.6
J-152	True	1,000.00	4,000.00	20.0	62.4
J-153	True	1,000.00	4,000.00	20.0	60.7
J-154	True	1,000.00	4,000.00	20.0	53.1
J-156	True	1,000.00	4,000.00	20.0	64.1
J-157	True	1,000.00	4,000.00	20.0	65.5
J-158	True	1,000.00	4,000.00	20.0	66.5
J-159	True	1,000.00	4,000.00	20.0	58.4
J-161	True	3,500.00	4,000.00	20.0	68.6
J-162	True	3,500.00	4,000.00	20.0	66.9
J-163	True	3,500.00	4,000.00	20.0	50.2
J-164	True	3,500.00	4,000.00	20.0	48.9
J-166	True	3,500.00	4,000.00	20.0	65.6
J-167	True	3,500.00	4,000.00	20.0	62.6
J-171	True	3,500.00	4,000.00	20.0	63.8
J-172	True	3,500.00	4,000.00	20.0	64.9
J-173	True	3,500.00	4,000.00	20.0	64.7

FlexTable: 2009 Fire Flow Node Table (MDD.wtg)

Current Time: 0.000 hours

Label	Satisfies Fire Flow Constraints?	Fire Flow (Needed) (gpm)	Fire Flow (Available) (gpm)	Pressure (Residual Lower Limit) (psi)	Pressure (Calculated Residual) (psi)
J-174	True	3,500.00	4,000.00	20.0	67.2
J-177	True	1,000.00	4,000.00	20.0	28.3
J-179	True	1,000.00	4,000.00	20.0	28.9
J-180	True	1,000.00	3,350.96	20.0	20.0
J-181	True	3,500.00	4,000.00	20.0	69.7
J-192	True	1,000.00	4,000.00	20.0	56.1
J-193	True	1,000.00	4,000.00	20.0	44.7
J-194	True	1,000.00	3,773.23	20.0	20.0
J-196	True	1,000.00	4,000.00	20.0	53.1
J-197	True	1,000.00	4,000.00	20.0	67.5
J-198	True	1,000.00	4,000.00	20.0	44.8
J-199	True	1,000.00	2,664.82	20.0	20.0
J-202	True	3,500.00	3,985.45	20.0	20.0
J-203	True	3,500.00	4,000.00	20.0	47.7
J-212	True	3,500.00	4,000.00	20.0	29.1
J-223	True	1,500.00	1,690.05	20.0	20.0
J-226	True	1,500.00	4,000.00	20.0	31.2
J-228	True	1,500.00	4,000.00	20.0	31.8
J-229	True	1,000.00	3,223.01	20.0	20.0
J-230	True	1,000.00	2,691.48	20.0	20.0
J-231	True	1,000.00	3,916.47	20.0	20.0
J-232	True	3,500.00	4,000.00	20.0	57.6
J-233	True	3,500.00	4,000.00	20.0	43.3
J-236	True	3,500.00	4,000.00	20.0	52.6
J-237	True	3,500.00	4,000.00	20.0	57.3
J-241	True	3,500.00	4,000.00	20.0	51.8
J-242	True	3,500.00	4,000.00	20.0	41.7
J-247	True	1,000.00	3,311.22	20.0	20.0
J-234	True	1,500.00	3,060.12	20.0	20.0
J-238	True	1,000.00	4,000.00	20.0	63.7
J-239	True	1,000.00	4,000.00	20.0	67.4
J-249	True	1,000.00	4,000.00	20.0	63.4
J-251	True	1,000.00	4,000.00	20.0	64.9
J-252	True	1,000.00	2,504.48	20.0	20.0
J-254	True	3,500.00	4,000.00	20.0	54.6
J-257	True	3,500.00	3,509.95	20.0	20.0
J-261	True	3,500.00	4,000.00	20.0	54.0
J-262	True	1,000.00	2,913.88	20.0	20.0
J-264	True	1,500.00	4,000.00	20.0	67.4
J-267	True	1,500.00	3,529.55	20.0	20.0
J-268	True	1,000.00	2,865.94	20.0	20.0
J-269	True	1,500.00	4,000.00	20.0	26.4
J-270	True	1,000.00	2,511.01	20.0	20.0
J-271	True	1,000.00	1,899.74	20.0	20.0

FlexTable: 2009 Fire Flow Node Table (MDD.wtg)

Current Time: 0.000 hours

Label	Satisfies Fire Flow Constraints?	Fire Flow (Needed) (gpm)	Fire Flow (Available) (gpm)	Pressure (Residual Lower Limit) (psi)	Pressure (Calculated Residual) (psi)
J-3000	True	1,000.00	1,904.42	20.0	20.0
J-279	True	1,000.00	3,950.29	20.0	20.0
J-282	True	1,000.00	2,358.90	20.0	20.2
J-284	True	1,000.00	2,178.21	20.0	20.2
J-287	True	1,000.00	2,245.32	20.0	20.2
J-289	True	1,000.00	2,237.17	20.0	20.1
J-292	True	1,000.00	1,339.61	20.0	20.0
J-293	True	1,000.00	2,938.44	20.0	20.0
J-294	True	1,000.00	1,659.47	20.0	20.0
J-296	True	1,500.00	2,321.25	20.0	20.0
J-297	True	1,500.00	3,902.89	20.0	20.0
J-298	True	1,000.00	3,278.31	20.0	20.0
J-302	True	1,500.00	4,000.00	20.0	24.0
J-303	True	1,500.00	4,000.00	20.0	49.1
J-304	True	1,500.00	3,433.44	20.0	20.0
J-306	True	1,500.00	2,874.03	20.0	20.0
J-307	True	1,500.00	2,820.17	20.0	20.0
J-308	True	1,500.00	2,877.91	20.0	20.0
J-309	True	1,500.00	2,954.84	20.0	20.9
J-311	True	1,500.00	2,648.74	20.0	20.4
J-312	True	1,500.00	2,285.06	20.0	20.4
J-313	True	1,500.00	2,060.60	20.0	20.0
J-319	True	1,500.00	3,172.65	20.0	20.6
J-324	True	1,500.00	2,448.60	20.0	20.0
J-328	True	1,000.00	1,749.31	20.0	20.0
J-329	True	1,500.00	2,429.17	20.0	20.4
J-331	True	1,500.00	3,123.31	20.0	20.0
J-332	True	1,000.00	1,815.14	20.0	20.0
J-333	True	1,500.00	3,156.97	20.0	20.0
J-334	True	1,500.00	2,626.32	20.0	20.0
J-336	True	1,500.00	3,062.39	20.0	20.0
J-337	True	1,500.00	2,565.02	20.0	20.0
J-338	True	1,500.00	3,039.23	20.0	20.0
J-339	True	1,500.00	2,216.58	20.0	20.0
J-341	True	1,500.00	1,613.91	20.0	20.0
J-342	True	1,500.00	1,911.60	20.0	20.0
J-343	True	1,000.00	1,767.75	20.0	20.0
J-346	True	1,500.00	4,000.00	20.0	24.7
J-347	True	1,500.00	3,440.18	20.0	20.0
J-348	True	1,500.00	3,407.13	20.0	20.0
J-349	True	1,500.00	3,475.41	20.0	20.0
J-351	True	1,500.00	3,550.18	20.0	20.0
J-352	True	1,500.00	3,992.96	20.0	20.0
J-356	True	1,000.00	4,000.00	20.0	58.8

FlexTable: 2009 Fire Flow Node Table (MDD.wtg)

Current Time: 0.000 hours

Label	Satisfies Fire Flow Constraints?	Fire Flow (Needed) (gpm)	Fire Flow (Available) (gpm)	Pressure (Residual Lower Limit) (psi)	Pressure (Calculated Residual) (psi)
J-357	True	1,500.00	4,000.00	20.0	61.8
J-358	True	1,500.00	4,000.00	20.0	59.2
J-359	True	1,500.00	4,000.00	20.0	61.4
J-361	True	1,500.00	4,000.00	20.0	61.3
J-362	True	1,000.00	4,000.00	20.0	50.1
J-363	True	1,000.00	4,000.00	20.0	41.8
J-364	True	1,000.00	1,615.28	20.0	21.3
J-367	True	1,000.00	1,476.55	20.0	20.0
J-368	True	3,500.00	4,000.00	20.0	45.9
J-369	True	1,500.00	4,000.00	20.0	35.6
J-371	True	1,500.00	4,000.00	20.0	33.0
J-372	True	3,500.00	4,000.00	20.0	24.9
J-457	True	3,500.00	4,000.00	20.0	22.9
J-374	True	3,500.00	4,000.00	20.0	21.3
J-376	True	3,500.00	4,000.00	20.0	45.5
J-377	True	1,500.00	4,000.00	20.0	47.5
J-378	True	3,500.00	4,000.00	20.0	34.7
J-379	True	1,500.00	4,000.00	20.0	51.8
J-381	True	1,500.00	4,000.00	20.0	52.9
J-382	True	3,500.00	4,000.00	20.0	26.5
J-386	True	3,500.00	4,000.00	20.0	35.8
J-387	True	3,500.00	4,000.00	20.0	34.3
J-389	True	3,500.00	4,000.00	20.0	25.2
J-391	True	3,500.00	4,000.00	20.0	31.4
J-392	True	3,500.00	4,000.00	20.0	25.4
J-393	True	3,500.00	4,000.00	20.0	51.6
J-394	True	3,500.00	4,000.00	20.0	47.5
J-396	True	3,500.00	4,000.00	20.0	41.5
J-397	True	3,500.00	4,000.00	20.0	40.0
J-398	True	3,500.00	4,000.00	20.0	37.4
J-399	True	3,500.00	4,000.00	20.0	52.3
J-403	True	3,500.00	4,000.00	20.0	52.7
J-404	True	3,500.00	4,000.00	20.0	65.0
J-406	True	3,500.00	4,000.00	20.0	58.3
J-408	True	3,500.00	4,000.00	20.0	63.6
J-411	True	3,500.00	4,000.00	20.0	56.0
J-412	True	3,500.00	4,000.00	20.0	48.7
J-413	True	3,500.00	4,000.00	20.0	20.9
J-414	True	3,500.00	4,000.00	20.0	32.7
J-416	True	3,500.00	4,000.00	20.0	46.9
J-417	True	3,500.00	4,000.00	20.0	48.1
J-418	True	3,500.00	4,000.00	20.0	27.4
J-420	True	3,500.00	4,000.00	20.0	23.7
J-422	True	3,500.00	3,996.45	20.0	20.0

FlexTable: 2009 Fire Flow Node Table (MDD.wtg)

Current Time: 0.000 hours

Label	Satisfies Fire Flow Constraints?	Fire Flow (Needed) (gpm)	Fire Flow (Available) (gpm)	Pressure (Residual Lower Limit) (psi)	Pressure (Calculated Residual) (psi)
J-423	True	3,500.00	4,000.00	20.0	33.4
J-424	True	3,500.00	4,000.00	20.0	43.1
J-425	True	3,500.00	4,000.00	20.0	45.0
J-426	True	3,500.00	4,000.00	20.0	26.1
J-428	True	3,500.00	4,000.00	20.0	64.7
J-429	True	3,500.00	4,000.00	20.0	28.8
J-431	True	3,500.00	4,000.00	20.0	40.9
J-432	True	3,500.00	4,000.00	20.0	25.7
J-433	True	3,500.00	4,000.00	20.0	65.3
J-434	True	3,500.00	4,000.00	20.0	53.5
J-436	True	3,500.00	4,000.00	20.0	48.4
J-437	True	3,500.00	4,000.00	20.0	30.0
J-438	True	3,500.00	4,000.00	20.0	62.7
J-439	True	3,500.00	4,000.00	20.0	34.0
J-441	True	3,500.00	4,000.00	20.0	62.6
J-442	True	3,500.00	4,000.00	20.0	49.8
J-443	True	3,500.00	4,000.00	20.0	50.1
J-444	True	3,500.00	4,000.00	20.0	26.2
J-447	True	3,500.00	4,000.00	20.0	47.1
J-448	True	3,500.00	4,000.00	20.0	65.7
J-449	True	3,500.00	4,000.00	20.0	28.5
J-451	True	3,500.00	4,000.00	20.0	28.8
J-452	True	3,500.00	4,000.00	20.0	43.2
J-453	True	3,500.00	4,000.00	20.0	44.6
J-454	True	3,500.00	4,000.00	20.0	23.7
J-456	True	3,500.00	4,000.00	20.0	31.5
J-458	True	3,500.00	3,852.30	20.0	20.0
J-3004	True	1,000.00	1,351.39	20.0	20.0
J-3005	True	1,000.00	1,229.62	20.0	20.0
J-3017	True	1,000.00	1,873.51	20.0	20.0
J-3019	True	1,500.00	3,748.72	20.0	20.0
J-3020	True	1,500.00	3,422.64	20.0	20.0
J-3021	True	1,500.00	3,481.95	20.0	20.0
J-3022	True	1,500.00	3,554.01	20.0	20.0
J-3023	True	1,500.00	2,881.13	20.0	20.0
J-3024	True	1,500.00	2,554.19	20.0	20.9
J-3025	True	1,500.00	2,014.07	20.0	20.0
J-3026	True	1,500.00	1,909.38	20.0	20.0
J-3030	True	1,500.00	4,000.00	20.0	43.6
J-3032	True	1,500.00	4,000.00	20.0	47.4
J-3033	True	1,000.00	4,000.00	20.0	40.5
J-3034	True	1,000.00	4,000.00	20.0	32.4
J-3036	True	1,000.00	4,000.00	20.0	48.9
J-3037	True	1,000.00	4,000.00	20.0	34.8

FlexTable: 2009 Fire Flow Node Table (MDD.wtg)

Current Time: 0.000 hours

Label	Satisfies Fire Flow Constraints?	Fire Flow (Needed) (gpm)	Fire Flow (Available) (gpm)	Pressure (Residual Lower Limit) (psi)	Pressure (Calculated Residual) (psi)
J-3038	True	1,000.00	3,295.46	20.0	20.0
J-3039	True	1,000.00	4,000.00	20.0	40.7
J-3040	True	1,000.00	4,000.00	20.0	31.8
J-3042	True	1,500.00	3,149.63	20.0	20.0
J-3043	True	1,500.00	2,187.32	20.0	20.0
J-3048	True	1,000.00	4,000.00	20.0	49.7
J-3049	True	1,500.00	4,000.00	20.0	54.5
J-3050	True	1,500.00	3,067.57	20.0	20.0
J-3051	True	1,500.00	2,151.08	20.0	20.0
J-3054	True	1,000.00	3,289.23	20.0	20.0
J-3055	True	1,000.00	2,599.53	20.0	20.0
J-3056	True	1,500.00	4,000.00	20.0	45.0
J-3057	True	1,000.00	4,000.00	20.0	36.0
J-3058	True	1,000.00	4,000.00	20.0	36.4
J-3059	True	1,000.00	3,488.97	20.0	20.0
J-3060	True	1,000.00	3,488.96	20.0	25.4
J-3061	True	1,000.00	3,271.68	20.0	20.0
J-3062	True	1,000.00	3,343.20	20.0	20.0
J-3063	True	1,000.00	3,238.59	20.0	20.0
J-3064	True	1,000.00	3,186.27	20.0	20.0
J-3065	True	1,000.00	2,428.11	20.0	20.0
J-3066	True	1,000.00	1,888.05	20.0	20.0
J-3068	True	1,000.00	2,250.81	20.0	20.0
J-3069	True	1,000.00	4,000.00	20.0	61.3
J-3070	True	1,000.00	3,149.30	20.0	20.0
J-3071	True	1,000.00	4,000.00	20.0	49.1
J-3072	True	1,000.00	4,000.00	20.0	47.9
J-3073	True	1,000.00	4,000.00	20.0	58.6
J-3074	True	1,000.00	4,000.00	20.0	52.7
J-3075	True	1,000.00	4,000.00	20.0	58.7
J-3076	True	1,000.00	4,000.00	20.0	57.6
J-3077	True	3,500.00	4,000.00	20.0	43.1
J-3078	True	3,500.00	4,000.00	20.0	59.6
J-3079	True	3,500.00	4,000.00	20.0	61.1
J-3080	True	3,500.00	4,000.00	20.0	64.1
J-3081	True	3,500.00	4,000.00	20.0	64.7
J-3082	True	1,500.00	4,000.00	20.0	59.0
J-3083	True	1,500.00	4,000.00	20.0	36.0
J-3084	True	1,000.00	4,000.00	20.0	35.5
J-3085	True	1,500.00	1,928.37	20.0	20.0
J-3086	True	1,000.00	4,000.00	20.0	43.0
J-3088	True	1,000.00	3,199.06	20.0	20.0
J-3089	True	1,000.00	4,000.00	20.0	28.2
J-3090	True	1,000.00	2,695.91	20.0	20.0

FlexTable: 2009 Fire Flow Node Table (MDD.wtg)

Current Time: 0.000 hours

Label	Satisfies Fire Flow Constraints?	Fire Flow (Needed) (gpm)	Fire Flow (Available) (gpm)	Pressure (Residual Lower Limit) (psi)	Pressure (Calculated Residual) (psi)
J-3091	True	1,000.00	2,046.35	20.0	20.0
J-3092	True	1,000.00	2,456.34	20.0	20.0
J-3093	True	1,000.00	2,855.54	20.0	20.0
J-3094	True	1,000.00	3,644.37	20.0	20.4
J-3095	True	1,000.00	2,120.84	20.0	20.0
J-3096	True	1,000.00	2,862.31	20.0	20.0
J-3097	True	1,500.00	3,658.83	20.0	20.0
J-3098	True	1,500.00	4,000.00	20.0	28.8
J-3099	True	1,500.00	4,000.00	20.0	30.3
J-3100	True	1,500.00	4,000.00	20.0	40.5
J-3101	True	1,500.00	4,000.00	20.0	35.3
J-3102	True	1,500.00	4,000.00	20.0	48.6
J-3103	True	1,500.00	4,000.00	20.0	61.2
J-3104	True	1,500.00	2,537.27	20.0	20.0
J-3105	True	1,500.00	4,000.00	20.0	51.8
J-3108	True	1,500.00	4,000.00	20.0	44.8
J-3111	True	1,500.00	1,977.90	20.0	20.0
J-3112	True	1,500.00	1,796.45	20.0	20.0
J-3115	True	1,500.00	4,000.00	20.0	41.9
J-3116	True	1,500.00	3,475.68	20.0	20.0
J-3119	True	1,500.00	3,425.88	20.0	20.0
J-3120	True	1,500.00	4,000.00	20.0	25.1
J-3127	True	3,500.00	4,000.00	20.0	35.1
J-3128	True	3,500.00	4,000.00	20.0	59.5
J-3129	True	3,500.00	4,000.00	20.0	49.5
J-3132	True	3,500.00	4,000.00	20.0	57.5
J-3133	True	3,500.00	4,000.00	20.0	50.6
J-3134	True	3,500.00	4,000.00	20.0	48.9
J-3135	True	3,500.00	4,000.00	20.0	50.5
J-3136	True	3,500.00	4,000.00	20.0	60.0
J-3137	True	3,500.00	4,000.00	20.0	62.7
J-3138	True	3,500.00	4,000.00	20.0	63.4
J-3139	True	3,500.00	4,000.00	20.0	51.2
J-3140	True	3,500.00	4,000.00	20.0	46.1
J-3141	True	3,500.00	4,000.00	20.0	37.0
J-3142	True	3,500.00	4,000.00	20.0	42.4
J-3143	True	3,500.00	4,000.00	20.0	37.4
J-3144	True	3,500.00	4,000.00	20.0	32.4
J-3145	True	3,500.00	4,000.00	20.0	65.1
J-3146	True	3,500.00	4,000.00	20.0	55.4
J-3147	True	3,500.00	4,000.00	20.0	58.1
J-3148	True	3,500.00	4,000.00	20.0	57.9
J-3149	True	3,500.00	4,000.00	20.0	63.4
J-3151	True	3,500.00	4,000.00	20.0	61.5

FlexTable: 2009 Fire Flow Node Table (MDD.wtg)

Current Time: 0.000 hours

Label	Satisfies Fire Flow Constraints?	Fire Flow (Needed) (gpm)	Fire Flow (Available) (gpm)	Pressure (Residual Lower Limit) (psi)	Pressure (Calculated Residual) (psi)
J-3153	True	3,500.00	4,000.00	20.0	27.9
J-3156	True	1,000.00	4,000.00	20.0	27.0
J-3157	True	3,500.00	3,622.16	20.0	20.0
J-3161	True	1,000.00	4,000.00	20.0	37.9
J-3162	True	1,500.00	3,880.23	20.0	20.0
J-3163	True	1,500.00	3,477.31	20.0	20.0
J-3164	True	1,000.00	3,919.54	20.0	20.0
J-3165	True	3,500.00	4,000.00	20.0	66.1
J-3166	True	1,500.00	1,969.04	20.0	20.0
J-3167	True	1,500.00	1,828.07	20.0	20.0
J-3168	True	1,500.00	1,764.84	20.0	20.0
J-3169	True	1,500.00	1,772.71	20.0	20.0
J-3174	True	1,500.00	1,860.61	20.0	20.0
J-3175	True	1,500.00	1,861.35	20.0	20.0
J-3182	True	1,000.00	3,610.93	20.0	20.0
J-3184	True	3,500.00	3,689.18	20.0	21.3
J-3185	True	3,500.00	4,000.00	20.0	26.1
J-3186	True	1,500.00	4,000.00	20.0	41.9
J-3187	True	1,500.00	4,000.00	20.0	60.5
J-3188	True	1,500.00	4,000.00	20.0	49.7
J-3189	True	1,500.00	1,665.98	20.0	20.0
J-3191	True	1,000.00	4,000.00	20.0	34.5
J-3192	True	1,000.00	3,810.27	20.0	20.0
J-3193	True	1,000.00	4,000.00	20.0	50.5
J-3194	True	1,000.00	4,000.00	20.0	47.4
J-3196	True	3,500.00	4,000.00	20.0	48.9
J-3197	True	3,500.00	4,000.00	20.0	28.9
J-3203	True	1,000.00	3,855.57	20.0	20.0
J-3205	True	1,000.00	3,165.79	20.0	20.0
J-3207	True	1,000.00	3,672.34	20.0	20.0
J-3208	True	1,000.00	3,098.48	20.0	20.0
J-3209	True	1,000.00	3,480.41	20.0	20.0
J-3212	True	1,000.00	1,917.47	20.0	21.0
J-3216	True	1,000.00	4,000.00	20.0	51.4
J-3217	True	1,000.00	1,148.63	20.0	20.0
J-3219	True	1,000.00	4,000.00	20.0	46.2
J-3220	True	1,000.00	4,000.00	20.0	21.1
J-3222	True	1,000.00	3,515.86	20.0	20.0
J-3223	True	1,000.00	4,000.00	20.0	24.2
J-3225	True	3,500.00	4,000.00	0.0	53.4
J-3226	True	3,500.00	4,000.00	20.0	32.2

FlexTable: 2029 PHD Junction Table (phd demand 2029.wtg)

Current Time: 0.000 hours

Label	Elevation (ft)	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
J-3192	288.00	12.80	386.29	42.6
J-3191	288.00	12.80	386.29	42.6
J-3008	290.00	0.00	391.42	44.0
J-3155	290.00	0.00	395.26	45.6
J-3195	105.00	0.00	211.50	46.2
J-3156	105.00	12.80	226.31	52.6
J-80	105.00	12.80	228.23	53.4
J-3063	90.00	12.80	225.06	58.6
J-3061	90.00	12.80	225.06	58.6
J-3062	90.00	12.80	225.06	58.6
J-3059	90.00	12.80	225.06	58.6
J-10	86.00	12.80	225.28	60.4
J-5	86.00	12.80	225.29	60.4
J-3002	86.00	12.80	225.36	60.4
J-354	86.00	12.80	225.50	60.5
J-353	86.00	12.80	225.50	60.5
J-344	86.00	12.80	226.07	60.7
J-37	86.00	12.80	226.09	60.7
J-366	86.00	12.80	226.09	60.7
J-20	84.00	12.80	226.09	61.6
J-15	84.00	12.80	226.11	61.6
J-25	83.00	12.80	226.10	62.0
J-30	83.00	12.80	226.14	62.1
J-35	83.00	12.80	226.23	62.1
J-364	83.00	12.80	226.26	62.1
J-3193	240.00	12.80	386.29	63.4
J-3183	80.00	12.80	226.56	63.5
J-3005	80.00	12.80	226.58	63.5
J-3004	80.00	12.80	226.59	63.6
J-1260	76.00	12.80	223.61	64.0
J-110	76.00	12.80	224.04	64.2
J-75	80.00	12.80	228.23	64.3
J-14	76.00	12.80	224.29	64.3
J-115	75.00	12.80	224.04	64.6
J-3179	75.00	12.80	224.04	64.6
J-8	75.00	12.80	224.11	64.6
J-70	79.00	12.80	228.23	64.7
J-105	75.00	12.80	224.78	64.9
J-1195	74.00	12.80	223.89	65.0
J-65	78.00	12.80	228.23	65.1
J-1160	73.00	12.80	223.77	65.4
J-1200	73.00	12.80	223.88	65.4
J-3182	77.00	12.80	228.23	65.6
J-3000	72.00	12.80	223.58	65.7
J-1155	72.00	12.80	223.67	65.8
J-1130	72.00	12.80	223.78	65.8

FlexTable: 2029 PHD Junction Table (phd demand 2029.wtg)

Current Time: 0.000 hours

Label	Elevation (ft)	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
J-1180	72.00	12.80	223.85	65.8
J-363	76.00	12.80	227.92	65.9
J-40	76.00	12.80	227.93	65.9
J-45	76.00	12.80	228.15	66.0
J-278	70.00	12.80	222.32	66.0
J-1250	71.00	12.80	223.48	66.1
J-50	76.00	12.80	228.50	66.1
J-3180	74.00	12.80	226.56	66.1
J-55	76.00	12.80	228.61	66.2
J-100	74.00	12.80	226.61	66.2
J-90	75.00	12.80	227.66	66.2
J-1065	71.00	12.80	223.90	66.3
J-1060	71.00	12.80	223.91	66.3
J-900	71.00	12.80	224.33	66.5
J-895	71.00	12.80	224.43	66.5
J-890	71.00	12.80	224.51	66.5
J-1125	70.00	12.80	223.72	66.6
J-120	70.00	12.80	223.83	66.7
J-277	70.00	12.80	223.84	66.7
J-4	70.00	12.80	223.91	66.7
J-362	74.00	12.80	227.99	66.8
J-95	73.00	12.80	226.99	66.8
J-60	74.00	12.80	228.01	66.8
J-6	70.00	12.80	224.02	66.8
J-3055	70.00	12.80	224.21	66.9
J-3054	70.00	12.80	224.21	66.9
J-130	70.00	12.80	224.21	66.9
J-125	70.00	12.80	224.22	66.9
J-9	70.00	12.80	224.22	66.9
J-11	70.00	12.80	224.22	66.9
J-12	70.00	12.80	224.22	66.9
J-13	70.00	12.80	224.22	66.9
J-905	70.00	12.80	224.53	67.0
J-885	70.00	12.80	224.67	67.1
J-7	69.00	12.80	224.28	67.3
J-1070	69.00	12.80	224.29	67.3
J-210	69.00	12.80	224.29	67.3
J-810	70.00	12.80	225.49	67.4
J-875	69.00	12.80	224.54	67.4
J-880	69.00	12.80	224.71	67.5
J-1055	68.00	12.80	223.88	67.6
J-314	67.00	4.70	222.94	67.6
J-317	67.00	4.70	222.94	67.6
J-313	67.00	4.70	222.95	67.6
J-276	65.00	12.80	221.06	67.7
J-850	70.00	12.80	226.08	67.7

FlexTable: 2029 PHD Junction Table (phd demand 2029.wtg)

Current Time: 0.000 hours

Label	Elevation (ft)	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
J-205	68.00	12.80	224.29	67.8
J-1245	67.00	12.80	223.44	67.8
J-710	71.00	4.70	227.55	67.9
J-565	71.00	4.70	227.57	67.9
J-535	71.00	12.80	227.57	67.9
J-870	68.00	12.80	224.58	67.9
J-705	71.00	4.70	227.62	67.9
J-725	71.00	4.70	227.62	67.9
J-570	71.00	4.70	227.65	67.9
J-3223	71.00	0.00	227.68	67.9
J-3066	68.00	12.80	224.69	67.9
J-920	68.00	12.80	224.70	67.9
J-925	68.00	12.80	224.70	67.9
J-915	68.00	12.80	224.77	68.0
J-910	68.00	12.80	224.79	68.0
J-825	68.00	12.80	224.80	68.0
J-26	68.00	12.80	224.81	68.0
J-930	68.00	12.80	224.82	68.0
J-935	68.00	12.80	224.82	68.0
J-332	66.00	12.80	222.89	68.0
J-316	66.00	4.70	222.94	68.0
J-312	66.00	4.70	222.95	68.0
J-318	66.00	4.70	222.95	68.0
J-311	66.00	4.70	222.95	68.0
J-815	68.00	12.80	225.01	68.1
J-820	68.00	12.80	225.01	68.1
J-291	65.00	12.80	222.16	68.1
J-720	71.00	4.70	228.29	68.2
J-955	67.00	12.80	224.45	68.3
J-990	67.00	4.70	224.50	68.3
J-1120	66.00	12.80	223.61	68.3
J-865	67.00	12.80	224.61	68.3
J-950	70.00	4.70	227.64	68.3
J-28	69.00	4.70	226.73	68.4
J-715	70.00	4.70	227.84	68.4
J-1050	66.00	12.80	223.86	68.4
J-329	65.00	4.70	222.90	68.5
J-341	65.00	4.70	222.90	68.5
J-339	65.00	4.70	222.90	68.5
J-337	65.00	4.70	222.93	68.5
J-322	65.00	4.70	222.94	68.5
J-234	65.00	4.70	222.95	68.5
J-307	65.00	4.70	222.95	68.5
J-321	65.00	4.70	222.95	68.5
J-308	65.00	4.70	222.95	68.5
J-309	65.00	4.70	222.96	68.5

FlexTable: 2029 PHD Junction Table (phd demand 2029.wtg)

Current Time: 0.000 hours

Label	Elevation (ft)	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
J-245	67.00	4.70	224.96	68.5
J-331	65.00	4.70	222.97	68.5
J-319	65.00	4.70	222.99	68.5
J-1040	66.00	12.80	224.13	68.6
J-585	70.00	4.70	228.24	68.6
J-1035	66.00	12.80	224.26	68.6
J-200	66.00	12.80	224.29	68.6
J-1030	66.00	12.80	224.33	68.6
J-860	68.00	4.70	226.38	68.7
J-1240	65.00	12.80	223.42	68.7
J-1025	66.00	12.80	224.46	68.7
J-965	66.00	12.80	224.54	68.7
J-1115	65.00	12.80	223.58	68.7
J-960	66.00	12.80	224.67	68.8
J-1020	66.00	12.80	224.74	68.8
J-575	69.00	4.70	227.74	68.8
J-24	69.00	4.70	227.74	68.8
J-945	66.00	4.70	224.83	68.9
J-540	68.00	12.80	226.85	68.9
J-289	65.00	12.80	223.85	68.9
J-284	65.00	12.80	223.85	68.9
J-282	65.00	12.80	223.85	68.9
J-283	65.00	12.80	223.85	68.9
J-286	65.00	12.80	223.86	68.9
J-287	65.00	12.80	223.86	68.9
J-27	65.00	12.80	223.89	68.9
J-288	65.00	12.80	223.91	68.9
J-327	64.00	4.70	222.94	68.9
J-326	64.00	4.70	222.94	68.9
J-323	64.00	4.70	222.94	68.9
J-338	64.00	4.70	222.94	68.9
J-324	64.00	4.70	222.94	68.9
J-306	64.00	4.70	222.95	68.9
J-505	68.00	12.80	226.95	68.9
J-269	66.00	4.70	224.98	68.9
J-840	68.00	4.70	227.11	69.0
J-845	68.00	4.70	227.11	69.0
J-185	65.00	12.80	224.30	69.1
J-220	65.00	12.80	224.35	69.1
J-215	65.00	12.80	224.35	69.1
J-995	65.00	12.80	224.43	69.1
J-145	65.00	12.80	224.47	69.1
J-855	68.00	4.70	227.69	69.2
J-560	66.00	4.70	225.69	69.2
J-830	65.00	12.80	224.70	69.2
J-700	66.00	4.70	225.70	69.2

FlexTable: 2029 PHD Junction Table (phd demand 2029.wtg)

Current Time: 0.000 hours

Label	Elevation (ft)	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
J-230	65.00	12.80	224.71	69.2
J-775	67.00	4.70	226.84	69.3
J-510	68.00	12.80	227.85	69.3
J-970	66.00	12.80	225.89	69.3
J-297	67.00	4.70	226.93	69.3
J-800	68.00	4.70	227.97	69.4
J-785	68.00	4.70	228.01	69.4
J-17	65.00	4.70	225.05	69.4
J-16	65.00	4.70	225.08	69.4
J-3058	65.00	12.80	225.08	69.4
J-780	67.00	4.70	227.09	69.4
J-140	65.00	4.70	225.09	69.4
J-3057	65.00	12.80	225.12	69.4
J-3056	65.00	4.70	225.12	69.4
J-1005	65.00	12.80	225.13	69.4
J-41	64.00	12.80	224.20	69.5
J-39	64.00	12.80	224.22	69.5
J-43	64.00	12.80	224.24	69.5
J-42	64.00	12.80	224.24	69.5
J-165	64.00	12.80	224.24	69.5
J-38	64.00	12.80	224.24	69.5
J-160	64.00	12.80	224.25	69.5
J-175	64.00	12.80	224.31	69.5
J-155	64.00	12.80	224.33	69.5
J-216	68.00	1.32	228.34	69.5
J-135	65.00	4.70	225.38	69.5
J-940	66.00	4.70	226.40	69.5
J-3036	64.00	12.80	224.43	69.5
J-3037	64.00	12.80	224.43	69.5
J-3039	64.00	12.80	224.45	69.6
J-3161	64.00	12.80	224.46	69.6
J-3040	64.00	12.80	224.46	69.6
J-3034	64.00	12.80	224.46	69.6
J-1000	66.00	4.70	226.47	69.6
J-3033	64.00	12.80	224.47	69.6
J-244	68.00	1.32	228.48	69.6
J-3032	64.00	4.70	224.50	69.6
J-735	67.00	4.70	227.52	69.6
J-985	64.00	4.70	224.54	69.6
J-298	65.00	12.80	225.55	69.6
J-231	65.00	12.80	225.55	69.6
J-500	66.00	12.80	226.59	69.6
J-305	64.00	4.70	224.60	69.6
J-975	64.00	4.70	224.62	69.6
J-2167	68.00	1.00	228.63	69.6
J-242	68.00	1.00	228.70	69.7

FlexTable: 2029 PHD Junction Table (phd demand 2029.wtg)

Current Time: 0.000 hours

Label	Elevation (ft)	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
J-3030	64.00	4.70	224.71	69.7
J-530	67.00	4.70	227.75	69.7
J-765	66.00	4.70	226.76	69.7
J-525	67.00	4.70	227.76	69.7
J-980	64.00	4.70	224.76	69.7
J-590	67.00	4.70	227.77	69.7
J-730	67.00	4.70	227.82	69.7
J-750	66.00	4.70	226.92	69.8
J-3065	64.00	12.80	224.96	69.8
J-3064	64.00	12.80	224.96	69.8
J-805	67.00	12.80	227.96	69.8
J-240	64.00	12.80	224.96	69.8
J-235	64.00	12.80	224.97	69.8
J-270	64.00	12.80	224.98	69.8
J-229	64.00	12.80	224.98	69.8
J-790	67.00	4.70	228.00	69.8
J-545	65.00	12.80	226.01	69.8
J-835	66.00	4.70	227.03	69.8
J-268	64.00	12.80	225.05	69.8
J-267	64.00	4.70	225.05	69.8
J-228	64.00	4.70	225.06	69.8
J-3060	64.00	12.80	225.06	69.8
J-356	67.00	12.80	228.09	69.8
J-3217	68.00	0.00	229.18	69.9
J-170	63.00	12.80	224.24	69.9
J-281	63.00	12.80	224.24	69.9
J-18	67.00	4.70	228.27	69.9
J-279	63.00	12.80	224.28	69.9
J-195	63.00	12.80	224.28	69.9
J-190	63.00	12.80	224.28	69.9
J-374	68.00	1.00	229.29	69.9
J-495	65.00	12.80	226.30	69.9
J-600	67.00	4.70	228.37	70.0
J-3038	63.00	12.80	224.43	70.0
J-3157	68.00	1.00	229.46	70.0
J-32	66.00	4.70	227.47	70.0
J-300	63.00	4.70	224.77	70.1
J-388	67.00	1.00	228.79	70.1
J-389	67.00	1.00	228.79	70.1
J-387	67.00	1.00	228.83	70.2
J-328	61.00	12.80	222.83	70.2
J-3017	61.00	12.80	222.84	70.2
J-580	66.00	4.70	227.84	70.2
J-310	63.00	4.70	224.89	70.2
J-755	65.00	12.80	226.91	70.2
J-460	66.00	12.80	227.93	70.2

FlexTable: 2029 PHD Junction Table (phd demand 2029.wtg)

Current Time: 0.000 hours

Label	Elevation (ft)	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
J-334	61.00	4.70	222.94	70.2
J-615	66.00	4.70	227.98	70.2
J-465	66.00	12.80	227.99	70.2
J-470	66.00	12.80	228.02	70.2
J-33	65.00	12.80	227.03	70.2
J-34	65.00	4.70	227.06	70.3
J-250	63.00	4.70	225.07	70.3
J-610	66.00	4.70	228.07	70.3
J-745	65.00	4.70	227.08	70.3
J-620	66.00	4.70	228.08	70.3
J-475	65.00	12.80	227.09	70.3
J-304	66.00	4.70	228.09	70.3
J-302	66.00	4.70	228.09	70.3
J-450	64.00	12.80	226.10	70.3
J-303	66.00	4.70	228.12	70.3
J-605	66.00	4.70	228.22	70.3
J-3112	66.00	4.70	228.27	70.3
J-3111	66.00	4.70	228.27	70.3
J-3050	63.00	4.70	225.29	70.4
J-315	63.00	4.70	225.29	70.4
J-490	64.00	12.80	226.30	70.4
J-150	62.00	12.80	224.39	70.4
J-272	61.00	12.80	223.43	70.4
J-690	64.00	12.80	226.45	70.4
J-247	65.00	430.60	227.53	70.5
J-371	67.00	4.70	229.58	70.5
J-455	63.00	12.80	225.60	70.5
J-369	67.00	4.70	229.62	70.5
J-22	65.00	4.70	227.67	70.5
J-3163	62.00	4.70	224.71	70.5
J-299	62.00	12.80	224.72	70.5
J-252	62.00	12.80	224.78	70.6
J-301	62.00	12.80	224.79	70.6
J-3070	65.00	12.80	227.83	70.6
J-3051	62.00	4.70	224.84	70.6
J-3069	65.00	12.80	227.84	70.6
J-295	62.00	12.80	224.84	70.6
J-249	65.00	12.80	227.85	70.6
J-238	65.00	12.80	227.85	70.6
J-251	65.00	12.80	227.87	70.6
J-180	63.00	12.80	225.89	70.6
J-179	63.00	12.80	225.89	70.6
J-3092	63.00	12.80	225.91	70.6
J-3090	63.00	12.80	225.91	70.6
J-239	65.00	12.80	227.92	70.6
J-290	62.00	12.80	224.92	70.6

FlexTable: 2029 PHD Junction Table (phd demand 2029.wtg)

Current Time: 0.000 hours

Label	Elevation (ft)	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
J-336	60.00	4.70	222.94	70.6
J-3209	65.00	0.00	227.94	70.6
J-3089	63.00	12.80	225.95	70.6
J-3168	60.00	4.70	222.96	70.6
J-3169	60.00	4.70	222.96	70.6
J-3026	60.00	4.70	222.97	70.6
J-3167	60.00	4.70	222.97	70.6
J-3166	60.00	4.70	222.97	70.6
J-3025	60.00	4.70	222.97	70.6
J-3119	65.00	4.70	227.98	70.7
J-280	62.00	12.80	224.98	70.7
J-3120	65.00	4.70	227.98	70.7
J-3116	65.00	4.70	227.99	70.7
J-3048	62.00	12.80	224.99	70.7
J-52	62.00	4.70	225.00	70.7
J-51	62.00	4.70	225.00	70.7
J-49	62.00	4.70	225.00	70.7
J-48	62.00	12.80	225.00	70.7
J-3115	65.00	4.70	228.01	70.7
J-3046	62.00	4.70	225.06	70.7
J-3189	62.00	4.70	225.06	70.7
J-47	62.00	4.70	225.06	70.7
J-3043	62.00	4.70	225.07	70.7
J-3042	62.00	4.70	225.07	70.7
J-685	65.00	1.00	228.08	70.7
J-223	66.00	4.70	229.10	70.7
J-260	62.00	4.70	225.11	70.7
J-3188	62.00	4.70	225.22	70.8
J-3186	62.00	4.70	225.25	70.8
J-3108	62.00	4.70	225.27	70.8
J-177	63.00	12.80	226.35	70.8
J-555	62.00	4.70	225.42	70.8
J-3105	62.00	4.70	225.43	70.8
J-31	64.00	12.80	227.43	70.9
J-370	62.00	12.80	225.46	70.9
J-457	66.00	1.00	229.46	70.9
J-445	63.00	12.80	226.49	70.9
J-285	61.00	12.80	224.59	70.9
J-3086	62.00	12.80	225.63	70.9
J-365	62.00	12.80	225.65	70.9
J-3	61.00	12.80	224.84	71.0
J-1	61.00	12.80	224.89	71.1
J-199	62.00	12.80	225.93	71.1
J-275	61.00	12.80	225.00	71.1
J-226	65.00	4.70	229.09	71.1
J-107	65.00	4.70	229.10	71.1

FlexTable: 2029 PHD Junction Table (phd demand 2029.wtg)

Current Time: 0.000 hours

Label	Elevation (ft)	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
J-103	65.00	4.70	229.10	71.1
J-99	65.00	4.70	229.11	71.1
J-213	65.00	1.00	229.11	71.1
J-104	65.00	4.70	229.12	71.2
J-58	61.00	12.80	225.13	71.2
J-57	61.00	12.80	225.13	71.2
J-56	61.00	12.80	225.13	71.2
J-59	61.00	12.80	225.14	71.2
J-54	61.00	12.80	225.15	71.2
J-382	65.00	1.00	229.18	71.2
J-53	61.00	12.80	225.19	71.2
J-265	61.00	4.70	225.21	71.2
J-378	65.00	1.00	229.28	71.2
J-3203	65.00	4.70	229.28	71.2
J-3205	65.00	4.70	229.28	71.2
J-458	65.00	1.00	229.28	71.2
J-372	65.00	1.00	229.28	71.2
J-358	61.00	4.70	225.29	71.2
J-3187	61.00	4.70	225.30	71.2
J-359	61.00	4.70	225.34	71.2
J-361	61.00	4.70	225.34	71.2
J-243	68.00	0.00	232.35	71.2
J-3097	61.00	4.70	225.35	71.3
J-181	64.00	1.00	228.35	71.3
J-3098	61.00	4.70	225.35	71.3
J-3099	61.00	4.70	225.35	71.3
J-3101	61.00	4.70	225.35	71.3
J-3100	61.00	4.70	225.35	71.3
J-3102	61.00	4.70	225.36	71.3
J-3103	61.00	4.70	225.36	71.3
J-335	61.00	4.70	225.37	71.3
J-161	64.00	1.00	228.37	71.3
J-2073	64.00	4.70	228.39	71.3
J-2070	64.00	4.70	228.39	71.3
J-350	61.00	12.80	225.39	71.3
J-357	61.00	4.70	225.42	71.3
J-73	61.00	4.70	225.42	71.3
J-72	61.00	12.80	225.42	71.3
J-345	61.00	4.70	225.42	71.3
J-69	61.00	12.80	225.43	71.3
J-3104	61.00	4.70	225.43	71.3
J-71	61.00	12.80	225.43	71.3
J-68	61.00	12.80	225.43	71.3
J-67	61.00	12.80	225.44	71.3
J-271	61.00	12.80	225.45	71.3
J-74	61.00	4.70	225.45	71.3

FlexTable: 2029 PHD Junction Table (phd demand 2029.wtg)

Current Time: 0.000 hours

Label	Elevation (ft)	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
J-550	61.00	4.70	225.46	71.3
J-3162	60.00	4.70	224.46	71.3
J-330	61.00	12.80	225.46	71.3
J-3096	61.00	12.80	225.47	71.3
J-66	61.00	12.80	225.48	71.3
J-76	61.00	12.80	225.50	71.3
J-79	61.00	12.80	225.54	71.3
J-325	61.00	12.80	225.54	71.3
J-3088	61.00	12.80	225.63	71.4
J-3095	61.00	12.80	225.63	71.4
J-3093	61.00	12.80	225.63	71.4
J-480	62.00	12.80	226.64	71.4
J-78	61.00	12.80	225.67	71.4
J-77	61.00	12.80	225.67	71.4
J-23	63.00	4.70	227.69	71.4
J-3164	63.00	12.80	227.78	71.4
J-343	58.00	12.80	222.83	71.5
J-3174	58.00	4.70	222.84	71.5
J-3175	58.00	4.70	222.84	71.5
J-3212	58.00	0.00	222.84	71.5
J-342	58.00	4.70	222.84	71.5
J-340	61.00	12.80	225.84	71.5
J-2	60.00	12.80	224.84	71.5
J-3091	61.00	12.80	225.91	71.5
J-198	61.00	12.80	225.93	71.5
J-333	58.00	4.70	222.94	71.5
J-3024	58.00	4.70	222.98	71.5
J-293	60.00	12.80	225.01	71.5
J-263	62.00	12.80	227.06	71.6
J-262	62.00	12.80	227.11	71.6
J-212	64.00	1.00	229.11	71.6
J-3197	64.00	1.00	229.11	71.6
J-202	64.00	1.00	229.11	71.6
J-3219	64.00	0.00	229.12	71.6
J-1355	64.00	1.00	229.12	71.6
J-3220	64.00	1.00	229.12	71.6
J-3221	64.00	0.00	229.14	71.6
J-1010	60.00	12.80	225.16	71.6
J-196	61.00	12.80	226.22	71.6
J-3049	60.00	4.70	225.26	71.6
J-3110	63.00	1.00	228.27	71.6
J-3113	63.00	1.00	228.27	71.6
J-3184	63.00	1.00	228.27	71.6
J-385	60.00	12.80	225.28	71.7
J-2135	60.00	4.70	225.30	71.7
J-1140	58.00	12.80	223.36	71.7

FlexTable: 2029 PHD Junction Table (phd demand 2029.wtg)

Current Time: 0.000 hours

Label	Elevation (ft)	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
J-675	65.00	1.00	230.36	71.7
J-347	60.00	4.70	225.38	71.7
J-346	60.00	4.70	225.38	71.7
J-29	62.00	12.80	227.42	71.7
J-376	63.00	1.00	228.43	71.7
J-425	63.00	1.00	228.43	71.7
J-426	63.00	1.00	228.44	71.7
J-423	63.00	1.00	228.45	71.7
J-424	63.00	1.00	228.45	71.7
J-422	63.00	1.00	228.46	71.7
J-485	61.00	12.80	226.48	71.7
J-246	68.00	0.00	233.49	71.7
J-296	60.00	4.70	225.52	71.8
J-62	61.00	12.80	226.54	71.8
J-355	60.00	12.80	225.54	71.8
J-61	61.00	12.80	226.54	71.8
J-3094	60.00	12.80	225.63	71.8
J-192	60.00	12.80	225.65	71.8
J-435	62.00	4.70	227.71	71.8
J-440	62.00	12.80	227.71	71.8
J-64	61.00	12.80	226.82	71.9
J-63	61.00	12.80	226.83	71.9
J-360	60.00	12.80	225.85	71.9
J-194	60.00	12.80	225.89	71.9
J-193	60.00	12.80	225.89	71.9
J-3085	60.00	4.70	225.91	71.9
J-1015	60.00	4.70	226.04	72.0
J-259	62.00	1.00	228.06	72.0
J-655	62.00	1.00	228.17	72.0
J-258	62.00	1.00	228.17	72.0
J-3185	62.00	1.00	228.28	72.1
J-3194	220.00	12.80	386.29	72.1
J-660	62.00	1.00	228.31	72.1
J-3228	62.00	0.00	228.32	72.1
J-1145	57.00	12.80	223.33	72.1
J-1150	57.00	12.80	223.40	72.1
J-21	62.00	1.00	228.55	72.2
J-390	61.00	12.80	227.76	72.3
J-395	61.00	12.80	227.76	72.3
J-3068	61.00	12.80	227.80	72.3
J-405	61.00	12.80	227.80	72.3
J-430	61.00	12.80	227.82	72.3
J-261	62.00	1.00	228.84	72.3
J-19	62.00	1.00	228.97	72.4
J-1225	56.00	4.70	222.99	72.4
J-1215	56.00	4.70	223.07	72.4

FlexTable: 2029 PHD Junction Table (phd demand 2029.wtg)

Current Time: 0.000 hours

Label	Elevation (ft)	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
J-1165	56.00	12.80	223.20	72.5
J-740	60.00	12.80	227.26	72.5
J-625	61.00	1.00	228.30	72.5
J-1170	56.00	12.80	223.30	72.5
J-348	58.00	4.70	225.38	72.6
J-352	58.00	4.70	225.38	72.6
J-380	60.00	12.80	227.55	72.6
J-197	60.00	12.80	227.68	72.7
J-3084	60.00	12.80	227.70	72.7
J-3083	60.00	4.70	227.71	72.7
J-3082	60.00	4.70	227.71	72.7
J-2130	60.00	12.80	227.71	72.7
J-81	60.00	4.70	227.74	72.7
J-82	60.00	4.70	227.75	72.7
J-232	61.00	1.00	228.85	72.8
J-1350	61.00	1.00	228.86	72.8
J-410	60.00	12.80	227.94	72.8
J-203	61.00	1.00	228.94	72.8
J-1235	55.00	4.70	222.95	72.8
J-1220	55.00	4.70	222.99	72.8
J-1185	55.00	12.80	223.11	72.9
J-1190	55.00	12.80	223.17	72.9
J-236	61.00	1.00	229.21	72.9
J-111	55.00	12.80	223.22	72.9
J-1175	55.00	12.80	223.23	72.9
J-292	55.00	12.80	223.31	73.0
J-1135	55.00	12.80	223.32	73.0
J-3127	63.00	1.00	231.35	73.0
J-349	57.00	4.70	225.38	73.0
J-351	57.00	4.70	225.38	73.0
J-264	59.00	4.70	227.71	73.1
J-400	59.00	4.70	227.71	73.1
J-3226	60.00	0.00	228.82	73.2
J-1110	55.00	12.80	223.94	73.2
J-446	60.00	1.00	228.94	73.2
J-434	60.00	1.00	228.94	73.2
J-3121	59.00	4.70	227.97	73.3
J-3216	60.00	0.00	228.98	73.3
J-436	60.00	1.00	229.00	73.3
J-233	60.00	1.00	229.01	73.3
J-102	60.00	4.70	229.05	73.3
J-241	60.00	1.00	229.06	73.3
J-101	60.00	4.70	229.06	73.3
J-87	60.00	1.00	229.06	73.3
J-3019	54.00	4.70	223.07	73.3
J-1210	54.00	4.70	223.09	73.3

FlexTable: 2029 PHD Junction Table (phd demand 2029.wtg)

Current Time: 0.000 hours

Label	Elevation (ft)	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
J-670	64.00	1.00	233.09	73.3
J-91	60.00	1.00	229.12	73.3
J-92	60.00	1.00	229.12	73.3
J-93	60.00	1.00	229.12	73.3
J-89	60.00	1.00	229.12	73.3
J-98	60.00	1.00	229.12	73.3
J-94	60.00	1.00	229.12	73.3
J-96	60.00	1.00	229.12	73.3
J-3222	60.00	0.00	229.12	73.3
J-97	60.00	1.00	229.12	73.3
J-375	58.00	12.80	227.55	73.5
J-3165	58.00	1.00	227.79	73.6
J-1045	55.00	12.80	224.85	73.6
J-3122	58.00	4.70	227.93	73.7
J-3022	53.00	4.70	223.08	73.7
J-159	57.00	12.80	227.83	74.1
J-3072	57.00	12.80	227.83	74.1
J-444	58.00	1.00	228.94	74.1
J-3153	58.00	1.00	228.97	74.1
J-415	57.00	12.80	228.01	74.1
J-3196	58.00	1.00	229.02	74.1
J-3023	52.00	4.70	223.09	74.2
J-3021	52.00	4.70	223.10	74.2
J-3020	52.00	4.70	223.12	74.2
J-1205	52.00	4.70	223.14	74.2
J-368	58.00	1.00	229.70	74.4
J-294	53.00	12.80	224.72	74.4
J-3074	56.00	12.80	227.82	74.5
J-3077	56.00	1.00	227.82	74.5
J-3076	56.00	12.80	227.82	74.5
J-3075	56.00	12.80	227.82	74.5
J-3073	56.00	12.80	227.82	74.5
J-3078	56.00	1.00	227.82	74.5
J-2125	56.00	1.00	227.82	74.5
J-3079	56.00	1.00	227.82	74.5
J-3080	56.00	1.00	227.83	74.5
J-3081	56.00	1.00	227.83	74.5
J-2120	56.00	4.70	227.83	74.5
J-3071	56.00	12.80	227.83	74.5
J-156	56.00	12.80	227.84	74.5
J-154	56.00	12.80	227.84	74.5
J-157	56.00	12.80	227.84	74.5
J-153	56.00	12.80	227.84	74.5
J-158	56.00	12.80	227.85	74.5
J-1105	52.00	12.80	223.86	74.5
J-2095	56.00	12.80	227.87	74.5

FlexTable: 2029 PHD Junction Table (phd demand 2029.wtg)

Current Time: 0.000 hours

Label	Elevation (ft)	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
J-152	56.00	12.80	227.87	74.5
J-760	55.00	12.80	226.88	74.5
J-367	55.00	12.80	227.02	74.6
J-3225	57.00	0.00	229.04	74.6
J-2170	56.00	12.80	228.14	74.6
J-645	56.00	1.00	228.22	74.7
J-640	56.00	1.00	228.35	74.7
J-635	56.00	1.00	228.37	74.7
J-3128	56.00	1.00	228.42	74.7
J-630	56.00	1.00	228.43	74.8
J-633	56.00	1.00	228.44	74.8
J-1075	52.00	12.80	224.53	74.8
J-3125	55.00	12.80	227.70	74.9
J-3124	55.00	12.80	227.70	74.9
J-3123	55.00	12.80	227.71	74.9
J-381	56.00	4.70	229.03	75.0
J-379	56.00	4.70	229.16	75.1
J-650	55.00	1.00	228.16	75.1
J-1100	51.00	12.80	224.19	75.1
J-377	56.00	4.70	229.21	75.1
J-1095	51.00	12.80	224.26	75.1
J-1090	51.00	12.80	224.39	75.2
J-407	55.00	1.00	228.47	75.2
J-406	55.00	1.00	228.49	75.2
J-411	55.00	1.00	228.51	75.2
J-399	55.00	1.00	228.54	75.2
J-403	55.00	1.00	228.54	75.2
J-402	55.00	1.00	228.56	75.2
J-401	55.00	1.00	228.56	75.2
J-398	55.00	1.00	228.56	75.2
J-393	55.00	1.00	228.56	75.2
J-397	55.00	1.00	228.56	75.2
J-392	55.00	1.00	228.60	75.3
J-394	55.00	1.00	228.62	75.3
J-391	55.00	1.00	228.64	75.3
J-396	55.00	1.00	228.71	75.3
J-448	55.00	1.00	228.77	75.3
J-456	55.00	1.00	228.79	75.3
J-437	55.00	1.00	228.79	75.3
J-454	55.00	1.00	228.83	75.4
J-1270	50.00	12.80	223.83	75.4
J-151	54.00	1.00	228.05	75.5
J-149	54.00	1.00	228.07	75.5
J-3129	54.00	1.00	228.18	75.5
J-147	54.00	1.00	228.24	75.5
J-1295	54.00	1.00	228.36	75.6

FlexTable: 2029 PHD Junction Table (phd demand 2029.wtg)

Current Time: 0.000 hours

Label	Elevation (ft)	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
J-1340	54.00	12.80	228.76	75.8
J-3208	54.00	12.80	228.76	75.8
J-1345	54.00	1.00	228.79	75.8
J-452	54.00	1.00	228.85	75.8
J-453	54.00	1.00	228.86	75.8
J-449	54.00	1.00	228.87	75.8
J-447	54.00	1.00	228.88	75.8
J-2065	54.00	1.00	229.02	75.9
J-254	54.00	1.00	229.02	75.9
J-408	53.00	1.00	228.45	76.1
J-404	53.00	1.00	228.46	76.1
J-420	53.00	1.00	228.47	76.1
J-418	53.00	1.00	228.47	76.1
J-414	53.00	1.00	228.47	76.1
J-416	53.00	1.00	228.47	76.1
J-2160	57.00	12.80	232.58	76.1
J-2075	53.00	430.60	228.71	76.2
J-3131	52.00	1.00	228.22	76.4
J-3130	52.00	1.00	228.22	76.4
J-127	52.00	1.00	228.67	76.6
J-128	52.00	1.00	228.67	76.6
J-129	52.00	1.00	228.70	76.6
J-3207	52.00	12.80	228.77	76.6
J-1335	52.00	1.00	228.77	76.6
J-123	52.00	1.00	228.77	76.6
J-119	52.00	1.00	228.78	76.6
J-439	52.00	1.00	228.79	76.6
J-3149	52.00	1.00	228.79	76.6
J-442	52.00	1.00	228.79	76.6
J-443	52.00	1.00	228.79	76.6
J-136	52.00	1.00	228.79	76.6
J-441	52.00	1.00	228.79	76.6
J-438	52.00	1.00	228.79	76.6
J-133	52.00	1.00	228.79	76.6
J-3151	52.00	1.00	228.80	76.6
J-122	52.00	1.00	228.80	76.6
J-3147	52.00	1.00	228.80	76.6
J-3148	52.00	1.00	228.81	76.6
J-124	52.00	1.00	228.86	76.7
J-126	52.00	1.00	228.89	76.7
J-3146	52.00	1.00	228.89	76.7
J-131	52.00	1.00	228.92	76.7
J-237	52.00	1.00	228.93	76.7
J-413	51.00	1.00	228.48	76.9
J-417	51.00	1.00	228.49	76.9
J-412	51.00	1.00	228.50	76.9

FlexTable: 2029 PHD Junction Table (phd demand 2029.wtg)

Current Time: 0.000 hours

Label	Elevation (ft)	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
J-3141	51.00	1.00	228.76	77.1
J-3142	51.00	1.00	228.76	77.1
J-3143	51.00	1.00	228.76	77.1
J-3144	51.00	1.00	228.76	77.1
J-3140	51.00	1.00	228.76	77.1
J-3139	51.00	1.00	228.76	77.1
J-451	51.00	1.00	228.86	77.1
J-1290	50.00	1.00	228.36	77.3
J-164	50.00	1.00	228.36	77.3
J-166	50.00	1.00	228.37	77.3
J-163	50.00	1.00	228.39	77.3
J-137	50.00	1.00	228.40	77.3
J-84	50.00	1.00	228.40	77.3
J-83	50.00	1.00	228.40	77.3
J-162	50.00	1.00	228.40	77.3
J-1280	50.00	1.00	228.41	77.3
J-138	50.00	1.00	228.41	77.3
J-139	50.00	1.00	228.41	77.3
J-141	50.00	1.00	228.41	77.3
J-142	50.00	1.00	228.41	77.3
J-85	50.00	1.00	228.41	77.3
J-143	50.00	1.00	228.41	77.3
J-144	50.00	1.00	228.42	77.3
J-146	50.00	1.00	228.42	77.3
J-1310	50.00	1.00	228.45	77.4
J-174	50.00	1.00	228.45	77.4
J-112	50.00	1.00	228.51	77.4
J-3133	50.00	1.00	228.55	77.4
J-3134	50.00	1.00	228.55	77.4
J-3135	50.00	1.00	228.55	77.4
J-3132	50.00	1.00	228.55	77.4
J-1300	50.00	1.00	228.56	77.4
J-117	50.00	1.00	228.58	77.4
J-433	50.00	1.00	228.62	77.4
J-432	50.00	1.00	228.64	77.4
J-3136	50.00	1.00	228.64	77.4
J-431	50.00	1.00	228.65	77.4
J-172	50.00	1.00	228.65	77.4
J-429	50.00	1.00	228.65	77.4
J-3137	50.00	1.00	228.66	77.5
J-3138	50.00	1.00	228.66	77.5
J-428	50.00	1.00	228.66	77.5
J-167	50.00	1.00	228.66	77.5
J-171	50.00	1.00	228.66	77.5
J-173	50.00	1.00	228.67	77.5
J-3145	50.00	1.00	228.76	77.5

FlexTable: 2029 PHD Junction Table (phd demand 2029.wtg)

Current Time: 0.000 hours

Label	Elevation (ft)	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
J-86	50.00	1.00	228.76	77.5
J-1325	50.00	1.00	228.76	77.5
J-1285	49.00	1.00	228.36	77.8
J-257	49.00	1.00	228.55	77.8
J-1315	49.00	1.00	228.55	77.8
J-386	49.00	1.00	229.05	78.1
J-384	49.00	1.00	229.09	78.1
J-383	49.00	1.00	229.11	78.1
J-1275	48.00	1.00	228.35	78.2
J-1305	48.00	1.00	228.36	78.2

FlexTable: 2029 Fire Flow Node Table (MDD PYSICAL 2029 DEMAND 2029.wtg)

Current Time: 0.000 hours

Label	Satisfies Fire Flow Constraints?	Fire Flow (Needed) (gpm)	Fire Flow (Available) (gpm)	Pressure (Residual Lower Limit) (psi)	Pressure (Calculated Residual) (psi)
J-2160	(N/A)	1,000.00	(N/A)	20.0	(N/A)
J-216	(N/A)	1,000.00	(N/A)	20.0	(N/A)
J-243	(N/A)	1,000.00	(N/A)	20.0	(N/A)
J-244	(N/A)	1,000.00	(N/A)	20.0	(N/A)
J-246	(N/A)	1,000.00	(N/A)	20.0	(N/A)
J-3008	(N/A)	1,000.00	(N/A)	20.0	(N/A)
J-3121	(N/A)	1,500.00	(N/A)	20.0	(N/A)
J-3122	(N/A)	1,500.00	(N/A)	20.0	(N/A)
J-3123	(N/A)	1,000.00	(N/A)	20.0	(N/A)
J-3124	(N/A)	1,000.00	(N/A)	20.0	(N/A)
J-3125	(N/A)	1,000.00	(N/A)	20.0	(N/A)
J-3155	(N/A)	1,000.00	(N/A)	20.0	(N/A)
J-3195	(N/A)	1,000.00	(N/A)	20.0	(N/A)
J-3221	(N/A)	1,000.00	(N/A)	20.0	(N/A)
J-3228	(N/A)	1,000.00	(N/A)	20.0	(N/A)
J-945	False	1,500.00	1,374.02	20.0	20.0
J-115	False	1,000.00	821.92	20.0	20.0
J-8	False	1,000.00	890.95	20.0	20.0
J-41	False	1,000.00	930.06	20.0	20.0
J-98	False	3,500.00	2,884.14	20.0	20.0
J-213	False	3,500.00	3,246.45	20.0	20.0
J-259	False	3,500.00	88.01	20.0	20.3
J-263	False	1,000.00	774.51	20.0	20.0
J-272	False	1,000.00	132.35	20.0	20.2
J-276	False	1,000.00	78.20	20.0	20.6
J-277	False	1,000.00	639.39	20.0	20.0
J-278	False	1,000.00	113.54	20.0	20.5
J-281	False	1,000.00	982.41	20.0	20.0
J-291	False	1,000.00	117.18	20.0	20.2
J-299	False	1,000.00	746.99	20.0	20.0
J-301	False	1,000.00	782.50	20.0	20.0
J-314	False	1,500.00	889.20	20.0	20.0
J-316	False	1,500.00	994.90	20.0	20.0
J-317	False	1,500.00	971.77	20.0	20.0
J-318	False	1,500.00	1,003.41	20.0	20.0
J-321	False	1,500.00	1,000.31	20.0	20.0
J-322	False	1,500.00	968.49	20.0	20.0
J-323	False	1,500.00	1,036.00	20.0	20.0
J-326	False	1,500.00	932.40	20.0	20.0
J-327	False	1,500.00	920.31	20.0	20.0
J-401	False	3,500.00	2,971.05	20.0	20.0
J-402	False	3,500.00	2,096.23	20.0	20.0

FlexTable: 2029 Fire Flow Node Table (MDD PYSICAL 2029 DEMAND 2029.wtg)

Current Time: 0.000 hours

Label	Satisfies Fire Flow Constraints?	Fire Flow (Needed) (gpm)	Fire Flow (Available) (gpm)	Pressure (Residual Lower Limit) (psi)	Pressure (Calculated Residual) (psi)
J-407	False	3,500.00	2,992.99	20.0	20.0
J-446	False	3,500.00	1,772.21	20.0	20.0
J-3046	False	1,500.00	1,214.40	20.0	20.0
J-3110	False	3,500.00	2,778.33	20.0	21.3
J-3113	False	3,500.00	3,303.83	20.0	21.3
J-3130	False	3,500.00	3,381.63	20.0	20.0
J-3131	False	3,500.00	2,802.13	20.0	20.0
J-3179	False	1,000.00	534.53	20.0	20.0
J-3180	False	1,000.00	725.64	20.0	20.0
J-3183	False	1,000.00	803.52	20.0	20.0
J-633	True	3,500.00	4,000.00	20.0	66.3
J-2073	True	1,500.00	4,000.00	20.0	69.9
J-2135	True	1,500.00	4,000.00	20.0	60.9
J-2130	True	1,000.00	4,000.00	20.0	69.7
J-2120	True	1,000.00	4,000.00	20.0	71.4
J-2125	True	3,500.00	4,000.00	20.0	71.2
J-2095	True	1,000.00	4,000.00	20.0	69.2
J-2170	True	1,000.00	4,000.00	20.0	66.3
J-2065	True	3,500.00	4,000.00	20.0	67.1
J-2167	True	3,500.00	4,000.00	20.0	60.0
J-2070	True	1,500.00	4,000.00	20.0	70.0
J-2075	True	1,000.00	4,000.00	20.0	73.8
J-260	True	1,500.00	4,000.00	20.0	56.0
J-5	True	1,000.00	1,159.38	20.0	20.0
J-75	True	1,000.00	4,000.00	20.0	62.2
J-1355	True	3,500.00	4,000.00	20.0	65.5
J-1350	True	3,500.00	4,000.00	20.0	65.6
J-1345	True	3,500.00	4,000.00	20.0	71.7
J-1340	True	1,000.00	4,000.00	20.0	39.0
J-1335	True	3,500.00	4,000.00	20.0	46.7
J-1325	True	3,500.00	4,000.00	20.0	72.1
J-1315	True	3,500.00	4,000.00	20.0	71.8
J-1310	True	3,500.00	4,000.00	20.0	73.3
J-1305	True	3,500.00	4,000.00	20.0	60.1
J-1300	True	3,500.00	4,000.00	20.0	43.8
J-1295	True	3,500.00	4,000.00	20.0	53.6
J-1290	True	3,500.00	4,000.00	20.0	64.3
J-1285	True	3,750.00	4,000.00	20.0	69.0
J-1280	True	3,500.00	4,000.00	20.0	72.4
J-1275	True	3,500.00	4,000.00	20.0	72.5
J-1270	True	1,000.00	4,000.00	20.0	29.0
J-1260	True	1,000.00	2,456.82	20.0	20.0
J-1250	True	1,000.00	3,526.12	20.0	20.0

FlexTable: 2029 Fire Flow Node Table (MDD PYSICAL 2029 DEMAND 2029.wtg)

Current Time: 0.000 hours

Label	Satisfies Fire Flow Constraints?	Fire Flow (Needed) (gpm)	Fire Flow (Available) (gpm)	Pressure (Residual Lower Limit) (psi)	Pressure (Calculated Residual) (psi)
J-1245	True	1,000.00	3,095.86	20.0	20.0
J-1240	True	1,000.00	3,666.09	20.0	20.0
J-1235	True	1,500.00	3,366.07	20.0	20.0
J-1225	True	1,500.00	3,572.52	20.0	20.0
J-1220	True	1,500.00	3,068.53	20.0	20.0
J-1215	True	1,500.00	3,093.28	20.0	20.0
J-1210	True	1,500.00	2,824.00	20.0	20.0
J-1205	True	1,500.00	3,430.25	20.0	20.0
J-1200	True	1,000.00	1,384.14	20.0	20.0
J-1195	True	1,000.00	2,675.55	20.0	20.0
J-1190	True	1,000.00	2,574.15	20.0	20.0
J-1185	True	1,000.00	3,619.97	20.0	20.0
J-1180	True	1,000.00	3,827.96	20.0	20.0
J-1175	True	1,000.00	2,797.64	20.0	20.0
J-1170	True	1,000.00	3,149.41	20.0	20.0
J-1165	True	1,000.00	2,870.56	20.0	20.0
J-1160	True	1,000.00	3,076.46	20.0	20.0
J-1155	True	1,000.00	2,674.31	20.0	20.0
J-1150	True	1,000.00	3,835.67	20.0	20.0
J-1145	True	1,000.00	3,417.40	20.0	20.0
J-1140	True	1,000.00	3,242.62	20.0	20.0
J-1135	True	1,000.00	3,450.60	20.0	20.0
J-1130	True	1,000.00	3,076.18	20.0	20.0
J-1125	True	1,000.00	3,376.55	20.0	20.0
J-1120	True	1,000.00	2,053.76	20.0	20.0
J-1115	True	1,000.00	2,986.19	20.0	20.0
J-1110	True	1,000.00	2,331.99	20.0	20.0
J-1105	True	1,000.00	3,201.57	20.0	20.0
J-1100	True	1,000.00	3,063.32	20.0	20.0
J-1095	True	1,000.00	2,258.02	20.0	20.0
J-1090	True	1,000.00	2,100.85	20.0	20.0
J-1075	True	1,000.00	2,139.06	20.0	20.0
J-1070	True	1,000.00	4,000.00	20.0	57.0
J-1065	True	1,000.00	3,885.19	20.0	20.0
J-1060	True	1,000.00	3,873.08	20.0	20.0
J-1055	True	1,000.00	3,924.93	20.0	20.0
J-1050	True	1,000.00	3,248.02	20.0	20.0
J-1045	True	1,000.00	2,563.71	20.0	20.0
J-1040	True	1,000.00	4,000.00	20.0	29.9
J-1035	True	1,000.00	4,000.00	20.0	34.1
J-1030	True	1,000.00	4,000.00	20.0	29.2
J-1025	True	1,000.00	4,000.00	20.0	23.4
J-1020	True	1,000.00	3,526.73	20.0	20.0

FlexTable: 2029 Fire Flow Node Table (MDD PYSICAL 2029 DEMAND 2029.wtg)

Current Time: 0.000 hours

Label	Satisfies Fire Flow Constraints?	Fire Flow (Needed) (gpm)	Fire Flow (Available) (gpm)	Pressure (Residual Lower Limit) (psi)	Pressure (Calculated Residual) (psi)
J-1015	True	1,500.00	3,719.16	20.0	20.0
J-1010	True	1,000.00	4,000.00	20.0	20.5
J-1005	True	1,000.00	3,932.55	20.0	20.0
J-1000	True	1,500.00	2,968.10	20.0	20.0
J-995	True	1,000.00	4,000.00	20.0	57.7
J-990	True	1,500.00	4,000.00	20.0	56.8
J-985	True	1,500.00	4,000.00	20.0	57.9
J-980	True	1,500.00	4,000.00	20.0	57.1
J-975	True	1,500.00	4,000.00	20.0	57.5
J-970	True	1,000.00	2,265.05	20.0	20.0
J-965	True	1,000.00	1,947.57	20.0	20.0
J-960	True	1,000.00	3,280.72	20.0	20.0
J-955	True	1,000.00	1,947.01	20.0	20.0
J-950	True	1,500.00	4,000.00	20.0	32.2
J-940	True	1,500.00	2,019.30	20.0	20.0
J-935	True	1,000.00	4,000.00	20.0	21.6
J-930	True	1,000.00	3,876.87	20.0	20.0
J-925	True	1,000.00	4,000.00	20.0	28.4
J-920	True	1,000.00	3,500.27	20.0	20.0
J-915	True	1,000.00	3,449.18	20.0	20.0
J-910	True	1,000.00	3,524.82	20.0	20.0
J-905	True	1,000.00	3,815.19	20.0	20.0
J-900	True	1,000.00	4,000.00	20.0	30.4
J-895	True	1,000.00	4,000.00	20.0	35.2
J-890	True	1,000.00	4,000.00	20.0	33.3
J-885	True	1,000.00	4,000.00	20.0	28.6
J-880	True	1,000.00	4,000.00	20.0	29.8
J-875	True	1,000.00	4,000.00	20.0	23.4
J-870	True	1,000.00	2,711.93	20.0	20.0
J-865	True	1,000.00	3,124.50	20.0	20.0
J-860	True	1,500.00	3,513.79	20.0	20.0
J-855	True	1,500.00	4,000.00	20.0	59.0
J-850	True	1,000.00	2,587.28	20.0	20.0
J-845	True	1,500.00	3,219.73	20.0	20.0
J-840	True	1,500.00	3,923.43	20.0	20.0
J-835	True	1,500.00	3,851.26	20.0	20.0
J-830	True	1,000.00	2,985.68	20.0	20.0
J-825	True	1,000.00	3,468.73	20.0	20.0
J-820	True	1,000.00	3,719.12	20.0	20.0
J-815	True	1,000.00	3,685.96	20.0	20.0
J-810	True	1,000.00	3,324.87	20.0	20.0
J-805	True	1,000.00	1,455.02	20.0	20.0
J-800	True	1,500.00	2,175.46	20.0	20.0

FlexTable: 2029 Fire Flow Node Table (MDD PYSICAL 2029 DEMAND 2029.wtg)

Current Time: 0.000 hours

Label	Satisfies Fire Flow Constraints?	Fire Flow (Needed) (gpm)	Fire Flow (Available) (gpm)	Pressure (Residual Lower Limit) (psi)	Pressure (Calculated Residual) (psi)
J-790	True	1,500.00	4,000.00	20.0	48.1
J-785	True	1,500.00	4,000.00	20.0	53.6
J-780	True	1,500.00	4,000.00	20.0	28.5
J-775	True	1,500.00	3,787.85	20.0	20.0
J-765	True	1,500.00	4,000.00	20.0	24.7
J-760	True	1,000.00	1,079.25	20.0	20.0
J-755	True	1,000.00	3,039.94	20.0	20.0
J-750	True	1,500.00	4,000.00	20.0	27.5
J-745	True	1,500.00	4,000.00	20.0	31.9
J-740	True	1,000.00	4,000.00	20.0	35.7
J-735	True	1,500.00	4,000.00	20.0	47.5
J-730	True	1,500.00	4,000.00	20.0	56.1
J-725	True	1,500.00	4,000.00	20.0	36.0
J-720	True	1,500.00	4,000.00	20.0	59.1
J-715	True	1,500.00	4,000.00	20.0	57.6
J-710	True	1,500.00	4,000.00	20.0	57.2
J-705	True	1,500.00	4,000.00	20.0	58.3
J-700	True	1,500.00	3,743.07	20.0	20.0
J-690	True	1,000.00	1,135.03	20.0	20.0
J-685	True	3,500.00	4,000.00	20.0	59.7
J-675	True	3,500.00	4,000.00	20.0	42.2
J-670	True	3,500.00	4,000.00	20.0	49.2
J-660	True	3,500.00	4,000.00	20.0	43.6
J-655	True	3,500.00	4,000.00	20.0	61.3
J-650	True	4,500.00	5,000.00	20.0	65.6
J-645	True	3,500.00	4,000.00	20.0	65.8
J-640	True	4,500.00	5,000.00	20.0	63.6
J-635	True	3,500.00	4,000.00	20.0	68.1
J-630	True	4,500.00	5,000.00	20.0	60.8
J-625	True	3,500.00	4,000.00	20.0	31.1
J-620	True	1,500.00	4,000.00	20.0	31.4
J-615	True	1,500.00	4,000.00	20.0	54.2
J-610	True	1,500.00	4,000.00	20.0	54.9
J-605	True	1,500.00	4,000.00	20.0	58.5
J-600	True	1,500.00	4,000.00	20.0	62.3
J-590	True	1,500.00	2,619.09	20.0	20.0
J-585	True	1,500.00	4,000.00	20.0	34.0
J-580	True	1,500.00	3,275.23	20.0	20.0
J-575	True	1,500.00	3,393.64	20.0	20.0
J-570	True	1,500.00	4,000.00	20.0	58.1
J-565	True	1,500.00	4,000.00	20.0	50.5
J-560	True	1,500.00	4,000.00	20.0	29.1
J-555	True	1,500.00	4,000.00	20.0	53.5

FlexTable: 2029 Fire Flow Node Table (MDD PYSICAL 2029 DEMAND 2029.wtg)

Current Time: 0.000 hours

Label	Satisfies Fire Flow Constraints?	Fire Flow (Needed) (gpm)	Fire Flow (Available) (gpm)	Pressure (Residual Lower Limit) (psi)	Pressure (Calculated Residual) (psi)
J-550	True	1,500.00	4,000.00	20.0	60.9
J-545	True	1,000.00	4,000.00	20.0	29.7
J-540	True	1,000.00	3,428.75	20.0	20.0
J-535	True	1,000.00	4,000.00	20.0	49.4
J-530	True	1,500.00	3,574.46	20.0	20.0
J-525	True	1,500.00	2,677.77	20.0	20.0
J-510	True	1,000.00	4,000.00	20.0	62.6
J-505	True	1,000.00	4,000.00	20.0	24.8
J-500	True	1,000.00	3,525.16	20.0	20.0
J-495	True	1,000.00	3,884.76	20.0	20.0
J-490	True	1,000.00	3,740.33	20.0	20.0
J-485	True	1,000.00	3,364.64	20.0	21.3
J-480	True	1,000.00	3,597.15	20.0	20.0
J-475	True	1,000.00	3,999.57	20.0	20.0
J-470	True	1,000.00	4,000.00	20.0	64.2
J-465	True	1,000.00	4,000.00	20.0	63.5
J-460	True	1,000.00	4,000.00	20.0	62.5
J-455	True	1,000.00	4,000.00	20.0	52.4
J-450	True	1,000.00	3,571.76	20.0	20.0
J-445	True	1,000.00	3,178.87	20.0	20.0
J-440	True	1,000.00	4,000.00	20.0	67.1
J-435	True	1,500.00	4,000.00	20.0	68.4
J-430	True	1,000.00	4,000.00	20.0	70.3
J-415	True	1,000.00	4,000.00	20.0	72.8
J-410	True	1,000.00	4,000.00	20.0	71.1
J-405	True	1,000.00	2,661.21	20.0	20.0
J-400	True	1,500.00	4,000.00	20.0	70.2
J-395	True	1,000.00	4,000.00	20.0	70.2
J-390	True	1,000.00	4,000.00	20.0	70.3
J-385	True	1,000.00	1,790.14	20.0	20.0
J-380	True	1,000.00	3,659.95	20.0	20.0
J-375	True	1,000.00	4,000.00	20.0	54.1
J-370	True	1,000.00	2,338.01	20.0	20.0
J-365	True	1,000.00	2,346.67	20.0	20.0
J-360	True	1,000.00	4,000.00	20.0	20.0
J-355	True	1,000.00	3,832.28	20.0	20.0
J-350	True	1,000.00	3,708.84	20.0	20.0
J-345	True	1,500.00	4,000.00	20.0	63.2
J-340	True	1,000.00	4,000.00	20.0	61.1
J-335	True	1,500.00	4,000.00	20.0	62.8
J-330	True	1,000.00	4,000.00	20.0	44.9
J-325	True	1,000.00	4,000.00	20.0	60.8
J-315	True	1,500.00	4,000.00	20.0	49.8

FlexTable: 2029 Fire Flow Node Table (MDD PYSICAL 2029 DEMAND 2029.wtg)

Current Time: 0.000 hours

Label	Satisfies Fire Flow Constraints?	Fire Flow (Needed) (gpm)	Fire Flow (Available) (gpm)	Pressure (Residual Lower Limit) (psi)	Pressure (Calculated Residual) (psi)
J-310	True	1,500.00	4,000.00	20.0	49.1
J-305	True	1,500.00	2,490.29	20.0	20.0
J-300	True	1,500.00	3,159.66	20.0	20.0
J-295	True	1,000.00	3,419.13	20.0	20.0
J-290	True	1,000.00	4,000.00	20.0	46.2
J-285	True	1,000.00	2,279.36	20.0	20.0
J-280	True	1,000.00	1,281.71	20.0	20.0
J-275	True	1,000.00	4,000.00	20.0	50.1
J-265	True	1,500.00	4,000.00	20.0	58.4
J-250	True	1,500.00	4,000.00	20.0	21.7
J-245	True	1,500.00	4,000.00	20.0	37.5
J-240	True	1,000.00	3,691.62	20.0	20.0
J-235	True	1,000.00	3,174.42	20.0	20.0
J-220	True	1,000.00	4,000.00	20.0	20.5
J-215	True	1,000.00	3,594.70	20.0	20.0
J-210	True	1,000.00	4,000.00	20.0	55.1
J-205	True	1,000.00	4,000.00	20.0	54.6
J-200	True	1,000.00	4,000.00	20.0	54.0
J-195	True	1,000.00	4,000.00	20.0	26.0
J-190	True	1,000.00	4,000.00	20.0	26.1
J-185	True	1,000.00	4,000.00	20.0	53.9
J-175	True	1,000.00	4,000.00	20.0	54.9
J-170	True	1,000.00	2,306.73	20.0	20.0
J-165	True	1,000.00	4,000.00	20.0	20.9
J-160	True	1,000.00	4,000.00	20.0	22.7
J-155	True	1,000.00	4,000.00	20.0	52.8
J-150	True	1,000.00	4,000.00	20.0	51.8
J-145	True	1,000.00	4,000.00	20.0	49.8
J-140	True	1,500.00	4,000.00	20.0	45.3
J-135	True	1,500.00	4,000.00	20.0	44.6
J-130	True	1,000.00	3,871.41	20.0	20.0
J-125	True	1,000.00	4,000.00	20.0	53.5
J-120	True	1,000.00	3,228.10	20.0	20.0
J-110	True	1,000.00	4,000.00	20.0	34.7
J-105	True	1,000.00	4,000.00	20.0	42.9
J-100	True	1,000.00	4,000.00	20.0	45.4
J-95	True	1,000.00	4,000.00	20.0	48.2
J-90	True	1,000.00	4,000.00	20.0	52.8
J-80	True	1,000.00	4,000.00	20.0	52.7
J-70	True	1,000.00	4,000.00	20.0	62.2
J-65	True	1,000.00	4,000.00	20.0	61.5
J-60	True	1,000.00	4,000.00	20.0	55.2
J-55	True	1,000.00	4,000.00	20.0	57.6

FlexTable: 2029 Fire Flow Node Table (MDD PYSICAL 2029 DEMAND 2029.wtg)

Current Time: 0.000 hours

Label	Satisfies Fire Flow Constraints?	Fire Flow (Needed) (gpm)	Fire Flow (Available) (gpm)	Pressure (Residual Lower Limit) (psi)	Pressure (Calculated Residual) (psi)
J-50	True	1,000.00	4,000.00	20.0	58.2
J-45	True	1,000.00	4,000.00	20.0	26.4
J-40	True	1,000.00	4,000.00	20.0	41.2
J-35	True	1,000.00	1,555.87	20.0	21.3
J-30	True	1,000.00	1,144.87	20.0	20.0
J-25	True	1,000.00	1,050.26	20.0	20.0
J-20	True	1,000.00	1,084.40	20.0	20.0
J-15	True	1,000.00	1,383.52	20.0	20.9
J-10	True	1,000.00	1,074.33	20.0	20.0
J-1	True	1,000.00	4,000.00	20.0	41.4
J-2	True	1,000.00	4,000.00	20.0	27.4
J-3	True	1,000.00	3,133.27	20.0	20.3
J-4	True	1,000.00	3,175.93	20.0	20.0
J-6	True	1,000.00	3,112.55	20.0	20.3
J-7	True	1,000.00	4,000.00	20.0	56.8
J-9	True	1,000.00	4,000.00	20.0	53.4
J-11	True	1,000.00	4,000.00	20.0	52.8
J-12	True	1,000.00	4,000.00	20.0	52.7
J-13	True	1,000.00	4,000.00	20.0	51.7
J-14	True	1,000.00	4,000.00	20.0	45.6
J-16	True	1,500.00	4,000.00	20.0	45.4
J-17	True	1,500.00	4,000.00	20.0	45.0
J-18	True	1,500.00	4,000.00	20.0	64.8
J-19	True	3,500.00	4,000.00	20.0	61.5
J-21	True	3,500.00	4,000.00	20.0	50.2
J-22	True	1,500.00	4,000.00	20.0	61.3
J-23	True	1,500.00	4,000.00	20.0	62.7
J-24	True	1,500.00	4,000.00	20.0	61.2
J-26	True	1,000.00	4,000.00	20.0	24.0
J-27	True	1,000.00	4,000.00	20.0	20.7
J-28	True	4,500.00	4,733.79	20.0	20.0
J-29	True	1,000.00	4,000.00	20.0	39.1
J-31	True	1,000.00	4,000.00	20.0	39.3
J-32	True	1,500.00	3,161.30	20.0	20.0
J-33	True	1,000.00	1,916.14	20.0	20.0
J-34	True	1,500.00	4,000.00	20.0	31.0
J-37	True	1,000.00	1,167.27	20.0	20.0
J-38	True	1,000.00	4,000.00	20.0	39.6
J-39	True	1,000.00	3,871.65	20.0	20.0
J-42	True	1,000.00	4,000.00	20.0	21.6
J-43	True	1,000.00	3,070.96	20.0	20.0
J-47	True	1,500.00	4,000.00	20.0	55.4
J-48	True	1,000.00	4,000.00	20.0	48.4

FlexTable: 2029 Fire Flow Node Table (MDD PYSICAL 2029 DEMAND 2029.wtg)

Current Time: 0.000 hours

Label	Satisfies Fire Flow Constraints?	Fire Flow (Needed) (gpm)	Fire Flow (Available) (gpm)	Pressure (Residual Lower Limit) (psi)	Pressure (Calculated Residual) (psi)
J-49	True	1,500.00	4,000.00	20.0	28.5
J-51	True	1,500.00	3,731.97	20.0	20.0
J-52	True	1,500.00	2,188.45	20.0	20.0
J-53	True	1,000.00	3,525.59	20.0	20.0
J-54	True	1,000.00	2,671.18	20.0	20.0
J-56	True	1,000.00	2,327.88	20.0	20.0
J-57	True	1,000.00	2,223.29	20.0	20.0
J-58	True	1,000.00	1,689.40	20.0	20.0
J-59	True	1,000.00	1,774.61	20.0	20.0
J-61	True	1,000.00	4,000.00	20.0	61.5
J-62	True	1,000.00	3,020.85	20.0	20.0
J-63	True	1,000.00	4,000.00	20.0	62.6
J-64	True	1,000.00	2,789.58	20.0	20.0
J-66	True	1,000.00	4,000.00	20.0	61.0
J-67	True	1,000.00	4,000.00	20.0	55.0
J-68	True	1,000.00	4,000.00	20.0	45.1
J-69	True	1,000.00	4,000.00	20.0	49.8
J-71	True	1,000.00	4,000.00	20.0	48.4
J-72	True	1,000.00	4,000.00	20.0	54.6
J-73	True	1,500.00	4,000.00	20.0	63.0
J-74	True	1,500.00	4,000.00	20.0	61.9
J-76	True	1,000.00	4,000.00	20.0	48.9
J-77	True	1,000.00	4,000.00	20.0	41.1
J-78	True	1,000.00	3,752.08	20.0	20.0
J-79	True	1,000.00	4,000.00	20.0	48.8
J-81	True	1,500.00	4,000.00	20.0	69.1
J-82	True	1,500.00	4,000.00	20.0	68.4
J-83	True	3,500.00	4,000.00	20.0	73.0
J-84	True	3,500.00	4,000.00	20.0	73.0
J-85	True	3,500.00	4,000.00	20.0	73.0
J-86	True	3,500.00	4,000.00	20.0	60.9
J-87	True	3,500.00	4,000.00	20.0	64.3
J-89	True	3,500.00	4,000.00	20.0	47.5
J-91	True	3,500.00	4,000.00	20.0	39.9
J-92	True	3,500.00	4,000.00	20.0	27.2
J-93	True	3,500.00	4,000.00	20.0	27.5
J-94	True	3,500.00	4,000.00	20.0	35.5
J-96	True	3,500.00	4,000.00	20.0	40.0
J-97	True	3,500.00	4,000.00	20.0	53.5
J-99	True	1,500.00	4,000.00	20.0	58.5
J-101	True	1,500.00	4,000.00	20.0	57.2
J-102	True	1,500.00	4,000.00	20.0	57.7
J-103	True	1,500.00	1,874.58	20.0	20.5

FlexTable: 2029 Fire Flow Node Table (MDD PYSICAL 2029 DEMAND 2029.wtg)

Current Time: 0.000 hours

Label	Satisfies Fire Flow Constraints?	Fire Flow (Needed) (gpm)	Fire Flow (Available) (gpm)	Pressure (Residual Lower Limit) (psi)	Pressure (Calculated Residual) (psi)
J-104	True	1,500.00	4,000.00	20.0	57.7
J-107	True	1,500.00	1,858.09	20.0	20.5
J-111	True	1,000.00	2,065.94	20.0	20.0
J-112	True	3,500.00	4,000.00	20.0	72.0
J-117	True	3,500.00	4,000.00	20.0	71.1
J-119	True	3,500.00	4,000.00	20.0	70.6
J-122	True	3,500.00	4,000.00	20.0	70.7
J-123	True	3,500.00	4,000.00	20.0	70.9
J-124	True	3,500.00	4,000.00	20.0	68.0
J-126	True	3,500.00	4,000.00	20.0	64.5
J-127	True	3,500.00	4,000.00	20.0	65.4
J-128	True	3,500.00	4,000.00	20.0	67.9
J-129	True	3,500.00	4,000.00	20.0	70.5
J-131	True	3,500.00	4,000.00	20.0	64.9
J-133	True	3,500.00	4,000.00	20.0	70.5
J-136	True	3,500.00	4,000.00	20.0	70.9
J-137	True	3,500.00	4,000.00	20.0	71.9
J-138	True	3,500.00	4,000.00	20.0	34.0
J-139	True	3,500.00	4,000.00	20.0	26.7
J-141	True	3,500.00	4,000.00	20.0	32.7
J-142	True	3,500.00	4,000.00	20.0	51.2
J-143	True	3,500.00	4,000.00	20.0	55.3
J-144	True	3,500.00	4,000.00	20.0	63.3
J-146	True	3,500.00	4,000.00	20.0	73.1
J-147	True	3,500.00	4,000.00	20.0	69.0
J-149	True	3,500.00	4,000.00	20.0	63.0
J-151	True	3,500.00	4,000.00	20.0	69.7
J-152	True	1,000.00	4,000.00	20.0	69.3
J-153	True	1,000.00	4,000.00	20.0	64.8
J-154	True	1,000.00	4,000.00	20.0	55.9
J-156	True	1,000.00	4,000.00	20.0	65.9
J-157	True	1,000.00	4,000.00	20.0	67.1
J-158	True	1,000.00	4,000.00	20.0	68.0
J-159	True	1,000.00	4,000.00	20.0	61.5
J-161	True	3,500.00	4,000.00	20.0	70.2
J-162	True	3,500.00	4,000.00	20.0	72.2
J-163	True	3,500.00	4,000.00	20.0	55.7
J-164	True	3,500.00	4,000.00	20.0	54.5
J-166	True	3,500.00	4,000.00	20.0	71.3
J-167	True	3,500.00	4,000.00	20.0	68.5
J-171	True	3,500.00	4,000.00	20.0	69.7
J-172	True	3,500.00	4,000.00	20.0	70.7
J-173	True	3,500.00	4,000.00	20.0	70.8

FlexTable: 2029 Fire Flow Node Table (MDD PYSICAL 2029 DEMAND 2029.wtg)

Current Time: 0.000 hours

Label	Satisfies Fire Flow Constraints?	Fire Flow (Needed) (gpm)	Fire Flow (Available) (gpm)	Pressure (Residual Lower Limit) (psi)	Pressure (Calculated Residual) (psi)
J-174	True	3,500.00	4,000.00	20.0	72.8
J-177	True	1,000.00	4,000.00	20.0	30.8
J-179	True	1,000.00	4,000.00	20.0	31.2
J-180	True	1,000.00	3,417.07	20.0	20.0
J-181	True	3,500.00	4,000.00	20.0	70.6
J-192	True	1,000.00	4,000.00	20.0	57.8
J-193	True	1,000.00	4,000.00	20.0	46.5
J-194	True	1,000.00	3,839.00	20.0	20.0
J-196	True	1,000.00	4,000.00	20.0	55.0
J-197	True	1,000.00	4,000.00	20.0	69.7
J-198	True	1,000.00	4,000.00	20.0	46.6
J-199	True	1,000.00	2,695.27	20.0	20.0
J-202	True	3,500.00	4,000.00	20.0	44.6
J-203	True	3,500.00	4,000.00	20.0	61.3
J-212	True	3,500.00	4,000.00	20.0	57.5
J-223	True	1,500.00	1,826.82	20.0	20.0
J-226	True	1,500.00	4,000.00	20.0	55.8
J-228	True	1,500.00	4,000.00	20.0	32.0
J-229	True	1,000.00	3,221.31	20.0	20.0
J-230	True	1,000.00	2,728.06	20.0	20.0
J-231	True	1,000.00	4,000.00	20.0	20.5
J-232	True	3,500.00	4,000.00	20.0	66.9
J-233	True	3,500.00	4,000.00	20.0	56.2
J-236	True	3,500.00	4,000.00	20.0	66.8
J-237	True	3,500.00	4,000.00	20.0	66.3
J-241	True	3,500.00	4,000.00	20.0	64.3
J-242	True	3,500.00	4,000.00	20.0	59.5
J-247	True	1,000.00	4,000.00	20.0	30.6
J-234	True	1,500.00	3,064.21	20.0	20.0
J-238	True	1,000.00	4,000.00	20.0	65.0
J-239	True	1,000.00	4,000.00	20.0	68.3
J-249	True	1,000.00	4,000.00	20.0	64.9
J-251	True	1,000.00	4,000.00	20.0	66.2
J-252	True	1,000.00	2,515.18	20.0	20.0
J-254	True	3,500.00	4,000.00	20.0	66.6
J-257	True	3,500.00	3,663.73	20.0	20.0
J-258	True	3,500.00	3,564.48	20.0	20.0
J-261	True	3,500.00	4,000.00	20.0	61.8
J-262	True	1,000.00	2,982.48	20.0	20.0
J-264	True	1,500.00	4,000.00	20.0	70.2
J-267	True	1,500.00	3,519.71	20.0	20.0
J-268	True	1,000.00	2,857.28	20.0	20.0
J-269	True	1,500.00	4,000.00	20.0	26.5

FlexTable: 2029 Fire Flow Node Table (MDD PYSICAL 2029 DEMAND 2029.wtg)

Current Time: 0.000 hours

Label	Satisfies Fire Flow Constraints?	Fire Flow (Needed) (gpm)	Fire Flow (Available) (gpm)	Pressure (Residual Lower Limit) (psi)	Pressure (Calculated Residual) (psi)
J-270	True	1,000.00	2,506.26	20.0	20.0
J-271	True	1,000.00	1,908.16	20.0	20.0
J-3000	True	1,000.00	1,915.98	20.0	20.0
J-279	True	1,000.00	4,000.00	20.0	20.4
J-282	True	1,000.00	3,221.29	20.0	20.0
J-283	True	1,000.00	2,732.50	20.0	20.0
J-284	True	1,000.00	3,129.66	20.0	20.0
J-286	True	1,000.00	3,171.61	20.0	20.0
J-287	True	1,000.00	3,298.84	20.0	20.0
J-288	True	1,000.00	3,564.40	20.0	20.0
J-289	True	1,000.00	2,928.20	20.0	20.3
J-292	True	1,000.00	1,344.07	20.0	20.0
J-293	True	1,000.00	3,048.51	20.0	20.0
J-294	True	1,000.00	1,684.84	20.0	20.0
J-296	True	1,500.00	2,398.11	20.0	20.0
J-297	True	1,500.00	4,000.00	20.0	24.2
J-298	True	1,000.00	3,346.91	20.0	20.0
J-302	True	1,500.00	4,000.00	20.0	30.6
J-303	True	1,500.00	4,000.00	20.0	55.8
J-304	True	1,500.00	3,651.80	20.0	20.0
J-306	True	1,500.00	2,873.77	20.0	20.0
J-307	True	1,500.00	2,819.07	20.0	20.0
J-308	True	1,500.00	2,877.50	20.0	20.0
J-309	True	1,500.00	2,955.59	20.0	20.9
J-311	True	1,500.00	2,644.84	20.0	20.4
J-312	True	1,500.00	2,278.39	20.0	20.4
J-313	True	1,500.00	2,053.36	20.0	20.0
J-319	True	1,500.00	3,178.19	20.0	20.6
J-324	True	1,500.00	2,444.04	20.0	20.0
J-328	True	1,000.00	1,739.73	20.0	20.0
J-329	True	1,500.00	2,422.71	20.0	20.4
J-331	True	1,500.00	3,128.39	20.0	20.0
J-332	True	1,000.00	1,808.02	20.0	20.0
J-333	True	1,500.00	3,168.64	20.0	20.0
J-334	True	1,500.00	2,627.19	20.0	20.0
J-336	True	1,500.00	3,070.44	20.0	20.0
J-337	True	1,500.00	2,563.77	20.0	20.0
J-338	True	1,500.00	3,044.92	20.0	20.0
J-339	True	1,500.00	2,211.23	20.0	20.0
J-341	True	1,500.00	1,608.55	20.0	20.0
J-342	True	1,500.00	1,901.70	20.0	20.0
J-343	True	1,000.00	1,758.23	20.0	20.0
J-344	True	1,000.00	1,071.43	20.0	20.0

FlexTable: 2029 Fire Flow Node Table (MDD PYSICAL 2029 DEMAND 2029.wtg)

Current Time: 0.000 hours

Label	Satisfies Fire Flow Constraints?	Fire Flow (Needed) (gpm)	Fire Flow (Available) (gpm)	Pressure (Residual Lower Limit) (psi)	Pressure (Calculated Residual) (psi)
J-346	True	1,500.00	4,000.00	20.0	24.9
J-347	True	1,500.00	3,442.25	20.0	20.0
J-348	True	1,500.00	3,408.90	20.0	20.0
J-349	True	1,500.00	3,477.51	20.0	20.0
J-351	True	1,500.00	3,552.75	20.0	20.0
J-352	True	1,500.00	3,998.51	20.0	20.0
J-353	True	1,000.00	1,267.74	20.0	20.0
J-354	True	1,000.00	1,113.66	20.0	20.0
J-356	True	1,000.00	4,000.00	20.0	65.0
J-357	True	1,500.00	4,000.00	20.0	63.5
J-358	True	1,500.00	4,000.00	20.0	60.8
J-359	True	1,500.00	4,000.00	20.0	63.0
J-361	True	1,500.00	4,000.00	20.0	62.9
J-362	True	1,000.00	4,000.00	20.0	51.0
J-363	True	1,000.00	4,000.00	20.0	42.5
J-364	True	1,000.00	1,578.99	20.0	21.3
J-366	True	1,000.00	1,203.59	20.0	20.0
J-367	True	1,000.00	1,501.73	20.0	20.0
J-368	True	3,500.00	4,000.00	20.0	66.3
J-369	True	1,500.00	4,000.00	20.0	55.2
J-371	True	1,500.00	4,000.00	20.0	52.6
J-372	True	3,500.00	4,000.00	20.0	63.1
J-457	True	3,500.00	4,000.00	20.0	63.6
J-374	True	3,500.00	4,000.00	20.0	54.4
J-376	True	3,500.00	4,000.00	20.0	58.9
J-377	True	1,500.00	4,000.00	20.0	61.4
J-378	True	3,500.00	4,000.00	20.0	60.3
J-379	True	1,500.00	4,000.00	20.0	65.5
J-381	True	1,500.00	4,000.00	20.0	63.9
J-382	True	3,500.00	4,000.00	20.0	60.0
J-383	True	3,500.00	3,932.33	20.0	20.0
J-384	True	3,500.00	4,000.00	20.0	22.4
J-386	True	3,500.00	4,000.00	20.0	64.7
J-387	True	3,500.00	4,000.00	20.0	56.1
J-388	True	3,500.00	3,984.10	20.0	20.0
J-389	True	3,500.00	4,000.00	20.0	44.9
J-391	True	3,500.00	4,000.00	20.0	47.4
J-392	True	3,500.00	4,000.00	20.0	40.4
J-393	True	3,500.00	4,000.00	20.0	65.7
J-394	True	3,500.00	4,000.00	20.0	63.3
J-396	True	3,500.00	4,000.00	20.0	59.8
J-397	True	3,500.00	4,000.00	20.0	54.3
J-398	True	3,500.00	4,000.00	20.0	51.6

FlexTable: 2029 Fire Flow Node Table (MDD PYSICAL 2029 DEMAND 2029.wtg)

Current Time: 0.000 hours

Label	Satisfies Fire Flow Constraints?	Fire Flow (Needed) (gpm)	Fire Flow (Available) (gpm)	Pressure (Residual Lower Limit) (psi)	Pressure (Calculated Residual) (psi)
J-399	True	3,500.00	4,000.00	20.0	66.0
J-403	True	3,500.00	4,000.00	20.0	66.3
J-404	True	3,500.00	4,000.00	20.0	71.0
J-406	True	3,500.00	4,000.00	20.0	66.7
J-408	True	3,500.00	4,000.00	20.0	69.6
J-411	True	3,500.00	4,000.00	20.0	66.3
J-412	True	3,500.00	4,000.00	20.0	63.0
J-413	True	3,500.00	4,000.00	20.0	35.1
J-414	True	3,500.00	4,000.00	20.0	46.8
J-416	True	3,500.00	4,000.00	20.0	61.0
J-417	True	3,500.00	4,000.00	20.0	62.4
J-418	True	3,500.00	4,000.00	20.0	41.5
J-420	True	3,500.00	4,000.00	20.0	37.8
J-422	True	3,500.00	4,000.00	20.0	33.8
J-423	True	3,500.00	4,000.00	20.0	47.2
J-424	True	3,500.00	4,000.00	20.0	56.9
J-425	True	3,500.00	4,000.00	20.0	58.5
J-426	True	3,500.00	4,000.00	20.0	39.8
J-428	True	3,500.00	4,000.00	20.0	70.6
J-429	True	3,500.00	4,000.00	20.0	34.7
J-431	True	3,500.00	4,000.00	20.0	46.6
J-432	True	3,500.00	4,000.00	20.0	31.4
J-433	True	3,500.00	4,000.00	20.0	71.0
J-434	True	3,500.00	4,000.00	20.0	64.0
J-436	True	3,500.00	4,000.00	20.0	61.3
J-437	True	3,500.00	4,000.00	20.0	39.2
J-438	True	3,500.00	4,000.00	20.0	69.6
J-439	True	3,500.00	4,000.00	20.0	44.0
J-441	True	3,500.00	4,000.00	20.0	70.0
J-442	True	3,500.00	4,000.00	20.0	57.4
J-443	True	3,500.00	4,000.00	20.0	57.7
J-444	True	3,500.00	4,000.00	20.0	36.1
J-447	True	3,500.00	4,000.00	20.0	55.2
J-448	True	3,500.00	4,000.00	20.0	71.5
J-449	True	3,500.00	4,000.00	20.0	36.3
J-451	True	3,500.00	4,000.00	20.0	36.3
J-452	True	3,500.00	4,000.00	20.0	50.5
J-453	True	3,500.00	4,000.00	20.0	52.1
J-454	True	3,500.00	4,000.00	20.0	30.7
J-456	True	3,500.00	4,000.00	20.0	41.1
J-458	True	3,500.00	4,000.00	20.0	60.6
J-3002	True	1,000.00	1,209.82	20.0	20.0
J-3004	True	1,000.00	1,334.02	20.0	20.0

FlexTable: 2029 Fire Flow Node Table (MDD PYSICAL 2029 DEMAND 2029.wtg)

Current Time: 0.000 hours

Label	Satisfies Fire Flow Constraints?	Fire Flow (Needed) (gpm)	Fire Flow (Available) (gpm)	Pressure (Residual Lower Limit) (psi)	Pressure (Calculated Residual) (psi)
J-3005	True	1,000.00	1,213.83	20.0	20.0
J-3017	True	1,000.00	1,863.23	20.0	20.0
J-3019	True	1,500.00	3,823.40	20.0	20.0
J-3020	True	1,500.00	3,484.33	20.0	20.0
J-3021	True	1,500.00	3,544.71	20.0	20.0
J-3022	True	1,500.00	3,618.56	20.0	20.0
J-3023	True	1,500.00	2,913.39	20.0	20.0
J-3024	True	1,500.00	2,566.20	20.0	20.9
J-3025	True	1,500.00	2,015.82	20.0	20.0
J-3026	True	1,500.00	1,910.10	20.0	20.0
J-3030	True	1,500.00	4,000.00	20.0	44.4
J-3032	True	1,500.00	4,000.00	20.0	48.7
J-3033	True	1,000.00	4,000.00	20.0	41.9
J-3034	True	1,000.00	4,000.00	20.0	33.8
J-3036	True	1,000.00	4,000.00	20.0	50.6
J-3037	True	1,000.00	4,000.00	20.0	36.3
J-3038	True	1,000.00	3,331.18	20.0	20.0
J-3039	True	1,000.00	4,000.00	20.0	42.2
J-3040	True	1,000.00	4,000.00	20.0	33.1
J-3042	True	1,500.00	3,162.92	20.0	20.0
J-3043	True	1,500.00	2,192.63	20.0	20.0
J-3048	True	1,000.00	4,000.00	20.0	50.7
J-3049	True	1,500.00	4,000.00	20.0	55.9
J-3050	True	1,500.00	3,103.82	20.0	20.0
J-3051	True	1,500.00	2,158.99	20.0	20.0
J-3054	True	1,000.00	4,000.00	20.0	29.5
J-3055	True	1,000.00	3,122.35	20.0	20.0
J-3056	True	1,500.00	4,000.00	20.0	45.2
J-3057	True	1,000.00	4,000.00	20.0	36.2
J-3058	True	1,000.00	4,000.00	20.0	36.6
J-3059	True	1,000.00	3,488.89	20.0	20.0
J-3060	True	1,000.00	3,488.88	20.0	25.3
J-3061	True	1,000.00	3,269.76	20.0	20.0
J-3062	True	1,000.00	3,341.69	20.0	20.0
J-3063	True	1,000.00	3,236.50	20.0	20.0
J-3064	True	1,000.00	3,182.69	20.0	20.0
J-3065	True	1,000.00	2,423.57	20.0	20.0
J-3066	True	1,000.00	1,902.73	20.0	20.0
J-3068	True	1,000.00	2,258.04	20.0	20.0
J-3069	True	1,000.00	4,000.00	20.0	62.7
J-3070	True	1,000.00	3,183.87	20.0	20.0
J-3071	True	1,000.00	4,000.00	20.0	51.5
J-3072	True	1,000.00	4,000.00	20.0	50.6

FlexTable: 2029 Fire Flow Node Table (MDD PYSICAL 2029 DEMAND 2029.wtg)

Current Time: 0.000 hours

Label	Satisfies Fire Flow Constraints?	Fire Flow (Needed) (gpm)	Fire Flow (Available) (gpm)	Pressure (Residual Lower Limit) (psi)	Pressure (Calculated Residual) (psi)
J-3073	True	1,000.00	4,000.00	20.0	61.9
J-3074	True	1,000.00	4,000.00	20.0	56.0
J-3075	True	1,000.00	4,000.00	20.0	62.1
J-3076	True	1,000.00	4,000.00	20.0	60.9
J-3077	True	3,500.00	4,000.00	20.0	46.5
J-3078	True	3,500.00	4,000.00	20.0	63.0
J-3079	True	3,500.00	4,000.00	20.0	64.5
J-3080	True	3,500.00	4,000.00	20.0	67.7
J-3081	True	3,500.00	4,000.00	20.0	68.3
J-3082	True	1,500.00	4,000.00	20.0	61.8
J-3083	True	1,500.00	4,000.00	20.0	38.8
J-3084	True	1,000.00	4,000.00	20.0	38.2
J-3085	True	1,500.00	1,945.84	20.0	20.0
J-3086	True	1,000.00	4,000.00	20.0	45.1
J-3088	True	1,000.00	3,253.13	20.0	20.0
J-3089	True	1,000.00	4,000.00	20.0	30.5
J-3090	True	1,000.00	2,732.51	20.0	20.0
J-3091	True	1,000.00	2,065.82	20.0	20.0
J-3092	True	1,000.00	2,485.51	20.0	20.0
J-3093	True	1,000.00	2,885.77	20.0	20.0
J-3094	True	1,000.00	3,698.67	20.0	20.4
J-3095	True	1,000.00	2,136.12	20.0	20.0
J-3096	True	1,000.00	2,892.98	20.0	20.0
J-3097	True	1,500.00	3,710.24	20.0	20.0
J-3098	True	1,500.00	4,000.00	20.0	30.3
J-3099	True	1,500.00	4,000.00	20.0	31.8
J-3100	True	1,500.00	4,000.00	20.0	42.0
J-3101	True	1,500.00	4,000.00	20.0	36.8
J-3102	True	1,500.00	4,000.00	20.0	50.1
J-3103	True	1,500.00	4,000.00	20.0	62.7
J-3104	True	1,500.00	2,567.75	20.0	20.0
J-3105	True	1,500.00	4,000.00	20.0	53.8
J-3108	True	1,500.00	4,000.00	20.0	46.4
J-3111	True	1,500.00	2,035.67	20.0	20.0
J-3112	True	1,500.00	1,843.90	20.0	20.0
J-3115	True	1,500.00	4,000.00	20.0	51.7
J-3116	True	1,500.00	3,810.40	20.0	20.0
J-3119	True	1,500.00	3,745.63	20.0	20.0
J-3120	True	1,500.00	4,000.00	20.0	34.8
J-3127	True	3,500.00	4,000.00	20.0	50.5
J-3128	True	3,500.00	4,000.00	20.0	64.9
J-3129	True	3,500.00	4,000.00	20.0	54.1
J-3132	True	3,500.00	4,000.00	20.0	62.8

FlexTable: 2029 Fire Flow Node Table (MDD PYSICAL 2029 DEMAND 2029.wtg)

Current Time: 0.000 hours

Label	Satisfies Fire Flow Constraints?	Fire Flow (Needed) (gpm)	Fire Flow (Available) (gpm)	Pressure (Residual Lower Limit) (psi)	Pressure (Calculated Residual) (psi)
J-3133	True	3,500.00	4,000.00	20.0	55.8
J-3134	True	3,500.00	4,000.00	20.0	54.1
J-3135	True	3,500.00	4,000.00	20.0	55.7
J-3136	True	3,500.00	4,000.00	20.0	65.8
J-3137	True	3,500.00	4,000.00	20.0	68.7
J-3138	True	3,500.00	4,000.00	20.0	69.4
J-3139	True	3,500.00	4,000.00	20.0	63.7
J-3140	True	3,500.00	4,000.00	20.0	58.6
J-3141	True	3,500.00	4,000.00	20.0	49.5
J-3142	True	3,500.00	4,000.00	20.0	54.9
J-3143	True	3,500.00	4,000.00	20.0	49.9
J-3144	True	3,500.00	4,000.00	20.0	44.9
J-3145	True	3,500.00	4,000.00	20.0	72.3
J-3146	True	3,500.00	4,000.00	20.0	63.8
J-3147	True	3,500.00	4,000.00	20.0	68.8
J-3148	True	3,500.00	4,000.00	20.0	69.7
J-3149	True	3,500.00	4,000.00	20.0	71.2
J-3151	True	3,500.00	4,000.00	20.0	69.1
J-3153	True	3,500.00	4,000.00	20.0	39.0
J-3156	True	1,000.00	4,000.00	20.0	27.0
J-3157	True	3,500.00	4,000.00	20.0	60.6
J-3161	True	1,000.00	4,000.00	20.0	39.3
J-3162	True	1,500.00	3,933.55	20.0	20.0
J-3163	True	1,500.00	3,499.21	20.0	20.0
J-3164	True	1,000.00	4,000.00	20.0	21.5
J-3165	True	3,500.00	4,000.00	20.0	69.6
J-3166	True	1,500.00	1,970.37	20.0	20.0
J-3167	True	1,500.00	1,828.42	20.0	20.0
J-3168	True	1,500.00	1,764.71	20.0	20.0
J-3169	True	1,500.00	1,772.61	20.0	20.0
J-3174	True	1,500.00	1,850.62	20.0	20.0
J-3175	True	1,500.00	1,851.60	20.0	20.0
J-3182	True	1,000.00	3,623.53	20.0	20.0
J-3184	True	3,500.00	3,927.93	20.0	21.3
J-3185	True	3,500.00	4,000.00	20.0	32.2
J-3186	True	1,500.00	4,000.00	20.0	43.5
J-3187	True	1,500.00	4,000.00	20.0	62.1
J-3188	True	1,500.00	4,000.00	20.0	51.5
J-3189	True	1,500.00	1,667.97	20.0	20.0
J-3191	True	1,000.00	4,000.00	20.0	34.4
J-3192	True	1,000.00	3,804.33	20.0	20.0
J-3193	True	1,000.00	4,000.00	20.0	50.4
J-3194	True	1,000.00	4,000.00	20.0	47.3

FlexTable: 2029 Fire Flow Node Table (MDD PYSICAL 2029 DEMAND 2029.wtg)

Current Time: 0.000 hours

Label	Satisfies Fire Flow Constraints?	Fire Flow (Needed) (gpm)	Fire Flow (Available) (gpm)	Pressure (Residual Lower Limit) (psi)	Pressure (Calculated Residual) (psi)
J-3196	True	3,500.00	4,000.00	20.0	62.5
J-3197	True	3,500.00	4,000.00	20.0	56.9
J-3203	True	1,000.00	4,000.00	20.0	58.0
J-3205	True	1,000.00	4,000.00	20.0	57.9
J-3207	True	1,000.00	4,000.00	20.0	50.0
J-3208	True	1,000.00	4,000.00	20.0	49.2
J-3209	True	1,000.00	4,000.00	20.0	25.4
J-3212	True	1,000.00	1,907.01	20.0	21.0
J-3216	True	1,000.00	4,000.00	20.0	62.5
J-3217	True	1,000.00	4,000.00	20.0	57.3
J-3219	True	1,000.00	4,000.00	20.0	59.6
J-3220	True	1,000.00	4,000.00	20.0	47.2
J-3222	True	1,000.00	4,000.00	20.0	21.9
J-3223	True	1,000.00	4,000.00	20.0	40.7
J-3225	True	3,500.00	4,000.00	0.0	65.6
J-3226	True	3,500.00	4,000.00	20.0	65.4

APPENDIX K

Capital Improvement Plan
Cost Estimates and
Implementation Schedule

City of Sumner
Preliminary Cost Opinion Worksheet

Project: D1 - Gary Street and Parker Road Loop
Prepared by: A. Porrini Date: 7/21/2009

Item Number	Description	Quantity	Unit	Unit Price	Total
1	Mobilization	1	LS	$11,000.00	$11,000
2	Shoring or Extra Excavation Class B	4,880	SF	$1.00	$4,880
3	Erosion Control	1	LS	$750.00	$750
4	Locate Existing Utilities	1	LS	$2,500.00	$2,500
5	CL 52 DI, 8-In. Diam., Incl. Backfill	1,220	LF	$85.00	$103,700
6	Hydrant Assembly	5	EA	$4,000.00	$20,000
7	Gate Valve, 8-In. Diam.	4	EA	$1,800.00	$7,200
8	Connect to Existing	2	EA	$3,500.00	$7,000
9	Testing & Disinfection	1,220	LF	$1.00	$1,220
10					$0
11					$0
12					$0
13					$0
14					$0
15					$0
16					$0
17					$0
18					$0
19					$0
				Subtotal	**$ 158,250**
			Contingency	30%	$ 47,475
			Sales Tax	9.3%	$ 14,717
			Planning Level Construction Cost		**$ 220,442**
			Administration	5%	$ 11,022
			Engineering	15%	$ 33,066
			Construction Administration	12%	$ 26,453
				GRAND TOTAL:	**$ 291,000**

ASSUMPTIONS:
Mobilization equals 7 percent of the Subtotal.
Shoring or Extra Excavation Class B square footage assumed to be the linear feet (of pipe to be installed) multiplied by 4' (depth of trench).
Erosion Control assumed to be 0.5 percent of Subtotal ($500 minimum).
Pipe installation costs include bedding and backfill.
Fire Hydrants assumed to be installed every 300 feet on all new projects.
Isolation valves assumed to be installed every 400 feet.

This project wil be completed in undeveloped area. Therefore traffic control and street restoration are not included.

Parametrix, Inc.

City of Sumner
Preliminary Cost Opinion Worksheet

Project: D2 - Rainier Street Replacement
Prepared by: A. Porrini Date: 6/22/2009

Item Number	Description	Quantity	Unit	Unit Price	Total
1	Mobilization	1	LS	$4,500.00	$4,500
2	Traffic Control	3	DAY	$800.00	$2,400
3	Shoring or Extra Excavation Class B	1,480	SF	$1.00	$1,480
4	Erosion Control	1	LS	$500.00	$500
5	Saw Cutting	800	LF	$2.50	$2,000
6	CSTC	55	CY	$50.00	$2,750
7	HMA Cl. 1/2" PG 64-22	58	TON	$120.00	$6,960
8	Cl. 52 DI Pipe for Water Main 6-In. Diam.	370	LF	$75.00	$27,750
9	Hydrant Assembly	2	EA	$4,000.00	$8,000
10	Connect to Existing	2	EA	$3,500.00	$7,000
11	Testing & Disinfection	370	LF	$1.00	$370
12	Locate Existing Utilities	1	LS	$2,500.00	$2,500
13					$0
14					$0
15					$0
16					$0
17					$0
18					$0
19					$0
				Subtotal	**$ 66,210**
				Contingency 30%	$ 19,863
				Sales Tax 9.3%	$ 6,158
				Planning Level Construction Cost	**$ 92,231**
				Administration 5%	$ 4,612
				Engineering 15%	$ 13,835
				Construction Administration 12%	$ 11,068
				GRAND TOTAL:	**$ 122,000**

ASSUMPTIONS:
Mobilization equals 7 percent of the Subtotal.
Traffic Control assuming two flaggers at $40/day for 8 hours a day.
Shoring or Extra Excavation Class B square footage assumed to be the linear feet (of pipe to be installed) multiplied by 4' (depth of trench).
Erosion Control assumed to be 0.5 percent of Subtotal ($500 minimum).
CSTC installed at minimum 6-inch compacted depth. 0.5
HMA installed at minimum 3-inch compacted depth. 0.25
HMA density equals 155 pcf.
HMA patch width is 8 feet. 8
Pipe installation costs include bedding and backfill.
Fire Hydrants assumed to be installed every 300 feet on all new projects.

Parametrix, Inc.

City of Sumner
Preliminary Cost Opinion Worksheet

Project: D3 - Main Street and Kincaid Avenue Loop
Prepared by: A. Porrini Date: 6/22/2009

Item Number	Description	Quantity	Unit	Unit Price	Total
1	Mobilization	1	LS	$2,600.00	$2,600
2	Traffic Control	2	DAY	$800.00	$1,600
3	Shoring or Extra Excavation Class B	680	SF	$1.00	$680
4	Erosion Control	1	LS	$500.00	$500
5	Saw Cutting	400	LF	$2.50	$1,000
6	CSTC	26	CY	$50.00	$1,300
7	Cement Conc. Pavement Incl. Dowels	152	SY	$300.00	$45,600
8	Cl. 52 DI Pipe for Water Main 8-In. Diam.	170	LF	$85.00	$14,450
9	Hydrant Assembly	1	EA	$4,000.00	$4,000
10	Connect to Existing	2	EA	$3,500.00	$7,000
11	Testing & Disinfection	170	LF	$1.00	$170
12	Locate Existing Utilities	1	LS	$2,500.00	$2,500
13					$0
14					$0
15					$0
16					$0
17					$0
18					$0
19					$0

Subtotal		**$**	**81,400**
Contingency	30%	$	24,420
Sales Tax	9.3%	$	7,570
Planning Level Construction Cost		**$**	**113,390**
Administration	5%	$	5,670
Engineering	15%	$	17,009
Construction Administration	12%	$	13,607
GRAND TOTAL:		**$**	**150,000**

ASSUMPTIONS:
Mobilization equals 7 percent of the Subtotal.
Traffic Control assuming two flaggers at $40/day for 8 hours a day.
Shoring or Extra Excavation Class B square footage assumed to be the linear feet (of pipe to be installed) multiplied by 4' (depth of trench).
Erosion Control assumed to be 0.5 percent of Subtotal ($500 minimum).
CSTC installed at minimum 6-inch compacted depth. 0.5
Concrete installed at minimum 6-inch depth

Concrete patch width is 8 feet. 8
Pipe installation costs include bedding and backfill.
Fire Hydrants assumed to be installed every 300 feet on all new projects.

Parametrix, Inc.

City of Sumner
Preliminary Cost Opinion Worksheet

Project: D4 - Thompson Street and Silver Street Loop
Prepared by: A. Porrini Date: 6/22/2009

Item Number	Description	Quantity	Unit	Unit Price	Total
1	Mobilization	1	LS	$20,000.00	$20,000
2	Traffic Control	11	DAY	$800.00	$8,800
3	Shoring or Extra Excavation Class B	6,600	SF	$1.00	$6,600
4	Erosion Control	1	LS	$1,400.00	$1,400
5	Saw Cutting	1,800	LF	$2.50	$4,500
6	CSTC	134	CY	$50.00	$6,700
7	HMA Cl. 1/2" PG 64-22	140	TON	$120.00	$16,800
8	Cl. 52 DI Pipe for Water Main 6-In. Diam.	1,650	LF	$75.00	$123,750
9	Hydrant Assembly	6	EA	$4,000.00	$24,000
10	Gate Valve, 6-In. Diam.	6	EA	$1,200.00	$7,200
11	Service Connection 3/4-In. Diam.	28	EA	$1,600.00	$44,800
12	Connect to Existing	4	EA	$3,500.00	$14,000
13	Testing & Disinfection	1,650	LF	$1.00	$1,650
14	Locate Existing Utilities	1	LS	$2,500.00	$2,500
15					$0
16					$0
17					$0
18					$0
19					$0
				Subtotal	**$ 282,700**
			Contingency	30%	$ 84,810
			Sales Tax	9.3%	$ 26,291
			Planning Level Construction Cost		**$ 393,801**
			Administration	5%	$ 19,690
			Engineering	15%	$ 59,070
			Construction Administration	12%	$ 47,256
				GRAND TOTAL:	**$ 520,000**

ASSUMPTIONS:
Mobilization equals 7 percent of the Subtotal.
Traffic Control assuming two flaggers at $40/day for 8 hours a day.
Shoring or Extra Excavation Class B square footage assumed to be the linear feet (of pipe to be installed) multiplied by 4' (depth of trench).
Erosion Control assumed to be 0.5 percent of Subtotal ($500 minimum).
CSTC installed at minimum 6-inch compacted depth. 0.5
HMA installed at minimum 3-inch compacted depth. 0.25
HMA density equals 155 pcf.
HMA patch width is 8 feet. 8
Pipe installation costs include bedding and backfill.
Fire Hydrants assumed to be installed every 300 feet on all new projects.
Service connection from new water main to ROW line. Includes installing new meter and setter.

This estimate does not include land acquisition or easements.
Parametrix, Inc.

City of Sumner
Preliminary Cost Opinion Worksheet

Project: D5 - West Valley Highway
Prepared by: A. Porrini Date: 6/22/2009

Item Number	Description	Quantity	Unit	Unit Price	Total
1	Mobilization	1	LS	$7,700.00	$7,700
2	Traffic Control	4	DAY	$640.00	$2,560
3	Shoring or Extra Excavation Class B	2,040	SF	$1.00	$2,040
4	Erosion Control	1	LS	$550.00	$550
5	Saw Cutting	1,100	LF	$2.50	$2,750
6	CSTC	101	CY	$50.00	$5,050
7	HMA Cl. 1/2" PG 64-22	159	TON	$120.00	$19,080
8	Cl. 52 DI Pipe for Water Main 12-In. Diam.	510	LF	$100.00	$51,000
9	Hydrant Assembly	2	EA	$4,000.00	$8,000
10	Gate Valve, 12-In. Diam.	2	EA	$2,100.00	$4,200
11	Connect to Existing	2	EA	$2,500.00	$5,000
12	Testing & Disinfection	510	LF	$1.00	$510
13	Locate Existing Utilities	1	LS	$2,500.00	$2,500
14					$0
15					$0
16					$0
17					$0
18					$0
19					$0
				Subtotal	**$ 110,940**
				Contingency 30%	$ 33,282
				Sales Tax 9.3%	$ 10,317
				Planning Level Construction Cost	**$ 154,539**
				Administration 5%	$ 7,727
				Engineering 15%	$ 23,181
				Construction Administration 12%	$ 18,545
				GRAND TOTAL:	**$ 204,000**

ASSUMPTIONS:
Mobilization equals 7 percent of the Subtotal.
Traffic Control assuming two flaggers at $40/day for 8 hours a day.
Shoring or Extra Excavation Class B square footage assumed to be the linear feet (of pipe to be installed) multiplied by 4' (depth of trench).
Erosion Control assumed to be 0.5 percent of Subtotal ($500 minimum).
CSTC installed at minimum 8-inch compacted depth. 0.67
HMA installed at minimum 3-inch compacted depth. 0.5
HMA density equals 155 pcf.
HMA patch width is 8 feet. 8
Pipe installation costs include bedding and backfill.
Fire Hydrants assumed to be installed every 300 feet on all new projects.
Isolation valves assumed to be installed every 400 feet.

Parametrix, Inc.

City of Sumner
Preliminary Cost Opinion Worksheet

Project: D6 - 30th Street East, South of 24th Street East Loop
Prepared by: A. Porrini Date: 6/22/2009

Item Number	Description	Quantity	Unit	Unit Price	Total
1	Mobilization	1	LS	$5,200.00	$5,200
2	Shoring or Extra Excavation Class B	2,400	SF	$1.00	$2,400
3	Erosion Control	1	LS	$500.00	$500
4	Cl. 52 DI Pipe for Water Main 12-In. Diam.	600	LF	$100.00	$60,000
5	Hydrant Assembly	2	EA	$4,000.00	$8,000
6	Gate Valve, 12-In. Diam.	2	EA	$2,100.00	$4,200
7	Connect to Existing	2	EA	$3,500.00	$7,000
8	Testing & Disinfection	600	LF	$1.00	$600
9	Locate Existing Utilities	1	LS	$2,500.00	$2,500
10					$0
11					$0
12					$0
13					$0
14					$0
15					$0
16					$0
17					$0
18					$0
19					$0
				Subtotal	**$ 90,400**
			Contingency	30%	$ 27,120
			Sales Tax	9.3%	$ 8,407
			Planning Level Construction Cost		**$ 125,927**
			Administration	5%	$ 6,296
			Engineering	15%	$ 18,889
			Construction Administration	12%	$ 15,111
				GRAND TOTAL:	**$ 167,000**

ASSUMPTIONS:
Mobilization equals 7 percent of the Subtotal.
Shoring or Extra Excavation Class B square footage assumed to be the linear feet (of pipe to be installed) multiplied by 4' (depth of trench).
Erosion Control assumed to be 0.5 percent of Subtotal ($500 minimum).
Pipe installation costs include bedding and backfill.
Fire Hydrants assumed to be installed every 300 feet on all new projects.
Isolation valves assumed to be installed every 400 feet.

This project wil be completed in an undeveloped area so no traffic control and street restoration are included.

Parametrix, Inc.

City of Sumner
Preliminary Cost Opinion Worksheet

Project: D7 - 29th Street East and 32nd Street East Loop
Prepared by: A. Porrini Date: 6/22/2009

Item Number	Description	Quantity	Unit	Unit Price	Total
1	Mobilization	1	LS	$6,000.00	$6,000
2	Shoring or Extra Excavation Class B	2,400	SF	$1.00	$2,400
3	Erosion Control	1	LS	$500.00	$500
4	Cl. 52 DI Pipe for Water Main 8-In. Diam.	600	LF	$85.00	$51,000
5	Hydrant Assembly	2	EA	$4,000.00	$8,000
6	Gate Valve, 8-In. Diam.	6	EA	$1,800.00	$10,800
7	Connect to Existing	2	EA	$3,500.00	$7,000
8	Testing & Disinfection	600	LF	$1.00	$600
9	Locate Existing Utilities	1	LS	$2,500.00	$2,500
10					$0
11					$0
12					$0
13					$0
14					$0
15					$0
16					$0
17					$0
18					$0
19					$0
				Subtotal	**$ 88,800**
			Contingency	30%	$ 26,640
			Sales Tax	9.3%	$ 8,258
			Planning Level Construction Cost		**$ 123,698**
			Administration	5%	$ 6,185
			Engineering	15%	$ 18,555
			Construction Administration	12%	$ 14,844
				GRAND TOTAL:	**$ 164,000**

ASSUMPTIONS:
Mobilization equals 7 percent of the Subtotal.
Shoring or Extra Excavation Class B square footage assumed to be the linear feet (of pipe to be installed) multiplied by 4' (depth of trench).
Erosion Control assumed to be 0.5 percent of Subtotal ($500 minimum).
Pipe installation costs include bedding and backfill.
Fire Hydrants assumed to be installed every 300 feet on all new projects.

This project wil be completed in an undeveloped area so no traffic control and street restoration are included.

Parametrix, Inc.

City of Sumner
Preliminary Cost Opinion Worksheet

Project: D8 - Extend from 149th Avenue to East Valley Highway
Prepared by: A. Porrini Date: 6/22/2009

Item Number	Description	Quantity	Unit	Unit Price	Total
1	Mobilization	1	LS	$62,000.00	$62,000
2	Shoring or Extra Excavation Class B	4,800	SF	$1.00	$4,800
3	Erosion Control	1	LS	$4,500.00	$4,500
4	Cl. 52 DI Pipe for Water Main 12-In. Diam.	1,200	LF	$100.00	$120,000
5	Hydrant Assembly	4	EA	$4,000.00	$16,000
6	Gate Valve, 12-In. Diam.	3	EA	$2,100.00	$6,300
7	Connect to Existing	2	EA	$3,500.00	$7,000
8	Testing & Disinfection	1,200	LF	$1.00	$1,200
9	Locate Existing Utilities	1	LS	$2,500.00	$2,500
10					$0
11					$0
12					$0
13					$0
14					$0
15					$0
16					$0
17					$0
18					$0
19					$0
				Subtotal	**$ 224,300**
			Contingency	30%	$ 67,290
			Sales Tax	9.3%	$ 20,860
			Planning Level Construction Cost		**$ 312,450**
			Administration	5%	$ 15,622
			Engineering	15%	$ 46,867
			Construction Administration	12%	$ 37,494
				GRAND TOTAL:	**$ 413,000**

ASSUMPTIONS:
Mobilization equals 7 percent of the Subtotal.
Shoring or Extra Excavation Class B square footage assumed to be the linear feet (of pipe to be installed) multiplied by 4' (depth of trench).
Erosion Control assumed to be 0.5 percent of Subtotal ($500 minimum).
Pipe installation costs include bedding and backfill.
Fire Hydrants assumed to be installed every 300 feet on all new projects.
Isolation valves assumed to be installed every 400 feet.

This project wil be completed in an undeveloped area so no traffic control and street restoration are included.

Parametrix, Inc.

City of Sumner
Preliminary Cost Opinion Worksheet

Project: D9 - East Valley Highway From Salmon Creek to CTI
Prepared by: A. Porrini Date: 6/22/2009

Item Number	Description	Quantity	Unit	Unit Price	Total
1	Mobilization	1	LS	$95,000.00	$95,000
2	Traffic Control	36	DAY	$640.00	$23,040
3	Shoring or Extra Excavation Class B	21,120	SF	$1.00	$21,120
4	Erosion Control	1	LS	$7,000.00	$7,000
5	Saw Cutting	10,600	LF	$2.50	$26,500
6	CSTC	1043	CY	$50.00	$52,150
7	HMA Cl. 1/2" PG 64-22	1637	TON	$120.00	$196,440
8	Cl. 52 DI Pipe for Water Main 16-In. Diam.	5,280	LF	$150.00	$792,000
9	Hydrant Assembly	18	EA	$4,000.00	$72,000
10	Butterfly Valve, 16-In. Diam.	14	EA	$3,000.00	$42,000
11	Connect to Existing	2	EA	$3,500.00	$7,000
12	Testing & Disinfection	5,280	LF	$1.00	$5,280
13	Locate Existing Utilities	1	LS	$6,000.00	$6,000
14					$0
15					$0
16					$0
17					$0
18					$0
19					$0

Subtotal		**$**	**1,345,530**
Contingency	30%	$	403,659
Sales Tax	9.3%	$	125,134
Planning Level Construction Cost		**$**	**1,874,323**
Administration	5%	$	93,716
Engineering	15%	$	281,148
Construction Administration	12%	$	224,919
GRAND TOTAL:		**$**	**2,475,000**

ASSUMPTIONS:
Mobilization equals 7 percent of the Subtotal.
Traffic Control assuming two flaggers at $40/day for 8 hours a day.
Shoring or Extra Excavation Class B square footage assumed to be the linear feet (of pipe to be installed) multiplied by 4' (depth of trench).
Erosion Control assumed to be 0.5 percent of Subtotal ($500 minimum).
CSTC installed at minimum 8-inch compacted depth. 0.67
HMA installed at minimum 6-inch compacted depth. 0.5
HMA density equals 155 pcf.
HMA patch width is 8 feet. 8
Pipe installation costs include bedding and backfill.
Fire Hydrants assumed to be installed every 300 feet on all new projects.
Isolation valves assumed to be installed every 400 feet.

Parametrix, Inc.

City of Sumner
Preliminary Cost Opinion Worksheet

Project: D10 - East Valley Highway from 24th Street East to CTI
Prepared by: A. Porrini Date: 6/22/2009

Item Number	Description	Quantity	Unit	Unit Price	Total
1	Mobilization	1	LS	$24,000.00	$24,000
2	Traffic Control	9	DAY	$600.00	$5,400
3	Shoring or Extra Excavation Class B	5,200	SF	$1.00	$5,200
4	Erosion Control	1	LS	$2,000.00	$2,000
5	Saw Cutting	2,600	LF	$2.50	$6,500
6	CSTC	257	CY	$50.00	$12,850
7	HMA Cl. 1/2" PG 64-22	403	TON	$120.00	$48,360
8	Cl. 52 DI Pipe for Water Main 16-In. Diam.	1,300	LF	$150.00	$195,000
9	Hydrant Assembly	5	EA	$4,000.00	$20,000
10	Butterfly Valve, 16-In. Diam.	4	EA	$3,000.00	$12,000
11	Connect to Existing	2	EA	$3,500.00	$7,000
12	Testing & Disinfection	1,300	LF	$1.00	$1,300
13	Locate Existing Utilities	1	LS	$2,500.00	$2,500
14					$0
15					$0
16					$0
17					$0
18					$0
19					$0
				Subtotal	**$ 342,110**
			Contingency	30%	$ 102,633
			Sales Tax	9.3%	$ 31,816
			Planning Level Construction Cost		**$ 476,559**
			Administration	5%	$ 23,828
			Engineering	15%	$ 71,484
			Construction Administration	12%	$ 57,187
				GRAND TOTAL:	**$ 630,000**

ASSUMPTIONS:
Mobilization equals 7 percent of the Subtotal.
Traffic Control assuming two flaggers at $40/day for 8 hours a day.
Shoring or Extra Excavation Class B square footage assumed to be the linear feet (of pipe to be installed) multiplied by 4' (depth of trench).
Erosion Control assumed to be 0.5 percent of Subtotal ($500 minimum).
CSTC installed at minimum 8-inch compacted depth. 0.67
HMA installed at minimum 6-inch compacted depth. 0.5
HMA density equals 155 pcf.
HMA patch width is 8 feet. 8
Pipe installation costs include bedding and backfill.
Fire Hydrants assumed to be installed every 300 feet on all new projects.
Isolation valves assumed to be installed every 400 feet.

Parametrix, Inc.

City of Sumner
Preliminary Cost Opinion Worksheet

Project: D11 - 8th Street East
Prepared by: A. Porrini Date: 6/22/2009

Item Number	Description	Quantity	Unit	Unit Price	Total
1	Mobilization	1	LS	$19,000.00	$19,000
2	Shoring or Extra Excavation Class B	7,800	SF	$1.00	$7,800
3	Erosion Control	1	LS	$1,300.00	$1,300
4	Cl. 52 DI Pipe for Water Main 12-In. Diam.	1,950	LF	$100.00	$195,000
5	Hydrant Assembly	7	EA	$4,000.00	$28,000
6	Gate Valve, 12-In. Diam.	5	EA	$2,100.00	$10,500
7	Connect to Existing	1	EA	$3,500.00	$3,500
8	Testing & Disinfection	1,950	LF	$1.00	$1,950
9	Locate Existing Utilities	1	LS	$2,500.00	$2,500
10					$0
11					$0
12					$0
13					$0
14					$0
15					$0
16					$0
17					$0
18					$0
19					$0

Subtotal		**$**	**269,550**
Contingency	30%	$	80,865
Sales Tax	9.3%	$	25,068
Planning Level Construction Cost		**$**	**375,483**
Administration	5%	$	18,774
Engineering	15%	$	56,322
Construction Administration	12%	$	45,058
GRAND TOTAL:		**$**	**496,000**

ASSUMPTIONS:
Mobilization equals 7 percent of the Subtotal.
Shoring or Extra Excavation Class B square footage assumed to be the linear feet (of pipe to be installed) multiplied by 4' (depth of trench).
Erosion Control assumed to be 0.5 percent of Subtotal ($500 minimum).
Pipe installation costs include bedding and backfill.
Fire Hydrants assumed to be installed every 300 feet on all new projects.
Isolation valves assumed to be installed every 400 feet.

This project wil be completed as part of a street improvement project. Therefore traffic control and street restoration are not included.

Parametrix, Inc.

City of Sumner
Preliminary Cost Opinion Worksheet

Project: D12 - 8th Street East and East Valley Hwy Loop
Prepared by: A. Porrini Date: 6/22/2009

Item Number	Description	Quantity	Unit	Unit Price	Total
1	Mobilization	1	LS	$33,000.00	$33,000
2	Shoring or Extra Excavation Class B	11,200	SF	$1.00	$11,200
3	Erosion Control	1	LS	$2,300.00	$2,300
4	Saw Cutting	2,000	LF	$2.50	$5,000
5	CSTC	149	CY	$50.00	$7,450
6	HMA Cl. 1/2" PG 64-22	155	TON	$120.00	$18,600
7	Cl. 52 DI Pipe for Water Main 12-In. Diam.	2,800	LF	$100.00	$280,000
8	Hydrant Assembly	10	EA	$4,000.00	$40,000
9	Gate Valve, 12-In. Diam.	7	EA	$2,100.00	$14,700
10	Connect to Existing	2	EA	$3,500.00	$7,000
11	Testing & Disinfection	2,800	LF	$1.00	$2,800
12	Locate Existing Utilities	1	LS	$2,500.00	$2,500
13	Bore and Jack Under Railroad	150	LF	$300.00	$45,000
14					$0
15					$0
16					$0
17					$0
18					$0
19					$0

Subtotal		**$**	**469,550**
Contingency	30%	$	140,865
Sales Tax	9.3%	$	43,668
Planning Level Construction Cost		**$**	**654,083**
Railroad Crossing Permit		$	15,000
Administration	5%	$	32,704
Engineering	15%	$	98,112
Construction Administration	12%	$	78,490
GRAND TOTAL:		**$**	**879,000**

ASSUMPTIONS:
Mobilization equals 7 percent of the Subtotal.
Shoring or Extra Excavation Class B square footage assumed to be the linear feet (of pipe to be installed) multiplied by 4' (depth of trench).
Erosion Control assumed to be 0.5 percent of Subtotal ($500 minimum).
CSTC installed at minimum 6-inch compacted depth. 0.5
HMA installed at minimum 3-inch compacted depth. 0.25
HMA density equals 155 pcf.
HMA patch width is 8 feet. 8
Pipe installation costs include bedding and backfill.
Fire Hydrants assumed to be installed every 300 feet on all new projects.
Isolation valves assumed to be installed every 400 feet.

A majority of this project wil be completed in undeveloped area. Therefore traffic control is not included.
Street restoration is included for the portion of pipe installed in the golf course parking lot.
Parametrix, Inc.

City of Sumner
Preliminary Cost Opinion Worksheet

Project: D13 - Valley Avenue E from the West Well to Houston Road
Prepared by: A. Porrini Date: 6/22/2009

Item Number	Description	Quantity	Unit	Unit Price	Total
1	Mobilization	1	LS	$52,000.00	$52,000
2	Traffic Control	28	DAY	$640.00	$17,920
3	Shoring or Extra Excavation Class B	16,800	SF	$1.00	$16,800
4	Erosion Control	1	LS	$4,000.00	$4,000
5	Saw Cutting	4,200	LF	$2.50	$10,500
6	CSTC	830	CY	$50.00	$41,500
7	HMA Cl. 1/2" PG 64-22	1302	TON	$120.00	$156,240
8	Cl. 52 DI Pipe for Water Main 8-In. Diam.	4,200	LF	$85.00	$357,000
9	Hydrant Assembly	14	EA	$4,000.00	$56,000
10	Gate Valve, 8-In. Diam.	11	EA	$1,800.00	$19,800
11	Connect to Existing	2	EA	$3,500.00	$7,000
12	Testing & Disinfection	4,200	LF	$1.00	$4,200
13	Locate Existing Utilities	1	LS	$5,000.00	$5,000
14					$0
15					$0
16					$0
17					$0
18					$0
19					$0

Subtotal		**$**	**747,960**
Contingency	30%	$	224,388
Sales Tax	9.3%	$	69,560
Planning Level Construction Cost		**$**	**1,041,908**
Administration	5%	$	52,095
Engineering	15%	$	156,286
Construction Administration	12%	$	125,029
GRAND TOTAL:		**$**	**1,376,000**

ASSUMPTIONS:

Mobilization equals 7 percent of the Subtotal.
Traffic Control assuming two flaggers at $40/day for 8 hours a day.
Shoring or Extra Excavation Class B square footage assumed to be the linear feet (of pipe to be installed) multiplied by 4' (depth of trench).
Erosion Control assumed to be 0.5 percent of Subtotal ($500 minimum).
CSTC installed at minimum 8-inch compacted depth. 0.67
HMA installed at minimum 6-inch compacted depth. 0.5
HMA density equals 155 pcf.
HMA patch width is 8 feet. 8
Pipe installation costs include bedding and backfill.
Fire Hydrants assumed to be installed every 300 feet on all new projects.
Isolation valves assumed to be installed every 400 feet.

Parametrix, Inc.

City of Sumner
Preliminary Cost Opinion Worksheet

Project: D14 - Fryar Avenue / Main Street Intersection
Prepared by: A. Porrini Date: 6/22/2009

Item Number	Description	Quantity	Unit	Unit Price	Total
1	Shoring or Extra Excavation Class B	3,760	SF	$1.00	$3,760
2	Erosion Control	1	LS	$600.00	$600
3	Saw Cutting	1,000	LF	$2.50	$2,500
4	CSTC	131	CY	$50.00	$6,550
5	HMA Cl. 1/2" PG 64-22	205	TON	$120.00	$24,600
6	Cl. 52 DI Pipe for Water Main 8-In. Diam.	660	LF	$75.00	$49,500
7	Cl. 52 DI Pipe for Water Main 12-In. Diam.	280	LF	$95.00	$26,600
8	Hydrant Assembly	1	EA	$4,000.00	$4,000
9	Gate Valve, 8-In. Diam.	3	EA	$1,800.00	$5,400
10	Gate Valve, 12-In. Diam.	5	EA	$2,100.00	$10,500
11	Connect to Existing	4	EA	$3,500.00	$14,000
12	Testing & Disinfection	940	LF	$1.00	$940
13					$0
14					$0
15					$0
16					$0
17					$0
18					$0
19					$0
				Subtotal	**$ 148,950**
			Contingency	10%	$ 14,895
			Sales Tax	9.3%	$ 13,852
			Planning Level Construction Cost		**$ 177,697**
			Administration	5%	$ 8,885
			Construction Administration	12%	$ 21,324
				GRAND TOTAL:	**$ 208,000**

ASSUMPTIONS:

Shoring or Extra Excavation Class B square footage assumed to be the linear feet (of pipe to be installed) multiplied by 4' (depth of trench).
Erosion Control assumed to be 0.5 percent of Subtotal ($500 minimum).
Pipe installation costs include bedding and backfill.
CSTC installed at minimum 8-inch compacted depth. 0.67
HMA installed at minimum 6-inch compacted depth. 0.5
HMA density equals 155 pcf.
HMA patch width is 8 feet. 8

Parametrix, Inc.

City of Sumner
Preliminary Cost Opinion Worksheet

Project: D15 - Riverside Dr &151st Ave
Prepared by: A. Porrini Date: 9/29/2009

Item Number	Description	Quantity	Unit	Unit Price	Total
1	Shoring or Extra Excavation Class B	4,400	SF	$1.00	$4,400
2	Traffic Control	10	DAY	$800.00	$8,000
3	Erosion Control	1	LS	$700.00	$700
4	Saw Cutting	1,100	LF	$2.50	$2,750
5	CSTC	82	CY	$50.00	$4,100
6	HMA Cl. 1/2" PG 64-22	171	TON	$120.00	$20,520
7	Cl. 52 DI Pipe for Water Main 8-In. Diam.	1,100	LF	$75.00	$82,500
8	Hydrant Assembly	3	EA	$4,000.00	$12,000
9	Gate Valve, 8-In. Diam.	5	EA	$1,800.00	$9,000
10	Connect to Existing	1	EA	$3,500.00	$3,500
11	Testing & Disinfection	1,100	LF	$1.00	$1,100
12	Connect to Existing in SR 162	1	LS	$10,000.00	$10,000
13					$0
14					$0
15					$0
16					$0
17					$0
18					$0
				Subtotal	**$ 158,570**
			Contingency	10%	$ 15,857
			Sales Tax	9.3%	$ 14,747
			Planning Level Construction Cost		**$ 189,174**
			Administration	5%	$ 9,459
			Construction Administration	12%	$ 22,701
				GRAND TOTAL:	**$ 222,000**

ASSUMPTIONS:

Shoring or Extra Excavation Class B square footage assumed to be the linear feet (of pipe to be installed) multiplied by 4' (depth of trench).
Erosion Control assumed to be 0.5 percent of Subtotal ($500 minimum).
Pipe installation costs include bedding and backfill.
CSTC installed at minimum 3-inch compacted depth. 0.25
HMA installed at minimum 3-inch compacted depth. 0.25
HMA density equals 155 pcf.
HMA patch width is 8 feet. 8

Parametrix, Inc.

City of Sumner
Preliminary Cost Opinion Worksheet

Project: D16 - Parker Rd and 62nd St Ct E
Prepared by: A. Porrini Date: 9/29/2009

Item Number	Description	Quantity	Unit	Unit Price	Total
1	Shoring or Extra Excavation Class B	800	SF	$1.00	$800
2	Traffic Control	10	DAY	$800.00	$8,000
3	Erosion Control	1	LS	$500.00	$500
4	Saw Cutting	200	LF	$2.50	$500
5	CSTC	40	CY	$50.00	$2,000
6	HMA Cl. 1/2" PG 64-22	62	TON	$120.00	$7,440
7	Cl. 52 DI Pipe for Water Main 8-In. Diam.	200	LF	$75.00	$15,000
8	Hydrant Assembly	1	EA	$4,000.00	$4,000
9	Gate Valve, 8-In. Diam.	2	EA	$1,800.00	$3,600
10	Connect to Existing	2	EA	$3,500.00	$7,000
11	Testing & Disinfection	200	LF	$1.00	$200
12					$0
13					$0
14					$0
15					$0
16					$0
17					$0
18					$0
				Subtotal	**$ 49,040**
				Contingency 10%	$ 4,904
				Sales Tax 9.3%	$ 4,561
				Planning Level Construction Cost	**$ 58,505**
				Administration 5%	$ 2,925
				Construction Administration 12%	$ 7,021
				GRAND TOTAL:	**$ 69,000**

ASSUMPTIONS:

Shoring or Extra Excavation Class B square footage assumed to be the linear feet (of pipe to be installed) multiplied by 4' (depth of trench).
Erosion Control assumed to be 0.5 percent of Subtotal ($500 minimum).
Pipe installation costs include bedding and backfill.
CSTC installed at minimum 8-inch compacted depth. 0.67
HMA installed at minimum 6-inch compacted depth. 0.5
HMA density equals 155 pcf.
HMA patch width is 8 feet. 8

Parametrix, Inc.

City of Sumner
Preliminary Cost Opinion Worksheet

Project: D17 - Kincaid Ave, Maple St to Academy St
Prepared by: A. Porrini Date: 9/29/2009

Item Number	Description	Quantity	Unit	Unit Price	Total
1	Shoring or Extra Excavation Class B	1,900	SF	$1.00	$1,900
2	Traffic Control	15	DAY	$800.00	$12,000
3	Erosion Control	1	LS	$500.00	$500
4	Saw Cutting	500	LF	$2.50	$1,250
5	CSTC	94	CY	$50.00	$4,700
6	Cement Conc. Pavement Incl. Dowels	423	SY	$300.00	$126,900
7	Cl. 52 DI Pipe for Water Main 8-In. Diam.	475	LF	$75.00	$35,625
8	Hydrant Assembly	1	EA	$4,000.00	$4,000
9	Gate Valve, 8-In. Diam.	2	EA	$1,800.00	$3,600
10	Connect to Existing	2	EA	$3,500.00	$7,000
11	Testing & Disinfection	475	LF	$1.00	$475
12					
13					$0
14					$0
15					$0
16					$0
17					$0
18					$0

Subtotal		**$**	**197,950**
Contingency	10%	$	19,795
Sales Tax	9.3%	$	18,409
Planning Level Construction Cost		**$**	**236,154**
Administration	5%	$	11,808
Construction Administration	12%	$	28,339
GRAND TOTAL:		**$**	**277,000**

ASSUMPTIONS:

Shoring or Extra Excavation Class B square footage assumed to be the linear feet (of pipe to be installed) multiplied by 4' (depth of trench).
Erosion Control assumed to be 0.5 percent of Subtotal ($500 minimum).
Pipe installation costs include bedding and backfill.

CSTC installed at minimum 8-inch compacted depth.	0.67
Concrete installed at minimum 6-inch depth	0.5
Concrete patch width is 8 feet.	8

Parametrix, Inc.

City of Sumner
Preliminary Cost Opinion Worksheet

Project: D18 - 140th Avenue East and 20th Street East
Prepared by: A. Porrini Date: 9/29/2009

Item Number	Description	Quantity	Unit	Unit Price	Total
1	Shoring or Extra Excavation Class B	400	SF	$1.00	$400
2	Traffic Control	2	DAY	$800.00	$1,600
3	Erosion Control	1	LS	$500.00	$500
4	Saw Cutting	100	LF	$2.50	$250
5	CSTC	15	CY	$50.00	$750
6	HMA Cl. 1/2" PG 64-22	31	TON	$120.00	$3,720
7	Cl. 52 DI Pipe for Water Main 8-In. Diam.	100	LF	$75.00	$7,500
8	Hydrant Assembly	1	EA	$4,000.00	$4,000
9	Gate Valve, 8-In. Diam.	2	EA	$1,800.00	$3,600
10	Connect to Existing	2	EA	$3,500.00	$7,000
11	Testing & Disinfection	100	LF	$1.00	$100
12					
13					$0
14					$0
15					$0
16					$0
17					$0
18					$0
				Subtotal	**$ 29,420**
			Contingency	10%	$ 2,942
			Sales Tax	9.3%	$ 2,736
			Planning Level Construction Cost		**$ 35,098**
			Administration	5%	$ 1,755
			Construction Administration	12%	$ 4,212
				GRAND TOTAL:	**$ 42,000**

ASSUMPTIONS:

Shoring or Extra Excavation Class B square footage assumed to be the linear feet (of pipe to be installed) multiplied by 4' (depth of trench).
Erosion Control assumed to be 0.5 percent of Subtotal ($500 minimum).
Pipe installation costs include bedding and backfill.
CSTC installed at minimum 6-inch compacted depth. 0.50
HMA installed at minimum 6-inch compacted depth. 0.5
HMA density equals 155 pcf.
HMA patch width is 8 feet. 8

Parametrix, Inc.

City of Sumner
Preliminary Cost Opinion Worksheet

Project: S1 - West Well Improvements
Prepared by: A. Porrini Date: 6/22/2009

Item Number	Description	Quantity	Unit	Unit Price	Total
1	Wellhead Protection Plan	1	LS	$8,000.00	$8,000
2	Source Approval/Project Report	1	LS	$6,000.00	$6,000
3	Aquifer Testing	1	LS	$10,000.00	$10,000
4	Well Rebabilitation	1	LS	$15,000.00	$15,000
5	Piping upgrades, sitework	1	LS	$20,000.00	$20,000
6	Telemetry Improvements	1	LS	$60,000.00	$60,000
7	Electrical	1	LS	$40,000.00	$40,000
8	Treatment/Control Building	600	SF	$200.00	$120,000
9	Treatment Filters (Green Sand)	1	LS	$125,000.00	$125,000
10	400 gpm Submersible Pump/Piping	1	LS	$36,000	$36,000
11	Upgrade Electrical Service	1	LS	$25,000	$25,000
12					$0
13					$0
14					$0
15					$0
16					$0
17					$0
18					$0
19					$0
				Subtotal	**$ 465,000**
			Contingency	30%	$ 139,500
			Sales Tax	9.3%	$ 43,245
			Planning Level Construction Cost		**$ 647,745**
			Administration	5%	$ 32,387
			Engineering/Programming/Hydrogeology	25%	$ 161,936
			Construction Administration	12%	$ 77,729
				GRAND TOTAL:	**$ 920,000**

ASSUMPTIONS:

Investigation of the existing well will indicate that the well casing is in good shape. Well rehabilitation activities will be limited to cleaning the existing casing and installing a new wellhead, discharge piping, and well pump.

This project does not include upgrading existing distribution piping.

Parametrix, Inc.

City of Sumner
Preliminary Cost Opinion Worksheet

Project: S2 - South Well Improvements
Prepared by: A. Porrini Date: 6/22/2009

Item Number	Description	Quantity	Unit	Unit Price	Total
1	Project Report (Hydrogeologist)	1	LS	$12,000.00	$12,000
2	Aquifer Testing	1	LS	$18,000.00	$18,000
3	Well Rebabilitation	1	LS	$15,000.00	$15,000
4	1000 gpm Submersible Pump/Piping	1	LS	$50,000.00	$50,000
5	Electrical	1	LS	$15,000.00	$15,000
6	New Pump House (12ft x 20ft, two rooms)	240	SF	$240.00	$57,600
7	New Meter, Control Valve, Piping, etc	1	LS	$20,000.00	$20,000
8	Site Work	1	LS	$6,000.00	$6,000
9	Telemetry Upgrades	1	LS	$7,500.00	$7,500
10	Cl. 52 DI Pipe for Water Main 36-In. Diam.	230	LF	$250.00	$57,500
11					$0
12					$0
13					$0
14					$0
15					$0
16					$0
17					$0
18					$0
19					$0
				Subtotal	**$ 258,600**
				Contingency 10%	$ 25,860
				Sales Tax 9.3%	$ 24,050
				Planning Level Construction Cost	**$ 308,510**
				Administration 5%	$ 15,425
				Engineering/Hydrogeology 20%	$ 61,702
				Construction Administration 12%	$ 37,021
				GRAND TOTAL:	**$ 423,000**

ASSUMPTIONS:

Investigation of the existing well will indicate that the well casing is in good shape. Well rehabilitation activities will be limited to cleaning the existing casing and installing a new wellhead, discharge piping, and well pump.

This project does not include upgrading existing distribution piping.

Telemetry improvements for the South Well will be completed prior to this project.

230 LF of 36-In. piping will be sufficient to meet CT requirements.

Parametrix, Inc.

City of Sumner
Preliminary Cost Opinion Worksheet

Project: S3 - New Well
Prepared by: A. Porrini Date: 6/22/2009

Item Number	Description	Quantity	Unit	Unit Price	Total
1	Wellhead Protection Plan	1	LS	$8,000.00	$8,000
2	Source Approval/Project Report	1	LS	$6,000.00	$6,000
3	Test and Develop Well	80	HRS	$150.00	$12,000
4	Drill 8-Inch Ob./Test Well & 4-Inch Casing	500	LF	$75.00	$37,500
5	Drill 18-inch well & 12-inch casing	500	LF	$150.00	$75,000
6	SS screen for production well	60	LS	$100.00	$6,000
7	1000 gpm Well Pump w/Piping	1	LS	$50,000.00	$50,000
8	Flow Meter , Level recorder, etc	1	LS	$18,000.00	$18,000
9	PSE Service to Site	1	LS	$25,000.00	$25,000
10	Electrical	1	LS	$32,000.00	$32,000
11	Telemetry	1	LS	$60,000.00	$60,000
12	Building	200	SF	$240.00	$48,000
13	Site Work	1	LS	$20,000.00	$20,000
14					$0
15					$0
16					$0
17					$0
18					$0
19					$0

Subtotal		**$**	**397,500**
Contingency	30%	$	119,250
Sales Tax	9.3%	$	36,968
Planning Level Construction Cost:		$	553,718
Administration	5%	$	27,686
Engineering/Programming/Hydrogeology	25%	$	138,429
Construction Administration	12%	$	66,446
GRAND TOTAL:		**$**	**787,000**

ASSUMPTIONS:
No costs to revise/acquire water rights for this well are included in the estimate.
This project does not include upgrading existing distribution piping.

Parametrix, Inc.

City of Sumner
Preliminary Cost Opinion Worksheet

Project: S4 - New Well at 148th Avenue E and 24th Street E Intersection
Prepared by: A. Porrini Date: 6/22/2009

Item Number	Description	Quantity	Unit	Unit Price	Total
1	Wellhead Protection Plan	1	LS	$8,000.00	$8,000
2	Source Approval/Project Report	1	LS	$6,000.00	$6,000
3	Test and Develop Well	80	HRS	$150.00	$12,000
4	Drill 8-Inch Observation/Test Welll & 4-Inch Casir	500	LF	$75.00	$37,500
5	Drill 18-inch well & 12-inch casing	500	LF	$150.00	$75,000
6	SS screen for production well	60	LS	$100.00	$6,000
7	1000 gpm Well Pump w/Piping	1	LS	$50,000.00	$50,000
8	Flow Meter , Level recorder, etc	1	LS	$18,000.00	$18,000
9	PSE Service to Site	1	LS	$25,000.00	$25,000
10	Electrical	1	LS	$32,000.00	$32,000
11	Telemetry	1	LS	$60,000.00	$60,000
12	Building	200	SF	$240.00	$48,000
13	Site Work	1	LS	$20,000.00	$20,000
14					$0
15					$0
16					$0
17					$0
18					$0
19					$0
				Subtotal	**$ 397,500**
				Contingency 30%	$ 119,250
				Sales Tax 9.3%	$ 36,968
				Planning Level Construction Cost:	$ 553,718
				Administration 5%	$ 27,686
				Engineering/Programming/Hydrogeology 25%	$ 138,429
				Construction Administration 12%	$ 66,446
				GRAND TOTAL:	**$ 787,000**

ASSUMPTIONS:
No costs to revise/acquire water rights for this well are included in the estimate.
This project does not include upgrading existing distribution piping.

Parametrix, Inc.

City of Sumner
Preliminary Cost Opinion Worksheet

Project: S5 - Intertie with Auburn
Prepared by: A. Porrini Date: 6/22/2009

Item Number	Description	Quantity	Unit	Unit Price	Total
1	Mobilization	1	LS	$9,000.00	$9,000
2	12" meter vault and control station	1	EA	$50,000.00	$50,000
3	Telemetry	1	LS	$20,000.00	$20,000
4	Electrical	1	LS	$25,000.00	$25,000
5	Sitework and piping	1	LS	$25,000.00	$25,000
6					$0
7					$0
8					$0
9					$0
10					$0
11					$0
12					$0
13					$0
14					$0
15					$0
16					$0
17					$0
18					$0
19					$0
				Subtotal	**$ 129,000**
			Contingency	30%	$ 38,700
			Sales Tax	9.3%	$ 11,997
			Planning Level Construction Cost		**$ 179,697**
			Administration	5%	$ 8,985
			Engineering	15%	$ 26,955
			Construction Administration	12%	$ 21,564
				GRAND TOTAL:	**$ 238,000**

ASSUMPTIONS:
Mobilization equals 7 percent of the Subtotal.
Intertie construction will not require significant retrofit to the existing distribution system.
No private land acquisition necessary.
Does not include connection or transfer fees.

Parametrix, Inc.

City of Sumner
Preliminary Cost Opinion Worksheet

Project: S6 - Intertie with Pacific
Prepared by: A. Porrini Date: 6/22/2009

Item Number	Description	Quantity	Unit	Unit Price	Total
1	Mobilization	1	LS	$6,400.00	$6,400
2	8" meter vault and control station	1	EA	$40,000.00	$40,000
3	Telemetry	1	LS	$15,000.00	$15,000
4	Electrical	1	LS	$20,000.00	$20,000
5	Sitework and piping	1	LS	$10,000.00	$10,000
6	Additional Meter at 8th St and Butte Ave	1	EA	10,000	$10,000
7					$0
8					$0
9					$0
10					$0
11					$0
12					$0
13					$0
14					$0
15					$0
16					$0
17					$0
18					$0
19					$0
				Subtotal	**$ 101,400**
			Contingency	30%	$ 30,420
			Sales Tax	9.3%	$ 9,430
			Planning Level Construction Cost		**$ 141,250**
			Administration	5%	$ 7,063
			Engineering	15%	$ 21,188
			Construction Administration	12%	$ 16,950
				GRAND TOTAL:	**$ 187,000**

ASSUMPTIONS:
Mobilization equals 7 percent of the Subtotal.
Intertie construction will not require significant retrofit to the existing distribution system.
No private land acquisition necessary.
Does not include connection or transfer fees.

Parametrix, Inc.

City of Sumner
Preliminary Cost Opinion Worksheet

Project: S7 - Water Right Modifications
Prepared by: A. Porrini Date: 6/22/2009

Item Number	Description	Quantity	Unit	Unit Price	Total
1	Cemetery Well water rights	1	LS	$16,000	$16,000
2	Change of Use of No. 2266 and 2267	1	LS	16,000	16,000
3	Change point of diversion of northern watershed	1	LS	15,000	15,000
4	Evaluation of water rights (legal)	1	LS	10,000	10,000
5					0
6					0
7					0
8					0
9					0
10					0
11					0
12					0
13					0
14					0
15					0
16					0
17					0
18					0

	Sub-total:	$	57,000
Contingency	30%	$	17,100
Sales Tax	9.3%	$	5,301
Planning Level Construction Cost		$	79,401
Administration	5%	$	3,970
Engineering	15%	$	11,910
Construction Administration	12%	$	9,528
GRAND TOTAL:		$	**105,000**

Assumptions:
Cemetery Well rights are in question due to Municipal Water Law
Spring sources have potential excessive water rights.
South Well has water right greater than existing source capacity, but Project S2 would remedy that.

Parametrix, Inc.

City of Sumner
Preliminary Cost Opinion Worksheet

Project: S8 - Additional Water Rights Acquisition
Prepared by: A. Porrini Date: 6/22/2009

Item Number	Description	Quantity	Unit	Unit Price	Total
1	Acquire additional water rights	1	LS	$ 65,000	$ 65,000
2					0
3					0
4					0
5					0
6					0
7					0
8					0
9					0
10					0
11					0
12					0
13					0
14					0
15					0
16					0
17					0
18					0
				Sub-total:	$ 65,000
			Contingency	30%	$ 19,500
			Sales Tax	9.3%	$ 6,045
			Planning Level Construction Cost		$ 90,545
			Administration	5%	$ 4,527
			Engineering	15%	$ 13,582
			Construction Administration	12%	$ 10,865
				GRAND TOTAL:	**$ 120,000**

Assumptions:
Negotiations with Cascade Water Alliance, City of Tacoma, City of Bonney Lake, City of Lakewood, and other nearby municipalities may facilitate additional water rights for Sumner.
Irrigation water rights within City limits may be available for purchase from private property owners.

Parametrix, Inc.

City of Sumner
Preliminary Cost Opinion Worksheet

Project: S9 - Intertie with Mountain View - Edgewood
Prepared by: A. Porrini Date: 6/22/2009

Item No.	Description	Quantity	Unit	Unit Cost	Amount
1	Minor Change	1	LS	$5,000	$5,000
2	Project Surveying	1	LS	$2,500	$2,500
3	Property Restoration	1	LS	$1,000	$1,000
4	Mobilization	1	LS	$26,000	$26,000
5	Removal of Structures and Obstructions	1	LS	$3,000	$3,000
6	Shoring or Extra Excavation, Class B	1	LS	$4,000	$4,000
7	Crushed Surfacing Top Course	40	TON	$35	$1,400
8	HMA Class 1/2 Inch PG 64-22	40	TON	$125	$5,000
9	10 Inch Gate Valve	2	EA	$2,500	$5,000
10	2 Inch Air Release Valve	1	EA	$3,500	$3,500
11	3" Vacuum Relief Valve	1	EA	$4,000	$4,000
12	Tapping Sleeve and Valve Assembly, 8 Inch	1	EA	$3,000	$3,000
13	DI Cl 52 Pipe for Water Main, 10 Inch	2100	LF	$100	$210,000
14	Flex-Tend Assembly, 10 Inch	1	EA	$7,200	$7,200
15	Erosion / Water Pollution Control	1	LS	$7,000	$7,000
16	Cement Curb	40	LF	$25	$1,000
17	Flow Meter in Vault	1	LS	$5,000	$5,000
18	PRV Vault (GC Systems)	1	LS	$40,000	$40,000
19	Chlorination Facility Incl. Structure	1	LS	$30,000	$30,000
				Subtotal =	**$363,600**
			Contingency	30.0%	$109,080
			Sales Tax	9.3%	$33,815
			Planning Level Construction Cost =		**$506,495**
			City Administration	5.0%	$25,325
			Engineering/Construction Management	25.0%	$126,624
			Environmental Documentation	5.0%	$25,325
			Construction Administration	12%	$60,779
				GRAND TOTAL:	**$745,000**

ASSUMPTIONS:
Mobilization equals approximately 7 percent of subtotal.
Removal of Structures and Obstructions includes all concrete and HMA removal for proposed connections.
Water main unit price includes all bedding backfill, bends, joints, tee's and thrust blocking/anchoring necessary.
Erosion / Water Pollution Control is approximately 2% of subtotal.
Minor road improvements will be made at the connection points including HMA, CSTC and Cement Curb.
All pipe appruntences are assumed to be ductile iron class 52.
Flex-Tend (Force Balanced) assembly list price is $5,560 plus freight; 20% added for install.
Flow meter cost is contingent on final flows.
GC Systems list price is $38,000 for a 10" PRV; 8" PRV will likely be needed.
Does not include connection costs/fees (as required by Mt. View-Edgewood Water Col).

Parametrix, Inc.

City of Sumner
Preliminary Cost Opinion Worksheet

Project: S10 - Springs Source Improvements
Prepared by: A. Porrini Date: 6/23/2009

Item Number	Description	Quantity	Unit	Unit Price	Total
1	Mobilization	1	LS	$32,000.00	$32,000
2	Erosion Control	1	LS	$15,000.00	$22,000
3	HDD Drilling of abandoned and new springs	500	LF	$200.00	$100,000
4	Temporary piping and flow meter for tests	10	EA	$2,000.00	$20,000
5	Test and Develop Spring	160	HRS	$150.00	$24,000
6	Restoation	1	LS	$15,000.00	$15,000
7	Repair/Replace Existing Collection Box	3	EA	$3,000.00	$9,000
8	New Collection Box	4	EA	$4,000.00	$16,000
9	8" Diam. Collection / Transmission Pipe	400	LF	$100.00	$40,000
10	Booster Pump Station (500 gpm)	1	LS	$75,000.00	$75,000
11	8" Diam. Transmission Force Main	200	LF	$120.00	$24,000
12	New Pump House (8 ft x 8 ft)	64	SF	$250.00	$16,000
13	New Flow Meter, Level Sensor, Valves, etc.	1	LS	$10,000.00	$10,000
14	Site Work	1	LS	$10,000.00	$10,000
15	Telemetry Upgrades	1	LS	$10,000.00	$10,000
16	Restoration	1	LS	5,000	$5,000
17	Electrical	1	LS	20,000	$20,000
18					$0
19					$0
				Subtotal	**$ 448,000**
			Contingency	30%	$ 134,400
			Sales Tax	9.3%	$ 41,664
			Planning Level Construction Cost		**$ 624,064**
			Administration	5%	$ 31,203
			Engineering/Hydrogeology	20%	$ 124,813
			Construction Administration	12%	$ 74,888
				GRAND TOTAL:	**$ 855,000**

ASSUMPTIONS:
Mobilization equals 7 percent of the Subtotal.
Erosion Control assumed to be 5 percent of Subtotal ($500 minimum).
10 spring sites will be drilled.
Spring sites will be drilled an average of 50 LF each.
2 days per site to test flow and water quality.
Developing springs does not include casing modifications.
Estimate includes survey and anlaysis of HDD's for springs.

Parametrix, Inc.

City of Sumner
Preliminary Cost Opinion Worksheet

Project: ST1 - Construct 2 MG Reservoir on West Hill
Prepared by: A. Porrini Date: 6/22/2009

Item Number	Description	Quantity	Unit	Unit Price	Total
1	Mobilization	1	LS	$110,000.00	$110,000
2	Erosion Control	1	LS	$8,000.00	$8,000
3	Construct 2 MG reservoir w/ foundation	2	MG	$650,000.00	$1,300,000
4	Control Building	200	SF	$175.00	$35,000
5	Site Improvements	1	LS	$50,000.00	$50,000
6	Connect to Existing System	1	LS	$10,000.00	$10,000
7	Telemetry Improvements	1	LS	$25,000.00	$25,000
8	Electrical	1	LS	$10,000.00	$10,000
9					$0
10					$0
11					$0
12					$0
13					$0
14					$0
15					$0
16					$0
17					$0
18					$0
19					$0
				Subtotal	**$ 1,548,000**
				Contingency 10%	$ 154,800
				Sales Tax 9.3%	$ 143,964
				Planning Level Construction Cost	**$ 1,846,764**
				Administration 5%	$ 92,338
				Engineering/Programming/Geotechnical 20%	$ 369,353
				Construction Administration 12%	$ 221,612
				GRAND TOTAL:	**$ 2,531,000**

ASSUMPTIONS:
Mobilization equals approximately 7 percent of subtotal.
Property for reservoir will be donated by developer.

Parametrix, Inc.

City of Sumner
Preliminary Cost Opinion Worksheet

Project: ST2 - Earthquake Control Valves and Foundation Improvements
Prepared by: A. Porrini Date: 6/22/2009

Item Number	Description	Quantity	Unit	Unit Price	Total
1	Mobilization	3	LS	$4,000.00	$12,000
2	Control Valve Vault	3	EA	$30,000.00	$90,000
3	Control Valves	3	EA	$12,000.00	$36,000
4	Misc. Piping	3	EA	$12,000.00	$36,000
5	Strapping and Foundation	1	EA	750,000	$750,000
6					$0
7					$0
8					$0
9					$0
10					$0
11					$0
12					$0
13					$0
14					$0
15					$0
16					$0
17					$0
18					$0
19					$0
				Subtotal	**$ 924,000**
			Contingency	30%	$ 277,200
			Sales Tax	9.3%	$ 85,932
			Planning Level Construction Cost		**$ 1,287,132**
			Administration	5%	$ 64,357
			Engineering	20%	$ 257,426
			Construction Administration	12%	$ 154,456
				GRAND TOTAL:	**$ 1,764,000**

ASSUMPTIONS:
Mobilization is approximately 7% of subtotal.

Parametrix, Inc.

City of Sumner
Preliminary Cost Opinion Worksheet

Project: ST3 - Reservoir Mixing
Prepared by: A. Porrini Date: 6/22/2009

Item Number	Description	Quantity	Unit	Unit Price	Total
1	Reservoir Mixing Apparatus	3	LS	$20,000.00	$60,000
2					$0
3					$0
4					$0
5					$0
6					$0
7					$0
8					$0
9					$0
10					$0
11					$0
12					$0
13					$0
14					$0
15					$0
16					$0
17					$0
18					$0
19					$0
				Subtotal	**$ 60,000**
				Contingency 30%	$ 18,000
				Sales Tax 9.3%	$ 5,580
				Planning Level Construction Cost	**$ 83,580**
				Administration 5%	$ 4,179
				Engineering 10%	$ 8,358
				Construction Administration 12%	$ 10,030
				GRAND TOTAL:	**$ 107,000**

ASSUMPTIONS:

Parametrix, Inc.

City of Sumner
Preliminary Cost Opinion Worksheet

Project: O&M1 - Meter Replacement Program - 10 Years
Prepared by: A. Porrini Date: 6/22/2009

Item Number	Description	Quantity	Unit	Unit Price	Total
1	Replace service meters with touch-tone	1500	EA	$180.00	$270,000
2					$0
3					$0
4					$0
5					$0
6					$0
7					$0
8					$0
9					$0
10					$0
11					$0
12					$0
13					$0
14					$0
15					$0
16					$0
17					$0
18					$0
19					$0
				Subtotal	**$ 270,000**
				Contingency 10%	$ 27,000
				Sales Tax 9.3%	$ 25,110
				Planning Level Construction Cost	**$ 322,110**
				Administration 10%	$ 32,211
				Engineering 0%	$ -
				Construction Administration 12%	$ 38,653
				GRAND TOTAL:	**$ 393,000**
				ANNUAL TOTAL:	**$ 65,500**

ASSUMPTIONS:
The City will install meter improvements.

Parametrix, Inc.

City of Sumner
Preliminary Cost Opinion Worksheet

Project: O&M2 - Hydrant and Isolation Valve Upgrades - 20 Years
Prepared by: A. Porrini Date: 6/22/2009

Item Number	Description	Quantity	Unit	Unit Price	Total
1	Hydrant Assembly	100	EA	$4,000.00	$400,000
2	Isolation valve replacements	10	EA	$1,200.00	$12,000
3					$0
4					$0
5					$0
6					$0
7					$0
8					$0
9					$0
10					$0
11					$0
12					$0
13					$0
14					$0
15					$0
16					$0
17					$0
18					$0
19					$0
				Subtotal	**$ 412,000**
			Contingency	10%	$ 41,200
			Sales Tax	9.3%	$ 38,316
			Planning Level Construction Cost		**$ 491,516**
			Administration	5%	$ 24,576
			Engineering	0%	$ -
			Construction Administration	12%	$ 58,982
				GRAND TOTAL:	**$ 576,000**
				ANNUAL TOTAL:	**$ 28,800**

ASSUMPTIONS:
Project based on replacing 5 hydrants per year.

Parametrix, Inc.

City of Sumner
Preliminary Cost Opinion Worksheet

Project: O&M3 - Source Meter Calibration (All Sources)
Prepared by: A. Porrini Date: 6/22/2009

Item Number	Description	Quantity	Unit	Unit Price	Total
1	Mobilization	1	LS	$1,750.00	$1,750
2	Meter Calibration at Sumner Springs	1	LS	$5,000.00	$5,000
3	Meter Calibration at County Springs	1	LS	$5,000.00	$5,000
4	Meter Calibaration at South Well	1	LS	$4,000.00	$4,000
5	Meter Calibration at Dieringer Well	1	LS	$4,000.00	$4,000
6	Meter Calibration at Elhi Springs	1	LS	$4,000.00	$4,000
7					$0
8					$0
9					$0
10					$0
11					$0
12					$0
13					$0
14					$0
15					$0
16					$0
17					$0
18					$0
19					$0
				Subtotal	**$ 23,750**
				Contingency 20%	$ 4,750
				Sales Tax 9.3%	$ 2,209
				Planning Level Construction Cost	**$ 30,709**
				Administration 5%	$ 1,535
				Engineering/Programming 15%	$ 4,606
				Construction Administration 12%	$ 3,685
				5-YEAR TOTAL:	**$ 41,000**

ASSUMPTIONS:
Mobilization equals 7 percent of the Subtotal.
Station and master meters will be calibrated on a 5-year schedule.
The meters at Dieringer Well and Elhi Springs are new are should not require calibration in 2005.

Parametrix, Inc.

City of Sumner
Preliminary Cost Opinion Worksheet

Project: O&M4 - Increased Telemetry Maintenance
Prepared by: A. Porrini Date: 6/22/2009

Item Number	Description	Quantity	Unit	Unit Price	Total
1	Telemetry maintenance	1	YR	$20,000.00	$20,000
2					$0
3					$0
4					$0
5					$0
6					$0
7					$0
8					$0
9					$0
10					$0
11					$0
12					$0
13					$0
14					$0
15					$0
16					$0
17					$0
18					$0
19					$0

Subtotal		**$**	**20,000**
Contingency	0%	$	-
Sales Tax	9.3%	$	1,860
Planning Level Construction Cost		**$**	**21,860**
Administration	5%	$	1,093
Engineering	0%	$	-
Construction Administration	12%	$	2,623
ANNUAL TOTAL:		**$**	**26,000**

ASSUMPTIONS:
Telemetry maintenance and upgrades will occur in 2004 and 2005 and then every other year thereafter.

Parametrix, Inc.

City of Sumner
Preliminary Cost Opinion Worksheet

Project: O&M5 - Water Use Efficiency Program / WLCAP
Prepared by: A. Porrini Date: 6/22/2009

Item Number	Description	Quantity	Unit	Unit Price	Total
1	Toilet and Clothes Washer Rebate (a)	1500	EA	$34.00	$51,000
2	Faucet Aerators, Showerheads, and Toilet Displacement (a)	7000	EA	$5	$35,000
3	Landscaping (b)	270	EA	$100	$27,000
4	Fees and Fines (c)	500	EA	-$100	-$50,000
5	Hydrant Locks (d)	125	EA	$300	$37,500
6					$0
7					$0
8					$0
9					$0
10					$0
11					$0
12					$0
13					$0
14					$0
15					$0
16					$0
17					$0
18					$0
				Subtotal	**$ 100,500**
				Contingency 10%	$ 10,050
				Sales Tax 9.3%	$ 9,347
				Planning Level Construction Cost	**$ 119,897**
				Administration 15%	$ 17,984
				Engineering 0%	$ -
				Construction Administration 12%	$ 14,388
				GRAND TOTAL:	**$ 153,000**

ASSUMPTIONS:

a) Assumes 50% of Sumner's residential population will implement this measure
b) Based on 100 landscaping areas
c) Based on 100 fees and fines averaging $100/each
d) Based on the installation of 300 hydrant locks

Parametrix, Inc.

CITY OF SUMNER
Capital Improvement Plan Schedule

Project No. - Description	Funding Source	Total Cost Year 2009	Year of Completion 2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019-2029
Seattle Construction Cost Index (increases at an average of 3.06%/year)		8652	8652	8917	9190	9471	9761	10059	10367	10684	11011	11348	11695
Distribution System Improvements													
D1 - Gary Street and Parker Road Loop	D	$291,000								$359,000			
D2 - Rainier Street Replacement	CM	$122,000					$138,000						
D3 - Main Street and Kincaid Avenue Loop	CM	$150,000			$159,000								
D4 - Thompson Street and Silver Street Loop	CM	$520,000		$536,000									
D5 - West Valley Highway	D	$204,000		$210,000									
D6 - 30th Street East, South of 24th Street East Loop	D	$167,000				$183,000							
D7 - 29th Street East and 32nd Street East Loop	D	$164,000		$169,000									
D8 - Extend from 149th Avenue to East Valley Highway	CG	$413,000						$96,000	$396,000				
D9 - East Valley Highway From Salmon Creek to CTI	CG	$2,475,000				$406,000	$1,675,000	$719,000					
D10 - East Valley Highway from 24th Street East to CTI	CG	$630,000		$325,000	$325,000								
D11 - 8th Street East	CG	$496,000	$496,000										
D12 - 8th Street East and East Valley Hwy Loop	CG	$879,000	$88,000				$892,000						
D13 - Valley Avenue E from the West Well to Houston Road	CG	$1,376,000						$240,000	$1,401,000				
D14 - Fryar Avenue / Main Street Intersection	CM	$208,000		$214,000									
D15 - Riverside Dr &151st Ave	CG	$222,000											$300,000
D16 - Parker Rd and 62nd St Ct E	CG	$69,000											$93,000
D17 - Kincaid Ave, Maple St to Academy St	CG	$277,000											$374,000
D18 - 140th Avenue East and 20th Street East	CG	$42,000											$57,000
D19 - Replacement of Old Water Mains with Street Projects	CG	$4,005,000				$200,000	$200,000	$200,000	$200,000	$220,000	$235,000	$250,000	$2,500,000
	Subtotal	**$12,710,000**	**$584,000**	**$1,454,000**	**$484,000**	**$789,000**	**$2,905,000**	**$1,255,000**	**$1,997,000**	**$579,000**	**$235,000**	**$250,000**	**$3,324,000**
Subtotal City Funded (Capital Imp Related to Growth) (CG)		**$10,884,000**	**$584,000**	**$325,000**	**$325,000**	**$606,000**	**$2,767,000**	**$1,255,000**	**$1,997,000**	**$220,000**	**$235,000**	**$250,000**	**$3,324,000**
Subtotal City Funded (Capital Imp Related to Maintenance) (CM)		**$1,000,000**	**$0**	**$750,000**	**$159,000**	**$0**	**$138,000**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**
Developer Funded (D)		**$826,000**	**$0**	**$379,000**	**$0**	**$183,000**	**$0**	**$0**	**$0**	**$359,000**	**$0**	**$0**	**$0**
Subtotal Water Fund (Distribution Projects)		**$11,884,000**											

Project No. - Description	Funding Source	Toal Cost Year 2009	Year of Completion 2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019-2029
Seattle Construction Cost Index (increases at an average of 3.06%/year)		8652	8652	8917	9190	9471	9761	10059	10367	10684	11011	11348	11695
Source Improvements													
S1 - West Well Improvements	CG	$920,000					$1,038,000						
S2 - South Well Improvements	CG	$423,000			$449,000								
S3 - New Well	CG	$787,000		$122,000	$711,000								
S4 - New Well at 148th Avenue E and 24th Street E Intersection	CG	$787,000								$972,000			
S5 - Intertie with Auburn	CG	$238,000						$277,000					
S6 - Intertie with Pacific	CG	$187,000		$193,000									
S7 - Water Right Modifications	CG	$105,000	$40,000	$40,000	$15,000	$10,000							
S8 - Additional Water Rights Acquisition	CG	$120,000	$40,000	$40,000	$20,000	$20,000							
S9 - Intertie with Mountain View - Edgewood	CG	$745,000		$768,000									
S10 - Springs Source Improvements	CG	$855,000	$51,000	$352,000	$490,000								
Subtotal City Funded (Capital Imp Related to Growth) (CG)		**$5,167,000**	**$131,000**	**$1,515,000**	**$1,685,000**	**$30,000**	**$1,038,000**	**$277,000**	**$0**	**$972,000**	**$0**	**$0**	**$0**
Storage Improvements													
ST1 - Construct 2 MG Reservoir on West Hill	CG	$2,531,000			$403,000	$1,385,000	$999,000						
ST2 - Earthquake Control Valves and Foundation Improvements	CM	$1,764,000	$8,200	$1,545,000									
ST3 - Reservoir Mixing	CM	$107,000					$121,000						
	Subtotal	**$4,402,000**	**$8,200**	**$1,545,000**	**$403,000**	**$1,385,000**	**$1,120,000**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**
Subtotal City Funded (Capital Imp Related to Growth) (CG)		**$2,531,000**	**$0**	**$0**	**$403,000**	**$1,385,000**	**$999,000**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**
Subtotal City Funded (Capital Imp Related to Maintenance) (CM)		**$1,871,000**	**$8,200**	**$1,545,000**	**$0**	**$0**	**$121,000**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**
Operations and Maintenance Programs													
O&M1 - Meter Replacement Program - 10 Years	O	$393,000	$66,000	$68,000	$70,000	$72,000	$74,000	$76,000					
O&M2 - Hydrant and Isolation Valve Upgrades - 20 Years	O	$576,000	$29,000	$30,000	$31,000	$32,000	$32,000	$33,000	$35,000	$36,000	$37,000	$38,000	$389,000
O&M3 - Source Meter Calibration (All Sources)	O	$194,000	$8,200	$8,400	$8,600	$8,800	$9,000	$9,200	$9,400	$9,600	$9,800	$10,000	$103,000
O&M4 - Increased Telemetry Maintenance	O	$26,000	$26,000	$27,000	$28,000	$28,000	$29,000	$30,000	$31,000	$32,000	$33,000	$34,000	$176,000
O&M5 - Water Use Efficiency Program / WLCAP	O	$153,000	$15,300	$16,000	$13,000	$13,000	$12,000	$12,000	$9,000	$9,000	$10,000	$10,000	$62,000
Operating Funds (O)		**$1,342,000**	**$144,500**	**$149,400**	**$150,600**	**$153,800**	**$156,000**	**$160,200**	**$84,400**	**$86,600**	**$89,800**	**$92,000**	**$730,000**
TOTAL WATER FUND (ALL CITY-FUNDED PROJECTS)		**$21,453,000**	**$723,200**	**$4,135,000**	**$2,572,000**	**$2,021,000**	**$5,063,000**	**$1,532,000**	**$1,997,000**	**$1,192,000**	**$235,000**	**$250,000**	**$3,324,000**
TOTAL ALL (INCL. DEVELOPER PROJECTS)		$23,621,000	'09 & '10= $4,858,200		'11 & '12= $4,593,000		'13 & '14= $6,595,000		'15 & '16= $3,189,000				

CG Capital Improvement Projects Related to Growth (Infrastructure Expansion)
CM Capital Improvement Projects Related to Maintaining Existing Infrastructure
D Developer Funded
O Operating Funds
X Developer Funded and not scheduled for payment by City

APPENDIX L

Contingency Operation Plans

CONTINGENCY PLAN
BOMB THREAT/SABOTAGE

Scenario

The City receives a call or letter containing a threat of sabotage/bomb. Location of device is unknown.

System Components and Effects:

- Spring Collection Works – Unlikely target
  - Make provisions to take target source off line by closing isolation valves, etc.
- Wells – Likely target due to proximity to major roads.
  - Make provisions to take target source off line by closing isolation valves, etc.
  - Power down well (by bomb squad).
  - Inform Fire Department of liquid chlorine drum locations.
- Spring Treatment Works – Most likely target, though not easily accessible.
  - Remove chlorine cylinders (by bomb squad).
  - Turn off valves to isolate from storage tanks.
- Storage Tanks – Likely target due to size and effect.
  - Make provisions to drain tank.
- Water Transmission Mains – Not likely target.
- Power Supply – Likely to be affected only peripherally to other facilities.
- General Response Actions – Office will take call, Police and Fire Department will respond.
  - Attempt to get caller to reveal location of bomb or method of sabotage.
  - Immediately notify Police and Fire Departments of location of bomb/sabotage or, if unknown, likely targets.
  - Train all personnel how to handle a caller making a bomb threat.
  - Keep a copy of the following near the switchboards at the City Hall, Fire, and Police Departments.

REPORTING BOMB THREATS

Person Receiving Call

- Attempt to retain the caller long enough to obtain all pertinent information, such as where the bomb/sabotage is located, type of bomb/sabotage, and when it is set to go off.
- Listen carefully to the exact words of the message so that you can repeat the information clearly and accurately.
- Listen for background noises, voice accent, word pronunciation, voice pitch (high or low), male or female voice, child, or adult.
- Try to signal another person near you to pick up the same telephone line and listen in.
- Prepare a list of the following information:
  - Date and time of call.
  - Type of bomb/sabotage.
  - Location of bomb/sabotage.
  - Description of bomb/sabotage.
  - What caller actually said.
  - Sex of caller.
  - Estimated age of caller.
  - Type of voice (soft, loud, whisper, normal, drunk).
  - Background noises heard, if any.
  - Your name and location.
- Report the threat to the Police Department and the Director of Public Works.

Operations Manager

- Notify employees to search their areas.
- Notify local law enforcement agency having jurisdiction.
- If a suspicious object or package is discovered at any time, whether or not a bomb threat call has been received, proceed as follows:
  - Do not move, touch, or disturb the object or package in any way.
  - Immediately notify the Public Works Director, Police, and Fire Departments.
- Clear all persons from the immediate area and notify the Fire Department of location and description of the suspicious object or package.
- Evaluate available information and make a decision on evacuation.
- Notify employees of evacuation decision or all-clear decision.
- When directed to evacuate, leave building.
- Take coats, jackets, purses, and briefcases when leaving the work area.
- Lock cash drawers and other valuable items.

REPORTING BOMB THREATS (Continued)

Employees

- Search own work areas for suspicious objects or packages as follows:
  - Desks
  - Wastebaskets
  - File Cabinets
  - Supply Room
  - Closets
  - Ashtray Receptacles
  - Locked Doors
  - Underside of Horizontal Surfaces
- Turn off electrical machines or other noise-making equipment.
- Search nonwork areas in assigned area including:
  - Restrooms
  - Conference Rooms
  - Coffee Shops
  - Store Rooms
  - Hallways, Stairways, and Lobbies
- Notify immediate supervisor of the results of the search.

CONTINGENCY PLAN
REGIONAL EARTHQUAKE

Scenario

7.5 Richter magnitude. Considerable damage to brick buildings. Foundations displaced. Ground cracks. Pipes broken.

- Spring Collection Works – Potential for broken pipes and landslides above spring tap boxes.
  - Isolate damaged portions of the system.
  - Have adequate supply of repair fittings and pipes or know locations of suppliers with parts needed for repair.
  - Remove debris and commence temporary repairs.
- Wells – Potential for damaged casing, shifted base, damage to chlorinators, and loss of power.
  - Check for signs of chlorine gas leak without entering building.
  - Put on breathing apparatus and enter building if all clear.
  - Inspect well base.
  - If no power is available, call power company (**see Major Power Outage**).
  - Turn on pump to aid in fire fighting if damage is not severe.
  - If pump or feeder pipes are damaged, isolate from system and commence temporary repairs.
- Spring Treatment Works – Potential for damage to buildings, metering control, chlorinators, injector pumps, power failure, chlorine leaks.
  - Check for signs of chlorine gas leak without entering building.
  - Put on breathing apparatus and enter building if all clear.
  - Inspect chlorinators. Shut off if leaking chlorine gas (**see Chlorine Gas Leak**).
  - If no power is available, call power company (**see Major Power Outage**).
  - If no power is available, install gas generator to run chlorinators and injector pumps.
  - Check for damage to chlorinators, injectors, analyzers, and metering control. If all is okay and there are breaks in mains and widespread fires in the transmission system, increase chlorine residual to 3.0 mg/ℓ.
  - Maintain supply and manual metering pumps to feed sodium hypochlorite in case chlorinators are damaged.
- Storage Tanks – Potential for structural damage.
  - Close tank isolation valves.
  - Inspect tanks for structural damage. If imminent failure is suspected, drain tank; otherwise, open valves.
  - Monitor tank levels throughout emergency.
  - Implement **Water Shortage Response Plan** at level appropriate to handle emergency. Keep Fire Department informed of available water so fire-fighting efforts may be prioritized.

CONTINGENCY PLAN – REGIONAL EARTHQUAKE (CONTINUED)

- Water Transmission Mains – Potential for broken pipes. Fire fighting demands may be high.
  - Stockpile repair fittings at key locations. Know location of suppliers.
  - Keep detailed system maps of isolation valves and water mains with all personnel so crews can locate valves and isolate broken pipes. Have valve wrench in each vehicle.
  - Open available interties if water is needed for fighting fires. **Call** adjacent water utility first to assure water is available.
- Power Supply – Potential for wide-scale power outages.
  - Respond as for **Major Power Outage**.
  - Maintain standby generators for South and Cemetery Wells and chlorination facilities.
- General Response Actions – Most taxing disaster on water system staff. Some may be injured in earthquake. Transportation impaired. Communications are down.
  - Train all personnel for earthquake response.
  - Keep Emergency Call-Up List with all water system staff.
  - Call or radio adjacent utilities to determine need for or surplus of water.
  - Call Department of Health for instruction.
  - Do not keep vehicles in damage prone locations.
  - Use mobile radios to coordinate activities.
  - Coordinate with Pierce County Emergency Response Agencies (**see Emergency Call-Up List**).
  - Inform local radio and television stations of nature and extent of water system damage.

CONTINGENCY PLAN

MAJOR POWER OUTAGE

Scenario

Major regional power outage occurs due to earthquake, windstorm, or other disaster with loss of power to all AC facilities for more than 12 hours.

- Spring Collection Works – No effect, gravity supplied.
- Wells – South, Dieringer, and Cemetery Wells out of service.
  - Call power company. Alert power company of emergency graveness.
  - Make provisions to hook up standby generators.
- Spring Treatment Works – Chlorinators and injector pumps cease to operate.
  - Monitor chlorine residual in storage tanks.
  - Hook up emergency generators if residual drops below 0.1 mg/ℓ. Attempt to operate facilities on generator power.
  - Keep extra granular sodium hypochlorite in emergency supply and administer as needed with manual feed pumps.
  - All facilities should be checked after power is restored to assure return to normal operations.
- Storage Tanks – Water levels may drop if wells are down for extended period.
  - Monitor storage tank levels.
  - If tank level drops below water shortage response Level I, turn on well standby generators.
  - Adhere to **Water Shortage Response Plan**.
- Water Transmission Mains – No effect.
- Power Supply – Interruption in power may create need to recalibrate meters and telemetry equipment.
- General Response Actions:
  - All personnel should obtain portable lights.
  - Check all facilities after power restoration to assure telemetry and metering controls are in operation.

CONTINGENCY PLAN
FLOODING/WASHOUTS

Scenario

100-year flood in the Puyallup and White Rivers. Heavy rains cause washouts of roads and embankments.

- Spring Collection Works – Mass wasting may cover tap boxes.
  - Remove all debris from tap boxes.
  - If large-scale bank failures damage pipes and tap boxes, isolate system.
  - Check turbidity of all spring sources.
  - Temporarily repair spring taps with spare parts inventory.
  - Use sandbags to stabilize banks against further failure.
- Wells – South and Cemetery Wells are above 100-Year flood plains.
  - If pump buildings become filled with water, seal and use bilge pumps to drain.
- Spring Treatment Works – Low likelihood of damage.
  - Divert surface water away from facilities.
- Storage Tanks – Low likelihood of damage.
  - Divert surface water away from facilities.
- Water Transmission Mains – May break due to road washouts.
  - Isolate breaks.
  - Eliminate cross connections by keeping buildings from flooding.
- Power Supply – Some localized outages could occur. See **Major Power Outage** if system is affected.
  - Keep all electrical equipment dry, including pumps and telemetry at South and Cemetery Wells.
- General Response Actions:
  - Use alternate routes in event of road washouts.

CONTINGENCY PLAN
HAZARDOUS SPILL

Scenario

A hazardous chemical spill occurs in the watershed, and one or more spring sources become contaminated.

- Spring Collection Works – Source of supply is contaminated.
  - Immediately isolate source from the system.
  - Call Department of Health emergency spill response number.
  - Increase chlorine residual in affected tank to 3.0 mg/l or greater to oxidize contaminants.
  - If health threat is immediate, notify users to stop using water.
  - Attempt to determine contaminating substance. Call professional services as required.
  - Coordinate with professionals to treat water to highest safe, feasible extent.
- Wells – Not likely route of contamination.
  - Same as for springs.
- Spring Treatment Works – Could be source of contaminant (i.e., sabotage).
  - Keep chemical supplies of granular activated carbon and lime in stock for possible emergency treatment. Do not store in plain view or outside building.
  - Prepare to raise chlorine dose to oxidize or disinfect the contaminant.
- Storage Tanks – No effect likely.
  - Isolate tank until emergency treatment is complete. If treatment is not adequate, take out of service. Do not drain before treating if hazardous to aquatic life (spills to Salmon Creek).
- Water Transmission Mains – No effect.
  - Intertie with Puyallup may need to be opened if isolated sources cannot meet demands.
  - Initiate **Water Shortage Response Plan** if necessary.
- Power Supply – No effect.
- General Response Actions – Some may be sick from ingesting tainted water.
  - Train personnel in hazardous waste cleanup, emergency water treatment, and use of protective equipment.
  - Inform public of possible health effects of contaminant **(see Public Notification**).

CONTINGENCY PLAN
EXTENDED DROUGHT

Scenario

Extended drought conditions severely tax available water supply. Demand increases.

- Spring Collection Works – Flows of the springs may be reduced in an extended drought.
  - Attempt to capture all flow from each of the springs.
- Wells – Well drawdown may increase with less recharge, though this effect will be long-term and seasonal.
  - Monitor static and dynamic water levels in wells. Make records of any changes.
- Spring Treatment Works – No effects.
- Storage Tanks – No effects.
- Water Transmission Mains – No effects.
  - Open interties with utilities capable of meeting demands.
- Power Supply – No effect.
- General Response Actions
  - Familiarize personnel with **Water Shortage Response Plan**.
  - Initiate **Water Shortage Response Plan**.

CONTINGENCY PLAN

WATER SYSTEM PERSONNEL INJURY

Emergency Scenario

Due to injury or disease, most water system staff are unable to work. This scenario includes a large strike.

- Spring Collection Works – Not vulnerable to short-term work stoppages. Minor maintenance will be delayed.
- Wells – Need staff to turn on and off pump.
  - Assure telemetry is functioning at South and Dieringer Wells.
- Spring Treatment Works – Requires taking daily water samples and adjusting chlorine dose. Routine maintenance may be delayed.
  - Cycle chlorine cylinders as needed.
  - Adjust chlorine dose to maintain desired residual.
  - Change pens and paper in recorder.
- Storage Tanks – Not vulnerable to short-term work stoppages.
  - Check tank water levels during periods of high demand.
- Water Transmission Mains – Not vulnerable to short-term work stoppages.
- Power Supply – No effect.
- General Response Actions
  - Familiarize more than one operator with each part of the system.
  - In the event of serious accident, call an ambulance.
  - For accidents resulting from fire, gas, explosion, etc., call the Fire Department.
  - Never move a seriously injured person unless necessary to prevent further injury.
  - Train all personnel in first aid and CPR.
  - Maintain medical histories and information cards on all employees. Use this card when accidents, illness, or injuries occur.
  - All injuries, no matter how minor, should be reported immediately to the foreman or the Public Works Director.
  - Once proper medical treatment is received, complete an accident report form and submit it to the Public Works Director's office.
  - If work stoppage persists, consider obtaining help from local water district operators on a part-time basis.

CONTINGENCY PLAN
MECHANICAL FAILURE

Scenario

A major source is incapacitated by large mechanical failure. To fix equipment, manufacturer's technicians are needed.

- Spring Collection Works – Few mechanical parts to affect.
- Wells – Pump out of service.
  - Prepare a list showing pump manufacturer's local supplier and service representatives.
  - If pump fails during peak demand period, implement **Water Shortage Response Plan**.
  - Call manufacturer or service representative if problem cannot be repaired in-house.
- Spring Treatment Works – Chlorinators, injector pumps, and regulators subject to failure.
  - Switch to backup chlorinator, injector, etc.
  - If both chlorinators are damaged, manually inject chlorine (sodium hypochlorite) with constant displacement feed pumps until repaired.
  - Call manufacturer or service representative if problem cannot be repaired in-house.
- Storage Tanks – No mechanical parts.
  - Monitor tank levels.
- Water Transmission Mains – No mechanical parts.
- Power Supply – No effect.
- General Response Actions
  - During repairs, some personnel may neglect routine duties.
  - Keep backup stocks of repair parts.

CONTINGENCY PLAN

SUB-ZERO WEATHER

Emergency Scenario

Extended freezing weather has promoted deep frost penetration in the soil. Local service connection lines are freezing. Spring flow is sluggish. Conditions are similar throughout the county.

- Spring Collection Works – Springs are freezing upon exit.
  - Consider building temporary shelter over collection works prone to freezing, and keeping them warm with portable space heaters.
- Wells – Minor parts not well oiled are subject to freezing shut.
  - Exercise pumps daily.
  - Keep moving parts oiled and moisture-free.
- Spring Treatment Works
  - Keep buildings warm with space heaters.
  - Keep space heaters in storage at City Shops and in chlorination buildings. Rentals cannot be relied upon due to heavy demand in the region causing shortages.
- Storage Tanks – Broken lines and open faucets may result in increased water demand.
  - Monitor tank levels.
  - Implement **Water Shortage Response Plan** if required.
- Water Transmission Mains – Effects are unlikely. Routine maintenance will be disrupted.
  - Fill meter boxes with insulating material to resist pipe freezing.
  - Areas of widespread problems should be documented and examined for preventive measures, such as deeper mains, insulted meter boxes, special customer notification, etc.
- Power Supply – Outage possible due to snow-weighted falling trees.
  - Inform power company of problem priority.
  - Check all electrical equipment throughout freezing weather to assure continued function.
  - **See Major Power Outage**.
- General Response Actions
  - Assure staff is wearing proper cold weather clothing to prevent hypothermia and frostbite.
  - Noncritical routine maintenance can be temporarily halted.
  - Prior to cold weather season, stock items for frozen line repair, fuels, and equipment for emergency power. Suppliers will most likely be out of stock during cold weather.

CONTINGENCY PLAN

WATERSHED FIRE

Scenario

A massive watershed fire threatens spring taps, collection works, chlorination facilities, and storage tanks. Local efforts cannot stop blaze.

- Spring Collection Works – No extensive damage to underground pipes and tap boxes expected.
  - Turn off spring supply that is immediately threatened.
  - Inspect water quality subsequent to fire. High turbidity can be expected.
- Wells – Not threatened. No trees nearby.
  - Turn on wells to aid in fire fighting.
- Spring Treatment Works – Metal buildings subject to intense heat.
  - Make an attempt to shut off and remove all chlorine gas cylinders if fire is not immediately threatening chlorination facilities. Chlorine cylinder rupture could send clouds of toxic fumes over the area and hamper fire-fighting efforts.
  - Take chlorine masks to unaffected area so they can be used by fire fighting personnel.
  - Hose down chlorination facilities as a first priority.
  - Avoid spraying hazardous fire retardants in the watershed.
- Storage Tanks – Threatened by high heat. Heavy demand will cause levels to drop.
  - Create firebreaks around tanks.
  - Keep tanks as full as possible to provide insulating capacity.
  - Monitor tank levels.
- Water Transmission Mains – No effect expected.
- Power Supply
  - Monitor power to chlorination facilities.
- General Response Actions
  - Keep line of communication open with Fire Department.
  - Inform emergency response personnel that the area is a watershed and fire retardants that are toxic cannot be used.

CONTINGENCY PLAN
WINDSTORM

Scenario

High winds knock down trees and block access roads.

- Spring Collection Works – Elhi Springs subject to damage by falling trees.
  - Top large trees annually that have a potential to fall on facilities.
  - Repair damage to buildings to keep out surface water contamination.
- Wells – No severe damage expected.
- Spring Treatment Works – Prone to damage by falling trees and battering by wind.
  - Inspect all chlorination facilities for damage.
  - Top large trees that have a potential to fall on facilities.
- Storage Tanks – No severe damage expected, especially when full.
  - Check roofs to assure they are securely fastened.
- Water Transmission Mains – No damage expected.
- Power Supply – Power outages may occur.
  - **See Major Power Outage**.
- General Response Actions
  - Equip personnel with chainsaws to check watershed after storm.
  - Keep flashlights, chainsaws, crowbars, leather gloves, etc. in stock at a location not prone to damage.

CONTINGENCY PLAN

VANDALISM

Emergency Scenario

Vandalism causes damage to the water system.

- Spring Collection Works – Not likely target of vandalism. Fencing of watershed restricts entry.
  - Walk road along spring tap trail periodically to check for signs of human passage.
  - Keep all tap box lids locked and secured.
  - Post signs near spring taps with the following description:

    City of Sumner Water Supply
    Do Not Disturb
    (Ordinance Number if Available)
- Wells – Likely target of vandalism.
  - Keep pump buildings inconspicuous.
  - Fence perimeter of pump buildings.
  - Keep pump building door and gates locked at all times.
- Spring Treatment Works
  - Provide fences around all chlorination buildings.
  - Keep all watershed gates and chlorination building doors locked.
- Storage Tanks – Target of graffiti.
  - If graffiti is observed, paint or clean immediately to discourage its spread.
  - Keep gates and fences around South Tank locked.
  - Keep gates and fences around Sumner and County Springs Tanks locked.
- Water Transmission Mains – No effects expected.
  - Fire hydrants may be subject to vandalism. Inspect all hydrants regularly according to a rotating schedule.
- Power Supply – Not likely target.
- General Response Actions
  - Visit all facilities regularly and inspect for signs of vandalism.
  - Alert Police of all vandalism.
  - Look for patterns, such as times, days of the week, and seasons when vandalism is likely to occur.
  - If problems persist, consider staking out a high-risk facility to catch perpetrators.
  - Completely fence watershed.
  - Design underground facilities in preference to aboveground facilities.
  - Keep stockpiled materials out of sight.

CONTINGENCY PLAN

CHLORINE GAS LEAK

The City of Sumner is currently in the process of updating/revising their Standard Operating Procedures (SOP) and Contingency Plan for Chlorine Gas Leaks. These materials will be inserted into this document as adopted by the City.

APPENDIX M

WSDOH Backflow Prevention Assemblies Approved for Installation in Washington State (February 2006)

Important Information About the 2009 DOH-Approved Assemblies List

Washington State drinking water regulations (WAC 246-290-490 (5)(a)) require purveyors to ensure that only backflow assemblies approved by the Department of Health (DOH) are used to protect public water systems from contamination via cross-connections. DOH Office of Drinking Water (ODW) publishes *Backflow Prevention Assemblies Approved for Installation in Washington State* to help water systems meet this requirement.

This publication, commonly called the "DOH-Approved Assemblies List," is based on the Approved Backflow Prevention Assemblies List published by the University of Southern California (USC) Foundation for Cross-Connection Control and Hydraulic Research. Per our agreement with USC, we may not post the list on our Web site or distribute it en masse. Thus, DOH distributes the list upon request only and limits distribution to purveyors, cross-connection control specialists, backflow assembly testers, and other parties working in the drinking water industry in Washington.

We publish the DOH list annually and may issue periodic updates during the year. Interested parties must submit a request to DOH each calendar year to receive the complete list. DOH will send updates to those who have requested the complete list for the calendar year.

You may request **one** copy of ODW's most recent list of *Backflow Prevention Assemblies Approved for Installation in Washington State* by:

- Ordering online at http://www.doh.wa.gov/ehp/dw/our_main_pages/public.htm (preferred method). Request publication number 331-137.
- Calling ODW toll-free at (800) 521-0323 if you do not have Internet access.

Due to budget cuts, we've published the 2009 list on a password-protected CD instead of printing hard copies. We've obtained permission from USC to issue the list in this format.

To help us comply with our agreement with USC, ***do not* distribute the list *outside your organization* by any of the following**:

- Posting the list to a website available to the public.
- Emailing the electronic file.
- Copying the CD or producing hard copies.

Staff ***within your organization*** may view the list and:

- Print as many hard copies as needed.
- Save the list to their computer hard drives.

We will issue the password to you via email.

If you have questions on how to interpret the DOH-Approved Assemblies List or need information about the approval status of a specific assembly, please contact:

- Terri Notestine at terri.notestine@doh.wa.gov or (360) 236-3133.
- Simon Tung at simon.tung@doh.wa.gov or (360) 236-3132.

APPENDIX N

Municipal Water Law Attachment 9: Water Reclamation Checklist for Systems with 1,000 or More Connections

Attachment 9: Water Reclamation Checklist for Systems with 1,000 or more Connections

The Municipal Water Supply - Efficiency Requirements Act, Chapter 5, Laws of 2003 (Municipal Water Law), amended Chapter 90.46 of the Revised Code of Washington (RCW) to require public water systems serving 1000 or more connections to evaluate opportunities for reclaimed water when completing their water system plans (WSP). This checklist may be used to ensure that your WSP includes sufficient information about opportunities for reclaimed water and your system's efforts to develop those opportunities.

Water System Name: City of Sumner Date: 3/23/05

PWS ID: 85120

1. An evaluation of water reclamation opportunities is found in the WSP on pages:
   At a minimum, include the following in your evaluation of reclamation opportunities:
   - An inventory of large water users.
   - Identification of potential reclaimed water users.
   - Estimates of how much water could be saved by development of reclaimed water projects
   - Identification of opportunities that your system intends to pursue within the next six years
   - A brief analysis of the financial and operation feasibility of identified opportunities

   The form on the opposite side of this page is provided to assist you in conducting an inventory of potential users and estimate savings. Use of this form is optional.

2. Provide the results of that evaluation.
   If new or additional reclaimed water opportunities are available, include a brief description of activities you are considering undertaking or those activities you will undertake to pursue development of those opportunities.

   If reclaimed water opportunities are not available, include a brief description of the interaction with the local wastewater facility (or other entity within the area you serve that may be a generator of reclaimed water) to evaluate opportunities to develop reclaimed water.

3. If evaluation of water reclamation is not included because such an evaluation has been completed by the wastewater facility, or other entity, please include a copy of that evaluation.

4. If water reclamation is mandated for this water system through local government agreement, contract, local regulations, ordinances, or other mechanism, please provide a copy of the governing mechanism.

5. If reclaimed is available within the service area of your water system please include the following information:
   - Name of Facility
   - Class of Water Received (A, B, C or D)
   - Reclamation Permit Number
   - Amount of Reclaimed Water received
   - A brief description of how this water is used, including information on cross connection control
   - Date when your utility began receiving reclaimed water

Reclaimed Water Potential Use Checklist	✓	Est. Annual Use	Est. Annual Savings
Crop Irrigation			
Trees	☐		
Sod	☐		
Nursery	☐		
Pasture	☐		
Irrigation of Food Crops	☐		
Landscape Irrigation			
Cemeteries	X	161,000 CF	$2,000
Freeway Landscapes	X	80,000 CF	$1,000
Other Restricted Landscape Areas	☐		
Golf Courses	X	564,000 CF	$6,700
Parks	☐		
Playgrounds	☐		
Schoolyards	☐		
Other Open Access Areas	☐		
Residential Landscapes	☐		
Ponds			
Landscape Impoundments	☐		
Recreational Impoundments	☐		
Water Trucks			
Street Sweeping	X	10,000	$100
Fire fighting & protection	☐		
Washing of Corporation Yards, Lots, and Sidewalks	☐		
Dust Control (Dampening Unpaved Roads, Other	☐		
Dampening Soil for Compaction (Construction Sites, Landfills, Pipelines, etc.)	☐		
Other			
Toilet and Urinal Flushing	☐		
Lift Stations	☐		
Ship Ballast	☐		
Fish Hatchery Basins	☐		
Washing Aggregate and Making Concrete	☐		
Flushing of Sanitary Sewers	☐		
Industrial Boiler Feed	☐		
Industrial Cooling	☐		
Industrial Process	☐		
Environmental Uses			
Streamflow Augmentation	☐		
Aquifer recharge	☐		
Wetland Mitigation	☐		
Other	☐		
***Other uses not listed above:**			
_____	☐		
_____	☐		
_____	☐		
_____	☐		
_____	☐		
_____	☐		
_____	☐		
_____	☐		
_____	☐		

APPENDIX O

SEPA Documentation

SEPA
ENVIRONMENTAL CHECKLIST

A. BACKGROUND

1. Name of proposed project, if applicable:

   City of Sumner Water System Plan

2. Name of applicant:

   City of Sumner, Public Works Department

3. Address and phone number of applicant and contact person:

   Bill Pugh, Public Works Director
   City of Sumner
   1104 Maple Street
   Sumner, WA 98390
   Telephone: 253-299-5701

4. Date checklist prepared:

   October 6, 2009

5. Agency requesting checklist:

   Washington State Department of Health

   City of Sumner

6. Proposed timing or schedule (include phasing, if applicable):

   Adoption by City Council:

   Plan Implementation: *Outlined in the 20-Year Capital Improvement Implementation Schedule*

7. Do you have any plans for future additions, expansion, or further activity related to or connected with this proposal? If yes, explain.

   Yes. Projects will be funded and constructed in accordance with the Water System Plan. Distribution, source, storage, and operations and maintenance improvements are discussed in Chapter 8 of the Water System Plan. Capital improvement and operation and maintenance program/improvement scheduling is shown in Table 8-1 of the Water System Plan. The Water System Plan will be updated in 6 years as required by the Washington State Department of Health.

8. List any environmental information you know about that has been prepared, or will be prepared, directly related to this proposal.

   No environmental information has been prepared to date. Environmental information will be developed and compiled during design and construction of each individual project as required by Sumner Municipal Code.

9. Do you know whether applications are pending for governmental approvals of other proposals directly affecting the property covered by your proposal? If yes, explain.

   The Water System Plan covers an area greater than 7,000 acres. While there are numerous proposals pending within the service area, there are no known conflicts.

10. List any government approvals or permits that will be needed for your proposal, if known.

    Washington State Department of Health approval is required for the Water System Plan. Several of the Capital Improvement Projects may require Hydraulic Project Approval (HPA) by the Department of Fish and Wildlife.

11. Give a brief, complete description of your proposal, including the proposed uses and the size of the project and site. There are several questions later in this checklist that ask you to describe certain aspects of your proposal. You do not need to repeat those answers on this page. (Lead agencies may modify this form to include additional specific information on project description.)

    The current and proposed Sumner Water Service Area boundary encompasses greater than 7,000 acres. The Sumner Water System Plan recommends capital improvements, hydrogeologic studies, operation and maintenance replacement projects, and operation and maintenance program implementation necessary to provide a safe, clean, and reliable water supply to the City's residents and water service customers. Improvements recommended in the Water System Plan include those required at present and those projected to be required in the future for source, storage, conveyance, water rights, water treatment, and operations and maintenance.

    Significant projects proposed in the next six years include various transmission main replacements and extensions, improvements to the existing South Well, and West Well, investigation to construct a new potable-water well to increase system instantaneous capacity, and continuation or implementation of various operation and maintenance programs including the Water Use Efficiency (WUE) program. The locations of individual projects as identified on Figure 8-1 of the Water System Plan are discussed in detail in Chapter 8 of the Water System Plan.

12. Location of the proposal. Give sufficient information for a person to understand the precise location of your proposed project, including a street address, if any, and section, township, and range, if known. If a proposal would occur over a range of an area, provide the range or boundaries of the site(s). Provide a legal description, site plan, vicinity map, and topographic map if reasonably available. While you should submit any plans required by the agency, you are not required to duplicate maps or detailed plans submitted with any permit applications related to this checklist.

    The Sumner Water Service Area lies entirely in Pierce County, specifically T20N R4E, T20N R5E, and T19N R5E. Current and future water service areas are shown in the Water System Plan.

B. ENVIRONMENTAL ELEMENTS

1. Earth

a. General description of the site (circle one): flat, rolling, hilly, steep slopes, mountainous, other.

The valley floor is flat with slopes ranging from 0 to 5 percent. Hillside slopes to the east and west vary from 20 to 10 percent.

b. What is the steepest slope on the site (approximate percent slope)?

Approximately 100 percent on the east and west slopes.

c. What general types of soils are found on the site (for example, clay, sand, gravel, peat, muck)? If you know the classification of agricultural soils, specify them and note any prime farmland.

The valley floor is primarily made up of Puyallup, Sultan, Puget, Snohomish, and Briscott soil types. These soils are somewhat poorly draining alluvial deposits. These soils are well suited for agriculture.

The hillside(s) and upland soils are predominantly of the Alderwood series. These soils are moderately draining, and are located on slopes ranging from 20 to 70 percent. Everett, Kapowsin, and Kitsap soil types are also present in the upland areas. These soils range from poorly to excessively draining.

d. Are there surface indications or history of unstable soils in the immediate vicinity? If so, describe.

Evidence of past slides can be seen on the hillsides above East and West Valley Highways. Both the east and west hillsides have a history of unstable soils. There is one project proposed on the west hillside, installation of a 2-million-gallon reservoir west of West Valley Highway, which may be affected by the unsuitable soils.

e. Describe the purpose, type, and approximate quantities of any filling or grading proposed. Indicate source of fill.

New water lines may be backfilled with either native or imported fill material, depending on the location of the installation (approximately 1 cubic yard per linear foot of pipe installed). The proposed 2-million-gallon reservoir on the west hill will require an undetermined amount of cut and fill during construction.

f. Could erosion occur as a result of clearing, construction, or use? If so, generally describe.

The potential for erosion during the 2-million-gallon reservoir construction on the west hill is high. Requirements related to controlling surface water flows and stabilizing denuded areas would be established during the reservoir design. The potential for erosion from construction projects proposed on the valley floor is minimal due to shallow slopes.

g. About what percent of the site will be covered with impervious surfaces after project construction (for example, asphalt or buildings)?

An undetermined amount of impervious area would be created during the construction of the 2-million-gallon reservoir on the west hill in the form of access roads, parking areas, an operations building, and the reservoir itself. An undetermined amount of new impervious surface will be created during the improvements to the new and existing wells by construction of new operations buildings.

h. Proposed measures to reduce or control erosion, or other impacts to the earth, if any:

Best management practices described in the stormwater control manual as adopted by the Sumner Municipal Code will be implemented to control erosion and surface water impacts. Migration of silt from construction sites will be prevented by installing silt fencing, phased construction, terracing, and other best management practices. Disturbance of ground will be minimized to minimize erosion potential. Disturbed areas will be stabilized during construction and will be revegetated as soon as possible after construction activities are complete.

2. Air

a. What types of emissions to the air would result from the proposal (for example: dust, automobile odors, industrial wood smoke) during construction and when the project is completed? If any, generally describe and give approximate quantities if known.

Petroleum fumes and dust from construction equipment will be emitted during construction activities. There will not be any emissions from completed projects.

b. Are there any off-site sources of emissions or odor that may affect your proposal? If so, generally describe.

None.

c. Proposed measures to reduce or control emissions or other impacts to air, if any?

Slashing and burning cleared vegetation will be prohibited. Fugitive dust will be controlled by implementing best management practices such as sprinkler trucks, jute matting, and hydroseeding.

3. Water

a. Surface:

1) Is there any surface water body on or in the immediate vicinity of the site (including year-round and seasonal streams, saltwater, lakes, ponds, wetlands)? If yes, describe type and provide names. If appropriate, state what stream or river it flows into.

Major surface water bodies in the project area include the Puyallup River, the White River, Salmon Creek, Van Ogles Creek, and Milwaukee Ditch. Van Ogles Creek is tributary to the Puyallup River. Salmon Creek and Milwaukee Ditch are tributary to the White River. Wetlands are interspersed throughout the service area.

2) Will the project require any work over, in, or adjacent to (within 200 feet) the described waters? If yes, please describe and attach available plans.

Yes, rivers and creeks will be crossed by proposed conveyance extension projects. A majority of the river and creek crossings will be overhead crossings at existing bridges. One proposed conveyance extension project will require jacking and boring under the White River.

3) Estimate the amount of fill and dredge material that would be placed in or removed from surface water or wetlands and indicate the area of the site what would be affected. Indicate the source of fill material.

There is no anticipated dredging or filling from surface waters. Disturbance to wetlands as a result of improvement construction will be mitigated per the applicable regulations.

4) Will the proposal require surface water withdrawals or diversions? Give general description, purpose, and approximate quantities if known.

No surface water withdrawals are anticipated.

5) Does the proposal lie within a 100-year floodplain? If so, note location on the site plan.

Some conveyance extension projects lie within the 100-year flood plain. All transitional main river and creek crossings will be constructed above the 100-year flood elevation.

6) Does the proposal involve any discharges of waste materials to surface waters? If so, describe the type of waste and anticipated volume of discharge.

None anticipated.

b. Ground:

1) Will ground water be withdrawn, or will water be discharged to ground water? Give general description, purpose, and approximate quantities if known.

The City of Sumner currently withdraws, on average, approximately 1.4 million gallons per day for domestic water use. Source improvement projects proposed in the Water System Plan will increase the capacity of several existing sources and introduce additional sources. No water will be discharged to groundwater. It is anticipated that minimal dewatering will be required during improvement construction activities.

2) Describe waste material that will be discharged into the ground from septic tanks or other sources, if any (for example: domestic sewage; industrial, containing the following chemicals: _____; agricultural: _____; etc.). Describe the general size of the system, the number of such systems, the number of houses to be served (if applicable), or the number of animals or humans the system(s) are expected to serve.

None anticipated.

c. Water Runoff (including storm water):

1) Describe the source of runoff (including storm water) and method of collection and disposal, if any (include quantities, if known). Where will this water flow? Will this water flow into other waters? If so, describe.

Stormwater from construction sites will be controlled to prevent erosion and fines migration off site. Runoff from impervious areas created as a result of improvement construction will be controlled as required by the Sumner Municipal Code.

2) Could waste materials enter ground or surface waters? If so, generally describe.

Suspended solids may be discharged to surface waters during construction activities.

d. Proposed measures to reduce or control surface, ground, and runoff water impacts, if any:

Erosion and sedimentation control best management practices will be implemented and maintained. Erosion and sedimentation control measures will be per the stormwater manual adopted by the Sumner Municipal Code.

4. **Plants**

a. Check or circle types of vegetation found on the Site:

X Deciduous tree: alder, maple, aspen, other
X Evergreen tree: fir, cedar, pine, other
X Shrubs
X Grass
X Pasture
X Crop or grain
X Wet soil plants: cattail, buttercup, bulrush, skunk cabbage, other
X Water plants: water lily, eelgrass, mil foil, other
X Other types of vegetation

b. What kind and amount of vegetation will be removed or altered?

Some clearing of forested areas is anticipated for construction of the 2-million-gallon reservoir proposed on the west hill. Clearing and grubbing of native and second-growth forest, grasslands, and urban landscaping is anticipated for installation of the distribution main.

c. List threatened or endangered species known to be on or near the site.

None known.

d. Proposed landscaping, use of native plants, or other measures to preserve or enhance vegetation on the site, if any.

Deforested areas will be replaced with Douglas fir, cedar, and other native species as allowed per the design. Landscaping vegetation will be replaced in kind. Wetlands will be revegetated with species suitable for Western Washington wetland habitat.

5. Animals

a. Circle any birds and animals that have been observed on or near the site or are known to be on or near the site:

Birds: hawk, heron, eagle, songbirds, other:_____
Mammals: deer, bear, elk, beaver, other: rodents
Fish: bass, salmon, trout, herring, shellfish, other:_____

b. List any threatened or endangered species known to be on or near the site.

Salmon species.

c. Is the site part of a migration route? If so, explain.

The Puyallup and White Rivers are a migration route for Pacific Northwest salmon species.

d. Proposed measures to preserve or enhance wildlife, if any:

Disturbed areas will be restored to natural state to the extent practical.

6. Energy and Natural Resources

a. What kinds of energy (electric, natural gas, oil, wood stove, solar) will be used to meet the completed project's energy needs? Describe whether it will be used for heating, manufacturing, etc.

Electricity will be used to run well pumps, chlorination facilities, and telemetry equipment at completed projects.

b. Would your project affect the potential use of solar energy by adjacent properties? If so, generally describe.

No.

c. What kinds of energy conservation features are included in the plans of this proposal? List other proposed measures to reduce or control energy impacts, if any:

Telemetry controls will reduce the operational hours of pumps and other equipment to the number of hours necessary to satisfy potable water demands. Transmission mains will take advantage of gravity rather than relying on mechanical pumping.

7. Environmental Health:

a. Are there any environmental health hazards, including exposure to toxic chemicals, risk of fire and explosion, spill, or hazardous waste, that could occur as a result of this proposal? If so, describe.

Chlorine storage and use on site at each potable water source. Chlorine could pose a health and safety risk if improperly handled or stored.

1) Describe special emergency services that might be required.

Chlorine spill cleanup may be required. Emergency treatment of the water supply(s) may be required in the event of contamination. Emergency Response and Contingency Plans are provided in an appendix of the Water System Plan.

2) Proposed measures to reduce or control environmental health hazards, if any:

Chlorine facilities will be checked daily. Respirators and protective clothing will be available at each site in case of chlorine spills/leaks.

b. Noise

1) What types of noise exist in the area which may affect your project (for example: traffic, equipment, operation, other)?

Construction equipment during improvement construction.

2) What types and levels of noise could be created by or associated with the project on a short-term or a long-term basis (for example: traffic, construction, operation, other)? Indicate what hours noise would come from the site.

Noise levels at the improvement sites will be elevated during construction activities. Construction activities will occur between 8 a.m. and 5 p.m., Monday through Friday, except on holidays.

3) Proposed measures to reduce or control noise impacts, if any:

Construction equipment operational noise will be confined to normal working hours. No long-term noise increases are anticipated at the completed improvement sites.

8. Land and Shoreline Use

a. What is the current use of the site and adjacent properties?

General land-use classifications within the Water Service Area include residential, commercial, industrial, civil/parks, and agricultural.

b. Has the site been used for agriculture? If so, describe.

Yes, various sites within the Water Service Area are utilized for agricultural purposes, including turf and rhubarb.

c. Describe any structures on the site.

Various residential, commercial, industrial, and civil buildings exist within the Water Service Area.

d. Will any structures be demolished? If so, what?

None anticipated.

e. What is the current zoning classification of the site?

Current zoning is described in the Sumner Comprehensive Plan (on file at the City of Sumner Public Works Department and on the City's website [http://www.ci.sumner.wa.us/]).

f. What is the current comprehensive plan designation of the site?

Current land use designations within the Water Service Area are described in the Sumner Comprehensive Plan (on file at the City of Sumner Public Works Department and on the City's website [http://www.ci.sumner.wa.us/]).

g. If applicable, what is the current shoreline master program designation of the site?

Urban, Conservancy, and Natural.

h. Has any part of the site been classified as an "environmentally sensitive" area? If so, specify.

Wetlands, steep slopes, and flood plains are located within the Sumner Water Service Area. These areas are shown and described in the Sumner Comprehensive Plan (on file at the City of Sumner Public Works Department).

i. Approximately how many people would reside or work in the completed project?

One to two additional full-time employees will be required to fully implement the ongoing and proposed operation and maintenance programs and to operate the existing and proposed potable water infrastructure in the six-year planning period.

j. Approximately how many people would the completed project displace?

None anticipated.

k. Proposed measures to avoid or reduce displacement impacts, if any:

Distribution main replacement and extension projects will be completed in existing right-of-way whenever possible. All source improvements will be completed on City-owned property. Wetlands, steep slopes, and flood plains will be minimally disturbed Natural vegetation will be maintained as much as practicable, and disturbed areas will be revegetated with native species as much as practicable.

l. Proposed measures to ensure the proposal is compatible with existing and projected land uses and plans, if any:

The Growth Management Act requires concurrence of plans. The Water System Plan was developed to coincide with the recommendations and land-use projections specified in the City of Sumner and Pierce County Comprehensive Plans.

9. Housing

a. Approximately how many units would be provided, if any? Indicate whether high, middle, or low-income housing.

None anticipated.

b. Approximately how many units, if any, would be eliminated? Indicate whether high, middle, or low-income housing.

None anticipated.

c. Proposed measures to reduce or control housing impacts, if any:

Proposed facilities will be located in existing right-of-way or City-owned property as much as possible.

10. Aesthetics

a. What is the tallest height of any proposed structure(s), not including antennas? What is the principal exterior building material(s) proposed?

The proposed 2-million-gallon reservoir is expected to be no more than 40 feet high. The tank will be constructed of steel or concrete. Control buildings for new and improved well sites are anticipated to be constructed with concrete masonry units. Control buildings are expected to be no more than 20 feet high.

b. What views in the immediate vicinity would be altered or obstructed?

None anticipated.

c. Proposed measures to reduce or control aesthetic impacts, if any:

New structures will be painted or finished to blend into the surroundings. Landscaping will be installed at each site as required by Sumner Municipal Code.

11. Light and Glare

a. What type of light or glare will the proposal produce? What time of day would it mainly occur?

The proposed 2-million-gallon reservoir and well-control buildings are expected to have site lighting to discourage vandalism. Lighting will probably be activated during evening, night, and early morning hours.

b. Could light or glare from the finished project be a safety hazard or interfere with views?

Not anticipated.

c. What existing off-site sources of light or glare may affect your proposal?

None.

d. Proposed measures to reduce or control light and glare impacts, if any:

Site lighting will be shielded and focused to on-site areas.

12. Recreation

a. What designated and informal recreational opportunities are in the immediate vicinity?

Current recreational opportunities are inventoried in the Sumner Parks and Recreation Plan. Recreational opportunities include fishing, hunting, golfing, hiking, biking, rafting, canoeing, and playgrounds.

b. Would the proposed project displace any existing recreational uses? If so, describe.

None anticipated.

c. Proposed measures to reduce or control impacts on recreation, including recreation opportunities to the provided by the project or applicant, if any:

None.

13. Historic and Cultural Preservation

a. Are there any places or objects listed on, or proposed for, national, state, or local preservation registers known to be on or next to the site? If so, generally describe.

There are several historic homes within the Water Service Area.

b. Generally describe any landmarks or evidence of historic, archaeological, scientific, or cultural importance known to be on or next to the site.

The Muckleshoot and Puyallup Indian Tribes place great cultural significance on the fishery resource provided by the White and Puyallup Rivers, and tributaries thereof.

c. Proposed measures to reduce or control impacts, if any:

In the event any archeologically significant artifacts are found during construction of the proposed improvements, all work will be suspended until an investigation and evaluation of the site can be completed by archeologists to ensure that artifacts are protected and preserved. Fisheries impacts will be avoided whenever possible.

14. Transportation

a. Identify public streets and highways serving the site, and describe proposed access to the existing street system. Show on site plans, if any.

Major highways located within the Water Service Area include SR 167, SR 410, SR 162, East Valley Highway, and West Valley Highway. Arterials and neighborhood streets are shown on maps presented in the Water System Plan.

b. Is site currently served by public transit? If not, what is the approximate distance to the nearest transit stop?

The City of Sumner is served by Pierce Transit.

c. How many parking spaces would the completed project have? How many would the project eliminate?

Parking will be provided for City vehicles at the 2-million-gallon reservoir and new/improved well sites. No additional public parking spaces will be created by the improvement projects. It is not anticipated that public parking spaces will be eliminated by the proposed improvement projects.

d. Will the proposal require any new roads or streets, or improvements to existing roads or streets, not including driveways? If so, generally describe (indicate whether public or private).

Access roads to new facilities will be constructed. Installation of improvements within existing right-of-way will likely require that the existing roads within the right-of-way be disturbed. Therefore, existing roads within construction sites will be resurfaced to preconstruction conditions.

e. Will the project use (or occur in the immediate vicinity of) water, rail, or air transportation? If so, generally describe.

One proposed distribution main extension project will require that a water main be jacked and bored under the BNSF railroad tracks paralleling East Valley Highway.

f. How many vehicular trips per day would be generated by the completed project? If known, indicate when peak volumes would occur.

None anticipated after project completion.

g. Proposed measures to reduce or control transportation impacts, if any:

None.

15. Public Services

a. Would the project result in an increased need for public services (for example: fire protection, police protection, health care, schools, other)? If so, generally describe.

Completion of the proposed projects will increase the City water system operation and maintenance responsibilities. Completion of the proposed projects will increase the quality and availability of public services (related to potable water).

b. Proposed measures to reduce or control direct impacts on public services, if any:

Appropriate rates and system development charges will be assessed to fund the ongoing maintenance and operation and capital expenditures of the facility improvements.

16. Utilities

a. Circle utilities currently available at the site: electricity, natural gas, water, refuse service, telephone, sanitary sewer, septic system, other.

The Water Service Area encompasses the incorporated Sumner City limits and beyond. All of the above-mentioned utilities are available within the Water Service Area.

b. Describe the utilities that are proposed for the project, the utility providing the service, and the general construction activities on the site or in the immediate vicinity which might be needed.

Electrical for 2-million-gallon reservoir and new/improved well sites. Electrical service will be provided by Puget Sound Energy. Stormwater control facilities will be constructed at each new and improved facility as required by the Sumner Municipal Code. The City of Sumner will manage the stormwater facilities.

TO BE COMPLETED BY APPLICANT

EVALUATION FOR
AGENCY USE ONLY

SIGNATURE

The above answers are true and complete to the best of my knowledge. I understand that the lead agency is relying on them to make its decision.

Signature: _____

Date Submitted: _____

C. SUPPLEMENTAL SHEET FOR NON-PROJECT ACTIONS

(Do not use this sheet for project actions.)

Because these questions are very general, it may be helpful to read them in conjunction with the list of the elements of the environment.

When answering these questions, be aware of the extent the proposal, or types of activities likely to result from the proposal, would affect the item at a greater intensity or at a faster rate than if the proposal were not implemented. Respond briefly and in general terms.

1. How would the proposal be likely to increase discharge to water; emissions to air; production, storage, or release of toxic or hazardous substances; or production of noise?

   The proposed improvements will likely increase dust and petroleum emissions during construction activities. Noise levels at improvement sites will increase during construction. There is a potential for chlorine spills if the chemical is handled or stored incorrectly.

2. How would the proposal be likely to affect plants, animals, fish, or marine life?

   Some temporary impacts may occur as a result of construction activities. Construction activities will temporarily remove or displace native vegetation and wildlife.

3. How would the proposal be likely to deplete energy or natural resources?

   The 2-million-gallon reservoir and new/improved well sites will consume electricity. Existing and proposed wells are or will be completed in a deep, confined aquifer that does not directly provide recharge to surface water bodies. Improvements proposed for the existing spring sources located on the east hill will capture spring water prior to it becoming surface water runoff down the slopes on the east hill.

4. How would the proposal be likely to use or affect environmentally sensitive areas or areas designated (or eligible or under study) for governmental protection such as parks, wilderness, wild and scenic rivers, threatened or endangered species habitat, historic or cultural sites, wetlands, floodplains, or prime farmlands?

   Environmentally sensitive areas may be temporarily disturbed during construction of facility improvements. Completed improvements will not adversely affect environmentally sensitive areas.

5. How would the proposal be likely to affect land and shoreline use, including whether it would allow or encourage land or shoreline uses incompatible with existing plans?

   The Water System Plan is compatible with the Sumner Comprehensive Plan and all City and County zoning ordinances. Construction of the improvements proposed in the Water System Plan will not affect land and shoreline use.

6. How would the proposal be likely to increase demands on transportation or public services and utilities?

   Hiring two new full-time employees over the next six years will likely increase ADT counts by four each day. Water and sewer utilities will see an increase commensurate with the addition of two full-time employees.

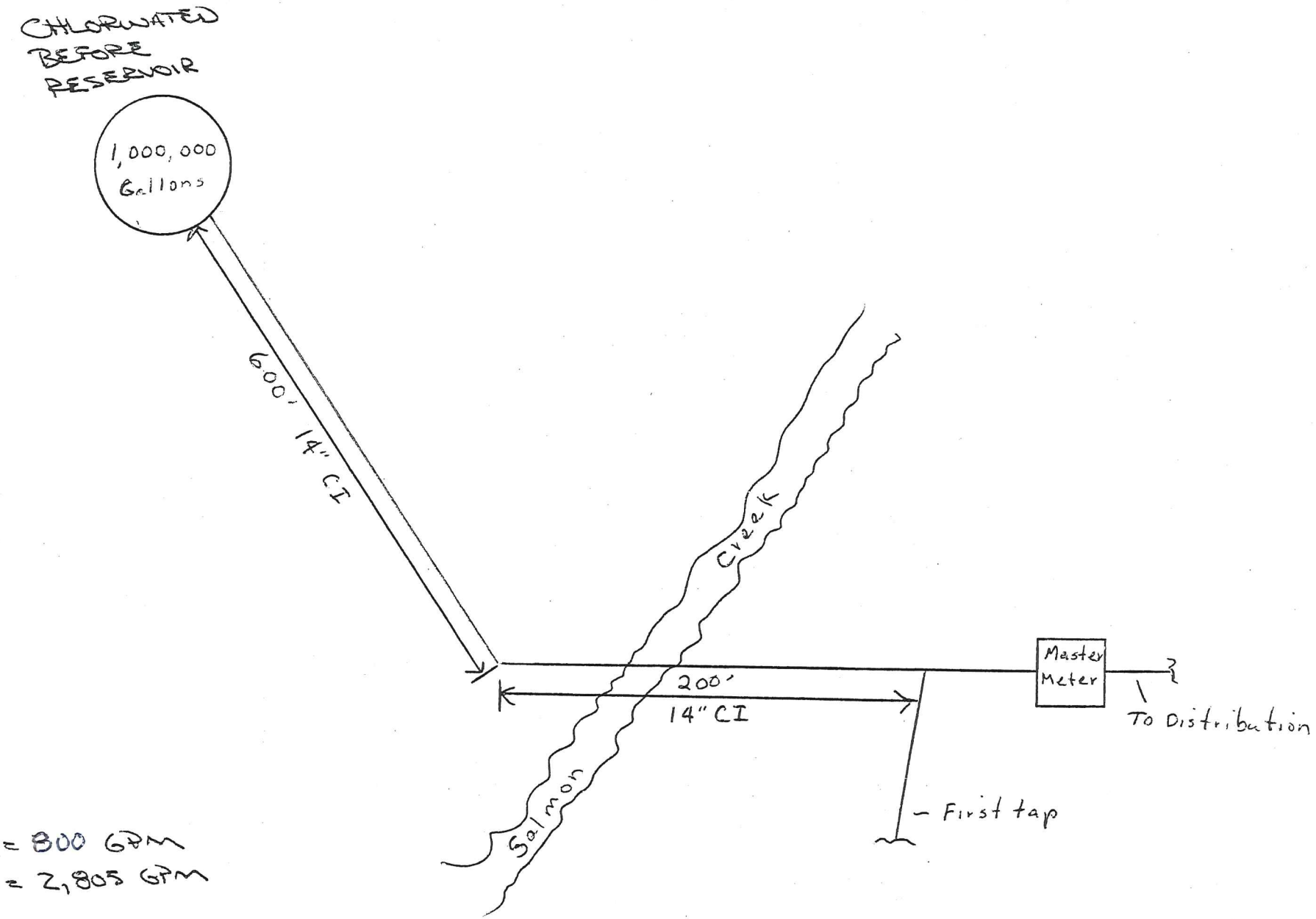
7. Identify, if possible, whether the proposal may conflict with local, state, or federal laws or requirements for the protection of the environment.

   The Water System Plan is compatible with the Sumner Comprehensive Plan, Sumner Sewer System Plan, Sumner Stormwater Plan, and all applicable Sumner ordinances and codes. It is not anticipated that the proposed improvements will conflict with local, state, or federal laws or requirements for the protection of the environment.

APPENDIX P

CT Product Calculations

Sumner Springs



Q_{MAX} = 800 GPM

RIGHT = 2,805 GPM

Sumner Springs CT at Maximum Source Capacity

(USING 10% BAFFLING FACTOR IN RESERVOIR)

CONTACT TANK #1			14-INCH DIAM. CONVEYANCE		
Tank Dia. =	**81**	feet	**Pipe Dia. =**	**14**	inch
Tank Dpth =	**26**	feet	**Length =**	**800**	linear feet
Flowrate=	**800**	gpm	**Flowrate=**	**800**	gpm
Volume =	133910.0	CF	Area =	1.07	square feet

Source Capacity[1] (gpm)	Total Flow (CF/Min)	Tank Volume (CF)		Flowrate (CF/min)		Baffling Factor (T10/T) 0.1		Detention Time (Min)	Pipe Volume (CF)		Flowrate (CF/min)		Baffling Factor (T10/T) 1.0		Detention Time (Min)	Total Detention Time T10 (Min)		FREE Residual Chlorine (mg/l)		**CT (mg/l)(min)**
800	107.0	133,910.0	/	107.0	x	0.1	=	125.2	855.2	/	107.0	x	1	=	8.00	133.2	x	**0.45**	=	59.9

[1] Approximate maximum physical capacity of Sumner Springs source.

Sumner Springs CT at Instantaneous Water Right

(USING 10% BAFFLING FACTOR IN RESERVOIR)

CONTACT TANK #1			14-INCH DIAM. CONVEYANCE		
Tank Dia. =	**81**	feet	**Pipe Dia. =**	**14**	inch
Tank Dpth =	**26**	feet	**Length =**	**800**	linear feet
Flowrate=	**2805**	gpm	**Flowrate=**	**2805**	gpm
Volume =	133910.0	CF	Area =	1.07	square feet

Source Capacity[1] (gpm)	Total Flow (CF/Min)	Tank Volume (CF)		Flowrate (CF/min)		Baffling Factor (T10/T) 0.1		Detention Time (Min)	Pipe Volume (CF)		Flowrate (CF/min)		Baffling Factor (T10/T) 1.0		Detention Time (Min)	Total Detention Time T10 (Min)		FREE Residual Chlorine (mg/l)		**CT (mg/l)(min)**
2805	375.0	133,910.0	/	375.0	x	0.1	=	35.7	855.2	/	375.0	x	1	=	2.28	38.0	x	**0.45**	=	17.1

[1] Instantaneous water right.

City of Sumner: Elhi Springs Source

Chlorine Contact Time Product (CT) Calculations

Estimated CT at first customer

Existing System CT at Maximum Source Capacity

	CONTACT TANK #1												CONTACT TANK #2											
	Tank Dia. = 36 inch Tank Dpth = 5.5 feet Flowrate= 92 gpm Volume = 38.9 CF												Tank Dia. = 32 inch Tank Dpth = 4.8 ft Flowrate= 92 gpm Volume = 26.8 CF											
Source Capacity[1] (gpm)	Total Flow (CF/Min)	Tank Volume (CF)		Flowrate (CF/min)		Baffling Factor (T10/T) 0.3		Detention Time (Min)					Tank Volume (CF)		Flowrate (CF/min)		Baffling Factor (T10/T) 0.3		Detention Time (Min)				
92	12.3	38.9	/	12.3	x	0.3	=	0.9					26.8	/	12.3	x	0.3	=	0.7				

	2-INCH DIAM. CONVEYANCE												4-INCH DIAM. CONVEYANCE											
	Pipe Dia. = 2 inch Length = 12 linear feet Flowrate= 92 gpm Area = 0.02 square feet												Pipe Dia. = 4 inch Length = 6 linear feet Flowrate= 92 gpm Area = 0.09 square feet											
Source Capacity[1] (gpm)	Total Flow (CF/Min)	Pipe Volume (CF)		Flowrate (CF/min)		Baffling Factor (T10/T) 1.0		Detention Time (Min)					Pipe Volume (CF)		Flowrate (CF/min)		Baffling Factor (T10/T) 1.0		Detention Time (Min)				
92	12.3	0.3	/	12.3	x	1	=	0.02					0.5	/	12.3	x	1	=	0.04				

	6-INCH DIAM. CONVEYANCE												3/4-INCH SERVICE LINE											
	Pipe Dia. = 6 inch Length = 29 linear feet Flowrate= 92 gpm Area = 0.20 square feet												Pipe Dia. = 0.75 inch Length = 450 linear feet Flowrate= 5 gpm [2] Area = 0.003 square feet											
Source Capacity[1] (gpm)	Total Flow (CF/Min)	Pipe Volume (CF)		Flowrate (CF/min)		Baffling Factor (T10/T) 1.0		Detention Time (Min)					Pipe Volume (ft^3)		Flowrate (CF/min)		Baffling Factor (T10/T) 1.0		Detention Time (Min)	Total Detention Time T10 (Min)		FREE Residual Chlorine (mg/l)		CT (mg/l)(min)
92	12.3	5.7	/	12.3	x	1	=	0.5					1.4	/	0.7	x	1	=	2.1	4.2	x	0.5	=	2.1

[1] Approximate maximum physical capacity of Elhi Springs source.
[2] Assumption based on flow thru a 3/4-inch service at minimum 30 psi (DOH Water System Design Manual, Table 5-3)

	CONTACT TANK #1												CONTACT TANK #2											
	Tank Dia. = 36 inch Tank Dpth = 5.5 feet Flowrate= 92 gpm Volume = 38.9 CF												Tank Dia. = 32 inch Tank Dpth = 4.8 ft Flowrate= 92 gpm Volume = 26.8 CF											
Source Capacity[1] (gpm)	Total Flow (CF/Min)	Tank Volume (CF)		Flowrate (CF/min)		Baffling Factor (T10/T) 0.3		Detention Time (Min)					Tank Volume (CF)		Flowrate (CF/min)		Baffling Factor (T10/T) 0.3		Detention Time (Min)				
92	12.3	38.9	/	12.3	x	0.3	=	0.9					26.8	/	12.3	x	0.3	=	0.7				

	2-INCH DIAM. CONVEYANCE												4-INCH DIAM. CONVEYANCE											
	Pipe Dia. = 2 inch Length = 12 linear feet Flowrate= 92 gpm Area = 0.02 square feet												Pipe Dia. = 4 inch Length = 6 linear feet Flowrate= 92 gpm Area = 0.09 square feet											
Source Capacity[1] (gpm)	Total Flow (CF/Min)	Pipe Volume (CF)		Flowrate (CF/min)		Baffling Factor (T10/T) 1.0		Detention Time (Min)					Pipe Volume (CF)		Flowrate (CF/min)		Baffling Factor (T10/T) 1.0		Detention Time (Min)				
92	12.3	0.3	/	12.3	x	1	=	0.02					0.5	/	12.3	x	1	=	0.04				

	6-INCH DIAM. CONVEYANCE												3/4-INCH SERVICE LINE											
	Pipe Dia. = 6 inch Length = 29 linear feet Flowrate= 92 gpm Area = 0.20 square feet												Pipe Dia. = 0.75 inch Length = 450 linear feet Flowrate= 5 gpm [2] Area = 0.003 square feet											
Source Capacity[1] (gpm)	Total Flow (CF/Min)	Pipe Volume (CF)		Flowrate (CF/min)		Baffling Factor (T10/T) 1.0		Detention Time (Min)					Pipe Volume (ft^3)		Flowrate (CF/min)		Baffling Factor (T10/T) 1.0		Detention Time (Min)	Total Detention Time T10 (Min)		FREE Residual Chlorine (mg/l)		CT (mg/l)(min)
92	12.3	5.7	/	12.3	x	1	=	0.5					1.4	/	0.7	x	1	=	2.1	4.2	x	1.42	=	6.0

[1] Approximate maximum physical capacity of Elhi Springs source.
[2] Assumption based on flow thru a 3/4-inch service at minimum 30 psi (DOH Water System Design Manual, Table 5-3)

Proposed System CT at Maximum Source Capacity

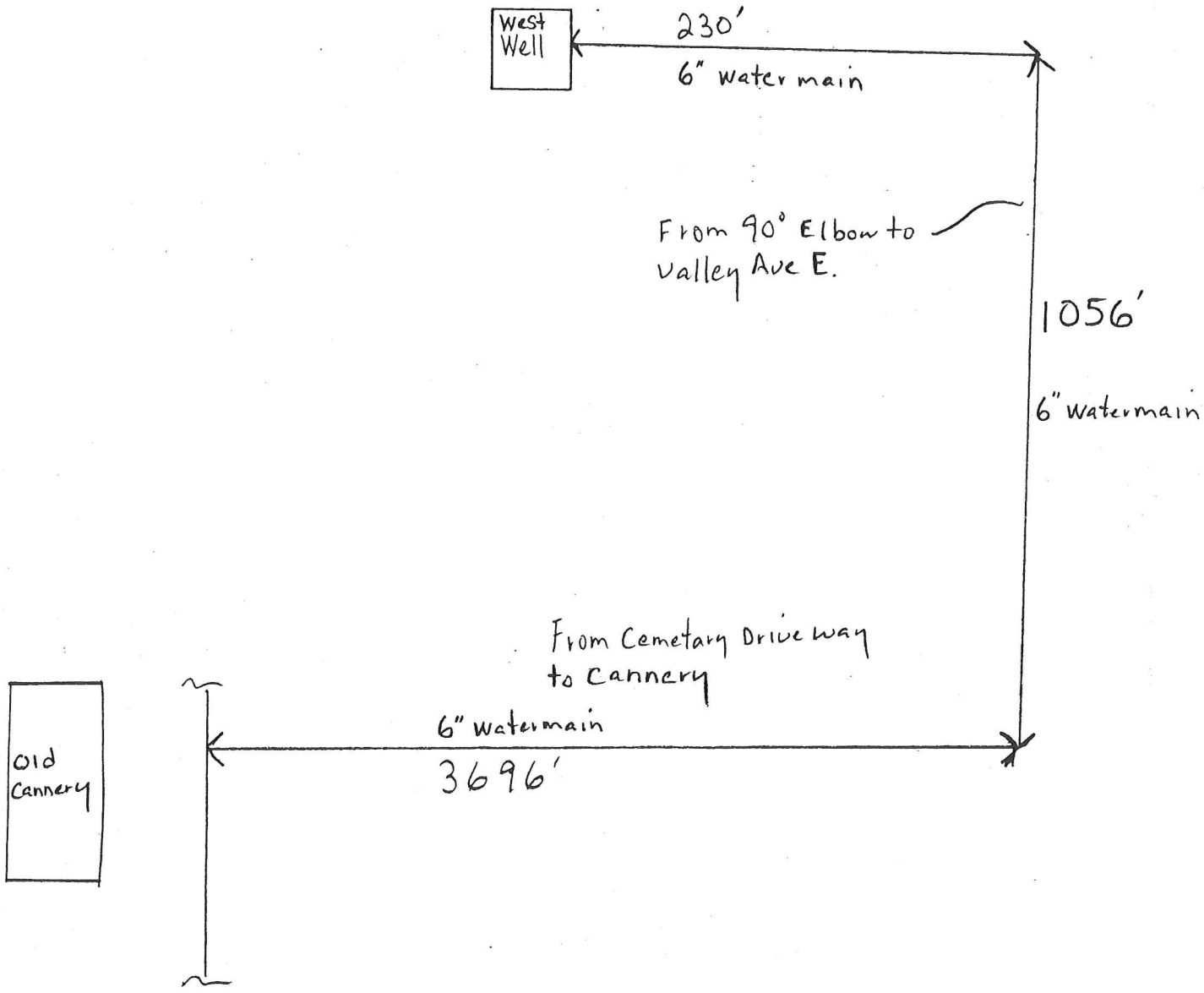
	CONTACT TANK #1												CONTACT TANK #2											
	Tank Dia. = 36 inch Tank Dpth = 5.5 feet Flowrate= 360 gpm Volume = 38.9 CF												Tank Dia. = 32 inch Tank Dpth = 4.8 ft Flowrate= 360 gpm Volume = 26.8 CF											
Source Capacity[1] (gpm)	Total Flow (CF/Min)	Tank Volume (CF)		Flowrate (CF/min)		Baffling Factor (T10/T) 0.3		Detention Time (Min)					Tank Volume (CF)		Flowrate (CF/min)		Baffling Factor (T10/T) 0.3		Detention Time (Min)				
360	48.1	38.9	/	48.1	x	0.3	=	0.2					26.8	/	48.1	x	0.3	=	0.2				

	2-INCH DIAM. CONVEYANCE												4-INCH DIAM. CONVEYANCE											
	Pipe Dia. = 2 inch Length = 12 linear feet Flowrate= 360 gpm Area = 0.02 square feet												Pipe Dia. = 4 inch Length = 6 linear feet Flowrate= 360 gpm Area = 0.09 square feet											
Source Capacity[1] (gpm)	Total Flow (CF/Min)	Pipe Volume (CF)		Flowrate (CF/min)		Baffling Factor (T10/T) 1.0		Detention Time (Min)					Pipe Volume (CF)		Flowrate (CF/min)		Baffling Factor (T10/T) 1.0		Detention Time (Min)				
360	48.1	0.3	/	48.1	x	1	=	0.01					0.5	/	48.1	x	1	=	0.01				

	6-INCH DIAM. CONVEYANCE												1-1/2INCH SERVICE LINE											
	Pipe Dia. = 6 inch Length = 420 linear feet Flowrate= 360 gpm Area = 0.20 square feet												Pipe Dia. = 1.50 inch Length = 200 linear feet Flowrate= 15 gpm Area = 0.012 square feet											
Source Capacity[1] (gpm)	Total Flow (CF/Min)	Pipe Volume (CF)		Flowrate (CF/min)		Baffling Factor (T10/T) 1.0		Detention Time (Min)					Pipe Volume (ft^3)		Flowrate (CF/min)		Baffling Factor (T10/T) 1.0		Detention Time (Min)	Total Detention Time T10 (Min)		FREE Residual Chlorine (mg/l)		CT (mg/l)(min)
360	48.1	82.5	/	48.1	x	1	=	1.7					2.5	/	2.0	x	1	=	1.2	3.4	x	1.77	=	6.0

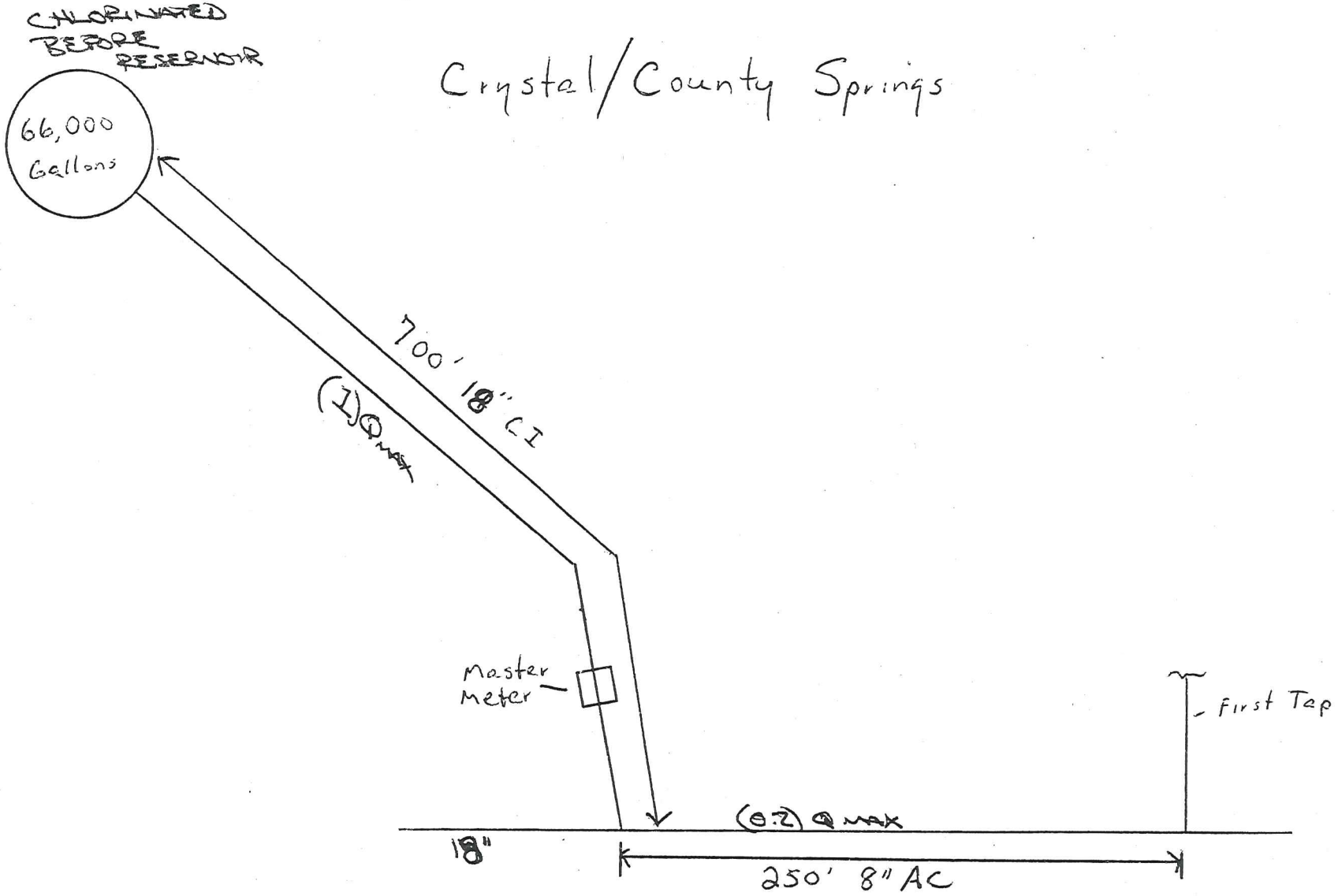
[1] Approximate maximum physical capacity of Elhi Springs source.
[2] Assumption based on flow thru a 3/4-inch service at minimum 30 psi (DOH Water System Design Manual, Table 5-3)

West Well



Q_{MAX} = 250 GPM
RIGHT = 250 GPM

Crystal/County Springs



Q_{MAX} = 493 GPM
RIGHT = 799 GPM

City of Sumner: Potable Water Source

Chlorine Contact Time Product (CT) Calculations

Estimated CT at first customer

West Well CT at Maximum Source Capacity

6-INCH DIAM. CONVEYANCE
Pipe Dia. = 6 inch
Length = 4982 linear feet
Flowrate= 250 gpm
Area = 0.20 square feet

Source Capacity[1] (gpm)	Total Flow (CF/Min)	Pipe Volume (CF)		Flowrate (CF/min)		Baffling Factor (T10/T) 1.0		Detention Time (Min)	Total Detention Time T10 (Min)		FREE Residual Chlorine (mg/l)		CT (mg/l)(min)
250	33.4	978.2	/	33.4	x	1	=	29.27	29.3	x	**0.45**	=	13.2

[1] Approximate maximum physical capacity of West Well source.

Crystal/County Springs CT at Maximum Source Capacity

(USING 10% BAFFLING FACTOR IN RESERVOIR)

CONTACT TANK #1
Tank Dia. = 20 feet
Tank Dpth = 28 feet
Flowrate= 493 gpm
Volume = 8792.0 CF

18-INCH DIAM. CONVEYANCE
Pipe Dia. = 18 inch
Length = 700 linear feet
Flowrate= 493 gpm
Area = 1.77 square feet

8-INCH DIAM. CONVEYANCE
Pipe Dia. = 8 inch
Length = 250 linear feet
Flowrate= 98.6 gpm[2]
Area = 0.35 square feet

Source Capacity[1] (gpm)	Total Flow (CF/Min)	Tank Volume (CF)		Flowrate (CF/min)		Baffling Factor (T10/T) 0.1		Detention Time (Min)	Pipe Volume (CF)		Flowrate (CF/min)		Baffling Factor (T10/T) 1.0		Detention Time (Min)	Pipe Volume (CF)		Flowrate (CF/min)		Baffling Factor (T10/T) 1.0		Detention Time (Min)	Total Detention Time T10 (Min)		FREE Residual Chlorine (mg/l)		CT (mg/l)(min)
493	65.9	8,792.0	/	65.9	x	0.1	=	13.3	1,237.0	/	65.9	x	1	=	18.77	87.3	/	13.2	x	1	=	6.62	38.7	x	**0.45**	=	17.4

[1] Approximate maximum physical capacity of County Springs source.
[2] Flow through 8" diam assumed to be approximately 20% of total flow.

Crystal/County Springs CT at Instantaneous Water Right

(USING 10% BAFFLING FACTOR IN RESERVOIR)

CONTACT TANK #1
Tank Dia. = 20 feet
Tank Dpth = 28 feet
Flowrate= 799 gpm
Volume = 8792.0 CF

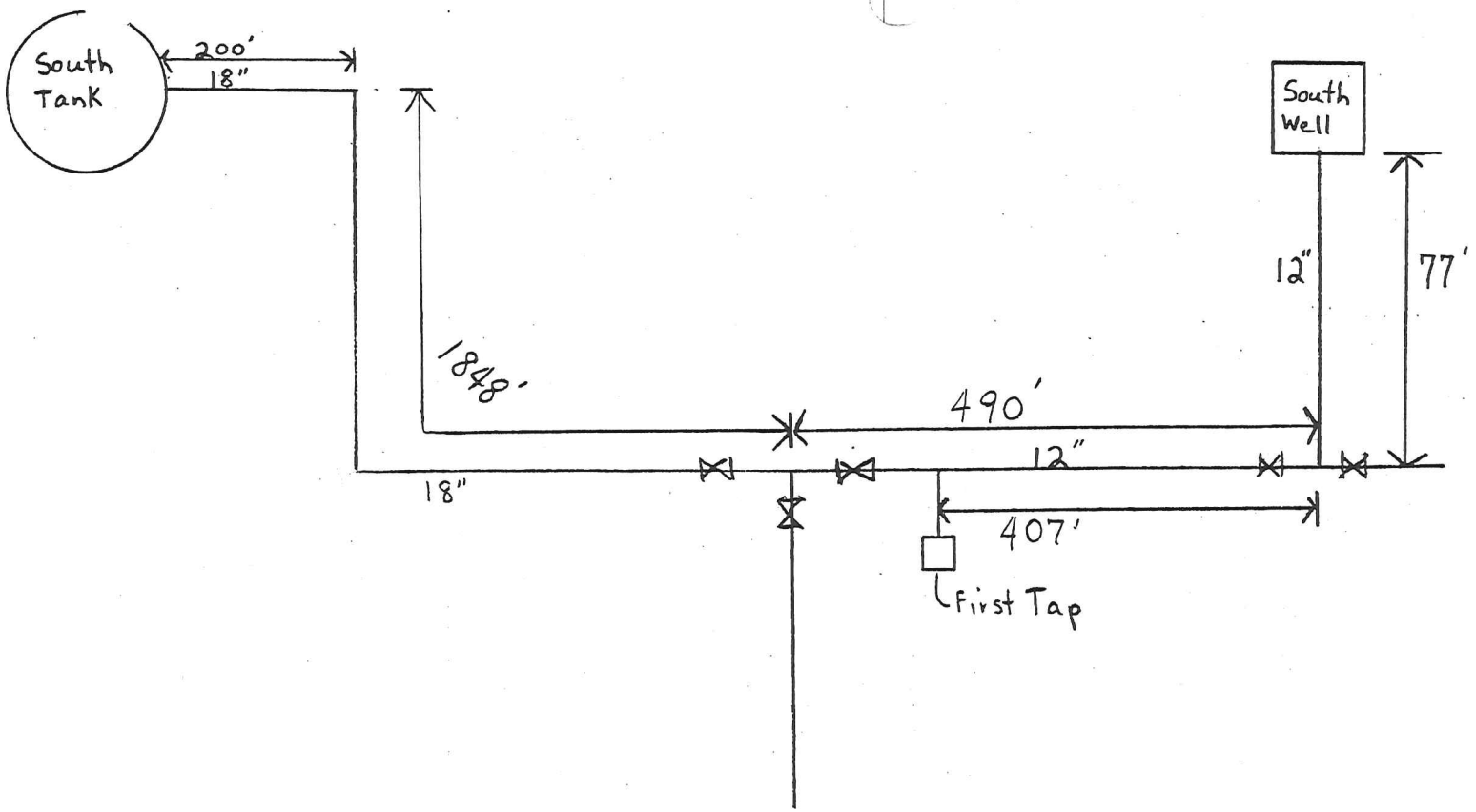
18-INCH DIAM. CONVEYANCE
Pipe Dia. = 18 inch
Length = 700 linear feet
Flowrate= 799 gpm
Area = 1.77 square feet

8-INCH DIAM. CONVEYANCE
Pipe Dia. = 8 inch
Length = 250 linear feet
Flowrate= 159.8 gpm[2]
Area = 0.35 square feet

Source Capacity[1] (gpm)	Total Flow (CF/Min)	Tank Volume (CF)		Flowrate (CF/min)		Baffling Factor (T10/T) 0.1		Detention Time (Min)	Pipe Volume (CF)		Flowrate (CF/min)		Baffling Factor (T10/T) 1.0		Detention Time (Min)	Pipe Volume (CF)		Flowrate (CF/min)		Baffling Factor (T10/T) 1.0		Detention Time (Min)	Total Detention Time T10 (Min)		FREE Residual Chlorine (mg/l)		CT (mg/l)(min)
799	106.8	8,792.0	/	106.8	x	0.1	=	8.2	1,237.0	/	106.8	x	1	=	11.58	87.3	/	21.4	x	1	=	4.08	23.9	x	**0.45**	=	10.8

[1] Instantaneous water right.
[2] Flow through 8" diam assumed to be approximately 20% of total flow.

SOUTH WELL



$Q_{MAX} = 700$ GPM

$Q_{(FUTURE)} = 1000$ GPM

South Well CT at Maximum Source Capacity

12-INCH DIAM. CONVEYANCE
Pipe Dia. = **12** inch
Length = **484** linear feet
Flowrate= **700** gpm
Area = 0.79 square feet

Source Capacity[1] (gpm)	Total Flow (CF/Min)	Pipe Volume (CF)		Flowrate (CF/min)		Baffling Factor (T10/T) 1.0		Detention Time (Min)	Total Detention Time T10 (Min)		FREE Residual Chlorine (mg/l)		CT (mg/l)(min)
700	93.6	380.1	/	93.6	x	1	=	4.06	4.1	x	**0.45**	=	1.8

[1] Approximate maximum physical capacity of South Well source.

Need ~9.4 min additional contact time.
Therefore, ~880 CF additional "storage" required prior to first connection
OR revise conveyance to connect South Well directly to South Tank

12-INCH DIAM. CONVEYANCE
Pipe Dia. = **12** inch
Length = **484** linear feet
Flowrate= **700** gpm
Area = 0.79 square feet

Source Capacity[1] (gpm)	Total Flow (CF/Min)	Pipe Volume (CF)		Flowrate (CF/min)		Baffling Factor (T10/T) 1.0		Detention Time (Min)	Total Detention Time T10 (Min)		FREE Residual Chlorine (mg/l)		CT (mg/l)(min)
700	93.6	380.1	/	93.6	x	1	=	4.06	4.1	x	**1.47**	=	6.0

[1] Approximate maximum physical capacity of South Well source.

Need ~1.47 mg/l Free Residual Chlorine to maintain CT = 6.0.

South Well CT at Instantaneous Water Right

12-INCH DIAM. CONVEYANCE
Pipe Dia. = **12** inch
Length = **484** linear feet
Flowrate= **1000** gpm
Area = 0.79 square feet

Source Capacity[1] (gpm)	Total Flow (CF/Min)	Pipe Volume (CF)		Flowrate (CF/min)		Baffling Factor (T10/T) 1.0		Detention Time (Min)	Total Detention Time T10 (Min)		FREE Residual Chlorine (mg/l)		CT (mg/l)(min)
1000	133.7	380.1	/	133.7	x	1	=	2.84	2.8	x	**0.45**	=	1.3

[1] Instantaneous water right.

Need ~10.7 min additional contact time.
Therefore, ~1450 CF additional "storage" required prior to first connection
OR revise conveyance to connect South Well directly to South Tank

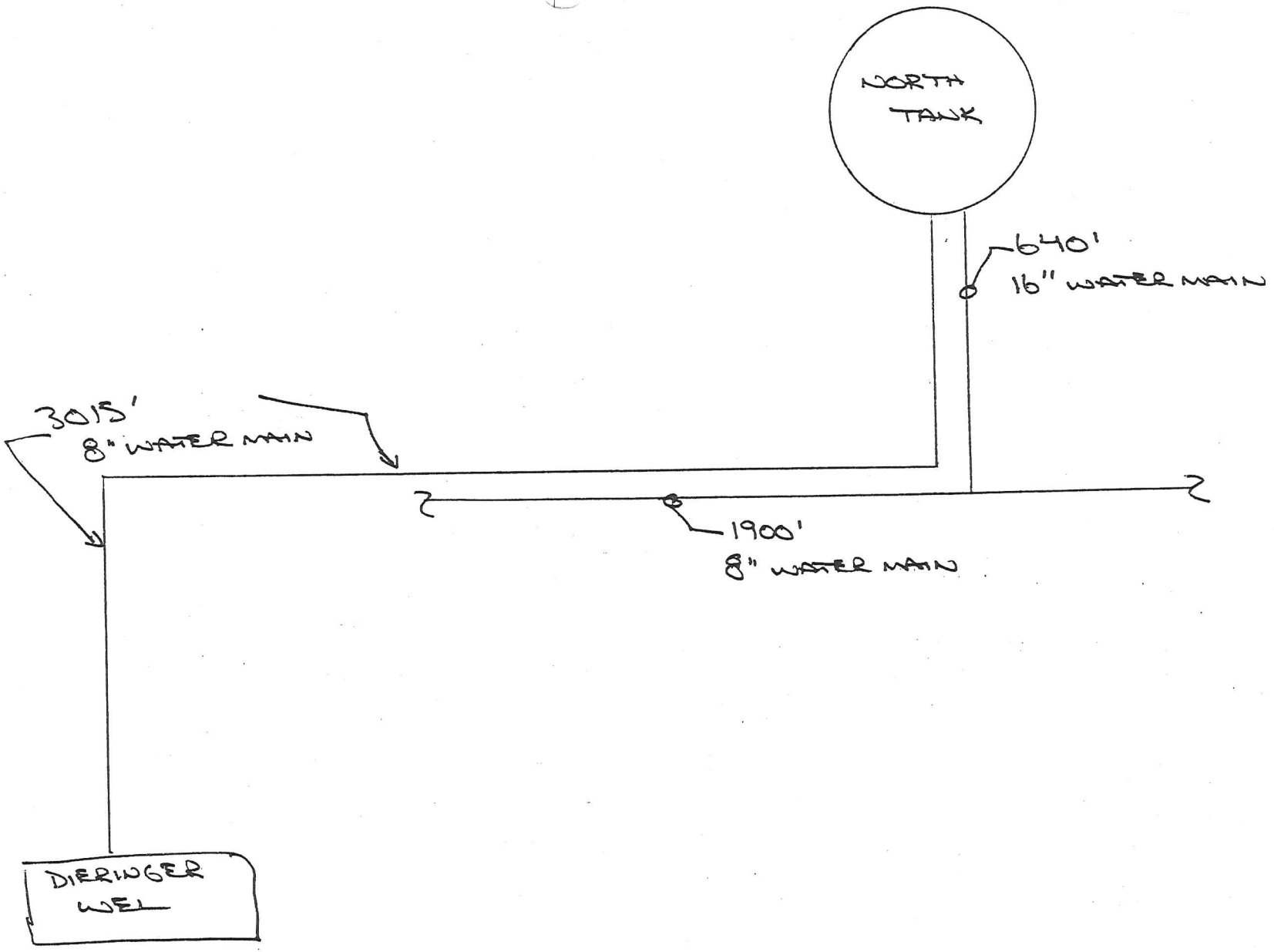
12-INCH DIAM. CONVEYANCE
Pipe Dia. = **12** inch
Length = **484** linear feet
Flowrate= **1000** gpm
Area = 0.79 square feet

Source Capacity[1] (gpm)	Total Flow (CF/Min)	Pipe Volume (CF)		Flowrate (CF/min)		Baffling Factor (T10/T) 1.0		Detention Time (Min)	Total Detention Time T10 (Min)		FREE Residual Chlorine (mg/l)		CT (mg/l)(min)
1000	133.7	380.1	/	133.7	x	1	=	2.84	2.8	x	**2.1**	=	6.0

[1] Instantaneous water right.

Need ~2.10 mg/l Free Residual Chlorine to maintain CT = 6.0.

DIERINGER WELL



City of Sumner: Dieringer Well Source

Chlorine Contact Time Product (CT) Calculations

Estimated CT at first customer

Existing System CT at Maximum Source Capacity

		4-INCH DIAM. CONVEYANCE							8-INCH DIAM. CONVEYANCE							NORTH RESERVOIR							16-INCH DIAM. CONVEYANCE							8-INCH DIAM. CONVEYANCE									
		Pipe Dia. = 4 inch Length = 20 linear feet Flowrate= 250 gpm Area = 0.09 square feet							Pipe Dia. = 8 inch Length = 3015 linear feet Flowrate= 250 gpm Area = 0.35 square feet							Tank Dia. = 120 feet Tank Dpth = 24.23 feet Flowrate= 800 gpm^2 Volume = 273895.9 CF							Pipe Dia. = 16.00 inch Length = 640 linear feet Flowrate= 800 gpm^2 Area = 1.396 square feet							Pipe Dia. = 8.00 inch Length = 1900 linear feet Flowrate= 500 gpm^2 Area = 0.349 square feet									
Source Capacity[1] (gpm)	Total Flow (CF/Min)	Pipe Volume (CF)		Flowrate (CF/min)		Baffling Factor (T10/T) 1.0		Detention Time (Min)	Pipe Volume (CF)		Flowrate (CF/min)		Baffling Factor (T10/T) 1.0		Detention Time (Min)	Tank Volume (CF)		Flowrate (CF/min)		Baffling Factor (T10/T) 0.1		Detention Time (Min)	Pipe Volume (ft^3)		Flowrate (CF/min)		Baffling Factor (T10/T) 1.0		Detention Time (Min)	Pipe Volume (ft^3)		Flowrate (CF/min)		Baffling Factor (T10/T) 1.0		Detention Time (Min)	Total Detention Time T10 (Min)		FREE Residual Chlorine (mg/l)		CT (mg/l)(min)
250	33.4	1.7	/	33.4	x	1	=	0.05	1,052.4	/	33.4	x	1	=	31.49	273,895.9	/	107.0	x	0.1	=	256.1	893.6	/	107.0	x	1	=	8.4	663.2	/	66.8	x	1	=	9.9	305.9	x	**0.3**	=	91.8

[1] Dieringer Well source capacity.
[2] Assumed flow from reservoir.

Existing System CT at Instantaneous Water Right

		4-INCH DIAM. CONVEYANCE							8-INCH DIAM. CONVEYANCE							NORTH RESERVOIR							16-INCH DIAM. CONVEYANCE							8-INCH DIAM. CONVEYANCE									
		Pipe Dia. = 4 inch Length = 20 linear feet Flowrate= 95 gpm Area = 0.09 square feet							Pipe Dia. = 8 inch Length = 3015 linear feet Flowrate= 95 gpm Area = 0.35 square feet							Tank Dia. = 120 feet Tank Dpth = 24.23 feet Flowrate= 800 gpm^2 Volume = 273895.9 CF							Pipe Dia. = 16.00 inch Length = 640 linear feet Flowrate= 800 gpm^2 Area = 1.396 square feet							Pipe Dia. = 8.00 inch Length = 1900 linear feet Flowrate= 500 gpm^2 Area = 0.349 square feet									
Source Capacity[1] (gpm)	Total Flow (CF/Min)	Pipe Volume (CF)		Flowrate (CF/min)		Baffling Factor (T10/T) 1.0		Detention Time (Min)	Pipe Volume (CF)		Flowrate (CF/min)		Baffling Factor (T10/T) 1.0		Detention Time (Min)	Tank Volume (CF)		Flowrate (CF/min)		Baffling Factor (T10/T) 0.1		Detention Time (Min)	Pipe Volume (ft^3)		Flowrate (CF/min)		Baffling Factor (T10/T) 1.0		Detention Time (Min)	Pipe Volume (ft^3)		Flowrate (CF/min)		Baffling Factor (T10/T) 1.0		Detention Time (Min)	Total Detention Time T10 (Min)		FREE Residual Chlorine (mg/l)		CT (mg/l)(min)
95	12.7	1.7	/	12.7	x	1	=	0.14	1,052.4	/	12.7	x	1	=	82.87	273,895.9	/	107.0	x	0.1	=	256.1	893.6	/	107.0	x	1	=	8.4	663.2	/	66.8	x	1	=	9.9	357.4	x	**0.3**	=	107.2

[1] Dieringer Well instantaneous water right.
[2] Assumed flow from reservoir.