

# Appendices

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## Appendix Table of Contents

- A. SEPA Determination of Non-Significance
- B. Approvals
  - B1. Plan Adoption by Yakima City Council
  - B2. Consistency Statement Checklists
- C. Agency Comments
  - C1. Department of Health Comments and Response
  - C2. Notices Sent to Agencies/Jurisdictions
  - C3. Agency/Jurisdiction Comments
- D. Water Facilities Inventory (WFI)
- E. Water System Ordinance (Chapter 7.68 of Municipal Code)
- F. MOAs between City of Yakima and Adjacent Purveyors
- G. Resolution No. D-1250, adopted March 29, 1965
- H. Approval of Nested Fire Suppression Storage from Fire Authority
- I. 2016 Water Quality Monitoring Schedule (WQMS)
- J. Inorganic Chemicals Monitoring Plan
- K. Organic Chemicals Monitoring Plan
- L. Stage 2 Disinfectant/Disinfectant By-Products Monitoring Plan
- M. Coliform Monitoring Plan
- N. Continuous and Miscellaneous Monitoring Plan
- O. 2015 Consumer Confidence Report
- P. 2015 ASR Project Summary Report
- Q. ASR Standard Operating Procedures
- R. Emergency Response Plan (Emergency Operations Guidelines)
- S. Letter of Commitment for Participation on Regional Wellhead Committee
- T. Ecology Records - Active Regulated Sites/Facilities in WRIA 38
- U. Sanitary Survey
- V. Cross Connection Control Annual Report
- W. Procedures Manual for Construction of Public Improvement Projects under Private Contracts
- X. Water System Specifications
- Y. Waterline Separation Requirements
- Z. Water System Standard Details
- AA. Public Waterline General Construction Notes
- BB. Documentation of Water System Consumer Meeting Discussing Water System Plan

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**Appendix A.  
SEPA Determination of Non-  
Significance**

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DEPARTMENT OF COMMUNITY DEVELOPMENT

Planning Division

Joan Davenport, AICP, Director  
129 North Second Street, 2<sup>nd</sup> Floor,  
Yakima, WA 98901

ask.planning@yakimawa.gov • www.yakimawa.gov/services/planning

**CITY OF YAKIMA  
DETERMINATION OF NON-SIGNIFICANCE  
NOTICE OF RETENTION**

**June 27, 2017**

**File Numbers: SEPA#013-17**

The City of Yakima Department of Community Development issued a:

- Determination of Nonsignificance (DNS),
- Mitigated Determination of Nonsignificance (MDNS),
- Modified DNS/MDNS,

on June 2, 2017, for this proposal under the State Environmental Policy Act (SEPA) and WAC 197-11-340(2). This retention concerns an State Environmental Policy Act (SEPA) Review for the 2017 Yakima Water System Plan Update.

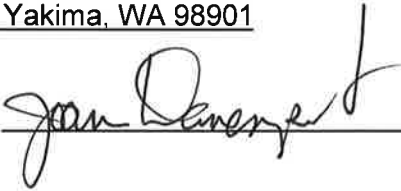
This threshold determination is hereby:

- Retained
- Modified. Modifications to this threshold determination include the following:
- Withdrawn. This threshold determination has been withdrawn due to the following:
- Delayed. A final threshold determination has been delayed due to the following:

Summary of Comments and Responses (if applicable): No comments were submitted.

Responsible official: Joan Davenport, AICP  
Position/Title: Community Development Director/SEPA Responsible Official  
Phone: (509) 575-6183  
Address: 129 N 2<sup>nd</sup> Street, Yakima, WA 98901

**Date:** June 27, 2017

**Signature:**  \_\_\_\_\_



DEPARTMENT OF COMMUNITY DEVELOPMENT

Joan Davenport, AICP, Director

Planning Division

Joseph Calhoun, Manager

129 North Second Street, 2<sup>nd</sup> Floor, Yakima, WA 98901

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**WASHINGTON STATE ENVIRONMENTAL POLICY ACT  
DETERMINATION OF NONSIGNIFICANCE  
CITY OF YAKIMA, WASHINGTON  
June 2, 2017**

**PROJECT DESCRIPTION:** State Environmental Policy Act (SEPA) Review for the 2017 City of Yakima Water System Plan Update. The draft plan can be found at:

[https://www.yakimawa.gov/services/water-irrigation/files/Yakima\\_WSP\\_2017-1-26-Final\\_Draft.pdf](https://www.yakimawa.gov/services/water-irrigation/files/Yakima_WSP_2017-1-26-Final_Draft.pdf)

**LOCATION:** Yakima City Limits  
**PARCEL NUMBERS:** N/A  
**PROPONENT:** City of Yakima Water and Irrigation Division  
**PROPERTY OWNERS:** City of Yakima  
**LEAD AGENCY:** City of Yakima Planning Division  
**FILE NUMBERS:** SEPA #013-17

**DETERMINATION:** The lead agency for this proposal has determined that it does not have a probable significant adverse impact on the environment. An environmental impact statement (EIS) is not required under RCW 43.21C.030(2)(c). This decision was made after review of a completed environmental checklist and other information on file with the lead agency. This information is available to the public on request.

This DNS is issued under WAC 197-11-340(2); the lead agency will not act on this proposal for 20 days from the date of this threshold determination. **All comments must be submitted by 5:00 pm on June 22, 2017.**

Responsible Official: Joan Davenport  
Position/Title: SEPA Responsible Official  
Phone: (509) 575-6183  
Address: 129 N. 2nd Street, Yakima, WA 98901

Date June 2, 2017

Signature

A handwritten signature in blue ink, appearing to read "Joan Davenport", written over a horizontal line.



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LAND USE APPLICATION

CITY OF YAKIMA, DEPARTMENT OF COMMUNITY DEVELOPMENT
129 NORTH SECOND STREET, 2ND FLOOR, YAKIMA, WA 98901
PHONE: (509) 575-6183 FAX: (509) 575-6105

MAY 11 2017
CITY OF YAKIMA
PLANNING DIV.

INSTRUCTIONS - PLEASE READ FIRST AND ANSWER ALL QUESTIONS COMPLETELY.

If you have any questions about this form or the application process, please ask to speak with a planner. All necessary attachments and the filing fee are required upon submittal. Filing fees are not refundable. This application consists of several parts. PART I - GENERAL INFORMATION, PART II - SUPPLEMENTAL APPLICATION, and PART III - CERTIFICATION are on this page. PART II, III, and IV contain additional information specific to your proposal and MUST be attached to this page to complete the application.

PART I - GENERAL INFORMATION

1. Applicant's Information: Name: David Brown, Mailing Address: 2301 Fruitvale Blvd., City: Yakima, St: WA, Zip: 98902, Phone: (509) 575-6154, E-Mail: david.brown@yakimawa.gov
2. Applicant's Interest in Property: Check One: [ ] Owner [x] Agent [ ] Purchaser [ ] Other
3. Property Owner's Information (If other than Applicant): Name: City of Yakima, Mailing Address: 129 N 2nd Street, City: Yakima, St: WA, Zip: 98901, Phone: (509) 575-6154, E-Mail: david.brown@yakimawa.gov

4. Subject Property's Assessor's Parcel Number(s):

5. Legal Description of Property. (if lengthy, please attach it on a separate document)
City of Yakima

6. Property Address:

7. Property's Existing Zoning:
[x] SR [x] R-1 [x] R-2 [x] R-3 [x] B-1 [x] B-2 [x] HB [x] SCC [x] LCC [x] CBD [x] GC [x] AS [x] RD [x] M-1 [x] M-2

8. Type Of Application: (Check All That Apply)
[x] Environmental Checklist (SEPA Review) [ ] Administrative Adjustment [ ] Type (1) Review
[ ] Type (2) Review [ ] Type (3) Review [ ] Binding Site Plan
[ ] Comprehensive Plan Text or Map Amendment [ ] Critical Areas Review [ ] Easement Release
[ ] Planned Development [ ] Preliminary Short Plat [ ] Preliminary Long Plat
[ ] Amended Long Plat [ ] Rezone [ ] Shoreline
[ ] Transportation Concurrency [ ] Other: [ ] Other:

PART II - SUPPLEMENTAL APPLICATION - SEPA CHECKLIST

9. Environmental Checklist (see attached forms)

PART III - CERTIFICATION

10. I certify that the information on this application and the required attachments are true and correct to the best of my knowledge.

Property Owner's Signature: [Signature] Date: 5/11/2017
Applicant's Signature: [Signature] Date:

FILE/APPLICATION(S)# SEPA # 013-17 IPR # 31679

Table with 4 columns: DATE FEE PAID: 5/12/2017, RECEIVED BY: O. Dellinger, AMOUNT PAID: 265.00, RECEIPT NO: CR-17-004302

**STATE ENVIRONMENTAL POLICY ACT (SEPA)  
ENVIRONMENTAL CHECKLIST**

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**A. BACKGROUND**

**1. Name of proposed project:**

City of Yakima Water System Plan Update

**2. Name of applicant:**

City of Yakima, Water/Irrigation Division.

**Telephone:**

(509) 575-6154

**3. Address:**

Water/Irrigation Division  
2301 Fruitvale Boulevard  
Yakima, WA 98902

**Contact:**

Mr. David Brown, Water/Irrigation Division Manager

**Telephone:**

(509) 575-6204

**4. Date checklist prepared:**

May 3, 2017.

**5. Agency requesting checklist:**

As the agency initiating this proposal, the City of Yakima is the lead agency and is requesting the checklist.

**6. Proposed timing or schedule (Including phasing, if applicable):**

The 2017 City of Yakima Water System Plan Update (Plan) evaluates the existing water system and projects future domestic, irrigation, and water supply needs in phases through the year 2042. Please refer to the schedule in Chapter 8 of the Plan for a description of the proposed capital improvement plan (CIP)

The Plan proposes phased implementation of a variety of physical projects and administrative programs that would address future demands for the supply, transmission, and operation of a potable water system within Yakima's water service area. The Plan recommends implementing modifications to supply, distribution, and storage facilities in the service area to ensure that projected and potential demands can be met. New water supply operations programs are

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also recommended. The Plan recommends increasing the supply capacity by installing new Aquifer Storage and Recovery (ASR) wells, constructing improvements to the WTP, constructing additional distribution lines within the City of Yakima, maintenance of existing pressure reducing valves, and implementing annual operations programs for water conservation, leak detection, and corrosion control.

The physical projects mentioned above are elements of the City's recommended water system Capital Improvement Program (CIP). The proposed construction dates for the City's water system CIP projects are listed in Chapter 8 of the Plan. The Plan recommendations would be implemented in two phases: Phase I, a 10-year phase from 2017 to 2027, and Phase II, the remaining 10 years of the 20-year timeframe covered by this Plan. Population and water demand projections in this Plan were made for a 20-year planning horizon. Recommendations for the Phase II years of the 20-year planning horizon will be reviewed and modified as part of subsequent Plan updates.

The CIP projects listed in Chapter 8 of the Plan are subject to change, depending upon the rate, location, and nature of future development within the City and its service area and should not be construed as a commitment by the City to complete a project by a specific date. Actual project implementation will be based on subsequent environmental review, permits and approvals, available funding sources, and scheduling requirements.

7. **Do you have any plans for future additions, expansion, or further activity related to or connected with this proposal? If yes, explain.**

This Water System Plan Update is in itself such a plan. The Plan is required to be updated every 10 years. Those CIP projects planned for implementation after the year 2027 will be part of the next Plan Update and specific impacts associated with these projects are not covered by this checklist. The appropriate level of environmental review consistent with SEPA requirements will be conducted for those projects in the future.

8. **List any environmental information (studies, reports, etc.) you know about that has been prepared, or will be prepared, directly related to this proposal.**

Please refer to the Water System Plan Update at [https://www.yakimawa.gov/services/water-irrigation/files/Yakima\\_WSP\\_2017-1-26-Final\\_Draft.pdf](https://www.yakimawa.gov/services/water-irrigation/files/Yakima_WSP_2017-1-26-Final_Draft.pdf) for a more complete discussion of recommended water system improvements. The SEPA process will be completed for the general impacts associated with this Plan and its projected changes to the City of Yakima's domestic water system. Specific projects to implement the Plan either not yet sited (e.g., wells, WTP modifications) and/or scheduled to occur after

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the year 2027 will remain subject to subsequent environmental review as required under SEPA.

- 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.**

Ongoing industrial, commercial, and residential development throughout the City of Yakima and its service area will continue during the life of this Plan. The City of Yakima has prepared an Urban Area Comprehensive Plan in conformance with the requirements of the Growth Management Act (GMA). Water demand forecasts incorporated into the Plan's analysis anticipate continued growth consistent with the City and region's growth management planning. However, there are no significant changes proposed for Yakima's urbanized area that would affect the Plan's growth projections.

- 10. **List any governmental approvals or permits that will be needed for your proposal, if known. Include Federal, State, City, County, and local districts or regional offices.**

- a. SEPA -Department of Ecology
- b. Plan approval- Department of Health, in progress
- c. Water rights-Department of Ecology, complete
- d. Appropriate local permits for constructing water system improvements at the time such improvements are scheduled.

- 11. **Give 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. (You may attach a page if this space is not adequate.)**

The Water System Plan Update analyzes the existing City of Yakima domestic water system including water supply, storage, distribution, and operations. The study has projected future water demands based on potential domestic needs.

Modifications to the existing domestic system are recommended to ensure that projected water demands can be met. Future decisions and political or legal actions (such as in regard to the City's water rights or irrigation conversion) could result in the need for a subsequent plan update or amendments to this plan.

The recommended water system improvements presented in this Plan relate to four aspects of the system: the supply program, storage and pump station facilities, distribution system, and system operations and management. Recommended improvements to the supply program include modification to the Naches River WTP required to improve operational efficiency and

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installation of new wells (two future ASR wells) needed to meet anticipated future demands and to meet reduced water supply due to climate change.

Recommended improvements to the domestic water distribution system include:

The following distribution projects, while not needed to correct any existing deficiencies, are included in the capital improvement program as part of the City's on-going efforts to maintain and upgrade the quality of the system to meet current and future needs.

Advanced Metering Infrastructure (AMI) Battery Replacement / System Upgrade. Project is currently not necessary. However, as the AMI ages the program will need to begin being implemented. Program will be placed in the long-term CIP with costs to be determined.

Private Water Main Replacement Program: This on-going program replaces private mains less than 6-inch (in some cases 1-inch galvanized) and complete loops in the areas where these mains are replaced. This project improves domestic flows to current residential customers, provides fire protection in areas where no fire hydrants have previously existed and improves overall system performance and reliability by looping the new mains to existing mains.

Open Gear Valve Replacement: Project will be placed as an annually recurring program throughout the 20-year CIP to address valve replacements as they become necessary.

Lead-Oakum Joint Waterline Replacement Program: Due to the significant maintenance issues surrounding the continued use of these pipes, these projects will be given a higher priority with identified projects scheduled for completion within the 10-year CIP. An annually recurring cost will also be included throughout the 20-year CIP to address not yet identified lead-oakum joint waterline replacements.

Distribution Main Leak Detection: Due to the relative ease to complete the program and the benefits for lowering distribution system losses, the leak detection program will be scheduled early in the 10-year CIP.

Recommendations to improve system operations programs include continuation of a corrosion control program, leak detection program, wellhead and watershed protection programs, groundwater monitoring program, and water conservation program.

Refer to Chapter 8 of the Water System Plan update for a complete discussion of planned capital improvements

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**12. Location of the proposal:**

The Water System Plan would be implemented throughout Yakima's water service area. The service area boundary is shown in Figure 1-5 in the Plan.

Recommended improvements are in Table 8-1 of the Plan. At this time, the exact locations of the proposed ASR wells, are not known. It is anticipated that these new facilities will be located at or near existing utility sites or on available vacant land within the City's jurisdiction.

**B. ENVIRONMENTAL ELEMENTS**

**1. EARTH**

**a. General description of the site (underline one):**

Flat, rolling hills, steep slopes, mountainous, other varies.

**b. What is the steepest slope on the site (approximate percent slope)?**

Does not apply

**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 soils types vary throughout the approximately 19-square-mile service area.

**d. Are there surface indications or history of unstable soils in the immediate vicinity? If so, describe.**

Does not apply

**e. Describe the purpose, type, and approximate quantities of any filling or grading proposed. Indicate source of fill.**

Some grading and filling would occur during pipeline replacement and other construction projects.

**f. Could erosion occur as a result of clearing, construction, or use? If so, generally describe.**

Because the proposed distribution mains would be located beneath relatively flat, already developed areas (e.g., paved roads), erosion from construction activities for these activities is expected to be low. Similarly, erosion is anticipated to be low at the WTP site as a result of improvements to be constructed within the existing facilities. Construction of the groundwater wells, could result in increased erosion, depending on the specific

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characteristics of sites selected for project implementation. No erosion impacts are expected from use of the water system improvements.

**g. About what percent of the site will be covered with impervious surfaces after project construction (for example, asphalt or buildings)?**

The projects identified in the plan are not expected to result in any increase in the amount of impervious surfaces associated with the water system facilities.

**h. Proposed measures to reduce or control erosion, or other impacts to the earth, if any:**

If required, erosion control measures at new construction sites would be based on applicable local and regional ordinances and/ or guidance manuals. General erosion and sediment control measures that could be implemented during site grading include spraying water or other dust control agents on graded areas to control dust, placing erosion control fences and/or straw bales at the toes of freshly graded slopes to reduce surface water velocity and offsite siltation, and revegetation of graded areas as soon as feasible after grading is complete.

**2. AIR**

**a. What types of emissions to the air would result from the proposal (i.e., dust, automobile, odors, industrial wood smoke) during construction and when the project is completed? If any, generally describe and give approximate quantities, if known.**

Construction of the recommended facility improvements would slightly increase air emissions (i.e., dust and equipment exhaust) during construction by vehicle and wind erosion over exposed earth surfaces. Clearing and grading activities comprise a major source of these temporary construction emissions. The severity of construction emissions is extremely variable, and depends on wind speed, soil type, soil moisture, the type of construction activity, and acreage affected by construction activity.

**b. Are there any off-site sources of emissions or odors that may affect your proposal? If so, generally describe.**

Does not apply

**c. Proposed measures to reduce or control emissions or other impacts to air, if any:**

Construction dust can be controlled by watering disturbed areas. Active construction areas will be watered whenever soil moisture conditions and weather conditions result in visible dust generation. Dust-producing activities will be suspended during period of high winds if dust control measures are unable to avoid visible dust plumes. All finished grades will be immediately treated with an appropriate soil binder.

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**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.**

The WTP diverts water from the Naches River, a tributary to the Yakima River. The domestic water service area is bound on the East by the Yakima River and on the North by the Naches River. Several creeks and lakes lie within the 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.**

No work is anticipated within 200 feet of either the Naches or Yakima Rivers.

- 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 that would be affected. Indicate the source of fill material.**

It is anticipated that new facilities would be sited to avoid direct impacts to surface water and wetlands. Potential impacts to surface water or wetlands associated with future facilities will be addressed under subsequent SEPA environmental review.

- 4) Will the proposal require surface water withdrawals or diversions? Give general description, purpose, and approximate quantities if known.**

The City currently diverts about 23 MGD at the treatment plant to meet peak demands. Additional groundwater rights through ASR would likely be needed by 2020.

- 5) Does the proposal lie within a 100-year floodplain? If so, note location on the site plan.**

Portions of the service area are within the 100-year floodplain. The only known projects planned within a floodplain are the WTP improvements. Environmentally acceptable construction methods and protection features will be incorporated during planning and design of these facilities, most of which will be installed within existing structures or buildings. In addition, an existing dike separates WTP facilities from the Naches River, therefore, no significant impacts are anticipated from construction within this floodplain area. Any potential impacts associated with construction of other facilities within a floodplain will be addressed under separate SEPA reviews.

- 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.**

No wastes would be discharged into the ground as a result of the proposed project.

**b. Ground:**

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**1) Will ground water be withdrawn, or will water be discharged to ground water? Give general description, purpose, and approximate quantities if known.**

Historically, the City of Yakima has used groundwater only as an seasonal/emergency source of supply. The capacity of its existing emergency ground water sources totals 13 MGD.

**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 houses to be served (if applicable), or the number of animals or humans the system(s) are expected to serve.**

No waste material would be discharged into ground or surface waters as a result of the proposed project.

**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 the water flow into other waters? If so, describe.**

No increase in the amount of impervious surfaces or run-off are anticipated as a result of the improvements identified in the plan.

**2) Could waste materials enter ground or surface waters? If so, generally describe.**

No waste material would be discharged into ground or surface waters as a result of the proposed project.

**d. Proposed measures to reduce or control surface, ground, and runoff water impacts, if any:**

In addition to implementing a water conservation program, replacing obsolete and deteriorated water mains will also help to conserve water. Developing a leak detection program will also help protect impacts to groundwater supplies.

**4. PLANTS**

**a. Check or underline types of vegetation found on the site:**

- x   deciduous tree: alder, maple, aspen, other (oak)
- 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

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- x   *water plants: water lily, eelgrass, milfoil, other*
- x   *other types of vegetation*

**b. What kind and amount of vegetation will be removed or altered?**

Slight amounts of vegetation could be disturbed during construction projects for new pipelines, as well as during construction of other recommended facilities (i.e., WTP improvements). In general, the proposed construction sites would be located in fairly developed urban settings, away from environmentally sensitive areas. Therefore, impacts to plants attributable to Plan implementation would be expected to be minor. Further environmental analysis under SEPA will be conducted to determine if any site-specific impacts would have to vegetation as a result of implementation of individual projects yet to be sited. See attached Supplement D.2 for additional discussion.

**c. List threatened or endangered species known to be on or near the site.**

See attached Supplement D.4.

**d. Proposed landscaping, use of native plants, or other measures to preserve or enhance vegetation on the site, if any:**

**5. ANIMALS**

See attached Supplement D.2.

**a. Underline any birds and animals which 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...coyote, mice.....

*fish:* bass, salmon, steelhead, trout, herring, shellfish, other .....

**b. List any threatened or endangered species known to be on or near the site.**

See attached Supplement D.2.

**c. Is the site part of a migration route? If so, explain.**

See attached Supplement D.4.

**d. Proposed measures to preserve or enhance wildlife, if any:**

See attached Supplement D.2.

**6. ENERGY AND NATURAL RESOURCES**

**a. What kind 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.**

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PLANNING DIV.

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FOR AGENCY  
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The City uses electric energy to run its pump stations, treatment facilities, and automated controls. Constructing a new supply well and WTP improvements, will increase the amount of energy consumed. In addition, construction activities would require the use of gasoline for fuel. Also, see attached Supplement D.3.

- b. **Would your project affect the potential use of solar energy by adjacent properties? If so, generally describe.**

Does not apply.

- 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:**

High-efficiency electric motors will be used at the new well and for WTP improvements. The Plan also includes implementation of leak detection, identification of additional water conservation measures.

**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.**

Does not apply.

- 1) **Describe special emergency services that might be required?**

Does not apply.

- 2) **Proposed measures to reduce or control environmental health hazards, if any:**

On-site chlorine generation is used at the WTP and chlorine tablets are used at the wells.

**b. NOISE**

- 1) **What types of noise exist in the area which may affect your project (for example: traffic, equipment, operation, other)?**

Does not apply.

- 2) **What types and levels of noise would be created by or associated with the project on a short-term or long-term basis (for example: traffic, construction, operation, other)? Indicate what hour's noise would come from the site.**

Short-term noise impacts would occur during construction hours. Operation of the new pump station would likely be located near existing facilities and/or in urbanized areas and would not significantly increase existing noise levels associated with traffic and/or facility operations. Also, see attached Supplement D.I.

- 3) **Proposed measures to reduce or control noise impacts, if any:**

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PLANNING DIV.

EVALUATION  
FOR AGENCY  
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Potential noise impacts would be considered in site selection and facility design as well as in future SEPA reviews. Noise generation would be subject to local and state regulations. If necessary, new facilities would be required to incorporate noise abatement devices to control noise emissions within regulated standards.

**8. LAND AND SHORELINE USE**

See attached Supplement D.5 for discussion of Items a through l below.

- a. **What is the current use of the site and adjacent properties?**  
The City of Yakima has areas zoned for residential, commercial, and industrial uses.
- b. **Has the site been used for agriculture? If so, describe.**
- c. **Describe any structures on the site.**
- d. **Will any structures be demolished? If so, what?**
- e. **What is the current zoning classification of the site?**
- f. **What is the current comprehensive plan designation of the site?**
- g. **If applicable, what is the current shoreline master program designation of the site?**
- h. **Has any part of the site been classified as an "environmentally sensitive" area? If so, specify.**
- i. **Approximately how many people would reside or work in the completed project?**
- j. **Approximately how many people would the completed project displace?**
- k. **Proposed measures to avoid or reduce displacement impacts, if any:**
- l. **Proposed measures to ensure the proposal is compatible with existing and projected land uses and plans, if any:**

**9. HOUSING**

- a. **Approximately how many units would be provided, if any? Indicate whether high, middle, or low-income housing.**  
No housing will be provided by the proposed projects or programs.
- b. **Approximately how many units, if any, would be eliminated? Indicate whether high, middle, or low income housing.**  
No housing will be eliminated by the proposed projects or programs.

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**c. Proposed measures to reduce or control housing impacts, if any:**

Does not apply.

**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 tallest height of any new structures will be the well houses for the new wells. They will have a height of 12 to 14 feet and will also include a small antenna for the telemetry system. The exact height of the antenna has yet to be determined but would probably be 30 feet or less.

**b. What views in the immediate vicinity would be altered or obstructed?**

Proposed distribution mains and the groundwater well are subsurface facilities and would therefore not alter or obstruct any views. The new well houses would also likely be located in already developed, urbanized settings; therefore, it is not anticipated that these projects would alter or obstruct any scenic views. Future site-specific SEPA review for these proposed new facilities will address potential aesthetic impacts in more detail.

**c. Proposed measures to reduce or control aesthetic impacts, if any:**

The planning and design of projects recommended in the Plan would carefully consider aesthetic values. It is anticipated that new above-grade facilities (i.e., well houses) would likely be located in already developed, urbanized settings and therefore would not have a significant adverse aesthetic effect on local visual resources.

**11. LIGHT AND GLARE**

**a. What types of light or glare will the proposal produce? What time of day would it mainly occur?**

Operation of the new wells could introduce new sources of light into the vicinity of the project sites for these facilities, including night lighting.

**b. Could light or glare from the finished project be a safety hazard or interfere with views?**

It is anticipated that new above-grade facilities (i.e., well houses) would likely be located in urbanized areas already developed with structures and outdoor lighting. Any potential changes in the level, amount, or intensity of light and glare at the proposed project sites are not anticipated to result in a safety hazard or interfere with existing views. Future site-specific SEPA review for these proposed new facilities will address potential effects of light and glare in more detail.

**c. What existing off-site sources of light or glare may affect your proposal?**

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Does not apply.

**d. Proposed measures to reduce or control light and glare impacts, if any:**

Future site-specific SEP A review for proposed new facilities will address mitigation measures to reduce or control light and glare impacts in more detail.

**12. RECREATION**

**a. What designated and informal recreational opportunities are in the immediate vicinity?**

The service area contains a large variety of recreational facilities and opportunities such as parks, rivers, and lakes.

**b. Would the proposed project displace any existing recreational uses? If so, describe.**

The proposed distribution mains and wells would not have any effects on recreational opportunities in the service area. Future site-specific SEPA review for implementation of the other proposed projects will provide information on potential impacts to recreational uses. It is anticipated that these projects would not have an adverse effect.

**c. Proposed measures to reduce or control impacts on recreation, including recreation opportunities to be provided by the project or applicant, if any:**

Impacts to recreation would be reduced or controlled through the siting process for future planned projects.

**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.**

The proposed distribution mains and well houses would be constructed in areas previously disturbed, and therefore it is not anticipated that construction activities for these projects would adversely impact any places or objects listed on or proposed for preservation registers. Future site-specific SEP A review for implementation of the Plan's other proposed projects will provide information on potential impacts to these resources at or near project sites.

**b. Generally describe any landmarks or evidence of historic, archaeological, scientific, or cultural importance known to be on or next to the site.**

Does not apply.

**c. Proposed measures to reduce or control impacts, if any:**

Areas with known or potential landmarks or evidence of historic, archaeological, scientific, or cultural importance would be avoided for proposed projects, to the extent feasible, through the facility siting process. If new

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facilities cannot avoid affecting these re- sources, impacts will be mitigated, as necessary .In the event that archaeological or other important remains are uncovered during construction, work should be halted until a qualified archaeologist or other appropriate professional can visit the site to determine the significance of the find and conduct additional testing, if necessary.

**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.**

Local streets will be used to access sites during construction of the Plan's proposed projects. Many local streets will be temporarily disturbed during installation of distribution mains; during construction periods, traffic may need to be re-routed to avoid construction activities.

- b. Is site currently served by public transit? If not, what is the approximate distance to the nearest transit stop?**

Does not apply.

- c. How many parking spaces would the completed project have? How many would the project eliminate?**

Minimal parking would be required at the well sites. It is anticipated that implementation of the Plan's recommended projects and programs would not result in the elimination of any parking spaces.

- 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).**

The need for new public access as a result of this Plan is unlikely. The new wells, WTP improvements, and distribution lines will be constructed in an urbanized area serviced by existing roads. It is anticipated that no new roads or road improvements would be required to service the new wells. However, public roads may be temporarily blocked and traffic diverted during construction of the proposed distribution mains.

- e. Will the project use (or occur in the immediate vicinity of) water, rail, or air transportation? If so, generally describe.**

Does not apply.

- f. How many vehicular trips per day would be generated by the completed project? If known, indicate when peak volumes would occur.**

Operation and maintenance of the new wells would generate approximately one new vehicular trip per day per facility. Any potential adverse effects caused by

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these additional trips will be addressed under subsequent SEPA environmental review.

**g. Proposed measures to reduce or control transportation impacts, if any:**

The recommended projects would be planned and designed to reduce transportation impacts. A temporary traffic control plan would be developed and implemented during construction of the proposed distribution mains. This traffic control plan would identify hours of construction and include a temporary recirculation plan for rerouting traffic.

**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.**

Does not apply.

**b. Proposed measures to reduce or control direct impacts on public services, if any.**

The Water System Plan Update includes many recommendations that will improve public services. The WTP and distribution improvements, and the development of new groundwater supplies will help ensure adequate supply of domestic water and fire protection. Development of leak detection, conservation, and on-going corrosion control programs will help ensure safe and efficient operation and use of local water supplies.

**16. UTILITIES**

**a. Underline utilities currently available at the site:**

electricity, natural gas, water, refuse service, telephone, sanitary sewer, septic system, other.

Does not apply.

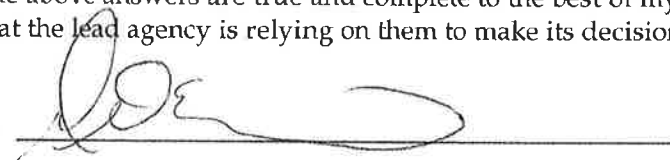
**b. Describe the utilities that are proposed for the project, the utility providing the service, and the general construction activities on the site or in the immediate vicinity, which might be needed.**

Electric service would be required for the proposed wells.

**C. 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:



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David Brown

---

Date Submitted:

City of Yakima.

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**D. SUPPLEMENTAL SHEET FOR NONPROJECT 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 the 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 Water System Plan Update in itself would not have direct impacts on the physical environment. However, the activities that may result from implementation of the Plan could result in possible short-term construction impacts or long-term site specific impacts. Although some recommendations of the Plan involve legal, political, or managerial actions which would not directly affect the environment, construction projects or operational changes that are a result of those actions might.

The recommendations of the Plan do not suggest projects that would permanently or significantly increase discharges to water; discharge emissions to air; produce, store, or release toxic or hazardous substances; or produce significant amounts of noise. Air emissions (in the form of dust) and noise emissions would be generated during new facility construction. Noise emissions.

**Proposed measures to avoid or reduce such increases are:**

Construction impacts can be reduced by watering and replanting disturbed areas and monitoring the hours of operation within sound-sensitive areas. The recommended facilities that are capable of producing noise would most likely be located adjacent to similar existing water utility facilities or in an urbanized area (e.g., new wells).

**2. How would the proposal be likely to affect plants, animals, fish, or marine life?**

Recommendations of the Plan would not be likely to affect plants, animals, fish, or marine life. The proposed distribution lines and contact basin building will be constructed in areas of previous disturbance. Further environmental analysis under SEPA will be conducted to determine if any site-specific impacts to these resources would result from implementation of other individual construction projects.

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**Proposed measures to protect or conserve plants, animals, fish, or marine life are:**

The planning, design, and construction of facilities that have the potential for such impacts would incorporate features to reduce the likelihood of occurrence and significance.

**3. How would the proposal be likely to deplete energy or natural resources?**

Some of the recommended facilities would require electrical energy, such as the new supply wells. However, this increase in energy demand would represent a small percentage of increase over that of the existing water system.

As the demand for treated domestic water increases, more water would be withdrawn from the surface water and groundwater sources.

**Proposed measures to protect or conserve energy and natural resources are:**

High-efficiency electric motors will be used at the new wells. The Plan also includes on-going leak detection, water conservation, and corrosion control programs.

**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?**

Facility improvements and additions would not likely affect sensitive areas. To the maximum extent feasible, facilities will be sited to avoid sensitive areas. Any potential impacts associated with facility construction and operation in these areas will be addressed as part of subsequent site-specific SEPA review for individual projects not yet sited.

**Proposed measures to protect such resources or to avoid or reduce impacts are:**

The planning and design modifications would incorporate environmental protection features to reduce impacts associated with construction. Environmentally-acceptable construction methods would also be implemented to lessen potential impacts to shoreline 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 recommended improvements to the water system would most likely be located at or near existing water utility facilities, or in existing urbanized commercial/industrial areas, thus reducing the likelihood of incompatible impacts on land use. Construction activities at the WTP would not alter the existing shoreline use at that site. It is anticipated that the projects recommended in the Plan would not displace any persons. In addition, projects that develop from implementation of this Plan would be done by existing City forces or by outside construction contracts.

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**Proposed measures to avoid or reduce shoreline and land use impacts are:**

Emphasis to locate new facilities at or near existing water utility locations would help to avoid land use and shoreline use impacts. Although planning requirements of public utilities are less restrictive than non-public projects, implementation of Plan recommendations would be subject to local planning review for compliance with land use compatibility, including applicable local land use ordinances, zoning regulations, and other possible approvals.

**6. How would the proposal be likely to increase demands on transportation or public services and utilities?**

It is unlikely that implementation of the Water System Plan Update would increase demands on transportation, public services, and utilities. However, the existing transportation system could be temporarily affected during construction of distribution lines; this construction activity may require rerouting traffic during pipeline installation in local roads.

**Proposed measures to reduce or respond to such demand(s) are:**

The Plan includes features that should have positive impacts on the quality and reliability of public services. The storage facilities improvements, WTP modifications, distribution improvements, and development of new groundwater supplies will improve fire protection services and the delivery of potable water in emergency situations.

**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 Update should not be in conflict with existing environmental laws or requirements. Implementation of recommendations within the Plan would be subject to specific environmental review as required under SEPA.

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## **Appendix B. Approvals**

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**B1. Plan Adoption by Yakima City Council**

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**RESOLUTION NO. R-2017-081**

**A RESOLUTION** adopting the 2017 the Water System Plan Update with its Appendices and the Water Use Efficiency Goals and Objectives

**WHEREAS**, the City of Yakima, is required to adopt the Water System Plan Update in accordance with WAC 246-290-100 by the Washington State Department of Health, and

**WHEREAS**, the City of Yakima has complied with all of the requirements of WAC 246-290-100 in developing said Plan, and

**WHEREAS**, the City Council has given notice and held a public session on the Plan including the City's Water Use Efficiency Goals and Objectives on June 20, 2017 and


**WHEREAS**, State Environmental Policy Act (SEPA) has been completed, no appeal was made, and copies of said Plan were distributed to all those requesting said Plan; and

**WHEREAS**, the City Council for the City of Yakima find that it is in the best interests of the City and its residents to adopt the 2017 Water System Plan Update and the Water Use Efficiency Goals and Objectives, now, therefore,


**BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF YAKIMA:**

The City of Yakima Water System Plan Update dated July, 2017, together with its appendices and the Water Use Efficiency Goals and Objectives, is adopted by the City of Yakima. A copy of the Plan Update shall be available to the public online and on file at the City of Yakima City Clerk's office

**ADOPTED BY THE CITY COUNCIL** this 11<sup>th</sup> day of July 2017

  
\_\_\_\_\_  
Kathy Coffey Mayor

ATTEST:

  
\_\_\_\_\_  
Sonya Claar Tee, City Clerk



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## **B2. Consistency Statement Checklists**

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## Local Government Consistency Determination Form

Water System Name: City of Yakima Water Division PWS ID: 99150

Planning/Engineering Document Title: Yakima Water System Plan Plan Date: January 2017

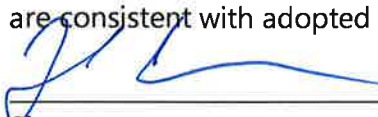
Local Government with Jurisdiction Conducting Review: City of Yakima

Before the Department of Health (DOH) approves a planning or engineering submittal under Section 100 or Section 110, the local government must review the documentation the municipal water supplier provides to prove the submittal is consistent with **local comprehensive plans, land use plans and development regulations** (WAC 246-290-108). Submittals under Section 105 require a local consistency determination if the municipal water supplier requests a water right place-of-use expansion. The review must address the elements identified below as they relate to water service.

By signing this form, the local government reviewer confirms the document under review is consistent with applicable local plans and regulations. If the local government reviewer identifies an inconsistency, he or she should include the citation from the applicable comprehensive plan or development regulation and explain how to resolve the inconsistency, or confirm that the inconsistency is not applicable by marking N/A. See more instructions on reverse.

Local Government Consistency Statement	For use by water system	For use by local government
	Identify the page(s) in submittal	Yes or Not Applicable
a) The water system service area is consistent with the adopted <u>land use and zoning</u> within the service area.	Figures 2-3 and 2-4	Yes
b) The <u>growth projection</u> used to forecast water demand is consistent with the adopted city or county's population growth projections. If a different growth projection is used, provide an explanation of the alternative growth projection and methodology.	Section 2.3.2	Yes
c) For <u>cities and towns that provide water service</u> : All water service area policies of the city or town described in the plan conform to all relevant <u>utility service extension ordinances</u> .	Section 1.8	Not Applicable
d) <u>Service area policies</u> for new service connections conform to the adopted local plans and adopted development regulations of all cities and counties with jurisdiction over the service area.	Sections 1.8 and 1.10	Yes
e) <u>Other relevant elements</u> related to water supply are addressed in the water system plan, if applicable. This may include Coordinated Water System Plans, Regional Wastewater Plans, Reclaimed Water Plans, Groundwater Management Area Plans, and the Capital Facilities Element of local comprehensive plans.	Sections 1.4, 1.5, 1.6, 1.7, and 8.3	Yes

I certify that the above statements are true to the best of my knowledge and that these specific elements are consistent with adopted local plans and development regulations.

  
\_\_\_\_\_  
Signature

Joseph Calhoun, Senior Planner, City of Yakima  
Printed Name, Title, & Jurisdiction

2/27/2017  
Date

## Consistency Review Guidance

### *For Use by Local Governments and Municipal Water Suppliers*

This checklist may be used to meet the requirements of WAC 246-290-108. When using an alternative format, it must describe all of the elements; 1a), b), c), d), and e), when they apply.

For **water system plans (WSP)**, a consistency review is required for the service area and any additional areas where a municipal water supplier wants to expand its water right's place of use.

For **small water system management programs**, a consistency review is only required for areas where a municipal water supplier wants to expand its water right's place-of-use. If no water right place-of-use expansion is requested, a consistency review is not required.

For **engineering documents**, a consistency review is required for areas where a municipal water supplier wants to expand its water right's place-of-use (water system plan amendment is required). For noncommunity water systems, a consistency review is required when requesting a place-of-use expansion. All engineering documents must be submitted with a service area map (WAC 246-290-110(4)(b)(ii)).

- A) Documenting Consistency:** The planning or engineering document must include the following when applicable.
- a) A copy of the adopted **land use/zoning** map corresponding to the service area. The uses provided in the WSP should be consistent with the adopted land use/zoning map. Include any other portions of comprehensive plans or development regulations that relate to water supply planning.
  - b) A copy of the **growth projections** that correspond to the service area. If the local population growth projections are not used, explain in detail why the chosen projections more accurately describe the expected growth rate. Explain how it is consistent with the adopted land use.
  - c) Include water service area policies and show that they are consistent with the **utility service extension ordinances** within the city or town boundaries. *This applies to cities and towns only.*
  - d) All **service area policies** for how new water service will be provided to new customers.
  - e) **Other relevant elements** the Department of Health determines are related to water supply planning. See Local Government Consistency – Other Relevant Elements, Policy B.07, September 2009.
- B) Documenting an Inconsistency:** Please document the inconsistency, include the citation from the comprehensive plan or development regulation, and explain how to resolve the inconsistency.
- C) Documenting a Lack of Local Review for Consistency:** Where the local government with jurisdiction did not provide a consistency review, document efforts made and the amount of time provided to the local government for review. Please include: name of contact, date, and efforts made (letters, phone calls, and emails). To self-certify, please contact the DOH Planner.

The Department of Health is an equal opportunity agency. For persons with disabilities, this document is available on request in other formats. To submit a request, please call 1-800-525-0127 (TTY 1-800-833-6388).

## Water System Plan Consistency Review

### Documenting Consistency

#### a) Land Use and Zoning

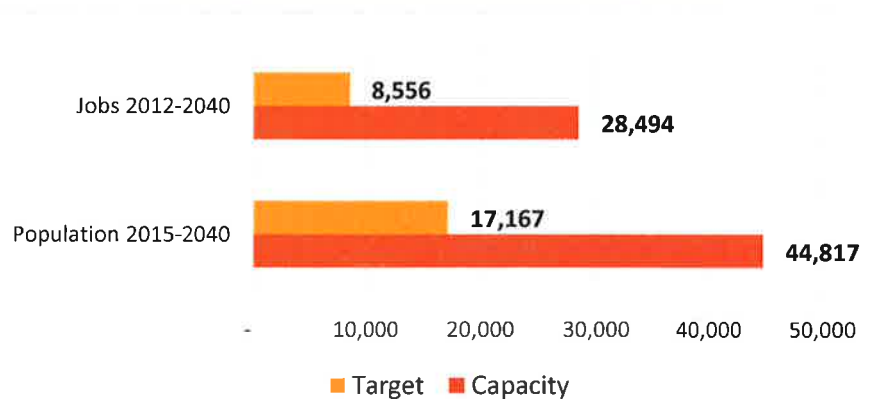
The City of Yakima is currently in the update process for its Comprehensive Plan. Part of the plan involves modifying the Future Land Use map to minimize the number of designations from 10 to 7. The underlying zoning districts remain the same. Areas that received a new or modified Future Land Use designation as part of the update will be eligible to apply for a rezone after plan adoption. Applicable sections of the zoning and subdivision ordinance and/or comprehensive plan are as follows:

YMC 14.15.020(B); YMC 14.20.090; YMC 14.20.100; YMC 15.01.030; Comprehensive Plan Land Use and Capital Facilities Elements.

#### b) Growth Projections

The 2040 growth projection for the Water System Plan and the 2040 Comprehensive Plan are the same – both plans show a 2040 population of 110,387. There is a slight difference in the 2015 estimate. The Water System Plan uses the Yakima County Population Estimate of 93,825 where the Comprehensive Plan uses the Office of Financial Management (OFM) estimate of 93,220. Either way there is more than sufficient capacity to meet our growth target.

Population and Jobs Capacity and Targets 2016



Source: BERK Consulting 2016

#### c) Water Service Area Policies

Not applicable to Planning. If utility service extensions are needed for new development, that determination will be made by applicable Engineering and/or Water Division personnel.

#### d) Service Area Policies

With the exception of the Glead community, all potential areas for new service connections are consistent with the City of Yakima's Urban Growth Area (UGA).

#### e) Other Relevant Elements

As noted in a) above, the 2017 WSP is consistent with the Capital Facilities Element of the Comprehensive Plan in regard to capital projects and planned growth.

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# Local Government Consistency Determination Form

Water System Name: City of Yakima Water Division PWS ID: 99150

Planning/Engineering Document Title: Yakima Water System Plan Plan Date: January 2017

Local Government with Jurisdiction Conducting Review: Click here to enter text. \_\_\_\_\_

Before the Department of Health (DOH) approves a planning or engineering submittal under Section 100 or Section 110, the local government must review the documentation the municipal water supplier provides to prove the submittal is consistent with **local comprehensive plans, land use plans and development regulations** (WAC 246-290-108). Submittals under Section 105 require a local consistency determination if the municipal water supplier requests a water right place-of-use expansion. The review must address the elements identified below as they relate to water service.

By signing this form, the local government reviewer confirms the document under review is consistent with applicable local plans and regulations. If the local government reviewer identifies an inconsistency, he or she should include the citation from the applicable comprehensive plan or development regulation and explain how to resolve the inconsistency, or confirm that the inconsistency is not applicable by marking N/A. See more instructions on reverse.

Local Government Consistency Statement	For use by water system	For use by local government
	Identify the page(s) in submittal	Yes or Not Applicable
a) The water system service area is consistent with the adopted <u>land use and zoning</u> within the service area.	Figures 2-3 and 2-4	Yes
b) The <u>growth projection</u> used to forecast water demand is consistent with the adopted city or county's population growth projections. If a different growth projection is used, provide an explanation of the alternative growth projection and methodology.	Section 2.3.2	Yes
c) For <u>cities and towns that provide water service</u> : All water service area policies of the city or town described in the plan conform to all relevant <u>utility service extension ordinances</u> .	Section 1.8	Yes
d) <u>Service area policies</u> for new service connections conform to the adopted local plans and adopted development regulations of all cities and counties with jurisdiction over the service area.	Sections 1.8 and 1.10	Yes
e) <u>Other relevant elements</u> related to water supply are addressed in the water system plan, if applicable. This may include Coordinated Water System Plans, Regional Wastewater Plans, Reclaimed Water Plans, Groundwater Management Area Plans, and the Capital Facilities Element of local comprehensive plans.	Sections 1.4, 1.5, 1.6, 1.7, and 8.3	Yes

I certify that the above statements are true to the best of my knowledge and that these specific elements are consistent with adopted local plans and development regulations.

Phil Hoge  
Signature  
Phil Hoge, Project Planner, Yakima County  
Printed Name, Title, & Jurisdiction

4-19-17  
Date

## Consistency Review Guidance

### *For Use by Local Governments and Municipal Water Suppliers*

This checklist may be used to meet the requirements of WAC 246-290-108. When using an alternative format, it must describe all of the elements; 1a), b), c), d), and e), when they apply.

For **water system plans (WSP)**, a consistency review is required for the service area and any additional areas where a municipal water supplier wants to expand its water right's place of use.

For **small water system management programs**, a consistency review is only required for areas where a municipal water supplier wants to expand its water right's place-of-use. If no water right place-of-use expansion is requested, a consistency review is not required.

For **engineering documents**, a consistency review is required for areas where a municipal water supplier wants to expand its water right's place-of-use (water system plan amendment is required). For noncommunity water systems, a consistency review is required when requesting a place-of-use expansion. All engineering documents must be submitted with a service area map (WAC 246-290-110(4)(b)(ii)).

- A) Documenting Consistency:** The planning or engineering document must include the following when applicable.
- a) A copy of the adopted **land use/zoning** map corresponding to the service area. The uses provided in the WSP should be consistent with the adopted land use/zoning map. Include any other portions of comprehensive plans or development regulations that relate to water supply planning.
  - b) A copy of the **growth projections** that correspond to the service area. If the local population growth projections are not used, explain in detail why the chosen projections more accurately describe the expected growth rate. Explain how it is consistent with the adopted land use.
  - c) Include water service area policies and show that they are consistent with the **utility service extension ordinances** within the city or town boundaries. *This applies to cities and towns only.*
  - d) All **service area policies** for how new water service will be provided to new customers.
  - e) **Other relevant elements** the Department of Health determines are related to water supply planning. See Local Government Consistency – Other Relevant Elements, Policy B.07, September 2009.
- B) Documenting an Inconsistency:** Please document the inconsistency, include the citation from the comprehensive plan or development regulation, and explain how to resolve the inconsistency.
- C) Documenting a Lack of Local Review for Consistency:** Where the local government with jurisdiction did not provide a consistency review, document efforts made and the amount of time provided to the local government for review. Please include: name of contact, date, and efforts made (letters, phone calls, and emails). To self-certify, please contact the DOH Planner.

The Department of Health is an equal opportunity agency. For persons with disabilities, this document is available on request in other formats. To submit a request, please call 1-800-525-0127 (TTY 1-800-833-6388).

## Local Government Consistency Determination Form

Water System Name: City of Yakima Water Division PWS ID: 99150

Planning/Engineering Document Title: Yakima Water System Plan Plan Date: January 2017

Local Government with Jurisdiction Conducting Review: City of Union Gap

Before the Department of Health (DOH) approves a planning or engineering submittal under Section 100 or Section 110, the local government must review the documentation the municipal water supplier provides to prove the submittal is consistent with **local comprehensive plans, land use plans and development regulations** (WAC 246-290-108). Submittals under Section 105 require a local consistency determination if the municipal water supplier requests a water right place-of-use expansion. The review must address the elements identified below as they relate to water service.

By signing this form, the local government reviewer confirms the document under review is consistent with applicable local plans and regulations. If the local government reviewer identifies an inconsistency, he or she should include the citation from the applicable comprehensive plan or development regulation and explain how to resolve the inconsistency, or confirm that the inconsistency is not applicable by marking N/A. See more instructions on reverse.

Local Government Consistency Statement	For use by water system	For use by local government
	Identify the page(s) in submittal	Yes or Not Applicable
a) The water system service area is consistent with the adopted <u>land use and zoning</u> within the service area.	Figures 2-3 and 2-4	N/A
b) The <u>growth projection</u> used to forecast water demand is consistent with the adopted city or county's population growth projections. If a different growth projection is used, provide an explanation of the alternative growth projection and methodology.	Section 2.3.2	N/A
c) For <u>cities and towns that provide water service</u> : All water service area policies of the city or town described in the plan conform to all relevant <u>utility service extension ordinances</u> .	Section 1.8	yes
d) <u>Service area policies</u> for new service connections conform to the adopted local plans and adopted development regulations of all cities and counties with jurisdiction over the service area.	Sections 1.8 and 1.10	yes
e) <u>Other relevant elements</u> related to water supply are addressed in the water system plan, if applicable. This may include Coordinated Water System Plans, Regional Wastewater Plans, Reclaimed Water Plans, Groundwater Management Area Plans, and the Capital Facilities Element of local comprehensive plans.	Sections 1.4, 1.5, 1.6, 1.7, and 8.3	yes

I certify that the above statements are true to the best of my knowledge and that these specific elements are consistent with adopted local plans and development regulations.

Dennis Henne  
Signature  
Dennis Henne PW&CO Director, Union Gap  
Printed Name, Title, & Jurisdiction

6/2/17  
Date

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**Appendix C.**  
**Agency Comments**

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## **C1. Department of Health Comments and Comment Response**

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STATE OF WASHINGTON  
DEPARTMENT OF HEALTH  
EASTERN DRINKING WATER REGIONAL OPERATIONS  
16201 E Indiana Avenue, Suite 1500, Spokane Valley, Washington 99216-2830  
TDD Relay 1-800-833-6388

April 27, 2017

Mr. David Brown  
City of Yakima Water Division  
2301 Fruitvale Blvd  
Yakima, WA 98902

Subject: City of Yakima Water Division; PWS ID #99150; Yakima County  
Water System Plan; Submittal #17-0104; DOH Comments

Dear Mr. Brown:

Thank you for providing the draft Water System Plan (WSP) for the City of Yakima Water Division received in this office on January 30, 2017. The following comments will need to be addressed before the Department of Health (DOH) can approve the document:

- 1) The plan must include the stamp and signature of a professional engineer licensed in the State of Washington.

#### **Chapter 1**

- 2) Please provide Figures 1-2 and 1-6 on 11"x17" paper, at a minimum.
- 3) Our records indicate that there are at least 12 other Group A water systems adjacent or near to the City of Yakima Water Division. The public water system identification numbers for these systems are: 07143, 99114, 71725, 70630, 42948, 46219, 01985, 27828, 62020, 05885, 85138, and 86280. Please ensure that each is included in the plan, that each receives proper notice and opportunity to comment. Please provide a discussion of any communications the City has had with these systems with regards to regionalization.

#### **Chapter 2**

- 4) In Table 2-13, provide the multifamily residential average daily demand (ADD) and equivalent residential units (ERU) based on the number of residential units.

### **Chapter 3**

- 5) In Section 3.3.4, the plan states that lead gooseneck research and removal is planned to be completed by the end of 2016. Has this been accomplished?
- 6) With regard to Section 3.6.1 and Figure 3-9, please note the following, WAC 246-290-230(8) requires that booster pumps for individual services approved by the city must be “under the management and control of the purveyor.” In addition;
  - State that no new services may be connected above the 1460’ level unless the City intends to create a new pressure zone for this area.
  - The Water System Design Manual (Section 10.0.3) identifies interim as 6-years, which coincides with the approval of the Comprehensive Water System Plan.
- 7) The detail provided under Section 3.7.4 for the identified distribution related improvements (Pages 3-69 through 3-96), shows the location of the pipe and connections / services improved by the project.
  - a) It appears from the information provided the distribution related projects that include the removal of the lead oakum joints are not considered a high priority. Is the city conducting lead and copper testing within this area, and are the levels being shown indicating no to minimal impact to the services being tested? The lead and copper testing completed by the city does not indicate an exceedance of the Action Level for Lead.
  - b) Did the city locate and identify the services impacted by the low pressures identified in the hydraulic analysis and confirm whether they were or had experienced low water pressures? Figure 3-14 indicates a small area impacted above and just outside the 3<sup>rd</sup> Level Boundary with low pressure.
  - c) Did the city locate and identify the services impacted by the high pressures identified in the hydraulic analysis and confirm whether they are experiencing high water pressures? Figure 3-14 indicates several nodes along the 1<sup>st</sup> Level and 2<sup>nd</sup> Level Boundaries with high pressure.

### **Chapter 4**

- 8) The Department of Ecology has issued a comment letter regarding this submittal. A copy of the review letter dated February 9, 2017 from the Department of Ecology is enclosed. Please address the issues, if any, contained in the letter in the second draft submittal.
- 9) With regard to Section 4.5, is the City considering an intertie with Yakima County’s Terrace Heights system?

### **Chapter 6**

- 10) Please update Bullet 8 in Section 6.5.1. Watershed control programs are now updated concurrently with the system’s water system plan.

## **Chapter 7**

- 11) Review the provided standards provided in this chapter and appendix W. with respect to the DOH Water System Design Manual, Section 4.5 (Pages 19 through 22). There was not enough detail to provide a waiver for the construction of the distribution related projects, such as Storage Tanks, Booster Pump Facilities, Transmission Mains, Pipe Linings, and Tank Coatings.
- The information provided including the design diagrams and specifications were adequate for construction of distribution mains and miscellaneous components under section 4.4 of the WSDM.

## **Appendices**

- 12) Please include the following documents in the second draft submittal:
- Signed State Environmental Policy Act (SEPA) environmental checklist and signed SEPA threshold determination.
  - Local Government Consistency Determination Forms from the City of Yakima, City of Union Gap, and Yakima County.
  - A list of systems to which notice of plan availability was made (including water systems noted in Chapter 1) and a sample of the notice. Please also attach any comments received.
- 13) Please provide an updated Water Facilities Inventory (WFI).

## **Other**

- 14) The water system must meet the consumer input process outlined in WAC 246-290-100(8). Please include documentation of a consumer meeting discussing the Water System Plan prior to its approval.
- 15) When DOH is ready to approve the document we will notify you. At that time the governing body will need to officially approve the Water System Plan and send DOH documentation of plan approval by the governing body, such as a copy of the signed meeting minutes or a copy of the signed resolution. When the documentation is received we will send a letter documenting DOH approval.

## **Recommendations**

Responding to the following recommendations is not required for approval of the plan, but we believe that they would may contribute to the clarity and usefulness of the plan.

- 16) As presented, the WSP may be approved until 2026. If the capital improvement program and operational budget projection were to include the year 2027, then approval may extend an additional year.
- 17) Please review and update the first sentence of the summary of Project S-1 on Page 8-5.

Mr. David Brown  
April 27, 2017  
Page 4

18) Please address the change in the Capital Reserve Fund Target Balance in 2026.

**END OF COMMENTS**

The department's review of your water system plan does not confer or guarantee any right to a specific quantity of water. Our review is based on your representation of available water quantity. If the Washington Department of Ecology, a local planning agency, or other authority responsible for determining water rights and water system adequacy determines that you have use of less water than you represent, the number of approved connections may be reduced commensurate with the actual amount of water and your legal right to use it.

We hope that you have found these comments to be clear, constructive, and helpful in the development of your final WSP. We ask that you submit **two copies** of the revised WSP **on or before July 27, 2017**. In order to expedite the review of your revised submittal, please complete the enclosed DOH Comment Response Form summarizing how each of the above comments was addressed in the revised WSP and where each response is located (i.e., page numbers, Appendices, etc.)

Regulations establishing a schedule for fees for review of planning, engineering, and construction documents have been adopted (WAC 246-290-990). Please note that we have included an invoice for **\$5,484.00** for the review of the Water System Plan. This fee covers our cost for review of the initial submittal, plus the review of one revised document. Please remit your complete payment in the form of a check or money order within thirty days of the date of this letter to: DOH, Revenue Section, P.O. Box 1099, Olympia, WA 98507-1099.

Thank you again for submitting your draft Water System Plan for our review. If you have any comments or questions concerning our review please contact either of us at (509) 329-2120 or (509) 329-2137, respectively.

Sincerely,



Andres Cervantes, P.E.  
Regional Engineer  
Office of Drinking Water  
Division of Environmental Public Health



Brian A. Sayrs  
Regional Planner  
Office of Drinking Water  
Division of Environmental Public Health

Enclosures: Comment Response Form  
Department of Ecology correspondence  
Invoice

cc: Ying Fu, Department of Ecology, Eastern Regional Office  
Yakima Health District  
Yakima County Planning Division  
David Kuhns, PE, HDR, Olympia  
George Simon, DOH Regional Compliance Program Director



STATE OF WASHINGTON  
DEPARTMENT OF ECOLOGY

4601 N Monroe Street • Spokane, Washington 99205-1295 • (509)329-3400

February 9, 2017

RECEIVED

FEB 10 2017

Mr. David Brown  
City of Yakima  
2301 Fruitvale Blvd  
Yakima, WA 98902

DEPARTMENT OF HEALTH  
EASTERN REGIONAL OFFICE

Dear Mr. Brown:

Re: Yakima Water Division, City of; PWS ID # 99150; Yakima County  
Water System Plan Update; DOH Project #17-0104

I have reviewed the above referenced document in accordance with the *2007 Memorandum of Understanding* between Department of Health (DOH) and Department of Ecology (DOE), and in accordance with RCW 90.03.386. Ecology's review is focused only on the subject water system's water rights legitimacy, adequacy and related issues affecting the submitted report.

City of Yakima has 6 water rights and 4 claims for municipal purposes of use. The water right self-assessment Table 4-5 through 4-7 appear to be current and correct. The City has a total instantaneous pumping right Qi of 40,589 gpm (on the high end), and annual quantity Qa of 29,178 acre-ft/yr. The City has adequate an water right for current operation, 6 year and 20 year forecast growth.

These are my comments at this time. Please contact me should you have any questions regarding this letter. I can be reached at (509) 329-3451 or by email at [yifu461@ecy.wa.gov](mailto:yifu461@ecy.wa.gov).

Sincerely,

Ying Fu  
Water Resources Program  
Eastern Regional Office

YF:md

cc: Brian Sayrs, DOH  
Tom Perkow, DOE/CRO



**Yakima Water System Plan  
DOH COMMENT RESPONSE FORM**

DOH Comment No.	DOH Comment	Water System Response	Page Number of Response	Other Water System Comments
1	The plan must include the stamp and signature of a professional engineer licensed in the State of Washington.	Signed stamp provided on final copy.		
2	Please provide Figures 1-2 and 1-6 on 11"x17" paper, at a minimum.	Figures 1-2 and 1-6 changed to 11x17 format.	1-5, 1-21	
3	Our records indicate that there are at least 12 other Group A water systems adjacent or near to the City of Yakima Water Division. The public water system identification numbers for these systems are: 07143, 99114, 71725, 70630, 42948, 46219, 01985, 27828, 62020, 05885, 85138, and 86280. Please ensure that each is included in the plan, that each receives proper notice and opportunity to comment. Please provide a discussion of any communications the City has had with these systems with regards to regionalization.	Plan has been updated to include these additional systems and provide discussion on regionalization.  Additional purveyors were provided an opportunity to comment.	1-13 to 1-14  Appendix C2	No communication have taken place for regionalization. Yakima County is a Satellite Management Agency and any regionalization would be done under their umbrella
4	In Table 2-13, provide the multifamily residential average daily demand (ADD) and equivalent residential units (ERU) based on the number of residential units.	Added to Table 2-13 the ADD and ERU for multifamily residential based on units in addition to service connections.	2-12	
5	In Section 3.3.4, the plan states that lead gooseneck research and removal is planned to be completed by the end of 2016. Has this been accomplished?	Lead gooseneck investigation is underway and expected to be completed in 2020. Chapter text changed from 2016 to 2020. Any lead goosenecks found will be replaced.	3-28	
6	With regard to Section 3.6.1 and Figure 3-9, please note the following, WAC 246-290-230(8) requires that booster pumps for individual services approved by the city must be 'Under the management and control of the purveyor.' In addition; <ul style="list-style-type: none"> <li>• State that no new services may be connected above the 1460' level unless the City intends to create a new pressure zone for this area.</li> <li>• The Water System Design Manual (Section 10.0.3) identifies interim as 6-years, which coincides with the approval of the Comprehensive Water System Plan.</li> </ul>	Additional text has been added stating, "In this area above 1,460 ft, no new service connections to the City distribution system will be made unless a new pressure zone is created in this area. Any properties in this area requesting a new water service connection will be considered for potential service by the Nob Hill Water Association instead of the City system.."	3-39	

**Yakima Water System Plan  
DOH COMMENT RESPONSE FORM**

DOH Comment No.	DOH Comment	Water System Response	Page Number of Response	Other Water System Comments
7	<p>The detail provided under Section 3.7.4 for the identified distribution related improvements (Pages 3-69 through 3-96), shows the location of the pipe and connections / services improved by the project.</p> <p>a) It appears from the information provided the distribution related projects that include the removal of the lead oakum joints are not considered a high priority. Is the city conducting lead and copper testing within this area, and are the levels being shown indicating no to minimal impact to the services being tested? The lead and copper testing completed by the city does not indicate an exceedance of the Action Level for Lead.</p> <p>b) Did the city locate and identify the services impacted by the low pressures identified in the hydraulic analysis and confirm whether they were or had experienced low water pressures? Figure 3-14 indicates a small area impacted above and just outside the 3<sup>rd</sup> Level Boundary with low pressure.</p> <p>c) Did the city locate and identify the services impacted by the high pressures identified in the hydraulic analysis and confirm whether they are experiencing high water pressures? Figure 3-14 indicates several nodes along the 1<sup>st</sup> Level and 2<sup>nd</sup> Level Boundaries with high pressure.</p>	<p>a) Lead and copper testing is conducted at locations throughout the City per the City's Inorganic Monitoring Plan. The City currently does not target sampling specifically to areas with lead oakum joints, but all prior sampling show no problems associated with lead and copper.</p> <p>b) The City has identified and monitors those areas. There have been no issues related to low pressure.</p> <p>c) The City has identified and monitors those areas. There have been no issues related to high pressure.</p>		No changes made to Plan text per comment.
8	<p>The Department of Ecology has issued a comment letter regarding this submittal. A copy of the review letter dated February 9, 2017 from the Department of Ecology is enclosed. Please address the issues, if any, contained in the letter in the second draft submittal.</p>	<p>No issues indicated. No changes made per Department of Ecology comment letter.</p>		No changes made to Plan text per comment.
9	<p>With regard to Section 4.5, is the City considering an intertie with Yakima County's Terrace Heights system?</p>	<p>The City has had some preliminary discussions with Yakima County. However any intertie would require a bridge crossing of the Yakima River. If any new bridges were constructed, they would include in their design piping to make an intertie connection. Additional text has been added to Section 4.5 describing this.</p>	4-41	
10	<p>Please update Bullet 8 in Section 6.5.1. Watershed control programs are now updated concurrently with the system's water system plan.</p>	<p>Text has been updated in Section.</p>	6-20	



**Yakima Water System Plan  
DOH COMMENT RESPONSE FORM**

DOH Comment No.	DOH Comment	Water System Response	Page Number of Response	Other Water System Comments
11	<p>Review the provided standards provided in this chapter and appendix W. with respect to the DOH Water System Design Manual, Section 4.5 (Pages 19 through 22). There was not enough detail to provide a waiver for the construction of the distribution related projects, such as Storage Tanks, Booster Pump Facilities, Transmission Mains, Pipe Linings, and Tank Coatings.</p> <ul style="list-style-type: none"> <li>The information provided including the design diagrams and specifications were adequate for construction of distribution mains and miscellaneous components under section 4.4 of the WSDM.</li> </ul>	<p>It was not the intent to receive a waiver for the construction of Storage Tanks, Booster Pump Facilities, Transmission Mains, Pipe Linings, and Tank Coatings. The intent was to receive a waiver only for the construction of distribution mains and miscellaneous distribution system components. Text in Section 7.1 has been modified to clarify the extent of the waiver.</p>	7-1	
12	<p>Please include the following documents in the second draft submittal:</p> <ul style="list-style-type: none"> <li>Signed State Environmental Policy Act (SEPA) environmental checklist and signed SEPA threshold determination.</li> <li>Local Government Consistency Determination Forms from the City of Yakima, City of Union Gap, and Yakima County.</li> <li>A list of systems to which notice of plan availability was made (including water systems noted in Chapter 1) and a sample of the notice. Please also attach any comments received.</li> </ul>	<p>Signed SEPA checklist and SEPA threshold determination have been included in Appendix A.</p> <p>Local government consistency check lists have been included in Appendix B2.</p> <p>A list of systems to which notice of plan availability was made and a sample of the notice is included along with received comments in Appendices C2 and C3</p>	<p>Appendix A</p> <p>Appendix B2</p> <p>Appendix C2</p> <p>Appendix C3</p>	
13	Please provide an updated Water Facilities Inventory (WFI).	An updated WFI is provided in Appendix D	Appendix D	
14	The water system must meet the consumer input process outlined in WAC 246-290-100(8). Please include documentation of a consumer meeting discussing the Water System Plan prior to its approval.	City held a Council Study session and public meeting. Documentation provided in Appendix BB.	Appendix BB	
15	When DOH is ready to approve the document we will notify you. At that time the governing body will need to officially approve the Water System Plan and send DOH documentation of plan approval by the governing body, such as a copy of the signed meeting minutes or a copy of the signed resolution. When the documentation is received we will send a letter documenting DOH approval.	A signed resolution by the City Council is included in Appendix B1.	Appendix B1	
16	As presented, the WSP may be approved until 2026. If the capital improvement program and operational budget projection were to include the year 2027, then approval may extend an additional year.	Plan will continue to use a CIP and operational budget projection that goes to the end of 2026.		No changes made to Plan text per comment.
17	Please review and update the first sentence of the summary of Project S-1 on Page 8-5.	Sentence has been corrected	8-5	
18	Please address the change in the Capital Reserve Fund Target Balance in 2026.	The Target Balance in 2026 has been corrected in Table 9-7	9-13	

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## C2. Notices Sent to Agencies/Jurisdiction

The following adjacent and nearby agencies/jurisdictions were notified about the water system plan and allowed an opportunity to review and provide comments:

- City of Yakima Planning Department
- Yakima County Planning Department
- Yakima County Utilities
- Nob Hill Water Association
- City of Selah
- Union Gap
- Noel Canning
- The Ice Rink
- Regal Mobile Estates
- Raybung Community Well
- Whispering Pines
- Laura Lee Mobile Home Park
- American Legion
- Gleed Mobile Estates
- Apple King LLC
- Bertsch Subdivision Water Association
- Sun-Tides RV Park
- Suntides Mobile Park

A copy of the email notice sent to the City of Yakima Planning Department, Yakima County Utilities, Nob Hill Water Association, City of Selah, and Union Gap can be found in the following pages. For the remaining agencies/jurisdictions, a copy of the letter template used can also be found in the following pages.

A copy of the email containing the initial notice, received comments, and comment response for Yakima County Planning Department and Yakima County Utilities can be found in Appendix C3.

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## Kuhns, David

---

**From:** Dave England <dave@nobhillwater.org>  
**Sent:** Wednesday, April 19, 2017 3:51 PM  
**To:** Pistoese, Sarah  
**Cc:** 'Brown, David'; Graham, Andrew  
**Subject:** RE: City of Yakima Draft 2017 Water System Plan for Review

Hi Sarah,

I've been busy working on projects in the field. I will try to review before the due date, but I doubt we will have any significant comments.

Thank you

**DAVE**

---

**From:** Pistoese, Sarah [mailto:Sarah.Pistoese@hdrinc.com]  
**Sent:** Monday, April 17, 2017 11:43 AM  
**To:** 'dave@nobhillwater.org' <dave@nobhillwater.org>  
**Cc:** 'Brown, David' <David.Brown@yakimawa.gov>; Graham, Andrew <Andrew.Graham@hdrinc.com>  
**Subject:** RE: City of Yakima Draft 2017 Water System Plan for Review  
**Importance:** High

Hello Dave,

We are currently processing final comments on the City of Yakima Water System Plan. Following up on my email below, I wanted to confirm if you plan to submit any comments on the Yakima WSP? If you would like to provide comments, please send these to Dave Brown and Andrew Graham (copied on this email) **by April 27, 2017**.

Let me know if you have any questions.

Kind regards,

Sarah

**Sarah Pistoese**

D 206.826.4740 M 425.891.2251



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---

**From:** Pistoese, Sarah  
**Sent:** Monday, January 30, 2017 3:10 PM  
**To:** [dave@nobhillwater.org](mailto:dave@nobhillwater.org)  
**Cc:** Brown, David <[David.Brown@yakimawa.gov](mailto:David.Brown@yakimawa.gov)>; Graham, Andrew ([Andrew.Graham@hdrinc.com](mailto:Andrew.Graham@hdrinc.com))  
<[Andrew.Graham@hdrinc.com](mailto:Andrew.Graham@hdrinc.com)>  
**Subject:** City of Yakima Draft 2017 Water System Plan for Review

**HDR Employees:**

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---

Hello Dave,

On behalf of Dave Brown, City of Yakima Water Division Manager, I am pleased to submit the City of Yakima 2017 Water System Plan (Draft Plan) for review by the Nob Hill Water Association. Pursuant to WAC 246-290-100(7), this document is provided to you for review as an adjacent utility. Attached via the slingshot file share site is the Draft 2017 Water System Plan. The City requests that you return any comments by February 28, 2017.

Thank you for your attention to this matter. Should you have any questions regarding this submittal, please contact me or Dave.

Kind regards,

Sarah

**Sarah Pistorese**

*Water System Planner*

**HDR**

601 Union Street, Suite 700  
Seattle, WA 98101  
D 206.826.4740 M 425.891.2251  
sarah.pistorese@hdrinc.com  
hdrinc.com/follow-us

## Kuhns, David

---

**From:** Pistorese, Sarah  
**Sent:** Monday, April 17, 2017 11:44 AM  
**To:** 'tjones@ci.selah.wa.us'  
**Cc:** 'Brown, David'; Graham, Andrew  
**Subject:** RE: City of Yakima Draft 2017 Water System Plan for Review

**Importance:** High

Hello Ty,

We are currently processing final comments on the City of Yakima Water System Plan. Following up on my email below, I wanted to confirm if you plan to submit any comments on the Yakima WSP? If you would like to provide comments, please send these to Dave Brown and Andrew Graham (copied on this email) **by April 27, 2017**.

Let me know if you have any questions.

Kind regards,

Sarah

### **Sarah Pistorese**

D 206.826.4740 M 425.891.2251



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---

**From:** Pistorese, Sarah  
**Sent:** Monday, January 30, 2017 3:14 PM  
**To:** tjones@ci.selah.wa.us  
**Cc:** Brown, David ; Graham, Andrew (Andrew.Graham@hdrinc.com)  
**Subject:** City of Yakima Draft 2017 Water System Plan for Review

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Hello Ty,

On behalf of Dave Brown, City of Yakima Water Division Manager, I am pleased to submit the City of Yakima 2017 Water System Plan (Draft Plan) for review by the City of Selah Public Works Utility Division. Pursuant to WAC 246-290-100(7), this document is provided to you for review as an adjacent utility. Attached via the slingshot file share site is the Draft 2017 Water System Plan. The City requests that you return any comments by February 28, 2017.

Thank you for your attention to this matter. Should you have any questions regarding this submittal, please contact me or Dave.

Kind regards,

Sarah

**Sarah Pistorese**

*Water System Planner*

**HDR**

601 Union Street, Suite 700

Seattle, WA 98101

**D** 206.826.4740 **M** 425.891.2251

sarah.pistorese@hdrinc.com

hdrinc.com/follow-us



## Kuhns, David

---

**From:** Pistoese, Sarah  
**Sent:** Monday, April 17, 2017 11:46 AM  
**To:** 'ugpwdirector@cityofuniongap.com'; 'ugshop@cityofuniongap.com'  
**Cc:** 'Brown, David'; Graham, Andrew  
**Subject:** RE: City of Yakima Draft 2017 Water System Plan for Review

**Importance:** High

Hello Dennis and Mike,

We are currently processing final comments on the City of Yakima Water System Plan. Following up on my email below, I wanted to confirm if you plan to submit any comments on the Yakima WSP? If you would like to provide comments, please send these to Dave Brown and Andrew Graham (copied on this email) **by April 27, 2017**.

Let me know if you have any questions.

Kind regards,

Sarah

### **Sarah Pistoese**

D 206.826.4740 M 425.891.2251



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---

**From:** Pistoese, Sarah  
**Sent:** Monday, January 30, 2017 3:04 PM  
**To:** [ugpwdirector@cityofuniongap.com](mailto:ugpwdirector@cityofuniongap.com); [ugshop@cityofuniongap.com](mailto:ugshop@cityofuniongap.com)  
**Cc:** Brown, David ; Graham, Andrew ([Andrew.Graham@hdrinc.com](mailto:Andrew.Graham@hdrinc.com))  
**Subject:** City of Yakima Draft 2017 Water System Plan for Review

### **HDR Employees:**

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### **Non-HDR Recipients:**

If you are not an HDR employee and this is your first time using Slingshot click [here](#) and follow the prompts to set your password.

Returning users click here to [Download](#) (files: [Yakima\\_WSP\\_\(2017-1-26\)\\_Final\\_Draft.pdf](#);) )

**Notice: The link in this email will only work for up to 30 days (as set by the sender). If you need access to these files for longer, please download and save a copy locally. Recipients of forwarded emails WILL NOT have access to the files using this link.**

Hello Dennis and Mike,

On behalf of Dave Brown, City of Yakima Water Division Manager, I am pleased to submit the City of Yakima 2017 Water System Plan (Draft Plan) for review by the City of Union Gap Water Division. Pursuant to WAC 246-290-100(7), this document is provided to you for review as an adjacent utility. Attached via the slingshot file share site is the Draft 2017 Water System Plan. The City requests that you return any comments by February 28, 2017.

Thank you for your attention to this matter. Should you have any questions regarding this submittal, please contact me or Dave.

Kind regards,

Sarah

**Sarah Pistoese**

*Water System Planner*

**HDR**

601 Union Street, Suite 700

Seattle, WA 98101

**D** 206.826.4740 **M** 425.891.2251

sarah.pistoese@hdrinc.com

hdrinc.com/follow-us



**Water / Irrigation Division**  
Working Together Toward Excellence in Service and Quality

---

2301 Fruitvale Blvd.  
Yakima, WA 98902

May 11, 2017

[Primary Contact Name]  
[System Name]  
[Address 1]  
[Address 2]

Re: City of Yakima Draft 2017 Water System Plan Update availability for review

Dear [Contact Name]:

The City of Yakima (City) has completed a draft of the City's 2017 Water System Plan (WSP) update, and is preparing to submit a final copy to the Washington State Department of Health (DOH) for approval. The City is required to notify adjacent and nearby water systems that the draft 2017 WSP update is available for review.

This 2017 WSP is an update to the last plan adopted by the City in 2011. The City's water system has not undergone significant changes since the 2011 plan. The City's 2017 WSP update includes (but is not limited to): the system's demand forecast to year 2040; analysis of distribution system deficiencies and necessary improvements; review of watershed conditions and potential risks to water quality; and a capital improvement program and financial plan for the next 10 years (through 2026).

The City has posted a copy of the draft 2017 WSP on its website (see web address below) titled "2017 Draft Water System Plan" under the section "Water System Plan."

[https://www.yakimawa.gov/services/water-irrigation/files/Yakima\\_WSP\\_2017-1-26-Final\\_Draft.pdf](https://www.yakimawa.gov/services/water-irrigation/files/Yakima_WSP_2017-1-26-Final_Draft.pdf)

A printed and bound copy of the draft 2017 WSP is also available for review at the City's Water/Irrigation Division. If requested, the City can mail an electronic copy of the draft WSP in a CD.

Comments or questions on the draft 2017 WSP update can be submitted in writing until June 17, 2017, by email or regular mail to the address below:

David Brown  
2301 Fruitvale Blvd  
Yakima, WA 98902  
david.brown@yakimawa.gov

The City will finalize the 2017 WSP in July after incorporating comments from DOH, public, and local agency and water system reviews, as appropriate. The City of Yakima appreciates your input and interest in its water system plan.

Sincerely,

David Brown

David E. Brown Water/Irrigation Manager  
(509) 575-6204 Fax (509) 575-6187  
David.brown@yakimawa.gov

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### **C3. Agency/Jurisdiction Comments**

Of the adjacent and nearby agencies/jurisdictions that were notified about the water system plan and allowed an opportunity to review and provide comments, comments were received from the following:

- Yakima County Planning Department
- Yakima County Utilities

The received comments and comment response (if needed) are included in the following pages.

This page left intentionally blank.

## Kuhns, David

---

**From:** Kuhns, David  
**Sent:** Monday, May 22, 2017 8:51 AM  
**To:** 'phil.hoge@co.yakima.wa.us'  
**Cc:** Dave Brown (dbrown@ci.yakima.wa.us); Graham, Andrew  
**Subject:** RE: YWSP- County Planning Comments and Appendix material location  
**Attachments:** Figure2-3.pdf; Figure2-4.pdf

Phil,

Thank you for the Consistency Determination Form and your comments on the water system plan. Regarding your comments, I provided a response in **RED** in the email below.

Thanks,

**David Kuhns, PE**  
D 360.570.7250



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---

**From:** Phil Hoge [<mailto:phil.hoge@co.yakima.wa.us>]  
**Sent:** Wednesday, April 19, 2017 5:57 PM  
**To:** Graham, Andrew <[Andrew.Graham@hdrinc.com](mailto:Andrew.Graham@hdrinc.com)>; Brown, David <[David.Brown@yakimawa.gov](mailto:David.Brown@yakimawa.gov)>  
**Cc:** Pistoese, Sarah <[Sarah.Pistoese@hdrinc.com](mailto:Sarah.Pistoese@hdrinc.com)>  
**Subject:** RE: City of Yakima Draft 2017 Water System Plan for Review

Hello Dave & Andrew,

Sarah Pistoese asked me to send you Yakima County's Consistency Determination Form; and it is attached.

She also invited me to send any additional comments to you, so I'm providing the following comments for consideration:

1. On page 1-25 under Northwest Boundary (Gleed) the description of the location of the UGA boundary doesn't appear to be correct. For instance, it says "The urban growth boundary shown in Figure 1-5 coincides with Maple Way Road," which isn't accurate (neither the Figure 1-5 part nor the Maple Way Road part). I suspect that this language dates from 1994-1996 when the *Interim* UGA boundary did extend to Maple Way Road. **Agreed. The text on page 1-25 has been updated to correctly describe the UGA boundary.**
2. The following areas appear to be within Yakima's service area per Fig. 4-1 (and other Figures that depict Yakima's service area) but for which Zoning (Fig. 2-3) and Future Land Use (Fig. 2-4) are not indicated:
  - West of 40<sup>th</sup> Ave and north of SR 12;
  - North of W. Powerhouse Rd., South of SR 12, between Ackley Rd. and the Mobile Home Park;
  - Southeast of Peck's Canyon Rd;
  - Parcel 18131612422 and vicinity;
  - Parcel 18131631402 and parcels to the south and east thereof.

**Figures 2-3 and 2-4 have been updated to not clip the zoning and future land use areas. The full extent of available zoning and future land use data is now shown on these figures. Copies of the updated figures are attached.**

3. The area south of Naches River, west of Fruitvale canal, and north of the Naches rail trail is indicated by several Figures as not being within Yakima's service area. Is this correct? And if so does Yakima plan to ever provide water service to this area?

**This is correct. The City does not intend to serve this area at this time.**

Feel free to contact me with questions or comments. Thank you,

**Phil Hoge**

Project Planner - Long Range  
Planning Division | Yakima County Public Services  
Fourth Floor County Courthouse | 128 N. 2nd Street | Yakima, WA 98901  
509-574-2254 direct voice | 509-574-2301 fax  
[phil.hoge@co.yakima.wa.us](mailto:phil.hoge@co.yakima.wa.us)  
[www.yakimacounty.us/planning](http://www.yakimacounty.us/planning)



**This email and replies to it are subject to public disclosure under Washington state statute (RCW 42.56 - Public Records Act).**

---

**From:** Pistorese, Sarah [<mailto:Sarah.Pistorese@hdrinc.com>]  
**Sent:** Monday, April 17, 2017 11:53 AM  
**To:** Phil Hoge <[phil.hoge@co.yakima.wa.us](mailto:phil.hoge@co.yakima.wa.us)>  
**Cc:** Brown, David <[David.Brown@yakimawa.gov](mailto:David.Brown@yakimawa.gov)>; Graham, Andrew <[Andrew.Graham@hdrinc.com](mailto:Andrew.Graham@hdrinc.com)>  
**Subject:** RE: City of Yakima Draft 2017 Water System Plan for Review  
**Importance:** High

Hello Phil,

We are currently working on finalizing the City of Yakima Water System Plan. We want to be sure to leave time to address any comments that you may have on the WSP. Therefore, we request that you complete your review of the Yakima WSP and the County's Consistency Checklist **by April 27, 2017**.

Once complete, please send the consistency checklist and any comments to Dave Brown and Andrew Graham (copied on this email).

Let me know if you have any questions.

Kind regards,

Sarah

**Sarah Pistorese**  
D 206.826.4740 M 425.891.2251



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---

**From:** Pistorese, Sarah  
**Sent:** Tuesday, March 28, 2017 4:14 PM  
**To:** 'Phil Hoge' <[phil.hoge@co.yakima.wa.us](mailto:phil.hoge@co.yakima.wa.us)>



**Cc:** 'Brown, David' <[David.Brown@yakimawa.gov](mailto:David.Brown@yakimawa.gov)>  
**Subject:** RE: City of Yakima Draft 2017 Water System Plan for Review

Hello Phil,

I just wanted to check in on the status of your review of the City of Yakima Water System Plan. Let us know if you have any questions.

Thanks again,

Sarah

**Sarah Pistoese**  
D 206.826.4740 M 425.891.2251



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---

**From:** Pistoese, Sarah  
**Sent:** Thursday, March 9, 2017 8:07 AM  
**To:** 'Phil Hoge' <[phil.hoge@co.yakima.wa.us](mailto:phil.hoge@co.yakima.wa.us)>  
**Cc:** Brown, David <[David.Brown@yakimawa.gov](mailto:David.Brown@yakimawa.gov)>  
**Subject:** RE: City of Yakima Draft 2017 Water System Plan for Review

Hi Phil,

Thank you for the update, March 23rd works fine. Let us know if you have any questions come up.

Kind regards,

Sarah

**Sarah Pistoese**  
D 206.826.4740 M 425.891.2251



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---

**From:** Phil Hoge [<mailto:phil.hoge@co.yakima.wa.us>]  
**Sent:** Monday, March 6, 2017 5:20 PM  
**To:** Pistoese, Sarah <[Sarah.Pistoese@hdrinc.com](mailto:Sarah.Pistoese@hdrinc.com)>  
**Cc:** Brown, David <[David.Brown@yakimawa.gov](mailto:David.Brown@yakimawa.gov)>  
**Subject:** RE: City of Yakima Draft 2017 Water System Plan for Review

Hi Sarah,

I should be able to provide the county's consistency checklist by March 23, and possibly sooner. Over the next 2 weeks we'll be pretty occupied with completing final draft comp plan elements and maps for our planning commission's study session on March 22. However, if I have some down time before the 22<sup>nd</sup>, I'll work on Yakima's WSP.

**Phil Hoge**

Project Planner - Long Range  
Planning Division | Yakima County Public Services  
Fourth Floor County Courthouse | 128 N. 2nd Street | Yakima, WA 98901  
509-574-2254 direct voice | 509-574-2301 fax  
[phil.hoge@co.yakima.wa.us](mailto:phil.hoge@co.yakima.wa.us)  
[www.yakimacounty.us/planning](http://www.yakimacounty.us/planning)



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---

**From:** Pistorese, Sarah [<mailto:Sarah.Pistorese@hdrinc.com>]  
**Sent:** Monday, March 06, 2017 4:00 PM  
**To:** Phil Hoge <[phil.hoge@co.yakima.wa.us](mailto:phil.hoge@co.yakima.wa.us)>  
**Cc:** Brown, David <[David.Brown@yakimawa.gov](mailto:David.Brown@yakimawa.gov)>  
**Subject:** RE: City of Yakima Draft 2017 Water System Plan for Review

Hi Phil,

I just wanted to follow up to see if you could provide an update on when you anticipate having the City of Yakima Water System Plan review complete?

Let me know if you have any questions or require any additional information.

Thank you,

Sarah

**Sarah Pistorese**

D 206.826.4740 M 425.891.2251



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---

**From:** Phil Hoge [<mailto:phil.hoge@co.yakima.wa.us>]  
**Sent:** Monday, January 30, 2017 5:56 PM  
**To:** Pistorese, Sarah <[Sarah.Pistorese@hdrinc.com](mailto:Sarah.Pistorese@hdrinc.com)>  
**Subject:** RE: City of Yakima Draft 2017 Water System Plan for Review

Hi Sarah,

Just to let you know, I downloaded the documents from Slingshot. However, It will be a couple weeks before I can review the WSP. Thanks,

**Phil Hoge**

Project Planner - Long Range  
Planning Division | Yakima County Public Services  
Fourth Floor County Courthouse | 128 N. 2nd Street | Yakima, WA 98901  
509-574-2254 direct voice | 509-574-2301 fax  
[phil.hoge@co.yakima.wa.us](mailto:phil.hoge@co.yakima.wa.us)  
[www.yakimacounty.us/planning](http://www.yakimacounty.us/planning)



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---

**From:** Pistorese, Sarah [<mailto:Sarah.Pistorese@hdrinc.com>]  
**Sent:** Monday, January 30, 2017 2:56 PM  
**To:** Phil Hoge <[phil.hoge@co.yakima.wa.us](mailto:phil.hoge@co.yakima.wa.us)>  
**Cc:** Brown, David <[David.Brown@yakimawa.gov](mailto:David.Brown@yakimawa.gov)>; Graham, Andrew <[Andrew.Graham@hdrinc.com](mailto:Andrew.Graham@hdrinc.com)>  
**Subject:** City of Yakima Draft 2017 Water System Plan for Review

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Returning users click here to [Download](#) (files: Local Gov Consistency\_DOH Form 331-568.docx; Yakima\_WSP\_(2017-1-26)\_Final\_Draft.pdf;)

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---

Hello Phil,

On behalf of Dave Brown, City of Yakima Water Division Manager, I am pleased to submit the City of Yakima 2017 Water System Plan (Draft Plan) for review by the Yakima County Planning Division. Pursuant to WAC 246-290-100(7), this document is provided to you for review as a local government entity. Attached via the slingshot file share site, is the Draft 2017 Water System Plan and the Department of Health Local Government Consistency Determination Form. The City requests that you return of this form and any comments by February 28, 2017.

Thank you for your attention to this matter. Should you have any questions regarding this submittal, please contact me or Dave.

Kind regards,

Sarah

**Sarah Pistorese**

*Water System Planner*

**HDR**

601 Union Street, Suite 700  
Seattle, WA 98101  
D 206.826.4740 M 425.891.2251  
[sarah.pistorese@hdrinc.com](mailto:sarah.pistorese@hdrinc.com)  
[hdrinc.com/follow-us](http://hdrinc.com/follow-us)

## Kuhns, David

---

**From:** Joe Stump <joe.stump@co.yakima.wa.us>  
**Sent:** Monday, March 6, 2017 1:19 PM  
**To:** Pistorese, Sarah  
**Cc:** Brown, David; Phil Hoge  
**Subject:** RE: City of Yakima Draft 2017 Water System Plan for Review

Hi Sarah,

I reviewed the City of Yakima's draft water system plan as it relates to Yakima County's Terrace Heights Water System plan. The plan looks consistent with the Terrace Heights water system plan. Thanks again for letting me review plan. Let me know if you need a more formal response than this email.

*Joe Stump, P.E.*

Utilities Manager

Yakima County Public Services

Voice: (509) 574-2300 Fax: (509) 574-2301

---

**From:** Pistorese, Sarah [mailto:Sarah.Pistorese@hdrinc.com]  
**Sent:** Tuesday, January 31, 2017 7:52 AM  
**To:** Joe Stump <joe.stump@co.yakima.wa.us>  
**Cc:** Brown, David <David.Brown@yakimawa.gov>  
**Subject:** RE: City of Yakima Draft 2017 Water System Plan for Review

Great, thank you Joe. Feel free to reach out to me or Dave should you have any questions come up.

Kind regards,

Sarah

**Sarah Pistorese**

D 206.826.4740 M 425.891.2251

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---

**From:** Joe Stump [mailto:joe.stump@co.yakima.wa.us]  
**Sent:** Tuesday, January 31, 2017 7:50 AM  
**To:** Pistorese, Sarah <Sarah.Pistorese@hdrinc.com>  
**Subject:** RE: City of Yakima Draft 2017 Water System Plan for Review

Thanks Sarah for the opportunity to provide comments on the City's water system plan. I'll take a look at it and let you know if I have any comments.

*Joe Stump, P.E.*

Utilities Manager

Yakima County Public Services

Voice: (509) 574-2300 Fax: (509) 574-2301

---

**From:** Pistorese, Sarah [<mailto:Sarah.Pistorese@hdrinc.com>]  
**Sent:** Monday, January 30, 2017 3:08 PM  
**To:** Joe Stump <[joe.stump@co.yakima.wa.us](mailto:joe.stump@co.yakima.wa.us)>  
**Cc:** Brown, David <[David.Brown@yakimawa.gov](mailto:David.Brown@yakimawa.gov)>; Graham, Andrew <[Andrew.Graham@hdrinc.com](mailto:Andrew.Graham@hdrinc.com)>  
**Subject:** City of Yakima Draft 2017 Water System Plan for Review

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---

Hello Joe,

On behalf of Dave Brown, City of Yakima Water Division Manager, I am pleased to submit the City of Yakima 2017 Water System Plan (Draft Plan) for review by the Yakima County Water Utility Division. Pursuant to WAC 246-290-100(7), this document is provided to you for review as an adjacent utility. Attached via the slingshot file share site is the Draft 2017 Water System Plan. The City requests that you return any comments by February 28, 2017.

Thank you for your attention to this matter. Should you have any questions regarding this submittal, please contact me or Dave.

Kind regards,

Sarah

**Sarah Pistorese**

*Water System Planner*

**HDR**

601 Union Street, Suite 700  
Seattle, WA 98101  
D 206.826.4740 M 425.891.2251  
[sarah.pistorese@hdrinc.com](mailto:sarah.pistorese@hdrinc.com)  
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**Appendix D.**  
**Water Facilities Inventory (WFI)**

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# WATER FACILITIES INVENTORY (WFI) FORM

Quarter: 1  
Updated: 05/15/2017  
Printed: 7/18/2017

ONE FORM PER SYSTEM

WFI Printed For: On-Demand

Submission Reason: Source Update

RETURN TO: Central Services - WFI, PO Box 47822, Olympia, WA, 98504-7822

<b>1. SYSTEM ID NO.</b> 99150 9	<b>2. SYSTEM NAME</b> YAKIMA WATER DIVISION, CITY OF	<b>3. COUNTY</b> YAKIMA	<b>4. GROUP</b> A	<b>5. TYPE</b> Comm
<b>6. PRIMARY CONTACT NAME &amp; MAILING ADDRESS</b>  DAVID E. BROWN [MANAGER] 2301 FRUITVALE BLVD YAKIMA, WA 98902-1225		<b>7. OWNER NAME &amp; MAILING ADDRESS</b>  YAKIMA, CITY OF DAVID E. BROWN 2301 FRUITVALE BLVD YAKIMA, WA 98902-1225		<b>8. OWNER NUMBER: 006797</b>  MANAGER
<b>STREET ADDRESS IF DIFFERENT FROM ABOVE</b> ATTN ADDRESS CITY STATE ZIP		<b>STREET ADDRESS IF DIFFERENT FROM ABOVE</b> ATTN ADDRESS CITY STATE ZIP		
<b>9. 24 HOUR PRIMARY CONTACT INFORMATION</b>		<b>10. OWNER CONTACT INFORMATION</b>		
Primary Contact Daytime Phone: (509) 575-6204		Owner Daytime Phone: (509) 575-6204		
Primary Contact Mobile/Cell Phone: (509) 901-4870		Owner Mobile/Cell Phone: (509) 901-4870		
Primary Contact Evening Phone: (xxx)-xxx-xxxx		Owner Evening Phone: (xxx)-xxx-xxxx		
Fax: (509) 575-6187	E-mail: xxxxxxxxxxxxxxxxxxxxxx	Fax: (509) 575-6187	E-mail: xxxxxxxxxxxxxxxxxxxxxx	
<b>WAC 246-290-420(9) requires that water systems provide 24-hour contact information for emergencies.</b>				
<b>11. SATELLITE MANAGEMENT AGENCY - SMA (check only one)</b>				
<input checked="" type="checkbox"/> Not applicable (Skip to #12) <input type="checkbox"/> Owned and Managed SMA NAME: _____ SMA Number: _____ <input type="checkbox"/> Managed Only <input type="checkbox"/> Owned Only				
<b>12. WATER SYSTEM CHARACTERISTICS (mark all that apply)</b>				
<input type="checkbox"/> Agricultural <input checked="" type="checkbox"/> Commercial / Business <input checked="" type="checkbox"/> Day Care <input checked="" type="checkbox"/> Food Service/Food Permit <input checked="" type="checkbox"/> 1,000 or more person event for 2 or more days per year <input checked="" type="checkbox"/> Hospital/Clinic <input checked="" type="checkbox"/> Industrial <input checked="" type="checkbox"/> Licensed Residential Facility <input checked="" type="checkbox"/> Lodging <input checked="" type="checkbox"/> Recreational / RV Park <input checked="" type="checkbox"/> Residential <input checked="" type="checkbox"/> School <input type="checkbox"/> Temporary Farm Worker <input checked="" type="checkbox"/> Other (church, fire station, etc.): _____				
<b>13. WATER SYSTEM OWNERSHIP (mark only one)</b>				<b>14. STORAGE CAPACITY (gallons)</b>
<input type="checkbox"/> Association <input checked="" type="checkbox"/> City / Town <input type="checkbox"/> County <input type="checkbox"/> Federal <input type="checkbox"/> Investor <input type="checkbox"/> Private <input type="checkbox"/> Special District <input type="checkbox"/> State				32,000,000

- SEE NEXT PAGE FOR A COMPLETE LIST OF SOURCES -

# WATER FACILITIES INVENTORY (WFI) FORM - Continued

1. SYSTEM ID NO.	2. SYSTEM NAME	3. COUNTY										4. GROUP	5. TYPE																																	
99150 9	YAKIMA WATER DIVISION, CITY OF	YAKIMA										A	Comm																																	
15 Source Number	16 SOURCE NAME  LIST UTILITY'S NAME FOR SOURCE AND WELL TAG ID NUMBER.  Example: WELL #1 XYZ456  IF SOURCE IS PURCHASED OR INTERTIED, LIST SELLER'S NAME Example: SEATTLE	17 INTERTIE  INTERTIE SYSTEM ID NUMBER	18 SOURCE CATEGORY										19 USE	20	21 TREATMENT					22 DEPTH	23	24 SOURCE LOCATION																								
			WELL	WELL FIELD	WELL IN A WELL FIELD	SPRING	SPRING FIELD	SPRING IN SPRINGFIELD	SEA WATER	SURFACE WATER	RANNEY / INF. GALLERY	OTHER			PERMANENT	SEASONAL	EMERGENCY	SOURCE METERED	NONE			CHLORINATION	FILTRATION	FLUORIDATION	IRRADIATION (UV)	OTHER	DEPTH TO FIRST OPEN INTERVAL IN FEET	CAPACITY (GALLONS PER MINUTE)	1/4, 1/4 SECTION	SECTION NUMBER	TOWNSHIP	RANGE														
S01	Naches River WTP																																													
S02	Airport Well		X																			943	1950	NW SE	35	13N	18E																			
S03	Kiwanis Park		X																			698	2100	SW NW	20	13N	19E																			
S05	InAct 11/02/2001 Wright Ave Well		X																			250	825	SE NE	14	13N	18E																			
S06	InAct 02/25/2016 59700M/Nob Hill	59700 M																					3000	NW NE	21	13N	18E																			
S07	59700M/Nob Hill	59700 M																					1000	SE SW	22	13N	18E																			
S08	Kissel Well		X																			878	2500	NW NW	35	13N	18E																			
S09	59700M/Nob Hill	59700 M																					2500	SW NE	03	12N	18E																			
S10	Gardner Well		X																			485	3000	S E	36	13N	18E																			

# WATER FACILITIES INVENTORY (WFI) FORM - Continued

<b>1. SYSTEM ID NO.</b> 99150 9	<b>2. SYSTEM NAME</b> YAKIMA WATER DIVISION, CITY OF	<b>3. COUNTY</b> YAKIMA	<b>4. GROUP</b> A	<b>5. TYPE</b> Comm
------------------------------------	---	----------------------------	----------------------	------------------------

	ACTIVE SERVICE CONNECTIONS	DOH USE ONLY! CALCULATED ACTIVE CONNECTIONS	DOH USE ONLY! APPROVED CONNECTIONS
<b>25. SINGLE FAMILY RESIDENCES (How many of the following do you have?)</b>		25656	Unspecified
A. Full Time Single Family Residences (Occupied 180 days or more per year)	14884		
B. Part Time Single Family Residences (Occupied less than 180 days per year)	0		
<b>26. MULTI-FAMILY RESIDENTIAL BUILDINGS (How many of the following do you have?)</b>			
A. Apartment Buildings, condos, duplexes, barracks, dorms	1608		
B. Full Time Residential Units in the Apartments, Condos, Duplexes, Dorms that are occupied more than 180 days/year	10772		
C. Part Time Residential Units in the Apartments, Condos, Duplexes, Dorms that are occupied less than 180 days/year	0		
<b>27. NON-RESIDENTIAL CONNECTIONS (How many of the following do you have?)</b>			
A. Recreational Services and/or Transient Accommodations (Campsites, RV sites, hotel/motel/overnight units)	20	20	
B. Institutional, Commercial/Business, School, Day Care, Industrial Services, etc.	1961	1961	
<b>28. TOTAL SERVICE CONNECTIONS</b>		27637	

<b>29. FULL-TIME RESIDENTIAL POPULATION</b>
A. How many residents are served by this system 180 or more days per year? <span style="float: right; border-bottom: 1px solid black; padding: 0 50px;">72624</span>

30. PART-TIME RESIDENTIAL POPULATION	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
A. How many part-time residents are present each month?												
B. How many days per month are they present?												

31. TEMPORARY & TRANSIENT USERS	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
A. How many total visitors, attendees, travelers, campers, patients or customers have access to the water system each month?												
B. How many days per month is water accessible to the public?												

32. REGULAR NON-RESIDENTIAL USERS	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
A. If you have schools, daycares, or businesses connected to your water system, how many students daycare children and/or employees are present each month?												
B. How many days per month are they present?												

33. ROUTINE COLIFORM SCHEDULE	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
* Requirement is exception from WAC 246-290	80	80	80	80	80	80	80	80	80	80	80	80

<b>34. NITRATE SCHEDULE</b>	<b>QUARTERLY</b>	<b>ANNUALLY</b>	<b>ONCE EVERY 3 YEARS</b>
<b>(One Sample per source by time period)</b>			

**35. Reason for Submitting WFI:**

- Update - Change   
  Update - No Change   
  Inactivate   
  Re-Activate   
  Name Change   
  New System   
  Other \_\_\_\_\_

<b>36. I certify that the information stated on this WFI form is correct to the best of my knowledge.</b>	
SIGNATURE: _____	DATE: _____
PRINT NAME: _____	TITLE: _____

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**Appendix E.**  
**Water System Ordinance**  
**(Chapter 7.68 of Municipal Code)**

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## Chapter 7.68 WATER DIVISION

### Sections:

- [7.68.010](#) Rules established.
- [7.68.012](#) Definitions.
- [7.68.015](#) Applications.
- [7.68.035](#) Service pipes laid by water division.
- [7.68.040](#) Installation of services.
- [7.68.043](#) Service installation charges.
- [7.68.050](#) Change in location or size of service installation.
- [7.68.055](#) Connection of temporary services to new mains.
- [7.68.065](#) Shut-off valve.
- [7.68.070](#) Cross-connection control.
- [7.68.075](#) New connections—Plumbing regulations.
- [7.68.080](#) Existing connection—Plumbing repairs or alteration.
- [7.68.085](#) Kind of service pipe.
- [7.68.090](#) Owners responsible for leakage, damage and repair.
- [7.68.095](#) Ownership of water mains, meters, extensions, service pipes, appurtenances and fixtures—No tampering, access or modification without prior city authorization.
- [7.68.203](#) Authority to impose conservation measures.
- [7.68.205](#) Waste.
- [7.68.210](#) Frozen services.
- [7.68.220](#) Interruption of service.
- [7.68.230](#) Water meters.
- [7.68.235](#) Repairing meters.
- [7.68.240](#) Testing and correcting meters.
- [7.68.250](#) Water services charges.
- [7.68.251](#) Bulk rate.
- [7.68.260](#) Charges for premises supplied through more than one meter.
- [7.68.275](#) Fire services.
- [7.68.280](#) Fire service inspection.
- [7.68.282](#) Fire service charges.
- [7.68.290](#) Maintenance of fire hydrants.
- [7.68.295](#) Use of fire hydrant.
- [7.68.300](#) Temporary domestic water service.
- [7.68.305](#) Abandoned services.
- [7.68.310](#) Extensions of mains other than by city.
- [7.68.315](#) Ownership and control of extensions of water mains.
- [7.68.320](#) Street work.
- [7.68.325](#) Connection with conductors.
- [7.68.335](#) Penalties for violation.

### **7.68.010 Rules established.**

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The following rules and regulations are hereby established for the management of the municipal water system of the city of Yakima. (Ord. B-606 § 4, 1944).

#### **7.68.012 Definitions.**

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The definitions set forth in this subsection apply throughout this chapter.

- (1) "Backflow" means the flow, other than the intended direction of flow, of any foreign liquids, gases, or substances into the distribution system of a public water supply.
- (2) "Backflow prevention device" means a device to counteract backflow.
- (3) "Contamination" means the entry into or presence in a public water supply of any substance which may be deleterious to health and/or quality of the water.
- (4) "Cross-connection" means any physical arrangement whereby a public water supply is connected, directly or indirectly, with any other water supply system, sewer, drain, conduit, pool, storage reservoir, plumbing fixture, or other device which contains or may contain contaminated water, wastewater, or other waste or liquids of unknown or unsafe quality which may be capable of imparting contamination to the public water supply as a result of backflow.
- (5) "Manager" means the manager of the water/irrigation division of the city of Yakima, or his authorized agent.
- (6) "Health officer" means the Yakima County district health officer, or his authorized agent.
- (7) "Public water supply" means any system or water supply intended or used for human consumption or other domestic uses, including source, treatment storage, transmission and distribution facilities, where water is furnished to any collection or number of individuals, or is made available to the public for human consumption or domestic use.
- (8) "Purveyor" means the city of Yakima or its authorized agent.
- (9) "DOH" means the Secretary of Department of Health.
- (10) "Unit of consumption (UOC)" means the basic unit of measure for water consumed, and shall contain one hundred cubic feet per unit.
- (11) "Domestic service line" means the pipe from the water main to five feet beyond the meter set.
- (12) "Fire service line" means the pipe from the water main to the property line. (Ord. 2006-07 § 30, 2006: Ord. 97-16 § 1, 1997).

#### **7.68.015 Applications.**

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A. Water Service Installation. All applications for service installations for water service shall be made at the office of code administration on printed forms furnished by the water/irrigation division, and shall contain the name of the owner, an account number, and when possible a description of the property, lot, block, and addition, name of the street upon which the property fronts and the official



street number assigned to the premises as shown by the records in the office of the city engineer, and the signature of the applicant agreeing to conform to the rules and regulations of the water/irrigation division that may be established by the city as conditions for the use of water.

All applications for service installations shall be made by the owner of the property to be served, or by his duly authorized agent, and shall state the size of service connection required, and the applicant shall at the time of making application pay to the city treasurer the amount of the fees or deposit required for the installation of the service connection as hereinafter provided. (Ord. 2006-07 § 31, 2006: Ord. 97-16 § 2, 1997: Ord. 2904 § 1, 1985: Ord. 590 § 1, 1964: Ord. B-606 § 5, 1944).

#### **7.68.035 Service pipes laid by water division.**

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The installation of service pipes extending from the main to the meter together with the necessary labor and materials for such construction shall be made by the water/irrigation division; provided, however, that at the discretion of the water/irrigation division manager, service pipes extending from the main to the meter may be installed by private contractors according to water/irrigation division approved plans and specifications; provided further, that all meters shall be furnished and installed by the water/irrigation division. The water/irrigation division shall be responsible for the operation and maintenance of the service line from the water main through the meter set to the outside of the water meter set. (Ord. 2010-02 § 1 (part), 2010: Ord. 2006-07 § 32, 2006: Ord. 97-16 § 4, 1997: Ord. 94-28 § 1, 1994: Ord. 93-22 § 1, 1993: Ord. B-606 § 9, 1944).

#### **7.68.040 Installation of services.**

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(a) A separate meter and service connection shall be installed to serve each one-family dwelling unit, as defined in Title [15](#), Yakima Urban Area Zoning Ordinance, of the city of Yakima Municipal Code, supplied with domestic water service; provided, for each multiple dwelling (including duplexes or apartment houses), co-ops, condominiums, and similar dwelling unit complexes with common walls, under single or common ownership or management, may be served by either a single meter and service connection or multiple meters and service connections at the option of the owner or manager thereof, regardless of whether the dwelling units therein are individual consumers for the purpose of computing water service charges as provided by YMC [7.50.010\(B\)](#).

(b) Mobile home parks may be served by either a single meter and service connection or multiple meters and service connections at the option of the owner or manager thereof, regardless of whether the dwelling units therein are individual consumers for the purpose of computing water service charges as provided by YMC [7.50.010\(B\)](#), and shall comply with YMC [7.68.070](#).

(c) (1) In the event of the sale or other transfer of title of any one-family dwelling unit constituting a portion of a multiple dwelling, co-op, condominium, or other similar dwelling unit complex so that such sold or otherwise transferred dwelling unit is separately owned, a separate meter and service connection shall be installed to serve each such separately owned dwelling unit; provided, this subsection shall not apply to the sale of dwelling units within condominiums by unit number according to applicable laws.

(2) In the event a separate meter and service connection is required by this section, the city may discontinue water service to the premises which is required to be separately served until such separate meter and service connection is installed.

(d) After the applicant has complied with all the prescribed requirements relating to the application for service connections and has paid all charges, the city shall cause the property described to be connected with the municipal water system. Wherever practicable the service connection shall be made in the street in front of the property to be served. Each service shall consist of a tap and connection with the main pipe, a length of service pipe extending from the main to a curb cock and water meter situated outside of the traveled roadway adjacent to the property to be served, together with the necessary covers for meters and curb cock.

(e) The city shall have the right to install a single service pipe from the main to the property line, of sufficient size to supply two or more separate properties, and with individual curb cocks and meters for the separate properties. (Ord. 2006-07 § 33, 2006: Ord. 1556 § 1, 1973: Ord. B-606 § 10, 1944).

#### **7.68.043 Service installation charges.**

Applicants for new water service installations shall pay to the director of finance and budget or his/her designee the installation charges as provided below, which payment shall be made prior to such installation being commenced:

Three-quarter-inch service pipe with five-eighths-inch by three-quarter-inch or full three-quarter-inch meter	\$1,285.00
One-inch service pipe with one-inch meter	\$1,325.00

The installation charge for a new water service where a meter larger than one-inch diameter is to be installed or the service line is larger than one-inch shall be an amount adequate to pay all costs of materials, installation and surface restoration as computed by the water/irrigation man-

ager or his/her designee. (Ord. 2007-67 § 1, 2007: Ord. 2006-07 § 34, 2006: Ord. 97-16 § 5, 1997: Ord. 3260 § 1, 1990: Ord. 2955 § 1, 1986: Ord. 2858 § 1, 1985: Ord. 2594 § 1, 1982: Ord. 1874 § 2, 1975: Ord. 1489 § 1, 1973: Ord. 982 § 4, 1967: Ord. B-2192, 1958: Ord. B-1462, 1953: Ord. B-606 § 11, 1944).

#### **7.68.050 Change in location or size of service installation.**

Any change made in a service installation, at the request of the property owner or water user, or made necessary due to any act of his, after such installation has once been made, whether such change involves a change in size of the pipe or meter, or both, or a change in the location or elevation thereof, shall be made solely at the expense of the applicant who shall pay the entire cost thereof in the same manner as provided in YMC [7.68.035](#) through [7.68.043](#). (Ord. B-606 § 12, 1944).

**7.68.055 Connection of temporary services to new mains.**

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Where a main is installed in any street, properties on said street or within one-half block on side streets which are served through temporary services, private mains, or mains in alleys or on private property, shall have their service pipes changed to connect with the new main, and the water/irrigation division shall without charge install a service from the new main to a meter which shall be installed in the street in front of the property and the property owner or water user shall reinstall his service pipe to connect with the meter. (Ord. 2006-07 § 35, 2006: Ord. 97-16 § 6, 1997: Ord. B-606 § 13, 1944).

**7.68.065 Shut-off valve.**

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A special shut-off valve for a domestic service shall be installed on the pipe leading from the meter into each property served and no branch pipe, bibb or fixture of any kind shall be connected to the pipe between this valve and the meter. This valve shall be installed and maintained by the property owner or water user; it shall be for his use in making extensions and repairs of the plumbing upon the property, and it shall be accessible at all times and, where necessary, a suitable box and key shall be provided. In case the water is shut off from any service which is not provided with such a valve or with one which is not in good condition, the property owner or water user shall make arrangements to install, repair or replace such valve and the water shall not be turned on again until such valve has been installed, repaired or replaced. (Ord. 2006-07 § 36, 2006: Ord. B-606 § 15, 1944).

**7.68.070 Cross-connection control.**

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A. Installing or maintaining any uncontrolled cross-connection that may endanger the quality of the public water supply of the city of Yakima shall be unlawful and is prohibited. Any such cross-connection now existing or hereafter installed is declared to be a public nuisance and shall be abated immediately.

1. The city of Yakima water/irrigation division (the city) hereby adopts by reference the standards and requirements of WAC [246-290-490](#), as now written or hereafter amended.
2. The city of Yakima water/irrigation division manager or the cross-connection control program manager shall have the authority to establish requirements more stringent than state regulations if he/she deems the conditions so dictate. These policies shall be published and available for public use.
3. The control or elimination of cross-connections shall be in accordance with the applicable sections of WAC [246-290](#), the City of Yakima Municipal Code and the policies and procedures established by the city of Yakima water/irrigation division.

B. Only those backflow prevention assemblies and controls identified in the most recent edition of Backflow Prevention Assemblies Approved for Installation in Washington State as published by the Washington State Department of Health or the Manual of Cross Connection Control as published by the USC Foundation for Cross Connection Control and Hydraulic Research shall be approved for new installations.

C. 1. Where a property has an existing water service and the potable water supply system is protected from a cross-connection/backflow by a nonconforming assembly (i.e., an assembly that is no longer on the approved assemblies list or does not meet the current standards or requirements of the WAC or this code or policies), the assembly, at the owner's risk, may be allowed to remain in service if it meets the following criteria:

- a. At the time of installation the assembly was a Washington State approved backflow prevention assembly; and
- b. At the time the assembly was installed its installation was approved by the city as appropriate for the degree of hazard; and
- c. The assembly does not meet any of the criteria for upgrading as required in subsection (C)(2) of this section.

2. All nonconforming cross-connection/backflow prevention assemblies shall be replaced or upgraded to current standards as required in subsection A and B of this section at such time as any of the following conditions exist:

- a. The assembly fails to operate properly; or
- b. The assembly fails its required annual testing and certification; or
- c. The assembly requires continual and/or excessive repair or maintenance; or
- d. The degree of hazard at the premises has increased from that which existed at the time the assembly was installed; or
- e. The water service, fire sprinkler system or plumbing have been or are modified from the originally approved condition.

D. When previously unknown, unprotected and improperly protected cross-connections are identified, the property owner shall be notified in writing of the noncompliant condition, the degree of the hazard, and control measures and/or backflow prevention assembly required to abate the hazard. This notice shall be provided in accord with subsection J of this section. The property owner shall implement all required corrective measures within the time frame specified in the notice provided.

E. All newly installed or relocated backflow prevention assemblies shall be inspected, tested and certified by a Washington State certified backflow assembly tester approved by this section.

F. 1. Pursuant to WAC [246-290-490](#), the property owner is required to have backflow prevention assemblies inspected, tested and certified by a Washington State certified backflow assembly tester (BAT) at least once per year.

- a. The city shall send notice of this requirement; and
- b. The city shall provide an approved inspection/testing report sheet; and
- c. The property owner shall send a copy of the completed inspection/testing report to the city of Yakima water/irrigation division; and

- d. The city will assign the annual testing schedule.
2. If a backflow assembly fails the annual inspection/test the property owner shall have thirty days from the date of notification of said failure to have the assembly repaired or replaced and retested by a Washington State certified backflow assembly tester.
- G. All facilities that receive water service from the city of Yakima are subject to a minimum of a bi-annual hazard assessment and comprehensive water audit survey to be performed by the city of Yakima water/irrigation personnel. Upon due notice to the property owner, the city shall be provided access to the property and plumbing systems to conduct the hazard assessment and comprehensive water audit.
- H. The specific requirements identified in this subsection do not replace or supersede the requirements of the Uniform Plumbing Code as adopted by the city of Yakima.
- I. Property owners who fail to comply with the provisions and requirements set forth in this subsection will be sent a notice advising of the noncompliant condition stating the requirements and remedies necessary to correct the noncompliant condition and the time within which corrections must be completed and reported to the city. In the event a property owner fails to correct a noncompliant condition and report the correction as directed in the notice, the city may:
1. Terminate water service until the noncompliance is satisfactorily corrected.
  2. Conduct the necessary testing, inspecting and/or repair of the noncompliant condition and charge the following costs to the property owner as an additional utility charge:
    - a. The inspection cost of three hundred fifty dollars to inspect or test a cross-connection device.
    - b. The cost to install, repair or replace a noncompliant device, said cost to include an administration fee of one hundred dollars.
- J. Notice to Property Owner. If, after preliminary investigation, the city determines that a property is noncompliant with the requirements of this section, the city shall serve upon the property owner, according to the provisions of subsection K of this section, a notice that shall state, identify, or describe:
1. The subject property including at least the property address and county assessor's tax parcel number;
  2. The conditions on the subject property that are illegal and that render the property noncompliant with the requirements of this section;
  3. What must be done to correct such noncompliant condition(s);
  4. The deadline for correction of such condition(s), which will allow thirty days for correction or some mutually agreeable completion date;

5. The potential termination of service and/or costs and administrative fee that may be charged to the owner as a consequence of the property owner's failure to timely correct the described noncompliant conditions;
6. The city's intent to proceed to correct the described noncompliant conditions on the subject property if such conditions are not corrected before the stated deadline by the property owner;
7. That the property owner shall be given the right to respond to the notice;
8. That if the property owner agrees to correct the noncompliant condition the city and the owner may negotiate a voluntary correction agreement in which, among other things, the owner:
  - a. Admits that the noncompliant condition(s) exist(s);
  - b. Promises to correct the illegal condition(s) by an agreed deadline;
  - c. Is advised of his/her rights under the state and federal constitutions to refuse consent to entry, to limit the scope of consent to entry, and to withdraw consent to entry once given, and that the owner consents to entry on the subject property by the city or persons under contract with the city to correct any nonconforming condition(s) that are not corrected by the stated deadline; and
  - d. Agrees to pay the city's costs and an administrative fee to correct the nonconforming conditions if the owner fails to do so;
9. If the noncompliant property is lawfully occupied by someone other than the property owner, no voluntary correction agreement will be offered unless such occupants lawfully occupying the property also consent to entry by the city or persons under contract with the city to correct the noncompliant condition(s) described that are not corrected by the deadline;
10. Advise the owner that if the illegal conditions are not corrected, the city will terminate water service.

K. **Service of Notice.** If, after determining that a noncompliant condition exists under this section, the city shall cause to be served, either personally or by certified mail, with return receipt requested, upon the property owner identified in the utility billing records and/or cross-connection records of the city the notice identified in subsection J of this section. In the event the property owner cannot be ascertained by the city in the exercise of reasonable diligence, and the city provides an affidavit to that effect, then service of such notice may be made either by personal service or by mailing a copy of the notice and order by certified mail, postage prepaid, return receipt requested, to each such person at the address of the property involved in the proceedings, and mailing a copy of the notice by first-class mail to any address of each such person in the records of the county auditor for the county where the property is located. Such notice shall advise all parties in interest of the responsibility to correct the noncompliant condition and otherwise meet the notice requirements set forth in subsection J of this section. (Ord. 2011-18 § 1, 2011: Ord. 2010-02 § 1 (part), 2010: Ord. 2006-07 § 37, 2006: Ord. 97-16 § 8, 1997: Ord. 3078 § 2, 1988).

#### **7.68.075 New connections—Plumbing regulations.**

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(a) Any person, firm or corporation desiring to be connected with the domestic water system and domestic water supply of the city of Yakima shall, before such connection may be made, first comply with all plumbing regulations of the city of Yakima, including those contained in Chapter [11.44](#), city plumbing code.

(b) Any such person, firm or corporation desiring to secure such services and to be hereafter connected with the domestic water supply system of the city of Yakima outside of the city limits of said city shall secure a permit as provided in Chapter [11.44](#), city plumbing code, and pay the inspection fees therein provided for and be subject to the inspection thereon provided for, the same as though said property were located within the city limits of the city of Yakima.

(c) No person, firm or corporation shall hereafter be connected with the domestic water supply or domestic water supply system of the city of Yakima until such person, firm or corporation has fully complied with all the provisions of this chapter, and it shall be unlawful for the water/irrigation division to give any such person, firm or corporation water service from the domestic water supply system of said city of Yakima or to connect the plumbing of such person thereto, until this chapter shall have been complied. (Ord. 2006-07 § 38, 2006: Ord. 97-16 § 9, 1997: Ord. B-606 § 17; April 3, 1944).

#### **7.68.080 Existing connection—Plumbing repairs or alteration.**

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No person, firm or corporation whose premises are now receiving water service from the domestic water supply, or domestic supply system, of the city of Yakima shall alter, repair or add to any plumbing at said premises, unless such additional alterations or repairs shall be performed in compliance with Chapter [11.44](#) of this code, and a permit therefor obtained and inspection fees paid to the office of code administration and planning; and in case of a violation of this section by any person, firm or corporation, it shall be the duty of the water/irrigation division of this city to immediately discontinue water service to the premises, until such violation shall have been removed as determined by the code administration and planning manager. (Ord. 2006-07 § 39, 2006: Ord. 97-16 § 10, 1997: Ord. B-606 § 18; April 3, 1944).

#### **7.68.085 Kind of service pipe.**

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Service pipe and fittings for domestic and/or fire services shall be of brass, copper, cross-linked polyethylene tubing in sizes through two-inch, high density polyethylene SDR 9 may be used for service line sizes one-and-one-half- and two-inch and ductile iron pipe for diameters greater than two-inch. All materials used in service lines, except valves and similar devices, shall be of like material, except where otherwise approved by the manager. (Ord. 2006-07 § 40, 2006: Ord. 97-16 § 11, 1997: Ord. B-606 § 19; April 3, 1944).

#### **7.68.090 Owners responsible for leakage, damage and repair.**

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Owners of services are responsible for all leaks or damages on account of leaks from privately owned services and privately owned mains leading from the city's mains to the premises served. This includes fire suppression services that were installed without a resilient seat gate valve with a standard valve box at the property/right-of-way line as required by YMC [7.68.275](#). (Ord. 2010-02 § 1 (part), 2010: Ord. B-606 § 20; April 3, 1944).

**7.68.095 Ownership of water mains, meters, extensions, service pipes, appurtenances and fixtures—No tampering, access or modification without prior city authorization.**

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The ownership of all water mains, extensions, service pipes, fixtures and appurtenant equipment, including but not limited to water meters, maintained by the water/irrigation division shall be vested in the city of Yakima, and in no case shall the owner of any premises have the right to claim or reclaim any part thereof.

No person, firm or corporation shall use, operate, modify or tamper with, access, or connect to water mains, service pipes, appurtenant equipment or fixtures, including but not limited to water meters, owned and maintained by the city of Yakima, without prior specific written authorization and permission of the water/irrigation division of the city.

In case of privately owned mains and services and where there is no responsible organization or individuals as owners of such mains and services, work done as an accommodation shall not place ownership in the city of Yakima. (Ord. 2015-005 § 1, 2015: Ord. 2010-02 § 1 (part), 2010: Ord. 2006-07 § 41, 2006: Ord. 97-16 § 12, 1997: Ord. B-606 § 21; April 3, 1944).

**7.68.203 Authority to impose conservation measures.**

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- A. The city manager, upon a finding by the city council that an emergency situation exists which threatens to seriously disrupt or diminish the municipal water supply, may order and enforce restrictions on water use so as to distribute the available supply on a just and equitable basis to all customers, including residential, industrial, and commercial users.
- B. Upon declaration of a water supply emergency, the city manager may direct that no water shall be used for outdoor uses including, but not limited to, irrigation of lawns, turf or use on other outdoor surfaces by any customer at any residence, apartment building, commercial building, or property or structure except at times and under conditions as specified by the city manager. Such conditions may include but are not limited to:
1. Alternate day limitations;
  2. Time of day limitations;
  3. Limitation of uses; and/or
  4. Suspension of domestic water irrigation service. (Ord. 2005-16 § 1, 2005).

**7.68.205 Waste.**

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It shall be unlawful for any person to waste water or allow it to be wasted by imperfect or leaking stops, valves, pipes, closets, faucets, or other fixtures, or to use water closets without self-closing valves, or to use water in violation of the city's ordinances regulating said use of water. The willful wasting of water shall be a misdemeanor; if such waste of water continues after receiving notice from the water/irrigation division to make repairs and to desist from the waste of water the water/irrigation division shall shut off the water supply from such premises until the necessary repairs have been made. (Ord. 2006-07 § 42, 2006: Ord. 97-16 § 14, 1997: Ord. B-606 § 23; April 3, 1944).



**7.68.210 Frozen services.**

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All services and installations shall be placed at the depth required in YMC Chapter [11.44](#) in order to avoid all probability of freezing. The water division shall be responsible for all meters and frozen services owned by the city. Owners of property served shall be responsible for all other frozen services leading to and located on the premises served, and shall pay the cost of thawing of such privately owned pipes when necessary.

- (a) All persons, firms or corporations engaging in the business of thawing frozen service installations shall comply with YMC Chapter [11.44](#).
- (b) Any individual property owner desiring to thaw his own service connection where access thereto is had through any meter box shall, before commencing such operation, secure a permit from the city water division. Such permit shall be issued by the city water/irrigation division without charge. The individual property owner shall be responsible for the costs of repairing any and all damages to the city's facilities caused by the thawing operation.
- (c) In addition to any other penalties prescribed for violation of any of the provisions of this chapter, in the event of the violation of either subsection a or b of this section, water service to the premises where any thawing operations are undertaken shall be discontinued immediately. (Ord. 2006-07 § 43, 2006: Ord. 97-16 § 15, 1997: Ord. B-101 § 1, 1949: Ord. B-606 § 24, 1944).

**7.68.220 Interruption of service.**

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The water may at any time be shut off from the city's mains without notice, for the purpose of making repairs, extensions or any other necessary work, and persons having boilers supplied by direct pressure from the mains are cautioned against danger of explosion or collapse. The city shall not be responsible for the safety of the boilers on the premises of any water consumer, nor will the city be responsible on account of the interruption in operating any hydraulically operated appliance or cooling device. (Ord. B-606 § 26, 1944).

**7.68.230 Water meters.**

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All water meters installed by the water/irrigation division, or by the previous owners of the water system, shall be and remain the property of the city, and may be removed or replaced, or changed as to size and type by the water/irrigation division whenever deemed necessary by the division. (Ord. 2006-07 § 44, 2006: Ord. 97-16 § 17, 1997: Ord. B-606 § 27, 1944).

**7.68.235 Repairing meters.**

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The water/irrigation division shall maintain and repair all meters when rendered unserviceable through fair wear and tear and shall renew them if necessary; provided, however, that where replacement, repairs or adjustments of any meter is rendered necessary by the act of neglect or carelessness of the owner or occupant of any premises, any expense caused the water/irrigation division thereby shall be charged against and collected from the water consumer, and water service may be discontinued until the cause is corrected and amount charged collected. (Ord. 2006-07 § 45, 2006: Ord. 97-16 § 18, 1997: Ord. B-606 § 29, 1944).

### **7.68.240 Testing and correcting meters.**

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When a consumer makes a complaint that the bill for any past service period has been excessive, the utility services division shall have such meter reread and the service inspected for leaks. If the consumer remains dissatisfied and desires that the meter be tested, upon written request, the water/irrigation division shall test the meter by means of a calibrated portable testing meter or a volume-measuring vessel, or shall replace the meter with a new or calibrated meter. The consumer shall, if he or she so desires, be present when such test or meter replacement is made.

In case a test should show an error of over five percent of the water consumed in favor of the water/irrigation division, a correctly registering meter will be installed and the bill will be adjusted accordingly, but such adjustment shall not extend back more than one service period plus one month from the date of the written request and the minimum charge shall not be affected. (Ord. 2006-07 § 46, 2006: Ord. 97-16 § 19, 1997: Ord. B-606 § 30, 1944).

### **7.68.250 Water services charges.**

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A. Effective January 8, 2017, the charge for domestic water supplied within the city of Yakima shall consist of a ready-to-serve charge and a charge for water consumed. Ready-to-serve charges are as follows:

<b>Ready-to-Serve Charges per Two-Month Period</b>		
<b>Meter size</b>	<b>January 8, 2017</b>	<b>January 1, 2018</b>
3/4"	\$19.03	\$20.64
1"	24.02	26.07
1-1/2"	37.36	40.53
2"	53.42	57.96
3"	90.92	98.65
4"	144.48	156.77
6"	278.28	301.93
8"	542.43	588.54
10"	813.68	882.84
12"	1,188.47	1,289.50

Charges for water consumed are as follows, expressed in rates per UOC, where “UOC” means unit of consumption and equals one hundred cubic feet of water:

<b>Charge for Water Consumed by UOC</b>	
January 8, 2017	January 1, 2018
\$1.59	\$1.72

B. The ready-to-serve charge may be computed on a daily basis by dividing the two month charge by 60 days.

C. All charges for water supplied outside the city shall be computed by multiplying the applicable rates set forth in subsections A through B of this section by one and one-half.

D. Home Kidney Dialysis. A residential customer who undergoes kidney dialysis at his or her home, or whose home is also the home of a different person who undergoes home kidney dialysis, shall not be required to pay utility charges for domestic water service or sewer service for the quantity of water that is necessary for the home dialysis. In order to be excused from utility charges under this subsection, the residential customer must present to the director of finance and budget or their designee written documentation annually from a recognized kidney dialysis center certifying that the person requires dialysis and the quantity of water needed for that person’s dialysis.

**Section 2.** Section 7.68.251 of the City of Yakima Municipal Code is hereby amended to read as follows:

**7.68.251 Bulk rate.**

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A. The charge for water supplied through fire hydrants, when the water is used by either the city or a private person for any use authorized by the water/irrigation division, shall be the same as the highest UOC charge set forth in YMC [7.68.250](#). No charge shall be made for water supplied through fire hydrants when the water is used for fire suppression or for maintenance and operation purposes by the city.

B. All water served through a fire hydrant shall comply with YMC [7.68.300](#).

C. Daily meter assembly use charge for temporary water service shall be four dollars for each day or portion thereof. The minimum meter assembly use charge shall be four dollars.

**Section 3.** Section 7.68.282 of the City of Yakima Municipal Code is hereby amended to read as follows:

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**7.68.260 Charges for premises supplied through more than one meter.**

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Where an individual consumer is supplied with water through more than one metered service, charges shall be computed separately for each individual meter. (Ord. B-606 § 35, 1944).

**7.68.275 Fire services.**

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All fire service connections between water mains and property lines shall be installed and maintained by the water division at the expense of the owner or occupant of the premises served, and shall be the property of the city of Yakima.

At or before the time of making application for such services the applicant shall file an application with the code administration and planning division as required by Title [11](#) of the city of Yakima Municipal Code and comply with the IBC/IFC. Each single source fire protection system, and each fire service connection shall have a resilient seat gate valve with a standard valve box installed at the property/right-of-way line by the customer and maintained by the customer as well as backflow prevention as required in YMC [7.68.070](#).

The manager of the water division or a designee shall fix the charge to be made for the installation of such service taking into consideration length and size of pipe, condition of street and sidewalk, all

relative to character of service, and such charge shall be paid to the city by the applicant before such installation shall be made.

Fire service connections shall not be used for combined fire protection and commercial purposes where separate service connections can be installed. In no case shall any tap be made upon, or any tank be connected with, any pipe used for fire protection unless a water meter is installed.

The use of water through a fire service connection for any purpose other than the extinguishing of a fire on the premises is prohibited unless authorization has been granted by the water manager or a designee and a meter provided by the water division is installed to measure all water so used.

A single fire service connection shall not serve more than one parcel or lot nor serve more than one building on a single lot or parcel. (Ord. 2006-07 § 48, 2006: Ord. 97-16 § 26, 1997: Ord. 2520 § 1, 1981: Ord. 2427 § 1, 1980: Ord. 472, 1963: Ord. B-606 § 38, 1944).

#### **7.68.280 Fire service inspection.**

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The water/irrigation division shall inspect all fire service connections with piping, valves and other appurtenances thereto, and the premises served thereby, at regular intervals and as often as found necessary. The inspector shall keep a record of all inspections made. Should an inspector find that water is used through a fire service for any purpose other than the extinguishing of fire upon the premises, the owner or occupant will be given notice to discontinue such use. If such use is not discontinued within ten days from such notice being given, water service to the premises shall be discontinued until such time as the owner or occupant complies with the requirement of such notice. No charge will be made for water used in extinguishing fire. (Ord. 2006-07 § 49, 2006: Ord. 982 § 8, 1967: Ord. 2026, 1957: Ord. B-606 § 39, 1944).

**7.68.282 Fire service charges.**

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The bimonthly charge for each fire service shall be as follows:

A. Charges within the city of Yakima commencing January 8, 2017:

<b>Size of Service</b>	<b>January 8, 2017</b>	<b>January 1, 2018</b>
2"	\$6.51	\$7.06
3"	9.50	10.31
4"	19.03	20.65
6" including hydrant only	55.94	60.69
8"	119.15	129.28
10"	214.24	232.45
12"	346.25	375.68

B. Daily charge is calculated by dividing the bimonthly charge by sixty days.

C. Charges for fire services outside the city limits shall be computed by multiplying the applicable rate above by one and one-half.

D. The inside diameter of the pipe leading to a fire hydrant shall determine the service charge. Any fire hydrant installed and maintained by the city outside of city limits will be billed as a fire service, which charge shall be terminated at such time as the responsible consumer's property is annexed to the city.

**Section 4.** Severability. If any section, sentence, clause or phrase of this Ordinance should be held to be unconstitutional, unlawful or invalid by a court of competent jurisdiction, such invalidity or unconstitutionality shall not affect the validity or constitutionality of any other section, sentence, clause or phrase of this Ordinance.

**Section 5.** Effective Date. This ordinance shall be in full force and effect 30 days after its passage, approval, and publication as provided by law and by the City Charter.

**7.68.290 Maintenance of fire hydrants.**

The water/irrigation division shall install, maintain and keep in repair all public city fire hydrants. (Ord. 2006-07 § 50, 2006: Ord. 97-16 § 28, 1997: Ord. B-606 § 41, 1944).

**7.68.295 Use of fire hydrant.**

No person other than an employee of the Yakima water/irrigation division, fire department, street division, wastewater division or codes division who is engaged in fire fighting, sprinkling or washing the public streets, cleaning sewers or conducting fire flow tests shall operate fire hydrants or interfere in any way with the city water system without first obtaining a water meter and the authority to do so from the water/irrigation division. (Ord. 2006-07 § 51, 2006: Ord. 97-16 § 29, 1997: Ord. B-606 § 42, 1944).

**7.68.300 Temporary domestic water service.**

A. Conditions of Use. Temporary domestic water service through an existing fire hydrant or by means of other existing water lines will be furnished to a customer on the following conditions:

1. Application for such service shall be made in person to the water/irrigation division.
2. Water furnished through the temporary service shall be measured by a meter assembly, to be furnished by the city, for the use of which the customer shall pay to the city the amounts as prescribed in YMC [7.68.251](#).
3. The customer shall only connect to a hydrant prescribed on the application for service.
4. When the meter assembly is installed by city employees, the customer shall pay to the city the actual labor cost incurred by the city, based in the then applicable payroll charges, including

overhead, for actual hours of labor involved, all as determined by the water/irrigation division of the city, with a minimum one-hour charge.

5. The customer shall pay the city the actual cost for equipment used in making such installation, based on the then current city rental rates for the actual hours of equipment usage, all as determined by the water/irrigation division of the city, with a minimum one-hour charge.

6. The customer shall pay for water furnished through a temporary service pursuant to YMC [7.68.251](#).

7. The customer shall return the water meter assembly in the same state of repair as when furnished to the customer by the city, or shall be responsible to the city for the actual cost of any meter assembly repair, or the actual total cost of the meter assembly in the event of its destruction.

8. The customer shall give notice to the Yakima fire department of the location of hydrants to be used for temporary service, and the duration of such use.

B. Billing. Bimonthly billings will be rendered by the city to temporary water use customers, for the applicable charges as specified in subsection A of this section and YMC [7.68.251](#), with payment due within the same time as other billings for city utility services; provided, if the temporary service is furnished for a period of time less than the two-month billing period, payment shall be due at the time such temporary service is discontinued and the meter assembly returned to the city.

C. Customer to Sign Agreement. Prior to the installation of the meter assembly by which a temporary water service will be furnished, the applicant for such service shall sign an agreement to comply with the provisions, terms and conditions of this section.

D. The provisions of this section do not require or authorize temporary domestic water service by or through any other than the water lines or fire hydrants existing at the time application for such service is made; and neither this section nor any agreement signed pursuant to it for temporary water service shall be construed to require the installation or extension by the city of any water line or facility to furnish temporary water service, either within or outside the corporate boundary of the city. (Ord. 2006-07 § 52, 2006: Ord. 2004-81 § 5, 2004: Ord. 2001-26 § 8, 2001: Ord. 97-16 § 30, 1997: Ord. 2537 § 1, 1981: Ord. B-606 § 43, 1944).

#### **7.68.305 Abandoned services.**

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All service installations connected to the water system, that have been abandoned or that have not been used for three years or that for any reason have become useless for further service, shall be disconnected at the main by the water/irrigation division or by others in accordance with plans and specifications approved by the city engineer, and all pipe and appurtenances removed shall be the property of the city of Yakima. (Ord. 2006-07 § 53, 2006: Ord. 97-16 § 31, 1997: Ord. B-606 § 44, 1944).

#### **7.68.310 Extensions of mains other than by city.**

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All extensions of water mains shall be made either by the water/irrigation division at the expense of the owners of the property to be served thereby, or by the owners of said property under the supervision of the city engineer and in accordance with the plans and specifications approved by the city engineer and in accordance with Title [12](#) of the Yakima Municipal Code. (Ord. 2006-07 § 54, 2006: Ord. 97-16 § 32, 1997: Ord. B-606 § 45, 1944).

#### **7.68.315 Ownership and control of extensions of water mains.**

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Unless deeded to the city, all existing extensions of water mains and appurtenant equipment installed by persons, firms or corporations, other than the city, shall be and remain the property of such persons, firms, or corporations, and of their heirs, successors or assigns, and shall be maintained by them. Any repair or maintenance work done by the water division/irrigation as an accommodation shall not place ownership in the city. In case a property owner desires to have a water service and meter installed and to be supplied with water through such a privately owned main, a permit must first be obtained from whomever owns or maintains such water mains and such permit shall be filed with utility billing. In case such a permit cannot be obtained due to there being no recognized owner or authorized person, the applicant for service and meter installation and for water service shall be obligated to perform his part in maintaining the main and to having water service discontinued if the main is not properly maintained.

All installations of water main extensions, additions and replacements, and appurtenances thereto, outside of the city limits shall, when made in the manner stipulated in YMC [7.68.310](#), be and remain the property of the city of Yakima after all payments for installations have been made or satisfactorily provided for, and after such installations have been tested and accepted by the city engineer and after the persons or person responsible for the construction of the extensions have relinquished all right to or interest in the ownership of said extensions, such extensions shall be maintained by the city and operated by the water/irrigation division as part of the distribution system and the water/irrigation division shall exercise complete control over said extensions. Nothing in this section or YMC [7.68.310](#) shall be construed so as to effect the term of any written agreement or contract binding on the city of Yakima. (Ord. 2006-07 § 55, 2006: Ord. 97-16 § 33, 1997: Ord. B-606 § 46, 1944).

#### **7.68.320 Street work.**

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All persons, contractors, corporations or any city department handling street work, such as grading, regrading, filling, trenching or paving, etc., shall give the water/irrigation division fourteen days' written notice in case it becomes necessary during the work to remove, displace or change any water mains, pipes, fittings, meters, gates or other waterworks' appurtenances that may interfere with the prosecution of such work, and failure to furnish said notice shall make the contractor, corporation or person, or other city department liable to the water/irrigation division in case damages should result from such failure. (Ord. 2006-07 § 56, 2006: Ord. 97-16 § 34, 1997: Ord. B-606 § 47, 1944).

#### **7.68.325 Connection with conductors.**

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Any uninsulated conductor which may convey electric current shall not be connected with any pipe or equipment which connects to the city water distribution system, without the consent of the manager,

all as provided in RCW Chapter [19.28](#). All such connections shall further comply with applicable electrical codes.

In case a city water pipe is found which conveys a noticeable amount of electric current, the manager shall immediately notify the owner of premises supplied by said pipe and the water supplied to said premises shall be discontinued until the electric current is removed. (Ord. 2006-07 § 57, 2006: Ord. 97-16 § 35, 1997: Ord. B-606 § 48, 1944).

#### **7.68.335 Penalties for violation.**

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Any person, firm, or corporation violating any of the provisions of this chapter shall, upon conviction thereof, be punished by a fine of not exceeding three hundred dollars or by imprisonment in the city jail for a period not exceeding ninety days, or by both such fine and imprisonment. (Ord. B-606 § 50, 1944).

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#### **The Yakima Municipal Code is current through Ordinance 2016-018, passed October 4, 2016.**

Disclaimer: The City Clerk's Office has the official version of the Yakima Municipal Code. Users should contact the City Clerk's Office for ordinances passed subsequent to the ordinance cited above.

[Click here to view recently enacted ordinances not yet codified](http://www.yakimawa.gov/council/archived-agenda-minutes/)  
(<http://www.yakimawa.gov/council/archived-agenda-minutes/>) .

City Website: <http://www.yakimawa.gov/> (<http://www.yakimawa.gov/>)

City Telephone: (509) 575-6037

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**Appendix F.**  
**MOAs between City of Yakima and Adjacent**  
**Purveyors**

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**RESOLUTION NO. R-2008-28**

**A RESOLUTION** authorizing the City Manager of the City of Yakima to execute a Memorandum of Understanding with Yakima County, Nob Hill Water Association, Yakima Valley Canal Company and the Yakima Tieton Irrigation District for the purpose of insuring the cost effective and best use of water resources for future development in the Yakima Valley.

**WHEREAS**, water resources, both surface and ground water, are necessary to support future growth within the designated City of Yakima Urban Growth Boundary for the parties to this MOU and other local governments, private parties and citizens; and

**WHEREAS**, the City, Yakima County, Nob Hill Water Association, Yakima Valley Canal Company and the Yakima Tieton Irrigation District recognize that said water resources are valuable public resources that may need protection and preservation; and

**WHEREAS**, the City, Yakima County, Nob Hill Water Association, Yakima Valley Canal Company and the Yakima Tieton Irrigation District recognize that said water resources are valuable public resources that may need protection and preservation; and

**WHEREAS**, the City, Yakima County, Nob Hill Water Association, Yakima Valley Canal Company and the Yakima Tieton Irrigation District recognize that a cooperative effort is the most effective and efficient way to protect and preserve their respective water resources and address the long-term planning, design, maintenance, and operation of future development; and

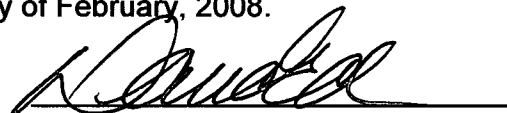
**WHEREAS**, the City, Yakima County, Nob Hill Water Association, Yakima Valley Canal Company and the Yakima Tieton Irrigation District desire to utilize existing multiple water resources to help address public infrastructure needs within the City of Yakima Urban Growth Boundary through a coordinated effort among the State, local governments, and other interested parties; and,

**WHEREAS**, the City, Yakima County, Nob Hill Water Association, Yakima Valley Canal Company and the Yakima Tieton Irrigation District desire to utilize water resources in a manner which will provide for continued growth that will meet the needs of the community, now, therefore,


**BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF YAKIMA:**

The City Manager of the City of Yakima is hereby authorized and directed to execute the attached "Memorandum of Understanding for the purpose of insuring coordinated and cooperative efforts toward establishing the cost effective and best use of water resources for future development in the Yakima Valley" with Yakima County, Nob Hill Water Association, Yakima Valley Canal Company and the Yakima Tieton Irrigation District.

**ADOPTED BY THE CITY COUNCIL** this 5<sup>th</sup> day of February, 2008.

  
David Edler, Mayor

ATTEST:

  
City Clerk

**MEMORANDUM OF UNDERSTANDING  
FOR THE EFFICIENT AND BEST USE OF WATER RESOURCES  
FOR FUTURE DEVELOPMENT IN THE YAKIMA VALLEY**

**THIS MEMORANDUM OF UNDERSTANDING** ("MOU") is entered into by and between the City of Yakima, Yakima County, Nob Hill Water Association, Yakima Valley Canal Company and the Yakima Tieton Irrigation District (collectively referred to hereinafter as the "Sponsors") for the purpose of insuring the cost effective and best use of water resources for future development in the Yakima Valley.

**RECITALS AND FINDINGS**

**WHEREAS**, water resources, both surface and ground water, are necessary to support future growth within the designated City of Yakima Urban Growth Boundary for the parties to this MOU and other local governments, private parties and citizens; and

**WHEREAS**, the Sponsors recognize that said water resources are valuable public resources that may need protection and preservation; and

**WHEREAS**, the Sponsors recognize that a cooperative effort is the most effective and efficient way to protect and preserve their respective water resources and address the long-term planning, design, maintenance, and operation of future development; and

**WHEREAS**, the Sponsors desire to utilize existing multiple water resources to help address public infrastructure needs within the City of Yakima Urban Growth Boundary through a coordinated effort among the State, local governments, and other interested parties; and

**WHEREAS**, the Sponsors desire to utilize water resources in a manner which will provide for continued growth that will meet the needs of the community consistent with adopted comprehensive plans,

**NOW, THEREFORE**, in consideration of the mutual agreements, covenants and promises contained herein, the Project Sponsors agree to the following terms and conditions:

**AGREEMENT**

**1. DEFINITIONS**

- 1.1 "Managers" means the representatives of the City of Yakima, Yakima County, Nob Hill Water Association, Yakima Valley Canal Company and the Yakima Tieton Irrigation District (the Sponsors).
- 1.2 "County" means Yakima County.
- 1.3 "City" means the City of Yakima.
- 1.4 "District" means Yakima Tieton Irrigation District.

- 1.5 "Company" means Yakima Valley Canal Company.
- 1.6 "Local Governments" means the county, cities, towns, irrigation districts and any other taxing authority.
- 1.7 "SEPA" means the State Environmental Policy Act as codified in RCW Chapter 43.21C.
- 1.8 'Comprehensive Plan' means the Yakima Urban Area Comprehensive Plan and the Yakima County Comprehensive *Plan 2015*.

## **2. DUTIES OF THE MANAGERS**

The Managers, by consensus, shall:

- 2.1 Determine the irrigation water needs for a development.
- 2.2 Determine the water sources available for irrigation use.
- 2.3 Determine which water resource is best suited to provide the development's needs.
- 2.4 Determine the most cost effective method to deliver water to the development in consultation with the owner/developer and for the future users of the development.
- 2.5 Determine the scope of work to be conducted including the sequence of events necessary to deliver irrigation water.
- 2.6 Determine the feasibility of installing a separate irrigation delivery system.

## **3. COMPLIANCE**

The Managers should make decisions for determinations made in Section 2 based upon applicable information in:

- 3.1 The Growth Management Act.
- 3.2 Adopted comprehensive plan goals and policies.
- 3.3 Adopted Development regulations.
- 3.4 Compliance with conditions contained in water rights determined to be used for landscape irrigation.
- 3.5 Company rules and or policies.
- 3.6 District rules and or policies.
- 3.7 Recommendations in the Watershed Management Plan, Yakima River Basin.
- 3.8 Recommendations in the Detailed Implementation Plan for the Watershed Management Plan, Yakima River Basin.

## **4. REPORTING REQUIREMENTS**

The Managers should:

- 4.1 Insure findings are reported on any SEPA documents prepared for a development.

- 4.2 A copy of the findings shall be provided to the irrigation water provider.
- 4.3 A copy of the findings shall be provided to the local jurisdiction reviewing the development.

**5. WITHDRAWAL AND TERMINATION OF M.O.U.**

- 5.1 A Sponsor may withdraw from the process and terminate its relationship to this MOU at any time, with or without cause, by providing written notice in accordance with Section 10.2 to the designated agent of the other Sponsors.

**6. PROTECTION OF EXISTING AUTHORITY**

- 6.1 Nothing contained herein shall abrogate or abridge the authority and or responsibilities of any of the Sponsors.

**7. EFFECTIVE DATE/TERM OF M.O.U.**

- 7.1 This MOU shall be effective on the date when all Sponsors have signed and executed this MOU.
- 7.2 This MOU terminates when two or more Sponsors have withdrawn.

**10. MISCELLANEOUS PROVISIONS, TERMS AND CONDITIONS**

**10.1 Drafting of Agreement.**

All Sponsors have participated in the drafting of this MOU. As such, it is agreed by the Sponsors that the general contract rule of law that ambiguities in the contract language shall be construed against the drafter of a contract shall have no application to any legal proceeding, arbitration and/or action in which this MOU and its terms and conditions are being interpreted and/or enforced.

**10.2 Notices.**

Unless stated otherwise herein, all notices and demands shall be in writing and sent or hand delivered to the parties to their addresses as follows:

- To the City: David Brown  
Water/Irrigation Manager  
2301 Fruitvale Blvd.  
Yakima, WA 98902
- To Yakima County: Vern Redifer  
Director of Public Services  
128 N. 2<sup>nd</sup> Street  
Yakima, WA 98901
- To Nob Hill Water Association: Zella West, Manager  
Nob Hill Water Association



6111 Tieton Dr.  
Yakima, WA 98908

To Yakima Valley Canal Co: Dick Woodin, President  
Yakima Valley Canal Company  
1640 Garretson Lane  
Yakima, WA 98908

To Yakima Tieton Irrigation Dist: Rick Dieker, Manager  
Yakima Tieton Irrigation District  
470 Camp 4 Road  
Yakima, WA 98908

or to such other addresses as the parties may hereafter designate in writing. Such notices shall be deemed effective when mailed or hand delivered at the addresses specified above.

**10.3 Integration and Amendment of MOU.**

This written document constitutes the entire agreement between the Sponsors. There are no other oral or written agreements between the parties as to the subjects covered herein. This MOU may be amended at any time by a unanimous decision of the Managers. All such amendments must be in writing signed by the Managers. Amendments shall be numbered, filed in accordance with Section 11.6, and attached to the original MOU.

**10.4 Filing with County Auditor and City Clerk.**

The City shall file a copy of this Agreement with the Yakima County Auditor's Office (pursuant to RCW 39.34.040) and the Yakima City Clerk.


Approved as to form:

BOARD OF YAKIMA COUNTY COMMISSIONERS

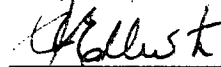
  
Date: 1-25-08

  
Ronald Gamache, Chairman

ATTEST:

  
Mike Leita, Member

 1/29/08  
Clerk of the Board Tiera L. Girard  
Deputy Clerk of the Board

  
Rand Elliott, Member



CITY OF YAKIMA

2/7/08  
Date:

[Signature]  
R. A. Zais, Jr., City Manager

ATTEST: [Signature]  
Deborah Moore, City Clerk  
Resolution R-2008-28  
Contract 2008-32



2/14/08  
Date: \_\_\_\_\_

NOB HILL WATER ASSOCIATION

*Zella West*  
\_\_\_\_\_  
Zella West, Manager

4/2/2008  
Date:

YAKIMA VALLEY CANAL COMPANY

*Dick R. Woodin*

Dick, Woodin, President

YAKIMA TIETON IRRIGATION DISTRICT

February 12, 2008  
Date:

Richard Dieker  
Rick Dieker, Manager

**BUSINESS OF THE CITY COUNCIL**

**YAKIMA, WASHINGTON**

**AGENDA STATEMENT**

Item No. 116

For Meeting of 2/5/08

**ITEM TITLE:** A Resolution authorizing the City Manager to execute a Memorandum of Understanding for the purpose of insuring the cost effective and best use of water resources for future development in the Yakima Valley


**SUBMITTED BY:** Dave Zabell, Assistant City Manager  
Dave Brown, Water/Irrigation Manager

**CONTACT PERSON/TELEPHONE:** Dave Brown / 575-6204

**SUMMARY EXPLANATION:** Water resource management and its relationship to future development in West Valley and other parts of the City has been discussed with the Council, Yakima County, Nob Hill Water Association, Yakima Valley Canal Company, Yakima Tieton Irrigation District and the Central Washing Home Builders Association. Of primary concern is that irrigation water traditionally used for agriculture from the canal companies and irrigation districts may not be put to full use as housing replaces agriculture. Additionally, where water to irrigate lawns at these new homes is supplied from municipal sources, like Nob Hill Water Association, those municipal water rights would be used up faster limiting future availability.

A Memorandum of Understanding has been developed to formalize the actions necessary to maximize the water resources in and around the City of Yakima to ensure long-term availability and the most cost effective use of water resources.

The memo previously provided to Council on November 28, 2007 about these discussions is attached.

Resolution <u>X</u> Ordinance _____ Other (Specify) _____ MOU _____ Contract _____
Mail to (name and address): Signature page only to addresses contained in MOU
Funding Source _____ N/A
APPROVED FOR SUBMITTAL: _____  City Manager

**STAFF RECOMMENDATION:** Approve resolution authorizing the City Manager to execute the accompanying Memorandum of Understanding.

**BOARD/COMMISSION RECOMMENDATION:**

**COUNCIL ACTION:** Adopt Resolution

**DATE:** November 28, 2007

**TO:** The Honorable Mayor and Members of the City Council

**FROM:** Dick Zais, City Manager  
Dave Zabell, Assistant City Manager  
Dave Brown, Water/Irrigation Manager

**RE:** Water Resources and Development in West Valley

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The subject of water resource management and its relationship to development in West Valley and other parts of the City has been discussed with the Council Economic Development Committee and was presented to the full Council at their April 24, 2007 Study Session. Of primary concern is that irrigation water traditionally used for agriculture from the canal companies and irrigation districts may not be put to full use as housing replaces agriculture. In Washington State, there is much case law to support that water not being put to its full beneficial use is subject to relinquishment – “use it or lose it”. Additionally, where water to irrigate lawns at these new homes is supplied from municipal sources, like Nob Hill Water Association, those municipal water rights would be used up faster limiting future growth. Attached is an outline of the issues discussed with Council. These conditions demonstrate that coordinated resource management of water rights is in the long-term interest of the City of Yakima, Nob Hill Water Association, the various irrigation districts and canal companies serving our community, as well as the general public.

Much has occurred over the months since Council was last briefed on this issue. City representatives have collaborated with Nob Hill Water Association, Yakima Valley Canal Company, Yakima Tieton Irrigation District, and the Central Washington Home Builders Association to address the issue of water resources in a comprehensive manner. Councilmembers McClure and Lover have participated in this effort. Issues, options, and resolutions discussed to insure continued use of the irrigation and irrigation district water rights were varied and included:

- Enacting development rules that require developers to install separate irrigation infrastructure in which the City would own and operate the new systems
- Enacting development rules that require developers to install separate irrigation infrastructure and have Nob Hill Water own and operate the new systems
- Enacting development rules that require developers to install separate irrigation infrastructure and have the canal company or irrigation district own and operate the new systems
- Enacting development rules that require developers to install separate irrigation infrastructure and have home owner associations own and operate the new systems (this is currently being done now in many developments)
- Transferring water rights that were used for irrigation to Nob Hill Water so the water could be provided through their municipal water system (Nob Hill Water supplies the domestic-municipal water for West Valley)
- Transferring water rights that were used for irrigation to the City of Yakima so the water could be provided to the Nob Hill Water municipal water system via intertie(s)

- Nob Hill Water would require developers to install separate irrigation infrastructure as a condition of receiving municipal-domestic water from Nob Hill Water and Nob Hill Water would own and operate the new systems
- Through cooperative agreements and cost sharing between Nob Hill Water and developers, developers would install separate irrigation infrastructure and Nob Hill Water would own and operate the new systems

We are pleased to report that a tentative final resolution has been achieved. After several discussions, it was decided that a cooperative agreement and cost sharing program with Nob Hill water and the developer(s) is the best solution. Developers will install separate irrigation infrastructure and Nob Hill Water will own and operate the new systems eliminating the need for new development regulations. The first agreement that will serve as a model for other developments is currently in affect between Nob Hill Water Association and Cottonwood Partners.

The City of Yakima, Yakima County, Nob Hill Water Association, Yakima Tieton Irrigation District and Yakima Valley Canal Company are in the process of developing a Memorandum of Understanding (MOU) which will outline the issues and define the roles of each entity. The Central Washington Home Builders Association will be providing input for the development community. The MOU will be presented to Council for approval at the appropriate time.

This will insure the water rights which have senior priority dates from the Canal Companies and Irrigation Districts will continue to be put to beneficial use. Nob Hill Water's municipal water rights will be available for additional future growth while maintaining maximum flexibility to determine the economics of an irrigation infrastructure system. This simple, yet elegant solution to a potentially critical public policy problem is being accomplished without the need for new development regulations, an approach which the development community has appreciated.



RESOLUTION NO. D-5346

A RESOLUTION authorizing the City Manager and the City Clerk to execute a Water Service Agreement with the City of Union Gap.

WHEREAS, portions of the Yakima domestic water system are situated so as to be capable of affording domestic water service to property in some areas of Union Gap and adjacent to Union Gap which areas are not served by the Union Gap domestic water system, and the cities of Yakima and Union Gap desire to authorize connections to the City of Yakima domestic water system for service to such property, or portions thereof, and

WHEREAS, both Yakima and Union Gap are public agencies authorized by law to engage in furnishing domestic water service, and the Water Service Agreement is executed for the purpose of authorizing domestic water service to be furnished by the City of Yakima to property within certain areas of the City of Union Gap, to provide for connections to the Yakima domestic water system to serve such property (or portions thereof as water connections may be made from time to time), and to set forth the powers, rights, objectives and responsibilities of Yakima and Union Gap relating to such water service, all pursuant to and in accordance with RCW 39.34.080, now, therefore;

BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF YAKIMA:

The City Manager and the City Clerk of the City of Yakima are hereby authorized and directed to execute the attached and incorporated Water Service Agreement City of Yakima - City of Union Gap.

ADOPTED BY THE CITY COUNCIL this 21st day of April, 1987.

S/HENRY BEAUCHAMP  
Mayor

ATTEST:

/S/ BARBARA J. TONEY

Acting City Clerk

WATER SERVICE AGREEMENT

CITY OF YAKIMA - CITY OF UNION GAP

THIS AGREEMENT, executed this 21 day of April, 1987, by and between the City of Yakima, Washington, hereinafter called Yakima, and the City of Union Gap, hereinafter called Union Gap;

WITNESSETH:

WHEREAS, portions of the Yakima domestic water system are situated so as to be capable of affording domestic water service to property in some areas of Union Gap and adjacent to Union Gap which areas are not served by the Union Gap domestic water system, and the parties desire to authorize connections to the Yakima domestic water system for service to such property, or portions thereof, and

WHEREAS, both Yakima and Union Gap are public agencies authorized by law to engage in furnishing domestic water service, and this agreement is executed for the purpose of authorizing domestic water service to be furnished by Yakima to property within certain areas of Union Gap, to provide for connections to the Yakima domestic water system to serve such property (or portions thereof as water connections may be made from time to time), and to set forth the powers, rights, objectives and responsibilities of Yakima and Union Gap relating to such water service, all pursuant to and in accordance with RCW 39.34.080, now, therefore;

The parties agree as follows:

Section 1. AUTHORIZATION TO FURNISH WATER SERVICE - AUTHORIZATION TO CONNECT TO WATER SYSTEM.

A. AUTHORIZATION TO FURNISH WATER SERVICE: Union Gap does hereby authorize Yakima to furnish domestic water service to certain property, to be determined as provided by this agreement, within the corporate boundaries and Utility Service Area of Union Gap and the Water Service Area of Union Gap

which areas are more economically served by Yakima, all in accordance with and subject to the provisions, terms and conditions of this agreement.

B. AUTHORIZATION TO CONNECT TO WATER SYSTEM: Yakima does hereby authorize the connection to the Yakima domestic water system of certain property, to be determined as provided by this agreement, within the Utility Service Area of Union Gap and the Water Service Area of Union Gap which areas could be more economically served by Yakima's domestic water system, all in accordance with the provisions, terms, and conditions of this agreement. The Utility Service Area of Union Gap shall include the corporate limits of Union Gap now and in the future and the area described in Exhibit 1 which is attached and incorporated herein. The Water Service Area of Union Gap shall be the area described in Exhibit 2 which is attached and incorporated herein.

Section 2. DETERMINATION OF PROPERTY TO BE SERVED.

Properties within the area described on Exhibit 2 shall be eligible to be afforded City of Yakima domestic water service pursuant to this agreement. In addition to the area depicted in Exhibit 2 the Union Gap City Supervisor and the Yakima City Manager may agree, from time to time, on additional properties within the Utility Service Area of Union Gap to which Yakima may furnish domestic water service where such properties are adjacent to Yakima's domestic water mains.

When water service is desired for property within Exhibit 1, the owner, developer, or other person shall be responsible for paying to the City of Yakima all fees and charges assessed by the City of Yakima Municipal Code for connection to the City of Yakima domestic water system. Property to be afforded such service shall be that which is economically feasible of being served by a portion of the Yakima domestic water system as it exists at the time such service is desired. No water connection within the area described in Exhibit 1 of the type contemplated by this agreement shall be made unless the City

Supervisor of Union Gap and the Yakima City Manager give their prior approval to such connection as conforming to the provisions and intent of this agreement.

Section 3. WATER SERVICE AREA BOUNDARY CHANGES.

Union Gap and Yakima acknowledge that the boundary of the Utility Service Area, depicted on Exhibit 1, is subject to review by the Yakima County Boundary Review Board which Board may approve, disapprove, or modify such boundaries. Union Gap and Yakima hereby agree that this agreement shall be void in the event that such Board or any other agency or board with authority over this agreement shall lawfully disapprove or modify the Utility Service Area depicted in Exhibit 1 or otherwise lawfully modify or disapprove of any other material provision of this agreement.

Section 4. CONNECTIONS AND METER INSTALLATIONS.

A. METER INSTALLATION: Connections and meter installations shall be made by the City of Yakima after the customer has first paid the appropriate permit fees and installation charges in accordance with this agreement. The connection shall be subject to inspection and approval for code compliance by Yakima and Union Gap code enforcement personnel in accordance with the Uniform Plumbing Code as adopted by the cities of Yakima and Union Gap, and ordinance policies of both cities in effect at the time the connection is made. Should there be a discrepancy between the two plumbing codes or city policies and ordinances the more restrictive provision shall apply.

B. MAINTENANCE OF FACILITIES: The City of Yakima shall own all meters, connections, water mains and other facilities and provide the necessary repair and maintenance for all facilities.

Section 5. COMPUTATION AND PAYMENT OF WATER SERVICE CHARGE.

A. TIME SCHEDULE: As part of its normal billing cycle, Yakima shall render to Union Gap an accounting for water service to all properties Yakima served the previous billing

period which are connected to a sewer main owned by Union Gap. Union Gap shall, on a continuing basis, furnish Yakima with a current list of all properties served by Union Gap sewer service and City of Yakima domestic water service.

B. CHARGES: All customer charges and fees for domestic water service shall be in accordance with and provided by the City of Yakima Municipal Code. Such charges shall be billed and collected by Yakima.

Section 6. COMPLIANCE WITH APPLICABLE LAWS.

In addition to complying with Yakima and Union Gap City Code requirements mentioned in Section 4 of this agreement, applicants for and owners of property served with domestic water service pursuant to this agreement shall otherwise comply with all applicable ordinances and policies of the City of Yakima and the City of Union Gap, and with all applicable laws, rules, regulations and policies dealing with water delivery facilities of any governmental agency, as those ordinances, policies, laws, rules or regulations now exist and as they, or any of them, may be amended. Provided, however, that City of Yakima Outside Utility Agreements applicable to property served pursuant to this agreement shall not bind such property to annexation by the City of Yakima.

Section 7. ACCESS TO RECORDS.

At all reasonable times, the Union Gap City Supervisor, or his designee, shall have access to and the right to examine and copy such records of Yakima as may be needed for the purpose of computing Union Gap's sewer service charge. Similarly the City Manager, or his designee, of Yakima shall have access to all pertinent records of the City of Union Gap.

Section 8. EFFECTIVE DATE--FILING OF AGREEMENT WITH WASHINGTON STATE OFFICE OF COMMUNITY DEVELOPMENT.

This agreement shall become effective on the \_\_\_\_\_ day of \_\_\_\_\_, 1987, or as soon thereafter as this agreement may legally become effective by virtue of the expiration of sixty days from the date of filing an executed copy of this

agreement with the Washington State Office of Community Development in accordance with RCW 39.34.050 and 39.34.120.

Section 9. DURATION OF AGREEMENT--TERMINATION.

This agreement is for an indefinite duration, and shall remain in effect until such time as either party gives six months written notice to the other party that the agreement is terminated.

Section 10. FILING OF AGREEMENT.

Executed copies of this agreement shall be filed with the City Clerk of Yakima, the City Clerk of Union Gap, the Yakima County Auditor, and the Secretary of State of the State of Washington prior to the effective date of this agreement, in accordance with RCW 39.34.040.

CITY OF YAKIMA, WASHINGTON,  
a municipal corporation

By:   
CITY MANAGER

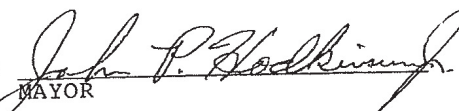
Signed this 21<sup>st</sup> day of  
April, 1987.

ATTEST:

City Contract No. 87-19  
Resolution No. D-5346

  
ACTING CITY CLERK

CITY OF UNION GAP, WASHINGTON,  
a municipal corporation

By:   
MAYOR

Signed this 21 day of  
April, 1987.

ATTEST:

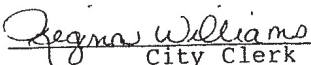
  
City Clerk

EXHIBIT 1

Utility Boundary Of Service Area of Union Gap

The Southeast quarter, and all that part of the Southwest quarter of Section 36, Township 13 North, Range 18 East, W.M. lying northerly and easterly of the City of Yakima corporate limits as established on the date of execution of the attached agreement

and

All that part of the Southwest quarter of Section 31, Township 13 North, Range 19 East, W.M. lying west of the City of Yakima corporate limits as established on the date of execution of the attached agreement, and northerly and westerly of the Town of Union Gap corporate limits as established on the date of execution of the attached agreement.

and

All that part of Lot 2 of Section 1, Township 12 North, Range 18 East, W.M. lying west of the west line of South Third Avenue; and all of Lot 3, said Section 1; and all that part of Lot 4, said Section 1, lying east of the City of Yakima corporate limits as established on the date of execution of the attached agreement.

VICINITY MAP

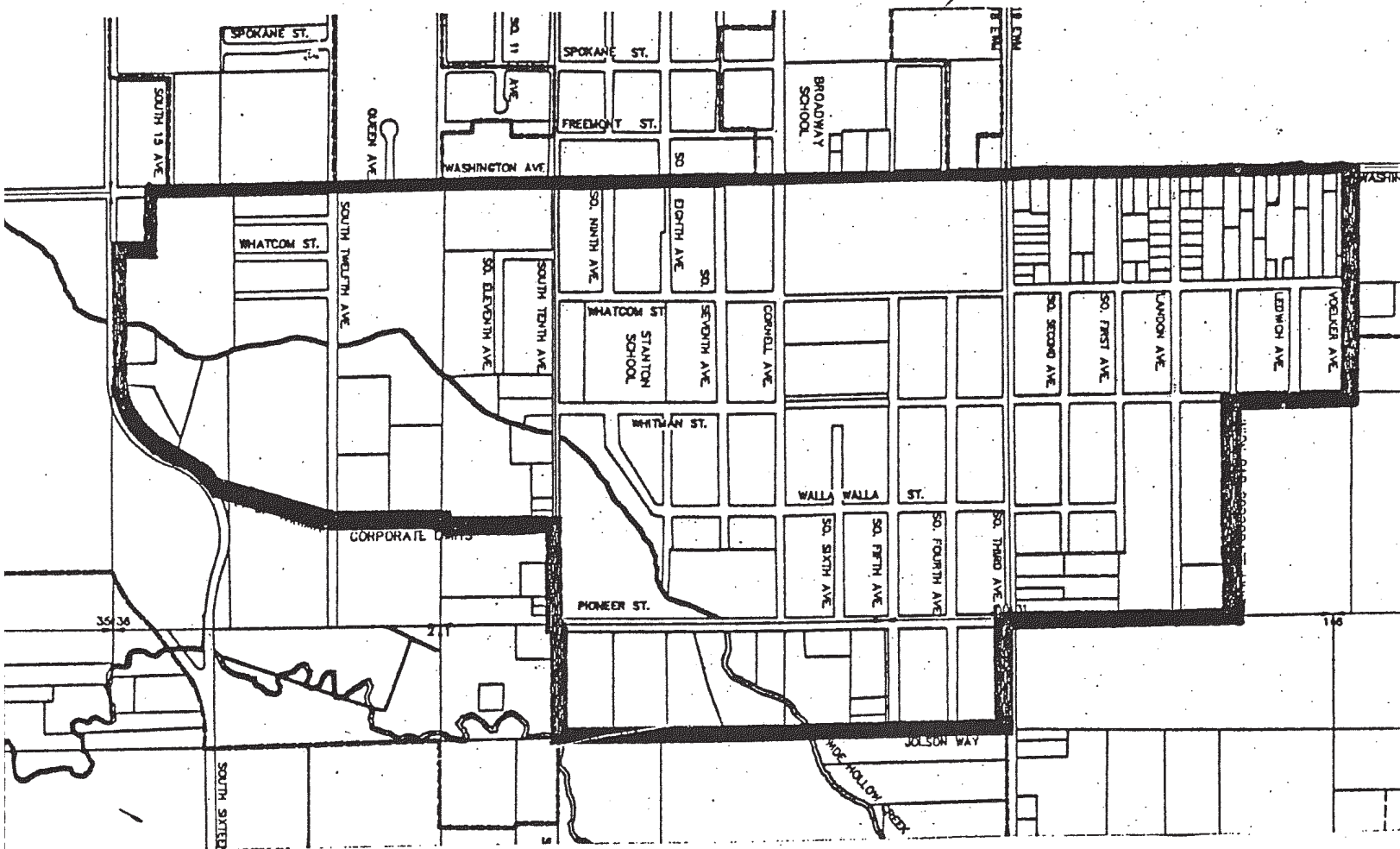


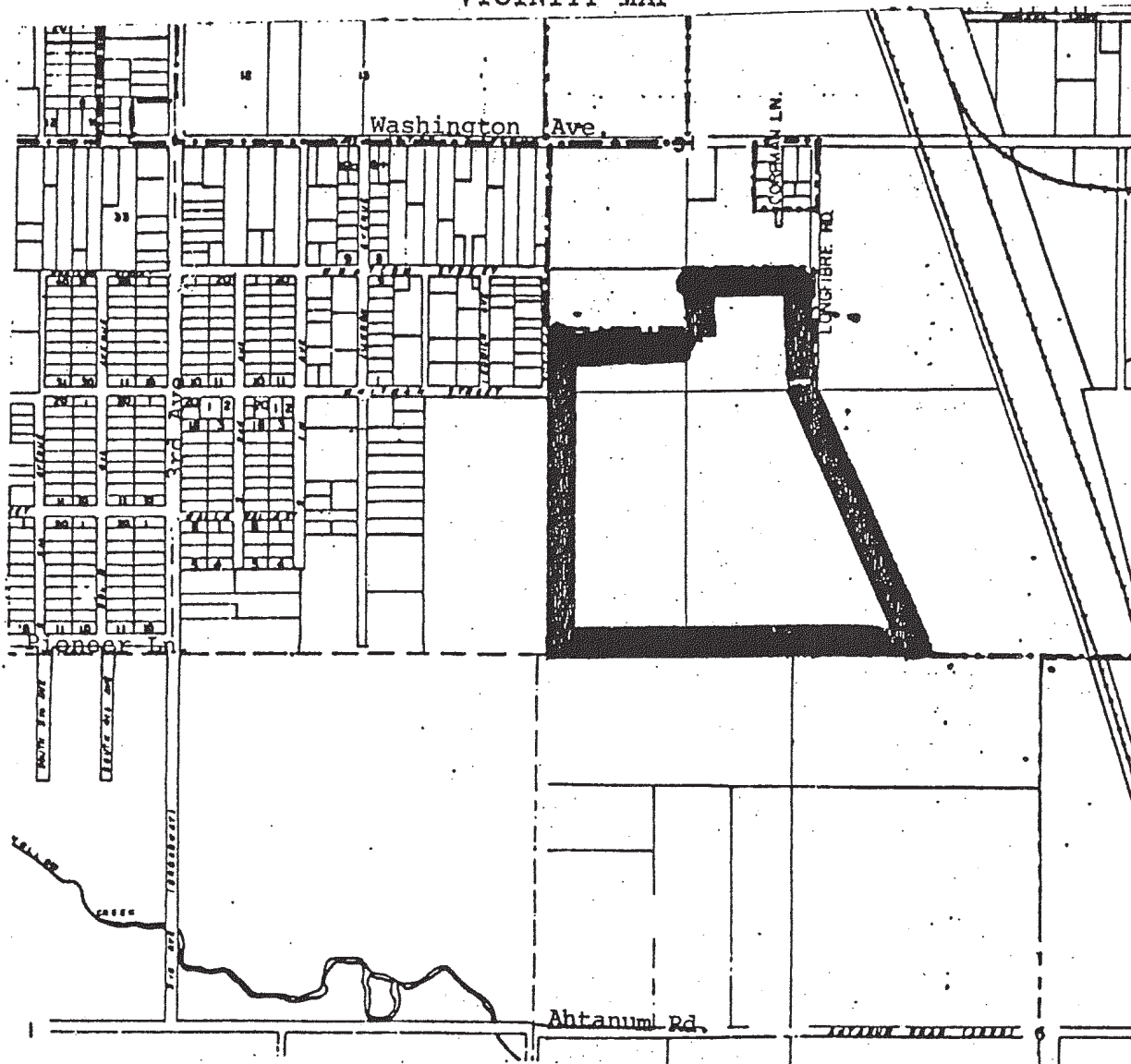
EXHIBIT 2

Boundary Of Water Service Area Of Union Gap

All that part of the south half of Section 31, Township 13 North, Range 19 East, W.M. lying within the corporate limits of the Town of Union Gap as now established on the date of execution of the attached agreement.

EXCEPT any part thereof lying west of the west line of the east half of the east half of the Southwest quarter of said Section 31.

VICINITY MAP





## MEMORANDUM OF UNDERSTANDING

September 6, 2000

The purpose of this Memorandum of Understanding is to put in writing a verbal agreement and understanding between the City of Yakima Water/Irrigation Division and Nob Hill Water Association. This agreement is in regard to the service area boundary between the two domestic water systems and also the mutual aid arrangement between the two organizations involving water system interties.

The City has prepared a City of Yakima Information Services GIS map dated September 5, 2000 which delineates the existing boundary between the two systems. Much of the area on each side of the boundary is already developed so the boundary in this area will not change. In areas which are not completely developed the proposed boundary line has been located in a place which has been mutually agreed upon. However, this line may be changed by mutual written agreement if it appears to be in the best interest of the City, Nob Hill Water and their customer(s).

In line with the mutual aid situation the City and Nob Hill Water already have three interties between the two systems so that water can be transferred from one system to the other. This arrangement is for emergency purposes only and is not designed for normal operation of the systems. These interties have been used a few times in the past and have proven to be very beneficial. Consequently it appears to be in the best interests of both parties to continue this mutual-aid arrangement.

NOB HILL WATER ASSOCIATION

CITY OF YAKIMA

  
Preston L. Shepherd, P.E.  
Manager

  
Dick Zais, City Manager

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**Appendix G.**  
**Resolution No. D-1250, adopted March 29, 1965**

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RESOLUTION NO. D-1250

A RESOLUTION adopting a statement of policy regarding the extension of City water and sewer services outside the corporate limits of the City of Yakima as such extensions affect annexation of unincorporated territory to the City of Yakima; and repealing Resolution No. D-791, adopted March 29, 1965.

WHEREAS, the City Council of the City of Yakima desires to encourage the orderly growth and development of the fringes of the City where annexation of unincorporated territory is a logical extension of City boundaries so that development of newly annexed areas will conform to the General Plan of the City, and

WHEREAS, the City Council further recognizes that land is rendered more valuable and desirable when water and sewer services are available to such land, and that the benefits of City water and sewer service should not be casually afforded to property outside the City, but rather that all property served by City water and sewer facilities should be within the city limits whenever and wherever possible, and

WHEREAS, the City Council further recognizes that in many instances where City water and sewer service is sought for property outside the City, the owners of such property desire to annex that property to the City but are prevented from doing so because of requirements of state annexation laws or other circumstances, but that in many such instances city water and sewer service should nevertheless be afforded to such property with conditions imposed which will lead to the annexation of that property to the city and which will otherwise enhance the value, safety and appearance of such property and the surrounding area, and which will, insofar as possible, insure land uses which conform to the City's General Plan, all as if such property were within the corporate limits of the City, Now, Therefore,

BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF YAKIMA:

Section 1. The City Council of the City of Yakima does hereby adopt the following statement of policy regarding the extension of City water and sewer services to property outside the corporate limits of the City of Yakima, as such extensions are related to the annexation of such

property to the City:

1. When such service is sought for property contiguous to existing city limits, and the size of the property is sufficiently large to merit its annexation, in the opinion of the Director of Planning and Community Development, the annexation of that property to the City shall be a condition of its receiving such service.

2. An application for such service to property outside and adjacent, but not contiguous, to existing City limits will be granted only after it has been determined that it is impractical or not feasible to annex that property to the City within the near future, and only under circumstances which will allow the development of that property to be controlled by city codes, regulations and policies, all as if such property were within the City.

3. Applications for such service shall be made to the Department of Planning and Community Development. If the Director of that Department determines that such service should be afforded, he shall so recommend and report his findings to the City Manager. Applications for utility services to property whose use and/or development has significant effect upon community development as prescribed in the General Plan of the City shall additionally be referred to the Planning Commission for their review and recommendations. Each application shall be granted only upon approval by motion of the City Council. In the event the City Council decides that any such application should be granted, the City Council may attach conditions to the granting of such application as the City Council deems advisable under the circumstances surrounding that application, which conditions shall include the execution by the owners and occupants of the property of an Outside Utility Agreement, a copy

of which is attached to this Resolution and made a part hereof. The alterations, improvements, or repairs referred to in paragraph 2 of that agreement are required in order that structures served outside the City in anticipation of future annexations will reasonably conform to applicable construction and zoning codes. Provisions of paragraph 2 are applicable only to structures built within the last two years. The requirements, restrictions and other provisions referred to in paragraph 4 of that Agreement may include, but need not be limited to, references to subdivision plat maps, site plans, utility maps and other similar development plans which, together with other obligations specified in that Agreement, will constitute conditions of the granting by the City of the application.

4. If the property for which such service is sought is developed and improved at the time of application, conformity to the City's General Plan, and conformity with building, zoning and other codes, regulations and policies of the City with regard to that development, will be considered as a persuasive factor for the granting of the application.

5. The filing of an application for such service prior to constructing any buildings, structures or other improvements thereon, or any other development thereof, will be considered as a persuasive factor for granting such application.

6. The existence of a City utility service line adjacent to developed property for which such service is sought will be considered as a persuasive factor for granting an application; however, property situated where no such utility service line exists adjacent to it will normally be required to constitute a Local Improvement District, or part of the area of a Local Improvement District which must be created to finance the extension of a utility line to serve an area of an appropriate size

and shape for annexation to the City, and the commencement of proceedings to annex that area will normally be a condition of the granting of an application for such service.

7. Inasmuch as utility service will be extended to property outside the City limits only when such property is subject to City codes, regulations and policies, all as if that property were within the City, an application for such service will be submitted by the Director to the Planning Commission of the City of Yakima for its review and recommendation to the City Council in the case of subdivision plat approval *AND* in case of land use differing from that contemplated by the City's General Plan.

While subdivision plat maps for property outside the City must be approved by Yakima County by law, nevertheless, any such preliminary plat map must be reviewed and approved by the City Planning Commission before final approval by Yakima County, if the property in that subdivision is to be served by City utilities. The approval by the City Planning Commission of the plat map may be subject to requirements, restrictions and provisions as conditions of the granting by the City of the application for such services.

Section 2. The foregoing statement of policy is intended to be general in scope and advisory only, and is not intended to be a limitation on the exercise of discretion and judgment by the City Council on any occasion when an application for City water or sewer service is made.

Section 3. Resolution No. D-791, adopted by the Yakima City Council on March 29, 1965, is hereby repealed in its entirety.

ADOPTED BY THE CITY COUNCIL THIS 9<sup>th</sup> day of ~~August~~ <sup>September</sup>, 1968.

  
\_\_\_\_\_  
Mayor

ATTEST:

  
\_\_\_\_\_  
City Clerk



**Appendix H.**  
**Approval of Nested Fire Suppression Storage from**  
**Fire Authority**

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Administration  
Fire Suppression  
Fire Investigation  
Fire Training  
Fire Prevention  
Public Education



401 North Front Street, Yakima, WA 98901

(509) 575-6060  
Fax (509) 576-6356  
www.yakimafire.com

May 25, 2016

City of Yakima Water/Irrigation Div.  
C/o David Brown, Water/Irrigation Manager  
2301 Fruitvale Blvd.  
Yakima, WA 98902

Re: Nesting of Standby and Fire Suppression Water Storage

Good day Mr. Brown,

We understand that the Washington State Department of Health (DOH) has specific regulations on the storage volumes required in finished water storage facilities for water systems in Washington Administrative Code (WAC) section 246-290-235. The regulations include the analysis of required storage volumes for standby storage and fire suppression storage.

WAC 246-290-235(4) allows for the nesting of standby and fire suppression storage volumes allowing the smaller of the two to be excluded out of the required storage volume.

WAC 246-290-235(4) reads as:

*Standby and fire suppression storage volumes may be nested with the larger of the two volumes being the minimum available, provided the local fire protection authority does not require them to be additive.*

Through this letter, as the local fire protection authority, I authorize the nesting of standby and fire suppression storage for all pressure zones in the water system.

Sincerely,

A handwritten signature in blue ink that reads "Bob Stewart".

Bob Stewart  
Fire Chief

***"The Yakima Fire Department is dedicated to providing quality public safety services to our community."***

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**Appendix I.**  
**2016 Water Quality Monitoring Schedule (WQMS)**

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# Water Quality Monitoring Schedule

**System:** YAKIMA WATER DIVISION, CITY OF  
**Contact:** David E Brown

**PWS ID:** 99150 9  
**Group:** A - Comm

**Region:** EASTERN  
**County:** YAKIMA

**NOTE:** To receive credit for compliance samples, you must fill out laboratory and sample paperwork completely, send your samples to a laboratory accredited by Washington State to conduct the analyses, AND ensure the results are submitted to DOH Office of Drinking Water. There is often a lag time between when you collect your sample, when we credit your system with meeting the monitoring requirement, and when we generate the new monitoring requirement.

## Coliform Monitoring Requirements

	Jul 2016	Aug 2016	Sep 2016	Oct 2016	Nov 2016	Dec 2016	Jan 2017	Feb 2017	Mar 2017	Apr 2017	May 2017	Jun 2017
<b>Coliform Monitoring Population</b>	72624	72624	72624	72624	72624	72624	72624	72624	72624	72624	72624	72624
<b>Number of Routine Samples Required</b>	80	80	80	80	80	80	80	80	80	80	80	80

- Collect samples from representative points throughout the distribution system.
- Collect required repeat samples following an unsatisfactory sample. In addition, collect a sample from each operating groundwater source.
- For systems that chlorinate, record chlorine residual (measured when the coliform sample is collected) on the coliform lab slip.

## Chemical Monitoring Requirements

### Distribution Monitoring

## Water Quality Monitoring Schedule

<u>Test Panel/Analyte</u>	<u># Samples Required</u>	<u>Compliance Period</u>	<u>Frequency</u>	<u>Last Sample Date</u>	<u>Next Sample Due</u>
Lead and Copper	30	Jan 2016 - Dec 2018	standard - 3 year	09/05/2015	Aug 2018
Asbestos	1	Jan 2011 - Dec 2019	standard - 9 year	01/23/1995	<b>Aug 2013</b>
Total Trihalomethane (THM)	8	Jan 2016 - Mar 2016	quarterly	05/25/2016	<b>Feb 2016</b>
Total Trihalomethane (THM)	8	Apr 2016 - Jun 2016	quarterly	05/25/2016	
Total Trihalomethane (THM)	8	Jul 2016 - Sep 2016	quarterly	05/25/2016	<b>Aug 2016</b>
Total Trihalomethane (THM)	8	Oct 2016 - Dec 2016	quarterly	05/25/2016	<b>Nov 2016</b>
Halo-Acetic Acids (HAA5)	8	Jan 2016 - Mar 2016	quarterly	05/25/2016	<b>Feb 2016</b>
Halo-Acetic Acids (HAA5)	8	Apr 2016 - Jun 2016	quarterly	05/25/2016	
Halo-Acetic Acids (HAA5)	8	Jul 2016 - Sep 2016	quarterly	05/25/2016	<b>Aug 2016</b>
Halo-Acetic Acids (HAA5)	8	Oct 2016 - Dec 2016	quarterly	05/25/2016	<b>Nov 2016</b>

### Notes on Distribution System Chemical Monitoring

For *Lead and Copper*: - Collect samples from the COLD WATER side of a KITCHEN or BATHROOM faucet that is used daily.  
 - Before sampling, make sure the water has sat unused in the pipes for at least 6 hours, but no more than 12 hours (e.g. overnight).  
 - If you are sampling from a faucet that has hot water, make sure cold water is the last water to run through the faucet before it sits overnight.  
 - If your sampling frequency is annual or every 3 years, collect samples between June 1 and September 30.

For *Asbestos*: Collect the sample from one of your routine coliform sampling sites in an area of your distribution system that has asbestos concrete pipe.

For *Disinfection Byproducts (HAA5 and THM)*: Collect the samples at the locations identified in your Disinfection Byproducts (DBP) monitoring plan.

### **Source Monitoring**

- Collect 'source' chemical monitoring samples from a tap after all treatment (if any), but before entering the distribution system.
- Washington State grants monitoring waivers for various test panels /analytes. Please note that we may require some monitoring as a condition of some waivers. We have granted complete waivers for dioxin, endothal, glyphosate, diquat, and insecticides.

<i>Source S01</i>	<i>Naches River WTP</i>	<i>Surface</i>	<i>Use - Permanent</i>	<i>Susceptibility - High</i>	
<u>Test Panel/Analyte</u>	<u># Samples Required</u>	<u>Compliance Period</u>	<u>Frequency</u>	<u>Last Sample Date</u>	<u>Next Sample Due</u>
Nitrate	1	Jan 2016 - Dec 2016	standard - 1 year	04/20/2016	
Complete Inorganic (IOC)	1	Jan 2011 - Dec 2019	waiver - 9 year	04/17/2013	
Volatile Organics (VOC)	1	Jan 2016 - Dec 2016	standard - 1 year	06/03/2015	<b>Mar 2016</b>



## Water Quality Monitoring Schedule

Source S01	Naches River WTP	Surface	Use - Permanent	Susceptibility - High	
<u>Test Panel/Analyte</u>	<u># Samples Required</u>	<u>Compliance Period</u>	<u>Frequency</u>	<u>Last Sample Date</u>	<u>Next Sample Due</u>
Herbicides	1	Jan 2014 - Dec 2022	waiver - 9 year	05/19/2009	May 2018
Pesticides	1	Jan 2014 - Dec 2022	waiver - 9 year	05/19/2009	May 2018
Soil Fumigants	0	Jan 2014 - Dec 2016	waiver - 3 year	04/26/2004	
Gross Alpha	1	Jan 2014 - Dec 2019	standard - 6 year	05/19/2015	
Radium 228	1	Jan 2014 - Dec 2019	standard - 6 year	05/19/2015	
Source S02	Airport Well	Well	Use - Permanent	Susceptibility - Low	
<u>Test Panel/Analyte</u>	<u># Samples Required</u>	<u>Compliance Period</u>	<u>Frequency</u>	<u>Last Sample Date</u>	<u>Next Sample Due</u>
Nitrate	1	Jan 2016 - Dec 2016	standard - 1 year	03/07/2016	
Complete Inorganic (IOC)	1	Jan 2011 - Dec 2019	waiver - 9 year	08/05/2013	
Iron	1	Jan 2014 - Dec 2016	standard - 3 year	03/07/2016	
Volatile Organics (VOC)	1	Jan 2014 - Dec 2019	waiver - 6 year	02/09/2010	Jul 2019
Herbicides	1	Jan 2014 - Dec 2022	waiver - 9 year	05/19/2009	Jul 2022
Pesticides	1	Jan 2014 - Dec 2022	waiver - 9 year	05/19/2009	Jul 2022
Soil Fumigants	0	Jan 2014 - Dec 2016	waiver - 3 year		
Gross Alpha	1	Jan 2014 - Dec 2019	standard - 6 year	09/21/2011	Sep 2017
Radium 228	1	Jan 2014 - Dec 2019	standard - 6 year	09/21/2011	Sep 2017
Source S03	Kiwanis Park	Well	Use - Permanent	Susceptibility - Low	
<u>Test Panel/Analyte</u>	<u># Samples Required</u>	<u>Compliance Period</u>	<u>Frequency</u>	<u>Last Sample Date</u>	<u>Next Sample Due</u>
Nitrate	1	Jan 2016 - Dec 2016	standard - 1 year	05/09/2016	
Complete Inorganic (IOC)	1	Jan 2011 - Dec 2019	waiver - 9 year	06/24/2013	
Volatile Organics (VOC)	1	Jan 2014 - Dec 2019	waiver - 6 year	02/09/2010	Jul 2019
Herbicides	1	Jan 2014 - Dec 2022	waiver - 9 year	05/19/2009	Jul 2022
Pesticides	1	Jan 2014 - Dec 2022	waiver - 9 year	05/19/2009	Jul 2022
Soil Fumigants	0	Jan 2014 - Dec 2016	waiver - 3 year		
Gross Alpha	1	Jan 2014 - Dec 2019	standard - 6 year	09/22/2011	Sep 2017

## Water Quality Monitoring Schedule

<i>Source S03</i>		<i>Kiwanis Park</i>		<i>Well</i>		<i>Use - Permanent</i>		<i>Susceptibility - Low</i>	
<u><i>Test Panel/Analyte</i></u>	<u><i># Samples Required</i></u>	<u><i>Compliance Period</i></u>	<u><i>Frequency</i></u>	<u><i>Last Sample Date</i></u>	<u><i>Next Sample Due</i></u>				
Radium 228	1	Jan 2014 - Dec 2019	standard - 6 year	09/22/2011	Sep 2017				
<i>Source S08</i>		<i>Kissel Well</i>		<i>Well</i>		<i>Use - Permanent</i>		<i>Susceptibility - Low</i>	
<u><i>Test Panel/Analyte</i></u>	<u><i># Samples Required</i></u>	<u><i>Compliance Period</i></u>	<u><i>Frequency</i></u>	<u><i>Last Sample Date</i></u>	<u><i>Next Sample Due</i></u>				
Nitrate	1	Jan 2016 - Dec 2016	standard - 1 year	05/18/2016					
Complete Inorganic (IOC)	1	Jan 2011 - Dec 2019	waiver - 9 year	08/28/2013					
Volatile Organics (VOC)	1	Jan 2014 - Dec 2019	waiver - 6 year	02/09/2010	Jul 2019				
Herbicides	1	Jan 2014 - Dec 2022	waiver - 9 year	05/19/2009	Jul 2022				
Pesticides	1	Jan 2014 - Dec 2022	waiver - 9 year	05/19/2009	Jul 2022				
Soil Fumigants	0	Jan 2014 - Dec 2016	waiver - 3 year						
Gross Alpha	1	Jan 2014 - Dec 2019	standard - 6 year	09/21/2011	Sep 2017				
Radium 228	1	Jan 2014 - Dec 2019	standard - 6 year	09/21/2011	Sep 2017				
<i>Source S10</i>		<i>Gardner Well</i>		<i>Well</i>		<i>Use - Permanent</i>		<i>Susceptibility - Low</i>	
<u><i>Test Panel/Analyte</i></u>	<u><i># Samples Required</i></u>	<u><i>Compliance Period</i></u>	<u><i>Frequency</i></u>	<u><i>Last Sample Date</i></u>	<u><i>Next Sample Due</i></u>				
Nitrate	1	Jan 2016 - Dec 2016	standard - 1 year	05/11/2016					
Complete Inorganic (IOC)	1	Jan 2014 - Dec 2016	standard - 3 year	08/20/2012					
Volatile Organics (VOC)	1	Jan 2014 - Dec 2019	waiver - 6 year	01/29/2013	Feb 2019				
Herbicides	1	Jan 2014 - Dec 2022	waiver - 9 year	08/21/2012	Aug 2021				
Pesticides	1	Jan 2014 - Dec 2022	waiver - 9 year	08/21/2012	Aug 2021				
Soil Fumigants	0	Jan 2014 - Dec 2016	waiver - 3 year	08/21/2012					
Gross Alpha	1	Jan 2014 - Dec 2019	standard - 6 year	12/19/2012	Dec 2018				
Radium 228	1	Jan 2014 - Dec 2019	standard - 6 year	12/19/2012	Dec 2018				

## Water Quality Monitoring Schedule

### Other Information

#### Other Reporting Schedules

#### Due Date

Measure chlorine residuals and submit monthly reports if your system uses continuous chlorination:	monthly
Submit Consumer Confidence Report (CCR) to customers and ODW (Community systems only):	07/01/2016
Submit CCR certification form to ODW (Community systems only):	10/01/2016
Submit Water Use Efficiency report online to ODW (Community and other municipal water systems only):	07/01/2016
Send notices of lead and copper sample results to the customers sampled:	10 days after you receive the laboratory results
Submit Certification of customer notification of lead and copper results to ODW:	60 days after you notify customers

#### Special Notes

None

#### Eastern Regional Water Quality Monitoring Contacts

For questions regarding chemical monitoring:	Stan Hoffman: (509) 329-2132: or Stan.Hoffman@doh.wa.gov
For questions regarding DBPs:	Stan Hoffman: (509) 329-2132 or Stan.Hoffman@doh.wa.gov
For questions regarding coliform bacteria and microbial issues:	Mark Steward: (509) 329-2134 or Mark.Steward@doh.wa.gov

#### Additional Notes

The information on this monitoring schedule is valid as of the date in the upper left corner on the first page. However, the information may change with subsequent updates in our water quality monitoring database as we receive new data or revise monitoring schedules. There is often a lag time between when you collect your sample and when we credit your system with meeting the monitoring requirement.

We have not designed this monitoring schedule to display all compliance requirements. The purpose of this schedule is to assist water systems with planning for most water quality monitoring, and to allow systems to compare their records with DOH ODW records. Please be aware that this monitoring schedule does not include constituents that require a special monitoring frequency, such as monitoring affiliated with treatment.

Any inaccuracies on this schedule will not relieve the water system owner and operator of the requirement to comply with applicable regulations.

If you have any questions about your monitoring requirements, please contact the regional office staff listed above.

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**Appendix J.**  
**Inorganic Chemicals Monitoring Plan**

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# City of Yakima Inorganic Monitoring Plan

Prepared in accordance to WAC 246-290-300 (4)(5)(8), subparts

## 1. SYSTEM INFORMATION

**System ID 991509**

**City Of Yakima, Division of Water/Irrigation**

2301 Fruitvale Blvd, Yakima, WA 98902 tel (509) 575-6154, fax (509) 575-6187

**Water Treatment Plant**

6390 US Hwy 12 Yakima, WA 98908 tel (509) 575-6177, fax (509) 966-5878

**Owner, primary contact**

David Brown, day (509) 575-6204, evening (509) 966-4659, cell (509) 901-4870

**Population Served:** 72,624

**Service Connections:** 27,637

### a) Source table

#	Name / Type	Capacity	Location	Use
S01	Naches River WTP	13,889 gpm	SW1/4 SW1/4 S13, T14N, R17E	Primary
S02	Airport Well	2,200 gpm	NW1/4 SE1/4 S35, T13N, R18E	Seasonal
S03	Kiwanis Well	2,200 gpm	SW1/4 NW1/4 S20, T13N, R19E	Seasonal
S07	56700M/Nob Hill Intertie	1,000 gpm	SE1/4 SW1/4 S20, T13N, R18E	Emergency
S08	Kissel Well	2,900 gpm	NW1/4 NW1/4 S35, T13N, R18E	Seasonal
S09	56700M/Nob Hill Intertie	2,000 gpm	NW1/4 NE1/4 S3, T12N, R18E	Emergency
S10	Gardner Well	3,100 gpm	SE1/4 NE1/4 S36, T13N, R18E	Seasonal

### b) Reservoir Table

1 <sup>st</sup> Level Zone	6 MG	40 <sup>th</sup> Avenue and Englewood Avenue
2 <sup>nd</sup> Level Zone	(2) 12 MG	Peck's Canyon Road and Reservoir Road
3 <sup>rd</sup> Level Zone	(2) 1 MG	North 58 <sup>th</sup> Avenue and Scenic Drive

c) **Pump Stations Table**

Name	Capacity	Service Area
Gleed Pump Station	2,200 gpm	Portion of Gleed (Hydropneumatic)
River Road (40 <sup>th</sup> Ave) Pump Station	5,000 gpm	2 <sup>nd</sup> Level Pressure Zone
Stone Church Pump Station	4,750 gpm	2 <sup>nd</sup> Level Pressure Zone
Reservoir Road (3 <sup>rd</sup> Level) Pump Station	2,100 gpm	3 <sup>rd</sup> Level Pressure Zone

d) **Pressure Reducing Valves Table**

Location	Size(s)	Service
20 <sup>th</sup> Avenue x Tieton Drive	6"	2 <sup>nd</sup> to 1 <sup>st</sup>
19 <sup>th</sup> Avenue x Chestnut Avenue	6"	2 <sup>nd</sup> to 1 <sup>st</sup>
Park x Summitview Avenue	6"	2 <sup>nd</sup> to 1 <sup>st</sup>
20 <sup>th</sup> Avenue x Lincoln Avenue	8" x3	2 <sup>nd</sup> to 1 <sup>st</sup>
20 <sup>th</sup> Avenue x Bonnie Doone	6"	2 <sup>nd</sup> to 1 <sup>st</sup>
30 <sup>th</sup> Avenue x Nob Hill Boulevard	8"	2 <sup>nd</sup> to 1 <sup>st</sup>
31 <sup>st</sup> Avenue x Clinton Way	4"	2 <sup>nd</sup> to 1 <sup>st</sup>
32 <sup>nd</sup> Avenue x Viola Avenue	6"	2 <sup>nd</sup> to 1 <sup>st</sup>
40 <sup>th</sup> Avenue x Powerhouse Road	8", 12"	2 <sup>nd</sup> to 1 <sup>st</sup>
27 <sup>th</sup> Avenue x Fraser Way	4"	2 <sup>nd</sup> to 1 <sup>st</sup>
40 <sup>th</sup> Avenue x Richey Road	6"	3 <sup>rd</sup> to 2 <sup>nd</sup>
506 N 40 <sup>th</sup> Avenue	8"	3 <sup>rd</sup> to 2 <sup>nd</sup>
Westpark x North 41 <sup>st</sup> Avenue	4"	3 <sup>rd</sup> to 2 <sup>nd</sup>

e) **Percent Population Served By Zone**

1 <sup>st</sup> Level Zone	2 <sup>nd</sup> Level Zone	3 <sup>rd</sup> Level Zone	Gleed
78.5 %	18.5 %	3.0 %	<1 %

## 2. Treatment at Sources

### S01 Naches River Water Treatment Plant

Coagulation	Aluminum Chlorohydrate
Hydraulic Flash Mix	550 gpm
Disinfection	Sodium Hypochlorite, generated on-site
Coagulation Aid	Magnafloc LT 7990
Flocculation / Sedimentation	Detention time varies with flow rate
Filtration Aid	Nalclear 8170
Filtration	Dual media – Anthracite, sand
Disinfection	Sodium Hypochlorite, generated on-site
pH Adjustment	Caustic Soda
Fluoridation	Hydrofluorosilicic Acid



### S02 Airport Well

Disinfection	Calcium Hypochlorite
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### S03 Kiwanis Well

Disinfection	Calcium Hypochlorite
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### S08 Kissel Well

Disinfection	Calcium Hypochlorite
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### S10 Gardner Well

Disinfection	Calcium Hypochlorite
Fluoridation	Sodium Fluoride

### S07, S09 Interties

Chlorination	Calcium Hypochlorite by Nob Hill Water
--------------	--

## 3. System Description

### a) Hydraulics

The City of Yakima water system is normally served by the Naches River WTP with the Naches River as the source. About three miles downstream from the Plant is the Glead system and this is our first customer. CT is calculated from this point. Treated water from the Plant is conveyed by gravity in a 48" concrete pipe to the 1st pressure zone and fills the 6MG reservoir. Water is normally pumped to the 2nd zone reservoirs and to the 2nd zone distribution system directly from the 40<sup>th</sup> Avenue pump station. Stone Church Pump Station is a backup / supplemental facility and delivers to the 2nd zone distribution system. The 3rd Level pump station is located at the 2nd zone reservoirs and pumps to the 3rd zone distribution system and 3rd zone reservoirs. System head is provided within a range for all three pressure zones by maintaining elevation in the reservoirs. The Glead pressure zone is hydropneumatic.

### b) Pressure Reducing Valves

The pressure zones are connected but isolated from each other by Pressure Reducing Valves and closed valves. The PRV's are set to open at specific downstream pressure setpoints, and are intended for emergency use only. See table 1.d

c) **Wells**

The four wells were designated seasonal sources in 2009 and are used in emergency and supplemental situations to support the WTP. Airport (S02), Kiwanis (S03), and Kissel (S08) are fixed output (dependent on system head) while Gardner (S10) can be controlled by variable frequency drive in local or remote modes. Kissel and Gardner are also ASR wellheads.

d) **Interties**

The interties with Nob Hill Water Co. are used only in the most extreme of circumstances, typically when very high demand and unexpected maintenance issues occur simultaneously.

## 4. Sampling

**Accredited Laboratory for IOC, L&C, Asbestos, Fluoride, Nitrate, Radionuclide Analysis:**

Cascade Analytical Inc

1008 Ahtanum Rd, Union Gap, WA 98903 phone: (509) 452-7707

**Number of Distribution Samples Required:** Variable with waivers

**Distribution System Sampling:** L&C, Asbestos

Asbestos sample is obtained once every 9 years from a fire hydrant located on Englewood Ave between 53<sup>rd</sup> Ave and 58<sup>th</sup> Ave. There are no routine coliform monitoring sites served by asbestos main. The following figure outlines the remaining AC main in the City distribution system.



Lead and Copper samples are obtained from a bank of 87 targeted homes that meet criteria as prescribed in the LCR. The City is required to obtain at least 30 samples from homeowners every three years. A copy of the home addresses, the site numbers and the results of testing since 1992 can be obtained from the Water Quality Specialist, (509) 576-6477.

**Source Sampling:** Nitrates, IOC's, and Fluoride

NO<sub>3</sub> samples are obtained once every year from the treated water before the first customer for each source monitored (the WTP and four wells).

Fluoride samples are obtained from treated water before the first customer once each month.

IOC's are obtained from treated water before the first customer on the following schedule:

WTP: once each year

Wells: once every three years

Nitrate samples can be part of a complete IOC sample event.

Radionuclide samples are obtained from treated water before the first customer on the following schedule:

WTP: once every six years

Wells: once every six years

Note: Cascade Analytical sends RN samples to TestAmerica in Richland, WA

**DOH contacts:**

Main Office: (509) 329-2100

Andres Cervantes, Regional Engineer: (509) 329-2120

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**Appendix K.**  
**Organic Chemicals Monitoring Plan**

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# City of Yakima Organic Monitoring Plan

Prepared in accordance to WAC 246-290-300 (7), subparts

## 1. SYSTEM INFORMATION

**System ID 991509**

**City Of Yakima, Division of Water/Irrigation**

2301 Fruitvale Blvd, Yakima, WA 98902 tel (509) 575-6154, fax (509) 575-6187

**Water Treatment Plant**

6390 US Hwy 12 Yakima, WA 98908 tel (509) 575-6177, fax (509) 966-5878

**Owner, primary contact**

David Brown, day (509) 575-6204, evening (509) 966-4659, cell (509) 901-4870

**Population Served:** 72,624

**Service Connections:** 27,637

### a) Source table

#	Name / Type	Capacity	Location	Use
S01	Naches River WTP	13,889 gpm	SW1/4 SW1/4 S13, T14N, R17E	Primary
S02	Airport Well	2,200 gpm	NW1/4 SE1/4 S35, T13N, R18E	Seasonal
S03	Kiwanis Well	2,200 gpm	SW1/4 NW1/4 S20, T13N, R19E	Seasonal
S07	56700M/Nob Hill Intertie	1,000 gpm	SE1/4 SW1/4 S20, T13N, R18E	Emergency
S08	Kissel Well	2,900 gpm	NW1/4 NW1/4 S35, T13N, R18E	Seasonal
S09	56700M/Nob Hill Intertie	2,000 gpm	NW1/4 NE1/4 S3, T12N, R18E	Emergency
S10	Gardner Well	3,100 gpm	SE1/4 NE1/4 S36, T13N, R18E	Seasonal

### b) Reservoir Table

1 <sup>st</sup> Level Zone	6 MG	40 <sup>th</sup> Avenue and Englewood Avenue
2 <sup>nd</sup> Level Zone	(2) 12 MG	Peck's Canyon Road and Reservoir Road
3 <sup>rd</sup> Level Zone	(2) 1 MG	North 58 <sup>th</sup> Avenue and Scenic Drive

c) **Pump Stations Table**

Name	Capacity	Service Area
Gleed Pump Station	2,200 gpm	Portion of Gleed (Hydropneumatic)
River Road (40 <sup>th</sup> Ave) Pump Station	5,000 gpm	2 <sup>nd</sup> Level Pressure Zone
Stone Church Pump Station	4,750 gpm	2 <sup>nd</sup> Level Pressure Zone
Reservoir Road (3 <sup>rd</sup> Level) Pump Station	2,100 gpm	3 <sup>rd</sup> Level Pressure Zone

d) **Pressure Reducing Valves Table**

Location	Size(s)	Service
20 <sup>th</sup> Avenue x Tieton Drive	6"	2 <sup>nd</sup> to 1 <sup>st</sup>
19 <sup>th</sup> Avenue x Chestnut Avenue	6"	2 <sup>nd</sup> to 1 <sup>st</sup>
Park x Summitview Avenue	6"	2 <sup>nd</sup> to 1 <sup>st</sup>
20 <sup>th</sup> Avenue x Lincoln Avenue	8" x3	2 <sup>nd</sup> to 1 <sup>st</sup>
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32 <sup>nd</sup> Avenue x Viola Avenue	6"	2 <sup>nd</sup> to 1 <sup>st</sup>
40 <sup>th</sup> Avenue x Powerhouse Road	8", 12"	2 <sup>nd</sup> to 1 <sup>st</sup>
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Westpark x North 41 <sup>st</sup> Avenue	4"	3 <sup>rd</sup> to 2 <sup>nd</sup>

e) **Percent Population Served By Zone**

1 <sup>st</sup> Level Zone	2 <sup>nd</sup> Level Zone	3 <sup>rd</sup> Level Zone	Gleed
78.5 %	18.5 %	3.0 %	<1 %

## 2. Treatment at Sources

### S01 Naches River Water Treatment Plant

Coagulation	Aluminum Chlorohydrate
Hydraulic Flash Mix	550 gpm
Disinfection	Sodium Hypochlorite, generated on-site
Coagulation Aid	Magnafloc LT 7990
Flocculation / Sedimentation	Detention time varies with flow rate
Filtration Aid	Nalclear 8170
Filtration	Dual media – Anthracite, sand
Disinfection	Sodium Hypochlorite, generated on-site
pH Adjustment	Caustic Soda
Fluoridation	Hydrofluorosilicic Acid



**S02 Airport Well**

Disinfection	Calcium Hypochlorite
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**S03 Kiwanis Well**

Disinfection	Calcium Hypochlorite
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**S08 Kissel Well**

Disinfection	Calcium Hypochlorite
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**S10 Gardner Well**

Disinfection	Calcium Hypochlorite
Fluoridation	Sodium Fluoride

**S07, S09 Interties**

Chlorination	Calcium Hypochlorite by Nob Hill Water
--------------	--

**3. System Description****a) Hydraulics**

The City of Yakima water system is normally served by the Naches River WTP with the Naches River as the source. About three miles downstream from the Plant is the Glead system and this is our first customer. CT is calculated from this point. Treated water from the Plant is conveyed by gravity in a 48" concrete pipe to the 1st pressure zone and fills the 6MG reservoir. Water is normally pumped to the 2nd zone reservoirs and to the 2nd zone distribution system directly from the 40<sup>th</sup> Avenue pump station. Stone Church Pump Station is a backup / supplemental facility and delivers to the 2nd zone distribution system. The 3rd Level pump station is located at the 2nd zone reservoirs and pumps to the 3rd zone distribution system and 3rd zone reservoirs. System head is provided within a range for all three pressure zones by maintaining elevation in the reservoirs. The Glead pressure zone is hydropneumatic.

**b) Pressure Reducing Valves**

The pressure zones are connected but isolated from each other by Pressure Reducing Valves and closed valves. The PRV's are set to open at specific downstream pressure setpoints, and are intended for emergency use only. See table 1.d

c) **Wells**

The four wells were designated seasonal sources in 2009 and are used in emergency and supplemental situations to support the WTP. Airport (S02), Kiwanis (S03), and Kissel (S08) are fixed output (dependent on system head) while Gardner (S10) can be controlled by variable frequency drive in local or remote modes. Kissel and Gardner are also ASR wellheads.

d) **Interties**

The interties with Nob Hill Water Co. are used only in the most extreme of circumstances, typically when very high demand and unexpected maintenance issues occur simultaneously.

## 4. Sampling

**Accredited Laboratory for VOC, SOC Analysis:**

Edge Analytical

1620 S Walnut St, Burlington, WA 98903 phone: (800) 755-9295

**Number of Source Samples Required:** Variable with waivers

**Source Sampling:** VOC's, SOC's

WTP: VOC samples are obtained once every year from the treated water before the first customer.

Wells: VOC samples are currently on 6 year waivers.

SOC's are a large group of contaminants that include pesticides, herbicides, soil fumigants, and others. Samples are obtained from treated water before the first customer on the following schedule:

WTP: waivers

Wells: waivers

**DOH contacts:**

Main Office: (509) 329-2100

Andres Cervantes, Regional Engineer: (509) 329-2120

**Appendix L.**  
**Stage 2 Disinfectant/Disinfectant By-Products**  
**Monitoring Plan**

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# City of Yakima Stage2 D/DBPR Monitoring Plan

Prepared in accordance to WAC 246-290-300 (6), subparts

## 1. SYSTEM INFORMATION

**System ID 991509**

**City Of Yakima, Division of Water/Irrigation**

2301 Fruitvale Blvd, Yakima, WA 98902 tel (509) 575-6154, fax (509) 575-6187

**Water Treatment Plant**

6390 US Hwy 12 Yakima, WA 98908 tel (509) 575-6177, fax (509) 966-5878

**Owner, primary contact**

David Brown, day (509) 575-6204, evening (509) 966-4659, cell (509) 901-4870

**Population Served:** 72,624

**Service Connections:** 27,637

### a) Source table

#	Name / Type	Capacity	Location	Use
S01	Naches River WTP	13,889 gpm	SW1/4 SW1/4 S13, T14N, R17E	Primary
S02	Airport Well	2,200 gpm	NW1/4 SE1/4 S35, T13N, R18E	Seasonal
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S07	56700M/Nob Hill Intertie	1,000 gpm	SE1/4 SW1/4 S20, T13N, R18E	Emergency
S08	Kissel Well	2,900 gpm	NW1/4 NW1/4 S35, T13N, R18E	Seasonal
S09	56700M/Nob Hill Intertie	2,000 gpm	NW1/4 NE1/4 S3, T12N, R18E	Emergency
S10	Gardner Well	3,100 gpm	SE1/4 NE1/4 S36, T13N, R18E	Seasonal

### b) Reservoir Table

1 <sup>st</sup> Level Zone	6 MG	40 <sup>th</sup> Avenue and Englewood Avenue
2 <sup>nd</sup> Level Zone	(2) 12 MG	Peck's Canyon Road and Reservoir Road
3 <sup>rd</sup> Level Zone	(2) 1 MG	North 58 <sup>th</sup> Avenue and Scenic Drive

c) **Pump Stations Table**

Name	Capacity	Service Area
Gleed Pump Station	2,200 gpm	Portion of Gleed (Hydropneumatic)
River Road (40 <sup>th</sup> Ave) Pump Station	5,000 gpm	2 <sup>nd</sup> Level Pressure Zone
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d) **Pressure Reducing Valves Table**

Location	Size(s)	Service
20 <sup>th</sup> Avenue x Tieton Drive	6"	2 <sup>nd</sup> to 1 <sup>st</sup>
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Park x Summitview Avenue	6"	2 <sup>nd</sup> to 1 <sup>st</sup>
20 <sup>th</sup> Avenue x Lincoln Avenue	8" x3	2 <sup>nd</sup> to 1 <sup>st</sup>
20 <sup>th</sup> Avenue x Bonnie Doone	6"	2 <sup>nd</sup> to 1 <sup>st</sup>
30 <sup>th</sup> Avenue x Nob Hill Boulevard	8"	2 <sup>nd</sup> to 1 <sup>st</sup>
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e) **Percent Population Served By Zone**

1 <sup>st</sup> Level Zone	2 <sup>nd</sup> Level Zone	3 <sup>rd</sup> Level Zone	Gleed
78.5 %	18.5 %	3.0 %	<1 %

## 2. Treatment at Sources

### S01 Naches River Water Treatment Plant

Coagulation	Aluminum Chlorohydrate
Hydraulic Flash Mix	550 gpm
Disinfection	Sodium Hypochlorite, generated on-site
Coagulation Aid	Magnafloc LT 7990
Flocculation / Sedimentation	Detention time varies with flow rate
Filtration Aid	Nalclear 8170
Filtration	Dual media – Anthracite, sand
Disinfection	Sodium Hypochlorite, generated on-site
pH Adjustment	Caustic Soda
Fluoridation	Hydrofluorosilicic Acid

**S02 Airport Well**

Disinfection	Calcium Hypochlorite
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**S03 Kiwanis Well**

Disinfection	Calcium Hypochlorite
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**S08 Kissel Well**

Disinfection	Calcium Hypochlorite
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**S10 Gardner Well**

Disinfection	Calcium Hypochlorite
Fluoridation	Sodium Fluoride

**S07, S09 Interties**

Chlorination	Calcium Hypochlorite by Nob Hill Water
--------------	--

**3. System Description**

a) **Hydraulics**

The City of Yakima water system is normally served by the Naches River WTP with the Naches River as the source. About three miles downstream from the Plant is the Glead system and this is our first customer. CT is calculated from this point. Treated water from the Plant is conveyed by gravity in a 48” concrete pipe to the 1st pressure zone and fills the 6MG reservoir. Water is normally pumped to the 2nd zone reservoirs and to the 2nd zone distribution system directly from the 40<sup>th</sup> Avenue pump station. Stone Church Pump Station is a backup / supplemental facility and delivers to the 2nd zone distribution system. The 3rd Level pump station is located at the 2nd zone reservoirs and pumps to the 3rd zone distribution system and 3rd zone reservoirs. System head is provided within a range for all three pressure zones by maintaining elevation in the reservoirs. The Glead pressure zone is hydropneumatic.

b) **Pressure Reducing Valves**

The pressure zones are connected but isolated from each other by Pressure Reducing Valves and closed valves. The PRV’s are set to open at specific downstream pressure setpoints, and are intended for emergency use only. See table 1.d

c) **Wells**

The four wells were designated seasonal sources in 2009 and are used in emergency and supplemental situations to support the WTP. Airport (S02), Kiwanis (S03), and Kissel (S08) are fixed output (dependent on system head) while Gardner (S10) can be controlled by variable frequency drive in local or remote modes. Kissel and Gardner are also ASR wellheads.

d) **Interties**

The interties with Nob Hill Water Co. are used only in the most extreme of circumstances, typically when very high demand and unexpected maintenance issues occur simultaneously.

#### 4. DBP Sampling

**Accredited Laboratory for DBP Analysis:**

Edge Analytical Laboratories Inc  
1620 S Walnut St, Burlington WA, 98233 phone: (800) 755-9295

**Number of Distribution Samples Required:** 8 (The City of Yakima does not qualify for reduced monitoring due to at least one LRAA above the 40/30 threshold.)

**Distribution System Sampling:** The IDSE Report for Standard Monitoring approved by EPA on 6/25/2009 established the sites and schedule for sampling of DBP’s under the new Stage 2 rule. The following table lists the sample locations and rationale for selection.

Z-49, St. Timothy’s Church	4105 Richey Rd	Highest TTHM
KW-1, Kissel Well	32 <sup>nd</sup> Ave x Mead Ave	Highest HAA5 (S1 site)
L3PS, 3 <sup>rd</sup> Level Pump Station	City Reservoir Rd	2 <sup>nd</sup> Highest HAA5 (S1 site)
Z-13, Yakima Eye Care	506 N 40 <sup>th</sup> Ave	2 <sup>nd</sup> Highest TTHM
X-44, Deccio Building, Fairgrounds	1301 S Fair Ave	3 <sup>rd</sup> Highest TTHM
WWTP, Wastewater Plant	2201 E Viola Ave	3 <sup>rd</sup> Highest HAA5 (S1 site)
Z-45, ARCO	1801 E Nob Hill Blvd	4 <sup>th</sup> Highest TTHM
CR-1, Creekside Realty	3907 Creekside Lp	4 <sup>th</sup> Highest HAA5

The schedule is quarterly, beginning November, 2012. Sampling is scheduled for the week the 23<sup>rd</sup> of February, May, August, and November of each calendar year.

TOC samples are obtained from the raw water and from an individual filter effluent once each month and are paired with an alkalinity measurement from the same day.

#### 5. Compliance

Compliance for DBP’s under the Stage 2 rule is calculated for each site using a Locational Running Annual Average (LRAA). Quarterly samples are averaged with the three previous



quarterly samples at each location to determine the LRAA for each of the 8 sample sites. LRAA's above 80 ppb for TTHM's and 60ppb for HAA5's are a violation of the MCL.

Compliance for chlorine MRDL is calculated from averaging all distribution chlorine residual samples taken each month. This includes all 70 coliform monitoring samples and samples reported from three other locations: the WWTP, City Hall, and the Kary Annex. An average above 4.0 mg/l is a violation.

Compliance for TOC reduction is not required due to Naches River source water containing less than 2.0 mg/l TOC as calculated quarterly by RAA (running annual average).

**DOH contacts:**

Main Office: (509) 329-2100

Russell Mau, DBP Program: (509) 329-2116

Andres Cervantes, Regional Engineer: (509) 329-2120

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**Appendix M.**  
**Coliform Monitoring Plan**

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# City of Yakima Coliform Monitoring Plan

Prepared in accordance to WAC 246-290-300 (3), subparts

## 1. SYSTEM INFORMATION

**System ID 991509**

**City Of Yakima, Division of Water/Irrigation**

2301 Fruitvale Blvd, Yakima, WA 98902 tel (509) 575-6154, fax (509) 575-6187

**Water Treatment Plant**

6390 US Hwy 12 Yakima, WA 98908 tel (509) 575-6177, fax (509) 966-5878

**Owner, primary contact**

David Brown, day (509) 575-6204, evening (509) 966-4659, cell (509) 901-4870

**Population Served:** 72,624

**Service Connections:** 27,637

### a) Source table

#	Name / Type	Capacity	Location	Use
S01	Naches River WTP	13,889 gpm	SW1/4 SW1/4 S13, T14N, R17E	Primary
S02	Airport Well	2,200 gpm	NW1/4 SE1/4 S35, T13N, R18E	Permanent
S03	Kiwanis Well	2,200 gpm	SW1/4 NW1/4 S20, T13N, R19E	Permanent
S07	56700M/Nob Hill Intertie	1,000 gpm	SE1/4 SW1/4 S20, T13N, R18E	Emergency
S08	Kissel Well	2,900 gpm	NW1/4 NW1/4 S35, T13N, R18E	Permanent
S09	56700M/Nob Hill Intertie	2,000 gpm	NW1/4 NE1/4 S3, T12N, R18E	Emergency
S10	Gardner Well	3,100 gpm	SE1/4 NE1/4 S36, T13N, R18E	Permanent

### b) Reservoir Table

1 <sup>st</sup> Level Zone	6 MG	40 <sup>th</sup> Avenue and Englewood Avenue
2 <sup>nd</sup> Level Zone	(2) 12 MG	Peck's Canyon Road and Reservoir Road
3 <sup>rd</sup> Level Zone	(2) 1 MG	North 58 <sup>th</sup> Avenue and Scenic Drive

c) **Pump Stations Table**

Name	Capacity	Service Area
Gleed Pump Station	2,200 gpm	Portion of Gleed (Hydropneumatic)
River Road (40 <sup>th</sup> Ave) Pump Station	5,000 gpm	2 <sup>nd</sup> Level Pressure Zone
Stone Church Pump Station	4,750 gpm	2 <sup>nd</sup> Level Pressure Zone
Reservoir Road (3 <sup>rd</sup> Level) Pump Station	2,100 gpm	3 <sup>rd</sup> Level Pressure Zone

d) **Pressure Reducing Valves Table**

Location	Size(s)	Service
20 <sup>th</sup> Avenue x Tieton Drive	6"	2 <sup>nd</sup> to 1 <sup>st</sup>
19 <sup>th</sup> Avenue x Chestnut Avenue	6"	2 <sup>nd</sup> to 1 <sup>st</sup>
Park x Summitview Avenue	6"	2 <sup>nd</sup> to 1 <sup>st</sup>
20 <sup>th</sup> Avenue x Lincoln Avenue	8" x3	2 <sup>nd</sup> to 1 <sup>st</sup>
20 <sup>th</sup> Avenue x Bonnie Doone	6"	2 <sup>nd</sup> to 1 <sup>st</sup>
30 <sup>th</sup> Avenue x Nob Hill Boulevard	8"	2 <sup>nd</sup> to 1 <sup>st</sup>
31 <sup>st</sup> Avenue x Clinton Way	4"	2 <sup>nd</sup> to 1 <sup>st</sup>
32 <sup>nd</sup> Avenue x Viola Avenue	6"	2 <sup>nd</sup> to 1 <sup>st</sup>
40 <sup>th</sup> Avenue x Powerhouse Road	8", 12"	2 <sup>nd</sup> to 1 <sup>st</sup>
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40 <sup>th</sup> Avenue x Richey Road	6"	3 <sup>rd</sup> to 2 <sup>nd</sup>
506 N 40 <sup>th</sup> Avenue	8"	3 <sup>rd</sup> to 2 <sup>nd</sup>
Westpark x North 41 <sup>st</sup> Avenue	4"	3 <sup>rd</sup> to 2 <sup>nd</sup>

e) **Percent Population Served By Zone**

1 <sup>st</sup> Level Zone	2 <sup>nd</sup> Level Zone	3 <sup>rd</sup> Level Zone	Gleed
78.5 %	18.5 %	3.0 %	<1 %

## 2. Treatment at Sources

### S01 Naches River Water Treatment Plant

Coagulation	Aluminum Chlorohydrate
Hydraulic Flash Mix	550 gpm
Disinfection	Sodium Hypochlorite, generated on-site
Coagulation Aid	Magnafloc LT 7990
Flocculation / Sedimentation	Detention time varies with flow rate
Filtration Aid	Nalclear 8170
Filtration	Dual media – Anthracite, sand
Disinfection	Sodium Hypochlorite, generated on-site
pH Adjustment	Caustic Soda
Fluoridation	Hydrofluorosilicic Acid

### S02 Airport Well

Disinfection	Calcium Hypochlorite
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### S03 Kiwanis Well

Disinfection	Calcium Hypochlorite
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### S08 Kissel Well

Disinfection	Calcium Hypochlorite
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### S10 Gardner Well

Disinfection	Calcium Hypochlorite
Fluoridation	Sodium Fluoride

### S07, S09 Interties

Chlorination	Calcium Hypochlorite by Nob Hill Water
--------------	--

## 3. System Description

### a) Hydraulics

The City of Yakima water system is normally served by the Naches River WTP with the Naches River as the source. About three miles downstream from the Plant is the Glead system and this is our first customer. CT is calculated from this point. Treated water from the Plant is conveyed by gravity in a 48" concrete pipe to the 1st pressure zone and fills the 6MG reservoir. Water is normally pumped to the 2nd zone reservoirs and to the 2nd zone distribution system directly from the 40<sup>th</sup> Avenue pump station. Stone Church Pump Station is a backup / supplemental facility and delivers to the 2nd zone distribution system. The 3rd Level pump station is located at the 2nd zone reservoirs and pumps to the 3rd zone distribution system and 3rd zone reservoirs. System head is provided within a range for all three pressure zones by maintaining elevation in the reservoirs. The Glead pressure zone is hydropneumatic.

### b) Pressure Reducing Valves

The pressure zones are connected but isolated from each other by Pressure Reducing Valves and closed valves. The PRV's are set to open at specific downstream pressure setpoints, and are intended for emergency use only. See table 1.d

c) **Wells**

The four wells were designated Permanent sources in 2016 and are used in emergency and supplemental situations to support the WTP. Airport (S02), Kiwanis (S03), and Kissel (S08) are fixed output (dependent on system head) while Gardner (S10) can be controlled by variable frequency drive in local or remote modes. Kissel and Gardner are also Aquifer Storage and Recovery (ASR) wellheads.

d) **Interties**

The interties with Nob Hill Water Co. are used only in the most extreme of circumstances, typically when very high demand and unexpected maintenance issues occur simultaneously.

## 4. Coliform Sampling

### **Accredited Laboratory for Coliform Analysis:**

Cascade Analytical, Inc

1008 W Ahtanum Rd, Union Gap WA, 98903 phone: (509) 452-7707

**Number of Distribution Samples Required:** 80 distribution, 8 raw water

**Groundwater:** The City of Yakima voluntarily samples each well once quarterly, whether in regular use or not, from a pre-chlorination tap in order to establish a long baseline of coliform negative sample results. Since January 2008 Airport (S02), Kiwanis (S03), and Kissel (S08) have consistently tested negative. Gardner (S10) has consistently tested negative since its commissioning in November 2011. Only Gardner (S10) could qualify for compliance monitoring under the Groundwater Rule, but the City chooses to treat it as the others and will rely on triggered monitoring when a positive coliform distribution sample occurs.

**Groundwater Rule (GWR) Triggered Monitoring:** If a routine distribution sample is total coliform positive (TC+) the City shall sample, from the pre-chlorination tap, all wells running within three days prior to the day of the original positive sample. If a well is TC+ the City shall notify and confer with the DOH within 24 hours to determine a course of action. If a well is E. coli positive (EC+) then the City shall notify DOH the same day, and in addition to corrective actions issued by DOH, Public Notification must be made within 24 hours.

**Distribution System Monitoring:** If any of the 80 routine distribution samples are total coliform positive (TC+), then within 24 hours the City will re-sample the original location and at least two more locations: one upstream and one downstream, within 5 services if possible. If any of the repeat samples are TC+, then the City may conduct a Level 1 Assessment, even if it does not meet the 5% threshold (<4 TC+ samples in same month). If repeat samples are TC+ and add up to more than 5% (>4) then the City shall conduct a Level 1 assessment. All TC+ samples will be further evaluated for E. coli, in every occurrence and circumstance, and if present then the City shall notify DOH the same day. Failure to perform EC analysis following a routine sample TC+ is a monitoring violation and requires a Tier 3 Public Notification.



The following table lists the combinations for an E. coli MCL violation as per the RTCR.

Routine Sample	Repeat Sample
EC+	TC+
EC+	Any missing sample
EC+	EC+
TC+	EC+
TC+	TC+ with no E. coli analysis

An E. coli MCL violation will result in a Level 2 Assessment to be performed by DOH or a DOH-approved entity.

**Distribution System Sampling:** Routine distribution sampling is performed by Cascade Analytical Inc. of Union Gap, WA. The City has chosen to use one regular bank of 80 sample sites in response to the difficulty in keeping two 80 sample banks that alternate monthly. Table a.) are the best sample sites based on geographical representation, stability of occupancy, ease of sampling, and access. The alternate / repeat sites (table b.) are former regular sites and will for now keep their old naming convention. All sites in either table are valid as regular or repeat sampling locations at the discretion of the sampler provided geographical representation is maintained. The new numbering convention is sequential with the first digit corresponding to the pressure zone in which it is located. The colors correspond to a week during the month in which the sampling occurs: week 1 is purple, week 2 is orange, and week 3 is green. The red locations are sampled by City personnel. The blue locations are alternate / repeat sample sites. Each pressure zone is sampled at least once per sampling week, with the exception of Glead which is quite small. A map is provided after the tables.

a.) Table of coliform sample sites

101	Creekside Realty	3907 Creekside Loop Ste 140
102	Kissel Park Well	32 <sup>nd</sup> Ave & Mead Ave
103	J M Perry	2011 W Washington Ave
104	Yakima Airport	2300 W Washington Ave
105	Gardner Park Well	Pierce St & Cornell Ave
106	Smitty's Conoco	304 W Mead Ave
107	Miner's Burgers	2415 S 1 <sup>st</sup> St
108	Home Depot	2115 S 1 <sup>st</sup> St
109	Coastal Farm and Ranch	2112 S 1 <sup>st</sup> St
110	Safeway	605 E Mead Ave
111	ARCO	1801 E Nob Hill Blvd
112	Pacific Container Systems	2201 Ahtanum Rd #100
113	Fairgrounds Office	1301 S Fair Ave
114	Sherwin Williams	1230 S 1 <sup>st</sup> St
115	7/11	1711 E Nob Hill Blvd

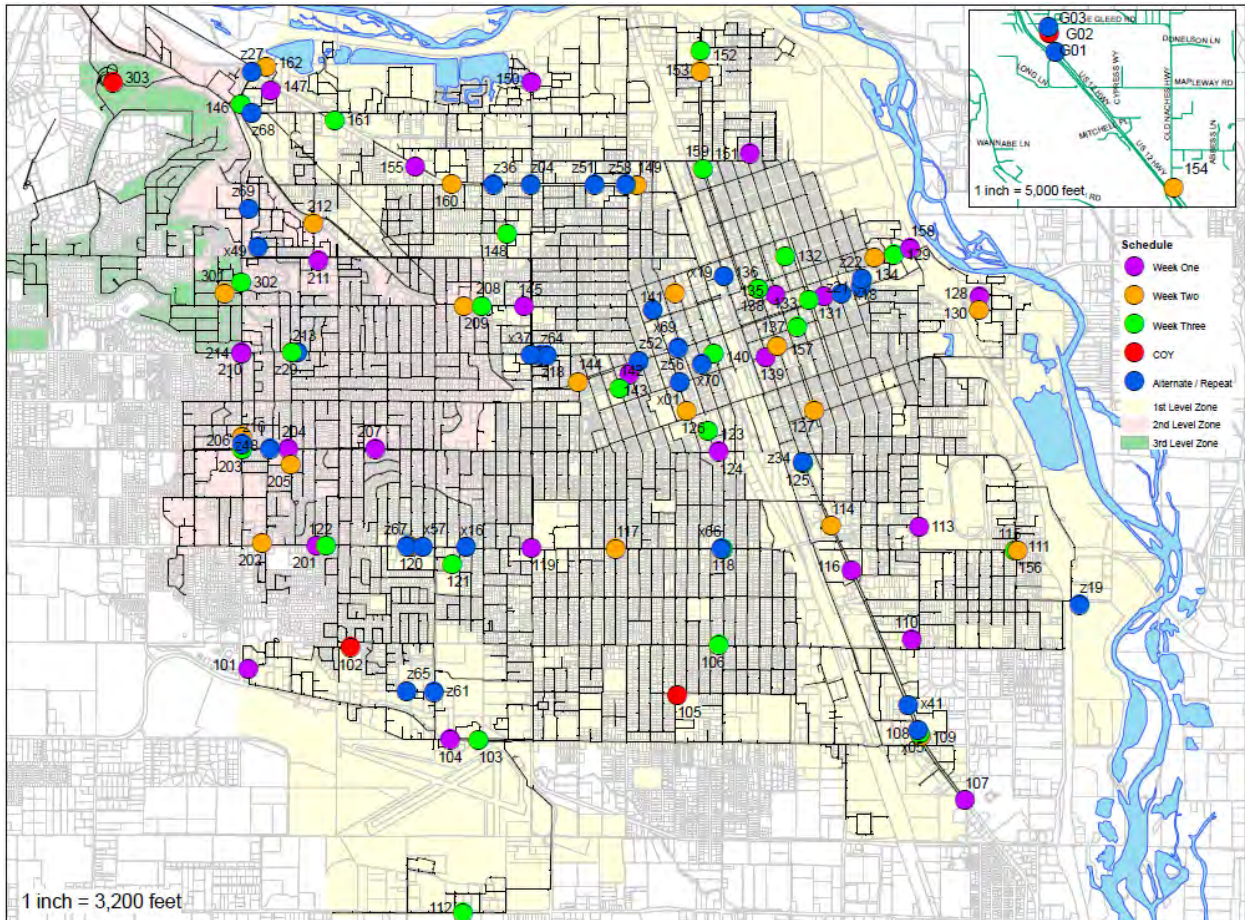
116	Bemis Appliance	1423 S 1 <sup>st</sup> St
117	Isaak's Furniture	1010 W Nob Hill Blvd
118	Wray's Thriftway	301 W Nob Hill Blvd
119	Taco Time	1020 S 16 <sup>th</sup> Ave
120	RJ's Tires	2601 W Nob Hill Blvd
121	Safeway	2204 A W Nob Hill Blvd
122	CWHBA	3301 W Nob Hill Blvd
123	Solarity CU	401 Tieton Dr
124	Employment Security	306 Division St
125	Valley Ford	910 S 1 <sup>st</sup> St
126	Bi Mart	309 S 5 <sup>th</sup> Ave
127	Carquest Auto Parts	511 S 3 <sup>rd</sup> St
128	Sunfair Chevrolet	1600 Terrace Heights Dr
129	Target	109 Fair Ave
130	Smart Style Salon	1600 E Chestnut Ave
131	Sun Towers	6 N 6 <sup>th</sup> St
132	Valikanje Law	405 E Lincoln Ave
133	YMCA	5 N Naches Ave
134	Holiday Inn	101 E "A" St
135	Yakima Library	102 N 3 <sup>rd</sup> St
136	City Hall	126 N 2 <sup>nd</sup> St
137	The Bindery	310 E Chestnut Ave
138	Yakima Courthouse	128 N 2 <sup>nd</sup> St
139	Firestone Tires	202 S 1 <sup>st</sup> St
140	ESD	33 S 2 <sup>nd</sup> Ave
141	People For People	302 W Lincoln Ave
142	Regional Hospital	110 S 9 <sup>th</sup> Ave
143	First Presbyterian Church	9 S 8 <sup>th</sup> Ave
144	Yakima Automotive	1 S 12 <sup>th</sup> Ave
145	Albertson's	1610 W Lincoln Ave
146	Bi Mart	1207 N 40 <sup>th</sup> Ave
147	Comfort Suites	3702 Fruitvale Blvd
148	Yakima Detention Center	1728 Jerome Ave
149	Stewart Subaru	506 Fruitvale Blvd
150	Farmers Insurance	1340 N 16 <sup>th</sup> Ave
151	Superior Laundry	906 N 4 <sup>th</sup> St
152	Lincoln Inn	1614 N 1 <sup>st</sup> St
153	Yakima Valley Hotel	1507 N 1 <sup>st</sup> St
154	Suntides Shell	11 Pence Rd
155	Yakima Tennis Club	2505 Fruitvale Blvd
156	Conoco Philips 76	1802 E Nob Hill Blvd
157	Yakima County TV	124 S 2 <sup>nd</sup> St

158	Super Cuts	110 N Fair Ave
159	Red Lobster	905 N 1 <sup>st</sup> St
160	Public Works	2301 Fruitvale Blvd
161	Carey Motors	3204 Fruitvale Blvd
162	Figgs Eye Clinic	1410 Lakeside Ct
201	Jiffy Lube	3310 W Nob Hill Blvd
202	Memorial Business Office	3803 W Nob Hill Blvd
203	Westside Medi Center	4001 Tieton Dr
204	Conoco	3602 Tieton Dr
205	Yakima Medical Consultants	622 S 36 <sup>th</sup> Ave
206	Albertson's	401 S 40 <sup>th</sup> Ave
207	Memorial Hospital	2811 Tieton Dr
208	Keeler's Medical Supply	2001 W Lincoln Ave
209	Kimmel Athletic	2105 W Lincoln Ave
210	Bank Of America	201 N 40 <sup>th</sup> Ave
211	The Ponderosa	3300 Englewood Ave
212	Orchard Park	620 N 34 <sup>th</sup> Ave
213	Papa John's Pizza	3512 Summitview Ave
214	Salon Nouveau	4001 Summitview Ave Ste 100
301	Saint Timothy's Church	4105 Richey Rd
302	Yakima Eye Care	506 N 40 <sup>th</sup> Ave
303	3 <sup>rd</sup> Level Pump Station	Reservoir Rd
G01	Yakima County Fire #6	81 N Gled Rd

b.) Table of alternate / repeat sites

X61	WDFW	1701 S 24th Ave
X41	Les Schwab Tires	2002 S 1 <sup>st</sup> St
Z48	Tieton Village Drug	3708 Tieton Dr
Z34	Cosmo Prof	909 S 1 <sup>st</sup> St
Z21	7/11	810 E Yakima Ave
X19	Eliot Tire	1 E Lincoln Ave
Z56	ACE Hardware	405 W Yakima Ave
Z29	Hillcrest Salon	3504 Summitview Ave
Z68	Oilcan Henry's	3805 River Rd
Z36	Valley Marine	1904 Fruitvale Blvd
G02	The Coffee Pot	3120 Mapleway Rd
Z65	Yakima Fitness	2501 Racquet Ln
Z19	WWTP	2220 E Viola
X18	Les Schwab Tires	702 E Yakima Ave
Z67	Elite Academy	2606 W Nob Hill Blvd
Z22	Howard Johnson's	9 N 9th St
X57	Oilcan Henry's	2501 W Nob Hill Blvd

X01	5 <sup>th</sup> Avenue Deli	415 W Walnut Ave
Z52	Chevron	702 W Yakima Ave
X69	Cost Less Carpet	210 N 5 <sup>th</sup> Ave
Z04	7/11	1601 Fruitvale Blvd
Z51	Yakima OIC	815 Fruitvale Blvd
G03	Curly's	111 N Glead Rd
X05	Mattress Outlet	2107 S 1 <sup>st</sup> St
X66	Bruchi's Sandwiches	302 W Nob Hill Blvd
Z16	Tom Tom Coffee	412 S 40 <sup>th</sup> Ave
X16	Pro Golf	2106 W Nob Hill Blvd
X70	NESCO	105 S 3 <sup>rd</sup> Ave
Z64	Nails/Spa Salon	1519 Summitview Ave
Z18	7/11	1512 Summitview Ave
X37	Fiddlestick's	1601 Summitview Ave
X49	Summit Leasing	3901 Fairbanks Ave
Z69	Pizza Hut	3915 Kern Rd
Z27	ARCO	3922 Fruitvale Blvd
Z58	K's Laundry	602 Fruitvale Blvd



## 5. Public Notifications

**Tier 1** notification is required within 24 hours of repeat sample EC+ confirmation or another EC+ MCL violation. Tier 1 PN's are to be performed within 24 hours.

**Tier 2** notification is required within 30 days of a treatment technique (TT) violation, defined as failure to perform a Level 1 or Level 2 assessment and/or failure to perform measures recommended by an assessment.

**Tier 3** notification is required within a year of a monitoring or reporting violation. Examples are failure to report an EC+ sample as required and failure to submit an assessment.

## 6. Assessments

**Level 1 assessments** are triggered when more than 5% (>4) of routine and repeat samples are TC+ in the same month, or failure to collect 3 repeat samples after a routine TC+ sample. Any knowledgeable person can perform a Level 1 assessment.

**Level 2 assessments** are triggered when there is an EC MCL violation or when there are two Level 1 assessments within a rolling 12 month period. Only DOH qualified persons can perform a Level 2 assessment.

Both Level 1 and Level 2 assessments must be performed and submitted to DOH within 30 days of the triggering event.

Guidance for conducting Level 1 and Level 2 Assessments will be provided by DOH.

### **DOH contacts:**

Main Office: (509) 329-2100

Mark Steward, Coliform Program: (509) 329-2134

Andres Cervantes, Regional Engineer: (509) 329-2120

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**Appendix N.**  
**Continuous and Miscellaneous Monitoring Plan**

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# City of Yakima Continuous and Miscellaneous Monitoring Plan

## 1. SYSTEM INFORMATION

**System ID 991509**

**City Of Yakima, Division of Water/Irrigation**

2301 Fruitvale Blvd, Yakima, WA 98902 tel (509) 575-6154, fax (509) 575-6187

**Water Treatment Plant**

6390 US Hwy 12 Yakima, WA 98908 tel (509) 575-6177, fax (509) 966-5878

**Owner, primary contact**

David Brown, day (509) 575-6204, evening (509) 966-4659, cell (509) 901-4870

**Population Served:** 72,624

**Service Connections:** 27,637

### a) Source table

#	Name / Type	Capacity	Location	Use
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S02	Airport Well	2,200 gpm	NW1/4 SE1/4 S35, T13N, R18E	Seasonal
S03	Kiwanis Well	2,200 gpm	SW1/4 NW1/4 S20, T13N, R19E	Seasonal
S07	56700M/Nob Hill Intertie	1,000 gpm	SE1/4 SW1/4 S20, T13N, R18E	Emergency
S08	Kissel Well	2,900 gpm	NW1/4 NW1/4 S35, T13N, R18E	Seasonal
S09	56700M/Nob Hill Intertie	2,000 gpm	NW1/4 NE1/4 S3, T12N, R18E	Emergency
S10	Gardner Well	3,100 gpm	SE1/4 NE1/4 S36, T13N, R18E	Seasonal

### b) Reservoir Table

1 <sup>st</sup> Level Zone	6 MG	40 <sup>th</sup> Avenue and Englewood Avenue
2 <sup>nd</sup> Level Zone	(2) 12 MG	Peck's Canyon Road and Reservoir Road
3 <sup>rd</sup> Level Zone	(2) 1 MG	North 58 <sup>th</sup> Avenue and Scenic Drive

c) **Pump Stations Table**

Name	Capacity	Service Area
Gleed Pump Station	2,200 gpm	Portion of Gleed (Hydropneumatic)
River Road (40 <sup>th</sup> Ave) Pump Station	5,000 gpm	2 <sup>nd</sup> Level Pressure Zone
Stone Church Pump Station	4,750 gpm	2 <sup>nd</sup> Level Pressure Zone
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d) **Pressure Reducing Valves Table**

Location	Size(s)	Service
20 <sup>th</sup> Avenue x Tieton Drive	6"	2 <sup>nd</sup> to 1 <sup>st</sup>
19 <sup>th</sup> Avenue x Chestnut Avenue	6"	2 <sup>nd</sup> to 1 <sup>st</sup>
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e) **Percent Population Served By Zone**

1 <sup>st</sup> Level Zone	2 <sup>nd</sup> Level Zone	3 <sup>rd</sup> Level Zone	Gleed
78.5 %	18.5 %	3.0 %	<1 %

## 2. Treatment at Sources

### S01 Naches River Water Treatment Plant

Coagulation	Aluminum Chlorohydrate
Hydraulic Flash Mix	550 gpm
Disinfection	Sodium Hypochlorite, generated on-site
Coagulation Aid	Magnafloc LT 7990
Flocculation / Sedimentation	Detention time varies with flow rate
Filtration Aid	Nalclear 8170
Filtration	Dual media – Anthracite, sand
Disinfection	Sodium Hypochlorite, generated on-site
pH Adjustment	Caustic Soda
Fluoridation	Hydrofluorosilicic Acid

**S02 Airport Well**

Disinfection	Calcium Hypochlorite
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**S03 Kiwanis Well**

Disinfection	Calcium Hypochlorite
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**S08 Kissel Well**

Disinfection	Calcium Hypochlorite
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**S10 Gardner Well**

Disinfection	Calcium Hypochlorite
Fluoridation	Sodium Fluoride

**S07, S09 Interties**

Chlorination	Calcium Hypochlorite by Nob Hill Water
--------------	--

**3. System Description**

a) **Hydraulics**

The City of Yakima water system is normally served by the Naches River WTP with the Naches River as the source. About three miles downstream from the Plant is the Glead system and this is our first customer. CT is calculated from this point. Treated water from the Plant is conveyed by gravity in a 48” concrete pipe to the 1st pressure zone and fills the 6MG reservoir. Water is normally pumped to the 2nd zone reservoirs and to the 2nd zone distribution system directly from the 40<sup>th</sup> Avenue pump station. Stone Church Pump Station is a backup / supplemental facility and delivers to the 2nd zone distribution system. The 3rd Level pump station is located at the 2nd zone reservoirs and pumps to the 3rd zone distribution system and 3rd zone reservoirs. System head is provided within a range for all three pressure zones by maintaining elevation in the reservoirs. The Glead pressure zone is hydropneumatic.

b) **Pressure Reducing Valves**

The pressure zones are connected but isolated from each other by Pressure Reducing Valves and closed valves. The PRV’s are set to open at specific downstream pressure setpoints, and are intended for emergency use only. See table 1.d

c) **Wells**

The four wells were designated seasonal sources in 2009 and are used in emergency and supplemental situations to support the WTP. Airport (S02), Kiwanis (S03), and Kissel (S08) are fixed output (dependent on system head) while Gardner (S10) can be controlled by variable frequency drive in local or remote modes. Kissel and Gardner are also ASR wellheads.

d) **Interties**

The interties with Nob Hill Water Co. are used only in the most extreme of circumstances, typically when very high demand and unexpected maintenance issues occur simultaneously.

## 4. Monitoring

### Continuous Monitoring:

The WTP continuously monitors Individual Filter Effluent (IFE), combined filter effluent (CFE), and raw water for turbidity.

The WTP continuously monitors pH and chlorine residual at two points in order to calculate two CT requirements and ratios to arrive at a final inactivation ratio.

The WTP continuously monitors fluoride residual at two points to determine feed rate accuracy, and is provided fluorine residual via SCADA at Gardner Well (S10) to determine feed rate accuracy while the Well is running.

The WTP is provided continuous free chlorine residual in the distribution system via SCADA by online analyzers located at the following points:

Gleed CT Facility	3211 Mapleway Rd
3 <sup>rd</sup> Level Pump Station	1310 Reservoir Rd
Airport Well	2007 W Washington Ave
Kiwanis Well	1103 E Maple St
Kissel Well	32 <sup>nd</sup> Ave x Mead Ave
Gardner Well	Pierce St x Cornell Ave

Free chlorine residual grab samples are analyzed by City staff nominally once per workday at three locations in the distribution system:

Kary Annex	2301 Fruitvale Blvd
City Hall	129 N 2 <sup>nd</sup> St
WWTP	2220 E Viola Ave

### Weekly Analysis:

WTP staff analyze raw and treated water once weekly for alkalinity and CFE for calcium equivalent hardness.

**DOH contacts:**

Main Office: (509) 329-2100

Andres Cervantes, Regional Engineer: (509) 329-2120

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**Appendix O.**  
**2015 Consumer Confidence Report**

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# 2015 WATER QUALITY REPORT

## Inside this issue:

Introduction and source water education	1
Summary tables, pt.1 and glossary with definitions	2
Summary tables, pt. 2 and your invitation to participate	3
Lead and Copper Rule sample results table	4

## Billing Rate: \$0.29/100 Gallons 2015 Gallons Produced

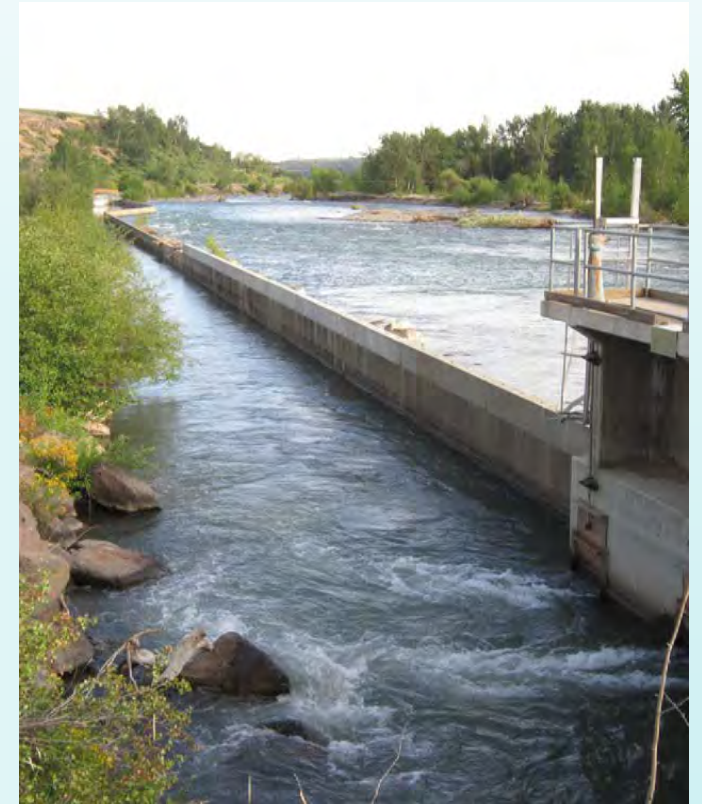
Naches River WTP	2.9 Billion
Airport Well	253 Million
Kissel Well	106 Million
Kiwanis Well	190.3 Million
Gardner Well	519.9 Million

## Naches River Water Treatment Plant

The City of Yakima is pleased once again to present for you our annual report of water quality. In addition to disclosing the results of our major testing programs, we hope this letter will inform you about your tap water and inspire confidence that the water we all rely on is of the highest quality possible. In pursuit of that goal the Water/Irrigation Division staff is committed to around-the-clock vigilance and service, and we are proud to announce that your tap water meets and exceeds all state and federal requirements.

### WHERE YOUR WATER COMES FROM

The Naches River supplies most of Yakima's drinking water. Our diversion is located along Hwy 12 and supplies the Naches River Water Treatment Plant at Rowe Hill. After treatment, water flows by gravity along the highway into town. During times of heavy runoff or when the Plant requires downtime maintenance, we can draw upon our 4 wells. They are located at Kiwanis Park, Kissel Park, Gardner Park, and Yakima Airport. These wells draw from the Ellensburg Aquifer and are also tested regularly.





Every year we take hundreds of samples and analyze them for disinfection byproducts, synthetic and volatile organics, biological, radiological, and inorganic contaminants. The tables below show the most important and frequently requested results for 2015. If you have any questions about these tests or if you would like to know about a substance not listed here you can call the Water Quality Specialist at 509-576-6477.

All drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that the water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the Environmental Protection Agency's Safe Drinking Water Hotline at 1-800-426-4791.

## Microbial Contaminants

Each year 840 samples from the distribution system are collected and analyzed to comply with the Total Coliform Rule (TCR). Coliforms are environmentally ubiquitous bacteria that live in the ground. The presence of coliforms in the water may indicate a leak, a cross-connection, or other problems.

Name	Units	MCL	MCLG	Number detected	Range low/high	Violation?
Total Coliform	Sample	>5%	0	0	0—100%	No

## Disinfection and Disinfection Byproducts

Disinfection Byproducts (DBP's) are formed when the chlorine added as a disinfectant combines with the naturally occurring organic matter (NOM) to form potentially harmful compounds. These compounds are divided into two main groups: Trihalomethanes (THM's) and Haloacetic Acids (HAA5's.)

Name	Units	MCL / MRDL	Range	2015 Average	Violation?
Chlorine	mg/L	4.0	0.04—2.20	0.80	No
TTHM's	ppb	80	0.0—78.8	29.29	No
HAA5's	ppb	60	0.0—42.3	16.92	No

## Turbidity

Turbidity is a measure of the "cloudiness" of water. High turbidity can indicate poor water quality. Sources of turbidity are generally attributed to soil runoff caused by heavy rain or snowmelt.

Name	Units	MCL	2015 Average	Range low/high	Violation?
Turbidity	NTU	TT	0.03	0.02—0.08	No

## Glossary for Tables

< = less than

MCL = Maximum Contaminant Level, the highest level of a contaminant allowed in drinking water.

MCLG = Maximum Contaminant Level Goal, the level of contaminant below which there is no known or expected health risk.

mg/L = milligrams per liter. Equal to ppm.

MRDL = Maximum Residual Disinfectant Level, the highest level of a disinfectant allowed in drinking water.

MRDLG = Maximum Residual Disinfectant Level Goal, the level of drinking water disinfectant below which there is no known or expected health risk.

NTU = Nephelometric Turbidity Unit.

ppm = part per million

ppb = part per billion

TT = Treatment Technique, a required process intended to reduce the level of a contaminant.

## Fluoride

Fluoride is added to drinking water to improve dental health. Fluoridation in Yakima began in 2004 after a referendum vote in 2001. For more information about water system fluoridation, please visit the DOH website: [http://www.doh.wa.gov/Portals/1/Documents/Pubs/160-021\\_Fluoridate\\_Facts.pdf](http://www.doh.wa.gov/Portals/1/Documents/Pubs/160-021_Fluoridate_Facts.pdf)

Name	Units	MCL	MCLG	2015 Average	Range	Violation?
Fluoride	ppm	4.0	2.0	0.97	0.61—2.0	No

## Primary Standards

National Primary Drinking Water Regulation primary standards are legally enforceable standards that apply to public water systems. There are more primary standards not included here because they were present in undetectable amounts.

Name	Units	MCL	MCLG	Amount detected	Violation?	Source
Arsenic	ppm	0.01	0	0.00017	No	Erosion of natural deposits, industrial waste.
Barium	ppm	2	2	0.003080	No	Erosion of natural deposits, industrial waste.
Chromium	ppm	0.1	0.1	<0.0001	No	Erosion of natural deposits, industrial waste.
Nitrate	ppm	10	10	<0.05	No	Erosion of natural deposits, fertilizer runoff, sewage, and faulty septic systems.
Nitrite	ppm	1	1	<0.05	No	Erosion of natural deposits, fertilizer runoff, sewage, and faulty septic systems.
Thallium	ppm	0.002	0.0005	0.00087	No	Industrial waste.

## Secondary Standards

Secondary standards are non-enforceable guidelines regulating contaminants that may have cosmetic or aesthetic effects, such as taste, odor, or staining.

Name	Units	MCL	Amount detected	Name	Units	MCL	Amount Detected
Calcium	mg/L	—	7.7	Manganese	mg/L	0.05	0.00015
Chloride	mg/L	250	4.3	Silica	mg/L	—	17.3
Color	units	15	<4	Silver	mg/L	0.1	<0.0001
Conductivity	µmhos/cm	700	79	Sodium	mg/L	—	5.89
Hardness	mg/L	—	26.1	Sulfate	mg/L	250	2.58
Iron	mg/L	0.3	<0.0097	Total Dissolved Solids	mg/L	500	43.9
Magnesium	mg/L	—	1.68	Zinc	mg/L	5	0.00085

## Questions, Comments, Concerns?

The City of Yakima welcomes your input! The City Council meets on the first and third Tuesday of each month at City Hall Council Chambers. You are encouraged to attend. If you would like to schedule a tour of the Naches River Water Treatment Plant, please call 575-6177. If you would like to talk about this report please call 576-6477.

## Water and Health

Some people may be more vulnerable to certain chemical compounds and substances in drinking water than the general population. Immuno-compromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. EPA and the Center for Disease Control guidelines on appropriate means to lessen the risk of infection by *Cryptosporidium* and other microbial contaminants are available from the **Safe Drinking Water Hotline (800-426-4791)**.

## About Lead in Drinking Water

If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. The City of Yakima is responsible for providing high quality drinking water, but cannot control the variety of materials used in plumbing components. When your water has been sitting for several hours, you can minimize the potential for lead exposure to lead by flushing your tap for 30 seconds to 2 minutes before using water for drinking or cooking. If you are concerned about lead in your water, you may wish to have your water tested. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline (800) 426-4791, or <http://www2.epa.gov/lead>



## Lead and Copper Rule

Every three years the City of Yakima is required to analyze water samples from homes determined by the EPA to be most susceptible to lead and copper leaching from pipes and plumbing components. The City of Yakima is very pleased to present the 2015 results of all these analyses here. The element abbreviation for lead is Pb, and copper is Cu. All values are mg/L, or PPM. The Rule sets an Action Level (AL) for lead at 0.015 mg/L and 1.3 mg/L for copper. As you can see, all of these locations from throughout our service area show very low to essentially undetectable amounts of these harmful metals.

	Site 1	Site 3	Site 4	Site 5	Site 7	Site 8	Site 9
Pb	0.00014	0.0001	0.00115	0.0003	0.00064	0.00086	0.00036
Cu	0.024	0.0286	0.0532	0.0132	0.0382	0.0266	0.043
	Site 10	Site 11	Site 17	Site 18	Site 19	Site 20	Site 22
Pb	0.00072	0.00011	0.00013	0.00019	<0.0001	0.0005	0.00056
Cu	0.053	0.0652	0.0395	0.0309	0.0271	0.0459	0.0776
	Site 25	Site 30	Site 31	Site 32	Site 35	Site 36	Site 38
Pb	<0.0001	0.0002	0.00022	0.00067	0.00018	<0.0001	0.0001
Cu	0.01	0.0234	0.0322	0.04	0.0195	0.00399	0.00701
	Site 39	Site 40	Site 41	Site 42	Site 43	Site 47	Site 49
Pb	0.00356	<0.0001	0.00015	0.0008	0.00708	0.00032	0.00361
Cu	0.0348	0.0262	0.00782	0.0501	0.0484	0.086	0.0421
	Site 50	Site 51	Site 53	Site 56	Site 57	Site 58	Site 59
Pb	0.00291	0.00219	0.00033	0.00018	0.00062	<0.0001	<0.0001
Cu	0.0927	0.0514	0.0457	0.0263	0.06	0.0238	0.0165
	Site 60	Site 61	Site 62	Site 65	Site 66	Site 68	Site 71
Pb	<0.0001	0.00021	0.00011	0.00065	0.00016	<0.0001	0.00016
Cu	0.00783	0.0296	0.0271	0.036	0.00861	0.0205	0.055
	Site 72	Site 73	Site 75	Site 76	Site 78	Site 80	Site 81
Pb	0.00093	0.00131	0.00036	0.00182	0.00013	0.00016	0.00011
Cu	0.0677	0.0572	0.0994	0.0708	0.0622	0.04	0.0362
	Site 83	Site 85	Site 87	Site 88	A big THANK YOU! to all 53 residents that participated this year. We can't do it without you.		
Pb	<0.0001	0.0004	0.00017	0.0007			
Cu	0.00271	0.038	0.0331	0.128			

**Appendix P.**  
**2015 ASR Project Summary Report**

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# **Yakima River Basin Integrated Water Resource Management Plan**

## **Ahtanum Valley Aquifer Storage and Recovery (City of Yakima ASR)**

### **City of Yakima Annual Report on ASR Operations: Water Year 2015**

U.S. Bureau of Reclamation  
Contract No. R13PC10006 ID/IQ

*Prepared by*

Golder Associates Inc.



**U.S. Department of the Interior  
Bureau of Reclamation  
Pacific Northwest Region  
Columbia-Cascades Area Office**



**State of Washington  
Department of Ecology  
Office of Columbia River**

**December 2015**

## **MISSION STATEMENTS**

### **U.S. Department of the Interior**

Protecting America's Great Outdoors and Powering our Future.

The U.S. Department of the Interior protects America's natural resources and heritage, honors our cultures and tribal communities, and supplies the energy to power our future.

### **Bureau of Reclamation**

The mission of the Bureau of Reclamation is to manage, develop, and protect water and related resources in an environmentally and economically sound manner in the interest of the American public.

### **Washington State Department of Ecology**

The Mission of the Washington State Department of Ecology is to protect, preserve and enhance Washington's environment, and promote the wise management of our air, land and water for the benefit of current and future generations.

If you need this document in a format for the visually impaired, call the Office of Columbia River at (509) 575-2490. Persons with hearing loss can call 711 for Washington Relay Service. Persons with a speech disability can call 877-833-6341.



# Contents

<b>EXECUTIVE SUMMARY</b> .....	<b>1</b>
<b>1.0 INTRODUCTION</b> .....	<b>2</b>
<b>2.0 SUMMARY OF ASR OPERATIONS</b> .....	<b>5</b>
2.1 BACKGROUND AND OVERVIEW.....	5
2.2 RECHARGE AND STORAGE VOLUME.....	5
2.3 RECOVERY / RECOVERABLE QUANTITY .....	6
2.4 RECHARGE WELL EFFICIENCY.....	7
<b>3.0 GROUNDWATER ELEVATION MONITORING</b> .....	<b>9</b>
3.1 GARDNER WELL.....	11
3.2 KISSEL WELL.....	11
3.3 KIWANIS WELL.....	12
3.4 AIRPORT WELL.....	12
3.5 AHTANUM WELL .....	12
3.6 WATER LEVEL RESPONSE TO RECHARGE.....	13
<b>4.0 WATER QUALITY</b> .....	<b>13</b>
4.1 RECHARGE WATER (SOURCE WATER) QUALITY .....	15
4.2 STORED WATER QUALITY .....	16
4.3 RECOVERED WATER QUALITY .....	17
<b>5.0 SUMMARY AND EXPECTATIONS FOR WY 2016</b> .....	<b>17</b>
5.1 RECHARGE VOLUME .....	17
5.2 STORAGE AND RECOVERY.....	17
5.3 RECHARGE WATER QUALITY .....	18
5.4 STORAGE WATER QUALITY .....	18
5.5 WY 2016 EXPECTATIONS.....	18
<b>6.0 REFERENCES</b> .....	<b>20</b>
<b>7.0 LIST OF PREPARERS</b> .....	<b>21</b>

## List of Tables (in text)

Table 2-1	Schedule of WY 2015 Recharge Operations
Table 2-2	1-hour Specific Capacity for the Gardner Well
Table 2-3	Schedule of Recoverable Storage (2015 Permit)
Table 2-4	Summary of Recoverable Quantity of Storage
Table 3-1	Monitoring Station Details
Table 4-1	DBP Monitoring Schedule (2015 Permit)
Table 4-2	Proposed Monitoring Schedule from the Technical Memorandum (Golder 2014c)
Table 4-3	DBP Analytes and Recharge Water Compliance Criteria (2015 Permit)
Table 4-4	DBP Results for WY 2015 Recharge Sampling
Table 4-5	DBP Results for WY 2015 Storage Sampling



## **List of Figures**

- Figure 3-1 Overview Map
- Figure 3-2 WY 2015 City of Yakima Production Well Hydrographs
- Figure 3-3 Gardner and Ahtanum Well Hydrographs for WY 2015 Recharge Cycles
- Figure 3-4 City Production Wells during Recharge Cycles at the Gardner Well
- Figure 3-5 Ahtanum Well Hydrographs

## **List of Appendices**

- A. Temporary Permit for Reservoir Application No. R4-34552 (2015 Permit)
- B. Summary of City of Yakima Surface Water Rights Used to Supply Recharge Water
- C. Summary of Groundwater Rights for City of Yakima Production Wells
- D. Water Quality Results for WY 2015 (Summary and Laboratory Reports)

## Acronyms and Abbreviations

2015 Permit	Temporary Reservoir Permit, dated 2/24/15
af	acre feet
AKART	All Known, Available and Reasonable Treatment
ASR	Aquifer Storage and Recovery
C <sub>s</sub>	Well Specific Capacity
DBP	Disinfection Byproduct – Includes THMs and HAAs
DOH	Washington Department of Health
Ecology	Washington State Department of Ecology
EPA	United States Environmental Protection Agency
ft amsl	feet above mean sea level
gpm	gallons per minute
HAA or HAA5	Haloacetic Acids consisting of: mono-, di- and tri-chloroacetic acids; and, mono- and di-bromoacetic acids
MCL	Maximum Contaminant Level
mg/L	milligrams per Liter
Mgal	million gallons
MGD	Million Gallons per Day
NRWTP	Naches River Water Treatment Plant
OM	Operations and Maintenance
SCADA system	Supervisory Control and Data Acquisition system
Technical Memorandum	Golder 2014c. <i>Technical Memorandum: City of Yakima ASR Application R4-34522 Package</i>
THM	Trihalomethanes consisting of: chloroform, bromodichloromethane, dibromochloromethane, and bromoform
TTHM	Total Trihalomethanes (combined concentrations of THMs)
ug/L	micrograms per liter
WAC	Washington Administrative Code
WSP	Water System Plan
WTP	Water Treatment Plant
WY	Water Year (October 1 through September 30)

# Executive Summary

The City of Yakima (City) has developed an Aquifer Storage and Recovery (ASR) program to provide additional water supply and improve water system reliability. The Department of Ecology issued a Temporary Permit for operation of the City's ASR system on February 24, 2015 (2015 Permit). This report details the City's operation of the ASR system under the 2015 Permit from February 24, 2015 through the end of Water Year (WY) 2015 (October 1, 2014 – September 30, 2015).

The City's WY 2015 operations are summarized as follows:

- A total of approximately 41 million gallons (125.1 acre-feet) was recharged to the aquifer via the Gardner Well during two periods of recharge in March and April 2015. No other wells were used for recharge.
- No stored water was recovered under the ASR program. Stored water is reserved for future recovery as provided in the 2015 Permit. Of the 125.1 af recharged in WY 2015, 100.1 af would be available for recovery in WY 2016 (80% of WY 2015 recharge volume).
- No discharge to surface waters occurred.
- Monitoring of disinfection byproducts (DBPs) in both source water (i.e., water being recharged into ASR wells) and stored water (i.e., water withdrawn from ASR wells) was conducted as required by the 2015 Permit. While water quality sampling frequency generally complied with the 2015 Permit, refinements to the sampling schedule are recommended for WY 2016.
- Water quality results in some instances exceeded the 2015 Permit limits for source water (1/2 the current drinking water limits for DBPs). However, water quality results were in compliance with drinking water standards in all samples (i.e., in both source water and stored water) at all times.
- Routine pumping of the Gardner Well from May through September under existing groundwater rights resulted in the withdrawal of approximately 1,260 af, which is substantially more water than was recharged during March and April.
- As of June 3, at which time approximately 340 af of water had been withdrawn from the Gardner Well after the end of recharge, DBPs had dropped to very low levels, indicating that the majority of DBPs introduced during recharge had been removed.

To address the water quality issues experienced in WY 2015, the City is preparing a set of Standard Operating Procedures (SOPs) for the ASR program. The SOPs will address procedures such as confirmation testing of source water before recharge begins; ongoing review of sampling data during recharge; action levels for increasing monitoring frequency or terminating recharge; contingency plans; and coordination with Ecology. The City will provide the SOPs to Ecology for its review before beginning recharge in WY 2016.

The City also requests the opportunity to consult with Ecology to develop a more readily implementable schedule for sampling source water during recharge, such as sampling after recharging every 1,000 af of water, or sampling every two months.

# 1.0 Introduction

The City of Yakima (City) has developed an Aquifer Storage and Recovery (ASR) program to provide additional water supply and improve water system reliability. The ASR program involves diverting water from the Naches River during low demand periods (e.g., the winter), treating the water to drinking water standards, delivering water through the City's distribution system to groundwater wells, and injecting (recharging) water through the wells into the aquifer (reservoir). Groundwater may then be withdrawn at later times for municipal use. The City's ASR program has been developed through extensive feasibility studies (Golder 2000, 2001, 2009, 2014a, 2014b, 2014c, and 2015). Additional technical information regarding the ASR program can be obtained from these studies.

The City submitted Reservoir Permit Application R4-3552 to the Washington Department of Ecology (Ecology) on April 12, 2002. The proposed storage reservoir was the Upper Ellensburg aquifer in the Ahtanum-Moxee subbasin. Development and final permitting of this storage reservoir is being coordinated with the Yakima River Basin Integrated Water Resources Management Plan (Integrated Plan). The goals of the Integrated Plan are to protect, mitigate and enhance fish and wildlife habitat; provide increased operational flexibility to manage instream flows to meet ecological objectives; and improve the reliability of the water supply for irrigation, municipal supply and domestic uses (Reclamation and Ecology 2012b).

A Temporary Reservoir Permit (2015 Permit; Appendix A) was issued by Ecology on February 24, 2015 for beneficial use of the groundwater reservoir while Ecology completes processing the application under WAC Chapter 173-157. The 2015 Permit will remain in effect until January 1, 2017.

The City began recharge operations on March 10, 2015 under the conditions of the 2015 Permit. This report summarizes the first year of ASR operations performed by the City through Water Year (WY) 2015 in accordance with the 2015 Permit.

The 2015 Permit references and is based largely on the Technical Memorandum (Golder, 2014c). The Technical Memorandum outlines the various elements of the ASR program and includes a specific project operation plan, legal framework, and environmental analysis. The 2015 Permit provides that all ASR activities shall comply with the Technical Memorandum except as otherwise specified in the Permit or authorized by Ecology. Key aspects of the 2015 Permit and Technical Memorandum to consider for ASR operations and annual ASR reporting include:

- Pilot Phase: The Technical Memorandum describes a 5 year Pilot Phase, at the end of which Ecology would evaluate the program's operation and could modify conditions of the permit, if warranted. The 2015 Permit provides that it is "associated with the Pilot Phase".
- Points of Recharge and Recovery: Under the 2015 Permit, water may be recharged at the City's Kissel and Gardner wells, and stored water may be recovered from any of the City's existing wells (i.e., Kissel, Gardner, Kiwanis, or Airport wells). The location of

these wells is shown on Figure 3-1. The Technical Memorandum addresses planned future ASR wells, which the City has requested be authorized in the final permit.

- Recharge Rates and Volumes: Under the 2015 permit, total recharge (at the Kissel and Gardner wells combined) may not exceed 4,000 gallons per minute (gpm) or 3,000 acre-feet per year (afy), respectively. During the Pilot Phase described in the Technical Memorandum, recharge would be limited to 3,000 gpm per well with a combined maximum of 9,000 gpm, and 4,800 afy per well with a combined maximum of 9,600 afy.
- Storage Volumes: The 2015 Permit does not contain an express limit on total quantity that may be stored in the reservoir. However, total quantity is implicitly limited to approximately 6,000 af because the Permit, which limits annual recharge to 3,000 afy, is only effective for approximately 2 years (February 24, 2015 – January 1, 2017). During the Pilot Phase described in the Technical Memorandum, the maximum recoverable quantity that the City may hold in storage would be 50,000 acre-feet (af). The Technical Memorandum recommends that this quantity be reviewed and potentially modified after the Pilot Phase in light of the application’s request for storage of up to 200,000 af.
- Recoverable Volume: The 2015 Permit provides that the recoverable volume of water is as outlined in the Technical Memorandum. The Technical Memorandum in turn provides that recoverable volume is a pre-determined percentage of any given year’s recharge volume, and is dependent on how long the water is stored. For each year that recharged water remains in storage, the quantity available for recovery decreases by 10% (see Table 2-3). Accordingly, recharge volumes that have been in storage for 1 year or less may be recovered at 90%, and recharge volumes that have been in storage for 10 years or more may not be recovered. The recoverable volume in storage is calculated each year based on recharge, withdrawal (if any) and duration of storage. So, for example, in Year 3 of the 2015 Permit, the City could recover 70% of the remaining Year 1 recharge, 80% of the remaining Year 2 recharge and 90% of the Year 3 recharge. This assumes no withdrawal of storage occurs in Years 1 and 2.
- Water Quality Criteria: The 2015 Permit provides the following water quality criteria:
  - DBPs in source water (i.e., water being recharged) shall not be higher than “½ of the current drinking water standard.” The current drinking water standards are 80 ug/L for Total Trihalomethanes (TTHMs) and 60 ug/L for the five major Haloacetic acids (HAA5). Therefore the 2015 Permit criteria for source water are 40 ug/L for TTHMs and 30 ug/L for HAA5.

The Technical Memorandum recommends the following water quality criteria:

- Recharged water should meet drinking water standards at all times (i.e., in source water, stored water and recovered water).
  - The average of recharge water samples (i.e., source water) within any recharge cycle should not exceed 50% of the drinking water criteria for TTHMs.
- Water Quality Sampling Schedule: The 2015 Permit requires sampling of source water and recovered water (if any) based on a percent of the total recharge volume. The

sampling frequency prescribed in the 2015 Permit therefore effectively assumes that the total volume to be recharged during the annual recharge cycle is known before recharge begins. The 2015 Permit also requires sampling of stored water 1-month after recharge ends, which the City interprets as the end of the final recharge period for the water year, or when no recharge has occurred for 1-month, whichever occurs first. The Technical Memorandum recommends that source water and stored water be sampled every two months, and that recovered water be sampled based on recovery of set percentages of the recharged water.

- Water Rights: The 2015 Permit provides that the schedule, volume and rates of recharge, storage and recovery are as outlined in the Technical Memorandum. The Technical Memorandum in turn provides that the recoverable annual quantities of stored water are additive to the City's existing water rights. Upon issuance of the final permit, the City intends to construct dedicated ASR wells that will recharge and withdraw water under the Reservoir Permit. The Technical Memorandum provides that the instantaneous quantities associated with these new wells will be additive to the City's existing groundwater rights, and that the annual quantities of water withdrawn from these dedicated ASR wells will be tracked against the recoverable quantities of stored water and will be additive to the City's existing rights.
- Regional Stream Benefits: The 2015 Permit and the Technical Memorandum both note that water recharged through the ASR program that is not recovered by the City will benefit streamflow in the Yakima River (termed "indirect recovery"). The method of tracking and accounting for these in-stream benefits relative to any water allocation or Total Water Supply Available (TWSA) calculations has not yet been determined.



## **2.0 Summary of ASR Operations**

### **2.1 Background and Overview**

Source water for recharge is diverted under the City's existing surface water rights on the Naches River and then treated at the Naches River Drinking Water Treatment Plant (NRWTP). Treated water is conveyed to the ASR wells via the City's water distribution system.

Consistent with Department of Health (DOH) regulations, the City is currently preparing an updated Water System Plan (WSP). The WSP will include a detailed Operations and Maintenance (OM) manual for the City's entire water system, including the ASR program. The OM manual will include operational protocols for the entire system, such as monitoring and controlling DBP precursors (e.g. organic matter) and chlorine residuals. It will also include protocols specific to the ASR program, such as water quality criteria for initiating and terminating recharge, and maintenance requirements for the monitoring network. A draft WSP is expected to be submitted to DOH by October 2016 and finalized in early 2017.

To address water quality issues experienced in WY 2015 under the 2015 Permit, and to institutionalize best management practices for the ASR program consistent with the Permit, the City is preparing a set of Standard Operating Procedures (SOPs) for the ASR program. The SOPs will address procedures such as confirmation testing of source water before recharge begins; ongoing review of sampling data during recharge; action levels for increasing monitoring frequency or terminating recharge; contingency plans; and coordination with Ecology. The City will provide the SOPs to Ecology for its review before beginning recharge in WY 2016. The final SOPs will be incorporated into the OM manual and WSP.

### **2.2 Recharge and Storage Volume**

Recharge rates to the aquifer are controlled by pressure reducing valves (PRVs) and orifice plates that are installed on dedicated recharge by-pass piping at the Kissel and Gardner wellheads. Air release valves are included in the recharge bypass to minimize introduction of air to the aquifer. The City adjusts PRV settings to control recharge rates as needed based on wellhead pressures, distribution system pressure, and other operational requirements.

Recharge and pumping volumes and rates are measured at the wellhead with dedicated Siemens MAG5000 inline flowmeters that report to the City's Supervisory Control and Data Acquisition system (SCADA system). The SCADA system records information at a 3-minute interval (data can also be viewed in real-time). The SCADA data was processed at approximately 1-hour intervals for presentation in this report. Pursuant to the 2015 Permit, and as described in Section 7.3 of the Technical Memorandum, the processed SCADA data and all other pertinent data for WY 2015 collected as part of the Permit (e.g., water level, flow rate, temperature, pressure and water quality) are being provided to Ecology in electronic format.

A total of approximately 41 million gallons (125.1 acre-feet) was recharged during two periods of recharge in WY 2015. As shown in Table 2-1, there was an initial 5-day period of recharge (approximately 16 af) in mid-March followed by 26 days of recharge (approximately 109 af) in late-March through April. Recharge occurred only at the Gardner Well, with a maximum

recorded instantaneous recharge rate of 1,368 gpm. The wellhead and distribution system performed well during WY 2015 and there were no leaks or other problems with the wellhead during recharge or storage.

**Table 2-1. Summary of WY 2015 Recharge Quantities**

Recharge Period (WY 2015)	Average Recharge Rate (gpm)	Volume Recharged in ac-ft (Mgal)	Note
<b>Gardner Well</b>			
3/10 - 3/15	679	16 (5.22)	Recharge interrupted due to elevated turbidity in source water
3/25 - 4/20	948	109 (35.53)	Recharge resumed; average recharge rate was 697 gpm through 4/9 and 1,288 gpm through 4/20
	<b>Total Gardner Well Recharge</b>	125.1 (40.8)	
<b>Kissel Well</b>			
--	--	--	No recharge at Kissel Well during WY 2015
<b>Both Wells</b>			
	<b>Total WY 2015 Recharge</b>	125.1 (40.8)	

Recharge volumes were less than the anticipated volumes for WY 2015 because:

- The 2015 Permit was not issued until February 24, 2015, so no recharge could occur from October 2014 through February 2015
- The Kissel Well was not operable due to pump removal for replacement
- Elevated turbidity in Naches River source water led to reduced capacity of the NRWTP and suspension of recharge on March 15. Recharge resumed on March 25 after turbidity levels subsided
- Drought conditions resulted in curtailment of some of the City’s surface water rights used for diversion of recharge source water; remaining surface water rights were needed for municipal supply after April 20, 2015

### 2.3 Recovery / Recoverable Quantity

The 2015 Permit allows for recovery of recharged water at Kissel, Gardner, Kiwanis, or Airport wells. The City did not recover any of the stored water during WY 2015. All water recharged during WY 2015 is reserved for future recovery as provided in the 2015 Permit.

Table 2-3 shows the recoverable quantities as a function of storage time, as provided in the Technical Memorandum and incorporated in the 2015 Permit. For storage of 1 year or less, the recoverable quantity is 90% of the volume recharged. Accordingly, had the City recovered ASR water in WY 2015, it could have recovered 112.6 af (90% of 125.1 af recharged in WY 2015).

Because the City did not recover any stored water in WY 2015, the recoverable quantity of WY 2015 storage available in WY 2016 is 100.1 af (80% of 125.1 af). If the City does not withdraw any stored water in WY 2016, the recoverable quantity of WY 2015 storage available in WY 2017 will be 87.6 af (70% of 125 acre-feet). Table 2-3 tracks actual storage, recovery and recoverable quantity available by WY. It will be updated in each year’s annual report.

## 2.4 Recharge Well Efficiency

Well efficiency is an important operational parameter that will help determine when well maintenance is required. It is also important in evaluating water-level responses in the recharge wells. Well efficiency is estimated by calculating specific capacity ( $C_s$ ), which is the recharge or pumping rate divided by the measured drawdown or water level rise at a specific time. A summary of observed specific capacities for the Gardner Well is presented in Table 2-2.

**Table 2-2. 1-hour Specific Capacities ( $C_s$ ) for the Gardner Well**

Water Year (WY)	Recharge		Pumping		Notes
	Rate (gpm)	$C_s$ (gpm/ft)	Rate (gpm)	$C_s$ (gpm/ft)	
2014 <sup>2</sup>	829	14.4	2,000	12.3	Measured during June step-test
	1,550	13.1	3,200	11.7	Measured during June step-test
2015	670	13	1,470	12.8	

<sup>1</sup> Specific capacity ( $C_s$ ) in gallons per minute per foot of drawdown from pumping (or buildup from injection) after approximately 1 hour of pumping or recharge.

<sup>2</sup>Testing completed during Gardner Well Pilot Test (Golder 2014b).

The specific capacity data for 2015 are very similar to the observations in 2014 (Golder 2014b). Therefore, no significant reduction in well or aquifer efficiency has occurred since the last recharge cycle.

**Table 2-3. Schedule of Recoverable Storage**

Year Recharged	Year Recovered									
	1	2	3	4	5	6	7	8	9	10
	(WY 2015)	(WY 2016)	(WY 2017)	(WY 2018)	(WY 2019)	(WY 2020)	(WY 2021)	(WY 2022)	(WY 2023)	(WY 2024)
Fraction of Directly Recoverable Quantity Remaining From Recharge										
Year 1 recharge (WY 2015)	0.9	0.8	0.7	0.6	0.5	0.4	0.3	0.2	0.1	0
Year 2 recharge (WY 2016)	-	0.9	0.8	0.7	0.6	0.5	0.4	0.3	0.2	0.1
Year 3 recharge (WY 2017)	-	-	0.9	0.8	0.7	0.6	0.5	0.4	0.3	0.2
Year 4 recharge (WY 2018)	-	-	-	0.9	0.8	0.7	0.6	0.5	0.4	0.3
Year 5 recharge (WY 2019)	-	-	-	-	0.9	0.8	0.7	0.6	0.5	0.4
Year 6 recharge (WY 2020)	-	-	-	-	-	0.9	0.8	0.7	0.6	0.5
Year 7 recharge (WY 2021)	-	-	-	-	-	-	0.9	0.8	0.7	0.6
Year 8 recharge (WY 2022)	-	-	-	-	-	-	-	0.9	0.8	0.7
Year 9 recharge (WY 2023)	-	-	-	-	-	-	-	-	0.9	0.8
Year 10 recharge (WY 2024)	-	-	-	-	-	-	-	-	-	0.9

<sup>1</sup>- not applicable

**Table 2-4. Summary of Recoverable Quantity in Storage (af)**

Recharge Year	Quantity Recharged	Quantity Withdrawn <sup>1</sup>	Recoverable Quantity by Storage/Recovery Year									
			WY 2015	WY 2016	WY 2017	WY 2018	WY 2019	WY 2020	WY 2021	WY 2022	WY 2023	WY 2024
WY 2015	125.1	0	112.6	100.1	-	-	-	-	-	-	-	-
WY 2016	-	-	-	-	-	-	-	-	-	-	-	-
WY 2017	-	-	-	-	-	-	-	-	-	-	-	-
WY 2018	-	-	-	-	-	-	-	-	-	-	-	-
WY 2019	-	-	-	-	-	-	-	-	-	-	-	-
WY 2020	-	-	-	-	-	-	-	-	-	-	-	-
WY 2021	-	-	-	-	-	-	-	-	-	-	-	-
WY 2022	-	-	-	-	-	-	-	-	-	-	-	-
WY 2023	-	-	-	-	-	-	-	-	-	-	-	-
WY 2024	-	-	-	-	-	-	-	-	-	-	-	-
<b>Total Recoverable Quantity in Storage</b>			<b>112.6</b>	<b>100.1</b>	-	-	-	-	-	-	-	-

<sup>1</sup>Represents quantity withdrawn from ASR storage <sup>1</sup>- not completed / not applicable

## 3.0 Groundwater Elevation Monitoring

Monitoring of groundwater-levels was completed as part of the 2015 Permit. This data may be periodically analyzed to assess hydrogeologic response to ASR operations during the Pilot Phase. This section presents the groundwater elevation data obtained from a monitoring network in place during WY 2015.

The monitoring network includes each of the City's production wells (Gardner, Kissel, Kiwanis, and Airport Wells) and the Ahtanum Youth Park Well in Union Gap (Ahtanum Well; Ecology Well Log No. 123858), which is a dedicated monitoring well. Well locations are presented in Figure 3-1. Hydrographs for each well are presented in Figures 3-2 through 3-5 for WY 2015.

During WY 2015, water-levels in City production wells and the Ahtanum Well were monitored with pressure transducers and data loggers (production wells report to the City's SCADA system). Monitoring well and pressure transducer information is summarized in Table 3-1. Pressure readings are corrected using a barometric pressure transducer housed at City offices. A relational database including hourly water level and flow data for the City's production and monitoring wells is maintained in the City's files.

The Gardner Well was the only well used for recharge operations during WY 2015. The following sections present the data obtained during WY 2015, including the recharge cycles. The hydrographs and figure numbers used in the discussion are summarized below.

- Figure 3-1: Well Location Map
- Figure 3-2: WY 2015 Hydrograph for City Production Wells (Gardner, Kissel, Kiwanis, Airport)
- Figure 3-3: Recharge Cycle Hydrograph at Gardner and Ahtanum Wells (March-April 2015)
- Figure 3-4: Recharge Cycle Hydrograph for City Production Wells (Kissel, Kiwanis, Airport)
- Figure 3-5: WY 2015 Hydrograph for Ahtanum Well

In general, seasonal water fluctuations are apparent in all wells during WY 2015, with static water-levels increasing from October 2014 to March 2015, and decreasing during the summer. These seasonal water level fluctuations are attributed primarily to minimal pumping of the aquifer during the winter, and higher pumping of the aquifer during the summer (e.g., for irrigation and municipal uses by the City and other groundwater users). Water-levels began to increase in September at the end of WY 2015, most likely due to reduced pumping of the aquifer for irrigation and municipal uses.

**Table 3-1: Monitoring Station Details**

Well (type)	Latitude	Longitude	Ground Surface Elev. (ft amsl) <sup>1</sup>	Measurement Point Elev. (ft amsl) <sup>2</sup>	Screened or Open Interval (ft bgs)	Well Owner	Transducer Type	Transducer Range/Accuracy <sup>3</sup>	Transducer Set Depth (ft bmp)	Well Log ID	Approximate Street Address
Airport (production)	46.570471	-120.536282	1,060	1,061	943-956 981-997 1,016-1,032	City of Yakima	Keller America MicroLevel	0-300psig /unknown	330	328395	Airport Rd at 16th & 24th Ave S.
Kissel (Recharge /production)	46.577922	-120.551230	1,116	1,117	878-907 999-1014 1,024-1,068 1,088-1,118			0-300psig/ 0.25%	300	125260	W. Mead Ave & S. 32nd St.
Gardner (Recharge /production)	46.574189	-120.514438	1,038	1,042	485-490 700-715 745-805 865-880		KPSI 330 INW PT2X	0-200psig/ 0.1% 0-300psia/ 0.05%	420	604431	SE Corner of Cornell & Pierce
Kiwanis (production)	46.599843	-120.486401	1,040	1,042	698-783		KPSI 330	0-200psig/ 0.1%	306	329198	E. Maple St & S. 12th St.
Ahtanum (Youth Park) (monitoring)	46.557386	-120.518794	1,026	1,030	197-202 (perforated)	Ecology/ City of Union Gap	INW PT2X	0-30psia/ 0.05%	35.5	123858	16th Ave S & Ahtanum Rd
Cahalan (Union Gap #5) (production) <sup>4</sup>	46.570590	-120.478834	1,004	1,007	385-390 400-410 465-505 513-590 590-610	City of Union Gap	INW PT2X (not active in current WY)	0-100psia/ 0.05%	101	254732	E. Washington Ave @ Cahalan Park

Notes:

1. Elevation determined from 6-foot Digital Elevation Model
2. Measurement point estimated using USGS DEM (10-meter resolution or greater)
3. Accuracy is % full scale (FS). Resolution of INW PT2X is 0.0034% FS and varies with other transducers.
4. The City is considering the Cahalan Well is a potential future monitoring point for water quality downgradient from the recharge wells; water levels were not monitored during WY 2015.

### 3.1 Gardner Well

Figure 3-2 presents the groundwater elevation measured at the Gardner Well (obtained from the KPSI transducer) for all of WY 2015. Static water-levels ranged from approximately 1,030 and 990 feet above mean sea level (ft amsl) near the beginning and end of WY 2015, respectively. Groundwater elevation varied between approximately 1,120 and 680 ft amsl during spring recharge and summer pumping, respectively. The Gardner Well was pumped regularly from May through mid-September to meet municipal demand, averaging above 2,100 gpm. A total of approximately 1,260 af of groundwater was withdrawn from the Gardner well between April 30 and September 11 under existing groundwater rights. The total production from the Gardner Well in WY 2015 was above average due to summer drought conditions.

The hydrograph in Figure 3-3 presents water-levels obtained from two pressure transducers installed in the Gardner well in WY 2015. These include a KPSI brand transducer that reports to the SCADA system and an INW brand transducer with internal data logging.

There are several characteristics to note in the hydrograph:

1. Transducer Overpressure: The KPSI and INW brand transducers have maximum pressure ratings of 200 pounds per square inch (psi) and 300 psi, respectively. The pressure rating of the KPSI transducer was exceeded when water-levels rose to approximately 1,085 ft amsl during recharge. In other words, the KPSI transducer cannot measure water-levels above 1,085 amsl.
2. Transducer Drift. The two transducers do not produce the same water level responses. Repeated over-pressurization of the KPSI transducer (e.g. during initial testing; Golder 2014b) may explain the deviation (drift) in water level readings between the two transducers. No manual water level measurements could be made to confirm this, due to an inability to access sounding ports.
3. Data Gap. There are two data gaps in the record for the INW transducer. The first data gap, between March 10 and March 15, occurred because the transducer was not activated during the first recharge period. The second data gap, after April 2, occurred because the transducer malfunctioned.
4. Recharge Flow Rates. Injection flow rates are shown in blue on the Figure 3-3, with the right vertical axis for scale. Recharge flow averaged approximately 680 gpm from March 10 to March 15. Recharge resumed on March 25 at about 700 gpm and was increased to an average of approximately 1,300 gpm from March 29 through the end of recharge on April 8, 2015.

The KPSI transducer was replaced at the end of WY 2015 with a new INW PT2X transducer (300 psi range); this should provide improved accuracy and reliability for water level monitoring during WY 2016.

### 3.2 Kissel Well

The hydrographs for the Kissel Well are presented in Figures 3-2 and 3-4. Figure 3-2 shows the water-levels for all of WY 2015 (October 1, 2014 to September 30, 2015). Figure 3-4 shows the water-levels during the Gardner Well recharge cycle from March 5, 2015 to April 23, 2015.

In general, WY 2015 static water-levels in the Kissel Well increased from 1,030 feet above mean sea level (ft amsl) in October 2014 to about 1,060 ft amsl in March 2015, just prior to recharge at

the Gardner well. Static water-levels generally declined from 1,062 ft amsl in late April (as regional groundwater production in the vicinity of Yakima increased) to 1,010 ft amsl in late August. Water-levels began to increase in September and were at about 1,027 ft amsl at the end of WY 2015.

### **3.3 Kiwanis Well**

The hydrograph for the Kiwanis Well is presented in Figures 3-2 and 3-4. Figure 3-2 shows the water-levels for all of WY 2015. Figure 3-4 shows the water-levels during the Gardner Well recharge cycle from March 5, 2015 to April 23, 2015.

In general, WY 2015 static water-levels in the Kiwanis Well increased from 1,070 ft amsl in October 2014 to about 1,085 ft amsl in March 2015, just prior to recharge at the Gardner well. Static water-levels generally declined from 1,097 ft amsl in late April (as regional production increased) to about 1,056 ft amsl in late August. Water-levels began to increase in September and were at approximately 1,070 ft amsl at the end of WY 2015.

### **3.4 Airport Well**

The hydrograph for the Airport Well is presented in Figures 3-2 and 3-4. Figure 3-2 shows the water-levels for all of WY 2015. Figure 3-4 shows the water-levels during the Gardner Well recharge cycle from March 5, 2015 to April 23, 2015.

In general, WY 2015 static water-levels in the Airport Well increased from 1,053 ft amsl in October 2014 to about 1,084 elevation in March 2015, just prior to recharge at the Gardner well. Static water-levels generally declined from about 1,084 ft amsl in late April (as regional production increased) to about 1,020 ft amsl in late August. Water-levels began to increase in September and were at approximately 1,043 ft amsl at the end of WY 2015.

### **3.5 Ahtanum Well**

The Ahtanum Well (also identified as the Ahtanum Youth Park or Youth Park Well) is a dedicated monitoring well located in the Ahtanum Youth Park, owned by the City of Union Gap. The Ahtanum Well has consistently responded to recharge and recovery testing at the City of Yakima's Kissel and Gardner Wells (Golder 2001, 2014c, 2015), which are located approximately 2.1 and 1.2 miles from the Ahtanum Well, respectively. Water-levels in the Ahtanum Well were monitored during WY 2015 using an INW pressure transducer with internal logging. Although the Ahtanum Well is consistently responsive to recharge at Gardner, it is also affected by pumping at a nearby irrigation well for the Ahtanum Youth Park (well name unknown) and the City of Union Gap Well #6.

The WY 2015 hydrograph for the Ahtanum Well is presented in Figure 3-5. The high frequency "chatter" in the hydrograph in October, April, and August/September is likely the result of pumping effects from the nearby irrigation well and/or City of Union Gap Well #6. The effect of pumping activities at these wells, as well as the effect of recharge at the City of Yakima's Gardner Well[s], on water-levels in the Ahtanum Well is described in the 2014 groundwater monitoring report (Golder, 2015). In general, WY 2015 static water-levels in the Ahtanum Well increased from about 1,013 ft amsl in October 2014 to approximately 1,020 ft amsl in March 2015, just prior to recharge at the Gardner well. Water-levels increased about 1.25 feet during the second WY 2015 recharge period at Gardner until April 6, and then declined in apparent



response to nearby pumping. Static water-levels generally declined through the summer to about 1,006 ft amsl in mid-August. Water-levels were at elevation approximately 1,011 ft amsl at the end of WY 2015.

### **3.6 Water Level Response to Recharge**

The Gardner and Ahtanum wells showed clear response to recharge during WY 2015. Water levels in the Kissel, Kiwanis, and Airport wells increased throughout the recharge period. However, it is unclear how much of this increase may be attributable to recharge vs. regional conditions, such as antecedent water level trends (e.g. recovery from pumping) and interference pumping from nearby wells.

## **4.0 WATER QUALITY**

Under the 2015 Permit, water quality monitoring is required during recharge, storage, and recovery phases of the ASR program. The monitored water quality parameters are specific constituents of concern, which were identified through completion of an All Known, Available, and Reasonable Treatment analysis (AKART; Golder 2015a). The 2015 Permit establishes the criteria for water being recharged (i.e., source water) as being “1/2 the current drinking water limits for DBPs.” The 2015 Permit does not specify the criteria for stored water or recovered water, indicating that these criteria are as set out in the Technical Memorandum, which requires that recharged water meet drinking water standards at all times, i.e., during recharge, storage and recovery. Current drinking water standards only contain numeric criteria for two categories of DBPs, Trihalomethanes (THMs) and Haloacetic Acids (HAA). The numeric criteria are for Total THMs (TTHMs) and five HAAs (HAA5). Table 4-1 presents the TTHM and HAA5 levels established in the 2015 Permit for source water (1/2 of drinking water limits) and for stored and recovered water (drinking water limits).

Samples of source water were collected from a sample port at the Gardner Well wellhead by City staff, and analyzed by Edge Analytical in Burlington, WA, following EPA methods 524.2 and 552.2 for THMs and HAAs, respectively. Field parameters, including electrical conductivity (as specific conductance), pH, temperature, and residual chlorine were also collected during WY 2015 (Table D-2). Complete water quality results and laboratory QA/QC for WY 2015 are summarized in Appendix D.

The frequency of sampling was initially proposed in the Technical Memorandum as shown in Table 4-2. The 2015 Permit prescribes sampling as a function of the percent of recharge volume, as shown in Table 4-3. The sampling frequency prescribed in the 2015 Permit effectively assumes that the total volume to be recharged during the annual recharge cycle is known before operations begin. For example, for WY 2015, the City estimated when a “50% of recharge volume” would be achieved and collected a water quality sample on April 2, based on an anticipated 2015 total recharge volume of approximately 82 ac-ft. However more water was eventually recharged during 2015 (after April 2), so the April 2 sample actually corresponded to 33% of the WY 2015 recharge volume (Table 4-4). The sample corresponding to “100% of recharge volume” was collected on April 20, just prior to shutting down recharge. If the City had available water to recharge later in the year, further deviation from the volume targets for sample collection would have been observed.

Operationally, the “percentage of recharge volume” sampling approach in Table 4-2 created some logistical difficulties that should be addressed for the WY 2016 sampling. The City requests the opportunity to consult with Ecology to develop a more readily implementable schedule for sampling source water during recharge, such as sampling after recharging every 1,000 af of water, or sampling every two months.

**Table 4-1. DBP Analytes and Compliance Criteria (2015 Permit)**

DBP Group	Analyte/Constituent	DOH ID No. <sup>1</sup>	Source Water Compliance Criteria <sup>2</sup>	Stored and Recovered Water Compliance Criteria (drinking water standard)
<b>Haloacetic Acids (HAAs);</b> [EPA Method 552.3]	Monochloroacetic Acid	411	-	-
	Dichloroacetic Acid	412		
	Trichloroacetic Acid	413		
	Monobromoacetic Acid	414		
	Dibromoacetic Acid	415		
	Total HAAs ( <b>HAA5</b> ) <sup>3</sup>	416	< 30 µg/L	<60 µg/L
<b>Trihalomethanes (THMs)</b> [EPA Method 524.2]	Chloroform	27	-	-
	Bromodichloromethane	28		
	Chlorodibromomethane	29		
	Bromoform	30		
	Total Trihalomethanes ( <b>TTHM</b> ) <sup>3</sup>	31	< 40 µg/L	< 80 µg/L

<sup>1</sup> Washington State Department of Health identification number

<sup>2</sup> Compliance criteria determined as ½ the current drinking water contaminant limit.

<sup>3</sup> HAA5 and TTHM are the only constituents of concern for which there are drinking water limits (and required for monitoring by the 2015 Permit)

**Table 4-2. Proposed Monitoring Schedule from the Technical Memorandum (Golder 2014c)**

Stage	Frequency	Analyte List
1. During recharge (distribution system/source water)	Every two months.	Field parameters: <ul style="list-style-type: none"> <li>Electrical conductivity</li> </ul> Laboratory parameters: <ul style="list-style-type: none"> <li>THMs (Method 524.2)</li> </ul>
2. During storage (groundwater)		
3. During recovery (groundwater)	Within one week of starting recovery and at recovery of 50% increments of equivalent volume of recharged water, up to a maximum of 3 samples (e.g., at 50%, 100% and 150% recovery of equivalent recharged volume).	

**Table 4-3. DBP Monitoring Schedule from 2015 Permit**

Phase	Percent of Recharge Volume <sup>2</sup>	Media
Recharge	0%	Source Water <sup>1</sup>
	50%	
	100%	
Storage	1 month after recharge ends	Groundwater
Recovery	0%	Groundwater
	50%	
	100%	

<sup>1</sup>Source water samples must be collected as near as possible to each well used for recharge. Storage samples must be collected from each well used for recharge. Recovery samples must be collected at each well used for recovery of stored water.

<sup>2</sup>Represents total recharge volume for a single water year.

## 4.1 Recharge Water (Source Water) Quality

The Gardner Well was the only well used for recharge during WY 2015. City staff collected three samples of source water from the Gardner Well during recharge (Table 4-4). The samples were collected at the wellhead prior to injection into the aquifer. The 50% recharge volume sample was collected on April 2 based on an anticipated recharge volume of approximately 82 ac-ft. However more water was eventually recharged than anticipated, so the April 2 sample actually corresponded to 33% of the WY 2015 recharge volume. The sample corresponding to 100% of recharge volume was collected on April 20, just prior to shutting down recharge for WY 2015.

**Table 4-4. DBP Results for WY 2015 Recharge (µg/L)**

Sample Date (WY 2015)	Volume Recharged	Total HAAs(HAA5)			Total Trihalo-methanes (TTHMs)		Drinking Water Criterion
		Measured Concentration	2015 Permit Compliance Criterion	Drinking Water Criterion	Measured Concentration	2015 Permit Compliance Criterion	
<b>Gardner Well</b>							
11-Mar	2%	38.4	30	60	57.9	40	80
2-Apr	33%	31.4			31.2		
20-Apr	100%	31.9			32.9		

Recharge water at the Gardner Well slightly exceeded the 2015 Permit compliance criterion for HAA5 on all sampling events. However, the measured concentrations of HAA5 remained well below the drinking water regulatory limit of 60 µg/L at all times.

Recharge water at the Gardner Well also exceeded the 2015 Permit limit for TTHMs during the first sampling event on March 11, but was in compliance during later sampling events. TTHMs remained within safe drinking water regulatory limit of 80 µg/L at all times.

The Technical Memorandum recommends a DBP compliance criteria based on “the average of recharge water samples within any recharge cycle”. The values reported in Table 4-3 are not averages. The average of the TTHM values is 40.6 µg/L, and the average of HAA5 values is 33.9 µg/L.

The intent of the criteria described in the Technical Memorandum is to ensure that water quality always meets drinking water standards. Previous pilot tests indicated that DBPs continued to form after recharge and during storage (Golder 2001 and 2014b). Therefore, the water quality

criteria for recharge (source water) were established to provide an allowance for increase of concentrations during storage while remaining within safe drinking water standards. As discussed in the next section, the results of stored water sampling indicate that this objective was met – all recharged water samples met drinking water standards at all times.

To address the water quality issues experienced in WY 2015, the City is preparing a set of Standard Operating Procedures (SOPs) for the ASR program. The SOPs will address procedures such as confirmation testing of source water before recharge begins; ongoing review of sampling data during recharge; action levels for increasing monitoring frequency or terminating recharge; contingency plans; and coordination with Ecology. The City will provide the SOPs to Ecology for its review before beginning recharge in WY 2016.

## 4.2 Stored Water Quality

Water quality monitoring of stored water is required one month after the end of recharge. Samples must be collected at each well used for recharge during the year. Recharge in WY 2015 only occurred at the Gardner Well. The recharge period ended on April 20, 2015. Water quality samples were collected from the Gardner Well on May 1 (11 days after recharge stopped) and on June 3 (44 days after recharge stopped). The samples were compared to regulatory drinking water standards (Table 4-1).

The average storage period for the two samples (i.e., May 1 and June 3) is approximately one month. The May 1 storage sample represents source water with an aquifer residence time of 11 days (pilot testing has indicated very little mixing occurs with native groundwater over this time period; Golder 2001, 2014b). As described previously, the City would like to consult with Ecology on how best to establish the sampling timing relative to recharge and storage periods for an annual recharge cycle (where there could be multiple recharge periods).

**Table 4-5. DBP Results for WY 2015 Storage (µg/L)**

Sample Date (WY 2015)	Days since Recharge Stopped <sup>1</sup>	Haloacetic Acids (HAA5)		Trihalomethanes (TTHMs)	
		Total HAAs (HAA5)	Stored Water Compliance Criterion <sup>2</sup>	Total Trihalo-methanes (TTHMs)	Stored Water Compliance Criterion <sup>2</sup>
<b>Gardner Well</b>					
1-May	11	44.3	60	53.2	80
3-Jun	44	<1		1.4	

<sup>1</sup> Represents days since April 20, the second recharge period of WY 2015

<sup>2</sup> Drinking Water Standard

Water quality of stored recharge water met drinking water criteria at all times. The HAA5 concentrations increased from 31.9 ug/L in source water on April 20 (when recharge stopped) to 44.3 ug/L on May 1 (11 days of storage). The TTHM concentrations increased from 32.9 ug/L in source water on April 20 (when recharge stopped) to 53.2 ug/L on May 1. These increases in DBP concentrations are likely associated with continued reaction of residual chlorine with organic material that is present in the aquifer and/or source water. This is consistent with results of ASR pilot tests at the Kissel and Gardner Wells (Golder 2001 and 2014b, respectively), which also showed increases in HAA5 and TTHM concentrations during the initial weeks of storage.

By June 3<sup>rd</sup>, both HAA5 and TTHM concentrations dropped to very low levels. It should be noted that the Gardner well was pumped between April 30 and June 3. Approximately 340 af of water was pumped during this period (relative to a total of 125 af of water recharged prior to April 30).

### **4.3 Recovered Water Quality**

Water quality monitoring in recovered water is required at the beginning of recovery, and after recovery of 50% and 100% of the recharged quantity has been withdrawn. Samples must be collected at each well used for recovery of stored groundwater. No recovery of stored groundwater occurred in WY 2015. Accordingly, no samples of recovered water were collected. However, the results of sampling of stored water (Section 4.2) are indicative of the quality of water withdrawn from the Gardner Well in WY 2015 during regular municipal operations.

## **5.0 Summary and Expectations for WY 2016**

The City of Yakima's WY 2015 Recharge Cycle and subsequent storage was conducted under the 2015 Permit issued by Ecology in February 2015.

### **5.1 Recharge Volume**

A total of approximately 41 million gallons (125.1 acre-feet) was recharged to the aquifer via the Gardner Well during two periods of recharge in March and April 2015. No other wells were used for recharge. Recharge volumes were less than the anticipated volumes for WY 2015 because:

- The 2015 Permit was not issued until February 24, 2015, so no recharge could occur from October 2014 through February 2015;
- The Kissel Well was not operable due to pump removal for replacement;
- Elevated turbidity in Naches River source water led to reduced capacity of the NRWTP and suspension of recharge on March 15. Recharge resumed on March 25 after turbidity levels subsided.
- Drought conditions resulted in curtailment of some of the City's surface water rights used for diversion of recharge source water; remaining surface water rights were needed for municipal supply after April 20, 2015.

The Gardner and Ahtanum wells showed clear response to recharge during WY 2015. Water levels in the Kissel, Kiwanis, and Airport wells increased throughout the recharge period. However, it is unclear how much of this increase may be attributable to recharge vs. regional conditions, such as antecedent water level trends (e.g. recovery from pumping) and interference pumping from nearby wells.

### **5.2 Storage and Recovery**

No stored water was recovered under the ASR program during WY 2015. Stored water is reserved for future recovery as provided in the 2015 Permit. Of the 125.1 af recharged in WY

2015, 100.1 af would be available for recovery in WY 2016 (80% of WY 2015 recharge volume).

### **5.3 Recharge Water Quality**

Recharge water (source water) at the Gardner Well slightly exceeded the 2015 Permit compliance criterion for total HAAs (HAA5) on all sampling events. Compliance limits in the 2015 Permit for HAA5 are 30 ug/L (which represents 50% of the drinking water regulatory maximum of 60 ug/L). The measured concentrations of HAAs were still well below the drinking water regulatory limit of 60 ug/L at all times. The 2015 Permit limit for TTHMs was also exceeded during the first sampling event on March 11, but all source water was still below the regulatory limit of 80 ug/L at all times.

### **5.4 Storage Water Quality**

Stored water was sampled at 11 days and 44 days after the end of WY 2015 recharge. HAA5 and TTHM concentrations were below regulatory drinking water limits at all times. The June 3 storage sample, which represents an aquifer residence time of 44 days, had very low levels of Both HAA5 and TTHM. It should be noted that approximately 340 af of water was pumped from the Gardner Well between April 30 and June 3 (relative to a total of 125.1 af of water recharged prior to April 30).

### **5.5 WY 2016 Expectations**

The ASR program for WY 2016 will include refinements and adjustments based on the results of the WY 2015 recharge. The City will continue to communicate closely with Ecology on the operation of the ASR system during WY 2016.

The pressure transducer in the Gardner Well has been replaced to improve reliability of water level measurements during recharge. No recharge operations are expected at the Kissel Well for WY 2016. The City may initiate development of a dedicated ASR well, but this is not expected to be completed until WY 2018, after the final ASR permit has been issued. Therefore, no withdrawal of recharged/stored water is expected in WY 2016. As with WY 2015, some withdrawal from City wells (including the Gardner Well) is expected to occur under existing water rights to meet municipal demand.

The target recharge volume for WY 2016 is estimated to be 1,000 af. The ability to achieve this recharge volume will depend on

- Initiation of Recharge: It is hoped that recharge can begin earlier in the water year (i.e. before March 2016).
- Turbidity at Source: Similar to WY 2015, if high turbidity is observed at the water treatment plant, recharge will be curtailed.
- Drought Curtailment: Similar to 2015, it is possible that WY 2016 will be another drought year and the City may have limited ability to divert source water starting in late spring 2016.

The City is currently drafting a revised Water System Plan (WSP) that includes a detailed Operations and Maintenance (OM) manual for the entire water system, including the ASR program. The OM manual will include operational protocols for the entire system, such as monitoring and controlling DBP precursors (e.g., organic matter) and chlorine residuals. It will also include protocols specific to ASR, such as water quality criteria for initiating and terminating recharge, and maintenance requirements for the monitoring network (e.g., guidance on water quality sampling and water level monitoring).

To address the water quality issues experienced in WY 2015, the City is preparing a set of Standard Operating Procedures (SOPs) for the ASR program. The SOPs will address procedures such as confirmation testing of source water before recharge begins; ongoing review of sampling data during recharge; action levels for increasing monitoring frequency or terminating recharge; contingency plans; and coordination with Ecology. The City will provide the SOPs to Ecology for its review before beginning recharge in WY 2016. The final SOPs will be incorporated into the OM and WSP.

City Water System Operators will receive training on the ASR system, the requirements of the 2015 Permit and the SOPs before recharge begins in WY 2016. In addition, the City may undertake periodic monitoring of the City of Union Gap's Cahalan Well (Union Gap Well 5; Table 3-1, Figure 3-1) to ensure stored water quality remains within Drinking Water standards for downgradient users.

The City also requests the opportunity to consult with Ecology to develop a more readily implementable schedule for sampling source water during recharge, such as sampling after recharging every 1,000 af of water, or sampling every two months.

## 6.0 References

- Golder 2000 Golder Associates Inc. (Golder) 2000. *Technical Compilation: Aquifer Storage and Recovery (ASR) Pilot Test*. Report prepared for the City of Yakima. September 2000.
- Golder 2001 Golder Associates Inc. 2001. *Aquifer Storage and Recovery (ASR) Pilot Test Report*. Prepared for City of Yakima. December 14, 2001.
- Golder 2009 Golder. 2009. *Technical Report on Groundwater Storage Alternatives for Yakima River Basin Storage Assessment*. Ecology Publication Number 07-11-004. June 2009.
- Golder 2014a Golder. 2014. *Programmatic Framework for Aquifer Storage and Recovery in the Ahtanum Valley*. Prepared for the United States Bureau of Reclamation and the Washington Department of Ecology, under Contract No. R08PC10677 ID/IQ. May 2014.
- Golder 2014b Golder. 2014. *City of Yakima Gardner Well ASR Test Report*. Prepared for the United States Bureau of Reclamation and the Washington Department of Ecology, under Contract No. R13PC10006. November 2014.
- Golder 2014c Golder. 2014. *City of Yakima ASR Application R4-34522 Package*. Prepared for the United States Bureau of Reclamation and the Washington Department of Ecology, under Contract No. R08PC10677 ID/IQ. December 2014.
- Golder 2015a Golder. 2015. *Ahtanum Aquifer Storage and Recovery (ASR) Groundwater Monitoring Network – 2014 Data*. Prepared for the United States Bureau of Reclamation and the Washington Department of Ecology, under Contract No. R08PC10677 ID/IQ.
- Golder 2015b Golder. 2015. *Ahtanum Aquifer Storage and Recovery (ASR) All Known, Available, and Reasonable Treatment Analysis (AKART)*. Prepared for the United States Bureau of Reclamation and the Washington Department of Ecology, under Contract No. R08PC10677 ID/IQ. July 2015.
- Reclamation and Ecology 2012 Bureau of Reclamation and Washington State Department of Ecology. 2012. *Four Accounts Analysis*. Technical Memorandum. August 2012. U.S. Department of the Interior, Bureau of Reclamation and Washington State Department of Ecology.



## 7.0 List of Preparers

NAME	BACKGROUND	RESPONSIBILITY
<b>GOLDER ASSOCIATES INC.</b>		
Andrew Austreng, LG	Hydrogeology	Author
Bob Anderson, L.Hg.	Hydrogeology	Co-Author
<b>CITY OF YAKIMA</b>		
Dave Brown	Engineering	Review
Jeff Bond	Operations	Review
Damon Wilkens	Operations	Review
<b>HDR Engineering, Inc.</b>		
Jeff Hansen	Water Quality	Review
<b>Coho Water Resources, LLC</b>		
Chris Pitre, L.Hg.	Hydrogeology	Review

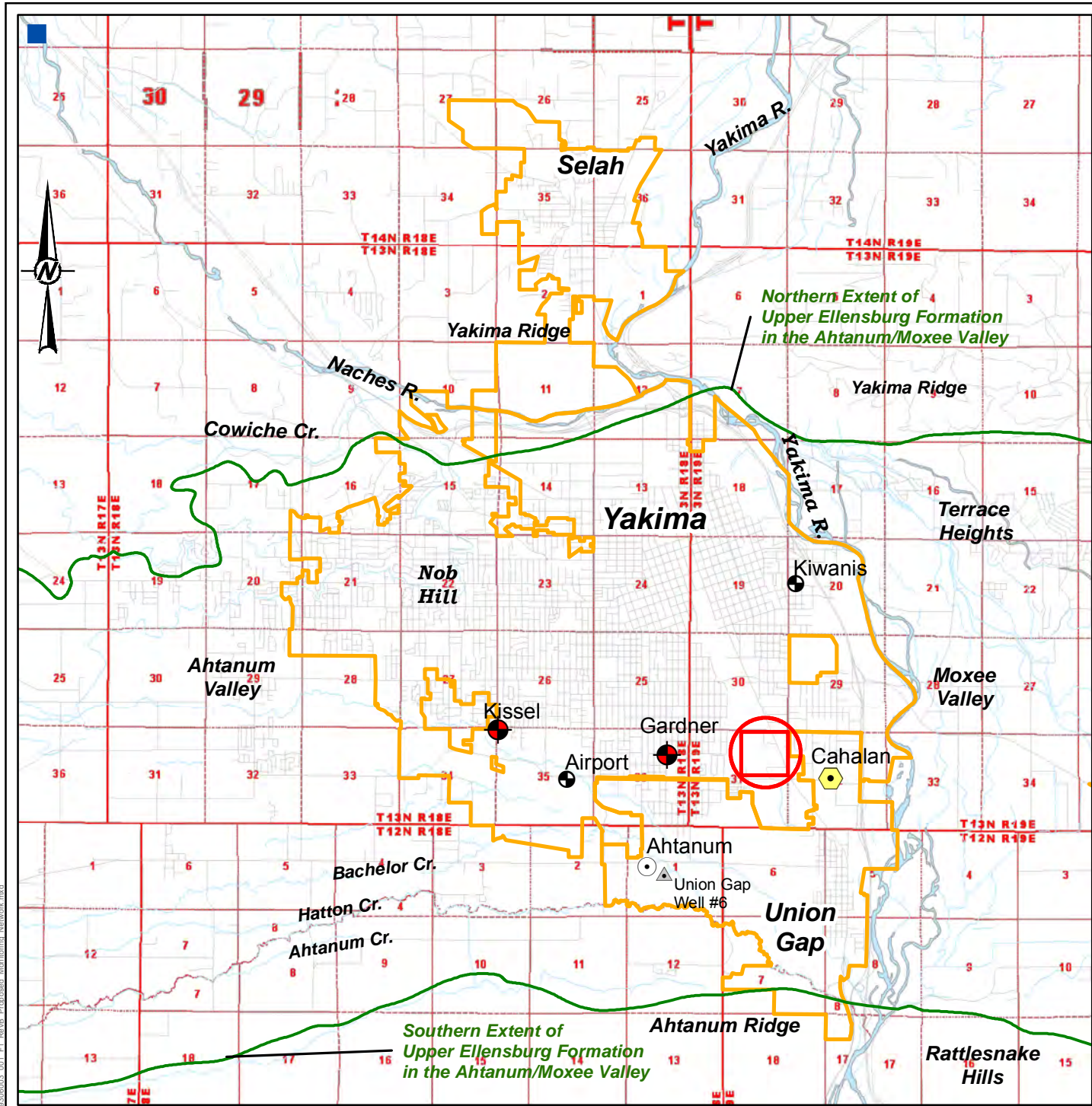
Bob Anderson, L.G, L.Hg.  
Principal, Water Resources

Andrew Austreng, L.G.  
Staff Hydrogeologist

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## Figures

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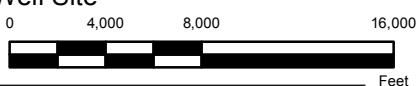
LEGEND

**Well Type**

- Monitoring Well
- Production Well
- Permitted Recharge Well / City Production Well
- ◇ Potential Future Monitoring
- ▲ Union Gap Production Well

**Map Features**

- ▭ City Boundary
- ⊖ Possible Future ASR Well Site
- ▭ Naches River Water
- Treatment Plant



**REFERENCE(S)**

1. WA DEPT OF ECOLOGY
2. WA DEPT OF NATURAL RESOURCES
3. COORDINATE SYSTEM: NAD 1983 STATE PLANE WASHINGTON SOUTH FIPS 4602 FEET

CLIENT  
HDR

PROJECT  
YAKIMA BASIN INTEGRATED PLAN: CITY OF YAKIMA ASR  
YAKIMA COUNTY, WA

TITLE  
**OVERVIEW MAP**

CONSULTANT



YYYY-MM-DD	2015-12-16
DESIGNED	AA
PREPARED	AA
REVIEWED	AA
APPROVED	###

PROJECT NO.  
10369306003

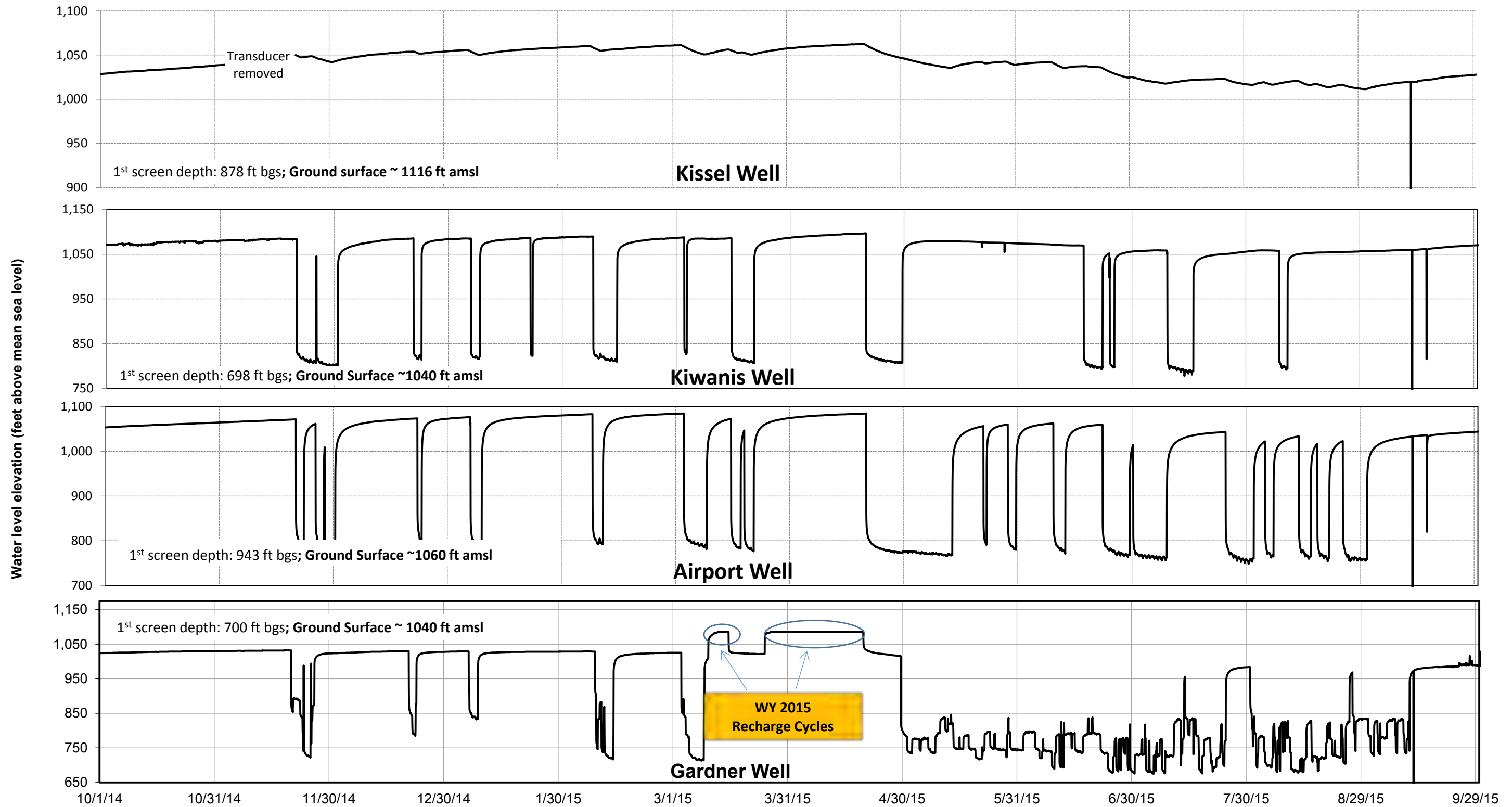
CONTROL  
004

REV.  
B

FIGURE  
**3-1**

PATH: G:\HDR\Volume8\han09\_PROJECTS\1036930600\_003\_ASR\Monitor03\_PROD\CONTOUR\MAXD\RevB\1036930603\_001\_F1\_RevB\_Proposed\_Monitoring\_Network.mxd

1 in IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANS/A



Legend  
 — Water Level

Note : Vertical **scale varies** between wells

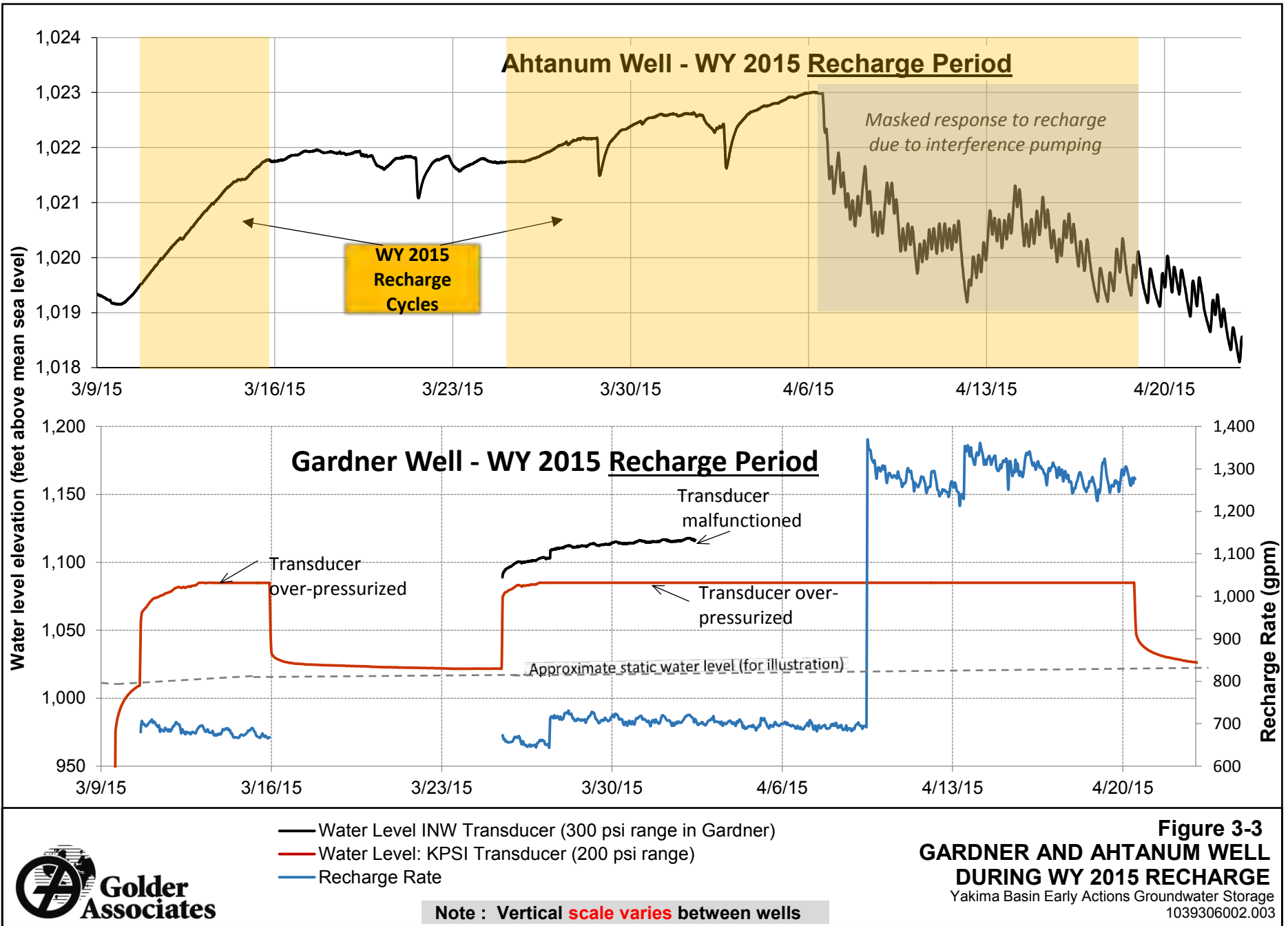
Figure 3-2

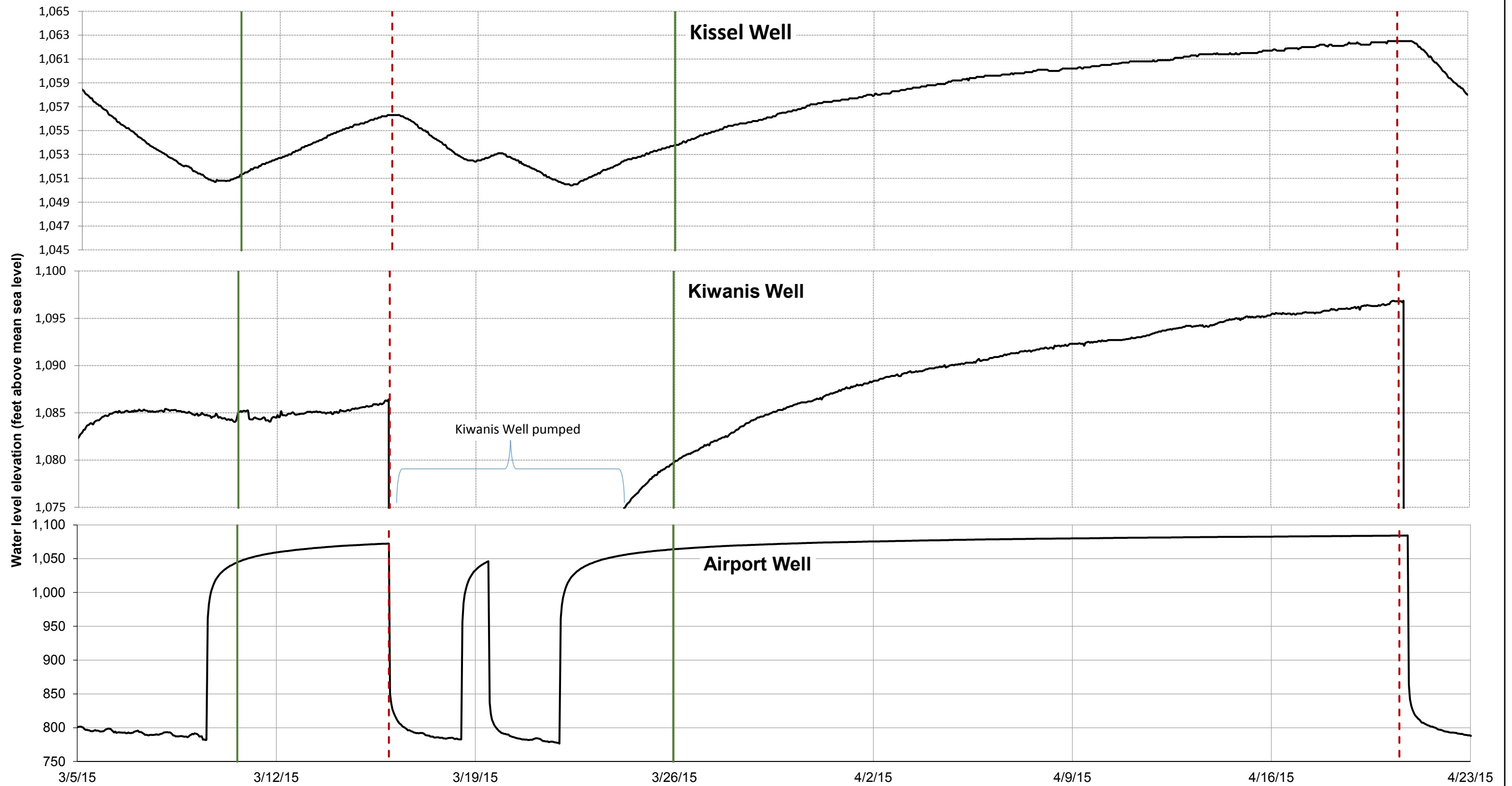
WY 2015 CITY OF YAKIMA PRODUCTION WELL HYDROGRAPHS

Yakima Basin Early Actions Groundwater Storage

1039306002.003







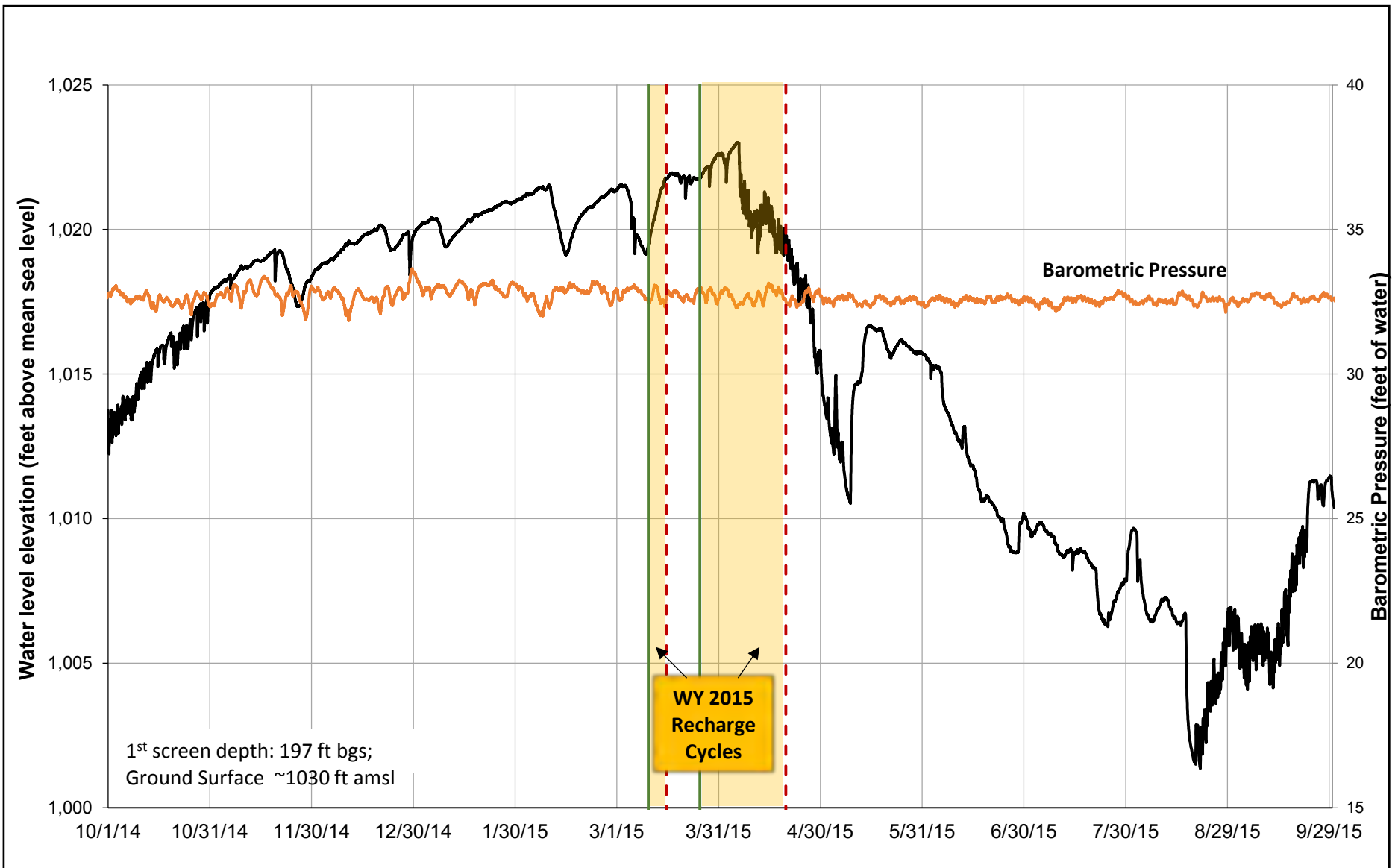
- Water Level
- Start Gardner Well Recharge Cycle
- - - Stop Gardner Well Recharge Cycle

Note : Vertical **scale varies** between wells

**Figure 3-4**  
**CITY PRODUCTION WELLS DURING WY 2015**  
**RECHARGE PERIODS AT THE GARDNER WELL**

Yakima Basin Early Actions Groundwater Storage  
 1039306002.003





1<sup>st</sup> screen depth: 197 ft bgs;  
Ground Surface ~1030 ft amsl

WY 2015  
Recharge  
Cycles

- Water Level
- Barometric Pressure
- Start Gardner Well Recharge Cycle
- - - Stop Gardner Well Recharge Cycle

**Figure 3-5**

**WY 2015 AHTANUM WELL HYDROGRAPH**

Yakima Basin Early Actions Groundwater Storage  
1039306002.003



## **Appendix A**

**Temporary Permit for Reservoir Application No. R4-34552  
(2015 Permit)**

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STATE OF WASHINGTON  
DEPARTMENT OF ECOLOGY

15 W Yakima Ave, Ste 200 • Yakima, WA 98902-3452 • (509) 575-2490

February 24, 2015

City of Yakima Water/Irrigation Division  
ATTN: David Brown, Water/Irrigation Manager  
2301 Fruitvale Blvd  
Yakima, WA 98902

**RE: Temporary Permit for the Beneficial Use of Water for Municipal Supply under Reservoir Application No. R4-34552**

This letter constitutes your TEMPORARY PERMIT under Reservoir Application Number R4-34552. This Temporary Permit authorizes the storage, recovery and beneficial use of water for municipal supply, subject to the provisions included below.

On April 12, 2002, the City of Yakima (City) filed Application No. R4-34552 with the Washington State Department of Ecology (Ecology) for a new reservoir permit. The source of water is a diversion from the Naches River under Acquavella Court Claim Nos. 02110, (A) 02826, (A) 03014, (A) 03015, and (A) 05474, Superseding Certificate No. S4-01141C(A), Superseding Permit No. S4-01141P(B), and Certificate No. G4-00990ALS. The existing diversion structure from the Naches River is located within the SW ¼, Section 13, Township 14N, Range 17E.W.M., Yakima County, Washington. The proposed reservoir is an aquifer in the Upper Ellensburg Formation. The proposed project entails diversion of source water, treatment at the City's water treatment plant, conveyance through the distribution system, injection into the aquifer system, and withdrawal of the stored water by wells at a later date for municipal uses.

The proposed points of injection are the City's Gardner well located approximately 1400 feet south and 1250 feet west of the northeast corner of Section 36, T. 13N., R. 18E.W.M. and the City's Kissel Well located approximately 300 feet east and 100 feet south of the north-west corner of Section 35, Township 13 North, Range 18E.W.M. The associated Yakima County Tax Parcel Nos. are 181336-14033 and 181335-22014. The Gardner Well is located in the northwest corner of Gardner Park in the south end of the City. The Kissel Well is located in the northwest corner of Kissel Park, in the south end of the City. The proposed points of withdrawal are the City's existing domestic groundwater wells (Gardner, Kissel, Airport and Kiwanis).

This Temporary Permit is associated with the Pilot Phase of the City's Aquifer Storage and Recovery (ASR) project. Work to be performed under this authorization is described in the City of Yakima Technical Memorandum, ASR Application R4-34522 Package, prepared by Golder Associates, Inc., dated December, 2014 (ASR Technical Memorandum), as amended below. This project is part of the groundwater storage element of the [Yakima Basin Integrated Water Resource Management Plan](#). Potential benefits of this project include:

- Surface water diverted in winter months can be used to restore the aquifer water balance and build up a reservoir over time, to be drawn upon as needed.
- Capturing winter streamflow for use in summer will help off-set anticipated hydrologic shifts in the timing of runoff resulting from climate change.
- Over time, potentially large volumes of water could be stored underground in the Yakima Valley for far less cost compared to an equivalent surface water storage facility.
- Artificially recharged groundwater is likely to increase Yakima River baseflow year round.



- Yakima River benefits from increased baseflow are likely to accrue above the Parker gage, potentially increasing Total Water Supply Available.
- The City may reduce their diversion of surface water during low flow times and draw upon groundwater stored in the aquifers, allowing more water to pass their diversion on the Naches River during that time.
- Stored groundwater could be pumped and used to augment river flow.
- Additional recharge/recovery wells can be installed to increase the capacity of the system and spread capital costs over time.
- Interties with neighboring water systems may be included in an expanded regional groundwater recharge program.
- Recharged water and associated water seepage to the river may be used to offset or mitigate other water uses.

A significant amount of information has been collected for this project that the City and Ecology are using to evaluate project operation and environmental impacts. This information will be used to prepare a reservoir permit that meets the requirements of Chapter 173-157 WAC, as proposed in Reservoir Permit Application No. R4-34552. This Temporary Permit will provide additional information and allows the City to recharge, store and beneficially use stored groundwater using existing wells as the point of withdrawal while Ecology is reviewing the application.

This TEMPORARY PERMIT is subject to the following conditions:

1. This Temporary Permit becomes effective immediately and will remain in effect until January 1, 2017, unless sooner revoked, revised, or extended by the Department of Ecology.
2. All expenses, risks, and liabilities incurred during operation under this temporary permit shall be borne by the applicant. If senior water right holders, including wells exempt from permitting under RCW 90.44.050, are adversely affected during any portion of the operations the activity shall be terminated immediately.
3. This Temporary Permit may be revoked if the applicant fails to comply with the terms and conditions of this Temporary Permit.
4. The issuance of this Temporary Permit in no way guarantees a reservoir permit will be issued.
5. Withdrawal of stored groundwater for beneficial use may take place from any of the City's existing municipal wells (Gardner, Kissel, Kiwanis and Airport), at rates and volumes described in the ASR Technical Memorandum.
6. No discharge of water to surface waters of the state is authorized in this Temporary Permit. The City shall monitor the discharge of water on the surface to ensure that all discharge water infiltrates prior to reaching surface water. Water quality field parameters shall be observed during recovery of stored water as described in the ASR Technical Memorandum, as amended below. If any water quality problems are observed during any portion of the ASR operations, water quality samples shall be collected for laboratory analyses and/or the activity shall be terminated immediately.
7. The City shall manage recharge operations and proceed with adequate safeguards in place to prevent the injection of water with DBP concentrations higher than ½ the current drinking water limits for DBPs. This includes the requirement that the City continue to follow WA DOH and US EPA guidance and requirements to minimize the formation of disinfection bi-products to the maximum extent reasonable.
8. The anticipated schedule, volume, and rates of recharge, storage, and recovery are as outlined in the ASR Technical Memorandum except as follows: total recharge under this temporary

authorization will not exceed 4,000 gpm or 3,000 AF per year.

9. Water quality samples shall be collected and analyzed for DBP's in accordance with the following table using methods and procedures as described in the Gardner Well ASR Test Quality Assurance Project Plan, prepared by Golder Associates, dated April 10, 2014. Copies of the Quality Assurance Project Plan can be obtained by contacting Ecology's project coordinator. Source water samples shall be collected as near as possible to each recharge well. Storage groundwater samples shall be collected from each well used for recharge. Recovery groundwater samples shall be collected from each well used to recover stored groundwater. Percentages represent recharge volumes within an annual recharge cycle.

Phase	Percent of Recharge Volume	Media
Recharge	0%	Source Water
	50%	Source Water
	100%	Source Water
Storage	1 month after recharge ends	Groundwater
Recovery	0%	Groundwater
	50%	Groundwater
	100%	Groundwater

10. All activities shall comply with the procedures as specified in the ASR Draft Technical Memorandum, prepared by Golder Associates, dated December 2014, except as Ecology may approve in writing prior to any material deviation, and the attached Quality Assurance Project Plan, dated April 10, 2014.
11. Deviations from the program outlined in this temporary authorization shall be documented and request for approval shall be submitted in writing to Ecology's project coordinator.
12. The operator of the system under this authorization shall have a copy of this Temporary Permit and be aware of the parameters and provisions and operate accordingly.
13. All water level, flow rate, temperature, pressure, water quality, and other relevant data collected as part of the Temporary Permit shall be provided to Ecology in electronic format (i.e., spreadsheet) with the reporting requirements as described in Section 7.3 in the Draft ASR Technical Memorandum prepared by Golder Associates, dated December 2014.
14. This Temporary Permit shall in no way excuse the permittee from compliance with any applicable federal, state, or local statutes, ordinances, or regulations including those administered by other programs of the Department of Ecology.
15. The issuance of this Temporary Permit does not convey a right of access to or other right to use land, which you do not legally possess. Obtainment of such a right is a private matter between the applicant and owner of that land.
16. The water sources and/or transmission facilities may not be located entirely upon the land owned by the applicant. Therefore, the applicant is advised that issuance of a permit by the Department of Ecology for appropriation of waters in question does not convey a right of access to, or other right to use, land which the applicant does not legally possess.
17. Ecology personnel, upon presentation of proper credentials, shall have access at reasonable times, to the records of water use and data collection that are kept to meet the above conditions, and to

inspect at reasonable times any measuring device used to meet the above conditions, but only to the extent otherwise allowed by law.

**YOUR RIGHT TO APPEAL**

You have a right to appeal this decision to the Pollution Control Hearings Board (PCHB) within 30 days of the date of receipt of this decision. The appeal process is governed by Chapter 43.21B RCW and Chapter 371-08 WAC. "Date of receipt" is defined in RCW 43.21B.001(2).

To appeal you must do the following within 30 days of the date of receipt of this decision:

- File your appeal and a copy of this decision with the PCHB (see addresses below). Filing means actual receipt by the PCHB during regular business hours.
- Serve a copy of your appeal and this decision on Ecology in paper form - by mail or in person. (See addresses below.) E-mail is not accepted.

You must also comply with other applicable requirements in Chapter 43.21B RCW and Chapter 371-08 WAC.

**ADDRESS AND LOCATION INFORMATION**

Street Addresses	Mailing Addresses
<b>Department of Ecology</b> Attn: Appeals Processing Desk 300 Desmond Drive SE Lacey, WA 98503	<b>Department of Ecology</b> Attn: Appeals Processing Desk PO Box 47608 Olympia, WA 98504-7608
<b>Pollution Control Hearings Board</b> 1111 Israel Road SW Ste 301 Tumwater, WA 98501	<b>Pollution Control Hearings Board</b> PO Box 40903 Olympia, WA 98504-0903

For additional information visit the Environmental Hearings Office Website: <http://www.eho.wa.gov>  
To find laws and agency rules visit the Washington State Legislature Website: <http://www.leg.wa.gov/CodeReviser>

Send a copy of your appeal to:  
Mark Schuppe, Operations Manager  
Office of the Columbia River  
Department of Ecology  
15 W Yakima Ave Ste 200  
Yakima WA 98902-3452

Sincerely,



Mark C. Schuppe  
Operations Manager  
Office of Columbia River

MCS:DN:aa (150212)

Enclosures: Your Right To Be Heard

Certified Mail: 7010 0290 0000 7127 4901

cc: Philip Rigdon, Director, Natural Resources Division, Yakama Nation  
Dave Nazy, Dept. of Ecology

## **Appendix B**

### **Summary of City of Yakima Surface Water Rights Used to Supply Recharge Water**



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**Table B-1: City of Yakima Surface Water Rights Used to Supply Water for Recharge**

Name	Water Right Identifying Information	Point of Diversion	Priority Date	Instantaneous Withdrawal Limit; Qi (cubic feet per second)	Annual Withdrawal Limit; Qa (acre-feet per year)	Season of Use
1902 10 cfs right	Claim No. S4-120529CL	Naches Drinking Water Treatment Plant (NRWTP)	6/30/1902	10	7,260	1/1 through 12/31
Reclamation Contract	Reclamation Contract No. 14-06-W 53	NRWTP & Nelson Bridge Diversion Dam (Nelson Bridge) <sup>1</sup>	5/10/1905	29 (NRWTP) 6.2 (Nelson Bridge)	3,583 <sup>2</sup> (NRWTP) 917 <sup>3</sup> (Nelson Bridge)	Beginning of storage control through 10/15
1951 30 cfs right	Superseding Certificate No. S4-01141C(A)	NRWTP	1/29/1951	29	4,414 <sup>4</sup>	10/16 to beginning of storage control
1951 30 cfs right	Superseding Permit No. S4-01141P(B)		1/29/1951	29 (non-additive to Sup. Cert. S4-01141C(A))	1,986 (additive to Sup. Cert. S4-01141C(A))	10/16 to beginning of storage control
Oak Flats <sup>5</sup>	Certificate No. G4-*00990ALS; GWC 00938-D		10/1/1928	3	2,172 <sup>6</sup>	When not on storage control
Glaspey	<i>Acquavella</i> claim No. 2110	Nelson Bridge	4/1/1869	3	945	4/1 through 10/15
Old Union	<i>Acquavella</i> claim No. 2110		6/30/1878	17.73	2,879 <sup>7</sup>	4/1 through 10/15

<sup>1</sup> The Reclamation contract authorizes the City to divert water at either of the City's two municipal surface water diversions.

<sup>2</sup> The portion of the Reclamation contract right diverted at the NDWTP and Superseding Certificate No. S4-01141C(A) are subject to a combined Qa limit of 7,826 AF.

<sup>3</sup> In 2013, as part of the City's settlement of *Acquavella* claims, the Qa authorized under the portion of the Reclamation contract right diverted at Nelson Bridge was reduced from 1,500 AF.

<sup>4</sup> Superseding Certificate No. S4-01141C(A) and the portion of the Reclamation contract right diverted at the NDWTP are subject to a combined Qa limit of 7,826 AF.

<sup>5</sup> Original Oak Flats right was moved to the NDWTP in 2000.

<sup>6</sup> The authorized Qa for this right assumes year-round diversion at the full Qi. However, due to the season of use limitation imposed during the water right change in 2000, actual Qa available under this right is less than the full authorized quantity. For example, in a year in which Reclamation storage control begins on May 15 and runs through October 15, only 1,267 AF of the authorized 2,172 AF would be available. The actual Qa available in any given year varies depending on the dates on which storage control begins and ends.

<sup>7</sup> In 2013, as part of the City's settlement of *Acquavella* claims, the Qa authorized for the City's Old Union water right was reduced from 5,585 AF.

**Appendix C**  
**Summary of Groundwater Rights for City of Yakima Production**  
**Wells**

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**Table C-1: Summary of Existing Groundwater Rights for City Production Wells**

Well	Associated Water Right	Instantaneous Withdrawal Rate, Qi (gpm)
<b>Currently Installed Wells</b>		
Kissel	CG4-00190-A(A)C (Superseding Certificate); CG4-00190-A(B)P (Superseding Permit); CG4-GWC2851-A@2	2,900
Gardner	CG4-GWC2851-A@2	3,000
Airport	CG4-GWC5318-A	2,800
Kiwanis	CG4-GWC 04646-A (G4-*04954CWRIS)	2,300
<b>Total Currently Installed Wells</b>		<b>11,000</b>

## **Appendix D**

### **WY 2015 Water Quality Results**

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**Table D-1: Summary of DBP Results for WY 2015**

Sample Date (WY 2015)	ASR Cycle	Well Sampled	% of Recharge Volume	Haloacetic Acids (HAAs)			Trihalomethanes		
				Dichloroacetic Acid	Trichloroacetic Acid	Total HAAs (HAA5)	Chloroform	Bromo-dichloro-methane	Total Trihalo-methanes (TTHMs)
11-Mar	Recharge	Gardner	2%	19.7	18.7	38.4	54	3.9	57.9
2-Apr	Recharge		33%	14	17.4	31.4	29.6	1.6	31.2
20-Apr			100%	15.8	16.1	31.9	31.2	1.7	32.9
1-May	Storage		9%	21.3	23	44.3	50.7	2.5	53.2
3-Jun			274%	<1	<1	<1	1.4	<0.5	1.4

1. Represents percent of total volume of recharged water that had been recharged or pumped during production under existing water rights

--' not measured

**Table D-2: Summary of Field Parameters Collected during WY 2015**

Sample Date (WY 2015)	ASR Cycle	% of WY 2015 Recharge Volume <sup>1</sup>	Well Sampled	pH (s.u.)	Specific Conductance (µS/cm)	Temp (°C)	Residual Chlorine (mg/L)
11-Mar	Recharge	2%	Gardner	7.55	109	14.3	0.85
2-Apr	Recharge	33%	Gardner	7.7	80	13	0.83
20-Apr		100%		7.75	83	14	0.85
1-May	Storage	9%		7.67	90	19.6	0.64
3-Jun		274%		7.69	157	--	<0.05

1. Represents percent of total volume of recharged water that had been recharged or pumped during production under existing water rights

--' not measured





Burlington, WA	Corporate Laboratory (a)	1620 S Walnut St	Burlington, WA 98233	800.755.9295 • 360.757.1400
Bellingham, WA	Microbiology (b)	805 Orchard Dr Ste 4	Bellingham, WA 98225	360.715.1212
Portland, OR	Microbiology/Chemistry (c)	9150 SW Pioneer Ct Ste W	Wilsonville, OR 97070	503.682.7802
Corvallis, OR	Microbiology (d)	540 SW Third Street	Corvallis, OR 97333	541.753.4946



FL NELAP E871040

Page 1 of 1

## DISINFECTION BY-PRODUCT COMPOUNDS REPORT

Client Name: City of Yakima  
6390 US Hwy 12  
Yakima, WA 98901

Reference Number: 15-04727  
Project: Gardner ASR

System Name: YAKIMA WATER DIVISION, CITY OF  
System ID Number: 991509  
DOH Source Number: 92 - Distribution Sample  
Multiple Sources:  
Sample Type: A - After treatment  
Sample Purpose: Investigative or Other  
Sample Location: Gardner ASR 0% Rg  
County: Yakima  
Sampled By: DW  
Sampler Phone:

Field ID: Gardner ASR  
Lab Number: 046-10816  
Date Collected: 3/12/15 12:15  
Date Analyzed: 03/18/15  
Report Date: 3/20/15

Approved By: mcs,pdm  
Authorized By:

*LJH*  
Lawrence J Henderson, PhD  
Director of Laboratories, Vice President

DOH#	COMPOUNDS	RESULTS	UNITS	SRL	Trigger	MCL	Method	Analyst	Lab	Batch	Comment
	<b>Halo-Acetic Acids</b>										
411	MONOCHLOROACETIC ACID	ND	ug/L	2			552.3	KAH	A	552_150318	
412	DICHLOROACETIC ACID	19.7	ug/L	1			552.3	KAH	A	552_150318	
413	TRICHLOROACETIC ACID	18.7	ug/L	1			552.3	KAH	A	552_150318	
414	MONOBROMOACETIC ACID	ND	ug/L	1			552.3	KAH	A	552_150318	
415	DIBROMOACETIC ACID	ND	ug/L	1			552.3	KAH	A	552_150318	
416	HAA(5)	38.4	ug/L	1	45	60	552.3	KAH	A	552_150318	
	<b>Other</b>										
417	BROMOCHLOROACETIC ACID	1.3	ug/L	1			552.3	KAH	A	552_150318	
	<b>EPA Regulated - Under Trihalomethanes Program</b>										
27	CHLOROFORM	54.0	ug/L	0.5			524.2	RJK	A	THM_150313	
28	BROMODICHLOROMETHANE	3.9	ug/L	0.5			524.2	RJK	A	THM_150313	
29	CHLORODIBROMOMETHANE	ND	ug/L	0.5			524.2	RJK	A	THM_150313	
30	BROMOFORM	ND	ug/L	0.5			524.2	RJK	A	THM_150313	
31	TOTAL TRIHALOMETHANE	57.9	ug/L		60	80	524.2	RJK	A	THM_150313	

**NOTES:**

If a compound is detected > or = to the State Reporting Level, SRL, specified increased monitoring frequencies may occur per DOH. MCL (Maximum Contaminant Level) maximum permissible level of a contaminant in water established by EPA; Federal Action Levels are 0.015 mg/L for Lead and 1.3 mg/L for Copper. Sodium has a recommended limit of 20 mg/L. A blank MCL value indicates a level is not currently established.

Trigger Level: DOH Drinking Water Response level. Systems with compounds detected in excess of this level are required to take additional samples. Contact your regional DOH office.

ND (Not Detected); indicates that the parameter was not detected above the State Reporting Limit (SRL).

An \* in front of the parameter name indicates it is not NELAP accredited but it is accredited through WSDOH or USEPA Region 10.

Lab - Indicates where parameter was analyzed. See header address for lab code.

These test results meet all the requirements of NELAC, unless otherwise stated in writing, and relate only to these samples.

If you have any questions concerning this report contact Lawrence J Henderson, PhD, Director of Laboratories, Vice President, at the toll-free phone number above.

FORM: cODBP.rpt



## SAMPLE INDEPENDENT QUALITY CONTROL REPORT

Laboratory Fortified Blank

Reference Number: **15-04727**

Report Date: 10/28/15

Batch	Analyte	Result	True Value	Units	Method	% Recovery	QC Limits*	QC Qualifier Type	QC Comment
<b>552_150318</b>	1 BROMOCHLOROACETIC ACID	13.4	12.5	ug/L	552.3	107	70-130	LFB	
	1 DIBROMOACETIC ACID	13.4	12.5	ug/L	552.3	107	70-130	LFB	
	1 DICHLOROACETIC ACID	13.8	12.5	ug/L	552.3	110	70-130	LFB	
	1 MONOBROMOACETIC ACID	12.9	12.5	ug/L	552.3	103	70-130	LFB	
	1 MONOCHLOROACETIC ACID	13.4	12.5	ug/L	552.3	107	70-130	LFB	
	1 TRICHLOROACETIC ACID	13.5	12.5	ug/L	552.3	108	70-130	LFB	
	2 BROMOCHLOROACETIC ACID	22.7	25	ug/L	552.3	91	70-130	LFB	
	2 DIBROMOACETIC ACID	22.6	25	ug/L	552.3	90	70-130	LFB	
	2 DICHLOROACETIC ACID	23.5	25	ug/L	552.3	94	70-130	LFB	
	2 MONOBROMOACETIC ACID	23.5	25	ug/L	552.3	94	70-130	LFB	
	2 MONOCHLOROACETIC ACID	24.6	25	ug/L	552.3	98	70-130	LFB	
	2 TRICHLOROACETIC ACID	22.4	25	ug/L	552.3	90	70-130	LFB	
<b>THM_150313</b>	1 BROMODICHLOROMETHANE	4.6	4	ug/L	524.2	115	70-130	LFB	
	1 BROMOFORM	4.1	4	ug/L	524.2	103	70-130	LFB	
	1 CHLORODIBROMOMETHANE	3.9	4	ug/L	524.2	98	70-130	LFB	
	1 CHLOROFORM	4.5	4	ug/L	524.2	113	70-130	LFB	
	2 BROMODICHLOROMETHANE	0.45	0.4	ug/L	524.2	113	70-130	LFB	
	2 BROMOFORM	0.43	0.4	ug/L	524.2	108	70-130	LFB	
	2 CHLORODIBROMOMETHANE	0.4	0.4	ug/L	524.2	100	70-130	LFB	
	2 CHLOROFORM	0.52	0.4	ug/L	524.2	130	70-130	LFB	

\*Notation:

% Recovery = (Result of Analysis)/(True Value) \* 100

NA = Indicates % Recovery could not be calculated.

Limits are intended for water matrices only. These criteria are for guidance only when reported with soils/solids.



## SAMPLE INDEPENDENT QUALITY CONTROL REPORT

Low-Level Lab Fortified Blank

Reference Number: **15-04727**

Report Date: 10/28/15

Batch	Analyte	Result	True		Method	%	Recovery	Limits*	QC	QC	Comment
			Value	Units					Qualifier	Type	
<b>552_150318</b>	0 BROMOCHLOROACETIC ACID	1.1	1	ug/L	552.3	110	50-150			LLFB	
	0 DIBROMOACETIC ACID	1.0	1	ug/L	552.3	100	50-150			LLFB	
	0 DICHLOROACETIC ACID	1.3	1	ug/L	552.3	130	50-150			LLFB	
	0 MONOBROMOACETIC ACID	1.0	1	ug/L	552.3	100	50-150			LLFB	
	0 MONOCHLOROACETIC ACID	1.4	1	ug/L	552.3	140	50-150			LLFB	
	0 TRICHLOROACETIC ACID	1.1	1	ug/L	552.3	110	50-150			LLFB	
<b>THM_150313</b>	0 BROMODICHLOROMETHANE	0.37	0.4	ug/L	524.2	93	50-150			LLFB	
	0 BROMOFORM	0.38	0.4	ug/L	524.2	95	50-150			LLFB	
	0 CHLORODIBROMOMETHANE	0.34	0.4	ug/L	524.2	85	50-150			LLFB	
	0 CHLOROFORM	0.49	0.4	ug/L	524.2	123	50-150			LLFB	

\*Notation:

% Recovery = (Result of Analysis)/(True Value) \* 100

NA = Indicates % Recovery could not be calculated.

Limits are intended for water matrices only. These criteria are for guidance only when reported with soils/solids.



## SAMPLE INDEPENDENT QUALITY CONTROL REPORT

Method Blank

Reference Number: **15-04727**

Report Date: 10/28/15

Batch	Analyte	Result	True		Method	% Recovery	Limits*	QC	QC	Comment
			Value	Units				Qualifier	Type	
<b>552_150318</b>	0 BROMOCHLOROACETIC ACID	ND		ug/L	552.3	0-0		MB		
	0 DIBROMOACETIC ACID	ND		ug/L	552.3	0-0		MB		
	0 DICHLOROACETIC ACID	ND		ug/L	552.3	0-0		MB		
	0 MONOBROMOACETIC ACID	ND		ug/L	552.3	0-0		MB		
	0 MONOCHLOROACETIC ACID	ND		ug/L	552.3	0-1		MB		
	0 TRICHLOROACETIC ACID	ND		ug/L	552.3	0-0		MB		
<b>THM_150313</b>	0 BROMODICHLOROMETHANE	ND		ug/L	524.2	0-0		MB		
	0 BROMOFORM	ND		ug/L	524.2	0-0		MB		
	0 CHLORODIBROMOMETHANE	ND		ug/L	524.2	0-0		MB		
	0 CHLOROFORM	ND		ug/L	524.2	0-0		MB		

\*Notation:

% Recovery = (Result of Analysis)/(True Value) \* 100

NA = Indicates % Recovery could not be calculated.

Limits are intended for water matrices only. These criteria are for guidance only when reported with soils/solids.



**SAMPLE DEPENDENT  
 QUALITY CONTROL REPORT**  
 Duplicate, Matrix Spike/Matrix Spike Duplicate and Confirmation Result Report

Batch	Sample	Analyte	Result	Duplicate		Units	%RPD	Limits	QC	
				Result					Qualifier	Type
<b>Duplicate</b>										
<b>552_150318</b>										
	11074	BROMOCHLOROACETIC ACID	0.0030	0.0029		mg/L	3.4	0-30		DUP
	11074	DIBROMOACETIC ACID	ND	ND		mg/L	NA	0-30		DUP
	11074	DICHLOROACETIC ACID	0.0202	0.0194		mg/L	4.0	0-30		DUP
	11074	HAA(5)	0.0388	0.0373		mg/L	3.9	0-30		DUP
	11074	MONOBROMOACETIC ACID	ND	ND		mg/L	NA	0-30		DUP
	11074	MONOCHLOROACETIC ACID	ND	ND		mg/L	NA	0-30		DUP
	11074	TRICHLOROACETIC ACID	0.0186	0.0179		mg/L	3.8	0-30		DUP
<b>THM_150313</b>										
	10816	BROMODICHLOROMETHANE	3.9	3.8		ug/L	2.6	0-30		DUP
	10816	BROMOFORM	ND	ND		ug/L	NA	0-30		DUP
	10816	CHLORODIBROMOMETHANE	ND	ND		ug/L	NA	0-30		DUP
	10816	CHLOROFORM	54.0	53.9		ug/L	0.2	0-30		DUP
	10816	TOTAL TRIHALOMETHANE	57.9	57.7		ug/L	0.3	0-30		DUP

%RPD = Relative Percent Difference

NA = Indicates %RPD could not be calculated

Matrix Spike (MS)/Matrix Spike Duplicate (MSD) analyses are used to determine the accuracy (MS) and precision (MSD) of an analytical method in a given sample matrix. Therefore, the usefulness of this report is limited to samples of similar matrices analyzed in the same analytical batch.

Only Duplicate sample with detections are listed in this report

Limits are intended for water matrices only. These criteria are for guidance only when reported with soils/solids.

Batch	Sample	Analyte	Result	Duplicate		Spike Conc	Units	Percent Recovery		Limits*	%RPD	Limits*	QC Qualifier	Type	Comments
				Spike Result	Spike Result			MS	MSD						
<b>Laboratory Fortified Matrix (MS)</b>															
<b>552_150318</b>															
	11165	BROMOCHLOROACETIC ACID	ND	12.5	12.5	ug/L		<b>100</b>	<b>NA</b>	70-130	NA	0-20		LFM	
	11165	DIBROMOACETIC ACID	ND	12.3	12.5	ug/L		<b>98</b>	<b>NA</b>	70-130	NA	0-20		LFM	
	11165	DICHLOROACETIC ACID	31.2	40.0	12.5	ug/L		<b>70</b>	<b>NA</b>	70-130	NA	0-20		LFM	
	11165	MONOBROMOACETIC ACID	ND	12.3	12.5	ug/L		<b>98</b>	<b>NA</b>	70-130	NA	0-20		LFM	
	11165	MONOCHLOROACETIC ACID	2.1	11.9	12.5	ug/L		<b>78</b>	<b>NA</b>	70-130	NA	0-20		LFM	
	11165	TRICHLOROACETIC ACID	15.6	24.6	12.5	ug/L		<b>72</b>	<b>NA</b>	70-130	NA	0-20		LFM	

%RPD = Relative Percent Difference

NA = Indicates %RPD could not be calculated

Matrix Spike (MS)/Matrix Spike Duplicate (MSD) analyses are used to determine the accuracy (MS) and precision (MSD) of an analytical method in a given sample matrix. Therefore, the usefulness of this report is limited to samples of similar matrices analyzed in the same analytical batch.

Only Duplicate sample with detections are listed in this report

Limits are intended for water matrices only. These criteria are for guidance only when reported with soils/solids.

FORM: QC Dependent.rpt



Burlington, WA	Corporate Laboratory (a)	1620 S Walnut St	Burlington, WA 98233	800.755.9295 • 360.757.1400
Bellingham, WA	Microbiology (b)	805 Orchard Dr Ste 4	Bellingham, WA 98225	360.715.1212
Portland, OR	Microbiology/Chemistry (c)	9150 SW Pioneer Ct Ste W	Wilsonville, OR 97070	503.682.7802
Corvallis, OR	Microbiology (d)	540 SW Third Street	Corvallis, OR 97333	541.753.4946



FL NELAP E871040

Page 1 of 1

## DISINFECTION BY-PRODUCT COMPOUNDS REPORT

Client Name: City of Yakima  
6390 US Hwy 12  
Yakima, WA 98901

Reference Number: 15-06210  
Project: ASR

System Name: YAKIMA WATER DIVISION, CITY OF  
System ID Number: 991509  
DOH Source Number: 92 - Distribution Sample  
Multiple Sources:  
Sample Type: A - After treatment  
Sample Purpose: Investigative or Other  
Sample Location: Gardner Well  
County: Yakima  
Sampled By: Damon Wilkens  
Sampler Phone:

Field ID:  
Lab Number: 046-14015  
Date Collected: 4/2/15 11:20  
Date Analyzed: 04/07/15  
Report Date: 4/13/15

Approved By: hy,mcs  
Authorized By:

*Patrick Miller*  
Patrick Miller, MS  
QA Officer

DOH#	COMPOUNDS	RESULTS	UNITS	SRL	Trigger	MCL	Method	Analyst	Lab	Batch	Comment
	<b>Halo-Acetic Acids</b>										
411	MONOCHLOROACETIC ACID	ND	ug/L	2			552.3	PMS	A	552_150407	
412	DICHLOROACETIC ACID	14.0	ug/L	1			552.3	PMS	A	552_150407	
413	TRICHLOROACETIC ACID	17.4	ug/L	1			552.3	PMS	A	552_150407	
414	MONOBROMOACETIC ACID	ND	ug/L	1			552.3	PMS	A	552_150407	
415	DIBROMOACETIC ACID	ND	ug/L	1			552.3	PMS	A	552_150407	
416	HAA(5)	31.4	ug/L	1	45	60	552.3	PMS	A	552_150407	
	<b>Other</b>										
417	BROMOCHLOROACETIC ACID	ND	ug/L	1			552.3	PMS	A	552_150407	
	<b>EPA Regulated - Under Trihalomethanes Program</b>										
27	CHLOROFORM	29.6	ug/L	0.5			524.2	RJK	A	THM_150407	
28	BROMODICHLOROMETHANE	1.6	ug/L	0.5			524.2	RJK	A	THM_150407	
29	CHLORODIBROMOMETHANE	ND	ug/L	0.5			524.2	RJK	A	THM_150407	
30	BROMOFORM	ND	ug/L	0.5			524.2	RJK	A	THM_150407	
31	TOTAL TRIHALOMETHANE	31.2	ug/L		60	80	524.2	RJK	A	THM_150407	

**NOTES:**

If a compound is detected > or = to the State Reporting Level, SRL, specified increased monitoring frequencies may occur per DOH.  
MCL (Maximum Contaminant Level) maximum permissible level of a contaminant in water established by EPA; Federal Action Levels are 0.015 mg/L for Lead and 1.3 mg/L for Copper. Sodium has a recommended limit of 20 mg/L. A blank MCL value indicates a level is not currently established.

Trigger Level: DOH Drinking Water Response level. Systems with compounds detected in excess of this level are required to take additional samples. Contact your regional DOH office.

ND (Not Detected): indicates that the parameter was not detected above the State Reporting Limit (SRL).

An \* in front of the parameter name indicates it is not NELAP accredited but it is accredited through WSDOH or USEPA Region 10.

Lab - Indicates where parameter was analyzed. See header address for lab code.

These test results meet all the requirements of NELAC, unless otherwise stated in writing, and relate only to these samples.

If you have any questions concerning this report contact Patrick Miller, MS, QA Officer, at the toll-free phone number above.

FORM: cODBP.rpt



## SAMPLE INDEPENDENT QUALITY CONTROL REPORT

Laboratory Fortified Blank

Reference Number: **15-06210**

Report Date: 10/28/15

Batch	Analyte	Result	True Value	Units	Method	% Recovery	QC Limits*	QC Qualifier Type	QC Comment
<b>552_150407</b>	1 BROMOCHLOROACETIC ACID	14.9	12.5	ug/L	552.3	119	70-130	LFB	
	1 DIBROMOACETIC ACID	15.8	12.5	ug/L	552.3	126	70-130	LFB	
	1 DICHLOROACETIC ACID	15.6	12.5	ug/L	552.3	125	70-130	LFB	
	1 MONOBROMOACETIC ACID	16.2	12.5	ug/L	552.3	130	70-130	LFB	
	1 MONOCHLOROACETIC ACID	16.1	12.5	ug/L	552.3	129	70-130	LFB	
	1 TRICHLOROACETIC ACID	15.3	12.5	ug/L	552.3	122	70-130	LFB	
	2 BROMOCHLOROACETIC ACID	23.4	25	ug/L	552.3	94	70-130	LFB	
	2 DIBROMOACETIC ACID	26.1	25	ug/L	552.3	104	70-130	LFB	
	2 DICHLOROACETIC ACID	23	25	ug/L	552.3	92	70-130	LFB	
	2 MONOBROMOACETIC ACID	25.9	25	ug/L	552.3	104	70-130	LFB	
	2 MONOCHLOROACETIC ACID	24.9	25	ug/L	552.3	100	70-130	LFB	
	2 TRICHLOROACETIC ACID	24.6	25	ug/L	552.3	98	70-130	LFB	
<b>THM_150407</b>	1 BROMODICHLOROMETHANE	4.2	4	ug/L	524.2	105	70-130	LFB	
	1 BROMOFORM	3.7	4	ug/L	524.2	93	70-130	LFB	
	1 CHLORODIBROMOMETHANE	3.7	4	ug/L	524.2	93	70-130	LFB	
	1 CHLOROFORM	4.1	4	ug/L	524.2	103	70-130	LFB	
	2 BROMODICHLOROMETHANE	27.4	25	ug/L	524.2	110	70-130	LFB	
	2 BROMOFORM	24	25	ug/L	524.2	96	70-130	LFB	
	2 CHLORODIBROMOMETHANE	24.7	25	ug/L	524.2	99	70-130	LFB	
	2 CHLOROFORM	24.4	25	ug/L	524.2	98	70-130	LFB	

\*Notation:

% Recovery = (Result of Analysis)/(True Value) \* 100

NA = Indicates % Recovery could not be calculated.

Limits are intended for water matrices only. These criteria are for guidance only when reported with soils/solids.





## SAMPLE INDEPENDENT QUALITY CONTROL REPORT

Low-Level Lab Fortified Blank

Reference Number: **15-06210**

Report Date: 10/28/15

Batch	Analyte	Result	True		Method	%	Recovery	Limits*	QC	QC	Comment
			Value	Units					Qualifier	Type	
<b>552_150407</b>	0 BROMOCHLOROACETIC ACID	1.2	1	ug/L	552.3	120	50-150			LLFB	
	0 DIBROMOACETIC ACID	1.2	1	ug/L	552.3	120	50-150			LLFB	
	0 DICHLOROACETIC ACID	1.3	1	ug/L	552.3	130	50-150			LLFB	
	0 MONOBROMOACETIC ACID	1.1	1	ug/L	552.3	110	50-150			LLFB	
	0 MONOCHLOROACETIC ACID	0.82	1	ug/L	552.3	82	50-150			LLFB	
	0 TRICHLOROACETIC ACID	1.1	1	ug/L	552.3	110	50-150			LLFB	
<b>THM_150407</b>	0 BROMODICHLOROMETHANE	0.35	0.4	ug/L	524.2	88	50-150			LLFB	
	0 BROMOFORM	0.3	0.4	ug/L	524.2	75	50-150			LLFB	
	0 CHLORODIBROMOMETHANE	0.3	0.4	ug/L	524.2	75	50-150			LLFB	
	0 CHLOROFORM	0.57	0.4	ug/L	524.2	143	50-150			LLFB	

\*Notation:

% Recovery = (Result of Analysis)/(True Value) \* 100

NA = Indicates % Recovery could not be calculated.

Limits are intended for water matrices only. These criteria are for guidance only when reported with soils/solids.



## SAMPLE INDEPENDENT QUALITY CONTROL REPORT

Method Blank

Reference Number: **15-06210**

Report Date: 10/28/15

Batch	Analyte	Result	True Value	Units	Method	% Recovery	Limits*	QC Qualifier	QC Type	Comment
<b>552_150407</b>	0 BROMOCHLOROACETIC ACID	ND		ug/L	552.3	0-0		MB		
	0 DIBROMOACETIC ACID	ND		ug/L	552.3	0-0		MB		
	0 DICHLOROACETIC ACID	ND		ug/L	552.3	0-0		MB		
	0 MONOBROMOACETIC ACID	ND		ug/L	552.3	0-0		MB		
	0 MONOCHLOROACETIC ACID	ND		ug/L	552.3	0-1		MB		
	0 TRICHLOROACETIC ACID	ND		ug/L	552.3	0-0		MB		
<b>THM_150407</b>	0 BROMODICHLOROMETHANE	ND		ug/L	524.2	0-0		MB		
	0 BROMOFORM	ND		ug/L	524.2	0-0		MB		
	0 CHLORODIBROMOMETHANE	ND		ug/L	524.2	0-0		MB		
	0 CHLOROFORM	ND		ug/L	524.2	0-0		MB		

\*Notation:

% Recovery = (Result of Analysis)/(True Value) \* 100

NA = Indicates % Recovery could not be calculated.

Limits are intended for water matrices only. These criteria are for guidance only when reported with soils/solids.



**SAMPLE DEPENDENT  
 QUALITY CONTROL REPORT**  
 Duplicate, Matrix Spike/Matrix Spike Duplicate and Confirmation Result Report

Batch	Sample	Analyte	Result	Duplicate		Units	%RPD	Limits	QC	
				Result					Qualifier	Type
<b>Duplicate</b>										
<b>552_150407</b>										
	13801	BROMOCHLOROACETIC ACID	0.0029	0.0029		mg/L	0.0	0-30		DUP
	13801	DIBROMOACETIC ACID	ND	ND		mg/L	NA	0-30		DUP
	13801	DICHLOROACETIC ACID	0.0221	0.0219		mg/L	0.9	0-30		DUP
	13801	HAA(5)	0.0441	0.0434		mg/L	1.6	0-30		DUP
	13801	MONOBROMOACETIC ACID	ND	ND		mg/L	NA	0-30		DUP
	13801	MONOCHLOROACETIC ACID	ND	ND		mg/L	NA	0-30		DUP
	13801	TRICHLOROACETIC ACID	0.0220	0.0215		mg/L	2.3	0-30		DUP
<b>THM_150407</b>										
	14375	BROMODICHLOROMETHANE	18.4	18.2		ug/L	1.1	0-30		DUP
	14375	BROMOFORM	ND	ND		ug/L	NA	0-30		DUP
	14375	CHLORODIBROMOMETHANE	6.6	6.3		ug/L	4.7	0-30		DUP
	14375	CHLOROFORM	36.7	37.2		ug/L	1.4	0-30		DUP
	14375	TOTAL TRIHALOMETHANE	61.7	61.7		ug/L	0.0	0-30		DUP

%RPD = Relative Percent Difference

NA = Indicates %RPD could not be calculated

Matrix Spike (MS)/Matrix Spike Duplicate (MSD) analyses are used to determine the accuracy (MS) and precision (MSD) of an analytical method in a given sample matrix. Therefore, the usefulness of this report is limited to samples of similar matrices analyzed in the same analytical batch.

Only Duplicate sample with detections are listed in this report

Limits are intended for water matrices only. These criteria are for guidance only when reported with soils/solids.

FORM: QC Dependent.rpt

Batch	Sample	Analyte	Result	Duplicate		Spike Conc	Units	Percent Recovery		Limits*	%RPD	Limits*	QC Qualifier	Type	Comments
				Spike Result	Spike Result			MS	MSD						
<b>Laboratory Fortified Matrix (MS)</b>															
<b>552_150407</b>															
	13323	BROMOCHLOROACETIC ACID	ND	13.1		12.5	mg/L	105	NA	70-130	NA	0-20			LFM
	13323	DIBROMOACETIC ACID	ND	15.3		12.5	mg/L	122	NA	70-130	NA	0-20			LFM
	13323	DICHLOROACETIC ACID	ND	13		12.5	mg/L	104	NA	70-130	NA	0-20			LFM
	13323	MONOBROMOACETIC ACID	ND	14.8		12.5	mg/L	118	NA	70-130	NA	0-20			LFM
	13323	MONOCHLOROACETIC ACID	ND	15		12.5	mg/L	120	NA	70-130	NA	0-20			LFM
	13323	TRICHLOROACETIC ACID	ND	13.5		12.5	mg/L	108	NA	70-130	NA	0-20			LFM

%RPD = Relative Percent Difference

NA = Indicates %RPD could not be calculated

Matrix Spike (MS)/Matrix Spike Duplicate (MSD) analyses are used to determine the accuracy (MS) and precision (MSD) of an analytical method in a given sample matrix. Therefore, the usefulness of this report is limited to samples of similar matrices analyzed in the same analytical batch.

Only Duplicate sample with detections are listed in this report

Limits are intended for water matrices only. These criteria are for guidance only when reported with soils/solids.

FORM: QC Dependent.rpt



Burlington, WA	Corporate Laboratory (a)	1620 S Walnut St	Burlington, WA 98233	800.755.9295 • 360.757.1400
Bellingham, WA	Microbiology (b)	805 Orchard Dr Ste 4	Bellingham, WA 98225	360.715.1212
Portland, OR	Microbiology/Chemistry (c)	9150 SW Pioneer Ct Ste W	Wilsonville, OR 97070	503.682.7802
Corvallis, OR	Microbiology (d)	540 SW Third Street	Corvallis, OR 97333	541.753.4946



FL NELAP E871040

Page 1 of 1

## DISINFECTION BY-PRODUCT COMPOUNDS REPORT

Client Name: City of Yakima  
6390 US Hwy 12  
Yakima, WA 98901

Reference Number: 15-07546  
Project: DBP ASR

System Name: YAKIMA WATER DIVISION, CITY OF  
System ID Number: 991509  
DOH Source Number: 92 - Distribution Sample  
Multiple Sources:  
Sample Type: A - After treatment  
Sample Purpose: Investigative or Other  
Sample Location: Gardner ASR  
County: Yakima  
Sampled By: Damon Wilkens  
Sampler Phone:

Field ID:  
Lab Number: 046-17166  
Date Collected: 4/20/15 12:00  
Date Analyzed: 04/23/15  
Report Date: 4/30/15

Approved By: mcs,rjk  
Authorized By:

*LJH*  
Lawrence J Henderson, PhD  
Director of Laboratories, Vice President

DOH#	COMPOUNDS	RESULTS	UNITS	SRL	Trigger	MCL	Method	Analyst	Lab	Batch	Comment
	<b>Halo-Acetic Acids</b>										
411	MONOCHLOROACETIC ACID	ND	ug/L	2			552.3	KAH	A	552_150423	
412	DICHLOROACETIC ACID	15.8	ug/L	1			552.3	KAH	A	552_150423	
413	TRICHLOROACETIC ACID	16.1	ug/L	1			552.3	KAH	A	552_150423	
414	MONOBROMOACETIC ACID	ND	ug/L	1			552.3	KAH	A	552_150423	
415	DIBROMOACETIC ACID	ND	ug/L	1			552.3	KAH	A	552_150423	
416	HAA(5)	31.9	ug/L	1	45	60	552.3	KAH	A	552_150423	
	<b>Other</b>										
417	BROMOCHLOROACETIC ACID	ND	ug/L	1			552.3	KAH	A	552_150423	
	<b>EPA Regulated - Under Trihalomethanes Program</b>										
27	CHLOROFORM	31.2	ug/L	0.5			524.2	HY	A	THM_150427	
28	BROMODICHLOROMETHANE	1.7	ug/L	0.5			524.2	HY	A	THM_150427	
29	CHLORODIBROMOMETHANE	ND	ug/L	0.5			524.2	HY	A	THM_150427	
30	BROMOFORM	ND	ug/L	0.5			524.2	HY	A	THM_150427	
31	TOTAL TRIHALOMETHANE	32.9	ug/L		60	80	524.2	HY	A	THM_150427	Field Dup: 31.6 ug/L

**NOTES:**

If a compound is detected > or = to the State Reporting Level, SRL, specified increased monitoring frequencies may occur per DOH.  
MCL (Maximum Contaminant Level) maximum permissible level of a contaminant in water established by EPA; Federal Action Levels are 0.015 mg/L for Lead and 1.3 mg/L for Copper. Sodium has a recommended limit of 20 mg/L. A blank MCL value indicates a level is not currently established.

Trigger Level: DOH Drinking Water Response level. Systems with compounds detected in excess of this level are required to take additional samples. Contact your regional DOH office.

ND (Not Detected): indicates that the parameter was not detected above the State Reporting Limit (SRL).

An \* in front of the parameter name indicates it is not NELAP accredited but it is accredited through WSDOH or USEPA Region 10.

Lab - Indicates where parameter was analyzed. See header address for lab code.

These test results meet all the requirements of NELAC, unless otherwise stated in writing, and relate only to these samples.

If you have any questions concerning this report contact Lawrence J Henderson, PhD, Director of Laboratories, Vice President, at the toll-free phone number above.

FORM: cODBP.rpt



## SAMPLE INDEPENDENT QUALITY CONTROL REPORT

Laboratory Fortified Blank

Reference Number: **15-07546**

Report Date: 10/28/15

Batch	Analyte	Result	True Value	Units	Method	% Recovery	QC Limits*	QC Qualifier Type	QC Comment
<b>552_150423</b>	1 BROMOCHLOROACETIC ACID	13.2	12.5	ug/L	552.3	106	70-130	LFB	
	1 DIBROMOACETIC ACID	13.8	12.5	ug/L	552.3	110	70-130	LFB	
	1 DICHLOROACETIC ACID	13.3	12.5	ug/L	552.3	106	70-130	LFB	
	1 MONOBROMOACETIC ACID	11.8	12.5	ug/L	552.3	94	70-130	LFB	
	1 MONOCHLOROACETIC ACID	13.4	12.5	ug/L	552.3	107	70-130	LFB	
	1 TRICHLOROACETIC ACID	12.3	12.5	ug/L	552.3	98	70-130	LFB	
	2 BROMOCHLOROACETIC ACID	24.8	25	ug/L	552.3	99	70-130	LFB	
	2 DIBROMOACETIC ACID	25.9	25	ug/L	552.3	104	70-130	LFB	
	2 DICHLOROACETIC ACID	25.6	25	ug/L	552.3	102	70-130	LFB	
	2 MONOBROMOACETIC ACID	23.8	25	ug/L	552.3	95	70-130	LFB	
	2 MONOCHLOROACETIC ACID	25.9	25	ug/L	552.3	104	70-130	LFB	
	2 TRICHLOROACETIC ACID	23.0	25	ug/L	552.3	92	70-130	LFB	
<b>THM_150427</b>	0 BROMODICHLOROMETHANE	4.5	4	ug/L	524.2	113	70-130	LFB	
	0 BROMOFORM	3.7	4	ug/L	524.2	93	70-130	LFB	
	0 CHLORODIBROMOMETHANE	3.8	4	ug/L	524.2	95	70-130	LFB	
	0 CHLOROFORM	4.5	4	ug/L	524.2	113	70-130	LFB	
	2 BROMODICHLOROMETHANE	7.9	8	ug/L	524.2	99	70-130	LFB	
	2 BROMOFORM	5.9	8	ug/L	524.2	74	70-130	LFB	
	2 CHLORODIBROMOMETHANE	6.0	8	ug/L	524.2	75	70-130	LFB	
	2 CHLOROFORM	7.6	8	ug/L	524.2	95	70-130	LFB	

\*Notation:

% Recovery = (Result of Analysis)/(True Value) \* 100

NA = Indicates % Recovery could not be calculated.

Limits are intended for water matrices only. These criteria are for guidance only when reported with soils/solids.



## SAMPLE INDEPENDENT QUALITY CONTROL REPORT

Low-Level Lab Fortified Blank

Reference Number: **15-07546**

Report Date: 10/28/15

Batch	Analyte	Result	True		Method	%	Recovery	Limits*	QC	QC	Comment
			Value	Units					Qualifier	Type	
<b>552_150423</b>	0 BROMOCHLOROACETIC ACID	1.2	1	ug/L	552.3	120	50-150			LLFB	
	0 DIBROMOACETIC ACID	1.2	1	ug/L	552.3	120	50-150			LLFB	
	0 DICHLOROACETIC ACID	1.4	1	ug/L	552.3	140	50-150			LLFB	
	0 MONOBROMOACETIC ACID	1.2	1	ug/L	552.3	120	50-150			LLFB	
	0 MONOCHLOROACETIC ACID	1.3	1	ug/L	552.3	130	50-150			LLFB	
	0 TRICHLOROACETIC ACID	1.1	1	ug/L	552.3	110	50-150			LLFB	
<b>THM_150427</b>	0 BROMODICHLOROMETHANE	0.43	0.4	ug/L	524.2	108	50-150			LLFB	
	0 BROMOFORM	0.41	0.4	ug/L	524.2	103	50-150			LLFB	
	0 CHLORODIBROMOMETHANE	0.36	0.4	ug/L	524.2	90	50-150			LLFB	
	0 CHLOROFORM	0.57	0.4	ug/L	524.2	143	50-150			LLFB	

\*Notation:

% Recovery = (Result of Analysis)/(True Value) \* 100

NA = Indicates % Recovery could not be calculated.

Limits are intended for water matrices only. These criteria are for guidance only when reported with soils/solids.



## SAMPLE INDEPENDENT QUALITY CONTROL REPORT

Method Blank

Reference Number: **15-07546**

Report Date: 10/28/15

Batch	Analyte	Result	True Value	Units	Method	% Recovery	Limits*	QC Qualifier	QC Type	Comment
<b>552_150423</b>	0 BROMOCHLOROACETIC ACID	ND		ug/L	552.3		0-0		MB	
	0 DIBROMOACETIC ACID	ND		ug/L	552.3		0-0		MB	
	0 DICHLOROACETIC ACID	ND		ug/L	552.3		0-0		MB	
	0 MONOBROMOACETIC ACID	ND		ug/L	552.3		0-0		MB	
	0 MONOCHLOROACETIC ACID	ND		ug/L	552.3		0-1		MB	
	0 TRICHLOROACETIC ACID	ND		ug/L	552.3		0-0		MB	
<b>THM_150427</b>	0 BROMODICHLOROMETHANE	ND		ug/L	524.2		0-0		MB	
	0 BROMOFORM	ND		ug/L	524.2		0-0		MB	
	0 CHLORODIBROMOMETHANE	ND		ug/L	524.2		0-0		MB	
	0 CHLOROFORM	ND		ug/L	524.2		0-0		MB	
	0 TOTAL TRIHALOMETHANE	ND		ug/L	524.2		0-0		MB	

\*Notation:

% Recovery = (Result of Analysis)/(True Value) \* 100

NA = Indicates % Recovery could not be calculated.

Limits are intended for water matrices only. These criteria are for guidance only when reported with soils/solids.





**SAMPLE DEPENDENT  
 QUALITY CONTROL REPORT**  
 Duplicate, Matrix Spike/Matrix Spike Duplicate and Confirmation Result Report

Batch	Sample	Analyte	Result	Duplicate		Units	%RPD	Limits	QC	
				Result					Qualifier	Type
<b>Duplicate</b>										
<b>552_150423</b>										
	16848	BROMOCHLOROACETIC ACID	0.0023	0.0023		mg/L	0.0	0-30		DUP
	16848	DIBROMOACETIC ACID	ND	ND		mg/L	NA	0-30		DUP
	16848	DICHLOROACETIC ACID	0.0114	0.0114		mg/L	0.0	0-30		DUP
	16848	HAA(5)	0.0207	0.0205		mg/L	1.0	0-30		DUP
	16848	MONOBROMOACETIC ACID	ND	ND		mg/L	NA	0-30		DUP
	16848	MONOCHLOROACETIC ACID	ND	ND		mg/L	NA	0-30		DUP
	16848	TRICHLOROACETIC ACID	0.0093	0.0091		mg/L	2.2	0-30		DUP
<b>THM_150427</b>										
	17166	BROMODICHLOROMETHANE	1.7	1.7		ug/L	0.0	0-30		DUP
	17166	BROMOFORM	ND	ND		ug/L	NA	0-30		DUP
	17166	CHLORODIBROMOMETHANE	ND	ND		ug/L	NA	0-30		DUP
	17166	CHLOROFORM	31.2	29.9		ug/L	4.3	0-30		DUP
	17166	TOTAL TRIHALOMETHANE	32.9	31.6		ug/L	4.0	0-30		DUP

%RPD = Relative Percent Difference

NA = Indicates %RPD could not be calculated

Matrix Spike (MS)/Matrix Spike Duplicate (MSD) analyses are used to determine the accuracy (MS) and precision (MSD) of an analytical method in a given sample matrix. Therefore, the usefulness of this report is limited to samples of similar matrices analyzed in the same analytical batch.

Only Duplicate sample with detections are listed in this report

Limits are intended for water matrices only. These criteria are for guidance only when reported with soils/solids.

FORM: QC Dependent.rpt

Batch	Sample	Analyte	Result	Duplicate		Spike Conc	Units	Percent Recovery		Limits*	%RPD	Limits*	QC Qualifier	Type	Comments
				Spike Result	Spike Result			MS	MSD						
<b>Laboratory Fortified Matrix (MS)</b>															
<b>552_150423</b>															
	17166	BROMOCHLOROACETIC ACID	ND	14.3		12.5	ug/L	114	NA	70-130	NA	0-20			LFM
	17166	DIBROMOACETIC ACID	ND	14.4		12.5	ug/L	115	NA	70-130	NA	0-20			LFM
	17166	DICHLOROACETIC ACID	15.8	27.0		12.5	ug/L	90	NA	70-130	NA	0-20			LFM
	17166	MONOBROMOACETIC ACID	ND	12.2		12.5	ug/L	98	NA	70-130	NA	0-20			LFM
	17166	MONOCHLOROACETIC ACID	ND	12.6		12.5	ug/L	101	NA	70-130	NA	0-20			LFM
	17166	TRICHLOROACETIC ACID	16.1	26.7		12.5	ug/L	85	NA	70-130	NA	0-20			LFM

%RPD = Relative Percent Difference

NA = Indicates %RPD could not be calculated

Matrix Spike (MS)/Matrix Spike Duplicate (MSD) analyses are used to determine the accuracy (MS) and precision (MSD) of an analytical method in a given sample matrix. Therefore, the usefulness of this report is limited to samples of similar matrices analyzed in the same analytical batch.

Only Duplicate sample with detections are listed in this report

Limits are intended for water matrices only. These criteria are for guidance only when reported with soils/solids.

FORM: QC Dependent.rpt



Burlington, WA	Corporate Laboratory (a)	1620 S Walnut St	Burlington, WA 98233	800.755.9295 • 360.757.1400
Bellingham, WA	Microbiology (b)	805 Orchard Dr Ste 4	Bellingham, WA 98225	360.715.1212
Portland, OR	Microbiology/Chemistry (c)	9150 SW Pioneer Ct Ste W	Wilsonville, OR 97070	503.682.7802
Corvallis, OR	Microbiology (d)	540 SW Third Street	Corvallis, OR 97333	541.753.4946



FL NELAP E871040

Page 1 of 1

## DISINFECTION BY-PRODUCT COMPOUNDS REPORT

Client Name: City of Yakima  
6390 US Hwy 12  
Yakima, WA 98901

Reference Number: 15-08655  
Project: DBP ASR

System Name: YAKIMA WATER DIVISION, CITY OF  
System ID Number: 991509  
DOH Source Number: 92 - Distribution Sample  
Multiple Sources:  
Sample Type: B - Before treatment  
Sample Purpose: Investigative or Other  
Sample Location: Gardner  
County: Yakima  
Sampled By: Damon Wilkens  
Sampler Phone:

Field ID:  
Lab Number: 046-19800  
Date Collected: 5/1/15 13:00  
Date Analyzed: 05/08/15  
Report Date: 5/18/15

Approved By: mcs,pdm  
Authorized By:

*Patrick Miller*  
Patrick Miller, MS  
QA Officer

DOH#	COMPOUNDS	RESULTS	UNITS	SRL	Trigger	MCL	Method	Analyst	Lab	Batch	Comment
	<b>Halo-Acetic Acids</b>										
411	MONOCHLOROACETIC ACID	ND	ug/L	2			552.3	KAH	A	552_150507	
412	DICHLOROACETIC ACID	21.3	ug/L	1			552.3	KAH	A	552_150507	
413	TRICHLOROACETIC ACID	23.0	ug/L	1			552.3	KAH	A	552_150507	
414	MONOBROMOACETIC ACID	ND	ug/L	1			552.3	KAH	A	552_150507	
415	DIBROMOACETIC ACID	ND	ug/L	1			552.3	KAH	A	552_150507	
416	HAA(5)	44.3	ug/L	1	45	60	552.3	KAH	A	552_150507	
	<b>Other</b>										
417	BROMOCHLOROACETIC ACID	ND	ug/L	1			552.3	KAH	A	552_150507	
	<b>EPA Regulated - Under Trihalomethanes Program</b>										
27	CHLOROFORM	50.7	ug/L	0.5			524.2	HY	A	THM_150511	
28	BROMODICHLOROMETHANE	2.5	ug/L	0.5			524.2	HY	A	THM_150511	
29	CHLORODIBROMOMETHANE	ND	ug/L	0.5			524.2	HY	A	THM_150511	
30	BROMOFORM	ND	ug/L	0.5			524.2	HY	A	THM_150511	
31	TOTAL TRIHALOMETHANE	53.2	ug/L		60	80	524.2	HY	A	THM_150511	Field Dup: 52.6 ug/L

**NOTES:**

If a compound is detected > or = to the State Reporting Level, SRL, specified increased monitoring frequencies may occur per DOH. MCL (Maximum Contaminant Level) maximum permissible level of a contaminant in water established by EPA; Federal Action Levels are 0.015 mg/L for Lead and 1.3 mg/L for Copper. Sodium has a recommended limit of 20 mg/L. A blank MCL value indicates a level is not currently established.

Trigger Level: DOH Drinking Water Response level. Systems with compounds detected in excess of this level are required to take additional samples. Contact your regional DOH office.

ND (Not Detected): indicates that the parameter was not detected above the State Reporting Limit (SRL).

An \* in front of the parameter name indicates it is not NELAP accredited but it is accredited through WSDOH or USEPA Region 10.

Lab - Indicates where parameter was analyzed. See header address for lab code.

These test results meet all the requirements of NELAC, unless otherwise stated in writing, and relate only to these samples.

If you have any questions concerning this report contact Patrick Miller, MS, QA Officer, at the toll-free phone number above.

FORM: cODBP.rpt



## SAMPLE INDEPENDENT QUALITY CONTROL REPORT

Laboratory Fortified Blank

Reference Number: **15-08655**

Report Date: 10/28/15

Batch	Analyte	Result	True Value	Units	Method	% Recovery	QC Limits*	QC Qualifier Type	QC Comment
<b>552_150507</b>	1 BROMOCHLOROACETIC ACID	13.8	12.5	ug/L	552.3	110	70-130	LFB	
	1 DIBROMOACETIC ACID	12.7	12.5	ug/L	552.3	102	70-130	LFB	
	1 DICHLOROACETIC ACID	13.5	12.5	ug/L	552.3	108	70-130	LFB	
	1 MONOBROMOACETIC ACID	14.0	12.5	ug/L	552.3	112	70-130	LFB	
	1 MONOCHLOROACETIC ACID	12.9	12.5	ug/L	552.3	103	70-130	LFB	
	1 TRICHLOROACETIC ACID	14.0	12.5	ug/L	552.3	112	70-130	LFB	
	2 BROMOCHLOROACETIC ACID	28.8	25	ug/L	552.3	115	70-130	LFB	
	2 DIBROMOACETIC ACID	27.6	25	ug/L	552.3	110	70-130	LFB	
	2 DICHLOROACETIC ACID	27.3	25	ug/L	552.3	109	70-130	LFB	
	2 MONOBROMOACETIC ACID	29.9	25	ug/L	552.3	120	70-130	LFB	
	2 MONOCHLOROACETIC ACID	28.1	25	ug/L	552.3	112	70-130	LFB	
	2 TRICHLOROACETIC ACID	28.4	25	ug/L	552.3	114	70-130	LFB	
<b>THM_150511</b>	0 BROMODICHLOROMETHANE	4.2	4	ug/L	524.2	105	70-130	LFB	
	0 BROMOFORM	3.3	4	ug/L	524.2	83	70-130	LFB	
	0 CHLORODIBROMOMETHANE	3.6	4	ug/L	524.2	90	70-130	LFB	
	0 CHLOROFORM	4.1	4	ug/L	524.2	103	70-130	LFB	
	1 BROMODICHLOROMETHANE	31.7	30	ug/L	524.2	106	70-130	LFB	
	1 BROMOFORM	28.9	30	ug/L	524.2	96	70-130	LFB	
	1 CHLORODIBROMOMETHANE	29.9	30	ug/L	524.2	100	70-130	LFB	
	1 CHLOROFORM	31.5	30	ug/L	524.2	105	70-130	LFB	

\*Notation:

% Recovery = (Result of Analysis)/(True Value) \* 100

NA = Indicates % Recovery could not be calculated.

Limits are intended for water matrices only. These criteria are for guidance only when reported with soils/solids.



## SAMPLE INDEPENDENT QUALITY CONTROL REPORT

Low-Level Lab Fortified Blank

Reference Number: **15-08655**

Report Date: 10/28/15

Batch	Analyte	Result	True Value	Units	Method	% Recovery	QC Limits*	QC Qualifier Type	QC Comment
<b>552_150507</b>	0 BROMOCHLOROACETIC ACID	1.4	1	ug/L	552.3	140	50-150	LLFB	
	0 DIBROMOACETIC ACID	1.3	1	ug/L	552.3	130	50-150	LLFB	
	0 DICHLOROACETIC ACID	1.0	1	ug/L	552.3	100	50-150	LLFB	
	0 MONOBROMOACETIC ACID	1.0	1	ug/L	552.3	100	50-150	LLFB	
	0 MONOCHLOROACETIC ACID	1.0	1	ug/L	552.3	100	50-150	LLFB	
	0 TRICHLOROACETIC ACID	0.63	1	ug/L	552.3	63	50-150	LLFB	
<b>THM_150511</b>	0 BROMODICHLOROMETHANE	0.34	0.4	ug/L	524.2	85	50-150	LLFB	
	0 BROMOFORM	0.24	0.4	ug/L	524.2	60	50-150	LLFB	
	0 CHLORODIBROMOMETHANE	0.29	0.4	ug/L	524.2	73	50-150	LLFB	
	0 CHLOROFORM	0.39	0.4	ug/L	524.2	98	50-150	LLFB	

\*Notation:

% Recovery = (Result of Analysis)/(True Value) \* 100

NA = Indicates % Recovery could not be calculated.

Limits are intended for water matrices only. These criteria are for guidance only when reported with soils/solids.



## SAMPLE INDEPENDENT QUALITY CONTROL REPORT

Method Blank

Reference Number: **15-08655**

Report Date: 10/28/15

Batch	Analyte	Result	True Value	Units	Method	% Recovery	Limits*	QC Qualifier	QC Type	Comment
<b>552_150507</b>	0 BROMOCHLOROACETIC ACID	ND		ug/L	552.3	0-0			MB	
	0 DIBROMOACETIC ACID	ND		ug/L	552.3	0-0			MB	
	0 DICHLOROACETIC ACID	ND		ug/L	552.3	0-0			MB	
	0 MONOBROMOACETIC ACID	ND		ug/L	552.3	0-0			MB	
	0 MONOCHLOROACETIC ACID	ND		ug/L	552.3	0-1			MB	
	0 TRICHLOROACETIC ACID	ND		ug/L	552.3	0-0			MB	
<b>THM_150511</b>	0 BROMODICHLOROMETHANE	ND		ug/L	524.2	0-0			MB	
	0 BROMOFORM	ND		ug/L	524.2	0-0			MB	
	0 CHLORODIBROMOMETHANE	ND		ug/L	524.2	0-0			MB	
	0 CHLOROFORM	ND		ug/L	524.2	0-0			MB	
	0 TOTAL TRIHALOMETHANE	ND		ug/L	524.2	0-0			MB	

\*Notation:

% Recovery = (Result of Analysis)/(True Value) \* 100

NA = Indicates % Recovery could not be calculated.

Limits are intended for water matrices only. These criteria are for guidance only when reported with soils/solids.



**SAMPLE DEPENDENT  
 QUALITY CONTROL REPORT**  
 Duplicate, Matrix Spike/Matrix Spike Duplicate and Confirmation Result Report

Batch	Sample	Analyte	Result	Duplicate		Units	%RPD	Limits	QC	
				Result					Qualifier	Type
<b>Duplicate</b>										
<b>552_150507</b>										
	19994	BROMOCHLOROACETIC ACID	ND	ND		ug/L	NA	0-30		DUP
	19994	DIBROMOACETIC ACID	ND	ND		ug/L	NA	0-30		DUP
	19994	DICHLOROACETIC ACID	4.4	4.8		ug/L	8.7	0-30		DUP
	19994	HAA(5)	16.1	17.4		ug/L	7.8	0-30		DUP
	19994	MONOBROMOACETIC ACID	ND	ND		ug/L	NA	0-30		DUP
	19994	MONOCHLOROACETIC ACID	ND	ND		ug/L	NA	0-30		DUP
	19994	TRICHLOROACETIC ACID	11.7	12.6		ug/L	7.4	0-30		DUP
<b>THM_150511</b>										
	19800	BROMODICHLOROMETHANE	2.5	2.4		ug/L	4.1	0-30		DUP
	19800	BROMOFORM	ND	ND		ug/L	NA	0-30		DUP
	19800	CHLORODIBROMOMETHANE	ND	ND		ug/L	NA	0-30		DUP
	19800	CHLOROFORM	50.7	50.2		ug/L	1.0	0-30		DUP
	19800	TOTAL TRIHALOMETHANE	53.2	52.6		ug/L	1.1	0-30		DUP

%RPD = Relative Percent Difference

NA = Indicates %RPD could not be calculated

Matrix Spike (MS)/Matrix Spike Duplicate (MSD) analyses are used to determine the accuracy (MS) and precision (MSD) of an analytical method in a given sample matrix. Therefore, the usefulness of this report is limited to samples of similar matrices analyzed in the same analytical batch.

Only Duplicate sample with detections are listed in this report

Limits are intended for water matrices only. These criteria are for guidance only when reported with soils/solids.

Batch	Sample	Analyte	Result	Duplicate		Spike Conc	Units	Percent Recovery		Limits*	%RPD	Limits*	QC Qualifier	Type	Comments
				Spike Result	Spike Result			MS	MSD						
<b>Laboratory Fortified Matrix (MS)</b>															
<b>552_150507</b>															
	19754	BROMOCHLOROACETIC ACID	ND	13.8		12.5	ug/L	110	NA	70-130	NA	0-20			LFM
	19754	DIBROMOACETIC ACID	ND	11.8		12.5	ug/L	94	NA	70-130	NA	0-20			LFM
	19754	DICHLOROACETIC ACID	ND	13.1		12.5	ug/L	105	NA	70-130	NA	0-20			LFM
	19754	MONOBROMOACETIC ACID	ND	13.2		12.5	ug/L	106	NA	70-130	NA	0-20			LFM
	19754	MONOCHLOROACETIC ACID	ND	13.1		12.5	ug/L	105	NA	70-130	NA	0-20			LFM
	19754	TRICHLOROACETIC ACID	ND	14.0		12.5	ug/L	112	NA	70-130	NA	0-20			LFM

%RPD = Relative Percent Difference

NA = Indicates %RPD could not be calculated

Matrix Spike (MS)/Matrix Spike Duplicate (MSD) analyses are used to determine the accuracy (MS) and precision (MSD) of an analytical method in a given sample matrix. Therefore, the usefulness of this report is limited to samples of similar matrices analyzed in the same analytical batch.

Only Duplicate sample with detections are listed in this report

Limits are intended for water matrices only. These criteria are for guidance only when reported with soils/solids.

FORM: QC Dependent.rpt





Burlington, WA	Corporate Laboratory (a)	1620 S Walnut St	Burlington, WA 98233	800.755.9295 • 360.757.1400
Bellingham, WA	Microbiology (b)	805 Orchard Dr Ste 4	Bellingham, WA 98225	360.715.1212
Portland, OR	Microbiology/Chemistry (c)	9150 SW Pioneer Ct Ste W	Wilsonville, OR 97070	503.682.7802
Corvallis, OR	Microbiology (d)	540 SW Third Street	Corvallis, OR 97333	541.753.4946



FL NELAP E871040

Page 1 of 1

## DISINFECTION BY-PRODUCT COMPOUNDS REPORT

Client Name: City of Yakima  
6390 US Hwy 12  
Yakima, WA 98901

Reference Number: 15-11194  
Project: Gardner ASR

System Name: YAKIMA WATER DIVISION, CITY OF  
System ID Number: 991509  
DOH Source Number: 92 - Distribution Sample  
Multiple Sources:  
Sample Type:  
Sample Purpose: C - Compliance  
Sample Location: Gardner Tap  
County: Yakima  
Sampled By: Damon Wilkens  
Sampler Phone:

Field ID:  
Lab Number: 046-25294  
Date Collected: 6/3/15 10:05  
Date Analyzed: 06/09/15  
Report Date: 6/12/15

Approved By: mcs,pdm  
Authorized By:

*Patrick Miller*  
Patrick Miller, MS  
QA Officer

DOH#	COMPOUNDS	RESULTS	UNITS	SRL	Trigger	MCL	Method	Analyst	Lab	Batch	Comment
	<b>Halo-Acetic Acids</b>										
411	MONOCHLOROACETIC ACID	ND	ug/L	2			552.3	PMS	A	552_150609	
412	DICHLOROACETIC ACID	ND	ug/L	1			552.3	PMS	A	552_150609	
413	TRICHLOROACETIC ACID	ND	ug/L	1			552.3	PMS	A	552_150609	
414	MONOBROMOACETIC ACID	ND	ug/L	1			552.3	PMS	A	552_150609	
415	DIBROMOACETIC ACID	ND	ug/L	1			552.3	PMS	A	552_150609	
416	HAA(5)	ND	ug/L	1	45	60	552.3	PMS	A	552_150609	
	<b>Other</b>										
417	BROMOCHLOROACETIC ACID	ND	ug/L	1			552.3	PMS	A	552_150609	
	<b>EPA Regulated - Under Trihalomethanes Program</b>										
27	CHLOROFORM	1.4	ug/L	0.5			524.2	HY	A	THM_150604	
28	BROMODICHLOROMETHANE	ND	ug/L	0.5			524.2	HY	A	THM_150604	
29	CHLORODIBROMOMETHANE	ND	ug/L	0.5			524.2	HY	A	THM_150604	
30	BROMOFORM	ND	ug/L	0.5			524.2	HY	A	THM_150604	
31	TOTAL TRIHALOMETHANE	1.4	ug/L		60	80	524.2	HY	A	THM_150604	Field Dup: 1.4 ug/L

**NOTES:**

If a compound is detected > or = to the State Reporting Level, SRL, specified increased monitoring frequencies may occur per DOH.  
MCL (Maximum Contaminant Level) maximum permissible level of a contaminant in water established by EPA; Federal Action Levels are 0.015 mg/L for Lead and 1.3 mg/L for Copper. Sodium has a recommended limit of 20 mg/L. A blank MCL value indicates a level is not currently established.

Trigger Level: DOH Drinking Water Response level. Systems with compounds detected in excess of this level are required to take additional samples. Contact your regional DOH office.

ND (Not Detected); indicates that the parameter was not detected above the State Reporting Limit (SRL).

An \* in front of the parameter name indicates it is not NELAP accredited but it is accredited through WSDOH or USEPA Region 10.

Lab - Indicates where parameter was analyzed. See header address for lab code.

These test results meet all the requirements of NELAC, unless otherwise stated in writing, and relate only to these samples.

If you have any questions concerning this report contact Patrick Miller, MS, QA Officer, at the toll-free phone number above.

FORM: cODBP.rpt



## SAMPLE INDEPENDENT QUALITY CONTROL REPORT

Laboratory Fortified Blank

Reference Number: **15-11194**

Report Date: 10/28/15

Batch	Analyte	Result	True		Method	% Recovery	Limits*	QC	QC	Comment
			Value	Units				Qualifier	Type	
<b>552_150609</b>	1 BROMOCHLOROACETIC ACID	14.8	12.5	ug/L	552.3	118	70-130		LFB	
	1 DIBROMOACETIC ACID	15.2	12.5	ug/L	552.3	122	70-130		LFB	
	1 DICHLOROACETIC ACID	14.9	12.5	ug/L	552.3	119	70-130		LFB	
	1 MONOBROMOACETIC ACID	13.2	12.5	ug/L	552.3	106	70-130		LFB	
	1 MONOCHLOROACETIC ACID	13.7	12.5	ug/L	552.3	110	70-130		LFB	
	1 TRICHLOROACETIC ACID	13.8	12.5	ug/L	552.3	110	70-130		LFB	
	2 BROMOCHLOROACETIC ACID	25.6	25	ug/L	552.3	102	70-130		LFB	
	2 DIBROMOACETIC ACID	26.7	25	ug/L	552.3	107	70-130		LFB	
	2 DICHLOROACETIC ACID	26.0	25	ug/L	552.3	104	70-130		LFB	
	2 MONOBROMOACETIC ACID	23.8	25	ug/L	552.3	95	70-130		LFB	
	2 MONOCHLOROACETIC ACID	25.1	25	ug/L	552.3	100	70-130		LFB	
	2 TRICHLOROACETIC ACID	23.6	25	ug/L	552.3	94	70-130		LFB	
<b>THM_150604</b>	0 BROMODICHLOROMETHANE	2.9	4	ug/L	524.2	73	70-130		LFB	
	0 BROMOFORM	3.0	4	ug/L	524.2	75	70-130		LFB	
	0 CHLORODIBROMOMETHANE	3.0	4	ug/L	524.2	75	70-130		LFB	
	0 CHLOROFORM	2.9	4	ug/L	524.2	73	70-130		LFB	
	2 BROMODICHLOROMETHANE	33.6	30	ug/L	524.2	112	70-130		LFB	
	2 BROMOFORM	30.3	30	ug/L	524.2	101	70-130		LFB	
	2 CHLORODIBROMOMETHANE	32.2	30	ug/L	524.2	107	70-130		LFB	
	2 CHLOROFORM	34.5	30	ug/L	524.2	115	70-130		LFB	

\*Notation:

% Recovery = (Result of Analysis)/(True Value) \* 100

NA = Indicates % Recovery could not be calculated.

Limits are intended for water matrices only. These criteria are for guidance only when reported with soils/solids.



## SAMPLE INDEPENDENT QUALITY CONTROL REPORT

Low-Level Lab Fortified Blank

Reference Number: **15-11194**

Report Date: 10/28/15

Batch	Analyte	Result	True		Method	%	Recovery	Limits*	QC	QC	Comment
			Value	Units					Qualifier	Type	
<b>552_150609</b>	0 BROMOCHLOROACETIC ACID	1.5	1	ug/L	552.3	150	50-150			LLFB	
	0 DIBROMOACETIC ACID	1.3	1	ug/L	552.3	130	50-150			LLFB	
	0 DICHLOROACETIC ACID	1.5	1	ug/L	552.3	150	50-150			LLFB	
	0 MONOBROMOACETIC ACID	1.3	1	ug/L	552.3	130	50-150			LLFB	
	0 MONOCHLOROACETIC ACID	1.3	1	ug/L	552.3	130	50-150			LLFB	
	0 TRICHLOROACETIC ACID	1.3	1	ug/L	552.3	130	50-150			LLFB	
<b>THM_150604</b>	0 BROMODICHLOROMETHANE	0.24	0.4	ug/L	524.2	60	50-150			LLFB	
	0 BROMOFORM	0.23	0.4	ug/L	524.2	58	50-150			LLFB	
	0 CHLORODIBROMOMETHANE	0.23	0.4	ug/L	524.2	58	50-150			LLFB	
	0 CHLOROFORM	0.24	0.4	ug/L	524.2	60	50-150			LLFB	

\*Notation:

% Recovery = (Result of Analysis)/(True Value) \* 100

NA = Indicates % Recovery could not be calculated.

Limits are intended for water matrices only. These criteria are for guidance only when reported with soils/solids.



## SAMPLE INDEPENDENT QUALITY CONTROL REPORT

Method Blank

Reference Number: **15-11194**

Report Date: 10/28/15

Batch	Analyte	Result	True Value	Units	Method	% Recovery	Limits*	QC Qualifier	QC Type	Comment
<b>552_150609</b>	0 BROMOCHLOROACETIC ACID	ND		ug/L	552.3	0-0		MB		
	0 DIBROMOACETIC ACID	ND		ug/L	552.3	0-0		MB		
	0 DICHLOROACETIC ACID	ND		ug/L	552.3	0-0		MB		
	0 MONOBROMOACETIC ACID	ND		ug/L	552.3	0-0		MB		
	0 MONOCHLOROACETIC ACID	ND		ug/L	552.3	0-1		MB		
	0 TRICHLOROACETIC ACID	ND		ug/L	552.3	0-0		MB		
<b>THM_150604</b>	0 BROMODICHLOROMETHANE	ND		ug/L	524.2	0-0		MB		
	0 BROMOFORM	ND		ug/L	524.2	0-0		MB		
	0 CHLORODIBROMOMETHANE	ND		ug/L	524.2	0-0		MB		
	0 CHLOROFORM	ND		ug/L	524.2	0-0		MB		
	0 TOTAL TRIHALOMETHANE	ND		ug/L	524.2	0-0		MB		

\*Notation:

% Recovery = (Result of Analysis)/(True Value) \* 100

NA = Indicates % Recovery could not be calculated.

Limits are intended for water matrices only. These criteria are for guidance only when reported with soils/solids.



**SAMPLE DEPENDENT  
 QUALITY CONTROL REPORT**  
 Duplicate, Matrix Spike/Matrix Spike Duplicate and Confirmation Result Report

Batch	Sample	Analyte	Result	Duplicate		Units	%RPD	Limits	QC	
				Result					Qualifier	Type
<b>Duplicate</b>										
<b>552_150609</b>										
	24152	BROMOCHLOROACETIC ACID	0.0038	0.0038		mg/L	0.0	0-30		DUP
	24152	DIBROMOACETIC ACID	0.0014	0.0014		mg/L	0.0	0-30		DUP
	24152	DICHLOROACETIC ACID	0.0076	0.0075		mg/L	1.3	0-30		DUP
	24152	HAA(5)	0.0136	0.0134		mg/L	1.5	0-30		DUP
	24152	MONOBROMOACETIC ACID	ND	ND		mg/L	NA	0-30		DUP
	24152	MONOCHLOROACETIC ACID	ND	ND		mg/L	NA	0-30		DUP
	24152	TRICHLOROACETIC ACID	0.0046	0.0045		mg/L	2.2	0-30		DUP
<b>THM_150604</b>										
	24939	BROMODICHLOROMETHANE	2.3	2.1		ug/L	9.1	0-30		DUP
	24939	BROMOFORM	ND	ND		ug/L	NA	0-30		DUP
	24939	CHLORODIBROMOMETHANE	1.6	1.5		ug/L	6.5	0-30		DUP
	24939	CHLOROFORM	3.1	2.5		ug/L	21.4	0-30		DUP
	24939	TOTAL TRIHALOMETHANE	7.0	6.1		ug/L	13.7	0-30		DUP
	25294	BROMODICHLOROMETHANE	ND	ND		ug/L	NA	0-30		DUP
	25294	BROMOFORM	ND	ND		ug/L	NA	0-30		DUP
	25294	CHLORODIBROMOMETHANE	ND	ND		ug/L	NA	0-30		DUP
	25294	CHLOROFORM	1.4	1.4		ug/L	0.0	0-30		DUP
	25294	TOTAL TRIHALOMETHANE	1.4	1.4		ug/L	0.0	0-30		DUP

%RPD = Relative Percent Difference

NA = Indicates %RPD could not be calculated

Matrix Spike (MS)/Matrix Spike Duplicate (MSD) analyses are used to determine the accuracy (MS) and precision (MSD) of an analytical method in a given sample matrix. Therefore, the usefulness of this report is limited to samples of similar matrices analyzed in the same analytical batch.

Only Duplicate sample with detections are listed in this report

Limits are intended for water matrices only. These criteria are for guidance only when reported with soils/solids.

Batch	Sample	Analyte	Result	Duplicate		Spike Conc	Units	Percent Recovery		Limits*	%RPD	Limits*	QC Qualifier	Type	Comments
				Spike Result	Spike Result			MS	MSD						
<b>Laboratory Fortified Matrix (MS)</b>															
<b>552_150609</b>															
	25228	BROMOCHLOROACETIC ACID	ND	0.0140		0.0125	mg/L	112	NA	70-130	NA	0-20			LFM
	25228	DIBROMOACETIC ACID	ND	0.0153		0.0125	mg/L	122	NA	70-130	NA	0-20			LFM
	25228	DICHLOROACETIC ACID	ND	0.0148		0.0125	mg/L	118	NA	70-130	NA	0-20			LFM
	25228	MONOBROMOACETIC ACID	ND	0.0133		0.0125	mg/L	106	NA	70-130	NA	0-20			LFM
	25228	MONOCHLOROACETIC ACID	ND	0.0134		0.0125	mg/L	107	NA	70-130	NA	0-20			LFM
	25228	TRICHLOROACETIC ACID	ND	0.0136		0.0125	mg/L	109	NA	70-130	NA	0-20			LFM

%RPD = Relative Percent Difference

NA = Indicates %RPD could not be calculated

Matrix Spike (MS)/Matrix Spike Duplicate (MSD) analyses are used to determine the accuracy (MS) and precision (MSD) of an analytical method in a given sample matrix. Therefore, the usefulness of this report is limited to samples of similar matrices analyzed in the same analytical batch.

Only Duplicate sample with detections are listed in this report

Limits are intended for water matrices only. These criteria are for guidance only when reported with soils/solids.

FORM: QC Dependent.rpt

**Appendix Q.**  
**ASR Standard Operating Procedures**

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# ASR OPERATIONS AND MAINTENANCE PROCEDURES FOR GARDNER WELL

## 1 INTRODUCTION

The City of Yakima (City) is qualifying an Aquifer Storage and Recharge (ASR) program to enhance and/or supplement municipal drinking water supply during drought and other surface water curtailment. The source water for recharge is treated drinking water from the city's Naches River Water Treatment Plant (WTP) and supplied to the recharge well(s) through the distribution main network. This document will serve as a guide for City personnel to operate and manage this process. References will be made to Department of Ecology 2015-2017 permit (Permit), and Golder Associates Technical Memorandum: City of Yakima ASR Application R4-34552 Package (Tech Memo). It is understood this document fulfills the City's obligation as cited in Sec. 5.4 of City of Yakima Annual Report on ASR Operations, WY2015, and to provide guidance for WY (water year) 2016 and beyond. This document will be amended and refined as more information and requirements become available, and will be incorporated into the WTP Operations and Maintenance Manual.

## 2 INITIATION OF RECHARGE

Prior to the beginning of any recharge two things must be known: the water quality of distribution supply in terms of DBP's, and how much the City intends to recharge into the aquifer.

Informational DBP samples must be collected from the well distribution piping in the pump room and results must be returned before the recharge phase can be started. The ASR sample tap is located just "upstream" from the ASR piping isolation gate valve. Currently, Edge Analytical in Burlington is our accredited lab for these samples. Turnaround times vary between one and three weeks being typical. The sample consists of two 40 ml VOA's for Total Trihalomethanes (TTHM's), and two 125 ml bottles for Haloacetic Acids (HAA5's). Directions for sampling and shipping are provided by Edge with every sample kit. These kits and informational samples are separate and distinct from the compliance monitoring for Stage 2 D/DBPR, but the sampling procedure is the same. DBP sample kits are pre-ordered and are delivered to the WTP.

The distribution source water cannot exceed 40 ppb TTHM or 30 ppb HAA5 prior to initiation of recharge. These concentrations represent 50% of the MCL's (Maximum Contaminant Limit) for each parameter. While these concentrations do exceed groundwater limits, an Overriding Public Interest ruling will allow recharge at these values.

The volume of intended recharge must be known in order to ensure sampling can occur as close as possible to 50% of the recharge quantity. Three recharge samples are required to comply with the Permit: Initiation, 50%, and Termination. Initiation and termination are self-defined.

The 50% sample can be difficult to pinpoint due to operational conditions being unpredictable. For example, the City may intend to recharge 1000 acre-feet (AF) but due to unforeseen circumstances may not be possible. The strategy as it now stands is to sample more often than necessary; either by regular elapsed times or by trying to cluster a group before the intended midway point as defined by volume recharged and conditional forecasting. In this example, if everything went perfectly, there will always be a sample taken at 500 AF.

The City intends to work with Ecology to refine this sampling process.

## 2.1 INSTRUCTION FOR RECHARGE INITIATION

If the DBP samples come back below the 40/30 ppb threshold, City staff can begin recharge. The first step is to flush the distribution system. Coordinate with Water Distribution to obtain a discharge flow diffuser. Close the street main valve located in the southeast corner of the intersection of Pierce and Cornell (vPC). Closing vPC ensures flush flow from Washington Avenue. Attach a sufficient length of firehose(s) to the fire hydrant located on Cornell to the west of the wellhouse to reach the sanitary pit on the north side of the wellhouse. Attach a flow diffuser to the end of the firehose(s) and open the hydrant to flush the distribution main for one hour. Notify the wastewater treatment plant (WWTP), 575-6077, that there will be ~30,000 gallon discharge of drinking water at this location. When flush is complete slowly close the hydrant and roll hose(s) to store in wellhouse. Leave vPC closed.

Enter the stored ASR flow volume from the ASR flowmeter on the ASR logsheet. We may now begin the actual recharge. This is accomplished by opening the two recharge piping isolation gate valves. Once the gates are open flow is controlled with the Rotork actuator / butterfly valve. This is an electric motor actuated valve with remote and local controls. At this time local control is mandated due to the actuation speed of the valve and the uncertainty of the remote control operation and response. Use the local control to achieve the desired flow rate. The flow is totalized in the SCADA system so daily visits to the wellhouse are not required.

## 3 MONITORING AND MAINTENANCE DURING RECHARGE

In the event of a DBP sample being above 40/30 ppb while in recharge, the process must stop and measures taken to get the distribution system supply near the recharge well back below the threshold. Only after a sample comes back below 40/30 ppb can recharge resume. The samples taken to determine 40/30 ppb in order to resume a recharge are not considered another initiation sample or other permit-required sample, although the procedure is the same: ASR tap, two week lag time, etc.

During recharge the City staff will monitor the SCADA system for unusual accumulation of backpressure head (bph) in the well which would indicate clogging. For example, the recharge flow is 1000 gpm, the bph is 500', and has been steady for several days. City staff observe a sudden and sustained jump to 550' with either no change or a loss of recharge flow. Staff are then advised to stop recharge and backflush. A slow and steady rise of bph accompanied by a

loss in recharge flow may or may not be interpreted as a blockage in need of backflush. A sudden rise in bph as a result of a recharge flow increase is not an indicator of blockage. A significant closing of the Rotork valve that does not result in a recharge flow decrease or decrease in bph may be interpreted as a blockage in need of backflush.

### 3.1 BACKFLUSH PROCEDURE

Stop the flow of recharge by closing the upstream gate valve. The reason we use the upstream gate valve first is to ensure a water hammer does not occur. Then close the Rotork valve. Then close the downstream gate valve. Open vPC. Start the well motor as per standard well start-up procedure and run in production for length of time and flow rate determined by City staff, e.g. 1500 gpm for 4 hours. There may or may not be any sign that blockage is cleared. Only by re-starting recharge will it be known if backflush was successful. A successful backflush is indicated by a lower bph at previous recharge flow. To re-start the recharge after a backflush once again close vPC and repeat section 2.1. There is no sampling requirement for this backflush procedure. Water produced from a backflush is not deducted from the volume previously recharged but is considered production flow.

## 4 TERMINATING RECHARGE

Recharge termination consists of sample acquisition from the ASR tap, closing the upstream gate valve, closing the Rotork valve, closing the downstream gate valve, and opening vPC. Recharge termination can be the result of recharge volume limit, operational necessity, or maintenance necessity.

Once recharge termination is confirmed there is ideally a minimum 30 day storage period to be observed. This allows the water time to react chemically in the ground. This storage period may be cut short due to operational necessity.

## 5 RECOVERY

After the storage phase has been determined sufficient, recovery may begin. This is simply defined as turning the well on as per standard start-up procedure. Within one hour of start-up an informational DBP sample must be collected from the Recovery tap. This sample tap is located on the well discharge piping in the pump room just “upstream” from the Cl<sub>2</sub> injection. There are three samples to collect: 0%, 50% and 100%. These values correlate to the volume of water supplied during recharge. As in the previous example of 1000 AF, the 50% sample will be when 500 AF are recovered. 0% and 100% are self-defined.

## 6 SAMPLE SCHEDULE TABLE

This is the sampling schedule from the Permit. The City intends to work with Ecology to refine this schedule as operational experience reveals efficiencies.

Phase	Percent of Recharge Volume	Media
Recharge	0%	Source Water
	50%	
	100%	
Storage	1 month after recharge ends	Groundwater
Recovery	0%	Groundwater
	50%	
	100%	

## 7 LABORATORY CONTACTS

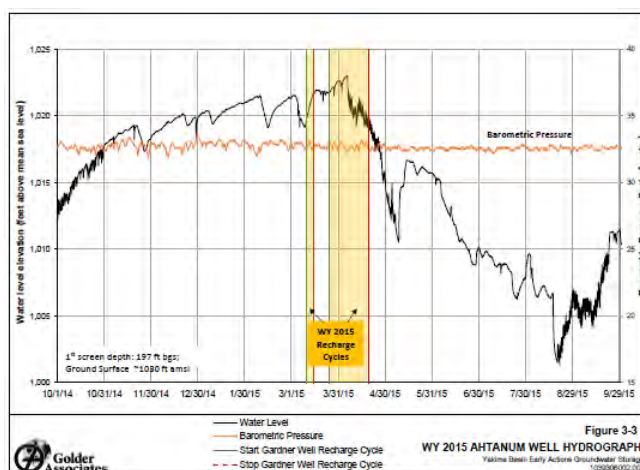
Cascade Analytical Inc. 1008 W Ahtanum Rd. Union Gap, WA 98903 (509) 452-7707

Edge Analytical Laboratories 1620 S Walnut St. Burlington, WA 98233 (800) 755-9295

## 8 REPORTING

By the end of each calendar year, the City will provide Ecology with an annual report that summarizes the WY ending September 30<sup>th</sup>. This summary report will provide operations, sampling and results, and hydrographs of all City wells and monitoring wells.

Mandatory information includes data for DBP's, instantaneous flow rates in both recharge and recovery / production modes, total volumes in recharge and recovery / production modes, groundwater levels in all City wells in addition to Ahtanum Youth Park (AYP) monitoring well, and downgradient informational DBP samples taken from well #5 (Cahalan) in Union Gap. The following is an example of a hydrograph:



Water recovered will be accounted for according to the following table from the Tech Memo:

Table 7-2. Suggested Recoverable Quantity Schedule and Model Results

	Year Recovered									
	1	2	3	4	5	6	7	8	9	10
<b>Suggested Percent Directly Recoverable Quantity Remaining From Recharge</b>										
Year 1 recharge	90%	80%	70%	60%	50%	40%	30%	20%	10%	0%
Year 2 recharge	-	90%	80%	70%	60%	50%	40%	30%	20%	10%
Year 3 recharge	-	-	90%	80%	70%	60%	50%	40%	30%	20%
Year 4 recharge	-	-	-	90%	80%	70%	60%	50%	40%	30%
Year 5 recharge	-	-	-	-	90%	80%	70%	60%	50%	40%
Year 6 recharge	-	-	-	-	-	90%	80%	70%	60%	50%
Year 7 recharge	-	-	-	-	-	-	90%	80%	70%	60%
Year 8 recharge	-	-	-	-	-	-	-	90%	80%	70%
Year 9 recharge	-	-	-	-	-	-	-	-	90%	80%
Year 10 recharge	-	-	-	-	-	-	-	-	-	90%
Recommended weighted average	90%	85%	80%	75%	70%	65%	60%	55%	50%	45%
Model results (Golder 2009a)	92%	86%	81%	76%	73%	69%	66%	64%	62%	59%
<b>Suggested Directly Recoverable Quantity From Recharging 10,000 afy Without Active Recovery (af)</b>										
Year 1 recharge	9,000	8,000	7,000	6,000	5,000	4,000	3,000	2,000	1,000	0
Year 2 recharge	-	9,000	8,000	7,000	6,000	5,000	4,000	3,000	2,000	1,000
Year 3 recharge	-	-	9,000	8,000	7,000	6,000	5,000	4,000	3,000	2,000
Year 4 recharge	-	-	-	9,000	8,000	7,000	6,000	5,000	4,000	3,000
Year 5 recharge	-	-	-	-	9,000	8,000	7,000	6,000	5,000	4,000
Year 6 recharge	-	-	-	-	-	9,000	8,000	7,000	6,000	5,000
Year 7 recharge	-	-	-	-	-	-	9,000	8,000	7,000	6,000
Year 8 recharge	-	-	-	-	-	-	-	9,000	8,000	7,000
Year 9 recharge	-	-	-	-	-	-	-	-	9,000	8,000
Year 10 recharge	-	-	-	-	-	-	-	-	-	9,000
<b>Total recharged</b>	<b>10,000</b>	<b>20,000</b>	<b>30,000</b>	<b>40,000</b>	<b>50,000</b>	<b>60,000</b>	<b>70,000</b>	<b>80,000</b>	<b>90,000</b>	<b>100,000</b>
Recommended Directly Recoverable Sum	9,000	17,000	24,000	30,000	35,000	39,000	42,000	44,000	45,000	45,000
Model results (scaled from Golder 2009a)	9,958	17,818	24,741	30,974	36,662	41,903	46,763	51,299	55,555	59,563
Amount the Recommended Directly Recoverable Quantity is Less Than Modeled	3%	1%	1%	2%	4%	6%	10%	14%	19%	24%
Quantity not directly recovered (i.e., seeps to streams or is left in the ground)	1,000	3,000	6,000	10,000	15,000	21,000	28,000	36,000	45,000	55,000

The City may use a simplified spreadsheet to account for water recharged and recovered, and will use SCADA to provide the required information for flow, levels, and Cl2.

The datalogger at AYP monitoring well must be periodically accessed for downloads and battery checks. City staff will use a laptop with the Aqua4Plus application and USB adapter to interact with the datalogger. When the batteries in the datalogger discharge to 2.0v it is advised to change them. To accomplish this simply pull up the datalogger and unscrew the rear end-cap to access the batteries. After replacement and re-assembly, lower the datalogger back down the well casing. The depth is set by rigging on the cable and care will be exercised so that the depth is set to the previous elevation. Because this is a monitoring well there is no disinfection requirement following surface exposure to the datalogger or cable, but staff will attempt to keep debris from entering the well.

The Aqua4Plus application is the used to reprogram the datalogger for sampling events every 1 hour for a more than sufficient time to allow uninterrupted operation between logons, currently every 3 months.

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**Appendix R.**  
**Emergency Response Plan**  
**(Emergency Operations Guidelines)**

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**WATER/IRRIGATION DIVISION**

**EMERGENCY OPERATIONS GUIDELINES**

**FOR DOMESTIC WATER**  
**SUPPLY - TREATMENT - DISTRIBUTION**

## Table of Contents

<b>Section 1</b>	<b>Mission Statement and Goals</b>	<b>3</b>
<b>Section 2</b>	<b>City of Yakima Water / Irrigation information</b>	<b>3</b>
<b>Section 3</b>	<b>Chain of Command</b>	<b>5</b>
<b>Section 4</b>	<b>Events That Cause Emergencies</b>	<b>6</b>
<b>Section 5</b>	<b>Severity of Emergencies</b>	<b>7</b>
<b>Section 6</b>	<b>Emergency Notification</b>	<b>9</b>
<b>Section 7</b>	<b>Water Quality Sampling</b>	<b>10</b>
<b>Section 8</b>	<b>Effective Communication</b>	<b>20</b>
<b>Section 9</b>	<b>Staff Instructions / Contingency Plans</b>	<b>21</b>
<b>Section 10</b>	<b>Returning To Normal Operating Conditions</b>	<b>46</b>
<b>Section 11</b>	<b>Plan Approval</b>	<b>47</b>
<b>Appendix A</b>	<b>Water System Map</b>	
<b>Appendix B</b>	<b>Primary and Secondary Source Description</b>	
<b>Appendix C</b>	<b>Water System Hydraulic Profile / Reservoirs / Pump Stations</b>	
<b>Appendix D</b>	<b>Water Conservation Tips</b>	
<b>Appendix E</b>	<b>Dialysis List</b>	
<b>Appendix F</b>	<b>Water Treatment Plant Process Schematic</b>	
<b>Appendix G</b>	<b>PRV Map / PRV List</b>	
<b>Appendix H</b>	<b>Asbestos Pipe Policy and Procedures</b>	
<b>Appendix I</b>	<b>Washington Water Sector – Specific Plan</b>	
<b>Appendix J</b>	<b>Levee / Flood Control at WTP</b>	
<b>Appendix K</b>	<b>Spill Prevention, Control and Countermeasures Plan (SPCC)</b>	
<b>Appendix L</b>	<b>Organizational Chart, Cell List, Emergency Callout List</b>	

## Section 1 – Mission Statement and Goals

### MISSION STATEMENT

In an emergency, the mission of the City of Yakima Water / Irrigation Division is to; “Protect the health of the citizens of Yakima, as well as the health and safety of our employees, by being prepared to respond immediately to a variety of events that may result in the interruption of water supply and / or the possible contamination of the potable water supply”.

### GOALS

- Be able to quickly identify an emergency and initiate timely and effective response action.
- Be able to quickly notify local, state, and federal agencies to assist in the response.
- Protect public health by being able to quickly determine if the water is not safe to drink or use and being able to immediately notify customers effectively of the situation and advise them of appropriate protective action.
- To be able to quickly respond and repair damages to minimize system down time and complete work in a fiscally responsible and efficient manner.

## Section 2 – City of Yakima Water / Irrigation System Information

<b>System ID</b>	991509
<b>System name and address</b>	City of Yakima Water / Irrigation Division 2301 Fruitvale Blvd. Yakima, WA. 98902
<b>Directions to Water / Irrigation Offices</b>	From Hwy 12, take the N. 40 <sup>th</sup> Ave exit, turn left on Fruitvale Blvd for approx. 2 miles. City of Yakima Public Works complex will be on North side of Fruitvale Blvd.
<b>Basic description of system facilities</b>	<p><b>PRIMARY SUPPLY</b></p> <p>The primary water supply is from the Naches River, and to a lesser degree, at the Wapatox diversion dam (from the beginning of April through the end of October) and intake structure West of Naches on Hwy 12. The water from the Wapatox Canal is now supplied to the old City of Yakima intake structure from the Wapatox flush ditch and not from the old PP&amp;L tailrace. Along with the tailings from the Wapatox flush ditch, a small amount of Naches Selah irrigation canal water supplies the flush ditch as well.</p> <p>The influent water for the Naches River Water treatment Plant is from direct diversion of raw water through the head gates of the City of Yakima's raw water intake structure. When the head gates are open to achieve the desired flow directly from the Naches River the Obermeyer inflatable weir at the lower intake structure and fish bar shall be in place. During periods of extremely low flows it may be necessary to dig a channel from the main portion of the river directly to the head gate structure in order to direct the flow into the intake structure. This has been accomplished in the past by using heavy equipment in the river and is done with a hydraulic permit from Washington Department of Fish &amp; Wildlife and a shoreline permit exemption from Yakima County. Through this structure the main source of supply is diverted to the City's Naches River Water Treatment Plant which provides treatment by coagulation, filtration and disinfection. This water is delivered by gravity flow through a 48" transmission main to the distribution system.</p> <p><b>Note: The City of Yakima's primary and secondary source descriptions can be found in Appendix B.</b></p>

	<p><b>SECONDARY SUPPLY</b></p> <p>The City of Yakima's four wells are capable of pumping directly into the distribution system. Disinfection is provided for at each site. The four wells pump directly into the low pressure zone of the distribution system. These groundwater supplies are utilized as a seasonal water source and are maintained in a standby status. The four wells are as follow: Kissel Well at 32<sup>nd</sup> Ave and Mead Ave, Airport Well on Washington Ave across from Perry Tech, Gardner Well at Gardner Park on Pierce and Cornell, Kiwanis Well at Kiwanis Park on Maple St.</p> <p><b>STORAGE AND DISTRIBUTION</b></p> <p>The distribution pipelines are 4 to 24 inches in diameter. The pipe materials are mainly cast iron, with ductile iron being used since the early 1970's. There are several steel pipelines and many unlined cast iron pipelines remaining in the system. There is approx. one mile of Asbestos Cement Pipe on Englewood Ave.</p> <p>The City's existing storage capacity is 32 million gallons (MG) distributed among five reservoirs within the three pressure zones. Each pressure zone has an established hydraulic elevation. This elevation is maintained by the distribution reservoirs located in each of the pressure zones.</p> <p><b>Note: The reservoirs are shown on the hydraulic profile in Appendix C. The table indicates the volume of storage, zone served, type of material, and the overflow and floor elevation of the five reservoirs in the distribution system.</b></p> <p><b>PUMP STATIONS</b></p> <p>The City of Yakima operates four booster pump stations. Three of the booster pump stations (40<sup>th</sup> Ave. pump station, Stone Church pump station, and 3<sup>rd</sup> level pump station) provide water to the middle and high zones, as shown in the hydraulic profile. The fourth pump station is at Gleed and supplies water to approximately 25 customers in the Gleed area.</p> <p><b>Note: The pump stations are listed in Appendix D, indicating the location, supply location, zone that is served, number of pumps in each station, pump capacity, and other characteristics.</b></p> <p><b>INTERTIES</b></p> <p>The Nob Hill Water Association and the City of Yakima have two emergency interties between their respective distribution systems.</p> <ol style="list-style-type: none"> <li>1. Intertie is located at the intersection of N. 56th Avenue and Lincoln Avenue. This connection is between the City of Yakima's high pressure zone and Nob Hill Water Association's middle pressure zone. The City of Yakima High Zone System pressure exceeds the Nob Hill Water System pressure by approximately 7 psi.</li> <li>2. Intertie is located at S. 32<sup>nd</sup> Avenue and Ahtanum Road. This connection is between the City of Yakima's low pressure zone and Nob Hill Water Association's low pressure zone through a two way pressure reducing valve. Flow is limited to 2,500 gpm in both directions.</li> </ol>	
<b>Location/Town</b>	Yakima, WA.	
<b>Population served and service connections</b>	65,038 People	18,700 Service Connections
<b>System owner</b>	Dave Brown – Water/Irrigation Division Manager	

<b>System manager responsible for plan</b>	Dave Brown Water/Irrigation Division Manager	(509) 575-6204 Phone (509) 901-4870 Cell (509) 575-6187 Fax
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### Section 3 – Chain of Command

<b>Name and title</b>	<b>Responsibilities during an emergency</b>	<b>Contact numbers</b>
<b>Dave Brown Water / Irrigation Division Manager</b>	Responsible for overall management and decision making for the water system. The Water/Irrigation Division Manager is the lead for managing the emergency, providing information to regulatory agencies, the public and news media. All communications to external parties are to be approved by the Water/Irrigation Division Manager.	Phone: (509) 575-6204  Cell: (509) 901-4870  Fax: (509) 575-6187
<b>Mike Shane Water/Irrigation Engineer</b>	Responsible for additions to water and irrigation systems and assisting Division Manager, Distribution Supervisor, WTP Supervisor with logistical / engineering expertise.	Phone: (509) 576-6480  Cell: (509) 728-3939  Fax: (509) 575-6187
<b>Emilio Lopez Distribution Supervisor</b>	In charge of operating the water distribution system, performing inspections, maintenance, sampling and relaying critical information, assessing distribution system, and providing recommendations to the Water/Irrigation Division Manager. <b>NOTE: These duties are in cooperation with the WTP Supervisor and the Water/Irrigation Engineer.</b>	Phone: (509) 575-6196  Cell: (509) 728-2355  Fax: (509) 575-6187
<b>Jeff Bond Water Treatment Plant Supervisor</b>	In charge of operation & maintenance of the water treatment plant, wells, booster pump stations, performing inspections, maintenance and sampling and relaying critical information, assessing facilities, and providing recommendations to the Water/Irrigation Division Manager. <b>NOTE: These duties are in cooperation with the Distribution Supervisor and the Water/Irrigation Engineer.</b>	Phone: (509) 575-6177  Cell: (509) 728-2362  Fax: (509) 966-5878

<p><b>Any assigned staff from Distribution, WTP, Irrigation, or Administration.</b> <b>Note: See Appendix L for list of personnel.</b></p>	<p>Delivers door hangers and supports Water/Irrigation Division during emergency event. Responsible for administrative functions in the office including receiving phone calls and keeping a log of events. These personnel will provide a standard carefully pre-scripted message to those who call with general questions provided by Division Manager.</p>	<p>Phone: (509) 575-6154 Fax: (509) 575-6187</p>
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## Section 4 - Events That Cause Emergencies

Why do emergencies happen? There are a variety of reasons including:

- Natural disasters
- Accidents
- Deliberate acts of vandalism or terrorism
- System neglect or deferred maintenance

Type of event	Probability or risk (High-Med-Low)	Comments
<b>Flood</b>	<b>High</b>	During spring runoff there are several City of Yakima water facilities that have the potential to be damaged and water quality compromised at flood stage water levels, as well as the possibility of flooding within buildings due to process / equipment malfunction.
<b>Earthquake</b>	<b>Med</b>	The Pacific Northwest has the potential for earthquake activity that could cause damage to distribution system, WTP facilities, and irrigation systems.
<b>Fire</b>	<b>Med</b>	The Yakima Valley is susceptible to both wild fires as well as structure fires that may require action on the part of the City of Yakima Water/Irrigation Division to assist emergency personnel in redirecting flow of water for higher pressures for fire fighting.
<b>High winds</b>	<b>Med</b>	System is vulnerable to high wind events. Power may be disrupted, telemetry disruption, water facilities can be damaged due to high winds.
<b>Ice and Snow Storms</b>	<b>Med</b>	Excessive ice and snow can damage water facilities, freeze pipes (burst mains), freeze water meters and make transportation during emergency events difficult.

<b>Drought</b>	<b>Med</b>	Need to plan for decrease in available water for late spring, summer and early fall during a drought year.
<b>Construction accident</b>	<b>Low</b>	Contractors occasionally damage buried water lines while excavating.
<b>Terrorism</b>	<b>Low</b>	Need to be trained on suspicious activity and report to proper authorities.
<b>Chemical spill</b>	<b>Low</b>	City of Yakima has a wellhead protection plan.

## Section 5 – Severity of Emergencies

### Level I Emergency

**Description:** The City of Yakima Water/Irrigation Division shall consider the following level I emergencies:

- Distribution line breaks
- Irrigation line breaks
- Short power outages
- Minor mechanical problems at WTP, Wells, Booster Pump Stations
- A minor act of vandalism
- Other minor situations that would not likely risk public health

The system has specific response activities identified for these types of emergencies, including proper sampling, disinfection, and pressure testing activities. System personnel are advised and are directed to work on the problem and are usually capable of resolving the problem within 24 hours. If it is determined that the problem will take longer than 24 hours to resolve and storage is likely to be drawn down below a safe operating level, the situation will be elevated to level II.

### Level II Emergency

**Description:** The City of Yakima Water / Irrigation Division shall consider the following level II emergencies:

- Disruption in supply such as a transmission main line break, pump failure with a potential for backflow, and loss of pressure
- Storage levels are not adequate to handle disruption in supply
- An initial positive coliform or E. coli sample
- An initial primary contaminant sample
- A disruption in chlorine/chemical feed from the groundwater sources
- Drought, with noticeable and continuing decline of water level available from surface and groundwater sources

### **Level III Emergency**

**Description:** The City of Yakima Water/Irrigation Division shall consider the following level III emergencies:

- A verified acute confirmed coliform MCL or E. coli/fecal positive sample requiring immediate consideration of a health advisory notice to customers
- A confirmed sample of another primary contaminant requiring immediate consideration of a health advisory notice to customers
- A loss or complete malfunction of the water treatment facilities for the surface water source, including, but not limited to, chlorination
- A major line break or other system failure resulting in a water shortage, requiring system shutdown and assistance from Nob Hill water Association
- If the first level system has a main break that may cause low pressure at hospitals and/or assisted living facilities, it is necessary to turn on Stone Church pump station as soon as possible
- An act of vandalism or terrorist threat such as intrusion or damage to a primary facility
- An immediate threat to public health of City of Yakima customers and an advisory is required
- Severe drought significantly affecting surface water or groundwater sources.

**NOTE:** If the City of Yakima Water/Irrigation Division experiences significant mechanical or contamination problems where disruption in supply is inevitable and issuance of a health advisory is needed to protect public health. Major emergencies should be reported to DOH as soon as possible to determine the best available means to protect customers' health. System personnel are directed to the situation, and outside entities are notified to aid in the response. Major emergencies may require more than 72 hours to resolve.

### **Level IV Emergency**

**Description:** The City of Yakima Water/Irrigation Division shall consider the following level III emergencies:

- Earthquake that shuts down the system or impacts sources, lines, pump stations, etc
- Act of terrorism possibly contaminating the water system with biological or chemical agents
- Flood that infiltrates system facilities (or is caused from mechanical malfunction within facilities), sources, transmission mains, or causes loss of system capabilities within the distribution system
- Chemical spill within 2000 feet of the system's sources
- Storm that significantly damages power grid and system facilities
- Mudslide or other earth shift that may cause failure of transmission or loss of water in surface or groundwater sources.

**Note:** If the City of Yakima Water/Irrigation Division experiences major damage or contamination from a natural disaster, an accident, or an act of terrorism. These incidents shall require immediate notification of local law enforcement, DOH, local emergency management services, local media, and City of Yakima customers. An immediate declaration of a water supply emergency is critical to protect public health. These events often take several days or weeks to resolve before the system returns to normal operation.



## Section 6 – Emergency Notification

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### Notification Procedures for Level I and Level II Emergencies

<b>Who is Responsible:</b>	The City of Yakima Water/Irrigation individual supervisors will be responsible for assignment of all emergency duties in regard to Level I and Level II emergencies. These supervisors are responsible for keeping the Water/Irrigation Division Manager informed of the progress of the activities during these emergencies. If the supervisors are not available during these emergencies, crew leaders and plant operators will be responsible for these emergency duties and keeping the Division Manager updated on all activities.
<b>Water Emergency Procedures for Level I and Level II Emergencies:</b>	<ul style="list-style-type: none"> <li>• Each Water/Irrigation supervisor (or acting representative) will be responsible for level I or level II emergencies, making contact with essential personnel or essential entities, such as:               <ol style="list-style-type: none"> <li>1. City of Yakima Water/Irrigation Manager</li> <li>2. Essential Water/Irrigation personnel to alleviate water emergencies</li> <li>3. Any contractor (construction, electrical, pump / motor repair or sales, etc.) that may be needed to alleviate water emergencies. Must follow prevailing wage and insurance guidelines.</li> <li>4. Wastewater collections and/or stormwater management in the event of any localized flooding due to distribution or irrigation main breaks or chemical spills that may effect stormwater collection or wastewater collection</li> </ol> </li> <li>• In the event of a Level I or Level II emergency, the responsible supervisor (or acting representative) will be required to keep the Division Manager informed of any problems that may require these emergencies to be classified as a higher level of emergency</li> </ul>

### Notification Procedures for Level III, and Level IV Emergencies

<b>Who is Responsible:</b>	The City of Yakima Water/Irrigation Manager shall be responsible for notifying the city public information officer and assigning public notification duties to desired personnel based on the severity of the emergency. If the Water/Irrigation Manager is not available, the assignment responsibility will go to the City of Yakima Director of Utilities and Engineering or the director's designee.
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<p><b>Water Emergency Procedures for Level III and Level IV Emergencies:</b></p>	<ul style="list-style-type: none"> <li>• Water/Irrigation Manager confers with key staff to verify problems</li> <li>• Water/Irrigation Manager organizes staff and public information officer to develop the message to be delivered to the customers (Dependent upon the severity of the water emergency)</li> <li>• Water/Irrigation Manager shall assign personnel to consult with state DOH regarding the problem</li> <li>• Water/Irrigation Manager, with assistance from the public information officer, prepares door hangers, signs and electronic media message</li> <li>• Water system operators continue to investigate problem and make repairs as necessary</li> <li>• Water/Irrigation management team will determine if there is any need for notification of wastewater collections or stormwater management due to localized flooding from distribution line breaks or chemical spills</li> <li>• The water emergency notification will be distributed by:             <ol style="list-style-type: none"> <li>1. Field staff placing “water emergency notices” on doors and along travel routes</li> <li>2. Staff will place signs on main travel routes into the community</li> <li>3. Water/Irrigation Manager contacts public information officer and requests issuance of the water emergency notice and any further public education notices for emergency</li> <li>4. Administrative support personnel will provide a pre-scripted message to phone callers and log each phone call</li> </ol> </li> <li>• Water system operators regularly update the Water/Irrigation Manager on water emergency and the progress that is being made</li> <li>• Once the water emergency is resolved, re-notify customers</li> </ul> <p>As a Level III or Level IV emergency is resolved an after action meeting will be conducted to determine if anything could have been done better or to determine if any Public Assistance from the State of Washington or FEMA can be applied for.</p> <p><b>NOTE: It is vitally important for all activities, financial, physical work, phone logs, operational logs, and contact information, be documented for FEMA Public Assistance. FEMA forms can be found at the following website: <a href="http://www.fema.gov/forms-0">http://www.fema.gov/forms-0</a> or at <a href="http://www.wawarn.org">www.wawarn.org</a></b></p>
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## **Section 7 – Water Quality Sampling**

Many different types of emergencies can jeopardize the quality of water and potentially water customers. Because the most important goal for any water system is to protect human health, the system must know how to act quickly and make decisions on whether to issue a health advisory. Sampling and obtaining results from a lab takes time and this fact should be taken into consideration when considering a course of action during any emergency.

If there is reason to believe that the water has been contaminated, the Water/Irrigation Manager (or an acting representative) should consult with DOH and consider issuing a health advisory as soon as possible – often before conducting water quality sampling.

Contamination of drinking water, whether intentional or unintentional, comes in many forms, which are classified in four general categories:

- Inorganics such as metals or cyanide.

- Organics such as pesticides or volatile solvents.
- Radionuclides.
- Pathogenic microorganisms.

If it suspected that someone intentionally sabotaged the system or contaminated the water, this should be considered a crime scene. Immediate contact with local law enforcement and DOH Division of Drinking Water regional office will be necessary, and it is vitally important that the potential contaminated area not be disturbed in order to protect any potential evidence.

### Water quality sampling

Sampling parameter	Do we have procedures? Yes/No	Basic steps to conduct sampling (sites, frequency, procedures, lab requirements, lab locations, lab contacts, lab hours, etc.)
<u>Coliform Bacteria</u> An indicator used to determine biological contamination	Yes	Determine sample point. Draw sample in appropriate thiosulphate prepared containers and submit to Cascade Analytical, 1008 W Ahtanum Rd, Union Gap, WA 98903, (509) 452-7707.
<u>VOC's</u> Volatile organic chemicals eg. gasoline	Yes	Determine sample point. Draw sample in appropriate airless containers and, if possible, ship to Edge Analytical, 1620 Walnut St, Burlington, WA 98233, 800 755-9295. If unable to coordinate shipping, submit to Cascade Analytical.
<u>Chlorine Residual</u> Presence of Cl <sub>2</sub> residual is quickest way to determine acute biological threat	Yes	Determine sample point, draw sample and analyze in portable colorimeter. Expand your area of contamination surveillance by drawing in an increasing radius to determine extent, and perhaps origin of contamination.
<u>Chlorine Demand</u> Depletion over time, can be used as rough estimate of severity of reactive contamination	Yes	Determine sample point, draw sample into several airless containers. Perform residual analysis as above on sequential samples at predetermined time intervals and plot demand.
<u>Nitrate/Nitrite</u> A pollutant of groundwater, causes blood and kidney damage	Yes	Draw sample from wellhead and submit to Cascade Analytical, 1008 W Ahtanum Rd, Union Gap, WA 98903, (509) 452-7707.
<u>SOC's</u> Broad category of synthetic contaminants, includes poisons	Yes	Determine sample point. Draw sample in appropriate airless containers and, if possible, ship to Edge Analytical, 1620 Walnut St, Burlington, WA 98233, 800 755-9295. If unable to coordinate shipping, submit to Cascade Analytical.
<u>Radionuclides</u> Uranium, radium, particle emissions	Yes	Determine sample point. Draw sample into 1L bottles and submit to Cascade Analytical, 1008 W Ahtanum Rd, Union Gap, WA 98903, (509) 452-7707.
<u>IOC's</u> Specific elemental constituents	Yes	Determine sample point. Draw sample into 1L bottles and submit to Cascade Analytical, 1008 W Ahtanum Rd, Union Gap, WA 98903, (509) 452-7707.

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**Return to Service:** Treatment operations, valve positions, and other emergency protective measures can be re-established by the Water / Irrigation Division Manager (or acting representative), after contaminants have been proven to be at or below Maximum Contaminant Limits (MCL's). **NOTE: More extensive return to service procedures can be located in section 10 of this manual.**

**Notification Procedures for Health Advisories**

<p><b>Who is Responsible:</b></p>	<p>The City of Yakima Water/Irrigation Manager in consultation with the public information officer shall be responsible for assigning the distribution of public notification of health advisories to desired personnel. If the Water/Irrigation Manager is not available, the assignment responsibility will go to the City of Yakima Director of Utilities and Engineering or the director's designee.</p>
<p><b>Health Advisory Procedures:</b></p>	<ul style="list-style-type: none"> <li>• Water/Irrigation Manager confers with key staff to verify problems</li> <li>• Water/Irrigation Manager in consultation with the public information officer organizes staff to develop the message to be delivered to customers</li> <li>• Water/Irrigation Manager assigns personnel to consult with DOH staff regarding the problem</li> <li>• Water/Irrigation Manager with assistance from the public information officer prepares door hangers, signs and electronic media message</li> <li>• Water system operators continue to investigate problem and keep City of Yakima Water/Irrigation Manager informed of progress regularly</li> <li>• The water emergency notification will be distributed by:             <ol style="list-style-type: none"> <li>1. Field staff placing "health advisories notices" on doors and along travel routes</li> <li>2. Assigned staff will make contact with all special needs contacts and assist in educating and keeping them informed of all progress and activities</li> <li>3. Staff will place signs on main travel routes into the community</li> <li>4. Water/Irrigation Manager contacts public information officer and requests issuance of the health advisory notice and any further public education notices for emergency</li> <li>5. Administrative support personnel will provide a pre-scripted message to phone callers and log in each phone call</li> </ol> </li> <li>• DOH has put together a number of tools, including fact sheets, brochures, forms, and templates to help prepare for a health advisory. These are on the Web at: <a href="http://www.doh.wa.gov/CommunityandEnvironment/DrinkingWater.aspx">http://www.doh.wa.gov/CommunityandEnvironment/DrinkingWater.aspx</a></li> <li>• Once the water emergency is resolved, re-notify customers and conduct an after action meeting to determine problems or aspects to improve upon</li> </ul>

**Alerting local law enforcement, fire protection services, DOH Officials, Dept. of Ecology (DOE), local health, and local emergency management**

<p><b>Who is Responsible:</b></p>	<p>The City of Yakima Water/Irrigation Manager (or assigned representative) is responsible for alerting law enforcement, fire protection services, DOH, local health agencies, and local emergency management of the severity of the emergency. If the Water/Irrigation Manager is not available, the assignment responsibility will go to the City of Yakima Director of Utilities and Engineering or the director's designee.</p>
<p><b>Procedures:</b></p>	<ul style="list-style-type: none"> <li>• If there is any immediate emergency that potentially could cause bodily harm or personal property damage, CALL 911 immediately.</li> <li>• Determine if there is a need for law enforcement involvement in regard to the emergency. If so, contact local law enforcement and advise them of the type and severity of the emergency.</li> <li>• Determine if there is a need for fire protection services involvement in regard to the emergency. If so, contact local fire protection services and advise them of the type and severity of the emergency.</li> <li>• Determine if there is any regulatory reason for the DOH to be involved contact regional engineer.</li> <li>• If there is any flooding of City of Yakima structures and facilities that may cause environmental hazards of rivers, lakes, or streams, contact the DOE [PLEASE FIND OUT WHAT SECTION AT doe] immediately.</li> <li>• Determine if there is any chance of water customers being exposed to a health risk due to a water emergency, if so, contact DOH and Yakima County Health District immediately.</li> <li>• Determine if there is any need for local emergency management to be notified due to local road closures, flooding of river banks, chemical spills, etc.</li> </ul>

**Contacting service and repair contractors**

<p><b>Who is Responsible:</b></p>	<p>In the event of most water emergencies, it will be the responsibility of the affected supervisor to be in contact with vendors and/or contractors to determine their availability for each situation or emergency.</p>
<p><b>Procedures:</b></p>	<ul style="list-style-type: none"> <li>• It is very important to make sure that the contractor is a vendor with the City of Yakima Purchasing Dept., is on the small works roster on the MRSC website (<a href="http://www.mrsc.org/">http://www.mrsc.org/</a>), and that they meet the qualifications of updated insurance and a current prevailing wage rules.</li> <li>• A requisition will need to be done and a purchase order created for any work to be done. In the event that an emergency happens and the work must start immediately and the supervisor is not able to start a requisition right away, the supervisor must create a requisition as soon as possible after the work has started. <b>(Note: It may be required to have an emergency PO started as soon as possible if the emergency is going to be of a Level III or Level IV variety)</b></li> <li>• When hiring a contractor for an emergency it will be important to give every detail to the contractor (i.e. city personnel contact information, location of emergency, immediate danger that the contractor may experience, etc.) in regard to the emergency situation.</li> <li>• For Level III and Level IV emergencies it is very important that all time (contractor or city employee) be tracked. <b>NOTE: It is vitally important for all activities, financial, physical work, time sheets, phone logs, operational logs, and contact information, be documented for Washington State public assistance and / or FEMA Public Assistance.</b></li> </ul>

**Contacting neighboring water systems**

<p><b>Who is Responsible:</b></p>	<p>In the event that a water emergency requires that the City of Yakima Water/Irrigation Division needs to contact any neighboring water utility for any reason, the responsibility of this activity will go to the City of Yakima Water/Irrigation Manager (or assigned representative). If the Division Manager is not available, this responsibility will go to the City of Yakima Director of Utilities and Engineering or otherwise assigned personnel or the director's designee</p>
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<b>Procedures:</b>	<ul style="list-style-type: none"> <li>• Water/Irrigation Manager will confer with the Water/Irrigation management team to determine if there is any chance of any neighboring domestic water provider or irrigation water provider being affected by any City of Yakima Water emergency. If there is any potential for them to be affected, contact immediately and include them in our emergency planning activities.</li> <li>• Water/Irrigation Manager will confer with the Water/Irrigation management team to determine if there is any need for interties to be opened between the City of Yakima water system and Nob Hill Water Associations water system. If so, contact Nob Hill Water Association and determine the availability of water from said interties.</li> <li>• If water is not available from Nob Hill Water Association, determine whether the City of Yakima needs to implement water conservation measures. If these measures are warranted, this emergency will be defined as a Level III emergency and the procedures for said emergency should be followed.</li> </ul>
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**Local notification**

Day	After Hours
Water/Irrigation Manager <b>Dave Brown</b> 575-6204 / 901-4870	See Emergency Call Out List
Water/Irrigation Engineer <b>Mike Shane</b> 576-6480 / 728-3939	
Water Distribution Supervisor <b>Emilio Lopez</b> 575-6196 / 728-2355 If not available, contact crew leader	
Water Distribution Crew Leaders <b>Jim Bumgarner – 728-2354</b> <b>Chris Robillard – 426-1015</b> <b>Jeff Morris – 728-8746</b> <b>Scott Johnson – 728-2353</b>	
Water Treatment Supervisor <b>Jeff Bond</b> 575-6177 / 728-2362	
Water Quality Specialist <b>Damon Wilkens</b> 576-6477 or 575-6177 / 728-2361	
Irrigation Supervisor <b>Rich Sanislo</b> 575-6194 / 728-2350 If not available, contact crew leader	
Irrigation Crew Leaders <b>Brad Harrison – 728-2351</b> <b>Zach Winters – 728-2352</b>	

Utility Locate <b>Dale Keeth</b> <b>728-2359</b>	
Public Works Director <b>Scott Schafer</b> <b>576-6411 / 949-3412</b>	
City Manager <b>Jeff Cutter</b> <b>575-6040</b>	
Wastewater Collections / Stormwater <b>Bob Brown</b> <b>575-6118 / 406-7103 / 575-6077</b>	
Street/Traffic Division <b>Dan Bigby</b> <b>576-6437</b>	
City of Yakima Emergency Management <b>Charles Erwin</b> <b>576-6732</b>	
Neighboring Water System <b>Nob Hill Water Association</b> <b>Dave England or Zella West</b> <b>966-0272</b>	
Neighboring Water System <b>Yakima County</b> <b>Joe Stump</b> <b>574-2425 / 574-2300</b>	
Neighboring Water System <b>Union Gap</b> <b>Dennis Henne or Mike Stillwaugh</b> <b>225-3524 / 248-0430</b>	
Neighboring Water System <b>City of Selah</b> <b>Joe Henne or Ty Jones</b> <b>698-7365</b>	
Yakima County Flood Hazards <b>Joel Freudenthal</b> <b>574-2322 – 574-2300</b>	
Yakima County Road, Bridges, and Levees <b>Matt Pietrusiewicz</b> <b>574-2320 / 945-4957</b>	
Yakima County Health District <b>952-7976 / 575-4040 @ prompt #1</b>	
Local Law Enforcement <b>Dispatch</b> <b>575-3012</b>	
Fire Dept <b>Dispatch</b> <b>575-3014</b>	



Communications & Public Affairs <b>Randy Beehler</b> <b>575-6092 / 901-1142</b>	
City of Yakima Utility Billing <b>Utility Billing Rep.</b> <b>575-6080</b>	

**County, State, and Federal notification list**

<b>Day</b>	<b>After hours</b>
State Police (day) <b>Dispatch</b> <b>249-6700</b>	State Police (After Hours) <b>Dispatch</b> <b>249-6700</b>
Division of Drinking Water Regional Office(day) <b>Andy Cervantes</b> <b>509-329-2120</b>	Division of Drinking Water (After Hours) <b>Andy Cervantes</b> <b>509-329-2120</b>
Dept. of Ecology Water Quality Program (day) <b>575-2490</b>	Dept. of Ecology Water Quality Program (After Hours) <b>575-2490 Answering service after hours</b>
Washington Department of Fish & Wildlife Screen Shop <b>575-2733</b>	Washington Department of Fish & Wildlife Screen Shop <b>575-2733 or 575-2740</b>
Washington Department of Fish & Wildlife Habitat Biologist <b>Eric Bertrand</b> <b>457-9310</b>	Washington Department of Fish & Wildlife Habitat Biologist <b>1-360-902-2537</b>
Bureau of Reclamation (day) <b>Tom Merendino</b> <b>(509) 575-5848 ext 227</b>	Bureau of Reclamation (After Hours) <b>(509) 457-2374 Follow instructions</b>
Army Corps of Engineers (day) <b>Charles Ifft</b> <b>Levee Safety Manager</b> <b>(206) 764-3406</b>	Army Corps of Engineers (After Hours) <b>Charles Ifft</b> <b>Levee Safety Manager</b> <b>(206) 764-3406</b>

**Service/Repair notification list**

<b>Day</b>	<b>After Hours</b>
Electric Utility <b>Pacific Power</b> <b>877-548-3768</b>	Electric Utility <b>Pacific Power</b> <b>877-548-3768</b>
Electrician <b>Tim Irvine – MBI</b> <b>453-3326</b>	Electrician <b>Tim Irvine - MBI</b> <b>833-9278</b>

Motor Specialist <b>H &amp; N (Pasco)</b> 509-547-1691 (800-795-3537)	Motor Specialist <b>H &amp; N (Pasco)</b> 509-547-1691 (800-795-3537)
Pump Specialist <b>Foremost Pump</b> Roy Jensen 930-2557	Pump Specialist <b>Foremost Pump</b> Roy Jensen 930-2557
Soil Excavator <b>TTC Construction</b> AJ Heckart 457-3969 945-6749	Soil Excavator <b>TTC Construction</b> AJ Heckart 457-3969 945-6749
Soil Excavator <b>Ken Leingang Excavating</b> Daren Leingang 575-5507	Soil Excavator <b>Ken Leingang Excavating</b> Daren Leingang (509) 728-0117 Victor Bohannon (509) 728-0183
Equipment Rental <b>Star Rental</b> 575-1414	Equipment Rental <b>Star Rental – John Heilman</b> 728-1951
Central Pre-Mix Concrete Co. <b>Tami Cain</b> 248-2041	Central Pre-Mix Concrete Co. <b>Tami Cain</b> 728-8275
Russell Crane Service <b>Greg Huylar</b> 457-6341	Russell Crane Service <b>Greg Huylar</b> 949-5611
Tank Trucks <b>LTI, Inc.</b> Jon Simmons 800-422-5993	Tank Trucks <b>LTI, Inc.</b> Jon Simmons 961-8855
Pipe and Fittings <b>H D Fowler</b> 248-8400	Pipe and Fittings <b>H D Fowler – Tim Heary</b> 728-3444
Pipe and Fittings <b>United Pipe</b> 248-9046	Pipe and Fittings <b>United Pipe</b> 248-9046
Laboratory <b>Cascade Analytical</b> 452-7707	Laboratory <b>Cascade Analytical</b> 452-7707
Laboratory <b>Edge Analytical</b> (800) 755-9295	Laboratory <b>Edge Analytical</b> (800) 755-9295
PLC and Controls Specialists <b>Conley Engineering</b> 965-9872	PLC and Controls Specialists <b>Conley Engineering</b> Ted Palmatier - 949-9357

### Special needs locations

<b>Name</b>	<b>Address</b>	<b>Telephone</b>	<b>Reason for Requesting Priority Service</b>
Memorial Hospital	2811 Tieton Drive	509-575-8052 509-575-8000	Patient Care
Yakima Regional Hospital	110 S. 9th Avenue	509-575-5131 509-575-5000	Patient Care and Home Kidney Dialysis Patients
Westside Medi-Center	4001 Tieton Drive	509-965-1770	Patient Care
Chandler House	701 N. 39 <sup>th</sup> Ave.	509-248-1007	Patient Care
Garden Village	206 S. 10th Avenue	509-453-4854	Patient Care
Park Meadows	1010 N. 34 <sup>th</sup> Ave.	509-249-0258	Patient Care
Crescent Health Care	505 N. 40th Avenue	509-248-4446	Patient Care
Renaissance Care Center	4007 Tieton Drive	509-966-4500	Patient Care
Chinook Convalescent	3300 Roosevelt Ave.	509-248-6220	Patient Care
Cedar Hills	1603 Drake Ct.	509-457-6954	Patient Care
Living Care Retirement Community	3801 Summitview Ave.	509-965-5260	Patient Care
Landmark Care Center	710 N. 39 <sup>th</sup> Ave.	509-248-4102	Patient Care
Yakima Retirement Manor	818 W. Yakima Ave.	509-575-0954	Patient Care
Englewood Heights Senior Living Community	3710 Kern Rd.	509-452-5822	Patient Care

Chesterley Court Memory Care Community	1100 N. 35 <sup>th</sup> Ave.	509-452- 1010	Patient Care
Wynwood of Yakima	4100 Englewood Ave.	509-965- 0111	Patient Care
North Star Lodge Cancer Care Center	808 N. 39 <sup>th</sup> Ave.	509-574- 3400	Patient Care
Children's Village	3801 Kern Rd.	509-574- 3200	Patient Care
Yakima County Juvenile Justice Center	1728 Jerome Ave.	509-574- 2050	Inmate Health
Yakima County Jail	111 N. Front St.	509-574- 1700	Inmate Health
Yakima County Jail	1500 Pacific Ave.	509-574- 1700	Inmate Health
Dialysis Patients	Several	<b>Refer to current Dialysis Patient List (This list should be updated as needed) Appendix E</b>	

## **Section 8 – Effective Communication**

Effective communication is a key element of emergency response. How we communicate with employees, customers, and the media can affect the outcome of the emergency situation. It is vitally important that an effective communication plan be developed and adhered to by all personnel involved in any emergency response.

A well developed relationship with outside entities can prove to be valuable in an emergency situation. In the event of an emergency it may be beneficial for the City of Yakima to look to DOH, DOE, Washington State Dept. of Fish & Wildlife, or the Bureau of Reclamation for assistance in communicating with the public in regard to their individual areas of expertise. The City of Yakima will look to the Public Information Officer or the Emergency management Analyst for assistance with communications with local or national media.

### **Communication Tips**

#### **Do:**

- Be prepared.
- Designate a spokesperson.
- Provide complete, accurate, and timely information.
- Tell the truth.
- Express empathy.
- Acknowledge uncertainty and offer to get back with more information later.
- Document your communications.

#### **Do not:**

- Speculate on the cause or outcome of an incident.
- Blame or debate.
- Minimize or brush off concerns of customers.
- Treat inquiries from interested parties as an annoying distraction from the real business of emergency response.

**Designate a spokesperson and alternates**

<b>Water/Irrigation Spokesperson</b>	<b>Water/Irrigation Alternate 1</b>	<b>Water/Irrigation Alternate 2</b>
Dave Brown, Manager	Randy Beehler, City of Yakima Public Information Officer  Emilio Lopez, Supervisor  Jeff Bond, Supervisor  Rich Sanislo, Supervisor	Mike Shane, Engineer

**Key messages**

- |   |
|---|
| <ul style="list-style-type: none"> <li>• We are taking this incident seriously and doing everything we can to resolve it.</li> <li>• Our primary concern is protecting public health.</li> <li>• Another important concern is keeping the system operational and preventing damage.</li> <li>• What we know right now is _____</li> <li>• The information we have is incomplete. We will keep you informed as soon as we know more.</li> <li>• We have contacted state and local officials to help us respond effectively.</li> <li>• If you think you may be ill or need medical advice, contact a physician.</li> <li>• We are sampling the water and doing tests to determine whether there is contamination.</li> </ul> |
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**Health advisories**

During events when water quality and human health are in question, it may be necessary to issue a health advisory that gives advice or recommendations to water system customers on how to protect their health when drinking water is considered unsafe or potentially compromised. These advisories are issued when the health risks to the consumers are sufficient, in the estimation of the water system or state or local health officials, to warrant such advice.

Health advisories usually take the form of a drinking water warning or boil water advisory. Communication during these times is critical. Health advisories should always be well thought out and provide very clear messages.

The DOH has put together a number of tools, including fact sheets, brochures, forms, and templates to help prepare for a health advisory. These are on the Web at:  
<http://www.doh.wa.gov/CommunityandEnvironment/DrinkingWater.aspx>

## **Section 9 – Staff Instructions / Contingency Plans for Various Facilities and Emergencies**

The following water system facilities and supplies have been analyzed for vulnerability situations and contingency plans formed including general and specific instructions on how to handle each problem identified.

1. Supply
2. Naches River Raw Water Intake
3. Transmission Mains
4. Water Treatment Plant Levee
5. Naches River Water Treatment Plant
6. Distribution System and Storage Reservoirs
7. Booster Pumping Stations
8. PRV Stations
9. Electrical Energy Supply
10. Materials and Supplies
11. Communications
12. Transportation
13. Fire and Police Request for Assistance

### **CITY OF YAKIMA MAJOR FACILITIES -- SUPPLY**

#### **PRIMARY SUPPLY**

The primary water supply is from the tailrace of the Bureau of Reclamations Wapatox Canal which is supplied from the Naches River at the Wapatox diversion dam (from the beginning of April through the end of October) and intake structure West of Naches on Hwy 12.

At times when the Wapatox Canal is out of service (from the end of October through the beginning of April), direct diversions of raw water are available through the head gates of the City of Yakima's raw water intake structure. When the head gates are open to achieve the desired flow directly from the Naches River, at the lower intake structure the Obermeyer weir fish bar shall be in place. During periods of extremely low flows it may be necessary to erect a coffer dam to direct the flow into the intake structure. This has been accomplished in the past by using heavy equipment in the river to push up rubble from the river bottom to build a coffer dam. A hydraulic permit is necessary prior to placing equipment into the river. Through this structure the main source of supply is diverted to the City's Naches River Water Treatment Plant which provides treatment through coagulation, some settling, filtration and disinfection of this supply. This water is delivered by gravity flow through a 48" transmission main to the low pressure zone distribution system.

**Note: The City of Yakima's primary and secondary source descriptions can be found in Appendix B.**

## **SECONDARY SUPPLY**

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The City of Yakima's four wells are capable of pumping directly into the distribution system. Disinfection is provided for at each site. The four wells pump directly into the low pressure zone of the distribution system. These groundwater supplies are utilized as a seasonal water source and are maintained in a standby status.

## **INTERTIES**

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The Nob Hill Water Association and the City of Yakima have two emergency interties between their respective distribution systems.

- This intertie is located at the intersection of 56th Avenue and Lincoln Avenue. This connection is between the City of Yakima's high pressure zone and Nob Hill Water Association's middle pressure zone. The City of Yakima High Zone System pressure exceeds the Nob Hill Water System pressure by approximately 7 psi.
- This intertie is located at S. 32<sup>nd</sup> Avenue and Ahtanum Road. This connection is between the City of Yakima's low pressure zone and Nob Hill Water Association's low pressure zone through a two way pressure reducing valve. Flow is limited to 2,500 gpm in both directions.

## **OPERATING MODES AND ALTERNATIVES**

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The function of the water system's supply is to provide a potable water supply for the City of Yakima. This supply is additionally utilized for fire suppression, sanitation and public health, industry, irrigation and recreation.

Should the water system's supply cease to be available, the following alternatives may be utilized to augment or replace the water system's supply.

- **Activation of the City of Yakima's wells.**

Failure of the water system's main supply to be available may require rationing or restriction of use of the remaining available water supplies.

The City of Yakima's groundwater sources are capable of meeting the system's average day demand during the fall, winter and spring. Restrictions of water use may be necessary during periods of the year when average day demand increases in the summer.

- **Activation of the interties with the Nob Hill Water Association.**

Utilization of the interties with the Nob Hill Water System as a sole source of supply would require rationing. This is because the amount of water available from Nob Hill's water system is limited; especially during the peak use summer months. In addition, the hydraulic capability of the piping making the interties is not of sufficient size to allow flows large enough to meet the City's needs.

- **Hauling of potable water from other safe sources.**

Hauling of water would only be implemented in extreme emergency when complete loss of the primary, secondary, and intertie source of supplies has occurred. Water hauling has typically been performed by

LTI of Sunnyside, WA to the Glead Pump Station to supply water to the unincorporated area of Glead, however they could provide other water stations through the city.

### **STAFF INSTRUCTIONS FOR SUPPLY LOSS**

#### **POSSIBLE CAUSES:**

- Spring runoff resulting in flooding and increased turbidities exceeding the process capabilities of the Water Treatment Plant.
- Extended periods of drought resulting in loss of river flow.
- USBR proration of water storage rights.
- Contamination of source water upstream of the WTP due to fuel spill, car accident, Naches Wastewater Treatment Plant contamination, etc.
- Failure of 54 inch transmission main transporting water from the Intake Structure to the Water Treatment Plant.
- Failure of 48 inch transmission main transporting water from the Water Treatment Plant to the City's water distribution system.

#### **ALTERNATIVE 1: Activation of the City wells.**

- PROCEDURE:**
1. Shutdown the Water Treatment Plant or reduce flows as required.
  2. Determine an estimate of the length of time the main source of supply will be unavailable or reduced.
  3. If it is determined that the water in the storage reservoirs will be inadequate to meet the needs then initiate procedures to activate the wells in the following order: Gardner Park, Kissel Park, . Airport, Kiwanis
  4. If The 48" transmission main is compromised and water cannot be supplied to Glead, contact LTI (Sunnyside) to initiate water to the Glead pump station. The pump station is already set up for temporary supply through the use of LTI's trucks.  
**Note: The spare piping for hooking up to the LTI trucks is on the 3<sup>rd</sup> floor of the WTP.**

**Note: If a valve can be shut to isolate Suntutides / Glead from the failed section of the 48" main, it is vital that this valve be shut so that the water treatment plant can continue to supply water to these areas and the wells in Yakima can supply water to the citizens of Yakima.**

#### **ALTERNATIVE 2: Activation of the interties with the Nob Hill Water Association.**

- PROCEDURE:**
1. Contact representatives of the Nob Hill Water Association (telephone 966-0272) and request that the appropriate interties be opened to allow water to enter the distribution system.
  2. Meet the Nob Hill Water Association representatives at the intertie locations and slowly open the control valves until pressure in both systems has stabilized.



3. Monitor the pressure levels of the City of Yakima's water distribution system in conjunction with the Nob Hill Water Association. Accomplish this by installing pressure gauges on respective system hydrants in the near vicinity of the interties.
4. Implement water conservation until the primary or secondary source of supply is available.

### **ALTERNATIVE 3: Hauling of potable water from other safe sources.**

- PROCEDURE:**
1. Implement water conservation until a sufficient supply of water is available to the system. Notify City of Yakima Department of Emergency Services and Communications & Public Affairs for assistance in this effort.
  2. Notify the local Fire Departments that no water is available for firefighting purposes from the hydrants.
  3. Contact LTI (Sunnyside) for use of potable water tanker trucks and request assistance in water hauling operation.
  4. The potable water trucks can be filled at the water fill station at the public works, yard (located inside the fence in the southwest corner), Gardner Park Well, and at neighboring water purveyor after approval from specific purveyor.
  5. The LTI trucks shall be hooked up to Glead pump station with pre plumbed emergency connections (piping is located at the WTP on the 3<sup>rd</sup> floor)
  6. When each truck is connected to the Glead pump station, a Bac-T sample and a chlorine residual must be taken and dropped off at Cascade Analytical. When each truck is emptied, chlorine residual must be taken and recorded.

### **ALTERNATIVE 4: Drought conditions causing reduced flow from river.**

- PROCEDURE:**
1. Implement voluntary water conservation measures until a sufficient supply of water is available to the system. Notify City of Yakima Communications & Public Affairs Director (Randy Beehler – 901-1142) and Emergency Management Analyst (Charles Erwin – 576-6732) for assistance in this effort. Water conservation tips can be found in Appendix D of this manual
  2. In the event that mandatory water conservation measures are required due to loss of the ability to meet domestic flow demand, a council resolution declaring a drought for the City of Yakima will be required. Once the resolution has been passed by council, the implementation of mandatory water conservation measures would be in effect until a sufficient supply of water is available to the system. Notify City of Yakima Communications & Public Affairs Director (Randy Beehler – 901-1142) and Emergency Management Analyst (Charles Erwin – 576-6732) for assistance in this effort. Water conservation tips can be found in Appendix D of this manual
  3. Activate emergency wells to supplement flow in order to meet demand

4. Continue to operate the water treatment plant for as long as possible (dependent upon the ability to continue to draw influent flow from the river)
5. Contact neighboring water purveyor to open intertie and supplement flow in order to meet demand. **Note: This is to be done only if wells and the WTP are not meeting demand at the maximum flows**

## **CITY OF YAKIMA MAJOR FACILITIES - INTAKE**

### **DESCRIPTION**

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The major features of the Naches River Raw Water Intake Structure are:

- **Head Gates to the Intake:** The head gates are located at the extreme upstream portion of the structure. These gates are operated manually or powered by a portable generator driven Milwaukee drill motor. The gates are used to control direct river diversions. Direct river diversions are necessary when an inadequate supply is available from the Wapatox Canal.
- **Wapatox Naches Selah Canal Bypass (flush ditch):** The canal bypass (flush ditch) outlet is located so that the flow enters into the old intake structure. The water from this outlet is not an alternate source of supply.
- **Radial Gates and Operators:** There are radial gates that are located at the extreme downstream portion of the intake structure. These gates are powered by electric gear drive operators. The purpose of these gates is to control the outflow of water from the Wapatox canal bypass (flush ditch) through the intake structure back out to the Naches River.
- **Old Intake Bar Screens:** These screens are located across the opening of the overflow weir and the outboard radial gate overflow weir. These screens were installed by the Washington State Department of Fish and Wildlife in the summer of 1984. The screens are cleaned of trash and operated by Water Treatment Plant staff. The purpose of the bar screens is to prevent anadromous fish from entering the intake structure and moving up The Bureau of Reclamations flush ditch. This is necessary to prevent fish from being fooled by the natural attraction of the outflow from the intake as being a tributary where they might spawn.
- **Fish Screens:** These screens are located inside the intake structure. They provide protection for fish, by screening out of the water supply. These screens are backwashed automatically with an air bust.
- **Concrete Wall of the Intake Structure:** The concrete wall separates the river from the water confined in the structure. Water must be confined within the structure to build a head of water above the 54" pipeline so that the water may flow by gravity through this pipeline to the Water Treatment Plant.

### **OPERATING MODES AND ALTERNATIVES**

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The function of the raw water intake is to divert a supply of water to the Naches River Water Treatment Plant. Due to the Wapatox canal not supplying water to the intake structure and the Naches River diverting away from the head gates, it is necessary to supplement flow from the Wapatox flush ditch over the intake stop logs. In order to divert the flush ditch flow over the stop logs, WTP staff will install foam boards next to the old intake fish bars. The installation of these foam boards will increase the head in the old intake structure and flow water over the stop logs to supplement flow to the new intake structure. Should the intake structure or fish screen backwash system cease to function, the following alternatives may be utilized to accomplish some or all of the same functions as stated above.

1. Manually maintain flow into intake structure by removing debris as needed.
2. Manually move ice and slush through intake channel by raising and lowering Obermeyer Inflatable Weir as needed to maintain adequate flow and head through channel.
3. Provide air for screen backwashing from distribution portable air compressors.

Failure of the intake structure would reduce or eliminate the water supply available to the Water Treatment Plant. Should the system reserves be inadequate to meet system demands before one of the alternatives above can be implemented, then the emergency should be handled as a loss of supply.

### **STAFF INSTRUCTIONS FOR LOSS OF RAW WATER INTAKE**

#### **POSSIBLE CAUSES:**

- Washed out by floods.
- Filled with debris during floods.
- Filled with ice.

#### **ALTERNATIVE 1: Manually maintain flow into intake structure by removing debris as needed.**

- PROCEDURE:**
1. Shut down the Water Treatment Plant or reduce flows as required.
  2. Begin manual removal of debris from intake structure if this can be safely accomplished.
  3. Determine an estimate of the length of time reduced flows, or plant shut down may be needed. This information is to be used to determine if the situation requires immediate action of starting wells for maintaining adequate reservoir levels and/or contacting Nob Hill Water Assoc. for assistance with an intertie.
  4. After flows have been restored, adjust flow rate or restart the Water Treatment Plant.

#### **ALTERNATIVE 2: Manually move ice and slush through intake channel by raising and lowering Obermeyer Inflatable Weir as needed to maintain adequate flow and head through channel.**

- PROCEDURE:**
1. It is primarily important for there to be adequate flow through the head gates at the upstream most end of the intake channel. Throughout the winter months it IS necessary to maintain adequate head over the fish screens in the intake structure to maintain gravity flow to the water treatment plant.
  2. In extreme cold temperatures (20 degrees Farenheit or lower) it is very likely that the intake channel will become filled and blocked with ice / slush ice. It will be necessary for water plant personnel to try to move ice as much as possible by raising and lowering the Obermeyer Inflatable Weir in order to try to maintain the necessary head over the fish screens.
  3. If it is deemed impractical to try to fight the ice, then initiate procedures to activate the wells in the following order:  
Gardner Park, Kissel Park, Airport, Kiwanis
  4. After flows have been restored, adjust flow rate or restart the Water Treatment Plant.

#### **ALTERNATIVE 3: Provide air for screen backwashing from distribution portable air compressors.**

- PROCEDURE:**
1. In the event that there is a mechanical malfunction at the intake structure in regard to any of the air compressors the water plant staff should contact water distribution and acquire the use of a portable air compressor so that flow through the fish screens can be maintained and/or so the Obermeyer Inflatable Weir can be inflated.
  2. Once the repairs to compressor in question are complete, return portable compressor to distribution and resume normal operations.

### **CITY OF YAKIMA MAJOR FACILITIES - TRANSMISSION MAINS**

#### **DESCRIPTION**

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The transmission mains are pre-tensioned concrete cylinder pipe sizes 54 inch, 48 inch, 30 inch.

54 inch = 3,500 L.F.  
48 inch = 45,200 L.F.  
30 inch = 3,000 L.F.

These mains were installed during the period of 1968-1972. Water flows through these pipelines utilize the force of gravity only. No pumps are required to aid the movement of water.

The 54 inch transmission main moves water from the Naches River Raw Water Intake Structure to the Naches River Water Treatment Plant.

The 48 inch transmission main conveys water from the Naches River Water Treatment Plant to the City of Yakima's domestic water distribution system. At Glead pump station there is the Glead CT facility. The CT facility houses two 48" butterfly valves which can be adjusted to maintain pressure in the 48" main from the WTP to the Glead site. The pressure between Glead and the WTP, chlorine residual, pH, and temperature are all contributing factors in maintaining an acceptable CT. CT is defined as the residual disinfectant concentration, "C" in mg/L, multiplied by the contact time, "T" in minutes. The goal is to achieve a calculated available CT value (CT<sub>calc</sub>) that is at least as great as the required CT value (CT<sub>req</sub>). In other words, CT compliance is achieved if the ratio of CT<sub>calc</sub> / CT<sub>req</sub> is greater than one. The CT compliance ratio must be greater than one for disinfection compliance. **Note: If the result is less than one, make appropriate changes and notify the Water Treatment Plant Supervisor.**

The 30 inch transmission main moves water between the equalizing reservoir at 40th Avenue and Englewood and the 48 inch transmission main.

## **OPERATING MODES AND ALTERNATIVES**

The function of the transmission facilities is to transport large quantities of water from the source to the point of treatment and disinfection (Naches River Water Treatment Plant) and from this point to the City's distribution system.

The 48 inch transmission main has outlets installed along its length at intervals of approximately every 1000 feet. Connections to this main can be accomplished through the use of an existing outlet or by direct tap.

The hydraulic gradient, as it currently exists, is such that the 48 inch pipeline does not become full of water under normal circumstances until somewhere between Eschbach Road and the community of Glead.

The 48 inch pipeline follows Highway SR 12 from the Water Treatment Plant crossing the Naches River to 40th Avenue where it turns south on 40th Avenue to Powerhouse Road. The main turns and runs along Powerhouse Road to Englewood Avenue at the intersection of Powerhouse Road and Englewood Avenue. The 30 inch pipeline between the equalizing reservoir at 40th Avenue and Englewood Avenue and the 48 inch pipelines are connected. The 48 inch main continues from this junction along Englewood Avenue to the intersection of 16th Avenue and Cherry Avenue where the 48 inch pipeline terminates with several distribution pipelines radiating out from this terminus.

Should the transmission facility cease to function between the source and 40th Avenue, this loss will be treated as a loss of supply. It is still possible that water can be supplied to Glead and Suntides areas by way of either isolation of the 48" main at the river or by hauling water (contracting LTI). Should the break occur between 40th Avenue and 16th Avenue, then the damaged section will need to be isolated until repairs or replacement can be accomplished.

Should the 48" transmission main be compromised at the Naches River crossing (just below the Nelson bridges), the damaged section of transmission main can be isolated on both sides of the Naches River. Once it has been isolated, provisions have been made to install a 24" bypass from the Glead side of the Naches River, over the train trestle to the Yakima side of the Naches River.

## **STAFF INSTRUCTIONS FROM TRANSMISSION MAIN FAILURE**

-- 28 --

**POSSIBLE CAUSES:**

- Exposure and damage by river flooding or unauthorized excavation.
- Failure from earth movement due to earthquake tremors.
- Pipeline material failure.

**ALTERNATIVE 1: Activation of City wells should transmission main failure result in loss of supply.**

- PROCEDURE:**
1. Isolate the damaged area from the system by closing the necessary valves.
  2. See loss of supply crew instructions for correct procedures to follow to restore water supply.
  3. Excavate damaged area to determine extent of the damage.
  4. Replace or repair the damaged pipe as required. (No repair parts or additional concrete pipe is kept in stock.)

**Note: If a valve can be shut to isolate Suntides / Glead from the failed section of the 48" main, it is vital that this valve be shut so that the water treatment plant can continue to supply water to these areas and the wells in Yakima can supply water to the citizens of Yakima.**

**ALTERNATIVE 2: Activation of river bypass at the train trestle (Nelson bridges area).**

- PROCEDURE:**
1. Isolate the break on each side of the Naches River.
  2. Wells will need to be started to supply water to Yakima throughout this process.
  3. The distribution crew will install a 24" bypass over the train trestle as a temporary fix. Once this section of bypass is installed, repair or replacement of damaged section of 48" main will need to be completed. (No repair parts or additional concrete pipe is kept in stock.)
  4. The water distribution crew has installed a permanent flush line hook up in the 48" main about halfway between the intersection of 40<sup>th</sup> Ave – Fruitvale Blvd and the end of the US 12 entrance ramp that can be connected to the City of Yakima general irrigation reservoir via 5 inch fire hose. Contact the City of Yakima Irrigation Supervisor so that the general reservoir can be isolated from its normal supply.
  5. When the repair is complete, chlorination and flushing of the main is required. Once the line has been flushed and chlorinated for 24 hours, a Bac-T and chlorine residual must be collected and delivered to Cascade Analytical. Once the Water staff has received a satisfactory result from Cascade Analytical from the Bac-T sampling, the main can be put back into service and customers notified of normal operations.

**CITY OF YAKIMA MAJOR FACILITIES - NACHES RIVER WATER TREATMENT PLANT LEVEE**

**DESCRIPTION**

The City of Yakima WTP levee is approximately 1150 feet long and is located on the east bank of the Naches River in Section 24, Township 14 North, Range 17 East, Willamette Meridian, and Yakima County, Washington. The levee protects the Naches River Water Treatment Plant structures, the WTP waste pond area, as well as the public parking/ fishing access area off of State Highway 12.

The City of Yakima WTP staff maintains the levee by periodically pruning the vegetation, placing gravel on the surface, and performing pre- and post-flood inspections. This level of maintenance is consistent with the standards of the Seattle District Corps of Engineers for eligibility in the Rehabilitation Inspection Program. It is increasingly important for WTP staff to be diligent in pre and post spring run-off inspections of the levee due to increased river level that may adversely affect the levee. Should there be a high water event that has damaged the WTP levee, please follow Staff instructions listed below.

**NOTE: Should there be any questions that arise in regard to the proper maintenance or operation parameters for the WTP levee, the Army Corps of Engineers Levee Owners Manual for Non-Federal Flood Control Works, can be found in the WTP supervisor's office. More information can be found in Appendix I of this manual.**

### **STAFF INSTRUCTIONS FOR WTP LEVEE DAMAGE**

**POSSIBLE  
CAUSES:**

- Damage from high water / flood event.
- Damage from earthquake.

**ALTERNATIVE 1: If it has been determined that there has been levee damage on either the riverward or landward side of the levee due to a high water / flood event, it is crucial to proceed to the following procedures for life and property safety.**

- PROCEDURE:**
1. Record level of river at Naches River measuring station. **Note: If the Naches River is predicted to be above flood stage and the City of Yakima has mobilized the personnel and equipment available for a flood fight, the levee is in danger of being breached, it will be necessary to contact the Army Corps of Engineers and request "Technical Assistance". At this time the ACE will determine their ability to respond to our levee for a flood fight.**
  2. If river levels are predicted to rise and it appears that the levee will be over topped, personnel and equipment should be mobilized to fill and transport sand bags to protect the WTP Main building, Chemical building and Fluoride building. Upon the mobilization of personnel and equipment for a flood fight at the WTP levee, a 10 yard dump truck will need to be dispatched to Central Pre-Mix to obtain sand for sand bags (Central Pre-Mix contact info is on page 17 of this manual. **Note: One ton super sacks for sand bagging of a breached levee can be obtained at the Water/Irrigation warehouse. Smaller sand bags for use at WTP entry points can be found on the WTP third floor storage. For the filling of sand bags, the filter media hopper at the WTP can be used to dump sand into and fill bags at the bottom of the hopper.**
  3. It will need to be determined if the WTP needs to be isolated / shut down and secondary sources started due to potential flooding of WTP structures. If flooding of WTP structures is possible, sand bagging of WTP structures may be necessary to prevent flooding of pipe gallery, chemical building, and / or fluoride building.
  4. If the City of Yakima's wells will not be enough to meet the water demand in Yakima, emergency water restrictions may need to be imposed and/or it may be necessary to contact Nob Hill Water Association to open interties.
  5. While repairs are being completed on the levee it will be necessary for Water/Irrigation staff to continually assess whether the WTP can be operational, the secondary sources should be operational, emergency restriction on water may need to be continued or if the Nob Hill Water Association interties should be open.
  6. It is vitally important for all activities, financial, physical work, phone logs, operational logs, and contact information, be documented for Washington State and / or FEMA Public Assistance.

**ALTERNATIVE 2: If the WTP levee has been compromised due to earthquake it will be crucial to proceed to the following procedures for life and property safety.**

- PROCEDURE:**
1. In the case of an earthquake that has affected the levee, follow the instructions for a flood and levee damage.

## **CITY OF YAKIMA MAJOR FACILITIES - NACHES RIVER WATER TREATMENT PLANT**

### **DESCRIPTION**

The existing Naches River Water Treatment Plant (WTP) has a rated capacity of 25 MGD with a direct filtration process. Raw water enters the plant from the Naches River intake via a 54 inch raw water transmission main. The main is reduced in size and controlled by a 36 inch influent valve.

### **OPERATING MODES AND ALTERNATIVES**

Chemicals are applied at the pump flash mix, which provides a mixing time of approximately 2.5 minutes. The chemically treated water discharges into one of two contact basins with a total detention time of about 30 to 75 minutes. The effluent from the contact basin flows to the filters, which discharge to a very small clearwell. (Please refer to the treatment process schematic.)

The chemicals available to be used in the treatment process include aluminum chlorohydrate (ACH) as a primary coagulant, cationic polymer as a coagulant aid, non-ionic polymer as a filter aid, powdered carbon for taste and odor control, caustic soda (sodium hydroxide) for pH control and sodium hypochlorite (chlorine) for disinfection.

The backwash water storage reservoir has a capacity of 750,000 gallons of finished water for use in backwashing the filters. After backwashing this water is wasted to the waste lagoons for storage and further settling before being pumped back into the main stream of the treatment system prior to the hydraulic mixer for the addition of chemicals.

Should the treatment facility become unable to produce water which meets or exceeds all of the drinking water standards, then the plant is to be placed out of service and the procedures for loss of supply followed.

Should components of the Water Treatment Plant cease to function, the following alternatives may be utilized:

**FLASH MIX:** Make adjustments to the chemical feed pumps to increase the chemical dosage and rely on hydraulic mixing of the chemicals.

**CONTACT BASIN:** there are two basins and may be operated separately.

**FILTERS:** Four filters are available and a maximum of three may be isolated at one time.

**BACKWASH RESERVOIR:** The reservoir may be isolated through utilization of the 24 inch butterfly valve installed between the WTP and the reservoir (valve is marked). The backwash refill pumps are then used to pump water directly from the clear well to the filters for washing. A small 3 horsepower pump and the appropriate fittings are stored at the WTP to provide service water under the above conditions.

**WASTE LAGOONS:** All backwash water is diverted directly to the new waste lagoons through the backwash water pump station. The recycling of waste lagoon water can be adjusted (gpm adjustment) on the SCADA system. In the case of a level control failure in the backwash flow pump station, it will be necessary for the operator to open all doors in pump station to drain any standing water in pump station, adjust pump VFD settings to keep up with flow from backwash production, and call in back up for operational assistance. Once the flood situation has been controlled, it will be necessary to contact Conley Engineering to have them troubleshoot the cause of the level control failure.

**CHLORINATION:** One option should the chlorine generator be unavailable is to purchase 12.5% sodium hypochlorite (barrels) and dilute with dilution system to 0.8% solution and fill NaOCL storage tanks. Should there continue to be a problem with the chlorine generator, use the remainder of the 0.8% solution in the solution tanks then shut down the WTP and start wells.



## **STAFF INSTRUCTIONS FOR SCADA, REMOTE TELEMETRY LOSS OF FUNCTION, OR PHONE OUTAGE**

### **POSSIBLE CAUSES:**

- Computer / server failure
- Telemetry radio failure
- Phone outage

**ALTERNATIVE 1: If loss of SCADA at the WTP occurs it will be necessary to determine if there is adequate water storage. If there is ample storage, contact Conley Engineering to determine cause of loss of SCADA.**

1. If loss will be for a short time, determine if wells need to be started
2. Visually monitor reservoir levels and manually control pumps at pump stations if necessary

**ALTERNATIVE 2: If you determine that water from storage will not meet demand during the expected duration of the SCADA outage and wells will not keep up with demand, the plant can be operated manually. (Note: it will be necessary for operator to call in other personnel to assist with operation manually)**

1. All Auma actuators for plant influent valve and all filter effluent valves can be operated manually or in "local".
2. Flow can be monitored on the influent side of the plant as well as the effluent side of the plant by monitoring mag meter flows at the read outs for each flow meter.
3. All chemical feed pumps can be operated in "local" mode and adjusted for speed according to what the chemical analyzers and operator determine is necessary to raise or lower chemical feed
4. In the case of washing a filter;
  - it will be necessary to close any Auma actuated valve (on filter) by hand or in "local"
  - open waste valve on air manifold
  - drain filter to just above surface wash sweeps using the "local" switch and hand turning valve on filter to waste valve to approx. 3.00 MGD. Close the Filter to waste valve by hand or "local"
  - start surface wash pump in "hand"
  - open filter backwash valve on air manifold in pipe gallery
  - operate backwash / filter to waste pumps in pump station by hand on VFD to maintain flow to waste lagoons
  - monitor filter backwash level (once level is just below top of wash troughs, turn off surface wash pump)
  - open main filter backwash valve manually in "local" at the Auma
  - monitor filter backwash level (once level is just below top of wash troughs, turn off surface wash pump)
  - raise backwash flow rate to proper flow rate according to water temperature
  - once the filter has been washed to desired clarity, follow normal hand wash filter return to service procedure operating the proper valves by hand and not from control panel.
5. All plant components (i.e. air compressors, Auma valve actuators, backwash refill pumps, wash pumps, recycle pumps, constant visual inspection of turbidity levels through filters, etc.) will have to be operated and inspected manually
6. All remote facilities will have to be operated by hand and through visual inspection
7. Once SCADA is restored, all components can be returned to normal automatic operation with the assistance of Conley Engineering

**ALTERNATIVE 3: Loss of telemetry at remote sites**

1. Use laptop from WTP and “Bird” meter to determine if remote radios are functioning correctly
2. If radios are not functioning correctly, run diagnostic checks to determine problem
3. If troubleshooting determines problem is beyond our capabilities, call Conley Engineering
4. Continue to visually monitor and operate reservoirs, pump stations, and wells as necessary
5. Return to normal operations as radio problems are resolved

**ALTERNATIVE 4: Landline (phone) Outage at WTP**

1. Assure that the plant cell phone is charged and with the operator at all times.
2. Contact Fire Dispatch (**575-3014**) and apprise them of the situation. If they receive any water or irrigation calls have them contact the WTP cell phone immediately.
3. Contact Police Dispatch (**575-3012**) and apprise them of the situation. If they receive any water or irrigation calls have them contact the WTP cell phone immediately.
4. Contact Century Link (800-788-3600) to determine how long the outage duration may be.
5. Once phone service has been restored, contact both Fire and police Dispatch to let them know you have full service once again.

**(Water Treatment Plant Process Schematic Chart – See Appendix F)**

**STAFF INSTRUCTIONS FOR WTP LOSS OF FUNCTION**

**POSSIBLE CAUSES:**

- Damage from flooding.
- Raw water turbidity too high for effective treatment or low winter temperatures cause slush ice and prevent water conveyance from intake to WTP

**ALTERNATIVE 1: If determination is made that loss of the facility is expected to be of short duration and that adequate supply is available from storage simply isolate the plant and shut down.**

- PROCEDURE:**
1. Isolate the plant and shut down. Sand bag around WTP structures if necessary
  2. Log time of day and reason for shut down
  3. Start emergency wells as necessary

**ALTERNATIVE 2: If you determine that water from storage will not meet demand during the expected duration of the WTP outage, proceed to follow the instructions for loss of supply.**

**PROCEDURE:** See "Loss of Supply" instructions in this manual.

## **CITY OF YAKIMA MAJOR FACILITIES - DISTRIBUTION SYSTEM AND STORAGE RESERVOIRS**

### **DESCRIPTION**

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The City's distribution system is adjacent to several water systems, but is only intertied with the Nob Hill Water Association. Two interties exist with Nob Hill Water Association. Nob Hill Water interties are located in the high zone pressure area at the intersection of 56th Avenue and Lincoln Avenue and at S. 32<sup>nd</sup> Ave. and Ahtanum Road.

The distribution pipelines are 4 to 24 inches in diameter. The pipe materials are mainly cast iron, with ductile iron being used since the early 1970's. There are several steel pipelines and many unlined cast iron pipelines remaining in the system.

The City's existing storage capacity is 32 million gallons (MG) distributed among five reservoirs within the three pressure zones. Each pressure zone has an established hydraulic elevation. This elevation is maintained by the distribution reservoir/s located in each of the pressure zones.

The City's existing instrumentation and control (I&C) system located at the WTP monitors and controls the functions of the distribution system and storage reservoirs.

**Note: The reservoirs are shown on the hydraulic profile in Appendix C. The table indicates the volume of storage, the zone served, type of construction, and the overflow and floor elevation of the five reservoirs in the distribution system.**

### **OPERATING MODES AND ALTERNATIVES**

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The function of the distribution system is to deliver potable water to domestic service connections, as well as fire flow to fire hydrants and fire suppression systems.

The function of the storage reservoirs is to provide: 1) standby water storage for emergencies and short-term interruptions of source of supply; 2) additional source of water for fire protection purposes; 3) equalizing water storage for changes in water demands within the system.

Distribution pipelines branch off from the transmission mains, conveying water to the three pressure zones -- high, middle, and low. Gravity alone provides adequate pressure to serve water to the low zone. Booster pump stations transfer water up to the reservoirs in the middle and high zones, and pressure-reducing valves (PRV's) regulate water flows back from the middle to the low zones when necessary. Normally, closed valves may be operated to move water from the high zone to the middle zone. Conversely, portions of the high zone could be served (at lower pressure) from the middle zone through operation of these normally closed valves and existing check valves.

The six million gallon reservoir at 40th Avenue and Englewood Avenue is utilized as an equalizing reservoir for the entire water system. The flow at the WTP is based upon levels in this reservoir. Any water not consumed by

the low pressure zone through customer demand, or by pumping to the middle and high pressure zones, is stored here.

Should the distribution system cease to function in specific areas, these areas may be isolated by closing valves to sections as needed according to the distribution grid system serving the affected area.

Should the entire distribution system fail to function, then water would need to be hand carried or transported by vehicle. No fire protection would be available from the system. Fire Department tankers would have to be utilized for fighting fires.

Potable water would need to be made available at distribution points throughout the system. The Yakima Firing Center, the National Guard, and private carriers may be pressed into service in an emergency. Fire stations, City parks, and other City properties shall be utilized for distribution of potable water. City residents would be notified of these distribution points and instructed to bring containers to receive their allotment of water.

The source of water for supplying the distribution points could be the Kiwanis, Airport, and Gardner artesian wells (if flowing). Additionally, potable water could be purchased from adjacent purveyors that still have a safe plentiful supply.

Should the storage reservoirs cease to function, the system's ability to meet all demands would become undependable. Some fire fighting capability might be retained but not to normal standards.

The interties with Nob Hill Water Association could be utilized to place their reservoirs into shared operation..

The reservoirs could be isolated and water supply pumped directly into the system from the wells or by gravity from the WTP. The 48" transmission main could act as a reservoir during an emergency.

During extended emergencies portable storage reservoirs or temporary reservoirs could be utilized to accomplish the same function as a storage reservoir.

## **STAFF INSTRUCTIONS FOR DISTRIBUTION SYSTEM AND STORAGE RESERVOIR LOSS OF FUNCTION**

### **POSSIBLE CAUSES:**

- Earthquake
- Sabotage
- Nuclear disaster

**ALTERNATIVE 1: Should localized areas of failure be determined, isolation of these areas of the distribution system or storage reservoirs is in order to reduce property damage from escaping water and maintain the system integrity.**

- PROCEDURE:**
1. Notify the Fire Department of the extent of service they may expect from the system and the approximate duration of this service level.
  2. Check water system maps and records for locations of system valves to be utilized in isolating the affected area or structure.
  3. Proceed to the valves and operate them into closed position.
  4. Depending upon the volume of water escaping, notify the customers in the affected area either before or after isolating the area.
  5. Determine amounts of damage to the affected areas.
  6. Determine methods and estimate the cost of repairs.

7. Costly repairs (greater than \$7,500) need management approval and assistance from Purchasing.
8. Institute water rationing and a distribution point program within the affected areas if repairs cannot be made immediately.
9. Make repairs or replace the portions of the distribution system and storage reservoirs that have failed.
10. Disinfect the main repairs and/or replacements made during restoration. Flush the mains and take a bacteriological sample. Receive a negative report on the bacteriological sample before returning the system back into service.

**ALTERNATIVE 2: Should complete failure of the distribution system and/or storage reservoirs occur, water rationing and potable water distribution points would need to be established to provide customers with a safe drinking water supply.**

- PROCEDURE:**
1. Notify the Fire Department that no water supply is available from the system.
  2. Notify the customers that the water supply is not safe or reliable and that water rationing is in effect.
  3. Boil water notice if necessary
  4. Determine sources and methods of distributing a potable water supply to the customers.
  5. Distribute information regarding the locations of potable water supply to the customers.
  6. Determine what portions of the system are salvageable and determine methods and costs to repair and/or replace the damaged portions of the system.
  7. Implement repair and/or replacement program.

**ALTERNATIVE 3: Should only the storage reservoirs cease to function, they should be isolated and the system operated on a limited basis without benefit of storage reservoirs.**

- PROCEDURE:**
1. Notify the Fire Department that a reduced amount of water supply is available from the distribution system.
  2. Notify the customers that the system use is curtailed and water rationing is in effect.
  3. Boil Water notice if necessary
  4. Determine best method to utilize under the disaster circumstances: a) utilize Nob Hill Water Association's storage reservoirs; b) place water directly into the distribution system without benefit of storage; c) construct or utilize temporary storage facilities through the use of portable reservoirs or open excavations with plastic or vinyl linings.

## **CITY OF YAKIMA MAJOR FACILITIES -- BOOSTER PUMPING STATIONS**

### **DESCRIPTION**

The pump stations are listed in Appendix C, showing the location, the supply, the pressure zone served, the number of pumps in each station and capacity, and other characteristics.

### **OPERATING MODES AND ALTERNATIVES**

The booster pump stations provide water to the middle and high zones, as shown in the hydraulic profile. The 40th Avenue and Stone Church pumps are operated in a variety of lead lag positions depending on the demand and the season. The difference in water demands is due to an irrigation demand in the middle and high zones. These pumps are controlled by the middle zone's two reservoir levels through the radio telemetry system.

The high zone pumping station is only capable of operating one of the 125 hp pumps at a time. This is due to the size of the electrical service available when the facility was constructed. The two 125 hp pumps are alternated with one placed in a standby role, while the other is being used and with the 30 hp pump placed in the lag position. The smaller 30 hp pump is placed in the lead during low demand times. This station's pumps are controlled by the water levels in the high zone's two reservoirs through the radio telemetry system.

The Glead pumping station is operated by utilizing the two 5 HP pumps to meet domestic water demands and the 125 HP pump for fire flow demands. This station's pumps are controlled by pressure sensing controls and a hydropneumatic tank. At 55 psi the lead pump will start and run until pressure builds to 75 psi. The lag pump starts at 45 psi 125 HP fire pump comes on at 30 psi; and run until it has 90 psi for 12 minutes. A pressure relief valve is located in the manifold system and allows the bypass of water back into the 48" transmission main of any water in excess of 100 psi.

Should the 40th Avenue and Stone Church pump stations cease to function, the available supply in the twin twelve (12) million gallon reservoirs needs to be determined. If additional water supply is needed to meet demands, Nob Hill Water Association may be contacted to furnish water through the emergency intertie in the high zone; then put into the middle zone through normally closed valves or PRV's . Should the station cease to function because of an electrical power outage, a portable electrical generator might be used to restore electrical power to the 40<sup>th</sup> Ave. pump station and/or depend on the generator at the Stone Church pump station.

### **PUMP STATIONS**

Should the High Zone Pump Station cease to function, the available supply in the twin one (1) million gallon reservoirs need to be determined. If additional water supply is needed to meet demands, the Nob Hill Water Association may be contacted to furnish a source of water through the emergency intertie at N.56th Avenue and Lincoln Avenue. Should the station cease to function because of an electrical power outage, the electrical generator should be used to restore electrical power to the site.

Should the Glead pump station cease to function, the customers are without a water supply at adequate pressure (greater than 30 psi). However, as long as the 6 million gallon reservoir at N.40th Avenue and Englewood Avenue is capable of maintaining at least a minimum level of 11 feet, there is a positive pressure at Glead. Currently, there are approximately twenty five customers served by this pump station. Water supply for domestic purposes would continue to be available at low pressure (10-15 psi). A local carrier with a food grade tanker may be filled with water and connected to the fire hydrant near the Naches Primary School to supply the Glead System. The Glead Fire Department should be notified immediately if the station is to be out of service for any length of time. This rural department has the capability of fighting fires without adequate water supplies available close at hand through use of tanker trucks and can dispatch additional tanker units if necessary.

## **STAFF INSTRUCTIONS FOR BOOSTER PUMPING STATIONS LOSS OF FUNCTION**

### **POSSIBLE CAUSES:**

- Severe Storms, Earthquakes, Volcanoes, and other natural disasters
- Sabotage
- Nuclear Disaster
- Electrical Power Loss
- Loss of PLC or Controls (All pump stations and wells, including backwash pump station and WTP)

**ALTERNATIVE 1: Should any of the booster pumping stations fail, the duration of the failure and available water storage must be determined. If the determination is that an additional water source will be needed to meet demands prior to placing the stations back in service, then the emergency interties(s) with the Nob Hill Water Association must be activated.**

- PROCEDURE:**
1. The WTP personnel will note the time of booster pumping station failure. Verify available water storage and supply demand.
  2. Proceed to the booster pumping station and make a preliminary inspection for possible causes of the loss of service.
  3. If possible, determine cause of problem and estimate duration of time the pumping station will be out of service. Make repairs as required to restore normal service.
  4. Determine if additional water supply will be necessary and estimate quantity needed to satisfy demand.
  5. Contact Nob Hill Water Association and Emilio Lopez, Water Distribution Supervisor, for implementation of the appropriate emergency interties.
  6. Make repairs as required to restore normal service.

**ALTERNATIVE 2: Should the booster pumping stations fail due to the loss of electrical power and / or loss of PLC or controls, and it is determined that the loss will be of a significant duration; secure portable electric power generation equipment and temporarily restore electrical power at Glead Pump Station and/or start generator at the High Zone Pump Station and/or Stone Church Pump Station.**

- PROCEDURE:**
1. Secure an adequately sized portable generator for the pump station: (Gleed: 250 KW)
  2. Contact a local electrical contractor for assistance in disconnecting the normal power supply and reconnecting the emergency power supply. Should the loss of PLC or electrical controls be the issue, it will be necessary to contact Conley Engineering as soon as possible to restore PLC / control function. It may be necessary for an operator to reconnect the remote access port so engineer might troubleshoot the issue before leaving their office. **NOTE: The network switch and patch panel is behind the control panel off of the control room at the WTP. This is the first Ethernet connection rack on the left as you walk behind the control panel. To reconnect the remote access port, follow this procedure; The Red wire from port 7 on the City Switch connects to TIE-11 on patch panel just below and the Red wire from port 8 on the City Switch connects to TIE-12 on the patch panel just below. These connections will have to be disconnected after remote access is no longer needed.**
  3. Monitor the operation of the emergency power supply until the normal power supply is restored.
  4. Contact a local electrical contractor for assistance in disconnecting to emergency power supply and reconnecting the normal power supply.
  5. Return the portable power generating equipment to its owners.

## **CITY OF YAKIMA MAJOR FACILITIES -- PRESSURE REDUCING VALVE STATIONS**

### **DESCRIPTION**

The PRV locations are listed in **Appendix G**, indicating the location, size, pressure settings, the zone that is served and some additional information.

The valves listed as "not in service" have been made redundant through changes in the boundaries of the pressure zones and are no longer required.

### **OPERATING MODES AND ALTERNATIVES**

Control of water flow between the middle and low pressure zones is provided by the PRV's located throughout the distribution system. These control valves are set to open and close at various hydraulic elevations depending on the intended purpose of the valve (continual supply or emergency only).

The normal use of the City's PRV's is to provide additional water flow for emergency purposes. The reduction of pressure in the low zone under emergency conditions because of a fire flow or other large water demand will cause the hydraulic elevation to decrease. This reduction in hydraulic elevation will cause the normally closed hydraulically actuated valves to open and provide additional flow into the low zone.

Should the PRV stations cease to function, the valves may be manually open or closed.

The effects of the PRV stations having failed are: 1) Water movement between zones which will result in losses and increases in water pressure in the distribution system, if failure is in the open position. 2) Inadequate water flows during an emergency or other high demand situations, should the valve fail in the closed position.



## **STAFF INSTRUCTIONS PRV STATIONS LOSS OF FUNCTION**

### **POSSIBLE CAUSES:**

- Sabotage
- Freezing
- Mechanical Malfunctions

### **ALTERNATIVE 1: Isolate the PRV stations that have failed.**

- PROCEDURE:
1. Determine which station(s) has/have failed by checking each station individually.
  2. Determine problem and attempt repairs or manually activate the valves either open or closed.
  3. If you fail in attempting to make repairs, isolate the valve(s) with the gate valves provided.
  4. Complete repairs as soon as possible. Parts are stocked at the Water/Irrigation Division Warehouse.
  5. Place the station(s) back in service.

## **CITY OF YAKIMA MAJOR FACILITIES -- ELECTRICAL POWER SUPPLY**

### **DESCRIPTION**

The source of the electrical power supply for the City of Yakima Water System is the PacifiCorp. All of the water system facilities are dependent upon electrical energy.

### **OPERATING MODES AND ALTERNATIVES**

The function of the water system's power supply is to provide the electrical energy necessary to operate the multitude of electrically powered equipment necessary for operation of the water system.

With the loss of electrical energy, the Water Treatment Plant, booster pumping stations, wells, telemetry control systems and telephonic communications may be affected; depending on the extent of the loss of power.

Should the water system's power supply cease to be available, the following alternatives may be utilized to augment or accomplish the same function.

1. Contact the PacifiCorp to determine the extent of the power outage and the length of time the loss of power is expected to last. Local Dispatch 575-3134.
2. Secure portable electrical generators to serve as a temporary power supply for the affected facility.
3. Utilization of the natural artesian well head pressure at the Kiwanis well, Airport well, and Gardner well is only adequate if these wells are flowing.

## **STAFF INSTRUCTIONS FOR ELECTRICAL POWER SUPPLY LOSS**

### **POSSIBLE CAUSES:**

- Severe storms, earthquakes, volcanoes, and other natural disasters
- Nuclear disaster
- Sabotage of electrical generation facilities
- Overload / Failure of electrical system
- Loss of PLC or Controls (All pump stations and wells, including backwash pump station, and WTP)

### **ALTERNATIVE 1: Contact PP&L**

- PROCEDURE:**
1. Attempt to telephone PP&L at 575-3133. If telephone communication is not possible, wait for normal business hours and personally contact them at their offices on North 16th Avenue or 7 North 3rd Street.
  2. Secure from PP&L their estimate of the area affected by the power outage and the estimate of the length of time the outage is expected to last.
  3. Using this information, along with the amount of water in storage at the time of the loss of power and the average daily system demand, determine if the water in storage is inadequate to meet the needs during the outage.
  4. If the electrical power is to be restored prior to the stored water levels, dropping below one day's reserves then simply wait for restoration of the power supply. If the loss of power will exceed this time frame, then implement the water rationing procedures outlined under "loss of supply" in this guide.
  5. When the loss of power supply is isolated to one or a few facilities, attempt to utilize an alternative to that particular facility or facilities. (see Major Facilities in this guide)

### **ALTERNATIVE 2: Secure portable electrical generators to serve as temporary power supplies for the affected facility. Note: There are generators at the WTP, 3<sup>rd</sup> Level Pump Station, and Stone Church Pump station.**

- PROCEDURE:**
1. If only the Water Treatment Plant is affected, then treat the emergency as a "loss of supply" and follow the instructions as outlined in this guide.
  2. Secure a generator from a local machinery vendor, Yakima Firing Center or the Washington State National Guard.

3. Once you have secured a generator, contact the or a private electrical contractor to disconnect the electrical service from PP&L and reconnect to the temporary power supply. Should the loss of PLC or electrical controls be the issue, it will be necessary to contact Conley Engineering as soon as possible to restore PLC / control function. It may be requested by the Engineer for an operator to reconnect the remote access port so that they may troubleshoot the issue before leaving their office. **NOTE: The network switch and patch panel is behind the control panel off of the control room at the WTP. This is the first Ethernet connection rack on the left as you walk behind the control panel. To reconnect the remote access port, follow this procedure; The Red wire from port 7 on the City Switch connects to TIE-11 on patch panel just below and the Red wire from port 8 on the City Switch connects to TIE-12 on the patch panel just below. These connections will have to be disconnected after remote access is no longer needed.**
4. Gleed System existing power requirements 250 KW.
5. Operate the pump station under these conditions until PP&L has completely restored a reliable power source. Contact the electrical technicians to disconnect the emergency power source and reconnect to PP&L's system.
6. Return the portable generator to its owner.

### **ALTERNATIVE 3: Utilization of artesian wells.**

- PROCEDURE:**
1. Proceed to the Kiwanis and Airport wells and activate the controlling valves to allow the natural artesian flow pressure into the distribution system. (Airport Well = 36 psi) (Kiwanis Well = 7 psi) if flowing
  2. The valves between the wells and the system are hydraulically operated and will be required to be manually overridden. This procedure should not be attempted until the water in storage is exhausted.
  3. Secure the hypochlorinator from the WTP or the City of Yakima Shops Complex - Water Division Warehouse.

**NOTE: Points of withdrawal in or near the pump house may be utilized as fill points for water hauling operations.**

## **CITY OF YAKIMA MAJOR FACILITIES -- MATERIALS AND SUPPLIES INVENTORY**

### **DESCRIPTION**

The City of Yakima Water/Irrigation Division maintains an extensive inventory of waterworks parts and supplies at its warehouse at 2301 Fruitvale Blvd.

An inventory index is maintained by the Division's Storekeeper. The inventory consists of parts and supplies most commonly utilized for operating and maintaining a water system.

### **OPERATING MODES AND ALTERNATIVES**

The function of this inventory is to provide a readily available source of the most often used materials and supplies for repair and operation of the water system.

Should necessary materials or supplies be unavailable from this inventory then the following alternatives may be utilized.

1. Contact local vendors and suppliers for needed materials or supplies. (Local includes all of Washington State and Portland, Oregon)
2. Contact adjacent water purveyors as possible sources of needed materials or supplies.
3. Isolate the affected area and re-route water flow, if possible.

**STAFF INSTRUCTIONS FOR UNAVAILABILITY OF MATERIALS AND SUPPLIES**

- POSSIBLE CAUSES:**
- Seldom used or odd sized materials or supplies
  - Delivery of material or supplies is delayed

**ALTERNATIVE 1: Contact local vendors and suppliers.**

- PROCEDURE:**
1. Make telephone inquiries regarding item's availability and cost.
  2. If costs exceed the City of Yakima Purchasing Guidelines (\$7,500) then an emergency purchase order must be obtained from Purchasing.
  3. Secure material or supplies and have delivered or picked up; whichever is appropriate.

**ALTERNATIVE 2: Contact adjacent water purveyors**

- PROCEDURE:**
1. Make telephone inquiries to surrounding and adjacent water purveyors.
  2. Request use of the needed material or supplies.
  3. Obtain needed items from other water purveyors.
  4. Make arrangements to order the identical material or supplies to replace the items.

**ALTERNATIVE 3: Isolate the area and re-route water flow if possible.**

- PROCEDURE:**
1. Through the use of existing valves, isolate the affected area to as small an area as possible.
  2. Utilize temporary or partial repairs to minimize the number of customers out of service.
  3. If necessary, construct temporary mains or services to restore water service.

**CITY OF YAKIMA MAJOR FACILITIES -- COMMUNICATIONS**

**DESCRIPTION**

The City of Yakima Water/Irrigation Division utilizes the CenturyLink Telephone Company service for land lines and Verizon cell phone service for cell phones. The cell phones are utilized in place of hand held radios.

The telemetry system operates on a stand-alone radio system at 155.125 MHz.

**OPERATING MODES AND ALTERNATIVES**

The function of the water system's communication system is two-fold: 1) Allow communication between service vehicles and the Water/Irrigation Division offices and Water Treatment Plant; 2) Allow communication between the automatic telemetry controls and the Water Treatment Plant.

Should the communication system cease to function, the following alternatives might be utilized.

1. Secure back up hand held radios, use personal cell phones or citizen-band type radios.
2. Operate automatically controlled equipment in the manual mode and utilize vehicles and staff to operate and control the water system functions manually.

**STAFF INSTRUCTIONS FOR LOSS OF COMMUNICATIONS SYSTEMS**

**POSSIBLE CAUSES:**

- Radio interference from a natural or manmade source
- CenturyLink Telephone Company system problems or failures

**ALTERNATIVE 1: Utilize portable radios or CB radios**

- PROCEDURE:**
1. If radio communications are possible, secure portable radios from the City of Yakima Police Department or Fire Department as they operate on an alternate radio band.
  2. If the radios above are unavailable, utilize citizen band type radios. Several employees have personal CB radios which could be volunteered for use during an emergency situation.
  3. Personal cell phones

**ALTERNATIVE 2: Operate automatic equipment in the manual mode.**

- PROCEDURE:**
1. Proceed to each necessary automated equipment location and place the equipment in the manual control mode.
  2. Monitor the reservoir levels, booster pumping stations and pressure sensing stations physically at intervals determined to be necessary under the conditions existing at the time.

**CITY OF YAKIMA MAJOR FACILITIES -- TRANSPORTATION**

**WATER DIVISION EQUIPMENT LISTING**

Number	Description	Fuel Type	Location
3	Backhoe/Loaders	Diesel	City Shops Complex
1	Boom Truck	Diesel	City Shops Complex
3	Service Vans	2 Diesel (1 gas)	City Shops Complex
1	4WD Pickup Truck	Gas	Water Treatment Plant
1	4WD Pickup Truck	Gas	Water Treatment Plant
3	4WD Pickup Truck	Gas	City Shops Complex
1	Valve Trucks	Gas	City Shops Complex
2	Valve/Vacuum Trailers	Gas	City Shops Complex
2	10 Yd. Dump Truck	Diesel	City Shops Complex
3	Air Compressor	Diesel	City Shops Complex

2	Compact Pickup Truck	Gas	City Shops Complex
7	2WD Pickup Trucks	Gas	City Shops Complex
1	Front End Loader	Diesel	City Shops Complex
1	Asphalt Zipper / Grinder	Diesel	City Shops Complex
1	Hybrid 4 door vehicle	Gas	City Shops Complex
1	5 Yd Dump Truck	Diesel	City Shops Complex

The City of Yakima maintains a fuel supply at 2301 Fruitvale Blvd., at N 1<sup>st</sup> Street and Lincoln and has a standing agreement with a private sector supply in case of emergency. Contact the Fleet Maintenance Manager if the City's supply is unavailable.

**OPERATING MODES AND ALTERNATIVES**

The function of the transportation system and vehicles is to mobilize the necessary manpower and equipment between different areas or parts of the water system.

Should the transportation system cease to function, the following alternatives might accomplish the same function.

1. Utilization of alternate routes and/or equipment.
2. Assigning manpower to sections of the water system making each responsible for the area assigned to them.

**STAFF INSTRUCTIONS FOR LOSS OF THE TRANSPORTATION SYSTEM**

- POSSIBLE CAUSES:**
- Massive destruction from a natural event such as fire, earthquake, volcano, flood, etc
  - Massive destruction from a nuclear disaster

**ALTERNATIVE 1: Utilization of alternate routes and/or equipment.**

- PROCEDURE:**
1. Attempt to utilize existing equipment and try alternate routes until you can reach your destination.
  2. Attempt to rent alternate equipment from rental businesses or utilize volunteer equipment from private citizens (i.e., 4 WD and Off Road Vehicle Clubs, Helicopters)

**ALTERNATIVE 2: Assign manpower to sections of the Water system.**

- PROCEDURE:**
1. Loss of transportation may isolate the operator or operators on duty at the Water Treatment Plant. Should this occur, the operator is required to remain at the WTP until relieved or released from duty by qualified WTP staff or other qualified personnel.

## **STAFF INSTRUCTIONS IN THE EVENT OF FIRE OR POLICE REQUEST FOR ASSISTANCE**

### **POSSIBLE CAUSES:**

- Fruit warehouse fire, large fire other than fruit warehouse
- Police request for assistance to assure public safety

**ALTERNATIVE 1: In the event utilization of heavy equipment at an emergency incident is deemed necessary, by an Incident Commander from the Fire Department in order to ensure life safety and/or expedite property conservation, the Incident Commander may contact the Water / Irrigation Division for assistance at the emergency scene.**

### **PROCEDURE:**

1. In the event of an emergency and the Fire Incident Commander (IC) determines that a backhoe and backhoe operator are required for public safety and/or property conservation, he/she will notify fire dispatch.
2. Fire dispatch will make this request by calling Water/Irrigation 575-6154.
3. During normal business hours (daytime hours), The Water Distribution and Irrigation Supervisors will collaborate on sending the proper personnel and equipment to the incident scene.  
After hours, weekends, and holidays, dispatch will call 575-6154 emergency personnel will notify either the water or the irrigation standby person of the situation.  
The standby person will notify their supervisor so standby duties are covered.  
The person dispatched to the fire scene shall report to the IC with their normal safety gear and personal protective equipment in a backhoe. They shall follow the directions of the IC or the designee for work to be performed and safety measures. Shall not leave until released by the IC or designee.

## **Section 10 – Returning to Normal Operation Conditions**

Many factors might need to be considered before you decide to return to normal operation after Level III, Level IV emergencies, or Health Advisories emergencies. For example:

- Has the system been repaired to the point that it can meet demand?
- Has the system operator made a safety and operational inspection of all system components?
- Has the system been properly flushed, disinfected and pressure tested?
- Has the water been adequately tested in accordance with sampling regulations?
- Does the water meet standards?
- Is there adequate staff to operate and manage the system?
- Do federal, state, and local agencies support returning to normal operation?
- Have you developed the proper public messages?

**General Level III and level IV: Returning to normal operations**

Action	Description and actions
Inspect, flush, and disinfect the system (if necessary)	Water system operator and support staff inspect all system facilities, ensure all water quality tests have been completed and the system has been flushed and disinfected if necessary. Water system operator makes a report to the Water / Irrigation Manager. Water / Irrigation Manager makes decision on current condition of system and will determine if each system component is ready for return to service.
Verification of water quality (if necessary)	Water/Irrigation Manager (or acting representative) verifies water quality sampling results and advises staff to return to service or if more sampling needs to be performed.
Coordinate with DOH	Water/Irrigation Manager (or acting representative) coordinates with DOH on system condition and water quality results.
Coordinate with PP&L, hired contractors, emergency / public safety agencies or other outside agencies	Water/Irrigation Manager (or acting representative) coordinates with outside stakeholder that may have been involved in emergency activities. Determine that all stakeholders have completed emergency work and are ready for a return to service on their end.
Notify customers	Water/Irrigation Manager meets with water system operators and Public Information Officer to prepare a notice to customers to advise of return to service activities and general explanation of system activities.

**Section 11 – Plan Approval**

This plan is officially in effect when reviewed, approved, and signed by the following people. The Emergency Operations Plan will need to be reviewed and updated on an annual basis:

Name/Title	Signature	Date
<b>Dave Brown – Water/Irrigation Manager</b>		
<b>Mike Shane – Water/Irrigation Engineer</b>		
<b>Emilio Lopez – Water Distribution Supervisor</b>		
<b>Jeff Bond – Water Treatment Plant</b>		



<b>Supervisor</b>		
<b>Rich Sanislo – Irrigation Supervisor</b>		

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**Appendix S.**  
**Letter of Commitment for Participation on Regional**  
**Wellhead Committee**

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# Upper Yakima Valley Regional Wellhead Protection Program

April 15, 2016

**For more information  
please contact:**

Brian Sayrs  
Regional Planner  
Eastern Drinking Water Operations  
16201 East Indiana Avenue  
Suite 1500  
Spokane Valley, WA 99216-2830

**Yakima County  
(509) 574-2300**

**City of Yakima  
(509) 575-6154**

**City of Union Gap  
(509) 248-0432**

**City of Selah  
(509) 698-7369**

**City of Moxee  
(509) 575-8851**

**Nob Hill  
Water Association  
(509) 966-0272**

**City of Tieton  
(509) 673-3162**

**Town of Naches  
(509) 653-2647**

**Department of Health  
(509) 456-3115**

Re: Upper Yakima Valley Regional Wellhead Protection Program Update

Dear Brian,

The Upper Yakima Valley Regional Wellhead Protection Committee recently completed our 2015 Update. As a group we completed the following items:

- Completed windshield surveys of all well sites.
- Reviewed and updated the Potential Wellhead Protection Contaminant Source Inventory Map
- Reviewed and updated the web page on Yakima County's web site

In addition to the above items each purveyor mailed notification letters to businesses located within each purveyor's wellhead protection area including any new potential contaminant sources. Also attached are everyone's updates for your review.

If you have any questions or need additional information, feel free to contact me at 509-575-8851

Sincerely,

Byron Adams  
City of Moxee, RWPC Chairman

Cc: Dave England/ Nob Hill Water Association  
Joe Stump/Yakima County  
Mike Shane/City of Yakima  
Mike Henderson/City of Tieton  
Dennis Henne/City of Union Gap  
Mikel Davis/Town of Naches  
Ty Jones/City of Selah  
Byron Adams/City of Moxee



# Upper Yakima Valley Regional Wellhead Protection Program

For more information  
please contact:

November 30, 2015

**Yakima County**  
(509) 574-2300

**City of Yakima**  
(509) 575-6154

**City of Union Gap**  
(509) 248-0432

**City of Selah**  
(509) 698-7365

**City of Moxee**  
(509) 575-8851

**Nob Hill  
Water Association**  
(509) 966-0272

**City of Tieton**  
(509) 673-3162

**Town of Naches**  
(509) 653-2647

**Department of Health**  
(509) 456-3115

Dear Property Owner or Business Owner:

The Regional Wellhead Protection Committee (RWPC) was formed by eight water purveyors in the Upper Yakima Valley including the City of Yakima in 1996 in response to Washington State Department of Health (DOH) wellhead protection planning requirements. The RWPC and the City of Yakima are taking a proactive approach to wellhead protection planning to ensure that each community's groundwater supplies are adequately protected from potential contamination sources on the ground surface. The purpose of this letter is to notify you of the location of your business within one of the City's wellhead protection areas and provide you with information on how you can help protect the City's drinking water supplies.

Wellhead protection planning includes the following four elements:

- Development of wellhead protection areas, or areas which may be susceptible to contamination
- Identification of potential contamination sources, which include septic tanks, underground storage tanks, abandoned wells, and certain businesses
- Coordination of management efforts to help minimize the impact of potential contamination sources, including posting of signs, distribution of literature, and public education efforts
- Development of contingency planning to ensure that prompt response procedures are in place in the event that a well becomes contaminated

The RWPC and the City understand that most business owners recognize the need to protect the environment in and around your business. We hope that informing you of the location of business within the City's wellhead protection area will result in an increase in precautions to ensure your activities do not adversely impact our drinking water supply. The following practices can greatly reduce the threat of contamination to groundwater supplies:

- Recycle all hazardous wastes used on the premises including solvents, paints, cleaners, printing supplies, or other chemicals through Yakima County's free small quantity generator or recycling programs (574-2450).
- Reduce the amount of hazardous waste used through waste minimization efforts. Free literature on waste minimization is available from the Department of Ecology (DOE) and your local water purveyor.
- Conserve water whenever possible. Water conservation reduces waste volumes and reduces the threat of contaminant transport.

For more information or to view your location in the WHPA, please visit the RWPC Website at:

<http://www.yakimacounty.us/584/Wellhead-Protection>

Sincerely,

Mike Shane  
Water/Irrigation Engineer  
City of Yakima

c/o Yakima County Public Works - 128 North 2<sup>nd</sup> Street, Room 408 - Yakima, Washington 98901-2614

## Gardner

Facility Name	Address 1	ZipCode
Autocraft Paint Body Works LLC	1804 S 3RD AVE	98902
CubCrafters	1918 S 16TH AVE	98903
DESIGN SERVICES	1507 S 9TH AVE	98902
Dills Property E Viola	1122 E VIOLA	98902
Hans Properties LLC	1601 W WASHINGTON AVE	98902
MCALLISTER FLYING SERVICE	2000 S 16TH AVE	98902
Perry Technical Institute	2011 W WASHINGTON AVE	98902
ROADRUNNER GAS	1820 3RD AVE S	98902
TAHOMA CEMETARY	1802 TAHOMA AVE	98902
S&A Auto Sales	1804 1/2 S 3RD AVE	98902
Yakima School Dist Central Coop	1802 W PERRY	98902
Arco (AM/PM)	1611 W. WASHINGTON AVE	98902
Yakima School Dist. (Bus Barn)	1802 W. PERRY	98902
Ed's VW Repair	905 W. WASHINGTON AVE	98902
COLONIAL LAWN AND GARDEN (UNION GAP)	1118 W. WASHINGTON AVE	98903
MODERN MILLWORKS	401 W. WASHINGTON AVE	98902
THE GARAGE	1802 S. 3RD. AVE	98902
AIRPORT & AUTO WASH	1003 W. WASHINGTON AVE	98902
SINOLOA TIRES	906 W. MEAD AVE	98902
HOUSE OF GREEN	1516 S. 18TH AVE	98902
RIDGEVIEW SCHOOL	609 W. WASHINGTON AVE	98902
LEWIS AND CLARK SCHOOL	1114 W. PIERCE ST.	98902
ABSOLUTE DRAIN & SEPTIC (UNION GAP)	2020 S. 10TH AVE	98903
BRONCO AUTO SALES	1710 S. 3RD AVE	98902
Machine Unlimited	501 A. W Washington Ave	98902
Evergreen Self Storage	1715 S. 3rd Ave.	98902
All-Safe Storage	1611 W. Perry St.	98902

## Kiwanis

Facility Name	Address 1	ZipCode
Yakima Tire Shop	401 S 3RD ST	98901
Lee Peterson Motors	410 S 1ST ST	98901
DEL MONTE FOODS 125	108 W WALNUT ST	98901
WA AGR Yakima 4	515 S FAIR AVE	98901
US GSA William O Douglas Fed Bldg	25 S 3RD ST	98901
Jiffy Lube	301 S 1ST ST	98901
FIRESTONE MASTER CARE	202 S 1ST ST	98901
City of Yakima Transit	2301 Fruitvale Blvd,	98901
American Red Cross Yakima	302 S 2ND ST	98901
City of Yakima (Kiwanis Well)	6390 U.S. hwy 12	98901
City of Yakima Parks and Rec.	2301 Fruitvale Blvd.	98901
Washington Middle School	510 S. 9th St.	98901
Yakima Bindery	310 E. Chestnut Ave.	98901
Extreme Auto Body	403 S. 2nd St.	98901
Go's Collision Repair	402 S. 2nd St.	98901
Jim and Jennis Tattoo	210E. Yakima Ave.	98901
Johnsons Auto Glass	119 S. 1st St.	98901
AAMCO Transmission	112 S. 1st. St.	98901
McKinney's Auto Glass	221 S. 1st St.	98901
Auto Shoppers of Yakima	320 S. 1st St.	98901
White Front Shop	332 S. 1st St	98901
Finish Line Powder Coating LLC.	309 S Front St.	98901
Inland Pipe and Supply Co.	102 S. Front St.	98901
Cascade Fire and Safety Equipment	123 S. Front St.	98901
H R Spinner Corp.	115 S. 1st. Ave.	98901
Platt Electric Supply Inc.	16 S. 1st Ave.	98901
CED	131 S. 1st. Ave.	98901
Roy's market / laundry	201S. 6th St.	98901
Crazy Ink Tattoo	118 S. 1st. St	98901
Sigs Office machine	112 S. 2nd St.	98901
City of Yakima Police Dept.	200 S. 3rd St.	98901
Yakima Valley Business Times	416 E. Maple St.	98901
Superior Transmission	404 S. 3rd St.	98901
Yakima Valley Farm Workers Clinic	120 S. 3rd St Suite 100	98901
P&F Automotive Warehouse	409 S. Front St.	98901
BNSF Yakima Warehouse	202 S FRONT ST	98901
Los Amigos Auto Repair	315 S. 2nd St.	98901
Boslers Automotive	502 S. 3rd St.	98901
Capital Theater	19 S. 3rd St.	98901
Scrivner Dental Lab	424 S. 3rd St.	98901
City of Yakima MiCare Clinic	103 S. 3rd St.	98901
YCH Hops (Warehouse at Front St.)	203 Division St.	98902

## Kissel

Facility Name	Address 1	ZipCode
City of Yakima Parks	2301 Fruitvale Blvd.	98902
City of Yakima (Kissel Well)	6390 U.S. Hwy 12	98902
Current Occupant	1701 Creekside Lp Suit 100	98902



Current Occupant	1701 Creekside Lp Suit 120	98902
Current Occupant	1703 Creekside Lp Suit 100	98902
Burkhart Dental Supply	1705 Creekside Lp	98902
Creekside Dental	1501 Creekside Lp	98902
G. Shayne Toliver, D.O.	3902 Creekside Lp Suite 105	98902
Northwest Asthma and Allergy Clinic	3601 Creekside Lp Suite 100	98902
Rad's Auto Repair	1602 S. 36th Ave	98902
Cascade Animal Care Products	1504 S. 36th Ave	98902
Cole Industries, Inc. (Boiler Repair and Service)	1502 S. 36th Ave	98902
City of Yakima Parks (Randall Park)	2301 Fruitvale Blvd.	98902
Bergen Screen Print	1418 S. 40th Ave.	98902
All-American Self Storage	1416 S. 40th Ave.	98902
Current Occupant	1601 Creekside Lp.	98902
Cascade Foot and Ankle	3919 Creekside Lp.	98902
Sole Therapy Medical Day Spa	3919 Creekside Lp.	98902
Hoyt Plastic Surgery	3907 Creekside Lp. Suite 100	98902
Yakima Pediatric Dentistry	3909 Creekside Lp. Suite 140	98902
Current Occupant	3909 Creekside Lp. Suite 130	98902
Yakima Gastroenterology	3909 Creekside Lp. Suite 120	98902
Apothecary Compounding Solutions	3909 Creekside Lp. Suite 110	98902
PAML (Laboratory)	3909 Creekside Lp. Suite 100	98902
Lally Chiropractic Clinic	1508 S. 36th Ave	98902
Cornerstone Medicine	4003 Creekside Loop	98908

## Airport

Facility Name	Address 1	ZipCode
City of Yakima (Airport Well)	6390 U.S. Hwy 12	98903
Federal Express Corp Yakima	2108 W WASHINGTON AVE	98903
YAKIMA AIR TERMINAL	2400 W WASHINGTON AVE	98903
TSA Yakima Air Terminal McAllister Field	2400 W WASHINGTON AVE TSA	98903
NATIONAL WEATHER SERVICE	2406 W WASHINGTON AVE	98903
YAKIMA CITY AIRPORT	2300 W WASHINGTON AVE	98903
HORIZON AIR YAKIMA AIR TERMINAL	2400 W WASHINGTON AVE	98903
Tube Art	2323 W WASHINGTON	98903
YAKIMA CITY FIRE DEPARTMENT UST 7636	2404 W WASHINGTON AVE	98903
Yakima Airport	2800 W WASHINGTON AVE	98903
Pingrey-Finger Hanger	2004 W Washington Ave	98903
Current Occupant	2006 W Washington Ave	98903
McCormick Air Center	2008 W Washington Ave	98903
Advanced Life Systems Ambulance Service	2106 W Washington Ave	98903
McCormick Air Center Maintenance	2108 W WASHINGTON AVE	98903
J.M. Perry Institute	2011 W Washington Ave	98903
Nolan Decoto Flying Service, Inc.	2801A W Washington Ave	98903
YKM Aerosport	2008 W Washington Ave	98903
Triumph	2720 W. Washington Ave.	98903
Accurate Metalurgical Inc.	2804 W. Washington Ave.	98903
Stephens Metal Products	3211 W. WASHINGTON AVE	98903
Current Occupant	3202 W. Washington Ave	98903
Current Occupant	3402 W. Washington Ave.	98903



# Upper Yakima Valley Regional Wellhead Protection Program

December 28, 2015

Dear Property Owner or Resident:

**For more information  
please contact:**

**Yakima County  
(509) 574-2300**

**City of Yakima  
(509) 575-6154**

**City of Union Gap  
(509) 248-0432**

**City of Selah  
(509) 698-7369**

**City of Moxee  
(509) 575-8851**

**Nob Hill  
Water Association  
(509) 966-0272**

**City of Tieton  
(509) 673-3162**

**Town of Naches  
(509) 653-2647**

**Department of Health  
(509) 456-3115**

The Regional Wellhead Protection Committee (RWPC) was formed by eight water purveyors in the Upper Yakima Valley including the City of Moxee in 1996 under the leadership of Yakima County in response to Washington State Department of Health (DOH) wellhead protection planning requirements. The RWPC and the City are taking a proactive approach to wellhead protection planning to ensure that each community's groundwater supplies are adequately protected from potential contamination sources on the ground surface. The purpose of this letter is to notify you of the location of your residence or business within the City's wellhead protection area and provide you with information on how you can help protect the City's drinking water supplies.

Wellhead protection planning includes the following four elements:

- development of wellhead protection areas, or areas which may be susceptible to contamination
- identification of potential contamination sources, which include septic tanks, underground storage tanks, abandoned wells, and certain businesses
- coordination of management efforts to help minimize the impact of potential contamination sources, including posting of signs, distribution of literature, and public education efforts
- development of contingency planning to ensure that prompt response procedures are in place in the event that a well becomes contaminated

The RWPC and the City understand that most residents and business owners recognize the need to protect the environment in and around their residences and businesses. We hope that informing you of the location of residences and businesses within the City's wellhead protection area will result in an increase in precautions to ensure your activities do not adversely impact our drinking water supply. The following practices can greatly reduce the threat of contamination to groundwater supplies:

- Recycle all hazardous wastes used on the premises, including solvents, paints, cleaners, printing supplies, or other chemicals through Yakima County's free small quantity generator or recycling programs (574-2450).
- Reduce the amount of hazardous waste used through waste minimization efforts. Free literature on waste minimization is available from the Department of Ecology (DOE) and your local water purveyor.
- Conserve water whenever possible. Water conservation reduces waste volumes and reduces the threat of contaminant transport.

For more information or to view your location in the WHPA, please visit the RWPC Website at:

<http://www.yakimacounty.us/584/Wellhead-Protection>

Sincerely

Byron Adams  
City of Moxee, Public Works Director

**c/o Yakima County Public Works - 128 North 2<sup>nd</sup> Street, Room 408 - Yakima, Washington 98901-2614**

City of Moxee

Wellhead Protection Contaminant Source Inventory List

Sharps Automotive Service 212 E. Moxee Avenue

Sharps Automotive Service 208 E. Moxee Avenue

Roy Farms 1300 E. Charron Road



CITY OF SELAH  
PUBLIC WORKS  
222 S Rushmore Rd.  
Selah, WA 98942



BUS: (509) 698-7365  
FAX: (509) 698-7372

November 24, 2015

Dear Property Owner or Resident:

The Regional Wellhead Protection Committee (RWPC) was formed by eight water purveyors in the Upper Yakima Valley including the city of Selah in 1996 in response to Washington State Department of Health (DOH) wellhead protection planning requirements. The RWPC and the City are taking a proactive approach to wellhead protection planning to ensure that each community's groundwater supplies are adequately protected from potential contamination sources on the ground surface. The purpose of the Wellhead Protection Plan is to inform the public they are in or near a wellhead protection area and to inform you of this program and provide information on how you can help protect your City's drinking water supplies.

Wellhead protection planning includes the following four elements:

- Development of wellhead protection areas, or areas which may be susceptible to contamination.
- Identification of potential contamination sources, which include septic tanks, underground storage tanks, abandoned wells, and certain businesses.
- Coordination of management efforts to help minimize the impact of potential contamination sources, including posting of signs, distribution of literature, and public education efforts.
- Development of contingency planning to ensure that prompt response procedures are in place in the event that a well becomes contaminated.

The RWPC and the City understand that most homeowners recognize the need to protect the environment in and around their residence. We hope that informing you of your location within the City's wellhead protection area will result in an increase in precautions to ensure your activities do not adversely impact our drinking water supply. The following practices can greatly reduce the threat of contamination to groundwater supplies:

- Recycle all household cleaners; paint thinner, motor oil, pesticides, antifreeze, batteries, and other chemicals at Free local collection points throughout the valley. Contact Yakima County Solid Waste Division at 574-2450 for locations drop times, and materials accepted.
- Do not dispose of any oil, antifreeze; paint thinner, or other chemicals on the ground.
- Use natural fertilizers, pesticides, and herbicides whenever possible.

For more information or to view your location in the WHPA, please visit the RWPC Website at:  
<http://www.yakimacounty.us/584/Wellhead-Protection>

Very Truly Yours,

Ty Jones  
Public Works Utilities Supervisor

WELLHEAD PROTECTION 2015

SITE NAME	CONTACT
ZIRKLE FRUIT COMPANY	352 HARRISON RD, SELAH
TREE TOP INC ROSS PLANT	220 E 2 <sup>ND</sup> AVE, SELAH
GRAHAM PACKING COMPANY	510 E NACHES AVE, SELAH
YAKAMA JUICE LLC	1 S RAILROAD AVE, SELAH
MONSON FRUIT CO.	252 N RUSHMORE RD, SELAH
LARSON FRUIT CO	109 N WENAS RD, SELAH
MATSON FRUIT CO	N RAILROAD AVE, SELAH
YAKIMA COOP ASSOCIATION	110 E 1 <sup>ST</sup> AVE, SELAH /2202 S 1 <sup>ST</sup> ST, YAKIMA 98903
SELAH EXPRESS	P O BOX 1346, YAKIMA 98907
Thind PMR Enterprises Inc.	301 S 1ST, SELAH
A&N Investment/rental properties LLC	313 S 1 <sup>ST</sup> ST, SELAH
7-11 SOUTHLAND CORP	P O BOX 219077, DALLES, TEXAS/ 120 N 1 <sup>ST</sup> ST, SELAH
TREE TOP INC OF SELAH UST 6550	209 E 5 <sup>TH</sup> AVE
WA DSHA YAKIMA VALLEY SCHOOL	609 SPEYER RD
BNRR SELAH MP 94 PRINT 401	LS048 SUB3RD PORTLAND DIVISION



# Upper Yakima Valley Regional Wellhead Protection Program

November 23, 2015

For more information  
please contact:

Yakima County  
(509) 574-2300

City of Yakima  
(509) 575-6154

City of Union Gap  
(509) 248-0432

City of Selah  
(509) 698-7369

City of Moxee  
(509) 575-8851

Nob Hill  
Water Association  
(509) 966-0272

Town of Tieton  
(509) 673-3162

Town of Naches  
(509) 653-2647

Department of Health  
(509) 456-3115

Dear Property Owner or Resident:

The Regional Wellhead Protection Committee (RWPC) was formed by eight water purveyors in the Upper Yakima Valley including Nob Hill Water in 1996 in response to Washington State Department of Health (DOH) wellhead protection planning requirements. The RWPC and Nob Hill Water are taking a proactive approach to wellhead protection planning to ensure that each community's groundwater supplies are adequately protected from potential contamination sources on the ground surface. The purpose of this letter is to notify you of the location of your property or business within one of Nob Hill Water's wellhead protection areas and provide you with information on how you can help protect the community's drinking water supplies.

Wellhead protection planning includes the following four elements:

1. development of wellhead protection areas, or areas which may be susceptible to contamination
2. identification of potential contamination sources, which include septic tanks, underground storage tanks, abandoned wells, and certain businesses
3. coordination of management efforts to help minimize the impact of potential contamination sources, including posting of signs, distribution of literature, and public education efforts
4. development of contingency planning to ensure that prompt response procedures are in place in the event that a well becomes contaminated

The RWPC and Nob Hill Water understand that most property and business owners recognize the need to protect the environment. We hope that informing you of the location of your property or business within Nob Hill Water's wellhead protection area will result in an increase in precautions to ensure your activities do not adversely impact our drinking water supply. The following practices can greatly reduce the threat of contamination to groundwater supplies:

- Recycle all hazardous wastes used on the premises including solvents, paints, cleaners, printing supplies, or other chemicals through Yakima County's free small quantity generator or recycling programs (574-2450).
- Reduce the amount of hazardous waste used through waste minimization efforts. Free literature on waste minimization is available from the Department of Ecology (DOE) and the City of Yakima.
- Conserve water whenever possible. Water conservation reduces waste volumes and reduces the threat of contaminant transport.

For more information, you may contact me at 966-0272 or visit the RWPC Website at <http://www.yakimacounty.us/584/Wellhead-Protection>

Sincerely,

NOB HILL WATER ASSOCIATION

David W. England  
Assistant Manager

## Byron Adams

---

**From:** Dave <dave@nobhillwater.org>  
**Sent:** Friday, January 08, 2016 2:09 PM  
**To:** 'Shane, Mike'; Joe Stump; Mikel Davis; jktieton@centurytel.net; 'Wilkens, Damon'; jhenne@elltel.net; 'Ty Jones '; 'Dennis Henne'; 'Mike Stillwaugh'; 'Bond, Jeff'; Bill Trout  
**Cc:** Byron Adams  
**Subject:** RE: 2015 Wellhead Protection Letter

Here is our letter. Mailed to the following:

Att Yakima Valley Canal	200 N 72Nd Ave	NobHill1
Evans Fruit Co Inc Summitview	Summitview 300 Feet Nw Of Hatton	NobHill1
Uswcom Yakima West Co	3 N 72Nd Ave	NobHill1
West Valley Junior High	7505 Zier Rd	NobHill5
West Valley Middle School	1500 S 75Th Ave	NobHill5
Wa Doc Ahtanum View Correctional Complex	2009 S 64Th Ave	NobHill7

Thank you

**DAVE**

-----Original Message-----

**From:** Shane, Mike [mailto:Mike.Shane@yakimawa.gov]

**Sent:** Thursday, January 07, 2016 12:46 PM

**To:** 'Joe Stump'; 'Mikel Davis'; 'jktieton@centurytel.net'; 'Dave'; Wilkens, Damon; 'jhenne@elltel.net'; 'Ty Jones '; 'Dennis Henne'; 'Mike Stillwaugh'; Bond, Jeff; 'Bill Trout'

**Cc:** 'Byron Adams'

**Subject:** RE: 2015 Wellhead Protection Letter

Just a reminder that if you haven't done it yet, please forward your letter and list of potential contaminant sources to Byron so he can wrap things up and send the committee letter and information to the state.

Thanks.

**Mike Shane**

*Water/Irrigation Engineer*

*City of Yakima*

*2301 Fruitvale Blvd.*

*Yakima, WA 98902*

*Office: 509.576.6480*

*Cell: 509-728-3939*

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**From:** Shane, Mike

**Sent:** Monday, November 30, 2015 2:13 PM

**To:** 'Joe Stump'; 'Mikel Davis'; 'jktieton@centurytel.net'; 'Dave'; Wilkens, Damon; 'jhenne@elltel.net'; 'Ty Jones '



# Upper Yakima Valley Regional Wellhead Protection Program

December 28, 2015

Dear Property Owner or Resident:

**For more information  
please contact:**

**Yakima County  
(509) 574-2300**

**City of Yakima  
(509) 575-6154**

**City of Union Gap  
(509) 248-0432**

**City of Selah  
(509) 698-7369**

**City of Moxee  
(509) 575-8851**

**Nob Hill  
Water Association  
(509) 966-0272**

**City of Tieton  
(509) 673-3162**

**Town of Naches  
(509) 653-2647**

**Department of Health  
(509) 456-3115**

The Regional Wellhead Protection Committee (RWPC) was formed by eight water purveyors in the Upper Yakima Valley including the City of Moxee in 1996 under the leadership of Yakima County in response to Washington State Department of Health (DOH) wellhead protection planning requirements. The RWPC and the City are taking a proactive approach to wellhead protection planning to ensure that each community's groundwater supplies are adequately protected from potential contamination sources on the ground surface. The purpose of this letter is to notify you of the location of your residence or business within the City's wellhead protection area and provide you with information on how you can help protect the City's drinking water supplies.

Wellhead protection planning includes the following four elements:

- development of wellhead protection areas, or areas which may be susceptible to contamination
- identification of potential contamination sources, which include septic tanks, underground storage tanks, abandoned wells, and certain businesses
- coordination of management efforts to help minimize the impact of potential contamination sources, including posting of signs, distribution of literature, and public education efforts
- development of contingency planning to ensure that prompt response procedures are in place in the event that a well becomes contaminated

The RWPC and the City understand that most residents and business owners recognize the need to protect the environment in and around their residences and businesses. We hope that informing you of the location of residences and businesses within the City's wellhead protection area will result in an increase in precautions to ensure your activities do not adversely impact our drinking water supply. The following practices can greatly reduce the threat of contamination to groundwater supplies:

- Recycle all hazardous wastes used on the premises, including solvents, paints, cleaners, printing supplies, or other chemicals through Yakima County's free small quantity generator or recycling programs (574-2450).
- Reduce the amount of hazardous waste used through waste minimization efforts. Free literature on waste minimization is available from the Department of Ecology (DOE) and your local water purveyor.
- Conserve water whenever possible. Water conservation reduces waste volumes and reduces the threat of contaminant transport.

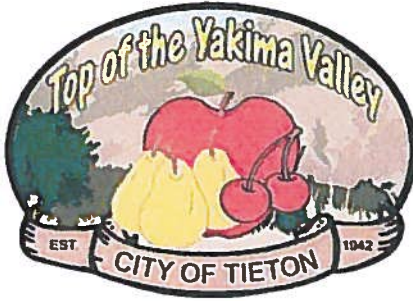
For more information or to view your location in the WHPA, please visit the RWPC Website at:

<http://www.yakimacounty.us/584/Wellhead-Protection>

Sincerely

Mikel Davis  
Town of Naches





February 29, 2016

RE: Wellhead Protection Program

Dear Property Owner or Resident,

The Regional Wellhead Protection Committee (RWPC) was formed by eight water purveyors in the Upper Yakima Valley including the City of Tieton in response to Washington State Department of Health (DOH) wellhead protection requirements. The RWPC and the City of Tieton are taking a proactive approach to wellhead protection planning to ensure that each community's groundwater supplies are adequately protected from potential contamination sources on the ground surface. The purpose of this letter is to notify you of the location of your property or business within one of the City of Tieton's wellhead protection areas and provide you with information on how you can help protect the community's drinking water supply.

Wellhead protection planning includes the following four elements:

1. Development of wellhead protection areas, or areas which may be susceptible to contamination
2. Identification of potential contamination sources, which include septic tanks, underground storage tanks, abandoned wells, and certain businesses
3. Coordination of management efforts to help minimize the impact of potential contamination sources, including postings of signs, distribution of literature, and public education efforts
4. Development of contingency planning to ensure that prompt response procedures are in place in the event that a well becomes contaminated

The RWPC and the City of Tieton understand that most property and business owners recognize the need to protect the environment. We hope that informing you of the location of your property or business within the City of Tieton's wellhead protection area will result in an increase in precautions to ensure your activities do not adversely impact our drinking water supply. The following practices can greatly reduce the threat of contamination to groundwater supplies:

- Recycle all hazardous wastes used on the premises including solvents, paints, cleaners, printing supplies, or other chemicals through Yakima County's free small quantity generator or recycling programs (574-2450).
- Reduce the amount of hazardous waste used through waste minimization efforts. Free literature on waste minimization is available from the Department of Ecology (DOE) and the City of Yakima.
- Conserve water whenever possible. Water conservation reduces waste volumes and reduces the threat of contamination transport.

For more information, you may contact me at 509-673-3162 or visit the RWPC Website at <http://www.yakimacounty.us/584/Wellhead-Protection>.

Sincerely,

Mike Henderson  
Public Works Supervisor  
City of Tieton

---

For more  
information  
please contact:

**Yakima County**  
(509)574-2300

**City of Yakima**  
(509)575-6154

**City of Union Gap**  
(509)248-0432

**City of Selah**  
(509)698-7369

**City of Moxee**  
(509)575-8851

**Nob Hill  
Water Association**  
(509)966-0272

**Town of Naches**  
(509)653-2647

**City of Tieton**  
(509)673-3162

**From: CITY OF TIETON  
P.O. BOX 357  
TIETON, WA 98947**

**To: Mighty Tieton Book Arts/ Lucia  
1400 2nd Ave.  
Seattle, WA 98101**

**From: CITY OF TIETON  
P.O. BOX 357  
TIETON, WA 98947**

**To: Mighty Tieton Book Arts/ Lucia  
1400 2nd Ave.  
Seattle, WA 98101**

**From: CITY OF TIETON  
P.O. BOX 357  
TIETON, WA 98947**

**To: Highland Transport  
PO Box 383  
Tieton, WA 98947**

**From: CITY OF TIETON  
P.O. BOX 357  
TIETON, WA 98947**

**To: Highland Transport  
PO Box 383  
Tieton, WA 98947**



# Upper Yakima Valley Regional Wellhead Protection Program

**For more information  
please contact:**

December 2, 2015

**Yakima County  
(509) 574-2300**

**City of Yakima  
(509) 575-6154**

**City of Union Gap  
(509) 248-0432**

**City of Selah  
(509) 698-7365**

**City of Moxee  
(509) 575-8851**

**Nob Hill  
Water Association  
(509) 966-0272**

**City of Tieton  
(509) 673-3162**

**Town of Naches  
(509) 653-2647**

**Department of Health  
(509) 456-3115**

Dear Property Owner or Resident:

The purpose of this letter is to inform you that your property is located within a wellhead protection area of the County's Terrace Heights Water System, and to provide you with information on how you can help protect the Terrace Heights drinking water supply.

The Upper Yakima Valley Wellhead Protection Committee and Yakima County understand that most property owners recognize the need to protect the environment. We hope that by informing you that your property is located within a wellhead protection area that you will take additional precautions to ensure your activities do not adversely impact our drinking water supply. The following practices can greatly reduce the threat of contamination to groundwater supplies:

- Recycle all household cleaners, paint thinner, motor oil, pesticides, antifreeze, batteries, and other chemicals at free local collection points throughout the valley. Contact Yakima County Solid Waste Division at 574-2450 for locations, drop times, and materials accepted.
- Reduce the amount of hazardous waste used through waste minimization efforts. Free literature on waste minimization is available from the Department of Ecology (DOE) and the City of Yakima.
- Conserve water whenever possible. Water conservation reduces waste volumes and reduces the threat of contaminant transport.

For more information, you may contact me at 574-2300 or visit the RWPC Website at: <http://www.yakimacounty.us/584/Wellhead-Protection>

Sincerely,

Joe Stump, P.E.  
Utilities Manager  
Yakima County Public Services

**c/o Yakima County Public Services - 128 North 2<sup>nd</sup> Street, 4<sup>th</sup> Floor - Yakima,  
Washington 98901-2614**

## Byron Adams

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**From:** Bill Trout  
**Sent:** Tuesday, April 05, 2016 2:49 PM  
**To:** Byron Adams  
**Subject:** RE: Wellhead Protection

Byron,

We sent letters to three property's in Terrace Heights.

Northwest Pipeline Corp PO BOX 8900 Salt Lake City Utah 84158-0900  
Bush Property 5412 Morningside Dr. Yakima WA 98901  
Terrace Heights Elementary 2002 Beaudry Rd. Yakima WA 98901

Bill

---

**From:** Byron Adams  
**Sent:** Monday, April 04, 2016 3:54 PM  
**To:** Bill Trout <bill.trout@co.yakima.wa.us>  
**Subject:** Wellhead Protection

Bill, I finally got everyone's wellhead protection letters to send to the state but in going through it I can't find your list of customers that you sent to . Can you forward me your list?

Thanks

Byron Adams  
City Supervisor  
City of Moxee  
[Byron.adams@co.yakima.wa.us](mailto:Byron.adams@co.yakima.wa.us)



# Upper Yakima Valley Regional Wellhead Protection Program

March 30, 2016

For more information  
please contact:

**Yakima County**  
(509) 574-2300

**City of Yakima**  
(509) 575-6154

**City of Union Gap**  
(509) 248-0432

**City of Selah**  
(509) 698-7369

**City of Moxee**  
(509) 575-8851

**Nob Hill  
Water Association**  
(509) 966-0272

**City of Tieton**  
(509) 673-3162

**Town of Naches**  
(509) 653-2647

**Department of Health**  
(509) 456-3115

Dear Union Gap Property Owners, Business Owners & Residents:

In 1996, the Regional Wellhead Protection Committee (RWPC) was formed by eight (8) water purveyors in the Upper Yakima Valley, including the City of Union Gap, under the leadership of Yakima County in response to Washington State Department of Health (DOH) wellhead protection planning requirements. The RWPC and the City are taking a proactive approach to wellhead protection planning to ensure that each community's groundwater supplies are adequately protected from potential contamination sources on the ground surface. The purpose of this letter is to notify you of the location of your parcel, within the City's wellhead protection area, and provide you with information on how you can help protect the City's drinking water supplies.

Wellhead protection planning includes four (4) elements; 1) Development of wellhead protection area, or areas, which may be susceptible to contamination; 2) Development of contingency planning to ensure that prompt response procedures are in place in the event a well becomes contaminated; 3) Identification of potential contamination sources, which include septic tanks, underground storage tanks, abandoned wells, and certain businesses; and 4) Coordination of management efforts to help minimize the impact of potential contamination sources, including posting of signs, distribution of literature, and public education efforts.

The RWPC and the City understand that most property owners, business owners and residents recognize the need to protect the environment in and around their property. We hope that informing you of your location within the City's wellhead protection area will result in an increase in precautions to ensure your activities do not adversely impact our drinking water supply. The following practices can greatly reduce the threat of contamination to groundwater supplies:

- Recycle all hazardous wastes used on the premises, including solvents, paints, paint thinner, printing supplies, and/or other known chemicals through Yakima County's free small quantity generator or recycling programs or other free local collection points throughout the valley. Contact Yakima County Solid Waste Division at 574-2450 for locations, drop times, and materials accepted.
- Reduce the amount of hazardous waste used through waste minimization efforts. Free literature on waste minimization is available from the Department of Ecology (DOE) and Union Gap Public Works Administration (225-3524).
- Conserve water whenever possible; water conservation reduces waste volumes and reduces the threat of contaminant transport.

For more information, or to view your location in the WHPA, please visit the RWPC Website at <http://www.yakimacounty.us/668/City-of-Union-Gap-Wellhead-Protection-Pl>.

Sincerely,

**CITY OF UNION GAP**  
Dennis Henne, Director  
Public Works & Community Development

Anderson Dairy	3016 S 1 <sup>st</sup> St
Liberty Bottleworks, Inc	2900 Sutherland Rd
Macro Plastics Washington	3555 Bay St
New Office Building	Longfiber Rd & Alder St
Noel Foods Inc	601 W Ahtanum Rd
Northwest Truck Repair & Salvage Inc	805 W Ahtanum Rd
Union Gap Fire Sta	107 Ahtanum Fire Sta
Union Gap School Dist 2	3200 S 2 <sup>nd</sup> St
US DEA Pine Mountain Yakima	Pine Mountain Lane .5 M N of Ahtanum Rd
Western Recreational Vehicles Service	292 Sutherland Park Dr
Weyerhaeuser Paper Co Union Gap	600 W Ahtanum Rd

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**Appendix T.**  
**Ecology Records - Active Regulated Sites/Facilities in**  
**WRIA 38**

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Washington State Department of Ecology Facility/Site Records		
Ecology Active Regulated Sites/Facilities in WRIA 38		
Facility/Site ID	Facility/Site Name	City
18692	Baxter Construction LLC	YAKIMA
454	JOHN I HAAS	YAKIMA
477	Tiger Oil N 1st St Fmr 6013	YAKIMA
505	PIT STOP NACHES	NACHES
533	KERSHAW ORCHARD	GLEED/YAKIMA
540	WA DOT RIMROCK MAINTENANCE SITE 1	NACHES
21714	Mt Adams Trucking	YAKIMA
10508	Dodge Foam & Coatings	YAKIMA
1580	Yakima Valley Canal Co	YAKIMA
4648	Washington Fruit Office Building	YAKIMA
7085	Washington Fruit & Produce Company	YAKIMA
17812	Bron Yr Aur Brewing Co	NACHES
7773	Brandts Fruit Tree Inc Storage Facility	YAKIMA
10275	Elbert Culberton DBA The Painter	YAKIMA
3073	Yakima Tieton Irrigation Dist	YAKIMA
19326	Collins Cowiche Service Summitview	COWICHE
21766	17th of Ireland - Lake Adit	NACHES
19597	Ramblers III Webers Relocation	YAKIMA
16700	Webers Auto Wrecking Yard Ramblers II	YAKIMA
10953	Naches Valley Elementary School	NACHES
24374	Richard Sarah Tamburello	
11709	Lower Cowiche Creek Restoration, Phase 3	YAKIMA
11493	COWICHE GROWERS SUMMITVIEW EAST	COWICHE
15560	Strand Apples Pesticide Shed	NACHES
5703	Poor Boys Auto Wrecking & Auto Sales	YAKIMA
14318	Thoboes Complaint	YAKIMA
7133	NACHES HATCHERY	NACHES
3240	Selah Naches Ranch Reservoir	
864	GARY J TREPANIER EXCAVAT EAGLE1536	TIETON
22867	Washington Fruit Phase 1 Cherry Ln Fclt	YAKIMA
20484	Rocky Mountain Faith Mission	NACHES
151067	Tieton Emmanuel Church	
244076	COWICHE REGIONAL POTW	COWICHE
458908	UPPER VALLEY FRUIT	NACHES
710893	VANDERHOUWEN STORAGE	YAKIMA
903682	WACHSMITH FRUIT LLC	YAKIMA
8974	APPLE KING LLC NACHES	NACHES
1181181	Evans Tieton Pond Dam	
1199873	GLEED FIRE DEPT STATION 2	YAKIMA
1229468	SUPERIOR ASPHALT LEHMAN HEATHERSTON	NACHES

Washington State Department of Ecology Facility/Site Records		
Ecology Active Regulated Sites/Facilities in WRIA 38		
Facility/Site ID	Facility/Site Name	City
1663828	STRAND APPLES INC MAIN PLANT	COWICHE
1937352	ACKLEY FRUIT COMPANY LLC	YAKIMA
1967044	Rene Garcia	
1975568	PRICE COLD STORAGE & PACKING CO	YAKIMA
1983468	TREPANIER EXCAVATING COWICHE	TIETON
2161643	Naches Valley Intermediate School	NACHES
2171152	Yakima Battery	YAKIMA
3562822	KERSHAW FRUIT SUPERCOLD STORAGE	YAKIMA
3683746	Brad Benzing	
3972676	APPLE PARTNERS OF IOWA FORNEY	TIETON
4323717	WA DNR CS4-SWC10286	
4524108	WA DFW CS4-SWC10284	
4599798	WA DFW CS4-SWC10285	
4808309	PRICE COLD STORAGE & PACKING CO BREAU	YAKIMA
4834932	HBQ INC	NACHES
5127895	LLOYD GARRETSON COMPANY	YAKIMA
5129203	WILLIAM G EVANS ETAL PARTNERS	YAKIMA
5131523	WA DOT US 12 Naches River Scour Repair	
5926988	NACHES POTW	NACHES
5980821	Harvey Ferguson	
6386241	Dave & Roberta Gill	
6401361	ROWE FARMS INC	NACHES
6562443	WA DOT SR 410 Rattlesnake Crk Slope Stab	
6630501	FM FUEL STOP 486	YAKIMA
6651859	Tieton Wastewater Lagoon No 4	COWICHE
6671886	YAKIMA CITY NACHES WTP	YAKIMA
6889351	ALLAN BROS INC AB-2	YAKIMA
6898781	NACHES DROP HYDRO FACILITY	NACHES
6954349	LEVEL 3 COMMUNICATIONS INC YAKIMA 1	YAKIMA
7080979	WA DFW CS4-SWC3676	
7455454	SNOKIST TIETON	TIETON
7655450	CM HOLTZINGER FRUIT PAINTED ROCKS	YAKIMA
8047476	KERSHAW FRUIT LOW RD	YAKIMA
8453293	STRAND APPLES REVENGE COLD STORAGE	YAKIMA
8456286	STRAND APPLES INC MARLEY BLDG	TIETON
8783174	Erving LaBarr CS4-01023CTCL CS4-01024CL	
8874901	Caton Inert & Demo Landfill	TIETON
8923621	WA Parks Columbia Hills	DALLESPO
9276166	ALLAN BROS INC AB-1	NACHES
9362800	Yakima City Housing Authority	

Washington State Department of Ecology Facility/Site Records		
Ecology Active Regulated Sites/Facilities in WRIA 38		
Facility/Site ID	Facility/Site Name	City
9523618	Tieton River Diversion Dam Bridge	
9555738	David P & Sandra K Elsner	
11365492	ALLAN BROS INC NACHES AB-3	NACHES
14738561	EVANS FRUIT CO INC NACHES	TIETON
14915189	Clear Creek Dam	NACHES
15748425	APPLE VALLEY FRUIT COMPANY	GLEED
16724389	USWCOM Ravens Roost Park	NACHES
17371422	SIMMONS CONSTRUCTION INC	NACHES
18754588	CPC INTERNATIONAL APPLE CO MARKET ST	TIETON
18921489	WA DOT RIMROCK MAINTENANCE SITE 2	NACHES
24617286	Tieton Wastewater Lagoon No 2	COWICHE
25539678	SOUTH ROADS DEPARTMENT	NACHES
26266683	CENTURYTEL COWICHE	COWICHE
27186879	CM Holtzinger Fruit Co Inc Yakima	YAKIMA
28828217	CHINOOK PASS WORK CENTER	NACHES
28842945	Tieton Dam	TIETON
29699667	PRICE COLD STORAGE FOSSUM	YAKIMA
29963564	CLARKS EMPIRE FOODS	YAKIMA
31383585	Pond Cafe	NACHES
33317552	HIGHLAND QUICK STOP	COWICHE
35583982	EAGLE ROCK RESORT	NACHES
38896732	Bumping Lake Dam	GOOSE PRAIRIE
39792384	Yakima Diversion Dam	
40323358	WA DOT White Pass	WHITE PASS
41612215	BATTLES RANCH NACHES	NACHES
43588176	Layman Lumber Co Inc	NACHES
44332655	COLLINS COWICHE SERVICE	COWICHE
46459173	Arco 5721	YAKIMA
46831557	EVANS FRUIT CO INC COWICHE CITY RD	COWICHE
47397716	Milk Pond Dam	CLIFFDELL
48922951	WHITE PASS WORK CENTER	NACHES
49387898	WEBERS IMPORT AMERICAN AUTO PARTS INC	YAKIMA
49427675	TROUT LODGE SERVICE	NACHES
52356421	EVANS FRUIT TIETON MAIN	TIETON
52682386	Western Recreational Vehicles Yakima	YAKIMA
53141312	WA DOT COTTONWOOD MAINTENANCE SITE	NACHES
56985129	COWICHE GROWERS INC MAIN PLANT	COWICHE
57114734	MCCORMICK FARMS LLC	YAKIMA
59229114	Sun Mart 21	NACHES
61973791	Whistlin Jack Lodge	NACHES

Washington State Department of Ecology Facility/Site Records		
Ecology Active Regulated Sites/Facilities in WRIA 38		
Facility/Site ID	Facility/Site Name	City
62216572	NEPA PALLET & CONTAINER	YAKIMA
63651567	SNOKIST NACHES UST 4745	NACHES
63977625	French Canyon Dam	TIETON
66562139	JAMES G LAYMAN INC	NACHES
66923619	CPC INTERNATIONAL CUBBERLEY PLANT	TIETON
67292435	Tieton Wastewater Lagoon No 3	COWICHE
68543861	APPLE KING LLC	YAKIMA
68665215	Naches Valley School Dist JT3	NACHES
69528783	WHITE PASS SKI AREA EASTSIDE	NACHES
72676578	COLUMBIA REACH PACK	YAKIMA
73123691	CM HOLTZINGER FRUIT RIVER RD	YAKIMA
73381958	CDM Enterprises LLC	TIETON
73739268	PACIFIC POWER & LIGHT NACHES UST 8719	NACHES
74984788	SUN TIDES GOLF COURSE	YAKIMA
75138895	WILBUR ELLIS CO COWICHE	COWICHE
75591358	BOB MYRICK EXCAVATING	NACHES
78847856	FRANCIS P MULLINS	SELAH
79747294	ANDERSON DEMOLITION SITE	YAKIMA
79819338	AT&T American River	AMERICAN RIVER
80674355	PRICE COLD STORAGE & PACKING CO GLEED RD	YAKIMA
83813864	SUNTIDES MARKET	YAKIMA
85923929	J & J WOOD PRODUCTS INC	NACHES
88378954	NACHES SHELL	NACHES
88643562	TIETON B530500 AT&T	NACHES
88765793	Tieton Wastewater Lagoon No 1	COWICHE
94489915	SQUAW ROCK RESORT	NACHES
94672819	SMITTYS MARKET & DELICATESSEN	YAKIMA
4758	WA DOT US HWY 12 & NACHES RIVER	YAKIMA
22579	Chiawana Gleed Ranch Dam	
14749	C 3114 Naches Tieton Road	NACHES
17086	Columbia Reach North Development	YAKIMA
11899	Copper City Mill	NACHES
16770	Main Canal Flume Replacement & Other Improvements	NACHES

Source:  
Washington State Department of Ecology. Facility/Site Database, WIRA 38 . Accessed August 18, 2016.  
<<https://fortress.wa.gov/ecy/facilitysite/SearchData/ShowSearch.aspx?ModuleType=FacilitySite&RecordSearchMode=New>>

**Appendix U.**  
**Sanitary Survey**

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STATE OF WASHINGTON  
DEPARTMENT OF HEALTH  
EASTERN DRINKING WATER REGIONAL OPERATIONS  
16201 E Indiana Avenue, Suite 1500, Spokane Valley, Washington 99216-2830  
TDD Relay 1-800-833-6388

December 3, 2014

David E. Brown, Water / Irrigation Manager  
City of Yakima Water Division  
2301 Fruitvale BLVD  
Yakima, WA 98902

Subject: Yakima Water Division, City of; PWS ID #991509; Yakima County  
Sanitary Survey – October 16, 2014

Dear Mr. Brown:

I would like to thank your operators for your time and help with the Department of Health (DOH) Routine Sanitary Survey, on October 16, 2014. I documented our discussion and observations during the survey, in the enclosed report including photographs.

### Significant Deficiencies

We inspected the groundwater and surface water sources (S01, S02, S03, S08, and S10), as well as, the middle level reservoirs. During the survey, we observed the following Significant Deficiencies. Please correct and provide a brief letter, documenting how you had each deficiency corrected, within **45 days** of the date of this letter. Please note: we must receive your responses no later than **January 19, 2015**.

1. S08 (Kissel Well) – The well was not properly covered when the pump column and motor were removed from the well. The casing is a direct conduit to the aquifer and falling debris, chemicals, and such which can quickly contaminate the aquifer. You can see from the pictures provided in the report, the well casing is not completely covered and the hole is large enough for small animals to access and fall down the well.
2. **Reservoir inspections:** Damien and I inspected the middle reservoirs, and discussed what needed to be documented with the inspections on the remainder of the reservoirs. Please note the following on the reservoirs inspected by your staff:
  - \* The vent is designed appropriately, and the screen is in good condition.
  - \* The hatch is framed from the reservoir roof, has a locking cover, the cover over laps the framed portion of the hatch, and the gasket is still in good condition.
  - \* No other potential holes or gaps around control wires, for example, where rain water, windblown dust, insects, or other potential contaminants can enter the reservoir.

The state's drinking water program has made it a high priority to make sure all water systems correct each Significant Deficiency discovered during a survey. Please mail your brief letter and photographs to Danielle Russell, at our address provided on our letterhead or by email at

David Brown  
December 3, 2014  
Page 2

[danielle.russell@doh.wa.gov](mailto:danielle.russell@doh.wa.gov). We have logged the completion date and deficiency into our survey database. If necessary, our office will take enforcement action if we do not receive your letter by the deadline listed above.

### Survey Fee

Our office will schedule a water system's survey once every three to five years. WAC 246-290-990 (3)(c), authorizes a schedule of fees to be implemented to help recover the cost of conducting a sanitary survey. The Department of Health's (DOH) total cost to complete this sanitary survey is \$1,583.87. The Office of Drinking Water has used state and federal funds to pay \$359.87 of this amount. An invoice showing the remaining amount due of \$1,224.00 is enclosed.

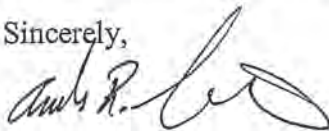
### Discussion Items

I provided information on the following water quality monitoring changes, since the last sanitary survey, as well as, documentation needed for the reservoir inspection.

- A. **Groundwater Rule:** General information on the rule and additional requirements triggered when a coliform sample tests positive for coliform. Triggered samples may indicate additional sampling or treatment will be necessary for the groundwater sources.
- \* The coliform monitoring plan for the town should be updated to include the added requirements for the GWR samples.
- B. **Lead and copper monitoring:** I enclosed general information on the changes and the forms required to be submitted to our office. Changes to the public notification requirement for your sample sites selected, included:
- \* Requirement to notify these residents about lead and copper sample results and general information / language about the contaminants.
  - \* Certification form to report or document the public notice provided to residents.

Do not hesitate to call me at (509) 329-2120, if you require additional information or assistance.

Sincerely,



Andres R. Cervantes, PE  
Regional Engineer  
Office of Drinking Water  
Division of Environmental Public Health

Enclosures: Invoice  
Sanitary Survey Report with Photos  
Fact Sheets

cc: **Yakima** County Health District  
Danielle Russell, Survey Coordinator

**Appendix V.**  
**Cross Connection Control Annual Report**

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**Cross-Connection Control Activities (Blue)  
Annual Summary Report (ASR) for 2015**

PWS ID: **991509** PWS Name: **YAKIMA WATER DIVISION, CITY OF** County: **YAKIMA**

**Part 1: Designated Cross-Connection Control Specialist (CCS) Information**

<b>CCS Name</b>	Emilio Lopez	<b>CCS Phone</b>	509-575-6196	<b>CCS Cert. #</b>	012025	<b>BAT Cert. #</b>	
<b>CCS is:</b> PWS owner or employee							

(Written program may be a separate document, or part of water system plan or small water system management program).

**Part 2: Status of Cross-Connection Control (CCC) Program at End of 2015**

Provide information about the status of your CCC Program at the end of the reporting year.

<b>PWS has:</b>	<b>A written CCC Program Plan<sup>1</sup></b> <input checked="" type="radio"/> Yes <input type="radio"/> No	<b>Program Plan Last Updated<sup>3</sup></b> 06/01/2011
	<b>CCC implementation activities<sup>2</sup></b> <input checked="" type="radio"/> Yes <input type="radio"/> No	

<sup>1</sup> Enter "Yes" if PWS has any type of written CCC Program Plan, policies, or procedures. Written CCC Program Plan must be part of a Water System Plan (WSP) or Small Water System Management Program (SWSMP).

<sup>2</sup> Enter "Yes" if PWS implemented any CCC Program activities during the reporting year, such as establishing legal authority, conducting hazard evaluations, requiring installation of backflow assemblies to protect the PWS, requiring assembly testing, maintaining CCC records, or enforcing the PWS's or CCC Program requirements.

<sup>3</sup> PWS can update the CCC Program Plan at any time (independent of WSP or SWSMP update).

Provide information regarding PWS's specific CCC Program Elements

Program Element Number	Description of Element [See WAC 246-290-490(3)]	This Program Element is:	
		Included in Written Program Plan	Being Implemented or Is Completed
1	Legal Authority Established	<input checked="" type="radio"/> Yes <input type="radio"/> No	<input checked="" type="radio"/> Yes <input type="radio"/> No
2	Hazard Evaluation Procedures and Schedules	<input checked="" type="radio"/> Yes <input type="radio"/> No	<input checked="" type="radio"/> Yes <input type="radio"/> No
3	Procedures/Schedules for Ensuring Installation of Backflow Preventers	<input checked="" type="radio"/> Yes <input type="radio"/> No	<input checked="" type="radio"/> Yes <input type="radio"/> No
4	Certified CCS Provided	<input checked="" type="radio"/> Yes <input type="radio"/> No	<input checked="" type="radio"/> Yes <input type="radio"/> No
5	Backflow Preventer Inspection and Testing	<input checked="" type="radio"/> Yes <input type="radio"/> No	<input checked="" type="radio"/> Yes <input type="radio"/> No
6	Assembly Testing Quality Assurance/Quality Control (AQ/QC) Program	<input checked="" type="radio"/> Yes <input type="radio"/> No	<input checked="" type="radio"/> Yes <input type="radio"/> No
7	Backflow Incident Response Procedures	<input checked="" type="radio"/> Yes <input type="radio"/> No	<input checked="" type="radio"/> Yes <input type="radio"/> No
8	Public Education Program	<input checked="" type="radio"/> Yes <input type="radio"/> No	<input checked="" type="radio"/> Yes <input type="radio"/> No
9	CCC Records	<input checked="" type="radio"/> Yes <input type="radio"/> No	<input checked="" type="radio"/> Yes <input type="radio"/> No
10	Reclaimed Water Permit	<input type="radio"/> Yes <input type="radio"/> No <input checked="" type="radio"/> N/A	<input type="radio"/> Yes <input type="radio"/> No <input checked="" type="radio"/> N/A

**Part 3A: PWS Characteristics at End of 2015**

Enter the number of connections (new and existing) served by the PWS by type.

Type of Service Connection	Number
<b>Residential (As defined by PWS)</b>	16484
All Other (include dedicated fire lines, dedicated irrigation lines, and PWS-owned facilities such as water and wastewater treatment plants and pumping stations, parks, piers, and docks)	2849
<b>Total Number of Connections</b>	19333

**Part 3B: Cross-Connection Control for Severe and High-Hazard Premises and High-Hazard Dedicated Lines Served by the PWS**

Answer the following questions carefully. These answers control your access to pages 2 and 3 for data entry.

1. Does your PWS serve any severe or high-hazard premises or any high-hazard dedicated fire or irrigation lines?  Yes  No

2. Does PWS serve any high-hazard medical premises?  Yes  No

- If you answer Yes to both questions, you must enter data in at least one row on page 2 and one row on page 3.
- If you answer Yes to Question 1 and No to Question 2, you must enter data on page 2 only.
- If you answer No to both questions, pages 2 and 3 will be grayed out to prevent data entry.

- Count only premises PWS serves water to.
- Report data as accurately as possible. DOH currently bases CCC compliance actions on this information.

Type of Severe or High-Hazard Premises or Dedicated Lines <u>[WAC 246-290-490(4)(b)]</u>	Number of Connections at end of 2015			
	A. Being Served Water by PWS <sup>1</sup>	B. With Premises Isolation by AG/RP <sup>2</sup>	C. With Column B AG Inspected or RP Tested <sup>3</sup>	D. Granted Exception from Premises Isolation
Agricultural (farms and dairies)	0	0	0	0
Beverage bottling plants (including breweries)	2	2	2	0
Car washes	14	12	11	0
Chemical plants	0	0	0	0
Commercial laundries and dry cleaners	10	10	10	0
Both reclaimed water and potable water provided	0	0	0	0
Film processing facilities	0	0	0	0
Dedicated fire lines with chemical addition or using unapproved auxiliary supplies	0	0	0	0
Food processing plants (including canneries, slaughter houses, rendering plants)	2	1	1	0
Hospitals, medical centers, medical, dental and veterinary clinics, mortuaries, nursing homes, etc., reported on Part 3C page 3 (totals imported from page 3)	90	61	57	1
Dedicated irrigation systems using purveyor's water supply and chemical addition <sup>4</sup>	0	0	0	0
Laboratories	0	0	0	0
Metal plating industries	0	0	0	0
Petroleum processing or storage plants	0	0	0	0
Piers and docks	0	0	0	0
Radioactive material processing plants or nuclear reactors	0	0	0	
Survey access denied or restricted	0	0	0	0
Wastewater lift/pump stations (non-residential only)	2	2	2	0
Wastewater treatment plants	1	1	1	
Unapproved auxiliary water supply interconnected with potable water supply	0	0	0	0
Other				
Tall buildings over 30 feet	14	7	7	0
<b>Totals</b>	<b>135</b>	<b>96</b>	<b>91</b>	<b>1</b>

<sup>1</sup> Count multiple connections or parallel installations to the same premises as separate connections.

<sup>2</sup> Count only connections with premises isolation AGs or RPs. Don't include connections with in-premises preventers only or connections with DCVAs or DCDAs installed for premises isolation. The number in Column B can't be larger than the number in Column A in the same row.

<sup>3</sup> Count only connections whose premises isolation preventers were inspected (AGs) or tested (RPs) during the reporting year.

<sup>4</sup> For example, dedicated irrigation lines to parks, playgrounds, golf courses, cemeteries, estates, etc.

<sup>5</sup> Premises with hazardous materials or processes (requiring isolation by AG or RP), such as aircraft and automotive manufacturers, pulp and paper mills, metal manufacturers, military bases, and wholesale customers that pose a high hazard to the PWS. May be grouped together in categories, for example: "Other manufacturing" or "Other commercial".

**Part 3C: Cross-Connection Control for High-Hazard Medical Premises Served by the PWS**

- Count only medical premises PWS serves water to.
- Don't count the same premises more than once. If you serve different medical category premises through a single connection, count the connection under the medical category you consider to pose the highest hazard to PWS.
- Report data as accurately as possible. **DOH currently bases CCC compliance actions on this information**

Type of High-Hazard Medical Premises <u>[WAC 246-290-490(4)(b)]</u>	Number of Connections at end of 2015			
	A. Being Served Water by PWS <sup>1</sup>	B. With Premises Isolation by AG/RP <sup>2</sup>	C. With Column B AG Inspected or RP Tested <sup>3</sup>	D. Granted Exception from Premises Isolation
<b>Hospitals</b>				
Hospitals (include psychiatric hospitals and alcohol and drug treatment centers)	11	11	11	0
<b>Facilities for Treatment and Care of Patients Not Located in Hospitals Counted Above</b>				
Same day surgery centers	1	1	1	0
Out-patient clinics and offices	28	25	22	1
Alternative health out-patient clinics and offices	0	0	0	0
Psychiatric out-patient clinics and offices	0	0	0	0
Chiropractors with water-connected X-ray equipment	4	0	0	0
Hospice care centers	0	0	0	0
Childbirth centers	0	0	0	0
Kidney dialysis centers	2	2	1	0
Blood centers	1	1	1	0
Dental clinics and offices	28	8	8	0
<b>Facilities for Housing Patients</b>				
Nursing homes	8	7	7	0
Assisted Living Facilities (formerly Boarding Homes)	0	0	0	0
Residential treatment centers	0	0	0	0
<b>Other Medical-Related Facilities</b>				
Mortuaries with embalming equipment	3	3	3	0
Morgues and autopsy facilities (not in hospitals)	2	2	2	0
Veterinarian offices, clinics and hospitals	2	1	1	0
<b>Other high-hazard medical premises</b>				
none	0	0	0	0
<b>Totals</b>	<b>90</b>	<b>61</b>	<b>57</b>	<b>1</b>

<sup>1</sup> Count multiple connections or parallel installations to the same premises as **separate** connections.

<sup>2</sup> Count only connections with premises isolation AGs or RPs. Don't include connections with in-premises preventers only or connections with DCVAs or DCDAs installed for premises isolation. The number in Column B can't be larger than the number in Column A in the same row.

<sup>3</sup> Count only connections with premises isolation AGs or RPs. Don't include connections with in-premises backflow preventers only or connections with premises isolation DCVAs or DCDAs isolation.

**Part 4A: Backflow Preventer Inventory and Testing Information for 2015**

- Complete all fields. Enter **zero (0)**, if no backflow preventers in a specific category.
- Count only backflow preventers relied on to protect the PWS.
- Count AVBs on *irrigation systems only*. Select No to AVB question above Table 2 if PWS doesn't track AVBs.
- Count multiple tests (or failures) for the same backflow preventer as one test (or failure) for that backflow preventer.
- For multiple service connections or parallel installations, count each assembly separately.
- Count RPDAs and DCDA as **single** assemblies. Count the tests of the mainline assembly and bypass assembly as **one test**. Count the failure of either the mainline or bypass assembly (or the failure of both) as **one failure**. Count an entire detector assembly taken out of service as **one assembly removed from service**.
- Count assemblies installed on dedicated fire or irrigation lines as **Premises Isolation Assemblies** in Table 1.

Backflow Preventer Category and Inspection/Testing Information		Air Gap	RPBA	RPDA	DCVA	DCDA	PVBA	SVBA	AVB
Table 1: Premises Isolation Preventers (include preventers isolating PWS-owned facilities)									
<b>Existing Premises Isolation Backflow Preventers</b>									
1	In service at beginning of 2015	0	233	1	517	40			
2	Inspected and/or tested in 2015 <sup>1</sup>	0	224	1	498	39			
3	Failed inspection or test in 2015	0	20	0	11	1			
<b>New Premises Isolation Backflow Preventers</b>									
4	Installed in 2015 <sup>2</sup>	0	30	2	33	1			
5	Inspected and/or tested in 2015 <sup>1</sup>	0	30	2	33	1			
6	Failed inspection or test in 2015	0	2	2	0	0			
<b>Premises Isolation Backflow Preventers (existing or new)</b>									
7	Removed from service in 2015 <sup>3</sup>	0	4	0	7	0			
<b>Total Premises Isolation Preventers at End of 2015</b>									
		0	259	3	543	41	0	0	0
Does PWS track AVBs on irrigation systems? <input type="radio"/> Yes <input checked="" type="radio"/> No									
Table 2: In-Premises Preventers (include preventers within PWS-owned facilities)									
<b>Existing In-Premises Backflow Preventers</b>									
8	In service at beginning of 2015	15	238	0	1361	0	77	3	unk
9	Inspected and/or tested in 2015 <sup>1</sup>	15	212	0	1235	0	66	2	unk
10	Failed inspection or test in 2015	0	10	0	34	0	5	0	unk
<b>New In-Premises Backflow Preventers</b>									
11	Installed in 2015 <sup>2</sup>	0	16	0	28	0	3	0	unk
12	Inspected and/or tested in 2015 <sup>1</sup>	0	16	0	28	0	3	0	unk
13	Failed inspection or test in 2015	0	0	0	1	0	0	0	unk
<b>In-Premises Backflow Preventers (existing or new)</b>									
14	Removed from service in 2015 <sup>3</sup>	0	11	0	30	0	4	1	unk
<b>Total In-Premises Preventers at End of 2015<sup>4</sup></b>									
		15	243	0	1359	0	76	2	0
<b>Grand Totals at End of 2015</b>									
		15	502	3	1902	41	76	2	0

<sup>1</sup> Initial and/or routine annual inspection (for proper installation and approval status) and/or test (for testable assemblies only, using DOH-approved USC field test procedures).

<sup>2</sup> Includes preventers installed on connections where backflow prevention was not previously required and any preventers that replaced those in service at the beginning of the reporting year. Replacement preventers may be of a different type than the originals.

<sup>3</sup> Existing or new preventers taken out of service, whether or not they were replaced by the same or a different type of preventer.



**Part 4B: Other Implementation Activities in 2015**

Complete all cells. Enter zero if not applicable.

Water Use Questionnaires	
Did your PWS send any water use questionnaires to customers during 2015?	<input type="radio"/> Yes <input checked="" type="radio"/> No

On-site Hazard Surveys			
Did your CCS conduct any on-site hazard surveys during 2015?			<input checked="" type="radio"/> Yes <input type="radio"/> No Number 51
	<b>Service Connection Type</b>		
	<b>New</b>	<b>Existing</b>	<b>Total</b>
1. Number of connections surveyed for cross-connection hazards to PWS.	51	0	51
2. Number of connections requiring backflow prevention to protect PWS. <sup>1,2</sup>	47	0	47

New Exceptions to Premises Isolation	
Did your CCS grant any new premises isolation exceptions in 2015 to high-hazard premises? <sup>3</sup>	<input type="radio"/> Yes <input checked="" type="radio"/> No

CCC Enforcement Actions	
Did your PWS take any enforcement actions during 2015? <sup>4</sup>	<input type="radio"/> Yes <input checked="" type="radio"/> No

<sup>1</sup> Include services where either premises isolation or in-premises preventers were required to protect the PWS.

<sup>2</sup> Include existing services that need new, additional or higher level backflow prevention.

<sup>3</sup> Submit a completed DOH Exception Form (green) for each new exception granted in the reporting year.

<sup>4</sup> "Enforcement actions" means actions taken by the PWS (such as water shut-off, PWS installation or testing of backflow preventer, assessment of fines, etc.) when the customer fails to comply with the PWS's CCC requirements.

**Part 5: Backflow Incidents and "Off-Normal" Events in 2015**

Backflow Incidents, Risk Factors, and Indicators during 2015		Number
<i>Backflow Incidents during 2015</i>		
1	Backflow incidents that contaminated the PWS <sup>5</sup> .	0
2	Backflow incidents that contaminated the customer's drinking water system <i>only</i> <sup>5</sup> .	0
<i>Risk Factors for Backflow during 2015</i>		
3	Distribution main breaks per 100 miles of pipe.	1.56
4	Low pressure events (<20 psi in PWS distribution system).	5
5	Water outage events.	5
<i>Indicators of Possible Backflow during 2015</i>		
6	Total health-related complaints received by PWS. <sup>6</sup>	0
7	Received during BWA or PN events. <sup>7</sup>	0
8	Received during low pressure or water outage events.	0
9	Total aesthetic complaints (color, taste, odor, air in lines, etc.).	6
10	Received during BWA or PN events. <sup>7</sup>	0
11	Number of these complaints received during low pressure or water outage events.	0

<sup>5</sup> Purveyors must submit a Backflow Incident Report form for each backflow incident known to have contaminated the public water system. DOH is also interested in receiving incident report forms for backflow incidents that contaminated the customer's drinking water system only.

<sup>6</sup> Such as stomach ache, headache, vomiting, diarrhea, skin rashes, etc.

<sup>7</sup> "BWA" means Boil Water Advisory and "PN" means Public Notification for water quality reasons.

**Part 6: Comments and Clarifications**

- Enter comments to:
  - Explain or clarify information in this report.
  - Describe challenges faced or accomplishments made in this reporting year.
  - Share your goals and objectives for the coming reporting year.
- Delete comments that are no longer valid.

Part No.	Date Added	Comments
Pt 1	08-22-2016	Working on abandoning services that have not had usage for at least 3 years or more, we will continue to do so each year.

**Part 7: Report Certification and Contact Information**

I, [Certified by] , certify that the information in this form is true, complete and accurate to the best of my knowledge.

Last Saved	08/22/2016	All ASR Forms Certified/Submitted	
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Designated CCS/CCC Program Manager <sup>1</sup>					
Name	Emilio Lopez	Title	Water Dist. Supervisor	CCS Cert #	012025
Email Address	emilio.lopez@yakimawa.gov	Phone	509-575-6196	Phone Ext	

PWS Manager <sup>2</sup>					
Name	David Brown	Title	Water / Irrigation Division Manager	Operator Cert #	003441
Email Address	david.brown@yakimawa.gov	Phone	509-575-6204	Phone Ext	

<sup>1</sup> The CCS responsible for developing and implementing the PWS's CCC program (CCC Program Manager).

<sup>2</sup> The person the designated CCS/CCC Program Manager reports to or other manager having direct oversight of the CCC Program.



**Cross-Connection Control Program Summary (Cream)  
Annual Summary Report (ASR) for 2015**

PWS ID: **991509** PWS Name: **YAKIMA WATER DIVISION, CITY OF** County: **YAKIMA**

Describe the characteristics of the PWS's Cross-Connection Control (CCC) Program at the end of 2015.

**Part 1: CCC Program Characteristics**

**A. Type of Program Implemented**

Type of Program	Check One
Premises isolation only.	<input type="radio"/>
Combination program: reliance on both premises isolation and in-premises prevention.	<input checked="" type="radio"/>
In transition from a combination program to a premises isolation only program.	<input type="radio"/>

**B. Coordination with Authority Having Jurisdiction (AHJ) on CCC Issues**

Indicate the status of coordination with AHJs in your service area. The AHJ is the entity that enforces the Uniform Plumbing Code at the local level. The AHJ is usually your county or city building department. Don't list DOH as an AHJ.

AHJ #	Name of AHJ (City or County Building Department) <sup>1</sup>	PWS		AHJ Declined to Coordinate
		Coordinates with AHJ	Has Written Agreement with AHJ	
1	City of Yakima	Yes <input checked="" type="radio"/> No <input type="radio"/>	Yes <input checked="" type="radio"/> No <input type="radio"/>	Yes <input type="radio"/> No <input checked="" type="radio"/>

<sup>1</sup> Do not enter an individual's name.

**C. Corrective/Enforcement Actions Available to the Purveyor**

Type of Corrective Action/Enforcement Action	Indicate Whether Available	Most Often Used (Check One)
Purveyor denies or discontinues water service.	Yes <input checked="" type="radio"/> No <input type="radio"/>	<input checked="" type="radio"/>
Purveyor installs backflow assembly and bills customer.	Yes <input type="radio"/> No <input checked="" type="radio"/>	<input type="radio"/>
Purveyor assesses fines (in addition to eliminating or controlling cross connection).	Yes <input checked="" type="radio"/> No <input type="radio"/>	<input type="radio"/>
Purveyor tests backflow assembly and bills customer.	Yes <input type="radio"/> No <input checked="" type="radio"/>	<input type="radio"/>
Other corrective actions (describe) <sup>1</sup> :no	Yes <input checked="" type="radio"/> No <input type="radio"/>	<input type="radio"/>

<sup>1</sup> Enter detailed description of other enforcement actions available to PWS. Don't enter "None", "Not Applicable", or "Not Available."

**D. CCC Program Responsibilities**

Do not include enforcement action related procedures or circumstances.

CCC Program Activity	Responsible Party (Check one per row)	
	Customer	Purveyor
Hazard Evaluation by DOH-certified CCS	<input type="radio"/>	<input checked="" type="radio"/>
Backflow preventer (BP) ownership	<input checked="" type="radio"/>	<input type="radio"/>
BP installation	<input checked="" type="radio"/>	<input type="radio"/>
BP <i>initial</i> inspection (for proper installation - all BPs)	<input type="radio"/>	<input checked="" type="radio"/>
BP <i>initial</i> test (for testable assemblies)	<input type="radio"/>	<input checked="" type="radio"/>
BP <i>annual</i> inspection (Air Gaps and AVBs)	<input type="radio"/>	<input checked="" type="radio"/>
BP <i>annual</i> test (for testable assemblies)	<input checked="" type="radio"/>	<input type="radio"/>
BP maintenance and repair	<input checked="" type="radio"/>	<input type="radio"/>

**E. Backflow Prevention for Fire Protection Systems**

Please remember to enter number of days allowed if you require retrofitting.

PWS coordinates with <i>AHJ</i> on CCC issues for fire sprinkler systems (FSSs)	Yes <input checked="" type="radio"/> No <input type="radio"/> N/A <input type="radio"/>
PWS coordinates with <i>local Fire Marshal</i> on CCC issues for FSSs.	Yes <input checked="" type="radio"/> No <input type="radio"/> N/A <input type="radio"/>
PWS ensures backflow prevention is installed before serving <i>new</i> connections with FSSs.	Yes <input checked="" type="radio"/> No <input type="radio"/>
PWS requires retrofits to <i>high-hazard</i> FSSs.	Yes <input checked="" type="radio"/> No. of days allowed: 45 No <input type="radio"/> N/A <input type="radio"/>
PWS requires retrofits to <i>low-hazard</i> FSSs.	Yes <input type="radio"/> No. of days allowed: No <input checked="" type="radio"/> N/A <input type="radio"/>

**F. Backflow Prevention for Irrigation Systems**

Minimum level of backflow prevention required on irrigation systems <i>without</i> chemical addition.	Not Addressed <input type="radio"/> AVB <input type="radio"/> PV/SVBA <input type="radio"/> DCVA <input type="radio"/> RPBA <input checked="" type="radio"/>
PWS currently inspects AVBs upon <i>initial</i> installation.	Yes <input type="radio"/> No <input checked="" type="radio"/> N/A <input type="radio"/>
PWS currently inspects AVBs upon repair, reinstallation or relocation.	Yes <input type="radio"/> No <input checked="" type="radio"/> N/A <input type="radio"/>

**G. Used Water**

Does PWS prohibit, by ordinance, rules, policy, by-laws or agreement, the intentional return of used water (e.g. for heating or cooling) into the distribution system?	Yes <input checked="" type="radio"/> No <input type="radio"/>
If not prohibited at present, date plan to prohibit use.	N/A
Current number of service connections returning used water to distribution system.	0

**H. Backflow Prevention for Unapproved Auxiliary Water Supplies<sup>1</sup> NOT Interconnected with PWS**

Show the minimum backflow preventer and type of protection required for service connections having unapproved auxiliary water supplies *when they are NOT interconnected to the PWS.*

<b>Existing service connections.</b>	None <input type="radio"/> DCVA <input type="radio"/> RPBA <input checked="" type="radio"/> AG <input type="radio"/>
<b>Type of protection required.</b>	N/A <input type="radio"/> In-premises prevention <input type="radio"/> Premises isolation <input checked="" type="radio"/>
<b>New service connections.</b>	None <input type="radio"/> DCVA <input type="radio"/> RPBA <input checked="" type="radio"/> AG <input type="radio"/>
<b>Type of protection required.</b>	N/A <input type="radio"/> In-premises prevention <input type="radio"/> Premises isolation <input checked="" type="radio"/>

<sup>1</sup> An auxiliary water supply is any water supply on or available to customer's premises in addition to the purveyor's potable water supply.

**I. Backflow Prevention for Tanker Trucks and Temporary Water Connections**

<b>Minimum level of backflow prevention (installed on or associated with the truck) required for tanker trucks taking water from PWS.</b>	AG <input type="radio"/> DCVA <input type="radio"/> RPBA <input checked="" type="radio"/> Not Specified <input type="radio"/> Tanker trucks not allowed <input type="radio"/>
<b>PWS requires tanker trucks to obtain water at designated fill sites each equipped with permanently installed backflow preventer(s).</b>	Yes <input type="radio"/> (Minimum preventer: DCVA <input type="radio"/> RPBA <input type="radio"/> ) No <input checked="" type="radio"/> N/A <input type="radio"/> No sites provided <input type="radio"/>
<b>PWS currently accepts tanker trucks approved by other PWSs without further inspection or testing.</b>	Yes <input type="radio"/> No <input checked="" type="radio"/> N/A <input type="radio"/>
<b>Minimum level of backflow prevention required for temporary water connections (e.g., for construction sites).</b>	AG <input type="radio"/> DCVA <input type="radio"/> RPBA <input type="radio"/> Not specified <input checked="" type="radio"/> Temp. connections not allowed <input type="radio"/>
<b>PWS provides approved backflow preventer for temporary connections.</b>	Yes <input type="radio"/> No <input type="radio"/> N/A <input checked="" type="radio"/> (Temp. connections not allowed)
<b>PWS requires testing each time the temporary connection backflow preventer is relocated.</b>	Yes <input type="radio"/> No <input type="radio"/> N/A <input checked="" type="radio"/> (Temp. connections not allowed)

**J. Backflow Prevention for Non-Residential Connections**

For each category shown, indicate whether PWS has non-residential connections of that type and the **minimum level of premises isolation** backflow prevention required (whether or not PWS currently has that type of customer).

Type of Connection	PWS has Customers of this Type	Minimum Premises Isolation Backflow Prevention Required
<b>Commercial</b>	Yes <input checked="" type="radio"/> No <input type="radio"/>	Not Required <input checked="" type="radio"/> DCVA <input type="radio"/> RPBA <input type="radio"/>
<b>Industrial</b>	Yes <input checked="" type="radio"/> No <input type="radio"/>	Not Required <input type="radio"/> DCVA <input type="radio"/> RPBA <input checked="" type="radio"/>
<b>Institutional</b>	Yes <input checked="" type="radio"/> No <input type="radio"/>	Not Required <input type="radio"/> DCVA <input checked="" type="radio"/> RPBA <input type="radio"/>

**K. Backflow Prevention for Wholesale Customers**

Indicate whether the PWS requires backflow prevention at interties with wholesale customers (other PWSs).

Type of Intertie	PWS has Customers of this Type	Minimum Backflow Prevention Required (if prevention is required, indicate minimum level).	
<b>Existing</b>	Yes <input checked="" type="radio"/> No <input type="radio"/>	Not specified / Not required <input checked="" type="radio"/> Always required <input type="radio"/> Required only if purchaser's CCC program is inadequate <input type="radio"/>	Minimum required (if applicable): DCVA <input type="radio"/> RPBA <input type="radio"/>
<b>New</b>	Yes <input type="radio"/> No <input checked="" type="radio"/>	Not specified / Not required <input checked="" type="radio"/> Always required <input type="radio"/> Required only if purchaser's CCC program is inadequate <input type="radio"/>	Minimum required (if applicable): DCVA <input type="radio"/> RPBA <input type="radio"/>

**L. Exceptions to Mandatory Premises Isolation**

<b>PWS's written CCC Program Plan allows system to grant exceptions to mandatory premises isolation per WAC 246-290-490(4)(b)(iii)</b>	Yes <input checked="" type="radio"/> No <input type="radio"/> Doesn't Address <input type="radio"/>
<b>PWS currently grants new Exceptions.</b>	Yes <input type="radio"/> No <input checked="" type="radio"/>
<b>PWS granted Exceptions in past reporting years.</b>	Yes <input checked="" type="radio"/> No <input type="radio"/>

**Part 2: CCC Program Record-Keeping Software**

Indicate the type or name of computer software the PWS uses to track CCC records.

BPMS <input type="radio"/>	Cross-Track (BMI) <input type="radio"/>	Tokay <input checked="" type="radio"/>	XC2 <input type="radio"/>	Custom developed for or by PWS <sup>1</sup> <input type="radio"/>
Other non-CCC software (e.g. Excel) <input type="radio"/>	Other commercial CCC software (specify) <input type="radio"/>	None Used <input type="radio"/>		

<sup>1</sup> Do not include commercial CCC software customized for PWS. If PWS uses customized commercial software, check the box for the appropriate commercial software name.

**Part 3: Comments and Clarifications**

- Enter comments to:
  - Explain or clarify information in this report.
  - Describe accomplishments made in this reporting year.
  - Identify challenges faced in this reporting year.
  - Share your goals and objectives for the coming reporting year.
- Delete comments that are no longer valid.

Part #	Date Added	Comment
General	08-22-2016	Our PWS is working on not allowing exceptions in the future.

**Part 4: Report Certification and Contact Information**

I, [Certified by], certify that the information in this form is true, complete and accurate to the best of my knowledge.

Last Saved	08/22/2016	All ASR Forms Certified/Submitted	
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Designated CCS/CCC Program Manager <sup>1</sup>					
Name	Emilio Lopez	Title	Water Dist. Supervisor	CCS Cert #	012025
Email Address	emilio.lopez@yakimawa.gov	Phone	509-575-6196	Phone Ext	

PWS Manager <sup>2</sup>					
Name	David Brown	Title	Water / Irrigation Division Manager	Operator Cert #	003441
Email Address	david.brown@yakimawa.gov	Phone	509-575-6204	Phone Ext	

<sup>1</sup> The CCS responsible for developing and implementing the PWS's CCC program (CCC Program Manager).

<sup>2</sup> The person the designated CCS/CCC Program Manager reports to or other manager having direct oversight of the CCC Program.



## Backflow Prevention for Severe Health Hazard Facilities (Gray) Annual Summary Report (ASR) for 2015

PWS ID: 991509 PWS Name: YAKIMA WATER DIVISION, CITY OF County: YAKIMA

### Part 1: Backflow Prevention Status

- Describe the backflow prevention status at the end of the reporting year for each wastewater treatment plant and nuclear facility your system serves.
- If you serve more than one severe health hazard facility, click the "Add Facility" button to display another facility data entry box.
- If you serve more than one connection to the same facility, click the "Add Connection" button to display another connection row for that facility.
- You may add as many facilities and connections as needed.
- To update this form, you may delete facilities and connections which are no longer served.

<i>Facility 1 of 1</i>	
<b>Facility Name</b>	City of Yakima Waste Water Treatment Pla
<b>Physical Address</b>	
<b>City</b>	
<b>Zip</b>	
<b>NPDES Permit#</b>	
<b>Facility Type</b>	Wastewater Treatment Plant (WWTP)
<b>Facility Comments</b>	
<i>Facility 1 Connection 1 of 1</i>	
<b>Connection Name</b>	City of Yakima
<b>Backflow Prevention Status</b>	Premises Isolation RP but No In-Plant Air Gap
<b>Connection Comments</b>	

### Part 2: Report Certification and Contact Information

I, [Certified by], certify that the information in this form is true, complete and accurate to the best of my knowledge.

<b>Last Saved</b>	08/22/2016	<b>All ASR Forms Certified/Submitted</b>	
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Designated CCS/CCC Program Manager <sup>1</sup>					
<b>Name</b>	Emilio Lopez	<b>Title</b>	Water Dist. Supervisor	<b>CCS Cert #</b>	012025
<b>Email Address</b>	emilio.lopez@yakimawa.gov	<b>Phone</b>	509-575-6196	<b>Phone Ext</b>	

PWS Manager <sup>2</sup>					
<b>Name</b>	David Brown	<b>Title</b>	Water / Irrigation Division Manager	<b>Operator Cert #</b>	003441
<b>Email Address</b>	david.brown@yakimawa.gov	<b>Phone</b>	509-575-6204	<b>Phone Ext</b>	

<sup>1</sup> The CCS responsible for developing and implementing the PWS's CCC program (CCC Program Manager).

<sup>2</sup> The person the designated CCS/CCC Program Manager reports to or other manager having direct oversight of the CCC Program.



## List of Exceptions to High-Hazard Premises Isolation Requirements Annual Summary Report for (ASR) for 2015

PWS ID: 991509 PWS Name: YAKIMA WATER DIVISION, CITY OF County: YAKIMA

### Designated Cross-Connection Control Specialist (CCS) Information

<b>CCS Name</b>	Emilio Lopez	<b>CCS Phone</b>	509-575-6196	<b>CCS Cert. #</b>	012025
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Use the table below to:

- **Edit, Renew, or Cancel** a saved exception (depending on the buttons listed under Available Actions).
- **Print** any saved Exception form.
- Re-sort the Exceptions List by any column heading (except Available Actions). Click once to sort from A to Z. Click a second time to sort from Z to A.

**Important Reminder!** You must **Renew** or **Cancel** all **expired** exceptions to submit your ASR Forms Package.

#	Premises Name	Premises Type	Status	Expiration Date	Last Saved
1	TRIUMP TREATMENT CENTER		Cancelled		08/22/2016 3:08 PM
2	TRIUMP TREATMENT CENTER	HOSPITAL	Cancelled		08/22/2016 3:08 PM
3	Triumph Treatment Center	Hospital, Medical facility	Cancelled		08/22/2016 3:08 PM
4	TRIUMP TREATMENT CENTER	Hospitals, medical centers, nursing homes, veterinary, medical and dental clinics, and blood plasma centers	Cancelled		08/22/2016 3:08 PM
5	Triumph Treatment Services	Hospitals, medical centers, nursing homes, veterinary, medical and dental clinics, and blood plasma centers	Cancelled		08/22/2016 3:08 PM
6	Triump Treatment Center	Hospitals, medical centers, nursing homes, veterinary, medical and dental clinics, and blood plasma centers	Cancelled		08/22/2016 3:08 PM
7	Triumph Treatment	Hospitals, medical centers, nursing homes, veterinary, medical and dental clinics, and blood plasma centers	Cancelled		08/22/2016 3:08 PM
8	Triumph Treatment	Hospitals, medical centers, nursing homes, veterinary, medical and dental clinics, and blood plasma centers	New	06/30/2017	08/22/2016 3:08 PM



**Appendix W.**  
**Procedures Manual for Construction of Public  
Improvement Projects under Private Contracts**

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**CITY OF YAKIMA:  
PROCEDURES MANUAL FOR  
CONSTRUCTION OF PUBLIC IMPROVEMENT PROJECTS  
UNDER PRIVATE CONTRACTS**

**INTRODUCTION**

The following procedures shall apply to all public improvements financed by Owner/Developer private contracts. In addition, the following procedures shall apply to the public improvements within a Subdivision or Planned Development, or other new development or redevelopment, when required through a permit process. Other improvements, so designated by the City, may be regarded as "public improvements" within the context of this procedure. Only contractors that are licensed in the State of Washington to perform the required construction elements and that have an appropriate City of Yakima business license shall be allowed to construct public improvements.

Unless otherwise specifically stated, the term "public improvement" shall mean any improvement constructed within public right of way, or one that will be transferred to the City following construction, including, but not limited to, sanitary sewer, storm drainage, water, irrigation, roadway, sidewalk, traffic signals, and street lights. The term "City" shall mean the City Engineer, or his designated representatives; "Owner/Developer" shall mean the actual Owner or Developer of the proposed development that includes public improvements or his designated Agent; and, "Consulting Engineer" shall mean an individual or firm, licensed to practice Civil Engineering in the State of Washington, who shall have been retained by the Owner/Developer for the purpose of preparing the detailed plans and specifications and doing such other engineering work as shall be specifically identified within the context of these procedures and as approved by the City Engineer.

The improvements for which these procedures shall typically apply include:

1. Public sanitary sewer interceptors, trunks, collectors and their appurtenances including portions of the building sewers located within the public rights-of-way or public easement. *(The required procedures for private sanitary sewer service laterals and appurtenances located outside of the public rights-of-way or public easements are listed in the plumbing permit.)*
2. Public storm drain systems and their appurtenances including open, natural drainageway improvements located within the public rights-of-way or public easements, and infrastructure for private, on-site storm drain systems, located outside the public rights-of-way. *(Review and inspection fees to ensure that the construction stormwater runoff and installed system meet the required stormwater regulations are not covered by this permit.)*
3. All public street or roadway facilities and their appurtenances including bridge drainage structures, storm drain systems, traffic signals, street lighting, sidewalks, bicycle facilities, parking areas, as approved on the plans and in the specifications. *(The required procedures for private on-site sidewalks, private parking and loading facilities, private driveways, and other improvements shall be included in the building permit.)*
4. Public water mains, water systems, irrigation mains, irrigation systems and their appurtenances as approved on the plans and in the specifications. *(The required procedures for private, on-site water systems from the City meter to the building, and for private, on-site irrigation systems are listed in the plumbing permit. The required*

*procedures for the irrigation system, from the canal service valve or the diversion box to the property line, shall be as required by the irrigation company owner/operator.)*

Minor improvements, such as driveway approaches or isolated sidewalk sections, may be exempt from these requirements at the discretion of the City Engineer.

## **PROCEDURES**

### **Step I**

The Owner/Developer shall, if other than himself, name and identify the person or persons who shall be designated to act on his behalf on matters relating to the project. The Consulting Engineer may, at the Owner/Developer's discretion and direction, be the Agent.

The Owner/Developer shall retain the services of a Consulting Engineer, having the appropriate City of Yakima business license and licensed to practice Civil Engineering in the State of Washington, who is qualified to perform the required engineering services to design and construction stake/survey, as required, of the proposed public improvements. If the project includes installation of domestic water infrastructure, the Consulting Engineer shall comply with the requirements of WAC 290-246-125.

If, at any time during the term of the permit, the Owner/Developer terminates or reduces the level of the services of the Consulting Engineer or the designated Agent as specifically identified and accepted by the City, the Owner/Developer and Consulting Engineer/Agent shall immediately notify the City.

The Owner/Developer and his Consulting Engineer shall request and schedule a pre-design conference with the City for the purpose of establishing project guidelines and requirements, to identify specific details of the project, and review applicable design standards early in the design. The pre-design conference shall be scheduled with the City Engineer a minimum of one week prior to the meeting.

The Owner/Developer has the overall responsibility for project management, construction management, contract administration, permit acquisition, compliance, testing, and, if required, right-of-way acquisition. No construction work shall be started prior to a Pre-Construction Conference and approval by the City Engineer.

### **Step II**

The Owner/Developer shall submit to the City a "Consulting Engineer Retained for Services" letter (Appendix 3) listing the Consulting Engineer that they have retained to perform engineering services for the public improvements to be included in the project. The Consulting Engineer's services shall include:

- a. Surveying required to prepare detailed engineering construction plans;
- b. Preparation of detailed plans and specifications;
- c. Construction engineering and construction surveying/staking;
- d. Preparation of "As-Built Record Drawings";
- e. Providing required certifications;
- f. Such other work as may be necessary and applicable to provide a complete project objective.

### **Step III**

Following the City Engineer's acceptance of the design and right-of-way plans, the Consulting Engineer shall prepare legal descriptions for all required permanent rights-of-way and easements. These may be amended, as required, to reflect changes during construction. The Owner/Developer shall obtain and/or provide the executed documents for all easements and rights-of-way. Copies of the fully executed and recorded documents shall be provided to the City.

When applicable, the Consulting Engineer shall coordinate with the City's Water/Irrigation Division, Yakima County, Nob Hill Water Association, and the appropriate irrigation district or company to determine the best means of providing irrigation to the development. The Consulting Engineer shall also be responsible for notifying, furnishing plans to, and coordinating the public improvements with all of the private utilities, such as Nob Hill Water, irrigation districts or companies, electrical, telephone, power, gas, cable TV, etc. The location of all existing and proposed utilities and easements shall be included on the plans. The City Engineer will forward copies of the plans to City utilities, when appropriate (Wastewater, Stormwater, Water, Irrigation).

The Consulting Engineer shall submit plans, specifications and other support data and information, as required, to the appropriate agency and shall obtain all necessary approvals and permits, i.e., Department of Ecology and/or Health, WSDOT, Department of Natural Resources, Corps of Engineers, Clean Air Authority, Washington Department of Fish and Wildlife or County Utility Permits. Copies of such written approvals or permits shall be submitted to the City prior to the Pre-Construction Conference.

### **Step IV**

The Consulting Engineer shall prepare, seal, and submit to the City four complete sets of detailed construction plans, profiles, cross sections, support data, design calculations, project details and project specifications. All such plans and specifications shall be compliant with the requirements of the most current edition of the WSDOT Standard Specifications for Road, Bridge, and Municipal Construction, the Department of Health Design Manual, the Criteria for Sewage Works Design with the Department of Ecology, the Stormwater Management Manual for Eastern Washington or an approved stormwater manual for the Yakima area, Yakima City Standards, and all design of domestic water shall be compliant with WAC 246-290-200, 220, and 230. Plans shall be 22"x34" (ANSI D) size for final acceptance. (11"x17" size plans may be submitted for review only). Larger size plan sheets may be permissible with prior approval of the City Engineer. The applicant shall allow a minimum clear area of 2.5"x2.5" on each plan sheet for final acceptance stamp. With the plans, the Consulting Engineer shall submit an application for a "Permit to Construct Public Improvements" (Appendix 2). At the time of submittal, a non-refundable fee of \$250 shall be paid to the City. The City shall review the submitted plans and specifications, and shall return one reviewed and noted copy indicating the changes, additions, deletions, or modifications that are required to make the plans and specifications acceptable. When the revised plans, specifications, and other materials are resubmitted to the City, the City shall review and upon acceptance, approve the revised plans and specifications notifying the Consulting Engineer of approval and the remainder of the review and inspection fees to be paid. The method used to calculate the inspection fees is described in "Appendix 2: Permit to Construct Public Improvements". The approved plans must be paid for within 12 months of submittal. If not paid within 12 months, plans will need to be resubmitted including all fees. If construction has not begun within 18 months of plan acceptance, the plans will need to be resubmitted and will be subject to any federal, state or local regulation changes. At the discretion of the City Engineer, an additional charge of 10% of the calculated fee may be charged for this additional review.

When developments are submitted in different phases, each phase will be treated as a separate project when determining the review and inspection fees.

#### **Step V**

The remainder of the review and inspection fees shall be paid prior to, or at the time of picking up the approved plans. The following listed items are required prior to construction of the public improvements:

- a. Copies of any required permits; including a Street Break permit (YMC 8.72), if applicable
- b. The name and State registration number of the prime contractor and sub-contractors, with a list of the work elements to be performed by each.
- c. Any other documentation as shall be required.

The fees are required to cover plan checking and inspection fees, in addition to such other fees as may be identified as appropriate for the specific project improvements. The Schedule of Charges for Engineering and Related Services has been established by the City Council in Chapter 12.20 of the Yakima Municipal Code.

While it is not a requirement of the permit, the City recommends that the Owner/Developer include in his contract with their Contractor, if other than themselves, a requirement that the Contractor furnish him with a Performance and Payment Bond in an amount equal to 110 percent of the Contract amount to insure the faithful performance of the Contractor and Contractor's payment of all bills, liens, or claims. The Performance and Payment Bond shall cover the construction period through the warranty period. One year Warranty period will begin upon written final acceptance of the project by the City.

#### **Step VI**

Following selection of a Contractor and prior to construction, the applicant is responsible for scheduling a pre-construction conference with the City's Construction Supervisor. Other jurisdictions, the applicant's engineer, the applicant's contractor, utility companies, subcontractors and other necessary parties to the project shall be present at the pre-construction conference.

The City shall endeavor to hold the Pre-Construction Conference within two weeks of the request. Construction may proceed, per the approved schedule, following the completion of the Pre-Construction Conference, provided all of the necessary documentation has been submitted and approved.

It is the responsibility of the Owner/Developer to ensure that the construction is in conformance with the approved plans and specifications. The Owner/Developer is ultimately responsible for the work that is done. The City shall be notified not less than three working days before construction is to start.

The City of Yakima will assign a qualified, experienced construction inspector to the project at the owner/developer's expense, the cost of which was covered by the fore-mentioned plan review/inspection fees. In addition to routine observation, the City inspector will inspect specific elements and milestones during the work. Such elements shall include, but not be limited to: Water; hydrostatic pressure test, Bacteria test, and final connection: Wastewater; connection to existing, air test, and mandrel test. *(TVing of wastewater and stormwater piping shall remain a City function and assess in accordance with YMC 7.60.105 E(3))*: Streets; sidewalks, subgrade, final aggregate lift. Such element shall be outlined at the pre-

construction meeting. All tests, inspections, or reviews to be done by the City shall be scheduled a minimum of one working day in advance. The City's inspection will not relieve the Owner/Developer's liability of all work being performed in conformance with the approved plans, specifications and permits.

The Owner/Developer shall independently hire and cover all costs associated with quality assurance sampling and materials testing by a certified testing company, and provide documentation of the results of the sampling and testing to the City. The requirements for sampling and testing are contained in the current edition of the WSDOT Standard Specifications for Road, Bridge and Municipal Construction.

The Owner/Developer, or his assigned Agent, shall administer, manage, and supervise the construction and will be readily available to approve design changes, when necessary. The Contractor shall have a representative with authority on site whenever work is being performed. Any problems that are encountered or changes required due to construction conditions will be reviewed with the Consulting Engineer and the owner/developer. Changes that require any increase or decrease to the contractor's cost will be the responsibility of the owner/developer and may result in increased City review and inspection fees.

All construction shall meet the requirements of the most current edition of the WSDOT Standard Specifications for Road, Bridge, and Municipal Construction, the Department of Health Design Manual, the Criteria for Sewage Works Design with the Department of Ecology, the Stormwater Management Manual for Eastern Washington or an approved stormwater manual for the Yakima area, Yakima City Standards, the approved plans, the approved Project Specifications and other applicable regulations. Special Provisions (project-specific specifications) shall be prepared and submitted to the City for acceptance. All changes, alterations, or revisions to the approved plans or specifications shall be submitted for acceptance by the City Engineer.

Copies of all test records shall be furnished to the City Engineer on a weekly basis, or as deemed necessary by the City Engineer. The City Engineer or designee will visit the project site to review the work related to the required inspection. Such site visits do not relieve the applicant, or the contractor of any responsibilities for performing all work in accordance with the approved plans and this chapter. The City Engineer or designee may also visit the project site from time to time to monitor the overall progress of the project.

Failure to comply with testing requirements may necessitate appropriate or additional testing and certification as directed by the City Engineer. Costs of such testing and certification shall be borne by the contractor and/or applicant. At the time that such action is directed by the City Engineer, no further work will be permitted on the road or subdivision until all tests have been completed and all corrections have been made to the satisfaction of the City Engineer.

The City shall have the authority to cause a suspension of construction when, in the City's opinion, such work is not being done in conformance with the approved plans, specifications, regulations or permit. Any resultant delays, impacts or added expenses shall not be the City's responsibility.

## **Step VII**

Upon written notice that the public improvements have been substantially completed, the City will, in the company of the Owner/Developer or his Agent, make a final inspection of the construction. Such inspection shall include the checking of valve box alignment and the operation of valves. The Owner/Developer shall see that all necessary additions, corrections, repairs, and/or modifications are made.

### **Step VIII**

At the conclusion of construction and when all corrections and repairs have been made, the Owner/Developer shall submit one full reproducible set and an electronic pdf of the "As Built" Record Drawings together with a Certificate of Work Completion, which shall include, but not be limited to, testing records, material certifications and warranties, and a request for acceptance by the City.

No building or service connection to sanitary sewers, storm drains, or water lines will be permitted until these systems have received final acceptance by the City, or unless otherwise approved by the City for connections (including the payment of connection charges).

The completion of all public improvements, including submittal of "As-Built Drawings" shall be required prior to the issuance of a building permit, however, in certain situations, a building permit may be granted prior to the completion of the public improvements provided the Owner/Developer submits a bond in the amount of 110% of the value of the public improvements yet to be completed. All public improvements must be completed prior to receiving a Certificate of Occupancy.

### **Step IX**

When all public improvements have been completed in an acceptable manner, the City shall certify its acceptance in writing. Final acceptance by the City shall not relieve the Owner/Developer's, or the Contractor's liability of all work being performed in conformance with the approved plans, specifications and permit. The City's letter of acceptance shall specify the effective period of the warranty. The Owner/Developer shall submit a letter to the City (Appendix 8) transferring ownership of the public improvements to the City.

### **STANDARD FORMS**

Attached hereto are samples of the various forms and letters that apply to the permit process for public improvements.

- Application for Private Development
- Appendix 1: Public Improvement Procedure Checklist
- Appendix 2: Permit to Construct Public Improvements (City)
- Appendix 3: Consultant Engineer Retained for Services (Owner/Developer)
- Appendix 4: Notice of Substantial Completion (Owner/Developer)
- Appendix 5: Correction Notice (City)
- Appendix 6: Affidavit of Release of Liens and Claims (Owner/Developer and Contractor)
- Appendix 7: Final Acceptance (City)
- Appendix 8: Transfer of Ownership (Owner/Developer)





# APPLICATION FOR PRIVATE DEVELOPMENT

CITY OF YAKIMA, DEPARTMENT OF COMMUNITY AND ECONOMIC DEVELOPMENT

129 NORTH SECOND STREET, 2ND FLOOR, YAKIMA, WA 98901

VOICE: (509) 575-6111 FAX: (509) 576-6305

INSTRUCTIONS – PLEASE READ FIRST Please type or print your answers clearly.

Answer all questions **completely**. If you have any questions about this form or the application process, please contact the Engineering Department. Remember to bring this completed form and the required filing fee when the application is submitted. The Engineering Division cannot accept an application unless it is complete and the filing fee of \$250 is paid. Filing fees are not refundable.

## PART I – GENERAL INFORMATION

### 1. Owner/Developer Name, Address, and Phone Number

Name

Street

City

State

Zip

Phone ( )

### 2. Applicant's Property Interest

Check One

Owner

Agent

Developer

Other \_\_\_\_\_

### 3. Engineer/Agent's Name, Address, And Phone Number

Name

Street

City

State

Zip

Phone ( )

## PART II – PROPERTY INFORMATION

### 4. Subject Property's Assessor's Parcel Number(s):

### 5. Property Address:

### 6. Type Of Work: (Check All That Apply)

Frontage Improvements (Curb, Gutter, Sidewalk, Driveway Approaches etc...)

Sanitary Sewer Improvements (Sanitary Sewer Pipe, Forcemain, Manholes, Cleanouts etc...)

Domestic Water Improvements (Water Pipe, Blow-off, Meter, Valve etc...)

Irrigation water improvements (Irrigation Pipe, Blow-off, Meter, Valve etc...)

Stormwater Improvements (Stormwater Pipes, Infiltration Units, Manholes, Catch Basins etc...)

Other: \_\_\_\_\_

### 7. Complete Description of Work:

## PART III – CERTIFICATION

8. I certify that the information on this application and the required attachments are true and correct to the best of my knowledge.

\_\_\_\_\_  
APPLICANT'S SIGNATURE

\_\_\_\_\_  
DATE

## FOR ADMINISTRATIVE USE ONLY

Revised 02-12

Notes

File No.

Date Fee Paid

Received By

Amount

Receipt No.



**APPENDIX 1**

**PUBLIC IMPROVEMENT PROCEDURE CHECKLIST**

<b>ITEM</b>	<b>DATE</b>	<b>INITIALS</b>
• <b>Project Acknowledgment</b>	_____	_____
• <b>Predesign Conference</b>	_____	_____
• <b>Permits</b>	_____	_____
- SEPA	_____	_____
Department of Ecology	_____	_____
Shorelines NPDES	_____	_____
Department of Health	_____	_____
WSDOT	_____	_____
Department of Natural Resources	_____	_____
Corps of Engineers	_____	_____
Wetlands	_____	_____
City or County Grading and Filling	_____	_____
Clean Air	_____	_____
Other	_____	_____
• <b>Plan Review</b>	_____	_____
Water	_____	_____
Irrigation	_____	_____
Sewer	_____	_____
Street	_____	_____
Illumination	_____	_____
Drainage	_____	_____
Other	_____	_____
• <b>Permit for Construction</b>	_____	_____
• <b>Preconstruction Conference</b>	_____	_____

- **Construction** \_\_\_\_\_
  - Material Submittals-Water, Sewer, Storm, Illumination, Irrigation, etc. \_\_\_\_\_
  - Warranties \_\_\_\_\_
  - Quality Assurance Sampling of Materials \_\_\_\_\_
  - Material Testing Documentation \_\_\_\_\_
  
- **Project Close-Out** \_\_\_\_\_
  - Notice of Substantial Completion \_\_\_\_\_
  - Final Inspection \_\_\_\_\_
  - Correction Notice \_\_\_\_\_
  - Final Acceptance \_\_\_\_\_
  - As-builts (hard copy and electronic (pdf) \_\_\_\_\_
  - Warranty Inspection \_\_\_\_\_
  - Deeds \_\_\_\_\_
  - Easements \_\_\_\_\_

**APPENDIX 2**

**PERMIT TO CONSTRUCT PUBLIC IMPROVEMENTS**

FILE NO. \_\_\_\_\_

OWNER/DEVELOPER:	
MAIL ADDRESS:	PHONE:
ENGINEER/AGENT:	
ADDRESS:	PHONE:
LOCATION OF WORK:	
DESCRIPTION OF THE WORK:	
PROPOSED STARTING DATE:	ANTICIPATED COMPLETION DATE:

*I hereby affirm that the above statements are true, and I agree to comply with all City Ordinances in the conduct of the work and that all work shall comply with City Specifications.*

**OWNER/AGENT:** \_\_\_\_\_ **BY:** \_\_\_\_\_

**APPLICANT CALCULATED FEES**

**1. Plan Check & Inspection Fee:**

**(0.14)(\$ \_\_\_\_\_ ) + (0.12)( \$ \_\_\_\_\_ ) + (0.10)( \$ \_\_\_\_\_ ) = \$ \_\_\_\_\_**

*The Plan Check and Inspection Fee shall be computed as follows:  
14% for the first \$25,000 project cost, plus 12% for project costs from \$25,000 and \$50,000, and plus 10% for all project costs over \$50,000*

*Example, the fee for a \$78,000 project would be calculated as follows:  
Then; (0.14)(\$25,000.00)+(0.12)(\$25,000.00)+(0.10)(\$28,000.00) = \$9,300.00).*

**2. TV Camera Sewer Pipe Fee: ( ( \_\_\_\_\_ LF of Public Sewer ) x \$2.02 ) = \$ \_\_\_\_\_**

**3. Application Fee: \_\_\_\_\_ = \$ \_\_\_\_\_ - 250.00**

***The Application Fee is all that shall be submitted initially. Any other moneys will be returned and plan review will be held until such time as the application fee is substantiated. Note that the application fee is non-refundable***

**4. Final Approval Fee: (Plan Check Fee)+(TV Camera Fee)-(Application Fee) = \$ \_\_\_\_\_**

*(The Approval Fee is to be paid ONLY upon notification from the City Engineer)*

CONDITIONS OF APPLICATION APPROVAL	DATES
1 Application Fee	
2 Approval of Plans & Specifications	
3 Payment of Remaining Fees	

CONDITIONS OF APPLICATION APPROVAL	DATES
4 Performance/Payment Bond	
5 Insurance certificate with Additional Insured Endorsement.	
6 Agency Approval	

**PERMIT APPROVED:** \_\_\_\_\_ **DATE:** \_\_\_\_\_

*Disclaimer: Neither the City of Yakima nor the Engineering Department warrants the accuracy or timeliness of any information herein. This acceptance is NOT a permit to construct and shall not be construed as such.*



**12.20.030: Public Works Improvement Bid Item Prices**

ITEM DESCRIPTION	UNIT	QNTY	UNIT PRICE	AMOUNT
------------------	------	------	------------	--------

<b>Clearing and Grading</b>				
Half Street Improvement	LF		\$6.00	
Full Street Improvement	LF		\$12.00	
OTHER				
<b>Clearing and Grading Total:</b>				

<b>Street</b>				
Saw Cut (per inch depth)	LF		\$1.00	
Crushed Surfacing Top Course	TON		\$15.00	
Crushed Surfacing Base Course	TON		\$14.00	
Asphalt Treated Base	TON		\$60.00	
Hot Mix Asphalt	TON		\$70.00	
Pavement Repair	SY		\$40.00	
Porous Asphalt Pavement	SF		\$4.00	
Porous Concrete Pavement	SF		\$5.00	
Cement Conc. Traffic Curb and Gutter	LF		\$9.00	
Cement Conc. Sidewalk, 4 inch depth	SY		\$27.00	
Cement Conc. Sidewalk, 6 inch depth	SY		\$30.00	
Handicap Ramp (Separate of Commercial Approach)	EA		\$750.00	
Commercial Approach	EA		\$3,500.00	
OTHER				
<b>Street Total:</b>				

<b>Storm Drainage System</b>				
8 Inch Pipe	LF		\$22.00	
10 Inch Pipe	LF		\$25.00	
12 Inch Pipe	LF		\$30.00	
18 Inch Pipe	LF		\$35.00	
24 Inch Pipe	LF		\$40.00	
Type 1 Catch Basin	EA		\$750.00	
Type 1L Catch Basin	EA		\$1,000.00	
Curb Inlet	EA		\$650.00	
Connection to Existing Catch Basin/Manhole	EA		\$1,600.00	
Retention System	LF		\$70.00	
Infiltration Swale	LF		\$6.00	
Pollution Control	EA		\$200.00	
OTHER				
<b>Storm Drainage Total:</b>				

**12.20.030: Public Works Improvement Bid Item Prices (Cont.)**

ITEM DESCRIPTION	UNIT	QNTY	UNIT PRICE	AMOUNT
------------------	------	------	------------	--------

<b>Sanitary Sewer System</b>				
8 Inch Pipe	LF		\$30.00	
10 Inch Pipe	LF		\$35.00	
12 Inch Pipe	LF		\$40.00	
48 Inch Manhole	EA		\$1,700.00	
72 Inch Manhole	EA		\$3,000.00	
Extra Depth Excavation (per foot depth over 12' deep)	LF		\$2.00	
Extra Depth Manhole (per foot over 12' depth)	FT		\$110.00	
OTHER				
<b>Sanitary Sewer System Total:</b>				

<b>Water System</b>				
6 Inch Pipe	LF		\$20.00	
8 Inch Pipe	LF		\$25.00	
12 Inch Pipe	LF		\$40.00	
18 inch Pipe	LF		\$120.00	
20 inch Pipe	LF		\$175.00	
6 Inch valve	EA		\$725.00	
8 Inch valve	EA		\$1,000.00	
12 Inch valve	EA		\$1,250.00	
18 Inch valve	EA		\$1,500.00	
20 inch valve	EA		\$2,500.00	
Fire Hydrant Assembly	EA		\$1,800.00	
Blow Off Assembly	EA		\$850.00	
Air and Vacuum Assembly	EA		\$1,000.00	
Water Valve Box	EA		\$65.00	
OTHER				
<b>Water System Total:</b>				

<b>Street Lighting</b>				
Aluminum Street Light	EA		\$3,000.00	
Service Meter	EA		\$300.00	
Electrical Junction Box	EA		\$150.00	
Electrical Conduit	LF		\$3.00	
OTHER				
<b>Street Lighting Total:</b>				



**12.20.030: Public Works Improvement Bid Item Prices (Cont.)**

ITEM DESCRIPTION	UNIT	QNTY	UNIT PRICE	AMOUNT
<b>Miscellaneous</b>				
Monument	EA		\$300.00	
Street Sign	EA		\$200.00	
Pavement Marking	LF		\$1.00	
Control Density Fill	CY		\$80.00	
Adjust Existing Utilities	EA		\$220.00	
Sod Installation	SY		\$17.00	
Permanent Signing	SF		\$10.00	
OTHER				
<b>Miscellaneous Total:</b>				
<b>Project Total:</b>				



**APPENDIX 3**

Date

City of Yakima  
Engineering Division  
129 No. 2nd Street  
Yakima, WA 98901

CONSULTING ENGINEER RETAINED FOR SERVICES - PROJECT: \_\_\_\_\_  
\_\_\_\_\_

We have contracted with the Engineering Consulting Firm of \_\_\_\_\_  
to provide engineering services for \_\_\_\_\_  
\_\_\_\_\_

This Public Works Improvement project will consist of \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

OWNER/DEVELOPER

cc: Consulting Engineer



**APPENDIX 4**

Date

City of Yakima  
Engineering Division  
129 No. 2nd Street  
Yakima, WA 98901

OWNER/DEVELOPER CERTIFICATION

NOTICE OF SUBSTANTIAL COMPLETION - PROJECT: \_\_\_\_\_

The following listed public improvements have been substantially completed and are ready for final inspection:

\_\_\_\_\_  
\_\_\_\_\_

Enclosed please find copies of testing reports, material certifications, and warranties. We hereby request that the City conduct its final inspection of these improvements. We will be happy to accompany the City's representatives on this inspection. Please contact \_\_\_\_\_

\_\_\_\_\_.

OWNER/DEVELOPER

cc: City of Yakima  
Contractors



**APPENDIX 5**

Date

OWNER/DEVELOPER

CORRECTION NOTICE -- PROJECT: \_\_\_\_\_

The attached list identifies the changes and/or corrections that are required to complete the public improvements in accordance with the most current edition of the WSDOT Standard Specifications for Road, Bridge, and Municipal Construction as amended by the Special Provisions, the Department of Health Design Manual, the Criteria for Sewage Works Design with the Department of Ecology, the Stormwater Management Manual for Eastern Washington or an approved stormwater manual for the Yakima area, Yakima City Standards Please notify this office when the correction work is to take place. When the corrections have been satisfactorily completed, the project will be ready for the finalization and acceptance process.

cc: City of Yakima  
Contractors





**APPENDIX 6**

Date

City of Yakima  
Engineering Division  
129 No. 2nd Street  
Yakima, WA 98901

RE: AFFIDAVIT OF RELEASE OF LIENS AND CLAIMS - PROJECT: \_\_\_\_\_

\_\_\_\_\_, Owner/Developer, and \_\_\_\_\_  
\_\_\_\_\_, Contractor, hereby affirm that they have satisfied all claims of project including, but not limited to, all payroll amounts due, all Contractor or Subcontractors amounts due, all accounts for labor, equipment, or materials furnished, and that all claims for incidental services, liens, judgments, and so forth, or claims arising out of said project work. In the event that the City is required to take legal action to satisfy any lien or claim relating to the project, the Owner/Developer and/or the Contractor shall be liable for all costs connected with the clearing any or all liens or claims.

OWNER/DEVELOPER: \_\_\_\_\_

Address: \_\_\_\_\_

Authorized Official: \_\_\_\_\_

Date: \_\_\_\_\_

CONTRACTOR: \_\_\_\_\_

Address: \_\_\_\_\_

Authorized Official: \_\_\_\_\_

Date: \_\_\_\_\_



**APPENDIX 7**

Date

OWNER/DEVELOPER

FINAL ACCEPTANCE - PROJECT: \_\_\_\_\_

The following listed public improvements have been constructed in accordance with the City's requirements and are hereby accepted by the City for operation and maintenance:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

The one-year warranty period shall commence \_\_\_\_\_ and shall be effective through \_\_\_\_\_. The City will conduct a warranty inspection prior to the above date and will notify you of any repairs or corrections that will be required under the warranty. You will be expected to have the repairs and/or corrections made immediately. Any required repair or correction identified at any time during the warranty period shall be made immediately upon notification.

- cc: City of Yakima  
    a. Engineering Division  
    b. Wastewater Division  
    c. Water/Irrigation Division  
Contractors  
Owner/Developer



**APPENDIX 8**

Date:

City of Yakima  
Engineering Division  
129 No. 2nd Street  
Yakima, WA 98901

RE: TRANSFER OF OWNERSHIP – Project \_\_\_\_\_

\_\_\_\_\_, Owner/Developer, hereby transfer ownership of the public improvements made as part of the above-referenced project to the City of Yakima. The public improvements include, but are not limited to, paved roadways, curb, gutter and sidewalk, sanitary sewer main, water main (if applicable), irrigation, streetlights, traffic signals and stormwater system. These improvements extend from \_\_\_\_\_ to \_\_\_\_\_ on \_\_\_\_\_, from \_\_\_\_\_ to \_\_\_\_\_ on \_\_\_\_\_, etc.

OWNER/DEVELOPER: \_\_\_\_\_

Address: \_\_\_\_\_

\_\_\_\_\_

Authorized Official: \_\_\_\_\_

Date: \_\_\_\_\_

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**Appendix X.**  
**Water System Specifications**

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**SPECIFICATIONS**  
**FOR**  
**PRIVATE CONSTRUCTION OF PUBLIC WATER MAINS**  
**FOR**  
**CITY OF YAKIMA**  
**2017**

**The latest edition of the Standard Specifications for Road, Bridge, and Municipal Construction prepared by the Washington State Department of Transportation and the Washington State Chapter of the American Public Works Association and all current applicable amendments is, by this supplemented hereinafter. Each section of the Standard Specifications shall be considered as much a part of these Specifications as if they were actually set forth herein.**

**All sections of the Standard Specifications shall apply to this project as appropriate, except as modified by these Special Provisions. All Special Provisions apply to work within the City of Yakima's water service area. Contact Nob Hill Water Association for requirements where construction is outside of the City of Yakima's water service area.**

**All measurement and payment sections within the Standard Specifications are deleted for privately funded construction projects. The Developer shall be responsible for payment of all costs for the project and for procuring a qualified contractor.**

**NOTE:**

Where pavement repair is required or when utilities are included with roadway construction, the Contractor shall follow the City of Yakima Special Provisions for Private Construction of Streets, Drainage & Illumination as they modify the Standard Specifications for that work including the adjustment of the utility castings to final grade. Contractor shall adhere to all requirements of Yakima Municipal Code Chapter 8.72 – Excavations in Public Rights-of-way.

## **2-07 WATERING**

### **2-07.3 Construction Requirements**

Add the following new section

#### **2-07.3(A) Water Supplied From Hydrants**

The Contractor shall contact the City of Yakima Water/Irrigation Division to secure a metered hydrant connection and comply with all requirements before obtaining water from fire hydrants. The Contractor shall notify the Engineer as soon as permit has been obtained.

The contractor shall only use hydrant wrenches to operate hydrants. The hydrant valve must be open full, since a partially opened valve may cause damage to the hydrant. The auxiliary valve on the outlet of the metered hydrant connection shall be used with for flow control purposes. Fire hydrant valves must be closed slowly to avoid pressure surges in the water system. The Contractor shall carefully note the importance of following these directions.

If a hydrant or metered connection is damaged, the Contractor shall immediately notify the City of Yakima Water/Irrigation Division so that the damage can be repaired as quickly as possible.

Upon completing the use of the hydrants, the Contractor shall return the metered hydrant connection. The City of Yakima Water/Irrigation Division may inspect the hydrant for any possible damage. The contractor will be billed for repairing the damage to a hydrant or meter if resulting from improper use.

The contractor shall convey the water from the nearest convenient hydrant at their own expense and as approved by the City of Yakima Water/Irrigation Division. The contractor shall be responsible for all costs associated with the use of the hydrant, including rental fees and metered water use.

Any violation of these requirements may result in fines and damage costs to the contractor resulting from the malfunctioning of damaged fire hydrants, in the event of fire.

## **7-08 GENERAL PIPE INSTALLATION REQUIREMENTS**

### **7-08.2 Materials**

Revise the second paragraph to read:

Gravel Backfill for Pipe Zone Bedding

The crushed gravel used for gravel backfill for pipe zone bedding shall be crushed surfacing top course meeting the requirements of Section 9-03.12(3).

## **7-09 WATER MAINS**

### **7-09.1 Description**

Supplement this section with the following:

The City Water/Irrigation Division will operate all existing water valves required as part of the project. Existing valves within the project area shall remain accessible at all times.

All new water mains crossing nonpotable lines such as sanitary and storm sewer lines shall conform to the City of Yakima's *Waterline Separation from Nonpotable Conveyance Systems* standards.

### **7-09.3(5) Grade and Alignment**

Revise the first sentence of the third paragraph to read as follows:

The depth of trenching for water mains shall be such as to give a minimum cover of 48 inches over the top of the pipe unless otherwise specified in the Special Provisions.

### **7-09.3(9) Bedding the Pipe**

Delete the first sentence

Revise the second sentence to read:

Gravel backfill for pipe zone bedding shall be placed to the depths shown on the City of Yakima Standard Detail for Typical Trench Section, W3.

### **7-09.3(10) Backfilling Trenches**

Supplement this section with the following:

Street crossing trenches and other locations as shown on the plans or directed by the Engineer shall be backfilled for the full depth of the trench with Crushed Surfacing Top Course meeting the requirements of SECTION 9-03.12(3).

#### **7-09.3(11) Compaction of Backfill**

Delete the first paragraph and supplement this section with the following:

The density of the compacted material shall be at least 95% of the maximum density as determined by ASTM D 698 Tests (Standard Proctor). Placement of courses of aggregate shall not proceed until density requirements have been met.

The first 500 feet of trench backfill operations shall be considered a test section for the Contractor to demonstrate his backfilling and compaction techniques. The Contractor shall notify the Engineer at least 3 working days prior to beginning trench excavation and backfill operations and the Engineer will arrange for in-place density tests to be taken on the completed test section in accordance with the above requirements. No further trenching will be allowed until the specified density is achieved in the test section. Passing in-place density tests in the test section will not relieve the Contractor from achieving the specified densities throughout the project.

#### **7-09.3(19)A Connection to Existing Mains**

Add the following:

No connection to existing mains shall be allowed prior to a successful pressure test, disinfection, flushing and a satisfactory bacteriological test result is obtained.

Prior to installing new water main, the contractor shall pothole the existing water main at the designed point of connection to determine exact size, type, depth and location of existing water main. The new water main shall be laid at the same depth as the existing water main to avoid an unnecessary fittings as part of the final connection.

The Water/Irrigation Division shall furnish and install new tapping sleeves and valves to existing mains up to and including 12-inch. Costs, including materials and labor, as determined by the Water Distribution Supervisor, shall be paid at the Code Administration, City Hall, 129 N. 2<sup>nd</sup> St. Yakima, WA. 98901, before materials are ordered and the work is scheduled.

Mechanical joint fittings, valves and fire hydrants shall be connected with a ROMAC "Grip Ring", or an approved equivalent.

#### **7-09.3(22) Blowoff Assemblies**

Revise the first sentence to read:

Blowoff Assemblies shall be constructed at the locations shown on the Plans and in accordance with the *City of Yakima Typical Blow Off Assembly Detail W5*.

### **7-09.3(23) Hydrostatic Pressure Test**

Revise the first sentence to read:

All water mains and appurtenances shall be tested under a hydrostatic pressure of 180 psi.

Supplement this section with the following:

Test shall be made with main gate valves open. Upon completion of the test, each valve shall be tested by closing each in turn and relieving the pressure beyond. This test of the valve will be acceptable if there is no immediate loss of pressure on the gauge when the pressure comes against the valve being checked. The Contractor shall verify that the pressure differential across the valve does not exceed the rated working pressure of the valve.

### **7-09.3(23)A Testing Extensions From Existing Mains**

Delete this section

### **7-09.3(23)B Testing Section With Hydrants Installed**

Revise this section to read:

When hydrants are included with the section of water main to be tested, the testing shall be conducted as described in Section 7-09.3(23) in two separate tests as follows:

**Test No. 1** – Hydrant auxiliary gate valves closed, with the hydrant operating stem valves and hose ports open.

**Test No. 2** – Hydrant operating the stem valves closed, with the hydrant auxiliary gate valves and hose ports open.

### **7-09.3(23)C Testing Hydrants Installed on Existing Mains**

Revise this section to read:

For hydrants being installed and connected to an existing water main, the hydrant connection shall be provided by the City of Yakima Water/Irrigation Division, including the auxiliary gate valve. In some cases, the City will also install the hydrant and all associated piping. The owner or contractor requiring the new fire hydrant shall be responsible for all costs associated with the City's installation.

Where the contractor installs the hydrant and piping, all materials shall be field chlorinated as described in **7-09.3(24)M** prior to connecting to the auxiliary gate valve.

Once connected, a visual inspection of all connections shall be performed prior to backfilling. If the distance between the auxiliary gate valve and hydrant is more than one full length of pipe, the hydrant and piping shall be pressure tested according to **7-09.3(23)** and disinfected according **7-09.3(24)** prior to being connected to the auxiliary gate valve and existing water main.

### **7-09.3(24) Disinfection of Water Mains**

Supplement this section with the following:

A representative from the City of Yakima Water/Irrigation Division will collect all bacteriological samples for testing and pay the cost associated with the initial samples. If test results are unsatisfactory, contractor shall disinfect the water main as previously outlined. New bacteriological samples will be taken by a representative of the Water/Irrigation Division. The contractor will be responsible for all costs associated with subsequent disinfection and sample testing.

### **7-09.3(24)A Flushing**

Revise the first paragraph to read:

All filling, flushing and chlorinating of the new water system shall be done through a metered hydrant or blowoff connection with an approved double check assembly. Contractor shall secure the metered connection and double check assembly from the City of Yakima Water/Irrigation Division (see also 2-07.3(A) Water Supplied From Hydrants). Sections of pipe to be disinfected shall first be flushed to remove any solids or contaminated material that may have become lodged in the pipe. If a hydrant is not installed at the end of the new main, then a temporary blow-off shall be provided by the contractor large enough to develop a flow velocity of at least 2.5 fps in the water main. No portion of the temporary blow-off shall remain in place as part of the permanent water system. Contractor is required to de-chlorinate all water flushed onto the street surface or into any storm drain system. Flushing may only be done into the sanitary sewer system if previously approved by the city's Wastewater Division.

Delete the second paragraph

### **7-09.3(24)H Point of Application**

Delete this section

### **7-09.3(24)N Final Flushing and Testing**

Revise the last sentence in the third paragraph to read:

Samples will be collected and bacteriological tests obtained by the City of Yakima Water/Irrigation Division.

### **7-12.3 Construction Requirements**

Supplement this section with the following:

Valve box tops and lids shall be placed so that the ears of the lid/notches of the top section are in-line with the direction of the main.

Where valve boxes are installed in unpaved areas, the contractor shall install a 24-inch square/diameter x 4-inch thick pad of 3,000 psi concrete pad around valve box. The valve box and concrete pad shall be set flush to the surrounding surface.

### **7-12.3(1) Installation of Valve Marker Post**

Delete this section

## **7-14 HYDRANTS**

### **7-14.3(1) Setting Hydrants**

Delete the fourth paragraph.

Supplement this section with the following:

The hydrant shall be set to the correct elevation on a concrete block base 12-inch x 12-inch x 6-inch thick, which has been placed on undisturbed earth. Around the base of the hydrant, the Contractor shall place 0.25 C.Y. of drain rock ranging in size from 3/4-inch to 1½-inch, said drain rock being for the purpose of allowing free drainage of the hydrant. Hydrants shall be installed according to City of Yakima Standard Detail for Hydrant Assembly, W1.

Where fire hydrants are installed in unpaved areas, the contractor shall install a 5-foot square x 4-inch thick pad of 3,000 psi concrete pad around fire hydrant at the bury line. The concrete pad shall be set flush to the surrounding surface.

### **7-14.3(2)A Hydrant Restraint**

Revise this section to read as follows:

All mechanical joints associated with the hydrant (shoe, auxiliary gate valve, tee) shall be connected with ROMAC "Grip Ring" accessory pack or approved equivalent. Where the length between the auxiliary valve and hydrant shoe is greater than 18 feet, a Tyton joint "Field-lok" type gasket shall be used at the pipe joint for restraint. No concrete thrust blocking is required at the hydrant tee or at the hydrant shoe.

### **7-14.3(2)B Auxiliary Gate Valves and Valve Boxes**

Revise this section as follows:

Auxiliary gate valves and valve boxes shall be installed in accordance with Section 7-12.

### **7-14.3(3) Resetting Existing Hydrants**

Revise this section as follows:

Where existing hydrants are shown on the Plans for adjustments to conform to a new street alignment or grade or both, the hydrant shall be relocated as necessary by the City of Yakima Water/Irrigation Division at the contractor's or owner's expense.

### **7-14.3(4) Moving Existing Hydrants**

Revise this section as follows:

Where existing hydrants are shown on the Plans to be moved, the hydrant shall be moved as necessary by the City of Yakima Water/Irrigation Division at the contractor's or owner's expense.

### **7-14.3(5) Reconnecting Existing Hydrants**

Delete this section

## **7-15 SERVICE CONNECTIONS**

### **7-15.1 Description**

This section is supplemented with the following:

City of Yakima Water/Irrigation Division will install all 2-inch and smaller service connections from the main to and including the meter setter for the premises served. Service connections larger than 2-inches shall be installed as shown and noted on the plans as part of the new waterline installation. No service shall be installed by the Water/Irrigation Division prior to a successful pressure test, disinfection, flushing and a satisfactory bacteriological test result is obtained.

Costs for all service connections/installations performed by the City of Yakima Water/Irrigation Division, including materials and labor, as determined by the Water Distribution Supervisor, shall be paid at Code Administration, City Hall, 129 N. 2<sup>nd</sup> St. Yakima, WA. 98901, before materials are ordered and the work is scheduled.

## **9-30 WATER DISTRIBUTION MATERIALS**



## **9-30.1 Pipe**

### **9-30.1(1) Ductile Iron Pipe**

The last sentence of paragraph 1 is replaced with the following:

All other ductile iron pipe shall be Special Thickness Class 52 with cement mortar lining complying with, AWWA C151/A21.51 and C104/A21.4 most current editions.

Paragraph 2 is replaced with the following:

Non-restraining joints shall be rubber gasket, push-on type (Tyton Joint), conforming to ANSI/AWWA C111/A21.11, most current edition.

Paragraph 3 is replaced with the following:

Restrained pipe joints shall utilize US Pipe "Field-lok" gaskets or approved equal.

### **9-30.1(4) Steel Pipe**

Delete this section.

### **9-30.1(5) Polyvinyl Chloride (PVC)**

Delete this section.

### **9-30.1(6) Polyethylene (PE) Pressure Pipe (4 Inches and Over)**

Delete this section

## **9-30.2 Fittings**

### **9-30.2(4) Steel Pipe**

Delete this section

### **9-30.2(5) Polyvinyl Chloride (PVC) Pipe**

Delete this section

### **9-30.2(6) Restrained Joints**

Revise this section to read:

Mechanically restrained pipe and fittings may be used in lieu of thrust blocking as approved by the City. The engineer shall provide appropriate restraint calculations, indicating the length of pipe and fittings to be restrained for each particular size and type of fitting to be installed. Thrust restraint calculators such as those provided by Ductile Iron Pipe Research Association, EBAA Iron or similar may be used to determine required restraint lengths.

The restraining of ductile iron fittings, and valves shall be accomplished by the use of ROMAC "Grip Ring" follower gland or approved equal. Any device utilizing round point set screws shall not be permitted.

All couplings installed underground to connect ductile iron shall be manufactured of ductile iron.

**9-30.2(9) Grooved and Shouldered Joints**

Delete this section.

**9-30.2(10) Polyethylene (PE) Pipe (4 Inches and Over)**

Delete this section.

**9-30.2(11) Fabricated Steel Mechanical Slip-Type Expansion Joints**

Delete this section

**9-30.3 Valves**

**9-30.3(1) Gate Valves (3 to 16 Inches)**

Delete this section and replace it with the following:

**9-30.3(1) Gate Valves (2-inches to 8-inches)**

Gate valves, sized 2-inch through 8-inch, shall be resilient seated gate valves conforming to ANSI/AWWA C 509 latest edition. The valves shall have mechanical joint connections including accessories, or flanged connections, as noted on the Plans.

The Contractor shall provide an affidavit of compliance stating that the valve furnished fully complies with AWWA C509

Approved gate valve manufacturers include:

- Mueller Co.
- Clow Valve Co.
- M&H Valve Co.
- Kennedy Valve Co.
- American Flow Control

**9.30.3(3) Butterfly Valves**

Supplement this section with the following:

All valves 12-inches and over shall be butterfly valves conforming to ANSI/AWWA C504, latest edition.

### **9-30.3(4) Valve Boxes**

Supplement this section with the following:

The top section of the valve boxes shall be Rich Model 940-B, or equal, 18 inches high. The bottom section shall be a Rich Model R-36, or equal, 36 inches high. Extension section shall be Rich Model 044, or equal, 12 inches high.

### **9-30.3(5) Valve Marker Posts**

Delete this section

### **9-30.3(8) Tapping Sleeve and Valve Assembly**

Delete this section

### **9-30.5 Hydrants**

#### **9-30.5(1) End Connections**

Replace this section with the following:

The end connection shall be mechanical joint, meeting the requirements of AWWA C110.

Hydrants domes and nozzle caps to be painted black using Moore's Urethane Gloss Safety Black or approved equal. Hydrant nozzle body to be painted yellow using Moore's Urethane Gloss Safety Yellow or approved equal. Nozzle caps and operating nut to be 1-1/2-inch pentagon point to flat. Hydrants to have weather caps installed on or over the operating nut. Hydrant pumper port to be supplied with 5-inch Storz coupling nozzle x 4-1/2-inch NST connection with cap and cable.

Approved hydrants include:

- Mueller Super Centurion 250
- M&H Style 129

### **9-30.6 Water Service Connections (2 Inches and Smaller)**

Delete this section

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**Appendix Y.**  
**Waterline Separation Requirements**

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## **Waterline Separation from Nonpotable Conveyance Systems**

These standards apply to water main lines, water services 3-inch and larger and nonpotable pipelines including sanitary sewer mains, sanitary side sewers, irrigation mains and storm sewer mains. The most common separation scenarios are addressed below. Consult the Water/Irrigation Division and Wastewater Division for guidance when other scenarios are encountered during design and construction. All deviations from the standard separation requirements shall be approved by the City. Additional standards and guidance can be found in the latest edition of the *DOH Water System Design Manual*, *DOE Criteria for Sewage Works Design*, and *DOH/DOE Pipeline Separation Design and Installation Reference Guide*. All horizontal separation measurements noted are from edge to edge of pipes and vertical separation from invert to crown of pipes.

### **Parallel Installation – New Waterlines / Existing Nonpotable Pipelines**

Waterlines shall be installed a minimum of 10 feet horizontally and 18 inches vertically above other nonpotable pipelines. Where this is not possible, a waterline may be installed a minimum of 5 feet horizontally and 18 inches vertically from other nonpotable pipelines, as long as the waterline is placed in a separate trench and on a bench of undisturbed earth.

### **Parallel Installation – New Nonpotable Pipelines / Existing Waterlines**

Nonpotable pipelines shall be installed a minimum of 10 feet horizontally and 18 inches vertically below existing waterlines. Where this is not possible, a nonpotable pipeline may be installed a minimum of 5 feet horizontally from an existing waterline, as long as the nonpotable pipeline is installed a minimum of 18 inches vertically below the waterline and the nonpotable pipeline is placed in a separate trench. If the vertical separation cannot be met, then the nonpotable pipeline shall be constructed of or encased in materials equal to waterline standards with a minimum pressure rating of 150psi (C-900 PVC, Ductile Iron).

### **Crossing Installation – New Waterlines / Existing Nonpotable Pipelines**

Waterlines shall be installed a minimum of 18 inches vertically above nonpotable pipelines. Where this is not possible, or the waterline passes under a nonpotable pipeline, the waterline shall be installed in a pressure rated pipe casing extending 10 feet each side of the crossing. In addition, where the waterline passes under an existing nonpotable pipeline, support shall be provided for the nonpotable pipeline by backfilling the nonpotable pipeline trench with controlled density backfill or other approved methods. A minimum of 6 inches of separation between the crossing pipelines must be maintained in all cases.

### **Crossing Installation – New Nonpotable Pipelines / Existing Waterlines**

Nonpotable pipelines shall be installed a minimum of 18 inches vertically below existing waterlines. Support shall be provided for the waterline by backfilling the nonpotable pipeline trench with controlled density backfill or other approved methods. Where the minimum clearance is not possible, or the nonpotable pipeline passes above a waterline, a full length of nonpotable pipeline shall be centered at the crossing. In addition, the nonpotable pipeline shall either be installed in a pressure rated pipe casing extending 10 feet each side of the crossing, or be constructed of one standard length of pipe material equal to waterline standards with a minimum pressure rating of 150psi (C-900 PVC, Ductile Iron). A minimum of 6 inches of separation between the crossing pipelines must be maintained in all cases.

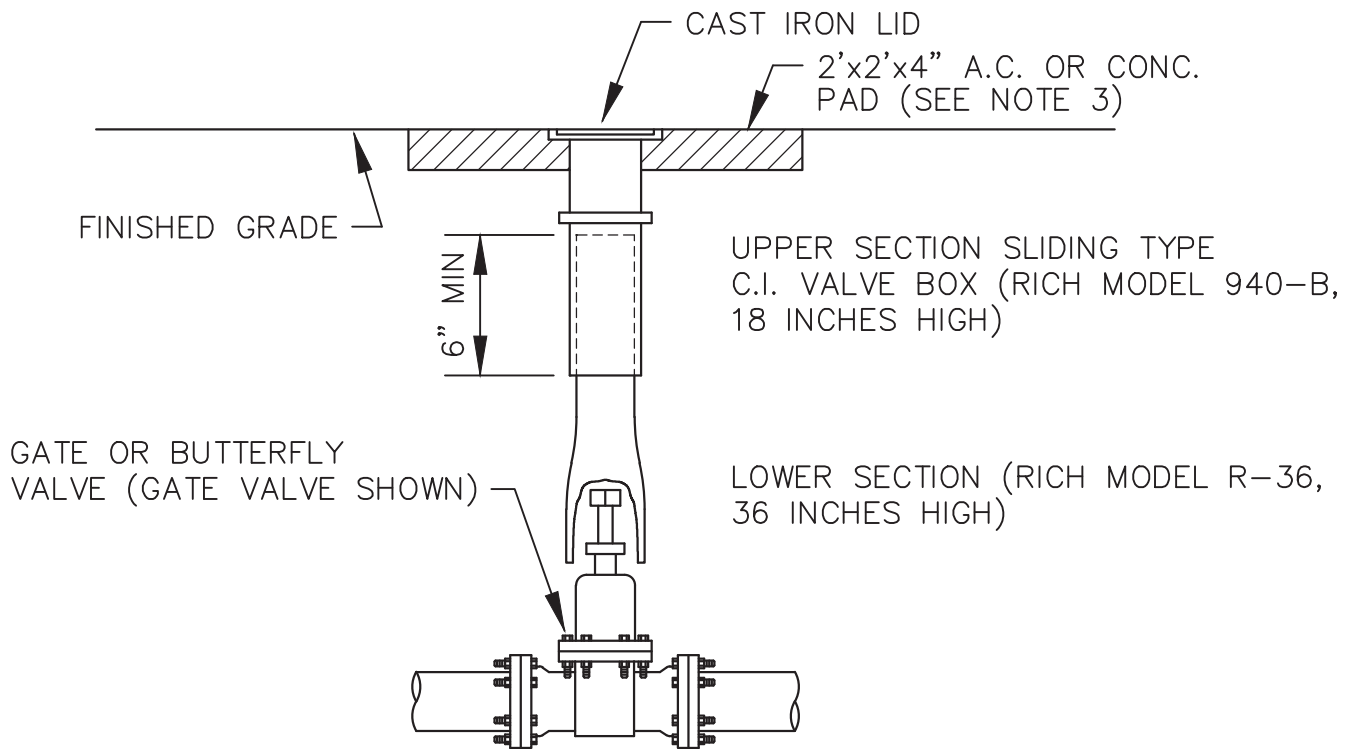
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**Appendix Z.**  
**Water System Standard Details**

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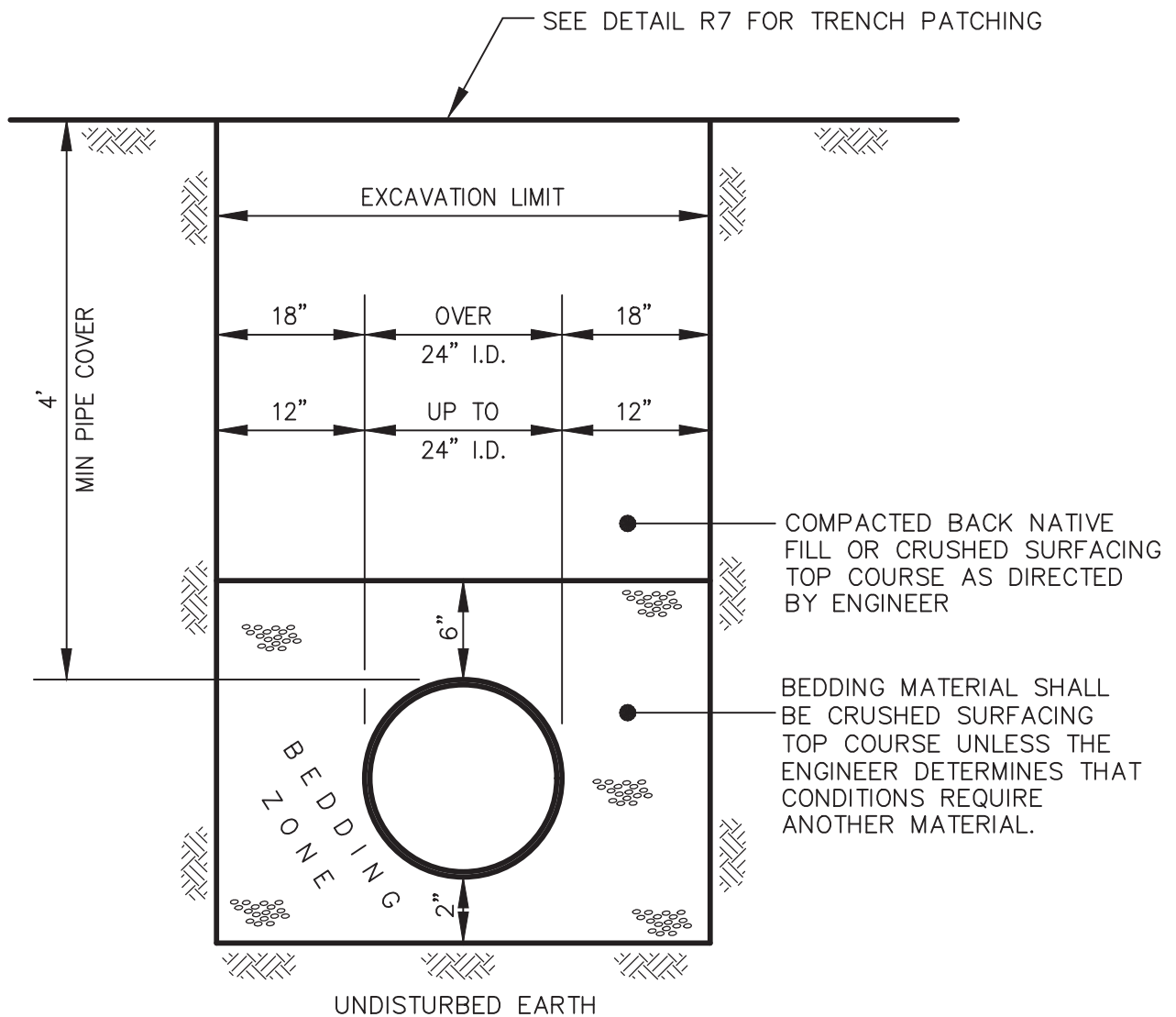


NOTES

1. PROVIDE EXTENSION PIECE WHERE REQUIRED FOR VALVE BOX. (RICH MODEL 044, 12 INCHES HIGH)
2. VALVE SIZE AND ENDS AS SPECIFIED OR INDICATED ON THE PLANS.
3. CONCRETE OR A.C. PAD REQUIRED IN AREAS OUTSIDE OF STREET SURFACE.

W2  
 NTS
 
WATER VALVE BOX  
 City of Yakima – Engineering Division

APPROVED: 11.15.16

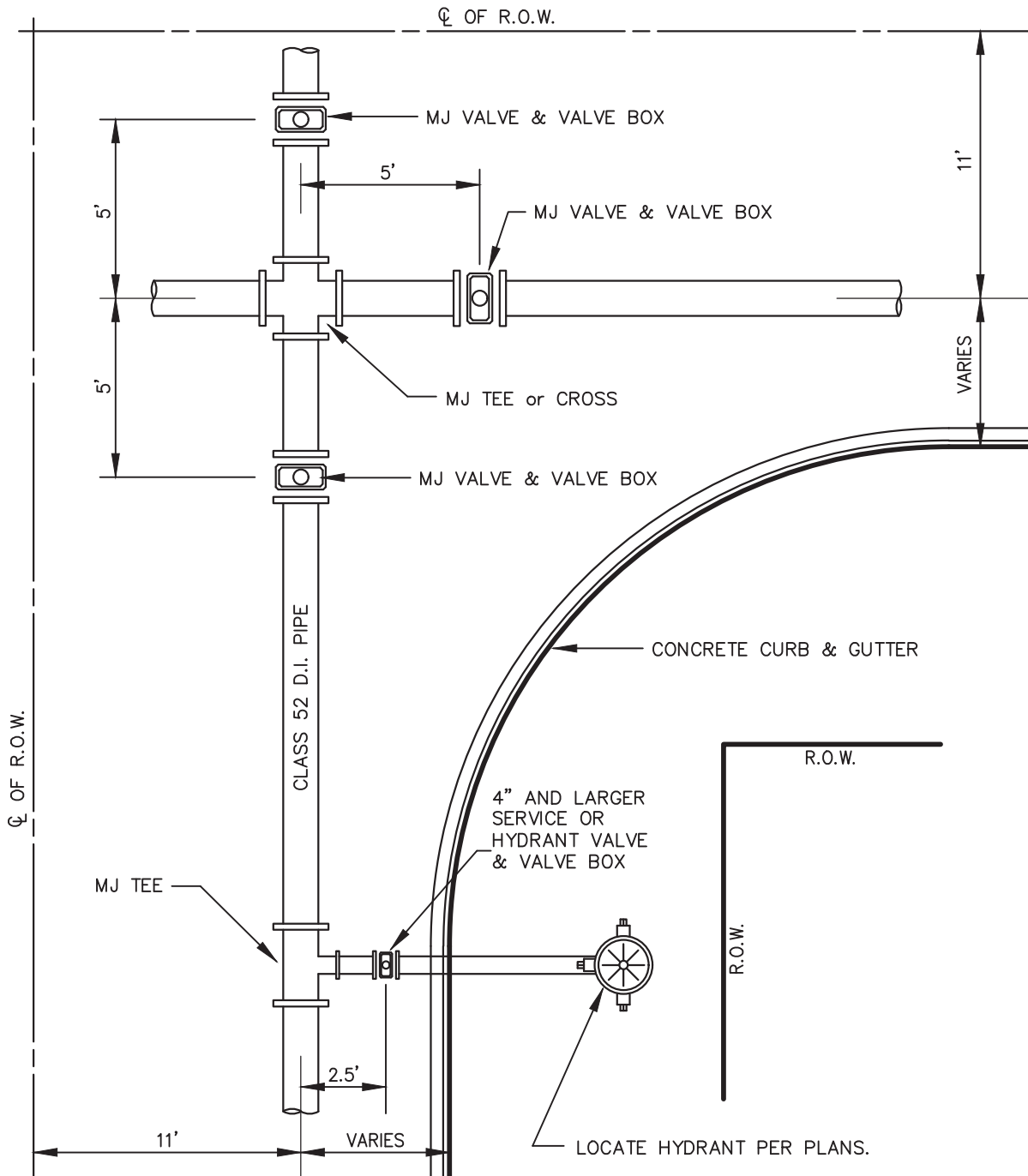


NOTES

1. ACTUAL SLOPE OF TRENCH SIDES TO BE DETERMINED BY THE CONTRACTOR TO FIT THE METHOD OF CONSTRUCTION AND ALL SAFETY REQUIREMENTS.
2. MECHANICAL COMPACTION SHALL BE REQUIRED FOR ALL TRENCHES.

**W3** TYPICAL TRENCH SECTION  
 NTS City of Yakima – Engineering Division

APPROVED: 11.15.16



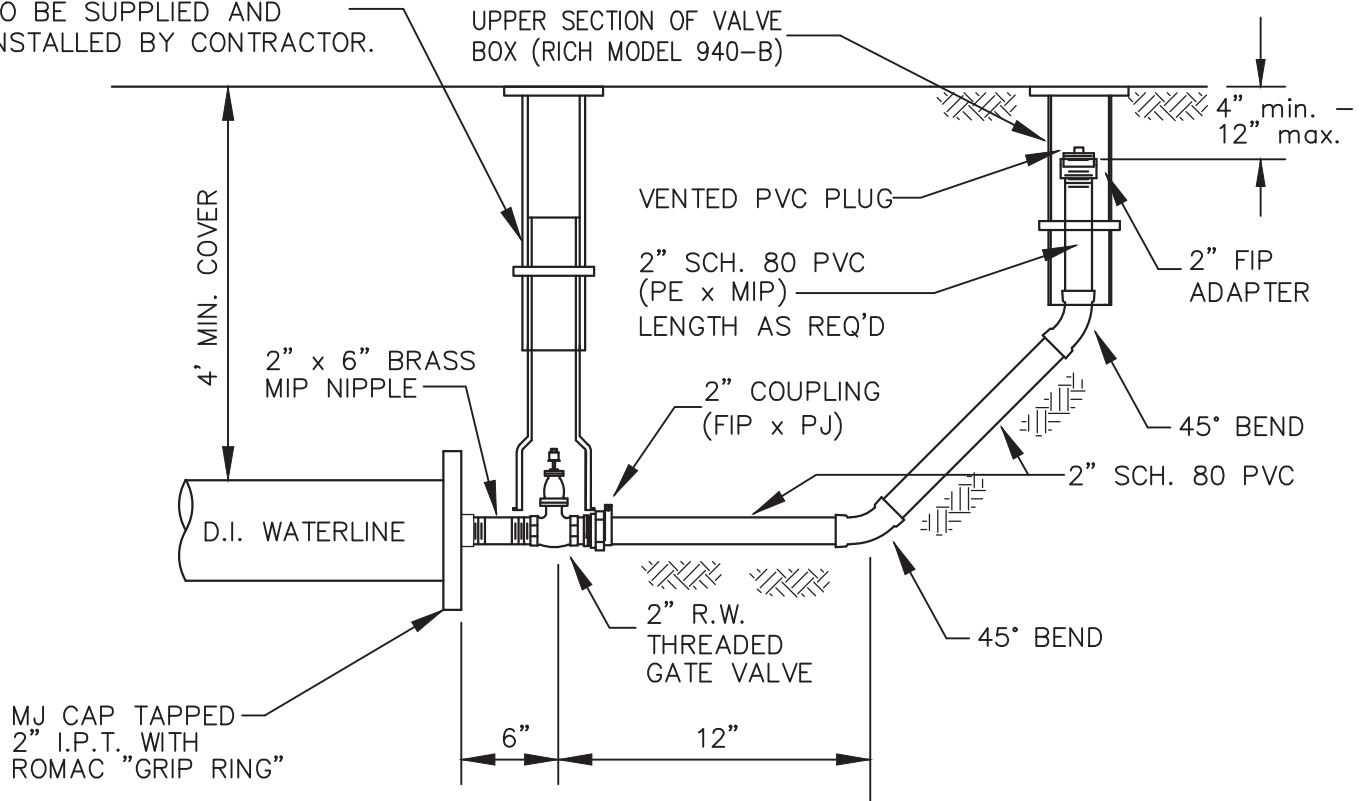
NOTES

1. SEE INDIVIDUAL DETAILS FOR ADDITIONAL INFORMATION AS TO TYPE OF FITTINGS, PIPE, AND DIMENSIONS.
2. ROMAC "GRIP RING" MECHANICAL JOINT ACCESSORY KITS SHALL BE USED ON ALL MECHANICAL JOINT FITTINGS.
3. MINIMUM OF TWO VALVES REQUIRED AT MAIN LINE TEE, THREE VALVES AT CROSS.

W4
**TYPICAL INTERSECTION LAYOUT**  
 NTS City of Yakima – Engineering Division

APPROVED: 11.15.16

COMPLETE VALVE BOX  
TO BE SUPPLIED AND  
INSTALLED BY CONTRACTOR.

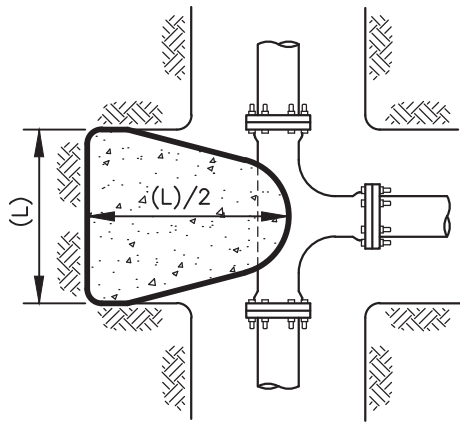


NOTES

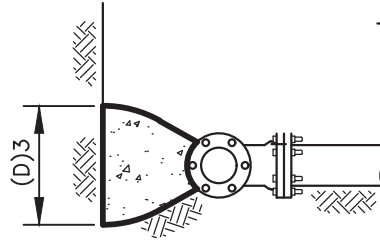
1. RESTRAIN MINIMUM OF 70 LF OF PIPE WITH FIELD-LOK GASKETS PRIOR TO BLOW OFF ASSEMBLY.

**W5 TYPICAL BLOW OFF ASSEMBLY**  
 NTS City of Yakima – Engineering Division

APPROVED: 11.15.16

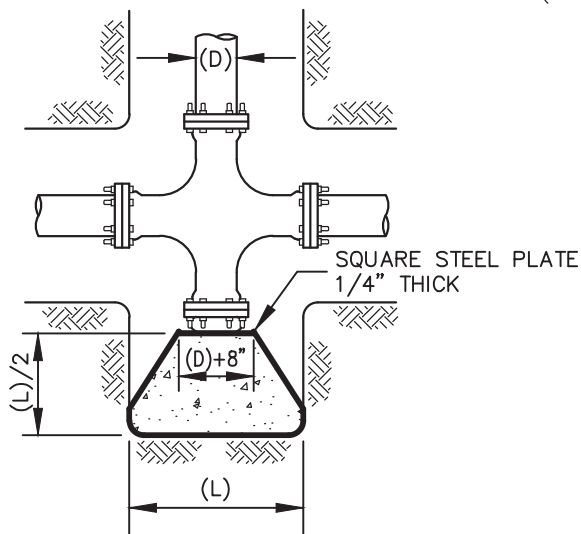


TEES



BENDS

SIDE VIEW (TYPICAL ALL BLOCKING)



PLUGS & CAPS

NOTES

1. FORM CONCRETE TO ALLOW REMOVAL OF BOLTS.
2. ALL FITTINGS AND/OR PIPE MAKING DIRECT CONTACT WITH CONCRETE SHALL BE WRAPPED WITH 4 MIL. POLYETHYLENE SHEETING PRIOR TO PLACEMENT OF CONCRETE.
3. (D) IS NOMINAL PIPE DIAMETER. THE TABLE OF END AREAS IS BASED ON AN ALLOWABLE SOIL BEARING PRESSURE OF 1500 psf. THE ENGINEER SHALL DETERMINE THE REQUIRED END AREAS.
4. ALL CONCRETE IS TO BE CLASS "B" CONCRETE AND IS TO BE POURED IN PLACE.
5. MECHANICAL RESTRAINT OF FITTINGS AND PIPE WITH ROMAC "GRIP RING" AND FIELD-LOK GASKETS ALLOWED IN LIEU OF THRUST BLOCK AS APPROVED BY ENGINEER.
6. VERTICAL BENDS TO BE RESTRAINED WITH MECHANICAL FITTING AND PIPE RESTRAINS (ROMAC "GRIP RING" AND FIELD-LOK GASKETS) AS DESIGNED/APPROVED BY ENGINEER.

MINIMUM END AREAS			
PIPE SIZE (D)	TEES & PLUGS	45° BENDS	22 1/2° BENDS
6"	5.1 sq. ft.	3.9 sq. ft.	2.0 sq. ft.
8"	8.8 sq. ft.	6.7 sq. ft.	3.4 sq. ft.
10"	14.3 sq. ft.	11.0 sq. ft.	5.6 sq. ft.
12"	20.4 sq. ft.	15.7 sq. ft.	7.9 sq. ft.
14"	27.7 sq. ft.	21.2 sq. ft.	10.7 sq. ft.
16"	35.8 sq. ft.	27.5 sq. ft.	13.9 sq. ft.

**W6** TYPICAL CONCRETE BLOCKING  
 NTS City of Yakima – Engineering Division

APPROVED: 11.15.16

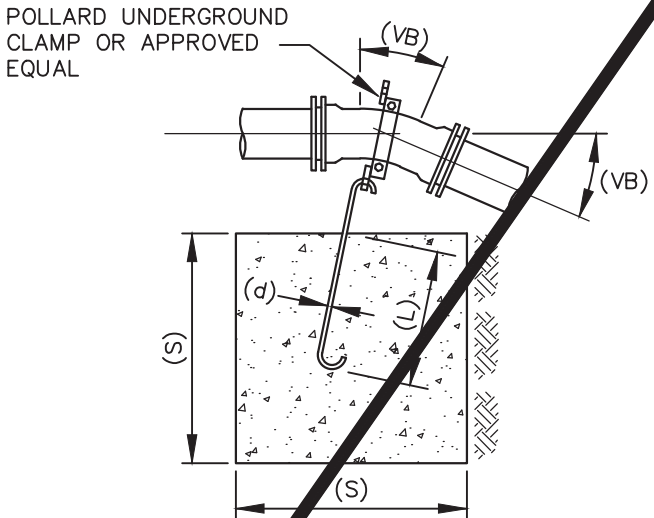


**TYPE "A" BLOCKING**  
FOR 11 1/4", 22 1/2", 30" VERTICAL BENDS

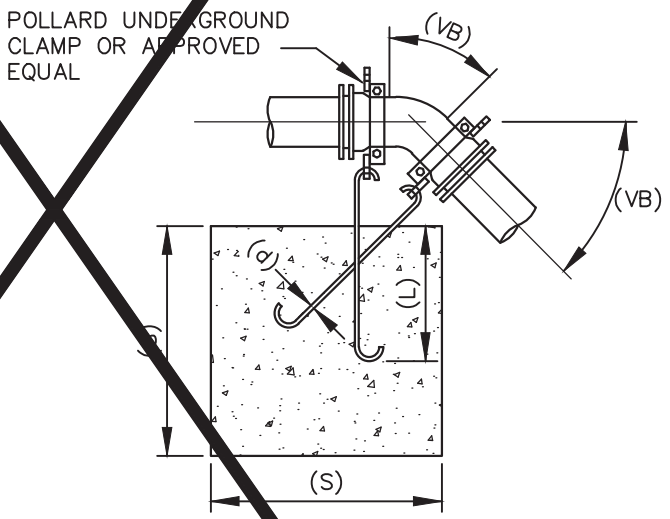
DIA.	(VB)	(S)	(d)	(L)
4"	11 1/4"	0.2'	5/8"	1.5'
	22 1/2"	2.2'		2.0'
	30"	2.6'		
6"	11 1/4"	2.9'	5/8"	2.0'
	22 1/2"	2.9'		
	30"	3.5'		
8"	11 1/4"	2.5'	5/8"	2.0'
	22 1/2"	3.6'		
	30"	4.1'		
12"	11 1/4"	3.2'	5/8"	2.0'
	22 1/2"	4.5'	7/8"	3.0'
	30"	5.1'		
16"	11 1/4"	4.1'	7/8"	3.0'
	22 1/2"	5.7'	1 1/8"	4.0'
	30"	6.5'	1 1/4"	
20"	11 1/4"	4.5'	7/8"	3.0'
	22 1/2"	6.1'	1 1/4"	4.0'
	30"	6.9'	1 3/8"	4.5'
24"	11 1/4"	5.0'	1"	3.5'
	22 1/2"	6.8'	1 3/8"	4.5'
	30"	7.9'	1 5/8"	5.5'

**TYPE "B" BLOCKING**  
FOR 45° VERTICAL BENDS

DIA.	(VB)	(S)	(d)	(L)
4"	45	3.1'	5/8"	2.0'
6"		4.1'		
8"		5.0'		
12"		6.1'	3/4"	2.5'
16"		7.8'	1 1/8"	4.0'
20"		8.2'	1 1/4"	
24"		9.4'	1 3/8"	

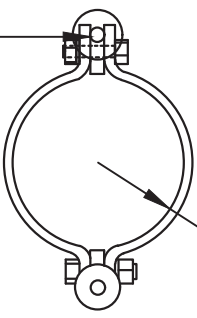


TYPE "A" BLOCKING  
(FOR VERTICAL BENDS OF 30° OR LESS)



TYPE "B" BLOCKING  
(FOR 45° BENDS)

DIAMETER OF HOLE EQUAL TO THE DIAMETER OF RESTRAINT ROD PLUS 1/8".



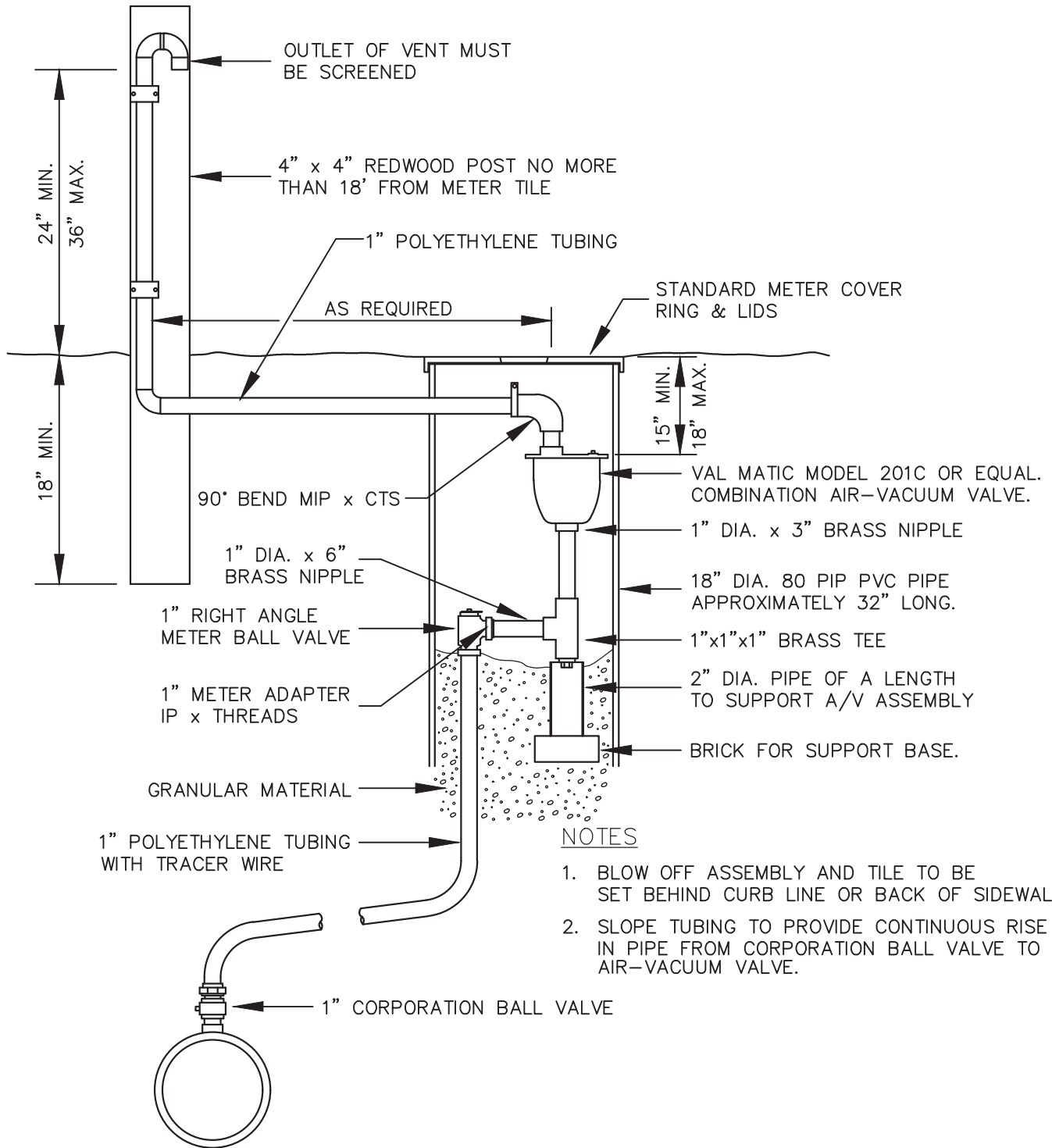
NOMINAL PIPE DIAMETER AS PER TABLES ABOVE

POLLARD UNDERGROUND CLAMP

**W7 CONCRETE VERTICAL BEND BLOCKING**  
NTS City of Yakima - Engineering Division

\*\*\* VERTICAL BENDS TO BE RESTRAINED WITH MECHANICAL JOINT FITTING AND PIPE RESTRAINT (ROMAC "GRIP RINGS" AND FIELD-LOK GASKETS) AS DESIGNED/APPROVED BY ENGINEER.

APPROVED: 7.9.99

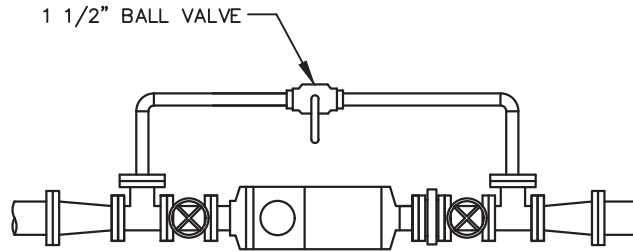


NOTES

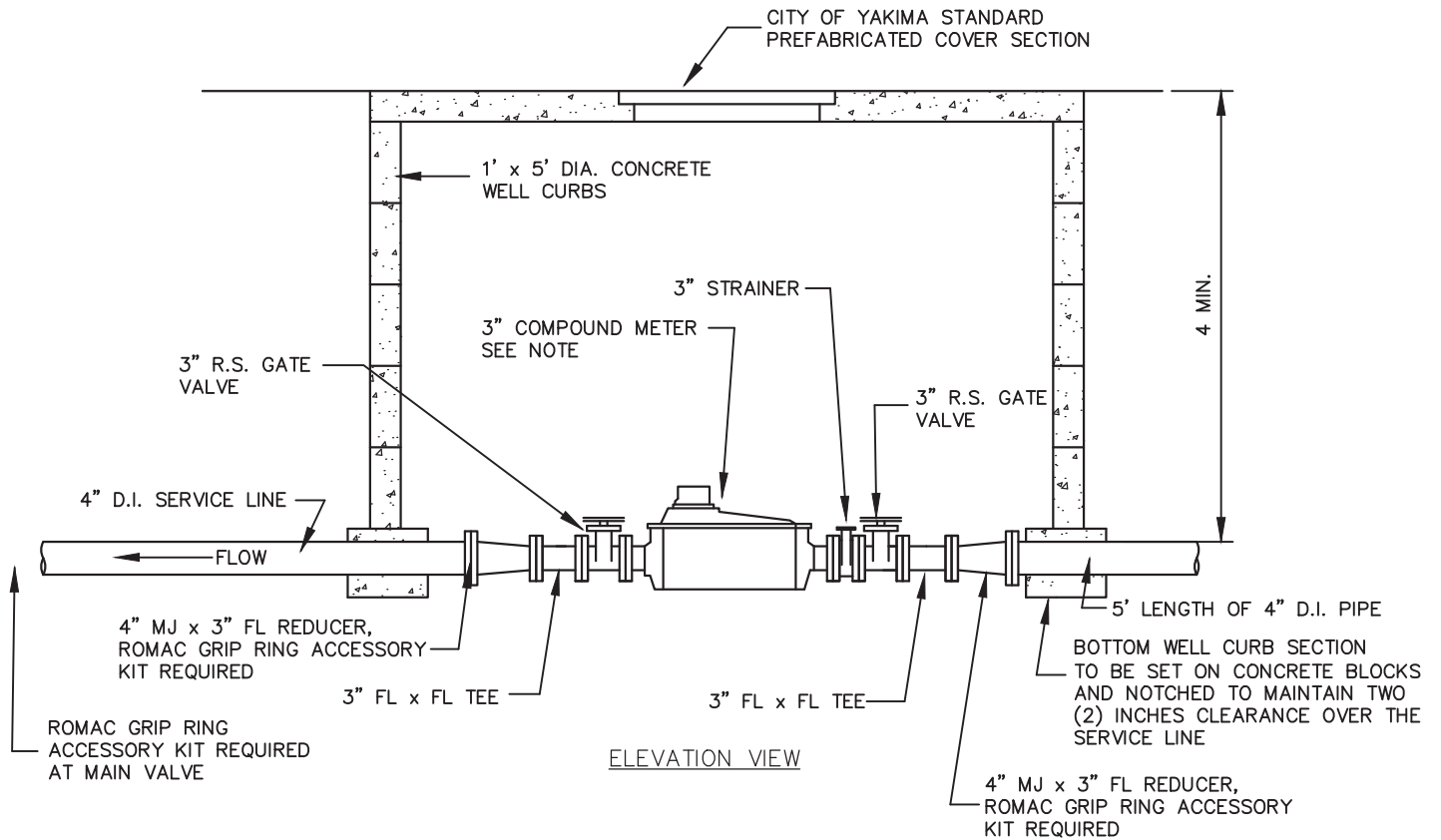
1. BLOW OFF ASSEMBLY AND TILE TO BE SET BEHIND CURB LINE OR BACK OF SIDEWALK
2. SLOPE TUBING TO PROVIDE CONTINUOUS RISE IN PIPE FROM CORPORATION BALL VALVE TO AIR-VACUUM VALVE.

W8
NTS
**AIR-VACUUM RELIEF VALVE**  
 City of Yakima – Engineering Division

APPROVED: 11.15.16



PLAN VIEW



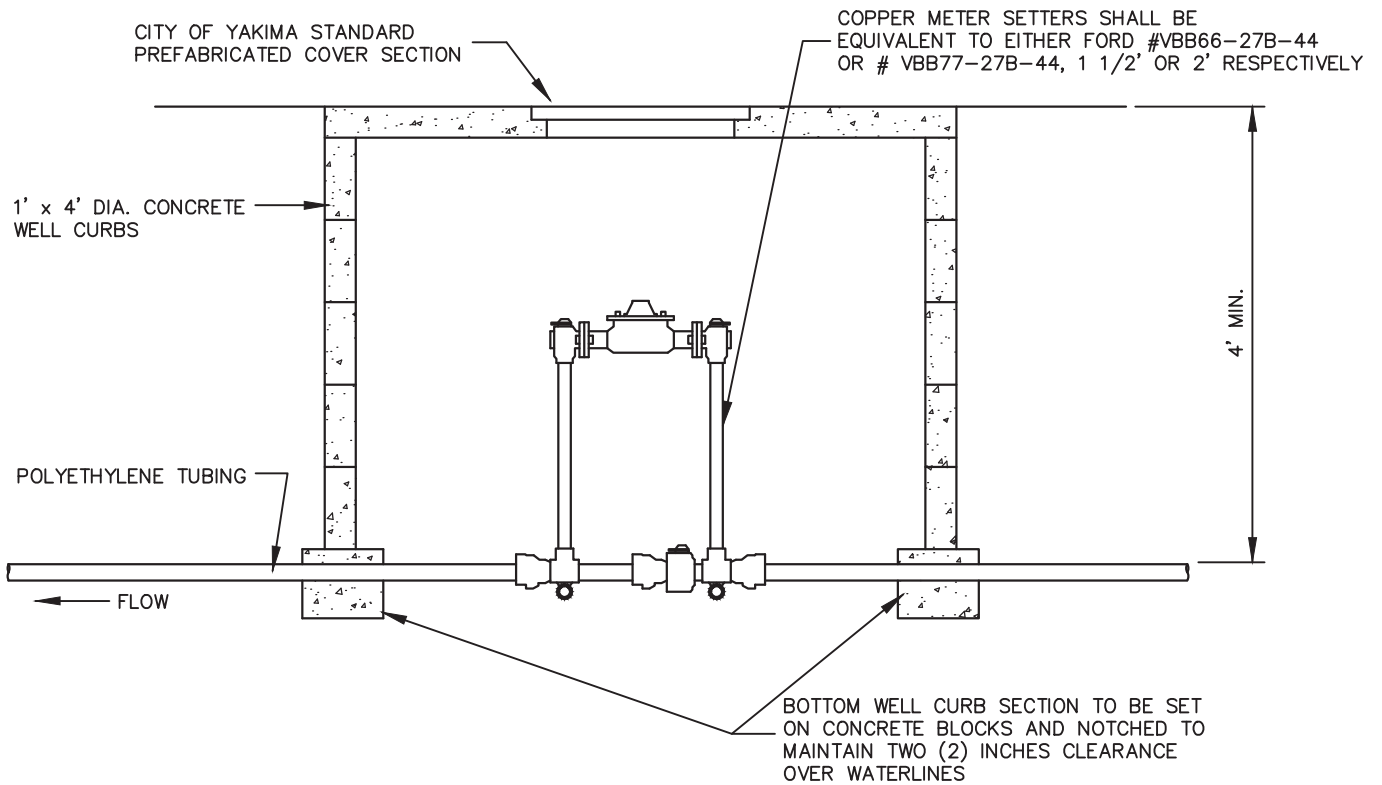
ELEVATION VIEW

NOTES

1. 3" COMPOUND METER SHOWN. IF LARGER THAN 3" COMPOUND METER IS USED, RESIZE THE SERVICE LINE, 90° BENDS, GATE VALVES AND TEES TO APPROPRIATE SIZE AND DELETE THE REDUCERS.

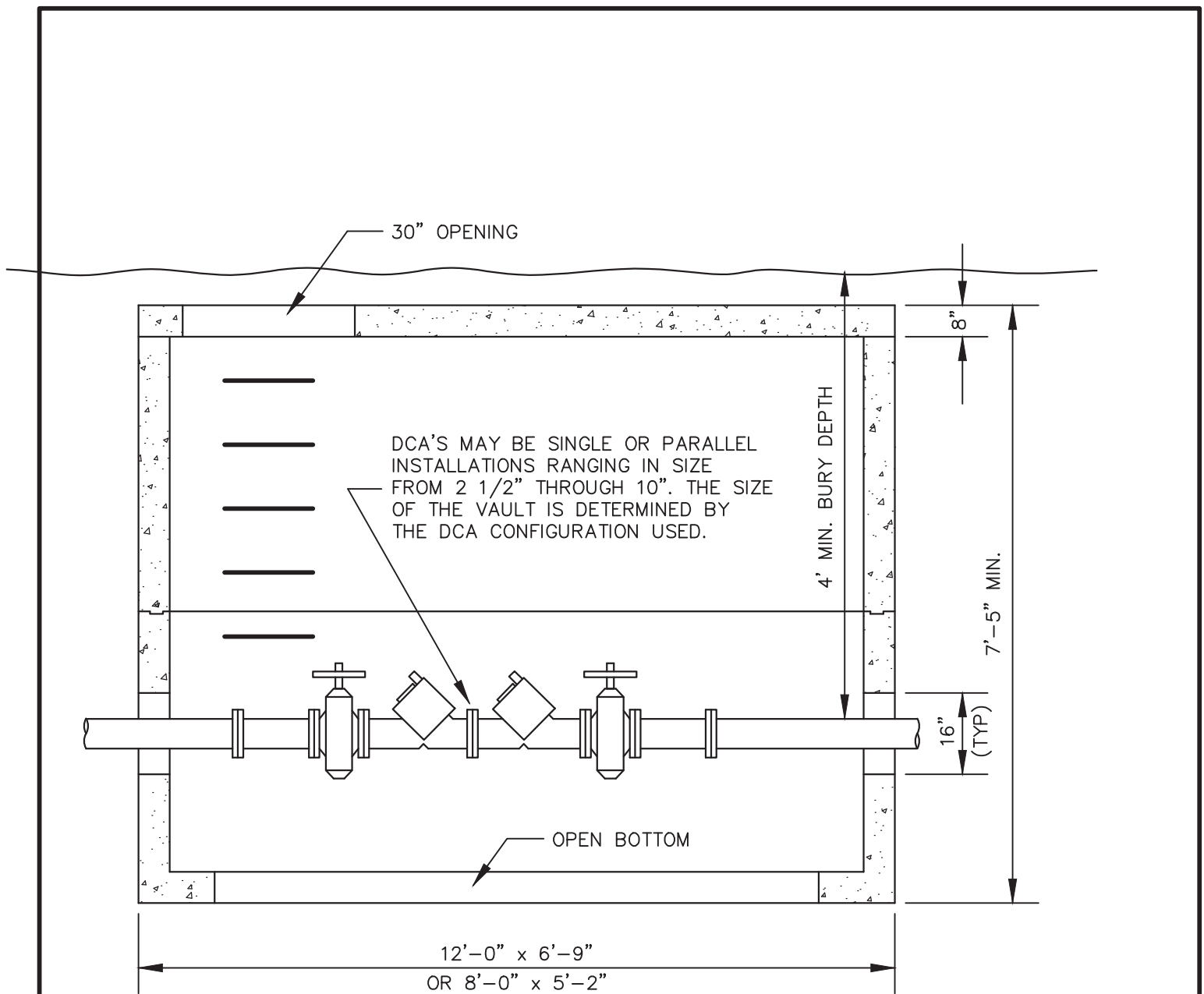
**W9** **COMPOUND METER INSTALLATION**  
 NTS City of Yakima – Engineering Division

APPROVED: 11.15.16



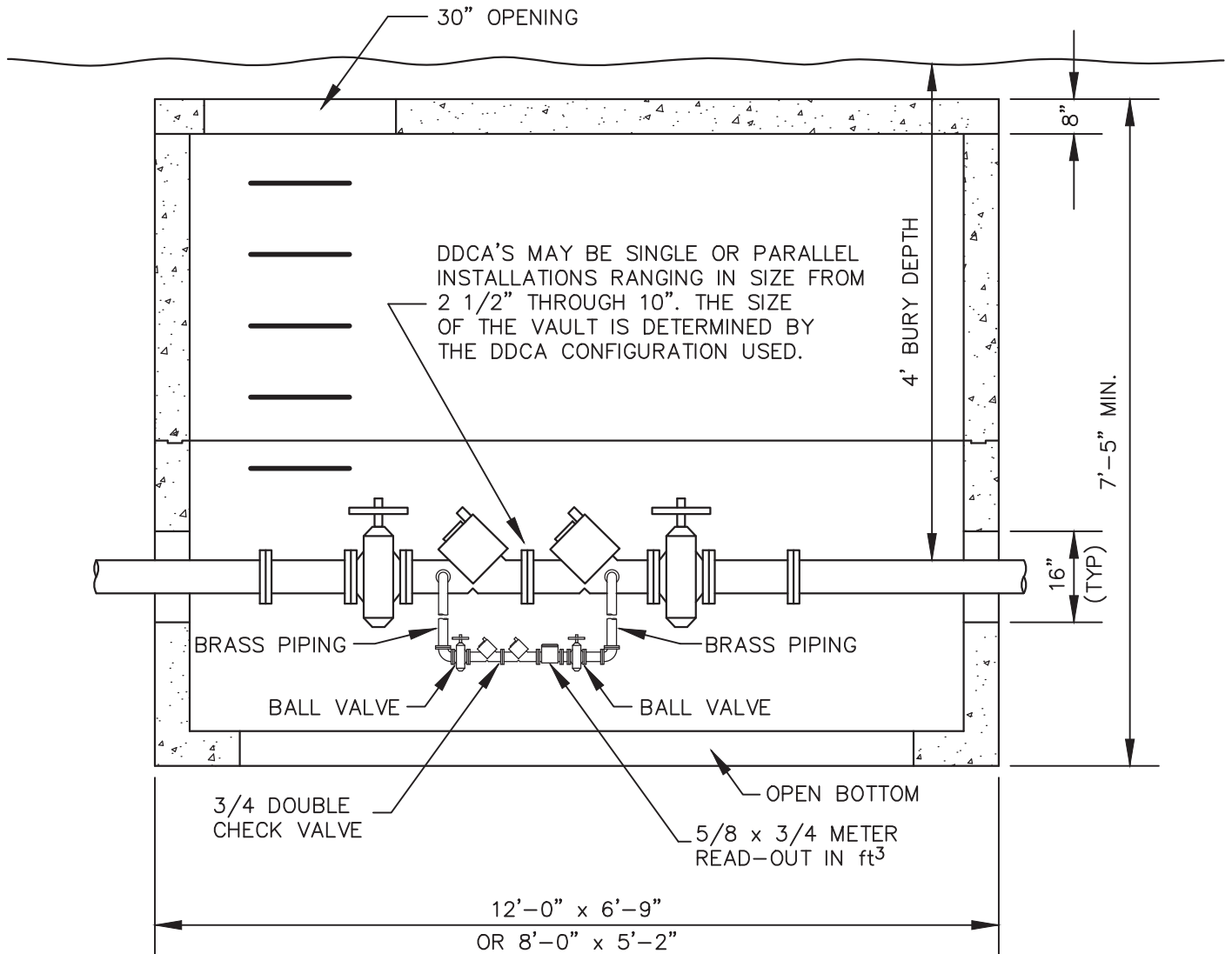
**W10** **1 1/2" & 2" METER INSTALLATION**  
 NTS City of Yakima – Engineering Division

APPROVED: 11.15.16



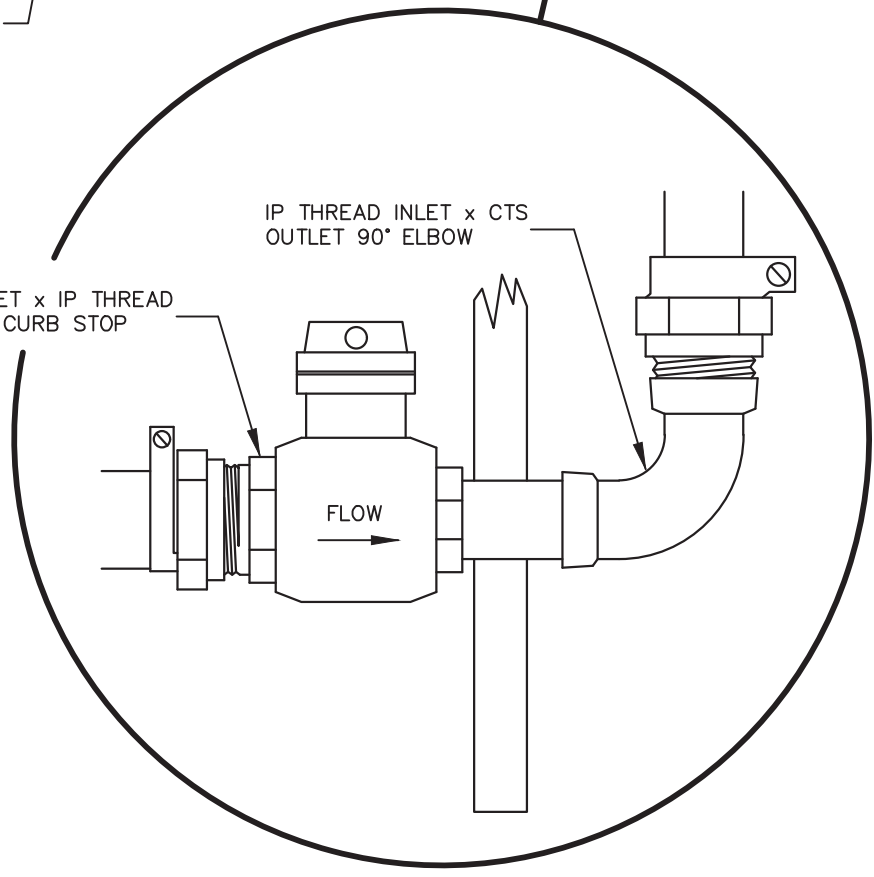
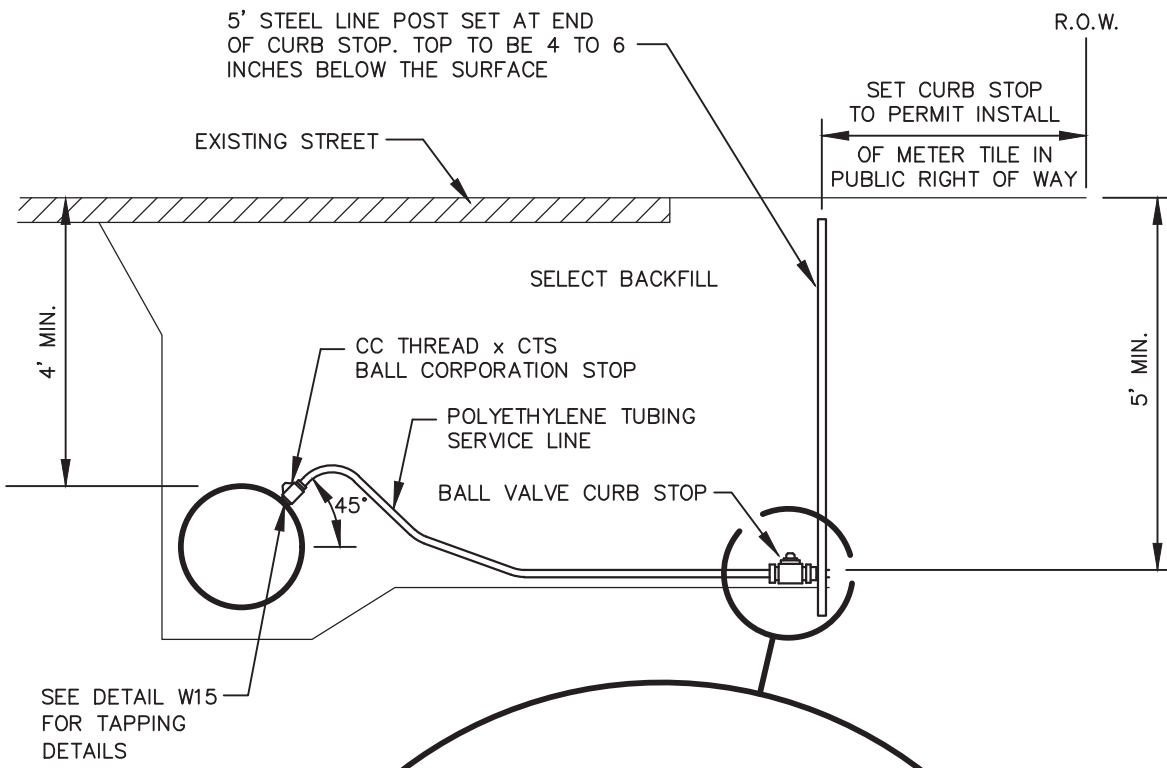
**W11** **INSTALL REQUIREMENTS FOR DCA'S**  
 NTS City of Yakima – Engineering Division

APPROVED: 11.15.16



**W12** **INSTALL REQUIREMENTS FOR DDCA'S**  
 NTS City of Yakima – Engineering Division

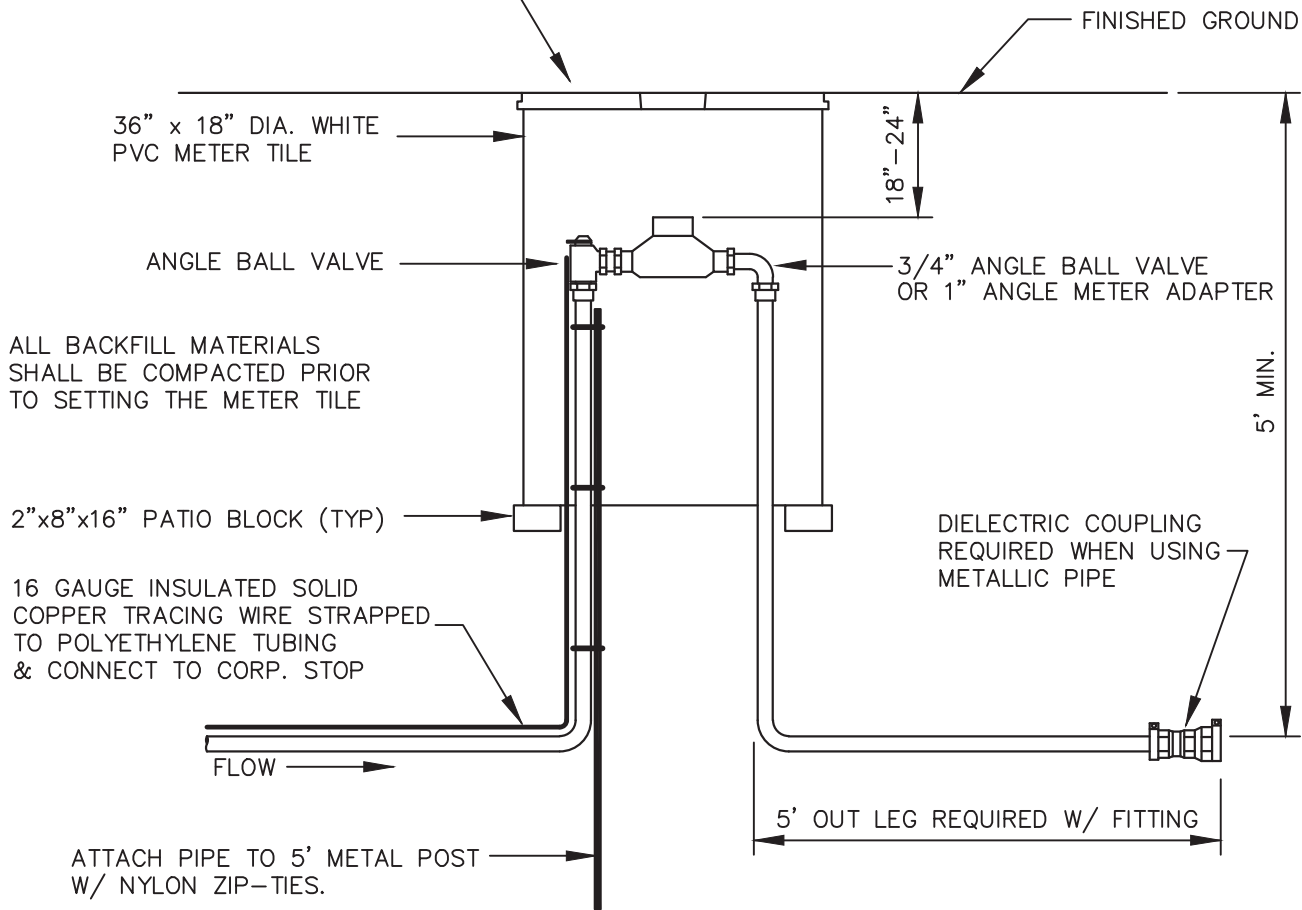
APPROVED: 11.15.16



**W13** 3/4" & 1" SERVICE LINE w/o METER  
 NTS City of Yakima – Engineering Division

APPROVED: 11.15.16

CITY OF YAKIMA STANDARD METER COVER & RING FURNISHED BY THE CITY AT CONTRACTORS EXPENSE



ALL BACKFILL MATERIALS SHALL BE COMPACTED PRIOR TO SETTING THE METER TILE

2"x8"x16" PATIO BLOCK (TYP)

16 GAUGE INSULATED SOLID COPPER TRACING WIRE STRAPPED TO POLYETHYLENE TUBING & CONNECT TO CORP. STOP

ATTACH PIPE TO 5' METAL POST W/ NYLON ZIP-TIES.

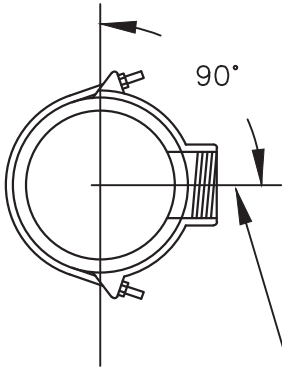
NOTES

1. USE POLYETHYLENE TUBING.
2. WHEN USING POLYETHYLENE TUBING A BENDING SUPPORT MUST BE USED AT ALL 90° BENDS.
3. WHEN USING POLYETHYLENE TUBING AN INTERNAL TUBING STIFFENER MUST BE USED ON ALL FITTINGS.

W14
3/4" & 1" METER INSTALLATION  
 NTS City of Yakima – Engineering Division

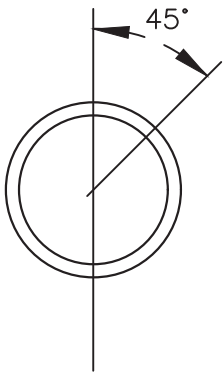
APPROVED: 11.15.16





2" TAPS FOR 1 1/2" AND 2" DIA. SERVICES SHALL BE MADE UTILIZING A TWO STRAP TAPPING SADDLE, HAVING IP THREADS. TAPPING SHALL BE DONE WITH A MUELLER MODEL D-5 TAPPING MACHINE ALL IN ACCORDANCE WITH THE INSTRUCTIONS INCLUDED WITH SAID TAPPING MACHINE.

APPROX. PARALLEL TO FINISHED SURFACE



TAPS FOR 3/4" AND 1" DIA. SERVICES SHALL BE MADE UTILIZING A MUELLER MODEL B-101 TAPPING MACHINE. THREADS SHALL BE CC TAPS SHALL BE IN ACCORDANCE WITH THE INSTRUCTIONS INCLUDED WITH SAID TAPPING MACHINE.

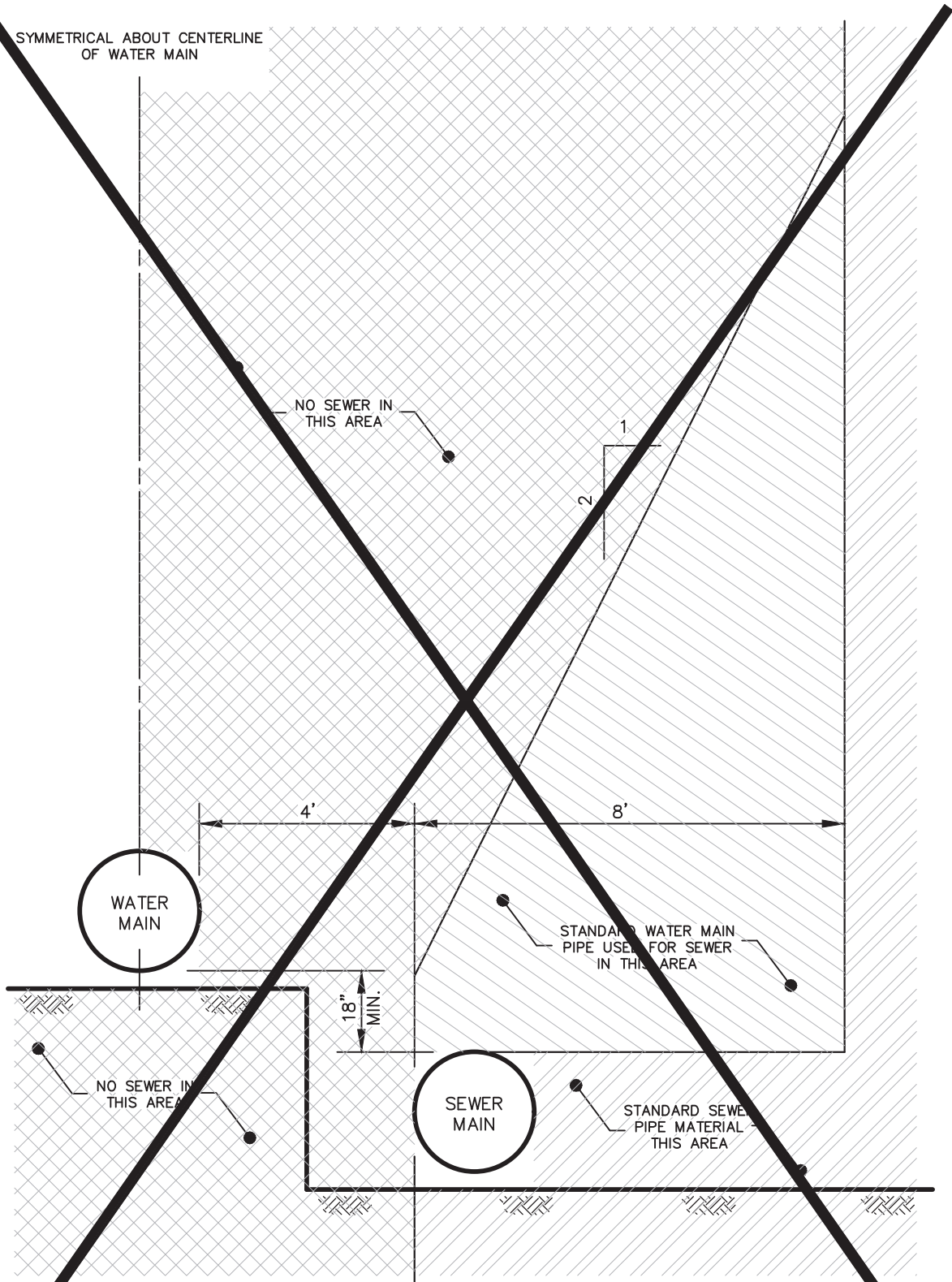
NOTES

1. ALL 3/4" AND 1" CORPORATION STOPS SHALL BE BALL VALVES
2. 1 1/2" AND 2" DIA. SERVICES TO HAVE 2" THREADED RS GATE VALVE AT POINT OF CONNECTION.

**W15 TAPPING PROCEDURE DETAIL**  
 NTS City of Yakima – Engineering Division

APPROVED: 11.15.16

SYMMETRICAL ABOUT CENTERLINE  
OF WATER MAIN



**W16** PARALLEL WATER/SEWER SEPARATION  
NTS City of Yakima – Engineering Division

\*\*\* SEE DOCUMENT "WATERLINE SEPARATION FROM  
NONPOTABLE CONVEYANCE SYSTEMS" FOR SEPARATION  
REQUIREMENTS

APPROVED: 7.9.99

**Appendix AA.**  
**Public Waterline General Construction Notes**

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**CITY OF YAKIMA PUBLIC WATERLINE GENERAL NOTES**

1. All public waterline pipe shall be Class 52 ductile iron. Ductile iron pipe shall be cement-mortar lined and shall conform to ANSI A-21.11 and shall be U.S. Tyton joint pipe or approved equal. Rubber ring gaskets shall conform to ANSI A-21.11. All Cast Iron fittings and flanged Ductile Iron fittings shall be Class 250 and all Ductile Iron mechanical joint fittings shall be class 350 conforming to ANSI/AWWA C110/A-21.10 and ANSI/AWWA C153 A-21.53. Mortar lining shall be same thickness as for pipe.
2. No public water valves shall be opened or closed (operated) by anyone but the City of Yakima Water/Irrigation Division staff.
3. All public waterlines shall have a typical cover of 48-inches unless otherwise noted.
4. All mechanical joints shall be restrained with Romac GripRing restraint system. Unless otherwise noted, all tees, bends and ends of waterlines shall also be blocked with poured in place concrete thrust blocks in accordance with the City of Yakima specifications unless alternate restraint systems have been previously approved. All fittings in contact with concrete shall be wrapped in plastic.
5. All fire hydrant leads longer than one full length of pipe shall be equipped with a restraint gasket (US Pipe Field Lok) at all bell joints.
6. Direct-buried line valves of 12" size and larger shall be butterfly valves. All smaller, direct-buried line valves shall be resilient wedge gate valves. All valves shall be designed to AWWA specifications and shall have a standard 2" square-operating nut unless otherwise shown on plans. All valves shall be designed for at least 150 psi working pressure and shall open counter clockwise.
7. All waterline facilities shall be thoroughly flushed, pressure tested and chlorinated and a potable water test (Bac-t) shall be approved by the City of Yakima **prior to any connection to existing water system.** Flushing of chlorinated water into storm drain system is not allowed unless de-chlorinated.
8. All waterline, fittings and valves used for final waterline connections to the existing water system shall be swabbed with 300ppm chlorinated solution.
9. Contractor shall notify all affected water customers 24 hours prior to any water system shutdown for final waterline connections. Coordinate with City of Yakima Water/Irrigation Division.
10. The City of Yakima Water/Irrigation Division shall make all water main taps unless previously approved by City of Yakima.
11. The City of Yakima Water/Irrigation Division shall install all water services unless previously approved by City of Yakima.

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**Appendix BB.**  
**Documentation of Water System Consumer**  
**Meeting Discussing Water System Plan**

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**BUSINESS OF THE CITY COUNCIL  
YAKIMA, WASHINGTON  
AGENDA STATEMENT**

Item No. 6.A.  
For Meeting of: June 6, 2017

**ITEM TITLE:** Set combined public hearing date for June 20, 2017, regarding the proposed 2017 Water Use Efficiency Goals & Objectives and the proposed 2017 Water System Plan

**SUBMITTED BY:** David Brown, Water/Irrigation Manager 575-6204  
Scott Schafer, Director of Public Works

**SUMMARY EXPLANATION:**

The Washington State Department of Health requires all water systems to have a comprehensive "Water System Plan." The City of Yakima last adopted such a Plan in July 2011 as it had been required by the state to be updated every 6 years. State regulatory changes recently implemented require plans to be updated every 10 years so Yakima's next update will be in 2027.

The City's Water System Plan preparation was authorized by Resolution R-2015-161. Before the final adoption of the Water System Plan, City Council must first hold a Public Hearing.

**ITEM BUDGETED:** Yes

**STRATEGIC PRIORITY:** Public Trust and Accountability

**APPROVED FOR SUBMITTAL:**

 City Manager

**STAFF RECOMMENDATION:**

Set Public Hearing date

**BOARD/COMMITTEE RECOMMENDATION:**

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### CITY OF YAKIMA NOTICE OF PUBLIC HEARING WATER SYSTEM PLAN

NOTICE IS HEREBY GIVEN that the Yakima City Council will conduct a public hearing regarding the proposed 2017 Water Use Efficiency Goals & Objectives and the proposed 2017 Water System Plan Update. The Washington State Department of Health requires all water systems to have a comprehensive "Water System Plan." The City of Yakima last adopted such a Plan in July 2011 as it is required by the state to be updated every 6 years. State regulatory changes recently implemented require plans to be updated every 10 years so Yakima's next update will be in 2027. The plan is located at: [https://www.yakimawa.gov/services/water-irrigation/files/Yakima-WSP-2017-06-01\\_Draft\\_Plan-and-appendix.pdf](https://www.yakimawa.gov/services/water-irrigation/files/Yakima-WSP-2017-06-01_Draft_Plan-and-appendix.pdf) Said public hearing will be held on **June 20, 2017 at 2:30 p.m.**, or as soon thereafter, in the City Council Chambers at Yakima City Hall, 129 North Second Street, Yakima. Any citizen wishing to comment on this request is welcome to attend the public hearing or contact the City Council in the following manner: 1) Send a letter via regular mail to "Yakima City Council, 129 N. 2nd Street, Yakima, WA. 98901"; or, 2) E-mail your comments to [citycouncil@yakimawa.gov](mailto:citycouncil@yakimawa.gov). Include in the e-mail subject line, "water system plan." Please also include your name and mailing address. Dated this 7th day of June, 2017. Sonya Claar Tee, City Clerk

(739011) June 9, 2017