

Standard Monitoring Plan

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I. GENERAL INFORMATION

A. PWS Information*

B. Date Submitted* 9/29/2006

PWSID: 4100047
 PWS Name: City of Ashland
 PWS Address: 90 N. Mountain Ave.
 City: Ashland State: OR Zip: 97520
 Population Served: 21,540

System Type: (X)	Source Water Type: (X)	Buying / Selling Relationships:
<input checked="" type="checkbox"/> CWS	<input checked="" type="checkbox"/> Subpart H	<input type="checkbox"/> Consecutive System
<input type="checkbox"/> NTNCWS	<input type="checkbox"/> Ground	<input type="checkbox"/> Wholesale System
		<input checked="" type="checkbox"/> Neither

C. PWS Operations

Residual Disinfectant Type: (X)

☒ Chlorine ☐ Chloramines ☐ Other: _____

Number of Disinfected Sources:

☒ Surface ☐ GWUDI ☐ Ground ☐ Purchased

D. Contact Person*

Name: Daryl McVey
 Title: Water Treatment Plant Supervisor
 Phone #: 1 (541) 488-5345 Fax #: 1 (541) 488-5320
 E-mail: daryl@ashland.or.us

II. IDSE REQUIREMENTS*

A. Number of Compliance	B. Schedule	C. Compliance Monitoring Frequency
<u>1</u> Near Entry Point	<input type="checkbox"/> Schedule 1	<input type="checkbox"/> During peak historical month
<u>2</u> Avg Residence Time	<input type="checkbox"/> Schedule 2	<input type="checkbox"/> (1 monitoring period)
<u>3</u> Highest TTHM	<input checked="" type="checkbox"/> Schedule 3	<input type="checkbox"/> Every 90 days (4 monitoring periods)
<u>2</u> Highest HAA5	<input type="checkbox"/> Schedule 4	<input checked="" type="checkbox"/> Every 60 days (6 monitoring periods)
<u>8</u> Total		

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A. Data Evaluated Put an "X" in each box corresponding to the data that you used to select each type of standard monitoring site. Check all that apply.

B. Summary of Data* Provide a summary of data you relied on to justify standard monitoring site selection. (attach additional sheets if needed)

Please see attached.

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IV. JUSTIFICATION OF STANDARD MONITORING SITES¹

Standard Monitoring Site ID (from map) ¹	Site Type	Justification
10	<input checked="" type="checkbox"/> Near Entry Pt <input type="checkbox"/> Avg. Res. Time <input type="checkbox"/> High TTHM <input type="checkbox"/> High HAA5	New entry point site located upstream of first user.
7	<input type="checkbox"/> Near Entry Pt <input type="checkbox"/> Avg. Res. Time <input checked="" type="checkbox"/> High TTHM <input type="checkbox"/> High HAA5	Existing Total Coliform Rule site with lowest 10th percentile chlorine residual (0.20 mg/L) and second highest water age (36 hrs) of sites not used for Stage 1 monitoring. Represents sub-pressure zone served by Granite Reservoir, which has no other IDSE or Stage 1 DBPR sample sites.
11	<input type="checkbox"/> Near Entry Pt <input type="checkbox"/> Avg. Res. Time <input checked="" type="checkbox"/> High TTHM <input type="checkbox"/> High HAA5	New sample site. Provides representation of Fallon Reservoir service area, which has an average water age exceeding 100 hours and has no existing Total Coliform Rule or Stage 1 DBPR sample sites.
12	<input type="checkbox"/> Near Entry Pt <input type="checkbox"/> Avg. Res. Time <input checked="" type="checkbox"/> High TTHM <input type="checkbox"/> High HAA5	New sample site. Provides representation of Aising Reservoir service area, which has an average water age exceeding 100 hours and is not represented by the other proposed IDSE sample locations.
5	<input checked="" type="checkbox"/> Near Entry Pt <input type="checkbox"/> Avg. Res. Time <input type="checkbox"/> High TTHM <input type="checkbox"/> High HAA5	Existing Total Coliform Rule site with 10th percentile chlorine residual (0.26 mg/L) similar to average for all TCR sites (0.27 mg/L) and water age (39 hrs) similar to system-wide average (49 hrs). Represents a sub-pressure zone served by Crowson Reservoir with no other IDSE or Stage 1 sites.
8	<input checked="" type="checkbox"/> Near Entry Pt <input type="checkbox"/> Avg. Res. Time <input type="checkbox"/> High TTHM <input type="checkbox"/> High HAA5	Existing Total Coliform Rule site with 10th percentile chlorine residual (0.20 mg/L) similar to system average (0.27 mg/L) and moderate water age (32 hrs). Represents a large sub-pressure zone served by Granite and Crowson Reservoirs.
9	<input type="checkbox"/> Near Entry Pt <input type="checkbox"/> Avg. Res. Time <input type="checkbox"/> High TTHM <input checked="" type="checkbox"/> High HAA5	Existing Total Coliform Rule site with higher than average 10th percentile chlorine residual (0.44 mg/L) and moderate water age (31 hrs). Represents a large sub-pressure zone served by Granite and Crowson Reservoirs.
6	<input type="checkbox"/> Near Entry Pt <input type="checkbox"/> Avg. Res. Time <input type="checkbox"/> High TTHM <input checked="" type="checkbox"/> High HAA5	Existing Total Coliform Rule site with higher than average 10th percentile chlorine residual (0.39 mg/L) and moderate water age (27 hrs). Provides representation of the area served directly by Crowson Reservoir, which has no other IDSE sample sites.

¹ Verify that site IDs match IDs in Section IV and on your distribution system schematic (See Section VII of this form). Attach additional copies if you are required to select more than 8 standard monitoring locations or need more room.

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V. PEAK HISTORICAL MONTH AND PROPOSED STANDARD MONITORING SCHEDULE

A. Peak Historical Month* August

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

N/A

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

☐ High TTHM

☒ Warmest water temperature

☐ High HAA5

If you used other information to select your peak historical month, explain here
(attach additional sheets if needed)

D. Proposed Standard Monitoring Schedule*

Standard Monitoring Site ID (from map) ¹	Projected Sampling Date (date or week) ²					
	period 1	period 2	period 3	period 4	period 5	period 6
10	Wk 10/6/08	Wk 12/1/08	Wk 2/2/09	Wk 4/6/09	Wk 6/1/09	Wk 8/3/09
7	Wk 10/6/08	Wk 12/1/08	Wk 2/2/09	Wk 4/6/09	Wk 6/1/09	Wk 8/3/09
11	Wk 10/6/08	Wk 12/1/08	Wk 2/2/09	Wk 4/6/09	Wk 6/1/09	Wk 8/3/09
12	Wk 10/6/08	Wk 12/1/08	Wk 2/2/09	Wk 4/6/09	Wk 6/1/09	Wk 8/3/09
5	Wk 10/6/08	Wk 12/1/08	Wk 2/2/09	Wk 4/6/09	Wk 6/1/09	Wk 8/3/09
8	Wk 10/6/08	Wk 12/1/08	Wk 2/2/09	Wk 4/6/09	Wk 6/1/09	Wk 8/3/09
9	Wk 10/6/08	Wk 12/1/08	Wk 2/2/09	Wk 4/6/09	Wk 6/1/09	Wk 8/3/09
6	Wk 10/6/08	Wk 12/1/08	Wk 2/2/09	Wk 4/6/09	Wk 6/1/09	Wk 8/3/09

¹ Verify that site IDs match IDs in Section IV and on your distribution system schematic (See Section VII of this form). Attach additional copies if you are required to select more than 8 standard monitoring locations.

² period = monitoring period. Complete for the number of periods from Section II.C. Can list exact date or week (e.g., week of 7/9/07)

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VI. PLANNED STAGE 1 DBPR COMPLIANCE MONITORING SCHEDULE¹

Stage 1 DBPR Monitoring Site ID (from map) ¹	Projected Sampling Date (date or week) ²			
	Period 1	Period 2	Period 3	Period 4
1	Wk of 11/3/08	Wk of 2/2/09	Wk of 5/4/09	Wk of 8/3/09
2	Wk of 11/3/08	Wk of 2/2/09	Wk of 5/4/09	Wk of 8/3/09
3	Wk of 11/3/08	Wk of 2/2/09	Wk of 5/4/09	Wk of 8/3/09
4	Wk of 11/3/08	Wk of 2/2/09	Wk of 5/4/09	Wk of 8/3/09

¹ Verify that site IDs match IDs on your distribution system schematic (See Section VII of this form). Attach additional copies if you are required to monitor at more than 8 Stage 1 DBPR sites.

² period = monitoring period. Complete for the number of periods in which you must conduct Stage 1 DBPR monitoring during IDSE monitoring. Can list exact date or week (e.g., week of 7/9/07)

VII. DISTRIBUTION SYSTEM SCHEMATIC¹

ATTACH a schematic of your distribution system.

Distribution system schematics are not confidential and should not contain information that poses a security risk to your system. EPA recommends that you use one of two options:

Option 1: Distribution system schematic with no landmarks or addresses

indicated. Show locations of sources, entry points, storage facilities, standard monitoring locations, and Stage 1 compliance monitoring locations (required). Also include pressure zone boundaries and locations of pump stations. Provide map scale.

Option 2: City map without locations of pipes indicated. Show locations of sources, entry points, storage facilities, standard monitoring locations, and Stage 1 compliance monitoring locations (required). Also include boundaries of the distribution system, pressure zone boundaries and locations of pump stations. Provide map scale.

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VIII. ATTACHMENTS

- ☒ Distribution System Schematic* (Section VII).
- ☒ Additional sheets for the summary of data or site justifications (Sections III and IV).
- ☐ Additional copies of Page 3 for justification of Standard Monitoring Sites (Section IV). Required if you are a subpart H system serving more than 49,999 people or a ground water system serving more than 499,999 people.
- ☐ Additional sheets for explaining how you used data other than TTHM, HAA5, and temperature data to select your peak historical month (Section V).
- ☐ Additional copies of Page 4 for proposed monitoring schedule (Section V). Required if you are a subpart H system serving more than 49,999 people or a ground water system serving more than 499,999 people.
- ☐ Additional sheets for planned Stage 1 DBPR compliance monitoring schedule (Section VI).

Total Number of Pages in Your Plan 8

Note: Fields with an asterisk (*) are required by the Stage 2 DBPR

City of Ashland - IDSE Plan

Summary of Data Used for Sample Site Selection

The evaluation of IDSE sample sites for the City of Ashland was based on three sources of information:

- Water age calculated using the City's hydraulic model.
- Historical chlorine residual concentrations at Total Coliform Rule (TCR) monitoring locations.
- Historical THM and HAA concentrations at Stage 1 Disinfectants and Disinfection By-Products Rule (DBPR) monitoring sites.

In addition, the sites were selected to provide good geographic representation of the City's distribution system.

Biological Degradation of HAAs. The City's historical pattern of HAA concentrations was consistent with biological degradation of HAAs. Average historical HAA levels were similar at three of the City's Stage 1 DBPR sites (Nos. 1 through 3), but were significantly lower at the fourth site (Site No. 4). Site No. 4 also had a much greater water age than the remaining sites and had no detectable chlorine residual in 33 percent of samples. Based on this finding, it was ensured that all selected High HAA sites had a historical 10th percentile free chlorine residual of 0.2 mg/L or greater and the sites were selected to be in the center regions of the distribution system.

Entry Point Site. A single entry point site was required. The entry point site should be located upstream of the first user and any reservoirs. As no TCR sites met these criteria, a new site (Site No. 10) meeting these criteria was selected.

High THM Sites. Existing TCR Site No. 7 was selected as the first High THM site, as it had the lowest chlorine residuals and second highest water age of the available TCR sites. The two remaining High THM sites were new sites selected to represent areas with high water age that are not represented by the current sites. These were Site Nos. 11 and 12, representing the service areas of Fallon and Alsing Reservoirs, respectively.

Average Residence Time Sites. Existing TCR Site Nos. 5 and 8 were selected as the two Average Residence Time sites. These sites both had 10th percentile chlorine residuals similar to the average for all TCR sites (0.27 mg/L). Of the available TCR sites, these sites also had water ages most similar to the system-wide average of 49 hours.

High HAA Sites. The two remaining TCR sites (Nos. 6 and 9) were selected as the two High HAA Sites based on the conclusion that biodegradation of HAAs is occurring in the City's system. The water age at these sites is somewhat less than the system average and they provide good geographic coverage of the central region of the City's system. Also, both sites have 10th percentile chlorine residuals greater than the TCR site average of 0.27 mg/L.



