



Updated July 2012

Stage 2 DBP Monitoring Plan - Surface Water (Routine Monitoring)

System Name	Woodinville Water District
PWSID#	41600Y
Date	6/5/2013
Completed by	Tim Cantwell
Population	48400

Initial Stage 2 Sampling Period First sampling period following **April 1, 2012**

Number of Samples Required 4 Dual Sample Sets per Quarter

Stage 2 Compliance Monitoring Site ID		Projected Sampling Date (Date or week) - every 90 days			
		Period 1	Period 2	Period 3	Period 4
Highest TTHM	DBP #7 (104-10*)	March, 2nd Week	June, 2nd Week	September, 2nd Week	December, 2nd Week
Highest HAA5	DBP #4 (104-1)	March, 2nd Week	June, 2nd Week	September, 2nd Week	December, 2nd Week
	DBP #3 (104-6)	March, 2nd Week	June, 2nd Week	September, 2nd Week	December, 2nd Week
	DBP #8 (104-4)	March, 2nd Week	June, 2nd Week	September, 2nd Week	December, 2nd Week

* Note-DBP Site #7 104-10 was hydrant #2371 (A sample stand was installed to replace the hydrant at this site).

Determining Compliance for TTHM and HAA5

Our system is required to monitor quarterly. Each quarter we will calculate a locational running annual average (LRAA) for TTHM and HAA5 at each monitoring location. Compliance will be achieved if the TTHM and the HAA5 LRAA at each monitoring location for the four most recent quarters is less than or equal to 0.080 mg/L for TTHM and less than or equal to 0.060 mg/l for HAA5.

Disinfectant Monitoring

Chlorine residuals must be measured at the same time and place as routine or repeat coliform samples

MRDL for chlorine and chloramines = 4.0 mg/l as Cl₂

Determining Compliance for disinfectant residuals

Compliance is based on the running annual average (RAA) of 12 consecutive months

Daily residual measurements will / will not be included in the compliance calculations (circle one)

Attach a distribution map with sample locations

Comments

Attached is a distribution map with DBP locations.

Note DBP site #7 was hydrant #2371 is now 104-10, a sample stand was installed to replace the hydrant at this location.

Emailed a copy of completed form to:

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Standard Monitoring Plan Entry

I. IDSE General Information

*PWS ID

*PWS Name

*PWS Address

*City

*State

*Zip

*Population Served

*System Type

*Source Water Type

*Buying / Selling Relationships

C. PWS Operations

Residual Disinfectant Type Chlorine Chloramines Other

Number of Disinfected Sources Surface Ground GWUDI Purchased

D. Contact Person

*Contact Name

Title

Phone Number ext.

Fax

E-mail Address

Standard Monitoring Plan Entry

II. IDSE Requirements

A. Number of Required Standard Monitoring Sites

High TTHM	3
High HAA5	2
Near Entry Point Sites	1
Average Residence Time Sites	2
Total	8

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

B. Schedule

Schedule 1

C. Required Standard Monitoring Frequency

During peak historical month (1 monitoring period)

Every 90 days (4 monitoring periods)

Every 60 days (6 monitoring periods)

Standard Monitoring Plan Entry

III. Selecting Standard Monitoring Sites

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

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

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

The District utilized Total Coliform Rule data (chlorine and temperature) and District's chlorine sampling data, distribution system mapping, master meters data, tank level data and Best Professional Judgement to select these sites.

Standard Monitoring Plan Entry

IV. Justification of Standard Monitoring Sites *

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

#	Standard Monitoring Site ID (from map) ¹	Site Type	Justification
1	DBP-1 (SS 104-7)	Average Residence Time	1. This site is located in the 570 zone; it is fed from the 650 zone thru PRVs # 26 & 5. 2. Total Coliform Rule data (chlorine and temperature) and District chlorine sampling data shows this location to have average chlorine residual. Average chlorine residual = Average Residence Time. 3. Mapping shows this location has an average population density. 4. Master meter data shows this area has an average flow demand. 5. This site has easy access year round. 6. Best professional judgment combined with the above data helped to select this site.
2	DBP-2 (SS 104-9)	Average Residence Time	1. This site is located in the 570 zone; it is fed mainly from the South Hollywood Reservoir and supplemented by the 650 zone thru PRV # 5. 2. Total Coliform Rule data (chlorine and temperature) and District chlorine sampling data shows this location to have average chlorine residual. Average chlorine residual = Average Residence Time. 3. Mapping shows this location has an average population density. 4. Master metered data shows this area has an average flow demand. 5. This site has easy access year round. 6. Best professional judgment combined with the above data helped to select this site.
3	DBP-3 (SS 104-6)	High TTHM	1. This site is located in the 350 zone; it is fed from the 420 zone thru PRVs # 32 & 38 that are fed from the 485 & 570 zones that get their water from the 670 zone. 2. This is a dead end zone that mixes three zones. 3. Total Coliform Rule data (chlorine and temperature) and District chlorine sampling data shows this location has difficulty in maintaining a chlorine residual. Low residual = advanced residence time. 4. Mapping shows this area to have advance residence time. 5. This site is in a dead end zone but the site is before the last hydrant or blow off. 6. This site has easy access year round. 7. Best professional judgment combined with the above data helped to select this site.
4	DBP-4 (SS 104-1)	High HAA5	1. This site is located in the 260 zone; it is fed from the 420 zone with PRV # 18 as the lead station and PRV # 14 as the supplemental feed. 2. Total Coliform Rule data (chlorine and temperature) and District chlorine sampling data shows this location has a low but detectable chlorine residual. 3. Master meter data shows this area has low water usage. 4. Mapping shows this location has advanced residence time. 5. Area avoids known biofilm. 6. This site has easy access year round. 7. Best professional judgment combined with the above data helped to select this site.
5	DBP-5 (Hyd 1899)	Near Entry Point	1. This site is located in the 670 zone; it is fed from Ringhill Pump Station which is fed directly from the Tolt Pipe Line. 2. Master meter data shows this site has the highest annual flow. 3. Distribution maps show this site is before the first customers tap. 4. This site has easy access year round. 5. Best professional judgment combined with the above data helped to select this site.

- | | | | |
|---|------------------|-----------|---|
| 6 | DBP-6 (Hyd 1658) | High TTHM | <p>1. This site is located in the 570 Zone; it is fed from the Wellington Reservoir. 2. Total Coliform Rule data (chlorine and temperature) and District chlorine sampling data shows this location to have a low chlorine residual. 3. This site is downstream of reservoir. 4. This is a dead end, but prior to last customer connection, hydrant or blow off. 5. Master meter data shows this is a low flow area. 6. Mapping shows this area to have advanced residence. 7. This site has easy access year round. 8. Best professional judgment combined with the above data helped to select this site.</p> |
| 7 | DBP-7 (Hyd 2371) | High HAA5 | <p>1. This site is located in the 570 zone; it is fed from the 670 zone thru PRV # 39 and Aspenwood Reservoir. 2. Total Coliform Rule data (chlorine and temperature) and District chlorine sampling data shows this area has low chlorine residuals 3. This site is down stream of a reservoir. 4. Mapping shows this is a dead end with advanced residence time. 5. Location avoids known biofilm 6. Master meter data shows this to be a low flow area. 7. This site has easy access year round. 8. Best professional judgment combined with the above data helped to select this site.</p> |
| 8 | DBP-8 (SS 104-4) | High TTHM | <p>1. This site is located in the 420 zone; it is fed from the Brookside Reservoir & PRV # 40 that is fed from the Avondale transmission main. 2. Total Coliform Rule data (chlorine and temperature) and District chlorine sampling data shows this area has difficulty maintaining a chlorine residual. 3. Master meter data shows this is a low flow area. 4. Mapping shows this area to have advanced residence time. 5. This site has easy access year round. 6. Best professional judgment combined with the above data helped to select this site.</p> |

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

Standard Monitoring Plan Entry

V. Peak Historical Month and Standard Monitoring Dates

A. *Peak Historical Month

September

B. If multiple Sources, Source Used to Determine Peak Historical Month (enter "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:

D. Proposed Standard Monitoring Dates

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

Standard Monitoring Site ID (from map)*

Projected Sampling Date (day or week)**

	Period 1	Period 2	Period 3	Period 4	Period 5	Period 6
DBP-1 (SS 104-7)	11/2007 week 3	1/2008 week 3	3/2008 week 3	5/2008 week 3	7/2008 week 3	9/2008 week 3
DBP-2 (SS 104-9)	11/2007 week 3	1/2008 week 3	3/2008 week 3	5/2008 week 3	7/2008 week 3	9/2008 week 3
DBP-3 (SS 104-6)	11/2007 week 3	1/2008 week 3	3/2008 week 3	5/2008 week 3	7/2008 week 3	9/2008 week 3
DBP-4 (SS 104-1)	11/2007 week 3	1/2008 week 3	3/2008 week 3	5/2008 week 3	7/2008 week 3	9/2008 week 3
DBP-5 (Hyd 1899)	11/2007 week 3	1/2008 week 3	3/2008 week 3	5/2008 week 3	7/2008 week 3	9/2008 week 3
DBP-6 (Hvd 1658)	11/2007 week 3	1/2008 week 3	3/2008 week 3	5/2008 week 3	7/2008 week 3	9/2008 week 3
DBP-7 (Hvd 2371)	11/2007 week 3	1/2008 week 3	3/2008 week 3	5/2008 week 3	7/2008 week 3	9/2008 week 3
DBP-8 (SS 104-4)	11/2007 week 3	1/2008 week 3	3/2008 week 3	5/2008 week 3	7/2008 week 3	9/2008 week 3

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

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

Standard Monitoring Plan Entry

VI. Planned Stage 1 DBPR Compliance Monitoring Schedule

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

Stage 1 DBPR Monitoring Site ID
(from map)¹

Projected Sampling Date (date or week)²

	Period 1	Period 2	Period 3	Period 4
None	None			

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

Standard Monitoring Plan Entry

VII & VIII Schematic & Attachments

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

File Name	Date Uploaded
Distribution System Schematic	2006-09-27 11:49:43.0
District Chlorine Sample Data	2006-09-28 14:48:50.0
District Chlorine Sample Data	2006-09-28 14:48:50.0
Pump flow data	2006-09-28 14:46:56.0
Source Temperature	2006-09-28 14:47:18.0
TCR Data	2006-09-28 14:47:14.0

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

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Dayton, OH 45401-0098

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stage2mdbp@epa.gov

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Enter a description of the items that will be mailed.

IDSE Report for Standard Monitoring

I. IDSE General Information

PWS ID

*PWS Name

*PWS Address

*City

*State

*Zip

*Population Served

*System Type

*Source Water Type

*Buying / Selling Relationships

C. PWS Operations

Residual Disinfectant Type Chlorine Chloramines Other

Number of Disinfected Sources Surface Ground GWUDI Purchased

D. Contact Person

*Contact Name

Title

Phone Number ext.

Fax

E-mail Address

IDSE Report for Standard Monitoring

II. Stage 2 DBPR Requirements*

A. Number of required Stage 2 DBPR Sites:

Total 4
Highest TTHM 2
Stage 1 DBPR 1
Highest HAA5 1

B. IDSE Schedule

Schedule 1

C. Required Stage 2 DBPR Monitoring Frequency

During peak historical month (1 monitoring period)

Every 90 days (4 monitoring periods)

IDSE Report for Standard Monitoring

III. Monitoring Results

A. Did you deviate in any way from your approved standard monitoring plan?

Yes No

If YES, explain:

B. Where were your TTHM and HAA5 samples analyzed?

In-House Is your in-house laboratory certified?
Yes No

Certified Laboratory Name of certified laboratory

C. What method(s) was used to analyze your TTHM and HAA5 samples?

- | TTHM | HAA5 |
|---|---|
| <input type="checkbox"/> EPA 502.2 | <input type="checkbox"/> EPA 552.1 |
| <input checked="" type="checkbox"/> EPA 524.2 | <input checked="" type="checkbox"/> EPA 552.2 |
| <input type="checkbox"/> EPA 551.1 | <input type="checkbox"/> EPA 552.3 |
| | <input type="checkbox"/> SM 6251 B |

IDSE Report for Standard Monitoring

D. IDSE Standard Monitoring Results - TTHM

Site ID ¹	Data Type	TTHM (mg/L)						LRAA
1 DBP #1	Sample Date	11/19/2007	01/22/2008	03/17/2008	05/19/2008	07/21/2008	09/15/2008	0.019
	Sample Result	0.0205	0.0171	0.0193	0.0235	0.0144	0.0209	
2 DBP #2	Sample Date	11/19/2007	01/22/2008	03/17/2008	05/19/2008	07/21/2008	09/15/2008	0.02
	Sample Result	0.0255	0.018	0.0171	0.0184	0.022	0.0183	
3 DBP #3	Sample Date	11/19/2007	01/22/2008	03/17/2008	05/19/2008	07/21/2008	09/15/2008	0.027
	Sample Result	0.0323	0.0274	0.028	0.0265	0.0232	0.0243	
4 DBP #4	Sample Date	11/19/2007	01/22/2008	03/17/2008	05/19/2008	07/21/2008	09/15/2008	0.025
	Sample Result	0.0311	0.0213	0.0226	0.0249	0.0278	0.024	
5 DBP #5	Sample Date	11/19/2007	01/22/2008	03/17/2008	05/19/2008	07/21/2008	09/15/2008	0.011
	Sample Result	0.013	0.0102	0.0092	0.0098	0.0122	0.0113	
6 DBP #6	Sample Date	11/19/2007	01/22/2008	03/17/2008	05/19/2008	07/21/2008	09/15/2008	0.025
	Sample Result	0.033	0.0253	0.0204	0.025	0.0227	0.0242	
7 DBP #7	Sample Date	11/19/2007	01/22/2008	03/17/2008	05/19/2008	07/21/2008	09/15/2008	0.033
	Sample Result	0.0327	0.0329	0.031	0.0355	0.0284	0.0347	
8 DBP #8	Sample Date	11/19/2007	01/22/2008	03/17/2008	05/19/2008	07/21/2008	09/15/2008	0.03
	Sample Result	0.04	0.026	0.0245	0.0292	0.0294	0.0313	

IDSE Report for Standard Monitoring

E. IDSE Standard Monitoring Results - HAA5

Site ID ¹	Data Type	HAA5 (mg/L)						LRAA
1 DBP #1	Sample Date	11/19/2007	01/22/2008	03/17/2008	05/19/2008	07/21/2008	09/15/2008	0.022
	Sample Result	0.0217	0.0253	0.0254	0.0228	0.0155	0.0231	
2 DBP #2	Sample Date	11/19/2007	01/22/2008	03/17/2008	05/19/2008	07/21/2008	09/15/2008	0.023
	Sample Result	0.0265	0.0216	0.0225	0.0212	0.0227	0.0209	
3 DBP #3	Sample Date	11/19/2007	01/22/2008	03/17/2008	05/19/2008	07/21/2008	09/15/2008	0.021
	Sample Result	0.0205	0.0203	0.026	0.0234	0.0204	0.0159	
4 DBP #4	Sample Date	11/19/2007	01/22/2008	03/17/2008	05/19/2008	07/21/2008	09/15/2008	0.025
	Sample Result	0.0211	0.0236	0.0262	0.0251	0.0281	0.0258	
5 DBP #5	Sample Date	11/19/2007	01/22/2008	03/17/2008	05/19/2008	07/21/2008	09/15/2008	0.012
	Sample Result	0.0145	0.0108	0.0114	0.0122	0.00981	0.0106	
6 DBP #6	Sample Date	11/19/2007	01/22/2008	03/17/2008	05/19/2008	07/21/2008	09/15/2008	0.024
	Sample Result	0.018	0.0221	0.0268	0.0256	0.025	0.0241	
7 DBP #7	Sample Date	11/19/2007	01/22/2008	03/17/2008	05/19/2008	07/21/2008	09/15/2008	0.019
	Sample Result	0.0161	0.0226	0.0219	0.0173	0.0211	0.0168	
8 DBP #8	Sample Date	11/19/2007	01/22/2008	03/17/2008	05/19/2008	07/21/2008	09/15/2008	0.024
	Sample Result	0.0191	0.0258	0.0278	0.0272	0.0272	0.0197	

IDSE Report for Standard Monitoring

F. Stage 1 DBPR Compliance Monitoring Results - TTHM

Site ID ¹	Data Type	TTHM (mg/L)				LRAA
1	Sample Date					
	Sample Result					
2	Sample Date					
	Sample Result					
3	Sample Date					
	Sample Result					
4	Sample Date					
	Sample Result					
5	Sample Date					
	Sample Result					
6	Sample Date					
	Sample Result					
7	Sample Date					
	Sample Result					
8	Sample Date					
	Sample Result					

IDSE Report for Standard Monitoring

G. Stage 1 DBPR Compliance Monitoring Results - HAA5

Site ID ¹	Data Type	HAA5 (mg/L)				LRAA
1	Sample Date					
	Sample Result					
2	Sample Date					
	Sample Result					
3	Sample Date					
	Sample Result					
4	Sample Date					
	Sample Result					
5	Sample Date					
	Sample Result					
6	Sample Date					
	Sample Result					
7	Sample Date					
	Sample Result					
8	Sample Date					
	Sample Result					

IDSE Report for Standard Monitoring

IV. Justification of Stage2 DBPR Compliance Monitoring Sites*

#	Stage 2 Compliance Monitoring Site ID	Site Type	Justification
1	.	Highest	Highest LRAA site for TTHM's TTHM
2	.	Highest	Highest LRAA site for HAA5's. HAA5
3	.	Highest	No stage 1 monitoring, tied as the 2nd highest LRAA site for HAA5's HAA5 and geographically represents a different area of the distribution system and is not close to the other HAA5 site (DBP# 4)
4	.	Highest	Next highest LRAA site for TTHM's that has not been selected. It is also geographically in a different area then the other TTHM site (DBP# 7)

IDSE Report for Standard Monitoring

V. Peak Historical Month

A. *Peak Historical Month

B. Is Your Peak Historical Month the Same as in Your IDSE Standard Monitoring Plan?

Yes

No

If no, explain how you selected your new peak historical month.

Old peak month was based on temperature (September), new month is based on peak month for HAA5's which is closer to the MCL than the peak month for TTHM's.

IDSE Report for Standard Monitoring

VI. Proposed Stage2 DBPR Compliance Monitoring Schedule*

	Projected Sampling Date (date or week) ¹			
Stage 2 Compliance Monitoring Site ID ¹	Period 1	Period 2	Period 3	Period 4
1				
2				
3				
4				

¹ period = monitoring period. Complete for the number of periods from Section II.C

IDSE Report for an Existing Monitoring Results SSS

VII & VIII & Schematic Attachments

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

File Name	Date Uploaded
None submitted.	

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Mailing Address:

US EPA-IPMC
PO Box 98
Dayton, OH 45401-0098

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Enter a description of the items that will be mailed.

