# Example Coliform Monitoring Plans

**Coliform Monitoring Plan for: ABC Water District**

1. **System Information Plan Date: 7/3/16**

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| **Water System Name**ABC Water District | **County**Skamania | **System I.D. Number**39111X |
| **Name of Plan Preparer**Murphy S. Law | **Position**Operations Manager | **Daytime Phone #****(\_ \_ \_) \_ \_ \_ - \_ \_ \_ \_** |
| **Sources:** DOH Source Number, Source Name, Well Depth, Pumping Capacity | S04 Well Field (138 feet, 595 gpm) S01 Well #1 (159 feet, 200 gpm) S02 Well #2 (138 feet,185 gpm)  S03 Well #3 (145 feet, 210 gpm)S05 Well #4 (387 feet, 400 gpm)  |
| **Storage:** List and Describe | Green Hill Reservoir – 1.8 million gallons |
| **Treatment:** Source Number & Process | Continuous chlorination on all the wells, 4-log virus provided – *Not doing Compliance Monitoring* |
| **Pressure Zones:** Number and name | Pressure Zone 1 – North ZonePressure Zone 2 – South ZonePressure Zone 3 – East Zone |
| **Population by Pressure Zone** | Pressure Zone 1 – 1,300 residentialPressure Zone 2 – 300 residentialPressure Zone 3 – 400 nonresidential  |
| **Number of Routine Samples Required Monthly by Regulation:** 2 | **Number of Sample Sites Needed to Represent the Distribution System:** 7 |
| **\*Request DOH Approval of Triggered Source Monitoring Plan?** |  **Yes [x]  No [ ]**  |  |

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

1. **Laboratory Information**

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| **Laboratory Name****Quality Lab** | **Office Phone #****(\_ \_ \_) \_ \_ \_ - \_ \_ \_ \_**  |
| **Address** | **After Hours #****(\_ \_ \_) \_ \_ \_ - \_ \_ \_ \_** |
| **Hours of Operation****Monday–Friday 7:30 a.m. to 6:30 p.m.****Saturday by appointment** |
| **Contact Name** |
| **Emergency Laboratory Name****Complete Water Lab** | **Office Phone #****(\_ \_ \_) \_ \_ \_ - \_ \_ \_ \_** |
| **Address** | **After Hours #****(\_ \_ \_) \_ \_ \_ - \_ \_ \_ \_** |
| **Hours of Operation****Monday–Friday 8 a.m. to 5:30 p.m.** |
| **Contact Name** |

1. **Wholesaling of Groundwater**

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|  | **Yes** | **No** |
| **We are a consecutive system and purchase groundwater from another water system.** | **[ ]**  | **[x]**  |
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**Routine, Repeat, and Triggered Source Sample Locations**

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| **Location/Address for****Routine Sample Sites** | **Location/Address for****Repeat Sample Sites** | **Sources for****Triggered Sample Sites** |
| **X1. 93 Main Street, PZ-1, sample station** |  | * 1. **93 Main Street**
 |  | **S 04****S 05** |
|  |  | * 1. **100 Main Street**
 |  |  |
|  |  | * 1. **88 Main Street**
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|  |  |  |  |  |
|  |  |  |  |  |
| **X2. 795 Green Valley Way, PZ-1, sample station** |  | **2-1. 795 Green Valley Way** |  | **S 04****S 05** |
|  |  | **2-2. 800 Green Valley Way** |  |  |
|  |  | **2-3. 791 Green Valley Way** |  |  |
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|  |  |  |  |  |
| **X3. 223 Cascade Avenue, PZ-1, sample station** |  | **3-1. 223 Cascade Avenue** |  | **S 04****S 05**  |
|  |  | **3-2. 227 Cascade Avenue** |  |  |
|  |  | **3-3. 220 Cascade Avenue** |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
| **X4. 220 North Valley Road, PZ-2, sample station** |  | **4-1. 220 North Valley Road** |  | **S 04****S 05**  |
|  |  | **4-2. 229 North Valley Road** |  |  |
|  |  |  **4-3. 210 North Valley Road** |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
| **X5. 151 Circle Drive, PZ-2, sample station** |  | **5-1. 151 Circle Drive** |  | **S 04****S 05** |
|  |  | **5-2. 160 Circle Drive** |  |  |
|  |  | **5-3. 149 Circle Drive** |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
| **X6. 41 Industry Way, PZ-3, sample station** |  | **6-1. 41 Industry Way** |  | **S 04****S 05** |
|  |  | **6-2. 51 Industry Way** |  |  |
|  |  | **6-3. 38 Industry Way** |  |  |
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|  |  |  |  |  |
| **X7. 631 First Avenue, PZ-3, sample station** |  | **7-1. 631 First Avenue** |  | **S 04****S 05** |
|  |  | **7-2. 651 First Avenue** |  |  |
|  |  | **7-3. 90th Second Avenue** |  |  |
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**Important notes for Sample Collector:**

1. Collect samples early in the month and early in the week.
2. Do not collect sample(s) in a week when there is a holiday or when a key staff member is on vacation.
3. If a sample site is no longer a good sample site, substitute an acceptable site in the same area. If the condition change cannot be resolved, choose a permanent new sample site and update this CMP.
4. Always review the lab results for your coliform samples.
5. **Reduced Triggered Source Monitoring Justification**

We will sample Well field S04 as a blended sample because S01, S02, & S03 have been classified as wells of a well field and all have similar aquifer characteristics.

1. **Routine Sample Rotation Schedule**

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| **Month** | **Routine Site(s)** | **Month** | **Routine Site(s)** |
| January | X1 and X6 | July | X1 and X4 |
| February | X2 and X4 | August | X2 and X7 |
| March | X3 and X7 | September | X3 and X5 |
| April | X1 and X5 | October | X1 and X6 |
| May | X2 and X6 | November | X2 and X4 |
| June | X3 and X7 | December | X3 and X7 |

1. ***E. coli*-present Sample Response Plan**

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| **Distribution System *E. coli* Response Checklist** |
| **Background Information** | **Yes** | **No** | **N/A** | **To Do List** |
| We inform staff members about activities within the distribution system that could affect water quality. | **[x]**  | **[ ]**  | **[ ]**  | **[ ]**  |
| We document all water main breaks, construction & repair activities, and low pressure and outage incidents. | **[x]**  | **[ ]**  | **[ ]**  | **[ ]**  |
| We can easily access and review documentation on water main breaks, construction & repair activities, low pressure and outage incidents. | **[x]**  | **[ ]**  | **[ ]**  | **[ ]**  |
| Our Cross-Connection Control Program is up-to-date. | **[x]**  | **[ ]**  | **[ ]**  | **[ ]**  |
| We test all cross-connection control devices annually as required, with easy access to the proper documentation. | **[x]**  | **[ ]**  | **[ ]**  | **[ ]**  |
| We routinely inspect all treatment facilities for proper operation | **[x]**  | **[ ]**  | **[ ]**  | **[ ]**  |
| We have procedures in place for disinfecting and flushing the water system if it becomes necessary. | **[x]**  | **[ ]**  | **[ ]**  | **[ ]**  |
| We can activate an emergency intertie with an adjacent water system in an emergency. | **[ ]**  | **[ ]**  | **[x]**  | **[ ]**  |
| We have a map of our service area boundaries. | **[x]**  | **[ ]**  | **[ ]**  | **[ ]**  |
| We have consumers who may not have access to bottled or boiled water. | **[x]**  | **[ ]**  | **[ ]**  | **[ ]**  |
| There is a sufficient supply of bottled water immediately available to our customers who are unable to boil their water. | **[ ]**  | **[x]**  | **[ ]**  | **[ ]**  |
| We have identified the contact person at each day care, school, medical facility, food service, and other customers who may have difficulty responding to a Health Advisory. | **[x]**  | **[ ]**  | **[ ]**  | **[ ]**  |
| We have messages prepared and translated into different languages to ensure our consumers will understand them. | **[x]**  | **[ ]**  | **[ ]**  | **[ ]**  |
| We have the capacity to print and distribute the required number of notices in a short time period. | **[x]**  | **[ ]**  | **[ ]**  | **[ ]**  |
| **Policy Direction** | **Yes** | **No** | **N/A** | **To Do List** |
| We have discussed the issue of *E. coli*-present sample results with our policy makers. | **[x]**  | **[ ]**  | **[ ]**  | **[ ]**  |
| If we find *E. coli* in a routine distribution sample, the policy makers want to wait until repeat test results are available before issuing advice to water system customers. | **[x]**  | **[ ]**  | **[ ]**  | **[ ]**  |
| **(Cont.)** |

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| **Distribution System *E. coli* Response Checklist** |
| **Potential Public Notice Delivery Methods** | **Yes** | **No** | **N/A** | **To Do List** |
| It is feasible to deliver a notice going door-to-door. | **[ ]**  | **[x]**  | **[ ]**  | **[ ]**  |
| We have a list of all of our customers’ addresses. | **[x]**  | **[ ]**  | **[ ]**  | **[ ]**  |
| We have a list of customer telephone numbers or access to a Reverse 9-1-1 system. | **[ ]**  | **[x]**  | **[ ]**  | **[ ]**  |
| We have a list of customer email addresses. | **[ ]**  | **[x]**  | **[ ]**  | **[ ]**  |
| We encourage our customers to remain in contact with us using social media. | **[ ]**  | **[x]**  | **[ ]**  | **[ ]**  |
| We have an active website we can quickly update to include important messages. | **[x]**  | **[ ]**  | **[ ]**  | **[ ]**  |
| Our customers drive by a single location where we could post an advisory and expect everyone to see it. | **[ ]**  | **[x]**  | **[ ]**  | **[ ]**  |
| We need a news release to supplement our public notification process. | **[x]**  | **[ ]**  | **[ ]**  | **[ ]**  |
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| ***E. coli*-Present Triggered Source Sample Response Checklist –** **All Sources** |
| **Background Information** | **Yes** | **No** | **N/A** | **To Do List** |
| We review our sanitary survey results and respond to any recommendations affecting the microbial quality of our water supply. | **[x]**  | **[ ]**  | **[ ]**  | **[ ]**  |
| We address any significant deficiencies identified during a sanitary survey. | **[x]**  | **[ ]**  | **[ ]**  | **[ ]**  |
| There are contaminant sources within our Wellhead ProtectionArea that could affect the microbial quality of our source water, andIf yes, we can eliminate them. | [ ] [ ]  | [x] **[ ]**  | [ ] [x]  | [ ] [ ]  |
| We routinely inspect our well site(s). | **[x]**  | **[ ]**  | **[ ]**  | **[ ]**  |
| We have a good raw water sample tap installed at each source. | **[x]**  | **[ ]**  | **[ ]**  | **[ ]**  |
| After we complete work on a source, we disinfect the source, flush, and collect an investigative sample. | **[x]**  | **[ ]**  | **[ ]**  | **[ ]**  |
| **(Cont.)** |

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| ***E. coli*-Present Triggered Source Sample Response Checklist –** **All Sources** |
| **Public Notice** | **Yes** | **No** | **N/A** | **To Do List** |
| We discussed the requirement for immediate public notice of an *E. coli*-present source sample result with our water system’s governing body (board of directors or commissioners) and received direction from them on our response plan. | **[x]**  | **[ ]**  | **[ ]**  | **[ ]**  |
| We discussed the requirement for immediate public notice of an *E. coli*-present source sample result with our wholesale customers and encouraged them to develop a response plan. | **[ ]**  | **[ ]**  | **[x]**  | **[ ]**  |
| We have prepared templates and a communications plan that will help us quickly distribute our messages. | **[x]**  | **[ ]**  | **[ ]**  | **[ ]**  |
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| ***E. coli*-Present Triggered Source Sample Response Checklist – Source S04** |
| **Alternate Sources** | **Yes** | **No** | **N/A** | **To Do List** |
| We can stop using this source and still provide reliable water service to our customers. | **[x]**  | **[ ]**  | **[ ]**  | **[ ]**  |
| We have an emergency intertie with a neighboring water system that we can use until corrective action is complete (perhaps for several months). | **[ ]**  | **[ ]**  | **[x]**  | **[ ]**  |
| We can provide bottled water to all or part of our distribution system for an indefinite period. | **[ ]**  | **[x]**  | **[ ]**  | **[ ]**  |
| We can quickly replace our existing source of supply with a more protected new source of supply. | **[ ]**  | **[x]**  | **[ ]**  | **[ ]**  |
| **Temporary Treatment** | **Yes** | **No** | **N/A** | **To Do List** |
| This source is continuously chlorinated, and our existing facilities can provide 4-log virus treatment (CT = 6) before the first customer.If yes, at what concentration? 0.2 mg/L | **[x]**  | **[ ]**  | **[ ]**  | **[ ]**  |
| We can quickly introduce chlorine into the water system and take advantage of the existing contact time to provide 4-log virus treatment to a large portion of the distribution system. | **[ ]**  | **[ ]**  | **[x]**  | **[ ]**  |
| We can reduce the production capacity of our pumps or alter the configuration of our storage quantities (operational storage) to increase the amount of time the water stays in the system before the first customer to achieve CT = 6. | **[ ]**  | **[ ]**  | **[x]**  | **[ ]**  |
| We can alter the demand for drinking water (maximum day or peak hour) through conservation messages to increase the time the water is in the system prior to the first customer in order to achieve 4-log virus treatment with chlorine. | **[ ]**  | **[ ]**  | **[x]**  | **[ ]**  |

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| ***E. coli*-Present Triggered Source Sample Response Checklist –****Source S05** |
| **Alternate Sources** | **Yes** | **No** | **N/A** | **To Do List** |
| We can stop using this source and still provide reliable water service to our customers. | [x]  | [ ]  | [ ]  | [ ]  |
| We have an emergency intertie with a neighboring water system that we can use until corrective action is complete (perhaps for several months). | [ ]  | [ ]  | [x]  | [ ]  |
| I can provide bottled water to all or part of my distribution system for an indefinite period. | [ ]  | [x]  | [ ]  | [ ]  |
| We can quickly replace our existing source of supply with a more protected new source of supply. | [ ]  | [x]  | [ ]  | [ ]  |
| **Temporary Treatment** | **Yes** | **No** | **N/A** | **To do List** |
| This source is continuously chlorinated, and our existing facilities can provide 4-log virus treatment (CT = 6) before the first customer.If yes, at what concentration? 0.2 mg/L | [x]  | [ ]  | [ ]  | [ ]  |
| We can quickly introduce chlorine into the water system and take advantage of the existing contact time to provide 4-log virus treatment to a large portion of the distribution system. | [x]  | [ ]  | [ ]  | [ ]  |
| We can reduce the production capacity of our pumps or alter the configuration of our storage quantities (Operational Storage) to increase the length of time water stays in the system before the first customer to achieve CT = 6. | [x]  | [ ]  | [ ]  | [ ]  |
| We can alter the demand for drinking water (Maximum Day or Peak Hour) through conservation messages to increase the time the water is in the system prior to the first customer in order to achieve 4-log virus treatment with chlorine. | [x]  | [ ]  | [ ]  | [ ]  |

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| **Distribution System *E. coli* Response Plan** |
| **If we have *E. coli* in our distribution system we will immediately:**1. Call DOH.
2. Collect repeat and triggered source samples per Part D. Collect additional investigative samples as necessary.
3. Inspect our water system facilities, including treatment plants for proper operation.
4. Interview staff to determine whether anything unusual was happening in the water system service area, especially since the previous month’s sample(s).
5. Review new construction activities, water main breaks, and pressure outages that may have occurred during the previous month.
6. Review Cross-Connection Control Program status.
7. Discuss with DOH whether to issue a Health Advisory based on the findings of steps 3-6. If necessary, issue the HA.
8. Wait for repeat sample results.
9. Respond appropriately to repeat results:
	* If repeats are all satisfactory, lift HA if one was issued.
	* If any repeat is unsatisfactory, issue HA if not already issued. Host DOH for an inspection and respond accordingly to inspection findings.
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| ***E. coli*-Present Triggered Source Sample Response Plan****Source S04** |
| **If we have *E. coli* in our source water we will immediately:**1. Call DOH.
2. Distribute required notice.
3. Begin compliance monitoring at the entry point to the distribution system.
4. Ask DOH to review our Contact Time analysis and acknowledge that we provide 4-log virus treatment before the first customer.
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| ***E. coli*-Present Triggered Source Sample Response Plan****Source S05** |
| **If we have *E. coli* in our source water we will immediately:**1. Call DOH.
2. Distribute required notice.
3. Begin compliance monitoring at the entry point to the distribution system.
4. Ask DOH to review our Contact Time analysis and acknowledge that we provide 4-log virus treatment before the first customer.
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1. **System Map**

Hypochlorinator

**Pressure Zone 1- North Zone**

**1,300 Residential Population**

**S04 Sample Tap**

**X4**

**X6**

**X7**

**X5**

**X3**

**X2**

**X1**

**S05 Sample Tap**

**Pressure Zone 3 - East Zone**

**400 Nonresidential Population**

**Pressure Zone 2 - South Zone**

**300 Residential Population**

PRV 2

PRV 1