**AP 1C - Contamination to Water System**

**CONFIRMED STAGE**

**ACTION PLAN SUMMARY**

This Action Plan applies to the intentional introduction of a contaminant into the water system. The contaminant could be introduced at any point within the system, including raw water, treatment facilities, distribution system including distribution pipes, finished water storage, or pump stations. The adversary may or may not give notice, identify the contaminant, or provide the location. Contamination may have actually occurred, or it may be a hoax.

If there is no confirmed evidence and no definitive information that the water system has been threatened or contaminated, GO TO AP 1B – CREDIBLE STAGE. It may take several days to collect sufficient evidence to confirm a contamination incident, and the required time will depend on the type of information used for confirmation (some microbial analytical procedures may take several days).

**INITIATION AND NOTIFICATION**

A.Initiate this Action Plan 1C if there is confirmed evidence that the water system has been contaminated such as the following:

1. There is **analytical confirmation** of the presence of one or more contaminants in the water system.

2. The **preponderance of the evidence** confirms that a contamination incident has occurred such as:

* There is a security breach with obvious signs of contamination along with unusual water quality and consumer complaints in the vicinity of the security breach.
* Additional findings (laboratory analysis, field observations) of continued site characterization activities add to other credible evidence of contamination.
* There is information from public health officials, area hospitals, or 911 call centers indicating a problem with the water supply.
* Law enforcement agencies have discovered crucial evidence or apprehended a suspect that helps confirm that the water has been contaminated.
* Specific information on a number of potential contaminants can be used in conjunction with other available information to narrow down the number of contaminant candidates.

B. The individual who first becomes aware of the confirmed evidence should immediately contact the water system’s designated Water Utility Emergency Response Manager or its alternate Water Utility Emergency Response Manager. Those individuals may also be referred to with the acronyms **WUERM** or **alternate WUERM**. Any available means of communication shall be used.

C. If the WUERM or alternate WUERM shall determine whether to initiate the full or partial Emergency Response Plan and then activation shall occur.

D. The WUERM or alternate WUERM shall then advise on initiation of the partial or full activation of the Emergency Operations Center also known as the EOC.

E. Engage other organizations as needed such as the drinking water primacy agency, public health agency, response agencies, and law enforcement. Notification phone numbers can be obtained from the Organization Contact List in the Appendices as well as from Section III.D of the Emergency Response Plan.

F. Perform internal and external notifications according to the Emergency Response Plan.

**EQUIPMENT IDENTIFIED**

This equipment is available to assist in the execution of this Action Plan.

|  |  |
| --- | --- |
| **Equipment:** | **[Insert Name of Equipment]** |
| **Location:** | **[Insert Location of Equipment]** |

**SPECIFIC ACTIVITIES**

**I. Assess the Problem**

Effective implementation of response actions depends on positive identification of the contaminant and knowledge of contaminant properties, including public health protection strategies and selection of treatment technologies.

1. Assess results of previous sample analysis in an attempt to identify the contaminant
2. Confirm the identity of the contaminant.
3. Perform a full characterization of the contaminated area, including contaminant properties, contaminant concentration profiles, and characteristics of the impacted area. The contaminated area can be estimated using hydraulic modes, consumer complaints, public health agency reports, water quality data, or other available information. The estimate may define additional locations where site characterization should be performed.
4. Evaluate the likely direction and extent of future movement of the contaminant within the distribution system.
5. Evaluate all available information about the contamination incident. If information from site characterization activities indicates that the contaminant impacts water quality in a certain manner (i.e., consumes free chlorine or imparts a certain odor to the water), the contaminant specific information may facilitate tentative identification of a contaminant and determine the analytical approach that should be used to positively identify the specific contaminant. Sources of contaminant information are available online by selecting the following links:

[The Agency for Toxic Substances and Diseases Registry](http://www.cdc.gov/atsdr/index.html)

and the [EPA Water Contaminant Information Tool under development](http://www.waterisac.org/)

**II. Isolate and Fix the Problem**

6. Take actions to isolate portions of system containing suspect water. See ERP Section VIII for System Shut Down Plan.

7. Shut down system if obvious or confirmed contamination warrants.

8. Issue “Boil Water”, “Do not Drink”, or “Do not Use” orders and Press Releases as appropriate. See Section VIII.A.1 of ERP for Press Release Forms.

9. Initiate Alternate Water Supply Plan which is in ERP Section III.G to provide alternate water supply for customers and fire protection, as necessary.

10.Revise public health response measures and public notifications, as necessary.

III. Monitoring

11. Continue sampling and analysis to monitor the status and extent of the contamination, and to verify that containment strategies are working.

IV. Recovery and Return to Safety

12. Consult with appropriate officials to develop a Remediation and Recovery Plan. Remediation and recovery activities will likely be planned and implemented by a number of agencies. The first step of the process is to establish the roles and responsibilities of each organization. The samples obtained during site characterization and monitoring should be stored in case the situation changes and further analysis is determined to be necessary.

1. Evaluate options for treating contaminated water and rehabilitating system components.
2. Select treatment and rehabilitation technology and approach.
3. Develop strategy for disposal of contaminated residuals.
4. Develop sampling and analysis plan to verify remediation.
5. Develop communications and public relations plan.

13. Implement Remediation and Recovery Plan.

1. Verify that water is safe by performing additional sampling and analysis to confirm the progress of system treatment and remediation.
2. Notify public that water is safe.
3. Notify outside agencies that water is safe.
4. Return to normal operations.
5. Store water samples for [Insert Predetermined Time Period Here].

**V. Report of Findings**

10**.** File incident reports with internal and external agencies as required. The Utility, through its Security Director, should file an internal report for the Utility’s files, and also provide information as requested to Local Law Enforcement and other outside agencies.

**VI. Action Plan 1C Revision Dates**

**[Insert Dates of Revision of Action Plan 1C]**