[Exercise Name]

**\*Note: Items highlighted in gray will or may need to be changed to reflect the details of your exercise. Delete this text box before producing and distributing this situation manual.**

Situation Manual

[Date]

[This Situation Manual (SitMan) provides exercise participants with all the necessary tools for their roles in the exercise. Some exercise material is intended for the exclusive use of exercise planners, facilitators and evaluators, but players may view other materials that are necessary to their performance. All exercise participants may view the SitMan].

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# Exercise Overview

| **Exercise Name** | [Insert the formal name of exercise, which should match the name in the document header] |
| --- | --- |
| **Exercise Dates** | [Indicate the start and end dates of the exercise] |
| **Scope** | This exercise is a tabletop exercise, planned for [exercise duration] at [exercise location]. Exercise play is limited to [exercise parameters]. |
| **Mission Area(s)** | [Prevention, Protection, Mitigation, Response and/or Recovery] |
| **Objectives** | [List exercise objectives; see page 2] |
| **Threat or Hazard** | Distribution System Contamination |
| **Scenario** | [Insert a brief overview of the exercise scenario, including scenario impacts (2-3 sentences)] |
| **Sponsor** | [Insert the name of the sponsor organization, as well as any grant programs being utilized, if applicable] |
| **Participating Organizations** | [Insert a brief summary of the total number of participants and participation level (e.g., federal, state, local, tribal, non-governmental organizations (NGOs) and/or international agencies). Consider including the full list of participating agencies in Appendix B. Delete Appendix B if not required.] |
| **Point of Contact** | [Insert the name, title, agency, address, phone number and email address of the primary exercise POC (e.g., exercise facilitator)] |

# General Information

## Exercise Objectives

The following exercise objectives in Table 1 describe the expected outcomes for the exercise.

| **Exercise Objectives** |
| --- |
| [Define or refine participants’ roles and responsibilities for managing the consequences of a distribution system contamination incident, which should be reflected in their ***plans, policies and procedures*** and other preparedness elements currently in place or under development] |
| [Build relationships between utilities and stakeholders] |
| [Determine neighboring utility water infrastructure capabilities and needs] |
| [Identify other needed enhancements related to ***training and exercises*** and other preparedness elements currently in place or under development] |
| [Insert objective] |

Table 1. Exercise Objectives

The exercise schedule is in Appendix A.

## Participant Roles and Responsibilities

The term *participant* encompasses many groups of people, not just those playing in the exercise. Groups of participants involved in the exercise (Appendix B), and their respective roles and responsibilities, are as follows:

**Players-** Players are personnel who have an active role in discussing or performing their regular roles and responsibilities during the exercise. Players discuss or initiate actions in response to the simulated emergency.

**Observers-** Observers do not directly participate in the exercise. However, they may support the development of player responses to the situation during the discussion by asking relevant questions or providing subject matter expertise.

**Facilitators-** Facilitators provide situation updates and moderate discussions. They also provide additional information or resolve questions as required. Key Exercise Planning Team members also may assist with facilitation as subject matter experts (SMEs) during the exercise.

**Evaluators-** Evaluators are assigned to observe and document certain objectives during the exercise. Their primary role is to document player discussions, including how and if those discussions conform to plans, policies and procedures.

## Exercise Structure

This exercise will be a multimedia, facilitated exercise. Players will participate in the following [five] scenario modules:

Module 1: [Contamination is Observed]

Module 2: [Complaints Continue]

Module 3: [The Contamination Source is Identified]

Module 4: [Contamination Extent is Determined]

Module 5: [Contamination is Remediated]

Each module begins with a multimedia update that summarizes key events occurring within that time period.

The facilitator will guide participants through a discussion period, developed using the scenario modules, to describe their actions, decisions and notifications as necessitated by the change in situation or resource status. Players are encouraged to ask questions of other players. Immediately following the discussion period, the facilitator will lead a “hot wash” session among participants to highlight key elements and develop a list of action items.

## Exercise Guidelines

* This exercise will be held in an open, low-stress, no-fault environment. Varying viewpoints, even disagreements, are expected.
* Respond to the scenario using your knowledge of current plans and capabilities (i.e., you may use only existing assets) and insights derived from your training.
* Decisions are not precedent setting and may not reflect your organization’s final position on a given issue. This exercise is an opportunity to discuss and present multiple options and possible solutions.
* Issue identification is not as valuable as suggestions and recommended actions that could improve [prevention, protection, mitigation, response or recovery] efforts. Problem-solving should be the focus.
* Assume there will be cooperation and support from other responders and agencies.
* The basis for discussion consists of the scenario narrative and modules, your experience, your understanding of your Emergency Response Plan (ERP), your intuition and other utility resources included as part of this material or that you brought with you.
* Treat the scenario as if it will affect your area.

## Exercise Assumptions and Artificialities

In any exercise, assumptions and artificialities may be necessary to complete play in the time allotted and/or account for logistical limitations. Exercise participants should accept that assumptions and artificialities are inherent in any exercise, and should not allow these considerations to negatively impact their participation. During this exercise, the following apply:

* [The exercise is conducted in a no-fault learning environment wherein capabilities, plans, systems and processes will be evaluated.]
* [The exercise scenario is plausible, and events occur as they are presented.]
* [All players receive information at the same time.]

# Module 1: [Contamination Is Observed]

## Scenario

[May 27, 2017]: [0700 hrs]

[It is spring and area businesses are gearing up for a busy holiday weekend. On the morning of May 27, the customer service department of the town’s water utility receives odor complaints from several local residents of the Buckhall neighborhood. The complaints are coming from residents on different streets served by different mains. Customers are claiming that their water smells skunk-like.

An operator from the utility is dispatched to investigate and obtain samples from hydrants and/or residential buildings. Once on site, the operator notices a strong, skunk-like smell in the samples.]

## Key Issues

* [The origins of the taste and odor complaint calls are within a four-block radius.]
* [The area where taste and odor complaints are coming from is mostly residential. Businesses in the area include a florist, a specialty foods store and a few other small retailers.]
* [The utility uses free chlorine as the residual disinfectant.]

## Questions

Based on the information provided, participate in the discussion concerning the issues raised in Module 1. Identify any critical issues, decisions, requirements or questions that should be addressed at this time.

The following questions are provided as suggested subjects that you may wish to address as the discussion progresses. These questions are not meant to constitute a definitive list of concerns to be addressed, nor is there a requirement to address every question.

1. [Who would the customer service department notify within your utility of a reported taste or odor complaint? What procedures and protocols does your utility follow during an incident like this?]
2. [In addition to collecting samples, what other initial actions would you initiate at this time?]
3. [What would your operator do when they notice the odor coming from the water when samples are collected?]
4. [What are the worker safety considerations during response to this type of incident?]
5. [Are any notifications made to agencies outside of your utility?]
6. [Would any public notification be made at this time? If so, to whom would this notification go and what would the notification advise? What procedures, protocols and templates exist at your utility for public notification?]

# Module 2: [Complaints Continue]

## Scenario

[May 27, 2017]: [0900 hrs]

[The local health department notes several unusual calls from the Buckhall neighborhood. Callers are complaining of a skunk or garlic-like odor in the tap water, and some are also reporting feeling mild nausea and headache from the odor.]

## Key Issues

* [The jurisdiction of the health department is entirely within the utility’s service area and covers approximately 80% of the service area.]
* [The local health department has key information that the utility would want to know.]
* [Customer complaints continue to come into the utility from the Buckhall neighborhood.]

## Questions

Based on the information provided, participate in the discussion concerning the issues raised in Module 2. Identify any critical issues, decisions, requirements or questions that should be addressed at this time.

The following questions are provided as suggested subjects that you may wish to address as the discussion progresses. These questions are not meant to constitute a definitive list of concerns to be addressed, nor is there a requirement to address every question.

1. [What actions are taken by the local health department? What working relationship has your utility established with your local health department?]
2. [What established procedures would your local health department use to investigate the potential exposures?]
3. [Who would your local health department notify and what information would it provide?]
4. [What actions would your utility take if notified by the local health department of potential exposures that may be due to contaminated water?]

# Module 3: [The Contamination Source is Identified]

## Scenario

[May 27, 2017]: [1100 hrs]

[By interviewing homeowners and businesses in the Buckhall neighborhood, the utility operator and supervisor learn that the skunk-like odor reported by residents reminds them of the odor they sometimes detect in the air after lawn care professionals have been in the neighborhood. Both an ABC Lawn Care truck and a Fly-by-Night Lawn Care truck were spotted connected to fire hydrants early in the morning. This did not seem unusual to the residents at the time, as the companies care for several yards in the neighborhood, and ABC Lawn Care has a contract to maintain the town’s park and playground in the neighborhood. The operator and supervisor call back to their office, but no hydrant permit has been issued for Fly-by-Night Lawn Care in the last two weeks.

Utility staff calls Fly-by-Night Lawn Care, and an employee there admits he did not obtain a permit to use the hydrant in Buckhall, and directly connected to the hydrant without a town-issued fire hydrant meter assembly. He did use backflow prevention, but the device has not been maintained or inspected. The worker had been using the hydrant to add water to a 300-gallon tank to dilute malathion, an insecticide. The utility operator and supervisor determine that unintentional backflow is probably the most likely cause for the odor complaints in the neighborhood.

## Key Issues

* [In total, it appears that twenty-nine residences and six businesses were impacted by the contaminant.]
* [Receiving a definitive analytical result for malathion in drinking water may take some time.]
* [There are color change tickets that can screen for organophosphates, which will change colors if malathion (or any other organophosphate) is present.]
* [Any concentrated malathion should be handled by HazMat teams, as skin contact can be hazardous.]

## Questions

Based on the information provided, participate in the discussion concerning the issues raised in Module 3. Identify any critical issues, decisions, requirements or questions that should be addressed at this time.

The following questions are provided as suggested subjects that you may wish to address as the discussion progresses. These questions are not meant to constitute a definitive list of concerns to be addressed, nor is there a requirement to address every question.

1. [What investigative and response procedures are in place at your utility? How can these be changed as the situation evolves?]
2. [How are these procedures modified by the holiday weekend? What backup staff is in place?]
3. [What other response actions would your utility take now?]
4. [Given that your local public health department is already involved, how would your utility coordinate investigation and response actions with the local health department?]
5. [What water use advisory would your utility issue?]
6. [What actions, operational changes and water use advisories would your utility implement based on rapid field testing results?]
7. [How would water customers be notified and updated as your utility receives more information about the contamination that has occurred?]
8. [What utility response partner agencies need to be notified and involved in this incident?]
9. [What sampling and analysis procedures are in place at your utility? How are they modified when sampling for unknown contaminants? What laboratories (in addition to an in-house utility laboratory) do you rely on for emergency sampling and analysis?]
10. [Which laboratory would analyze the samples? Would they analyze a sample for an unknown contaminant? Are contracts in place for rapid turn-around analysis?]

# Module 4: [Contamination Extent is Determined]

## Scenario

[May 28, 2017]: [1400 hrs]

[Lab results from the samples collected on May 27 reveal concentrations of the insecticide malathion at up to 10.0 mg/L in the impacted area. Malathion is a common insecticide used for residential and commercial purposes in addition to usage in the agricultural industry. There are currently over 1,200 registered products in the United States containing malathion.

According to EPA, the following levels of malathion in drinking water are not expected to cause effects that are harmful to health: 0.2 milligrams per liter (mg/L) for 1 day, 10 days or longer-term exposure for children and 0.1 mg/L for lifetime exposure of adults.

Based on field tests, laboratory analysis, hydraulic modeling and expert operator knowledge, the utility believes the contamination has been isolated to a five-block area of the Buckhall neighborhood. A flushing plan is being developed to purge the malathion from the affected portion of the distribution system.]

## Key Issues

* [Malathion exhibits a “stickiness” to copper and iron pipes.]
* [Malathion does react with free chlorine. Malaoxon is produced but it degrades rapidly.]
* [Flushing of water from the system without additional treatment may pose a threat to the environment due to malathion’s toxicity to wildlife.]

## Questions

Based on the information provided, participate in the discussion concerning the issues raised in Module 4. Identify any critical issues, decisions, requirements or questions that should be addressed at this time.

The following questions are provided as suggested subjects that you may wish to address as the discussion progresses. These questions are not meant to constitute a definitive list of concerns to be addressed, nor is there a requirement to address every question.

1. [What resources does your utility use to find information regarding contaminants for which no maximum contaminant level exists? Is your utility familiar with or registered to use EPA’s Water Contaminant Information Tool (WCIT)?]
2. [Who would your utility work with to evaluate the potential health effects of malathion exposure? Who would establish “safe” concentrations of the contaminant in water?]
3. [What flushing procedures does your utility have? With whom would you consult to potentially modify them for this incident?]
4. [What measures would your utility take to ensure that affected customers within the isolation zone have access to alternate drinking water and fire protection?]

# Module 5: [Contamination is Remediated]

## Scenario

[May 29, 2017]: [0800 hrs]

[The utility implements a flushing protocol in the area suspected/confirmed to have been contaminated to remove the affected water from the distribution system. The mains will be flushed for three to six pipe volumes, but it is uncertain if some of the pesticide may remain “stuck” onto pipe walls. Internal water fixtures of the impacted residences and buildings will require flushing as well, and water using appliances (e.g., ice and coffee makers) must be replaced.]

## Key Issues

* [All residences and businesses have been notified of the identity and extent of the contamination.]
* [The entire plumbing systems of several residences and businesses were contaminated during the incident.]
* [Untreated water containing malathion that is removed from the system via flushing may pose a threat to the environment due to malathion’s toxicity to wildlife.]

## Questions

Based on the information provided, participate in the discussion concerning the issues raised in Module 5. Identify any critical issues, decisions, requirements or questions that should be addressed at this time.

The following questions are provided as suggested subjects that you may wish to address as the discussion progresses. These questions are not meant to constitute a definitive list of concerns to be addressed, nor is there a requirement to address every question.

1. [How will the flushed water be handled? Can it be discharged to the sanitary or combined sewer? Will treatment, including dechlorination, be required prior to discharge?]
2. [Who can your utility turn to for technical expertise regarding malathion? Where can your utility turn to locate additional staff to assist with the flushing operation?]
3. [What are some ways your utility could find the additional treatment chemicals if needed to properly dispose of the flushed, contaminated water?]
4. [How will the wastewater treatment plant be engaged in decisions about how to handle the flushed water?]
5. [How would your utility be cleared for resumption of normal operation and use by the public?]
6. [What course of action would be considered if the contaminant remained in the distribution system at unacceptable levels after the extensive flushing (i.e., because it adhered to pipe walls and plumbing fixtures)?]

# Appendix A: Exercise Schedule

**Note:** Because this information is updated throughout the exercise planning process, appendices may be developed as stand-alone documents rather than as part of the SitMan.

| Time | Activity |
| --- | --- |
|  | **[Month Day, Year]** |
| 00:00 | Registration |
| 00:00 | Welcome and Opening Remarks |
| 00:00 | Module 1: Discussions |
| 00:00 | Break |
| 00:00 | Module 2: Discussions |
| 00:00 | Break |
| 00:00 | Module 3: Discussions |
| 00:00 | Lunch |
| 00:00 | Module 4: Discussions |
| 00:00 | Break |
| 00:00 | Module 5: Discussions |
| 00:00 | Hot wash |
| 00:00 | Closing Comments |

# Appendix B: Exercise Participants

| Participating Organizations |
| --- |
| **Federal** |
| [Participating organization] |
| [Participating organization] |
| [Participating organization] |
| **State** |
| [Participating organization] |
| [Participating organization] |
| [Participating organization] |
| **[Jurisdiction A]** |
| [Participating organization] |
| [Participating organization] |
| [Participating organization] |
| **[Jurisdiction B]** |
| [Participating organization] |
| [Participating organization] |
| [Participating organization] |

# Appendix C: Relevant Plans

[Insert excerpts from relevant plans, policies or procedures to be tested during the exercise.]

# Appendix D: Acronyms

| Acronym | Term |
| --- | --- |
| DHS | U.S. Department of Homeland Security |
| HSEEP | Homeland Security Exercise and Evaluation Program |
| SitMan | Situation Manual |
| SME | Subject-Matter Expert |
| TTX | Tabletop Exercise |
| [Acronym] | [Term] |
| [Acronym] | [Term] |
| [Acronym] | [Term] |
| [Acronym] | [Term] |
| [Acronym] | [Term] |