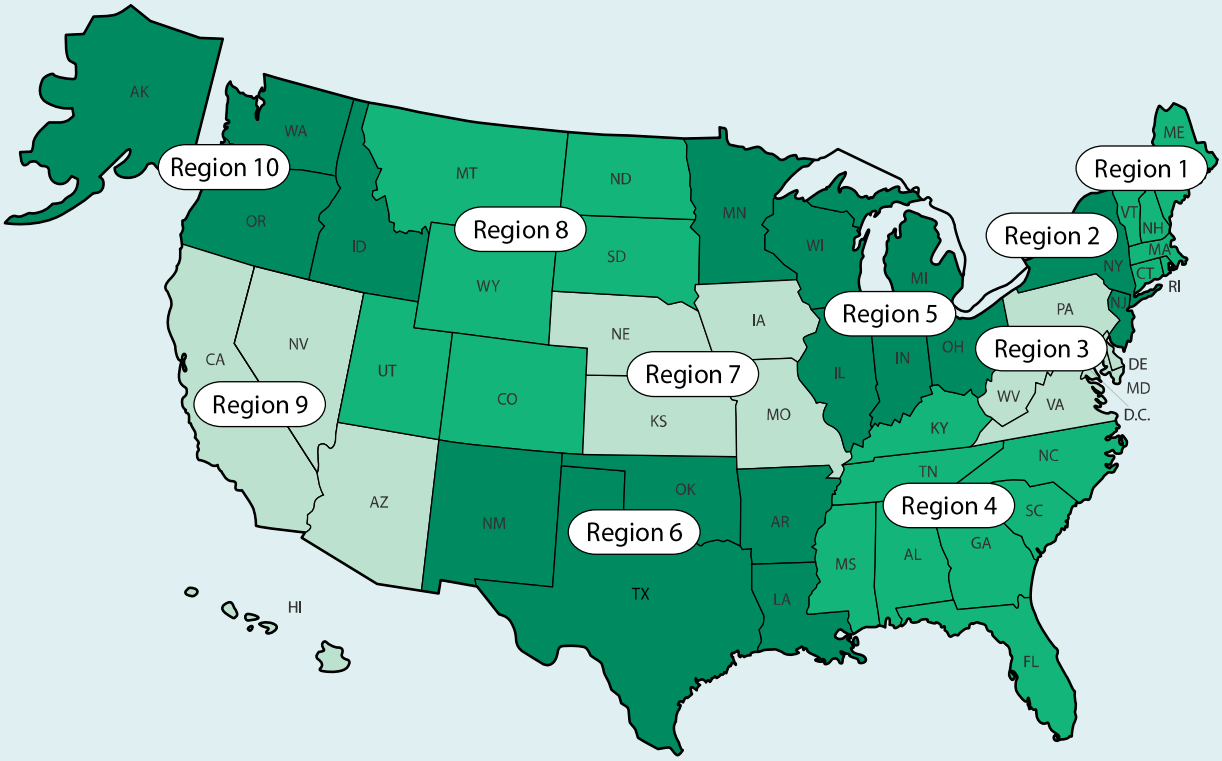
Water Laboratory Alliance - Response Plan

May 2010



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Disclaimer

The U.S. Environmental Protection Agency (EPA) prepared this plan to help laboratories, water utilities, emergency responders, and other local, state, and federal agencies work together to coordinate response to drinking water contamination incidents. This document does not impose legally binding requirements on EPA, laboratories, states, tribes, or the regulated water community. Rather, this plan should be used as needed to coordinate laboratory support for water contamination incidents. EPA may review and update this plan, as needed, to address procedure and policy changes and other evolving needs of the Water Sector. To determine whether EPA has revised this plan or to obtain additional copies, contact Latisha Mapp at mapp.latisha@epa.gov.

Any mention of trade names, companies, products, or services in this plan does not constitute an endorsement by EPA or any non-federal entity, its products, or its services.

Acknowledgments

The U.S. Environmental Protection Agency's (EPA) Office of Water would like to recognize the following individuals for their support in the development of this document:

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Change Control

Section	Change	Changes Made By	Date

Executive Summary

The goal of Environmental Protection Agency's (EPA) Water Laboratory Alliance (WLA) is to provide the water sector with an integrated nationwide network of laboratories with the analytical capabilities and capacity to support monitoring and surveillance, response, and remediation of intentional and unintentional water contamination events involving chemical, biological, and radiochemical contaminants. The WLA is the water component of the EPA's Environmental Response Laboratory Network (ERLN). The ERLN is a network of laboratories which provides analytical capability and capacity for the above contaminants in all environmental matrices.

The Water Laboratory Alliance Response Plan (WLA-RP) provides processes and procedures for coordinated laboratory response to water contamination incidents that may require additional analytical support and a broader response than a typical laboratory can provide. The WLA-RP is designed to work within existing Incident Command System (ICS) structures and procedures. This plan may be adopted by the EPA Regions to replace their existing Regional Laboratory Response Plans (RLRPs). These RLRPs were developed for each region in cooperation with drinking water utilities, state public health laboratories, state environmental laboratories, emergency response personnel, and other experts. Functional Exercises were conducted in 2008 to test each of the RLRPs and the lessons learned from the Functional Exercises and the common elements of the RLRPs provided the basis for development of this draft WLA-RP. The WLA-RP provides a consistent, national approach to coordinated laboratory response to water contamination events and eliminates the need to maintain separate RLRPs. The WLA-RP is intended for use in small incidents requiring support from a single laboratory to multi-regional incidents supported by many laboratories.

During a natural disaster, terrorist event, or accident affecting the water sector, a large number of environmental samples will be generated, likely overwhelming the capacity and/or capability of any individual laboratory to provide sufficient analytical support. This plan does not obligate laboratories to provide support in such an event, but rather provides a consistent approach to how water utility, state, and EPA Regional laboratories should work together to meet the need for analytical support. This plan should not be construed to supplant or subordinate existing legal authorities, but rather should be used as needed to coordinate laboratory support for water contamination incidents.

Note: The WLA-RP is a living document and will be reviewed and updated as needed to address procedure and policy changes and other evolving needs of the water sector.

Section 1.0 Introduction

1.1 Scope

The Water Laboratory Alliance Response Plan (WLA-RP) addresses water contamination incidents that, due to their suspected cause or size, may require additional analytical support and a broader response than a typical utility, state, or federal laboratory can provide. The WLA-RP is intended for use in responses on a regional and multi-regional scale. The guidance and procedures discussed in the WLA-RP are also applicable to smaller multi-laboratory responses, and many aspects of the plan regarding sample analysis, sample tracking, data review and data transfer can also be applied to single-laboratory responses.

A laboratory's participation in a specific incident is at the discretion of the individual laboratory's management and will normally require consultation with higher level management in the parent organization before the laboratory can commit to providing analytical support. The WLA-RP addresses actions to be taken by the responding laboratories early in an incident. Once an Incident Command System (ICS) is stood up, the plans and operations of the ICS may supplant those in this WLA-RP. Although overall coordination during an incident response will be directed by the appropriate party (e.g., Laboratory Coordinator under the Environmental Unit) as part of the ICS, the WLA-RP procedures may still be used to coordinate laboratory support under the direction of the ICS.

ICS is a flexible and scalable system driven by the tactical needs of an incident. It provides a common structure and terminology that facilitates the integration and coordination of multiple agencies while still maintaining a chain of command. ICS also provides pre-designated leadership positions, specific span of control, and well-understood assigned responsibilities. For more information, please refer to the EPA Incident Management Handbook (2007 edition) or the Federal Emergency Management Agency (FEMA) training site at: http://www.fema.gov/about/training/index.shtm. Appendix O provides general information on the ICS.

If a contamination event occurs that is beyond the analytical capability or capacity of the initial responding laboratory, the WLA-RP may be used for a coordinated multi-laboratory response. The WLA-RP provides procedures for a coordinated response to water contamination incidents that threaten public health and safety. This plan assumes that samples are analyzed to identify unknown contaminants, and to determine the extent of contamination, the success of remediation efforts, and when the system can be returned to service. Samples may also be collected and analyzed as part of a criminal investigation. Support that may be provided under the plan includes:

- Analyses
- Consulting
- Data review, reporting, transmission, and exchange
- Reagent exchange
- Sample storage and brokerage
- Training
- Coordination / communications with other entities
- Assumption of other support laboratories normal workload
- Staff exchange (laboratories should be aware that legal issues, such as overtime and liability regulations, may limit this support)

Recommended roles and responsibilities of laboratories during a response are described in this WLA-RP. However, these designations are not intended to supersede those dictated by state, agency, or department statutory authorities.

For example, this plan does not supersede reporting and other notification requirements already in place between water utilities and state primacy agencies.

This plan is not intended to pose additional requirements or burdens on the participating laboratories, but to establish an approach for coordination during an event and increase consistency to the extent practical across existing capabilities and procedures. It is strongly recommended that the guidelines provided in this document be followed for all responses. For some larger scale incidents (e.g., incidents where WLA member laboratories are providing support under contract to EPA), laboratories may be required to follow the procedures included in the WLA-RP, especially for evidentiary chain of custody (see Section 3.2.2) and data reporting (see Section 3.5).

1.2 Purpose

The purpose of the WLA-RP is to establish a comprehensive, national approach to laboratory response across a spectrum of activities including preparedness, response, remediation, and recovery for water related incidents. The WLA-RP provides federal, state environmental, state public health and water utility laboratories with a laboratory structure for a systematic, coordinated response to a water contamination incident. Implementation and maintenance of this plan also may identify capability gaps and opportunities for revision of existing standard operating procedures (SOPs) and emergency plans.

This plan is intended to support and coexist with other laboratory coordinating programs, such as the Centers for Disease Control and Prevention's (CDC) Laboratory Response Network (LRN), the Food and Drug Administration's (FDA) Food Emergency Response Network (FERN), the United States Department of Agriculture's (USDA) National Animal Health Laboratory Network (NAHLN) and the EPA's Environmental Response Laboratory Network (ERLN). Additional information on these laboratory networks can be found in Appendix R.

1.3 Application

The WLA-RP applies to the local, state, and EPA Regional laboratories that may be requested to provide assistance or conduct analyses in actual or suspected water contamination incidents. This includes the laboratories and utilities which participated in the development and review of the Regional Laboratory Response Plans (RLRPs) for each region.

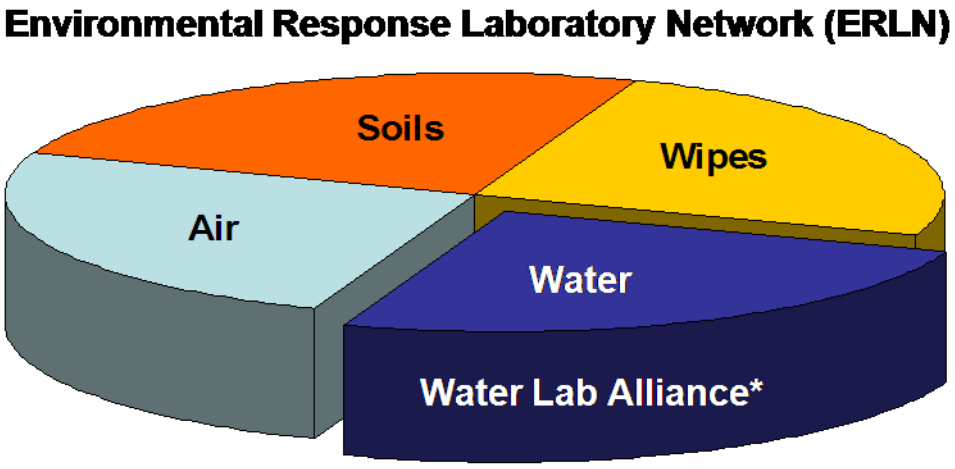
Water contamination incidents may require a coordinated response by an appropriate combination of utility, local, state, and federal laboratories. This plan can be made part of a laboratory's existing response network through notification of the drinking water programs and emergency management agencies. The following parties should be notified of this plan during routine communications with the laboratory:

- State and federal drinking water programs
- State and federal emergency response programs
- State emergency management agencies
- Agency management

1.4 Relationship of the EPA Water Laboratory Alliance (WLA) and the Environmental Response Laboratory Network (ERLN)

EPA is developing the ERLN to address analytical capability and capacity for response to environmental contamination events. The ERLN will be coordinated with other national laboratory networks through the Integrated Consortium of Laboratory Networks (ICLN). The ERLN will have the capacity to analyze samples for chemical, biological, and radiological agents in all environmental matrices; will include federal, state, and private sector laboratories; and will incorporate many of the network infrastructure elements (e.g., laboratory types, proficiency testing, standardized methods) found in the CDC's LRN and FDA's FERN. The WLA is part of the ERLN and provides support and coordination for analyses of water matrices. Figure 1 depicts the relationship of the WLA within the ERLN.

The WLA-RP provides recommended procedures to coordinate local, state, and federal laboratory efforts to meet analytical needs that may result from an incident. The creation and implementation of the WLA-RP will serve as groundwork for the development the WLA and ERLN, by providing a testing ground to address issues such as sample brokerage, analytical method selection, secure data transfer, and legal authority.



***Coordinated by the EPA Office of Water**

Figure 1. Relationship of the WLA to the ERLN

Section 2.0 Laboratory Response Plan Elements

This section of the WLA-RP addresses the following elements:

- Laws and authorities (Section 2.1)
- Minimum qualifications for participation and expectations (Section 2.2)
- Resource management (Section 2.3)
- Planning (Section 2.4)
- Direction, control, and coordination (Section 2.5)
- Quality assurance project plans (Section 2.6)
- Communications and notification (Section 2.7)
- Health and safety (Section 2.8)

The general procedures below apply to laboratory support during emergency response, remediation, and recovery. However, the applicability of any particular element of the plan will be dictated by the specifics of the incident.

2.1 Laws and Authorities

On January 30, 2004, the President signed Homeland Security Presidential Directive (HSPD) 9, *Defense of United States Agriculture and Food*, which directs EPA to develop comprehensive surveillance and monitoring systems for water quality, as well as nationwide laboratory networks for water quality that integrate existing state and federal laboratory resources. HSPD-9 recognizes that surveillance efforts and laboratory support must be coordinated with the states and the nation's 56,000 community water systems, and this Directive forms the basis for the development of the WLA-RP. In addition, the National Strategy for Homeland Security and HSPD-10 assign EPA responsibility for building laboratory diagnostic surge capacity for environmental samples during crises.

Laboratories providing support under the WLA-RP must comply with all applicable state and local laws and authorities. Federal and state legislations, regulations, codes, and authorities relevant to this WLA-RP will be reviewed by EPA when the WLA-RP is updated as part of the biennial review process.

The WLA-RP is intended to comply with applicable legislation, regulations, directives, and policies. Applicable federal authorities include Section 103 of the Clean Air Act, 42 U.S.C. 7403, Section 104 of the Clean Water Act, 33 U.S.C. 1254, Section 8001 of the Solid Waste Disposal Act, 42 U.S.C. 6981, Sections 101(8), 104(a) and 104(b) of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), U.S.C. 9601, the Safe Drinking Water Act, 42 U.S.C. 300f and the Oil Pollution Act of 1990. These statutes provide EPA with authority to undertake cooperative efforts with states to promote the coordination and acceleration of research, studies, and other activities relating to the causes, effects, extent, prevention, reduction, and elimination of pollution (with the exception of CERLA which covers response authorities).

Under the *National Response Framework*, EPA has a co-lead role with the Coast Guard for Emergency Support Function (ESF) #10, which specifies the federal response to an actual or potential release of oil or hazardous materials, including certain chemical, biological, and radiological substances considered weapons of mass destruction. In addition, EPA is designated as a support agency to the U.S. Army Corps of Engineers for water infrastructure and safety under ESF #3, which applies to all types of national incidents, including, but not limited to, natural and human caused disasters.

The National Contingency Plan (NCP), in support of the Oil Pollution Act of 1990, established response roles, responsibilities and coordination procedures in response to major discharges of oil or hazardous materials. A key role in the plan is that of the National Response Team (NRT), of which EPA serves as the lead, and describes its roles and responsibilities including planning and coordinating responses to

major discharges of oil or hazardous waste, providing guidance to Regional Response Teams, coordinating a national program of preparedness planning and response, and facilitating research to improve response.

2.2 Minimum Qualifications for Participation and Expectations

To demonstrate capabilities, the plan relies on existing programs that laboratories currently participate in, such as the National Environmental Laboratory Accreditation Program (NELAP), the LRN, the EPA Drinking Water Certification Program, American Association of Laboratory Accreditation Program (A2LA), and the Regional Quality Assurance programs. These programs provide indication and verification of a laboratory's capabilities though their own program requirements. Requirements for laboratory certification will vary from state to state. Decisions regarding the requirements for laboratory support will be incident specific and will be made by the Analytical Services Requester (ASR) or other responsible party. Laboratories are not required to be members of the WLA or the ERLN in order to provide support during an incident. However, if ERLN/WLA member laboratories are called upon to provide support to an incident under contract to EPA, the member laboratories must meet the requirements of the appropriate program.

Laboratories are expected to provide the basic support necessary to implement and regularly review the plan. Additionally, laboratories should register for access to EPA's Compendium of Environmental Testing Laboratories (CETL or EPA Lab Compendium) database (www.epa.gov/compendium) and update their laboratories' capabilities as well as other essential information (e.g., contacts, telephone numbers, etc.) on a regular basis.

2.3 Resource Management

This plan is based on use of laboratories' current personnel, equipment, and supplies that are normally used in day-to-day operations to accomplish current program missions and mandates. Laboratories will follow their existing procedures regarding resource inventory (e.g., reagents, disposables, standards) and are not required to maintain any non-routine stock for emergency use. If a lack of standards or reagents will create an issue, the laboratory should contact the Primary Responding Laboratory (PRL) or ASR to inform them.

Incidents may necessitate the use or provision of emergency response sampling kits. An example sample collection kit is provided in Appendix L for reference. However, laboratories are not required to supply emergency sampling kits.

Laboratories my require access to calibration materials or standards for analyses they do not perform routinely. In addition, laboratories may need additional testing supplies and reagents once their existing supplies are exhausted. Laboratories should address this resource issue using one or more of the following mechanisms:

- Sharing existing inventory information to aid in rapidly locating materials during an emergency
- Working with the state or EPA regional laboratories to procure materials
- Developing relationships with other laboratory networks (e.g., ERLN), academic institutions, or commercial organizations that have large reagent inventories
- Entering into a commercial contract with a supplier

2.4 Planning

The WLA-RP addresses analytical demand during the emergency response, remediation, and recovery phases of a natural disaster, accident, or terrorist incident affecting the water sector. Coordination of likely activities through the WLA-RP can prevent duplication of effort, maximize efficiencies and

effectiveness, improve communication, and increase analytical support. Laboratories are encouraged to increase awareness of the WLA-RP through notification and discussion with the state drinking water programs and emergency management agencies.

A review of this plan will be performed every two years and updates to the plan will be made as necessary to ensure that it meets the needs of the water sector. The EPA Water Security Division (WSD) will be responsible for leading the review of the plan and updating the plan as needed. All changes made to the plan will be tracked in the change control table at the beginning of this plan. To access the current version of the plan, laboratories should go to the WLA Web page at: http://cfpub.epa.gov/safewater/watersecurity/wla.cfm. The plan review should include consideration of the following:

- Lessons learned from recent incidents and exercises
- Regulatory changes
- New potential hazards or changes in existing potential hazards
- Major resource or organizational structure changes
- Infrastructure or laboratory guidance changes
- Funding or budget-level changes
- Changes in other laboratory organizations (e.g., LRN, FERN, etc.)
- Changes in documents and Web resources cited in the plan
- Changes in address and contact information for participating laboratories

2.5 Direction, Control, and Coordination

Direction, control, and coordination of collaborative laboratory support under this plan follow ICS and include the designation of a Primary Responding Laboratory (PRL) and Mutual Support Laboratory(ies) (MSLs) as the line of support and coordination. The PRL is the laboratory that first agrees to provide analytical support for a water contamination event when asked by the ASR. However, if the laboratory that first provides initial support is not qualified to serve as the PRL, this role may be transitioned to another laboratory (see Section 2.5.3). The ASR may be the first responder (e.g., police officer), Hazmat team leader, state drinking water agency, or utility manager. Although the "selection" of an ASR is outside the scope of this plan, laboratories should work with the requester to ensure that proper channels and notifications have been followed prior to request and engagement of laboratory support. If the PRL does not have the capability and/or capacity to fully address the analytical needs presented by the water contamination incident, the PRL in consultation with the ASR will contact other laboratories for assistance. The PRL should get the ASR approval before engaging any laboratories to act as MSLs. Those laboratories agreeing to provide assistance are referred to as MSLs. The PRL will direct sample brokerage, coordination of analytical issues and quality assurance (QA) requirements, and routing of MSL results to the ASR. The PRL will interface directly with all MSLs and the ASR.

An ICS should be implemented for all emergency response incidents. The WLA-RP is designed to function under the ICS structure, which is a standardized system used to organize all of the management functions necessary to respond to an emergency (the ICS is described in more detail in Appendix O).

2.5.1 Roles

Coordination of laboratory support under this WLA-RP in response to a water contamination incident involves the following roles:

- **Analytical Services Requester (ASR)** – This is the primary point of contact who requests analytical assistance for a water contamination incident from a laboratory. The ASR may be a first responder (e.g., police officer), Hazmat team leader, utility manager, state regulatory authority affected by the incident, or a state drinking water agency. As the ICS sections are put in place, the responsibilities of the ASR may be absorbed by the EU under the planning or operations sections of the ICS. Existing Emergency Operations Centers (EOCs) and Multi-

Agency Coordination Systems (MACS) may also play a role in identification and coordination of resources for laboratory emergency response.

- **Primary Responding Laboratory (PRL)** – The initial laboratory contacted by the ASR that agrees to provide support.
- **Mutual Support Laboratory (MSL)** – Laboratory that may be engaged by the PRL, should the PRL's resources be insufficient at any point in the process to meet the analytical needs of the incident.

2.5.2 Responsibilities

The ASR has the following responsibilities:

- Contact the laboratory that will serve as the PRL and that will provide analytical services for the incident. The ASR should provide information to the PRL on the incident including site characterizations, potential hazards, and any field screening information.
- Act as the primary decision maker concerning the type, quality, and timeliness of the analytical data required for the response. The ASR may consult with the PRL regarding the various analytical options available to provide the type of data requested.
- Direct sample collection and distribution to the PRL and MSL(s) as appropriate. Communicate any information from the support laboratories to the samplers regarding requirements for sample volumes, preservation, shipping and storage, need for personal protective equipment, etc.
- Coordinate with other organizations that may have information relevant to the incident, such as clinical laboratories and public health departments, and ensure that this information is communicated to the PRL.
- Inform the PRL of requirements for data turnaround, data format, sample and record retention, and sample storage.

The PRL has the following responsibilities:

- In consultation with the ASR, develop an initial analytical strategy based on Section 3.3. Depending on the information available from the ASR, the PRL may involve other laboratories in developing the strategy. [See the Response Protocol Toolbox – Module 4 for additional information: http://www.epa.gov/safewater/watersecurity/pubs/guide_response_module4.pdf]
- Provide coordination and follow direction from ICS.
- Provide sample collection staff to the ASR (if appropriately trained staff are available), or guidance and information regarding collection, preservation, and shipment of samples. The PRL should provide the ASR or sample collection staff with specifications regarding minimum field data elements, sample container and preservation guidance, sample shipping conditions, need for personal protective equipment, and cautions regarding potential release of data in response to Freedom of Information Act (FOIA) requests (see Appendix P) or other legal authorities.
- As needed, identify and engage laboratories as approved by the ASR with appropriate expertise to function as MSLs in order to meet the analytical demands of the particular phase of the incident. For example, for potential biological contamination, LRN laboratories may be engaged during the triage phase to perform pathogen analyses. During the remedial investigation phase, several MSLs may be needed to provide adequate capacity to determine the extent of contamination by a particular agent. MSL support to an incident could also include expert advice on selection of appropriate methodology and peer review of data, in addition to analysis of samples. The PRL may elect to use other assets, such as commercial laboratories, if the circumstances of the response effort require this approach. The PRL may use the CETL or other federal, regional, state, or local resources to identify laboratories that have the capabilities to provide support.

- Act as a communications conduit between MSLs and the ASR as the situation develops and samples are collected. In this capacity, the PRL sample coordinator ensures that samples and field data are appropriately routed to the correct laboratory (sample brokerage is discussed further in Section 3.2.1) and that the laboratory has the necessary information to correctly analyze those samples as soon as possible. Frequent and complete exchange of communication is key to ensuring a coordinated response (see Section 2.7). The ASR may request that the MSLs provide data directly to the ASR, rather than routing it through the PRL.
- Coordinate collection and compilation of data from MSLs and report back to the ASR. Depending on the phase of an event, reports may be sent to the ASR as data from the PRL and/or MSL(s) become available. The PRL may also be responsible for consolidating and performing basic quality checks on MSL data prior to forwarding the data on to the ASR (discussed further in Section 3.5). The MSLs may provide data compilation and data review. The PRL is also responsible for obtaining special instructions from the ASR regarding data release and records maintenance, retention, and destruction. The ASR should be advised that various state laboratories may function under different FOIA requirements.
- In addition, the PRL may provide analytical support. This support would typically be during the initial phases of the response when rapid identification of the unknown is required, but may also include the remedial phase.
- Additional support may include:
    - Analysis
    - Consulting
    - Data review, reporting, and exchange
    - Reagent exchange
    - Sample storage
    - Training

MSLs have the following responsibilities:

- Follow direction from the ASR/IC or other ICS authority (e.g., EU Laboratory Coordinator)
- Rapidly assess available resources and provide timely realistic assessment of available support
- Meet commitments to the PRL (e.g., analyses, data review, sample storage)
- Consult with PRL as changes occur and analytical information becomes available
- Support provided may include:
    - Sample collection
    - Analyses
    - Consulting
    - Quality control
    - Data review
    - Reagent exchange
    - Sample storage
    - Training
    - Staff exchange

In addition to providing analytical support directly related to the incident, MSLs may provide support by assuming part of the PRL or other MSLs normal workload to create capacity at those laboratories to provide direct incident support.

Laboratories may refer to the Checklist and Quick Reference Guide for Providing Laboratory Support during a Drinking Water Emergency Response for high-level guidance on laboratory support activities and references to appropriate sections of this plan for further information (Appendix B).

2.5.3 Incident Command System (ICS)

For smaller-scale incidents and the early stages of a larger incident, management functions might be handled by one person, the incident commander (IC). In this case, the IC will serve as the ASR. The ASR or IC will serve until the requirements of the event move beyond the scope of their expertise (e.g., scale of incident escalates, contamination is confirmed, or remediation and recovery begins), at which time the role of the ASR or IC will be transferred to another individual or organization, as appropriate for the situation (e.g., for hazardous materials incidents or oil spills, the role of the ASR or IC may transition to an EPA On-scene Coordinator (OSC)).

As the incident develops and operational requirements warrant, the ICS may be expanded to address the scope and size of the event and provide the IC with supporting staff according to a standardized, well-understood management structure. If the incident is of sufficient complexity, the IC may activate an Environmental Unit (EU) within the planning section of the ICS to facilitate environmental data management, monitoring, sampling, analyses and assessment, which would include the efforts by the labs. A list of the EU personnel involved in coordinating the laboratory response to a water contamination incident and the highlights of their duties are provided as follows:

- **Laboratory Coordinator**: identify and reach out to available laboratory resources, set priorities for laboratory analyses, and coordinate lab resources with other agencies
- **Analytical Coordinator**: schedule environmental sample analyses, maintain laboratory contacts, maintain sample and data chain-of-custody, and provide analytical reports to the IC and EU
- **Quality Assurance Coordinator**: review and approve quality assurance project plans (QAPPs) and standard operating procedures (SOPs), supervise data review and validation, and resolve QA issues
- **Sampling and Monitoring Plan Coordinator**: develop and review the sampling plans, sampling procedures, and QAPP

The EU roles listed above may be played by a single person or multiple people, depending on the complexity and demands of the incident. In addition to the EU roles listed above, there may be other EU personnel involved with the laboratory response to a water contamination incident. For a complete list of EU personnel and descriptions of their responsibilities, please refer to the EPA Incident Management Handbook (2007 edition).

After the EU is implemented, the ICS may continue to use the structure and roles set up by the WLA-RP for coordination of laboratory support. The PRL may interface directly with the appropriate personnel under the EU, or the EU may replace the PRL coordination / sample brokering role and coordinate directly with all laboratories providing support to the incident. In this case, the PRL could continue to provide analytical services as a support laboratory. A schematic of the relationship of the ASR, PRL, and MSLs, and how this may be integrated into an expanded ICS, is provided in Figure 2.

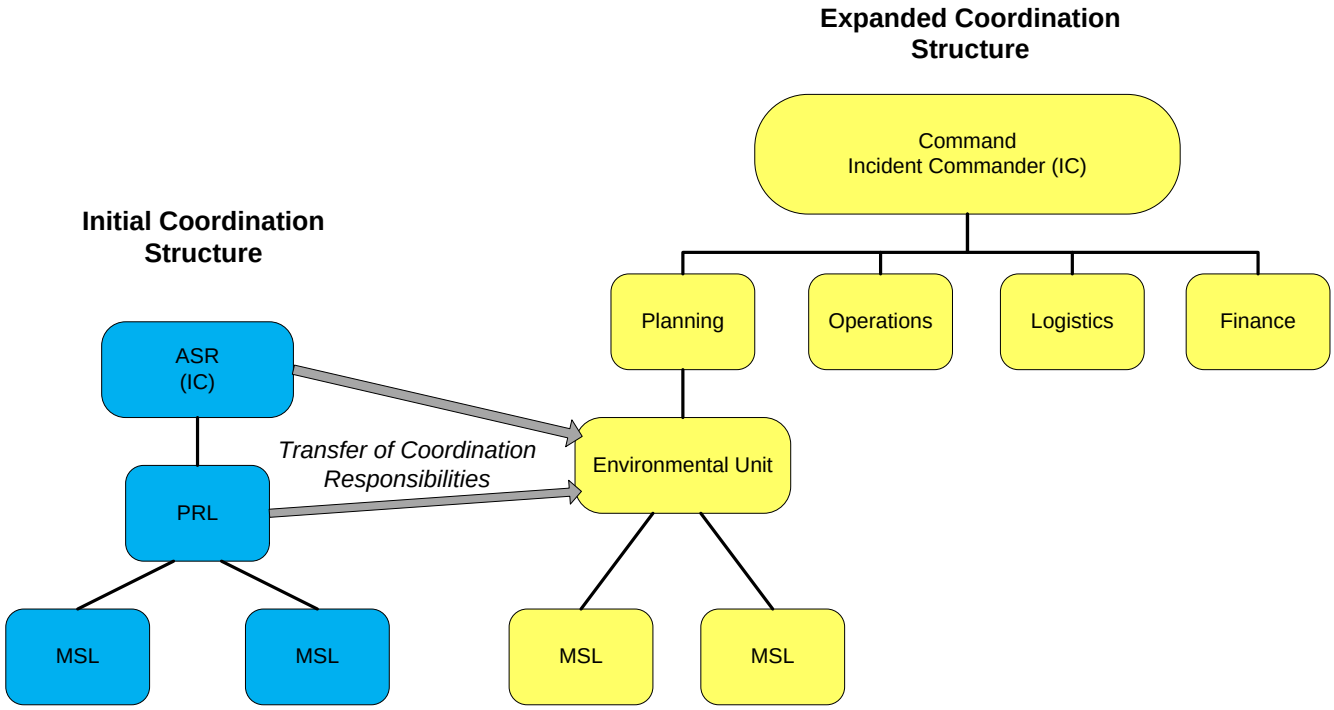


Figure 2. General Relationship of Laboratory Response Participants

2.5.4 Transfer of Responsibilities

Depending on the evolution of the response to an incident, the PRL may determine that transferring this responsibility to another laboratory or functional position within an ICS EU is appropriate. This may be necessary if the scope and scale of the incident exceeds the resources and capabilities of the PRL (e.g., personnel issues, instrumentation problems, sample capacity exceeded), or the PRL's operations are impacted by the incident. If this transfer is necessary, the PRL will coordinate with the MSL(s) to identify the issues, responsibilities, and materials that would need to be addressed to implement this change. Actions that will need to be taken by the PRL when transferring its role to a new laboratory include:

- Coordinating with ICS
- Notifying the ASR of the need to transfer the PRL role
- Providing necessary background information about the incident to the new PRL using the Help Sheet for Requesting Analytical Support during Water Emergency Response (Appendix C)
- Notifying the MSLs of the change in PRL
- Completing any ongoing sample analyses
- Arranging for any remaining samples to be transferred to another laboratory, as appropriate
- Providing all data generated in support of the event to the new PRL

Similar to the PRL, an MSL may decide that it can no longer provide support to an incident. The MSL should inform the PRL or functional position within the ICS EU if support can no longer be provided. The PRL should work with the MSL to ensure that all necessary information is provided to a new laboratory that is taking over the MSL role, and that any remaining samples are transferred to the new laboratory. The MSL should complete any ongoing sample analyses and report any data already generated to the PRL. If the MSL is a subcontractor to the PRL, the PRL will be responsible for enforcing contractual requirements and determining if transfer of responsibilities to a new MSL is necessary.

2.5.5 Multi-Regional Incident Coordination

For larger incidents or incidents that require specialized laboratory capabilities (e.g., analysis of chemical warfare agents), it may be necessary to request assistance from laboratories outside of the EPA Region where the incident initially occurred. In this case, the following procedure should be used:

1. The ASR/EU/PRL contacts their EPA Regional Laboratory Director regarding the need for assistance from other EPA Regions.
2. The EPA Regional Laboratory Director would then contact their counterpart(s) in another EPA Region(s) to request assistance.
3. The assisting EPA Regional Laboratory Director may provide direct support (e.g., analyses performed at the Regional Laboratory) or request assistance from other laboratories located in their Region.
4. The EPA Regional Laboratory Directors from the requesting and assisting Regions should come to an agreement regarding how laboratory support from the assisting Region will be coordinated.

2.5.6 Data Ownership

Generally, the ASR will be the owner of the data generated by laboratories participating in a response under the WLA-RP. Data will be released to the ASR through the PRL, in accordance with the analytical laboratory's existing policies and procedures governing data reporting (e.g., provision of original data or copies of the data). Laboratories participating in the WLA-RP will not release data to anyone other than the PRL or ASR, unless there are specific circumstances requiring the laboratory to do so. Circumstances that may require the laboratory to release data may include FOIA requests and state mandates. Any information shared with laboratory management should not be released to parties outside the laboratories.

2.6 Quality Assurance Project Plans (QAPPs)

The QAPP is a document that describes specific analytical considerations that need to be addressed in the event that there is an emergency drinking water response. QAPPs typically include information on the background of the project, scope and application, project organization (which lists all key personnel, sampling, and analytical specifications), Quality Assurance (QA)/Quality Control (QC) checks, and method verification. Since the laboratory performs a support service, it is not responsible for writing the QAPP. However, the laboratory can be an important resource for analytical information during development of the QAPP. Laboratories should be aware that although a general or generic QAPP may be used during the initial phases of an emergency response, a more complex one will likely be necessary during recovery and remediation. Laboratories are advised to request a copy of the QAPP if one has been developed. The ICS EU QA coordinator is responsible for reviewing and approving the QAPP. A template for a Short Form Quality Assurance Project Plan is included in Appendix N.

2.7 Communications and Notification

Communications should follow the ASR/PRL/MSL structure described in Section 2.5. Laboratories should maintain a list of primary through tertiary contacts, including a duty or 24-hour line, if available, and physical (delivery) and Web site addresses. This information should be updated in the CETL quarterly.

Communication among the laboratories will generally be limited to the primary point of contact (POC). The participants of this plan acknowledge that discussions about the analytical strategy will be documented in writing. In the event that the primary POC becomes unavailable at the PRL or MSLs, laboratories need to coordinate internally to ensure that back-up contacts are kept informed throughout the lifecycle of the event to avoid lapses in ongoing, rapid support.

Laboratories should note that the PRL POC may require routine updates or conference calls amongst the laboratories if the response continues for a prolonged period. This communication may include a planning call with the MSL(s) to prepare for any conference calls with the ASR or applicable EOC, and a call

afterwards to update the MSL(s). The PRL and MSL(s) should communicate health and safety issues as soon as preliminary data become available. It is good practice to document the issues that were discussed and follow up with an email summary of the information (see Section 2.7.1).

If samples are law enforcement sensitive, this information needs to be communicated to all involved parties at the beginning of the event. The samplers will need to use appropriate techniques, including sample custody tape, if required, and enhanced internal chain-of-custody documentation. The PRL should ask the MSL if it will be able to provide enhanced, internal, laboratory chain-of-custody tracking. **For more information on internal laboratory chain-of-custody requirements for potential or actual criminal investigation samples, see Appendix I.**

Decisions should be made at the beginning of an incident regarding how communications with parties that are outside of the laboratory support structure will be handled. In general, these communications will be routed through the ASR/PRL/MSL notification and reporting structure, and information should not be provided by the laboratories to outside parties. Laboratories may need to communicate with other organizations during an incident response to make necessary notifications and share information. These organizations will vary between incidents, but may include:

- Hospitals and clinical laboratories
- Local and state public health agencies
- State drinking water agencies
- Local, state, and federal law enforcement
- The Department of Homeland Security
- Neighboring water systems

In many situations, an IC may appoint a designated public information officer (PIO) responsible for all communications with the press and public. Each laboratory must follow their own local, state and federal guidelines for communications with the press and the public. There also may be a Liaison Officer (LNO) that is responsible for coordinating with other agencies and organizations providing support to an incident.

In some cases, communications may occur outside the structure chosen by the ASR. Although laboratories acknowledge that such communications may need to occur, laboratories **shall** always notify the PRL and/or the ASR beforehand. Exceptions to the communication structure include:

- FOIA requests or "sunshine" laws
- Program requirements (e.g., LRN)
- Management requests
- Political pressure (e.g., governor)
- Law enforcement (in some circumstances)

Laboratories may use the following forms (or similar forms currently used by the laboratory) to aid in communications during an incident:

- Checklist and Quick Reference Guide for PRL and MSL Response during a Water Emergency (Appendix B)
- Help Sheet for Requesting Analytical Support during Water Emergency Response (Appendix C)

2.7.1 Communications Logistics

Laboratories participating in a response should establish procedures for how emergency calls and calls to the POC for the incident will be handled, how they will be forwarded, and how after-hours calls will be addressed. The laboratory should establish procedures for transferring authority within the laboratory during the incident to ensure that they can continue to provide efficient incident support. These procedures should include notification to the ASR or PRL that the laboratory's POC has changed. Responding laboratories should consider setting up a laboratory specific command center during the

response that will serve as their headquarters for managing the incident. Ideally, the command center will have multiple phone lines with voice mail, computer access, and a fax machine. The command center should be staffed by the following, as needed:

- Laboratory's POC
- Back-up POC
- Clerical/phone support
- Quality Assurance Officer (QAO)
- IT Support
- PIO

See the Command Center and Ongoing Communications section of Appendix B for activities coordinated by the Command Center.

The Help Sheet for Requesting Analytical Support during Water Emergency Response (Appendix C) and the Incident Communications Tracking Form for Laboratories (Appendix D) may be used by the laboratories to facilitate the communication of information necessary for a laboratory to provide support during a drinking water contamination incident. This help sheet is divided into two parts: the first part is for documenting communication between the ASR and the PRL, and the second part is for documenting communication between the PRL and MSLs. These forms can be completed electronically, and laboratories may wish to send the completed help sheet to the appropriate MSLs (via a secure means) to ensure that the laboratories have all needed information. In addition to using the help sheets, other activities the laboratories should undertake to ensure efficient communication during a response could include:

- Maintain communication logs to document all communication related to the incident
- Email follow-up after phone conversations/conference calls to document information that was provided, decisions that were made, and any follow-up action items
- Confirm receipt of data sent electronically through a follow-up secure fax, email, or phone call
- Provide written status reports or daily briefings to keep all the participants in a response informed
- Designate a single person in charge that handles all information coming into and out of the laboratory
- Maintain a designated phone line and have someone to man the line at all times
- Consider establishing a secure portal for posting and transfer of data and other incident related information

2.8 Health and Safety

During an event which requires activation of the WLA-RP system, samples may be collected that are of unknown contamination type, and are the results of an intentional contamination activity. The ASR and PRL should provide all information available regarding potential sample hazards to the support laboratories receiving samples. Laboratories may elect to reject samples suspected of containing contaminants which may be hazardous to laboratory personnel. If a laboratory chooses to accept samples, the laboratory management and personnel should be familiar with the protective measures required if a sample is considered an unknown and/or law-enforcement sensitive. For unknowns, elevated levels of personal protective equipment (PPE) should be worn by field and laboratory teams that come in contact with the sample.

Section 3.0 Operations and Procedures

This section of the plan addresses the following:

- Sampling (Section 3.1)
- Sample brokerage, tracking, and transport (Section 3.2)
- Analysis (Section 3.3)
- Internal data review (Section 3.4)
- Data reporting (Section 3.5)
- Secure data transfer and storage (Section 3.6)
- Analytical data validation (Section 3.7)
- Data interpretation (Section 3.8)
- Record keeping (Section 3.9)
- Training (Section 3.10)
- Exercises, evaluation, and corrective actions (Section 3.11)
- Finance and administration (Section 3.12)

Laboratories should be familiar with all procedures detailed in the WLA-RP, and maintain appropriate SOPs and good laboratory practices to perform these actions.

3.1 Sampling

During the early stages of an event, upon initial contact by the ASR, the PRL may be responsible for gathering critical information pertaining to the nature of the samples to be collected. At this time, the PRL may also provide guidance to the ASR, or directly to field personnel on sampling requirements (e.g., containers, holding times and conditions, chain of custody, health and safety considerations for sample collection, etc.) and development of a sampling plan. Laboratories should follow their existing procedures for sample security and integrity unless otherwise instructed. Laboratories may utilize the Help Sheet for Requesting Analytical Support during Water Emergency Response (Appendix C) to ensure that the critical questions are asked and that necessary information is recorded. Laboratories should also communicate with samplers to discuss the number of samples required, prioritize samples, and alert the member laboratories.

Depending on the information available regarding the nature of the incident, the PRL may contact other laboratories before providing specific sampling guidance. Analytical methods sometimes have specific sample preservation requirements; therefore, it is good practice to confirm what methods are being used and to convey method-specific preservation requirements to the samplers. If the ASR elects to follow the standard PRL/MSL scheme, the PRL is also responsible for passing along the critical information provided by the ASR regarding the nature of the samples to any MSLs that will assist with the analyses. Laboratories should aim for real-time, constant communications between all parties involved in response.

In supporting sample collection, laboratories may also utilize the following resources:

- EPA's Response Protocol Toolbox (RPTB), which provides guidance on sampling and related safety issues (http://cfpub.epa.gov/safewater/watersecurity/home.cfm?progrma_id=8_-_response_toolbox)
- Sampling Guidance for Unknown Contaminants in Drinking Water: http://www.epa.gov/safewater/watersecurity/pubs/guide_watersecurity_samplingforunknown.pdf
- U.S. EPA Sampling Guide for First Responders to Drinking Water Contamination Threats and Incidents (http://www.newwa.org/Links/Research_Orgs.htm)
- Appendix F: Example Field Testing Results Form
- Standardized Analytical Methods for Environmental Restoration following Homeland Security Events (SAM) companion documents (http://www.epa.gov/sam/). These documents provide method-specific sampling guidance regarding containers, preservation, holding time, and

shipping, as well as evaluating site information for EPA priority contaminants. For more information, see Appendix M.

3.2 Sample Brokerage, Tracking, and Transport

Based upon the initial field/safety screening and field investigation information available, the ASR will contact a laboratory to serve as the PRL, according to the procedures described in Section 2.5. If the PRL is unable to perform all of the necessary analyses, the PRL and the ASR will work to contact candidate MSLs to determine whether they have the capability and capacity to accept samples. Before agreeing to provide support, a laboratory should consider the following:

- Capability
- Capacity
- Data turnaround
- Management approval
- Nature of threat
- Level of analysis (i.e., screening or confirmatory analysis)
- Proficiency or certification (if available for the contaminant of concern)
- Availability of funding and/or vehicle for reimbursement
- Required level of internal chain of custody
- Special conditions (e.g., data ownership)
- Number of samples
- Duration of support
- Estimated concentration
- Data quality objectives (end-use)
- Availability of supplies

Acceptance or rejection of samples will be based on individual samples (i.e., a laboratory can accept or reject samples at any time during the lifetime of the event). A laboratory's participation in a specific incident is at the discretion of the individual laboratory's management and may require consultation with higher level management in the parent organization before the laboratory agrees to provide analytical support. If samples are collected, shipped, and/or preserved in a manner that may affect sample integrity, the PRL should notify the ASR as soon as possible. The laboratory should discuss with the ASR the use of the data and possible impacts of sample integrity issues on the validity of any data generated. Consideration of possible impacts on data quality should be weighed against the monitoring objectives (e.g., the need to obtain rapid preliminary identification of the contaminant) before making a decision to accept or reject samples. Any results generated from analysis of samples with shipping or preservation issues should be appropriately qualified. Although sample acceptance (or rejection) is ultimately the laboratory director's or higher level management's prerogative, laboratories should consider the following before accepting samples:

- Sample integrity (i.e., condition)
- Sample packaging and preservation
- Sample volume
- Chain of custody provided
- Minimum documentation provided
- Potential sample hazards
- Field/Safety screening results (e.g., radiation, explosives)
- Law enforcement involvement or requirements
- Special instructions from the ASR
- Availability of additional, identical samples (splits)

3.2.1 Sample Brokerage

Based on the information from field/safety screening and field investigation, the ASR will distribute samples as directed by the PRL to the laboratories providing assistance (the PRL and MSLs, if necessary). Accepting samples does not obligate a laboratory to provide support throughout the life cycle of an incident. Laboratories will need to consider the rate at which samples will arrive so they can accommodate holding time or needed response time. Information on the number, type, and volume of samples and the required data turnaround times should be recorded in a laboratory notebook or the Form Requesting Analytical Support during a Water Emergency Response (Appendix C). In the event that an MSL determines it can no longer provide analytical support, the MSL manager or designee should contact the PRL to request that sample shipment be stopped. If samples are in route to the MSL, a mutually agreeable plan to ship samples to the PRL, ASR, or another MSL will be developed. If samples are received, but the laboratory subsequently determines it does not have the required capabilities for analysis, the samples will be rerouted by the PRL or ASR. Note: This plan assumes that most laboratories are participating on a voluntary basis. Laboratories participating under a contract may not be able to refuse samples, depending on the terms of their contract.

The following items should be considered during sample brokerage:

- **Hazard.** This plan is designed to cover only water samples, and is not intended for hazardous materials or other types of sample matrices. During certain serious situations (e.g., time-sensitive public health issues), decisions will be made at a local, state, or federal level regarding how true unknowns will be handled. Water samples with true unknown contaminants will only be shipped to those laboratories with the capability to accept and assess unknown contaminants. Laboratories should consult EPA's CETL to determine all-hazard receipt laboratories and their capability to analyze unknowns. Laboratories with such capability should be advised of the unknown nature prior to sample shipment and agree to accept the samples. Some resources are available (Civil Support Team (CST) and OSC) to perform field screening in order to determine the nature of the contaminant prior to sample shipment. Note: Field screening that can be provided by CSTs is very limited.

- **Matrix.** Laboratories should have procedures for properly separating a contaminant from its matrix. Prepared samples may be sent to another laboratory for analysis, if the laboratory that has separated the contaminant from its matrix (e.g., concentrated or extracted) does not have procedures to complete an analysis. Laboratories should be aware of the impact this may have on data quality.

- **Contaminant type.** Laboratories should be able to perform appropriate methods for the contaminant or contaminant type tentatively characterized and/or identified during field investigation and screening. In addition, certain contaminants (e.g., select biological agents and chemical warfare agents) can only be handled by laboratories with appropriate containment and methods.

- **Level of contamination.** If contamination levels are high, rapid qualitative and quantitative methods may be appropriate for use. For trace level contamination, more sensitive methods may be required. Contaminant levels may be unknown when samples are first analyzed, so the PRL and MSL(s) should agree upon screening and/or confirmatory methods to use.

- **In-house capacity.** The PRL should contact MSLs during the brokerage process to ensure that their stated capabilities and capacities are true at the given moment (e.g., that all instrumentation personnel, and (secure) storage are available). During this process, laboratories will need to consider prioritization of existing and incoming samples requiring analysis (with consideration of sample aging, equipment recalibration, and other issues). Laboratories may also need to ship extracts and/or digestates in certain situations, and should be aware of the possible repercussions on related QC.

3.2.2 Sample Tracking

A chain-of-custody form should be initiated at sample collection. The PRL should establish a standard format for sample identification that can be used for sample tracking, and this format should be conveyed to the samplers and the MSLs. Once samples are relinquished by the field investigation team and received at the laboratory, normal laboratory procedures should be followed regarding chain of custody, unless other procedures are necessary (e.g., evidentiary chain of custody). This chain-of-custody form should follow the sample throughout the process and include information describing when the sample was collected, who has handled the sample, and who was in possession of the sample. If samples are received at the laboratory, but not listed on the chain of custody, laboratories will contact the sampler to obtain the additional information and will document the additional sample(s) through normal lab procedures (e.g., complete a non-conformance document and file accordingly). Existing chain-of-custody forms will be used; however, laboratories should ensure that the chain-of-custody form provided with samples includes the minimum elements necessary through use of the Help Sheet for Requesting Analytical Support during Water Emergency Response in Appendix C. An example chain-of-custody form is provided in Appendix G and a list of minimum data elements is provided in Appendix H.

If samples need to be handled as law enforcement sensitive, the ASR needs to notify laboratories prior to shipping. To ensure that data is protected for evidentiary purposes, it is important that laboratories know or are informed of what is required of the laboratory by law enforcement groups. This may include ensuring that custody tape is intact on sample containers and/or coolers, that the sample is tracked on the chain-of-custody form more closely throughout the sampling and analysis stage, and that the results may need to be shared with law enforcement entities. Good communication with appropriate individuals or organizations will ensure that all necessary criteria are met during an event. Additional guidance on handling criminal investigation samples is provided in Appendix I. WLA and ERLN member laboratories providing support to an incident under contract to EPA may be required to follow the guidelines on handling criminal investigation samples specified in Appendix I. This may also be a requirement for laboratories providing support to the incident under other contract mechanisms, depending on the specifics of the contract.

Laboratories should follow their existing procedures, unless otherwise requested, for intra-laboratory sample transfers, and for identifying and tracking split samples created after sample receipt at the laboratory.

Once a sample has been received by a laboratory, that laboratory may use its own internal tracking procedures, provided the sample can be tracked back to the original sample received and identified by the provided chain of custody. Procedures within a given laboratory may include secure sample storage and sample and extract log-in/log-out forms to document the chain of custody, rather than a single form. Should a responding laboratory ship a split sample, extract, or digestate to facilitate additional analysis at another laboratory, it is essential that each aliquot be uniquely identified (coded) and that the chain-of-custody form reflecting this split of the original field sample accompany it.

3.2.3 Sample Transport

Although it is not expected that the PRL or MSLs will need to ship samples (this is the responsibility of the ASR), the PRL may need to advise the ASR on sample transport issues or ship samples to MSLs if the PRL cannot analyze samples. As such, all laboratories should have personnel trained in shipping regulations. Personnel in charge of transporting samples from the site to the PRL and/or MSLs must ensure that sample packaging is in compliance with U.S. Department of Transportation (DOT) and, if applicable, International Air Transport Association (IATA) regulations regarding the transfer of hazardous substances and environmental samples. These regulations, CFR 49 Parts 171 through 180 for DOT and the Dangerous Goods Regulations (DGR) for IATA, provide specific details regarding proper marking, labeling, use of placards, and packaging and shipment of hazardous materials, substances and wastes, as well as regulatory exceptions. The PRL will also advise the ASR to follow any state

regulations governing these activities. The state drinking water agencies may also be able to provide advice and assistance with sample shipping.

The PRL can refer the ASR to information regarding the appropriate labeling and packaging of sample transport containers at: http://www.myregs.com/dotRSPA/. (This link contains Hazmat tables.) Additional information on transport procedures and training will eventually be available in the companion documents to the EPA National Homeland Security Research Center's (NHSRC) Standardized Analytical Methods for Environmental Restoration following Homeland Security Events (SAM). Laboratories are strongly encouraged to take courses on Dangerous Goods Regulations and Shipping Guidelines for Infectious Substances (if analyzing or shipping biological samples). Information on courses available through IATA can be found at http://www.iata.org/training/cargo/.

3.3 Analysis

Before samples are transported to laboratories from the sampling site, the PRL will need to work with MSLs and the ASR to revise or develop an analytical approach, including QC requirements and internal custody, if required. Unless the ASR and/or PRL requests that the MSL follow project-specific sample preparation, analysis, quality control, data reporting and/or verification procedures, the MSL will utilize its in-house SOPs. It is the responsibility of the ASR and PRL to advise the MSL of any special analytical, quality control, or reporting procedures.

The analytical approach may be divided into three stages: Basic Field/Safety Screening (Section 3.3.1), Rapid Laboratory Analyses (Section 3.3.2), and Confirmatory Analyses (Section 3.3.3). Depending on the nature of the contamination incident and available resources, the laboratory analyses may occur at one or more laboratories. The analytical approach is anticipated to change as the incident progresses. During the initial phases of the incident, the focus will likely be on obtaining results as soon as possible. Rapid laboratory methods will be favored, and reducing QC to decrease data turnaround times may be acceptable. (See Section 3.3.5 for additional guidance on appropriate QC). As the incident progresses to remediation and recovery, the focus of analysis will change. Confirmatory analyses performed using a consistent approach by qualified laboratories performing full QC will be needed. When developing the analytical approach, the requester should be sure to convey the objectives of the monitoring (e.g., initial contaminant detection, determining if clean-up goals have been met) and data turnaround times to the supporting laboratories in order that appropriate methods can be selected. Based on this information, the PRL should work with the ASR to develop an agreed-upon analytical approach.

Laboratories should consider what steps can be taken to reduce data turnaround times, in addition to use of rapid methods and performing abbreviated QC. Laboratories that have already begun sample processing, but cannot complete all necessary analyses, may wish to ship processed samples (e.g., sample extracts, biological isolates) to an MSL for additional analyses. If processed samples are shipped to another laboratory for analysis, this should be documented on the accompanying chain-of-custody form and any impacts on data quality (e.g., holding time violations) should be documented. Laboratories may also prepare standards and calibrate instruments ahead of time to allow sample processing to begin as soon as samples arrive at the laboratory, provided that enough information about the contaminant and contaminant concentrations is known.

Screening analyses do not require the use of a particular procedure; however, there are available procedures for performing screening analyses, such as the All-Hazard Receipt Facility (AHRF) protocol, that should be leveraged by laboratories. Contaminants that may be accidentally or intentionally introduced into drinking water may not fall within the suite of analytes that environmental laboratories typically monitor in drinking water. Environmental laboratories should work with other divisions of their laboratory (e.g., public health division) to utilize their full capability to perform analysis for non-routine contaminants (especially biological contaminants), including use of mass spectral library searches to tentatively identify unknown peaks when using GC/MS and LC/MS. For example, the environmental

section may filter and culture biological samples, and provide the isolates to their clinical laboratory for identification.

As analyses are completed at the PRL or MSL laboratories, the PRL should coordinate the review and reporting of results to the ASR (Section 3.6).

3.3.1 Basic Field/Safety Screening

The earliest stage of analysis is Basic Field/Safety Screening. The purpose of this stage is to provide additional credible information for sample threat assessment; screen for high risk radioactive and chemical warfare agents to protect laboratory personnel and facilities; and to tentatively identify potential contaminants. This screen may occur in the field or at an AHRF, and may include the target parameters, screening techniques, and methods listed in Table 3-1. The EPA CETL and other local or regional resources should be consulted to identify a laboratory with the capability to analyze the samples or to perform analysis of unknowns. If no AHRF is available, the WLA-RP team may need to work to identify other laboratories that can accept the samples for screening and analysis.

It is always incumbent upon the receiving laboratory to review Basic Field/Safety Screening data to assess the hazard a sample may present before the sample is shipped. This information should be conveyed to the laboratory receiving the samples as soon as it is available, and a copy of the field screening information should be shipped with the samples. Samplers should list the PPE used by the field samplers on the chain-of-custody form. If field screening is inadequate, incomplete, or otherwise compromised, the laboratory may require additional screening before acceptance.

Safety screening at the laboratory is termed triage and is conducted in an AHRF, or equivalent high-hazard laboratory area. If a laboratory does not have AHRF capability, the laboratory should consider their ability to handle the samples and any field screening and threat information before deciding whether to accept the samples. No screening techniques for biological agents in drinking water are currently identified in SAM; and as such, true unknown samples should be treated as if they are biologically active if available information suggests that they may pose such a threat. The field screener will communicate results and characterization to the laboratory as presumptive. Samples can be rejected by the laboratory manager or senior staff if accepting the samples could put the laboratory at risk for liability (e.g., health and safety issues, equipment loss). Resources are expected to be available (CST, OSC) during these situations to perform field screening.

Table 3-1. Basic Field/Safety Screening[1]

Target Parameter	Example Methodology
Radiochemical	Ludlum Model 2241-3K
Free Cyanide	Hach Model DR890
pH/conductivity/ORP	Myron Ultrameter 6P
Chlorine residual	Hach Model DR890 Colorimeter
Volatile chemicals	ppbRAE plus photo ionization detector (PID)
VOC(PID), CO, H_2S, O_2	MultiRAE
Chemical Warfare Agents	M272 Water Testing Kit

[1] *The information in this table was developed by the Office of Water in support of the Water Security Initiative pilot.*

In addition to field screening data, any available information on threat credibility should be communicated to the laboratory for sample threat assessment. A credible threat may be indicated by the following:

- Unauthorized individuals present at the site
- Signs of tampering or unusual containers
- Fire or other obvious hazard
- Signs of a potential explosive hazard (e.g., devices with exposed wires)

- Signs of a potential chemical hazard (e.g., dead animals, dead or stressed vegetation, unusual fogs, unusual odors)
- Unusual and unexplained equipment at the site
- Notification that a person or group has made threats to contaminant a water supply (or other target)
- Other signs of immediate hazard

3.3.2 Rapid Laboratory Analyses

In time-sensitive situations, the ASR may request that laboratories perform rapid analyses. This would normally be during the initial phases of an investigation during which public health concerns are paramount. Rapid analysis may be used as an initial screening tool. Examples of rapid laboratory analyses include 'shake and shoot' sample preparation for extractable organics, headspace procedures for volatile organic analytes (VOAs), immunoassays for various classes of compounds, and real-time polymerase chain reaction (PCR) technology methods for biological agents. Until EPA provides national guidance on the use of rapid analytical procedures, laboratories should follow their existing procedures regarding the use of rapid laboratory analyses. Many of these analytical approaches are in common use for other programs where rapid, indicative techniques may be suitable for producing data for real-time decision-making. For information on NHSRC's development of rapid laboratory analyses (companion document to SAM), see Appendix M.

Because some of these tests may not be fully validated "standard" methods and/or may not provide highly accurate quantification of the contaminants in question, laboratories are urged to develop internal QA/QC data to support their use of the procedures and to always report data as "Preliminary Data Pending Confirmation" (see Section 3.4 for more information on the release of preliminary data). Response laboratories should document the QC performed for rapid laboratory analyses, as well as any limitations to the data. The EPA Response Protocol Toolbox, module 4, has additional guidance on basic analytical screening of drinking water samples for general unknowns (http://cfpub.epa.gov/safewater/watersecurity/home.cfm?program_id=8#response_toolbox).

3.3.3 Confirmatory Analyses

Confirmatory methods are used to verify the results of rapid laboratory analyses (if those methods have been employed). For some analytes, the confirmatory method may be sufficiently expedient with full QC procedures to obviate the need for a rapid laboratory analysis, and in some cases may be the only method available for a particular analyte. The methods performed by the support laboratories will depend on the phase of the incident (initial rapid response vs. remediation and recovery) and the capability of the laboratories providing the support. During the response and remediation phase of an event, there is a greater need for consistent and reliable data generation.

To ensure comparability of results, the ASR or PRL should work together to select the appropriate methods to meet the monitoring objective. A list of potential method options, in descending order of preference, is as follows:

1. SAM 4.0 (See Appendix M for more information)
2. EPA Certified Drinking Water Methods
3. Other applicable EPA methods (e.g., SW-846 or 40CFR136 methods)
4. Other methods performed by the laboratories (such as Standard Methods or ASTM)

NHSRC has recently published SAM 4.0, which identifies preferred confirmatory methods. See Appendix M for additional information on SAM and Standard Analytical Protocols (SAPs). However, the methods contained in SAM:

- Do not include structured step-by-step methods for all analytes,
- Have not been validated for all analytes, and
- Many are not specifically applicable to EPA's Drinking Water Program.

Confirmatory methods should be performed by competent, experienced laboratories. It is expected that laboratories will have established SOPs for all of their confirmatory methods, and that those methods will require extensive QC samples/analyses to verify and document the quality of the data, including new analytes added for identification of unknowns. Any laboratory that is accredited under NELAP or A2LA, using NELAC standards or certified under EPA's Drinking Water Certification Program (or and equivalent state or regional program) should be deemed capable of performing confirmatory methods for which it has been accredited, even if the unknown analyte is not one included in their certification/accreditation. Requirements for certification may vary from state to state. Decisions regarding the requirements for laboratory support will be incident specific and will be made by the ASR or other responsible party.

In the instance where all federal, state, and municipal laboratories cannot accept samples, the PRL should contact the appropriate ICS resource to identify non-governmental or commercial laboratories that might be capable of performing those chemical or biological analyses. The qualifications and performance of those laboratories should be evaluated by the PRL or ICS designee prior to use.

3.3.4 Sample Disposal

Disposal of samples should adhere to requester (e.g., ASR) direction. Law enforcement may have forensic needs that, depending on the nature of the incident, may require laboratories to retain samples as evidence. Alternatively, the ASR may request that samples be returned to the ASR for disposal during remediation and recovery. Procedures for sample disposal should be decided upon when a laboratory is first contacted to provide support, if possible. Samples may also be returned to the ASR as a precondition for sample acceptance by the support laboratories. Sample disposal should not occur until the contaminant and concentration is identified. Samples may require autoclaving or other processing (e.g., neutralization, precipitation, or phase separation) prior to disposal.

If disposal is to take place at the testing laboratory through normal procedures, consultation with the responsible Hazardous Waste Coordinator (for chemical agents) or Emergency Medical Services Coordinator (for biological agents) may be required, due to the possibility of introducing a broader range of contaminants into a laboratory's waste stream than may be associated with its normal operations.

3.3.5 Quality Assurance/Quality Control

QC pertains to sample collection, sample analysis, and data reporting. Although sample collection is not under laboratory control, QC during this step is an important consideration during interpretation of analytical results. Laboratories should request sample QC information during preliminary discussions with the ASR.

The level or amount of QC necessary depends on the data quality objectives of the activity, which should be decided by the ASR based on discussion between the ASR and the PRL prior to sample analysis (and preferably prior to sample collection). Reduced levels of QC might be acceptable when rapid data turnaround and initial detection are the goals. When quantitative results are needed to confirm that remediation efforts are successful or the system can be returned to service, more extensive QC will be required. All relevant QC should be performed and documented as agreed by the PRL and MSL, unless unique circumstances prevent the QC. If it becomes necessary to reduce or alter the agreed-upon QC procedures, the PRL and ASR should be notified as soon as possible.

Method QA/QC requirements should be followed, depending on the monitoring objectives, and if time allows. The following is the minimum recommended QC that should be performed for rapid and confirmatory methods (confirmatory methods may require additional QC depending on use of the data) to verify that the method is performing acceptably:

Chemical analytes

- Method blank
- Analytical duplicates/replicates
- Calibration verification
- Laboratory Control Sample (LCS) or Laboratory Fortified Blank (LFB)

Radiochemical analytes

- Calibration check
- Background check
- Duplicate
- Blank

Biological analytes

- Positive control
- Negative control
- Blank

Member laboratories should be prepared with calibrated instruments, appropriate standards, method-specific standard analytical procedures, and qualified and trained technicians. Laboratories should also be capable of providing rapid turnaround of sample analyses and data reporting if agreeing to accept samples for rapid analysis. The ASR should work with the support laboratories to determine if they have sufficient capabilities to provide the required analytical support. MSLs should provide all QC data to the PRL, in addition to a narrative description of observations, tentative identifications, and QC deviations.

3.4 Internal Data Review

During response to a contamination incident, concerns for public health may decrease the time period available for initial laboratory analyses and corresponding data review. If a PRL is required by the ASR to provide data that have not undergone adequate internal verification, but the analysis has been completed, the laboratory will label results as "Preliminary Data Pending Confirmation," with the understanding that confirmed data will follow as soon as they are available. MSLs should report preliminary data to the PRL only. Ideally, preliminary data would only be released by the laboratory performing the analyses during the initial phases of an incident. These results should be accompanied by documentation of the level of QA/QC performed.

Throughout the analytical process, frequent communication between the PRL and the ASR and between the PRL and the MSL(s) is necessary to clarify and negotiate the timeframe required for preliminary and confirmed data. These discussions should include specific expectations on the level of data verification that will occur within the given timeframe.

During the data review process, each laboratory should follow their existing procedures for QA data review and specific laboratory roles for data approval. The overall data generation and reporting process may entail the following steps:

1. Data generation
2. Data reduction
3. Raw data package generation
4. Analyst review
5. Peer review
6. Final data package generation
7. QA review
8. Sign off by lab manager with a statement that analysis have been performed using the proper methodology and proper QA
9. Data release

In addition to the requirements described above, laboratories should ensure the following before reporting results:

- If possible, confirm the presence of contaminants using standardized methods
- Provide appropriate caveats to the validity of data, including any QA/QC issues that may have been observed
- Maintain documentation of all communications and chain of custody
- Report results only to designated authority (MSLs to the PRL; PRL to the ASR)

3.5 Data Reporting

Under the WLA-RP, multiple laboratories may provide analytical support during a drinking water emergency. It is highly recommended that laboratories submit analytical results via an electronic spreadsheet (Excel or other appropriate format) using the columns given in Appendix E. WLA and ERLN member laboratories providing support to an incident under contract to EPA may be required to submit results using the format specified in Appendix E. This may also be a requirement for laboratories providing support to the incident under other contract mechanisms, depending on the specifics of the contract. Laboratories may also need to submit additional data (in hardcopy or electronic format) in order for the ASR/PRL to perform a stage 2 validation. The hardcopy or electronic format for these additional data will need to be agreed upon by the ASR and the PRL.

Laboratories may share data by the following means: submitted via email, posted to a secure Web site, or a hard copy submitted via facsimile (fax). Laboratories also acknowledge that results may be reported via telephone, with a full written report provided as a follow up.

For the purposes of the WLA-RP, the ASR owns the data. See Section 2.7 for outside factors that may require the laboratory to release data to parties other than the ASR or PRL. In these cases, the laboratory should notify the ASR prior to release, if possible.

3.6 Secure Data Transfer and Storage

Laboratories will exchange data through the agreed upon method designated by the ASR [e.g., file transfer protocol (FTP), secure fax, secure email, hand deliver, etc.]. However, on an incident-specific basis, a different method of data exchange may be requested. Data transfer should balance security needs with the need to rapidly transmit data to support an emergency response. In all cases, the PRL should discuss data transfer requirements with the MSL(s) prior to sample analysis. Likewise, the PRL should discuss data transfer requirements with the ASR prior to data exchange. In the long-term, laboratories may adopt a standard data format that is compatible across the Laboratory Information Management Systems (LIMS) of different laboratories.

3.7 Analytical Data Validation

Based on discussions with the ASR, the PRL may be asked to consolidate and validate analytical data quality aspects of results reported by the MSLs. Alternatively, if the ASR is directly interfacing with all laboratories, the ASR or a designee may perform this function for data received from all laboratories. The ASR or PRL should inform the laboratories prior to the beginning of analysis of what data the laboratory will be required to submit for data validation. The following information should be checked by the responsible party (also known as stage 2a validation) as applicable to chemical, radiochemical, and biological analyses (for more information see: http://www.epa.gov/superfund/policy/pdfs/EPA-540-R-08-005.pdf):

(1) Documentation identifies the laboratory receiving and conducting analyses, and includes documentation for all samples submitted by the project or requester for analysis.

(2) Requested methods (handling, processing, preparation, cleanup, and analytical) are performed.

(3) Requested target analyte results are reported along with the original laboratory data qualifiers and data qualifier definitions for each reported result (and the uncertainty of each result and clear indication of the type of uncertainty reported, if required, e.g., for radiochemical analyses).

(4) Requested target analyte result units are reported (along with their associated uncertainty units, if required, e.g., for radiochemical analyses).

(5) Requested reporting limits for all samples are present, and results at and below the requested (required) reporting limits are clearly identified (including sample detection limits, if required).

(6) Sampling dates (including times, if needed), date and time of laboratory receipt of samples, and sample conditions upon receipt at the laboratory (including preservation, pH and temperature) are documented.

(7) For radiochemical analyses, the sample-specific critical values (sometimes called "critical level," "decision level" or "detection threshold") and sample-specific minimum detectable value, activity or concentration for all samples are reported and results at and below the requested (required) critical values are clearly identified.

(8) For radiochemical analyses, the chemical yield (if applicable to the method) and reference date and time (especially for short-lived isotopes) is reported for all samples (as appropriate).

(9) Method dates (including dates, times and duration of analysis for radiation counting measurements and other methods, if needed) for handling (e.g., Toxicity Characteristic Leaching Procedure), processing, preparation, cleanup and analysis are present, as appropriate.

(10) Sample-related QC data and QC acceptance criteria (e.g., method blanks, surrogate recoveries, deuterated monitoring compounds (DMC) recoveries, laboratory control sample (LCS) recoveries, duplicate analyses, matrix spike and matrix spike duplicate recoveries, serial dilutions, post digestion spikes, standard reference materials) are provided and linked to the reported field samples (including the field quality control samples, such as trip and equipment blanks).

(11) Requested spike analytes or compounds (e.g., surrogate, DMCs, LCS spikes, post digestion spikes, matrix spikes and matrix spike duplicates) have been added, as appropriate.

(12) Sample holding times (from sampling date to preparation and preparation to analysis) are evaluated.

(13) Method QC (e.g., Frequency of QC samples, QC sample criteria) are evaluated.

(14) Raw data are provided for biological analyses (to confirm or recalculate results).

3.8 Data Interpretation

During an incident, the PRL (or an MSL) may be requested to interpret the results for the ASR. However, data use is not the responsibility of the laboratory and is beyond the scope of the WLA-RP. If laboratories are called upon to provide such information, they should refer the ASR to resources available to aid the

ASR in interpreting data (e.g., epidemiologists, toxicologists, EPA's Red Team, Water Contaminant Information Tool (www.epa.gov/WCIT/)).

3.9 Record Keeping

Laboratories should maintain all records and data needed for a third party to verify and reconstruct analytical results. Laboratories will inform the ASR and PRL that they will follow their existing procedures, if specific guidance is not provided. These procedures include what records must be maintained (e.g., incident logs, chain of custody, LIMS reports, sample and analytical records), the timeframe for retention, and requirements for record destruction. However, record retention must occur as required by law, unless otherwise directed. Laboratories should contact the ASR or responsible party, when possible, before disposing of hard copy documents. EPA and/or state regulations may require that original hard copy records remain at the laboratory; if a request is made for the originals, the laboratory will inform the requester that only copies can be provided. Laboratories should also follow existing procedures for criminal evidence requirements, unless the ASR indicates that specific requirements need to be met when first contacting the PRL.

Laboratories participating in an emergency response should be aware that not all records may be exempt from FOIA or other legal authorities (see Section 2.7). When necessary, the PRL should direct the MSLs on how to respond to such requests, based on the guidance provided by the ASR when analytical support is first requested.

3.10 Training

The objective of training is to create awareness and enhance the skills required to plan and execute analytical support for a drinking water emergency. A basic assumption of this plan is that laboratories are familiar with, and proficient in, the analytical methods they agree to perform as part of the WLA-RP. From this perspective, it is anticipated that no additional training in new methods will be required. However, laboratories should ensure that all personnel have received appropriate and documented training to carry out the role of PRL or MSL. Training and familiarity with the WLA-RP are important.

Laboratories need staff trained in IATA and DOT shipping regulations and the LIMS. In addition, the primary through tertiary contacts for each laboratory should have at least 100- and 200-level ICS training. For more information refer to the FEMA training site at: http://training.fema.gov/IS/crslist.asp. Other personnel that may be involved in coordination during a response are recommended to receive training in ICS.

Laboratories should consider training in new methods as they become available [e.g., Clean Water Act (CWA) methods], if they are considering implementing these methods. Additional training opportunities from the Association of Public Health Laboratories' (APHL) National Laboratory Training Network (NLTN) should be leveraged, when available. Training in data formats (e.g., Staged Electronic Data Deliverable (SEDD) 2a) or data management tools (such as Scribe) may occur on a lab-specific basis. Annual laboratory meetings may be leveraged as an opportunity for centralized training on an ad hoc basis. Training records should be maintained for all current personnel.

3.11 Exercises, Evaluations, and Corrective Actions

At the minimum, a review of the WLA-RP will occur once every two years and will be coordinated by EPA WSD. At this time, no set frequency will be established for exercises to test the WLA-RP. However, laboratories should take advantage of opportunities to test the WLA-RP (e.g., WSD-sponsored table-top and functional exercises, state exercises, etc.). In addition to participating in table-top and functional exercises, there are activities (e.g., practicing data transfer) that laboratories can undertake individually or

in small groups to practice and prepare for participation in a response (See Appendix K). Some exercises may only involve certain portions of the plan (e.g., data exchange).

After completion of an exercise or an actual response, an assessment will occur to review the exercise or incident outcomes, identify program shortfalls, and recommend necessary corrective actions. To aid in the development of the assessment, an example Close-out Action Checklist has been included in Appendix J. The issues identified will be documented in an After-Action Report. When an assessment is initiated as a result of a water contamination incident, EPA will coordinate with participating laboratories to conduct the review and will lead the effort to develop a report. Laboratory-specific changes will be made by those laboratories according to their procedures.

The WLA-RP may be updated based on the After-Action Report corrective items. Documentation of the entire corrective action process should be maintained to ensure a clear understanding and effective resolution of current and future deficiencies. All changes made to the WLA-RP must be noted in the Change Control table at the beginning of this plan. Development of future exercises should account for these changes, and should be designed to test whether the underlying issues have been resolved.

Note: Appropriate corrective actions may not be taken due to budgetary constraints or will be deferred as a part of the long-range capital project. However, temporary actions may be adopted in the interim until funds are provided to implement the desired option.

3.12 Finance and Administration

This plan does not establish mechanisms for laboratories that provide support to receive financial assistance to offset costs incurred during an emergency response under this plan. This plan does not obligate additional expenditures by any laboratory, as all laboratories have the ability to decline to provide support for any reason. The following resources outside of the WLA-RP may be used for assistance with cost reimbursement:

- Emergency Management Assistance Compact (EMAC) (state to state): www.emacweb.org
- Stafford Act (including ESF #3 and #10): www.fema.gov/government/grant/pa/reference.shtm
- State and tribal assistance grants (STAG): www.epa.gov/compliance/state/grants/
- Inter-agency grants or agreements
- OSC funding mechanisms
- Purchase orders
- Commodities workgroup agreement amongst regional lab chiefs
- Mutual Aid Agreements (e.g., Water/Wastewater Agency Response Network (WARN): www.nationlwarn.org)

When the potential exists for reimbursement, laboratories must maintain records of expenditures associated with analytical support of an event, including the tracking of all personnel engaged in incident activities, costs related to regular or overtime work, reagents, acquisition of equipment, overflow laboratory costs (i.e., the cost of contracting laboratories to cover routine support), courier/transport costs for samples, data reproduction, and storage and disposal of samples and/or records. Specific expenditures to track will vary based on the situation. When reimbursement is possible under the Stafford Act, laboratories should note that the project plan will explicitly list all expenditures that are available for reimbursement. See Appendix Q for Reimbursement Tips for Emergency Laboratory Support (draft).

Additional considerations may need to be made for fee-for-service laboratories based on their operational constraints. Whether one of these laboratories can perform analyses will be determined on an incident-specific basis.

Appendix A List of Acronyms

A2LA	American Association of Laboratory Accreditation
ADR	Automated Data Review
AHRF	All-Hazard Receipt Facility
APHA	American Public Health Association
APHL	Association of Public Health Laboratories
ASR	Analytical Services Requester
ASTM	American Society for Testing and Materials
AWWA	American Water Works Association
CBR	Chemical, Biological, and Radiochemical
CDC	Centers for Disease Control and Prevention
CDX	Central Data Exchange
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CETL	Compendium of Environmental Testing Laboratories
CFR	Code of Federal Regulations
CST	Civil Support Team (Army National Guard)
CWA	Clean Water Act
DGR	Dangerous Goods Regulations
DMC	Deuterated Monitoring Compound
DOT	U.S. Department of Transportation
EDD	Electronic Data Deliverable
EMAC	Emergency Management Assistance Compact
EOC	Emergency Operations Center
EPA	U.S. Environmental Protection Agency
ERLN	Environmental Response Laboratory Network
ERP	Emergency Response Plans
ESF	Emergency Support Function
EU	Environmental Unit
FDA	U.S. Food and Drug Administration
FEMA	Federal Emergency Management Agency
FERN	Food Emergency Response Network
FOIA	Freedom of Information Act
FTP	File Transfer Protocol
HMIC	Hazardous Materials Information Center
HMR	Hazardous Materials Regulations
HSPD	Homeland Security Presidential Directive
IATA	International Air Transport Association
IC	Incident Commander
ICAO	International Civil Aviation Organization
ICLN	Integrated Consortium of Laboratory Networks
ICS	Incident Command System
LCS	Laboratory Control Spike
LFB	Laboratory Fortified Blank
LIMS	Laboratory Information Management Systems
LNO	Liaison Officer
LRN	Laboratory Response Network
MACS	Multi-agency Coordination System
MSL	Mutual Support Laboratory
NAHLN	National Animal Health Laboratory Network
NCP	National Contingency Plan
NELAP	National Environmental Laboratory Accreditation Program

NEMI-CBR	National Environmental Methods Index for Chemical, Biological, and Radiological Contaminants
NHSRC	National Homeland Security Research Center
NLTN	National Laboratory Training Network
NRT	National Response Team
OSC	On-Scene Coordinator
PCR	Polymerase Chain Reaction
PHMSA	Pipeline and Hazardous Materials Safety Administration
PID	Photo Ionization Detector
PIO	Public Information Officer
POC	Point of contact
PPE	Personal Protective Equipment
PRL	Primary Responding Laboratory
QA	Quality Assurance
QAPP	Quality Assurance Project Plan
QC	Quality Control
RLRP	Regional Laboratory Response Plans
RPTB	Response Protocol Toolbox
SAM	Standardized Analytical Methods
SAP	Standard Analytical Protocol
SEDD	Staged Electronic Data Deliverable
SOP	Standard Operating Procedure
STAG	State and Tribal Assistance Grants
USC	United States Code
USDA	United States Department of Agriculture
VOA	Volatile Organic Analytes
VOC	Volatile Organic Compound
WARN	Water/Wastewater Agency Response Network
WCIT	Water Contaminant Information Tool
WEF	Water Environment Federation
WLA	Water Laboratory Alliance
WLA-RP	Water Laboratory Alliance Response Plan
WSD	Water Security Division

Appendix B Checklist and Quick Reference Guide for PRL and MSL Response during a Water Emergency

Purpose: *This sheet should be used as a checklist and quick reference guide for laboratories supporting an incident. References to appropriate sections of the Water Laboratory Alliance Response Plan (WLA-RP) are provided in each section of this sheet.*

INITIAL SUPPORT REQUEST

When the initial call comes in from the Analytical Services Requester (ASR) or Primary Responding Laboratory (PRL) use the Help Sheet for Requesting Analytical Support during Water Emergency Response (Appendix C) to collect the following:

- ☐ ASR contact info
- ☐ Site Characterization Information
- ☐ Field Screening Results (Basic Field/Safety Screening: Section 3.3.1 and Field Testing Results Form: Appendix E)
- ☐ Information on types and number of samples
- ☐ Analyses required
- ☐ Data turnaround times and reporting requirements
- ☐ Sample disposal information

AGREEING TO PROVIDE SUPPORT

Prior to agreeing to provide support, the laboratory should consider the following (Sample Brokerage, Tracking, and Transport: Section 3.2):

- ☐ Capability
- ☐ Capacity
- ☐ Data turnaround requirements
- ☐ Nature of the threat
- ☐ Required proficiencies and certifications
- ☐ Internal chain-of-custody requirements
- ☐ Management approval
- ☐ Funding
- ☐ Other special conditions

COMMAND CENTER AND ONGOING COMMUNICATIONS

Responding laboratories should take steps to ensure efficient communication during an incident (Communications Logistics: Section 2.7.1)

- ☐ Set up a command center with multiple phone lines and computer and fax access
- ☐ Set up procedures for handling incident phone calls
- ☐ Designate points-of-contact and procedures for transferring information during shift changes
- ☐ Log all communications with the ASR and/or PRL
- ☐ Follow-up verbal conversations with emails to confirm information and document decisions
- ☐ Provide a daily status report and/or set up daily briefings with all participants
- ☐ Post Public Information Officer (PIO) contact information for any external inquiries

COMMAND CENTER STAFF

Responding Laboratories should have the appropriate staff available to respond to an incident (Communications Logistics: Section 2.7.1)

- ☐ Set up a command center with multiple phone lines and computer and fax access
- ☐ Set up procedures for handling incident phone calls
- ☐ Designate points-of-contact and procedures for transferring information during shift changes
- ☐ Log all communications with the ASR and/or PRL
- ☐ Follow-up verbal conversations with emails to confirm information and document decisions
- ☐ Provide a daily status report and/or set up daily briefings with all participants
- ☐ Post Public Information Officer (PIO) contact information for any external inquiries

IDENTIFY AND RECRUIT ADDITIONAL SUPPORT LABORATORIES (PRL ONLY)

If the PRL does not have the capability and/or capacity to fully address the analytical needs of the incident, then it may be necessary to bring in additional laboratory support (Direction, Control, and Coordination: Section 2.5).

- ☐ Determine that additional support is required
- ☐ Identify appropriate support laboratories (Roles: Section 2.5.1)
- ☐ Contact the laboratories to provide support
- ☐ Provide background information on the incident and available analytical results

SAMPLE BROKERAGE AND SAMPLE TRACKING

Section 3.2.1: Sample Brokerage, Section 3.2.2: Sample Tracking, and Appendix F (example chain-of-custody form):

- ☐ Obtain sample tracking numbers
- ☐ Confirm that samples arrived in acceptable condition
- ☐ Confirm that appropriate chain-of-custody was received with samples
- ☐ Determine requirements for internal sample tracking

SAMPLE ANALYSIS

The ASR and PRL should consider the following when determining an analytical strategy (Analysis: Section 3.3):

- ☐ Objectives of the monitoring (identification of contaminant vs. remediation and recovery)
- ☐ Data turnaround times
- ☐ Type of method: Rapid or Confirmatory (Rapid Laboratory Analysis: Section 3.3.2, and Confirmatory Analysis: Section 3.3.3)
- ☐ Information regarding the type of contaminant
- ☐ Laboratory capabilities
- ☐ Level of Quality Control (QC) required (Quality Assurance/Quality Control: Section 3.3.5)

DATA REVIEW AND VALIDATION

Data Review: Section 3.4 and Data Validation: Section 3.5

- ☐ Mark data that has not undergone a complete review as "Preliminary Data Pending Confirmation"
- ☐ Complete internal data review prior to releasing confirmatory data
- ☐ Determine if additional data validation is needed by PRL or ASR

DATA REPORTING

Document requirements for Data Reporting (Section 3.6) in the Help Sheet (Appendix C)

- ☐ Use the data reporting template (Appendix D)
- ☐ Confirm receipt of data submitted electronically

SAMPLE AND RECORDS RETENTION

Laboratories should follow their existing procedures regarding the following in the absence of alternative guidance or specific instructions. Document requirements in the Help Sheet (Appendix C)

- ☐ Sample retention and disposal (Sample Disposal: Section 3.3.4)
- ☐ Data/records retention (Record Keeping: Section 3.8)

COMMUNICATIONS WITH THE MEDIA AND OTHER OUTSIDE PARTIES

Generally, communication with parties not directly involved in the response should be handled through the ASR/PRL/MSL chain-of-command. Procedures for routing requests and providing information should be established at the beginning of a response (Communications and Notification: Section 2.8).

- ☐ Establish procedures for handling requests for information
- ☐ Be aware of potential exceptions to communication structure (e.g., FOIA)
- ☐ Log all communication requests received and report to appropriate contact

Appendix C Help Sheet for Requesting Analytical Support during an Emergency Response

Purpose: *This sheet is designed to help discussions between the Analytical Services Requester (ASR) and the laboratory. The ASR may be either the Incident Commander/representative or the Primary Response Laboratory (PRL). The Laboratory may be either the PRL or a Mutual Support Laboratory. The Laboratory should use this help sheet to ensure that all critical information is exchanged. The information should be recorded in a logbook or notebook dedicated to the incident, the laboratory's standard forms, or the forms that follow.*

For each analytical request, to the extent practical, the ASR should record any information provided in writing and send to the laboratory, e.g., via fax, e-mail, etc.

COMMUNICATION INFORMATION

During the initial call with a requestor, record the following information:

- ☐ Date and time of the call
- ☐ Incident primary point of contact (POC)
- ☐ POC phone number, cell number, fax number, and email address
- ☐ Other relevant contact information

SITE CHARACTERIZATION INFORMATION

Ensure that the following information is documented with the sample paperwork shipped to the laboratory:

- ☐ General background of the incident
- ☐ Available field data – environmental and clinical
- ☐ Specific hazards associated with the site
- ☐ Samples collected from the site

GENERAL INFORMATION FOR LAB SERVICE REQUESTERS

Record the following information regarding the analytical request:

- ☐ Analytes of interest
- ☐ Matrix
- ☐ Analytical method(s) preferred
- ☐ Number of samples
- ☐ Reporting limit(s)
- ☐ Background levels (if data is available)
- ☐ Quantitative (standard QC or reduced QC) or semi-quantitative/screening (estimated; presence/absence)
- ☐ Data validation (preliminary or full validation)
- ☐ Turn around time

Review/Confirm sample volume, container and preservation requirements with requester.

CHAIN OF CUSTODY REQUIREMENTS

Determine requirements for chain of custody:

- ☐ Routine chain of custody or law enforcement sensitive?
- ☐ Internal chain of custody required (if law enforcement sensitive)?
- ☐ Other special conditions or instructions

SAMPLE SHIPMENTS

Inform the requestor of the laboratory's shipping address and record the following:

- ☐ Transport method
- ☐ Tracking numbers (if applicable)
- ☐ Arrival date/time at laboratory
- ☐ Other special conditions/instructions

DATA REPORTING AND RECORDS RETENTION

Laboratories will follow their existing procedures regarding the following in the absence of alternative guidance or specific instructions and record the following:

- ☐ Who receives a copy of the report
- ☐ Data format needed (e.g., Excel Spreadsheet, Specific EDD, etc.)
- ☐ Method of transmission (e.g., electronic or hard copy)

The laboratory should verify that their standard sample and record retention is adequate.

Appendix C Form Part 1: Requesting Analytical Support during Water Emergency Response (ASR⇔ PRL)

Purpose: *This sheet is designed to help discussions between the Analytical Services Requester (ASR) and the Primary Responding Laboratory (PRL). Potential PRLs should use this help sheet to ensure that all critical information is exchanged.*

COMMUNICATION INFORMATION
Date of initial call:
Time of initial call:
Who is in charge of the incident (Analytical Services Requester (ASR) or Incident Commander(IC))?
ASR/IC name:
ASR/IC phone number:
ASR/IC cell number:
ASR/IC fax number:
ASR/IC email address:
Other contacts (utilities, labs, public health, law enforcement, etc.):
EPA/Public Information Officer (PIO) contact:

SITE CHARACTERIZATION INFORMATION
Ensure that this information is documented with the sample paperwork shipped to the laboratory:
Nature of threat:
How was the threat determined (who, what, when):
Threat investigation status, circle one: a) possible b) credible c) confirmed d) other - list here:
Incident information:
Has distribution system been shut down? a) yes b) no c) don't know
Is this incident law enforcement sensitive? a) yes b) no c) don't know
Who has been contacted?
Any known exposure risks: a) contact b) inhalation c) ingestion d) other - specify:
Results of field safety screening (if applicable, see Field Screening Results Table):
Any known illnesses or injuries related to the incident:
Clinical data/results:
Additional information required for sample acceptance:

GENERAL INFORMATION FOR LAB SERVICE REQUESTERS

The table below should be filled out to document the sample analyses requested. If samples have not already been collected, the completed table can be provided to the samplers to provide guidance on sample volumes, preservation, sample containers, etc.

Requested Analyses

Method	# Samples	Sample Volume	Container	Preservation	Storage and Shipping Conditions	Standard or Rapid Analysis	QC Level

Sample disposal instructions:

Other special conditions or instructions:

Relevant background levels from matrix:

Drinking water treatment chemicals:

Prioritization of specific samples:

CHAIN OF CUSTODY REQUIREMENTS

Will routine chain of custody be sufficient or is the event law enforcement sensitive?

If law enforcement sensitive, will internal laboratory chain of custody be required?

Other special conditions or instructions:

SAMPLE SHIPMENTS

Transport method (courier, overnight shipping):

Tracking number(s):

When will the samples arrive at the lab?

Other special conditions or instructions:

DATA REPORTING AND RECORDS RETENTION

Laboratories will follow their existing procedures regarding the following in the absence of alternative guidance or specific instructions:

Data turnaround for preliminary results (if needed):

Data turnaround time for final results:

Data format:

Method of data transmission:

Contact to report results to:

How will the laboratory be reimbursed?

Will routine sample and record retention be adequate?

How to respond to Freedom of Information Act (FOIA), state information access laws, or law enforcement requests?

Other special considerations:

ADDITIONAL INFORMATION OR COMMENTS

Appendix C Form Part 2: Requesting Analytical Support during Water Emergency Response (PRL⇔ MSL)

Purpose: *This sheet is designed to help discussions between the PRL and the Mutual Support Laboratory (MSL). Potential MSLs should use this help sheet to ensure that all critical information is exchanged.*

COMMUNICATION INFORMATION
Date of initial call:
Time of initial call:
Who is in charge of the incident (Analytical Services Requester (ASR) or Incident Commander(IC)?
ASR/IC name:
ASR/IC phone number:
ASR/IC cell number:
ASR/IC fax number:
ASR/IC email address:
PRL point of contact name:
PRL phone number:
PRL cell number:
PRL fax number:
PRL email address:
Other contacts (utilities, labs, public health, law enforcement, etc.):
EPA/Public Information Officer (PIO) contact:
SITE CHARACTERIZATION INFORMATION
Ensure that this information is documented with the sample paperwork shipped to the laboratory:
Nature of threat:
How was the threat determined (who, what, when):
Threat investigation status, circle one: a) possible b) credible c) confirmed d) other - list here:
Incident information:
Has distribution system been shut down? a) yes b) no c) don't know
Is this incident law enforcement sensitive? a) yes b) no c) don't know
Any known exposure risks: a) contact b) inhalation c) ingestion d) other - specify:
Any known illnesses or injuries related to the incident:
Clinical data/results:
Results of field safety screening (if applicable, see Field Screening Results Table):
Results from other laboratories (if applicable, types of analytes tested, positive/negative results):
Additional information required for sample acceptance:

GENERAL INFORMATION FOR LAB SERVICE REQUESTERS

The table below should be filled out to document the sample analyses requested. If samples have not already been collected, the completed table can be provided to the samplers to provide guidance on sample volumes, preservation, sample containers, etc.

Requested Analyses

Method/Analyte	# Samples	Matrix	Sample Volume	Container	Preservation	Storage and Shipping Conditions	Standard or Rapid Analysis	QC Level

Relevant background levels of matrix:

Known water treatment chemicals:

Sample disposal instructions:

Prioritization of specific samples:

Other special instructions:

CHAIN OF CUSTODY REQUIREMENTS

Will routine chain of custody be sufficient or is the event law enforcement sensitive?

If law enforcement sensitive, will internal laboratory chain of custody be required?

Other special conditions or instructions:

SAMPLE SHIPMENTS

Laboratory shipping address:

Transport method (courier, overnight shipping):

Tracking number(s):

When will the samples arrive at the lab?

Other special conditions or instructions:

DATA REPORTING AND RECORDS RETENTION

Laboratories will follow their existing procedures regarding the following in the absence of alternative guidance or specific instructions:

Data turnaround for electronic and/or hardcopy results:

Data turnaround time for verbal results, if applicable:

Data format:

Method of data transmission:

Contact to report results to:

How will the laboratory be reimbursed?

Will routine sample and record retention be adequate?

How to respond to Freedom of Information Act (FOIA), state information access laws, or law enforcement requests?

Other special considerations:

ADDITIONAL INFORMATION OR COMMENTS

Appendix D Incident Communications Tracking Form for Laboratories

INSTRUCTIONS

This form is intended to be used by a responding laboratory to capture drinking water incident field information relevant to the laboratory response activity. A form should be completed for each investigation and expanded as necessary to fully document all information received from the field for each batch of samples received. If field data has been collected and reported on other forms those form can be attached and referred to on this incident tracking form.

Incident Report to Laboratory

Site Name: _____

Date: _____

Time: _____

Reported By: _____

Contact Cell Number: _____

Type of facility:

☐ Source water ☐ Treatment plant ☐ Pump station
☐ Ground storage tank ☐ Elevated storage tank ☐ Finished water reservoir
☐ Distribution main ☐ Hydrant ☐ Service connection
☐ Other _____

Address: _____

Additional Site Incident Information: _____

INITIAL HAZARD ASSESSMENT

Initial hazard categorization

☐ Low hazard ☐ Chemical hazard
☐ Radiological hazard ☐ Biological hazard
☐ Unknown

If the initial hazard assessment indicates a chemical, radiological, or biological hazard (as described in RPTB Module 3, Section 4.1.3), then only teams trained to deal with such hazards should be sent to the site.

SITE CHARACTERIZATION TEAM

Name & Affiliation of Site Characterization/Sampling Team Leader:

_____

Contact Information: _____

Other Site Contacts

Organization _____ Name: _____
Organization _____ Name: _____
Organization _____ Name: _____
Organization _____ Name: _____

Representatives from other agencies:

☐ Local law enforcement ☐ Fire department ☐ HazMat
☐ US EPA ☐ FBI ☐ Other

COMMUNICATION PROCEDURES

Mode of communication:

☐ Phone ☐ 2-way radio ☐ Digital
☐ Facsimile ☐ Other _____

Reporting events:

☐ Upon arrival at site ☐ During approach ☐ Site entry
☐ After site evaluation ☐ After field testing ☐ Site exit
☐ Other _____

VERBAL FIELD SAFETY SCREENING INFORMATION (Written report to be included with COC and samples)

Y	Parameter[1]	Screen[2]	Instrument	Result	Comments
	Radiation	Both			
	Chlorine residual	Water			
	pH / conductivity	Water			
	Cyanide	Water			
	Volatile chemicals	Safety			
	Chemical weapons	Both			
	Biotoxins	Water			
	Pathogens	Water			

1. List the parameters that will be evaluated as part of field screening (examples are listed).
2. Screening may be conducted for safety, rapid water testing, or both.

Name of Field Screen Tech _____

Cell Phone Number _____

SAMPLES Taken and Lab Destination

Y	Analyte	No. Samples	Preservation	Destination Laboratory(s)
	Standard VOCs			
	Semi-volatiles			
	Quartenary nitrogen compounds			
	Cyanide			
	Carbamate pesticides			
	Metals/elements			
	Organometallic compounds			
	Cyanide			
	Radionuclides			
	Non-target VOCs			
	Non-target organic compounds			
	Non-target inorganic compounds			
	Immunoassays			
	Pathogens – culture			
	Pathogens – PCR			
	Water quality – bacteria			
	Water quality – chemistry			

Appendix E Data Elements for Electronic Transmission

Note: Data reporting requirements will evolve as ERLN/WLA reporting systems are developed and implemented.

The electronic data deliverable (EDD) must arrive in a spreadsheet composed of the following data elements. Each element shall be a column, which is to be populated. Some of the columns, such as LabName, will be very repetitive. Each row shall contain the results for one analyte or parameter. QC data, such as surrogate and spiked sample results are reported as analytes.
This "Bio" column indicates which fields are required for population when reporting results for biological analyses.

Data Element #	Data Element Name	Definition	Comment	Bio	Format
1	LabName	Descriptive name for the laboratory performing this analysis		Y	
2	ClientSampleID	A client-defined identifier for a sample	This should be reported exactly as it is seen on the chain of custody form.	Y	Alphanumeric
3	LabSampleID	A laboratory-defined identifier for a sample that uniquely identifies a single sample that is subjected to an analysis		Y	Alphanumeric
4	PreparationBatch	A laboratory-defined identifier for a batch of aliquots that are prepared together for analysis by one method. Together can imply similarity of time, place, and manner of preparation.	Use a unique ID for each method and preparation batch.	Y	Alphanumeric
5	LocationID	Identifier for the sampling location at a site	This information may be present on the chain of custody form.	Y	
6	CollectedDate	Date (and time, if required) the sample was collected. If collected over a range of dates, this is the start date.		Y	The following ISO 8601 format is recommended: YYYY-MM-DDThh:mm:ss.sTZD
7	CollectedEndDate	If the sample was collected over a range of dates (and times, if required), the end of the collection period.	This field would not need to be populated for grab samples.	Y	
8	MatrixID	A more specific description of the sample matrix or media		Y	These are listed in the SEDD 5.2 Valid Value List located at: http://www.epa.gov/superfund/programs/clp/seddspec52.htm
9	MethodID	The published reference code for the method used by the laboratory to analyze the sample		Y	These are listed in the SEDD 5.2 Valid Value List located at: http://www.epa.gov/superfund/programs/clp/seddspec52.htm. The list will be updated periodically to include SAM and other appropriate methods.

10	LabMethodID	A laboratory-defined code for the method used by the laboratory to analyze the sample		N	
11	PreparedDate	Date and time of sample preparation. Preparation is used generally to include method specific techniques such as extraction, digestion, and separation. If prepared over a range of dates, this is the start date.	Enables users to determine holding time based on when samples were prepared, as well as when samples were analyzed.	Y	The following format is recommended: YYYY-MM-DDThh:mm:ss.sTZD
12	AnalyzedDate	The date (and time, if required) of analysis of an aliquot. If analyzed over a range of dates, this is the start date.		Y	The following format is recommended: YYYY-MM-DDThh:mm:ss.sTZD
13	CASRegistryNumber	The Chemical Abstract Service number for the analyte		N	Alphanumeric/text
14	AnalyteName	The published reference name for the analyte		Y	Recommend using the EPA Registry Name from EPA's Substance Registry System located at: http://iaspub.epa.gov/srs
15	LabAnalyteID	A laboratory-defined identifier for an analyte		N	
16	Result	Reportable final result for the analyte	This field is almost always numerical, unless the analysis is qualitative (i.e., detect/nondetect).	Y	
17	ResultUnits	Units for Result	Ensure that ResultUncertainty is expressed in same ResultUnit as the Result.	Y	IEEE/ASTM SI 10™ - 2002 – American National Standard for Use of the International System of Units (SI) : the Modern Metric System. These are listed in the SEDD 5.2 Valid Value List located at http://www.epa.gov/superfund/programs/clp/seddspec52.htm
18	LabQualifier	A laboratory-assigned string of result qualifiers (usually a single character for each qualifier), based on client or laboratory-defined rules and values		Y	In order to stay consistent from one deliverable to another, the only qualifiers that will be used are "U", "J", and "UJ". "U" indicates that the analyte was analyzed for but not detected. "J" indicates an estimated value. The "J" qualifier is used when a QC parameter indicates that the reported quantity could be inaccurate, or when the data indicates the presence of an analyte that meets the identification criteria but the result is less than the sample quantitation limit but greater than zero. The "UJ" qualifier indicates that the analyte was analyzed for but not detected, and a QC parameter indicates that the reporting limit could be inaccurate.

19	ResultUncertainty	Calculated Uncertainty associated with the Result	For Radiochemical Analysis only at this time. Ensure that ResultUncertainty is expressed in same Result Unit as the Result.	N	Numeric
20	UncertaintyCoverageFactor	Numerical factor by which the combined standard uncertainty is multiplied to obtain the reported uncertainty	Radiochemical Analysis Element -- typically between 2 and 3, but may be 1 if the CSU itself is reported.	N	Numeric
21	ResultBasis	The basis upon which the final results were calculated		N	"Dry" or "Wet" for samples with a solid matrix, and "Total" or "Dissolved" for samples with an aqueous matrix.
22	ReportingLimit	Reporting limit for the analyte being measured. Reporting limits are defined in terms of a number below which data is reported as not detected.		N	
23	ReportingLimitUnits	Units for ReportingLimit.	Should be the same as ResultUnits	N	Use the same format as the ResultUnits.
24	ReportingLimitType	One of a list of client-defined acronyms that specify the type of reporting limit.		N	Specifies the type of reporting limit for the analysis, i.e., MDL, PQL, CRQL, MDC, MDA
25	AnalyteType	A client-defined identifier that identifies the type of analyte reported		N	This field is used to distinguish spiked analytes from sample results (e.g., Target, Spike, TIC, Surrogate, or Internal_Standard).
26	ExpectedResult	The expected final result of an analyte that has been spiked into an aliquot at any time during the analysis process or the true value of an analyte in the sample analyzed.	Enables user to calculate recoveries for surrogates, spikes, Pes, duplicates, etc.	Y	
27	ExpectedResultUnits	Units associated with expected result.		Y	
28	QCType	The client-defined term used to define the specific type of QC sample being analyzed	Currently the SEDD 5.2 Valid Value List located at http://www.epa.gov/superfund/programs/clp/seddspec52.htm contains some, but not all, of the EPA Office of Water QC sample types.	Y	This field describes the QC sample used to generate results the lab inserts into the EDD (e.g., Laboratory_Fortified_Blank). It should be populated with the QC sample types listed in the SEDD valid value list (Appendix B).
29	Comment	A free-form comment field.		Y	The comment field can not contain any commas or semi-colons, in case the electronic deliverable is converted into a comma delimited or semi-colon delimited file.

*** Insert NA for any element not applicable, (e.g. CAS # for unnumbered radiochemical analytes).

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Appendix F Field Testing Results Form

Date of Field Testing:	Site/Incident Name:	Field Tester:	Phone No.

Parameter	Units	Screen[1]	Meter/Kit ID[2]	Testing Location[3]	Testing Time[4]	Results[5]	Ref. Value[6]

[1] *Screening may be conducted for safety, rapid water testing, or both*

[2] *Report the unique identifier for the meter or kit used during screening*

[3] *Report the specific location where the field testing was conducted*

[4] *Report the specific time at which the test was performed*

[5] *Results of field testing should include replicate analysis where appropriate*

[6] *Results should be compared with a reference value, if available, to determine whether or not the levels detected pose a hazard*

Appendix G Example of a Chain-of-Custody Form

Chain of Custody Form							
Site Name:			Sample Owner/Collector:				
Contact Information:			Signature				
Sample ID	Collection Date/Time (24 h)	Sample Location	Sample Type (Matrix)	Grab/ Composite	Preservative(s)	No./Type of Bottles	Comments
Matrix: DW = Drinking Water, RW = Reservoir Water, UW=Untreated Water, SD = Sediment, SL = Sludge, SO = Soil, SM = Misc. Solid Material							
Relinquished By:		Received by:		Date/Time:			
Relinquished By:		Received by:		Date/Time:			
Relinquished By:		Received by:		Date/Time:			
Relinquished By:		Received by:		Date/Time:			
Relinquished By:		Received by:		Date/Time:			
Dispatched by:	Date/Time:	Received by:	Date/Time				
Method of Sample Transport							
Shipper:	Phone No.:	Shipper's Tracking No.:					

Attach additional pages as required.

Appendix H Minimum and Optional Chain-of-Custody Data Elements

Note: The collection of data elements listed below is based on the input received on the February 11, 2009 draft WLA Response Plan. The names of the data elements included on your laboratory's chain-of-custody (COC) form do not have match the names listed below. The names given below under "Minimum COC Data Elements" are to be compared with what is on your form for ensuring that all information covered by the proposed minimum data elements is captured by your form. This is being done in order to ensure that any COC form used during incident response conveys the same minimum information to the laboratory.

The minimum data elements for COC forms given below are still being discussed and may change based on further input received from you.

A. Project/Site Information

Minimum COC Data Elements for each Project/Site

1. SiteID /Incident ID
2. SiteName
3. ProjectID
4. ProjectName
5. Site/Incident Description
6. Site/Sampler Contact Information (name, affiliation, phone number)
7. Site/Incident Data Coordinator Contact Information (name, affiliation, phone number)
8. General comments on this shipment

Optional COC Data Elements for each Project/Site

9. AnalyticalRequestID (A client-defined identifier for the paperwork that authorizes the analyses of specific samples by listed methods.)
10. ClientID – unique ID for the client
11. ClientName – name of the client
12. CoolerID – unique ID for a sample cooler
13. CustodyID – unique ID for the COC form
14. RequesterID - ID for person requesting analysis
15. RequesterName - name of person requesting analysis
16. ShippingBatch – unique ID for samples shipped together
17. SamplingBatch – unique ID for samples collected together

B. Sample Information

Minimum COC Data Elements for each Sample

18. ClientSampleID – Sample ID as given in the field
19. CollectedDate – the date and time the sample was collected. If collected over a period of time, this is the start date and time.
20. CollectedEndDate – the date and time of the end of the sample collection period.
21. LocationID – location ID as given in the field
22. LocationName – name of the location where samples were collected
23. MatrixID - a more specific description of the sample matrix, e.g., drinking water
24. MatrixMedium – a general description of the sample matrix, e.g., aqueous
25. SampleType (Grab or Composite)
26. Preservatives added in field (e.g., nitric acid, sodium thiosulfate)
27. Bottles and BottleType: Number and type of bottles/sample containers

28. ClientMethodID & ClientMethodName: Test code and Test names requested on sample
29. Additional comments regarding specific sample

Optional COC Data Elements for each Sample

30. Filtered – Yes or No (Indicates whether or not the sample as received by the laboratory was field filtered.)
31. Quarantine – Yes or No (Indicates whether or not the sample as received by the laboratory is to be quarantined.)
32. SampleAmount – the amount (weight or volume) as received by the laboratory
33. SampleAmountUnits – units for sample amount
34. Sample Disposal Information

C. Shipping Information (Minimum COC Data Elements)

35. Signature blocks designating who shipped samples (dates and times)
36. Mode of shipment (e.g., Fedex, courier, hand delivery)
37. Shipping contact information
38. Date shipped
39. Sample shipping tracking number

D. Sample Receipt Information (Minimum COC Data Elements)

40. LabReceiptDate - The date (and time, if required) that the sample was received in the laboratory.
41. Block to record comments from Receiving Laboratory (e.g., preservative checks, sample condition)
42. Signature block designating who relinquished samples to the laboratory (dates and times)
43. Signature block designating who received samples at the laboratory (dates and times)

E. Field Measurements (Optional Data Elements)

44. CharacteristicType (e.g., pH, dissolved oxygen, residual chlorine)

Appendix I Guidelines for Handling Criminal Investigation Samples

Introduction

Samples analyzed as part of a response to a suspected or known water contamination incident may become part of a criminal investigation. Additional sample custody and recordkeeping procedures may need to be implemented by the laboratory analyzing criminal investigation samples to ensure that the samples and results are appropriate for evidentiary purposes. Laboratories must have procedures in place to prevent the sample or data from being altered in any way. Guidelines for handling criminal investigation samples are provide below.

Sample Receipt and Acceptance

- Completed chain-of-custody forms should accompany samples that are part of a criminal investigation.
- Samples should arrive in a cooler or other container sealed with custody tape at a minimum and may also be padlocked.
- If samples arrive without appropriate chain-of-custody, custody tape, or locks the investigating authority should be notified immediately.
- Digital pictures should be taken of samples upon sample receipt. Guidelines for digital imaging technology for criminal investigations can be found at http://www.theiai.org/guidelines/swgit/index.php.

Sample Custody

- Samples should remain in custody throughout sample receipt, analysis, and disposal. Samples are in formal custody if they are in:
    - Someone's physical possession
    - Direct view after being in physical possession
    - Locked location so that tampering cannot occur
    - Secure area, restricted to authorized personnel only
- Samples should be tracked from receipt through report issuance and disposal, preferably using the Laboratory Information Management System (LIMS).
- It is recommended that site identification or location information about the samples not be entered in LIMS. The investigation authority should assign a case number that can be used for sample tracking.
- Only one sample custodian should handle criminal investigation samples. The role of the sample custodian is to control access to the samples while they are in the custody of the laboratory.
- Samples should be stored in a locked cooler or other locked area. Access to the cooler should be limited to the sample custodian. If an analyst needs access to the samples, they should sign out the samples from the sample custodian.
- Analysis of samples should be limited to one analyst, if possible. If a second analyst needs to relieve the original analyst, a note with the date, times, and signatures should be included in the sample file.
- Samples should be locked in storage if the analyst leaves the room where analysis is being performed. Analysts should sign out a key from the sample custodian for the storage area where samples will be stored during sample analysis.
- Custody applies to original samples only as long as some original material remains. If all of a sample is used, any extracts or digests must then be kept under custody as if they were original. Extracts that have no original sample remaining should be supervised at all times.
- When aliquots are removed from the original sample, the remaining original sample should be returned to the sample custodian for safe keeping.

Sample Analysis

- Analyst, date of analysis, and LIMS sample ID should be on every page of the analytical data package, including bench sheets, instrument printouts, and narratives.
- If there are any flags associated with the data, a complete explanation of the circumstances and corrective actions attempted should be included in the data file.
- Samples associated with a criminal investigation should not be combined in a batch or analytical run with any other samples not associated with the criminal investigation.

Quality Control (QC)

- Samples being analyzed for the purposes of criminal investigation only (i.e., results will not be used as part of response or recovery decisions) should be analyzed using complete method QC. If samples are being analyzed to make response or other decisions, sample QC should be appropriate for the monitoring objectives.

Reporting

- Data should be reviewed by the analytical laboratory according to the laboratory's documented procedures prior to release to the investigating authority.
- All data should be kept in locked storage when the laboratory is closed.
- The laboratory's LIMS should be set up to create an audit trail that can be used to confirm that no one has changed any values.
- The laboratory should agree with the investigating authority regarding the appropriate route for data transmission. Transmission of data via voicemail or email may not be acceptable.

Appendix J Close-out Action Checklist

Plan Elements and Procedures	Problem Issue?	Description of Issue	After-Action Plan Solutions
Laws and Authorities			
Minimum Qualifications for Participation			
Resource Management			
Form of Commitment to this Plan			
Planning			
Direction, Control, and Coordination			
Roles			
Quality Assurance Project Plans (QAPPs)			
Communications and Notification			
Health and Safety			
Sampling			
Sample Brokerage, Tracking, and Transport			
Sample Brokerage			
Sample Tracking			
Sample Transport			
Analysis			

Plan Elements and Procedures	Problem Issue?	Description of Issue	After-Action Plan Solutions
Basic Field/Safety Screening			
Rapid Laboratory Analysis			
Confirmatory Analysis			
Sample Disposal			
QA/QC			
Data Verification			
Data Reporting and Validation			
Secure Data Transfer and Storage			
Record Keeping			
Training			
Exercises, Evaluations, and Corrective Actions			
Finance and Administration			
Other			

Appendix K Recommendations for Laboratory Practice of the Water Laboratory Alliance Response Plan

Purpose

The Water Laboratory Alliance (WLA) Response Plan (WLA-RP) for drinking water is intended as a guideline for joint laboratory response to an actual or suspected drinking water contamination event due to a natural disaster or terrorist event. During such an event, a large number of environmental samples may be generated, likely overwhelming the capacity and/or capability of any individual laboratory to provide sufficient analytical support. The WLA-RP addresses this situation by providing a blueprint for how EPA National, Regional, drinking water utility, and state laboratories can work together to meet analytical needs during an event.

The EPA Water Security Division conducted table top exercises and functional exercises of the Regional Laboratory Response Plans (RLRP) during 2008. Multi-regional exercises of the WLA-RP will be conducted during the 2009 calendar year. In addition to participation in these activities, laboratories may wish to practice aspects of the WLA-RP on their own or in conjunction with other laboratories to prepare for implementation of the WLA-RP during an actual event.

Laboratory practice of aspects of the WLA-RP prior to participation in a drinking water contamination response provides the following benefits to the participating laboratories, as well as the drinking water community:

- An increase in member laboratories' familiarity with the WLA-RP;
- Opportunities to identify issues that can be resolved ahead of time and increase overall preparedness;
- A reduction in the time needed by laboratories to determine the appropriate procedures during an event resulting in decreased response time;
- Increased communication and collaboration with other labs within the WLA WLA-RP network.

Recommendations for Practice of the WLA-RP:

Laboratories should practice different aspects of the WLA-RP in order to prepare for participation in a response to a drinking water contamination incident. Some of these activities can be performed independently by the laboratory, and others should be performed in conjunction with other laboratories to test communication and data exchange. Your laboratory may have already performed some of these activities.

Independent Laboratory Activities:

1. Review the WLA-RP

- Review the WLA-RP on a regular basis.
- If your contact information is out of date, provide updated contact information to those in your region.
- Identify roles and responsibilities for your staff should your laboratory become involved in a response.
- Evaluate the WLA-RP against your laboratory's standard operating procedures (SOPs) and determine if procedures need to be updated or added such as those listed below:
  - Method QC activities that could be dropped to minimize turnaround times
  - Requirements related to sample tracking and retention in law enforcement cases

- Minimum data review prior to sample release.

2. Practice Creating Data Files

- Coordinate with your laboratory's LIMS manager to create flat files or Excel spreadsheets for samples analyzed in-house; ideally these files will meet most of the recommendations in the WLA-RP. Laboratories analyzing both chemical and biological samples should practice generating data files for both types of analyses.

3. Become Familiar with the EPA Compendium of Environmental Testing Laboratories (CETL) - http://www.epa.gov/compendium

- The EPA CETL is a web-based system that can be used to identify laboratory analytical capabilities and capacities based on categories of threat agents or analytes.
- If you don't currently have access, register at http://www.epa.gov/compendium.
- Logon using your username and password; contact the helpdesk at 703-818-4200 if needed.
- Go to 'Manage' and view your laboratory's contact information and capabilities; update this information if needed.
- Using the search function, identify five laboratories in your region that have the capability to analyze samples for total organic carbon.
- Logon to the system at least once every three months to ensure your username and password are active and that your laboratory's information is up to date.

4. Confirm Access to Water Contaminant Information Tool (WCIT) -

- WCIT is a secure, Web-based system that provides contaminant data that may be used in planning for or responding to a drinking water contamination incident. This includes information on available methods for chemical, biological, and radiochemical contaminants (formerly available in the National Environmental Methods Index for Chemical, Biological, and Radiological Methods [NEMI-CBR]) that allows users to compare method performance, speed, and relative cost for response to both intentional and accidental contamination events (http://www.epa.gov/wcit).
- If you do not currently have access, register at https://cdx.epa.gov/warning.asp.
- Logon using your username and password. Contact the CDX Helpdesk at 1-888-890-1995, if needed.
- Practice using the 'Search' feature to find contaminants by name, synonym or "free search."
- Select one of the contaminants returned by your search; select the field and analytical methods for the contaminant.
- Logon to the system at least once every three months to ensure your username and password are active.

5. Receive Incident Command System (ICS) Training - http://training.fema.gov/IS/crslist.asp

- This is the website for Independent Study courses offered by FEMA.
- Laboratory managers and other laboratory personnel that may be directly involved in managing a response should take the course "Introduction to Incident Command System, I-100".

6. Receive Training for International Air Transport Association (IATA) and Department of Transportation (DOT) Transportation Regulations for Sample Shipment - http://www.iata.org/training/cargo/

- IATA training focuses on regulations for shipping dangerous goods.
- At least one person at each laboratory should be trained to ship dangerous goods according to IATA and DOT regulations.

- Courses should be taken on Dangerous Goods Regulations and Shipping Guidelines for Infectious Substances (if analyzing or shipping biological samples).
- The laboratory should have the appropriate materials for packing and shipping samples according to IATA regulations, if applicable.

Activities to Coordinate with other Laboratories:

1. Laboratory Communication

- Role-play with other laboratories to practice communication between laboratories during a response. Take turns being the Primary Response Laboratory (PRL) and Mutual Support Laboratory (MSL).
- Use the Help Sheet for Requesting Analytical Support during Water Emergency Response to practice collecting information about an 'incident' including analyses required, method QC to perform, data review and reporting requirements, etc.

2. Data Exchange

- Practice exchanging data with other laboratories through the various mechanisms that data exchange may occur during an incident (e.g., fax, phone, email, etc.)
- Exchange flat files that comply with the recommendations of the WLA-RP.
- Attempt to compile data files from your laboratory with data files from other laboratories.

Appendix L Suggested Emergency Water Sample Collection Kit

2

Table L-1. Example Emergency Water Sample Collection Kit

Item	Quantity	Notes
Field Resources and Documentation		
Field guide	2	Resource for field personnel
Health and safety plan	2	If required for the site
Sample labels	2 times the number of bottles	Waterproof (filled out in advance, if possible)
Sample documentation forms	24	For recording sample information
Custody tape (or seals)	2 rolls	Used on sample or shipping containers
Chain of custody forms	24	For documenting sample custody
Lab marker	2	Waterproof, 1 red, 1 black
Disposable camera	1	Waterproof or water resistant
General Sampling Supplies		
Sample containers	Table L-2, L-3, and L-4	For collecting samples
Device for grab sampling	1	For sampling large water bodies
10 liter HDPE container	4	For collection of large volume water samples
Lab grade tape	3 rolls	For temporary labeling in the field
Miscellaneous glassware	N/A	Beakers, graduated cylinders, spatula, etc.
Collapsible cooler	1 or more	For sample storage
Rigid shipping container	1 or more	For shipping by overnight service if needed.
1 qt. zippered freezer bags	1 pack 100	For double bagging ice and sample containers
Thermometer	2	For checking water temperature
Paper towels	2 rolls	Wiping wet containers and containing spills
Pathogen Sampling Supplies		
Tubing and clamp	1	For sample tap flushing, etc.
Stopwatch & graduated cylinder	1	For measuring flow rate
Ultrafiltration or membrane filtration apparatus	1	For concentrating biological (pathogen and toxin) samples
Reagents (may need to be kept separate from the rest of the kit)		
Laboratory grade water	5 liters	For sample dilution in the field
Sodium thiosulfate crystals	100 grams	For water sample dechlorination
Ascorbic acid	100 grams	For water sample dechlorination
Sodium sulfite crystals	100 grams	For water sample dechlorination
Potassium dihydrogen citrate	100 grams	For carbamate preservation
6 Molar ACS grade hydrochloric acid (HCl)	25 mL	In dropper bottle for preservation of samples for organic analyses
6 Molar trace metal-grade nitric acid (HNO_3)	25 mL	In dropper bottle for preservation of samples for trace metals analysis
10 Normal Sodium hydroxide (NaOH)	25 mL	In dropper bottle for preservation of samples for cyanide analyses
Sulfuric Acid (H_2SO_4)	25 mL	In dropper bottle for preservation of samples for pesticide preservation
pH paper in ranges from 0 - 4 and 10 – 14	50 strips	For checking the pH of samples preserved with acid or base (sensitive to 0.5 pH units)
Safety Supplies		
Splash resistant goggles	2	One per individual (minimum)
Disposable gloves	1 box per size (S, M, L, XL)	Nitrile or polyethylene, powder-free
Disposable shoe covers	2 pairs	One pair per individual (minimum)
Disposable laboratory coats	2	One per individual (minimum)
Clear, heavy duty plastic trash bags	4	For disposal of lab coat, gloves, etc.
Rinse water	20 liters	For general use and first aid
Antiseptic wipes	1 container	For cleaning hands, sample containers, etc.
Squirt bottle	2	For use with rinse water or lab grade water

Item	Quantity	Notes
First aid kit	1	For general first aid
Flashlight/headlamp	3	For working at night or in dark locations

2

4 **Table L-2. Chemical Sample Collection Kit Guidelines**

Contaminant Class/Type	Container Volume and Type	No. of Containers	Disinfection Reducing Agent	Preservative	Holding Time	Analytical Technique
Volatiles (Methods 502.2, 8021B, 524.2, 8260B)	40 mL, Glass w/ Teflon faced septa	5	Ascorbic acid (0.25–0.5 g)	1:1 HCL to pH ≤2 stored <4°C	14 days	P&T - GC/MS P&T - GC/PID/ELCD
Carbamate Pesticides (Methods 531.1, 531.2)	40 mL, Glass w/ Teflon faced septa	4	Sodium thiosulfate (12.5 mg)	Potassium dihydrogen citrate; adjust sample pH to ~3.8 stored ≤4°C	28 days	HPLC-fluorescence
Unknown organics (volatile)	40 mL, Glass w/ Teflon faced septa	5	None	None - mark samples not preserved stored ≤4°C	7 days	P&T - GC/MS
Metals/ Elements (Methods 200.7, 200.8, 200.9)	125 mL, Plastic (i.e., HPDE)	2	None	Trace metal grade nitric acid to pH ≤2	6 months	ICP-MS ICP-AES AA
Organometallic compounds	125 mL, Plastic (i.e., HPDE)	2	None	Nitric acid to pH ≤2	30 days	AA - cold vapor manual AA - cold vapor automated
Toxicity	125 mL, Glass	2	Consult manufacturer's instructions	Consult manufacturer's instructions	Consult manufacturer's instructions	Rapid toxicity assay (several vendors)
Cyanide (Methods 335.2, 335.3, 335.4)	1 L, Plastic	2	Ascorbic acid (0.06 g)	Sodium hydroxide to pH ≥ 12 stored ≤4°C	14 days	Titrimetric Spectrophotometric
Quaternary nitrogen compounds (Method 549.2)	1 L, Amber PVC or silanized glass	4	Sodium Thiosulfate (100 mg)	Sulfuric acid to pH ≤ 2 stored ≤4°C	14 Days	SPE HPLC – UV
Semi-volatiles (Methods 525.2, 8270D/3535A)	1 L, Amber w/ Teflon-lined screw caps	4	Sodium sulfite (40 – 50 mg)	6M HCl to pH ≤2 stored ≤4°C	7 days to extraction, 28 days to analysis	SPE GC/MS

Contaminant Class/Type	Container Volume and Type	No. of Containers	Disinfection Reducing Agent	Preservative	Holding Time	Analytical Technique
Unknown organics (general)	1 L, Amber glass	4	None	None - mark samples not preserved stored ≤4°C	7 days to extraction, 28 days to analysis	Prep: SPE, SPME, micro LLE, direct aqueous injection, headspace Analysis: GC/MS, GC, HPLC, LC-MS
Unknown inorganics	1 L, Plastic	2	None	None - mark samples not preserved	28 days	ICP-MS
Water quality: Chemistry	1 L, Plastic or Glass	1	None	None - mark samples not preserved	Immediate to 14 days	Conductivity, pH, alkalinity, hardness, turbidity

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Table L-3. Biological (Pathogens and Toxins) Sample Collection Kit Guidelines

Contaminant Class/Type	Container Volume and Type	Sample Concentration Volume	Disinfection Reducing Agent	Preservative	Holding Time	Analytical Technique (or Instrumentation)
Biological Fecal coliforms, *E. coli*	125 mL to 250 mL, Plastic	None	Sodium thiosulfate (0.05% final)	≤ 4°C ± 2°C, do not freeze	24 – 30 hours	Culture Methods (multiple-tube fermentation/ membrane filtration)
Biological (pathogens and toxins)	10 to 100 L, Plastic	250 to 500 mL (ultrafiltration)	Sodium thiosulfate (0.05% final)	Sample concentrate ≤ 10°C, do not freeze	TBD	PCR and immunoassay
Bacterial Pathogens	1 to 2 L, Plastic	2-4 mL (membrane filtration)	Sodium thiosulfate (0.05% final)	Sample concentrate ≤ 10°C, do not freeze	TBD	PCR and immunoassay

4

6 **Table L-4. Radiochemical Collection Guidelines**

Contaminant Class/Type	Container Volume and Type	Number of Containers	Disinfection Reducing Agent	Preservative	Holding Time	Analytical Technique (or Instrumentation)
Radiochemical	1, 5-L cubitainer or 4, 1-L plastic containers	2	None	Trace metal grade nitric acid to pH ≤2	6 months	Gross alpha, gross beta, gamma isotopes, specific radionuclides

Appendix M Standardized Analytical Methods for Environmental Restoration Following Homeland Security Events (SAM)

To expedite and standardize identification and measurement of contaminants in environmental samples across multiple laboratories following a homeland security related incident, EPA's NHSRC is compiling and maintaining a list of laboratory analytical methods for priority contaminants relevant to homeland security (the SAM document). The methods will be used by environmental laboratories identifying and measuring chemical, radiochemical, pathogen, and biotoxin contaminants in environmental samples associated with remediation activities following a contamination incident. By standardizing the methods across laboratories, SAM potentially shortens critical decision times in national emergencies by reducing confusion associated with interpreting analytical results. SAM facilitates the analysis of large numbers of environmental samples, greatly improves the process of validating and analyzing sample data, and improves evaluating the effectiveness of decontamination efforts. Thus far, SAM lists procedures to identify and measure 135 priority chemical contaminants, 22 radionuclides, 32 pathogens, and 18 biotoxins that may be a concern following a homeland security incident.

SAM is the product of an NHSRC-sponsored workgroup, with support from multiple agencies, including, but not limited to the U.S. Centers for Disease Control and Prevention (CDC), Department of Homeland Security (DHS), and the Department of Defense. The fourth revision to this methods compendium (SAM 4.0) was published in September 2008. The latest revision to SAM includes input from DHS, the National Institutes of Occupational Safety and Health, CDC, the Food and Drug Administration, and numerous EPA offices. The latest revision of SAM can be found on the SAM Web site (www.epa.gov/sam), which was first developed in 2007 by NHSRC to allow users and other stakeholders to search for specific needs. The SAM Web site is updated with each revision of the document to reflect the most recent information and allows users to submit questions and comments regarding the information.

Standard Analytical Protocols (SAPs)

NHSRC is developing and validating Standard Analytical Protocols (SAPs) based on the methods listed in the SAM document, where further development and verification are necessary to address the specific analytes and environmental sample types listed in SAM. SAPs are being tested, verified, and validated in single- and multi-laboratory studies. Once validation is complete, data regarding specific method performance and data quality objectives will be available. Verification or validation of 10 chemistry SAPs and 2 pathogen SAPs has been initiated. These SAPs include: gas chromatography/mass spectrometry (GC/MS) for chemical warfare agents, chemical warfare agent degradation products, semi-volatile organic compounds, and volatile compounds; high performance liquid chromatography (HPLC) tandem MS for carbamates, thiodiglycol, ethanolamines, and organophosphates; inductively coupled plasma (ICP) for metal-containing compounds; ion chromatography (IC) for inorganic anions; and culture technique for *Escherichia coli* O157:H7 and *Salmonella* Typhi.

SAM Companion Documents

As companions to SAM, NHSRC is also developing several documents that are intended to standardize procedures used to collect and screen samples prior to full confirmatory analysis in the laboratories. These documents will provide information needed to (1) collect, package, and ship environmental samples to be analyzed using the analytical methods listed in SAM, (2) screen field conditions for the presence of SAM target analytes or related compounds, and (3) provide rapid preliminary analyses for laboratory identification of SAM target analytes or related compounds, prior to confirmatory analysis. NHSRC also is preparing a sample disposal document that provides guidelines regarding disposal of samples containing the SAM analytes. These documents are currently under various stages of development and review, and involve the multi-agency workgroups involved in development of SAM. It is anticipated that the first three SAM companion documents will be available during 2009.

Appendix N Short Form Quality Assurance Project Plan Template for Emergency Response Laboratory Services for Drinking Water Incidents

A Project Title and Participants

Project Name:	
Date:	
Lead Agency:	
Other Agencies:	

B Distribution List, Roles, and Approvals

Include names, organizations, roles, and telephone numbers of those individuals receiving copies of this QAPP. The Incident Commander/Analytical Services Requester, QA Officer, and Laboratory Manager(s) must sign on the lines below their names, signifying their approval of the document. Other recipients of the plan do not sign the document, but receive copies. (Add more rows to the table, or attach additional pages, as needed.)

Name	Organization	Role	Telephone Number/ e-mail
		Incident Commander/ Analytical Services Requester	
		QA Officer	
		Laboratory Manager	
		Laboratory Manager	

C Problem Definition

In the sections below, provide a brief description of the problem or the nature of the emergency response situation and describe how the data will be used (i.e., assess immediate threat to the water supply). Use tasking material provided by the Project Manager/OSC/Incident Commander, as appropriate.

C1 Problem Statement

C2 Intended Use of Data

D Response Timetable

In emergency response situations, it is critical that everyone involved understand the timeframes for response actions so that they can provide the needed data in time to make meaningful decisions. (Getting "perfect" data two days after the decision needs to be made is not helpful). Use the table below to describe the major activities that must take place and the dates and times by which they must occur. Use local time, or specify a time zone for each entry. (Add more rows to the table, as needed.)

Activity	Date and Time for Completion

E Parameters of Interest and Measurement Quality Objectives

E1 Matrices, parameters, and measurement type

Use the table below to identity the matrices, parameters (contaminants) of interest, and identify the nature of the measurements to be made. Parameters may be listed as broad classes of analytes (e.g., semivolatile organics) or specific suspected threats (e.g., kerosene), based on available information. If specific methods are to be employed, list them in the column that represents their capabilities (screening, semiquantitative, or quantitative), or simply mark the cell that corresponds to the type of measurement requested. (Add more rows to the table, as needed.)

Matrix	Parameter	Type of Measurement or Specific Method Required		
		Screening?	Semiquantitative?	Quantitative?*

**Mark the cell only; fill out the following table*

Matrix	Parameter	Quantitative Analysis				
		Project's Quantitation Limit**	Precision Require-ment**	Accuracy Require-ment**	Selected Method	Lab's Method Detection Limit

***Consult project/client provided documentation*

E2 Representativeness

Use this section to briefly describe how subsamples taken from sample containers are representative of the entire sample.

E3 Comparability

Use this section to identify any requirements for comparability of the results to data from other sources, including action limits, regulatory limits, health-based limits, or other measures used to judge the success of the project. For example, what units of measure are to be used (µg/L?, CFU/mL?, etc.) What value (if any) will "non-detects" be given for subsequent statistical analysis (e.g., zero, the MDL, treated as outliers)? What rounding rules and levels of significant figures are needed for calculations and reporting? If specific methods must be employed, list them here, as well as in Section 5.A above.

E4 Completeness

Completeness is a measure of the number of valid measurements made as a percentage of samples collected. Use the table below to estimate the numbers of samples to be collected and analyzed for each parameter and to define the level of completeness required. The level of completeness may vary for each project, in that even one positive result may provide enough information to take action in some instances. (Add more rows to the table, as needed.)

Parameter	# Samples Anticipated	# Valid Results Required	Completeness (%)

F Sample Collection, Handling, and Transport Procedures

Use the section below to describe how samples will be collected, by whom, and how they will be handled and transported by the laboratory(ies). Identify any required sampling equipment and procedures consistent with the discussion in Section 5.B.

G Training and Certification Requirements

Use the section below to identify any training or certification requirements required for participants in the project (both organizations and individuals). Such requirements should be specific to the project and do not include routine training provided to all employees (e.g., ethics training or timekeeping training).

H Documentation and Records

Use the section below to briefly describe the documentation and other records that must be produced during the sample collection and analysis processes. If chain of custody is required, state that here. When describing analytical raw data, cite the analytical technique where practical (e.g., GC/MS raw data, including mass spectra and quantitation reports) as a means of describing the information. Indicate if there are requirements for electronic data versus hard copy. Specify the locations in which documentation and records will be retained, for what period, and by whom.

I Quality Control Requirements

The nature of emergency response situations changes the focus of many quality control operations, primarily because there may not be time to take corrective actions when QC acceptance criteria are not met (e.g., samples with poor surrogate recoveries may not be able to be rerun in time). Therefore, the focus of these QC operations may shift to identifying those critical aspects of the sampling, analysis, and data evaluation processes that must be considered, and establishing minimum requirements for each critical operation.

Use the three subsections below to identify all critical QC operations and checks for the sampling, analysis, and data evaluation processes. Where possible, establish minimum acceptance criteria, rather than acceptance windows (e.g., state that surrogate recovery must be at least 10%, rather than giving a range like 70–130%), based on your assessment of the importance of each QC check and its impact on the decision to be made (e.g., what risk of a decision error can you accept?).

I1 Laboratory QC Checks

I2 Data Evaluation Checks

J Instrument/Equipment Testing, Inspection, and Maintenance Requirements

Use the table below to identify the testing, inspection, and maintenance requirements associated with any of the laboratory equipment and instrumentation. List the equipment type (or name), the type of testing, inspection, and maintenance, and the required frequency. (Add more rows to the table, as needed). These requirements may be met through a laboratory's current quality systems, as required by drinking water certification and method implementation in its state.

Equipment Type (or name)	Type of Testing, Inspection, and Maintenance	Required Frequency

K Calibration Requirements

Use the table below to identify the requirements for calibration any analytical instruments used in the laboratory. Describe the type of calibration (e.g., single-point) and the required frequency, whether during the project (e.g., daily, before each use) or overall (e.g., annually). These requirements may be met through a laboratory's current quality systems, as required by drinking water certification and method implementation in its state.

Instrument	Type of Calibration	Frequency

L Inspection and Acceptance Requirements

Use this section to identify any inspection and acceptance requirements for supplies, reagents, or equipment that are critical to the successful completion of the emergency response, whether purchased or created in house. For example, identify those laboratory testing reagents that must be freshly prepared each day. If sampling equipment must be prepared in advance using specific procedures, describe the process for ensuring that such equipment is available and readily identifiable to field personnel. These requirements may be met through a laboratory's current quality systems, as required by drinking water certification and method implementation in its state.

M Assessment and Response Actions

Use the section below to briefly describe how the results will be used to assess the situation and determine appropriate responses. The details should be consistent with the statement of the problem in Section 3, the description of the parameters of interest and any associated limits in Section 5, and QC requirements in Section 9. Where practical, identify the person or persons making each assessment and those responsible for the responses, by name, organization, and role.

N Data Review, Validation, and Verification

In the context of this plan, data review refers to the process by which the person or organization generating primary data ensures that the results are correct and accurately represent what took place. "Self-inspection" is another term that has been used for this process. Data validation refers to those procedures used by an independent party to assess the validity of the results. The independent party may be another participant in the project (i.e., not part of the laboratory that generated the results), or an outside party whose sole responsibility is to validate the data. Data verification refers to the steps taken to ensure that the quality (or limitations) of any secondary data used in the project (secondary data being data which were not generated as part of the project, but taken from other sources, including literature, other projects, etc.).

The extent to which these review, validation, and verifications processes can be accomplished in an emergency response situation will vary. Some steps may be taken as the primary data are generated (e.g.,

some level of self-inspection by the laboratory staff), while others may be carried out retrospectively (after the project decisions have been made) as support for the overall project.

Use the section below to describe any procedures used to review data, validate results, and verify results, identifying the person or persons responsible for each process by name, organization, and role. Clearly indicate those procedures that will be carried out during the project and those that will be carried out later.

O Reports

Use this section to describe any anticipated reports or summaries of project activities. For reports of results that are needed to make decisions, identify the recipient (e.g., the project manager or on-scene coordinator), how the information will be transmitted (e.g., by telephone, facsimile, or email), and the timeframe. For summaries of project activities, or final reports, identify the persons or organizations responsible for generating each report, the intended audience, and any project personnel responsible for reviewing and approving the reports

Appendix O Structure of the Incident Command System

In 2003, the President issued Homeland Security Presidential Directive (HSPD) 5 that directed the Secretary of the Department of Homeland Security (DHS) to develop the National Incident Management System (NIMS) Incident Command System (ICS). NIMS provides a consistent framework for federal, state, and local governments, and private sector and nongovernmental organizations to work together to plan, prepare, respond, and recover from domestic incidents, including catastrophic terrorism acts. HSPD 5 also directed the Secretary of DHS to develop the National Response Plan (now the National Response Framework) to integrate federal government domestic planning, preparedness, response and recovery (addressing all hazards) into a single plan. The WLA-RP uses the NIMS framework as a mechanism to provide guidance and direction for federal support to state, local, and tribal incident managers.

ICS is a flexible and scalable system driven by the tactical needs of the responders at the scene. It provides a common structure and terminology that facilitates the integration of multiple agencies while still maintaining a coherent chain of command. ICS also provides standardized training, pre-designated leadership positions, specific span of control, and well-understood assigned responsibilities. This approach will provide consistency in addressing key aspects of a response such as organizational elements and lines of communication. The system is built around five major response management functional areas: Command, Planning, Operations, Logistics, and Finance. These functional areas may be further subdivided depending on the situation and its complexity.

An Incident Commander (IC) typically handles the command function and is responsible for overall management of the incident. The command function normally includes a Public Information Officer (PIO), a Liaison Officer, and a Safety Officer. The PIO is responsible for developing and releasing, when approved, information regarding the incident to the press and public. Only one PIO exists per incident command. A Liaison Officer may exist in multi-jurisdictional incidents or where several agencies are involved, and serves as the point of contact for personnel assigned to the incident by assisting or cooperating agencies. The Safety Officer is responsible for safely conducting all operations of the incident command, and develops and recommends measures for ensuring personnel safety and for assessing hazardous situations.

The remaining response management functional areas are known as general staff. Their responsibilities include:

- Operations Section – Management of all operations directly applicable to the primary mission. This section activates and supervises organizational elements in accordance with an Incident Action Plan (IAP) and directs its execution. It also requests and releases resources and makes changes to the IAP as necessary.
- Planning Section – Collection, evaluation, dissemination, and use of information regarding the development of the incident and resources status. The Planning Section may include an Environmental Unit (EU) which facilitates interagency environmental data management, monitoring, sampling, analysis and assessment. The EU is responsible for scientific support for a response, including support for response technologies, modeling and data interpretation, natural resources and ecological issues and establishment of standard methods and permitting issues. It participates in developing sampling and analysis plans; receives field data from the Operations Section and/or electronic deliverables from laboratory support; and verifies, interprets, and manages data, among other activities. This role may be supported by a Scientific Support Coordinator (SCC) who is a technical expert in the issues at hand. The SSC is a technical specialist and is defined in the National Contingency Plan as the principal advisor to the FOSC for scientific issues. The SSC is responsible for providing expertise on chemical hazards, field observations, trajectory analysis, resources at risk, environmental tradeoffs of countermeasures and cleanup methods, and information management. The SSC is also charged with gaining consensus on scientific issues affecting the response, but ensuring that differing opinions within the scientific

community are communicated to the Incident Command. The SSC can serve as the Environmental Unit Leader.

- Logistics Section – Provision of facilities, services, and materials to support the response. It also participates in developing and implementing the IAP.
- Finance Section – Oversight of all financial and cost analysis aspects of the incident.

An ICS may be expanded into a Unified Command (UC). The UC is a structure that brings together ICs of all major organizations involved in the incident to coordinate an effective response while simultaneously carrying out their own responsibilities. The UC links the organization responding to the incident and provides a forum for these agencies to make consensus decisions.

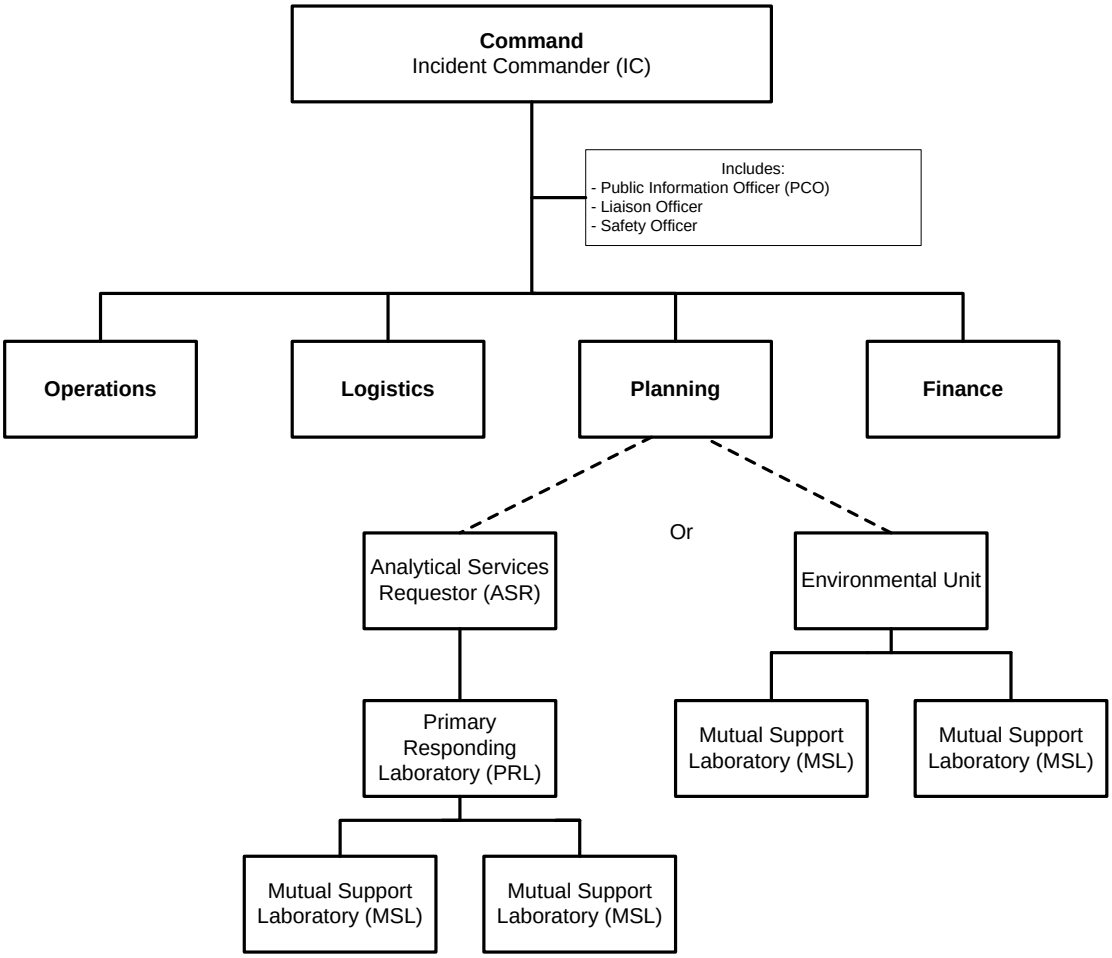
A UC may be used whenever multiple jurisdictions are involved in a response effort. These jurisdictions could be represented by:

- Geographic boundaries (e.g., two states, Indian tribal land)
- Governmental levels (e.g., federal, state, local, tribal)
- Functional responsibilities (e.g., fire, oil spill, Emergency Medical Services (EMS))
- Statutory responsibilities (e.g., Federal Land Managers, Responsible Party)
- Some combination of the above

The composition of a UC for a specific incident will be determined on a case-by-case basis. Factors to consider are incident specifics, determinations outlined in existing response plans, and decisions reached during the initial meeting of the UC. UC composition may change as the incident progresses. For a UC to be effective, the number of personnel should be kept as small as possible. A well-defined process requires the UC to set clear objectives to guide the on-scene response resources.

Figure N-1 shows the main ICS structure and how it might interact with the ASR/PRL/MSL structure described in the WLA-RP. Each of the general staff functions may be further subdivided depending on the situation. This structure may also increase in complexity as necessary. For more information, please refer to the draft EPA National Incident Management Handbook.

Figure N-1. Interaction of the ICS with the WLA-RP Structure



2

Appendix P Overview of Freedom of Information Act (FOIA) Applicability to Data Generated in Response to Drinking Water Incidents

Note: These are federal regulations but state laws may vary. Laboratories should contact their in-house FOIA representative or public information officer to obtain guidance for your specific situation.

Background and Applicability of the Freedom of Information Act of 1966[1] (FOIA)

Under FOIA, each federal agency must make information available to the public upon request. FOIA applies when U.S. citizens, non-U.S. citizens, corporations, associations, public interest groups, and state, local and foreign governments submit a written request for a federal agency record (e.g., a record held or believed to be held by EPA, its laboratories, or contractors) to the agency. FOIA does not apply to the President, Congress, the courts, and state and local governments (although each of the 50 states has its own freedom-of-information laws, as do many cities).

This overview focuses on how FOIA applies to EPA and regional laboratories. When a FOIA request is made, the burden of proof is on EPA to deny the request under the nine exemptions listed below. A brief interpretation of how they may apply to data generated during response to a drinking water incident follows.

Exceptions to FOIA: The Nine Exemptions[2]

FOIA establishes nine exemptions and three exclusions that provide the only basis for withholding information; Exemption 5 is highlighted below because of its many nuances:

Exemption 1 - Matters of National Defense or Foreign Policy (e.g., Homeland Security). Withholding information based upon matters of national security requires that the information be formally classified under Executive Order 12356 (e.g., Secret, Top Secret). Stamping analytical data with the phrase, "For Official Use Only" would not serve as formal classification.

Exemption 2 - Internal Agency Rules. This exemption protects records related solely to the internal personnel rules and practices of the Agency that are of a relatively trivial nature (e.g., policy on sick leave) but can encompass more substantial internal matters, the disclosure of which would allow circumvention of a regulation.

Exemption 3 - Information Exempted by Other Statutes (e.g., the Privacy Act). Information that is specifically exempted from disclosure by another federal statute enacted by Congress is also exempt from disclosure under FOIA.

Exemption 4 -Trade Secrets, Commercial, or Financial Information (e.g., Confidential Business Information). This exception allows the Agency to withhold trade secrets and commercial or financial information obtained from a person and such information is privileged and confidential.

Exemption 5 - Privileged Inter- or Intra-Agency Memoranda. This exemption allows withholding from disclosure inter- and intra-agency memoranda, letters, or electronic communication under one of the following privileges:

[1] 5 U.S.C. 552

[2] See also 40 CFR 2.105, Exemption categories

- The deliberative work process privilege
- The attorney work-product privilege
- The attorney-client privilege
- The government commercial information privilege
- The expert witness report privilege
- The confidential informant privilege (see also Exemption 7)
- Investigative report privilege

Even when these privileges may apply, EPA encourages the release of records unless it would significantly harm EPA's decision-making process. Also, these privileges may be waived (and may not apply) if the Agency has disclosed the materials to third parties.

Exemption 5 applies only to inter- or intra-agency records. Intra-agency records are those transmitted within EPA, and include reports prepared or reviewed by outside EPA contractors and contract laboratories. Inter-agency memoranda or letters are documents circulated between federal agencies. Recommendations from state officials to EPA may be considered intra-agency records in certain circumstances when EPA has solicited state comments and has a formal relationship with the state and the records concern a specific deliberative process. EPA's Office of General Counsel should be consulted in these instances.

The most widely used privilege is the pre-decisional or deliberative work process privilege. This privilege incorporates the traditional government privilege against discovery of government documents. The purpose of this privilege is to protect the quality of the Agency's decision-making process (i.e., to protect against premature disclosure of proposed policies), to encourage frank discussion among Agency officials, and to avoid premature disclosure that could mislead the public. In determining if material is deliberative or pre-decisional, one must consider the material's language and its place in the Agency's chain of decision making. The material must be a part of the deliberative process to be pre-decisional. Pre-decisional materials include the following:

- Drafts of documents that discuss the pros and cons of one policy or another.
- Drafts that do not debate pros and cons, but that represent a tentative expression of the Agency's position, as in a draft administrative order or memorandum that is being reviewed prior to adoption of a final Agency position.

However, the purely factual portions of deliberative process materials must be released to requesters *if* such factual portions can be segregated from the rest of the document and the facts themselves do not reflect the Agency's deliberative process.

Exemption 6 - Personal Privacy. This exemption permits the withholding of all information about individuals in personnel, medical, and similar files.

Exemption 7 - Investigatory Records or Information Compiled for Law Enforcement Purposes. This exemption provides that all records and information compiled for law enforcement purposes need not be disclosed in six specific instances: interference with enforcement proceedings; adverse effect on right to fair trial; unwarranted invasion of personal privacy; disclosure of identity of confidential source; revealing special investigative technique; and endangering the life or safety of any individual.

Exemption 8 - Records of Financial Institutions. This exemption applies to reports prepared for agencies responsible for regulating or supervising financial institutions. It generally does not apply to EPA.

Exemption 9 - Geographical or Geophysical Information and Data Concerning Wells. This exemption pertains to "geological and geophysical information and data, including maps, concerning wells."

How the Exceptions to FOIA May Apply to Data Generated during Response to a Drinking Water Incident

Potential drinking water incident response scenarios are presented in **Table 1**. As noted in the table, Exemptions 1, 5, and 7 may apply to one or more of these scenarios. Note that FOIA Exemption 1 (withholding information based upon matters of national security or foreign policy) requires that the withheld information be *formally* classified (e.g., stamped Secret or Top Secret).

Because the WLA-RP applies to emergency situations, Exemption 7 (investigatory records or information compiled for law enforcement purposes) may appear to have little usefulness. However, emergencies, such as one-time, accidental spills, can result in long-term contamination with serious public health consequences. Accidental spill emergencies may be subject to follow-up investigations leading to enforcement actions. Therefore, if a signatory laboratory to the WLA-RP has compiled information that it believes in good faith will become the subject of an enforcement investigation or action, Exemption 7 may be used if releasing the information to the public would interfere with enforcement proceedings; have an adverse effect on right to fair trial; create an unwarranted invasion of personal privacy; disclose the identity of a confidential source; reveal a special investigative technique; or endanger the life or safety of Agency personnel.

It is less clear how signatory laboratories to the WLA-RP may use Exemption 5 (privileged inter- or intra-agency memoranda). In the case of data that has not gone through the Agency's quality assurance/quality control (QA/QC) process, raw invalidated data are non-factual and could even be considered pre-decisional. In this case, Exemption 5 would apply until the data receive appropriate QA/QC and becomes factual. Once factual, the information may be segregated from privileged inter- or intra-agency memoranda and made available to the public under FOIA.

However, some data that have been through the QA/QC process and have become factual may still not be able to be segregated from certain inter- or intra-agency memoranda (and may therefore be considered exempt from FOIA). Some examples of this include the following:

- Factual information that is "inextricably intertwined" with deliberative material[3]
- No segregation if factual material is a small amount, so interspersed that its separation from exempt material would be an inordinate burden, and the resulting factual material would be of little use to the requester[4]
- The factual material would reflect or reveal the deliberative process[5]

[3] Lead Industries Association v. OSHA, 610 F.2d 70, 85 (2d Cir 1979)

[4] Sterling Drug, Inc. v, Harris, 488 F. Supp. 1019, 1028 (S.D.N.Y. 1980)

[5] Montrose Chemical Corp. v. Train, 491 f.2d 63 (D.C. Cir. 1974)

Further Research

In the last example listed above, where the factual material reveals the deliberative process, a valid FOIA exemption might depend upon *why* the data were collected in the first place. For example, if releasing the data that are part of a deliberative process would reveal a water security vulnerability, then Exemption 5 may apply. Further research into this question may be warranted. Further research into state FOIA laws may also be warranted to more fully inform the WLA-RP. Further research into whether the WLA-RP might ever use Exemption 9 (geographical or geophysical information and data concerning wells) is also warranted. Finally, further research into the effect of EPA involvement in a response, and the extent of that involvement, on the applicability of FOIA to state laboratories may be warranted.

Table P-1. Potential drinking water incident response scenarios.

Nature of Incident	Nature of Information				FOIA Exemptions
	Federal Enforcement Action (e.g, EPA)?	**Investigation Ongoing (e.g., FBI or other)?**	**Formally Classified (e.g., top secret, secret)?**	**Pre-decisional (e.g., Intra-EPA, labs, contractors or Inter-Fed Agencies deliberating)?**	
Terrorist attack	N/A	Yes or No	Yes	N/A	Exemption 1, Matters of National Defense, Foreign Policy, or Homeland Security
Terrorist attack	N/A	Yes or No	No	Yes	Exemption 5, Privileged Intra/Inter Agency Memoranda
Vandalism or intentional contamination	Yes	Yes or No	N/A	N/A	Exemption 7, Investigatory Records for Law Enforcement
Vandalism or intentional contamination	Yes or No	Yes	N/A	N/A	Exemption 7, Investigatory Records for Law Enforcement
Accident (unintentional contamination)	No	No	N/A	Yes	Exemption 5, Privileged Intra/Inter Agency Memoranda
Accident (unintentional contamination)	Yes	Yes or No	N/A	No	Exemption 7, Investigatory Records for Law Enforcement
Natural Disaster	N/A	N/A	N/A	Yes	Exemption 5, Privileged Intra/Inter Agency Memoranda

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Appendix Q Reimbursement Tips for Emergency Laboratory Response

Note: The document below is a WLA Fact Sheet and can be found at: www.epa.gov/safewater/watersecurity/pubs/fs_watersecurity_reimbursementtips_laboratory.pdf.

The Water Laboratory Alliance (WLA) provides the Water Sector with an integrated nationwide network of laboratories with the analytical capabilities and capacity to support monitoring and surveillance, and response and remediation in the event of intentional, unintentional, and natural water contamination; and the WLA-Response Plan provides a comprehensive approach to providing a coordinated multi-laboratory response these events. Emergency response and recovery costs incurred by laboratories supporting the Water Sector following an incident may be eligible for reimbursement through local, state, or federal level mechanisms. This tips sheet has been developed in support of the WLA to facilitate laboratory reimbursement activities.

While the rules for allowable activities vary between reimbursement mechanisms, lessons learned from past incidents reveal that reimbursement is commonly not maximized due to either lack of knowledge or failure to follow proper procedures and processes specific to a particular mechanism. This document presents tips laboratories can use to develop or refine internal processes and procedures that may maximize their ability to receive reimbursement. The tips are organized by activities before and after an incident.

Before an Incident

Identification of appropriate resources and mechanisms facilitates the reimbursement process. In general, laboratories that may provide emergency support services in response to an authorized Analytical Services Requester (ASR) (e.g., Incident Commander, Analytical Coordinator, Primary Responding Laboratory [PRL], and local, state or federal emergency operations center representative or state Emergency Management Assistance Compact [EMAC] coordinator) and seek reimbursement for these services should prepare in advance. Consideration of the following pre-incident planning and preparation activities may be helpful:

- Review reimbursement eligibility, mechanisms, and resources for laboratory support activities and how they might differ if response is at a local, state, or federal level.
- Establish emergency procurement procedures and logistics for essential laboratory supplies.
- Review current staffing and identify personnel and procedures to support contingency or extraordinary staffing requirements.
- Review current resource typing criteria and information (e.g., FEMA 501-9; NIMS Basic Resource Typing System) for applicable resources.
- Review requirements (e.g., sample identification) for criminal and forensic sample analyses.
- Establish accounting codes to capture, track, and distinguish routine operational costs from incident support-related costs (including pre-incident emergency work).
- Describe compensation (e.g., overtime) in the personnel policy and review any limitations on analyst hours (e.g., maximum number of hours in Biosafety Level 3 on a daily basis).
- Document routine hours of use for equipment and instrumentation.

Develop…

— and maintain a thorough pre-incident inventory of critical resources, including equipment and instrumentation, reagents, supplies, and consumables related to specialized or anticipated support activities.

- — a comprehensive listing of available support resources (e.g., personnel, analytical capabilities and capacities, analytical instrumentation, sampling equipment, and supplies) and register your laboratory with EPA's Compendium of Environmental Testing Laboratories (http://epa.gov/compendium), if appropriate.
- — and maintain records of all routine Quality Assurance and Quality Control (QA/QC) procedures (types and frequency).
- — and maintain thorough maintenance and calibration records for laboratory equipment and instrumentation including all required procedures and intervals.
- — and maintain standard sample evidentiary chain of custody protocols (*Note:* a link to internal chain of custody training is available on the WLA Web site).

During and After an Incident

When the potential exists for laboratory support reimbursement, laboratories must maintain accurate records of expenditures associated with support of an incident. Laboratories may find the following activities and accounting procedures helpful during and after an incident:

- Coordinate with emergency management agencies at local, state, and federal levels to identify all incident-related activities and ensure that a complete list is provided to State Emergency Management Agency (EMA), Federal Emergency Management Agency (FEMA) officials and the Incident Commander, or other responsible designee.
- Review reimbursement eligibility, mechanisms, and resources for laboratory support activities.
- Review time limitations for potential reimbursement sources, as well as any deadlines for requesting extensions.
- Develop a detailed cost summary sheet to support claims for reimbursement.
- Develop and maintain a system to cross-check and validate all records.
- Provide secure on-site and off-site storage of all records.

Document…

- — **labor costs** in detail utilizing pre-established accounting codes to identify incident-related costs (including emergency work conducted before a state or federal declaration of disaster). Ensure that documentation can 1) distinguish between regular and overtime, 2) provide hours on a per-person, per-day basis, and 3) provide detail on all tasks performed, including hours per task and task location. In particular, track costs for…
  - o staff exchange.
  - o consulting services.
  - o data review.
  - o sample collection, analysis, disposition, and disposal.
- — **non-labor** costs through pre-established accounting codes and/or detailed logs that 1) separate emergency from permanent work, 2) provide detail on date, location, task, analyst/technician, and hours of use, and 3) account for equipment damage/extraordinary use. In particular, track…
  - o analytical costs, including use/replacement of reagents and supplies and QA/QC analyses.
  - o courier/transport costs for samples; disposition, storage and disposal of samples, and/or records.
  - o acquisition of equipment and equipment (e.g., autoclaves and computers) usage costs associated with the incident (e.g., need for accelerated equipment maintenance and calibration, need for earlier replacement of parts, such as microscope bulbs).
  - o overflow laboratory costs (i.e., the cost of contracting laboratories to cover routine support).

- incidental costs, such as temporary re-location (e.g., airfare, lodging, food, rental vehicle).

The following resource also may be useful in determining eligibility and reimbursement requirements:

- FEMA Public Assistance Information: www.fema.gov/government/grant/pa/

Contact Us

For additional information on the Water Laboratory Alliance, please contact WLA@epa.gov or see http://cfpub.epa.gov/safewater/watersecurity/wla.cfm. Latisha Mapp may also be contacted directly at mapp.latisha@epa.gov.

Appendix R References and Resources

Laboratory Networks and Associations

R.1 Water Laboratory Alliance (WLA)

The WLA integrates a nationwide network of laboratories specifically to serve the drinking water sector. This network identifies the laboratory analytical capabilities and capacity that could be used to support monitoring and surveillance, response, and remediation of intentional and unintentional drinking water supply contamination events involving chemical, biological, and radiochemical contaminants. http://cfpub.epa.gov/safewater/watersecurity/wla.cfm

R.2 Environmental Response Laboratory Network (ERLN)

EPA's environmental laboratory response network addresses capability and capacity for response to national emergencies, including developing environmental analytical capability at a core group of local, state, federal, and private laboratories.

R.3 CDC Laboratory Response Network (LRN)

The LRN is charged with maintaining an integrated network of state and local public health, federal, military, and international laboratories that can respond to bioterrorism, chemical terrorism and other public health emergencies. http://www.bt.cdc.gov/lrn/

R.4 Food Emergency Response Network (FERN)

FERN supports food analytical laboratory programs at the national, regional, state and local levels. FERN provides training, proficiency testing, method development and validation, surveillance, electronic communication, and laboratory outreach/cooperative agreements. Laboratories that are part of FERN are responsible for analyzing food samples implicated in threats. FERN responds to food-related emergencies, including both terrorist acts and natural disasters. http://www.fernlab.org/

R.5 Association of Public Health Laboratories (APHL)

The APHL provides support to public health laboratories by providing a network based, publications, mentoring, and training. A membership must be purchased to access most APHL publications and services. To view APHL services go to http://www.aphl.org/pages/default.aspx.

R.6 National Animal Health Laboratory Network (NAHLN)

The USDA NAHLN is a network of laboratories performing diagnostic tests and providing animal disease surveillance. The network includes the USDA National Veterinary Services Laboratories (NVSL), that serve as the reference and confirmatory laboratory, and the state and university laboratories that perform the diagnostic tests. http://www.aphis.usda.gov/animal_health/nahln/

Tools and Databases

R.7 Compendium of Environmental Testing Laboratories (CETL)

EPA's CETL is a web-based database used to track laboratory capabilities. The Compendium can be accessed at: https://cfext.epa.gov/cetl/.

R.8 Response Protocol Toolbox (RPTB)

The RPTB was developed to provide guidance to the water sector on developing and revising Emergency Response Plans (ERPs) for addressing contamination threats and incidents. It is a planning tool composed of six interrelated modules, which focus on the different aspects of planning a response to drinking water contamination threats and incidents. The RPTB and other documents prepared by EPA and associated agencies with information on Water Security can be found at: http://cfpub.epa.gov/safewater/watersecurity/home.cfm?progrma_id=8_-_response_toolbox.

R.9 Water Contaminant Information Tool (WCIT)

EPA's WCIT is a secure database of the most current information on priority contaminants for drinking water and wastewater security. It contains data that can assist in planning for and responding to drinking water contamination threats and incidents. WCIT is designed to provide real-time information on water contaminants to inform response decisions. WCIT lists and provides links to available validated methods for Chemical/Biological/Radiochemical (CBR) type contaminants. Access to this tool must be secured through an application process that may take a few weeks. Users who have been approved to access WaterISAC Pro do not have to go through the approval process and can log in through their WaterISAC Pro account for immediate access. For more information and to learn how to sign-up for WCIT, visit http://www.epa.gov/wcit.

R.10 WaterISAC

WaterISAC is a central clearinghouse that provides a common link in the flow of information about water security to and from utilities, federal homeland security, intelligence, law enforcement, public health and environmental agencies. Users must apply to gain access to WaterISAC. WaterISAC's services can be viewed at: http://www.waterisac.org/.

R.11 Sampling Guidance for Unknown Contaminants in Drinking Water

This document provides comprehensive guidance that integrates recommendations for pathogen, toxin, chemical, and radiochemical sample collection, preservation, and transport procedures to support multiple analytical approaches for the detection and identification of potential contaminants in drinking water. The guidance is intended to support sampling for routine and baseline monitoring to determine background concentrations of naturally occurring pathogens, sampling in response to a triggered event, and sampling in support of remediation or decontamination efforts. The sampling guidance can be found at: http://www.epa.gov/safewater/watersecurity/pubs/guide_watersecurity_samplingforunknown.pdf.

Analytical Method Information

R.12 Standardized Analytical Methods (SAM)

SAM is a list of laboratory analytical methods for priority contaminants relevant to water security. The methods can be used by environmental laboratories identifying and measuring biological, chemical, radiochemical, and biotoxin contaminants in environmental samples associated with remediation activities following a contamination incident. SAM 4.0 can be found online at: http://www.epa.gov/sam/.

R.13 Water Contaminant Information Tool (WCIT)

WCIT recently incorporated the National Environmental Methods Index for Chemical, Biological, and Radiological Methods (NEMI-CBR) and now contains lists and summarizes nearly all available methods for chemical, biological, and radiochemical type contaminants, not just validated methods. This tool allows the user to compare and contrast the performance, speed, and relative cost of analytical methods for response to both intentional (i.e., terrorist attacks) and accidental (i.e., spills) contamination events from CBR type contaminants. Access to this tool must be secured through an application process that may take a few weeks. Users who have been approved to access WaterISAC Pro do not have to go through the approval process and can log in through their WaterISAC Pro account for immediate access. Users who

formerly had access to NEMI-CBR now have access to WCIT using their NEMI-CBR user name and password. For more information and to learn how to sign-up for WCIT, visit http://www.epa.gov/wcit.

R.14 Standard Methods for the Examination of Water and Wastewater

Standard Methods for the Examination of Water and Wastewater is a comprehensive reference that presents all aspects of water and wastewater analysis techniques. Standard Methods is a joint publication of the American Public Health Association (APHA), the American Water Works Association (AWWA), and the Water Environment Federation (WEF). http://www.standardmethods.org.

R.15 EPA Drinking Water Analytical Methods and Laboratory Certification

This website supports EPA's certification program for laboratories conducting drinking water sample analyses. This site includes information on the laboratory certification program, EPA approved analytical methods for drinking water analyses, and the method approval processes.
http://www.epa.gov/safewater/methods/

R.16 EPA Test Method Collections

This EPA site comprises a collection of analytical test methods for all media. It also provides information on current research and development efforts, a list of sources with weblinks, a federal contact list, and regional laboratory contacts. To view the collection, go to
http://www.epa.gov/OSA/fem/methcollectns.htm.

Hazardous Materials and Shipping Information

R.17 International Air Transport Association (IATA) Dangerous Goods Regulations (DGR) & Quick Reference Guide Combo 2009

The IATA DGR reference and quick reference guide contains information on how to classify, mark, pack, label and document dangerous shipments and stay in compliance. This reference has been recognized by the world's airlines for over 50 years. The 50th edition, and the most up-to-date of the IATA Dangerous Goods Regulations, includes all amendments made by the Dangerous Goods Board and changes to the 2009-2010 edition of the International Civil Aviation Organization (ICAO) Technical Instructions. To purchase this reference set of the regulations and the quick reference guide go to
https://www.iataonline.com/Store/Products/Product+Detail.htm?cs_id=9625%2D50&cs_catalog=Publications.

R.18 Department of Transportation Hazardous Materials Information Center (HMIC)

Pipeline and Hazardous Materials Safety Administration (PHMSA) operates the HMIC for help on use of the Hazardous Materials Regulations 49 CFR Parts 100-185. The phone number is 1-800-HMR-4922 or 1-800-467-4922 and is touch tone menu driven. Non-touch tone phone callers must use the telephone number 202-366-8553. More information can be found at http://phmsa.dot.gov/hazmat/info-center.

R.19 Hazardous Materials Regulations (HMR)

The HMR, issued by the PHMSA of the Department of Transportation (DOT), govern the transportation of hazardous materials by highway, rail, vessel, and air. Hazardous materials classification, packaging, hazard communication, emergency response information and training as related to transportation are addressed. These regulations apply to each person who performs "…functions related to the transportation of hazardous materials such as determination of, and compliance with, basic conditions for offering; filling packages; marking and labeling packages; preparing shipping papers; handling, loading, securing and segregating packages within a transport vehicle, freight container or cargo hold; and transporting hazardous materials." The regulations can be found at http://phmsa.dot.gov/hazmat/regs.

R.20 Hazardous Materials Transportation Training One-Day Workshops

This workshop provides an overview of how to use the HMR and a summary of many of the requirements found in the HMR which can affect transportation safety. Topics covered include: Training Requirements, Packaging, Hazard Communications, and Security. More information on these workshops can be found at http://phmsa.dot.gov/hazmat/training/seminars.

ICS Information and Training

R.21 Incident Command System (ICS)

ICS is a flexible and scalable system driven by the tactical needs of the responders at the scene. It provides a common structure and terminology that facilitates the integration of multiple agencies while still maintaining a coherent chain of command. ICS also provides standardized training, pre-designated leadership positions, specific span of control, and well-understood assigned responsibilities. For more information, please refer to the draft EPA National Incident Management Handbook or the Federal Emergency Management Agency (FEMA) training site at: http://www.fema.gov/about/training/index.shtm.

R.22 National Incident Management System (NIMS) and ICS Training for the Water Sector

These training materials developed by the EPA Water Security Division help drinking water and wastewater utilities to better understand ICS, integrate with other first responders within an expanding ICS structure, and implement NIMS concepts and principles that will help utilities provide mutual aid and assistance to one another. Date Published: 09/05/2008. http://cfpub.epa.gov/safewater/watersecurity/publications.cfm?sort=name&view=doctype_results&document_type_id=9.

Appendix S Regional Laboratory Contact Information

Note: This appendix serves as a placeholder for regions to insert their laboratories' contact information and any Region specific information.