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Plan

Idaho Cleanup Project Drinking Water Program Plan

Idaho Cleanup Project

CH2M ◆ WG Idaho, LLC is the Idaho Cleanup Project contractor for the U.S. Department of Energy

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ACRONYMS

BMP	best management practice
CFR	Code of Federal Regulations
DEQ	Idaho Department of Environmental Quality
DOE	U.S. Department of Energy
DOE-ID	U.S. Department of Energy Idaho Operations Office
DQO	data quality objectives
DWP	Drinking Water Program
E&RS	Environmental and Regulatory Services
EPA	Environmental Protection Agency
ICP	Idaho Cleanup Project
IDAPA	Idaho Administrative Procedures Act
INL	Idaho National Laboratory
INTEC	Idaho Nuclear Technology and Engineering Center
JSA	job safety analysis
MCL	maximum contaminant level
MCP	management control procedure
PLN	plan
PRD	program requirements document
PWS	public water system
QA	quality assurance
QC	quality control
RWMC	Radioactive Waste Management Complex
SDWA	Safe Drinking Water Act
SMCL	secondary maximum contaminant level
SPR	sampling procedure

Idaho Cleanup Project Drinking Water Program Plan

1. INTRODUCTION

Environmental Project Support personnel monitor drinking water of Idaho Cleanup Project (ICP) facilities at the Idaho National Laboratory (INL) Site. Monitoring is focused on ICP drinking water systems, which are multiple-use wells for individual use, fire safety, and drinking water.

This Drinking Water Program (DWP) plan is structured to meet the minimum regulatory requirements for monitoring drinking water systems under the Idaho Department of Environmental Quality (DEQ) Rules, Idaho Administrative Procedures Act (IDAPA) 58.01.08, "Idaho Rules for Public Drinking Water Systems," and company requirements identified in Program Requirements Document (PRD)-5030, "Environmental Requirements for Facilities, Processes, Materials, and Equipment," Section 3.13. This program plan describes the aspects of monitoring, contains the drinking water sampling schedule, the data quality objectives (DQOs), and summarizes requirements established by the Environmental Protection Agency (EPA) and the State of Idaho for water quality parameters. This program plan also details the organizations responsible for implementing sample collection, sample analysis, quality assurance/quality control (QA/QC) requirements, documentation, and corrective action plans.

This program plan was prepared for use by Environmental Project Support sampling personnel at the INL Site and meets the requirements of a Category III Quality Assurance Program Plan as defined by the EPA and the requirements in *EPA Requirements for Quality Assurance Project Plans* (EPA QA/R-5).

Table A-1 in Appendix A compares the elements of this plan to the applicable company quality requirements and to EPA QA/R-5.

2. PROGRAM DESCRIPTION

The drinking water systems are monitored routinely for microbiological (total coliform and E. coli), chemical (organic and inorganic), and radiological contaminants for compliance with state and federal regulations and to ensure the water in these systems is safe for human consumption.

The ICP operates two drinking water systems at the INL Site: the Idaho Nuclear Technology Center (INTEC) and the Radioactive Waste Management Complex (RWMC) drinking water systems. These two systems are classified as nontransient, noncommunity water systems and are monitored in accordance with State of Idaho and EPA regulations. The State of Idaho has assigned Public Water System (PWS) numbers for each system: INTEC is PWS # ID6120012 and RWMC is PWS # ID6120018.

The State of Idaho has primacy for implementing the EPA drinking water regulations. Because State of Idaho and EPA monitoring regulations [Code of Federal Regulations (CFR) (40 CFR, Parts 141-143)] are the same, IDAPA 58.01.08 is generally referenced in this document.

3. PROGRAM OBJECTIVES

The following objectives have been established for sampling ICP drinking water systems:

- Protect public health
- Comply with regulatory requirements
- Meet the technical objectives of Environmental Project Support
- Meet standards of good practice.

3.1 Public Health Protection

Under the Safe Drinking Water Act (SDWA), EPA sets legal limits on the levels of certain contaminants in drinking water. The legal limits reflect both the level that protects human health and the level that water systems can achieve using the best available technology. Besides prescribing these legal limits, EPA rules set drinking water testing schedules and methods that water systems must follow. The rules also list techniques for treating contaminated water.

Drinking water systems must be monitored for certain regulated contaminants, and the monitoring results must be reported to the state. Standards on what contaminants must be monitored for and how often they must be monitored are set by EPA and implemented into State of Idaho regulations.

Drinking water systems are required to inform their customers of any violations of the state's drinking water standards. Notification requirements vary by category of violation incurred.

3.2 Regulatory Requirements

The objective of the regulatory requirements is to protect the health of workers and visitors at the INL Site by ensuring that the drinking water does not expose them to contaminants that pose an unacceptable risk (above the maximum contaminant level [MCL] or action level). The ICP drinking water systems will be monitored as nontransient, noncommunity water systems according to state and federal regulations. Human health is protected by complying with drinking water regulations and U.S. Department of Energy (DOE) orders. Table 3-1 lists these regulatory codes and orders. Regulatory limits that define maximum drinking water concentrations that protect human health are given in IDAPA 58.01.08, and DOE Order 458.1 Chg. 2, “Radiation Protection of the Public and the Environment,” which incorporate by reference federal limits in 40 CFR, Parts 141-143.

Table 3-1. Applicable drinking water regulatory codes and orders.

Document Number	Document Title	Summary
DOE Order 458.1 Chg. 2	Radiation Protection of the Public and the Environment	This DOE order provides a level of radiation protection for persons consuming water from drinking water systems operated by the Idaho Cleanup Project. The level of protection should be equivalent to that provided to members of the public by the community drinking water standards of 40 CFR 141.
IDAPA 58.01.08	Idaho Rules for Public Drinking Water Systems	ICP drinking water must meet the state regulations to be in compliance. The regulations list the parameters to be analyzed and the frequency of the analysis. The scope of the regulations is to provide a degree of assurance that public drinking water systems are protected from contamination and maintained free from contaminants that may injure the health of the consuming public.
40 CFR 141 40 CFR 142 40 CFR 143	National Primary Drinking Water Regulations National Primary Drinking Water Regulations Implementation National Secondary Drinking Water Regulations	All states are required to comply with the Safe Drinking Water Act set forth by EPA, and the state regulations must be as stringent as the federal regulations to be in compliance. The drinking water regulations for Idaho are as strict as those promulgated under the Safe Drinking Water Act; therefore, the State of Idaho regulations have primacy.

The ICP drinking water systems are classified as nontransient, noncommunity water systems and, as such, are not required by the State of Idaho to meet the requirements for radionuclide monitoring and reporting. However, DOE Order 458.1 Chg. 2, Attachment 1, "Contractor Requirements Document," paragraph 2.i., "Protection of Drinking Water and Groundwater," Item (1) states that the contractor must establish and implement procedures and practices to ensure that DOE sites provide a level of radiation protection for persons consuming water from a drinking water system operated by DOE, directly or through a DOE contractor, which is equivalent to that provided to members of the public by the community drinking water standards of 40 CFR Part 141, "National Primary Drinking Water Regulations" (that is, not exceed the radionuclide MCLs).

Environmental Project Support personnel must monitor ICP drinking water systems in accordance with established schedules and determine whether concentrations of parameters exceed MCLs or action levels specified in state and federal regulations. If concentrations are below MCLs or action levels, then no action is required. If concentrations exceed MCLs or action levels, then response actions, such as confirmatory sampling and notification, will be taken as specified in the regulations.

3.3 Technical Objectives

The technical objectives are to ensure monitoring is representative and accurate of the water systems and of water actually consumed at ICP-operated facilities. In addition, the drinking water data will be either verified and/or validated to ensure accurate results are reported.

3.4 Standards of Good Practice

The ICP water system monitoring process is routinely evaluated and updated to the latest standards (e.g., American Water Works Association) through self-assessments and procedural and field activity audits.

4. PROGRAM BASES AND DESIGN

In order to fulfill the DWP objectives, this plan has been established to ensure drinking water is safe for human consumption and that the drinking water meets state and federal regulations.

4.1 Monitoring Locations

Monitoring locations currently consist of two active drinking water systems, supplied by three wells, which are monitored routinely (see Table 4.1). Depending on the specific regulatory requirements, samples are collected either at the wellhead, manifold, or from the point of entry to the distribution system after any treatment. Monitoring locations for the two drinking water systems are listed in Table 4-2.

Table 4-1. Drinking water wells monitored by the Idaho Cleanup Project at the INL Site.

Well Name	Building/Structure Number
CPP-04	CPP-1767
ICPP-POT-A-012	CPP-1767
RWMC Production	WMF-603

Table 4-2. Idaho Cleanup Project drinking water monitoring locations and schedule.

Facility/Sample Point	Type of Contaminant	Contaminant	Maximum Contaminant Level (MCL)	Samples Collected (Minimum)
INTEC/Distribution System	Microbiological 40 CFR 141.21 and 141.63	Total coliform E. coli	If fewer than 40 samples per month collected, no more than 1 positive for total coliform	2 samples monthly[a] 1 sample monthly[b]
INTEC/CPP-1666	Disinfection byproducts (DPBs) 40 CFR 141.130 – 141.135	Total trihalomethanes (TTHMs)[c]	0.08 mg/L	1 sample (July, August, or September) as required once every 3 years[a] (due between 01/01/2014 and 12/31/2016)
		Haloacetic acids (HAA5s)[d]	0.60 mg/L	
INTEC/CPP-614	Inorganic chemicals (IOCs) 40 CFR 141.11, 141.23 and 141.62(b)	Antimony	0.006 mg/L	1 sample as required once every 9 years[a] (due between 01/01/2020 and 12/31/2028)
		Arsenic	0.010 mg/L	
		Barium	2 mg/L	
		Beryllium	0.004 mg/L	
		Cadmium	0.005 mg/L	
		Chromium	0.1 mg/L	
		Mercury	0.002 mg/L	
		Selenium	0.05 mg/L	
		Thallium	0.002 mg/L	
		Nitrite as nitrogen	1 mg/L	
		Nitrate as nitrogen	10 mg/L	1 sample annually[a]

Table 4-2. (continued).

Facility/Sample Point	Type of Contaminant	Contaminant	Maximum Contaminant Level (MCL)	Samples Collected (Minimum)
INTEC/CPP-626, CPP-652, CPP-659, CPP-663, CPP-666, CPP-698, CPP-1604, CPP-1605, CPP-1650, CPP-1686	Inorganic chemicals (IOCs) 40 CFR 141.80–141.91	Lead	0.015 mg/L (action level)	10 samples (June, July, August, or September) as required once every 3 years[a] (due between 01/01/2012 and 12/31/2014)
		Copper	1.3 mg/L (action level) Lead and copper are regulated by a treatment technique that requires systems to control the corrosiveness of their water. If more than 10% of samples exceed the action level, water systems must take additional steps.	

Table 4-2. (continued).

Facility/Sample Point	Type of Contaminant	Contaminant	Maximum Contaminant Level (MCL)	Samples Collected (Minimum)
INTEC/CPP-614	Volatile organic chemicals (VOCs) 40 CFR 141.24 and 141.61(a)	1,1,1-Trichloroethane	0.2 mg/L	1 sample as required once every 6 years[a] (due between 01/01/2017 and 12/31/2022)
		1,1,2-Trichloroethane	0.005 mg/L	
		1,1-Dichloroethylene	0.007 mg/L	
		1,2,4-Trichlorobenzene	0.07 mg/L	
		1,2-Dichlorobenzene (o-Dichlorobenzene)	0.6 mg/L	
		1,2-Dichloroethane	0.005 mg/L	
		1,2-Dichloropropane	0.005 mg/L	
		1,4-Dichlorobenzene (para-Dichlorobenzene)	0.075 mg/L	
		Benzene	0.005 mg/L	
		Carbon tetrachloride	0.005 mg/L	
		Chlorobenzene (Monochlorobenzene)	0.1 mg/L	
		cis-1,2-Dichloroethylene	0.07 mg/L	
		Dichloromethane	0.005 mg/L	
		Ethylbenzene	0.7 mg/L	
		Styrene	0.1 mg/L	
		Tetrachloroethylene	0.005 mg/L	
		Toluene	1 mg/L	
		trans-1,2-Dichloroethylene	0.1 mg/L	
		Trichloroethylene	0.005 mg/L	
		Vinyl chloride	0.002 mg/L	
		Xylenes (total)	10 mg/L	

Table 4-2. (continued).

Facility/Sample Point	Type of Contaminant	Contaminant	Maximum Contaminant Level (MCL)	Samples Collected (Minimum)
INTEC/CPP-614	Synthetic organic contaminants (SOCs) 40 CFR 141.24 and 141.61(c)	2,4-D	0.07 mg/L	1 sample as required once every 3 years[a] (due between 01/01/2014 and 12/31/2016)
		2,4,5-TP	0.05 mg/L	
		Dalapon	0.2 mg/L	
		Dinoseb	0.007 mg/L	
		Pentachlorophenol	0.001 mg/L	
		Picloram	0.5 mg/L	
INTEC/CPP-614	Radiological 40 CFR 141.25, 141.26, 141.55, and 141.66	Gross alpha (including radium-226, but excluding radon and uranium)	15 pCi/L	1 sample semiannually[b]
		Gross beta	Shall not produce annual dose equivalent to the total body or internal organ greater than 4 millirem/year	1 sample semiannually[b]
		Radium-226	Combined radium-226/228 is 5 pCi/L	1 sample every 9 years[b] Due in 2017
		Radium-228	Combined radium-226/228 is 5 pCi/L	1 sample every 9 years[b] Due in 2017
		Strontium-90	8 pCi/L	1 sample annually[b]
		Tritium	20,000 pCi/L	1 sample annually[b]
		Uranium	0.030 µg/L	1 sample every 9 years[b] Due in 2017

Table 4-2. (continued).

Facility/Sample Point	Type of Contaminant	Contaminant	Maximum Contaminant Level (MCL)	Samples Collected (Minimum)
RWMC/Distribution System	Microbiological 40 CFR 141.21 and 141.63	Total coliform E. coli	If fewer than 40 samples per month collected, no more than 1 positive for total coliform	1 sample quarterly[a] 1 sample monthly[b]
RWMC/WMF-645	Disinfection byproducts (DBP) 40 CFR 141.130 – 141.135	Total trihalomethanes (TTHMs)[c]	0.08 mg/L	1 sample (July, August, or September) as required once every 3 years[a] (due between 01/01/2014 and 12/31/2016)
		Haloacetic acids (HAA5s)[d]	0.60 mg/L	
RWMC/WMF-604	Inorganic chemicals (IOCs) 40 CFR 141.11, 141.23 and 141.62(b)	Antimony	0.006 mg/L	1 sample as required once every 9 years[a] (due between 01/01/2020 and 12/31/2028)
		Arsenic	0.010 mg/L	
		Barium	2 mg/L	
		Beryllium	0.004 mg/L	
		Cadmium	0.005 mg/L	
		Chromium	0.1 mg/L	
		Mercury	0.002 mg/L	
		Selenium	0.05 mg/L	
		Thallium	0.002 mg/L	
		Nitrite as nitrogen	1 mg/L	
		Nitrate as nitrogen	10 mg/L	1 sample annually[a]

Table 4-2. (continued).

Facility/Sample Point	Type of Contaminant	Contaminant	Maximum Contaminant Level (MCL)	Samples Collected (Minimum)
RWMC/WMF-601, WMF-604, WMF-610, WMF-613, WMF-617, WMF-620, WMF-637, WMF-646, WMF-658, WMF-677	Inorganic chemicals 40 CFR 141.80–141.91	Lead	0.015 mg/L (action level)	10 samples (June, July, August, or September) as required once every 3 years[a] (due between 01/01/2012 and 12/31/2014)
		Copper	1.3 mg/L (action level) Lead and copper are regulated by a treatment technique that requires systems to control the corrosiveness of their water. If more than 10% of samples exceed the action level, water systems must take additional steps.	
RWMC/WMF-603 and WMF-604	Volatile organic chemicals (VOCs) 40 CFR 141.24 and 141.61(a)	1,1,1-Trichloroethane	0.2 mg/L	1 sample as required once every 3 years at WMF-604[a] (due between 01/01/2014 and 12/31/2016) 1 sample quarterly at WMF-603[b] 1 sample quarterly at WMF-604[b]
		• 1,1,2-Trichloroethane	0.005 mg/L	
		• 1,1-Dichloroethylene	0.007 mg/L	
		• 1,2,4-Trichlorobenzene	0.07 mg/L	
		• 1,2-Dichlorobenzene (o-Dichlorobenzene)	0.6 mg/L	
		• 1,2-Dichloroethane	0.005 mg/L	
		1,2-Dichloropropane	0.005 mg/L	

Table 4-2. (continued).

Facility/Sample Point	Type of Contaminant	Contaminant	Maximum Contaminant Level (MCL)	Samples Collected (Minimum)
		1,4-Dichlorobenzene (para-Dichlorobenzene)	0.075 mg/L	
		Benzene	0.005 mg/L	
		Carbon tetrachloride	0.005 mg/L	
RWMC/WMF-603 and WMF-604 (continued)		Chlorobenzene (Monochlorobenzene)	0.1 mg/L	
		• cis-1,2-Dichloroethylene	0.07 mg/L	
		• Dichloromethane	0.005 mg/L	
		• Ethylbenzene	0.7 mg/L	
		• Styrene	0.1 mg/L	
		• Tetrachloroethylene	0.005 mg/L	
		• Toluene	1 mg/L	
		• trans-1,2-Dichloroethylene	0.1 mg/L	
		• Trichloroethylene	0.005 mg/L	
		• Vinyl chloride	0.002 mg/L	

Table 4-2. (continued).

Facility/Sample Point	Type of Contaminant	Contaminant	Maximum Contaminant Level (MCL)	Samples Collected (Minimum)
		• Xylenes (total)	10 mg/L	1 sample quarterly at WMF-604[a]
RWMC/WMF-604	Synthetic organic contaminants (SOCs) 40 CFR 141.24 and 141.61(c)	• 2,4-D	0.07 mg/L	1 sample as required once every 3 years[a] (due between 01/01/2014 and 12/31/2016)
		• 2,4,5-TP	0.05 mg/L	
		• Dalapon	0.2 mg/L	
		• Dinoseb	0.007 mg/L	
		• Pentachlorophenol	0.001 mg/L	
		• Picloram	0.5 mg/L	

Table 4-2. (continued).

Facility/Sample Point	Type of Contaminant	Contaminant	Maximum Contaminant Level (MCL)	Samples Collected (Minimum)
RWMC/WMF-604	Radiological 40 CFR 141.25, 141.26, 141.55, and 141.66	Gross alpha (including radium-226, but excluding radon and uranium)	15 pCi/L	1 sample semiannually[b]
		Gross beta	Shall not produce annual dose equivalent to the total body or internal organ greater than 4 millirem/year	1 sample semiannually[b]
		Radium-226	Combined radium-226/228 is 5 pCi/L	1 sample every 9 years[b] Due in 2017
		Radium-228	Combined radium-226/228 is 5 pCi/L	1 sample every 9 years[b] • Due in 2017
		Strontium-90	8 pCi/L	1 sample annually[b]
		Tritium	20,000 pCi/L	1 sample annually[b]
		Uranium	0.030 µg/L	1 sample every 9 years[b] Due in 2017

a. Compliance sample.
b. Surveillance sample.
c. Total trihalomethanes—the sum of the concentrations of bromoform, bromodichloromethane, chloroform, and dibromochloromethane.
d. Haloacetic acids—dibromoacetic acid, dichloroacetic acid, monobromoacetic acid, monochloroacetic acid, and trichloroacetic acid.

4.2 Type and Frequency of Sampling

ICP water systems at INTEC and RWMC are monitored according to their classification as nontransient, noncommunity water systems.

4.3 Primary and Secondary Drinking Water Contaminants

Contaminants are regulated by the State of Idaho under authority of the SDWA. The State of Idaho regulations incorporate the federal limits by reference. Contaminants that have been proven to cause cancer or other health problems in laboratory animals at high concentrations are regulated by primary drinking water standards. Primary drinking water standards set MCLs and action levels for these contaminants. Contaminants that have not been proven to cause adverse health effects, but can cause aesthetic problems in a water supply, are regulated by secondary maximum contaminant levels (SMCLs).

Table 4-2 shows the drinking water schedule for the two ICP drinking water systems at the INL Site. A sample tracking system is used to track the status of samples collected. A calendar is also kept in the DWP files to track each month's planned sampling to ensure all samples are collected.

4.4 Surveillance Samples

The DWP monitors many contaminants more frequently during the initial period to establish a baseline; these samples are surveillance samples. Subsequent monitoring schedules are established using the baseline information. All samples collected for surveillance are evaluated to ensure the objectives of the DWP are being met.

Because of known contaminants, the DWP monitors more frequently than regulations require; these additional samples are also surveillance samples. For example, the DWP monitors more frequently for microbiological analysis because of historical problems with microbiological contaminants.

If an MCL, action level, or SMCL is exceeded on a surveillance sample, the DWP follows the same guidelines as those for a compliance sample, except for regulatory agency notification. Notification of surveillance samples is tracked internally.

5. PROGRAM ORGANIZATION AND RESPONSIBILITIES

This section describes the DWP organization and the responsibilities of key program positions.

5.1 Environmental and Regulatory Services Director

The Environmental and Regulatory Services (E&RS) director is responsible for implementing the DWP, including seeking necessary funding to implement the program as defined in this plan and obtaining trained staff and facilities to carry out the monitoring activities. The E&RS director is also responsible for maintaining a records management system for quality records generated by the DWP.

5.2 Drinking Water Program Technical Resource

The DWP technical resource provides direction to employees in conformance with program requirements, ensures that the plan and implementing program documentation meet the regulatory

requirements, and monitors work schedules to ensure compliance with project commitments. The DWP technical resource or designee reviews reports and data to ensure conformance with this plan. The DWP technical resource communicates with DEQ and the Department of Energy Idaho Operations Office (DOE-ID) concerning drinking-water-related issues and notifies facility managers and project environmental leads if an MCL or other regulatory standard is exceeded.

5.3 Field Team Leader/Sampler

The field team leader/sampler ensures that all field activities are conducted according to the requirements of this plan, management control procedures (MCPs), and sampling procedures (SPRs). The field team leader/sampler also establishes a system of recordkeeping, recommends standards for purchasing, coordinates sampling and analysis, ensures that assigned personnel are adequately trained to perform required sampling, and with the DWP technical resource, identifies and resolves problems.

5.4 Quality Engineer

Quality engineering support is obtained as needed to support Environmental Project Support activities.

5.5 Safety Engineer

Safety engineering and industrial hygiene support is obtained as needed to support Environmental Project Support activities.

5.6 Personnel Training

Personnel and new employees must be trained in sampling MCPs, SPRs, job safety analyses (JSAs), this plan, and paperwork (logbooks, chain of custody, etc.) of the DWP.

5.6.1 Program Training Techniques

The E&RS director, with input from the DWP technical resource, prepares individual training plans for the work organization in accordance with MCP-27, “Preparation and Administration of Individual Training Plans.” In addition, the new employee is familiarized with Environmental Project Support in accordance with MCP-27.

5.6.2 Project-Specific Training

The new employee or personnel new to the DWP must be familiar with this plan and the program’s SPRs, and must complete required reading training of MCP-9227, “Environmental and Regulatory Services Logkeeping Practices,” and MCP-9228, “Managing Nonhazardous Samples.” The new employee is under an observation period until the DWP field team leader/sampler determines that the employee is capable of performing the task alone. JSA-597, “Working in Environmental Project Support Sample Preparation Areas - Various Locations” and JSA-6703, “Collecting Drinking Water Samples per SPR-188, SPR-189, and SPR-190” list required training courses, qualifications, job codes, and required reading.

5.6.3 Continued Training

DWP personnel receive continued training through sampling meetings, training sessions (as needed), on-Site and off-Site seminars, and education programs. Safety training occurs during the initial staff orientation meeting and on a continual basis throughout the year. The E&RS training coordinator keeps records of staff meeting attendance and safety training.

6. DATA QUALITY OBJECTIVES

The decisions to be made, along with the sample design and frequency, are defined by state and federal drinking water regulations, as discussed in Section 3.1. A brief discussion of the DQO process steps and the application of the process are provided in the following subsections.

6.1 Problem Statement

The problem addressed by the DWP is to protect the health of workers and visitors at the INL Site by ensuring that the water consumed does not expose them to contaminants that pose an unacceptable risk. An unacceptable risk is defined as an exceedance of a stated MCL or action level.

As stated in Section 3.1, the two ICP drinking water systems at INTEC and RWMC have been classified as nontransient, noncommunity water systems. Monitoring is required to be performed according to the classification of the water system. Table 4-2 lists applicable regulatory MCLs and action levels for each contaminant.

6.2 Decision Identification and Inputs to the Decision

Do the concentrations of the regulated drinking water contaminants supplied by ICP drinking water sources exceed the stated MCLs or action levels?

Input

- To evaluate whether the contaminants exceed stated MCLs or action levels, sampling personnel must routinely sample each active drinking water system at the INL Site and obtain the concentration of each contaminant using the appropriate analytical method of analyses
- Only approved drinking water methods listed in 40 CFR, Parts 141 and 143 will be used for drinking water analyses
- Laboratories used for analyses must be certified for drinking water analyses by the EPA, the state of residence, and have reciprocity with the State of Idaho.

Action

- If the contaminant's concentration exceeds 90% of the MCL but does not exceed the MCL, then response actions are determined by established best management practices (BMPs). Examples of BMP actions include monitoring the source water (i.e., samples at wellhead), resampling the original sampling point, checking sampling techniques, reviewing laboratory QA/QC, etc.

- If the contaminant's concentration is above the MCL, then the response actions are determined by the state or federal regulations. These required regulatory-driven responses actions include confirmation sampling and notification and are addressed in Section 15.1.

6.3 Define Boundaries

The spatial boundary is defined as the two ICP water systems at INTEC and RWMC, which are located within the INL Site boundary, as listed in Section 2.

The sample collection schedule is determined according to regulations and is identified in Section 4.

6.4 Data Quality Assurance/Quality Control

6.4.1 Tolerance Limits on Decision Errors

For the DWP, the decision errors are deciding (1) that the true contaminant concentration from a single event has exceeded the MCL when it has not, and (2) that the true contaminant concentration has not exceeded an MCL when it actually has.

The consequence of deciding that the true contaminant concentration has exceeded an MCL when it has not is the cost of confirmation samples, unwarranted notifications, issue tracking, cause analysis, MCL violations, and the possible psychological stress imposed on affected workers or visitors.

The consequence of deciding that the true contaminant concentration has not exceeded an MCL when it actually has is possible harm to the health of persons who continue to drink from the water source and possible liabilities for future damages.

Validation and/or verification are performed to ensure that project and laboratory QA/QC requirements have been met. Section 15 addresses corrective action that will be taken if these criteria are not met.

6.4.1.1 Precision. The regulations specify what analytical methods are to be used for each contaminant by certified laboratories. Precision is a measure of mutual agreement among individual measurements of the same property, usually under prescribed similar conditions. Duplicate samples are used as indicators of the precision of sampling techniques and laboratory analytical methods. Three types of duplicates are used: field replicates, laboratory recounts, and laboratory duplicates. Field replicates measure the precision of the entire sampling and analyses process. Laboratory recounts measure the precision of laboratory radiation counting procedures only. Laboratory duplicates measure the precision of laboratory analysis.

Within each calendar year, 10% of the minimum number of samples collected for each analysis type are QA/QC samples, which include field duplicates. Relative percent difference determined from field duplicates must be within 35% or less for 90% of the field duplicates that have positive results greater than five times the method detection limit.

In specifying particular analytical methods to obtain data to meet permit requirements, EPA also specifies the tolerable level of laboratory analytical uncertainty in data. Analytical methods specify that certain QC checks be performed during sample analysis and specify the limits within which the QC

checks must fall. Environmental Project Support passes these requirements to analytical laboratories through the laboratory statement of work. The laboratory is required to include the results of QC measurements with the analytical results returned to Environmental Project Support. The data validation process involves checking the QC data against the method-specific limits to ensure that QA goals were met. Data flags are used to mark analytical data that either do not conform to QC limits or may be questionable because of laboratory findings. In this way, the quality of laboratory data is identified so that the level of uncertainty is known during data interpretation.

6.4.1.2 Accuracy. Accuracy is a determination of how close the measurement is to the true value. For concentrations of contaminants in drinking water, performance evaluation (blind spikes) samples are used to determine the accuracy of laboratory analyses. Within each calendar year, 10% of the minimum number of samples collected (excluding bacteria samples) are QA/QC samples, which include blind spikes. All blind spike percent recoveries must fall within the standards range.

6.4.1.3 Representativeness. Representativeness is the degree to which data accurately and precisely represent a characteristic of a population, parameter variations at a sampling point, a process condition, or an environmental condition. Representativeness is ensured through use of established sampling points, schedules, and procedures for field sample collection, preservation, and handling.

6.4.1.4 Completeness. Completeness is a measure of the amount of valid data obtained from a measurement system compared to the amount that was expected to be obtained under correct, normal conditions. The criterion for completeness by laboratories supporting the program is that at least 90% of the surveillance and 100% of the compliance samples submitted annually must be successfully analyzed and reported according to specified procedures. Similarly, the criterion for field data collection under the control of the program is that at least 90% of the surveillance and 100% of the compliance samples must be successfully collected on an annual basis and reported according to the specified procedures. If a completeness criterion is not met, the problem will be evaluated, and it will be determined whether the quality of the remaining data is suspect and whether corrective action is needed either in the field collection or laboratory analysis.

6.4.1.5 Comparability. Comparability expresses the confidence with which one data set can be compared to another data set measuring the same property. Comparability is ensured through the use of SPRs for sample collection, preparation, and handling, approved analytical methods for laboratory analyses, and consistency in reporting procedures.

6.4.2 Optimize the Design

The frequency of sampling and number of samples collected per event is determined from the regulations. The result of a single measurement collected and analyzed by the prescribed methods can initiate action.

7. SAMPLING PROCEDURES

Generating quality data, upon which sound regulatory compliance decisions can be based, begins with collecting representative samples. Samples must be collected in a manner that is representative of the drinking water and avoids alteration of the sample's composition during sampling, handling, or shipping. The DWP consistently follows well documented JSAs, SPRs, and MCPs that closely follow accepted EPA protocols to ensure that samples are representative of the media being monitored.

7.1 Sample Collection Procedures and Methods

The DWP follows approved SPRs and MCPs. The following SPRs and MCPs apply to DWP sampling:

- SPR-188, "Collecting Water Samples for Radiological Analysis"
- SPR-189, "Routine Collection of Samples for Coliform Bacteriological Analysis"
- SPR-190, "Sampling of Public Water Systems"
- MCP-9227, "Environmental and Regulatory Services Logkeeping Practices"
- MCP-9228, "Managing Nonhazardous Samples."

7.2 Sample Containers and Sample Preservation

The DWP follows EPA-established sample container cleaning protocols, follows sample container type requirements, and uses the required sample preservatives to prevent cross contamination during sampling. Current analytical methods, holding times, containers, and preservation are provided in 40 CFR 141.

7.3 Sample Security and Storage

Samples are collected and transported under chain of custody as discussed in Section 8.

The subcontract laboratory follows the laboratory's QA plan to store samples and, thus, ensure sample integrity. The laboratory's QA plan is reviewed and approved during the laboratory procurement process.

7.4 Sample Packaging and Shipping

Samples are packaged according to MCP-9228. Samples are packaged in a cooler with sufficient cooling material to maintain sample temperatures following preservation recommendations. Glass bottles are wrapped with bubble wrap or other protective material. Samples are either delivered or shipped off the INL Site by overnight carrier to ensure sample integrity and to meet EPA-required holding times.

7.5 Recordkeeping

Auditable records of environmental monitoring and surveillance activities carried out under DOE Order 458.1 Chg. 2 must be maintained in accordance with the requirements of DOE Order 414.1D, "Quality Assurance." The Environmental Project Support processes for quality records are contained in MCP-557, "Records Management." In addition, logbooks are completed and maintained according to MCP-9227.

7.5.1 Sample Identifier

Each sample must have a unique identifier to ensure that analytical data are uniquely identified and can be associated with the time and place of its collection. The DWP assigns a 10-digit number to each sample, except for bacteriological samples, which are assigned a 9-character identifier. SPR-188, -189, and -190 show the method of sample identification.

7.5.2 Sample Label

Samples label requirements are implemented in MCP-9228. Each sample container is clearly labeled using dark indelible ink. Samples are labeled so that laboratory results obtained from the sample material are correctly related to the sampling time and location. Samples labels must be robust and protected to ensure recorded information is not lost. Sample labels are not maintained in the project records.

7.5.3 Chain of Custody Form

The chain of custody form accompanies the sample and provides documentation of the handling and transfer of the sample. Use of chain of custody forms is described in MCP-9228. The chain of custody form is maintained as a quality record.

7.5.4 Sample Logbook

Sample logbooks are used to record field sampling activities, to document the results of field measurements, and to record all samples collected, including all QA/QC samples. Sample logbooks are completed in accordance with MCP-9227.

The nature of sampling activities is such that variations from the procedures will occasionally be required to complete the task. When these deviations are one-time events, instructions in MCP-135, "Document Management," will be followed and the field change will be noted in the sample logbook. If the field change results in a permanent change, then a Document Revision Form must be completed and a new revision of the procedure released.

8. SAMPLE CUSTODY

Sample chain of custody provides traceability of analytical results to the time and location at which the sample was collected. The chain of custody also documents the handling and transfer of samples from the time and location of sampling through the analysis procedure in the laboratory.

Chain of custody forms are prepared for all samples, custody is maintained to the extent practicable, and transfers are documented with signatures, dates, and times on the chain of custody form. Sample identity is verifiable from the sample logbook and laboratory analytical data sheets, as well as the chain of custody form.

The chain of custody procedure for the DWP is MCP-9228.

8.1 Definition of Custody

A sample is considered to be in an individual's custody if the sample is (a) in the physical possession or view of the responsible party, or (b) secured by the responsible party to prevent tampering, or (c) placed in a restricted area by the responsible party.

The Sample Preparation Area is used by the DWP to store samples in a secured area with restricted access. It is locked to restrict access whenever Environmental Project Support personnel are not present.

8.2 Transfer of Chain of Custody

Samples are accompanied by a chain of custody form. When possession of samples is transferred, the individual relinquishing the samples signs and records the date and time on the chain of custody form. The individual receiving the samples also signs and records the date and time on the chain of custody form. When samples are sent to the laboratory, the chain of custody form is sealed in the shipping container and is not available for documenting transfers. Security of the samples during shipping is maintained by sealing the shipping container with a custody seal prior to shipment. The laboratory records the condition of the containers upon receipt to document that the seals are intact upon arrival Information on the condition of the containers and samples upon arrival at the laboratory and a copy of the original chain of custody form are included with the analytical data package. The shipping forms from the freight carrier are maintained by and retrievable from Transportation and Packaging.

8.3 Laboratory Custody Procedures

Upon receipt of the samples, the laboratory signs the chain of custody form and writes the condition of the samples on the form. Any conditions, such as temperature in excess of preservation requirements, are noted. The laboratory notifies the DWP field team leader/sampler, Sample and Analysis Management, or designee of any evidence of tampering, broken sample containers, chain of custody discrepancies, etc. The laboratory follows internal chain of custody procedures documented in laboratory standard operating procedures. These internal laboratory procedures are reviewed for adequacy during the laboratory procurement process.

9. STANDARDIZATION PROCEDURES AND FREQUENCY

Analytical and sampling equipment is standardized or calibrated, whichever is applicable, for the equipment being used, to ensure that it is operating correctly and that information provided by the instrumentation is accurate.

9.1 Laboratory Instrumentation

Standardization and calibration procedures and frequencies for laboratory analytical equipment are specifically listed in EPA analytical methods. Compliance with method-specific calibration procedures is required in either or both the statement of work or the task order statement of work for analytical contracts between ICP and the performing laboratories. Laboratory compliance with method requirements is checked during independent laboratory assessments conducted for the DWP or during laboratory certification by the state and confirmed by data validation.

Only laboratories that have instruments that are dedicated for drinking water analysis are utilized. Also, laboratories must have separate refrigerators for drinking water samples that have a high risk of cross-contamination among other samples (e.g., volatile organic compounds).

9.2 Field Instrumentation

Field instrumentation is not used, other than for chlorine testing. The chlorine test kit does not require standardization.

10. ANALYTICAL PROCEDURES

10.1 Laboratory Certifications

All drinking water analyses used for compliance purposes must be completed by a laboratory that is certified by the State of Idaho or a laboratory that has reciprocity with the State of Idaho (IDAPA 58.01.08.100.10). In addition, all drinking water methods used by the laboratory must be EPA-approved, as listed in 40 CFR 141 and 143.

11. DATA VALIDATION AND REPORTING

The DWP follows the data verification instructions in MCP-9236, "Analytical Data Verification, Assessment, and Reporting" and MCP-9229, "Validation, Verification, and Controlling Environmental Monitoring Data," for microbiological (coliform) and chemical (organic and inorganic) contaminants. Laboratory analytical results for radiological contaminants are sent for Level B validation in accordance with Guide (GDE)-205, "Radiological Data Validation."

11.1 Data Evaluation

Data evaluation is the process of verifying that reportable data accurately reflect the measurement value. The evaluation process includes verifying instrument readings and calculations, reviewing QA/QC, evaluating field performance, and reviewing the data package for consistency with the requirements in either or both the statement of work or task order statement of work. All data will be evaluated.

11.2 Data Assessment

Data assessment is performed by comparing the results to MCLs and historical results.

11.3 Data Reporting

Data generated in support of the DWP are reported in a variety of ways. Information reports contain a summary of data with associated data evaluation and assessment comments. Monthly or quarterly reports are generated throughout the year, and the DWP provides a data synopsis for the Annual Site Environmental Report.

11.3.1 Reporting Units

Reporting units used by the DWP for each contaminant will be consistent with laboratory reporting forms. Conversion factors will be included for comparison with units specified in state and federal regulations.

11.3.2 Required Reporting

Environmental Project Support provides compliance sample data to DEQ to meet reporting requirements of IDAPA 58.01.08.150.

Reporting requirements are implemented in the following:

- SPR-188, "Collecting Water Samples For Radiological Analysis"
- SPR-189, "Routine Collection of Samples for Coliform Bacteriological Analysis"
- SPR-190, "Sampling of Public Water Systems"
- MCP-3480, "Environmental Instructions for Facilities, Processes, Materials, and Equipment"
- MCP-9109, "Preparation, Certification, and Transmittal of Environmental Deliverables."

The following reports are provided:

- Results of all monitoring and analyses required under State of Idaho regulations
- A representative copy of each type of public notice distributed, published, posted, or made available to the persons served by the water system or to the media within 10 days of the completion of each notification
- The DWP technical resource coordinates information on MCL violations for notification and reporting with the E&RS project environmental leads.

Surveillance samples results are tracked internally.

The DWP technical resource notifies the responsible charge operator, area project manager or designee, and applicable E&RS project environmental leads of the following according to MCP-3480:

- Exceedances of MCLs or maximum residual disinfectant levels
- Violation of treatment techniques
- Monitoring and testing procedure violations
- Failure to comply with the schedule of a variance or exemption
- Occurrence of a waterborne disease outbreak or other waterborne emergency

- Exceedance of the SMCL for fluoride
- Availability of monitoring results of unregulated contaminant
- Any other violations and situations required by DEQ.

11.3.2.1 Organic Contaminants. If an MCL for any organic contaminant is exceeded, DEQ and the consuming public are notified per IDAPA 58.01.08.150.02.

Water treatment or alternative water supplies may be required if the MCL is exceeded and will be initiated in accordance with applicable regulations and management evaluation as described in Section 15, "Corrective Action."

11.3.2.2 Inorganic Contaminants. If an MCL or action level for any inorganic contaminant is exceeded (excluding nitrate), then the State of Idaho and the consuming public are notified in accordance with IDAPA 58.01.08.150.02.

If the MCL for nitrate or nitrite is exceeded, another sample must be collected within 24 hours of receipt of the first sample showing an exceedance, and the average of the two samples must be used to test compliance and determine appropriate notification requirements per IDAPA 58.01.08.150.02.

Water treatment or alternative water supplies may be required if the MCL is exceeded. The organization operating the well will initiate corrections in accordance with applicable regulations and management evaluation.

11.3.2.3 Synthetic Organic Contaminants. If an MCL for any synthetic organic contaminant is exceeded, the State of Idaho and the consuming public must be notified per IDAPA 58.01.08.150.02.

Water treatment or alternative water supplies may be required if the MCL is exceeded. The organization operating the well will initiate corrections in accordance with applicable regulations and management evaluation.

11.3.2.4 Microbiological Contaminants. If the MCL for total coliform is exceeded, the State of Idaho and area landlords are notified according to IDAPA 58.01.08.150.01 and 58.01.08.150.02. Additional samples are collected within 24 hours according to IDAPA 58.01.08.100.01.e (40 CFR 141.21(b)).

Water treatment or alternative water supplies may be required if the MCL is exceeded. The organization operating the water system will initiate corrections in accordance with applicable regulations and management evaluation.

11.3.2.5 Radiological Contaminants. If the MCLs for radiological contamination are exceeded, DOE-ID will be notified. Water treatment or alternative water supplies may be required if an MCL is exceeded. The organization operating the water system will initiate corrective actions in accordance with applicable regulations and management evaluation.

11.3.2.6 Secondary Drinking Water Standards. Secondary Drinking Water Standards control contaminants in drinking water that primarily affect aesthetic qualities relating to the public acceptance of drinking water. At considerably higher concentrations of these contaminants, health implications may also exist. The regulations are not federally enforceable, but are intended as guidelines for the states (40 CFR 143.1). The only secondary drinking water standard that requires notification and compliance is an exceedance of fluoride. Exact wording for notification and additional requirements from 40 CFR 141.208 shall be followed.

11.3.3 Annual Site Environmental Report

Summarized drinking water monitoring data for the calendar year will be included in the Annual Site Environmental Report. Contaminants of interest or exceedances are reported.

12. INTERNAL QUALITY CONTROL CHECKS

The DWP monitors data quality with internal QC checks as stated in program-specific MCPs, SPRs, and this plan.

12.1 Field Activities

Assessments are periodically conducted by Environmental Project Support personnel not specifically associated with the DWP. These assessments are conducted to ensure that program plans and procedures are being followed.

QA/QC samples are included with samples to assess field activities and laboratory performance. The types and frequencies of submissions are covered in SPR-190.

12.2 Laboratory Activities

The laboratory follows approved EPA drinking water analytical methods to prepare and analyze laboratory samples. Data validation verifies that QC checks were performed and that results conform to method requirements.

13. PERFORMANCE AND SYSTEM ASSESSMENTS

13.1 System Assessments

Environmental Project Support, in coordination with Sample and Analysis Management, may conduct an annual audit of an analytical laboratory's operations and performance. The audit may be an onsite evaluation or a desk evaluation of the laboratory's past performance at the discretion of Sample and Analysis Management. DOE Consolidated Audit Program (DOECAP) audits of the laboratory will be considered as part of the evaluation information. Audits are conducted according to:

- Plan (PLN)-2106, "Environmental and Regulatory Services Performance Assurance and Assessment Program Plan"
- PRD-5093, "Management of Environmental Data"

- PRD-5030, "Environmental Requirements for Facilities, Processes, Materials, and Equipment"
- MCP-591, "Supplier Evaluation and Qualification"
- MCP-3480, "Environmental Instructions for Facilities, Processes, Materials, and Equipment."

The Sample and Analysis Management performance evaluations of analytical laboratories are addressed in PLN-491, "Laboratory Performance Evaluation Program Plan," which is owned by Sample and Analysis Management.

13.2 Self-Assessments

A self-assessment is a systematic check to determine whether personnel are complying with the requirements outlined and referenced in this plan and the DWP SPRs and technical procedures. The scheduling frequency of field activity assessments is the responsibility of the E&RS director. This is accomplished by implementing MCP-8, "Performing Management Assessments and Management Reviews," and MCP-9172, "Developing, Integrating, and Implementing Assessment Schedules." The self-assessment schedule is tracked in the companywide Integrated Assessment Schedule Database. Any issues from a self-assessment are identified, and response actions are scheduled and tracked in ICARE (Issue Communication and Resolution Environment) in accordance with MCP-598, "Corrective Action System," and MCP-538, "Control of Non-conforming Items."

14. PREVENTIVE MAINTENANCE PROCEDURES

Field instruments are backed up by a functionally equivalent instrument in case of a catastrophic instrument failure. Also, as a preventive measure, an adequate supply of bottles, preservatives, and miscellaneous sampling supplies are kept in the Sample Preparation Area.

Analytical laboratories have specific preventive maintenance procedures documented within their specific QA Program.

15. CORRECTIVE ACTION

The identification, cause, and corrective actions for conditions adverse to quality are documented and reported to appropriate levels of management as discussed in implementing procedures. Subsequently, the cause of any adverse condition that affects compliance with the applicable technical or QA/QC requirements is determined, and action is taken to preclude its recurrence. Nonconforming items are handled according to MCP-538. Corrective actions are handled as described in MCP-598.

When errors, deficiencies, or out-of-control situations exist, the QA Program provides systematic procedures and corrective actions to resolve problems and restore proper function to the analytical system. Corrective action procedures are described in Section 15.3.

15.1 Maximum Contaminant Level Exceedances

If the MCL or action level for any contaminant is exceeded on a single sample (routine compliance), DWP personnel implement SPR-189 (summarized as follows) to determine if alternative potable water sources are required:

1. Additional samples shall be collected to conform to regulations and to confirm the MCL or action level violation.

2. Proper notifications shall be made according to applicable regulations and company procedures.

3. An evaluation of the situation shall be performed by management to determine when water treatment or alternative water supplies are required.

4. Environmental Project Support shall provide technical assistance for determining the source of contamination, corrective actions, and follow-up sampling requirements.

If the MCL or action level for a contaminant is exceeded, DWP personnel shall notify area landlords.

15.2 Recordkeeping and Reporting

In addition to the recordkeeping practices listed in Section 7.5, the following information is maintained in accordance with MCP-557:

- Records of actions taken to correct violations of MCLs and action levels

- Copies of all written reports, summaries, or communications relating to sanitary surveys

- Records concerning a variance or exemption granted to the system.

In addition to the reporting requirements listed in Section 11.3.2, Environmental Project Support must provide the DOE-ID with a representative copy of each type of notice distributed, published, posted, or made available to the persons served by the water system or to the media within 10 days of the completion of each public notification.

15.3 Laboratory and Programmatic Quality Control

QC samples are used to measure the performance of the laboratory and for the overall sampling program. Method requirements for analytical QC are published in EPA methods, and conformance to the method requirements is documented by data validation. Field QC samples (duplicates and trip blanks) are used to assess the introduction of bias and uncertainty from the entire sampling and analysis process. Programmatic goals for field QC samples are presented in Section 6. Corrective action procedures are implemented when samples do not meet QA/QC established standards. The two types of reconciliation corrective actions available are: laboratory corrective actions and field corrective actions, which are identified in the following subsections.

Performance evaluation standards are prepared by an independent laboratory. Performance evaluation standards consist of specified parameter type and concentration prepared in the independent laboratory and sent to the INL Site. The standard is submitted as a "blind" sample to the analytical laboratory for analysis. The performance evaluation standard is used to assess laboratory accuracy; results should be within the performance acceptance limits specified on the performance standard's certification.

15.3.1 Laboratory Corrective Actions

The laboratory manager and the Sample and Analysis Management are responsible for ensuring that laboratory QA/QC procedures are followed. Laboratory situations requiring corrective actions, the appropriate corrective action, and the documentation requirements will be specified in the laboratory Statement of Work prepared by Sample and Analysis Management in accordance with MCP-3480, "Environmental Instructions for Facilities, Processes, Materials, and Equipment." If notified by the laboratory of a situation that may impact the DQOs of the DWP, then Sample and Analysis Management notifies the DWP technical resource of the situation and the corrective actions being implemented.

15.3.2 Field Corrective Actions

The DWP field team leader/sampler and DWP technical resource are responsible for ensuring that field QA/QC procedures are followed. If a situation develops that may jeopardize the integrity of the samples, the DWP field team leader/sampler or DWP technical resource will document the situation, the possible impacts to the DQOs of the program, and the corrective actions taken. The DWP technical resource will notify or consult with appropriate individuals. The situation and impacts on the DQOs of the program will be described in the Annual Site Environmental Report.

16. QUALITY ASSURANCE REPORTS TO MANAGEMENT

The QA reporting system is a valuable tool for measuring the overall effectiveness of the QA Program. It is used to evaluate the program design, identify problems and trends, and plan for future needs. Results of all self-assessments that are conducted in accordance with MCP-8 are presented to either the E&RS director and/or the DWP technical resource.

Compliance issues with any requirement or instruction are managed per MCP-598.

16.1 Plan Revision and Control

This plan and DWP procedures are revised and controlled per MCP-135.

17. REFERENCES

40 CFR 141, "National Primary Drinking Water Regulations"

40 CFR 142, "National Primary Drinking Water Regulations Implementation"

40 CFR 143, "National Secondary Drinking Water Regulations"

DOE Order 414.1D, "Quality Assurance"

DOE Order 458.1 Chg. 2, "Radiation Protection of the Public and the Environment"

EPA QA/R-5, "EPA Requirements for Quality Assurance Project Plans"

GDE-205, "Radioanalytical Data Validation"

IDAPA 58.01.08, "Idaho Rules for Public Drinking Water Systems"

JSA-597, "Working in Environmental Project Support Sample Preparation Areas - Various Locations"

JSA-6703, "Collecting Drinking Water Samples per SPR-188, SPR-189, and SPR-190"

MCP-8, "Performing Management Assessments and Management Reviews"

MCP-27, "Preparation and Administration of Individual Training Plans"

MCP-135, "Document Management"

MCP-538, "Control of Non-conforming Items"

MCP-557, "Records Management"

MCP-561, "Quality Program Plan/Quality Assurance Project Plan Development"

MCP-591, "Supplier Evaluation and Qualification"

MCP-598, "Corrective Action System"

MCP-3480, "Environmental Instructions for Facilities, Processes, Materials, and Equipment"

MCP-9109, "Preparation, Certification and Transmittal of Environmental Deliverables"

MCP-9172, "Developing, Integrating, and Implementing Assessment Schedules"

MCP-9227, "Environmental and Regulatory Services Logkeeping Practices"

MCP-9228, "Managing Nonhazardous Samples"

MCP-9229, "Validating, Verifying and Controlling Environmental Monitoring Data"

MCP-9236, "Analytical Data Verification"

PLN-491, "Laboratory Performance Evaluation Program Plan"

PLN-2106, "Environmental and Regulatory Services Performance Assurance and Assessment Program Plan"

PRD-5030, "Environmental Requirements for Facilities, Processes, Materials, and Equipment"

PRD-5093, "Management of Environmental Data"

SPR-188, "Collecting Water Samples for Radiological Analysis"

SPR-189, "Routine Collection of Samples for Coliform Bacteriological Analysis"

SPR-190, "Sampling of Public Water Systems"

Appendix A

Comparison of Idaho Cleanup Project Drinking Water Program Plan to PRD-5093, MCP-561, and EPA-QA/R-5

Table A-1. Comparison of Idaho Cleanup Project Drinking Water Program Plan to PRD-5093, MCP-561, and EPA-QA/R-5.

PLN-730 Elements		PRD-5093 Elements	MCP-561 Appendix B (QAMS-005/08) Elements		EPA-QA/R-5 Elements	
	Title Page, Form 412.14		1.1	Cover Sheet, Form 412.14, with provision for approval signatures for the project manager and quality engineer	A1	Title and Approval Sheet
	DRF # 338256		1.2	Document Approval Sheet, Form 412.15 for recording concurrence signatures (not required if concurrence signatures are recorded on a DAR form)	A1	Title and Approval Sheet
	Table of Contents		1.3	Table of Contents	A2	Table of Contents
2	Program Description	Program Description	1.4 (5.3)	Project Description	A5	Problem Definition/Background
					A6	Project/Task Description
5	Program Organization and Responsibilities	Organization	1.5 (5.4)	Project Organization and Responsibility	A3	Distribution List
					A4	Project/Task Organization
					A8	Special Training/ Certification
					A9	Documents and Records
6	Data Quality Objectives	QA Objectives for Data	1.6 (5.5)	QA Objectives for measurement data in terms of precision, accuracy, completeness, representativeness and comparability	A7	Quality Objectives and Criteria
5.6	Personnel Training		1.6.1	Personnel Qualifications	A8	Special Training/ Certification

Table A-1. (continued).

PLN-730 Elements		PRD-5093 Elements	MCP-561 Appendix B (QAMS-005/08) Elements		EPA-QA/R-5 Elements	
7	Sampling Procedures	Sampling Procedures	1.7 (5.6)	Sampling Procedures	B1	Sampling Process Design
					B2	Sampling Methods
8	Sample Custody	Transportation Chain-of-Custody	1.8 (5.7)	Sample Custody	A7	Quality Objectives and Criteria
					B3	Sample Handling and Custody
9	Standardization Procedures and Frequency	Laboratory Quality Control	1.9 (5.8)	Calibration Procedures and Frequency	A7	Quality Objectives and Criteria for Measurement Data
					B7	Instrument/Equipment Calibration and Frequency
10	Analytical Procedures	Laboratory Quality Control	1.10 (5.9)	Analytical Procedures	B4	Analytical Methods
11	Data Validation and Reporting	Data Validation Evaluation	1.11 (5.10) (5.14)	Data Reduction, Validation and Reporting	A7	Quality Objectives and Criteria for Measurement Data
					B9	Non-Direct Measurements
					B10	Data Management
					D1	Data Review, Verification and Validation
					D2	Verification and Validation Methods
					D3	Reconciliation with User Requirements

Table A-1. (continued).

PLN-730 Elements		PRD-5093 Elements	MCP-561 Appendix B (QAMS-005/08) Elements		EPA-QA/R-5 Elements	
12	Internal Quality Control Checks	Field QC	1.12 (5.11)	Internal Quality Control Checks and Frequency	B2	Sampling Methods
		Laboratory Quality Control			B5	Quality Council
					B6	Instrument/Equipment Testing, Inspection, and Maintenance
					B7	Instrument/Equipment Calibration and Frequency
					B9	Non-Direct Measurements
13	Performance and System Assessments	Performance and System Audits/Assessments	1.13 (5.12)	Performance and System Audits and Frequency	C1	Assessments and Response Actions
14	Preventative Maintenance Procedures		1.14	Preventive Maintenance Procedures and Schedules	B6	Instrument/Equipment Testing, Inspection, and Maintenance
			1.15	Specific routine procedures to be used to assess data precision, accuracy and completeness of specific measurement parameters involved	D3	Reconciliation with User Requirements
15	Corrective Action	Corrective Action	1.16 (5.15)	Corrective Action	C1	Assessments and Response Actions
			1.16.1	Deviations		
16	Quality Assurance Reports to Management	Reports to Management	1.17 (5.16)	Quality Assurance Reports to Management	A7	Quality Objectives and Criteria for Measurement Data
			1.18	Change control or revision process while QAPjP is effective	C2	Reports to Management
15.2	Recordkeeping and Reporting		1.19	Reporting		
15.2	Recordkeeping and Reporting	Records	1.20	Records	A9 & B10	Documents and Records