

## **INTRODUCTION AND SIGNATURE PAGE**

**Permittee: Department of Energy (DOE) and DOE Designated Contractors, Idaho National Engineering and Environmental Laboratory**  
**Facility Identification/Partial-Permit Number: EPA ID# ID4890008952**

## **INTRODUCTION AND SIGNATURE PAGE**

Pursuant to the Idaho Hazardous Waste Management Act of 1983 (HWMA), Idaho Code §§ 39-4401 *et seq.*, and the “*Rules and Standards For Hazardous Waste*,” as amended, IDAPA 58.01.05.000 *et seq.*, specifically IDAPA 58.01.05.012 [40 CFR § 270.1(c)(4)], a Partial-Permit (for less than the entire facility) is hereby issued to the United States Department of Energy (DOE) and DOE designated contractor (see Permit Definitions), hereinafter called the Permittee, at the Idaho National Engineering and Environmental Laboratory (INEEL), to implement the Corrective Action and Post-Closure Care Permit for the Waste Calcine Facility (WCF) at the Idaho Nuclear Technology and Engineering Facility (INTEC).

The Permittee shall comply with all of the terms and conditions of this Partial-Permit (Permit), including Attachments to this permit. The permittee shall comply with all applicable state regulations and federal regulations, including IDAPA 58.01.05.004 through 58.01.05.008 and 58.01.05.010 through 58.01.05.013 [40 Code of Federal Regulations (CFR), Parts 124, 260 through 264, 266, 268, and 270], and as specified in this permit.

Applicable state regulations are those which are in effect on the date of final administrative disposition of this permit and any self-implementing statutory provisions and related regulations that, according to the requirements of HWMA and the Hazardous and Solid Waste Amendments (HSWA) as amended, are automatically applicable to the permittee’s hazardous waste management activities, notwithstanding the conditions of this permit.

This permit is based upon the administrative record, as required by IDAPA 58.01.05.013 [40 CFR § 124.9]. The permittee’s failure, in the application or during the permit issuance process, to fully disclose all relevant facts, or the permittee’s misrepresentation of any relevant facts, at any time, shall be grounds for the termination or modification of this permit and/or initiation of an enforcement action including criminal proceedings.

To the extent there are inconsistencies between the permit and attachments, the language of the permit shall prevail. The permittee must inform the Director of the Idaho Department of Environmental Quality (hereinafter referred to as “Director”) of any deviation from the permit conditions or changes in the information on which the application is based, which would affect the permittee’s ability to comply, or actual compliance with the applicable regulations or permit conditions, or which alters any permit condition in any way.

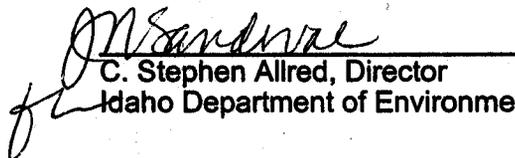
The Director shall enforce all conditions of this permit. Any challenges of any permit condition shall be appealed to the Director in accordance with IDAPA 58.01.05.996, and the Idaho Department of Environmental Quality Rules and Regulations 58.05.03.000 *et seq.*, “Rules Governing Contested Cases and Declaratory Rulings.”

The United States Environmental Protection Agency (EPA) shall maintain an oversight role of the state-authorized program and in such capacity shall enforce any permit condition based on state requirements if, in EPA’s judgement, the Director should fail to enforce that permit condition. Any challenges to the EPA-enforced conditions shall be appealed to EPA, in accordance with IDAPA 58.01.05.013 [40 CFR § 124.19].

This permit will be reviewed five (5) years after the date of issuance in accordance with IDAPA 58.01.05.012 [40 CFR § 270.50(d)] and modified, as necessary, to assure that the facility continues to comply with the applicable requirements of HWMA. This permit is effective as of October 16, 2003 and shall remain in effect until October 15, 2013 unless, in accordance with IDAPA 58.01.05.012, the permit is revoked and reissued [40 CFR § 270.41], terminated [40 CFR § 270.43], or continued [40 CFR § 270.51]. The permittee shall re-apply to obtain a new Post-Closure Permit a minimum of 180 calendar days prior to the expiration date of this permit. Failure to re-apply constitutes a violation of IDAPA 58.01.05.012 [40 CFR § 270.51].

September 15, 2003

Date

  
C. Stephen Allred, Director  
Idaho Department of Environmental Quality

## **TABLE OF CONTENTS**

**TABLE OF CONTENTS**

**INTRODUCTION AND SIGNATURE PAGE ..... 1**

**LIST OF TABLES ..... 5**

**LIST OF ATTACHMENTS ..... 6**

**DEFINITIONS ..... 8**

**ACRONYMS AND ABBREVIATIONS ..... 11**

**MODULE I - STANDARD PERMIT CONDITIONS ..... 12**

I.A. EFFECT OF PERMIT ..... 12

I.B. ENFORCEABILITY ..... 12

I.C. OTHER AUTHORITY ..... 12

I.D. PERMIT ACTIONS ..... 13

I.E. SEVERABILITY ..... 13

I.F. DUTIES TO COMPLY ..... 14

I.G. DUTY TO REAPPLY ..... 14

I.H. PARTIAL-PERMIT EXPIRATION ..... 14

I.I. CONTINUATION OF EXPIRING PERMIT ..... 14

I.J. PERMIT REVIEW ..... 15

I.K. NEED TO HALT OR REDUCE ACTIVITY NOT A DEFENSE ..... 15

I.L. DUTY TO MITIGATE ..... 15

I.M. PROPER OPERATION AND MAINTENANCE ..... 15

I.N. DUTY TO PROVIDE INFORMATION ..... 16

I.O. INSPECTION AND ENTRY ..... 16

I.P. MONITORING AND RECORDS ..... 16

I.Q. REPORTING PLANNED CHANGES ..... 18

I.R. REPORTING ANTICIPATED NONCOMPLIANCE ..... 18

I.S. TRANSFER OF PERMIT ..... 18

I.T. TWENTY-FOUR HOUR REPORTING ..... 19

I.U. OTHER NONCOMPLIANCE ..... 20

I.V. OTHER INFORMATION ..... 20

I.W. SIGNATORY REQUIREMENT ..... 21

I.Y. REPORTS, NOTIFICATIONS, AND SUBMISSIONS ..... 21

I.Z. BIENNIAL REPORT ..... 21

**MODULE II - GENERAL FACILITY CONDITIONS ..... 22**

II.A. DESIGN AND OPERATION OF FACILITY ..... 22

II.B. FACILITY DESCRIPTION ..... 22

II.C. SECURITY ..... 22

II.D. PERSONNEL TRAINING ..... 22

II.E. RECORDKEEPING AND REPORTING ..... 23

II.F. EQUIVALENT MATERIALS/INFORMATION ..... 23

II.H. SCHEDULE OF COMPLIANCE ..... 24

<b>MODULE III – GROUND WATER MONITORING.....</b>	<b>25</b>
III.A. GROUND WATER MONITORING PROGRAM .....	25
III.B. GROUND WATER MONITORING WELLS .....	27
III.C. GROUND WATER WELL INSPECTION AND MAINTENANCE.....	29
III.D. GROUND WATER SAMPLING & ANALYSIS.....	29
III.E. GROUND WATER ELEVATION AND WELL DEPTH.....	30
III.F. DETECTION MONITORING PROGRAM (DMP) .....	31
III.G. COMPLIANCE MONITORING PROGRAM.....	33
III.H. DATA REPORTING FOR DETECTION AND COMPLIANCE MONITORING PROGRAMS .....	34
III.I. SCHEDULE OF COMPLIANCE .....	35
III.J. STATISTICAL ANALYSIS .....	36
<b>MODULE IV - POST-CLOSURE CARE .....</b>	<b>39</b>
IV.A. POST-CLOSURE .....	39
IV.B. HWMA/CERCLA INTEGRATION.....	39
IV.C. POST-CLOSURE CARE INSPECTION PLAN.....	39
IV.D. POST-CLOSURE MAINTENANCE ACTIVITIES .....	40
IV.E. POST-CLOSURE PROPERTY USE.....	40
IV.F. POST-CLOSURE CARE OF GROUND WATER EQUIPMENT .....	41
IV.G. CERTIFICATION.....	41
<b>MODULE V - CORRECTIVE ACTION.....</b>	<b>42</b>

## **LIST OF TABLES**

EFFECTIVE DATE: October 16, 2003

INEEL WCF POST-CLOSURE PERMIT  
PERMIT NUMBER: ID4890008952

List of Tables, Page 5 of 42

**LIST OF TABLES**

Table 1	GROUND WATER MONITORING CRITERIA FOR DETECTION, COMPLIANCE AND CORRECTIVE ACTION MONITORING PROGRAMS . . . . .	PAGE 26
Table 2 28	GROUND WATER MONITORING NETWORK . . . . .	PAGE
Table 3	CONSTITUENT ANALYTE LIST, ESTIMATED QUANTITATION LIMITS (EQL) AND GROUND WATER PROTECTION STANDARDS (GPS) . . . . .	PAGE 31

## **LIST OF ATTACHMENTS**

## LIST OF ATTACHMENTS

The following documents are excerpts from the Permittee's Administrative Record, i.e., Volume 21 of the INEEL applications, supplemental reports, and other documents contained in the Department's supporting file for the permit. The Director has modified specific language in the attachments as deemed necessary. These modifications are described in the permit conditions (Modules I through V), and thereby supersede the language of the original attachment. These incorporated attachments are enforceable conditions of this permit as modified by the specific permit condition.

### **ATTACHMENT 1** FACILITY DESCRIPTION and Maps of Facility Location, consisting of:

Introduction of the Post-Closure Permit Application for the Volume 21 Waste Calcine Facility, as last revised September 2002.

Part A Application of the Post-Closure Permit Application for the Volume 21 Waste Calcine Facility, as last revised September 2002.

Facility Description, Section A of the Post-Closure Permit Application for the Volume 21 Waste Calcine Facility, as last revised September 2002.

Facility Location Information, Section F of the Post-Closure Permit Application for the Volume 21 Waste Calcine Facility, as last revised September 2002.

Description of Topographic Maps, Section I, and Waste Calcine Facility Topographic Map of the Post-Closure Permit Application for the Volume 21 Waste Calcine Facility, as last revised July, 2003.

Waste Calcine Facility Closure Plan, Appendix I of the Post-Closure Permit Application for the Volume 21 Waste Calcine Facility, as last revised September 2002.

Engineering Design File, Appendix III of the Post-Closure Permit Application for the Volume 21 Waste Calcine Facility, as last revised September 2002.

Required Notices, Appendix IV of the Post-Closure Permit Application for the Volume 21 Waste Calcine Facility, as last revised September 2002.

### **ATTACHMENT 2** SECURITY, INSPECTIONS, and MAINTENANCE PLANS consisting of:

Security Procedures and Equipment, Section B of the Post-Closure Permit Application for the Volume 21 Waste Calcine Facility, as last revised September 2002.

Preparedness and Prevention Waiver, Section C of the Post-Closure Permit Application for the Volume 21 Waste Calcine Facility, as last revised September 2002.

EFFECTIVE DATE: October 16, 2003

INEEL WCF POST- CLOSURE PERMIT  
PERMIT NUMBER: ID4890008952

List of Attachments, Page 7 of 42

General and Specific Inspection Schedule, Section D of the Post-Closure Permit Application for the Volume 21 Waste Calcine Facility, as last revised September 2002.

Maintenance Activities, Section E of the Post-Closure Permit Application for the Volume 21 Waste Calcine Facility, as last revised September 2002.

Inspection Forms, Appendix II of the Post-Closure Permit Application for the Volume 21 Waste Calcine Facility, as last revised September 2002.

Sampling and Analysis Plan Tables, Appendix IX of the Post-Closure Permit Application for the Volume 21 Waste Calcine Facility, as last revised September 2002.

**ATTACHMENT 3** POST-CLOSURE PLAN, consisting of:

Section J - Additional Information, of the Post-Closure Permit Application for the Volume 21 Waste Calcine Facility, as last revised September 2002.

Geologic and Hydrogeologic Characterization of the INEEL, Appendix VIII of the Post-Closure Permit Application for the Volume 21 Waste Calcine Facility, as last revised September 2002.

U.S. Environmental Protection Agency Region 9 Preliminary Remediation Goals (PRGs) User Guide, October, 2002.

**ATTACHMENT 4** PERMIT MODIFICATION LOG and PAGE CHANGE OUT LIST, consisting of:

Attachment 4 shall be used to track the current revision of the permit, including attachments. The permit modification log shall record each permit modification, the portion of the permit affected, the date the modification was posted to the permit, and either a reference to a page change-out sheet, or if fewer than three pages of an attachment are revised a list of the page changes.

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## **DEFINITIONS**

## DEFINITIONS

For purposes of this permit, the following definitions shall apply:

- a. **"Application"** shall mean the following: Volume 21, Revised September 2002, Part A and Part B Permit Application.
- b. **"Days"** shall mean calendar day(s) unless otherwise specified. Any requirement of submittal under the terms of this permit that would be due on a Saturday, Sunday, or a federal or state holiday shall be due on the following business day.
- c. **"Department"** shall mean the Idaho Department of Environmental Quality.
- d. **"Director"** shall mean the Director of the Idaho Department of Environmental Quality or his designee.
- e. **"DOE"** shall mean the United States Department of Energy.
- f. **"Facility"** shall mean all contiguous land, structures, other appurtenances, and improvements under the control of the Department of Energy at the Idaho National Engineering and Environmental Laboratory for a total of approximately 890 square miles or 601,260 acres.
- g. **"HSWA"** shall mean the Hazardous and Solid Waste Amendments of 1984.
- h. **"HWMA"** shall mean the State of Idaho, Hazardous Waste Management Act of 1983, as amended.
- i. **"Hazardous Waste"** shall mean a solid waste, or combination of solid wastes, which because of its quantity, concentration, or physical, or chemical, or infectious characteristics may cause, or significantly contribute to, an increase in mortality or an increase in serious irreversible, or incapacitating reversible, illness, or pose a substantial present or potential hazard to human health or the environment when improperly treated, stored, transported, or disposed of, or otherwise managed [See Public Law 98-616 Section 1004(5)].
- j. **"Hazardous Waste Constituent"** shall mean any constituent identified in Appendix VIII of IDAPA 58.01.05.005 [40 CFR Part 261], or any constituent identified in Appendix IX of IDAPA 58.01.05.008 [40 CFR Part 264].
- k. **"Hazardous Waste Management Unit (HWMU)"** shall mean a contiguous area of land on or in which hazardous waste is placed, or the largest area in which there is significant likelihood of mixing hazardous constituents in the same area.
- l. The term **"IDAPA"** shall mean the Idaho Administrative Procedures Act, Chapter 52, Title 67, Idaho Code.

- m. **"INEEL"** shall mean the Idaho National Engineering and Environmental Laboratory, the facility.
- n. The term **"MCL(s)"** shall mean Maximum Contaminant Levels promulgated under the Safe Drinking Water Act.
- o. **"Mixed Waste"** shall mean waste that is both hazardous and radioactive.
- p. **"Operator"** shall mean the DOE Designated Contractor, which has operational responsibilities and control of the HWMU. The DOE Designated Contractor, as operator of the WCF at INTEC, is Bechtel BWXT Idaho, LLC (BBWI). BBWI reports to the DOE-ID.
- q. **"Owner"** shall mean the United States Department of Energy (DOE).
- r. **"Permit"** shall mean this Permit issued by the Idaho Department of Environmental Quality.
- s. **"Permittee"** shall mean both the DOE, as owner, and the DOE Designated Contractor.
- t. **"RCRA"** shall mean the Resource Conservation and Recovery Act of 1976, as amended by HSWA in 1984.
- u. **"Release"** shall mean any spilling, leaking, pouring, emitting, emptying, discharging, injecting, pumping, escaping, leaching, dumping, or disposing of hazardous wastes (including hazardous waste constituents) into the environment (including the abandonment or discarding of barrels, containers, and other closed receptacles containing hazardous wastes or hazardous waste constituents).
- v. **"Remedial Action"** shall mean actions required to reduce contaminant concentrations to achieve corrective action goals.
- w. **"Schedule of Compliance"** shall mean a schedule of remedial and/or closure measures included in a permit, including an enforceable sequence of interim requirements (i.e., actions, operations, or milestone events) leading to compliance with the HWMA and regulations.
- x. **"Solid Waste Management Unit"** (SWMU) shall mean any discernable unit at which solid wastes have been placed at any time, irrespective of whether the unit was intended for the management of solid or hazardous wastes. Such units include any area at a facility at which solid wastes have been routinely and systematically released.
- y. The term **"SW-846"** shall mean "Test Methods for the Evaluation of Solid Waste: Physical/Chemical Methods," USEPA, (latest edition).

EFFECTIVE DATE: October 16, 2003

INEEL WCF POST-CLOSURE PERMIT  
PERMIT NUMBER: ID4890008952

Definitions, Page 10 of 42

- z. The term "**UHC**" shall mean Underlying Hazardous Constituent. UHC means any constituent listed in IDAPA 58.01.05.011[40 CFR § 268.48], Table UTS – Universal Treatment Standards, except fluoride, selenium, sulfides, vanadium, and zinc, which can reasonably be expected to be present at the point of generation of the hazardous waste at a concentration above the constituent – specific UTS Treatment Standard.

All definitions contained in IDAPA 58.01.05.004, .008, and .010 through .013 [40 CFR Parts 260, 264, 266, 268, 270, and 124] are hereby incorporated, in their entirety, by reference into this permit, except that any of the definitions used above shall supersede any definition of the same term given in IDAPA 58.01.05.000 et seq. Where terms are not defined in the regulations or the permit, the meaning associated with such terms shall be defined by a standard dictionary reference or the generally accepted scientific or industrial meaning of the term.

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## **ACRONYMS AND ABBREVIATIONS**

**ACRONYMS AND ABBREVIATIONS**

ASTM	American Society for Testing and Materials
CAMP	Corrective Action Monitoring Program
CAP	Corrective Action Program
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
CFR	Code of Federal Regulations
CMP	Compliance Monitoring Program
DEQ	Department of Environmental Quality
DMP	Detection Monitoring Program
DOE	Department of Energy
DOE-ID	Department of Energy - Idaho Falls Field Office
DQO	Data Quality Objective
EPA	U.S. Environmental Protection Agency
EQL	Estimated Quantitation Limit
FFA/CO	Federal Facilities Agreement and Consent Order
GPS	Ground Water Protection Standards
HSWA	Hazardous and Solid Waste Amendments of 1984
HWMA	Hazardous Waste Management Act of 1983, as amended
HWMU	Hazardous Waste Management Unit
INEEL	Idaho National Engineering and Environmental Laboratory
LDR	Land Disposal Restrictions
MDL	Minimum Detection Limit
mg/l	milligrams per liter
MSDS	Material Safety Data Sheet
NIOSH	National Institute for Occupational Safety and Health
No.	Number
OSHA	Occupational Safety and Health Administration
PE	Professional Engineer
PM	Preventive Maintenance
ppm	Parts per Million
QA	Quality Assurance
QA/QC	Quality Assurance/Quality Control
QC	Quality Control
RCRA	Resource Conservation and Recovery Act
RMW	Radioactive Mixed Waste
SAP	Sampling and Analysis Plan
SARA	Superfund Amendments and Reauthorization Act of 1986
SOP	Standard Operating Procedure
SVOC	Semivolatile organic compound
SW-846	Test Methods for Evaluating Solid Waste: Physical/Chemical Methods
SWMU	Solid Waste Management Unit
TCLP	Toxicity Characteristic Leaching Procedure
TSD	Treatment, Storage, and/or Disposal
µg/l	micrograms per liter-
USGS	United States Geological Survey
VOC	Volatile Organic Compound
WCF	Waste Calcine Facility

# **MODULE 1**

## **MODULE I - STANDARD PERMIT CONDITIONS**

### **I.A. EFFECT OF PERMIT**

The permittee is required to: maintain the closed hazardous waste landfill and monitor ground water in accordance with the conditions of this partial-permit. Any storage, treatment, or disposal of hazardous and/or mixed waste and debris in the Hazardous Waste Management Units (HWMU) described herein, not authorized in this permit, is prohibited.

Pursuant to IDAPA 58.01.05.012 [40 CFR § 270.4], compliance with this permit generally constitutes compliance, for purposes of enforcement, with the Idaho Hazardous Waste Management Act (HWMA), as amended, except for the requirements not included in this permit, which become effective by future statute or regulatory changes, to include those requirements promulgated under IDAPA 58.01.05.011 [40 CFR Part 268] restricting the placement of hazardous and/or mixed waste in or on the land. Issuance of this permit does not convey any property rights of any sort or any exclusive privilege; nor does it authorize any injury to persons or property, any invasion of other private rights, or any infringement of state or local law or regulations.

Pursuant to Idaho Code § 39-101 et seq., Idaho Environmental Protection and Health Act (EPHA), the DOE shall monitor for deleterious materials in Table 3 of Module III, in accordance with IDAPA 58.01.01.11 et seq., Ground Water Quality Rules.

- I.A.1. DOE is the owner and is responsible for the activities which include policy, programmatic, funding and scheduling, decisions, as well as general oversight.
- I.A.2. The DOE Designated Contractor, as operator, is responsible for the day-to-day operations of the assigned permitted units, and for all permitted activities related to the assigned units, for which the DOE Designated Contractor, its agents, employees, or subcontractors have operational control, including monitoring, maintenance, recordkeeping, reporting, and contingency planning.

### **I.B. ENFORCEABILITY**

The terms and conditions of this permit are enforceable pursuant to the HWMA or any other applicable federal, state, or local law. Violations of this permit may result in civil penalties in accordance with the HWMA (Idaho Code § 39-4414) and the HWMA Civil Penalty Policy.

### **I.C. OTHER AUTHORITY**

The Department expressly reserves any right of entry provided by law and any authority to order or perform emergency or other response activities as authorized by law.

**I.D. PERMIT ACTIONS**

- I.D.1. This permit may be modified, revoked and reissued, or terminated for cause, as specified in IDAPA 58.01.05.012 [40 CFR §§ 270.41, 270.42, or 270.43].
- I.D.2. The filing of a request for a permit modification, revocation and re-issuance, or termination, or the notification of planned changes or anticipated noncompliance on the part of the permittee does not stay the applicability or enforceability of any permit condition.
- I.D.3. The Director may modify this permit when the standards or regulations on which the permit was based have been changed by statute, amended standards or regulations, or by judicial decision after the effective date of this permit.
- I.D.4. Except as provided by specific language in this permit or except for the Director's approval of a Class 1 or 2 Permit Modification, in accordance with IDAPA 58.01.05.012 [40 CFR § 270.42(a) and (b)], any modifications which substantially alter the WCF facility or its operation, as covered by this permit, shall be administered as a Class 3 Permit Modification, in accordance with IDAPA 58.01.05.012 [40 CFR § 270.42(c)].
- I.D.5. Within 45 (forty-five) days of a permit modification being put into effect or approved, the permittee shall provide clean copies of the relevant portions of the permit and attachments to incorporate the change (if not already reflected/provided in the change pages submitted with the permit modification request), reprint the documents (as necessary), and submit them to the Director. The permittee shall submit an electronic version of all permit modifications and permit applications to the Director.

**I.E. SEVERABILITY**

- I.E.1 The provisions of this permit are severable, and if any provision of this permit, or the application of any provision of this permit to any circumstance, is held invalid, the application of such provision to other circumstances and the remainder of this permit shall not be affected thereby. Invalidation of any state or federal statutory or regulatory provision, which forms the basis for any condition of this permit, does not affect the validity of any other state or federal statutory or regulatory basis for said condition.
- I.E.2 In the event that a condition of this permit is stayed for any reason, the permittee shall continue to comply with the related applicable and relevant permitted standards in IDAPA 58.01.05.008 [40 CFR Part 264] until final resolution of the stayed condition, unless compliance with the related applicable and relevant interim status standards in IDAPA 58.01.05.009 [40 CFR Part 265] would be technologically incompatible with compliance with other conditions of this permit that have not been stayed.

**I.F. DUTIES TO COMPLY**

I.F.1. The permittee shall comply with all conditions of this Permit, except to the extent and for the duration such noncompliance is authorized by an emergency permit issued in accordance with IDAPA 58.01.05.012 [40 CFR § 270.61]. Any permit noncompliance, except under the terms of the emergency permit, constitutes a violation of RCRA and/or of HWMA, and is grounds for enforcement action; permit termination, modification, or revocation and re-issuance of the permit; and/or denial of a permit renewal application.

I.F.2. Compliance with the terms of this permit does not constitute a defense to any order issued or any action brought under §§ 3007, 3008, 3013, or 7003 of RCRA [42 U.S.C. §§ 6927, 6928, 6934 and 6973], or similar HWMA provisions; Section 104, 106(a), or 107 of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 [42 U.S.C. §§ 9604, 9606(a), or 9607, commonly known as CERCLA], as amended by the Superfund Amendments and Reauthorization Act of 1986 (SARA), or any other state or Federal law providing for protection of public health or the environment from any imminent and substantial endangerment to human health or the environment. However, compliance with the terms of this permit does not constitute a defense to any action alleging failure to comply with the applicable standards upon which the permit is based.

**I.G. DUTY TO REAPPLY**

The permittee must submit a new application a minimum of 180 calendar days prior to the expiration of this permit, in accordance with IDAPA 58.01.05.012 [40 CFR §§ 270.10(h) and 270.30(b)]. Failure to submit a timely permit application prior to completion of closure may result in enforcement action, in accordance with IDAPA 58.01.05.012 [40 CFR § 270.51(c)].

**I.H. PARTIAL-PERMIT EXPIRATION**

Except as renewed, modified, revoked, reissued, or terminated by the Department, this permit shall automatically expire ten (10) years from the effective date of this permit.

**I.I. CONTINUATION OF EXPIRING PERMIT**

This permit and all conditions herein shall continue in force until the effective date of a new permit, if the permittee has submitted a timely and complete application, in accordance with IDAPA 58.01.05.012 [40 CFR §§ 270.10, 270.13 through 270.29], and through no fault of the permittee, the Director has neither issued or denied a new permit under IDAPA 58.01.05.013 [40 CFR § 124.5] on or before the expiration date of this

permit. In the event the permittee fails to submit a timely and complete application, this permit will remain enforceable until the effective date of a new permit.

**I.J. PERMIT REVIEW**

I.J.1 The permit shall be reviewed two years after the effective date and modified, as necessary, to:

- a. Establish background concentrations and to establish detection monitoring criteria;
- b. Ensure the monitoring well network is both adequate and representative of the perched aquifer; and
- c. Integrate the HWMA/RCRA required monitoring with the site remediation efforts, as appropriate.

I.J.2 In accordance with IDAPA 58.01.05.012 [40 CFR § 270.50(d)], this permit shall be reviewed five (5) years after the effective date and modified, as necessary, in accordance with IDAPA 58.01.05.012 [40 CFR § 270.41].

**I.K. NEED TO HALT OR REDUCE ACTIVITY NOT A DEFENSE**

It shall not be a defense for the permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

**I.L. DUTY TO MITIGATE**

In the event of noncompliance with this permit, the permittee shall take all reasonable steps to minimize releases to the environment resulting from the noncompliance, and shall carry out such measures as are reasonable, to prevent significant adverse impacts on human health or the environment.

**I.M. PROPER OPERATION AND MAINTENANCE**

The permittee shall, at all times, properly operate and maintain all facilities and controls (and related appurtenances), which are installed or used by the permittee so as to achieve compliance with the conditions of this permit. Proper operation and maintenance includes effective performance, adequate funding, adequate operator staffing and training, and adequate laboratory and process controls, including appropriate quality assurance procedures. This provision requires the operation of back-up or auxiliary equipment, or similar systems, only when necessary to achieve compliance with the conditions of this permit.

**I.N. DUTY TO PROVIDE INFORMATION**

The permittee shall furnish to the Department and/or the Director, within a reasonable time, any relevant information which the Department and/or the Director may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit, or to determine compliance with this permit. The permittee shall also furnish to the Department and/or the Director upon request, copies of records required to be kept by the conditions of this permit.

**I.O. INSPECTION AND ENTRY**

Pursuant to IDAPA 58.01.05.012 [40 CFR § 270.30(I)], the permittee shall allow the Department, the Director, and/or their authorized officers, employees, or representatives, upon the presentation of credentials and other documents as may be required by law, to:

- I.O.1. Enter, at reasonable times, upon the permittee's premises where a regulated facility or activity is located or conducted, or where records are kept as required by the conditions of this permit;
- I.O.2. Have access to and copy, at reasonable times, any records that are kept as required by the conditions of this permit;
- I.O.3. Inspect, at reasonable times, any portion of the facility, equipment (including monitoring and control equipment), practices, or operations regulated or required under this permit; and
- I.O.4. Sample or monitor, at reasonable times, for the purposes of assuring permit compliance or as otherwise authorized by the HWMA or RCRA, any substances or parameters at any location.

**I.P. MONITORING AND RECORDS**

- I.P.1. The permittee shall retain at INTEC, INEEL or DOE controlled Idaho Falls areas, records of all monitoring information (including all calibration and maintenance records), copies of all reports required by this permit, the certification required by IDAPA 58.01.05.008 [40 CFR § 264.73(b)(9)], and records of all data used to complete the application for this permit, for a period of at least three (3) years from the date of the sample, measurement, report, certification, or recording unless a longer retention period is required by other conditions of this permit. These periods may be extended by a request of the Director, at any time, upon written notification to the permittee. The retention times are automatically extended during any unresolved enforcement action regarding this facility to three (3) years beyond the conclusion of the enforcement action.

- I.P.2. The permittee shall maintain, at INTEC: 1) a copy of this permit and its attachments and all modifications to this permit, and 2) three years of records from all ground water monitoring well installations and sampling events, and associated ground water elevations. Documents greater than three (3) years old, yet still required to demonstrate HWMA/RCRA compliance shall also be maintained at INTEC.
- I.P.3. Those records greater than three (3) years old may be maintained in a readily retrievable manner at an alternate location on the INEEL (the facility) or in a DOE controlled Idaho Falls area. These records shall be maintained until Post-Closure is completed and certified, by an Idaho, independent, registered professional engineer, and has been approved by the Director.
- I.P.4. Copies of any/all records associated with this permit shall be made available to the Department, the Director, and/or their authorized officers, employees, or representatives, within three (3) business days of the receipt of a hand-delivered or certified mail request for such. The INTEC WCF contact for access to the records is:
- WCF Manager  
INTEC Facility at the INEEL - 1604  
Idaho Falls, Idaho 83415-5220  
(208) 526-8899
- I.P.5. Records of monitoring information shall include:
- I.P.5.a. The date(s), exact place, and time(s) of sampling or measurement(s);
- I.P.5.b. The name(s) and affiliation of individual(s) who performed the sampling or measurements;
- I.P.5.c. The date(s) analyses were performed;
- I.P.5.d. The name(s) and affiliation of individuals who performed the analyses;
- I.P.5.e. The analytical techniques or methods used; and
- I.P.5.f. The results of such analyses, including the Quality Assurance/Quality Control Summary.
- I.P.6. Samples and measurements taken for monitoring purposes shall be representative of the monitored activity. The method used to obtain a representative sample of the waste to be analyzed shall be the appropriate method from IDAPA 58.01.05.005 [40 CFR Part § 261, Appendix I] or an equivalent method approved by the Director. Laboratory methods shall be those specified in *Test Methods for Evaluating Solid Waste: Physical/Chemical Methods SW-846* (latest Edition, hereinafter referred to as SW-846), *Standard Methods of Wastewater Analysis* (most recent edition), another alternate method approved in this permit, or an equivalent method in accordance with Permit Condition I.P.6 of this permit.

- I.P.7. The permittee may substitute analytical methods that are equivalent or superior to those specifically approved for use in this permit, in accordance with the following:
- I.P.7.a. The permittee submits to the Director a request for substitution of analytical method(s) specifically approved for use in this permit. The request shall provide information demonstrating that the proposed method(s) requested to be substituted are equivalent or superior in terms of sensitivity, accuracy, and precision (i.e., reproducibility); and
- I.P.7.b. The permittee receives written approval from the Director for the substitution of analytical method(s). Such approval shall not require a permit modification under IDAPA 58.01.05.012 [40 CFR § 270.42].
- I.P.8. Results of all ground water analyses required by this permit shall be managed consistent with the goals of Paragraph 19.1 of the Federal Facilities Agreement and Consent Order (FFACO). The WCF shall attempt to provide quality controlled/quality assured data within 75 calendar days of completion of sampling. Quality assurance/quality controlled ground water analyses shall be submitted to the Director no later than 120 calendar days after the last sample is collected.
- I.P.9. The Department may, during the life of this permit, require the permittee to revise the format(s) used to present the raw data and conclusions associated with the monitoring reports. These format changes may include, but not be limited to, requiring tabular and/or graphical presentations of the raw data or the submittal of raw data in electronic format on computer diskettes for direct input into the Department's ground water monitoring database.

**I.Q. REPORTING PLANNED CHANGES**

As soon as possible, prior to any planned physical alteration or addition, the permittee shall give notice to the Director of such planned physical alterations or additions, in accordance with IDAPA 58.01.05.012 [40 CFR § 270.30(l)(1)].

**I.R. REPORTING ANTICIPATED NONCOMPLIANCE**

The permittee shall give advance notice to the Director of any planned changes in the permitted facility or activity which may result in noncompliance with the requirements of this permit. Such notice does not authorize any noncompliance with or modification of this permit.

**I.S. TRANSFER OF PERMIT**

This permit shall be transferred to a new owner or operator only if it is modified or revoked and reissued pursuant to IDAPA 58.01.05.012 [40 CFR § 270.41]. Prior to transferring ownership or operation of the facility during its operating life and/or the post-

closure period, the permittee shall notify the new owner or operator, in writing, of the requirements of IDAPA 58.01.05.008 and 58.01.05.012 [40 CFR Parts 264 and 270] and this permit.

**I.T. TWENTY-FOUR HOUR REPORTING**

I.T.1. In accordance with IDAPA 58.01.05.012 [40 CFR § 270.30(l)(6)], the permittee shall verbally report to the Director any noncompliance with this permit which may endanger human health or the environment within twenty-four (24) hours from the time the permittee becomes aware of the noncompliance. Potential endangerment to human health and the environment may include, but not be limited to:

I.T.1.a. Noncompliance with Permit Condition II.A. of this permit; or

I.T.1.b. A release or discharge of any hazardous and/or mixed waste that may endanger public drinking water supplies; or

I.T.1.c. A release or discharge of hazardous and/or mixed waste, or a fire or explosion at the facility that could threaten human health or the environment outside the facility.

I.T.2. The verbal description of the occurrence and its cause shall, at a minimum, include:

- Name, and telephone number of the individual reporting;
- Name, address, and telephone number of the owner or operator;
- Name, address, and telephone number of the facility;
- Date, time, and type of incident;
- Location and cause, if known, of the accident;
- Name(s) and quantity(ies) of materials involved;
- The extent of injuries, if any;
- An assessment of actual or potential hazards to the environment and human health, where this is applicable;
- Description of any emergency action taken to minimize possible threat(s) to human health and the environment;
- Estimated quantity and disposition of recovered material that resulted from the incident; and

- Any other information necessary to evaluate the situation fully and to develop an appropriate course of action.

I.T.3. Within five (5) calendar days after the permittee is required to provide verbal notification, as specified in Permit Condition I.T.2 of this permit, the permittee shall provide to the Director a written submission.

I.T.3.a. The written submission shall include, but not be limited to, the following:

- Name, address, and telephone number of the individual reporting;
- A description (include cause, location, extent of injuries, if any, and an assessment of actual or potential hazard(s) to the environment and human health outside the WCF at INTEC, where this is applicable) of the incident (noncompliance and/or release);
- The period(s) in which the incident (noncompliance and/or release) occurred (including exact dates and times);
- Whether the results of the incident remain a threat to human health and the environment (whether the noncompliance has been corrected and/or the release has been adequately remediated); and
- If the incident/noncompliance has not been corrected, the anticipated time it is expected to continue, and the steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance, and/or the steps taken or planned to adequately remediate the release.

I.T.4. The permittee need not comply with the five (5) calendar day written notice requirement if the Director waives the requirement and the permittee submits a written report within fifteen (15) calendar days from the time the permittee is required to provide verbal notification, as specified in Permit Condition I.T.1 of this permit.

#### **I.U. OTHER NONCOMPLIANCE**

The permittee shall report all other instances of noncompliance not otherwise required to be reported, in accordance with Permit Condition I.R and I.T of this permit, on a semi-annual basis from the effective date of the permit. The reports shall contain the information, as applicable, listed in Permit Condition I.T of this permit. Reporting shall not constitute a defense for any noncompliance.

#### **I.V. OTHER INFORMATION**

Whenever the permittee becomes aware that any relevant information was omitted in the permit application or incorrectly submitted in the permit application or in any report to

the Director, the permittee shall promptly submit such facts or information to the Director, in accordance with Permit Condition I.Y of this permit.

**I.W. SIGNATORY REQUIREMENT**

All applications, reports, or information requested by or submitted to the Director shall be signed and certified, in accordance with IDAPA 58.01.05.012 [40 CFR § 270.11].

**I.X. CONFIDENTIAL INFORMATION**

Pursuant to Title 9, Chapter 3, of the Idaho Code; IDAPA 58.01.05.012 [40 CFR § 270.12], or any other applicable federal, state, or local law, the permittee may assert a claim of confidentiality regarding any information required to be submitted pursuant to this permit, on a case-by-case basis. The Department shall determine whether said information is exempt from disclosure pursuant to applicable law.

**I.Y. REPORTS, NOTIFICATIONS, AND SUBMISSIONS**

All reports, notifications, or other submissions which are required by this permit and IDAPA 58.01.05.012 [40 CFR § 270.5] shall be sent or given to the Director in duplicate by certified mail, express mail, or hand delivered to:

Director c/o Hazardous Waste Program Manager  
Idaho Department of Environmental Quality  
Waste Management and Remediation Division  
1410 North Hilton  
Boise, Idaho 83706-1255  
Telephone No. (208) 373-0502

Twenty-four (24) hour telephone number (800) 632-8000

The title, addresses, and telephone numbers listed above are current as of the effective date of this permit and may be subject to change.

**I.Z. BIENNIAL REPORT**

The permittee shall, by March 31 of each even numbered year, submit a biennial report to the Department covering the facility activities, in accordance with the applicable sections of IDAPA 58.01.05.008 [40 CFR § 264.75(a) through (j)].

## **MODULE II**

## **MODULE II - GENERAL FACILITY CONDITIONS**

### **II.A. DESIGN AND OPERATION OF FACILITY**

- II.A.1. The permittee shall, at all times, properly maintain and operate the facility to minimize the possibility of a fire, explosion, or any unplanned, sudden or non-sudden release of hazardous and/or mixed waste or hazardous and/or mixed constituents to the air, soil, ground water, or surface water which could threaten human health and/or the environment.
- II.A.2. The permittee shall, at all times, properly maintain and operate the facility, including any systems of treatment and control (and related appurtenances) which are installed or used by the permittee to achieve compliance with the conditions of this permit. Proper operation and maintenance includes effective performance, adequate funding, adequate operator staff and training, and adequate laboratory and process controls (including appropriate quality assurance procedures).

### **II.B. FACILITY DESCRIPTION**

The Waste Calcine Facility land disposal unit is located at the Idaho Nuclear Technology and Engineering Center on the Idaho National Engineering and Environmental Laboratory. The WCF was closed with waste in place and covered with a low permeability concrete cap. For purposes of this permit, the facility consists of the WCF concrete cap and Ground Water Monitoring Network.

### **II.C. SECURITY**

The permittee shall comply with the Security Provisions of IDAPA 58.01.05.008 [40 CFR § 264.14] and the WCF site-specific security measures described in Attachment 2 of this permit.

### **II.D. PERSONNEL TRAINING**

- II.D.1 The permittee shall ensure that all personnel who are involved in the inspection, and/or maintenance of the WCF are instructed in inspection and recordkeeping procedures.
- II.D.2 The permittee shall ensure that all personnel who are involved in post-closure activities are trained in hazardous waste management, safety, and emergency procedures, as applicable to their job function.

**II.E. RECORDKEEPING AND REPORTING**

- II.E.1. In addition to recordkeeping and reporting requirements specified elsewhere in this permit, the permittee shall maintain a written operating record at INTEC until post-closure is completed, in accordance with IDAPA 58.01.05.008 [40 CFR § 264.73], including at least the following:
  - II.E.1.a. A map showing the location of the closed hazardous waste management units;
  - II.E.1.b. A map designating the monitoring zone and location of all ground water monitoring wells;
  - II.E.1.c. Records and results of the Operation and Maintenance activities in accordance with Attachment 2 of this permit;
  - II.E.1.d. Records and results of inspections performed in accordance with Attachment 2 of this permit; and
  - II.E.1.e. Records and results of ground water sampling and analysis to include results of all monitoring, testing and QA/QC data gathered, in accordance with Module III and any other applicable sections of this permit.
- II.E.2. All reports, notifications, applications, or other materials required to be submitted to the Director shall be submitted in accordance with Permit Condition I.Y. of this permit.

**II.F. EQUIVALENT MATERIALS/INFORMATION**

- II.F.1. If certain equipment, materials, and administrative information (such as names, phone numbers, addresses) are specified in this permit, the permittee is hereby authorized to use equivalent or superior items. Use of such equivalent or superior items shall not be considered a modification of this permit, but the permittee shall place in the Operating Record (prior to the institution of such revision) the revision, accompanied by a narrative explanation, and the date the revision became effective. The Director may judge the soundness of the revision during inspections of the facility, and take appropriate action. The format of tables, forms, and figures are not subject to the requirements of this permit, and may be revised at the permittee's discretion.
- II.F.2. If the Department determines that the substitution was not equivalent to the original, it will notify the permittee that the permittee's claim of equivalency has been denied, the reasons for the denial, and that the original material or equipment must be used. If the product substitution is denied, the permittee shall comply with the original approved product specification, find an acceptable substitution, or apply for a permit modification in accordance with Permit Condition I.D.4.

**II.G. PREPAREDNESS AND PREVENTION**

Based on information included in the Post-Closure Permit Application, the Director has waived the requirements of IDAPA 58.01.05.008 [40 CFR 264 Subpart D] in accordance with IDAPA 58.01.05.012 [40 CFR § 270.14(b)(6)].

**II.H. SCHEDULE OF COMPLIANCE**

- II.H.1 The permittee shall identify and quantify all steam vent and other deliberate water discharges to the land or subsurface in the vicinity of the WCF within ninety (90) days of the effective date of this permit.
- II.H.2 The permittee shall submit a work plan to eliminate any sources of discharge that may impact the WCF monitoring well network within 180 days of the effective date of this permit. The work plan shall include, but not be limited to:
  - II.H.2.a A list of the discharge sources to be eliminated;
  - II.H.2.b A detailed timeline identifying critical path activities for each source to be eliminated; and,
  - II.H.2.c Abandonment of any injection wells shall be consistent with IDAPA 37.03.09.025 Section 12 as necessary.
- II.H.3 The permittee shall implement the approved work plan within sixty (60) days of DEQ approval.
- II.H.4 Elimination of the discharge points shall be completed within 540 days of the effective date of this permit.
- II.H.5 If the permittee demonstrates, to the Director's satisfaction, that the discharge points can not be eliminated, a minimum of two (2) additional monitoring wells will be required to ensure the ground water monitoring data is representative of the perched zone in the vicinity of the WCF. These wells shall be in addition to the well required at the Permit Condition III.B.1. All newly installed wells shall be subject to the characterization procedures of Permit Condition III.I.

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## **MODULE III**

## **MODULE III – GROUND WATER MONITORING**

### **III.A. GROUND WATER MONITORING PROGRAM**

The Ground Water Monitoring Programs, applicable under the terms of this permit, shall be undertaken in accordance with IDAPA 58.01.05.008 [40 CFR §§ 264.97, 264.98, 264.99, and 264.100]. The Ground Water Monitoring Programs shall consist of and be instituted as follows:

- III.A.1. A Detection Monitoring Program (DMP), which shall be put into effect immediately and shall remain in effect until:
  - III.A.1.a. The Director releases the permittee from the Post-Closure Care monitoring requirements, in accordance with IDAPA 58.01.05.008 [40 CFR § 264.120]; or
  - III.A.1.b. The detection monitoring criteria listed in Table 1 as the Estimated Quantitation Limits [EQL(s)] plus background concentrations, if applicable, are exceeded (for any Table 3 constituent), in accordance with Permit Condition III.F. At the time of the exceedance, a Compliance Monitoring Program and/or a Corrective Action Program shall be put into effect, in accordance with Permit Conditions III.A.2 and/or III.A.3 of this permit.
- III.A.2. A Compliance Monitoring Program (CMP) shall be put into effect at such time as the detection monitoring criteria are demonstrated to have been exceeded through Permit Condition III.F. The CMP shall remain in effect until:
  - III.A.2.a. The Table 1 detection monitoring criteria have not been exceeded during six (6) consecutive CMP sampling events, at which time the permittee shall reactivate the DMP; or
  - III.A.2.b. The compliance monitoring criteria, listed in Table 1 as Ground Water Protection Standard (GPS) plus background concentrations, if applicable, are demonstrated to have been exceeded through Permit Condition III.G. At which time the permittee shall proceed in accordance with Permit Condition III.A.3.
- III.A.3. A Corrective Action Monitoring Program (CAMP), shall be put into effect at such time as the compliance monitoring criteria are exceeded during the post-closure period. The CAMP shall remain in effect until:
  - III.A.3.a. The Table 1 compliance monitoring criteria are not exceeded during four (4) consecutive CAMP events. At such time, the CMP shall be reactivated.
  - III.A.3.b. The permittee shall submit to the Director a request for a permit modification, in accordance with Permit Condition I.D, to meet the Corrective Action Monitoring Program requirements of IDAPA 58.01.05.008 [40 CFR § 264.100].

- III.A.4. Additional detection monitoring, compliance monitoring, or corrective action wells and/or programs may be added to the detection monitoring, compliance monitoring, or corrective action programs as the need arises, based upon future ground water sampling results.
- III.A.5. The permittee shall be required to submit a Class 3 Modification Request to modify the EQL and/or GPS concentrations in Table 3 when, after two years of quarterly monitoring, background concentrations are established with the Director's approval, in accordance with Permit Conditions I.J.1 and III.I.
- III.A.6. Ground Water Protection Standards (GPS) for any newly identified chemical constituent shall be the MCL plus background concentrations established under Permit Condition III.I. If an MCL has not been developed, the GPS shall be calculated using the EPA Region IX Preliminary Remediation Goals (RPG) risk equations, most recent edition. The *PRG User Guide* is available on the web at: [www.epa.gov/region09/waste/sfund/prg/files/02userguide.pdf](http://www.epa.gov/region09/waste/sfund/prg/files/02userguide.pdf)
- III.A.6.a The GPS for carcinogens shall be established at a  $1 \times 10^{-5}$  (1 in 100,000) risk based on an industrial exposure scenario that includes the ingestion and inhalation pathways.
- III.A.6.b The GPS for non-carcinogens shall be established at the  $1 \times 10^{-5}$  (1 in 100,000) risk using a Hazard Quotient of 1 based on an industrial exposure scenario that includes the ingestion and inhalation pathways.
- III.A.6.c Other equivalent risk equations may be substituted with prior Director approval.

**TABLE 1 GROUND WATER MONITORING CRITERIA FOR DETECTION, COMPLIANCE AND CORRECTIVE ACTION MONITORING**

MONITORING PROGRAM	BEGIN	MONITORING CRITERIA
Detection Monitoring	At Permit Issuance or when Permit Condition III.A.2.a. has been satisfied.	Analytical results indicate contamination below the detection monitoring criteria defined as the Estimated Quantitation Limit (EQL) in Table 3 plus any established background concentrations, if applicable. The EQL may not exceed any of the concentrations presented in Table 3.
Compliance Monitoring	When the detection monitoring criteria is exceeded, or Permit Condition III.A.3.a. has been satisfied.	Analytical results indicate contamination equal to or below the Ground water Protection Standard(s) as presented in Table 3 plus background concentrations if applicable, but are greater than the detection monitoring criteria for any constituent.
Corrective Action Monitoring	When the compliance monitoring criteria is exceeded in accordance with Permit Conditions III.A.2.b. and III.A.3.	Exceedance of Ground Water Protection Standards plus background for one or more of the constituents as listed in Table

	3.
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**III.B. GROUND WATER MONITORING WELLS**

- III.B.1. The Ground Water Monitoring Network shall consist of the monitoring wells, sampling types and frequencies indicated at Table 2. One additional monitoring well will be required to complete the monitoring network in accordance with Permit Condition III.I.2. The location of the well shall be identified, and approved by DEQ, based on one year of monitoring data including the water level measurements. Wells shall be constructed in accordance with IDAPA 58.01.05.008 [40 CFR § 264.97(c)].
- III.B.2. The permittee must determine the direction(s) and rate(s) of flow in the uppermost aquifer. Due to the uncertainty concerning the flow direction and velocity, several monitoring wells in addition to the proposed monitoring network will require bi-monthly water elevation measurements throughout the initial two-year monitoring period in accordance with Permit Condition III.I. Upon establishment of flow direction and velocity, as approved by the Director, the permittee will be required to collect water level elevations in accordance with Permit Conditions III.E.
- III.B.3. The permittee shall notify the Director of all planned sampling events at least five (5) working days in advance of the date of the planned sampling. The Director shall be notified of all other sampling events required under this permit as far in advance as possible, and before the event.

EFFECTIVE DATE: October 16, 2003

INEEL WCF POST-CLOSURE PERMIT  
 PERMIT NUMBER: ID4890008952

Module III, Page 28 of 42

**TABLE 2 GROUND WATER MONITORING NETWORK**

MONITORING WELL	WELL DESIGNATION	TYPE OF WELL	FREQUENCY	EST. DEPTH TO WATER (below ground surface)	WELL DEPTH (feet)	SCREEN LENGTH INTERVAL	ELEVATION MEASURING POINT
MW-5 INTEC-MON-P-005	Point of Compliance	Water Elevation/ Monitoring	Bi-Monthly/ Quarterly	112	141	20 106.5-126.5	4919.3
MW-12 INTEC-MON-P-012	Point of Compliance	Water Elevation/ Monitoring	Bi-Monthly/ Quarterly	119	153	10 109-119	4916
MW-18 INTEC-MON-P-018	Point of Compliance	Water Elevation/ Monitoring	Bi-Monthly/ Quarterly	Dry	494 Multiple Comp.	10 105-115	4917.32
CPP-33-1 33-1	Upgradient Background	Water Elevation/ Monitoring	Bi-Monthly/ Quarterly	99	113.6	10 89-99	4915.2
MW-2 INTEC-MON-P-002	Upgradient Background	Water Elevation/ Monitoring	Bi-Monthly/ Quarterly	107	127	10 102-112	4916.1
CPP-33-2 33-2	Water Elevation	Water Elevation	Bi-Monthly	104	114.7	20 85.8-105.8	4915.4
CPP-33-4 33-4	Water Elevation	Water Elevation	Bi-Monthly	104	124	20 98.2-118.2	4914
CPP-37-4 37-4	Water Elevation	Water Elevation	Bi-Monthly	104	129.3	10 99.9-109.9	4912.7
MW-4 INTEC-MON-P-004	Water Elevation	Water Elevation	Bi-Monthly	109	131	10 100.6-110.6	4914.2
CPP-55-06 55-06	Water Elevation	Water Elevation	Bi-Monthly	108	122.9	20 93.1-113.1	4913.2
MW-8 INTEC-MON-P-008	Water Elevation	Water Elevation	Bi-Monthly	123	141	10 115-125	4914.4
New Well				TBD			

III.B.4. If, at anytime during the Post-Closure Care period, an additional perched water zone is identified (whether it is seasonal or manmade), the permittee shall submit a characterization plan to the Director, within sixty (60) calendar days of the discovery. The plan must specify how the facility will characterize the additional perched zone and shall include, at a minimum, the following:

- III.B.4.a. Proposed locations for additional perched zone monitoring wells;
- III.B.4.b. A well installation (drilling) schedule;
- III.B.4.c. A complete analyte list; and
- III.B.4.d. A procedure for determining the flow rate and direction of this water-bearing zone.

**III.C. GROUND WATER WELL INSPECTION AND MAINTENANCE**

- III.C.1. The permittee shall inspect and maintain all monitoring wells identified in Table 2 throughout the post-closure period, in accordance with: Permit Condition IV.B and IV.F, and Attachment 2 of this permit.
- III.C.2. The need for maintenance shall not constitute grounds for missing a sampling event without prior approval from the Director. Under no circumstances shall a well remain out of commission for two (2) consecutive sampling periods.
- III.C.3. The Director shall be notified at least five (5) days before the installation of any replacement wells. Replacement wells shall be constructed in accordance with IDAPA 58.01.05.008 [40 CFR § 264.97] and the Technical Enforcement Guidance Document.

**III.D. GROUND WATER SAMPLING & ANALYSIS**

- III.D.1. The permittee shall sample all monitoring wells listed in Table 2 quarterly, for a minimum of two (2) years or until the background concentrations have been approved by the Director, and semi-annually throughout the post-closure period thereafter. Any/all additional monitoring wells will require quarterly sampling until the Director has approved background concentrations.
- III.D.2. The permittee shall use the techniques and procedures specified in this permit and Attachment 3 of this permit when collecting, preserving, shipping, tracking, controlling, and analyzing ground water samples.
- III.D.3. The permittee shall collect Quality Assurance/Quality Control (QA/QC) samples during ground water monitoring events as specified in Attachment 3, Table J-5 of this permit.

- III.D.4. The permittee's evaluation of the laboratory QA/QC data from each sampling event shall be completed within thirty-five (35) days of receipt of results from sample analyses. Analytical results shall be submitted to the Director in accordance with Permit Condition I.P.8.
- III.D.5. If problems are identified with either the field sampling procedures or the laboratory QA/QC, the need to resample shall be at the discretion of the Director. The permittee shall notify the Director within fifteen (15) days after problems are identified.
- III.D.6. The permittee shall use the following methods to analyze ground water samples collected during implementation of the detection monitoring, compliance monitoring and corrective action monitoring programs: for metals, SW-846 Methods 6010B, 200.9, 7470A, and CLP ILM040-EPA 335.2; for volatile organic compounds, SW-846 Method 8260B; for semi-volatile organic compounds, SW-846 Method 8270. The specific constituents to be analyzed for in the samples are listed in Table 3. The analyses must achieve the reporting limits (EQLs) in Table 3. Equivalent or superior analytical methods may be substituted with prior approval from the Director.
- III.D.7. In lieu of managing the purge water as a hazardous waste, the permittee shall properly store all purge water/development water associated with the sampling events until such time as the analytical data is received.
- III.D.7.a If the purge water is found to contain a constituent(s) listed in Table 3 in concentrations above a GPS, the permittee shall manage the purge water as a hazardous waste. Such contaminated purge waters shall be managed in accordance with IDAPA regulations.
- III.D.7.b DOE shall manage non-hazardous purge/development waters in a manner protective of human health and the environment.
- III.D.8. In the event purge water is collected in conjunction with a CERCLA ground water sampling event, purge waters may be disposed of at the ICDF Evaporation Pond, provided the purge waters meet the Waste Acceptance Criteria for the ICDF Evaporation Pond, DOE/ID-10866.

**III.E GROUND WATER ELEVATION AND WELL DEPTH**

- III.E.1. The permittee shall measure all water elevation measurements used in calculating the semi-annual ground water flow rate and flow direction for the entire Ground Water Monitoring Network within a twenty-four (24) hour period.
- III.E.2. The permittee shall measure monitoring well depths annually and report results in the fall semi-annual report.

**III.F. DETECTION MONITORING PROGRAM (DMP)**

III.F.1. Additional detection monitoring wells shall be added in accordance with Permit Condition III.I.2 and the permit modified, as necessary, in accordance with Permit Condition I.D.

**TABLE 3 CONSTITUENT ANALYTE LIST AND ASSOCIATED ESTIMATED QUANTITATION LIMITS AND GROUND WATER PROTECTION STANDARDS (GPS)**

CONSTITUENT	EQL (µg/l)	GPS (µg/l)	CONSTITUENT	EQL (µg/l)	GPS (µg/l)
Arsenic	5	20	Methyl Ethyl Ketone	5	38000
Barium	20	4000	Aniline	5	240
Cadmium	1	10	Benzene	1	10
Chromium	10	200	Chloroform	1	200
Lead	3	30	Methylene Chloride	1	86
Mercury	0.2	4	1,4-Dioxane	54	122
Selenium	20	100	Methyl Iodide	5	100
Silver	10	200	Phenol	5	220,000
Vanadium	20	5200	Bromoform	1	200
1,1,1-Trichloroethane	1	400	Vinyl Chloride	2	4
1,1,2-Trichloroethane	1	10	Tran-1,2-Dichloroethylene	5	200
Carbon Tetrachloride	1	10	Cis-1,2-Dichloroethylene	5	140
Trichloroethene	1	10	Cyanide	10	400
Tetrachloroethene	1	10	Formaldehyde	23.2	110000
Carbon Disulfide	1	2000	Hydrazine	0.1	0.44
Toluene	1	2000			
Pyridine	5	720			
Isobutyl Alcohol	50	36,000			

III.F.2. The permittee shall collect and analyze samples from each detection monitoring and background well listed in Table 2 for the constituents of concern listed in Table 3 of this permit. The permittee shall collect and analyze the samples in accordance with Permit Condition III.D.

III.F.3. Detection Monitoring Criteria and Data Evaluation

The criteria for evaluating data from each detection monitoring sampling event shall be to compare the sample analytical results with the detection monitoring criteria in Table 1 of this permit, as follows:

- III.F.3.a. If the analytical results are less than or equal to the detection monitoring criteria set forth in Table 1, the permittee shall continue the DMP until Permit Condition III.A.1.a has been satisfied; or
- III.F.3.b. If the analytical results exceed the detection monitoring criteria as defined in Table 1, the permittee shall comply with Permit Condition III.F.4.
- III.F.4. Response to Exceedance of Detection Monitoring Criteria
  - III.F.4.a. Upon detection of any constituent(s) that exceed the detection monitoring criteria specified in Table 1, the permittee shall perform the following:
    - III.F.4.a.1. Notify the Director of this finding, in writing, within seven (7) calendar days after completion of data validation; and
    - III.F.4.a.2. At the permittee's discretion, immediately collect two (2) verification samples from all affected well(s), purging the well(s) between samples, and reanalyze both samples for all constituents listed in Table 3, or forgo the verification process and comply with the requirements of Permit Condition III.F.4.b.
    - III.F.4.a.3. If analytical results from either verification sample confirm the detection of constituents in concentrations that exceed the detection monitoring criteria given in Table 1, the Permittee shall comply with the requirements of Permit Condition III.F.4.b.
  - III.F.4.b. The Permittee must sample the affected well(s) within fifteen (15) calendar days and the collected samples must be analyzed for the constituents identified in IDAPA 58.01.05.008 [40 CFR Part 264, Appendix IX]. The permittee shall notify the Director in writing within seven (7) days of making this finding. Within sixty (60) calendar days of this sampling event, the permittee shall perform the requirements of either Permit Condition III.F.4.c or III.F.4.d.
  - III.F.4.c. The permittee shall submit to the Director a report that includes the following:
    - III.F.4.c.1. The results of the Appendix IX analysis required by Permit Condition III.F.4.b.
    - III.F.4.c.2. A determination as to whether a Compliance Monitoring Program or Corrective Action Monitoring Program is to be implemented, based upon a comparison of analytical results to the compliance monitoring criteria and corrective action monitoring criteria, as presented in Table 1 of this permit.
    - III.F.4.c.3. In accordance with IDAPA 58.01.05.008 [40 CFR § 264(g)(3)], a list of any additional chemical constituents or analytical parameters identified during the Appendix IX sampling that are to be the basis for the Compliance or Corrective Action Monitoring Programs.

- III.F.4.d. The permittee may choose to demonstrate, in accordance with IDAPA 58.01.05.008 [40 CFR § 264.98(g)(6)], that a source other than the regulated unit caused the contamination, or that the increased contamination resulted from an error in sampling, analysis, or evaluation. When required by IDAPA 58.01.05.008 [40 CFR § 264.98(g)(6)(iii)], the permittee shall submit an application for a permit modification to make any appropriate changes to the current monitoring programs at the facility, in accordance with IDAPA 58.01.05.012 [40 CFR § 270.42] and Permit Condition I.D.
- III.F.5. If the permittee successfully demonstrates to the Director that a source other than a regulated unit caused the exceedance or that the exceedance resulted from an error in sampling, analysis, or evaluation, the Director shall notify the permittee to remain in the Detection Monitoring Program. Otherwise, the Director will instruct the permittee to comply with Permit Condition III.F.4.c. within the time frame established by the Director. This period will not be less than forty-five (45) calendar days.
- III.F.6. If analytical results from both verification samples described in Permit Condition III.F.4.a.2, fail to confirm the detection of parameter(s) from Table 3 in concentrations that exceed the detection monitoring criteria, the permittee shall resume detection monitoring and notify the Director that the Detection Monitoring Program has been resumed.

**III.G. COMPLIANCE MONITORING PROGRAM**

- III.G.1. Compliance Monitoring Wells will be determined through exceedance of the detection monitoring criteria in Table 1. The monitoring wells shall be identified through permit modification, adopted in accordance with Permit Condition I.D.4.
- III.G.2. Compliance Monitoring Sampling Constituents/Parameters and Frequency
  - III.G.2.a. During the Compliance Monitoring Program (CMP), the permittee shall sample wells in accordance with Permit Condition III.B. The permittee shall collect and analyze the samples for the constituents listed in Table 3 of this permit plus any/all additional constituents identified from Appendix IX sampling, in accordance with Permit Condition III.F.4.c.3.
  - III.G.2.b. On an annual basis, any/all monitoring wells in the Compliance Monitoring Program shall be analyzed for all constituents listed in IDAPA 58.01.05.008 [40 CFR Part 264, Appendix IX]. As a result of this sampling, any newly identified compounds shall be added to the existing list of analytes in Table 3, in accordance with IDAPA 58.01.05.008 [40 CFR § 264.99(g)] and through permit modification, in accordance with Permit Condition I.D.

III.G.3. Compliance Monitoring Criteria and Data Evaluation

The criteria for evaluating data from each compliance monitoring sampling event shall be to compare the sample analytical results with the compliance monitoring criteria in Table 1 of this permit, as follows:

III.G.3.a. If the analytical results for any/all constituent(s) listed in Table 3 of this permit are less than or equal to the compliance monitoring criteria in Table 1, the permittee shall continue the CMP until Permit Condition III.A.2 has been satisfied; or

III.G.3.b. If the analytical results from any well listed in Table 2 of this permit exceed the compliance monitoring criteria in Table 1, the permittee shall comply with Permit Condition III.A.3.

III.G.4. Response to Exceedance of Compliance Monitoring Criteria

III.G.4.a. If the analytical results of samples taken from any well listed in Table 2 exceed the compliance monitoring criteria in Table 1, the permittee shall institute the Corrective Action Monitoring Program for the monitoring well network, in accordance with Permit Condition III.A.3; and

III.G.4.b. Notify the Director of this finding, in writing, within seven (7) calendar days after completion of data validation; and

III.G.4.b.1. At the permittee's discretion, within fifteen (15) days of sample validation, collect two (2) verification samples from all affected well(s), purging the well(s) between samples, and reanalyze both samples for all parameters listed in Table 3.

III.G.4.b.2. If analytical results from either of the verification samples confirm the detection of parameters in concentrations that exceed the GPS as defined in Table 1. The permittee shall notify the Director in writing within seven (7) days of making this finding. Within sixty (60) calendar days of sampling, the permittee shall perform the requirements of III.G.4.c.

III.G.4.c. Establish a CAMP in accordance with Permit Condition III.A.3 of this permit.

III.G.5. Submit a request for a permit modification in accordance with Permit Condition III.A.3.a.

III.G.6. Reporting requirements for the CAMP will be identified within the permit modification establishing the CAMP.

III.H. **DATA REPORTING FOR DETECTION AND COMPLIANCE MONITORING PROGRAMS**

While in Detection or Compliance Monitoring Program(s), the permittee shall submit semi-annual reports to the Director that shall include, at a minimum:

- III.H.1. A narrative summary of ground water monitoring data which has been collected to date, and a detailed listing of the monitoring and analytical data obtained not included in the previous report, including laboratory QA/QC information and all newly identified compounds from the annual Appendix IX testing;
- III.H.2. Analytical results from sampling and analysis, and a narrative summary of sampling data including laboratory QA/QC information;
- III.H.3. A table summary of the ground water elevation and well depth data collected in accordance with Permit Condition III.E, the results of ground water flow rate and direction calculations, and parameters used to calculate ground water flow velocities and direction for the perched aquifer in accordance with Permit Condition III.B shall be submitted annually, including a summary/statement that either:
- III.H.3.a. The monitoring well network as described in this permit is still valid for the purpose of satisfying the requirements of IDAPA 58.01.05.008 [40 CFR §264.97(a)]; or
- III.H.3.b. An in-depth evaluation of the monitoring well network is warranted and a proposal, including a schedule, for such will be submitted to the Director within ten (10) calendar days of the submittal of this summary.
- III.H.4. Field sampling data, including:
- sample collection procedures,
  - amount of purge water collected at each well,
  - sample preservation methods,
  - chain of custody information, and
  - any anomalies that may have occurred during sampling and analysis;
- III.H.5. A summary of maintenance work done on ground water monitoring equipment; and
- III.H.6. A summary of deficiencies identified during the inspections of the monitoring wells, surveyed benchmarks, and WCF cap (see Permit Condition IV.B).

**III.I. SCHEDULE OF COMPLIANCE**

- III.I.1 Within thirty (30) days of the effective date of this permit, the permittee shall begin collecting background samples from the designated wells in Table 2. Ground water monitoring samples shall be collected quarterly for a minimum of eight quarters.
- III.I.1.a. Ground water elevations shall be measured bi-monthly for two years. All water elevations shall be collected within a 24-hour period to ensure comparability.
- III.I.1.b. If the permittee is collecting this data prior to the effective date of this permit, the measurements shall be conducted on the routine schedule in accordance with Table 2.

- III.I.1.c. If the data is determined to be of poor quality, insufficient to determine ground water flow direction and velocity, or if the ground water quality is impacted by changes to the hydrologic system in the vicinity of the WCF, the Director may require additional monitoring.
- III.I.2. Within one hundred eighty (180) days of the one year anniversary date of the effective date of this permit, the permittee shall submit a work plan for the construction of one (1) additional monitoring well. This monitoring well shall be completed within one hundred eighty (180) days of DEQ approval of the work plan. The permittee shall submit a work plan for the site selection and construction of one (1) additional monitoring well within one hundred eighty (180) days of completion of the first additional monitoring well, unless the Director determines there is no need for a second additional monitoring well.
- III.I.3. The permittee shall, for the first two (2) years after permit issuance, annually collect a sample from one (1) or more point of compliance well(s) to be analyzed for all constituents listed in IDAPA 58.01.05.008 [40 CFR Part 264, Appendix IX]. Any newly identified compounds shall be added to the existing list of analytes in Table 3 as part of the Class 3 Modification following the establishment of the background data, in accordance with Permit Condition III.I.5.
- III.I.4. The permittee shall complete the calculation of background data using the statistical methods in Permit Condition III.J within forty-five (45) days of validation of the analytical data from the eight (8) quarterly sampling events. The data and supporting calculations shall be submitted to the Director within fifteen (15) days of completion of the calculations.
- III.I.5. The permittee shall submit a Class 3 Permit Modification within 45 (forty-five) days of the establishment of the background data to revise the Detection and/or Compliance Monitoring criteria, sampling frequency, and sampling parameters. If the background data is not calculated within the 45 (forty-five) days or is not submitted to the Director within 60 (sixty) days of receipt, the Director may either require continued quarterly monitoring of the monitoring network or elect to establish the background levels and the detection and compliance monitoring criteria to be used in this permit.

### **III.J. STATISTICAL ANALYSIS**

- III.J.1. The permittee shall follow the statistical procedures outlined in this section for calculating background concentrations after two (2) years of data collection.
  - III.J.1.a. For detected constituents, the permittee shall use the Mann-Kendall Test for trend analysis.
  - III.J.1.b. If no trend is observed, the permittee shall test for normality and log normality using the Shapiro-Wilk Test.

III.J.2. Limits shall be set using the following methods:

III.J.2.a. If no trend is present and data is normal, then use parametric 95% upper tolerance limit using normal data arithmetic mean and standard deviation.

III.J.2.b. If no trend is present and data is log-normal, then use parametric tolerance limit using log-normal data arithmetic mean and standard deviation:

III.J.2.b.1. The arithmetic mean ( $\bar{x}$ ) and standard deviation(s) for log-normal data are to be calculated using the following equations:

$$\text{III.J.2.b.1.a. } \bar{x}_y = \frac{1}{N} \sum_{i=1}^N \ln(x_i); s_y^2 = \frac{1}{N} \sum_{i=1}^N [\ln(x_i) - \bar{x}_y]^2$$

$$\text{III.J.2.b.2.b. } \bar{x} = \exp\left(\bar{x}_y + \frac{s_y^2}{2}\right); s = \sqrt{\exp(2\bar{x}_y + s_y^2)[\exp(s_y^2) - 1]}$$

III.J.2.c. If there is no trend and the data is non-parametric, then use non-parametric tolerance limit [highest measured value], at certain confidence limit (based on number of data).

III.J.2.d. If the eight data points show a trend, the limits must be re-evaluated after five (5) years using the same method provided a statistical steady state (no trend) is established.

III.J.2.e. If, after five (5) years of additional data is analyzed, the background shows no trend and the variability remains similar, then limits will be re-evaluated.

III.J.3. The permittee shall complete the following statistical tests when sampling consists of non-detects. Methods used shall be from reference (EPA, 1992 and Gibbons, 1994):

III.J.3.a. When less than 15% of samples result in non-detects – the permittee shall substitute  $\frac{1}{2}$  the estimated quantitation limit (EQL), and conduct the limit-setting procedure in III.J.2.

III.J.3.b. When non-detects equate to 15% to 60% of samples collected during the two (2) year period, the permittee shall use the non-parametric parametric Wilcoxon Rank-Sum procedure adjusted for ties (Helsel and Hirsch, 1995) for comparison of data collected from upgradient and downgradient monitoring wells. There must be at least three (3) samples worth of data collected from downgradient wells before this procedure can be employed.

- III.J.3.c. When non-detects are greater than 60%, the permittee shall use Poisson tolerance limits.
- III.J.3.d. The permittee shall use the EQLs as the limit whenever all sampling events are non-detects since EQLs plus background equals the EQLs.
- III.J.4. The following references shall be used for conducting statistical analysis:

Gibbons, R.D. 1987. Statistical Models for the Analysis of Volatile Organic Compounds in Waste Disposal Sites. *Groundwater*. **25**. 572-580.

Gibbons, R.D. 1994. Statistical Methods for Groundwater Monitoring. John Wiley & Sons. New York. 286 pages.

Helsel, D.R. and Hirsch, R.M. 1995. Statistical Methods in Water Resources. *Studies in Environmental Science* 49. Elsevier. New York. Section 5.1.

Maindonald, J.H. 1984. Statistical Computation. John Wiley & Sons, New York.

U.S. Environmental Protection Agency (EPA). 1992a. "Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities: Addendum to Interim Final Guidance." EPA/530-R-93-003.

Zacks, S. 1970. Uniformly most accurate upper tolerance limits for monotone likelihood ratio families of discrete distributions. *Journal of the American Statistical Association*. **65**. 307-316.

## **MODULE IV**

## **MODULE IV - POST-CLOSURE CARE**

### **IV.A. POST-CLOSURE**

The period of Post-Closure Care for the facility shall be thirty (30) years, commencing on November 29, 1999. Post-Closure Care shall be performed in accordance with IDAPA 58.01.05.008 [40 CFR §§ 264.117 through 264.120]. At any time during the post-closure period, the Director may, in accordance with the permit modification procedures in IDAPA 58.01.05.013, and .012 [40 CFR Parts 124 and 270]:

- IV.A.1. Extend the post-closure period, if necessary, to protect human health or the environment (e.g., ground water monitoring results indicate migration of hazardous constituents or levels of hazardous constituents remaining, which may be harmful to human health and the environment); or
- IV.A.2 Shorten the Post-Closure Care period, if determined that the reduced period is sufficient to protect human health and the environment.

### **IV.B. HWMA/CERCLA INTEGRATION**

The integration of HWMA and CERCLA is desirable provided the HWMA required actions are performed. Any/all use of mandatory language referring to HWMA/CERCLA integration found in the Permit Application is hereby replaced with non-mandatory terms.

### **IV.C. POST-CLOSURE CARE INSPECTION PLAN**

The permittee shall comply with the inspection provisions of IDAPA 58.01.05.008 [40 CFR § 264.15] and as follows:

- IV.C.1. The permittee shall comply with, follow, and maintain the Inspection and Maintenance Schedules and Procedures provided in Attachment 2 of this permit.
- IV.C.2. The permittee shall immediately remedy, as required by IDAPA 58.01.05.008 [40 CFR § 264.15(c)], any deterioration or malfunction discovered by an inspection, as specified in Attachment 2 of this permit.
- IV.C.3. The permittee shall record inspections on the Inspection Logs and Inspection Log Sheets, required by Permit Condition IV.B.1, as specified in IDAPA 58.01.05.008 [40 CFR § 264.15(d)]. At a minimum, the following information shall be recorded:
  - The date and time of the inspection;
  - The name of the inspector;
  - A notation of the observations made, including any/all deficiencies identified; and

- The date, nature, and status (e.g., lock replaced September 10, 200X, work order submitted – parts ordered) of any needed repairs or other remedial actions.

IV.C.4. The permittee shall retain documentation of the inspections and maintenance activities at the facility, as required by IDAPA 58.01.05.008 [40 CFR § 264.73(b)(5)], for at least three (3) years from inspection date.

IV.C.5. The permittee may add inspection requirements to an existing inspection form in cases where such additional requirements will result in a more comprehensive or detailed inspection plan, without receiving a permit modification. These changes shall be noted in the Facility Operating Record at the time the changes are made.

#### **IV.D. POST-CLOSURE MAINTENANCE ACTIVITIES**

IV.D.1. The permittee shall maintain the facility, as required by IDAPA 58.01.05.008 [40 CFR § 264.117], during the post-closure period. The permittee shall be responsible for conducting, as set forth in Attachment 3 of this permit, the following inspections and maintenance activities:

IV.D.1.a. Maintain the integrity and effectiveness of the cap including making repairs to the cap as necessary to correct the effects of subsidence, erosion, or other events; and the ground water monitoring system and equipment;

IV.D.1.b. Maintain the security of the facility in accordance with IDAPA 58.01.05.008 [40 CFR § 265.14];

IV.D.1.c. Maintain and monitor the ground water monitoring system and comply with all other applicable requirements of IDAPA 58.01.05.008 [40 CFR 264 Subpart F].

IV.D.1.d. Prevent run-on and run-off from eroding or otherwise damaging the cap; and

IV.D.1.e. Protect and maintain surveyed benchmarks used in complying with IDAPA 58.01.05.008 [40 CFR § 264.309].

IV.D.2. Post-Closure Care shall be performed in accordance with Permit Modules III and IV and Attachment 3 of this permit.

#### **IV.E. POST-CLOSURE PROPERTY USE**

IV.E.1. Post-Closure use of property on or in which hazardous wastes remain after closure must never be allowed to disturb the integrity of the final cover or the function of the facility's monitoring systems, unless the Director determines the disturbance:

IV.E.1.a. Is necessary to the proposed use of the property, and will not increase the potential hazard to human health or the environment; or

- IV.E.1.b. Is necessary to reduce a threat to human health or the environment.
- IV.E.2. If the permittee, or any subsequent owner or operator of the land upon which the hazardous waste management unit are located, elects to remove hazardous waste and hazardous waste residues, the liner (if any), or the contaminated soils, prior to the expiration of this permit, a request for a modification to this permit shall be submitted in accordance with the applicable requirements of IDAPA 58.01.05.012 and .013 [40 CFR Parts 270 and 124]. The permittee or subsequent owner or operator of the land shall demonstrate that the removal of hazardous waste or hazardous waste residues shall satisfy the criteria of IDAPA 58.01.05.008 [40 CFR § 264.117(c)].

**IV.F. POST-CLOSURE CARE OF GROUND WATER EQUIPMENT**

- IV.F.1 The Permittee shall provide the DEQ Director with a list of monitoring equipment (including piping and pumps), monitoring and recovery wells, that will remain in service when the post-closure period is completed.
- IV.F.2. All monitoring wells, recovery wells, and associated equipment to be taken out of service shall be decommissioned in accordance with IDAPA 58.01.05.008 [40 CFR § 264.114] and IDAPA 37.03.09.025 Section 12.

**IV.G. CERTIFICATION**

No later than sixty (60) days after completion of the established post-closure period, the permittee shall submit to the Director, by registered mail, a certification that the Post-Closure Care was performed in accordance with this permit. The permittee and an independent, registered professional engineer must sign the certification. Documentation supporting an independent, registered professional engineer's certification must be furnished to the Director, upon request, until the Director releases the permittee from the Post-Closure Care monitoring requirements, in accordance with IDAPA 58.01.05.008 [40 CFR § 264.120].

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## **MODULE V**

EFFECTIVE DATE: October 16, 2003

INEEL WCF POST-CLOSURE PERMIT  
PERMIT NUMBER: ID4890008952

Module V, Page 42 of 42

### **MODULE V - CORRECTIVE ACTION**

- V.A. The corrective action requirements for these facilities are addressed in the previously issued HWSF/RSSF/RSWF Partial-Permit (effective January 23, 1994), Module V.
- V.B. In the event that both the FFA/CO and all Final Partial-Permits for Hazardous Waste Management on the Idaho National Engineering Laboratory are vacated, the permittee shall submit a permit modification, in accordance with IDAPA 58.01.05.012 [40 CFR § 270.42] and Permit Condition I.D.

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