

ARIZONA HAZARDOUS WASTE MANAGEMENT ACT PERMIT

EPA ID NUMBER AZ7 213 820 635 - PLACE ID 3051 – LICENSE LTF NUMBER 62926

In accordance with the State of Arizona Administrative Code (A.A.C.), Title 18, Chapter 8, Article 2, R18-8-260 et. seq. (hereinafter called Article 2), and pursuant to the Arizona Hazardous Waste Management Act, A.R.S. § 49-921 et. seq. (hereinafter called AHWMA), this Permit is issued to the following:

FACILITY NAME: Camp Navajo

FACILITY ADDRESS: Hughes Avenue, Building 15
Bellemont, Arizona 86015

FACILITY ID NUMBER: AZ7 213 820 635

PROPERTY OWNER: United States Army National Guard Directorate

FACILITY OPERATOR: Arizona Army National Guard

The Camp Navajo facility is located approximately 10 miles west of Flagstaff and south of Interstate I-40 and Bellemont. The Post-Closure Permit Area consists of former open burn/open detonation (OB/OD) areas located in the southern portion of the installation. The OB/OD areas were used between the early 1940s and 1994 to demilitarize munitions that had become obsolete or unserviceable. The Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) process was used to investigate, remediate and close all units for contamination. Since only partial removal of munitions and explosives of concern (MEC) was completed, the Post-Closure Permit Area remains with MEC waste in place on the surface and in the subsurface, requiring post-closure care under a hazardous waste post-closure permit. An area outside of the Post-Closure Care Area received kick-out of munitions and debris during demilitarization activities. Although the surface was cleared of munitions, corrective action measures are in place to either blow up the munition in place or move it to designated areas within the Post-Closure Permit Area for treatment. Constituents of concern (COCs) and potential constituents of concern (COPCs) include, but are not limited to, perchlorate, explosives (including hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)) and metals. Post-closure care will consist of the following:

1. Inspection and maintenance of the surface of the closed unit – periodic inspections will be performed to monitor erosion. Corrective action and/or soil sampling will occur if MEC or heavy sedimentation are observed to be migrating outside of the Post-Closure Permit Area.
2. Groundwater and vadose zone monitoring and reporting – a groundwater compliance monitoring plan will be implemented to periodically collect and analyze groundwater from regional aquifer wells within and in the vicinity of the installation and vadose zone water from on-site shallow monitoring wells. Based on groundwater monitoring to date, detected COCs or COPCs are below established regulatory standards or regional screening levels.
3. Inspection and maintenance of the installation perimeter fence and gates, access roads, installation and Post-Closure Permit Area warning signs, monitoring wells, survey monuments and concrete barriers – preventative and corrective maintenance and repair procedures will be performed in conjunction with the periodic inspections.



This permit also establishes a post-closure care period. The post-closure care period is for 30 years and begins on the effective date of this permit. The Director may extend this post-closure care period if he finds that the extended period is necessary to protect human health and the environment. The Director may also shorten the post-closure care period if it is determined that the reduced period is sufficient to protect human health and the environment.

The Permittee must comply with all terms and conditions of this Permit. This Permit consists of the conditions contained herein (including those in any attachments) and the applicable regulations contained in Article 2 as specified in the Permit. This Permit does not, in any way, release the Permittee from complying with the applicable requirements of any of the provisions of Article 2, AHWMA, or any other applicable state requirement promulgated by rule or statute. Unless modified, applicable regulations are those which are in effect on the date of issuance of this Permit pursuant to A.A.C. R18-8-264, 270 and 271, and the conditions therein are specified pursuant to A.A.C. R18-8-270.A (40 CFR §270 Subpart C), K, L, M, N, and O. All references to 40 CFR in this Permit refer to those regulations as adopted and modified by Article 2.

This Permit is based on the assumption that the information contained in the Permit Application is accurate, and that the closed facility will be monitored and maintained as specified in the Permit Attachments and Appendices. Any inaccuracies found in this information may be grounds for the termination, modification, or revocation and reissuance of this Permit pursuant to A.A.C. R18-8-271.D (40 CFR §§ 270.41, 270.42 and 270.43) and potential enforcement action. The Permittee shall inform the Director of any deviation from or changes in the information in the application which would affect the Permittee’s ability to comply with the applicable regulations or permit conditions.

This Permit is effective as of _____, 2017 and shall remain in effect for ten (10) years from this date, unless revoked and reissued, or terminated pursuant to A.A.C. R18-8-270.A (40 CFR §270.41 and 270.43) or continued in accordance with A.A.C. R18-8-270.A (40 CFR §270.51) and P (40 CFR §270.51(a)).

For the Arizona Department of Environmental Quality,

Signed this _____ day of _____, 2017

by _____
Laura L. Malone, Director
Waste Programs Division
Arizona Department of Environmental Quality

DRAFT AHWMA PERMIT

**CAMP NAVAJO
HUGHES AVENUE
BELLEMONT, ARIZONA
EPA ID NO. AZ7 213 820 635**

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PART I – GENERAL PERMIT CONDITIONS

A. EFFECT OF PERMIT

The Permittee shall perform Post-Closure care in accordance with the requirements of this Permit and any other plans submitted and approved pursuant to this Permit.

There are no permitted operating hazardous waste storage, treatment, or disposal units at the facility. Any storage, treatment, and/or disposal of hazardous waste not specifically authorized in this Permit is prohibited, unless exempted from Permit requirements. There are hazardous waste generator activities that occur in other parts of the installation in accordance with A.A.C. R18-8-262 (40 CFR 262) and that do not fall under the post-closure permit.

Subject to Arizona Administrative Code (A.A.C.) R18-8-270.A and 40 CFR 270.4, compliance with this Permit generally constitutes compliance, for purposes of enforcement, with the Arizona Hazardous Waste Management Act (AHWMA). 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. Compliance with the terms of this Permit does not constitute a defense to any order issued or any action brought under Sections 3008(a), 3008(h), 3013, or 7003 of RCRA (42 U.S.C. 6921 et seq.); Sections 106(a), 104 or 107 of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (42 U.S.C. 9601 et seq., commonly known as CERCLA), or any other law providing for protection of public health or the environment.

[A.A.C. R18-8-270.A and 40 CFR 270.4, 270.30(g)]

B. DEFINITIONS

For purposes of this Permit, terms used herein shall have the same meaning as those in A.A.C. R18-8-260 et seq. (40 CFR Parts 124, 260, 264, 266, 268, and 270), unless this Permit specifically provides otherwise (see alphabetized terms below); 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.

1. A.A.C. and CFR means the Arizona Administrative Code (A.A.C.) Title 18, Chapter 8, Article 2 (A.A.C. R18-8-260 et seq.), effective September 5, 2015, as published at 21 Arizona Administrative Register (A.A.R.) 1246, which adopts and modifies portions of Title 40 Code of Federal Regulations Part 260 through 273 (40 CFR Part 260 -273) (See Attachment L).
2. AHWMA means Arizona Hazardous Waste Management Act.

3. Area of Concern or AOC defined as:
 - (a) Hazardous product storage unit or area.
 - (b) Any area where a one-time hazardous material (product or waste) spill event occurred.
 - (c) Any hazardous material unit or area where management may have occurred, whether the potential for release may have existed, but where insufficient evidence was found during the RCRA Facility Assessment (RFA) to verify the existence of a definable Solid Waste Management Unit (SWMU).
4. CERCLA or Comprehensive Environmental Response, Compensation, and Liability Act (i.e., Superfund) means a law enacted by Congress on December 11, 1980. This law created a tax on the chemical and petroleum industries and provided broad Federal authority to respond directly to releases or threatened releases of hazardous substances that may endanger public health or the environment. This facility was investigated, with remedial response activities conducted, and closed under the CERCLA program.
5. Director means the Director of ADEQ or the Director's designee or authorized representative.
6. Example means, unless otherwise specified, that the form is a blank form that has the mandatory minimum information that shall be recorded and that is to be used or followed. This term does not convey to the Permittee that the statements are optional to be performed or are at the user's discretion. "Example" presents, unless otherwise specified, minimum acceptable.
7. Facility or Activity means any HWM facility or any other facility or activity (including land or appurtenances thereto) that is subject to regulation under the RCRA program. In accordance with R18-8-260.E and F (40 CFR 260.10) and R18-8-270.A (40 CFR 270.2), this includes:
 - a. Any HWM facility or other facility or activity, including all contiguous land, structures, appurtenances, and improvements on the land which are used for treating, storing, or disposing of hazardous waste, [that is subject to regulation under the HWMA program]. A facility may consist of several treatment, storage, or disposal operational units ([that is], one or more landfills, surface impoundments, or combinations of them).
 - b. For the purposes of implementing corrective action under 40 CFR 264.101 (as incorporated by R18-8-264), all contiguous property under the control of the owner or operator seeking a permit under Subtitle C of RCRA. This definition also applies to facilities implementing corrective action under RCRA Section 3008(h).

- c. Notwithstanding paragraph (b) of this definition, a remediation waste management site is not a facility that is subject to 40 CFR 264.101(as incorporated by R18-8-264), but is subject to corrective action requirements if the site is located within such a facility.
8. Groundwater Monitoring Plan or GWMP means The Groundwater Monitoring Plan included in Permit Attachment I of this permit that describes groundwater and vadose zone monitoring associated with the hazardous waste management facility. It includes sampling of other water sources.
9. Hazardous constituent means (a) any constituent identified in A.A.C. R18-8-261.A (Appendix VIII of 40 CFR Part 261) that have been detected in groundwater in the uppermost aquifer underlying a regulated unit and that are reasonably expected to be in or derived from waste contained in a regulated unit, unless the Director has excluded them under (b), below.

(b) The Director will exclude an appendix VIII constituent from the list of hazardous constituents specified in this Permit if he finds that the constituent is not capable of posing a substantial present or potential hazard to human health or the environment. In deciding whether to grant an exemption, the Director will consider the following: (1) Potential adverse effects on groundwater quality, considering: (i) The physical and chemical characteristics of the waste in the regulated unit, including its potential for migration; (ii) The hydrogeological characteristics of the facility and surrounding land; (iii) The quantity of groundwater and the direction of groundwater flow; (iv) The proximity and withdrawal rates of groundwater users; (v) The current and future uses of groundwater in the area; (vi) The existing quality of groundwater, including other sources of contamination and their cumulative impact on the groundwater quality; (vii) The potential for health risks caused by human exposure to waste constituents; (viii) The potential damage to wildlife, crops, vegetation, and physical structures caused by exposure to waste constituents; (ix) The persistence and permanence of the potential adverse effects; and (2) Potential adverse effects on hydraulically-connected surface water quality, considering: (i) The volume and physical and chemical characteristics of the waste in the regulated unit; (ii) The hydrogeological characteristics of the facility and surrounding land; (iii) The quantity and quality of groundwater, and the direction of groundwater flow; (iv) The patterns of rainfall in the region; (v) The proximity of the regulated unit to surface waters; (vi) The current and future uses of surface waters in the area and any water quality standards established for those surface waters; (vii) The existing quality of surface water, including other sources of contamination and the cumulative impact on surface-water quality; (ix) The potential damage to wildlife, crops, vegetation, and physical structures caused by exposure to waste constituents; and (x) The persistence and permanence of the potential adverse effects.

(c) In making any determination under 264.93 (b), as incorporated by R18-8-264, about the use of groundwater in the area around the facility, the Director shall

consider any identification of underground sources of drinking water and exempted aquifers made under 40 CFR 144.7, and any identification of uses of groundwater made pursuant to 18 AAC 9 or 11.

10. Hazardous waste means a hazardous waste as defined in R18-8-261.A (40 CFR 261.3).
11. Hazardous Waste Management facility or HWM facility means all contiguous land and structures, other appurtenances, and improvements on the land, used for treating, storing, or disposing of hazardous waste. A facility may consist of several treatment, storage, or disposal operational units.
12. IDW or Investigation Derived Waste or Investigative Derived Waste means media or solid waste generated during environmental site investigations and sampling activities including soil cuttings and other soil wastes; fluids from well drilling, aquifer testing, well purging, sampling, and decontamination; and disposable sampling and personal protection equipment.
13. MEC means munitions and explosives of concern. These include unexploded ordnance (UXO), discarded military munitions (DMM) and munitions constituents (e.g., trinitrotoluene (TNT), hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)) present in high enough concentrations to pose an explosive hazard.
14. OB/OD or open burn and open detonation means a method of demilitarizing (i.e., treating) conventional munitions that had become obsolete or unserviceable.
15. MRWA or Munitions Response Work Area or MRWA means an informal operational unit to address the explosive hazard associated with munitions disposed of at the Navajo Army Depot (NAAD) 02 Open Detonation Area, a former RCRA OB/OD unit.
16. PCP or Post-Closure Plan refers to the plan (or plans) containing the maintenance requirements for a hazardous waste management unit under post-closure care including security, inspections and maintenance procedures. The PCP to be used by the Permittee is attached to this Permit as Permit Attachment D.
17. Post-closure Care Area refers to the hazardous waste management unit within Camp Navajo in post-closure care under this Permit. It is comprised of a former open burn/open detonations area, MRWA 02-01 and a portion of MRWA 02-03, which was used to burn munitions containing white phosphorus.
18. Qualified means that the individual or group shall have the same training, education, experience, and other necessary skills, as required by this Permit, as the person(s) or group who normally performs that function has.

19. QAPP or Quality Assurance Project Plan refers to the plan (or plans) containing the policies and procedures; project organization and objectives; and the quality assurance (QA) requirements and quality control activities designed to achieve the desired type and quality of environmental data necessary to support the project objectives.
20. Release includes the definitions of “discharge” and “disposal” as found in A.A.C. R18-8-260.A (40 CFR 260.10) and means any spilling, leaking, pouring, emitting, emptying, discharging, injecting, pumping, escaping, leaching, dumping, or disposing of hazardous wastes (including hazardous constituents) into the environment (including the abandonment or discarding of barrels, containers, and other closed receptacles containing hazardous wastes or hazardous constituents).
21. Shall, Must, and Will, denote a mandatory requirement.
22. Should or May denotes a recommendation or permission, respectively, which is not mandatory.
23. Solid Waste Management Unit or SWMU means any discernible 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 waste. SWMUs include any area at a facility at which solid wastes have been routinely and systematically released.

This permit refers to SWMU MRWA 02-02 as an area surrounding the Post-Closure Permit Area. It may have received kick-out during detonations within MRWA 02-01. This area went through a surface clearance process for munitions, but munitions may still remain in the subsurface. Therefore, corrective action for any munitions encountered is required in accordance with Permit Attachment F.
24. Vadose Zone Water refers to transient water percolating through the vadose, or unsaturated, zone, which generally moves downward through the vadose zone to the groundwater table under the influence of gravity. Water in the vadose zone has a pressure head less than atmospheric pressure, and may be retained in the vadose zone by a combination of adhesion and capillary action. In this Permit, the vadose zone monitoring wells, piezometers and AWI-Series wells are sampled to collect vadose zone water.

C. PERMIT ACTIONS

1. Permit Modification, Revocation and Reissuance, and Termination
 - (a) This Permit may be modified, revoked and reissued, or terminated for cause, as specified in A.A.C. R18-8-270.A (40 CFR 270.41, 270.42, and 270.43). The Permit may be modified by the Director at any time, following procedures in A.A.C. R18-8-271.D in order to ensure compliance with applicable state and federal requirements. The filing of a request for a Permit

Modification, revocation and reissuance, 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.

- (b) In accordance with Arizona Revised Statutes, Title 41, Chapter 6, Article 10, a final determination regarding any Permit Modification (the approval of the Permittee's Permit Modification request, the approval of the Permittee's Permit Modification request with changes, the denial of the Permittee's Permit Modification request, or the final decision on any agency-initiated Permit Modifications) made by the Director is an appealable agency action.
[A.A.C. R18-8-270.A and 40 CFR 270.30(f), A.R.S. §41-1092 et seq.]

2. Permit Renewal

This Permit may be renewed as specified in Permit Condition I.E.2.

[A.A.C. R18-8-270.A and 40 CFR 270.30(b)]

3. Permit Expiration

This Permit shall be effective for a fixed term not to exceed ten (10) years. This Permit and all conditions herein will remain in effect beyond the Permit's expiration date, if the Permittee has submitted a timely, complete permit application for renewal and through no fault of the Permittee, the Director has not issued a new Permit. For purposes of this requirement, a complete application for renewal must be in accordance with requirements of A.A.C. R18-8-270.A, E, F, G, I, and J (40 CFR 270.10, 270.13 through 270.29)

[A.A.C.R18-8-270.A and 40 CFR 270.50(a), 40 CFR 270.51]

4. Transfers

- (a) This Permit is not transferable to a new owner or operator, except after notice to the Director. The Director may modify or revoke and reissue the Permit to change the name of the Permittee and incorporate such other requirements as necessary pursuant to A.A.C. R18-8-270.A (40 CFR 270.40). Before transferring ownership or operation of the facility during its operating life, or of a disposal facility during the post closure care period, the Permittee shall notify the new owner or operator in writing of the requirements of A.A.C. R18-8-270 (40 CFR 270) and this Permit.

- (b) Any new owner or operator must submit an ADEQ Character/Background Reference Form. The Director may deny a permit to a person if any of the following applies:

- (i) The person fails to demonstrate sufficient reliability, expertise, integrity, and competence to operate a hazardous waste management facility;

- (ii) The person has been convicted of or pled guilty or no contest to, a felony in any state or federal court during the five years before the date of the Permit Modification request;
- (iii) In the case of a corporation or business entity, if any officer, director, partner, key employee, other person or business entity who holds ten percent or more of the equity or debt liability has been convicted of, or pled guilty or no contest to a felony in any state or federal court during the five years before the date of the Permit Modification request.

[A.A.C. R18-8-270.A, J, and L, and 40 CFR 270.30(l)(3); R18-8-264.A and 40 CFR 264.12(c)]

D. [RESERVED]

E. DUTIES AND REQUIREMENTS

1. Duty to Comply

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. Any Permit noncompliance, other than noncompliance authorized by an emergency permit, constitutes a violation of AHWMA and/or RCRA and is grounds for enforcement action; for Permit termination, revocation and reissuance, or modification; or for denial of a Permit renewal application.

[A.A.C. R18-8-270.A and 40 CFR 270.30(a)]

2. Duty to Reapply

If the Permittee wishes to continue an activity allowed by this Permit after the expiration date of this Permit, the Permittee shall submit a complete application for a new Permit at least one hundred eighty (180) days prior to Permit expiration.

[A.A.C. R18-8-270.A, 40 CFR 270.10(h), and 40 CFR 270.30(b)]

3. 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.

[A.A.C. R18-8-270.A and 40 CFR 270.30(c)]

4. Duty to Mitigate

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

[A.A.C. R18-8-270.A and 40 CFR 270.30(d)]

5. Proper Operation and Maintenance

The Permittee shall, at all times, properly operate and maintain all facilities and 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 staffing and training, and adequate laboratory and process controls, including appropriate quality assurance/quality control procedures. This provision requires the operation of back-up or auxiliary facilities only when necessary to achieve compliance with the conditions of this Permit.

[A.A.C. R18-8-270.A and 40 CFR 270.30(e)]

6. Property Rights

This Permit does not convey any property rights of any sort, or any exclusive privilege.

[A.A.C. R18-8-270.A, 40 CFR 270.4(b) and 270.30(g)]

7. Duty to Provide Information

The Permittee shall furnish to the Director, within a reasonable time, any relevant information which 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 Director, upon request, copies of records required to be kept by this Permit.

[A.A.C. R18-8-264.A and 270.A, and 40 CFR 264.74(a) and 270.30(h)]

8. Inspection and Entry

The Permittee shall allow the Director, or an authorized representative, upon the presentation of credentials and other documents, as may be required by law, to:

- (a) Enter at reasonable times upon the Permittee's premises where a regulated waste management unit or activity is located or conducted, or where records must be kept under the conditions of this Permit;
- (b) Have access to and copy, at reasonable times, any records that must be kept under the conditions of this Permit;
- (c) Inspect at reasonable times any waste management unit, equipment (including monitoring and control equipment), practices, or operations regulated or required under this Permit; and
- (d) Sample or monitor, at reasonable times, for the purposes of assuring Permit compliance or as otherwise authorized by AHWMA and RCRA, any substances or parameters at any location.

[A.A.C. R18-8-270.A (40 CFR 270.30(i))]

9. Monitoring and Records

- (a) Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity (e.g., air emissions). The method used to obtain a representative sample of the waste to be analyzed must be the appropriate method from A.A.C. R18-8-261.A, Appendix I of 40 CFR 261 or an equivalent or better method approved by the Director. Laboratory methods must be those specified in *Test Methods for Evaluating Solid Waste: Physical/Chemical Methods*, EPA Publication SW-846 (current edition), or an equivalent or better method, or as approved by the Director.

[A.A.C. R18-8-270.A (40 CFR 270.30(j)(1))]

- (b) The Permittee shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports and records required by this Permit, and records of all data used to complete the application for this Permit for a period of at least 3 years from the date of the sample, measurement, report, record, certification, or application. These periods may be extended by request of the Director at any time and are automatically extended during the course of any unresolved enforcement action regarding this facility.

[A.A.C. R18-8-264.A and 270.A, and 40 CFR 264.74(b) and 270.30(j)(2)]

- (c) Pursuant to A.A.C. R18-8-270.A and 40 CFR 270.30(j)(3), records of monitoring information shall specify:

- (i) The dates, exact place, and times of sampling or measurements;
- (ii) The individual(s) who performed the sampling or measurements;
- (iii) The dates analyses were performed;
- (iv) The individual(s) who performed the analyses;
- (v) The analytical techniques or methods used; and
- (vi) The results of such analyses.

[A.A.C. R18-8-270.A (40 CFR 270.30(j)(3))]

- (d) Each parameter test that an in-state or out-of-state laboratory can perform for hazardous waste analysis must be licensed (certified) by the Arizona Department of Health Services (ADHS). Additionally, if a contract laboratory is used to perform analyses, the Permittee shall be responsible for ensuring the contract laboratory is licensed by ADHS and utilizing an adequate QAPP. With the notification of a new QAPP, a copy(ies) of the ADHS certification must be included for any laboratories to be used.

[A.R.S. Title 36, Chapter 4.3, Article 1, 36-495.01, A.A.C. R18-8-270.A (40 CFR §270.30(e) and §270.31) and A.A.C. R18-8-270.A, M, N and O (40 CFR §270.32)]

10. Signatory and Certification Requirements

All applications, reports, or information submitted to or requested by the Director, his/her designee, or authorized representative, shall be signed and certified in accordance with A.A.C. R18-8-270.A (40 CFR 270.11).

[A.A.C. R18-8-270.A (40 CFR 270.30(k))]

11. Reporting Requirements

(a) Planned Changes

The Permittee shall give notice to the Director, as soon as possible, of any planned physical alterations or additions to the permitted facility. The Permittee shall give notice to the Director of any planned physical alterations or additions to the permitted facility that may be initiated by the PROPERTY OWNER, as soon as the Permittee is made aware of the planned physical alterations or additions.

[A.A.C. R18-8-270.A and 270.L (40 CFR 270.30(1)(1))]

(b) Anticipated Noncompliance

The Permittee shall give advance notice to the Director of any planned changes (e.g., physical alterations) in the Permitted facility or activity which may result in noncompliance with Permit requirements. The Permittee shall give notice to the Director as soon as the Permittee is made aware of any planned changes (e.g., physical alterations) in the permitted facility or activity which may be initiated by the PROPERTY OWNER, and which may result in noncompliance with Permit requirements.

[A.A.C. R18-8-270.A and 270.L (40 CFR 270.30(1)(2))]

(c) Monitoring Reports

Monitoring results shall be reported at the intervals specified elsewhere in this Permit.

[A.A.C. R18-8-270.A and 270.L (40 CFR 270.30(1)(4))]

(d) Compliance Schedules

Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of this Permit shall be submitted no later than fourteen (14) calendar days following each schedule date.

[A.A.C. R18-8-270.A (40 CFR 270.30(1)(5))]

(e) Other Noncompliance

The Permittee shall report all instances of noncompliance not required under A.A.C. R18-8-270.A and 40 CFR 270.30(1)(4), (1)(5) and (1)(6), at the time

monitoring reports are submitted. Reports shall contain the information listed in A.A.C. R18-8-270.A and 40 CFR 270.30(l)(6).

[A.A.C. R18-8-270.K and 270.L (40 CFR 270.30(l)(10))]

12. Twenty-Four Hour Reporting

The Permittee shall report to the Director any noncompliance which may endanger health or the environment. Any such information shall be reported orally as soon as possible but not later than twenty-four (24) hours from the time the Permittee becomes aware of the circumstances. The report shall include the following:

- (a) Information concerning the release of any hazardous waste that may cause an endangerment to public drinking water supplies.
- (b) Any information of a release or discharge of hazardous waste, or of a fire or explosion from the hazardous waste management facility, which could threaten the environment or human health outside the facility. The description of the occurrence and its cause shall include:
 - (i) Name, address, and telephone number of the owner or operator;
 - (ii) Name, address, and telephone number of the facility;
 - (iii) Date, time, and type of incident;
 - (iv) Name and quantity of material(s) involved;
 - (v) The extent of injuries, if any;
 - (vi) An assessment of actual or potential hazards to the environment and human health outside the facility, where this is applicable; and
 - (vii) Estimated quantity and disposition of recovered material that resulted from the incident.
- (c) A written submission of the occurrence shall also be provided within five (5) calendar days of the time the Permittee becomes aware of the circumstances. The written submission shall contain:
 - (i) A description of the noncompliance and its cause;
 - (ii) The period(s) of noncompliance (including exact dates and times);
 - (iii) Whether the noncompliance has been corrected; and, if not corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent recurrence of the noncompliance.

The Director may waive the five (5) day written notice requirement in favor of a written report within fifteen (15) days.

[A.A.C. R18-8-270.A (40 CFR 270.30(l)(6))]

13. Other Information

Whenever the Permittee becomes aware that it failed to submit any relevant facts in the Permit application, or submitted incorrect information in a Permit application or in any report to the Director, the Permittee shall promptly submit such facts or information.

[A.A.C. R18-8-270.A and 270.L (40 CFR 270.30(l)(11))]

F. CONFIDENTIAL INFORMATION

The Permittee may claim confidential any information required to be submitted by this Permit.

[A.A.C. R18-8-270.A and H (40 CFR 270.12)]

G. DOCUMENTS TO BE MAINTAINED

The Permittee shall maintain the following documents and all amendments, revisions and modifications to these documents:

1. Inspection schedules, as required by A.A.C. R18-8-264.A, 40 CFR 264.15(b) and this Permit;
2. Contingency Plan, as required by A.A.C. R18-8-264.A, 40 CFR 264.53(a) and this Permit;
3. Operating record, as required by A.A.C. R18-8-264.A, 40 CFR 264.73 and this Permit;
4. [RESERVED];
5. All other documents required by Permit Condition I.E.9 (Monitoring and Records).
6. Groundwater Monitoring Plan (Attachment I) and QAPP and groundwater monitoring records as required by A.A.C. R18-8-264.A, 40 CFR 264.100, and this Permit.
7. Corrective action plans and reports as required by A.A.C. R18-8-264.A, 40 CFR 264.100 and 264.101, and this Permit.

H. PERMIT MODIFICATIONS

1. General Conditions

For Permit Modifications (including re-application), the Permittee shall follow A.A.C. R18-8-270.A (40 CFR 270.42) and A.A.C. R18-8-270.G for any fees to be submitted with the application for Permit Modification.

2. Facility Mailing List

The Permittee shall obtain from ADEQ and use an updated facility mailing list, pursuant to A.A.C. R18-8-270.A and 40 CFR 270.42 when processing all Permittee-requested Permit Modifications.

[A.R.S. 49-941, A.A.C. R18-8-271.I(c)]

3. Changes to Key Employee(s)

For the following key personnel changes, the Permittee shall also submit an ADEQ Character/Background Reference Form:

(a) Signatories – See Permit Condition I.E.10 (Signatory and Certification Requirements);

(b) Emergency Coordinator – See Permit Attachment G (Contingency Plan).

[A.R.S. 49-922.C; A.A.C. R18-8-270.J, and 40 CFR 270.14(b)(20)]

PART II – GENERAL FACILITY CONDITIONS

A. MAINTENANCE AND OPERATION OF FACILITY

The Facility is described in Permit Attachment B Permittee shall maintain the facility to minimize the possibility of a fire, explosion, or any unplanned, sudden or non-sudden release of hazardous waste constituents and perchlorate to air, soil, or surface water which could threaten human health or the environment.

[A.A.C. R18-8-264.A and 40 CFR 264.31]

B. SECURITY

The Permittee shall comply with the security provisions of A.A.C. R18-8-264.A(40 CFR 264.14(b)(2)) and (c) and those contained in the Permit Attachment D (Post-Closure Plan, Section 3.1), summarized in III.F.

C. GENERAL INSPECTION REQUIREMENTS

1. The Permittee shall follow the inspection schedule and requirements in accordance with Permit Attachment D, Section 3.2, summarized in III.G.
2. The Permittee shall remedy any deterioration or malfunction discovered by an inspection, as required by A.A.C. R18-8-264.A (40 CFR 264.15(c)).
3. Records of inspection shall be kept, as required by A.A.C. R18-8-264.A (40 CFR 264.15(d)).

D. CONTINGENCY PLAN

1. Implementation of Plan

The Permittee shall immediately carry out the provisions of the Contingency Plan (Permit Attachment G), and follow the emergency procedures described by A.A.C. R18-8-264.A and G (40 CFR 264.56) whenever there is a release, fire, or explosion involving hazardous waste or hazardous materials at the Post-closure Permit Area or to a situation at the Post-closure Permit Area that threatens human health or the environment..

[A.A.C. R18-8-264.A (40 CFR 264.51(b))]

2. Copies of Plan

The Permittee shall maintain and distribute copies of the Contingency Plan pursuant to 40 CFR 264.53.

[A.A.C. R18-8-264.A (40 CFR 264.53)]

3. Amendments to Plan

The Permittee shall review and immediately amend, if necessary, the Contingency Plan. Any amendment shall be subject to Permit Condition I.H.

[A.A.C. R18-8-264.A (40 CFR 264.54)]

4. Emergency Coordinator

A trained emergency coordinator shall be available at all times in case of an emergency. Any change to the names, addresses, and phone numbers of all persons qualified to act as emergency coordinators listed in the Contingency Plan shall be supplied to the Director as a Class 1 permit modification request requiring Director approval pursuant to Permit Condition I.H.

[A.A.C. R18-8-264.A (40 CFR 264.55)].

E. RECORD KEEPING AND REPORTING

In addition to the record keeping and reporting requirements specified elsewhere in this Permit, A.A.C. R18-8-264.A, and 40 CFR 264.77, the Permittee shall maintain a written operating record at Camp Navajo or at the location specified in Permit Condition I.G.

[A.A.C. R18-8-264.A (40 CFR 264.73)]

F. PERSONNEL TRAINING

The Permittee shall ensure that all personnel performing functions involving hazardous waste, groundwater monitoring, vadose zone monitoring, inspections, and maintenance are properly trained for the duties performed as required by A.A.C. R18-8-264.A (40 CFR 264.16). This training program shall follow the Personnel Training Plan in the Post-Closure Plan (Permit Attachment D, Section 4). The Permittee shall maintain training documents and records, as required by A.A.C. R18-8-264.A (40 CFR 264.16(d) and (e)).

[A.A.C. R 18-8-264.A and R18-8-270.A (40 CFR 264.16 and 40 CFR 270.14(b)(12))]

G. SPECIAL PROVISIONS FOR IGNITABLE OR REACTIVE WASTE

The Permittee shall take precautions to prevent accidental ignition or reaction of ignitable or reactive waste and follow the procedures specified in Permit Attachment D, Section 3.3.

[A.A.C. R18-8-264.A (40 CFR 264.17(a))]

H. PREPAREDNESS AND PREVENTION

The Permittee shall comply with the preparedness and prevention provisions of A.A.C. R18-8-264.A(40 CFR 264 Subpart C) and those contained in the Permit Attachment D (PCP, Sections 3 and 5).

I. GENERAL WASTE ANALYSIS

For any solid waste generated at the Post-closure Permit Area, or as part of post-closure care facility, the Permittee shall determine if the waste is a hazardous waste in accordance with R18-8-261.A (40 CFR 261.11). If the waste is determined to be hazardous, the Permittee shall manage the waste in accordance with R18-8-261.A (40 CFR 261.11). All analyses performed shall be done in accordance with Test Methods for Evaluating Solid Waste: Physical/Chemical Methods, EPA Publication SW-846 (current edition), or equivalent or better methods as approved by the Director. If the Permittee uses a contract laboratory to perform analyses, each parameter test that the in-state or out-of-state laboratory performs for hazardous waste analysis must be licensed (certified) by the Arizona Department of Health Services (ADHS). There are hazardous waste generator activities that occur in other parts of the installation in accordance with A.A.C. R18-8-261 and 262 (40 CFR 261 and 262) and do not fall under the post-closure permit.

[A.A.C. R18-8-261.A (40 CFR 261.11) and A.R.S. Title 36, Chapter 4.3, Article 1, Section §36-495.01]

J. SCHEDULE OF COMPLIANCE

The Permittee shall modify the Permit with the following information within the timeframes specified below. The modifications shall be submitted as Class 1 Permit modification requests with Director approval in accordance with A.A.C. R18-8-270.A (40 CFR §270.42). Any change to a deadline specified below must be submitted as Class 1 Permit modification request with Director approval.

1. Regional Aquifer Monitoring Well CN-1 Sampling Evaluation:

- (a) Within thirty (30) calendar days of Permit issuance the Permittee shall submit a written proposal for the method to be used to conduct multi-depth sampling of refurbished regional aquifer well, CN-1. The proposal must evaluate COPC/COC concentrations at different depths. It shall include an optimization plan to determine the most appropriate depth for collecting subsequent samples during monitoring within the zone(s) of highest concentrations. The work must commence within thirty (30) calendar days of ADEQ approval.
- (b) Within ninety (90) calendar days following completion of the work plan activities, the Permittee shall submit a technical memorandum to the Director that includes, but not be limited to, the following:
 - (i) Description of procedures, methods and equipment used to collect the samples.
 - (ii) Summary of the results and a discussion of the results with identification of any issues encountered and limitations. Results summary table(s) shall be included to easily review data.
 - (iii) Data Validation.

- (iv) Conclusions, including the optimum depth(s) for monitoring of this well.
 - (v) Recommendations. If modifications to the Post-Closure Permit are recommended, submit the changes under this permit modification request with the technical memorandum.
- (c) The technical memorandum will be added to GWMP Attachment I.6.

[A.A.C. R18-8-264.A (40 CFR §264 Subpart F, §264 Subpart N and §264.310), A.A.C. R18-8-270.A, M, N and O (40 CFR §270.32) and R18-8-270.A (40 CFR §270.33)]

2. Surface Water Survey:

- (a) Within ten (10) calendar days of Permit issuance the Permittee shall submit a surface water survey to evaluate run-on/run-off. The survey shall include, but not be limited to:
- (i) Topographic mapping and/or hydrologic modeling of the Post-Closure Permit Area and surrounding land.
 - (ii) Use of a 25-year 24-hour storm for quantitative maximum precipitation estimates;
 - (iii)
 - (iv) Maximum amount of run-on onto the Post-Closure Permit Area and which portions;
 - (v) Identification of run-off drainage areas and areas where contaminant and contaminated particulates may build up;
 - (vi) A map showing the directions of stormwater flow and run-off using arrows and the location of stormwater conveyances;
 - (vii) Options for actions or controls to minimize accumulation of water in the pits with reasons why these pits have not been backfilled; and
 - (viii) Options for run-on/run-off controls.
- (b) The evaluation will be added to the GWMP Attachment I.6.
- (c) If the evaluation concludes that a control or controls are necessary, within sixty (60) calendar days of approval of the evaluation, the Permittee shall submit a work plan for implementation or construction of the control(s). The work plan shall be submitted as a Class 1 permit modification request requiring Director approval.

[A.A.C. R18-8-264.A and P (40 CFR §264 Subpart N, §264.301 and §264.310), A.A.C. R18-8-270.A, M, N and O (40 CFR §270.32) and R18-8-270.A (40 CFR §270.33)]

3. Post-Closure Permit Area Contingency Plan:

- (a) Within ten (10) calendar days of Permit issuance the Permittee shall submit a contingency plan specific to the Post-Closure Permit Area to replace the existing installation-wide Contingency Plan (Attachment G).
- (b) The Contingency Plan shall incorporate EPA Contingency Plan and Preparedness and Prevention Requirements for RCRA TSDFs dated March 2010. This includes:
 - (i) An Executive Summary with the names and telephone numbers of all facility personnel qualified to act as emergency coordinators;
 - (ii) A description of the preparedness and prevention measures as an appendix to the contingency plan;
 - (iii) Submitting required emergency planning information in electronic format so that it can be easily integrated, stored, and retrieved along with other emergency response information, such as that submitted to the States under EPCRA; and
 - (iv) Inviting local responders to a facility visits at least annually for more effective emergency response.
- (c) The Post-Closure Permit Area contingency plan shall meet the requirements of A.A.C. R18-8-264.A and G (40 CFR 264 Subpart D).

[A.A.C. R18-8-264.A and G (40 CFR §264 Subpart D and §264 Subpart N) and R18-8-270.A (40 CFR §270.33)]

4. Procedures for Statistical Analysis:

Within ten (10) calendar days of Permit issuance, Permittee shall submit a revision to the GWMP (Attachment I). The revised GWMP shall include additional details for regional aquifer well and for shallow well statistical analysis, which shall be added to Permit Attachment I.5 to replace the U.S. EPA, *The Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities Unified Guidance, March 2009*, which is currently present in I.5. The procedures will reference the U.S. EPA document. The update shall include, but not be limited to:

- (a) A description of how U.S. EPA, *The Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities Unified Guidance, March 2009*, (e.g., Shewhard-CUSUM and Mann-Kendall trend test), will be specifically implemented for the site;
- (b) Specification of the method(s) that will be used to determine whether changes in concentration are statistically significant;
- (c) Inclusion of site-specific sample control charts;

- (d) Inclusion of other applicable charts or tables (e.g., status table with each vadose zone monitoring well and its concentrations to-date towards determining a baseline concentration for that well. Concentrations shall include RDX, perchlorate, and all other relevant COCs/COPCs that will be used for the statistical analysis;
- (e) Evaluation of the sets of data that will be used for any intrawell evaluations for the shallow wells;
- (f) Details of when seasonal Mann-Kendall testing will also be used;
- (g) Evaluate the option for baseline concentrations using the data from all, or a subset of, the vadose zone wells, given the extended time involved to obtain four (4) data points for each vadose zone monitoring well for each COC/COPC; and
- (h) Estimated timeframes for when the statistical analyses and data evaluations may begin.

[A.A.C. R18-8-264.A (40 CFR §264 Subpart F, §264 Subpart G, §264.301 and §264.310), A.A.C. R18-8-270.A (40 CFR §270.21 and §270.31), A.A.C. R18-8-270.A, M, N and O (40 CFR §270.32) and R18-8-270.A (40 CFR §270.33)]

5. Post-Closure Permit Area QAPP:

Within ninety (90) calendar days of Permit issuance, Permittee shall submit a revised QAPP specific to the Post-Closure Permit Area, for ADEQ approval. This QAPP will not be part of the permit, but reference to it shall be included in the Permit and Permit Attachment I, if not already present.

[A.A.C. R18-8-270.A (40 CFR §270.30(e) and §270.31) and R18-8-270.A (40 CFR §270.33)]

6. Sycamore Canyon Springs Sampling Plan:

Within one hundred eighty (180) calendar days of Permit issuance the Permittee shall submit a revision to the GWMP (Permit Attachment I). The revision will include a sampling plan to sample springs annually in Sycamore Canyon and to revise Permit Attachment I to include sampling of selected springs. The sampling plan shall be added to Attachment I.6.

[A.A.C. R18-8-264.A and P (40 CFR §264 Subpart G, §264.301 and §264.310), A.A.C. R18-8-270.A (40 CFR §270.21, §270.30 and §270.31), A.A.C. R18-8-270.A, M, N and O (40 CFR §270.32) and R18-8-270.A (40 CFR §270.33)]

7. Land Use Control Implementation Plan (LUCIP):

Within one hundred eighty (180) calendar days of Permit issuance, the Permittee shall submit a draft of the Camp Navajo LUCIP for ADEQ review and concurrence. ADEQ will be allowed at least thirty (30) calendar days for the review and to provide comments. A final version will be provided to ADEQ upon completion. This document will not be submitted as a permit modification or permit modification request, but will be placed in the public file.

[A.A.C. R18-8-264.A and G (40 CFR §264 Subpart A, C, D, G and N), A.A.C. R18-8-266.A (40 CFR §266.204 and §266.206), A.A.C. R18-8-270.A (40 CFR §270.21 and §270.30), A.A.C. R18-8-270.A, M, N and O (40 CFR §270.32) and R18-8-270.A (40 CFR §270.33)]

PART III – POST-CLOSURE PLAN

A. SUMMARY

The Post-Closure Permit Area is comprised of a closed former open burn / open detonation treatment area operated under 40 CFR 265 Subpart P, thermal treatment. Munitions of explosive concern and munitions constituents remain on site, requiring post-closure care for at least 30 years in accordance this Post-Closure Permit. Closure was completed through the CERCLA process on May 9, 2016. The Post-Closure Permit Area lies within the southern portion of the Camp Navajo installation. Vadose zone monitoring occurs within and in the vicinity of the Post-Closure Care Area. Monitoring of regional aquifer groundwater wells occurs within and outside the perimeter of the installation. Inspection and maintenance activities occur for signage, installation fencing and gates, wells, erosion and barriers at the access roads into the Post-Closure Permit Area. Training of those authorized to enter the Buffer Area surrounding the Post-Closure Permit Area is a key part of the security plan to support the waiver of the rules for fencing around the Post-Closure Permit Area and gates at the access roads into the area from the Buffer Area.

B. POST-CLOSURE CARE AND USE OF THE PROPERTY

1. Post-Closure Care

Throughout the post-closure care period, the Permittee shall:

- (a) Prevent run-on and run-off from eroding or otherwise damaging the surface of the Post-Closure Permit Area and maintain the integrity of the Post-Closure Permit Area, including making repairs to any required structures, as necessary to correct the effects of erosion or other events;
- (b) Maintain and monitor the groundwater and vadose zone monitoring systems and comply with Permit Attachment I (GWMP) and the QAPP and Permit Conditions found in Part IV;
- (c) Maintain:
 - (i) The installation perimeter fence, gates and warning signs;
 - (ii) The Post-Closure Permit Area warning signs (English and Spanish), no hunting signs;
 - (iii) The Post-Closure Permit Area access road barriers;
 - (iv) Monitoring wells (e.g., Regional aquifer wells and vadose zone wells); and
 - (v) Run-on and run-off control systems and vegetative cover for the Post-Closure Permit Area.
- (a) Protect and maintain surveyed benchmarks used in complying with 40 CFR 264.309.

[A.A.C. R18-8-264.A (40 CFR 264.117(c) and 264 Subpart N) and
A.A.C. R18-8-270.A, M, N and O (40 CFR §270.32)]

2. Post-Closure Care Period

The Permittee shall provide care in accordance with the Post-Closure Plan (Permit Attachment D) for at least 30 years after the effective date of this Permit.

[A.A.C. R18-8-270.A (40 CFR 270.32)]

3. Integrity of the Post-closure Permit Area System

Post-closure use of the portion of property on or in which hazardous waste remains after closure shall not be allowed to disturb the function of the facility's monitoring or containment systems, unless approved by the Director in accordance with 40 CFR 264.117(c).

[A.A.C. R18-8-264.A (40 CFR 264.117(c) and 264 Subpart N)]

C. POST-CLOSURE PLAN

1. The Post-Closure Plan (Permit Attachment D) is part of this Permit.

[A.A.C. R18-8-264.A (40 CFR 264.118(a))]

2. The Permittee shall amend the Post-Closure Plan (Permit Attachment D) in accordance with Permit Condition I.C.1 and I.H of this Permit and the requirements of 40 CFR 264.118(d) whenever necessary or required to do so by the Director.

[A.A.C. R18-8-264.A (40 CFR 264.118(d))]

D. POST-CLOSURE NOTICE

1. The Permittee has submitted to the Arizona Department of Emergency and Military Affairs (Arizona Army National Guard) Office of Planning and Programming with jurisdiction over local land use, and to the Director, a record of the type, location, and estimated quantity of hazardous wastes disposed within the Post-Closure Permit Area to the best of the Permittee's knowledge and in accordance with any records the Permittee has kept. The Permittee shall update these records whenever necessary.

[A.A.C. R18-8-264.A (40 CFR 264.119(a))]

2. In accordance with Arizona law, the Permittee has recorded (and shall update whenever necessary), a notation on the Camp Navajo Real Property Development Plan for the Post-Closure Permit Area, that will in perpetuity notify any potential purchaser of the property, or anyone planning a change in land use, that:

- (a) The land has been used to manage hazardous waste;
- (b) Its use is restricted under 40 CFR Part 264, Subpart G regulations;
- (c) Land use restrictions are in place under this post-closure permit;

- (d) Non-qualified personnel must be escorted by explosive ordnance (EOD) or unexploded ordnance (UXO)-qualified personnel; and
- (e) The survey plat and record of the type, location, and quantity of hazardous wastes disposed within each cell of the facility have been filed with the Director and the Arizona Department of Emergency and Military Affairs' Office of Planning and Programming.

[A.A.C. R18-8-264.A (40 CFR 264.119(b)(1))]

- 3. The Permittee has submitted a certification to the Director, signed by the Permittee, that he has recorded the notation specified in Permit Condition III.D.2, including a copy of the document in which the notation has been placed. The Permittee shall update this certification whenever deemed necessary.

[A.A.C. R18-8-264.A (40 CFR 264.119(b)(2))]

- 4. If the Permittee wishes to remove hazardous wastes and hazardous waste residues or contaminated soils, then the Permittee shall request a modification to this Permit in accordance with the applicable requirements in 40 CFR Parts 124 and 270. The Permittee shall demonstrate that the removal of hazardous wastes will satisfy the criteria of 40 CFR 264.117(c).

[A.A.C. R18-8-264.A (40 CFR 264.119(c))]

E. CERTIFICATION OF COMPLETION OF POST-CLOSURE CARE

No later than 60 days after completion of the established post-closure care period for each hazardous waste disposal unit, the Permittee must submit to the Director by registered mail a certification that the post-closure care period for the hazardous waste disposal units was performed in accordance with the specifications in the submitted Post-Closure Plan (Permit Attachment D). The certification must be signed by the Permittee and an independent, registered professional engineer registered in the State of Arizona. Documentation supporting the engineer's certification must be furnished to the Director.

[A.A.C. R18-8-264.A and 40 CFR 264.120]

F. SECURITY

The Permittee shall comply with the security provisions of the Procedures to Prevent Hazards in the Post-Closure Plan (Permit Attachment D, Section 3.1) and A.A.C. R18-8-264.A (40 CFR 264.14(b)), including:

- 1. The Permittee shall maintain the 4-foot, 3-strand, barbed wire fence around the perimeter of the installation. The eastern portion of the Post-Closure Permit Area has steep cliffs into a Volunteer Canyon minimizing unauthorized entry into the Post-Closure Permit Area from that side.

2. The Permittee shall maintain gates for entering the installation and Post-Closure Care Area. The gates shall be locked when not in use and access to gate keys shall be controlled. The Permittee shall maintain the off-set concrete barriers at the access roads into the Post-Closure Permit Area and shall ensure they are staggered and with a gap of no more than 50 feet).
3. The Permittee will maintain signs:
 - (a) At all entrances to, and the perimeter of, the Post-closure Permit Area in both English and Spanish with the legend “Danger--Unauthorized Personnel Keep Out,” or with language approved by ADEQ (See Attachment D, Section 3.1);
 - (b) At the access roads to the Post-Closure Permit Area specifically warning hunters (“No Hunting in this Area”); and
 - (c) Stating “No Trespassing” that deter unknowing and unauthorized entry and are located along the perimeter of the installation.
4. The Permittee shall provide MEC Awareness Training, with refresher training no less than annually, and provide daily updates for those authorized to enter the Buffer Area to ensure the risks and consequences are relayed for those not authorized to enter the Post-Closure Permit Area (See Permit Attachment D, Section 3.1). Those authorized to enter the Post-Closure Permit Area are also provided with these training sessions.

[A.A.C. R 18-8-264.A (40 CFR 264.14, 264.117(b)) and
A.A.C. R18-8-270.A, M, N and O (40 CFR §270.32)]

G. INSPECTIONS

The Permittee shall inspect the facility during the post-closure care period in compliance with the procedures specified the Post-Closure Plan (Permit Attachment D, Section 3.2). A schedule and description of the activities is found in Permit Attachment D, Table PCP-1. The inspection procedures shall include, but not be limited to:

1. Inspecting the monitoring wells (vadose zone and regional aquifer), the Post-Closure Permit Area boundary and areas prone to erosion or frost heave, and for seeps and springs in Volunteer Wash and Canyon, at each monitoring event, recording results of the on the Inspection Log (Table PCP-2a) in Permit Attachment D.
2. Inspecting the installation fencing as part of routine operations; information on fencing inspections is recorded in the installation records and will be evaluated during the annual inspection.
3. Inspecting for evidence of trespassers onto the installation and into the Post-Closure Permit Area and checking records and logs for trespassers.

4. Performing annual reviews of the Facilities Maintenance Office, Facilities Engineering, and Security inspection and maintenance records for the installation boundary fence, gates and signs and the Limited Area boundary fence, gates, and locks for the annual inspection.

Any actions required or taken as a result of the inspection will be recorded on the Maintenance and Repair Log (Permit Attachment D, Table PCP-2b)

Sediment sampling will be performed if indications of migration (e.g., sedimentation, munitions or munitions debris) are observed outside of the Post-Closure Permit Area. Water sampling will be performed if indications of springs or seeps are observed in Volunteer Wash and Canyon.

All records of inspections and remedial actions shall be retained in the Operating Record throughout the post-closure care period. This information will be included in the Annual Post-Closure Care and Groundwater Monitoring Report (“the Annual Report”) submitted to ADEQ as described in Permit Condition IV.F.4.

[A.A.C. R 18-8-264.A (40 CFR 264.15 and 40 CFR 264.117(a)(1)(ii)), A.A.C. R18-8-270 (40 CFR §270.21, 40 CFR §270.30) and 40 CFR §270.31(c)) and A.A.C. R18-8-270.A, M, N and O (40 CFR §270.32)]

H. CORRECTIVE ACTION FOR SWMU MRWA 02-02

The Permittee shall conduct corrective action measures within SWMU MRWA 02-02, the former kick-out area surrounding the Post-Closure Permit Area in accordance with Permit Attachment F, Solid Waste Management Unit Corrective Action Procedures.

A.A.C. R18-8-264.A and G (40 CFR §264 Subpart A, C, D and G), A.A.C. R18-8-266.A (40 CFR §266 Subpart M), A.A.C. R18-8-270 (40 CFR §270.21 and §270.30) and A.A.C. R18-8-270.A, M, N and O (40 CFR §270.32)]

PART IV – GROUNDWATER AND VADOSE ZONE MONITORING

A. GROUNDWATER AND VADOSE ZONE MONITORING PLAN

The Permittee shall conduct vadose zone monitoring (i.e., vadose zone monitoring wells (VZMW), piezometer wells (VPZ), and AWI-Series wells), groundwater monitoring, well field measurements, surface water sampling in the Former Stock Tank, water sampling of seeps in Volunteer Wash and Volunteer Canyon, sampling of springs in Sycamore Canyon, analysis, and reporting according to parameters and frequencies specified in Attachment I (Groundwater Monitoring Plan [GWMP]) and in the approved QAPP).

- 1 The Permittee is responsible for control of contaminant plume migration and the remediation of all contaminants attributed to the Permittee, within and outside property boundaries, and shall revise the GWMP, as needed, to comply.
- 2 Based on data collected from groundwater monitoring, vadose zone monitoring or other investigation results required by this Permit, the Permittee shall make changes to the GWMP as necessary in order to protect human health and the environment. Such changes may include the addition of monitoring wells or change to monitoring frequency.

[A.A.C. R18-8-101 (40 CFR 264.101)]

3. If the Permittee believes the compliance monitoring program no longer satisfies the requirements of the regulations, the Permittee shall, within 90 days of the determination, submit a Permit Modification request requiring the Director's approval, to make any appropriate changes to the program that will satisfy the regulations. The Permit Modification request shall be submitted in accordance with Permit Condition I.H.

[A.A.C. R18-8-264.A (40 CFR 264.99(h) – (j))]

4. The Permittee shall revise the QAPP, as necessary, with a change in the GWMP and to protect human health and the environment. The Permittee shall submit a written notification of a new QAPP to ADEQ and shall comply with Permit Condition I.E(9)(d).

[A.R.S. Title 36, Chapter 4.3, Article 1, 36-495.01]

B. WELL LOCATIONS, INSTALLATION, AND CONSTRUCTION

The Permittee shall design, install, and maintain a groundwater monitoring system and vadose zone monitoring system to comply with applicable requirements of A.A.C. R18-8-264.A (40 CFR 264 Subpart F) and as specified below.

1. The Permittee shall maintain groundwater monitoring wells and vadose zone monitoring wells within the facility at the locations specified on Table GWMP-14 and shown on Figure GWMP-1 (vadose zone wells, piezometers and AWI-series

wells) and Figure GWMP-2 (Regional aquifer wells) in Permit Attachment I. Well locations will be added as directed by ADEQ, or at the discretion of the Permittee, using installation methods and procedures approved by the Director. Wells may only be removed from the network or modified following the Director's written approval of a permit modification request.

Wells that shall be monitored according to this Permit are:

- (a) Regional Aquifer Wells:
 - (i) Two Camp Navajo wells (CN-1 and CN-2),
 - (ii) Four Bellemont wells (DW-1, DW-2, DW-3 and DW-4),
 - (iii) One Veterans Cemetery well (VC-1), and
 - (iv) One Garland Prairie Well (WP-1) (pending right of entry approval)

- (b) Vadose Zone (Shallow) Wells:
 - (i) Twenty (20) vadose zone monitoring wells (VZMWs);
 - (ii) Fifteen (15) temporary piezometers (VPZ); and
 - (iii) Three (3) shallow monitoring wells (AWI-series).

- 2. All wells approved by ADEQ for removal from the groundwater monitoring system or vadose zone monitoring system shall be abandoned in accordance with procedures approved by the Arizona Department of Water Resources. Well abandonment methods and certification shall be submitted to ADEQ within 90 days from the date the well is removed from the network.

- 3. Any changes to the GWMP must be made as a Permit Modification request, requiring the Director's approval, and submitted in accordance with Permit Condition I.H.

A.A.C. R18-8-264.A (40 CFR §264 Subpart G and §264 Subpart N), A.A.C. R18-8-270.A (40 CFR §270.21, §270.30 and §270.31) and A.A.C. R18-8-270.A, M, N and O (40 CFR §270.32)]

C. GROUNDWATER SAMPLING AND ANALYSIS

The Permittee shall follow the following techniques and procedures when obtaining and analyzing groundwater (i.e., Regional aquifer) samples to provide a reliable indication of groundwater quality.

[A.A.C. R18-8-264.A (40 CFR 264.97(d) and (e)) and
A.A.C. R18-8-270.A, M, N and O (40 CFR §270.32)]

- 1. Groundwater samples shall be collected from the wells identified in Table GWMP-14 (Regional Aquifer Wells Located in the Camp Navajo Vicinity), Table GWMP-15 (Summary of Wells to be Included in Groundwater Monitoring Program) and shown on Figure GWMP-2 (Regional Aquifer Wells in Vicinity) of Permit Attachment I (GWMP). Groundwater samples shall be collected, preserved, and shipped in

accordance with the procedures specified in Permit Attachments I (GWMP) and the approved QAPP).

2. The Permittee shall ensure that the frequency of sample collection and the wells to be sampled are in accordance with Table GWMP-16 of Permit Attachment I (GWMP).
3. Groundwater samples shall be tracked and controlled using the chain-of-custody procedure specified in Permit Attachment I (GWMP).
4. Samples shall be analyzed according to Permit Attachment I (GWMP) or the most current final version of EPA Test Methods for Evaluating Solid Waste SW-846. For those constituents that have established Arizona Aquifer Water Quality Standards (AWQS), Maximum Contaminant Levels (MCL), Regional Screening Levels (RSL), or Arizona Health-Based Guidance Level (HBGL), the analytical method chosen must be capable of achieving a Practical Quantitation Limit (PQL) below the established AWQS, MCL, RSL, or HBGL.
5. Depth to water level measurements will be collected quarterly at all wells identified in Table GWMP-15 (Summary of Wells to be Included in Groundwater Monitoring Program). Water level measurements will be performed in accordance with the specifications of Permit Attachment I (GWMP). Groundwater flow direction shall be calculated quarterly. If no significant seasonal changes in water level are seen for 2 years, the frequency of water level measurements may be decreased. Such a change would be subject to the permit modification requirements of Permit Condition I.H.
6. Changes in groundwater quality will be assessed and further actions taken pursuant to Permit Attachment I (GWMP).
7. Appendix IX constituents shall be monitored in accordance with Permit Attachment I (GWMP). If an Appendix IX constituent is not detected above screening levels after two (2) years, then that constituent may be removed from the analytical suite. Such a change would be subject to the permit modification requirements of Permit Condition I.H.

D. VADOSE ZONE SAMPLING AND ANALYSIS

The Permittee shall follow the following techniques and procedures when obtaining and analyzing vadose zone (i.e., vadose zone monitoring wells, piezometers and AWI-Series wells) samples to provide a reliable indication of water quality in the subsurface.

[A.A.C. R18-8-264.A (40 CFR 264.97(d) and (e)), A.A.C. R18-8-270.A (40 CFR §270.21, §270.30 and §270.31) and A.A.C. R18-8-270.A, M, N and O (40 CFR §270.32)]

1. Vadose zone water samples shall be collected from the wells identified in Figure GWMP-1 (Vadose Zone Monitor Well and Piezometer Locations) of Permit Attachment I (GWMP). Vadose zone water samples shall be collected, preserved,

and shipped in accordance with the procedures specified in Permit Attachment I (GWMP and QAPP).

2. The Permittee shall ensure that the frequency of sample collection and the wells to be sampled are in accordance with Table GWMP-16 of Permit Attachment I (GWMP).
3. Vadose zone samples shall be tracked and controlled using the chain-of-custody procedure specified in Permit Attachment I (GWMP).
4. Samples shall be analyzed according to Permit Attachment I (GWMP) or the most current final version of EPA Test Methods for Evaluating Solid Waste SW-846. For those constituents that have established Arizona Aquifer Water Quality Standards (AWQS), Maximum Contaminant Levels (MCL), Regional Screening Levels (RSL), or Arizona Health-Based Guidance Level (HBGL), the analytical method chosen must be capable of achieving a Practical Quantitation Limit (PQL) below the established AWQS, MCL, RSL, or HBGL.
5. Depth to water level measurements will be collected during semiannual sampling events at all wells identified in Table GWMP-1 (Vadose Zone Monitoring Well Installation Information). Transducers are installed in a limited number of wells to assist in determining the whether there is a sufficient amount of water in the wells for sampling. Water level measurements will be performed in accordance with the specifications of Permit Attachment I (GWMP).
6. Changes in vadose zone water quality will be assessed and further actions taken pursuant to Permit Attachment I (GWMP). The results of 2009 through 2010 and 2014 through 2015 vadose zone sampling will be considered baseline.

E. OTHER POST-CLOSURE CARE WATER SAMPLING ACTIVITIES

1. The Permittee shall sample a spring representative of flows in Sycamore Canyon annually.
2. The Permittee shall sample water seeps or springs in Volunteer Wash and Volunteer Canyon if they are discovered during inspections pursuant to Permit Attachment D (PCP) and Permit Attachment I (GWMP).
3. The Permittee shall conduct surface water sampling in the Former Stock Tank when present during vadose zone sampling events pursuant to Permit Attachment D (PCP), Section 3.2 and Permit Attachment I.2 (GWMP), Section I.2.6.5.

A.A.C. R18-8-264.A (40 CFR §264 Subpart G and §264 Subpart N), A.A.C. R18-8-270.A (40 CFR §270.21 and §270.31) and A.A.C. R18-8-270.A, M, N and O (40 CFR §270.32)]

F. REPORTING AND RECORDKEEPING

1. The Permittee shall enter all monitoring, testing, and analytical data obtained pursuant to this Permit in the operating record. The data must include all computations and data validation.
2. By August 1 and November 1, the Permittee shall submit to ADEQ Semi-Annual Vadose Zone Technical Memoranda providing vadose zone water level and water quality data collected during the spring and summer sampling events, respectively. These will include data for the vadose zone wells, piezometers and AWI-series wells. Information to be contained in a Semi-Annual Vadose Zone Technical Memorandum is detailed in Permit Attachment J.
3. By February 1, May 1, August 1, and November 1, the Permittee shall submit to ADEQ Quarterly Technical Memoranda providing regional aquifer groundwater level and groundwater quality data collected in the previous calendar quarter. Groundwater flow direction shall be calculated and presented quarterly. Information to be contained in the Quarterly Report is detailed in Permit Attachment J.
4. On or before March 1 of each year, the Permittee shall submit an Annual Post-Closure Care and Groundwater Monitoring Report (“the Annual Report”) to ADEQ. The Annual Report shall provide comprehensive documentation of the previous year’s groundwater monitoring and vadose zone monitoring activities. It will also include documentation of other post-closure care activities. Information to be contained in the Annual Report is detailed in Permit Attachment J and Permit Attachment I.3, Section I.3.6.7.

[A.A.C. R18-8-264.A (40 CFR 264.73(b) and A.A.C. R18-8-270 (40 CFR 270.32)]

G. MANAGEMENT OF IDW

The Permittee shall manage IDW pursuant to Permit Attachment I (GWMP).

[A.A.C. R18-8-270.M, N, and O (40 CFR 270.32)]

**PART V – CORRECTIVE ACTION FOR SOLID WASTE
MANAGEMENT UNITS – SCHEDULE OF COMPLIANCE**

A. AUTHORITY

RCRA Section 3004(u) and (v), as amended by the HSWA, and A.A.C. R18-8-264.A (40 CFR 264.101 and 40 CFR 264 Subpart S) requires that Permits issued after November 8, 1984, address corrective action for releases of hazardous waste and hazardous waste constituents from any Solid Waste Management Unit (SWMU) at the facility, regardless of when the waste was placed in the unit.

When the Permittee discovers a new SWMU or an area of concern (AOC) at the facility, or determines a release has occurred, the facility will be governed by the conditions of this Permit Part (hereinafter referred to as the “Corrective Action Schedule of Compliance” or “CASOC”).

B. SUMMARY OF PREVIOUS CORRECTIVE ACTION ACTIVITIES

1. RCRA Facility Assessment

A RCRA Facility Assessment (RFA) was conducted by Uribe & Associates and a final report summarizing the findings and recommendations was prepared for the U.S. Environmental Protection Agency (EPA) on May 27, 1994. Potential releases of hazardous waste to local soils were noted in the RFA. A list and description of interim status units (OB/OD and thermal treatment) and SWMUs based on the 1994 RFA with a status of the units is provided in Table 1 under Permit Condition V.M(2). Table V-2a and Table V-2b in Permit Condition V.M(2) provide a summary of those units that are located within MRWA 02.

2. Area-Wide Investigations

From approximately 1992 through 2016, area-wide investigations, including soil and groundwater characterization, were completed under CERCLA for operational areas after a detailed review of the facility operational history. These investigations included soil characterization which included surface and subsurface soil sampling, geologic mapping, geophysical surveys and installation of exploration borings. Surface water and groundwater characterization occurred in 2004 through 2006. Multiple MEC and soil removal actions were also carried out. Cultural resource surveys and endangered species (e.g., Mexican Spotted Owl) surveys were completed. Closure of the SWMUs occurred throughout this time period, as well as chemical contamination for the interim status units. Closure of MRWA 02 and NAAD 02 occurred on May 9, 2016 with ADEQ’s concurrence of the *Final After Action Report, Munitions Response Work Area 02 and Navajo Army Depot (NAAD) 02, Camp Navajo, Bellemont, Arizona*, dated March 2016. Waste remains in place within MRWA 02-01 with the possibility of surface MEC encountered within

MRWA 02-02 (kick-out area), despite surface clearance activities during the CERCLA investigations. A corrective action section for MRWA 02-02 is included in Permit Attachment F.

3. Vadose Zone and Groundwater Monitoring

Due to the depth to groundwater of approximately 1,600 feet below ground surface, a vadose zone monitoring network of 20 shallow wells was installed within the Post-Closure Permit Area to monitor any contamination released from munitions. These shallow wells were monitored 2009 through 2010 and then in 2014 through 2015. Piezometers were added temporarily to evaluate additional locations for vadose zone well installations. The vadose zone wells have been sampled in the spring after snowmelt and in the summer during monsoon season to get sufficient water sample volumes. Concentrations of the explosive RDX have exceeded EPA regional screening levels (RSLs) and concentrations of perchlorate have been found above detection limits, yet below the Arizona health-based guidance levels (HBGLs). Vadose zone monitoring, as well as groundwater monitoring in regional aquifer wells within and in the vicinity of Camp Navajo, commenced in spring 2016.

C. SPECIFIC CORRECTIVE ACTION REQUIREMENTS

1. The Permittee shall conduct corrective action if any MEC are encountered in SWMU MRWA 02-02 during normal training and installation activities in accordance with Permit Attachment F, Solid Waste Management Unit Corrective Action Procedures. This does not obviate corrective action measures outside of the facility in accordance with this Part.
2. If any constituents are found in excess of action levels in any well tested by the Permittee, or confirmed by ADEQ, in any active private domestic well within a five (5) mile radius of the installation, the Permittee will supply an alternative drinking water source to the private well owner at the request of the private well owner. The alternative drinking water shall be supplied to the private well owners' residence from a bottled water distributor agreed upon by the private well owner and the Permittee, at no cost to the private well owner. The amount to be provided will be the amount requested by the private well owner, but shall not exceed 40 gallons per week. The Permittee agrees to provide the alternative water source until constituent levels within the well being replaced are below action levels for twelve (12) months.

[A.A.C. R18-8-264.A (40 CFR 264.101) and A.A.C. R18-8-270.A, M, N, and O (40 CFR 270.32)]

D. GENERAL CORRECTIVE ACTION REQUIREMENTS

1. Record Keeping

As stated in Permit Condition I.E.9 (Monitoring and Records), all raw data, such as laboratory reports, drilling logs, bench-scale or pilot-scale data, and other supporting

information gathered or generated during activities undertaken pursuant to this CASOC shall be maintained at the facility, or alternate location specified in the Permit, during the term of this Permit.

2. Reporting, Notifications and Submittals

- (a) The Permittee shall submit to the Director signed monthly progress reports of all activities (i.e., SWMU Assessment, Interim Corrective Measures, RCRA Facility Investigation, Corrective Measures Study, Corrective Measures Implementation) conducted pursuant to the provisions of this CASOC, These reports shall contain:
 - (i) A description of the work completed;
 - (ii) Summaries of all findings, including summaries of laboratory data;
 - (iii) Summaries of all problems or potential problems encountered during the reporting period and actions taken to correct the problems; and
 - (iv) Projected work for the next reporting period with a detailed schedule for this work.
- (b) Copies of other reports (e.g., inspection reports), drilling logs and laboratory data shall be made available to the Director upon request.
- (c) The Director may require the Permittee to conduct new or more extensive assessments, investigations, or studies, as needed, based on information provided in these progress reports or other supporting information. These assessments, investigations or studies may be required following review of the Permittee's Corrective Measures Study Workplan (see IV.I.3), or Corrective Measures Study Report (see IV.I.6), or Corrective Measures Implementation Program Plan (See IV.K), which will be submitted as Class 1 Permit Modification requests requiring the Director approval.
- (d) The Permittee shall ensure that all plans, reports, notifications, and other submissions to the Director required by this Permit are signed, certified, and submitted in accordance with Permit Condition I.E.10 (Signatory and Certification Requirements), and other applicable conditions. Technical work submitted to the Director shall be stamped by a professional Geologist and/or Engineer, as appropriate, registered in the State of Arizona.

3. Contamination that has Migrated Beyond the Facility Boundary

The Permittee shall implement corrective actions beyond the Facility boundary where necessary to protect human health and the environment, unless the Permittee demonstrates to the satisfaction of the Director that, despite the Permittee's best efforts, as determined by the Director, the Permittee was unable to obtain the necessary permission to undertake such actions. The Permittee is not relieved of all responsibility to clean up a release that has migrated beyond the Facility boundary

where off-site access is denied. On-site measures to address such releases will be determined on a case-by-case basis. Assurances of financial responsibility for completion of off-site corrective action will be required. Any determination by the Director requiring the Permittee to address such releases, including any associated financial responsibility requirements, will be made as a Permit Modification request, requiring the Director's approval.

4. Quality Assurance and Control

When performing Corrective Action, the Permittee shall meet the minimum requirements below for any sampling and sample testing:

(a) Sample Collection and Management

A sampling plan submitted by the Permittee shall include all elements of EPA SW-846, and A.A.C.R18-8-260 et seq. (40 CFR Part 260, et seq.), not limited to:

- (i) Specifying the sampler and sampler procedure for use;
- (ii) Specifying sampling points based on a statistical basis, logic, and strategy;
- (iii) Trip blanks, duplicates, spikes, splits, and other field control samples; and
- (iv) Sample management procedures for the field notebook, collection form, preservatives and capping, and other chain-of-custody components.

(b) Laboratory Analysis and Chain-of-Custody

Throughout all sample analysis activities, the Permittee shall ensure the use of Director-approved quality assurance, quality control, and chain-of-custody procedures

In addition, the Permittee shall:

- (i) Inform the Director's Project Coordinator which laboratories will be used by the Permittee.
- (ii) Ensure that all laboratories used by the Permittee for its analyses participate in a quality assurance/quality control program equivalent to that described in EPA SW-846. As part of such a program, and upon request by the Director, such laboratories shall perform analyses of a reasonable number of known samples provided by the Director to demonstrate the quality of the analytical data.
- (iii) Ensure that the laboratory used is licensed by the Arizona Department of Health Services (ADHS) to perform the specific analyses for the specific analyte(s) of concern.

(c) Evaluation of Sampling Data

The Permittee shall ensure that sampling plans contain provisions for review of all field and laboratory QA/QC notes and results, and shall use EPA SW-846 to evaluate all data developed in compliance with this Permit. Sampling plans must demonstrate the use of representative samples and must include parameters sufficient to identify migration of hazardous waste, hazardous constituents, and perchlorate to the environment.

5. Project Coordinator

Within fifteen (15) calendar days of the effective date of this Permit, the Permittee shall designate a Project Coordinator and shall notify ADEQ in writing of the Project Coordinator it has selected. The Permittee's Project Coordinator shall be responsible for overseeing the implementing of corrective action at the Facility in accordance with this CASOC and for designating a person to act in his/her absence. ADEQ will also designate a Project Coordinator. All communications between the Permittee and ADEQ, and all documents, reports, approvals, and other correspondence concerning the activities performed pursuant to this Permit shall be directed through the Project Coordinators. The Permittee must provide at least seven (7) calendar days written notice to ADEQ prior to changing the Project Coordinator.

E. NOTIFICATION AND ASSESSMENT OF NEWLY IDENTIFIED SWMU(s) OR AOC(s)

1. Notification of Newly Identified SWMU(s) or AOC(s)

The Permittee shall notify the Director in writing of any newly identified SWMUs or AOCs (i.e., a unit not specifically identified during the RFA), discovered during the course of the groundwater monitoring, field investigations, environmental audits, or other means, no later than fifteen (15) calendar days after its discovery. The notification shall include, at a minimum, the location of the SWMU or AOC and all available information pertaining to the nature of the release (e.g., media affected, hazardous constituents and perchlorate released, magnitude of release).

2. Request for SWMU Assessment Plan

After such notification, the Director may require in writing, that the Permittee prepare a SWMU Assessment Plan and a proposed schedule of implementation and completion of the SWMU Assessment Plan for any additional SWMU(s) or AOC(s) discovered subsequent to the issuance of this Permit. This plan will be submitted as a Class 1 Permit Modification request requiring the Director approval.

3. Content and Submittal of SWMU Assessment Plan

Within sixty (60) calendar days after receipt of the Director's request for a SWMU Assessment Plan, the Permittee shall prepare and submit a SWMU Assessment Plan for determining past and present operations at the unit, as well as any sampling and analysis of groundwater, land surface and subsurface strata, and surface water or air, as necessary to determine whether a release of hazardous waste including hazardous constituents and perchlorate from such unit(s) occurred, is likely to have occurred, or is likely to occur. The SWMU Assessment Plan must demonstrate that the sampling and analysis program, if applicable, is capable of yielding representative sampling and must include parameters sufficient to identify migration of hazardous waste including hazardous constituents and perchlorate from the newly discovered SWMU(s) to the environment.

4. Review and Approval or Disapproval of SWMU Assessment Plan

After the Permittee submits the SWMU Assessment Plan, the Director shall either approve or disapprove the plan in writing. If the Director disapproves of the SWMU Assessment Plan, the Director shall either:

- (a) Notify the Permittee in writing of the SWMU Assessment Plan deficiencies and specify a due date for submittal of a revised SWMU Assessment Plan, or
- (b) Revise the SWMU Assessment Plan and notify the Permittee of the revisions. The Director-revised SWMU Assessment Plan becomes the approved SWMU Assessment Plan, and constitutes the approval of the Class 1 Permit Modification request specified in Condition E.2, above.
- (c) The approved SWMU Assessment Plan shall be incorporated into Permit Attachment M (CASOC - Approved Workplans and Reports).

5. Implementation of the SWMU Assessment Plan

The Permittee shall implement the SWMU Assessment Plan within fifteen (15) calendar days of receiving written approval.

6. Content and Submittal of SWMU Assessment Report (SAR)

The Permittee shall submit a SWMU Assessment Report (SAR) to the Director no later than thirty (30) calendar days from completion of work specified in the approved SWMU Assessment Plan. The Report will be submitted as Class 1 Permit Modification request, requiring the Director's approval. The SAR shall describe all results obtained from the implementation of the approved SWMU Assessment Plan. At a minimum, the SAR shall provide the following information for each newly identified SWMU:

- (a) The location of the newly identified SWMU in relation to other SWMUs;
- (b) The type and function of the unit;
- (c) The general dimensions, capacities, and structural description of the unit, including any available drawings;
- (d) The period during which the unit was operated;
- (e) The specifics on all wastes that have been or are being managed at the SWMU, to the extent available; and
- (f) The results of any sampling and analysis required for the purpose of determining whether releases of hazardous waste including hazardous constituents and perchlorate have occurred, are occurring, or are likely to occur from the unit.

7. SAR Approval and Determination of Further RFI Action

- (a) Based on the results of the SAR, the Director shall determine the need for further investigations at specified unit(s) covered in the SWMU Assessment, and may require the Permittee to prepare an RFI Work Plan for such investigations. If the Director determines that investigations are needed, the Director shall incorporate his determination into the SAR approval. The SAR and SAR Approval shall constitute approval of the Permittee's Class 1 Permit Modification request. The final approved SAR shall then be incorporated into Permit Attachment M (CASOC - Approved Workplans and Reports).
- (b) The RFI Work Plan described in Condition IV.E.7.(a) will be reviewed for approval pursuant to Condition H (RCRA Facility Investigation Work Plan and Report), as specified by the Director. The RFI Work Plan will be submitted to the Director as a Class 1 Permit Modification request, requiring the Director's approval.

F. NEWLY DISCOVERED RELEASES AND THREATS TO HEALTH AND THE ENVIRONMENT

1. Notification Requirements

The Permittee shall notify the Director, in writing, of any release(s) of hazardous waste, including hazardous constituents and perchlorate, from its historic or current operations, discovered during the course of groundwater monitoring, field investigation, environmental auditing, or other activities undertaken after commencement of the RFI, no later than fifteen (15) calendar days after their discovery. Such newly discovered releases may be from newly identified units, from

units for which, based on the findings of the RFA, the Director had previously determined that no further investigation was necessary, or from units investigated as part of RFI.

In the event the Permittee identifies a current and/or potential threat to human health or the environment, the Permittee shall immediately notify the Director orally, and in writing within seven (7) calendar days, summarizing immediacy and magnitude of these threats.

2. Interim Measures for Current or Potential Threats

Within forty-five (45) calendar days of notifying the Director, the Permittee shall submit to the Director an Interim Measures (IM) Work Plan, pursuant to Condition IV.G of this Permit (Interim Measures) that identifies interim measures which mitigate this threat and are consistent with, and integrated into, any long term solution at the facility. The Work Plan shall be submitted as a Class 1 request, requiring the Director's approval. The approved IM Work Plan constitutes approval of the Permit Modification request. The approved IM Work Plan shall be incorporated into Permit Attachment M (CASOC – Approved Workplans and Reports).

3. Further Investigations

The Director may require further investigation of newly identified release(s). A plan for such investigation will be submitted by the Permittee as a Class 1 Permit Modification request, requiring the Director's approval. The Plan shall be reviewed pursuant to Condition IV.H (RCRA Facility Investigation Work Plan and Report) of this Permit.

G. INTERIM MEASURES

1. Determination that Interim Measures are Needed

If during the course of any activity initiated under this CASOC, the Director or Permittee determines that a release or potential release of hazardous waste, including hazardous constituents and perchlorate from a SWMU poses an actual, imminent, or potential threat to human health or the environment, the Director and Permittee may determine that interim measures are necessary. Interim stabilization measures consistent with final remedy may be deployed during ongoing investigations. The following factors should be considered in this determination:

- (a) Time required to develop and implement a final remedy;
- (b) Actual and potential exposure to the environment (e.g., animals, ecosystems) and/or human receptors;

- (c) Actual and potential contamination of drinking water supplies and sensitive ecosystems;
- (d) Potential for further degradation of the medium absent interim measures;
- (e) Presence of hazardous waste in containers that may pose a threat of release;
- (f) Presence and concentration of hazardous waste (including hazardous constituents and perchlorate, in soils having potential to migrate to ground or surface water);
- (g) Weather conditions that may affect the current levels of contamination;
- (h) Risks of fire, explosions, or accident; and
- (i) Other situations that may pose threats to human health and the environment.

2. Specifying Interim Measures and Actions

- (a) When it is determined that interim measures are needed, an Interim Measures (IM) Work Plan shall be developed that will include, but not be limited to, the following elements:
 - (i) What interim measures need to be taken;
 - (ii) Specific action(s) that must be taken to implement the interim measure;
 - (iii) Schedule for their implementation; and
 - (iv) Parameters or measurements by which to judge the completion of the measures.
- (b) Either the Director or the Permittee shall develop the IM Work Plan as follows:
 - (i) The Director may notify the Permittee in writing of the need to perform specific interim measures. If the Permittee concurs, the Permittee shall begin to implement the interim actions within fifteen (15) calendar days after receiving notification. Interim Measures do not require a public comment period until the measures are incorporated into the Corrective Measures Study (CMS) Work Plan and Report Described in Condition IV.I of this Permit.
 - (ii) The Director may notify the Permittee in writing that the Permittee is required to develop an IM Work Plan. In this event, the Permittee shall submit the IM Work Plan within thirty (30) calendar days after request. The IM Work Plan shall be submitted as a Class 1 Permit Modification request, requiring the Director's approval.

3. Review and Approval or Disapproval of IM Work Plan

After the Permittee submits the IM work plan, the Director shall either approve or disapprove the IM Work Plan in writing. If the Director disapproves the IM Work Plan, the Director shall either:

- (a) Notify the Permittee in writing of the IM Work Plan's deficiencies and specify a due date for submittal of a revised Plan, or
- (b) Revise the IM Work Plan (this revised Work Plan becomes the approved IM Work Plan) and notify the Permittee of the revisions. The approved IM Work Plan constitutes approval of the Class 1 Permit Modification request specified in Condition IV.G.2(b)(ii). The final approved IM Work Plan shall then be incorporated into Permit Attachment M (CASOC – Approved Workplans and Reports).

4. Implementation of the IM Work Plan

The Permittee shall implement interim actions within fifteen (15) calendar days after receiving approval or notification of any revisions requested by the Director.

H. RCRA FACILITY INVESTIGATION (RFI) WORK PLAN AND REPORTS

1. Submittal of RFI Work Plan

The Permittee has submitted an RFI Work Plan as described in Permit Condition IV.B (Summary of Previous Corrective Action Activities). Additional RFI Work Plans may be required by the Director in the future to address updated information (e.g., newly-identified SWMUs) needed to determine potential or actual impacts on human health and the environment.

2. Content and Submittal of RFI Work Plan

Within sixty (60) days after receiving a request from the Director, the Permittee shall submit a complete RFI Work Plan to the Director. The RFI Work Plan shall be submitted as a Class 1 Permit Modification request, requiring the Director's approval. The Work Plan shall address in detail SWMUs, releases of hazardous waste, hazardous constituents, perchlorate, and media of concern which require further investigations.

- (a) The Work Plan shall describe the objectives of the investigation and the overall technical and analytical approach to completing all actions necessary to characterize the nature, direction, rate, movement, and concentration of releases of hazardous waste (including hazardous constituents and perchlorate) from specific units or groups of units, and their actual or potential receptors. The Work Plan shall detail all proposed activities and

procedures to be conducted at the facility, the schedule for implementation and completing such investigations, the qualifications of personnel performing or directing the investigations, including contractor personnel, and the overall management of the RFI.

- (b) The Plan shall discuss sampling and data collection quality assurance and data management procedures listed in Condition D.4 of this Permit Part (Quality Assurance and Control), including formats for documenting and tracking data and other results of investigation, and health and safety procedures.

3. Review and Approval or Disapproval of RFI Work Plan

The Director shall review the RFI Work Plan for proper content and those RFI Work Plan elements applicable to the facility. After review, the Director will either approve or disapprove the RFI Work Plan in writing. If the Director disapproves the RFI Work Plan, the Director shall either:

- (a) Notify the Permittee in writing of the RFI Work Plan's deficiencies and specify a due date for submittal of a revised RFI Work Plan; or
- (b) Revise the RFI Work Plan and notify the Permittee of the revisions. This modified RFI Work Plan becomes the approved RFI Work Plan and constitutes approval of the Class 1 Permit Modification request in IV.H.2.

The Director shall also review for approval as part of the RFI Work Plan any plans developed addressing further investigations of newly identified SWMUs (Condition F of this Permit Part).

If approved, the RFI Workplan will be incorporated into Permit Attachment M (CASOC – Approved Workplans and Reports). If the Director approves the RFI Workplan, the Permittee shall, within ninety (90) calendar days of receipt of approval, send a Class 1 Permit Modification notice to all individuals on the facility mailing list maintained by the Director in accordance with R18-8-270.A and 270.I(c)(1)(ix) and (x) [40 CFR 124.10(c)(1)(ix) and (x)]. The notice shall include a summary of the approved RFI Workplan and describe the change made to Permit Attachment M (CASOC – Approved Workplans and Reports).

4. Implementation of RFI Work Plan

No later than thirty (30) calendar days after the Permittee has received written approval from the Director for the RFI Work Plan, the Permittee shall begin implementing the RCRA Facility Investigation according to the schedules and procedures specified in the RFI Work Plan.

5. Content and Submittal of RFI Final Report

Within sixty (60) calendar days after the completion of the RFI Work Plan or other schedule approved by the Director, the Permittee shall submit:

(a) RFI Final Report

The RFI Final Report shall be submitted as a Class 1 Permit Modification request, requiring the Director's approval. The RFI Final Report shall describe the procedures, methods, and results of all facility investigations of SWMUs and their releases, including information on the type and extent of contamination at the facility, sources and migration pathways, and actual or potential receptors. The RFI Final Report shall present all information gathered under the approved RFI Work Plan. The RFI Final Report must contain adequate information to support further corrective action decisions at the facility.

(b) Determination of No Further Actions with Modification

Based on the results of the RFI and other relevant information, the Permittee may submit an RFI-based determination of No Further Action with a proposed Class 3 Permit Modification request to the Director requesting termination of any Corrective Action required. The NFA determination and proposed Class 3 Permit Modification, will be processed pursuant to requirements of Permit Parts I.C.1 and I.H) must contain information demonstrating that there are no releases of hazardous wastes, hazardous constituents, and perchlorate, from SWMUs at the facility that pose a threat to human health and the environment. It must also include information required in R18-8-270.A (40 CFR 270.42(c), which incorporates by reference 40 CFR 270.13 through 270.21, 270.62, and 270.63), and state if:

- (i) Contamination is found to be non-existent;
- (ii) Contaminant levels and subsequent risks are less than background levels (i.e. levels are naturally occurring);
- (iii) Contamination results from releases originating from outside the facility or from a source not related to the Permittee's historic operations or current remediation efforts at the site;
- (iv) Groundwater is neither a current or potential source of drinking water, impacts potentially vulnerable Class I groundwaters, nor is potentially usable for other human purposes;
- (v) Contamination is located adjacent to industrialized, non-residential areas.

6. Review and Approval or Disapproval of RFI Final Report

The Director shall review the RFI Final Report submittal (including the NFA Determination, if applicable), and either approve or disapprove the Report.

- (a) If the Director disapproves the Report, the Director shall notify the Permittee in writing of the Report's deficiencies and specify a due date for submittal of the revised Report.
- (b) RFI Final Report without NFA Determination: If the Director approves the Report, the approval constitutes approval of the Permit Modification request of Condition IV.H.5(a). The Permittee shall, within ninety (90) calendar days of receipt of approval, send a Class 1 Permit Modification notice to all individuals on the facility mailing list maintained by the Director in accordance with A.A.C. R18-8-271.A and 271.I(c)(1)(ix) and (x) [40 CFR 124.10(c)(1)(ix) and (x)]. The notice shall include a summary of the approved RFI Final Report and describe the change made to Permit Attachment M (CASOC – Approved Workplans and Reports).
- (c) RFI Final Report with NFA Determination: If, based upon review of the Permittee's NFA determination and proposed Class 3 Permit Modification request, the results of the RFI, and other information (including comments received during the public comment period), the Director determines that releases or suspected releases which were investigated either are non-existent or do not pose a threat to human health and the environment, the Director may grant the requested modification. However, the NFA approval does not preclude the Director from initiating other modifications to the CASOC according to procedures in 40 CFR 270.41 (Director-initiated Permit Modifications) that may rescind the determination or require the Permittee to perform:
 - (i) Continued or periodic monitoring of air, soil, groundwater, or surface water, when site-specific circumstances indicate that releases of hazardous wastes (including hazardous constituents and perchlorate) are likely to occur, if necessary to protect human health and the environment;
 - (ii) Further investigations, studies, or remediation at a later date, if new information or subsequent analysis indicates a release or likelihood of a release from a SWMU is likely to pose a threat to human health or the environment.

Upon approval of the RFI Final Report with NFA Determination and Class 3 Permit Modification request, the RFI Final Report and NFA Determination will be incorporated into Permit Attachment M (CASOC – Approved Workplans and Reports).

I. CORRECTIVE MEASURES STUDY

1. Call-in of the Corrective Measures Study

- (a) For existing SWMUs: Within forty-five (45) calendar days after the Director's written approval of the RFI Report required by Condition IV.C.8, (reviewed and approved in accordance with Condition IV.H), the Permittee shall submit a CMS Workplan and Class 1 Permit Modification request requiring the Director's approval in accordance with Condition IV.I.2, below.
- (b) For newly-identified SWMUs: If the Director has reason to believe, after review of the RFI Final Report, that a SWMU has released concentrations of hazardous constituents and perchlorate in excess of any action level, or determines that contaminations present at levels below those action levels pose a threat to human health and the environment given site specific exposure conditions, the Director may require a Class 1 Permit Modification, for a Corrective Measures Study (CMS), and shall so notify the Permittee in writing.

2. Content and Submittal of the CMS Workplan

The Permittee shall submit a Class 1 Permit Modification request requiring the Director's approval and CMS Workplan to the Director within forty-five (45) calendar days after notification of the requirement to conduct a CMS. The CMS Workplan shall provide the following information:

- (a) Description of general approach to investigate and evaluate potential remedies;
- (b) Definition of the overall study objectives;
- (c) The specific plans and factors for evaluating remedies to ensure compliance with remedy standards, as stated in Permit Condition IV.J (Remedy Selection);
- (d) The schedules for conducting the study; and
- (e) Proposed format for presentation of the information.

3. Review and Approval or Disapproval of CMS Workplan

The Director shall review the CMS Workplan to ensure it contains all necessary contents.

- (a) If the Director disapproves the CMS Workplan, the Director shall either:

- (i) Notify the Permittee in writing of the Workplan's deficiencies and specify a due date for submittal of a revised Workplan, or
 - (ii) Revise the CMS Workplan and notify the Permittee of the revisions. This modified CMS Workplan becomes the approved CMS Workplan, and the approval to the Permit Modification request specified in Condition IV.I.2).
- (b) If the Director approves the CMS Workplan, the Permittee shall, within ninety (90) calendar days of receipt of approval, send a Class 1 Permit Modification notice to all individuals on the facility mailing list maintained by the Director in accordance with R18-8-270.A and 270.I(c)(1)(ix) and (x) [40 CFR 124.10(c)(1)(ix) and (x)]. The notice shall include a summary of the approved CMS Workplan and describe the change made to Permit Attachment M (CASOC – Approved Workplans and Reports).

4. Implementation of CMS Workplan

The Permittee shall implement the CMS Workplan no later than fifteen (15) calendar days after the Permittee has received written approval from the Director for the CMS Workplan. The CMS shall be conducted in accordance with the approved CMS Workplan.

5. Content and Submittal of CMS Report

No later than March 15, 2012 (see Condition IV.C.9), the Permittee shall submit a Class 1 Permit Modification request requiring the Director's approval and the CMS Report. (For newly-discovered SWMU's, the Permit Modification request and CMS Report shall be submitted within sixty (60) calendar days after the completion of the CMS tasks). The CMS Report must contain adequate information to support the Director in the remedy selection decision-making process and shall include, at a minimum:

- (a) A summary of results of investigations, and any bench-scale or pilot tests conducted for each remedy studied;
- (b) A description and evaluation of each remedial alternative which passed through the initial screening of corrective measure technologies;
- (c) All information gathered under the approved CMS Plan with Performance standards streamlined;
- (d) The recommended corrective measure(s), and a justification for selection of the corrective measure(s) recommended.

6. Review and Approval or Disapproval of CMS Report and Remedy

The Director shall approve, approve with modifications, or disapprove the CMS Report and will advise the Permittee of the determination in writing. The Director shall select the remedy according to Condition J (Remedy Selection) of this Permit Part. In all cases, the Director may require the Permittee to evaluate additional remedies or particular elements of the proposed remedies.

- (a) If the Director disapproves the CMS Report, the Director shall notify the Permittee in writing of deficiencies in the CMS Report and specify a due date for submittal of a revised draft CMS Report.
- (b) If the Director approves or approves with modifications, the CMS Report, the approved CMS Report constitutes approval of the Permit Modification request of Condition I.5). The CMS Report will be incorporated into Permit Attachment M (CASOC – Approved Workplans and Reports). If the Director approves the CMS Report, the Permittee shall, within ninety (90) calendar days of receipt of approval, send the Class 1 Permit Modification notice to all individuals on the facility mailing list maintained by the Director in accordance with R18-8-270.A and 270.I(c)(1)(ix) and (x) [40 CFR 124.10(c)(1)(ix) and (x)]. The notice shall include a summary of the approved CMS Report and describe the change made to Permit Attachment M (CASOC – Approved Workplans and Reports).
- (c) Within forty-five (45) calendar days of receipt of the Director’s approval, or approval with modifications, of the proposed corrective measure(s), the Permittee shall submit a corrective Measures Implementation (CMI) Program Plan for the remedy selected pursuant to Permit Condition IV.K (Corrective Measures Implementation).

J. REMEDY SELECTION

1. Remedy Standards

Based on results of the CMS and any further evaluations of additional remedies, the Director shall select a remedy from the remedial alternatives evaluated in the CMS that will protect human health and the environment; meet the concentration levels of hazardous constituents and perchlorate in each medium that the remedy must achieve to be protective of human health and the environment; control the course(s) of release(s) so as to reduce or eliminate, to the maximum extent practicable, further releases that might pose a threat to human health and the environment; and meet all applicable waste management requirements.

The Director’s selection of a remedy is subject to appeal. Should the Permittee exercise its right to appeal the Director’s selection of a remedy, all further obligations regarding the implementation of a remedy are stayed until such a time as the

administrative appeal has concluded and the Director has issued a final decision accepting, rejecting, or accepting with modifications the Administrative Law Judge's decision (see A.R.S. §41-1092.08).

2. Technical Evaluation Factors of Remedy

In approving the recommended remedy(s) which meets the standards for remedies established above, the Director shall consider the following evaluation factors, as appropriate:

(a) Long-term reliability and effectiveness

To establish the degree of certainty that the remedy will prove successful, evaluate the:

- (i) Magnitude of residual risks in terms of amounts and concentrations of waste remaining following remedy implementation, considering the persistence, toxicity, mobility and propensity to bio-accumulate of such hazardous wastes including hazardous constituents and perchlorate;
- (ii) Type and degree of long-term management required, including monitoring, operation and maintenance;
- (iii) Exposure potential of humans and environmental receptors to remaining wastes, considering potential threats to human health/environment associated with excavation, transportation, re-disposal or containment;
- (iv) Long-term reliability of the engineering and institutional controls, including uncertainties associated with land disposal of untreated wastes and residuals;
- (v) Potential need for replacement of the remedy.

(b) Reduction of toxicity, mobility, and volume

The degree to which a potential remedy employs treatment that reduces toxicity, mobility, or volume of hazardous wastes (including hazardous constituents and perchlorate) that shall be considered include:

- (i) The treatment processes the remedy(s) employs and materials it would treat;
- (ii) Amount of hazardous wastes (including hazardous constituents and perchlorate) that would be destroyed or treated;

- (iii) The degree to which the treatment is irreversible; and
- (iv) The residuals that will remain following treatment, considering the persistence, toxicity, mobility and propensity to bio-accumulate of such hazardous wastes (including hazardous constituents and perchlorate).

(c) Short-term effectiveness.

Assess potential remedy(s) for short-term effectiveness considering:

- (i) Magnitude of reduction of existing risks;
- (ii) Short-term risks that might be posed on the community, workers, or environment during implementation of such remedy, including potential threats to human health and the environment associated with excavation, transportation, re-disposal or containment; and
- (iii) Time until full protection is achieved.

(d) Implementability.

The ease or difficulty of implementing a potential remedy(s) may be assessed by considering the following types of factors:

- (i) Degree of difficulty associated with constructing the technology;
- (ii) Expected operational reliability of the technologies;
- (iii) Need to coordinate/obtain necessary approvals and permits from other agencies;
- (iv) Availability of necessary equipment and specialists; and
- (v) Available capacity, location of needed treatment, storage and disposal services.

(e) Cost.

The types of costs assessed include:

- (i) Capital, and Operation and Maintenance costs;
- (ii) Net present value of capital and operation and maintenance costs; and

- (iii) Potential future remedial action costs.

K. CORRECTIVE MEASURES IMPLEMENTATION (CMI) PROGRAM PLAN

1. Content and Submittal of CMI Program Plan

Within forty-five (45) calendar days after receipt of the Director's Remedy Selection, the Permittee shall submit a Class 1 Permit Modification request, requiring Director's approval and a draft Corrective Measures Implementation (CMI) Program Plan. All corrective action requirements of 40 CFR 264.99(h) and 264.100 shall be addressed, not limited to:

- (a) Details of specific remedies (i.e. remove-and-treat or treat-in-place) to be taken which achieve compliance with the standards, and a description of remedy's technical features that are necessary to achieve the standards, not limited to:
 - (i) Requirements for quality sampling and analysis; including a plan for CMI groundwater monitoring that demonstrates an effective post-closure compliance or assessment monitoring program;
 - (ii) Requirements for removal, decontamination, closure, or post-closure of units, equipment, devices or structures used to implement remedy;
 - (iii) Requirements for achieving compliance with concentration limits and levels;
- (b) Basic standards including, but not limited to:
 - (i) List of hazardous constituents and perchlorate;
 - (ii) All concentration levels or limits of hazardous constituents and perchlorate in each medium (i.e. soil, groundwater) that the remedy must achieve to protect human health and environment;
 - (iii) Compliance points and compliance period;
 - (iv) Management of hazardous waste.
- (c) A schedule for initiating and completing all major technical features and milestones of remedy, and required length of Corrective Actions taken, including when CMI groundwater monitoring is initiated in lieu of post-closure groundwater compliance or assessment monitoring;
- (d) Requirements for submission of semi-annual reports, other information, and modifications if above regulations cannot be met.

2. Review and Approval or Disapproval of CMI Program Plan

The Director shall approve, approve with modifications, or disapprove the draft CMI Plan and will advise the Permittee of its determination in writing.

- (a) If the Director disapproves of the CMI Program Plan, the Director shall notify the Permittee in writing of deficiencies in the CMI Program Plan and specify a due date for submittal of a revised CMI Program Plan.
- (b) If the Director approves (or approves with modifications) the CMI Program Plan, the CMI Program Plan will be incorporated into Permit Attachment M (CASOC – Approved Workplans and Reports). If the Director approves the CMI Program Plan, the Permittee shall, within ninety (90) calendar days of receipt of approval, send the Class 1 Permit Modification notice to all individuals on the facility mailing list maintained by the Director in accordance with R18-8-270.A and 270.I(c)(1)(ix) and (x) [40 CFR 124.10(c)(1)(ix) and (x)]. The notice shall include a summary of the approved CMI Program Plan and describe the change made to Permit Attachment M (CASOC – Approved Workplans and Reports). The Director's approval of the CMI Program Plan constitutes approval of the Permit Modification request.
- (c) Within forty-five (45) calendar days of receipt of Director's approval, or approval with modifications, of the proposed corrective measure(s), the Permittee shall submit to the Director a final CMI Program Plan consistent with the Director's written notification.

3. Implementation of CMI Program Plan

No later than fifteen (15) calendar days after the Permittee has received written approval from the Director for the CMI Program Plan, the Permittee shall begin to implement the CMI Program Plan according to the schedules and procedures specified in the CMI Program Plan.

L. SITE ASSESSMENT AND REMEDY

Site Assessment and Remedy may be required to assess and possibly remedy sites consisting of suspected historic releases of small area extent and for which no groundwater contamination has occurred or threatens to occur. Site Assessment and Remedy shall consist of a Site Assessment Plan (SP) and, if necessary, a Remedial Plan (RP). At the Director's discretion the Permittee may be required to follow the provisions of the RFI, CMS, and CMI processes (Permit Sections V.H through V.K of this Permit Part) if, during performance of the SP or RP, extensive contamination is found, or if it is found that groundwater may be affected by the historic release.

1. Site Assessment Plan

Any SP submitted by the Permitted in accordance with V.L shall be submitted as a Class 1 Permit Modification request requiring the Director's approval. The SP shall contain the following:

- (a) A description of the purpose for the SP
- (b) A general description of the site including a site diagram or drawing. Identify as applicable:
 - (i) property boundaries;
 - (ii) buildings and fences;
 - (iii) process and maintenance areas;
 - (iv) active and inactive waste generation, handling treatment, storage, disposal, and spill areas;
 - (v) water wells, dry wells, sumps, storm sewers, industrial and sanitary sewers, septic tanks, surface waters (including intermittent washes, discharges or irrigation ditches, canals, etc);
 - (vi) depth to groundwater;
 - (vii) soil coverings (asphalt, concrete, vegetation, etc);
 - (viii) topography and drainage patterns
- (c) Identity of each waste which has been stored, treated, or disposed at the site, and the identity of each hazardous constituent present in that waste.
- (d) The method(s) used to determine sample locations and depths (random, systematic, biased, or combination) and a rationale for the number of samples taken.
- (e) A diagram showing the number, type, and location of samples
- (f) Detailed sampling procedures describing:
 - (i) Contents of the field notebook
 - (ii) Sampling equipment used
 - (iii) Sample sizes
 - (iv) Use of any sample compositing
 - (v) Sample containers, labels, and seals
 - (vi) Field and trip blanks
 - (vii) Sample preservatives
 - (viii) Quality assurance procedures (blind field duplicates, use of a check lab, and chain of custody)
 - (ix) Sample packaging and shipment
 - (x) Reserved samples (samples to be taken but not immediately analyzed)
 - (xi) Backfilling and grouting of sample borings

- (xii) Equipment decontamination procedures, including disposal of spent solutions
- (g) Analytical parameters and the rationale for choosing such parameters
- (h) Provision for expanding the SP if contamination is found to have migrated
- (i) Provision for the submittal of a Site Assessment Report within 90 days of performance of the SP, providing the following information:
 - (i) A summary of results, significant observations, and conclusions.
 - (ii) A discussion of the sampling followed for each site, including a description of:
 - The sampling procedures used;
 - The equipment used for sampling;
 - The analytical procedures and methods used;
 - The analytical equipment used; and
 - The quality assurance procedures used.
 - (iii) The procedures used to prevent hazards and protect field personnel;
 - (iv) The equipment used to prevent hazards and protect field personnel;
 - (v) Drawings and photographs where appropriate;
 - (vi) Description of any deviations from the approved SP;
 - (vii) Data generated from sampling and analysis activities performed pursuant to the plan, including field notes, manifests, bills of lading, LDR forms, laboratory submittal forms, chain-of-custody forms, laboratory reports, and drilling logs.
- (j) Provision for the submittal of a RP, if any hazardous constituents are found above the applicable soil remediation standards of Title 18, Chapter 7, Article 2 or if any hazardous constituents may be expected to migrate to groundwater.
- (k) Provision for a request of a Finding of No Further Action from the Director, if no hazardous constituents are found above the applicable soil remediation standards of Title 18, Chapter 7, Article 2, or if no hazardous constituents may be expected to migrate to groundwater.
- (l) The final approved SP shall be incorporated into Permit Attachment M (CASOC – Approved Work Plans and Reports).

2. Remedial Plan

Any RP submitted by the Permittee in accordance with V.L shall be submitted as a Class 1 Permit Modification request requiring the Director's approval. The RP shall contain the following:

- (a) A description of the process to be used in the removal of all hazardous waste, hazardous waste constituents, and/or soils determined to be contaminated with hazardous waste or hazardous waste constituents;
- (b) An estimate of the amount of waste or soils to be generated, including a site map indicating the location and vertical and horizontal extent of the area to be remediated;
- (c) Identification of the personnel to be used during the remediation, including the name of the project officer who will be responsible for managing the site;
- (d) A provision for a site safety plan which will be enforced during the remediation. At a minimum, the site safety plan should specify the precautions to be taken and monitoring to be performed which ensures the safety of the site workers and the surrounding community;
- (e) The method(s) used to determine sample locations and depths (random, systematic, biased, or combination) and a rationale for the number of samples taken;
- (f) A diagram showing the number, type, and location of samples to be taken;
- (g) Detailed sampling procedures describing:
 - (i) Contents of the field notebook
 - (ii) Sampling equipment used
 - (iii) Sample sizes
 - (iv) Use of any sample compositing
 - (v) Sample containers, labels, and seals
 - (vi) Field and trip blanks
 - (vii) Sample preservatives
 - (viii) Quality assurance procedures (blind field duplicates, use of a check lab, chain of custody)
 - (ix) Sample packaging and shipment
 - (x) Reserved samples (samples to be taken but not immediately analyzed)
 - (xi) Backfilling and grouting of sample borings
 - (xii) Equipment decontamination procedures, including disposal of spent solutions;
- (h) Analytical parameters and the rationale for choosing such parameters;

- (i) The chain of custody procedures to be followed;
- (j) If the remediation may be expected to include the storage of hazardous waste or soils contaminated with hazardous constituents on-site, the storage method, location, and expected duration must be detailed. The description must specify the precautions to be taken to protect the facility and surrounding community from exposure to the waste or soils contaminated with hazardous constituents;
- (k) If the remediation entails excavation, the steps which will be taken to limit access to the excavated area must be described;
- (l) If the remediation entails the use of imported back-fill, provisions for documenting that the back-fill is clean;
- (m) The decontamination procedures and disposal techniques to be employed for all decontaminated solutions and personal protective equipment;
- (n) The disposal method and identification of the disposal site(s) of all hazardous wastes and contaminated soils generated during the remediation;
- (o) A schedule for performance of the remedy, including provision for prior ADEQ notification (5 days);
- (p) Provisions for amendment of the RP should confirmatory sampling indicate the presence of hazardous waste or hazardous waste constituents, are found above the applicable soil remediation standards of Title 18, Chapter 7, Article 2 or if any hazardous constituents may be expected to migrate to groundwater;
- (q) Documentation that the site has been “blue staked” prior to remediation;
- (r) Provisions for the submission of a Remedial Report within 90 days of completion of the remedy providing:
 - (i) A summary of results, significant observations, and conclusions.
 - (ii) A discussion of the sampling followed for each site, including a description of:
 - the sampling procedures used;
 - the equipment used for sampling;
 - the analytical procedures and methods used;
 - the analytical equipment used;
 - the quality assurance procedures used;
 - (iii) The procedures used to prevent hazards and protect field personnel;
 - (iv) The equipment used to prevent hazards and protect field personnel
 - (v) Drawings and photographs where appropriate

- (vi) Description of any deviations from the approved RP.
- (vii) Data generated from the remedy and confirmatory sampling and analysis activities performed pursuant to the RP, including field notes, manifests, bills of lading, LDR forms, laboratory submittal forms, chain-of-custody forms, laboratory reports, and drilling logs;
- (s) Provision for a request of a Finding of No Further Action from the Director, if no hazardous constituents remain above the applicable soil remediation standards of Title 18, Chapter 7, Article 2, and if no hazardous constituents may be expected to migrate to groundwater;
- (t) The final approved RP shall be incorporated into Permit Attachment M (CASOC – Approved Work Plans and Reports).

3. Notification

Within thirty (30) calendar days of submittal of the RP to the Director, the Permittee shall send a notice of the RP to all persons on the facility mailing list maintained by the Director in accordance with R18-8-270.I (40 CFR 124.10) and to appropriate units of state and local government. The notice shall briefly describe the RP and provide facility and ADEQ contacts.

M. CORRECTIVE ACTION AT CAMP NAVAJO

1. RCRA/CERCLA Integration

The Army's CERCLA response obligations and the Army's RCRA corrective action obligations which relate to the release(s) of hazardous substances, hazardous wastes, pollutants or contaminants covered by this permit are considered to provide equivalent protection of human health and the environment. Remedial activities covered under this permit satisfy the corrective action requirements of sections 3004(u) and (v) of RCRA, 42 U.S.C. §6924(u) and (v), achieve compliance with CERCLA, 42 U.S.C. §6901 et seq., and meet or exceed all applicable or relevant and appropriate federal and state laws and regulations, to the extent required by section 121 of CERCLA, 42 U.S.C. §6921. Additionally, remedial activities conducted in accordance with CERCLA, 42 U.S.C. §6901 et seq. which are required to meet or exceed all applicable or relevant and appropriate federal and state laws and regulations, including RCRA or more stringent state regulations, meet or exceed the corrective action requirements of this permit.

Based upon the foregoing, any corrective action selected under the RCRA permit will be considered under CERCLA as deferral to RCRA for any CERCLA response needed to address any release(s) of hazardous substances, hazardous wastes, pollutants, or contaminants. Sites being addressed under CERCLA will be treated under this permit as deferred to CERCLA for any RCRA corrective action

requirements under this permit for the release(s) of hazardous substances, hazardous wastes, pollutants, or contaminants.

With respect to release(s) of hazardous substances, hazardous wastes, pollutants, or contaminants deferred to CERCLA under this permit, RCRA shall be considered an applicable or relevant and appropriate requirement pursuant to section 121 of CERCLA, 42 U.S.C. §9621. Any requirement to obtain permits for response actions at sites deferred to CERCLA under this permit shall be as provided in CERCLA and the National Oil and Hazardous Substance Contingency Plan. The ADEQ may revisit a deferral decision if it appears that the response action is not being properly addressed under CERCLA.

The Permittee shall submit a written notification to ADEQ when a corrective action remedial activity will be deferred to CERCLA.

[A.A.C. R18-8-270.A, M, N and O (40 CFR §270.32)]

2 Interim Status and Solid Waste Management Units

Table V-1 provides a list of all former interim status units (OB/OD and thermal treatment units) and SWMUs according to the 1994 RFA¹. A list and summary of the closure work and documents for all former interim status (RCRA-related) units and SWMUs found within MRWA 02 is provided in Table V-1a. Table V-2b provides a summary of documented releases at the former interim status units within MRWA 02. NAAD 13, the activation furnace was a former interim status unit located outside of MRWA 02.

Additional details for these units can also be found in Permit Attachment D, Section 1, and in the *Final After Action Report, Munitions Response Work Area 02 and Navajo Army Depot (NAAD) 02, Camp Navajo, Bellemont, Arizona*, dated March 2016.

Table V-1: Interim Status Units and SWMUs within the Camp Navajo

Site Number	Former AREE #	Site Name	Site Status
AZ-001		Former Construction Shop Area	NFA Closed in SI phase
NAAD-001-R-01		Small Arms Range Safety Fan	NFA Closed in SI phase
NAAD-002-01		Ammunition Demolition/Burning Area	NFA Ineligible-duplicate of OB/OD area
NAAD-01	AREE-01	Old EOD Demolition Area	NFA chemical LTM MEC
NAAD-02	AREE-02	Open Detonation Area	PCC
NAAD-03	AREE-03	Former White Phosphorus Detonation and Burn Area	NFA chemical PCC MEC

NAAD-04	AREE-04, -44	Former CK / CG Demolition Area	NFA chemical PCC MEC
NAAD-05	AREE-05	Former Open Burn Area	NFA chemical PCC MEC
NAAD-06	AREE-06	OB/OD Waste Pile and Burn Area	NFA chemical PCC MEC
NAAD-07	AREE-07	Closed TNT Retention Ponds	NFA chemical PCC MEC
NAAD-08A	AREE-08	Former Open Burn Area (Ponds)	NFA chemical PCC MEC
NAAD-08B	AREE-08	Former Open Burn Area (Trenches)	NFA chemical PCC MEC
NAAD-09A	AREE-09	Closed Open Burn Area	NFA chemical PCC MEC
NAAD-09B	AREE-09	Closed Open Burn Area	NFA chemical PCC MEC
NAAD-09C	AREE-09	Closed Open Burn Area	NFA chemical PCC MEC
NAAD-09D	AREE-09	Closed Open Burn Area	NFA chemical PCC MEC
NAAD-10	AREE-10	Pad #3	NFA chemical PCC MEC
NAAD 11A	AREE-11,-12	Laundry Facility	NFA
NAAD 11B	AREE-13	Bldg 334 Deactivation Furnace	LTM
NAAD 13	AREE-14	Building 322	NFA Closed prior to PCC
NAAD 14A	AREE-14	Building 322	NFA
NAAD 14B	AREE-14	Building 307, Receiving	NFA
NAAD 14C	AREE-14	Building 321	NFA
NAAD 14D	AREE-14	Building 322	NFA
NAAD 14F	AREE-14	Closed TNT Retention Ponds	NFA
NAAD 14G	AREE-14	Buildings 325/327	NFA
NAAD 15A	AREE-15	Building 301	NFA
NAAD 15B	AREE-15	Building 310	NFA
NAAD 16	AREE-16	Old Earth Reservoir	NFA
NAAD 17	AREE-17	D-200 Series Igloos	NFA
NAAD 18	AREE-18	D-300 Series Igloos	NFA
NAAD 19	AREE-19	Former Chemical Laboratory	NFA
NAAD 20	AREE-20	Pyrotechnic Range	NFA Chemical LTM MEC
NAAD 21	AREE-21	Building 331	NFA
	AREE-22	Buffer Areas	NFA Ineligible-Active
NAAD 23A	AREE-23	Firing Range	NFA Ineligible-Active
NAAD 23B/41	AREE-23,-41	Old Firing Range	NFA
NAAD 24A	AREE-24	Building 23	NFA

NAAD 24B	AREE-24	Building 218 Sludge Pile	NFA
NAAD 25	AREE-25	Paint Operations	NFA Ineligible-Active
NAAD 26	AREE-26	Heavy Equipment Storage	NFA Ineligible-Active
NAAD 27	AREE-27	Sewage Treatment Plan	NFA
NAAD 28	AREE-28	Indian Village Waste Water Trmt Sys	NFA
NAAD 29	AREE-29	Former Asphalt Plant	NFA
NAAD 30	AREE-30	Bldg 101 Old Hospital	NFA
NAAD 31	AREE-31	Buildings 231/233	NFA
NAAD E32	AREE-32	Igloo H-111	NFA
NAAD 33	AREE-33	Pesticide Storage	NFA
NAAD 34	AREE-34	Building 335	NFA
	AREE-35	Building 244 Temporary Pesticide Storage	NFA Ineligible-Pesticides used as intended
NAAD E36	AREE-36	F-306 Igloo	NFA
NAAD E37	AREE-37	GSA Warehouses	NFA
NAAD 38	AREE-38	Former Open Air Storage Area	NFA
NAAD 39	AREE-39,-61	Current Open Air Storage Area	NFA Ineligible-Active
NAAD 40	AREE-40	Former Sanitary Landfill	LTM
NAAD 41	AREE-41	Cinder Pit #3	NFA
NAAD 42	AREE-42	Construction Debris Landfill #1	NFA
NAAD 43	AREE-43	Construction Debris Landfill #2-5	#2-4 NFA #5 LTM
NAAD 44	AREE-44	Former Drum Burial Site	NFA
NAAD 45	AREE-45	Quarry Tank	NFA
NAAD E46	AREE-46	Former Construction Debris Waste Pile	NFA
NAAD 47	AREE-47	Warehouse Area Waste Pile	NFA
NAAD 48	AREE-48	Fuel-Contaminated Stockpiles	NFA
NAAD 49	AREE-49	Igloo Area C Drum Site	NFA
NAAD E50	AREE-50	Building 37, Incinerator	NFA
	AREE-51	Asbestos	NFA
NAAD 52A		Building 25	NFA
NAAD 52B	AREE-52	Power Pole Across from Building 334	NFA
NAAD 53	AREE-53	LUST Areas	NFA
	AREE-54	Lead-based paint and solder	NFA Ineligible
	AREE-55	Groundwater contamination	NFA Ineligible
	AREE-56	Surface water contamination	NFA Ineligible
	AREE-57	Well abandonment	NFA Ineligible

NAAD E58	AREE-58	Pipe Spring	NFA
NAAD 59	AREE-59	Administrative Area Burn Pile	NFA
NAAD 60		Building 34	NFA
NAAD 61		Building 210	NFA

¹ RCRA Facility Assessment Report for Camp Navajo, prepared by Uribe & Associates on May 27, 1994.
 NFA = No Further Action; PCC = Post-Closure Care (AHWMA Permit); LTM = Long-Term Management (CERCLA)

Table V-2a: Closure of Interim Status Units and SWMUs in MRWA 02

NAAD	Program Status	MRWA	SWMU Name	Closure Work	Closure Document Reference
NAAD 02	PCC	02-01	Open Detonation Area	RI for chemical constituents completed in 2007 (Brown and Caldwell, 2007).	AAR for closure of chemical constituents and explosive hazards completed in 2016 (CH2M HILL, 2016). Requires post-closure care.
NAAD 05	PCC	02-01	Former Open Burn Area	NAAD 05 RI for chemical constituents completed in 2006 (AMEC, 2006a).	DD for closure for chemical constituents completed in 2009 (AMEC, 2009).
NAAD 06	PCC	02-01	OB/OD Waste Pile and Burn Area	NAAD 06 RI for chemical constituents completed in 2006 (AMEC, 2006).	DD for closure for chemical constituents completed in 2009 (AMEC, 2009).
NAAD 08B	PCC	02-01	Former Open Burn Area (Trenches)	NAAD 08B RI for chemical constituents completed in 2005 (AMEC, 2005).	DD for closure for chemical constituents completed in 2009 (AMEC, 2009).
NAAD 09B	PCC	02-01	Closed Open Burn Area	NAAD 02 RI for drum and debris removal followed by IRA for soil removal completed in 2006 (Brown and Caldwell, 2007).	Incorporated into NAAD 02.

NAAD	Program Status	MRWA	SWMU Name	Closure Work	Closure Document Reference
NAAD 09C	PCC	02-01 & 02-02	Closed Trinitrotoluene Retention Ponds	Majority of area located in MRWA 02-01. Surface MEC clearance completed in entire area (CH2M HILL, 2011).	DD for soil removal action completed in 2004 (Brown and Caldwell, 2004). Explanation of Significant Differences completed in 2010 to describe changes to the removal action (Brown and Caldwell, 2009).
NAAD 09D	PCC	02-02	Former Open Burn Area (Trenches)	The chemical constituent RI was completed in 2005 (AMEC, 2005b). No releases were identified and no remediation was necessary.	DD for RC for chemical constituents at NAAD 09D was finalized in 2009 (AMEC, 2009).
NAAD 04	LTM	02-01	Former Cyanogen Chloride (CG) / Phosgene (CK) Demilitarization Area and Drum Burial Site	Construction Completion and Risk Screening Evaluation for chemical constituents completed in 2006 (MKM Engineers, Inc., 2006a).	DD for closure for chemical constituents finalized in 2009 (MKM Engineers, Inc., 2009).
NAAD 07	LTM	02-01	Closed Trinitrotoluene (TNT) Retention Ponds	Characterization Report and Risk Screening Evaluation for chemical constituents completed in 2006 (MKM Engineers, Inc., 2006).	DD for closure for chemical constituents finalized in 2009 (MKM Engineers, Inc., 2009).
NAAD E76	LTM	02-01 & 02-02	Potential Mustard Round Burial Site	Site characterization completed in 2006 (MKM Engineers, Inc., 2006).	DD for RC for chemical constituents at NAAD E76 was finalized in 2009 (MKM Engineers, Inc., 2009).
NAAD 08A	LTM	02-02	Former Open Burn Area (Ponds)	Soil removal action and bioremediation completed in 2001 for explosive compounds (Tetra Tech, Inc., 2001). Chemical constituent characterization and risk-screening evaluation completed in 2006 (MKM Engineers, Inc., 2006).	DD for response complete (RC) for chemical constituents at NAAD 08A was finalized in 2009 (MKM Engineers, Inc., 2009).

NAAD	Program Status	MRWA	SWMU Name	Closure Work	Closure Document Reference
NAAD 09A	LTM	02-02	Closed Open Burn Area	Chemical constituent characterization and risk screening evaluation completed in 2006 (MKM Engineers, Inc., 2006). No releases identified and no remediation necessary.	DD for RC for chemical constituents at NAAD 09A was finalized in 2009 (MKM Engineers, Inc., 2009).
NAAD 10	LTM	02-02	Pad No. 3	Site characterization activities were completed in 2005 and 2006 (MKM Engineers, Inc., 2006)	DD for closure for chemical constituents completed in 2009 (AMEC, 2009).
NAAD 03	LTM	02-03	Former WP Detonation and Burn Area	RI for chemical constituents at NAAD 03 was completed in 2006 (Brown and Caldwell, 2006).	DD for RC for chemical constituents at NAAD 03 was finalized in 2009 (Brown and Caldwell, 2009).

PCC = Post-Closure Care (AHWMA Permit); LTM = Long-Term Management (CERCLA), but covered under PCC.

Table V-2b: Summary of Documented Releases for Interim Status Units in MRWA 02

NAAD	MRWA	AREE	SWMU Name	Documented Releases
NAAD 02	02-01	AREE-02	Open Detonation Area	MEC found on surface and in subsurface. Result of the 2007 RI characterization showed that no further action was warranted in surface and subsurface soils for chemical constituents, aside from a removal action in two areas of NAAD 09B that was completed for lead, zinc and dioxin/furans. However, RDX, perchlorate and other constituents have been measured in samples collected from vadose zone monitoring wells.
NAAD 05	02-01	AREE-05	Former Open Burn Area	MD found. An interim removal action is proposed to address TNT and lead detected in concentrations above NR-SRLs in soil at Cinder Area 2 in NAAD 05.
NAAD 06	02-01	AREE-06	OB/OD Waste Pile and Burn Area	MD found. Five COPCs identified – DNT as a mixture, arsenic, barium, cadmium, and lead. Quantitative HHRA will be conducted for closure of NAAD 06.

NAAD 08B	02-01	AREE-08	Former Open Burn Area (Trenches)	Surface and potential subsurface MEC.
NAAD 09B	02-01	AREE-09	Closed Open Burn Area	Combined with NAAD 02. See NAAD 02 above.
NAAD 09C	02-01 & 02-02	AREE-09	Closed Trinitrotoluene Retention Ponds	Soil and debris removal action began in 2004 and completed in 2010. <ul style="list-style-type: none"> • Total of 6,061 MEC, MPPEH, and other explosive hazard materials recovered; • 500 cubic yards of soil with levels of contamination exceeding Arizona Non-Residential SRLs hauled offsite and disposed of as nonhazardous waste.
NAAD 09 D	02-02	AREE-09	Former Open Burn Area (Trenches)	No releases identified.