

GARY R. HERBERT Governor

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## Department of Environmental Quality

L. Scott Baird Interim Executive Director

DIVISION OF WASTE MANAGEMENT AND RADIATION CONTROL Ty L. Howard Director

September 3, 2019

Nick Montgomery Tooele Army Depot JMTE-BON, Bldg. 501 1 Tooele Army Depot Tooele, UT 84074-5003

RE: Class 3 Permit Modification Request – Additional Munitions Storage Igloos Draft Permit UT3213820894

Dear Mr. Montgomery:

On April 16, 2019, the Tooele Army Depot North Area (TEAD-N) submitted a Class 3 permit modification request to add more igloos for hazardous waste munitions storage (DSHW-2019-003710). A 60-day public comment period was held from April 22 to June 21, 2019. A public meeting was held on May 7, 2019. No comments were received. The igloos proposed for permitting were inspected on June 18, 2019.

On July 11, 2019, TEAD-N submitted a revised permit modification request clarifying which igloos are to be permitted (DSHW-2019-007065). The permit modification request has been reviewed and draft changes to the permit have been made. A 45-day public comment period has been scheduled to begin on September 6, 2019, and conclude on October 21, 2019. A hearing will be held on October 1, 2019, at 7:00 pm, at the Eagles Nest Room 10, located in the MWR area of the Tooele Army Depot Building 1005. Copies of the draft permit that will be available for comment are attached.

If you have any questions, please call Rick Page at (801) 536-0230.

Sincerely,

Ty L. Howard, Director Division of Waste Management and Radiation Control

(Over)

DSHW-2019-008344

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#### TLH/RAP/ar

Enclosures:	Module 2 – General Facility Conditions (DSHW-2017-000686)
	Module 3 – Storage in Containers (DSHW-2017-000687)
	Attachment 1 – General Facility Description (DSHW-2017-000661)
	Attachment 2 – Waste Analysis Plan (DSHW-2017-000662)
	Attachment 3 – Security Procedures (DSHW-2017-000663)
	Attachment 4 – Inspection Plan and Schedules (DSHW-2017-000664)
	Attachment 6 – Preparedness and Prevention Plan (DSHW-2017-000666)
	Attachment 7 – Contingency Plan (DSHW-2017-000667)
	Attachment 8 – Closure Plan (DSHW-2017-000668)
	Attachment 9 – Containers (DSHW-2017-000669)

c: Jeff Coombs, EHS, Health Officer, Tooele County Health Department Bryan Slade, Environmental Health Director, Tooele County Health Department Annette Maxwell, USEPA Region VIII (ENF-RC)

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

## II.A. <u>APPLICABILITY</u>

II.A.1. The requirements of this Permit module pertain to all Hazardous Waste Management Units (HWMUs) identified within this Permit.

#### II.B. DESIGN AND OPERATION OF FACILITY

- II.B.1. The Permittee shall design, construct, maintain and operate the HWMUs and surrounding areas to minimize the possibility of a fire, explosion, or any sudden or non-sudden release of hazardous waste or hazardous waste constituents to air, soil, groundwater or surface water which could threaten human health or the environment. Should one of these incidents occur, the Permittee shall investigate and determine the cause of the incident and implement corrective measures to prevent future occurrences. The Director may consider appropriate enforcement action, to include the cessation of waste management activities, until adequate resolution of the problem occurs.
- II.B.2. Any request for changes to the existing HWMUs shall be in accordance with Utah Admin. Code R315-270-42. Changes to the design and operation of a HWMU shall satisfy the requirements specified in this Permit and in the Utah Solid and Hazardous Waste Rules. Any changes to a HWMU must be documented on asbuilt drawings and with professional engineering certifications as required by Utah Admin. Code R315-270-30(1).
- II.B.3 After review of the as-built drawings and field verification of the units, the Director will notify the Permittee in writing of any change which he concludes does not satisfy the operating requirements specified in this Permit. If it is established that such changes are permit violations, the Director may require the Permittee to remove, replace or modify any construction inconsistent with this permit.

## II.C. <u>REQUIRED NOTICE</u>

- II.C.1. As required by Utah Admin. Code R315-264-12(a)(1), the Permittee shall notify the Director in writing at least four weeks in advance of the date the Permittee expects to receive hazardous waste from a foreign source. Notice of subsequent shipments of the same waste from the same foreign source in the same calendar year is not required.
- II.C.2. When the Permittee arranges to receive hazardous waste from an off-site source, the generator must be informed in writing by the Permittee that he has the appropriate permit for and will accept the waste the generator is shipping. As required by Utah Admin. Code R315-264-12 (b), the Permittee shall keep a copy of the written notice as part of the operating record.

## II.D. <u>WASTE ANALYSIS PLAN</u>

- II.D.1. The Permittee shall comply with the waste analysis procedures found in Attachment 2 (Waste Analysis Plan). In addition, the Permittee shall comply with any other conditions of this permit involving waste analysis.
- II.D.2. The Permittee shall use the test methods described in Attachment 2 (Waste Analysis Plan) or an equivalent procedure that satisfies Condition I.O.3. Changes in a test method described in Attachment 2 (Waste Analysis Plan) as a result of an improvement or refinement of that method, may be adopted by the Permittee in accordance with Utah Admin. Code R315-124-5.
- II.D.3. The Permittee shall verify the analysis of each waste stream when new or modified wastes are known or suspected to have been generated and at least once every three years thereafter. The Permittee shall conduct an evaluation of each new waste stream generated on site and shall submit to the Director a report of the analysis in compliance with Utah Admin. Code R315-264-13. The Permittee shall conduct a yearly evaluation of each waste stream and shall submit to the Director a letter report certifying that the known waste streams have not changed. The Waste Stream Evaluation Form, as shown in Attachment 2 (Waste Analysis Plan), shall be used for these reports. Data from the analysis of waste streams shall be kept in the operating record.
- II.D.4. Sampling of any component of a waste munition to be stored, treated or both at TEAD, including the energetic material of a munition, is not required to meet the waste analysis requirements of Utah Admin. Code R315-264-13 or of 40 CFR 265.13 which is incorporated by reference into Utah Admin. Code R315-265. Generator knowledge will suffice. Generator knowledge to determine the detailed physical and chemical analysis of waste munitions shall include use of information in the MIDAS database as well as drawings and manufacturers information. All waste characterization information shall be kept in the operating record. Residues from the treatment of PEP wastes are subject to Condition II.D.3.
- II.D.5. At a minimum, the Permittee shall:
- II.D.5.a. Maintain proper functional instruments;
- II.D.5.b. Use approved sampling and analytical methods;
- II.D.6. If the Permittee uses a contract laboratory to perform analyses, the laboratory shall be certified by the State of Utah to perform the contracted analyses.
  Provisional certification is not acceptable as certification under this condition. For parameters for which certification is unavailable, the laboratory shall provide quality control/quality assurance data sufficient to assess the validity of the data.

The Permittee shall inform the laboratory in writing that it is required to follow the Waste Analysis Plan conditions set forth in Attachment 2 (Waste Analysis Plan).

#### II.E. <u>SECURITY</u>

II.E.1. The Permittee shall comply with security conditions and procedures contained in Attachment 3 (Security Procedures).

#### II.F. <u>GENERAL INSPECTION REQUIREMENTS</u>

- II.F.1. The Permittee shall conduct inspections in accordance with Utah Admin. Code R315-264-15, and the procedures and schedule in Attachment 4 (Inspection Plan). In addition, the Permittee shall comply with the conditions pertaining to inspections in Modules III, IV, V, VI, and VII and the following conditions:
- II.F.1.a. The Permittee shall remedy any deterioration or malfunction of equipment or structures as required by Utah Admin. Code R315-264-15(c). If the remedy requires more than 72 hours to implement, from the time that the problem is detected, the Permittee shall submit to the Director, before the expiration of the 72 hour period, a proposed time schedule for correcting the problem.
- II.F.1.b. Records of inspections shall be kept as required by Utah Admin. Code R315-264-15(d).

#### II.G. <u>PERSONNEL TRAINING</u>

- II.G.1. The Permittee shall conduct personnel training as required by Utah Admin. Code R315-264-16. The Permittee shall comply with the training procedures found in Attachment 5 (Training Plan). New personnel working with or around hazardous waste shall complete the required personnel training within six (6) months after their hire date, assignment to the Facility or assignment to a new position at the Facility. In addition, the Permittee shall comply with the following conditions:
- II.G.1.a. Facility personnel shall annually review their initial training in both contingency procedures and the hazardous waste management procedures relevant to the positions in which they are employed.
- II.G.1.b. The Permittee shall maintain training documents and records as required by Utah Admin. Code R315-264-16(d) and Utah Admin. Code R315-264-16(e) and in accordance with Attachment 5 (Training Plan). These records shall indicate the type and amount of training received.
- II.G.1.c. The Permittee shall maintain a copy of Attachment 5 (Training Plan) at the Facility until the Facility is fully closed and closure is certified in accordance with

Utah Admin. Code R315-264-115.

#### II.H. <u>GENERAL REQUIREMENTS FOR IGNITABLE, REACTIVE, OR</u> <u>INCOMPATIBLE WASTE</u>

- II.H.I. The Permittee shall comply with the requirements of Utah Admin. Code R315-264-17 and the requirements of all applicable National Fire Protection Association (NFPA) and Department of Defense Explosives Safety Board (DDESB) codes and standards.
- II.H.2. In addition to the requirements of Utah Admin. Code R315-264-17, the Permittee shall comply with the conditions of Modules III, IV, V, VI, and VII pertaining to ignitable, reactive, or incompatible waste.
- II.H.3. The Permittee shall separate and protect ignitable and reactive waste from sources of ignition or reaction including but not limited to: open flames, smoking, cutting and welding, hot surfaces, frictional heat, sparks (static, electrical, or mechanical), spontaneous ignition (e.g., from heat-producing chemical reactions), water and radiant heat.
- II.H.4. The Permittee shall take precautions to prevent reactions which:
- II.H.4.a. Generate extreme heat or pressure, fire or explosions, or violent reactions;
- II.H.4.b. Produce uncontrolled toxic mists, fumes, dusts or gases in sufficient quantities to threaten human health or the environment;
- II.H.4.c. Produce uncontrolled flammable fumes or gases in sufficient quantities to pose a risk of fire or explosions;
- II.H.4.d. Damage the structural integrity of the device or facility;
- II.H.4.e. Through other or like means, threaten human health or the environment.

## II.I. <u>RESERVED</u>

#### II.J. PREPAREDNESS AND PREVENTION

- II.J.1. The Permittee shall follow the preparedness and prevention procedures found in Attachment 6 (Preparedness and Prevention Plan).
- II.J.2. At a minimum, the Permittee shall equip and maintain at the Facility and keep in good operating condition the equipment set forth in Attachment 6 (Preparedness and Prevention Plan), as required by Utah Admin. Code R315-264-32.
- II.J.3. The Permittee shall test and maintain the equipment specified in Condition II.J.2.

as necessary to assure its proper operation in time of emergency.

- II.J.4. The Permittee shall maintain records of those preventative maintenance and repair activities specified in Condition II.J.3. and shall keep schedules reflecting minimum and planned frequency for the performance of preventative maintenance activities in the Operating Record at the Facility.
- II.J.5. The Permittee shall maintain access to the communications or alarm system as required by Utah Admin. Code R315-264-34.
- II.J.6. The Permittee shall maintain aisle space as required by Utah Admin. Code R315-264-35. A minimum of 2.5 feet of aisle space is required in the container and munitions storage areas.
- II.J.7. The Permittee shall attempt to make arrangements with state and local authorities as required by Utah Admin. Code R315-264-37. Any refusals to enter into an agreement shall be documented in the Operating Record.

## II.K. <u>CONTINGENCY PLAN</u>

- II.K.I. The Permittee shall comply with Attachment 7 (Contingency Plan), and follow the emergency procedures described by Utah Admin. Code R315-264-56 whenever there is a fire, explosion, or release of hazardous waste or hazardous waste constituents which threatens or could threaten human health or the environment. The Permittee shall comply with Utah Admin. Code R315-263-30 and Condition I.T. in reporting releases to the Director.
- II.K.2. The Permittee shall maintain copies of the plan in accordance with the requirements of Utah Admin. Code R315-264-53.
- II.K.3. The Permittee shall review Attachment 7 (Contingency Plan) in accordance with Utah Admin. Code R315-264-54. The Permittee shall immediately amend, if necessary, Attachment 7 (Contingency Plan) in accordance with Utah Admin. Code R315-124- 5.
- II.K.4. A trained emergency coordinator shall be available at all times in case of an emergency as required by Utah Admin. Code R315-264-55. The names, addresses and telephone numbers of all persons qualified to act as emergency coordinators shall be supplied to the Director as required by Utah Admin. Code R315-264-52(d).

#### II.L. <u>MANIFEST SYSTEM</u>

II.L.1. The manifest number shall be recorded in the Operating Record with each waste load that leaves the Permittee's facility. The Permittee shall comply with Utah Admin. Code R315-262 Appendix and Utah Admin. Code R315-264-70 for the

movement of each waste load off site.

- II.L.2. The manifest number shall be recorded in the Operating Record with each waste load that arrives at the Permittee's facility. The Permittee shall comply with the manifest requirements of Utah Admin. Code R315-264-71, Utah Admin. Code R315-264-72 and Utah Admin. Code R315-264-76.
- II.L.3. If the waste load is refused and returned to the generator, such actions shall be documented in the Operating Record.

#### II.M. <u>RECORDKEEPING AND REPORTING</u>

- II.M.1. The permittee shall maintain an accurate written Operating Record at the facility in accordance with Utah Admin. Code R315-264-73 and Utah Admin. Code R315-264 Appendix I.
- II.M.2. The Permittee shall, by March 1 of each year, submit to the Director:
- II.M.2.a. A certification pursuant to Utah Admin. Code R315-264-73, signed by the owner or operator of the facility or an authorized representative, that the Permittee has a waste minimization program in place to reduce the volume and toxicity of hazardous waste that he generates to the degree determined by the Permittee to be economically practicable; and that the proposed method of treatment, storage, or disposal is the most practicable method currently available to the Permittee which minimizes the present and future threat to human health or the environment; and
- II.M.2.b. A certification that OB and OD treatment is the only practicable method or combination of methods currently available to minimize the present and future threat to human health or the environment and that the Permittee has a program in place to investigate available technologies, other than the OB and OD of energetic wastes, to reduce the volume and toxicity of released treatment residues and discharges. A report with an evaluation of alternatives shall be included with the certification. The report shall present a list and analysis of viable alternatives according to technical feasibility, economic feasibility, impact to employee health and safety and whether the alternatives will reduce releases and discharges to the environment. Alternatives that are not viable shall be identified with the rationale for the rejection.
- II.M.3. The Permittee shall comply with the biennial report requirements of Utah Admin. Code R315-264-75, by March 1 of each even-numbered reporting year. The report shall include wastes generated, treated and stored at the Permittee's facility during the previous odd-numbered year.
- II.M.4. The Permittee shall submit additional reports to the Director in accordance with Utah Admin. Code R315-264-77.

- II.M.5. All reports, notifications, applications, or other materials required to be submitted to the Director shall be submitted at the address shown in Condition I.DD.
- II.M.6. The Permittee shall maintain a copy of the certifications required in Condition II.M. in the operating record and sign each certification in accordance with Utah Admin. Code R315-262-41(a)(8) and Utah Admin. Code R315-270-11(d)(1).

#### II.N. <u>CLOSURE/POST-CLOSURE</u>

- II.N.I. The Permittee shall comply with Utah Admin. Code R315-264-110 and close the Facility in accordance with Attachment 8 (Closure Plan).
- II.N.2. For all HWMUs, minor deviations from the procedures found in Attachment 8 (Closure Plan) that are necessary to accommodate proper closure shall be described in narrative form with the closure certification statements. The Permittee shall describe the rationale for implementing minor changes as part of this narrative report. Within sixty (60) days after completion of closure of each hazardous waste management unit, the Permittee shall submit the certification statements and narrative report to the Director.
- II.N.3. The Permittee shall amend Attachment 8 (Closure Plan) and any post-closure plans in accordance with Utah Admin. Code R315- 124-5 whenever necessary, or when required to do so by the Director.
- II.N.4. The Permittee shall notify the Director in writing of the partial closure of any portion of the Facility in accordance with Utah Admin. Code R315-264-110. The Permittee shall notify the Director at least 180 days prior to the commencement of final facility closure. Attachment 8 (Closure Plan) will be reviewed by the Permittee, and modified if necessary, before commencing partial or final facility closure. If Attachment 8 (Closure Plan) requires modification, the plan shall be modified and submitted to the Director for approval in accordance Utah Admin. Code R315-270-42.
- II.N.5. After treating the final volume of hazardous waste, the Permittee shall remove from the site all hazardous waste and complete closure activities in accordance with the time frames specified in Attachment 8 (Closure Plan).
- II.N.6. The Permittee shall decontaminate or dispose of all facility equipment, structures, soil and rinsate as required by Utah Admin. Code R315-264-114 and Attachment 8 (Closure Plan). Facility equipment, structures and soil which have not been decontaminated shall be disposed of at a permitted Treatment, Storage and Disposal Facility (TSDF).
- II.N.7. The Permittee shall certify that the facility has been closed in accordance with the specifications in Attachment 8 (Closure Plan) and as required by Utah Admin. Code R315-264-115, and shall provide a certification by an independent,

registered professional engineer qualified by experience and education in the appropriate engineering field.

- II.N.8. In the event that any hazardous waste management unit cannot be clean closed by removing hazardous constituents, contaminated soil and subsoil, and any contaminated groundwater as specified in Attachment 8 (Closure Plan), the Permittee shall modify Attachment 8 (Closure Plan) and any post-closure plan for that HWMU in accordance with Utah Admin. Code R315-124-5. Within 30 days of the date that the Director approves the modification request, the unit shall be closed as a landfill, in accordance with Utah Admin. Code R315-264-110.
- II.N.9. The Permittee shall submit a survey plat no later than the submission of certification of closure of each hazardous waste storage and treatment unit, in accordance with Utah Admin. Code R315-264-116.

## II.O. FINANCIAL ASSURANCE FOR FACILITY CLOSURE

II.O.1. The Permittee is exempt from the requirements for closure cost estimates in accordance with Utah Admin. Code R315-264-140.

## II.P. RECEIPT OF OFF-SITE WASTE PROHIBITED

- II.P.1. The Permittee shall not receive hazardous wastes that are generated at other facilities except for:
- II.P.1.a. Wastes generated by TEAD during investigation or remediation of sites adjacent to TEAD that were contaminated from past TEAD operations;
- II.P.1.b Department of Defense (DoD)-owned waste conventional military munitions that will be treated in the incinerator operated in accordance with Module IV of this Permit;
- II.P.1.c. DoD-owned waste conventional military munitions that will be recycled and treated in the small caliber disassembly line operated in accordance with Module V of this Permit;
- II.P.1.d. DoD-owned waste conventional military explosives that will be treated at the hydrolysis facility operated in accordance with Module V of this Permit;
- II.P.1.e. Waste conventional munitions generated at the Tooele Army Depot South Area (TEAD-S);
- II.P.1.f. Conventional military or commercial explosive items identified as hazardous waste and collected during emergency response situations and transported by U.S. Army Explosive Ordnance Disposal (EOD) Personnel. The collection of these wastes is limited to the area of Utah, Wyoming and Idaho and three counties in

Nevada, namely, Elko, Eureka and White Pine. The maximum amount of explosive wastes that can be received and stored from one EOD emergency response shall be no more than 100 kg (220 pounds);

- II.P.1.g. DoD-owned waste conventional munitions that will be treated at the OB/OD area in accordance with Module VI of this Permit; and
- II.P.1.h. DoD-owned waste conventional military munitions that will be treated in the low temperature thermal treatment system operated in accordance with Module VII of this Permit.
- II.P.2. F999 and P999 wastes associated with lethal chemical agents shall not be stored or treated at TEAD.

#### II.Q TREATMENT OF MUNITIONS CONTAINING DEPLETED URANIUM

II.Q.1. Munitions containing depleted uranium in any form shall not be treated at the Facility without the express approval of the Director.

#### II.R. <u>RISK THRESHOLDS</u>

- II.R.1. Open Burn (OB) and Open Detonation (OD) operations shall be conducted in a manner that minimizes the risk to human health and the environment. The risk thresholds in Module VI for operations at the OB/OD area are based on risk assessments.
- II.R.2. At the request of the Director or the Permittee, the completeness and accuracy of the risk assessments shall be evaluated. At a minimum, the evaluation shall include the following information:
- II.R.2.a. A review of the list of chemicals/munitions constituents to add additional chemicals and emission factors as a result of updates in the waste characterization databases such as the MIDAS database;
- II.R.2.b A review of the toxicity information (reference doses, cancer slope factors), to include any new toxicity data.

#### **MODULE III - STORAGE IN CONTAINERS**

#### III.A. <u>APPLICABILITY</u>

1

III.A.1. The requirements of this Module pertain to the operation of hazardous waste container and hazardous waste munitions storage areas at the Facility. The Permittee shall comply with Utah Administrative Code R315-264-170 and all conditions of this Module. The units regulated in this Permit include munitions igloos A101, <u>C514</u>, C815, C816, <u>K401</u>, <u>K402</u>, <u>K403</u>, <u>K404</u>, <u>K801</u>, <u>K802</u>, <u>K803</u>; Service Magazines 1368, <u>1369</u>, 1370, <u>and 1371</u>; Above Ground Magazine 1205, Building 528, and Building 1320.

#### III.B. WASTE IDENTIFICATION

III.B.1 The Permittee may store in containers only the hazardous waste identified by the following codes:

D001, D002, D003, D004, D005, D006, D007, D008, D009, D011, D018, D019, D020, D022, D023, D025, D026, D028, D029, D030, D032, D033, D035, D036, D037, D039, D040, D042, D043, F001, F002, F003, F004, F005, K047, P030, P098, P106, U002, U003, U019, U031, U041, U044, U051, U069, U075, U080, U127, U131, U151, U154, U188, U211, U220, U226, U239.

III.B.2. The Permittee is prohibited from storing hazardous waste not identified in Condition III.B.1. Any addition of hazardous waste to Condition III.B.1. requires a modification to the permit in accordance with Condition I.D.

#### III.C. <u>CONDITION OF CONTAINERS</u>

III.C.1. If a container holding hazardous waste is not in good condition (e.g., severe rusting, bulging, apparent structural defects) or it begins to leak, the Permittee shall transfer the hazardous waste from such container, or the container of hazardous waste itself, to a Department of Transportation (DOT) approved container. This shall be completed as soon as possible, but no later than 24 hours from the time the problem was first discovered and noted in the inspection log.

#### III.D.COMPATIBILITY OF WASTE WITH CONTAINERS

III.D.1. The Permittee shall ensure that the waste is compatible with the containers as required by Utah Admin. Code R315-264-172.

## III.E. <u>MANAGEMENT OF CONTAINERS</u>

- III.E.1. As required by Utah Admin. Code R315-264-173 the Permittee shall keep all containers closed except when it is necessary to add or remove waste. The Permittee shall not handle or store containers in a manner which may rupture or cause the containers to leak. The Permittee shall manage containers in accordance with the procedures contained in Attachment 9 (Containers).
- III.E.2. The Permittee shall maintain aisle space as specified in Condition II.J.6. and Attachment 9 (Containers).
- III.E.3.The Permittee shall not use containers for storage of liquid waste in the storage<br/>facilities identified in Condition III.F. larger than an 85-gallon over pack drum.
- III.E.4.The Permittee shall not stack 55-gallon containers more than three high and<br/>85-gallon containers more than two high.

## III.F. <u>CONTAINMENT UNITS</u>

- III.F.1. The Permittee shall construct, maintain and operate the containment systems in accordance with Attachment 9 (Containers). At capacity, the Permittee may store the following volumes of waste:
- III.F.1.a. Building 528 57,800 gallons, which is 680 85-gallon liquid waste containers, or the equivalent, 7,500 cubic feet. Incompatible waste in Building 528 shall be segregated by bays and identified accordingly;
- III.F.1.b. Igloo A 101 5,760 cubic feet 8,544 cubic feet (which is 178 pallets, 48 cubic feet per pallet, or the equivalent);
- III.F.1.c. Igloos <u>C-514</u>, C-815, C-816, K-401, K-402, K-403, K-404, K-801, K-802, and <u>K-803</u>---12,960 cubic feet each 11,616 cubic feet each (242 pallets each, 48 cubic feet per pallet, or the equivalent);
- III.F.1.d.Service Magazines 1368, 1369, 1370, and 1371-800 cubic feet which is 10<br/>pallets (80 cubic feet per pallet) or their equivalent480 cubic feet each (ten<br/>pallets each, 48 cubic feet per pallet, or the equivalent);

III.F.1.e.	Above Ground Magazine 1205 – 72,000 cubic feet which is 162 pallets (100 cubic feet per pallet) or their equivalent(900 pallets, 80 cubic feet per pallet, or the equivalent); and
III.F.1.f.	Building 1320 – 720 cubic feet (nine pallets, 80 cubic feet per pallet, or the equivalent).
III.F.2.	A secondary containment sump in Building 528 shall be inspected for the presence of liquids in accordance with Attachment 4 (Inspection Plan). If liquids are discovered in the sump, the Permittee shall identify the source of the release in the inspection log. Any liquids discovered in the sump shall be removed and handled according to the plan outlined in Attachment 4 (Inspection Plan).
III.F.3.	For the purpose of <u>inspections_determining compliance with the capacity</u> <u>limitations</u> , all containers shall be considered full to their respective capacities with liquid or solid hazardous waste.
III.G.	<u>SPECIAL REQUIREMENTS FOR IGNITABLE OR REACTIVE</u> <u>WASTE</u>
III.G.1.	The Permittee shall not store containers holding ignitable or reactive waste within 50 feet of the Facility's property line in accordance with Utah Admin. Code R315-264-176.
III.H.	SPECIAL REQUIREMENTS FOR INCOMPATIBLE WASTE
III.H.1.	The Permittee shall not place incompatible waste or materials in the same container in accordance with Utah Admin. Code R315-264-177.
III.H.2.	The Permittee shall not place hazardous waste or materials in an unwashed container that previously held an incompatible waste or material in accordance with Utah Administrative Code R315-264-177.
III.H.3.	The Permittee shall document compliance with Conditions III.H.1. and III.H.2. and place the documentation in the Operating Record.
III.I.	IDENTIFICATION AND LOCATION OF CONTAINERS IN OPERATING RECORD

III.I.1. The Permittee shall record in the Operating Record the location of each container of hazardous waste and hazardous waste munition accepted in any container storage area until it is shipped off site or taken for treatment to the incinerator, the Small Caliber Disassembly Process, Hydrolysis, or the OB/OD unit.

#### III.J. <u>INSPECTIONS</u>

III.J.1.The Permittee shall conduct inspections of the storage areas identified in<br/>Condition III.A. of this Permit in accordance with the schedule outlined in<br/>Attachment 4 (Inspection Plan).

#### III.K. <u>CLOSURE/POST CLOSURE</u>

III.K.1. The Permittee shall close the storage areas in accordance with Utah Admin. Code R315-264-110, Utah Admin. Code R315-264-178, Condition II.N, and the procedures of Attachment 8 (Closure Plan).

#### III.L. <u>STORAGE OF MUNITIONS</u>

III.L.1. All waste munitions stored in containers or on pallets or other packing materials shall be stored in compliance with all applicable Department of Defense (DOD) Ammunition and Explosives Safety Standards.

# ATTACHMENT 1

GENERAL FACILITY DESCRIPTION

## **TABLE OF CONTENTS**

1.0	GENERAL FACILITY DESCRIPTION	. 3
2.0	BACKGROUND INFORMATION	. 7
3.0	CORRECTIVE ACTIONS	. 7
4.0	SEISMIC STANDARD	. 8
5.0	FLOODPLAIN STANDARD	. 8
6.0	TRAFFIC PATTERNS	. 9
7.0	TRAFFIC CONTROL	. 9
8.0	ESTIMATED TRAFFIC VOLUME	. 9
9.0	ROAD SURFACING AND LOAD BEARING CAPACITY	. 9
10.0	TOPOGRAPHIC MAPS	10

I

#### LIST OF FIGURES AND TABLES

FIGURE 1:	VICINITY MAP
FIGURE 2:	GENERAL SITE MAP
FIGURE 3:	TOPOGRAPHIC AND STORM DRAINAGE MAP
FIGURE 4:	HAZARDOUS WASTE MANAGEMENT UNITS/TRAFFIC PATTERNS
TABLE 1:	ROAD DESIGN STANDARDS

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## 1.0. GENERAL FACILITY DESCRIPTION [Utah Admin. Code R315-270-14(b)(1)]

1.1. Tooele Army Depot (TEAD) consists of 24,732 acres of federal land in north-central Utah, in Tooele County. The facility is located about 40 miles southwest of Salt Lake City, approximately 3 miles southwest of the town of Tooele, Utah.

1.2. A Vicinity Map, Figure 1, and a General Site Map, Figure 2, show the location of TEAD in reference to its surrounding communities and the overall layout, roads and structures, of the Depot. With the exception of the city of Tooele, the properties immediately adjacent to TEAD are undeveloped. The properties to the north are used as pasture or are cultivated, and the properties to the west and south are used for rangeland grazing. The properties to the east of TEAD consist of the city of Tooele and undeveloped rangeland along the lower western slopes of the Oquirrh Mountains.

1.3. The principal work activities at TEAD are the shipping, receiving, and demilitarization of conventional munitions, and the testing and development of ammunition peculiar equipment and related demilitarization testing. This Permit contains the operating requirements for permitting seven Hazardous Waste (HW) storage facilities, a deactivation furnace (HW incineration), a small caliber munitions primer initiation unit, a hydrolysis unit and Open Burn/Open Detonation (OB/OD) Units. General information about these hazardous waste management units (HWMUs) is given below:

HWMU	<b>TYPES OF WASTES STORED/TREATED</b>
Permitted HW Storage (Bldg. 528)	Waste industrial chemicals: solvents, fuels,
	paint residues, Petroleum Oil and Lubricant
	(POL), corrosives, paint removers, metal
	processing compounds.
PEP HW Storage (Bldgs. A101 C514, C815,	Waste propellants, explosives, and pyrotechnic
C816, K401, K402, K403, K404, K801, K802,	(PEP) materials, munitions, munition
<u>K803</u> , 1205, 1320, 1368, <u>1369</u> , 1370, <u>1371</u> )	components, residues.
HW Incineration (Deactivation Furnace Bldg.	Thermal treatment of waste munitions,
1320)	munitions components, and PEP materials.
Primer Initiation (Disassembly Line Bldgs.	Initiation of primers from small caliber
1325 and 1335)	munitions.
Hydrolysis (Bldg. 1400)	Items are hydrolyzed in a hot caustic bath to
	dissolve and inert the energetic material.
Open Burning/Open Detonation Units	Demilitarization activities including munitions
	detonation in pits, munitions burning in static
V	silos and propellant burning in pans.



**Figure 1** Vicinity Map

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Attachment 1 – General Facility Description Tooele Army Depot

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**Figure 2** General Site Map

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## 2.0. BACKGROUND INFORMATION

2.1. TEAD's current missions include ammunition renovation, storage, demilitarization, and the design, fabrication, and testing of ammunition equipment.

2.2. The realignment of TEAD's mission to rebuild and refurbish of military equipment, by the Base Realignment and Closure (BRAC) commission, has greatly reduced the generation of hazardous paint wastes, spent solvents, and acids and bases. The generated wastes are managed and stored pending removal and transportation to a permitted hazardous waste (HW) disposal facility by a contracted permitted HW transporter.

2.3. Small arms munitions from onsite inventories that are deemed obsolete or offspecification by Department of Army (DA) standards are incinerated in the Deactivation Furnace, also known as the APE 1236 furnace. Recoverable scrap metal from incineration of these munitions is recycled through the Qualified Recycling Program (QRP). The ash from this operation is tested by TCLP analysis and is managed appropriately. Metal parts are determined to be free of explosive contamination by Ammunition Surveillance personnel at TEAD and are reprocessed if necessary until free of explosive contamination.

2.4. The Small Caliber Disassembly Lines separate the projectiles from the cartridge cases, which allows for the propellant to be recovered for reuse. The projectile is containerized and sent to the Deactivation Furnace for treatment, or packaged for reuse. The primer in the cartridge case is initiated in a cubicle on the end of the disassembly line.

2.5. The Hydrolysis System, in Building 1400, treats energetic material containing items such as Cartridge Activated Devices (CADs), Propellant Activated Devices (PADs), or other munitions for which the energetic material may be accessed readily by a caustic solution. The energetic items are hydrolyzed in a hot caustic bath to dissolve and inert the energetic material. The process provides indiscriminate de-activation of the energetic constituents.

2.6. The OB/OD Area is located in the southwestern corner of TEAD and consists of a detonation unit, a static fire unit and a burn pan unit. The OB/OD Units have been used since the 1940s for demilitarization activities including munitions detonation in pits and propellant burning in pans. Past activities included burning munitions and other items in open trenches. Trenches were backfilled when they became full. Burning is no longer conducted in open trenches. There are currently 19 detonation pits, 14 burn pans and six static silos at the OB/OD Area.

## **3.0. CORRECTIVE ACTIONS**

3.1. TEAD is on the CERCLA National Priorities List and entered into a Federal Facilities Agreement (FFA) with EPA Region VIII and the Utah Department of Environmental Quality (UDEQ) in September 1991. Seventeen of the 58 known and potential waste sites at TEAD were designated as CERCLA sites in this agreement.

3.2. In January 1991, TEAD was issued a RCRA Post Closure and Corrective Action Permit. This permit basically serves the same purpose as the FFA. The Corrective Action portion of the Permit addresses 9 known release Solid Waste Management Units (SWMUs) and 32 suspected release SWMUs. Thus, 17 of the 58 sites are being handled under CERCLA/SARA with the EPA as the lead regulatory agency and 41 are being addressed under RCRA with the state of Utah as the lead agency. The FFA has been incorporated into the *TEAD North Area Industrial Waste Lagoon Post-Closure Permit*. Further information about the SWMUs and corrective actions can be found in the latest version of the TEAD Installation Action Plan.

#### 4.0. SEISMIC STANDARD [Utah Admin. Code R315-264-18(a)]

4.1. The HWMUs at TEAD are existing facilities and as such are exempt from the provisions of Utah Admin. Code R315-264-18(a).

## 5.0. FLOODPLAIN STANDARD [Utah Admin. Code R315-264-18(b)]

5.1. No Flood Insurance Administration 100-year floodplain maps of the TEAD facility exist. However, TEAD has been determined to be outside of the 100-year flood plain and not subject to flooding based on the following information extracted from the *TEAD Master Plan Report* prepared by Higginbotham and Associates, P.C., and the *Installation Assessment* prepared by the U.S. Army Toxic and Hazardous Materials Agency (USATHAMA):

5.1.1. There is no history of flooding at TEAD during the 74 years that it has been in existence.

5.1.2. The overall drainage gradient for the entire TEAD facility is 2% or greater, and this grade continues for many miles. The topography is generally smooth and uniform, allowing no chance for ponding or pooling of floodwaters.

5.1.3. No channels exist that would concentrate flows from upgradient areas.

5.1.4. Few well-defined channels exist in the vicinity of TEAD. There are none that would carry or direct water to or through any of the HWMUs.

5.1.5. TEAD facilities are 300 feet higher in elevation than the Great Salt Lake, the ultimate drainage for the area.

5.1.6. The drainage gradient to the Great Salt Lake is smooth and uniform. The lake is approximately eight miles from TEAD.

5.1.7. There are no onsite barriers to impede runoff. No significant vegetation exists to retain runoff waters.

5.1.8. The area is arid to semiarid and receives little precipitation. The 100-year 24-hour precipitation event is less than 3.2 inches.

5.1.9. The soils of the area are generally very pervious. Thus, little runoff is expected.

5.2. A Topographic Map of the Depot covering all HWMUs, required by Utah Admin. Code R315-270-14(b)(19), is included in this Attachment as Figure 3.

## 6.0. TRAFFIC PATTERNS [Utah Admin. Code R315-270-14(b)(10)]

6.1. The Vicinity Map in Figure 1 shows the highway network for the major highways serving the TEAD area. State Highway 36 runs from the southwest to the northeast, adjacent to the southeast corner of TEAD.

6.2. State Highway 112 runs from the northwest to the southeast, adjacent to the northeast corner of TEAD. State Highway 59 runs from the north to the south along the western boundary of TEAD.

6.3. Primary entry routes to TEAD are by way of the Main Entrance Road to State Highway 36 and the North Gate Approach Road off of State Highway 112. The Main Entrance Road serves as the major traffic corridor.

6.4. Traffic patterns related to the HWMUs are shown in Figure 4. Generally, all traffic, including government, commercial, and private vehicles, follows the primary traffic routes.

#### 7.0. TRAFFIC CONTROL

7.1. Stop signs are positioned at most intersections to control the flow of traffic in the more congested areas of the installation. Traffic lights are located at the main entrance gate. Security personnel are authorized to enforce traffic regulations and provide traffic control when required. Arterial roads are constructed within the magazine areas to service maintenance and storage facilities. These roads are of standard two-lane configuration with speed limits ranging from 10 to 50 mph, depending on congestion and road conditions such as curves, surface types, and visibility.

## 8.0. ESTIMATED TRAFFIC VOLUME

8.1. It is estimated that up to 600 vehicles belonging to employees and contractors, are driven onto the installation each workday. Most trips driven on the installation by employees are made in government vehicles. There are around 50 government (GSA) high capacity trucks and about 210 pickup trucks, vans, and sedans. These vehicles are used approximately 5 hours per day. About 60 engineering construction vehicles are also in use in varying degrees. Additionally, about 115 material handling equipment vehicles, forklifts, etc., are frequently driven on the installation's roads.

## 9.0. ROAD SURFACING AND LOAD BEARING CAPACITY

9.1. All arterial and major access roads at TEAD are designated for a minimum bearing load capacity of 18,000 pounds per axle. Construction materials for road surfaces along main access routes and arterial roads to the operations and storage are asphalt/concrete, bituminous, or gravel. Secondary road surfaces are earthen. Table 1 gives design details for TEAD roads by class.

#### **10.0. TOPOGRAPHIC MAPS**

10.1. The map, presented in Figure 3, illustrates the general topography of each HWMU, including the OB/OD Units.



Attachment 1 – General Facility Description Tooele Army Depot

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August 26, 2019 UT3213820894 Topographic and Storm Drainage Map



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Figure 4 Hazardous Waste Management Units/Traffic Patterns

Design Contr Element Design Contr	ols and t <u>s C</u> ols	<u>Class A</u>	<u>Class B</u>	<u>Class C</u>	<u>Class D</u>	<u>Class E</u>	<u>Class F</u>
Road Type	. 4	Lane	2 Lane	2 Lane	2 Lane	2 Lane	2 Lane
Daily hourly v (vehicles/hour	vehicles* 9: r)	20/lane	780-920/2 lanes	580-780/2 lanes	190-580/2 lanes	19-190/2 lanes	under 19/2 lanes
Design speed,	MPH 60	0	50	50	40	40	40
Average runni MPH	ing speed, 38	8	36	36	32	32	32
<u>Cross-Section</u> Minimum wid lanes, ft**	Elements th of 12	2	12	12	11	10	10
Normal cross; in/ft	slope,	1/8	to 1/4	3/16	to 3/8	1/4	to ½
Road thicknes	s, in***	4-inch base material. 6-inch surface material.					
<u>Design Elemer</u> Grade desirabl maximum perc	n <u>ts</u> le 3 cent		3	3	4	5	6
Road bearing o Ibs	capacity,	18,000 lbs single axle load					
Maximum truc weight, Ibs	k curb	18,000 lbs single axle load					
NOTES:							
* These va These D track-lay	alues show the PHV <sup>2</sup> s are based ying vehicles, e	mixed traffic vo d on indicated pe etc., during peak	lume <del>which</del> that requires th ercentage of the daily volur hours are considerably low	e same operational area as me and may be over-conser ver than the average percent	that required by light delive vative in some instances be tage during all hours.	ery trucks and pass ecause the percenta	senger cars. ages of trucks,
** The traffic lane widths indicated are for use on streets where the traffic will consist principally of vehicles with maximum overall widths of 9.64 or loss							
*** Thickness of combined base material and surface material.							
SOURCE: Department of the Army, TM5-822-6							

## Table 1 Road Design Standards

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# ATTACHMENT 2

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# WASTE ANALYSIS PLAN

## Table of Contents

1.0 Hazardous Wastes Managed at TEAD and Stored in Building 528	1
1.1 Background and Scope	1
1.2 Previously Identified Waste Streams & Associated EPA Waste Codes	1
1.3 Parameters and Rational	1
1.4 Parameter Test Methods	3
1.5 Sampling Method	3
1.6 Frequency of Analyses	4
1.7 Additional Requirements for Ignitable, Reactive or Incompatible Wastes	4
1.8 Land Disposal Restrictions	4
2.0 Waste Ammo Igloos A-101, C-514, C-815, C-816, K-401, K-402, K-403, K404,	
K-801, K-802, K-803A-101, C-815, C-816; Service Magazines 1368, 1369, 1370, a	and
<u>1371;</u> Above	
Ground Magazine 1205; and Building 1320	6
2.1 Background and Scope	6
2.2 Waste Streams	7
2.3 Parameters and Rationale	7
2.4 Parameter Test Methods	8
2.5 Frequency of Analysis	8
2.6 Sampling Methods	8
2.7 Analysis Supplied by Off-site Facilities	8
2.8 Additional Requirements for Wastes Generated Off-Site	9
2.9 Land Disposal Restriction & Notification, Waste Analysis	9
3.0 APE 1236 Deactivation Furnace	9
3.1 Background and Scope	.10
3.2 Waste Streams	.10
3.3 Parameters and Rationale	.10
3.4 Analysis Supplied by Off-site Facilities	.12
3.5 Additional Requirements for Wastes Generated Off-Site	.12
3.6 Land Disposal Restriction & Notification, Waste Analysis	.12
4.0 Small Caliber Disassembly Line	.13
4.1 Background and Scope	.13
4.2 Waste Streams	.13
4.3 Parameters and Rationale	.14
4.4 Additional Requirements for Wastes Generated Off-Site	.15
4.5 Land Disposal Restriction & Notification, Waste Analysis	.15
5.0 Hydrolysis Facility	.15
5.1 Background and Scope	.15
5.2 Waste Streams	.16
5.3 Parameters and Rationale	.16
5.4 Analysis Supplied by Off-site Facilities	.17
5.5 Additional Requirements for Wastes Generated Off-Site	.17
5.6 Land Disposal Restriction & Notification, Waste Analysis	.18
6.0 OB/OD	.26

6.1 Waste Appropriate for Treatment	
6.2 Physical and Chemical Characteristics of Wastes	
6.3 Waste Analysis	
6.4 Management of Ash and Residue	

## List of Figures and Tables

Libt of Figures und Fusites	
	10
Table 1. SW-846 Approved Analytical Methodologies	19
Table 2. Sampling/Analytical Methodology Summary	21
Table 3. Land Disposal Restriction Standards/Technologies	22
Table 4. General Chemical Composition of Military Items Treated at the OB/OD Unit	29
Table 5. Rational for Parameters Analyzed	35
Table 6. Analytical Test Procedures at TEAD for Ash	36
Figure 1. Waste Stream Evaluation Form	25

## 1.0. Hazardous Wastes Managed at TEAD and Stored in Building 528

#### **1.1. Background and Scope**

1.1.1. Hazardous Wastes, except explosive wastes, requiring storage for more than ninety days, shall be stored in Building 528. Hazardous wastes managed at TEAD and stored in Building 528 shall be described by one or more of the following EPA waste codes; no other hazardous wastes of other codes can be handled or stored in Building 528:

D001, D002, D003\*, D004, D005, D006, D007, D008, D009, D011, D018, D019, D020, D022, D023, D025, D026, D028, D029, D030, D032, D033, D035, D036, D037, D039, D040, D042, D043, F001, F002, F003, F004, F005, K047, P030, P098, P106, U002, U003, U019, U031, U041, U044, U051, U069, U075, U080, U127, U131, U151, U154, U188, U211, U220, U226, U239.

\* Indicates reactivity as defined in Utah Administrative Code R315-261-23(5), regarding cyanide and sulfide bearing wastes. It does not include reactivity as defined in Utah Administrative Code R315-261-23(6), (7) or (8), regarding wastes capable of detonating (i.e. explosive wastes). D003 Reactive (explosive) wastes are managed at Igloos <u>A-101, C-514, C-815, C-816, K-401, K-402, K-403, K-404, K-801, K-802, and K-803; Service Magazines 1368, 1369, 1370, and 1371A-101, C-815, C-816; Service Magazines 1368, 1370; Above Ground Magazine 1205; Building 1320; the OB/OD area; the 1236 Deactivation Furnace (incinerator located at Building 1320); the Small Caliber Disassembly Lines (Buildings 1325 and 1335), and the Hydrolysis Facility (Building 1400).</u>

**NOTE:** Waste described by the above listed characteristic (D) and listed (F) EPA waste codes are generated by processes that operate intermittently and on a continual basis by TEAD operations. K, P, and U waste codes are included based on a review of past operating records and are not generated on a continual basis.

#### 1.2. Previously Identified Waste Streams & Associated EPA Waste Codes

1.2.1. Detailed chemical analyses shall be performed by the Permittee in order to identify and manage hazardous waste during storage, and to provide the correct notification to off-site treatment, storage and disposal facilities (TSDF) as required under the Land Disposal Restrictions found in Utah Administrative Code R315-268.

1.2.2. Specific waste streams grouped under nine general waste stream titles are presented in Table 1, along with the EPA Waste Code(s) that describe each group.

1.2.3. The parameters of analysis shall be those constituents described by EPA waste codes D001 through D043, the constituents included in the listed waste codes F001 through F005, and Total Organic Halides.

1.2.4. TEAD's Environmental Management Division (EMD) shall select the parameters to be analyzed for as noted in the next paragraph using knowledge as to how the waste was generated, and past analytical results of similar waste streams.

## **1.3.** Parameters and Rationale [Utah Administrative Code R315-264-13(b)(1)]

The parameters of chemical/physical analyses and rationale for their selection are described by general waste title in the following paragraphs.

**1.3.1.** Surface Coatings/Related Wastes: These wastes are generated during surface coating and removal activities. Wastes categorized under this waste stream title shall be analyzed for the characteristics of Ignitability, Toxicity Characteristic Leaching Procedures (TCLP) Metals and Organics, and Total Organic Carbon (TOC). Constituents of concern contained in the EPA listed waste codes F001 through F005 shall not be analyzed for if they are known to be in the waste stream. These codes are assigned to wastes based on the Permittee's knowledge. If there is any possibility of these constituents being in the waste stream, analysis shall be conducted to verify their presence or absence.

**1.3.2. Batteries:** Wastes included under this general waste stream include various spent batteries to include lithium, ni-cad and lead-acid. These wastes need not be analyzed unless the information available, safety data sheets or Army disposal guidance, does not allow a determination to be made. If a determination is required, the waste battery shall be analyzed for Toxicity Characteristic Metals.

**1.3.3.** Chemical Cleaning/Related Wastes (organics): Wastes categorized under this general waste stream title are generated from the degreasing and treatment of metal parts. Listed waste codes F001 through F005 will be assigned to these wastes based on the Permittee's knowledge. If a determination is required, these wastes shall be analyzed at a minimum for the characteristics of Ignitability, Toxicity Characteristic Metals, and Toxicity Characteristic Organics.

**1.3.4. Petroleum Oil and Lubricant Wastes (POL):** Wastes in this category include those from automotive and other mechanical operations. Wastes categorized under this general waste stream category will be analyzed for Total Metals, Total Organic Halides (TOX) and Ignitability. Wastes in this category are managed as Used Oil in accordance with R315-15.

**1.3.5.** Thermal Treatment Residues: Wastes categorized under this general waste stream title are generated in the deactivation furnace, the Small Caliber Disassembly Line, and the open burn and open detonation units. This waste shall be analyzed for Toxicity Characteristic Metals, and for the Toxicity Characteristic Organics 2,4, dinitrotoluene (D030), and hexachlorobenzene (D032) and if necessary, explosives.

**1.3.6. Hydrolysate:** Spent hydrolysate is generated from the destruction of munition items in a hot caustic bath. This waste will be analyzed for Corrosivity (D002), Reactivity (D003), the Toxicity Characteristics Metals, and Organics: nitroglycerine, 2,4 dinitrotoluene (D030) and hexachlorobenzene (D032).

**1.3.7. Spent Blast Grit:** Spent blast grit is generated from blast grits made of walnut shells, glass, or steel. The blast grit becomes contaminated with paint chips, the pigment formulations of which contain heavy metals. Past analyses of this waste stream show this waste to be hazardous for Toxicity Characteristic Metals. Therefore the only analysis that is required to be performed on this waste stream is Toxicity Characteristic Metals.
**1.3.8. Installation Restoration Program (IRP) Derived Wastes:** Wastes included in this general waste stream title are generated from the investigation and remediation of sites contaminated by past operations. The type of analysis for each waste shall depend upon the operations previously conducted at the site and previous investigative or remedial work performed. The parameters for determination that shall be considered include the characteristics of Ignitability, Corrosivity, and Reactivity. Determinations shall also be made for Toxicity Characteristic Metals, Toxicity Characteristic Organics, and Toxicity Characteristic Organics (pesticides and herbicides). The results from these determinations shall be placed in the Permittee's Operating Record.

**1.3.9.** Discarded Commercial Products: If the waste is a discarded commercial product or residue collected from a spill of hazardous material, a Safety Data Sheet (SDS) shall be used to determine if the waste is a listed P or U waste or if the waste exhibits any hazardous characteristics.

**1.3.10. Miscellaneous (Orphan) Wastes:** These wastes are materials which are not currently or routinely generated from processes not currently in operations at the Facility and/or are limited in quantity. A determination shall be made for the characteristics of Ignitability, Corrosivity, and Reactivity. Also, determinations shall be made for Toxicity Characteristic Metals, Toxicity Characteristic Organics, and/or Toxicity Characteristic Organics (pesticides and herbicides) depending on the Permittee's knowledge of the process and materials that generated the wastes. Those characteristics which couldn't be generated will not be analyzed for.

1.3.10.1. If there is no knowledge as to the origin of the waste or how the waste was generated then the parameters of analysis shall include the characteristics of Ignitability, Corrosivity, Reactivity, plus Toxicity Characteristic Metals, Toxicity Characteristic Organics, Toxicity Characteristic Organics (pesticides/herbicides). Constituents of concern contained in the EPA listed codes F001 through F005 shall be analyzed for.

1.3.10.2 The results from these determinations shall be placed in the Permittee's Operating Record.

1.4. Parameter Test Methods [Utah Administrative Code, R315-264-13(b)(2)]

1.4.1. Table 1 contains the EPA waste codes for hazardous waste managed at the Facility, Building 528, and the approved SW-846 analytical method(s) for each waste code listed. In addition, the EPA waste numbers have been grouped into analyte groups.

1.4.2. More than one method of analysis may appear since analytical contracts are awarded to various labs. Labs performing the analysis shall be certified by the State of Utah for the parameters to be analyzed for.

**1.5.** Sampling Method [Utah Administrative Code R315-264-13(b)(3)]

1.5.1. Wastes generated on a continual basis at the Facility are sampled in the 90-day storage yard, or at the point of generation. Wastes are either managed in open top or closed top drums,

gondolas, or in some instances discharged to a bulk tanker for transport to a Treatment Storage and Disposal Facility (TSDF).

1.5.2. The sampling method selected for a given waste stream shall be based on the physical properties the waste exhibits and the location or method of storage of the waste. Table 2 is a summary of sampling and analytical methodologies for each general waste stream title.

1.5.3. One sample per waste stream is taken, using a sampling tool that will insure the most representative sample. For waste streams generated at a rate greater than 55 gallons per month, the sample to be analyzed shall be a composite sample comprised of equal amounts taken from all the drums filled with the same waste stream that are in storage in the 90-day storage yard (in any given month).

**1.6.** Frequency of Analyses [Utah Administrative Code R315-264-13(b)(4)]

1.6.1. An analysis shall be performed whenever the process generating a waste stream has changed. Waste streams generated on site and on a continual basis shall be analyzed (at a minimum) once every three years if the process generating the waste stream has not changed. Waste streams shall be reviewed on an annual basis to determine if a process change (such as using different materials such as paints or chemicals or a change in the operation has occurred such as a change in operating temperature or the use of equipment of new design) has occurred (see Figure 1). If the waste stream is changed, it shall be sampled within one week of the change and the sample analyzed and a determination made. Any changes in the waste stream will be documented in the Operating Record.

1.6.2. Waste streams generated from non-process sources (e.g. spill, leaks) shall be analyzed at the time of generation, if the constituent of concern is not identified as a listed waste. The determination shall be made on a case-by-case basis and includes both the application of the Permittee's knowledge (in the event of hazardous substance spills, and spills of wastes from existing waste streams) and chemical analysis if necessary. These determinations shall be documented in the Operating Record.

1.6.3. Waste streams generated from non-continuous sources shall be analyzed on an annual basis. These determinations shall be documented in the Operating Record.

## **1.7.** Additional Requirements for Ignitable, Reactive or Incompatible Wastes [Utah Administrative Code R315-264-13(b)(6)]

1.7.1. Hazardous wastes shall be stored so as to prevent the mixing of incompatible waste should a release occur. In Building 528 the bays are numbered 1 through 4. With the orientation of the observer standing beneath the overhead door, facing into the building, bays 1 and 3 are to the observer's left, bays 2 and 4 are to the observer's right. Bays 1 and 2 are the first bays encountered upon entering Building 528 through the overhead door.

1.7.2. Bay 1 shall be used to store wastes that are sludges or solids and that are hazardous wastes by Toxicity Characteristic Metals D004 through D011. Bay 2 shall be used to store

corrosive (D002 alkaline) wastes. Bay 3 shall be used to store ignitable and solvent wastes (D001 and F001 through F005). Bay 4 shall be used to store corrosive (D002, acidic) wastes.

1.7.3. The Permittee shall determine the most appropriate bay for wastes with EPA codes D018 through D043 or the U or P codes listed in paragraph 1.1 above based on the characteristics of each waste. Any wastes placed into storage that are reactive (D003, sulfide or cyanide producing) shall be stored in Bay 2.

## **1.8. Land Disposal Restrictions** [Utah Administrative Code R315-268]

1.8.1. The Permittee shall arrange for the disposal of hazardous waste managed on site through the Defense Logistics Agency Disposition Services (DLADS). DLADS holds and administers the contract for the ultimate treatment and disposal of hazardous wastes managed at the Facility. The Permittee shall ensure that contracts are written in such a manner as to ensure the proper treatment and disposal of hazardous wastes generated at the Facility. This includes the notifications required under the Land Disposal Restrictions (LDR) found in Utah Administrative Code R315-268.

1.8.2. The Permittee shall provide a notification with each shipment of hazardous waste that is being sent off site for storage, treatment, and/or disposal. The Permittee shall make the receiving facility aware of any LDRs and/or treatment methods that may be required before the hazardous waste can be disposed of. The Permittee shall include this notification with each shipment of hazardous waste transported off site in addition to, and in association with, the hazardous waste shipping manifest.

1.8.3. The Permittee shall determine:

- 1.8.3.1. All applicable EPA hazardous waste codes associated with each waste stream managed at the Facility.
- 1.8.3.2. Treatment standards, or prohibition levels that apply to the waste code(s) used to characterize each waste stream based on waste classification (i.e. wastewaters or non-wastewaters) and waste code, or (in the case of listed wastes) subdivisions found within waste codes referring to specific constituent(s) of concern.
- 1.8.3.3. What regulated constituents and what concentrations are present in the each waste stream.

1.8.4. From a comparison of information contained in paragraph 1.8.3.2. and 1.8.3.3. above, the Permittee shall determine which waste streams require treatment before disposal.

1.8.5. Table 3 is a compilation of tables CCWE (Constituent Concentration in Waste Extract, Utah Administrative Code R315-268-41), Table 2 (Technology-Based standards by RCRA Waste Code, Utah Administrative Code R315-268-42), and Table CCW (Constituent Concentration in Wastes, Utah Administrative Code R315-268-43) for hazardous wastes generated and managed at the Facility.

1.8.6. Should a hazardous waste or discarded commercial product be described by an EPA waste code that does not appear in Table 3, the Permittee shall review all three sections of Utah Administrative Code R315-268 referenced above to determine which treatment standard, or treatment technology applies.

1.8.7. The Permittee shall determine whether or not a hazardous waste or waste stream is restricted from land disposal by comparison of the waste analysis and the applicable tables mentioned above. If it is determined that the waste does not meet the treatment standards, a notice containing the following information will be sent with each shipment to the receiving facility:

- 1.8.7.1. The EPA hazardous waste code(s),
- 1.8.7.2. The applicable treatment standard(s), or if the treatment standard is expressed as a treatment, the applicable five letter treatment code,
- 1.8.7.3. The manifest number associated with the waste shipment, and
- 1.8.7.4. The waste analysis data used to make the determination.

1.8.8. If the Permittee determines that the waste meets the treatment standards, and can therefore be disposed of without further treatment, a notice containing the information listed above shall be sent with each shipment of hazardous waste to the receiving facility. In addition, the following certification will be sent with the waste shipment and will be signed by a representative of the Facility:

"I certify under penalty of law that I personally have examined and am familiar with the waste through analysis and testing or through knowledge of the waste to support this certification that the waste complies with the treatment standards specified in Utah Administrative Code R315-268-40 and all applicable prohibitions set forth in Utah Administrative Code R315-268-32 through 35. I believe that the information I submitted is true, accurate, and complete. I am aware that there are significant penalties for submitting a false certification, including the possibility of a fine and imprisonment."

1.8.9. If it is determined that a waste is exempt from LDR regulations, or has been given an exemption under the nationwide capacity variance, in addition to information contained in items 1.8.7.1 through 1.8.7.4 above, the generator must include the date the waste is subject to prohibitions (i.e. the date the variance expires).

# 2.0.Waste Ammunition Igloos <u>A-101, C-514, C-815, C-816, K-401, K-402, K-403, K-404, K-801, K-802, K-803; Service Magazines 1368, 1369. 1370, and 1371A-101, C-815, C-816; Service Magazines 1368, 1370; Above Ground Magazine 1205; and Building 1320</u>

## 2.1. Background and Scope

2.1.1. Ammunition Igloos <u>A-101, C-514, C-815, C-816, K-401, K-402, K-403, K-404, K-801,</u> <u>K-802, K-803; Service Magazines 1368, 1369, 1370, and 1371</u><u>A-101, C-514, C-815, C-816, K-401, K-402, K-403, K-404, K-801, K-802, K-803; Service Magazines 1368, 1369, 1370, and 1371</u>; Above Ground Magazine 1205; and Building 1320 are used to store hazardous waste. The igloos and service magazines were designed for the purpose of storing munitions; however, these structures have been designated Hazardous Waste Management Units (S01, storage) in order to comply with federal and state regulations and support the conventional ammunition demilitarization mission conducted by TEAD's Directorate of Ammunition Operations.

2.1.2. The hazardous waste that is stored in the above mentioned igloos and service magazines can be described by the EPA waste code and subcategory D003 Reactive (explosive). In addition, some explosives can be further described as toxicity characteristic metals (EPA codes D004 through D011) and toxicity characteristic organics (D030 and D032).

2.1.3. Military Propellant, Explosive, and Pyrotechnics (PEP) formulations in general are comprised of the elements lead, sulfur, chlorine, carbon, hydrogen, oxygen, and nitrogen in the form of organic compounds, halogenated organic compounds, and lead compounds.

## 2.2. Waste Streams

2.2.1. The waste streams contributing to the D003 (explosive) hazardous waste that will be stored in the ammunition storage igloos <u>A-101, C-514, C-815, C-816, K-401, K-402, K-403, K-404, K-801, K-802, K-803; Service Magazines 1368, 1369, 1370, and 1371A-101, C-815, C-816; Service Magazines 1368, 1370; Above Ground Magazine 1205; and Building 1320 are:</u>

**2.2.2. Waste PEP:** This waste stream is comprised of munitions that are determined to be obsolete and/or have undergone formulation degradation to the point that their performance characteristics are in question (in essence, discarded commercial or off spec product).

2.2.2.1. Waste PEP items are generated on site and received from off site. The only off-site facility/organizations the Permittee will receive off-site waste reactive (explosive subcategory) wastes from will be Tooele Army Depot South Area (TEAD-S), U.S. Army Explosives Ordnance Personnel and DOD facilities shipping waste munitions for treatment in the deactivation furnace. No hazardous wastes that have the State of Utah Waste codes P999 or F999 will be transferred from TEAD-S or any other facility to TEAD.

2.2.2.2. Munitions that are usable stock are not considered discarded or off-spec product (hazardous waste) until an approved Department of Defense destruction document is signed by the operator of the treatment unit where the redesignated D003 (explosive) hazardous waste will undergo deactivation. Waste PEP items are treated at the APE 1236 Deactivation Furnace, the Small Caliber Disassembly Line, the Hydrolysis Facility, or the Open Burn/Open Detonation (OB/OD) area located at the Facility.

2.2.2.3. In the event that the availability of the treatment unit the munitions are intended to be treated at changes (due to weather conditions in the case of OB/OD, or equipment operational status in the case of the deactivation furnace), thereby preventing the munitions that have been designated hazardous waste from undergoing treatment, these wastes explosives shall be stored

in igloos <u>A-101, C-514, C-815, C-816, K-401, K-402, K-403, K-404, K-801, K-802, K-803;</u> Service Magazines 1368, 1369, 1370, and 1371<u>A-101, C-815, C-816; Service Magazines 1368,</u> 1370; Above Ground Magazine 1205; and Building 1320. Waste munitions received at an OB/OD unit may be stored in place in accordance with Condition VI.C.1.f.

**2.2.3.** Debris/Liquids contaminated with D003 reactive (explosive) Hazardous Waste: These wastes are generated on site by ammunition maintenance (i.e., disassembly of munitions) and demil operations, or samples of these types of waste are sent from off site. In many instances, these wastes are not reactive in the sense that they will detonate, but are contaminated with PEP residues.

2.3. Parameters and Rationale [Utah Administrative Code, R315-264-13(b)(1)]

The parameters of chemical/physical analysis, and the rationale for their selection, are described in the following paragraphs:

**2.3.1. Waste PEP in Munitions:** This waste stream is generated as: 1) munitions currently in storage as usable stock become obsolete; 2) PEP fillers found in munitions degenerate and become unstable or lose their performance characteristics; and 3) damaged, defective, or obsolete ammunition components are discarded and replaced with new components during ammunition maintenance operations.

2.3.1.1. Regardless of the reason the PEP item became a hazardous waste, the Army has knowledge as to the chemical make-up of the PEP filler, the correct method of storage, and the intended method of deactivation. Therefore, no chemical analysis will be done on waste PEP. In addition, PEP shipping containers are clearly marked and labeled. Further testing will not provide any useful information to the operator for storage than does already exist in munition specification data. The munition specification data for each munition shall be reviewed before being placed in hazardous waste storage to ensure that the required information is available at the time of treatment. The parameters that shall be calculated are; 1) the heat content of the waste on a Btu/lb basis, and 2) the sulfur, halogen (specify halogen type), lead, and mercury content on a weight percent basis.

**2.3.2. Debris/Liquids Contaminated With PEP Residue:** No chemical analysis will be performed on these waste items. The generator has knowledge as to what raw materials were used in the process that generated the waste. Further analysis will not provide the operator with any useful knowledge for the purpose of storing the waste. This user knowledge includes knowing whether the waste contains free liquids. A visual inspection shall be performed at the time the waste is placed into storage to verify that the contents of the container match the physical description found on the container label.

2.4. Parameter Test Methods [Utah Administrative Code, R315-264-13(b)(2)]

2.4.1. For wastes stored in Ammunition Igloos <u>A-101, C-514, C-815, C-816, K-401, K-402, K-403, K-404, K-801, K-802, K-803; Service Magazines 1368, 1369, 1370, and 1371A-101, C-815, C-816; Service Magazines 1368, 1370; Above Ground Magazine 1205; and Building 1320, the parameters of concern are heat content, sulfur, halogen, lead, and mercury content. As noted</u>

before, the concentrations of these parameters can be determined by review of manufacturer and/or munition specifications and no chemical analysis is done.

2.4.2. Calculations are conducted on the basis of one munition item (round), or on the basis of one pound of propellant. In all cases only the reactive PEP filler will be considered; the inert metal munition casing will not be considered.

## **2.5.** Frequency of Analysis [Utah Administrative Code, R315-264-13(b)(4)]

2.5.1. The review and determinations as noted in paragraphs 2.3 and 2.4 above shall be performed each time a new waste, or munition is demiled (deactivated), or a munition with a different NSN number is programmed for deactivation. The analysis shall be prepared prior to the waste being deactivated.

## 2.6. Sampling Methods [Utah Administrative Code, R315-264-13(c)(2)]

2.6.1. No sampling methods shall be employed because the analysis of the parameters of concern is based on a review of manufacturer literature (i.e. generator knowledge) which is then used to determine the concentrations of the parameters of concern.

2.7. Analysis Supplied by Off-site Facilities [Utah Administrative Code, R315-264-13(b)(5)]

2.7.1. The Permittee may receive, in accordance with Condition II.P., reactive (explosive) hazardous wastes that are generated off site. The only facility/organizations TEAD will receive off-site generated hazardous waste from will be TEAD-S, U. S. Army Explosive Ordnance Personnel, and DOD facilities shipping waste munitions for treatment in the deactivation furnace, small caliber disassembly line or the hydrolysis facility. The only hazardous wastes the Permittee will receive from TEAD-S will be reactive (explosive subcategory). No hazardous wastes that have the State of Utah waste codes P999 or F999 shall be transferred from TEAD-S or any other facility to TEAD.

2.7.2. The TEAD Environmental Management Division (EMD) will ensure that the waste analysis for wastes to be transferred is available, and includes, at a minimum, the analysis of the same parameters wastes generated in a similar manner at the Facility.

## **2.8.** Additional Requirements for Wastes Generated Off-Site [Utah Administrative Code, R315-264-13(c)]

2.8.1. Hazardous waste (explosives) received from TEAD-S or other DOD facilities shall be inspected at the time of arrival to ensure that containers in the shipment match information included in the accompanying manifest. The operator who receives the shipment of hazardous waste shall:

2.8.1.1. Verify the manifest document number on each container label matches the unique number assigned to the manifest accompanying the shipment.

2.8.1.2. Verify that the number and type(s) of containers in the shipment match the number and type(s) of containers specified on the shipping document.

2.8.1.3. Verify that the explosive type and quantity of the contents of the container match the physical description found on the container label. Every container in the shipment shall be opened to verify this. This requirement shall not apply to unused ammunition shipped in their original containers. Type and quantity of unused munitions shall be verified by the nomenclature marked on the outside of the containers.

2.8.1.4. Verify that the waste analysis for the waste received is available, and the EPA waste codes that the waste is described by are permitted to be stored in igloos <u>A-101, C-514, C-815, C-816, K-401, K-402, K-403, K-404, K-801, K-802, K-803; Service Magazines 1368, 1369, 1370, and 1371A-101, C-815, C-816; Service Magazines 1368, 1370; Above Ground Magazine 1205; and Building 1320.</u>

2.8.2. If a discrepancy is found with the manifest, the TEAD EMD shall be called (ext. 3504) for direction.

**2.9. Land Disposal Restriction & Notification, Waste Analysis** [Utah Administrative Code, R315-268]

2.9.1. Wastes stored in Ammunition Igloos <u>A-101, C-514, C-815, C-816, K-401, K-402, K-403, K-404, K-801, K-802, K-803; Service Magazines 1368, 1369, 1370, and 1371A-101, C-815, C-816; Service Magazines 1368, 1370; Above Ground Magazine 1205; and Building 1320 are reactive (D003, explosive subcategory), and are treated at either the 1236 Deactivation Furnace or at the OB/OD area operated by the Permittee and are not land filled. These methods of treatment comply with the treatment technology specified in Utah Administrative Code R315-268 for D003 (explosive subcategory) wastes.</u>

## 3.0. APE 1236 Deactivation Furnace

## 3.1. Background and Scope

3.1.1. The Permittee operates a hazardous waste incinerator located in building 1320. The Army refers to the type of incinerator operated at the Facility as an Ammunition Peculiar Equipment (APE) 1236 Deactivation Furnace. Incinerators of this type are operated at Army Depots throughout the country and were designed specifically to deactivate discarded/obsolete military PEP.

## 3.2. Waste Streams

**3.2.1.** Incinerator Waste Feed: The only wastes that shall be treated in the APE 1236 Deactivation Furnace (hazardous waste incinerator) located in Building 1320 are defined as reactive (D003, explosive subcategory) hazardous waste as per Utah Administrative Code R315-261-23. The incineration of waste PEP meets the treatment technology required in Utah Administrative Code R315-268.

**3.2.1.1.** Hazardous wastes generated from industrial operations at the Facility (sump sludges, wastewater treatment sludges, paint waste, spent degreasers, etc.) shall not be treated in the APE 1236 Deactivation Furnace.

**3.2.2. Incinerator Treatment Residues**: Residues from the treatment of discarded/obsolete PEP consist of ash, scrap metal, and slag.

3.2.2.1. During operation, incinerator ash accumulates in the cyclone, and high temperature ceramic baghouse. Ash is removed from each of these pieces of process equipment as it is generated and collected in the drums. There is a collection drum associated with, and located below each piece of process equipment mentioned above. Each drum is connected to its associated component either by flexible ducting or hard fittings. This arrangement allows for the transfer and collection of incinerator residues from process equipment to storage drums, and insures that residues will not be released to the environment.

3.2.2.2. Drums filled with incinerator treatment residues (ash) shall be removed to one of the 90-day container storage areas and, if necessary, stored at Building 528 until they are transported to an off-site TSDF.

3.2.2.3. Metal introduced into the treatment process as ammunition casings and projectiles is removed from the kiln on a continual basis by the interior staggered flights (that act like an auger) that are fabricated into the kiln wall. As metal ammunition casings exit the incinerator at the burner end of the kiln, they fall on to a conveyor and are transferred to scrap metal collection drums for recycling.

3.2.2.4. Scrap metal is recycled.

**3.2.3.** Incinerator Systems Maintenance Generated Wastes: Wastes generated from maintenance of the APE 1236 Deactivation Furnace and its associated Pollution Abatement System (PAS) consist of treatment residues (ash) that has accumulated in the duct work, and discarded surface-contaminated process equipment.

**3.3.** Parameters and Rationale [Utah Administrative Code R315-264-13(b)(1)] The parameters of chemical/physical analysis, and the rationale for their selection, are described in the following paragraphs:

**3.3.1. PEP:** Propellants, Explosives, and Pyrotechnics comprise the only waste stream that will be treated in the APE 1236 Deactivation Furnace. This waste stream is characterized as reactive (subcategory explosive) hazardous waste. No chemical analysis will be performed on this waste stream because the waste stream is characterized by the definition found in federal and state regulations (reactive), the treatment standard for the explosive subcategory of reactive wastes is technology based (DEACT), not concentration based, and treatment standards found in Utah Administrative Code R315-268 expressed as technologies take precedence over treatment standards expressed as concentrations. The waste analyses for the PEP hazardous wastes to be treated in the APE 1236 Deactivation Furnace are included in the Munition Items Disposition Action System (MIDAS) database.

3.3.1.1. The analysis that shall be performed on hazardous waste PEP to be treated at the APE 1236 Deactivation Furnace is: 1) a visual inspection of the material contained in the shipment received at Building 1320 to ensure the material delivered matches the material described on the 4508 form accompanying the shipment, and 2) a review of the waste analysis contained in the MIDAS database to ensure that the PEP delivered to the APE 1236 Deactivation Furnace is included.

**3.3.2. Treatment Residues (ash):** Treatment residues collected in the cyclone and baghouse are managed as one waste stream. These residues shall be sampled and analyzed in accordance with Section 1 of this Attachment.

**3.3.3. Treatment Residues (metal scrap):** Metal is introduced to the treatment process as ammunition casings and cartridge projectiles. Metal that does not melt as it passes through the rotary kiln is collected and sold as scrap metal and is therefore exempt from regulation. No chemical analysis will be performed on the scrap metal.

3.3.3.1. All pieces of metal exiting the kiln shall be visually inspected to ensure that the deactivation of the PEP component contained in the items fed to the incinerator is complete.

**3.3.4.** Treatment Residue (slag): Slag accumulating in the rotary kiln is comprised of melted aluminum ammunition casings and/or melted lead projectiles. Metal slag removed from the APE 1236 Deactivation Furnace is recycled as scrap metal, and therefore exempt from regulation. No analysis will be performed on metal slag exiting the rotary kiln.

**3.3.5. Discarded Process Equipment:** Discarded process equipment that comes in direct contact with waste feeds or incinerator treatment residues may have its surface contaminated by residues that are Toxicity Characteristic hazardous waste. The surface of discarded process equipment will be decontaminated either by grit blasting, wire brushing, or compressed air jet. No chemical analysis will be performed on discarded process equipment.

3.3.5.1. This equipment is inorganic debris with surface contamination. Residues removed from the surface of discarded process equipment shall be collected and managed along with the waste stream described in paragraph 3.3.2 of this section.

3.3.5.2. Discarded process equipment will be visually inspected to ensure that no surface contamination remains on the item. Components made of metal will be recycled as scrap metal.

3.3.5.3. Discarded process equipment that cannot be surface decontaminated, and that has no recycle value, will be characterized as inorganic debris contaminated with characteristic hazardous waste treatment residues (ash). The characterization of the ash will be applied to the debris it contaminated.

3.4. Analysis Supplied by Off-site Facilities [Utah Administrative Code R315-264-13(b)(5)]

3.4.1. The Permittee may receive, in accordance with Condition II.P., reactive (explosive) hazardous wastes that are generated off-site. The only facility/organizations the Permittee will receive off-site generated hazardous waste from will be TEAD-S, U. S. Army Explosive

Ordnance Personnel, and DOD facilities shipping waste munitions for treatment in the deactivation furnace, the Small Caliber Disassembly Line, and the Hydrolysis Facility. The only hazardous wastes TEAD will receive from TEAD-S will be reactive (explosive subcategory). No hazardous wastes that have the State of Utah waste codes P999 or F999 shall be transferred from TEAD-S or any other facility to TEAD.

3.4.2. The TEAD Environmental Management Division (EMD) will ensure that the waste analysis for wastes to be transferred is available and includes at a minimum the analysis of the same parameters wastes generated in a similar manner at the Facility.

**3.5.** Additional Requirements for Wastes Generated Off Site [Utah Administrative Code R315-264-13(c)]

3.5.1. Hazardous waste (explosives) received from TEAD-S or other DOD facilities will be inspected at the time of arrival to ensure that containers in the shipment match information included in the accompanying manifest. The operator who receives the shipment of hazardous waste shall:

3.5.1.1. Verify the manifest document number on each container label matches the unique number assigned to the manifest accompanying the shipment.

3.5.1.2. Verify that the number and type(s) of containers in the shipment match the number and type(s) of containers specified on the shipping document.

3.5.1.3. Verify that the explosive type and quantity of the contents of the container match the physical description found on the container label. Every container in the shipment shall be opened to verify this. This requirement shall not apply to unused ammunition shipped in their original containers. Type and quantity of unused munitions shall be verified by the nomenclature marked on the outside of the containers.

3.5.1.4. Verify that the waste analysis for the waste received is available, and the EPA waste codes that the waste is described by are permitted to be burned in the APE 1236.

3.5.2. If a discrepancy is found with the manifest, the TEAD EMD shall be called (ext. 3504) for direction.

**3.6.** Land Disposal Restriction & Notification, Waste Analysis [Utah Administrative Code R315-268]

3.6.1. The management method of each waste stream treated or generated at the APE 1236 Rotary Kiln is as follows:

Waste Stream	Management Method
Military PEP	Deactivation (DEACT)
Treatment Residues (ash)	Off-site treatment/disposal
Treatment Residues (metal scrap)	Recycled as scrap metal (not regulated)
Discarded Process Equipment	Recycled as scrap metal, or disposed of as

3.6.2. Hazardous wastes generated from operations of the APE 1236 Deactivation Furnace that will be further treated and eventually disposed of at an off-site TSDF are the treatment residue (ash), and discarded process equipment/components. These waste streams shall first be transferred to the central 90-day storage area or Building 528. From there these wastes shall be managed in accordance with the procedures for waste stored in Building 528 found in Section 1 of this Attachment. This plan discusses the methods used to ensure hazardous wastes leaving the Facility and bound for off-site TSDF are managed properly. This includes requirements found in Utah Administrative Code R315-268.

## 4.0. Small Caliber Disassembly Line

### 4.1. Background and Scope

4.1.1. The small caliber disassembly line separates the projectile from the cartridge case, collects the propellant, and initiates the primer.

### 4.2. Waste Streams

**4.2.1. Small Caliber Disassembly Line Waste Feed:** The only wastes that will be treated in the small caliber disassembly line located in building 1325 are primers from various size cartridges that are defined as reactive (D003, explosive subcategory) hazardous waste in accordance with Utah Administrative Code R315-261-23. The initiation of the primers meets the treatment technology required in Utah Admin Code R315-268.

**4.2.2.** Small Caliber Disassembly Line Treatment Residues: Residues from the treatment operation consist of projectiles, scrap metal casings, and casings with primers that failed to initiate.

4.2.2.1 The projectiles that are removed from the casings and determined to be waste shall be treated in the deactivation furnace in accordance with Section 3 of this Attachment.

4.2.2.2. Projectiles that have been classified as reusable through the Departments of Defense (DOD) Supply Conditional Code (SCC) Standards will be packaged for reuse.

4.2.2.3. As metal ammunition casings exit the primer-firing module, they are collected in drums for recycling.

4.2.2.4. Primers that fail to initiate in the primer-firing module are returned to the primer firing module or collected for processing through the deactivation furnace.

**4.2.3. Small Caliber Disassembly Line Maintenance Generated Wastes**: Wastes generated from maintenance of the disassembly line and its associated Pollution Abatement System (PAS) consist of treatment residues (ash) that have accumulated in the duct work, and discarded surface-contaminated process equipment. The residues from the pollution abatement system shall be removed to one of the 90-day container storage areas and, if necessary, stored at Building 528

until they are transported to an off-site TSDF. Scrap metal that has been decontaminated is recycled.

**4.2.4. Propellant:** Reusable propellant will be repackaged and stored as product for future use and is therefore exempt from hazardous waste regulation. Propellant that is determined to be waste by the Designated Disposition Authority (DDA) shall be managed in accordance with the Army Propellant Management Guide. Once the propellant is removed from storage in a military magazine or other storage area for the purpose of being disposed of, burned or incinerated, or treated prior to disposal it shall be handled as hazardous waste.

4.2.4.1. Waste propellant is treated at the Open Burn/Open Detonation (OB/OD) area located at the Facility or sent to a permitted hazardous waste treatment facility for off-site disposal.

4.2.4.2. In the event that the availability of the treatment unit the munitions are intended to be treated at changes (due to weather conditions in the case of OB/OD, or equipment operational status in the case of the deactivation furnace), thereby preventing the munitions that have been designated hazardous waste from undergoing treatment, these wastes explosives shall be stored in igloos <u>A-101, C-514, C-815, C-816, K-401, K-402, K-403, K-404, K-801, K-802, K-803;</u> <u>Service Magazines 1368, 1369, 1370, and 1371A-101, C-815, C-816; Service Magazines 1368, 1370;</u> Above Ground Magazine 1205; and Building 1320, or treated off-site. Waste munitions received at an OB/OD unit may be stored in place in accordance with Condition VI.C.1.f.

4.3. Parameters and Rationale [Utah Administrative Code R315-264-13(b)(1)]

The parameters of chemical/physical analysis and the rationale for their selection are described in the following paragraphs:

**4.3.1. Projectiles:** Projectiles shall be characterized in accordance with Section 3 of this Attachment.

**4.3.2. Primers:** No chemical analysis of primers will be performed because: 1) the materials comprising this waste stream were manufactured to government specifications and are already well characterized, and 2) the waste stream is characterized by the definition found in federal and state regulations (reactive), the treatment standard for the explosive subcategory of reactive wastes is technology based (DEACT), not concentration based, and treatment standards found in Utah Administrative Code R315-268 expressed as technologies take precedence over treatment standards expressed as concentrations. The PEP analysis of the primers is on file at the Facility.

**4.3.3.** Shell Casings: The casings are scrap metal and are therefore exempt from hazardous waste regulation.

**4.3.4. Pollution Abatement System Residue:** Residues collected in the pollution abatement system shall be managed as one waste stream. The residue shall be sampled and analyzed in accordance with Section 1 of this Attachment.

**4.3.5.** Discarded Process Equipment: Any discarded process equipment shall be inspected to ensure it is free of explosive contamination and is therefore exempt from hazardous waste regulation.

**4.4.** Additional Requirements for Wastes Generated Off Site [Utah Administrative Code R315-264-13(c)]

4.4.1. Hazardous waste (explosives) received from TEAD-S or other DOD facilities shall be inspected at the time of arrival to ensure that containers in the shipment match information included in the accompanying manifest. The operator who receives the shipment of hazardous waste shall:

4.4.1.1. Verify the manifest document number on each container label matches the unique number assigned to the manifest accompanying the shipment.

4.4.1.2. Verify that the number and type(s) of containers in the shipment match the number and type(s) of containers specified on the shipping document.

4.4.1.3. Verify that the explosive type and quantity of the contents of the container match the physical description found on the container label. Every container in the shipment shall be opened to verify this. This requirement will not apply to unused ammunition shipped in its original containers. Type and quantity of unused munitions shall be verified by the nomenclature marked on the outside of the containers.

4.4.1.4. Verify that the waste analysis for the waste received is available.

4.4.2. If a discrepancy is found with the manifest, the TEAD EMD shall be called (ext. 3504) for direction.

## **4.5. Land Disposal Restriction & Notification, Waste Analysis** [Utah Administrative Code R315-268]

The management method of each waste stream generated at the small caliber disassembly line is as follows:

Waste Stream	Management Method
Primers	Deactivation (DEACT)
Propellant	Sold as product (not regulated)
Casings (metal scrap)	Recycled as scrap metal (not regulated)
Pollution System Residue	Off-site treatment/disposal
Discarded Process Equipment	Recycled as scrap metal (not regulated)

## 5.0. Hydrolysis Facility

## 5.1. Background and Scope

5.1.1. The Hydrolysis Facility treats energetic material containing items such as cartridge activated devices (CADs), propellant activated devices (PADs), or other munitions for which the energetic material can be accessed. The energetic containing items are hydrolyzed in a hot caustic bath to dissolve and inert the energetic material.

5.1.2. The process provides indiscriminate de-activation of energetic constituents. The precise configuration of the munition to be treated is not required due to the nature of the process. When available, manufacturing drawings and data are used to define critical characteristics of the munition to be processed. Important variables include energetic type and content, aluminum content and surface area, and accessibility of the energetic constituents. Based upon the information, the caustic consumption by the waste is calculated. In instances where specific manufacturing data is not available, the required munition characteristics may be assumed by Department of Defense Identification Code (DODIC) and National Stock Number (NSN) groups. For example, many CADs possess comparable mass, size and constituent quantities. However, their NSNs differ due to their location of use (e.g., "left side" or "right side"). The chiral nature of the munition configuration will have no impact on its processing requirements.

5.1.3. Bench scale tests are performed on representative munitions to demonstrate the efficacy of the process and to determine the treatment time to access the energetic material. The treatment time is established as the accessing time plus 30 minutes plus a 25 % margin to assure destruction of all energetic material. The operating conditions are verified by the initial runs of each munition item in the hydrolysis tank and a thorough inspection of the effluent.

## 5.2. Waste Streams

**5.2.1. Hydrolysis Waste Feed:** The wastes that will be treated in the Hydrolysis Facility located in Building 1400 are CADs and PADs and are defined as reactive (D003, explosive subcategory) hazardous waste in accordance with Utah Administrative Code R315-261-23. The destruction of the CADs and PADs meets the treatment technology required in Utah Administrative Code R315-268.

**5.2.2.** Hydrolysis Facility Residues: Residues from the treatment operation consist of hydrolysate, scrap metal, plastic and sludge remaining from the reaction of the sodium hydroxide and the munition components.

5.2.2.1. The spent hydrolysate is transferred to a tanker truck or other suitable container and shipped to an off-site TSDF. Other residues removed from the process shall be containerized and stored for disposal in a 90-day container storage area and, if necessary, stored at Building 528 until they are transported to an off-site TSDF.

5.3. Parameters and Rationale [Utah Administrative Code, R315-264-13(b)(1)]

The parameters of chemical/physical analysis and the rationale for their selection are described in the following paragraphs:

**5.3.1.** Munitions (CADs and PADs): No chemical analysis of CADs and PADs or other munitions will be performed because: 1) the specifications for the materials comprising this

waste stream are typically available from various databases, such as MIDAS, or in various repositories of the manufacturing information; and 2) the waste stream is characterized by the definition found in federal and state regulations (reactive), the treatment standard for the explosive subcategory of reactive wastes is technology based (DEACT), not concentration based, and treatment standards found in Utah Administrative Code R315-268 expressed as technologies take precedence over treatment standards expressed as concentrations. In addition, due to the similarity of various CADs and PADs, detailed characterization of each item is not necessary nor will be performed as characterizing one item may adequately represent a group as large as 100 having separate NSNs. A review of like items will be done to determine which item or items will be characterized as necessary to conduct the bench scale and validation test(s). The important data needed to conduct the bench scale tests and treat an energetic material containing item are the accessibility of the energetic material, the energetic material content, and the aluminum content and surface area. As stated above, this information is typically available from various databases such as the MIDAS database.

5.3.1.1. Bench scale tests are conducted by placing the munition item in a bath of caustic at a temperature of 212 °F or higher and measuring the time to access the energetic to determine its accessibility. Successfully tested munitions will be processed at varying quantities in the hydrolysis system to validate efficacy of the process.

5.3.1.2. The objective of the validation tests is to set and confirm the final operating conditions. The important criteria are to maintain the hydrogen concentration in the off-gas at less than 2% which represents 50% of the lower flammability limit and to produce energetic-free solid and liquid effluents. Excessive hydrogen production may limit the batch size or require initial reaction at a lower temperature followed by heating to 212°F or greater as the final soak temperature. A 25% margin shall be added to the time required to achieve energetic-free effluents to assure destruction of energetic material in all production runs. The initial test is performed at 1/4 batch size with submersion for the access time plus 30 minutes. If the concentration of hydrogen in the off-gas is less than 2%, then no adjustment in batch size or initial temperature is required. If the concentration is greater than 2%, then the batch size must be reduced to  $100\% / 4*C_{H2}$  (C<sub>H2</sub> is the concentration of hydrogen gas) of the original size, or the starting temperature must be adjusted downward and the test repeated. Note that the bath temperature will still be raised to 212°F or greater for the time required for accessing plus 30 minutes after the aluminum reaction slows down. The solid and liquid effluents shall be analyzed to verify that the energetic material concentrations are low enough that they do not present a potential reactive hazard.

**5.3.2.** Hydrolysis Residue: Residues collected in the hydrolysis tanks shall be managed as one waste stream. The residue shall be sampled and analyzed in accordance with Section 1 of this Attachment.

**5.3.3.** Discarded Process Equipment: Any discarded process equipment shall be inspected to ensure all contamination has been removed and is therefore exempt from regulation.

5.4. Analysis Supplied by Off-site Facilities [Utah Administrative Code, R315-264-13(b)(5)]

5.4.1. The Environmental Management Division (EMD) shall ensure that the waste analysis for wastes to be transferred is available and includes at a minimum the analysis of the same parameters wastes generated in a similar manner at TEAD are analyzed for.

**5.5.** Additional Requirements for Wastes Generated Off-Site [Utah Administrative Code, R315-264-13(c)]

5.5.1. Hazardous waste (explosives) received from TEAD-S or other DOD facilities shall be inspected at the time of arrival to insure that containers in the shipment match information included in the accompanying manifest. The operator who receives the shipment of hazardous waste shall:

5.5.1.1. Verify the manifest document number on each container label matches the unique number assigned to the manifest accompanying the shipment.

5.5.1.2. Verify that the number and type(s) of containers in the shipment match the number and type(s) of containers specified on the shipping document.

5.5.1.3. Verify that the explosive type and quantity of the contents of the container match the physical description found on the container label. Every container in the shipment shall be opened to verify this. This requirement will not apply to unused ammunition shipped in their original containers. Type and quantity of unused munitions shall be verified by the nomenclature marked on the outside of the containers.

5.5.1.4. Verify that the waste analysis for the waste received is available.

5.5.2. If a discrepancy is found with the manifest, the TEAD EMD shall be called (ext. 3504) for direction.

## **5.6.** Land Disposal Restriction & Notification, Waste Analysis [Utah Administrative Code, R315-268]

The management method of each waste stream generated at the hydrolysis facility is as follows:

Waste Stream	Management Method
Munitions	Deactivation (DEACT)
Tramp Material	Recycled as scrap metal (not regulated)
Hydrolysate Residue	Off-site treatment/disposal
Discarded Process Equipment	Recycled as scrap metal (not regulated)

## Table 1. SW-846 Approved Analytical Methodologies TEAD shall use the most current method

CHARACTERISTIC WASTE CODE		DEFINITION CONSTITUENT OF CONCERN	Managed at TEAD	SW-846 ANALYTICAL METHOD(S)
Ignitability	D001	Flash Point less than 140 °F	$\checkmark$	1010 or 1020
Corrosivity	D002	pH less than or equal to 2	$\checkmark$	9040 or 9045
		or greater or equal to 12.5	$\checkmark$	
Reactivity	D003	Total Cyanide greater than 590 mg/kg	$\checkmark$	9010 or 9012
		Total Sulfide greater than 500 mg/kg		9030
Toxicity (Metals)	D004	Arsenic		6010, 6020 or 7061
	D005	Barium		6010 or 6020
	D006	Cadmium	$\checkmark$	6010 or 6020
	D007	Chromium	$\sim$	6010, 6020, 7195, 7196, 7197, 7198 or 7199
	D008	Lead		6010 or 6020
	D009	Mercury	$\checkmark$	6020, 7470 or 7471
	D010	Selenium		6010, 6020, 7741 or 7742
	D011	Sliver	~	6010 or 6020
Toxicity	D012	Endrin		8081
(Pesticides/Herbicides)	D013	Lindane		8081
	D014	Methoxychlor		8081
	D015	Toxaphene		8081
	D016	2,4 D		8151
	D017	2,4,5- TP (Silvex)		8151
	D020	Chlordane		8081
	D031	Heptachlor & (hydroxide)		8081
Toxicity (Organics)	D018	Banzana	1	8015 8021 or 8260
Toxicity (Organics)	D010	Carbon Tetrachloride	✓	8013, 8021 01 8200 8021 or 8260
	D019	Chlordane	1	8081
	D020	Chlorobenzene		8021 or 8260
	D021	Chloroform	$\checkmark$	8021 or 8260
	D023	o-Cresols	$\checkmark$	8041 or 8270
	D024	m-Cresol		8041 or 8270
	D025	p-Cresol	$\checkmark$	8041 or 8270
	D026	Cresol (Total)	$\checkmark$	8041 or 8270
	D027	1,4 Dichlorobenzene		8021, 8121, or 8260
	D028	1,2 Dichloroethane	$\checkmark$	8021 or 8260
	D029	1,1 Dichloroethylene	$\checkmark$	8021 or 8260
	D030	2,4 Dinitrotoluene	$\checkmark$	8091 or 8270
	D032	Hexachlorobenzene		8121 or 8270
	D033	Hexachloro 1,3 butadiene	$\checkmark$	8121 or 8270
	D034	Hexachloroethane		8270
	D035	Methyl Ethyl Ketone	$\checkmark$	8015
	D036	Nitrobenzene	$\checkmark$	8091 or 8270
	D037	Pentachlorophenol	$\checkmark$	8041 or 8270
	D038	Pyridine		8015, or 8260
	D039	Tetrachloroethylene	$\checkmark$	8021 or 8260

	D040	Trichloroethylene	$\checkmark$	8021 or 8260
	D041	2,4,5 Trichlorophenol		8041 or 8270
	D042	2,4,6 Thichlorophenol	$\checkmark$	8041 or 8270
	D043	Vinvl Chloride	✓	8021 or 8260
CHARACTERISTIC	WASTE	DEFINITION	Managed	SW-846 ANALYTICAL
	CODE	CONSTITUENT OF CONCERN	at TEAD	METHOD(S)
Spent Halogenated Solvents	F001	Carbon Tetrachloride	$\checkmark$	8021 or 8260
used in Degreasing		Methylene Chloride	$\checkmark$	8021 or 8260
		1,1,1 Trichloroethane	$\checkmark$	8021 or 8260
		Tetrachloroethylene	$\checkmark$	8021 or 8260
		Trichloroethylene		8021 or 8260
		Chlorinated Fluorocarbons		8021 or 8260
Spent Halogenated Solvents	F002	Chlorobenzene		8021 or 8260
		Methylene Chloride	✓	8021 or 8260
		Ortho-Dichlorobenzene		8021, 8121 or 8260
		Tetrachloroethylene		8021 or 8260
		1,1,1 Trichloroethane	$\checkmark$	8021 or 8260
		Trichloroethylene	$\checkmark$	8021 or 8260
		Trichlorofluoromethane	~	8021 or 8260
		1,1,2 Trichloroethane		8021 or 8260
		1,1,2 Trichloro-		8260
		1,2,2 trifluoroethane		
Spent nonhalogenated Solvents		Acetone	$\checkmark$	8015 or 8260
	F003	n-Butyl Alcohol	$\checkmark$	8260
		Cyclohexanone	$\checkmark$	8260
		Ethyl acetate	$\checkmark$	8015 or 8260
		Ethyl Benzene	$\checkmark$	8015, 8021 or 8260
		Ethyl Ether	$\checkmark$	8015 or 8260
		Methanol	$\checkmark$	8015 or 8260
		Methyl Isobutyl Ketone	$\checkmark$	8260
		Xylene	$\checkmark$	8021 or 8260
Spent nonhalogenated Solvents	F004	Cresols	$\checkmark$	8041 or 8270
		Cresylic Acid		8041 or 8270
		Nitrobenzene	$\checkmark$	8091 or 8270
Spent nonhalogenated Solvents	F005	Carbon Disulfide	$\checkmark$	8260
		Isobutanol	$\checkmark$	8260
		Methyl Ethyl Ketone	$\checkmark$	8015 or 8260
		Pvridine		8015 or 8260
		Toluene	$\checkmark$	8021 or 8260
		Benzene	✓	8021 or 8260
		2 Ethoxy ethanol		8260
		2 Nitropropane		8260
California List Land Ban	тох	Total Organic Halides	✓	9020 or 9022
Restrictions				
	TOC	Total Organic Carbon	$\checkmark$	9060

GENERAL WASTE STREAM TITLE	POSSIBLE PHYSICAL STATES	SAMPLING METHOD	CHEMICAL/PHYSICAL ANALYSIS*	ANALYTICAL METHOD(S)
Surface Coating/Related Wastes	· Sludge	Trier	· Ignitability	1010, or 1020
	· Solid	Auger	<ul> <li>TC Metals</li> </ul>	7000 series
	· Liquid	Coliwasa or	<ul> <li>TC Organics</li> </ul>	8260 and/or 8270
		glass tube	<ul> <li>Total Organic Carbon</li> </ul>	9060
(organical Cleaning/Related Wastes	· Debris	Trion	Ignitability	1010 or 1020
(organics)	• Sludge	Colineaca or	• Ignitability	1010, of 1020
	· Liquiu	dlass tubo	TC Organics	8260 and /or 8270
	• Moist granules	Trier	Spent Solvents	8260  and / or  8270
	Moist grandles	THE	F001-F005	6200 and 61 627 6
Petroleum Oil & Lubricant Wastes	· Sludge	Trier	<ul> <li>Total Organic Halides</li> </ul>	9020 or 9022
	· Liquid	Coliwasa or	· Ignitability	1010 or 1020
		glass tube		
Chemical Cleaning/Related Wastes	· Liquid	Coliwasa or	· Corrosivity	9040, or 9045
		glass tube	· TC Metals	7000 series
	· Sludge	Trier	• Reactivity (cyanide)	9010, or 9012
Thermal Treatment Residues	• Dry powder	Trier	• TC Metals	7000 series
	Packed powder	Auger	• Reactivity (explosive)	See notes below
Spent Blast Grit	• Dry powder	Trier	· TC Metals	7000 series
IRP Derived Wastes	· Liquid	Coliwasa or	• Generator Knowledge	
		glass tube	<ul> <li>Ignitability</li> </ul>	1010 or 1020
	<ul> <li>Dry powder</li> </ul>	Trier	<ul> <li>Corrosivity</li> </ul>	9040 or 9045
	<ul> <li>Packed powder</li> </ul>	Auger	<ul> <li>Reactivity (cyanide)</li> </ul>	9010 or 9012
	<ul> <li>Sludge</li> </ul>	Trier	· Reactivity (sulfide)	9030
	<ul> <li>Moist granules</li> </ul>	Trier	• TC Metals	7000 series
			• TC Organics	8260 and/or 8270
			• TC Pesticides	8250
Miscellaneous (Orphan) Wastes	· Liquid	Coliwasa or	· Generator Knowledge	Material Safety Data Sheet
		glass tube	<ul> <li>Ignitability</li> </ul>	1010 or 1020
	• Dry powder	Trier	Corrosivity	9040 or 9045
	Packed powder	Auger	• Reactivity (cyanide)	9010 or 9012
	• Sludge	Trier	• Reactivity (sulfide)	9030
	<ul> <li>Moist granules</li> </ul>	Trier	• TC Metals	7000 series
			TC Organics	8260 and/or 8270
			IC Pesticides	8270

## Table 2. Sampling/Analytical Methodology Summary

\* Refer to Table 1, SW-846 Approved Analytical Methodologies for constituents of concern contained in each analyte group (Latest version of test methods are to be used) TC refers to

	Code	Characteristic/	Regulatory	Waste Classification	Land Disposal Restriction based on		n based on
		Constituent of	Level	Subcategory	CCWF*	CCW/*	TBS*
		Concern			CCWB		105
~	D001	Ignitability	Flash point less than 140 °F	High TOC ignitable liquids TOC greater than 10%	<	A	FSUBS; RORGS; or INCIN
~				Ignitable compressed gases			DEACT
~				Oxidizers			DEACT
~	D002	Corrosivity	pH less than or equal to 2 or	Acid			DEACT
~			pH greater than or equal to 12.5	Alkaline			DEACT
	D003	Reactivity	Sulfide producing	Reactive sulfides			DEACT (may not be diluted)
			Cyanide producing	Total		590 mg/kg	
			Cyanide producing	Amenable		30 mg/kg	
			Class A or B explosive	Explosive			DEACT
	D004	Arsenic	5.0 mg/l (TCLP)		5.0 mg/l		
	D005	Barium	100 mg/l (TCLP)		100 mg/l		
~	D006	Cadmium	1.0 mg/l (TCLP)		1.0 mg/l		
~				Cadmium containing batteries			RTHRM
~	D007	Chromium(total)	5.0 mg/l (TCLP)		5.0 mg/l		
~	D008	Lead	5.0 mg/l (TCLP)		5.0 mg/l		
V	D009	Mercury	0.2 mg/l (TCLP)	Low mercury- less than 260 mg/kg	0.2 mg/l		
				High mercury- greater than or equal to 260 mg/kg, containing organics also, and not an			RMERC

## Table 3. Land Disposal Restrictions Standards/Technologies

Code	Characteristic/	Regulatory	Waste Classification	Land Dispo	sal Restriction bas	ed on
	Constituent of Concern	Level	Subcategory	CCWE*	CCW*	TBS*
	Jondorn		incinerator residue			120
D010	Selenium	1.0 mg/l (TCLP)		1.0 mg/l		
✓ D011	Silver	5.0 mg/l (TCLP)		5.0 mg/l		
✓ D018	Benzene	0.5 mg/l (TCLP)		0.5 mg/l		
✓ D019	Carbon Tetrachloride	0.5 mg/l (TCLP)		0.5 mg/l		
✓ D020	Chlordane	0.03 mg/l(TCLP)		0.03 mg/l		
D021	Chlorobenzene	100 mg/l (TCLP)		100 mg/l		
✓ D022	Chloroform	6.0 mg/l (TCLP)		6.0 mg/l		
✓ D023	o-Cresol	200 mg/l (TCLP)		200 mg/l	-	
✓ D025	p-Cresol	200 mg/l (TCLP)		200mg/l		
✓ D026	Cresol (total)	200 mg/l (TCLP)		200 mg/l		
D027	1,4 Dichlorobenzene	7.5 mg/l (TCLP)		7.5 mg/l		
✓ D028	1,2 Dichloroethane	0.5 mg/l (TCLP)		0.5 mg/l		
✓ D029	1,1 Dichloroethylene	0.7 mg/l (TCLP)		0.7 mg/l		
✓ D030	2,4 Dinitrotoluene	0.13 mg/l (TCLP)		0.13 mg/l		
D031	Heptachlor & epoxide	.008 mg/l (TCLP)		.008 mg/l		
✓ D032	Hexachlorobenzene	0.13 mg/l (TCLP)		0.13 mg/l		
✓ D033	Hexachlorobutadiene	0.5 mg/l (TCLP)		0.5 mg/l		
D034	Hexachloroethane	3.0 mg/l (TCLP)		3.0 mg/l		
✓ D035	Methyl Ethyl Ketone	200 mg/l (TCLP)		200 mg/l		
✓ D036	Nitrobenzene	2.0 mg/l (TCLP)		2.0 mg/l		
✓ D037	Pentachlorophenol	100 mg/l (TCLP)		100 mg/l		
D038	Pyridine	5.0 mg/l (TCLP)		5.0 mg/l		
✓ D039	Tetrachloroethylene	0.7 mg/l (TCLP)		0.7 mg/l		
✓ D040	Trichloroethylene	0.5 mg/l (TCLP)		0.5 mg/l		

Code	Characteristic/	Regulatory	Waste Classification	Land Dispos	al Restriction based o	n
	Constituent of	Level	Subcategory			
	Concern			CCWE*	CCW*	TBS*
D041	2,4,5 Trichlorophenol	0.5 mg/l (TCLP)		0.5 mg/l		
✓ D042	2,4,6 Trichlorophenol	2.0 mg/l (TCLP)		2.0 mg/l		
(						
✓ D043	Vinyl chloride	0.2 mg/I (TCLP)		0.2 mg/l		
✓ E001	Acotono	Detectable (TCLD)		0.50 mg/l		
- F001	n-Butyl alcohol	Detectable (TCLI)		5.00  mg/l		
-1003	Carbon disulfide	Detectable (TCLP)		4.81 mg/l		
1	Carbon tetrachloride	Detectable (TCLP)		0.96 mg/l		
	Chlorobenzene	Detectable (TCLP)		0.95  mg/l		
$\checkmark$	Cresols	Detectable (TCLP)		0.05 mg/l		
~	Cyclohexanone	Detectable (TCLP)		0.75 mg/l		
	1.2 Dichlorobenzene	Detectable (TCLP)		0.125  mg/l		
~	Ethyl acetate	Detectable (TCLP)		0.75  mg/l		
~	Ethylbenzene	Detectable (TCLP)		0.053  mg/l		
$\checkmark$	Ethyl ether	Detectable (TCLP)		0.75 mg/l		
	2 Ethoxy ethanol	Detectable (TCLP)			INCIN	
✓	Isobutanol	Detectable (TCLP)		5.00 mg/l		
$\checkmark$	Methanol	Detectable (TCLP)		0.75 mg/l		
$\checkmark$	Methylene chloride	Detectable (TCLP)		0.96 mg/l		
✓	Methyl ethyl ketone	Detectable (TCLP)		0.75 mg/l		
✓	Methyl isobutyl ketone	Detectable (TCLP)		0.33 mg/l		
✓	Nitrobenzene	Detectable (TCLP)		0.125 mg/l		
	2-Nitropropane	Detectable (TCLP)			INCIN	
	Pyridine	Detectable (TCLP)		0.33 mg/l		
✓	Tetrachloroethylene	Detectable (TCLP)		0.05 mg/l		
$\checkmark$	Toluene	Detectable (TCLP)		0.33 mg/l		
✓ F001	1,1,1 Trichloroethane	Detectable (TCLP)		0.41 mg/l		
-F005	5 1,1,2 Trichloro-1,2,2	Detectable (TCLP)		0.96 mg/l		
	tetrafluoroethane					
<ul> <li></li></ul>	Trichloroethylene	Detectable (TCLP)		0.091 mg/l		
<ul> <li>Image: A start of the start of</li></ul>	Trichlorofluoromethane	Detectable (TCLP)		0.96 mg/l		
$\checkmark$	Xylene	Detectable (TCLP)		0.15 mg/l		

#### California List

Liquid hazardous wastes, including free liquids associated with any solid or sludge, containing the following metals or compounds of these metals at concentrations greater than or equal to those specified: Thallium => 130 mg/l

Nickel => 130 mg/l

✓ Liquid hazardous wastes containing PCBs at concentrations greater than or equal to 50 ppm

Hazardous wastes containing Halogenated Organic Compounds (TOX) at concentrations greater than or equal to 1000 mg/kg or 1000mg/l

1	Characteristic/	Regulatory	Waste Classification	Land Dispo	sal Restriction ba	ised on
	Constituent of	Level	Subcategorv			
	Concern			CCWE*	CCW*	TBS*
NOTES:	✓ indicates managed	d at TEAD		30112		
	CCWE* => Constitu	uent Concentrations in	Waste Extract (40 CFR 268.41)			
	TBS* => Technolog	y Based Standards (40	CFR 268.42)			
	CCW* => Constitue	nt Concentrations in W	aste (40 CFR 268.43)			
	The above mentione	ed sections in section 2	68 should be consulted if further in	formation is require	ed	
				io roquire		
					S	

## Figure 1

## WASTE STREAM EVALUATION FORM

Waste Stream Name	Date
Waste Stream Number:	
Current Waste Stream Analytical Date:	
EPA Waste Codes:	
Brief Process Description:	
Material(s) Used (paint, solvent, etc.)	
Changes In Process Since Last Analytical (material	or procedural):
Comments:	
Is a New Waste Stream Analytical Necessary? YE	CS NO

Signature\_\_\_\_\_

## 6.0. OB/OD

## 6.1. Waste Appropriate for Treatment

6.1.1. Open burning (OB)/open detonation (OD) operations at TEAD are limited to the treatment of energetic wastes. The energetic wastes meet one or more of the following conditions:

6.1.1.1. The waste is capable of detonation explosive reaction if it is subjected to a strong initiating source or if heated under confinement.

6.1.1.2. The waste is readily capable of detonation or explosive decomposition or reaction at standard temperatures and pressure.

6.1.1.3. The waste is considered a forbidden explosive as defined by 49 CFR 173.51.

6.1.1.4. The waste is one of the following Class 1 explosives as defined by 49 CFR 173.50.

6.1.2. Class 1 explosives that are appropriate for treatment by OB/OD are:

6.1.2.1. Division 1.1 (Class A) - consists of explosives that have a mass explosion hazard. A mass explosion hazard is one that affects almost the entire load instantaneously.

6.1.2.2. Division 1.2 (Class A or B) - consists of explosives that have a projection hazard but not a mass explosion hazard.

6.1.2.3. Division 1.3 (Class B) - consists of explosives that have a fire hazard and either a minor blast hazard or a minor projection hazard or both.

## 6.2. Physical and Chemical Characteristics of Wastes

6.2.1. The wastes treated by OB/OD at TEAD consist primarily of military energetic materials that have exceeded their shelf life and off-specification versions of these same materials. These munitions are no longer serviceable and need to be destroyed. The off-specification items generally are composed of the same raw material as the usable items, but for one or more reasons they do not meet some performance specifications. For off-specification items, the same conclusions can be drawn regarding appropriate treatment based on published data. It is not likely that a difference in the composition of off-specification materials will render them unacceptable for OB/OD treatment, since in all cases they will be reactive.

6.2.2. When ordnance items are demilitarized because shelf lives have been exceeded or because deterioration of the energetic compound or container (casing) has occurred, any change in chemical or physical characteristics of the energetic constituents would not affect the choice of treatment technique. The overall chemical composition and resulting combustion products will not be affected, because the energetic materials are composed chiefly of carbon, hydrogen, and

nitrogen. Concentrations of inorganics such as metallic compounds also will not change, nor will the likely combustion products.

## 6.2.1. Waste Constituents

6.2.1.1. Process knowledge and munitions specifications are used to obtain the necessary chemical and physical data for treatment of explosive material at the OB/OD Unit. A summary of the primary chemical constituents of energetic material items that might be treated in OB/OD is presented in Table 4.

6.2.1.2. A complete munitions and/or ordnance item includes several components. Typical components may include a projectile, a propellant charge, and a primer that ignites the propellant. Other components such as a casing, fuzes, and bursting charge are frequently included. With few exceptions, these components contain one single energetic compound or a mixture of energetic compounds. The U.S. Army has been conducting a study to compile a computerized database of the composition of individual military energetic material items as a component of the Munitions Items Disposition Action System (MIDAS). The MIDAS database is developed by the U.S. Army Defense and Ammunition Center School. Information available from MIDAS on item-specific specifications is used to characterize items treated in the OB/OD Unit. The MIDAS computerized database includes complete composition information (energetic and non-reactive components) for over 3,000 munitions.

6.2.1.3. Munitions and ordnance items that may be treated at the OB/OD Unit can be grouped into the following consolidated families. They are:

6.2.1.3.1. Small a	arms, fuzes, and primers.
6.2.1.3.1.a.	Small arms ammunition less than or equal to 50 caliber, all types
6.2.1.3.1.b.	Fuzes, all types
6.2.1.3.1.c.	Primers, squibs, detonators, and other devices used to initiate
detonation	

6.2.1.3.2. Smokes and dyes

6.2.1.3.3. Pyrotechnics

- 6.2.1.3.4. High-explosive loaded projectiles
  6.2.1.3.4.a. Gun ammunition greater than 50 caliber and less than or equal to 40 mm, all types except smoke, riot control agents, or chemical
  6.2.1.3.4.b. Gun ammunition greater than 40 mm, all types except smoke, riot control agents, or chemical
  6.2.1.3.5. Rockets and missiles
- 6.2.1.3.6. Bombs, torpedoes, and depth charges
- 6.2.1.3.7. Riot control agents

- 6.2.1.3.8. Bulk explosives (except fuzes, detonators, and related items)
- 6.2.1.3.9. Grenades and mines (all types except smoke, riot control agents, chemical,

or fuzes)

- 6.2.1.3.10. Navy gun ammunition (all types except propellant charges)
- 6.2.1.3.11. Special function projectiles
- 6.2.1.3.12. Propellants and propellant charges6.2.1.3.12.a. Propellants6.2.1.3.12.b. Propellant charges
- 6.2.1.3.13. Inert loaded items (no energetics and not appropriate for OB/OD)

6.2.1.3.14. Miscellaneous Items
6.2.1.3.14.a. Miscellaneous items (primarily related to aircraft ejection systems)
6.2.1.3.14.b. Miscellaneous items (primarily not related to aircraft ejection systems)

PROPELLANTS			
<u>Chemical Formula</u>			
C <sub>12</sub> H <sub>16</sub> (ONO <sub>2</sub> ) <sub>4</sub> O <sub>6</sub>			
$C_3H_5N_3O_9$			
$CH_4N_4O_2$			
	PROPELLANTSChemical Formula $C_{12}H_{16}(ONO_2)_4O_6$ $C_3H_5N_3O_9$ $CH_4N_4O_2$		

## TABLE 4. GENERAL CHEMICAL COMPOSITION OF MILITARY ITEMSTREATED AT THE OB/OD UNIT

These three primary constituents can be used singly or in various combinations along with metals, metallic salts, and organic polymer binders.

PRIMARY EXPLOSIVES			
Name	Chemical Formula		
Lead Azide	H <sub>6</sub> Pb (71% Pb)		
Mercury Fulminate	C <sub>2</sub> HgN <sub>2</sub> O <sub>2</sub> (70.5% Hg)		
Diazodinitrophenol (DDNP)	$C_6H_2N_4O_5$		
Lead Styphnate	C <sub>6</sub> HN <sub>3</sub> O <sub>8</sub> Pb (44.2% Pb)		
Tetracene	$C_2H_8N_{10}O$		
Potassium Dinitrobenzofuroxane (KDNBF)	$C_6H_2N_4O_6K$		
Lead Monomitroresorcinate (LMNR)	C <sub>6</sub> H <sub>5</sub> NO <sub>4x</sub> Pb (57.5% Pb)		
Ingredients to Rocket Propellant: Copper Monobasic Salicylate Lead Salicylate	$\begin{array}{c} C_{14}H_{12}Cu_{2}O_{8} \\ C_{14}H_{10}O_{6}Pb \end{array}$		
Fuels: Lead Thiocyanate Antimony Sulfide Calcium Silicide	Pb(SCN) <sub>2</sub> (64% Pb) S <sub>5</sub> Sb <sub>2</sub> CaSi <sub>2</sub>		
Oxidizers: Potassium Chlorate Ammonium Perchlorate Barium Nitrate Calcium Resinate Strontium Peroxide Barium Peroxide Strontium Nitrate Potassium Perchlorate	$\begin{array}{l} KClO_3 \\ NH_4ClO_4 \\ N_2O_6Ba \\ Ca(C_{44}H_{62}O_4)_2 \\ SrO_2 \\ BaO_2 \\ Sr(NO_3)_2 \\ KClO_4 \end{array}$		

Primary compositions include a mixture of primary explosive (as shown above), fuels, oxidizers, and binders (e.g., paraffin wax).

#### TABLE 4. (Continued)

#### BOOSTER AND SECONDARY EXPLOSIVES (High Explosives)

#### <u>Name</u>

#### **Chemical Formula**

#### Aliphatic Nitrate Esters:

1,2,4-Butanetriol Trinitrate (BTN) Diethyleneglycol Dinitrate (DEGN) Nitroglycerine (NG) Nitrostarch (NS) Pentaerythritol Tetranitrate (PETN) Triethylene Glycol Dinitrate (TEGDN) 1,1,1-Trimethylethane Trinitrate (TMETN) Nitrocellulose (NC)

#### Nitramines:

Cyclotetramethylene Tetranitramine (HMX) Cyclotrimethylene Trinitramine (RDX) Ethylenedimine Dinitrate (EDDN, Haleite) Nitroguanidine (NQ) 2,4,6-Trinitrophenylmethylnitramine (Tetryl) Ammonium Picrate (Explosive D) 1,3-Diamino-2,4,6-Trinitrobenzene (DATB) 2,2'4,4'6,6'-Hexanitroazobenzene (HNAB) Hexanitrostilbene (HNS) 1,3,5-Triamino-2,4,6-Trinitrobenzene (TATB) 2,4,6-Trinitrotoluene (TNT) Ammonium Nitrate  $C_4H_7N_3O_9$   $C_4H_8N_2O_7$   $C_3H_5N_3O_9$   $C_6H_7(OH)_X(ONO_2)_Y$  where X - Y = 3  $C_5H_8N_4O_{12}$   $C_6H_{12}N_2O_8$   $C_5H_9N_3O_9$  $C_{12}H_{16}(ONO_2)_4O_6$ 

 $\begin{array}{c} C_4 H_8 N_8 O_8 \\ C_3 H_6 N_6 O_6 \\ C_2 H_6 N_4 O_4 \\ C H_4 N_4 O_2 \\ C_7 H_5 N_5 O_8 \\ C_6 H_3 N_3 O_7 H_3 N \\ C_6 H_4 N_5 O_6 \\ C_{12} H_4 N_8 O_{12} \\ C_{14} H_2 N_6 O_{12} \\ C_6 H_6 N_6 O_6 \\ C_7 H_5 N_3 O_6 \\ H N O_3 H_3 N \end{array}$ 

#### COMPOSITIONS

#### **Binary Mixtures:**

Amotols (ammonium nitrate + TNT) Composition A (RDX + Desensitizer) Composition B (RDX + TNT) Composition C (RDX + Plasticizer) Ednatols (Haleite + TNT) LX-14 [HMX (95.5%) + Estane 5702-F1] Octols (HMX + TNT) Pentolite (PETN + TNT) Picratol [Ammonium Picrate (52%) + TNT (48%)] Tetrytols (TNT + Tetryl) Tritonal [TNT (80%) + Flaked Aluminum (20%)]

#### **Ternary Mixtures:**

Amatex 20 [RDX (40%) + TNT (40%) + Ammonium Nitrate (20%)] Ammonals (Ammonium Nitrate + Aluminum and TNT, DNT, or RDX) HBX - High Blast Explosives (TNT + RDX + AlD<sub>2</sub> Wax + Calcium Chloride) HTA-3 (HMX + TNT + Al Mixture 3) Minol-2 (TNT + Ammonium Nitrate + Aluminum) Torpex [RDX (41.6%), TNT (39.7%), Al (18.0%) Wax (0.7%)]

#### **Quaternary Mixtures:**

DBX [TNT (40%), RDX (21%), Ammonium Nitrate (21%), Al (18%)

#### Plastic Bonded Explosives (PBX):

Basic Explosive [RDX, HMX, HNS, or PETN + Polymeric Binder (Polyester, Polyurethane, Nylon, Polystyrene, Rubbers, Nitrocellulose, Teflon)]

#### **Pyrotechnics:**

Combination of: Oxidizer-Oxygen or Fluorine Fuel - Powdered Aluminum or Magnesium Binding Agents - Resins, Waxes, Plastics, Oils, Retardants Waterproofing, Color Intensifier

Source: Military Explosives, Department of the Army, Technical Manual TM9-1300-214, September 1984

## 6.2.2. Items Prohibited From Treatment

6.2.2.1. Certain items shall not be treated by OD. OD of hexachloroethane (HC), colored smoke, white phosphorus (WP), bulk red phosphorous (RP), depleted uranium (DU), and riot control munitions are prohibited, except in emergency situations as approved by the installation commander and the Director.

6.2.2.2. Certain items shall not be treated by OB. OB of spent halogenated solvents and non-halogenated solvents that are not constituents in an explosive is forbidden (i.e., diesel fuel, gasoline, paint thinner, trichlor, solvents, etc.). OB of HC, colored smoke, WP, RP, and riot control munitions (CS, CN) is forbidden. OB of WP and RP munitions will be allowed only for emergency destruction purposes and by authorization of the installation commander and the Director.

## 6.3. Waste Analysis

6.3.1. TEAD may thermally treat any form of conventional munitions waste at any given time except the prohibited items discussed elsewhere in this Permit.

6.3.2. This waste analysis plan also provides information on characterizing the ash residue remaining in the burn pans after OB operations and determining the appropriate handling, storage, and disposal of ash residual. The most recent analytical result of the OB ash is available at the Facility.

6.3.3. Analysis of the OD treatment residue is not conducted at TEAD. TEAD periodically recovers scrap metal, casing, fragment, and related items from the OD grounds as resources allow, based on the Demil Supervisor's judgment regarding safe operation of the range. The recovered material is disposed of through the Defense Logistics Agency Disposition Services (DLADS). The Demil Operations Team will inspect and document that the recovered material is explosive free. The Ammunition Surveillance Inspector will verify the documentation.

6.3.4. All residue from the OB grounds is required to be containerized. The waste/residue needs to be packaged in containers that are compatible with the waste. Waste/residue must be stored in appropriate containers that are in good physical condition. There shall be no free liquid permitted in solid waste containers (if free liquids are encountered, they must be removed by siphoning, draining, decanting, solidification, etc.). Free liquids removed or generated must be containerized in an approved liquid container (e.g., steel closed-top drum with threaded bung and special liner, or ABS, polyurethane, or similar inert plastic drum with threaded bung). All containers must have a 3-inch head space between lid and contents in the drum. All steel-top drums must be sealed with metal lids, gaskets, and rings. All containers must be labeled with the name of the waste, waste stream number and the 12-digit container number.

6.3.5. Drums need to be placed on pallets that are in good physical condition and free of wastes, spills, or any other contamination. Four-way pallets must be utilized. Waste must be placed three drums to a pallet and banded together using steel banding.

## 6.3.6. Parameters and Rationale

## 6.3.6.1. Wastes Treated

Unless an emergency or priority treatment is necessary, TEAD does not treat any wastes at the OB/OD Unit unless adequate chemical and physical information is available to treat the waste material safely.

## 6.3.6.2. Treatment Residue

The only hazardous wastes treated at the OB pans are those that possess the RCRA characteristic of reactivity. The burn pan treatment residue shall be sampled and analyzed for reactivity prior to being removed for disposal. In addition, although not expected to be present, the burn pan treatment residue shall be sampled and analyzed for the toxicity characteristic (TC) metals using the toxicity characteristic leaching procedure (TCLP). Table 5 lists the parameters analyzed for and the rationale for the analysis.

## 6.3.7. Test Methods

## 6.3.7.1. Waste Treated

Reactive hazardous wastes are not tested prior to treatment at the OB/OD Units because of safety concerns. The physical and chemical characteristics of the reactive hazardous wastes have already been determined prior to treatment as they are included in the MIDAS database.

## 6.3.7.2. Treatment Residue

The analytical methods for analyzing the treatment residue in burn pans are shown in Table 6. Analytical procedures are from Test Methods for Evaluating Solid Waste, Physical/Chemical Methods SW-846 (SW-846), unless otherwise referenced. Laboratories performing these analyses will operate in conformance with the TEAD Quality Assurance Program Plan (QAPP).

## 6.3.8. Sampling Methods

## 6.3.8.1. Waste Treated

Sampling and analyses of reactive hazardous wastes treated at the OB/OD Unit are not performed.

## 6.3.8.2. Treatment Residue

The treatment residue is collected only after the burn pans have cooled to ambient temperatures. Typically, the burn pans are cleared of ash at least 24 hours after the OB. The residual ash from OB shall be sampled to ensure that the treatment has been successful in rending the waste non-reactive. The ash is collected and placed into an appropriate container. Ash is tested for TCLP metals and reactivity criteria for energetics (i.e., concentrations greater than 10%). Analytical results are kept for 3 years at the EMD office.

## 6.3.9. Frequency of Analyses

## 6.3.9.1. Wastes Treated

Sampling and analyses of reactive hazardous wastes treated at the OB/OD Unit are not performed.

## 6.3.9.2. Treatment Residue

Because of the low volume of OB ash and waste stream consistency these tests shall be conducted every 3 years.

## 6.3.10. Additional Requirements for Waste Generated Off-Site

Currently, TEAD does not accept waste from off-site for treatment at the OB/OD Unit except from Tooele Army Depot South Area (TEAD-S) and, on an emergency treatment basis from the 62nd Ordnance Group. Munitions are treated the same day (weather permitting) that they are received at the OB/OD Unit. In the case of weather delays, the munitions will be stored in place, in accordance with the OB/OD/SF Standard Operating Procedures, until conditions permit treatment to commence.

## 6.3.11. Additional Requirements for Ignitable, Reactive or Incompatible Wastes

All ordnance items treated at the OB/OD Unit are reactive. Ignitable and corrosive wastes shall not be managed at the OB/OD Unit unless they are primarily reactive; therefore, there is no need for additional requirements to handle ignitable or corrosive waste.

## 6.3.12. Land Disposal Restrictions

6.3.12.1. The explosive wastes treated at the OB area have the RCRA characteristic of reactivity (D003). The Land Disposal Restrictions (LDR) treatment requirements listed in Utah Administrative Code R315-268-40 for explosives subcategory D003 wastes is deactivation and attainment of the treatment standards listed in Utah Administrative Code R315-268-48. Underlying hazardous constituents that may be present in the wastes treated are listed in Utah Administrative Code R315-268-48. OB achieves the LDR treatment standard for deactivation. Ash from OB is analyzed to determine whether it is a hazardous waste because of reactivity or exhibits the TCLP. These analyses are also used to determine whether LDR treatment standards are met or whether treatment in accordance with the LDR is required.

6.3.12.2. Analytical results from the OB ash residues in conjunction with TCLP criteria for metals and reactivity criteria for energetics (i.e., concentrations greater than 10%) shall be used to determine if waste from OB that is being disposed of off site are hazardous.

Wastes	Parameters	Rationale
Burn pan treatment residue	TC leaching procedure	Generate leachate
Burn pan treatment residue	TC arsenic	Determine if treatment residue
		exceeds TC level for arsenic
Burn pan treatment residue	TC barium	Determine if treatment residue
		exceeds TC level for barium
Burn pan treatment residue	TC cadmium	Determine if treatment residue
		exceeds TC level for cadmium
Burn pan treatment residue	TC chromium	Determine if treatment residue
		exceeds TC level for chromium
Burn pan treatment residue	TC lead	Determine if treatment residue
		exceeds TC level for lead
Burn pan treatment residue	TC mercury	Determine if treatment residue
		exceeds TC level for mercury
Burn pan treatment residue	TC selenium	Determine if treatment residue
		exceeds TC level for selenium
Burn pan treatment residue	TC silver	Determine if treatment residue
		exceeds TC level for silver
Burn pan treatment residue	TC 2,4-dinitrotoluene	Determine if treatment residue
		exceeds TC level for
-		2,4-dinitrotoluene
Burn pan treatment residue	Reactivity	Determine if explosive has been
		treated

#### TABLE 5. RATIONALE FOR PARAMETERS ANALYZED
Parameter	Method	Regulatory Level (mg/L)
TCLP METALS		
Arsenic	6010, 6020 or7061	5.0
Barium	6010 or 6020	100.0
Cadmium	6010 or 6020	1.0
Chromium	6010, 6020, 7195, 7196, 7197,	5.0
	7198 or 7199	
Lead	6010 or 6020	5.0
Mercury	6020, 7470 or 7471	0.2
Selenium	6010, 6020, 7741 or 7742	1.0
Silver	6010 or 6020	5.0
ENERGETICS		
HMX	8330	*
RDX	8330	*
TNB	8330	*
DNB	8330	*
NB	8330	*
TNT	8330	*
DNT	8330	*
2NT	8330	*
3NT	8330	*
4NT	8330	*
Tetryl	8330	*

#### TABLE 6. ANALYTICAL TEST PROCEDURES AT TEAD FOR ASH

\* No regulatory level has been promulgated.

6.3.12.3. If the ash does not meet the LDR treatment standards for TCLP, with each shipment of waste, TEAD shall notify the facility receiving the waste in writing of the appropriate treatment standards. The notice will include the following information:

- 6.3.12.3.1. EPA hazardous waste number(s);
- 6.3.12.3.2. The corresponding treatment standard(s);
- 6.3.12.3.3. The manifest number associated with the shipment of waste; and
- 6.3.12.3.4. Waste analysis data.

6.3.12.4. If the ash meets LDR treatment standards, and the waste no longer exhibits characteristics of a hazardous waste (reactivity or toxicity), it may be disposed of as a nonhazardous waste at a Subtitle D landfill. Required notifications and certifications shall be submitted to U.S. EPA. The notification will include the following information:

6.3.12.4.1. Name and address of the facility receiving the waste shipment;

6.3.12.4.2. Description of the waste as initially generated, including applicable EPA hazardous waste number; and

6.3.12.4.3. Treatment standards applicable to the waste at the initial point of generation.

6.3.12.5. The certification shall be signed by an authorized representative of TEAD and shall state the following:

I certify under the penalty of law that I have personally examined and am familiar with the waste through analysis and testing or through knowledge of the waste to support this certification that complies with the treatment standards specified in Utah Administrative Code R315-268-40, and all applicable prohibitions set forth in Utah Administrative Code R315-268-32. I believe that the information I submitted is true, accurate, and complete. I am aware that there are significant penalties for submitting a false certification, including the possibility of a fine and imprisonment.

# 6.3.13. Quality Assurance

QA procedures for laboratory analysis of wastes shall be followed according to the latest edition of <u>Test Methods for Evaluating Solid Waste, Physical/Chemical Methods SW-846</u>, (SW-846) and Attachment 22 Quality Assurance Program Plan (QAPP). Chain-of-custody procedures that conform to the U.S. EPA requirements contained in SW-846 shall be applied.

#### 6.4. Management of Ash and Residues

This section contains the practices and procedures for the management of ash and residue generated by the OB/OD of waste munitions and components at the OB/OD unit.

#### 6.4.1. Open Burning Ash and Residue Management

6.4.1.1. The SOP for OB (SOP No. TE-0000-H-012) specifies the procedure for containerizing the ash and residue from the OB grounds. All ash and residue from OB is required to be containerized. The ash and residue shall be packaged in containers that are compatible with the waste and in good physical condition. Free liquids are not allowed in the containers. If free liquids are encountered, they shall be removed by siphoning, draining, decanting, solidification, or other appropriate process. Free liquids removed or generated shall be containerized in an approved liquid container (i.e., steel closed-top drum with threaded bung and special liner, or ABS, polyurethane, or similar inert plastic drum with threaded bung). All containers shall have a 3-inch head space between the lid and contents. All steel-top drums shall be sealed with metal lids, gaskets, and rings with 5/8 inch bolts. All containers shall be labeled with the following information: name of the waste, waste stream number and 12-digit container number.

6.4.1.2. After OB, pans shall be inspected and any ash collected in an appropriate container. This container is temporarily stored at the burn pan area. When the container is full, a composite sample is collected and analyzed, and within three working days the container is taken to a TEAD storage facility.

6.4.1.3. All notifications, analytical results, demonstrations, certifications, and other relevant documentation shall be retained on site in the facility operating record for at least three years. Copies of all manifests shall be retained for at least three years after the waste is shipped off site.

6.4.1.4. After OB activities are completed, the burn pans shall be inspected for partial burns. If unburned material is discovered, it shall be reburned, provided the pan is safe. Otherwise, reburning operations will be delayed overnight and conducted in accordance with SOP No. TE-0000-H-012.

6.4.1.5. Drums of ash and residue shall be placed on pallets that are in good physical condition and free of wastes, spills, or any other contamination. Four-way pallets shall be utilized. A maximum of three drums shall be placed on a pallet and banded together using steel banding.

6.4.1.6. The containers shall be stored in a Satellite Accumulation Area (SAA) at the OB/OD unit. Drums shall be locked and keys kept with the Demil Supervisor. When necessary, drums will be moved from the SAA to a 90-day accumulation area. Most wastes will be sent off site within 90 days. However, wastes that are not sent off site within 90 days shall be moved to the Building 528 permitted hazardous waste storage area. The ash and residue shall be sampled for TCLP metals and energetics. Sampling shall be performed once every 3 years. Sampling more often is not necessary due to the low generation rate of OB ash and residue and the consistency of the waste stream. The ash and residue shall be sent off-site for disposal in accordance with RCRA regulations.

#### 6.4.1.7. Analytical Parameters and Rationale

The only hazardous wastes treated at the OB pans are those that possess the RCRA characteristic of Reactivity. The burn pan treatment residue is sampled and analyzed for reactivity prior to being removed for disposal. In addition, although not expected to be present, the burn pan treatment residue is sampled and analyzed for the toxicity characteristic (TC) metals using the Toxicity Characteristic Leaching Procedure (TCLP). Tables 5 and 6 list the parameters analyzed and the rationale for the analysis.

#### 6.4.1.8. Test Methods

The methods for analyzing the ash and residue in the burn pans are shown in Table 1. Analytical procedures are from Test Methods for Evaluating Solid Waste, Physical/Chemical Methods SW-846 (SW-846), unless otherwise referenced. When necessary, samples shall be screened for high level explosive concentrations using Methods 8510 and/or 8515 of SW 846. Laboratories performing these analyses shall operate in conformance with Attachment 22 QAPP.

#### 6.4.1.9. Sampling Methods

Ash and residue from a burn pan is collected and sampled after the pan has cooled to ambient temperatures. Typically, the burn pans are cleared of ash within 24 hours of an OB event. The residual ash is sampled to ensure that the treatment has been successful in rendering the waste nonreactive. Collection, preservation and handling of ash and residue shall be conducted in accordance with Attachment 22 QAPP.

#### 6.4.1.10. Frequency of Analysis

Because of the low volume of OB ash produced and the waste stream consistency these tests shall be conducted every 3 years.

#### 6.4.2. Open Detonation Residue Management

6.4.2.1. OD is a very efficient method of treatment; very little shrapnel is generated. After each day of detonation operations, a search of the surrounding area shall be made for unexploded munitions and items. Items or materials such as lumps of explosives or unfuzed ammunition may be picked up and prepared for the next detonation. Recovery and detonation of fuzed ammunition or suspected live munitions items are treated in accordance with SOP No. TE-0000-G-010. All items or materials (fuzed, unfuzed, or live munitions) found must be detonated on the day they are found, or if they are safe to handle they shall be put into permitted storage until they are detonated.

6.4.2.2. Analysis of OD treatment residue is not conducted at TEAD. TEAD periodically recovers scrap metal, casing, fragment, and related items from the OD grounds as resources allow and based on the Range Supervisor's judgment regarding safe operation of the range. The recovered material is disposed of through the Defense Logistics Agency Disposition Services (DLADS). The Demil Team shall inspect and document that the recovered material is explosive free.

# **ATTACHMENT 3**

# **SECURITY PROCEDURES**

#### 1.0 Security Procedures and Equipment (Utah Admin. Code R315-264-14)

1.0.1. The general security provisions at the Facility include: (1) a barrier around the entire TEAD facility; (2) 24 hour, 7-day-per-week surveillance by roving patrols; (3) warning signs posted along perimeter fences to discourage unknowing or unauthorized entry; (4) internal barriers around specific facilities; (5) controlled entry to HWMUs through locked gates; (6) personnel access to the storage units, the incinerator, the Decineration<sup>™</sup> test area, and the OB/OD unit controlled by the Demil Team, the Environmental Office and the Security Office, (7) two-way radio communications between security personnel, selected employees, and a central communications center; and (8) telephone communications available at selected facilities.

1.0.2. In addition to the above, security provisions for the OB/OD Area include:

- 1.0.2.1. Entry to the area limited by posted road barricade/gate;
- 1.0.2.2. Access limited to personnel involved in ongoing operations; and
- 1.0.2.3. Restricted air space above TEAD OB/OD Area during daylight hours

extends from ground surface to 3,048 m (10,000 ft) MSL.

#### 1.1.1 Barriers and Means to Control Entry (Utah Administrative Code R315-264-14(b)(2)(i-ii))

1.1.1.1. The entire Facility is enclosed by a fence. Clear zones are maintained on either side of the perimeter fence, where possible. Clear zones are for the purpose of extending the line of sight distances for the patrolling security guards. Security personnel control gates in the perimeter fence. The main gate is open during normal duty hours Monday through Thursday and on an as-needed basis Friday through Sunday. All other gates are opened on an as-needed basis, and under security personnel supervision.

1.1.1.2. Conditions of entry signs are erected at the main gate outlining the responsibilities, limitations, and liabilities assumed by personnel entering the Facility. "No Trespassing" signs are posted every 500 feet along the perimeter fence.

1.1.1.3. In addition to perimeter fence and gates, entry to the three container storage igloos, the service magazines, the Decineration<sup>™</sup> test area, and the deactivation furnace is controlled by internal barriers. The Facility Storage Yard (Bldg 528) is enclosed with a 6-foothigh chain-link fence. A single access gate to Bldg 528 is locked unless needed. TEAD Environmental Office personnel control gate access. Entry to the OB/OD Unit is limited by posted road barricade/gate, and access is limited to personnel involved in ongoing operations.

1.1.2 24-Hour Surveillance System (Utah Administrative Code R315-264-14(b)(1))

1.1.2.1. Periodic surveillance of facilities at TEAD, including the HWMUs, is accomplished by roving security patrols. The security checks are as follows: HWMUs, Buildings 528, <u>A-101, C-514, C-815, C-816, K-401, K-402, K-403, K-404, K-801, K-802, K-803, 1368, 1369, 1370, and 1371, A-101, C-815, C-816, 1368, 1205, and 1370-1320 will be checked once per shift during non-duty hours. The security checks include perimeter barriers, gates, locks, and building exteriors.</u>

1.1.2.2. Adequate personnel are provided to man all access gates and to provide roving patrols of the administration and ammunition areas. Each roving patrol is motorized and radio equipped, and is assigned to a specific patrol area during its watch. Typical duties required by patrol members include:

1.1.2.2.1. Checking for possible intrusion or security violations.

1.1.2.2.2. Checking the security of locks to bunkers and buildings within the perimeter of the patrol area.

1.1.2.2.3. Checking the physical integrity of perimeter barriers.

1.1.2.2.4. Challenging all persons entering or exiting the patrol area who act suspicious, do not have a proper badge or who may require questioning.

1.1.3 <u>Warning Signs</u> (Utah Administrative Code R315-264-14(c))

1.1.3.1. Signs stating "U.S. Government Property -- No Trespassing" are posted along the perimeter fences at 500-foot intervals. These signs are approximately 18" by 24" and are easily visible at a distance of 25 feet. Large signs describing the "Conditions of Entry" are posted at each gate to the Facility. These signs are approximately 4' by 6' in size and warn of the possible consequences of detected unauthorized entry.

1.1.3.2. Rectangular signs with either "Danger Unauthorized Persons Keep Out" or "Caution -- Hazardous Waste Area --Unauthorized Persons Keep Out" are posted at each of the HWMUs so that they can be seen from at least 25 feet from any approach to the unit. No other language edition is necessary since English is the area's predominant language.

1.1.3.3. The entrance to the TEAD OB/OD Unit is clearly marked with signs informing personnel that detonation and/or burning activities may be occurring. During the times that the OB/OD Unit is active, Ammunition Operations personnel control access to the area. As stated earlier, all signs are in English; all persons working within the TEAD perimeter are required to be literate in English, which is the predominant language of the surrounding area. Authorized visitors who might not be literate in English, such as members of international inspection teams shall be escorted by base personnel at all times.

1.1.4 Inspection Schedule (Utah Administrative Code R315-264-15(a)-(d))

1.1.4.1 The Facility conducts regular and frequent inspections in accordance with Attachment 4 (Inspection Plan).

# **ATTACHMENT 4**

I

INSPECTION PLAN AND SCHEDULES

#### Table of Contents

1.0	) General Inspection Requirements	
2.0	Deactivation Furnace Inspection Plan	
3.0	Container Storage Facilities Inspection Plan	2
4.0	Small Caliber Disassembly Line Inspection Plan	2
5.0	O OB/OD Inspection Plan	
6.0	0 Hydrolysis Facility Inspection Plan	
7.0	0 Reserved	
8.0	0 Records	

# List of Tables and Figures

Table 1. Inspection Plan & Schedule for Deactivation Furnace    4
Table 2. Inspection Plan & Schedule for Building 528    6
Table 3. Inspection Plan & Schedule for Igloos
A-101, C-514, C-815, C-816, K401,
<u>K-402, K-403, K-404, K-801, K-802, K-803</u> <u>A-101, C-815, C-816</u> ; Above Ground
Magazine 1205; Service Magazines 1368, 1369, 1370, and 1371Service Magazines 1368,
1370; and Building 1320
Table 4.       Inspection Plan & Schedule for Hazardous Waste Loading & Unloading Areas 9
Table 5.       Inspection Plan & Schedule for Small Caliber Disassembly Line
Table 6. Inspection Plan and Schedule for OB/OD Unit       11
Table 7. Inspection Plan and Schedule for Hydrolysis Facility         12

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# 1.0 GENERAL INSPECTION REQUIREMENTS

1.1 The Permittee conducts regular and frequent inspections of the facilities and equipment used to treat, store, handle, or otherwise manage hazardous waste. These include checks for the mechanical condition of the equipment, equipment malfunctions, operator errors, structural deterioration, loss or theft of items, equipment supply, and discharges that could adversely affect the environment. Remedial actions found necessary by inspections are always completed on a time schedule that ensures that any deterioration or malfunction discovered does not lead to an environmental or human health hazard. Where a hazard is imminent or has already occurred, remedial action is taken immediately. Inspection of security and emergency equipment is carried out by security, fire and medical personnel.

1.2 The inspection schedule includes items that are considered important in preventing, detecting, or responding to environmental or human health hazards associated with hazardous waste material.

1.3 All inspection records shall be compiled and kept for 3 years. Inspection records show date and time of inspection, the name of the inspector, notations of observations made, and the date and nature of any repairs or remedial action.

1.4 The inspections outlined in this Attachment are the minimum required. All inspections required by this Permit shall be documented on forms and maintained as part of the Operating Record. Those forms are not included in this Attachment, but a list of all required inspection items, frequencies, and what is being inspected is included on the Inspection Plan and Schedules (Tables 1-7). Although the format of the inspection forms may change, all items on the Inspection Plan and Schedules shall be included on the forms and inspected.

1.5 The nature of the Facility activities requires the presence of a security force, a full-time fire department, a medical group, as well as engineering and operations groups responsible for equipment development and operation. Site security is maintained through the use of manned guard stations, patrols, barriers, and electronic monitoring equipment. Security force personnel are responsible for maintaining the communication equipment and the alarm system. Fire department personnel are responsible for dealing with emergency situations such as fires and explosions, and for maintaining emergency equipment, including fire extinguishers and other firefighting equipment. The fire department is also responsible for inspection of all facilities to identify, recognize, evaluate and control hazardous occupational environments. Medical Personnel are responsible for inspection and maintenance of all necessary medical equipment.

1.6 Security personnel patrol the Facility storage, incinerator, and OB/OD Unit perimeters to ensure against intrusion or penetration of the security system. Tests of the radio communications network are made in accordance with Federal Communications Commission (FCC) regulations. A test of the transmitting system is made every 24 hours. In addition, all units on all three shifts respond to the dispatcher every 60 minutes with their call code. A radio log is kept noting these tests. The logs are kept for 5 years in the Security Office function file. Since the emergency communication equipment is in constant use, any defect is immediately reported and repaired.

1.7The fire department at the Facility is a full-time organization. The Facility's emergencyAttachment 4 -- TEAD Inspection Planpage 1Tooele Army DepotUT3213820894

firefighting equipment is inspected daily and any defect is promptly remedied. All inspections are noted in an organizational log. All fire extinguishers at the Facility (excluding those in vehicles) are inspected monthly and a log of these inspections is kept. The fire department also inspects all facilities and logs any potential hazard and ensures its removal by the responsible organization.

1.8 A medical unit is located at the Facility. Personnel within the unit are responsible for ensuring that their emergency equipment is operational. Frequent inspections of the equipment are made and noted in the Medical Unit Log. The medical unit also participates in periodic testing and training exercises monitored by inspectors from outside the TEAD organization.

# 2.0 DEACTIVATION FURNACE INSPECTION PLAN

2.1 The inspection plan and schedule for the deactivation furnace is given below as Table 1. The inspections indicated for a daily and weekly frequency are only for times when the facility is in use. The schedules identify the items requiring inspection and the types of problems to look for.

2.2 The emergency waste feed cut off system is described in Attachment 13 (Process Control Equipment). The low limit parameters are verified automatically each time the system is started up. The PLC programming of the system has interlocks so that the system will not run unless all of the low limit parameters are satisfied. During inspections Facility furnace operators demonstrate the low limit parameters by artificially altering sensor signals and observing that the feed system stops. The waste feed rate monitoring scale is tested weekly. To test the waste feed rate monitor, the operator shall call up the test mode on the computer, which allows a two-fold check with known weights. One weight that is slightly higher than the specified feed weight for the test is placed on the scale and shall cause the red overload indicator to illuminate, and cause the conveyor to be unable to feed. A second weight that is slightly under the specified feed weight for the test is placed on the scale and shall cause the green load OK indicator to illuminate.

# 3.0 CONTAINER STORAGE FACILITIES INSPECTION PLAN

3.1 The container storage hazardous waste management units (HWMUs) requiring inspection are Building 528 (hazardous waste from Industrial Sources), Igloos <u>A-101, C-514, C-815, C-816</u>, <u>K-401, K-402, K-403, K-404, K-801, K-802, K-803</u>; Service Magazines 1368, 1369, 1370, and <u>1371A-101, C-815, C-816</u>; Service Magazines 1368, 1370; Above Ground Magazine 1205; and Building 1320 (explosive reactive hazardous waste).

3.2 These HWMUs will be inspected on a weekly basis and the inspections will be documented on logsheets specific to each facility. The inspection plan and schedules for the container storage HWMUs are given below as Tables 2and 3.

3.3 Hazardous waste transfer areas (loading and unloading) are inspected whenever containers are received or removed from storage. The inspection plan and schedule is given below on Table 4.

#### 4.0 SMALL CALIBER DISASSEMBLY LINE INSPECTION PLAN

4.1 The inspection plan and schedule for the Small Caliber Disassembly Line is given below as Table 5. The inspections indicated for a daily and weekly frequency are only for times when the facility is in use. The schedules identify the items requiring inspection and the types of problems to look for.

## 5.0 OB/OD INSPECTION PLAN

5.1 The operation of the OB/OD Unit is in accordance with the Tooele Standard Operating Procedures (SOPs). Inspections are conducted for equipment malfunctions, UXO, metal fragments, water, glass, wood, metal scraps, debris, trash, obstacles and other discharges that could threaten human health or the environment. The area is also inspected for plant matter and other potentially combustible material. The Permittee is allowed to store waste munitions in pits, pans and silos under certain conditions. When waste munitions are being stored the Permittee will conduct weekly inspections. The purpose of the inspections is to detect potential problems and correct them before they affect human health or the environment. Records of inspections and the inspection schedule are maintained in files at the Facility. All inspection logs are kept on file for at least 3 years.

5.2 The Demil Team is responsible for inspecting necessary equipment for operational readiness prior to the beginning of detonation and/or burning. If any vital equipment in the area is inoperative, has deteriorated, or is not in compliance with regulatory requirements, maintenance or replacement is initiated before operations commence. Table 6 presents a schedule for inspecting safety and emergency equipment, security devices, operating equipment, and the OB/OD Unit. This record will be maintained at the Facility for each day the OB/OD unit is operated.

5.3 At the conclusion of all detonations for the day, the area immediately surrounding the pit formed by the explosion is inspected for any possible kick-outs. If not completely destroyed, items are placed in the pit and detonated or, if unstable, detonated in place. The pits are inspected for the presence of water before OD operations. If there is water in a pit, that pit is not used.

5.4 Inspections for leaks, spills, and fugitive emissions are not applicable to the type of OB/OD operations performed at the Facility.

# 6.0 HYDROLYSIS FACILITY INSPECTION PLAN

6.1 The inspection plan and schedule for the Hydrolysis Facility is set out in Table 7, below. The inspections indicated for a daily and weekly frequency are only for times when the facility is in use. The schedules identify the items requiring inspection and the types of problems to look for.

#### 7.0 RESERVED

#### 8.0 Records

The records of inspection will be transferred to the Environmental Management Division and

maintained for a minimum of three years.

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	TABLE 1. INSPI	ECTION PLAN AN	D SCHEDULE FOR DEACTIVATION FURNACE
	Item	Frequency*	Types of Problems
	R315-264-15(b)(1)	R315-264-15(b)(4)	R315-264-15(b)(3)
Facility	Feed Housing	Daily	Inspect and clean out, if necessary. Collect and feed any live items
· ·			through the furnace. Collect and containerize any ash or residues.
	Burner Area, Fuel	Daily	Check for sufficient fuel level, look for damage, leaks, etc. in burner
	Reservoir		area and fuel lines.
	Retort/Conveyor	Daily	Check for residue build up.
	Interface Area		
	Discharge	Daily	Check for mechanical damage, remove melted/solidified metal.
	Conveyor		
	Scrap Metal	Daily	Insure that sufficient collection volume exists in drum.
	Collection Drum		
	Feed Room Floor	Daily	Collect floor sweepings in waste drum. Check feed conveyor for
			damage.
	Catch Pans	Daily	Check that empty catch pans are in position under the retort junctions
			to receive ash that may sift through during operations.
	Afterburner	Daily	Check the afterburner, burner area, and ductwork for damage and
			leaks.
	Ductwork	Daily	Check the ductwork cleanouts, and double tipping valves for damage.
			Check for adequate capacity and proper labeling in collection drum.
	Gas Monitoring	Daily	Ensure equipment is in good condition.
	Equipment	D : '1	Clark latin for later environments for the Environ that along anti-static
	Cyclone Separator	Daily	check ducting for leaks, corrosion, etc. Ensure that clean out gate is
			collection drum
	Baghouse	Daily	Check proper function of double tipping valve. Check for adequate
	Dagnouse	Dally	capacity and proper labeling of collection drum
	Draft Fan and	Daily	Inspect the fan unit for damage ductwork and fittings joints fan
	Stack	Dully	belt, etc. Inspect fan base for damage, inspect stack and duct
			connections for leaks or damage.
	Dampers	Daily	Visually inspect for damage and correct position (open or closed).
	Compressor	Daily	Check compressor and air lines for air tightness, check for rated 90 -
			100 psi pressure in tank.
	Control Panels	Daily	Ensure all main enclosure indicator lights are functional.
	Load/Unloading	Daily	Check for spills, collect for floor sweepings into waste drum.
	Areas		
	On Screen	Daily	Verify that the on-screen monitoring equipment for the following
	Monitoring		items is operational before feeding waste into the furnace: furnace
	Equipment		feed end temperature, furnace exhaust draft pressure, baghouse
	X		differential pressure, afterburner exit temperature, retort speed, pre-
			baghouse temperature, post baghouse temperature.
	Waste Feed Rate	Daily	Check that the WFRMS is not activated until all normal operating
	Monitoring System		conditions are reached.
	Fugitive Emissions	Daily	Check for visible smoke coming from the retort, feed chute, or any
		<b>~</b> "	other area of the furnace system.
	Baghouse Pressure	Daily	Verify that the delta P range is above 3.5" we during operation.
	Drop		Manually inspect the baghouse interior if delta P is outside of
			parameter.

	TABLE 1. INSPECTION PLAN AND SCHEDULE FOR DEACTIVATION FURNACE				
	Item	Frequency*	Types of Problems		
	R315-264-15(b)(1)	R315-264-15(b)(4)	R315-264-15(b)(3)		
	Tampering of Control System	Daily	Check for evidence of tampering (electrical jumpers, disconnections, etc.) of any of the feed system and feed controls.		
	Proper Program Setting	Daily	Verify correct program setting.		
	Waste Feed Cut Off Test	Weekly	Perform weekly test of the waste feed cut off system, and associated alarms. Test is described in Attachment 13 of the Permit.		
	Calibration of WFRMS Scale	Weekly	Perform weekly calibration of the WFRNS scale, as described in paragraph 2.0 above.		
General	Operating Record	As required by Module II.M	Verify that the entries in the operating record are complete and up to date. Entries include; description (common name, NSN, EPA codes, physical form, item number), process that produced the waste (characteristic wastes), quantity treated, feed rates, time and date. Verify that waste characterization data are present along with details of any incident, which requires implementation of the contingency plan. Records of repairs, emergency waste feed cut off system test results.		
Emergency Equipment	Contingency Plan	Weekly	Ensure that the Contingency Plan is present at the facility.		
	Fire Extinguisher	Weekly	Verify that the fire extinguisher is present and the pressure gauge shows the extinguisher to be operational.		
	Communication Equipment	Weekly	Verify communication equipment is present at the facility and functional.		
	Eye Wash	Weekly	Check eyewash for proper functioning.		
*= When in	use				

	TABLE 2.	INSPECTION P	LAN AND SCHEDULE FOR BUILDING 528
	Item	Frequency*	Types of Problems
	R315-264-15(b)(1)	R315-264-	R315-264-15(b)(3)
		15(b)(4)	
Facility	Doors	Weekly	Verify that the entrances to the building are closed when building is
·			not in use, check all entrances both front and back.
	Security Fence	Weekly	Verify that fence is not damaged; look for bent or torn chain links,
			bent fence posts, and loose barbwire.
	Fence Gate	Weekly	Verify lock and chain is present.
	Warning Signs	Weekly	Verify that warning signs are readable from a distance of 25 feet and
			are able to be noticed from any direction the facility may be
			approached (i.e. each side of the fence which faces away from the
			building must have warning signs).
	Leaks	Weekly	Verify that no releases to the environment have occurred by inspecting
			the interior four corners of the secondary containment base (i.e. the
			four corners of the interior of building 528) looking for liquid
			accumulation and/or discoloration of the base coating.
	Base Integrity	Weekly	Verify the integrity of the secondary containment base by inspecting
			for cracks in the concrete base or berm, or exposed concrete
			(indicating the failure of the concrete sealant).
	Odors	Weekly	Verify the absence of odors. If odors are present, it is an indication of
			a possible spill, open container, leaking container, etc.
Containers	Operating Record	As required by	Verify that all entries in the operating record are complete and up to
		Module II.M	date. Entries include; a description (common name, EPA hazardous
			waste numbers, physical form, and for characteristic wastes, the
			process that produced the waste) and quantity (weight, or volume and
			density) of each hazardous waste received and the methods (EPA
			handling codes) and dates of its treatment, storage, or disposal at the
			facility. Verify the location of the waste within the facility and the
			quantity at each location. Verify the records and results of waste
			analysis are present along with any summary reports and details of any
			incidents which required implementation of the contingency plan are
	Cantain an Labala	Westeley	present.
	Container Labels	Weekly	Verify that all containers are properly labeled.
	Proper Storage	weekiy	verify that wastes received at the facility since the fast inspection are
	Containant	Waalihu	Stored in a compatible manner.
	Containers	weekiy	defacts) and not looking. In addition, insure the containers are stored
			in the preper configuration, which is a size space 2.5 fact (minimum)
			fin the proper configuration, which is, also space 2.5 feet (infinitum),
			high and total container volume per pallet does not exceed 170
	<b>X</b>		gallons
Spill Fauip	Contingency Plan	Weekly	Ensure that the Contingency Plan is present at the facility
Spin Equip.	Fire Extinguisher	Weekly	Verify that the fire extinguishers are present and the pressure gauge
	I IIC Extinguistici	Weekiy	shows the extinguisher to be operational
	Communication	Weekly	Verify that the telephone is present at the facility and functional
	Equipment	,, conty	, only that the telephone is present at the facility and functional.
	Eve Wash	Weekly	Verify eye wash is functional
	Absorbent Material	Weekly	Verify absorbent material is present and in usable condition.

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	R315-264-15(b)(1)	R315-264-	R315-264-15(h)(3)
		15(b)(4)	1015 204-15(0)(5)
	Eye Shields	Weekly	Verify that face shields and safety glasses are present and in usable condition.
	Protective Gloves	Weekly	Verify protective gloves are present and are usable (i.e. without holes or cracks).
	Coveralls	Weekly	Verify that Tyvek suits are available at the facility and in usable condition.
Other	Material Handling Equipment	Weekly	Verify that material handling equipment performs properly by insuring that; 1) brakes function and work predictably, and 2) hydraulic lift functions properly and in a predictable manner.

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TABLE 3.           403         K	INSPECTION PLA	N AND SCHED	ULE FOR IGLOOS <u>A101, C-514, C-815, C-816, K-401, K-402, K-</u> MAGAZINES 1368, 1369, 1370, and 1371A101, C-815, C-816.
403, K-4 SER	VICE MAGAZINE	-805, SERVICE <del>S 1368, 1370</del> : AF	BOVE GROUND MAGAZINE 1205: and BUILDING 1320
	Item	Frequency*	Types of Problems
	R315-264-15(b)(1)	R315-264-	R315-264-15(b)(3)
		15(b)(4)	
Facility	Doors	Weekly	Verify the entrances to the igloos and service magazines are locked when facility is not in use.
	Warning Signs	Weekly	Verify that warning signs are readable from a distance of 25 feet <u>at</u> <u>each access door.</u> The igloos and service magazines have only one door each through which to access, therefore the sign must be visible when the facility is approached from the entrance.
·	Spills	Weekly	Verify that no spills have occurred by looking for loose debris on container surfaces, pallets, and floor.
	Base Integrity	Weekly	Verify the integrity of the base by inspecting for cracks in the concrete.
Containers	Operating Record	As required by Module II.M And Module III	Verify that all entries in the operating record are complete and up to date. Entries include; a description (common name, EPA hazardous waste numbers, physical form, and for characteristic wastes, the process that produced the waste) and quantity (weight, or volume and density) of each hazardous waste received and the methods (EPA handling codes) and dates of its treatment, storage, or disposal at the facility. Verify the location of the waste within the facility and the quantity at each location. Verify the records and results of waste analysis are present along with any summary reports and details of any incidents which required implementation of the contingency plan are present.
	Container Labels	Weekly	Verify that all containers are properly labeled.
	Proper Storage	Weekly	Verify that containers in the proper configuration see Attachment 9 of
	Configuration		the permit for storage configurations specific to each facility.
	Containers	Weekly	Verify all containers in storage are free from severe defects and are not leaking.
Spill Equip.	Contingency Plan	Weekly	Insure that the Contingency Plan is present at the facility.
	Fire Extinguisher	Weekly	Verify that the fire extinguisher is present and the pressure gauge shows the extinguisher to be operational.
	Communication Equipment	Weekly	Verify that communication equipment, hand-held radio or phone, is present and functional.
*= When in u	ise	•	

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# TABLE 4. INSPECTION PLAN AND SCHEDULE FOR HAZARDOUS WASTE LOADING/UNLOADING<br/>AREAS

Item	Frequency	Types of Problems	
R315-264-	R315-264-	R315-264-15(b)(3)	
15(b)(1)	15(b)(4)		
Loading	Whenever in	Inspect the loading ramps or concrete aprons for signs of damage which might	
Dock/Ramp	use	cause instability, or difficulty with operation of material handling equipment.	
		Look for scaling or chipping of surface, debris, or other objects on the concrete	
		ramp/apron that the equipment operator would have to avoid.	
Leaks/Spills	Whenever in	Inspect for evidence of spills by looking for residue on pallets, and truck cargo	
	use	beds. Look for soil discoloration in and around the concrete ramp/apron, and in	
		the vicinity of the material handling equipment (i.e. trucks and forklifts).	
Container	Whenever in	Inspect the containers that are to be transferred to ensure they are in good	
Transferred	use	condition. Look for corrosion, bulging, loose lids, dents or creases that could	
		significantly affect container integrity. Insure pallets are not crushed or broken to	
		the point of causing difficulty for the forklift operator. Look for loose or broken	
		banding.	
		Ensure the containers are transferred to the proper location in storage (i.e.	
		compatible storage configuration).	
		Ensure containers are properly labeled.	
		Ensure the transferred containers are added or subtracted from the operating	
		record. Insure the waste analysis plan includes the type of waste being transferred (if the transfer is a receipt).	
		Ensure the Hazardous Waste Manifest (if the transfer involves an off-site transfer	
		of containers) is filled out properly and no applicable entries are blank. Insure	
	•	verification of waste received from off-site is done according to the waste	
		anarysis plan.	

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Rational Productive       Types of producting         Rational State       Rational State       Rational State       Rational State         Facility       Process Room       Daily       Collect floor sweepings in waste drum.         Conveyor System       Daily       Check for mechanical damage.       Collect floor sweepings in waste drum.         Cart. Dear down       Daily       Check for mechanical damage, unit is clean.         mach       Propellant Dump       Daily       Check for propellant residue.         Cube       Deprime machine       Daily       Check for propellant residue.         Uni-wash dust cltr       Daily       Check for leaks.       Check for adequate eapacity, and proper la drum.         Baghouse       Daily       Check for leaks.       Check for adequate eapacity, and proper la drum.         Baghouse       Daily       Check for proper function of waste chute. Check for adequate c and proper labeling of collection drum.         Inspect the fan unit for damage.       Inspect the fan unit for damage.       Inspect the fan unit for damage.         Control Panels       Daily       Check for spills, collect floor sweepings into waste drum.         Areas       Control Panels       Daily       Check for spills, collect floor sweepings into waste drum.         General       Operating Record       As required       Veri			Eng grupp gru#	Temor of Dephane
R315-204-18(0)(1)         R315-204-18(0)(3)           Facility         Process Room         Daily         Collect floor sweepings in waste drum.           Delinker         Daily         Check for mechanical damage.         Clean.           Cart. Dear down         Daily         Check for mechanical damage. unit is clean.           Cart. Dear down         Daily         Check for mechanical damage. unit is clean.           Machan         Daily         Check for propellant residue.           Cube         Deprime machine         Daily         Check for propellant residue.           Uni-wash dust cltr         Daily         Check for leaks.         Check for adequate capacity, and proper laddrum.           Baghouse         Daily         Check proper function of waste chute. Check for adequate capacity, and proper laddrum.           Draft Fan and         Daily         Inspect the fan unit for damage, duetwork and fittings, joints belt, etc.           Stack         Daily         Ensure all indicator lights are functional.           Areas         Control Panels         Daily           Load/Unloading         Daily         Check for spills, collect floor sweepings into waste drum.           Areas         Operating Record         As required         Verify that the entries in the operating of coll ada are present along wit           General         Oper	D2	11em 215 2(4 15(h)(1)	Frequency"	D215 2(4 15(k)(2)
Factor       Daily       Concernings in wake dufin.         Conveyor System       Daily       Check for mechanical damage.         Delinker       Daily       Check for mechanical damage, unit is clean.         Cart. Dear down       Daily       Check for mechanical damage, unit is clean.         Mach       Daily       Check for mechanical damage, unit is clean.         Propellant Dump       Daily       Check for propellant residue.         Cube       Deprime machine       Daily       Check for propellant residue.         Uni-wash dust cltr       Daily       Check for leaks.       Check for adequate capacity, and proper la drum.         Baghouse       Daily       Check for leaks.       Check for adequate capacity, and proper la drum.         Draft Fan and       Daily       Inspect the fan unit for damage, inspect stack and due connections for leaks or damage, inspect stack and due connections for leaks or damage.         Control Panels       Daily       Ensure all indicator lights are functional.         Areas       Areas       Areas       Verify that the entries in the operating record are complete a date. Entries include; description (common name, NSN, Epphysical form, item number), process that produced the was (characteristic wastes), quantity treated; feed rates, time and Verify that waste characterization data are present along with of any incident which requires implementation of the contin plan. Records orepairs, emergency waste feed cutoff syste	cility Pro	313-204-15(D)(1)	K315-264-15(D)(4)	K315-204-15(D)(3)
Conveyor System         Daily         Check for mechanical damage.           Delinker         Daily         Check for mechanical damage, unit is clean.           Cart. Dear down mach         Daily         Check for mechanical damage, unit is clean.           Propellant Dump Cube         Daily         Check for propellant residue.           Deprime machine         Daily         Clean, check seals for leaks.           Uni-wash dust cltr         Daily         Check water level.           Mac Env Cyclone         Daily         Check for leaks. Check for adequate capacity, and proper la drum.           Baghouse         Daily         Check proper function of waste chute. Check for adequate capacity and proper labeling of collection drum.           Draft Fan and         Daily         Inspect the fan unit for damage, ductwork and fittings, joints belt, etc.           Stack         Daily         Ensure all indicator lights are functional.           Load/Unloading Areas         Daily         Check for spills, collect floor sweepings into waste drum.           General         Operating Record         As required         Verify that the entries in the operating record are complete a date. Entries include; description (common name, NSN, EP physical form, item number), process that produced the was (characteristic wastes), quantity treated; feed rates, time and functional.           Emergency         Contingency Plan         Weekly         Insure tha	Flo	oor	Dany	Conect noor sweepings in waste druin.
Delinker         Daily         Check for mechanical damage, unit is clean.           Cart. Dear down mach         Daily         Check for mechanical damage, unit is clean.           Propellant Dump Cube         Daily         Check for propellant residue.           Deprime machine         Daily         Clean, check seals for leaks.           Uni-wash dust cltr         Daily         Check for leaks. Check for adequate capacity, and proper la drum.           Baghouse         Daily         Check proper function of waste chute. Check for adequate c and proper labeling of collection drum.           Draft Fan and         Daily         Inspect the fan unit for damage, inspect stack and duc connections for leaks or damage.           Control Panels         Daily         Ensure all indicator lights are functional.           Load/Unloading Arcas         Daily         Ensure all indicator lights are functional.           General         Operating Record         As required         Verify that the entrics in the operating record are complete a date. Entries include; description (common name, NSN, EP physical form, item number), process that produced the wass (characteristic wastes), quantity treated; feed rates, time and Verify that waste characterization data are present along wit of any incident which requires implementation of the contin plan. Records of repairs, emergency waste feed cutoff syste results.           Emergency         Contingency Plan         Weekly         Verify that the fire extinguisher is present and the pressure	Cor	onveyor System	Daily	Check for mechanical damage.
Cart. Dear down machDailyCheck for mechanical damage, unit is clean.Propellant Dump CubeDailyCheck for propellant residue.Deprime machineDailyClean, check seals for leaks.Uni-wash dust cltrDailyCheck water level.Mac Env CycloneDailyCheck for leaks. Check for adequate capacity, and proper la drum.BaghouseDailyCheck proper function of waste chute. Check for adequate c and proper labeling of collection drum.Draft Fan and StackDailyInspect the fan unit for damage, duetwork and fittings, joints belt, etc. Inspect fan base for damage, inspect stack and due connections for leaks or damage.Control PanelsDailyEnsure all indicator lights are functional.Load/Unloading AreasDailyCheck for spills, collect floor sweepings into waste drum. AreasGeneralOperating RecordAs requiredVerify that the entries in the operating record are complete a date. Entries include; description (common name, NSN, EP physical form, item number), process that produced the wast (characteristic wastes), quantity treated; feed rates, time and Verify that waste characterization data are present along wit of any incident which requires implementation of the contin plan. Records of repairs, emergency waste feed cutoff syste results.Emergency EquipmentFire ExtinguisherWeekly Weekly functionalCom EquipmentWeekly functionalVerify that the fire extinguisher is present and the pressure g shows the extinguisher to be operational. Verify the expirat on the extinguisher to be operational. Verify the expirat on the extinguisher to be operational. Ver	De	elinker	Daily	Check for mechanical damage, unit is clean.
Propellant Dump Cube         Daily         Check for propellant residue.           Deprime machine         Daily         Clean, check seals for leaks.           Uni-wash dust eltr         Daily         Check water level.           Mac Env Cyclone         Daily         Check for leaks. Check for adequate capacity, and proper la drum.           Baghouse         Daily         Check proper function of waste chute. Check for adequate capacity, and proper labeling of collection drum.           Draft Fan and         Daily         Inspect the fan unit for damage, ductwork and fittings, joints bet, etc. Inspect fan base for damage, inspect stack and duc connections for leaks or damage.           Control Panels         Daily         Ensure all indicator lights are functional.           Load/Unloading Areas         Daily         Check for spills, collect floor sweepings into waste drum.           General         Operating Record         As required         Verify that the entries in the operating record are complete a date. Entries include; description (common name, NSN, EP physical form, item number), process that produced the was (characteristic wastes), quantity treated; feed rates, time and Verify that waste characterization data are present along wit of any incident which requires implementation of the contin plan. Records of repairs, emergency waste feed cutoff syste results.           Emergency         Contingency Plan         Weekly         Insure that the Contingency Plan is present and the pressure shows the extinguisher to be operational. Verify the expirat on the	Cai ma	art. Dear down ach	Daily	Check for mechanical damage, unit is clean.
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Protective Gloves Weekly Check that protective gloves are present and useable (no hol	Ab	bsorbent Material	Weekly	Verify that absorbent material is present in adequate amounts in the spill kit.
cracks).	Pro	otective Gloves	Weekly	Check that protective gloves are present and useable (no holes or cracks).
Safety glasses or goggles         Weekly         Verify that safety glasses or goggles are present and in useal condition.	Saf gos	afety glasses or oggles	Weekly	Verify that safety glasses or goggles are present and in useable condition.
Tyvek Suits Weekly Check that Tyvek Suits are available and in useable condition	Tv	yvek Suits	Weekly	Check that Tyvek Suits are available and in useable condition.
*= When in use	When in use	2	,	

Itam	Fraguaray*	Types of Dyphlams
P315 2648 15(b)(1)	<b>P315 264 15(b)(4)</b>	P315 264 15(b)(3)
Loading/Unloading Area	Daily	Inspect for discolored soil propellant and explosive residue
Entrance Gate	Weekly	Verify that lock and chain are present and operational
Warning Signs	Weekly	Verify that warning signs are readable from a distance of 25 feet and
warning Signs	Weekiy	noticeable from any direction from which the facility may be
		approached (i.e., each side of the fence that faces away from the
		building must have warning signs).
Burn Pans	Daily	Verify that the burn pans are in good condition and capable of
	2	containing the propellant that will be poured into them. Look for
		holes in the bottom or failed welds at the corners. Ensure that there
		is no residue or moisture in the burn pan.
Burn Pan Lids	Daily	Verify that the lids to the burn pans are capable of preventing
		precipitation from contacting the interior surface of the pan. Ensure
		that all lids are in place if pans are not in use, and that there is a lid
		for each pan.
Silos and Caps	Daily	Verify that silos are in safe operating condition and that caps are in
		place when the silos are not in use. Ensure that there is no
		residue/spent motor casings in the silo.
Detonation Pits	Daily	Ensure that all ordnance has been properly detonated.
Meteorological Conditions	Daily	Ensure that the meteorological conditions comply with those
W/s star A so a land in Dland	A	specified in the permit and Army Regulations and SOPs.
waste Analysis Plan	As required	demilled one included in the OP/OP expecting record
Transfor Documents	Daily	Varify that the transfer deguments are filled out preparly and the
Transfer Documents	Daily	werity that the transfer documents are fined out property and the material received is the same as that specified on the document (NSN)
		and quantity)
Road Barriers/Gate	Daily	Verify that the road barrier/gate is secure when operations are in
Roud Durriers, Gute	Dully	progress.
Contingency Plan Equipment	Weekly	Ensure that the Contingency Plan is present at the Equipment facility.
Fire Extinguishers	Weekly	Verify that the fire extinguisher is present and the pressure gauge
8		shows the extinguisher to be operational. Verify that the expiration
		date on the extinguisher charge has not passed.
Communication Equipment	Weekly	Verify that communication equipment is present at the facility.
Personal Protective Equipment	Weekly	Verify that each worker has powder coveralls, safety shoes, hard hat,
		gloves and safety glasses.
Material Handling Equipment	Weekly	Verify that material handling equipment performs properly by
		ensuring that (1) brakes function and work predictably, and (2)
		hydraulic lift functions properly and in a predictable manner.
Vehicle Horn	Daily	Verify that a vehicle horn is functional.
Burn Pans and Lids	Weekly**	Verify that the burn pans are in good condition and properly
		containing the propellant. Ensure that the lids are in place on the burn
		pans.
Silos and Caps	Weekly**	Verify that silos are in safe operating condition and that the caps are
Determetican Dita	W 1.1 / A C	In place on the silos.
Deconation Pits	weekiy/After	Ensure that the pits have not been disturbed.
	Storms	

\*\*=When munition items are being stored in place. Visual inspections will be conducted from a safe distance.

	Item	Frequency*	Types of Problems
	R315_264_15(b)(1)	R315_264_	B315-264-15(b)(3)
	<b>K</b> 515-20 <b>4</b> -15(b)(1)	15(b)(4)	N313-204-13(0)(3)
Facility	NaOH Storage Tank	Daily	Corrosion, leaks, liquid level, heater.
	NaOH Transfer	Daily	Leaks, wear, mounting integrity.
	Pump	-	
	Line from NaOH Tank	Daily	Corrosion, leaks, cracks, insulation damage, loose supports.
	Basket Carriage System	Daily	Corrosion, excessive wear on drive train and parts.
	Vent Line	Daily	Corrosion, leaks, cracks, loose supports.
	Rinse Tank	Daily	Corrosion, leaks, liquid level.
	Rinse Tank Pump	Daily	Leaks, wear, mounting integrity, suction screen, discharge pressure.
	Hydrolysis Tank	Daily	Corrosion, leaks, liquid level.
	Push Blower	Daily	Cracks in housing, blade wear, mounting.
	Basket Cart	Daily	Structural integrity, signs of corrosion, air motor and oil, grease gears.
	Scale	Daily	Functionality, accuracy, excess debris buildup.
	Conveyor Motor	Daily	Cracked housing, mounting, roller wear.
	Spent Hydrolysate	Daily	Corrosion, leaks, cracks, insulation damage, loose supports, fittings,
	Line	2	flanges.
	Hydrolysis Recirc Line	Daily	Corrosion, leaks, cracks, insulation damage, loose supports, fittings, flanges.
	Hydrolysis Recirc Pump	Daily	Leaks, wear, mounting suction strainer, discharge pressure.
	Hydrolysate Heating System	Daily	Corrosion, leaks, line fittings, cracks, loose supports, steam pressure.
	Hydrolysis Tank Secondary Containment System	Daily	Accumulated material, corrosion, damage, leaks.
	Rinse Tank Secondary Containment System	Daily	Accumulated material, corrosion, damage, leaks.
	Process Room Floor	Daily	Cracks, spills.
	Gas Analysis System (Lines, Chiller, Fan)	Daily	Leaks, cracks, corrosion, mounting, supports, gas pressure, flow rate.
	Vent Fan	Daily	Inspect the fan unit for damage, ductwork and fittings, joints, fan belt, caustic buildup.
	Scrubber	Daily	Inspect the scrubber unit for damage, ductwork and fittings, plugged spray nozzles, excessive material buildup on packing, and mist eliminator pads.
	Scrubber Sump Tank	Daily	Inspect the sump tank for damage, plugged strainer, excessive material buildup inside tank.
	Control Panels	Daily	Ensure all indicator lights are functional.
	Load/Unloading	Daily	Check for spills.

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	TABLE 7. INSPECTION PLAN AND SCHEDULE FOR THE HYDROLYSIS FACILITY		
	Item	Frequency*	Types of Problems
	R315-264-15(b)(1)	R315-264- 15(b)(4)	R315-264-15(b)(3)
	Areas		
General	Operating Record	As required by Module II.M.	Verify that the entries in the operating record are complete and up to date. Entries include; description (common name, NSN, EPA codes, physical form, item number), process that produced the waste (characteristic wastes), quantity treated, feed rates, time and date. Verify that waste characterization data are present along with details of any incident which requires implementation of the contingency plan. Records of repairs, emergency waste feed cutoff system test results.
	Contingency Plan	Weekly	Insure that the Contingency Plan is present at the facility and functional.
Emergency Equipment	Fire Extinguishers	Weekly	Verify that the fire extinguishers are present and the pressure gauge shows the extinguisher to be operational. Verify the expiration date on the extinguisher charge has not passed.
	Com Equipment	Weekly	Verify telephone is present at the facility and functional.
	Eye Wash	Weekly	Check for proper functioning, unit and water are clean.
	Emergency Shower	Weekly	Check for proper function.
	Absorbent Material	Weekly	Verify that absorbent material is present in adequate amounts in the spill kit.
	Personnel Protective Equipment	Weekly	Check that equipment is present and useable.
*= When in	use		

ATTACHMENT 6

PREPAREDNESS AND PREVENTION PLAN

#### Table of Contents

1.0	Conta	iner Storage Facility – Bldg. 528	1
	1.1	Emergency Equipment	1
	1.2	Operating Requirements	1
	1.3	Preventative Procedures, Structures, and Equipment	2
	1.4	Inspections and Maintenance	2
2.0		Senteiner Sterrer Freilitige Deilling A 101 C 015 C 016 C 514 C 015 C 016	
2.0 V 4		Container Storage Facilities – Buildings A-101, C-815, C-816 $\underline{C-514}$ , C-815, C-816,	
<u>K-4</u>	<u>01, N-4</u> K_40'	<u>02.</u> 3 K_404 K_801 K_802 K_803 1368 1369 1370 1371	
120	)5 and	1320	3
,120	2 1	Emergency Equipment	3
	2.1 2.2	Operating Requirements	<i>5</i> 3
	2.2	Preventative Procedures Structures and Fouriment	5 4
	2.5 2 4	Inspections and Maintenance	 4
	2.1	inspections and Maintenance	1
3.0	Deact	ivation Furnace	5
	3.1	Emergency Equipment	5
	3.2	Operating Requirements	5
	3.3	Preventative Procedures, Structures, and Equipment	6
	3.4	Inspections and Maintenance	6
4.0	~ 11		_
4.0	Small	Caliber Disassembly Line	7
	4.1	Emergency Equipment	7
	4.2	Operating Requirements	7
	4.3	Preventative Procedures, Structures, and Equipment	8
	4.4	Inspections and Maintenance	8
5.0	Open	Burning/Open Detonation area	
2.0	5.1	Internal Communications	9
	5.2	Reutilization and External Communications	9
	5.3	Fire and Spill Control.	9
	5.4	Equipment Testing and Maintenance	9
	5.5	Contingency Arrangements and Coordination Agreements	10
	5.6	General Hazard Prevention	10
		5.6.1 Loading and Unloading Operations	10
		5.6.2 Runoff	11
	4	5.6.3 Water Supplies	11
		5.6.4 Equipment and Power Failures	11
		5.6.5 Personnel Protection Procedures	12
		5.6.6 Prevention of Accidental Ignition or Reaction of Waste	12
_			
6.0	Hydro	lysis Facility	13
	6.1	Emergency Equipment	13
	6.2	Operating Requirements	13

6.3	Preventive Procedures, Structures and Equipment	.14
6.4	Inspections and Maintenance	.14

Appendix A. Location of Emergency Equipment Figure A-1 Building 528 Figure A-2 Igloo A-101 Figure A-3 Igloos <u>C-514, C-815, C-816, K-401, K-402, K-403, K-404, K-801, K-802,</u>	16 17 18
and K-803-C-815, C-816	
$\mathbf{F} = \mathbf{A} + \mathbf{C} + \mathbf{A} + \mathbf{C} + $	20
Figure A-4 Service Magazines $\frac{1368}{1369}$ , $\frac{1370}{1370}$ , and $\frac{1371}{1368}$ , $\frac{1370}{1370}$	20
Figure A-5 Above Ground Magazine 1205	21
Figure A-6 Building 1320	22
Figure A-7 Building 1325	23
Figure A-8 OB/OD and Static Fire	24
Figure A-9 Building 1400	25
Figure A-10 Building 1335	26
Appendix B. List of Reciprocal Agreements	27

#### PREPAREDNESS AND PREVENTION PLAN

#### 1.0 Container Storage Facility – Bldg. 528

#### **1.1 Emergency Equipment**

1.1.1. Internal communication and alarm is achieved by a hand-held telephone or voice. The facility is small (75ft x 75ft) and generally no more than two people work in the facility at the same time.

1.1.2. A telephone is located just inside the exterior door of the facility to be used for summoning external help or emergency assistance. The operator of the facility shall also have a hand held telephone available for summoning assistance.

1.1.3. Whenever the facility is in use, employees will communicate by voice with others present. Employees will use the telephone for summoning external emergency assistance. If only one person is working in the Container Storage Facility (CSF), a hand held telephone shall remain within immediate reach for summoning external emergency assistance.

1.1.4. Two portable fire extinguishers are located at the CSF. The location of the fire extinguishers is given in the drawing of Building 528 in Appendix A.

1.1.5. A spill kit containing Tyvek suits, absorbent material, gloves, boots, face shields, and safety glasses or goggles is located at the CSF.

1.1.6. An eye wash and an emergency shower are located at the CSF. The location of this equipment is in the drawing of Building 528 in Appendix A.

#### **1.2 Operating Requirement**

1.2.1. A minimum aisle space of 2.5 feet shall be maintained between the rows of pallets. This space will allow for inspections, use of fire extinguishers, and spill control equipment, if necessary.

1.2.2. The Permittee shall maintain reciprocal agreements with area fire departments, law enforcement agencies and hospitals. A list of the local authorities that the Permittee has agreements with is given in Appendix B. Tooele Army Depot (TEAD) has its own fire department and security organizations, who will be the primary responders to emergencies. This plan and others dealing with hazardous waste management are reviewed by these organizations so that they may become familiar with hazards and properties of the materials and the facilities at TEAD.

1.2.3. Fire hydrant No. 31 is within 500 ft. of CSF, with a total flow of 3125 gpm at a static pressure of 82 psi. Fire hydrant No. 20 is within 700 ft. and has a total flow of 2000 gpm at 80 psi static pressure.

#### 1.3 Preventative Procedures, Structures and Equipment

1.3.1. The following procedures, structures, and equipment are used to minimize hazards: forklift (high weight capacity) is used; a limit of four drums per pallet is adhered to; stronger hardwood (oak) pallets are used; a full concrete ramp exists leading to the main door; no docks are used; delivery trucks are backed onto the ramp in winter to avoid snow and ice during loading and unloading; operators are trained and licensed for operating material handling equipment; a minimum of two persons are present when the contractor is present for loading; slings, drums handlers, etc. are available for safely handling single drums.

1.3.2. The CSF is totally enclosed and weather tight. All spills shall be immediately cleaned up and neutralized using absorbents stored in the immediate area. Toxic spills shall be decontaminated by the fire department Haz Mat team.

1.3.3. Electricity is used only for lighting in the CSF. Lighting is only used in early hours in the winter, and the forklift has headlights that could be used in the event of a power outage. An extended power outage in the winter could result in freezing of the emergency shower. If this happens, operations shall be shut down until all safety and decontamination equipment is functional, or provisions for temporary equipment are made.

1.3.4. Contamination of water supplies is prevented by minimizing the probability of releasing hazardous waste (HW) into the environment by proper HW handling practices. Regular inspections, adherence to safety procedures, prompt cleanup of spills, and sufficient training of all employees working in the CSF are examples of proper HW management practices. In addition, a 20 mil liner is in place under the CSF as an additional precaution in the event that HW constituents penetrated the floor of the CSF. The floor of the CSF is sealed and divided into four separate cells by concrete curbing, and a six-inch concrete curb around the perimeter prevents spilled liquids from escaping the building.

1.3.5. No personnel protective equipment is used under normal conditions. If there is leakage or a spill, the following personnel protective items are available in the spill kit: Tyvek suites, gloves, boots, face shields and safety glasses or goggles.

1.3.6. Waste of different compatibility types are stored in separate cells; smoking is prohibited in the CSF; non-ferrous metal tools are used; explosion proof lighting is installed; and there are no electrical outlets in the CSF.

#### **1.4 Inspections and Maintenance**

1.4.1. The spill control, fire and decontamination equipment is inspected in accordance with Attachment 4 (Inspection Plan).

1.4.2. If any of the spill control or decontamination equipment is incomplete or deficient the<br/>Environmental Management Division (EMD) will provide whatever is needed to maintain the<br/>Attachment 6 – Preparedness and Prevention PlanAugust 26, 2019<br/>UT3213820894Tooele Army Depotpage 2UT3213820894

spill control equipment. EMD shall also initiate work orders to Engineering Services Division to repair or replace any decontamination equipment (emergency eye wash and shower).

#### 2.0 PEP Container Storage Facilities – Buildings

<u>A-101, C-514, C-815, C-816, K-401, K-402,</u> <u>K-403, K-404, K-801, K-802, K-803, 1368, 1369, 1370, 1371</u><u>A-101, C-815, C-816, 1368, 1370,</u> 1205, and 1320

#### 2.1 Emergency Equipment

2.1.1. Internal communication and alarm functions are achieved by voice and by two-way radio. These facilities are small and voice is the most efficient method for alarm and internal communication. Generally, there are no more than two people working at these facilities at a given time.

2.1.2. Personnel, when working at any of these locations, are required to have a hand-held phone and/or two-way radio immediately available which can be used for summoning external assistance in an emergency.

2.1.3. Whenever personnel are working at any of these facilities, voice communications are used to communicate between those present. A portable two-way radio or a hand-held phone shall be within immediate reach for summoning external emergency assistance. If only one person is working at these facilities, a portable hand-held radio or hand-held phone shall remain within immediate reach for summoning assistance.

2.1.4. Each facility has a 10 lb. ABC chemical/electrical dry powder type of fire extinguisher. The location of the fire extinguishers is shown on the drawing of the structures in Appendix A. Portable showers are not provided because the Permittee has determined that they are not necessary.

2.1.5. Spill kits are not provided at the PEP storage facilities because liquid hazardous waste will not be stored at any of these facilities.

2.1.6. Portable showers and eyewashes are not provided because the Permittee has determined that they are not necessary.

# 2.2 Operating Requirements

2.2.1. A minimum of 2.5 feet of aisle space shall be maintained between stacks of pallets in these storage facilities. This space is sufficient to allow inspection of containers, use of spill control equipment and fire control equipment.

2.2.2. The Permittee shall maintain reciprocal agreements with area fire departments, law<br/>enforcement agencies and hospitals. A listing of the local authorities that the Permittee has<br/>Attachment 6 – Preparedness and Prevention Plan<br/>Tooele Army DepotAugust 26, 2019<br/>UT3213820894

agreements with is given in Appendix B. TEAD has its own fire department and security organizations, who will be the primary responders to emergencies. This plan and others dealing with hazardous waste management are reviewed by these organizations so that they may become familiar with the hazards and properties of the materials and the facilities at TEAD.

2.2.3. Only fires that are outside of the PEP igloos are fought (i.e. grass fires, etc.) and these fires are fought with pumper trucks only. In general, the fire department will respond to fires in the ammo storage area igloos only to the quantity/distance line, beyond which shrapnel etc. is not expected to reach. Fires outside of ammunition storage igloos are not fought because of explosion danger. Water for refilling pumper trucks is available from water troughs and fire hydrants at distances ranging from 1000 to 3200 feet from the PEP CSFs.

#### 2.3 Preventive Procedures, Structures, and Equipment

2.3.1. Proper techniques for transportation and handling as outlined in SOPs include grounding when exposed propellant is present, prohibition of smoking and open flames, prohibition of spark producing devices, and use of non-sparking tools and material handling equipment.

2.3.2. Run-off control is provided by the fact that the six-PEP CSFs are totally enclosed and weather tight.

2.3.3. In the event of equipment failure or power outage, operations shall cease until the faulty equipment is either repaired or replaced.

2.3.4. Contamination of water supplies is prevented by minimizing the risk of discharge through frequent inspections, training, adherence to SOPs, and prompt cleanup of spills. All of the PEP CSFs are enclosed so that spilled solids will be contained.

2.3.5. Personnel working in these facilities are equipped with coveralls and leather gloves. Since the substances stored in these facilities are non-corrosive and have a low toxicity, other personal protective equipment is not normally used.

2.3.6. A system of fusible links provides some protection from fires outside of the igloos by closing air vents when the outside temperature becomes too high. Proper storage and handling techniques, as outlined in SOPs, include: grounding, prohibition of smoking and open flames, prohibition of any spark producing devices, and all cotton clothing to reduce static electricity accumulation. No electrical outlets or lighting are present in these facilities.

#### 2.4 Inspections and Maintenance

2.4.1. The fire extinguishers are inspected in accordance with Attachment 4 (Inspection Plan). If a fire extinguisher is deficient the operator will provide a replacement.

#### 3.0 Deactivation Furnace – Bldg. 1320

Attachment 6 – Preparedness and Prevention Plan Tooele Army Depot page 4

## **3.1 Emergency Equipment**

3.1.1. The deactivation furnace is operated remotely from the control room. Personnel access to the inside of the concrete/metal walls around the furnace is restricted during processing of PEP items. Alarms (audible beeping, flashing lights on control board) are built into the automated control system which alerts the operators to emergency situations. Other personnel working in the area are alerted by voice communication.

3.1.2. A telephone is located inside the control room with an additional phone located outside of the facility on the northwest corner, which can be used for summoning external help or emergency assistance.

3.1.3. When the furnace is in use, employees shall have immediate access to communications and alarm systems by voice communication and telephone. While the Deactivation Furnace is operating (treating wastes) there will always be more than one person present.

3.1.4. Fire extinguishers of the dry powder type (ABC chemical/ electrical, rubbish) are present. The locations of the fire extinguishers are given in the drawing of Building 1320 in Appendix A.

3.1.5. No liquids are stored or treated at this facility and therefore only brooms and dust pans are provided for the collection of any ash that may spill onto the floor.

3.1.6. An eyewash will be present at all times during operation of the incinerator. A portable shower is not necessary because the wastes processed are relatively non-toxic and non-corrosive.

# 3.2 Operating Requirements

3.2.1. The layout of the equipment in Building 1320 is provided in the drawing in Appendix A. The equipment layout was designed to allow easy inspection, maintenance, and removal/replacement of the installed equipment. This spacing is also adequate for spill control activities. No combustible materials other than the fuel and feedstock items are present. The spacing is adequate for fighting fires of ordinary combustible materials (non-PEP materials). No PEP materials are stored at the facility. During operation, only the quantity of PEP materials that are to be processed that day, are brought to the feed room. If for some reason these items are not processed, they will be returned to a permitted PEP HW storage facility.

3.2.2. The Permittee shall maintain reciprocal agreements with area fire departments, law enforcement agencies and hospitals. A list of the local authorities that the Permittee has agreements with is given in Appendix B. TEAD has its own fire department and security organizations, which will be the primary responders to emergencies. This plan and others dealing with hazardous waste management are reviewed by these organizations so that they may become familiar with the hazards and properties of the materials and the facilities at TEAD.

3.2.3. Fires fueled by PEP materials or wastes are not fought because of safety reasons. Fires of ordinary combustible items are fought and the following water sources are available: hydrant No. 6 is located within 1600 ft. of the deactivation furnace and supplies 1325 gpm at 101 psi static pressure. Pumper trucks are also available for firefighting, and there are several sources of water for refilling, if necessary.

#### 3.3 Preventive Procedures: Structures and Equipment

3.3.1. Proper techniques for transportation and handling as outlined in SOPs include prohibition of smoking and open flames, prohibition of spark producing devices, and use of non-sparking tools and material handling equipment.

3.3.2. The facility is fully enclosed. Prior to each day's operation, the interior concrete floor is swept to collect any ash which might be present and the sweepings are managed as hazardous waste.

3.3.3. If problems develop with equipment or power failure, the feed conveyor shall be immediately stopped, and not started until the problems are corrected. Any items remaining in the retort will be processed in the normal manner. In the event of a total power outage, the furnace flame will go out and all conveyors will stop. Feed stock items shall be removed from the conveyor in the feed room. Any items in the retort would be incinerated due to the residual high temperature. If items are left on the conveyor between the retort and outside of the control room, they shall be left loaded and access shall be controlled by ammunition operations personnel until the furnace can be restarted and processing resumed. After the power is restored, the furnace will be restarted and the items in the retort will be collected by the discharge conveyor.

3.3.4. Contamination of water supplies is prevented by sweeping up any ash or residue from the retort room concrete floor, properly containerizing drums of hazardous waste residues, and promptly responding to spills or discharges. Frequent inspections and training also help to prevent contamination of water supplies.

3.3.5. Personnel working at the deactivation furnace are equipped with coveralls and leather gloves. Since the substances processed are non-corrosive and have a low toxicity, other personal protective equipment is not normally used. Spill kits are not provided at the deactivation furnace as no liquid hazardous wastes are present.

3.3.6. Proper techniques for transportation and handling as outlined in SOPs include prohibition of smoking and open flames, prohibition of spark producing devices, and use of non-sparking tools and material handling equipment. All electrical systems and equipment at the facility are explosion proof.

#### 3.4 Inspections and Maintenance

3.4.1. The emergency equipment is inspected in accordance with Attachment 4 (Inspection Plan). The decontamination equipment (eyewash) shall be inspected and maintained by Ammunition Operations personnel.

## 4.0 Small Caliber Disassembly Line – Bldg. 1325 and 1335

#### 4.1 Emergency Equipment

4.1.1. Internal communication and alarm is achieved by voice. The facilities are small and generally no more than eight people work in each facility at the same time.

4.1.2. A telephone is located in the office of each facility that would be used for summoning external help or emergency assistance.

4.2.3. Whenever the facilities are in use, employees will communicate by voice with others present. Employees will use the telephone for summoning external emergency assistance.

4.2.4. Portable fire extinguishers are located at each Small Caliber Disassembly Line as shown on the drawings of Buildings 1325 and 1335 in Appendix A.

4.2.5. A spill kit containing Tyvek suits, absorbent material, safety glasses or goggles, boots and gloves is located at each Small Caliber Disassembly Line. The locations of the spill kits is shown on the drawings of Buildings 1325 and 1335 in Appendix A.

4.2.6. An eyewash is located at each Small Caliber Disassembly Line. The location of the eyewashes is shown on the drawings of Buildings 1325 and 1335 in Appendix A.

#### 4.2 Operating Requirements

4.2.1. The floor plan of Buildings 1325 and 1335 is shown on the drawings in Appendix A. The equipment layout in each building was designed to allow easy inspection, maintenance, removal and replacement of the installed equipment. The spacing is also adequate for spill control activities. No PEP materials are stored at the facilities. During operation, only the quantity of PEP materials that are to be processed that day are brought to the feed room. If, for some reason, these items are not processed, they will be returned to a permitted hazardous waste storage facility.

4.2.2. The Permittee shall maintain reciprocal agreements with area fire departments, law enforcement agencies and hospitals. A listing of the local authorities that the Permittee has agreements with is given in Appendix B. TEAD has its own fire department and security organizations, which will be the primary responders to emergencies. This plan and others dealing with hazardous waste management are reviewed by these organizations so that they may become familiar with the hazards and properties of the materials and the facilities at TEAD.

4.2.3. Fires fueled by PEP material or wastes are not fought because of safety reasons. Fires of ordinary combustible items are fought and two primary water sources are available, one for each disassembly line building. For building 1325 a hydrant is located just outside the gate to the facility within a few hundred feet of the structure and supplies 1653 gpm at 20 psi of static pressure. Building 1335 has a hydrant 50 feet directly east which supplies 1653 gpm at 20 psi of static pressure. Pumper trucks are also available for firefighting.

#### 4.3 Preventative Procedures, Structures, and Equipment

4.3.1. Proper techniques for transportation and handling as outlined in SOPs include prohibition of smoking and open flames, prohibition of spark producing devices, and use of non-sparking tools and material handling equipment.

4.3.2. The Small Caliber Disassembly Lines are totally enclosed and weather tight. All spills shall be immediately cleaned up.

4.3.3. If problems develop with equipment or power failure, the process shall be halted and not started until the problems are corrected.

4.3.4. Contamination of water supplies is prevented by sweeping up any residue or propellant from the disassembly room concrete floor, properly containerizing all materials and waste, and promptly responding to all spills and discharges.

4.3.5. Personnel working at the Small Caliber Disassembly Lines are equipped with coveralls, leather gloves, and conductive soled shoes. Since the substances processed are non-corrosive and have a low toxicity, other personal protective equipment is not normally used. In the event of a spill, Tyvek suits, safety glasses or goggles, gloves and boots are available in the spill kit.

4.3.6. Proper techniques for transportation and handling as outlined in SOPs include grounding of exposed propellant, prohibition of smoking and open flames, prohibition of spark producing devices, and use of non-sparking tools and material handling equipment. All electrical systems at the facility are explosion proof.

#### 4.4 Inspection and Maintenance

4.4.1. The spill control, fire, and decontamination equipment are inspected in accordance with Attachment 4 (Inspection Plan).

4.4.2. If any of the spill control or decontamination equipment is incomplete or deficient the Operators will provide whatever is needed to maintain the spill control equipment. The decontamination equipment (eyewash) shall be inspected and maintained by the Ammunition Operations personnel.

#### 5.0 Open Burn/Open Detonation (OB/OD) Unit

## 5.1 Internal Communications

5.1.1. The OB/OD Area is serviced with a mobile telephone and a two-way radio. The telephone and the two-way radio are maintained in good working order and checked by Demil Team personnel prior to going to the area.

#### 5.2 External Communications

5.2.1. Communications with off-site emergency agencies shall be conducted by the Installation On Scene Coordinator (IOSC) or the On Scene Commander (OSC). These personnel shall be contacted by the Demil Planner, who shall be contacted by portable radio and/or mobile telephone by the Demil Team Leader.

#### **5.3** Fire and Spill Control

5.3.1. Firefighting equipment is readily available at the OB/OD area during operations. The equipment consists of hand tools and fire extinguishers. Additional emergency equipment is stored at the TEAD Fire Department. This equipment includes respirators, protective clothing, fire extinguishers, and first aid kits. TEAD Fire Department personnel, trained in responding to hazardous materials emergencies, have ready access to the area and are dispatched to the scene in case of emergency.

5.3.2. Prior to beginning OB/OD operations, the Demil Team Leader or his designated representative shall arrange to have the areas around the operations site cleared of vegetation. Firebreaks are cut around and within the OB/OD area. Access roads serve as firebreaks. After each burn/detonation, the area is swept for fires.

5.3.3. Workers are not allowed to engage in fire fighting if the size or condition of the fire would endanger their life or health.

5.3.4. In addition, the TEAD Fire Department stores and maintains an inventory of spill control and containment materials. This includes shovels, overpack drums and specialized tools. Large quantities of absorbent socks, pads, mats, sheets, bales, pillows, and pulp are also stored in the Fire Station.

5.3.5. The TEAD Fire Prevention and Protection Branch responds to fires and provides the initial response. They evacuate and assess the area. Meanwhile, the members of the TEAD Fire Department start decontamination procedures.

#### 5.4 Equipment Testing and Maintenance

5.4.1. Preparedness and prevention equipment is inspected in accordance with Attachment 4 (Inspection Plan).

#### 5.5 Contingency Arrangements and Coordination Agreements

5.5.1. The Permittee shall maintain reciprocal agreements with area fire departments, law enforcement agencies and hospitals. A listing of the local authorities that the Permittee has agreements with is given in Appendix B of this plan. TEAD has its own fire department and security organizations, which will be the primary responders to emergencies. This plan and others dealing with hazardous waste management are reviewed by these organizations so that they may become familiar with the hazards and properties of the materials and the facilities at TEAD.

5.5.2. The IOSC is the primary emergency authority. All decisions concerning the type of emergency response (i.e., firefighting technique, traffic control, medical treatment, isolation/evacuation requirements, air sampling, spill containment/cleanup) are made by the IOSC and the emergency response team members.

5.5.3. Ambulance Support is provided by the TEAD Fire Department 24 hours per day every day of the year.

#### 5.6 General Hazard Prevention

#### 5.6.1 Loading and Unloading Operations

5.6.1.1. Motor vehicles and mobile heavy equipment used for transporting ammunition or explosives are operated in accordance with the following procedures:

> 5.6.1.1.1. The motor is not started while a magazine door is open. Magazine doors are closed when a vehicle approaches within 25 feet, until the motor is turned off.

5.6.1.1.2. Prior to unloading, vehicles are turned off, parking brake is set, and wheels are chocked. Only then are explosive packages, components, and ordnance removed from the vehicle.

5.6.1.1.3. During unloading operations compatibility requirements are maintained. Any unloaded initiator, combustible material and fuels are positioned a safe distance from explosives or ordnance.

5.6.1.1.4. Explosives and ammunition are not unloaded or piled immediately in back of the exhaust system of the transporting vehicle.

5.6.1.1.5. All explosive and ordnance containers are spotted and opened at least 10 feet from each other and from previously laid material.

5.6.1.1.6. Packages are opened only when the vehicle is out of the area.
5.6.1.1.7. When the vehicle is completely unloaded, it is withdrawn from the area to a safe location, until completion of the demolition.

5.6.1.2. Items transported to the OB/OD area a-re stabilized in boxes filled with sand. Items are packaged in containers of strength equal to or greater than those described in 49 CFR Part 173 Subpart C – Explosives and Blasting Agents; Definition and Preparation. Containers are then transported to the OB/OD Area by Demil Team personnel in government-operated vehicles and offloaded at the silos, pits or burn pans. All containers shall be securely stowed to prevent movement during transport. During transport, all vehicles are operated according to strict adherence to U.S. Department of Transportation (DOT) motor courier, state, Army, and local regulations. Drivers are furnished with DD Form 836 (Special Instructions for Motor Vehicle Drivers) which describes the nature of the explosives on the truck, the fire hazards, the methods to be used in fighting fires involving the truck or cargo, the missile distance in case of explosion, proper distance to maintain from other trucks, and any other information that will bring about safe delivery of the shipment to its destination. Army regulations require that the form be transferred to each subsequent driver and finally to the consignee at the destination. Transport vehicles are removed from the hazard area before the containers are opened.

## 5.6.2 Runoff

5.6.2.1. No hazardous wastes are present at the burn pans, silos or pits except during operations.

5.6.2.2. OB/OD operations shall not be conducted during periods of precipitation or during flooding.

# 5.6.3 Water Supplies

5.6.3.1. No known drinking water supplies are located within a mile of the OB/OD area.

# 5.6.4 Equipment and Power Failures

5.6.4.1. Power outages and lighting strikes are not anticipated to be a cause of problems at the OB/OD Unit. OB/OD operations do not require a permanently installed outside source of electric or other power; therefore, the facility is not subject to power failures. All OB/OD operations are halted or canceled during an electrical storm. Additionally, treatment operations using an electrical firing system are not conducted during sand, dust, or snowstorms. Other natural weather phenomena, such as high winds, are potential problems and are closely monitored. OB/OD operations are conducted only within well-defined weather conditions as specified in Module VI and Attachment 16 (Open Burning Open Detonation Operation).

5.6.4.2. If a truck breaks down and cannot be towed to its destination, a guard will be stationed at the truck site. The Permittee will dispatch a truck at once with loading personnel to transfer the load to a replacement vehicle.

# 5.6.5 Personnel Protection Procedures

5.6.5.1. The handling of waste explosives is conducted in a manner that minimizes contact of involved personnel with the waste. All handling operations and requirements for protective clothing are in accordance with SOPs. Protective clothing includes explosive handler coveralls, steel-toed safety shoes and safety glasses. Additional equipment may be required by a specific SOP for a particular ordnance item.

#### 5.6.6 Prevention of Accidental Ignition or Reaction of Waste

5.6.6.1. All hazardous materials and hazardous wastes handled at the Facility OB/OD Area are assumed to be reactive, since they are military ordnance and only reactive wastes may be treated at the site. Non-reactive wastes are not treated at the OB/OD Area. All personnel working in the OB/OD Area must take all appropriate measures to prevent incidents that generate uncontrolled extreme heat or pressure, fire or explosions or violent reactions; produce uncontrolled toxic mists, fumes, dusts, or gases in sufficient quantities to threaten human health or the environment; produce uncontrolled inflammable fumes or gases in sufficient quantities to pose a risk of fire or explosion; or through any other means, threaten human health or the environment.

5.6.6.2. OB/OD operations generate heat, pressure (shock waves), explosions, and violent reactions. The intent of the OB/OD operations is to initiate these phenomena in a controlled setting. The means to prevent unintended reactions is provided through the establishment of safety guidelines implemented through SOPs. As summarized below, the safety guidelines include, but are not limited to, the following:

5.6.6.2.1. Unauthorized ignition sources such as flame-producing devices are prohibited at the OB/OD area at any time;

5.6.6.2.2. Sparking equipment and tools are prohibited near explosive materials unless specifically authorized by the Demil Supervisor;

5.6.6.2.3. All hand tools and mechanical devices are inspected prior to use to ensure their safety;

5.6.6.2.4. Motor vehicles used to transport waste explosives, ammunition, or other material meet the requirements of TE-0000-R-354;

5.6.6.2.5. OB/OD operations cease during electrical storms, rain, or snowstorms;

5.6.6.2.6. The material is protected against accidental ignition or explosion from fragments, grass fires, burning embers, or the impulse associated with materials being detonated;

5.6.6.2.7. Dry grass, leaves and flammable/combustible materials are removed from around the OB/OD area;

5.6.6.2.8. Initiators (e.g., blasting caps, primers) and explosives are packaged, transported, and handled separately until placement for treatment; or

5.6.6.2.9. Engines of transport vehicles are turned off prior to the unloading of munitions.

5.6.6.3. These procedures are in use at various Department of Defense OB/OD operations throughout the country. Experience has shown that when they are followed, the danger of accidental detonation or combustion is negligible.

# 6.0 Hydrolysis Facility, Building 1400

# 6.1 Emergency Equipment

6.1.1. Alarms (audible beeping, alarm messages on control screens) are built into the automated control system alerting the operators to emergency situations. Internal communication and alarm is achieved by voice. The facility is small and generally no more than eight people work in the facility at the same time.

6.1.2. A telephone is located in the office of the facility that shall be used for summoning external help or emergency assistance.

6.1.3. Whenever the facility is in use, employees will communicate by voice with others present. Employees shall use the telephone located in the office for summoning external emergency assistance.

6.1.4. Portable fire extinguishers are located at the Hydrolysis Facility as shown on the drawing of Building 1400 in Appendix A.

6.1.5. A spill kit containing Tyvek suits, absorbent material, gloves, boots, face shields, and safety glasses or goggles is located at the Hydrolysis Facility. The location of the spill kit is shown on the drawing of Building 1400 in Appendix A.

6.1.6. An eyewash and shower is located at the Hydrolysis Facility. The locations of the eyewash and shower are shown in the drawing of Building 1400 in Appendix A.

# 6.2 Operating Requirements

6.2.1. The floor plan of the Hydrolysis Facility is shown in the drawing of Building 1400 in Appendix A. The equipment layout was designed to allow easy inspection, maintenance, removal and replacement of the installed equipment. The spacing is also adequate for spill control activities. No PEP materials are stored at the facility. During operation, only the quantity of PEP materials that are to be processed that day are brought to the facility. If, for

some reason, these items are not processed, they will be returned to a permitted hazardous waste storage facility.

6.2.2. The Permittee shall maintain reciprocal agreements with area fire departments, law enforcement agencies and hospitals. A listing of the local authorities that the Permittee has agreements with is given in Appendix B. TEAD has its own fire department and security organizations, who will be the primary responders to emergencies. This plan and others dealing with hazardous waste management are reviewed by these organizations so that they may become familiar with the hazards and properties of the materials and the facilities at TEAD.

6.2.3. Fires fueled by PEP material or wastes are not fought because of safety reasons. Fires of ordinary combustible items are fought and two primary water sources are available. A hydrant is located just out the gate to the facility within a few hundred feet of the structure and supplies 1325 gpm at 101 psi of static pressure. Pumper trucks are also available for firefighting. Building 1400 is also equipped with an automatic dry powder fire suppression system.

# 6.3 Preventative Procedures, Structures, and Equipment

6.3.1. The same procedures and equipment used for unloading at the PEP CSFs are also used at the Hydrolysis Facility. These include: use of spotters for movement of PEP, non-sparking lifts and hand tools, grounding, explosive safety training, refresher training, and on-the-job training.

6.3.2. The Hydrolysis Facility is totally enclosed and weather tight. All spills will be immediately cleaned up.

6.3.3. The facility shall be supported with a back-up generator to ensure ventilation systems remain online in the event of a power failure.

6.3.4. Contamination of water supplies is prevented by the utilization of secondary containment on the hydrolysis, rinse and NAOH product tanks; sweeping up any residue or propellant from the disassembly room concrete floor; properly containerizing all materials and waste; and promptly responding to all spills and discharges.

6.3.5. Personnel working at the Hydrolysis Facility are provided chemical resistant aprons, rubber and leather gloves, face shield, boots, and conductive soled shoes. In the event of a spill, Tyvek suits, gloves, boots, face shields and safety glasses or goggles are available in the spill kit.

6.3.6. Proper techniques for transportation and handling as outlined in SOPs include grounding, prohibition of smoking and open flames, prohibition of spark producing devices, and use of non-sparking tools and material handling equipment. The ventilation system, which is supported by a back-up generator, ensures hydrogen emissions are maintained below the explosive limit.

## 6.4 Inspection and Maintenance

6.4.1. The spill control, fire, and decontamination equipment are inspected in accordance with Attachment 4 (Inspection Plan).

6.4.2. If any of the spill control or decontamination equipment is incomplete or deficient the Operator will provide whatever is needed to maintain the spill control equipment. The decontamination equipment (eyewash and shower) will be inspected and maintained by the Ammunition Operations personnel.

Appendix A

Location of Emergency Equipment



Figure A-1





Figure A-3 Igloos C-514, C-815, C-816, K-401, K-402, K-403, K-404, K-801, K-802, & K-803 Location of Emergency Equipment





August 26, 2019 UT3213820894











OB/OD & Static Fire Location of Emergency Equipment Figure A-8





Figure A-10

# **Appendix B**

# List of Reciprocal Agreements

# Medical

- Mountain West Medical
- IHC Health Services, INC
- University of Utah Hospital
- MEDCOM

Fire

- Tooele City Fire Department
- Stockton Fire Department
- North Tooele County Fire Department
- Dugway Proving Ground Fire Department
- Grantsville City Fire Department

Law Enforcement

• Tooele City Law Enforcement

ATTACHMENT 7

and and a

HAZARDOUS WASTE CONTINGENCY PLAN

# **Table of Contents**

Table of Contentsii							
Tab	le of A	ppendices	iii				
Defi	Definitionsiv						
1.0	1.0 General Information						
	1.1	Introduction	1				
	1.2	Purpose	1				
	1.3	Scope	1				
	1.4	Type of Installation	2				
	1.5	Name, Address, Telephone Number of Owner / Operator	2				
	1.6	Location of Installation	4				
	1.7	Surveillance Procedures for Early Detection of Spills	4				
	1.8	Arrangements Agreed to by Local Agencies	4				
	1.9	Installation on Scene Coordinator (IOSC)	4				
	1.1	0 Review and Amendment of Plan	6				
2.0	Spill R	lesponse	6				
	2.1	Initial Response Actions	6				
	2.2	Spill Response, Duties and Responsibilities	7				
	2.3	Spill Response, Mobilization Procedures	11				
	2.4	Emergency Notifications for Off-Site Impacts	12				
	2.5	Response During Off duty Hours	12				
	2.6	Spill Mitigation and Clean Up	12				
	2.7	Control of Fires Involving Reactive (Explosive) Hazardous Waste	13				
	2.8	Cleanup Resources	13				
	2.9	Reporting Requirements	14				
	2.1	0 Resources Available to Regional Response Team	14				
	2.1	1 Training	14				
	2.12	2 Extremely Hazardous Substances	15				
3.0	Hazaro	lous Waste Management Facilities	15				
3.1	Locati	on of Hazardous Waste Management Facilities	15				
3.2	Dissen	nination of Site Specific Spill Procedures	15				
3.3	Evacua	ation Procedures and Routes	16				
4.0	OB/OI	O Contingency Plan Procedures	16				
	4.1	Identification of Hazardous Materials Released at the O/OD Unit	18				
	4.2	Assessment	18				
	4.3	Uncontrolled Fires	19				
	4.4	Storage, Treatment and Disposal of Released Material	20				
	4.5	Control of Fires and Prevention of Recurrence or Spread of Fires, Explosions or					
		Releases	20				
	4.6	Post-Emergency Equipment Maintenance	20				

# **Figures and Tables**

Figure 1	Map, Location of TEAD	3
Figure 2	Emergency/Non-Emergency Response Duties	5
Figure 3	Spill Response Procedures	8
Figure 4	Location of HWMUs1	7
$\mathcal{O}$		

 Table 1
 NFPA Planning Guide for Determining Incident Levels, Response Incident Levels.....9

# Appendices

Appendix A.	List of Emergency Coordinators	21
Appendix B.	Site Specific Spill Response Procedures	23
Appendix C.	Decontamination Procedures	35
Appendix D.	Contracted and Outside Resources	41
Appendix E.	Emergency and Spill Control Equipment	43
Appendix F.	Spill Reporting	48
Appendix G.	Guidelines for Releasing Information	52
Appendix H.	Evacuation Routes	54

#### Definitions

TEAD: Tooele Army Depot, the Facility.

**EMD:** Environmental Management Division, the organization at TEAD responsible for managing all environmentally related programs at the installation. The EMD will report spills to agencies if required.

**HWCP:** Hazardous Waste Contingency Plan, a plan which specifies how all types of emergencies in which hazardous wastes or substances are involved will be mitigated.

**IOSC:** Installation On Scene Coordinator, the individual who is responsible for assessing the potential impact of an incident and coordinating the deployment of personnel and equipment for mitigation and reporting the incident to the EMD.

**OSC:** On Scene Commander, the individual who directs the actual cleanup operations at the site of the incident. This role is filled by the on duty Fire Department supervisor for emergency incidents.

**HAZMAT TEAM:** Fire Department personnel who are the most highly trained individuals of the Incident Response Team. This team has the responsibility of making emergency entries into hazardous areas to mitigate emergency incidents involving hazardous substances.

**EOC:** Emergency Operations Center, a facility located in building 1246 at TEAD which is designed and equipped for directing and coordinating response operations for all types of emergencies.

**EOC Operations Officer:** Acts as the IOSC and reports to the EOC in the event of an emergency incident.

**ICS:** Incident Command System, a standardized system of organization, terminology, and resource identification for efficient control of emergency situations.

**PAO:** Public Affairs Officer, the person who is authorized and given the responsibility for releasing information to the public, media, etc.

**ISCP:** Installation Spill Contingency Plan, a required plan (40 CFR 300) for cleanup of discharges of oil and hazardous substances. An ISCP is also required by Army Regulation AR 200-1.

#### HAZARDOUS WASTE CONTINGENCY PLAN

#### 1.0 General Information

#### 1.1 Introduction

1.1.1. A number of State and Federal regulations have been promulgated which require various plans to respond to spills of hazardous substances. The National Oil and Hazardous Substances Contingency Plan (40 CFR 300) requires federal agencies to develop a plan to respond to discharges of oil and hazardous substances for which they are responsible. The Utah Hazardous Waste Management Rules require facilities storing or treating hazardous waste to develop a contingency plan for the release of hazardous waste. Other State statutes require similar plans. This plan incorporates the requirements from the various regulations into one plan as they apply at the Facility.

## 1.2 Purpose

1.2.1. This plan establishes the duties, responsibilities, resources, and procedures to be employed for mitigation and cleanup of hazardous substance or waste spills, fires, and explosions at the Facility. This plan identifies the Installation On Scene Coordinator (IOSC), the On Scene Commander (OSC), and the Hazardous Material (HAZMAT) Team. This plan also identifies Army resources that may be available to the Regional Response Team (RRT) for assistance in cleaning up non-Army spills.

## 1.3 Scope

1.3.1. This plan addresses the following permitted Hazardous Waste Management Units (HWMUs) at the Facility: Container Storage Facilities (Buildings 528, A-101, C-514, C-815, C-816, K-401, K-402, K-403, K-404, K-801, K-802, K-803, 1368, 1369, 1370, 1371, 1320, and 1205)(Buildings 528, A-101, C-815, C-816, 1368, 1370, 1320, and 1205), the Deactivation Furnace (Building 1320), the Small Caliber Disassembly Lines (Buildings 1325 and 1335), the Open Burn/Open Detonation Facility and the Hydrolysis Facility (Building 1400).

## 1.4 Type of Installation

1.4.1. TEAD is a government-owned government-operated (GOGO) facility. The current major functions of the Facility are as follows:

1.4.1.1. Storage, surveillance, maintenance, and distribution of conventional munitions and other military supplies, and

- 1.4.1.2. Researching and developing new methods for demilitarization of all types of munitions
- 1.4.2. The current tenant activities at the Facility are:

U.S. Army Corps of Engineers U.S. Army Health Clinic Utah Industrial Hygiene Section Air Force Reserve Ammunition Team Civilian Personnel Advisory Center

#### 1.5 Name/Address/Telephone Number of Owner/Operator

Installation – Government Staff:

Name: Tooele Army Depot

Address: Tooele Utah, 84074

Telephone Number: (801) 833-3504 (Environmental Management Division)

Installation's Major Subordinate Command

Name: Joint Munitions Command

Address: Rock Island, Illinois

Telephone Number: (309) 782-0080

Installation's Major Command

Name: Army Material Command

Address: Fort Belvoir, Virginia 22060

Telephone Number: (703) 806-8726 (Env. Office)



# 1.6 Location of Installation

1.6.1. The Facility is located in the north-central portion of the state of Utah in eastern Tooele County. The installation lies about three miles south of the town of Tooele, and is about forty miles south and west of Salt Lake City. The location is indicated on Figure 1.

#### 1.7 Surveillance Procedures for Early Detection of Spills

1.7.1. The surveillance function for the early detection of spills at the Facility will be accomplished by the following organizations: Area workers at potential spill sites, Fire Department (HAZMAT Team), and Installation Security. These personnel have been trained to observe these locations throughout the day during their normal duties. In addition to these groups, other personnel including environmental inspectors, maintenance, engineering, and transportation personnel will make observations while performing their regular duties.

#### 1.8 Arrangements Agreed to by Local Agencies:

1.8.1. The Facility has its own law enforcement, medical, and Fire Department organizations located on the installation. These organizations will be the first responders for emergencies occurring at the Facility. These organizations have been provided copies of this plan and other related plans so that they are informed about the types of hazards present, the layout of the facilities, and evacuation routes.

1.8.2. In addition, the Permittee has entered into mutual assistance agreements with other local emergency, medical, and law enforcement agencies. Copies of these agreements are located in Attachment 6 (Preparedness and Prevention Plan).

1.8.3. Copies of this Contingency Plan are given to all of the TEAD organizations identified in the plan and the local agencies that the Permittee has support agreements with. The names and phone numbers of the local agencies are listed below:

Tooele City Fire Department	(435) 843-2200-882-5600
North Tooele County Fire Department	(435) 882-6730 882-5600
Stockton Fire Department	(435) 882-1634 882-5600
IHC Health Services, Inc.	(801) <u>507-7000</u> <del>357-7850</del>
University of Utah Hospital	(801) 581-2121
Mountain West Medical Center	(435) 843-3601
Tooele City Law Enforcement	(435) 882-5600
Dugway Proving Ground Fire Department	(435) 831-2236
Grantsville City Fire Department	(435) 884-3343

## 1.9 Installation On-Scene Coordinator (IOSC)

1.9.1. The IOSC has been designated by the TEAD command group to be the Emergency Operations Center (EOC) Operations Officer. The IOSC will function as the facility emergency coordinator. The responsibilities of the IOSC include: assessment of the spill, requesting for additional manpower and resources, coordination of mitigation and cleanup. The IOSC will be supported as necessary by the Advisory/Support Group, see Figure 2. Further information about the duties of the Advisory/Support Group is given in Section 2.2. The IOSC along with the alternates are specified in Appendix A.

Attachment 7 – Hazardous Waste Contingency Plan Tooele Army Depot 2

#### EMERGENCY RESPONSE



Attachment 7 – Hazardous Waste Contingency Plan Tooele Army Depot 3

Attachment 7 – Hazardous Waste Contingency Plan Tooele Army Depot 4

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#### 1.10 Review and Amendment of Plan

1.10.1. This plan will be reviewed and amended if necessary when any of the following conditions exist:

1.10.1.1. The facility hazardous waste operating permit is modified.

1.10.1.2. The plan fails in actual use during an emergency.

1.10.1.3. The design, operation, or construction of the facility changes in such a way as to cause an increased potential for fires, explosions, or releases of hazardous material or waste, or changes the response necessary in an emergency.

1.10.1.4. The list of emergency coordinators or emergency equipment changes.

#### 2.0 Spill Response

#### 2.1 Initial Response Actions

2.1.1. The Primary concern in any spill scenario is the protection of personnel from harm. This protection can be accomplished by evacuating the area, using appropriate clothing and personnel protective equipment, and removing sources of ignition if fire or explosion hazards exist.

2.1.2. The overall spill response procedure is shown in Figure 3. Whoever first discovers a spill shall assess the emergency status of the spill or related incident using the following criteria:

2.1.2.1. EMERGENCY: Any spill or release of hazardous substance, which poses an <u>immediate</u> threat to life or health, or poses an <u>immediate</u> threat to the environment and requires immediate action. The following criteria may also indicate an emergency scenario:

2.1.2.1.1. Need for personal protective equipment beyond what is on hand;

2.1.2.1.2. An unusual release of dangerous quantities of gases, fumes, liquids, etc. for which the local workers are not trained or prepared to deal with;

2.1.2.1.3. Presence of other hazards such as electrical shock, heat, flames, or other physical hazards;

2.1.2.1.4. Spills involving an unknown substance.

2.1.2.2. NON-EMERGENCY (incidental release): Any spill or release of a hazardous substance or waste, which is <u>not immediately</u> threatening to life, health, or the environment and can be controlled and mitigated by employees in the immediate area. A typical example would be routine spills of common substances for which the workers are familiar with and trained and prepared to respond to and in quantities that are manageable.

2.1.3. Table 1 provides additional guidance for determining the emergency status of a spill. An incident level of two or three for any of the listed incident conditions would indicate an emergency response.

Attachment 7 – Hazardous Waste Contingency Plan Tooele Army Depot 5

2.1.4. Persons regularly working in these areas are most likely to be the ones who discover spills. Most of the workers at the HWMUs and other potential spill sites receive OSHA Hazard Communication Standard training and on the job training (OJT) sufficient for assessing the emergency status of spills. This training is described in Section 2.11.

2.1.5. Initial Response for Emergency Spills includes the following:

2.1.5.1. Evacuate and deny entry to all personnel in immediate area.

2.1.5.2. Call 911 and give your name and call back number, the exact location of the spill or release, any injuries related to the spill or release, the type or kind of substance involved and the amount of substance involved.

2.1.5.3. Stay on the line and answer all questions asked by the dispatcher.

2.1.5.4. Assign someone to direct emergency personnel to spill or release.

2.1.5.5. Do not attempt to rescue downed personnel unless you are trained to do so, and have a reasonable chance for success.

2.1.6. Initial Response for Non-Emergency Spills (incidental releases) includes the following: Stop flow, contain and clean up spill with locally available resources (spill control supplies, personal protective equipment, manpower) in accordance with site specific instructions for spill cleanup and reporting. Only persons who have received formal training and are equipped with appropriate personal protective equipment (PPE) may take these actions. Site-specific instructions for non-emergency spill response (clean up and reporting) have been developed for all potential spill sites, and will be posted locally. Copies of the site specific spill response procedures are found in Appendix B.

## 2.2 Spill Response Duties and Responsibilities

2.2.1. IOSC: Shall activate any internal alarm systems not activated by the OSC and notify any needed facility personnel, such as local area responders, to assist in the emergency response. Shall take steps to ensure that fires, explosions, and discharges do not occur, recur, or spread to other hazardous substance or waste operations. This responsibility is also shared with the OSC. Shall request assistance from State or local response agencies when their assistance is needed. Shall determine the character, source, and extent of any discharged materials, and assess all possible hazards, both direct and indirect, to human health or the environmental resulting from these discharges. Shall ensure that any recovered waste or other contaminated materials resulting from the incident are properly managed as a hazardous waste, unless these materials are found not be hazardous. Shall ensure that all emergency equipment is clean and fit for its intended use, and shall notify the appropriate State or local authorities before operations are resumed.



Attachment 7 – Hazardous Waste Contingency Plan Tooele Army Depot 7

Figure 3 Spill Response Procedures

Attachment 7 – Hazardous Waste Contingency Plan Tooele Army Depot 8

August 26, 2019 UT3213820894

Incident Level	One	Two	Three			
Incident Conditions						
Product Identifications	Placard not required, NFPA 0 or 1 categories all OLM A, B, C and D	DOT placarded, NFPA 2 for any categories, PCBs without fire, EPA regulated waste	Poison A (gas), explosives A/B, organic peroxide, flammable solid, materials dangerous when wet, chlorine, fluorine, anhydrous ammonia, radioactive materials, NFPA 3 and 4 for any categories including special hazard, PCBs and fire, DOT inhalation hazard, EPA extremely hazardous substance and cryogenics			
Container Size	Small (e.g., pail, drums, cylinders except one-ton packages, bags)	Medium (e.g., one-ton cylinder, portable containers, nurse tanks, multiple small packages)	Large (e.g., tank cars, tank trucks, stationary tanks, hopper cars/trucks, multiple medium containers)			
Fire/Explosion Potential	Low	Medium	High			
Leak Severity	No release or small release contained or confined with readily available resources	Release may be controlled without special resources	Release may not be controlled even with special resources			
Life Safety	No life threatening situation from materials involved	Localized area, limited evacuation area	Large area, mass evacuation area			
Environmental Impact Potential	Minimal	Moderate	Severe			
Container Integrity	Not damaged	Damaged but able to contain contents to allow handling	Damaged to such an extent that catastrophic rupture is possible			

Table 1 NFPA Planning Guide for Determining Incident Levels, Response and Training

2.2.2. On Scene Commander (OSC): The Fire Department supervisor shall assume the role of OSC. The OSC directs the emergency mitigation and cleanup operations at the incident site and works in communication with the IOSC. Responsibilities shared with the IOSC include: activation of facility alarms, notification or recall of response personnel and ensuring that fires, releases, explosions, etc., do not recur or spread to other HW operations.

2.2.3. Fire Department (FD): The participation of the FD HAZMAT Team shall be limited to incidents involving real or suspected emergency hazards as defined in section 2.1. The FD HAZMAT Team is the most highly trained and equipped group on the installation for spill response and is responsible for

Attachment 7 – Hazardous Waste Contingency Plan Tooele Army Depot 9 entering and mitigating emergency releases. The FD also provides emergency medical treatment and ambulance service of HAZMAT incident victims.

2.2.4. Advisory/Support Group: Members of this group have the responsibility of assisting the IOSC as outlined below.

2.2.5. Environmental Management Division (EMD): Shall assist with determination of environmental threats, proper disposal and management of wastes, technical guidance and reporting to outside agencies as required by regulations.

2.2.6. Safety Office: Shall provide to the OSC site-specific information on chemical and other hazards at the Facility including MSDSs, PPE information, sampling and monitoring data, chemical hazard and other emergency response information. Other responsibilities include the establishment of control zones based upon the evaluation of hazards, ensuring that proper decontamination procedures (Appendix C) are in place, and documentation of site activities.

2.2.7. Utah Environmental Health Section (Industrial Hygiene): Shall provide monitoring of the scene and determine the extent of contamination around the scene. This information will be used by the IOSC or OSC to determine evacuation priorities.

2.2.8. U.S. Army Health Clinic: Responsibilities include providing medical surveillance and support for HAZMAT entry teams, while remaining outside of the hot areas.

2.2.9. Public Affairs Office: The Public Affairs Office (PAO) may be called upon by the IOSC to interface with the news media in the event that a hazardous substance escapes from the installation and threatens the public.

2.2.10. Contract Officer: The responsibility of the Contract Officer is to initiate a contract for spill cleanup by private contractor if directed by the IOSC. Contracted cleanup will be used when spill cleanup operations impair the primary mission of TEAD, or when the spill exceeds the installation's capabilities. Contractors will clean up any non-emergency spill that requires greater than level "C" protection. Possible sources of contracted clean up assistance are listed in Appendix D. If clean-up operations involve treatment of HW beyond initial response, an emergency permit may be required

2.2.11. Local Area Responders: Composed of persons who regularly work in non-HW management facilities that have a potential for spills of hazardous substances. This group consists of permanently employed individuals from Installation Support, Ammunition Equipment and Ammunition Operations.

2.2.11.1. Their responsibilities include cleaning up small or large incidental spills (nonemergency) of substances that they are familiar with, trained and equipped to deal with. This includes stopping or containing flows, diking, repairing leaks, containerizing and labeling spilled wastes, and notification to the IOSC. For larger, non-emergency spills, this group may be called upon by the IOSC to assist in the clean-up of spills in areas larger than where they ordinarily work.

Attachment 7 – Hazardous Waste Contingency Plan Tooele Army Depot 10

2.2.12. HW Management Facility Employees: The responsibilities of this group are similar to those of the Local Area Responders except that these individuals are members of the TEAD Hazardous Waste Management Program (HWMP). The HWMP is for all employees who work at permitted HW management facilities. All HWMP members receive RCRA hazardous waste management training.

2.2.13. Directorate for Law Enforcement and Security: Their function is to control traffic and crowd situations as a result of an incident and assist the OSC with emergency evacuation and isolation.

2.2.14. Directorate for Base Operations: Maintenance and Grounds Division Provides heavy equipment support if needed as instructed by the IOSC or the OSC. The Utilities Division may be called upon to disconnect electrical power when deemed necessary by the IOSC or the OSC.

2.2.15. The training requirements for the response groups described above are given in Section 2.11.

## 2.3 Spill Response Mobilization Procedures

2.3.1. Any employee who witnesses or discovers a spill or incident involving hazardous or unknown substances and determines that the incident requires an emergency response shall call the Fire Department by dialing 911.

2.3.2. After receiving a 911 call, the Fire Department supervisor (OSC) shall activate the FD HAZMAT Team, notify the IOSC, and commence mitigation procedures.

2.3.3. The IOSC, or alternate, will report to the Emergency Operations Center (EOC), which is located in Building 1246. From the EOC, the IOSC will communicate with the OSC and mobilize support staff if necessary. The Incident Command System (ICS) will be implemented from the EOC, all responders will operate within the ICS.

2.3.4. The FD HAZMAT Team will remain at the incident site until the emergency is brought under control. When the situation becomes a non-emergency clean up, the IOSC will direct one of the other groups (Installation Support, local area responders, HW Mgmt. Employees, etc.) to complete the clean up operations, and report the incident to the EMD.

2.3.5. Release of information to the media, if required, shall be coordinated with the PAO and TEAD command group by the IOSC. See Appendix G, *Guidelines for Releasing Information*.

2.3.6. Non-Emergency spills shall be cleaned up with local manpower and resources using locally available materials and manpower and report the incident as soon as possible to the EMD in accordance with the site-specific spill response instructions posted in the immediate area and contained in Appendix B.

2.3.7. The EMD shall report all spills that are at or above the reportable quantity to the appropriate state and federal agencies as detailed in Appendix F.

Attachment 7 – Hazardous Waste Contingency Plan Tooele Army Depot 11

#### 2.4 Emergency Notifications for Off-Site Impacts

2.4.1. Should the IOSC determine that the facility has had an incident that could threaten human health or the environment outside of the facility, the following reports will be made:

2.4.1.1. If the IOSC's assessment indicates that evacuation of local areas may be advisable, he will immediately notify the appropriate local authorities, and be available to assist the local authorities in making the decision of whether or not to evacuate.

2.4.1.2. The Environmental Management Division will make the appropriate notifications to the State of Utah Department of Environmental Quality and the National Response Center.

#### 2.5 Response During Off-Duty Hours

2.5.1. The spill response procedure for off-duty hours is the same as for normal hours, except for the following differences: During off-duty hours, the IOSC and Advisory/Support Group are not present, and members or alternates may have to be called on to report to the incident site if required by the OSC.

#### 2.6 Spill Mitigation and Cleanup

2.6.1. Site-specific spill response procedures for each hazardous material or waste management facility are given in Appendix B. These procedures are for non-emergency cleanup operations, and are to be carried out by HW Management Facility employees working in the immediate areas. The procedures in Appendix B are general in nature, and are for general guidance to be carried out by trained individuals only.

2.6.2. For emergency spills requiring emergency response, the IOSC shall determine the most effective clean up procedure for each individual spill, and ensure that the procedures are properly carried out.

2.6.3. Leaking HW containers (drums) are generally not repaired. Normally, a leaking drum will be placed into an overpack drum. Various types of emergency leak repair kits are maintained and may also be used as a temporary measure until the damaged drum is placed in an overpack drum or the contents transferred to a sound container.

2.6.4. In the event that a waste is incompatible with wastes or materials already stored at a given location is spilled, the incompatible materials or wastes will be moved to a temporary location until the spilled waste is completely cleaned up or neutralized. If necessary, an extension to the 90-day limit for emergency HW storage at the TEAD 90 day storage facility will be requested from the Director. This same procedure will be used if the Container Storage Facility is unusable for other reasons (fires, explosions, damage, etc.) as well.

2.6.5. Following the completion of spill cleanup, fires, or other incidents involving hazardous materials or wastes, all emergency equipment will be decontaminated using the procedures given in Appendix C.

Attachment 7 – Hazardous Waste Contingency Plan Tooele Army Depot 12
The decontamination operations will be conducted by members of the HAZMAT team, hazardous waste management facility employees, and/or local area responders under the direction of the IOSC. Also, the Fire Department, hazardous waste management facility employees, and/or local area responders will restock spill control and fire control materials, before normal operations resume.

2.6.6. During response to fires, care will be taken to contain and recover any run off of waste and water, foams, or chemicals applied to the fire. If possible, the area will be diked and any drains blocked before using liquids to fight the fire. After the fire is extinguished, the materials involved in the fire and surrounding area will be decontaminated if necessary and recovered and placed into containers for proper disposal.

2.6.7. A complete description of all emergency, spill control, and decontamination equipment, for each hazardous waste management facility is provided in Attachment 6 (Preparedness and Prevention Plan).

## 2.7 Control of Fires Involving Reactive (Explosive) Hazardous Waste

2.7.1. The TEAD FD shall respond to any reported emergency situation involving reactive hazardous wastes. The FD is staffed and led by trained, professional fire fighters. Actions appropriate to controlling and preventing the spread of fires will be selected and implemented by these trained professionals. The Permittee shall rely upon their professional, on-scene judgment in selecting a course of action that is most protective of human health and the environment. Similarly, the knowledge and training of on-scene Army ordinance experts shall be used in determining the most appropriate response to actual or potential uncontrolled explosions, or releases of reactive hazardous wastes. Typically fires involving explosives will not be fought unless it is necessary to provide assistance to injured personnel.

## 2.8 Cleanup Resources

2.8.1. Manpower for cleanup includes the HAZMAT team which is made up of FD staff, hazardous waste management facility staff and local area responders.

2.8.2. A complete listing of all of supplies, materials and equipment, including descriptions of capabilities, number of items, and locations are given in Appendix E.

2.8.3. A medical facility, the U.S. Army Health Clinic, is maintained at the Facility. The Fire Department maintains ambulance service 24 hours per day seven days per week.

2.8.4. A file of SDS's is maintained at the TEAD Safety Office, ext. 2713. A listing of environmental contractors, which could provide technical assistance for emergencies, and their telephone numbers, is provided in Appendix D.

## 2.9 Reporting Requirements

2.9.1. Personnel working at HWMUs shall follow the site-specific instructions for reporting spills. The site-specific instructions are located at the hazardous material/waste management areas and are also

Attachment 7 – Hazardous Waste Contingency Plan Tooele Army Depot 13

included in Appendix B of this plan. Regulations, as identified in Appendix F, require that spills in excess of their reportable quantities be reported immediately by telephone to various federal state, and local agencies and Army offices. The Environmental Management Division is responsible for determining whether a reportable quantity has been spilled and for making the required telephonic notifications. The telephonic reporting shall be done promptly, even if the information is incomplete.

2.9.2. It is required by various federal and state regulations that a written report be submitted, in addition to telephonic reporting, when a spill in excess of the reportable quantity happens. The written report must contain the information discussed in Appendix F. The Environmental Management Division shall maintain copies of written spill reports on file.

2.9.3. Spill information for release to the public shall be reviewed by the Environmental Management Division, and approved by the installation commander. Appendix G provides guidance for releasing information. The PAO has been designated as the individual responsible for providing information to the public.

#### 2.10 Resources Available to Regional Response Team

2.10.1. All of the equipment listed in Appendix E is available for use by the Regional Response Team (RPT). In the event that such assistance is requested, the IOSC will coordinate with the installation commander and determine what resources will be made available the RRT.

#### 2.11 Training

2.11.1. The TEAD ISCP training program consists of two parts as outlined below:

2.11.1.1. All employees that work in any of the hazardous waste management facilities will receive the OSHA Hazard Communication Standard training and the RCRA training for hazardous waste management facility employees in accordance with Attachment 5 (Training Plan). The training records for hazardous waste management employees are maintained by the EMD.

2.11.2. This plan shall be tested annually by staging a simulated spill event, in which the HAZMAT Team is mobilized. In the event that a real spill occurs, the simulated event may not be required. The installation commander and the IOSC will determine the time and scope of the simulated spill. The response actions of the spill exercise shall be evaluated and a lessons learned briefing shall be held after the simulation. The exercise shall be documented by the IOSC to include the time, date, and participants of the exercise and lessons learned. The training requirements of OSHA 29 CFR 1910.120, which concern safety hazards associated with hazardous substance emergency response actions will be provided to the Fire Department.

#### 2.12 Extremely Hazardous Substances

Attachment 7 – Hazardous Waste Contingency Plan Tooele Army Depot 14 2.12.1. Presently there are no extremely hazardous substances, as defined by Superfund Amendment and Reauthorization Act (SARA) Title III, at the Facility. Yearly inventories are scheduled for determining if any of these materials will be present in the future. If any materials are brought on the installation that are considered extremely hazardous and are above the reportable quantity, the following actions shall be taken:

2.12.1.1. The Tooele County Health Department and the Utah Division of Waste Management and Radiation Control will be notified.

2.12.1.2. This plan shall be amended to identify that they are present.

## 3.0 Hazardous Waste Management Facilities

## 3.1 Location of Hazardous Waste Management Units (HWMUs)

3.1.1. The locations of the permitted HWMUs at the Facility (Buildings 528, A-101, C-514, C-815, C-816, K-401, K-402, K-403, K-404, K-801, K-802, K-803, 1368, 1369, 1370, 1371, 1320, 1205, 1325, 1335, 1400, and the Open Burning and Detonation area) are shown on Figure 4.

## **3.2** Dissemination of Site Specific Spill Procedures

3.2.1. The purpose of the site-specific spill response procedures is to provide instructions to the local workers at the permitted sites to assist them in cleaning up and reporting non-emergency spills. The instructions are not complete in all details, but should be useful to local workers who have received OSHA Hazard Communication Standard training, RCRA training, and on-the-job training. A complete list of the instruction sheets can be found in Appendix B.

3.2.2. Most of the hazardous wastes which are handled at these facilities are derived from common industrial and military materials that are well characterized. Instruction sheets have been prepared for initial response, reporting, emergency procedures, spill cleanup and decontamination procedures for each of the types of hazardous wastes present and will be posted at each HWMU. The table below lists the combination of instruction sheets posted at each unit.

Site Number	Type of Operation	Instruction Sheets
R0528M	Permitted HW Storage	All except K
A0101M	Igloo A101, PEP HW Storage	A, B, K
<u>A0514M</u>	Igloo C514, PEP HW Storage	<u>A, B, K</u>
A0815M	Igloo C815, PEP HW Storage	A, B, K
A0816M	Igloo C816, PEP HW Storage	A, B, K
<u>A0401M</u>	Igloo K401, PEP HW Storage	<u>A, B, K</u>
<u>A0402M</u>	Igloo K402, PEP HW Storage	<u>A, B, K</u>
<u>A0403M</u>	Igloo K403, PEP HW Storage	<u>A, B, K</u>
<u>A0404M</u>	Igloo K404, PEP HW Storage	<u>A, B, K</u>
A0801M	Igloo K801, PEP HW Storage	A, B, K

Attachment 7 – Hazardous Waste Contingency Plan Tooele Army Depot 15

<u>A0802M</u>	Igloo K802, PEP HW Storage	<u>A, B, K</u>
<u>A0803M</u>	Igloo K803, PEP HW Storage	<u>A, B, K</u>
A1205M	Above Ground Magazine	A, B, K
	1205, PEP HW Storage	
A1368M	Service Magazine 1368, PEP	A, B, K
	HW Storage	
<u>A1369M</u>	Service Magazine 1369, PEP	<u>A, B, K</u>
	HW Storage	
A1370M	Service Magazine 1370, PEP	A, B, K
	HW Storage	
<u>A1371M</u>	Service Magazine 1371, PEP	<u>A, B, K</u>
	<u>HW Storage</u>	
1320T	Deactivation Furnace, PEP	A, B, K
	HW Storage	
A1325T	Small Caliber Disassembly	A, B, K
	Line (Buildings 1325 and	
	1335)	
A1346T	Open Burning/Open	A, B, K
	Detonation	7
A1400T	Hydrolysis Facility	A, B, C, K

#### **3.3** Evacuation Procedures and Routes

3.3.1. In the event that a safety or life-threatening hazard exists, the involved facilities shall be evacuated. Appendix H contains the evacuation routes and alternate routes for the hazardous waste facilities. The signal for commencement of evacuation is a steady continuous alarm with an air horn, siren, or vehicle horn. The supervisor or an assigned alternate shall determine the presence or absence of all employees when assembled at a safe waiting area.

Attachment 7 – Hazardous Waste Contingency Plan Tooele Army Depot 17

August 26, 2019 UT3213820894

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Attachment 7 – Hazardous Waste Contingency Plan Tooele Army Depot 18

Figure 4 Locations of HWMUs

Attachment 7 – Hazardous Waste Contingency PlanTooele Army Depot19

## 4.0 OB/OD Specific Procedures

4.0.1. The IOSC shall implement the Contingency Plan if accidents occur involving wastes intended for OB/OD when those accidents result in or could result in uncontrolled burning or detonation, which could release hazardous constituents into the environment or endanger human health. The IOSC shall act immediately to assess any such situation. The decision to implement this Plan will depend on the IOSC assessment of several factors:

- 4.0.1.1. The type and quantity of wastes and other materials involved
- 4.0.1.2. The potential for the spread of fire or the initiation of an explosion
- 4.0.1.3. The available capability to respond to and control the situation.

4.0.2. If the IOSC must be summoned, on-scene personnel (in particular the designated team leader), who would most likely be the Range Supervisor at the OB/OD unit, shall first call the Demil Team Leader, who shall then call the IOSC. While waiting for the IOSC to arrive, on-scene personnel shall try to control the incident, if safe to do so, or else shall immediately evacuate the area. The initial response to any emergency is to protect human health and safety, and then the environment. Identification, containment, treatment, and disposal assessment constitute the secondary response.

## 4.1 Identification of Hazardous Materials Released at the OB/OD Unit

4.1.1. The IOSC, with the assistance of the Demil Team Leader, is responsible for identifying the chemical and physical characteristics, exact source, amount, and area extent of the release and hazards of the incident.

4.1.2. Information available to the IOSC will be gathered by interviewing personnel at the OB/OD unit, reviewing the schedules and records pertaining to the OB/OD operations, and discussions with the Demil Team. Information of any hazards presented by waste materials during an emergency is limited to the items scheduled to be detonated.

4.1.3. The types of waste explosives treated at the Facility by OB/OD include unserviceable ammunition, mines, grenades, bombs, propellants, and other ordnance.

## 4.2 Assessment

4.2.1. The IOSC is responsible for assessing the nature of the emergency incident. Since little or no quantitative information (for example, exposure levels) initially may be available, the criteria for assessing the hazards, risks, and vulnerabilities are qualitative. The following criteria will be considered in making this assessment:

4.2.1.1. The need to protect individuals present at the scene and those in the process of responding.

Attachment 7 – Hazardous Waste Contingency Plan Tooele Army Depot 20

4.2.1.2. The nature and size of the incident.

4.2.1.3. Specific information available on the wastes and other materials involved.

4.2.1.4. Weather (e.g., wind speed and direction), topography, and other conditions (e.g., time of day).

- 4.2.1.5. Need to establish safety zones.
- 4.2.1.6. Factors that affect spread, ignition, or reactivity of the product.
- 4.2.1.7. The probability that the incident could spread beyond the incident scene.
- 4.2.1.8. The need to deny access to unauthorized personnel.

4.2.2. To assist in the assessment of the situation, the IOSC may find it appropriate to confer with the Demil Team, or with explosives experts from other Department of Defense installations.

4.2.3. Under reasonably foreseeable conditions, the types and quantities of materials treated at the OB/OD unit would not result in any significant releases that could spread beyond the Facility boundary. In the event of fires, the combination of natural firebreaks, paved roads, man-made firebreaks, and long distances present in the OB/OD unit have been designed to prevent fires from spreading beyond the unit and outside the Facility.

## 4.3 Uncontrolled Fires

4.3.1. Uncontrolled fires may occur as a result of OB/OD operations. If an uncontrolled fire occurs within the OB/OD area, it will not be fought unless necessary to provide assistance to injured personnel.

4.3.2. During uncontrolled fires, the IOSC performs the following functions:

4.3.2.1. Assesses the situation using all available knowledge; the assessment determines whether or not to implement the Contingency Plan.

4.3.2.2. Upon implementation of the Contingency Plan, performs the functions in paragraph 4.3.3.

4.3.2.3. Notifies all appropriate military authorities and emergency response units immediately.

4.3.2.4. Eliminates all possible sources of ignition in the immediate area. These include lighted tobacco products and unauthorized vehicle traffic.

4.3.2.5. Coordinates all response efforts without exposing personnel to undue risk.

Attachment 7 – Hazardous Waste Contingency Plan Tooele Army Depot 21

4.3.2.6. With assistance from EMD, assumes responsibility for directing follow-up activities, if required.

4.3.2.7. With assistance from EMD, prepares and submits all necessary reports on the incident.

#### 4.3.3. The IOSC takes the following actions upon implementation of the Contingency Plan:

- 4.3.3.1. Stops all routine work in the affected area.
- 4.3.3.2. Stops all nonessential waste handling activities.
- 4.3.3.3. Evacuates all nonessential personnel.
- 4.3.3.4. Removes all injured persons from the site and gives medical treatment.
- 4.3.3.5. Gives "all-clear" notification by radio or portable telephone when all danger is over.

4.3.3.6. Arranges for cleaning and inspecting all emergency equipment before resuming normal OB/OD operations.

#### 4.4 Storage, Treatment, and Disposal of Released Material

4.4.1. Immediately after an incident, the IOSC shall arrange for the treatment, storage, or transportation and disposal of recovered waste and waste residues, contaminated soil, or other contaminated materials. The cleanup residue is collected by Demil Team personnel and FD personnel. The material will be collected and containerized until the arrangements for sampling, analysis and disposal can be made.

4.4.2. Cleanup residues that do not possess a potential to burn or detonate will not be treated in the OB/OD unit. These waste residues that may be reactive, but not explosive, will be treated and disposed offsite by other appropriate methods in compliance with applicable regulations.

4.4.3. The IOSC shall be authorized to use all facility personnel and equipment or contractor services as necessary to complete this task. Should the services of a cleanup contractor be required, the IOSC shall request such support from the TEAD Director of Contracting. Reactive wastes or reactive waste residues recovered after an incident shall be treated on-site at the unit by Demil Team personnel.

## 4.5 Control of Fires and Prevention of Recurrence or Spread of Fires, Explosions, or Releases

4.5.1. The TEAD FD shall respond to any reported emergency situation involving reactive hazardous wastes. The FD is staffed and led by trained, professional fire fighters. Actions appropriate to controlling and preventing the spread of fires will be selected and implemented by these trained professionals. The Permittee shall rely upon their professional, on-scene judgment in selecting a course of action that is most protective of human health and the environment. Similarly, the knowledge and

Attachment 7 – Hazardous Waste Contingency Plan Tooele Army Depot 22

training of on-scene Army ordnance experts shall be used in determining the most appropriate response to actual or potential uncontrolled explosions, or releases of reactive hazardous wastes.

4.5.2. Should any event occur that would require implementation of this Contingency Plan, the Permittee shall follow up with actions to prevent future recurrences. At a minimum, future OB/OD operations shall be suspended and an investigation of the incident shall be conducted to determine the reasons for the occurrence. Based on the results of the investigation, any appropriate changes shall be instituted prior to resumption of OB/OD operations.

#### 4.6 Post-Emergency Equipment Maintenance

4.6.1. The IOSC is responsible for maintaining necessary emergency response equipment and PPE. The FD Officer-In-Charge inspects and inventories all emergency equipment before returning it to service. As appropriate, soiled equipment is decontaminated with an appropriate cleaning solution and the rinsate is collected in 55-gallon drums. Representative samples of the collected rinsate will be analyzed for toxic metals (including barium, lead, and selenium) and for 2,4-dinitrotoluene. All analyses will be conducted in accordance with Attachment 2 (Waste Analysis Plan). Rinsates exhibiting hazardous or toxic characteristics as defined in Utah Admin. Code R315-261-20 through 24 will be managed accordingly and will be sent offsite for appropriate treatment at a RCRA-permitted treatment facility. OB/OD operations can resume only when all emergency equipment is determined to be clean and in service.

**APPENDIX A** 

# LIST OF EMERGENCY COORDINATORS

Attachment 7 – Hazardous Waste Contingency Plan Tooele Army Depot 1

August 26, 2019 UT3213820894

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#### LIST OF EMERGENCY COORDINATORS

IOSC	Chief, Fire Department	Office Phone: 435-833-2015
	Craig Tate	Home Phone: 435-830-7074
Alternate 1	Assistant Fire Chief	Office Phone: 435-833-2053
	James Tarpley	Home Phone: 801-631-5002
Alternate 2	Fire Department Training Officer	Office Phone: 435-833-2015
	Brad Tippetts	Home Phone: 435-830-8279

## FIRE DEPARTMENT SUPERVISORS

Business Phone: 435-833-2015 (911 - For Emergencies)

Primary	Chief, Fire Department	Home Phone: 435-830-7074
	Craig Tate	
Alternate 1	Assistant Fire Chief	Home Phone: 801-631-5002
	James Tarpley	
Alternate 2	Fire Department Training Officer	Home Phone: 435-830-8279
	Brad Tippetts	e

APPENDIX B

## SITE-SPECIFIC SPILL RESPONSE PROCEDURES

Attachment 7 – Hazardous Waste Contingency PlanTooele Army Depot23

## SHEET A

Site No.:

#### Location/Operation:

#### Spill Response Procedure:

A. Determine if the spill is an emergency. An emergency exists when the spill causes an <u>immediate</u> threat to human life, health, or the environment. If it is not clear whether or not an emergency exists, assume that there is an emergency. All other spills are non-emergencies.

B. FOR EMERGENCY SPILLS ONLY: (The Fire Department is not responsible for cleanup of non-emergency spills.)

- 1. Evacuate and deny entry to all personnel in immediate area.
- 2. CALL 911 and give the following information:
  - a. Your name and call back number.
  - b. Exact location of spill
  - c. Injuries involved.
  - d. Type of substance involved.
  - e. Amount of substance involved.
  - f. Stay on line and answer all questions asked by the dispatcher.
- 3. Assign someone to direct emergency personnel to the spill site.

4. Do not attempt to rescue downed personnel unless you are trained to do so, and have a reasonable chance for success.

C. For Non-emergency Spills: For spills which can be cleaned up with local resources, perform cleanup operations in accordance with the site specific instructions provided in the following page(s).

D. Reporting Instructions: Fill out the attached Notification of Spill Event as completely and accurately as possible and submit to the Environmental Specialist as soon as possible.

## SHEET B

#### **General Spill Response:**

The first step in the event of a spill, after donning the proper PPE, is to stop the flow using one of the following methods:

- turning off pumps or closing valves
- returning the container to the upright position
- patching holes
- transferring the material to another container
- moving the container to a less dangerous location

After the flow is stopped or slowed down, the expansion of the spill should be slowed by using one of the following methods:

- apply porous or absorbent material in sheets, booms, pillows, or particulate form for land spills
- use floating booms of porous or absorbent material for spills onto water
- if feasible, the material should be gathered together so that it can be more easily separated or collected

Often a sorbent can be helpful for collecting spilled material. The sorbent is distributed using mops, pillows, sheets, booms, or scattered as loose chips, particles, beads, or fibers. Direct pickup, skimming, filtering, or settling can collect the sorbent, with its absorbed spill material. With some types of sorbents the hazardous material can be wrung or squeezed out, so that the sorbent can be used again for treating the spill.

To collect material spilled into water, the material can be skimmed from the surface using adsorbents, if the material floats. Materials that mix or dissolve in water cannot usually be recovered. Materials that sink may be recovered by pumping or dredging from the bottom.

Recovered products must be stored properly prior to reuse or disposal. If they are to be disposed, they must be stored properly until their hazardous waste status is determined. Contact the Environmental Management Division, extension 3504, for proper storage and containerization instructions. Used sorbents that are not immediately reused must be disposed of.

The last traces of hazardous materials must be removed (decontaminated) from the spill area, cleanup materials, and from protective clothing and equipment. Decontamination procedures for each type of material, which may be present at potential spill sites, are given in the specific spill response procedure for each type of substance.

## SHEET C

## SPECIFIC SPILL CLEAN-UP PROCEDURES FOR BASES:

- 1. Enclose the spilled material with a dike made of a solid absorbent such as sand, sawdust, clay, or vermiculite.
- 2. For Collection of Liquids:
  - a. Apply an appropriate neutralizer until the pH is in the 6 to 8 range. Use pH paper to test for pH.
  - b. Transfer material into a properly labeled drum by pumping or by collecting with an absorbent and shoveling into drums.
- 3. For Collection of Solids:
  - a. Containerize as much as possible into a properly labeled drum, by scooping or shoveling.
  - b. Add water to the remaining material and neutralize until the pH is between 6 and 8. The resulting liquid is then collected by pumping or absorption by solids and shoveled into a drum.
- 4. Personal Protective Equipment: See posted instructions for specific waste streams.
- 5. Decontamination: Decontaminate the spill area, tools, and personal protective equipment, etc. with an appropriate neutralizer until the resulting pH is between 6 and 8.

## SHEET D

## SPECIFIC SPILL CLEAN UP PROCEDURES FOR ACIDS:

- 1. Contain the spill with a dike of clay absorbent or other non-combustible absorbent.
- 2. Neutralize acid spill by adding sodium bicarbonate to the liquid acid spill until it is completely covered, test with pH paper until pH is between 6 and 8. If the acid is in solid or pellet form, containerize by direct pickup into a properly labeled drum. Take up liquid by adding sand or other non-combustible absorbent and deposit into properly labeled drum.
- 3. Personal Protective Equipment: See posted instructions for specific waste streams.

4. Decontamination: Decontaminate the spill area, tools, and personal protective equipment, etc. with sodium bicarbonate (or equivalent) until the resulting pH is between 6 and 8.

#### SHEET E

# SPECIFIC SPILL CLEAN-UP PROCEDURES FOR OXIDIZERS AND ORGANIC PEROXIDES:

- 1. Contain or enclose the spill by diking with clay, sand, or talc, or other non-combustible material.
- 2. Chemical treatment (neutralization): Consult with the Environmental Management Division, ext. 3504. Standard Hazardous Material cleanup methods will be employed.
- 3. Collection: Add more non-combustible absorbent until the oxidizer is completely absorbed. Scoop up the absorbent with a non-sparking shovel. Place the waste oxidizer into drum of the proper type and labeling.
- 4. Personal Protective Equipment: See posted instructions for specific waste streams.
- 5. Decontamination: Wash with soap and water.

#### SHEET F

## SPECIFIC SPILL CLEAN-UP PROCEDURES FOR NON-FLAMMABLE SOLVENTS:

- 1. Contain the spilled material with a dike made from non-combustible absorbent material (sand, earth, vermiculite, etc.).
- 2. Collect spilled material by taking up with non-combustible absorbent and place into properly labeled drum. Where liquid is pooled deeply, air operated diaphragm pumps may be used for collection
- 3. Personal Protective Equipment: See posted instructions for specific waste streams.
- 4. Decontamination:
  - a. Impervious surfaces: Let trace amounts evaporate.
  - b. Tools and equipment: Tools clean with solvent, clothing wash with soap and water.

## SHEET G

#### SPECIFIC SPILL CLEAN-UP PROCEDURES FOR PESTICIDES:

- 1. Contain the spilled material with a dike of absorbent (sawdust, clay, vermiculite, etc.).
- 2. Neutralize the spilled material by following the procedures found on the container label. Also, SDSs are available from the Safety Office, ext. 2713.
- 3. Collection: Add more absorbent if necessary, to collect liquids. Scoop up absorbent or dry solid material and place into a drum or metal can with a plastic liner.
- 4. Personal Protective Equipment: See posted instructions for specific waste streams.
- 5. Decontamination: Follow procedure found on product label, or SDS.

## SHEET H

## SPECIFIC SPILL CLEAN-UP PROCEDURES FOR PAINT:

- 1. Contain or enclose the spilled material with an absorbent such as sand, earth, clay, vermiculite, etc.
- 2. Collection of Material: If paint is in liquid form, add sufficient extra absorbent to absorb all of the liquid. Shovel or scoop the material into the proper type labeled container. If the material is dry or solidified, gather or shovel the material into the proper type labeled container.
- 3. Personal Protective Equipment: See posted instructions for specific waste streams.
- 4. Decontamination: Decontaminate the spill area by removing two inches of earth below the extent of the spill into the ground. Spill sites inside buildings and on impervious surfaces will be cleaned as completely as practicable using sorbents.

#### SHEET I

#### SPECIFIC SPILL CLEAN-UP PROCEDURES FOR OIL:

- 1. Contain the spilled material with a solid absorbent material such as earth, sawdust, vermiculite, clay, etc.
- 2. Collection of Material: Absorb liquids onto solid absorbent materials and scoop or shovel into a container. Oil soaked into the ground is shoveled into a container. Spilled oil and the clean-up residues have been tested and found to be non-hazardous. If the circumstances of any spill warrant, the spill clean-up residues will be tested for HW characteristics.
- 3. Personal Protective Equipment: See posted instructions for specific waste streams.
- 4. Decontamination: Oil spilled onto the ground is removed along with two inches of uncontaminated soil.

#### SHEET J

# SPECIFIC SPILL CLEAN-UP PROCEDURES FOR FLAMMABLE AND COMBUSTIBLE ORGANIC LIQUIDS:

- 1. Enclosed spilled organic liquid with a dike of sawdust or sweeping compound (solid sorbent).
- 2. Collection: use enough sorbent to soak up all of the spilled liquid. Avoid all sources of ignition or sparking. Scoop up all of the solid sorbent with a non-sparking shovel or scoop and place into a proper type and properly labeled container.
- 3. Personal Protective Equipment: See posted instructions for specific waste streams. Decontamination Procedure: Let trace amounts which are not collected evaporate. For clothing and personal protective equipment, the procedure is evaporation followed by washing with soap and water.

#### SHEET K

## SPECIFIC SPILL CLEAN-UP PROCEDURES FOR EXPLOSIVE REACTIVE WASTE:

- 1. If necessary enclose or contain the material with a non-combustible absorbent such as earth, sand, clay, etc.
- 2. Collection of Solids:
  - a. Powdery Materials: Apply oil to the material before attempting to collect to avoid reaction.
  - b. Pellet sized materials: Sweep up with non-sparking dustpan and broom.
  - c. Material is destroyed in open burning trays or in open detonation site.
- 3. Personal Protective Equipment: See posted instructions for specific waste streams.

APPENDIX C

# **DECONTAMINATION PROCEDURES**

Attachment 7 – Hazardous Waste Contingency PlanTooele Army Depot23

#### **DECONTAMINATION PROCEDURES**

#### **DECONTAMINATION:**

Personnel protective equipment helps prevent the wearer from exposure while good work practices help minimize contamination of protective clothing, instruments, and equipment. Even with these safeguards, contamination may occur. Harmful materials can be transferred to clean areas, exposing unprotected personnel. In addition, personnel may come in contact with contaminants while removing protective clothing. To prevent such occurrences, methods to reduce contamination must be developed before anyone enters a suspected contaminated area. Decontamination consists of physically removing contaminants involved and the level of exposure. Since the extent of decontamination will depend on the incident, only general guidelines can be given.

Initial decontamination planning should assume that persons leaving the contaminated area are grossly contaminated. A system is set up to wash and rinse all the protective clothing worn. This is combined with a sequential doffing of equipment, starting at the first station with the most heavily contaminated outer clothing and ending at last station with the least contaminated article. The spread of contaminants is further reduced by separating each step in the decon process by at least three feet. After more information is obtained, the initial system may be modified by eliminating unnecessary stations or adapting it for site conditions.

The decon plan must be adapted to conditions found at the incident. These conditions may result in more or less decon being required. The following factors should be considered in determining the extent of decon required.

The extent of decon will depend on the hazard characteristics involved and the chemical's routes of entry. Generally, the more toxic the substance, the more extensive the decon required.

The amount of contamination on protective clothing is normally determined visually. If gross contamination is evident, a thorough decon procedure is required. In addition, higher air concentrations of substances or direct contact may result in permeation or degradation of the clothing material. Swipe tests may help in determining the type and quantity of surface contaminants.

The level of protection to a certain extent influences the extent of decon required. Wearing disposable clothing over the primary protective equipment may reduce direct exposure.

The work being performed by the entry team determines their exposure potential. Clean up monitors, photographers, and perimeter air samplers performing tasks that will not bring them in direct contact with substances will normally require less decon than those performing task involving direct contact with contaminated substances.

The reason for leaving the contaminated area may influence the extent of decon. Personnel leaving the area to pick up or drop off equipment or to change out air cylinders or respirator canisters normally do not require full decontamination. Personnel departing for a lunch break or end of a workday must be thoroughly decontaminated to avoid spreading contaminants to the clean area.

There is no method for immediately determining how effective the decon procedure is. Discoloration, stains, corrosive effects, and substances adhering to clothing may indicate that contaminants have not been completely removed. Also, contaminants may not be easily observed, and permeation of suit material may not be evident. Swipe testing may be used to identify surface contamination. Testing for permeation will require a piece of the exposed material. If there is any question on the effectiveness of the decon procedure, the contaminated clothing may need to be disposed of.

Equipment for decon can be easily procured. Soft bristle, long handle scrub brushes are used to remove contaminants. Water in buckets or garden sprayers can be used for rinsing. Galvanized wash tubs or children's wading pools can be used for holding contaminated water, and plastic garbage bags may be used for storing contaminated water and other liquids, and plastic bags may be used for storing contaminated equipment and clothing.

Equipment is usually decontaminated by scrubbing with a detergent and water solution followed by rinsing with copious amounts of water. While this process may not be fully effective in removing contaminants, it is relatively safe compared with using a chemical decon solution. Decon chemicals may be appropriate when the exact contaminants are known and a decon material is useful to neutralize or change the contaminant to a less harmful substance. <u>Chemical decon solutions should only be used in consultation with an experienced chemist.</u> The appropriate decontamination procedure will be determined by the IOSC in consultation with the Advisory / Support group. Members of this group are outlined in section 2.2. of Attachment 7 (Contingency Plan).

Mobile equipment used at TEAD for emergency spill response will be taken to bldg. 609, a steam cleaning facility, for decontamination, if necessary. The effluent from this facility is piped directly into the Industrial Waste Treatment Plan (IWTP).

Any equipment exposed to a hazardous chemical environment must be considered potentially contaminated, and handled accordingly. The extent of decon required will vary with the type of equipment and magnitude of the potential contamination. In most instances, washing and rinsing will remove any gross contamination. In some instances, swab sampling and lab analysis may be required to ascertain the efficiency of the decontamination procedure.

Some situations, such as secondary releases, accidents on-scene, or unanticipated exposures may result in the need for a quick exit from the contaminated zone. Since the normal decon procedure is time consuming, an abbreviated decontamination procedure is necessary for removal of gross levels of contamination prior to exit from the contaminated zone. Generally, the emergency decon

Attachment 7 – Hazardous Waste Contingency Plan Tooele Army Depot 24

would be an abbreviated version of decon procedures including wash down and removal of equipment and protective clothing and removal of potentially contaminated underclothing. If prompt lifesaving first aid and / or medical treatment is required, decon procedures should be omitted or minimized. Lifesaving care should be instituted immediately, although every precaution should be taken to minimize the spread of contamination from injured personnel to medical personnel.

An excellent way to control contamination is with the use of protective equipment covers. These covers can be disposable or reusable. Reusable covers, however, should be decontaminated after use. Disposable covers are the most convenient to use. Clear plastic bags can be used over equipment such as organic vapor detectors or radios. Some equipment, such as atmospheric sniffers, cannot be entirely encapsulated since they need direct access to ambient air. Plastic covers and masking (duct) tape can be used to cover many parts of the equipment. Upon completion of the response, these covers are removed and bagged for disposal.

<u>DECONTAMINATION STATIONS</u>: The full decontamination procedures outlined in this appendix are based on worse case gross contamination levels for entry team members. These procedures may need to be modified based on actual levels of contamination.

Station 1: Segregated Equipment Drop

- Deposit equipment used on scene (tools, monitoring instruments, etc.) on plastic drop cloths or in separate containers with plastic liners. Since each item may be contaminated to a difference degree, segregation at the drop reduces the possibility of cross contamination.
- Equipment: Various size containers, plastic liners, plastic drop cloths.

Station 2: Boot Cover and Glove Wash

- Scrub outer boot covers and gloves with detergent / water or decon solution.
- Equipment: Container (0-3- gallons), Appropriate decon solution, 2-3 long handle soft handle soft bristle brushes, small buckets.

Station 3: Boot Cover and Glove Rinse

- Rinse off decon solution from station 2 using copious amounts of water. Repeat as many times a necessary.
- Equipment: Container (30-50 gallons) or high-pressure water spray unit, 2-3 long-handle soft bristle scrub brushes.

Station 4: Tape Removal

Attachment 7 – Hazardous Waste Contingency Plan Tooele Army Depot 25

- Remove tape around boots and gloves and deposit in container with plastic liner.
- Equipment: Container (20-30 gallons), plastic liners.

Station 5: Boot Cover Removal

- Remove boot covers and deposit in container with plastic liner.
- Equipment: Container (20-30 gallons), plastic liners, bench or stool.

Station 6: Outer Glove Removal

- Remove outer gloves and deposit in container with plastic liner.
- Equipment: Container (20-30 gallons), plastic liners.

Station 7: Suit/Safety Boot Wash

 Thoroughly wash protective clothes and boots. Scrub unit and boots with long handle, soft bristle scrub brush and copious amounts of the appropriate decon solution. If level B Protection, wrap SCBA regulator (belt type) with plastic to keep out water. Repeat as many times as necessary.

Station 8: Suit/Safety Boot Rinse

- Rinse off decon solution using copious amounts of water, repeat as many times as necessary.
- Equipment: Container (30-50 gallons) or high-pressure water spray unit, 2-3 long handle, soft bristle brushes.

Station 9: Tank or Canister Change

- If the worker leaves the contaminated area to change out an air tank or respirator canister, this is the last step in the decon procedure. The workers air tank or canister is exchanged, new outer gloves and boot covers donned and joints taped. The workers then return to the contaminated area.
- Equipment: Air tanks / respirator canisters, tank, boot covers, gloves.

Station 10: Safety Boot Removal

• Remove safety boots and deposit in container with plastic liner.

Attachment 7 – Hazardous Waste Contingency Plan Tooele Army Depot 26 • Equipment: Container (30-50 gallons), plastic liners, bench or stool, bootjack.

Station 11: Removal of Protective Clothing Garment (note: stations 11 and 12 reversed for level B).

- With assistance of decon team, remove the protective clothing garment (encapsulated suit, splash gear). Hang clothing or place in container for disposal as appropriate.
- Equipment: Rack, drop cloths, bench or stool, container (30-50 gallons), plastic liners.

Station 12: SCBA Backpack Removal (note: stations 11 and 12 reversed for level B)

- While still wearing face piece, remove backpack and place on table. Disconnect hose from regulator valve and proceed to next station.
- Equipment: table

Station 13: Inner Glove Wash

- Wash with appropriate decon solution that will not harm skin. Repeat as many times as necessary.
- Equipment: Basin or bucket, decon solution, small table.

Station 14: Inner Glove Rinse

- Rinse with water, repeat as often as necessary.
- Equipment: Water basin or bucket, small table.

Station 15: Face Piece Removal

- Remove face piece, deposit in container with plastic liner, avoid touching face with gloves.
- Equipment: Containers (30-50 gallons), plastic liners.

Station 16: Inner Gloves Removal

- Remove inner gloves and deposit in containers with plastic liner.
- Equipment: Container 30-50 gallons), plastic liners.

Station 17: Inner Clothing Removal

- Remove clothing soaked with perspiration. Place in container with plastic liner. Inner clothing should not be worn out of the decon area since some contaminants may have been transferred while removing the outer protective garment.
- Equipment: Container (30-50 gallons), plastic liners.

#### Station 18: Field Wash

- If practicable, a field shower should be taken before leaving the decon area. If a shower is unavailable, thoroughly wash face and hands.
- Equipment: Field shower, small table, basin or bucket, towels.

Station 19: Redress

• Put on clean clothing. A dressing trailer or tent is appropriate for inclement weather.

Attachment 7 – Hazardous Waste Contingency Plan Tooele Army Depot 28

• Equipment: Tables, chairs, tent or trailer.

Attachment 7 – Hazardous Waste Contingency PlanTooele Army Depot29

APPENDIX D

# CONTRACTED AND OUTSIDE RESOURCES

Attachment 7 – Hazardous Waste Contingency PlanTooele Army Depot23

#### **CONTRACTED AND OUTSIDE RESOURCES**

**E.T. Technologies Inc.** 3656 W 2100 S Salt Lake City (801) 977-0731 General HAZMAT, petroleum products, Level B Team, TSD

H2O Environmental, Inc.	General HAZMAT, petroleum products,
903 W Center Street, Suite D	Level B Team, Level B Team, TSD
North Salt Lake City	
(801) 677-0036	
Ecology Control Industries General	HAZMAT, petroleum products,
503 W 400 S	-Level B Team. TSD
(800) <u>321-5479</u>	
(801) 359-6861	
Enviro Care <del>TW Company</del>	General HAZMAT netroleum
products	
505 N Main	Level A Team Level B Team TSD
North Salt Lake	Lever A Team, Lever D Team, 15D
(801) 200-1000	
(801) 277-1700	
Clean Harbors	General HAZMAT, petroleum products,
Environmental Services	Level A Team, Level B Team, TSD
2150 N 470 East	
Tooele	
Day (435) 843-4840	
Night (800) 645-8265	
WRS Infrastructure	General HAZMAT. petroleum products.
Environmental Inc.	Level A Team Level B Team TSD
4120 S 500 W	I = 1 = 1 = 1 = 1 = 1 = 1 = 1 = 1 = 1 =
Salt Lake City	
Day (801) 265-2323	
Night (ANA) 358_A135	
1 1gnt (404) 550-4155	

APPENDIX E

# EMERGENCY AND SPILL CONTROL EQUIPMENT

Attachment 7 – Hazardous Waste Contingency Plan<br/>Tooele Army Depot23
#### FACILITIES ENGINEER EMERGENCY EQUIPMENT POINT OF CONTACT: Utilities Division x3386

Description	Capability		
Earth Auger	Boring, depths to 9 ft.		
Multipurpose Excavator	Backhoe type, for excavation		
Tractor	Caterpillar type, for trenching backhoe		
	capabilities, etc.		
Road Grader	Road Grader, trenching, etc. with 12 ft. blade		
Scoop Loader	1-1/2 cu. yd. capacity, front end		
Hydraulic Crane	25 ton major item material handling		
Dump Truck	10 cu. yd. capacity		
Pickup Truck	General transportation		
Bucket Truck	60 ft. reach, 500 lb. capacity		

Attachment 7 – Hazardous Waste Contingency Plan<br/>Tooele Army Depot23

[					
FIRE DEPARTMENT EMERGENC	CY EQUIPMENT AND MATERIALS				
POINT OF CONTACT: F	TRE DEPARTMENT x2015				
In HAZ MAT TRAILER	and TRUCK in Bldg. T-8				
Description	Capability				
Fire Truck	Skid Load Squad/Pierce Pumper				
Trailer	Enclosed 22'				
Acid Neutralizer	Acid Neutralizer Box				
Base Neutralizer	Base Neutralizer Box				
Repair Kit	Emergency leak repair kit				
	(Edwards & Cromwell 'F')				
Repair Kit	Emergency leak repair kit				
	(Edwards & Cromwell 'A-NS')				
Repair Kit	Emergency leak repair kit				
	(Edwards & Cromwell 'E')				
SCBA	Apparatus (SCBA), One Hour Packs SCBA,				
	Thirty Minute Packer				
Communications Interface (SCBA)	Communication hardware (installed on SCBA)				
Replacement Bottles (SCBA)	Spare bottles for SCBA				
Gastrsc	Flammable Gas Detector for Flammable Vapors				
Weather Station	Wind speed and direction indicator				
Decontamination Booth	Portable decontamination booth used for personnel				
	after entry into hazardous areas				
Level A	Protective Suits, fully encapsulated, Regular and				
	Flash				
Vests	Cooling vests used with ice				
Drum Upender and Lifter	Used in placing drums in upright position				
Cart, 300 lb Capacity	Portable cart used for moving equipment and for				
	rescue of personnel				
Tools	Non-sparking tools				
Additional Miscellaneous	60-minute air cylinders				
	pH paper				
	Chemical tape				
	Barricade tape (haz mat)				
	Emergency response guidebook and various other				
	references				
	Push broom and scrub brushes				
	Stakes for tents and marking				
Y	Various Sorbent rolls and Pads				
	Sorbent Pillows				
	Plug and Dike Kit				
	85 gal. salvage drum				
	Levels of protective suits				
	Scrubs apparel				

Attachment 7 – Hazardous Waste Contingency PlanTooele Army Depot24

#### FIRE DEPARTMENT EMERGENCY EQUIPMENT AND MATERIALS POINT OF CONTACT: FIRE DEPARTMENT x2015 In HAZ MAT TRAILER and TRUCK in Bldg. T-8

III TIAZ MAT TRAILER and TROCK III Blug. 1-8			
Description	Capability		
	Butyl gloves		
	PVC gloves		
	Disposable silver shield gloves		
	Examination gloves, various sizes		
	Safety vests for positions		
	Pipe fittings and valves		
	Poly tarps		
	Wooden plugs for tank holes, (various shapes and		
	sizes)		
	Bucket, brushers, soap		
	Chlorine "A" kit		
	Propane heaters		

APPENDIX F

SPILL REPORTING

Attachment 7 – Hazardous Waste Contingency PlanTooele Army Depot26

August 26, 2019 UT3213820894

#### **SPILL REPORTING**

- 1. Utah Department of Environmental Quality Requirements:
  - a. Immediately notify the Department of Environmental Quality by calling the 24 hour answering service (801) 536-4123, if greater than 2.2 pounds of acutely hazardous waste is spilled or 220 pounds if any other hazardous waste is spilled in accordance with Utah Administrative Code R315-263-30(b). The following information will be provided when making the verbal report:
    - (1) Name, address, and phone number of the person responsible for the spill.
    - (2) Name, title, and telephone number of the individual reporting.
    - (3) Time and date of spill.
    - (4) Location of spill as specific as possible including nearest town, city, highway, or waterway.
    - (5) Description contained on the manifest and the amount of material spilled.
    - (6) Cause of spill.
    - (7) Emergency action taken to minimize the threat to human health and the environment.
  - b. Within 15 days after any reportable spill of hazardous waste, submit a written report to the Director containing the following information:
    - (1) Name, address, and telephone number.
    - (2) Date, time, location, and nature of the incident.
    - (3) Name and quantity of material(s) involved.
    - (4) The extent of injuries, if any.
    - (5) An assessment of actual or potential hazards to human health or the environment, where this is applicable.
    - (6) The estimated quantity and disposition of recovered material that resulted from the incident.
  - c. If a release of a hazardous substance or an acutely hazardous substance, as defined in 40 CFR 302.6 or 40 CFR 355 Appendix A, has the potential to expose persons off-site, the incident must also be reported to the Department of Environmental Quality by calling (801) 536-4123.
  - d. Releases of greater than 25 gallons, or smaller releases that pose a potential threat to human health or the environment, of used oil must be reported immediately to the Department of Environmental Quality by calling (801) 536-4123. This must be followed by a written follow-up report within 15 days (Utah Administrative Code R315-15-9).
- 7. Local Community Emergency Coordinator: If a release of a hazardous substance or an acutely hazardous substance, as defined in 40 CFR 302.6 or 40 CFR 355 Appendix A, has

Attachment 7 – Hazardous Waste Contingency Plan Tooele Army Depot 27 the potential to expose persons off-site, the incident must also be reported to Tooele County Emergency Management, (435) 833-8100.

- 8. National Response Center: Spills exceeding the reportable quantity of a hazardous substance must be reported immediately to the National Response Center in accordance with 40 CFR 302.6. Table 302.4, contains a listing of hazardous substances and their reportable quantities. The National Response Center requirement applies to both fixed facility and transportation incidents. The National Response Center's phone number is 800-424-8802 or 202-426-2675.
- 9. Army Internal Reporting Requirements: Any reportable spills, as defined in the paragraphs above, will be reported, within 24 hours of discovery, to JMC Operations Center by calling DSN 793-7270 and a follow-up report submitted electronically to the following email address:

AMC.ROCK.ORG.JMC-OPCTR-OP@mail.mil USARMY.RIA.JMC.MBX.OPCTR-OP@mail.mil

Within five working days from the initial notification, forward any information that was unknown at the time of the initial report to the above addresses, e.g., remedial action planned, total cost of cleanup activities, steps being taken to prevent future occurrences of this type, etc.

NOTIFICATI	ION OF REPORTAI	BLE QUANTITY PC	DLLUTION EVENT	
1. INSTALLATION:	2. COMMANDER		3. DISCOVERY DATE & TIME:	
4. PERSON REPORTING (NAME/PHONE):		5. SEVERITY:	Medium Maior	
6. TYPE & AMOUNT OF MATERIAL SPILLE	D:			
7. LOCATION OF SPILL (FACILITY/EQUIPM	IENT INVOLVED):			
8. CAUSE:				
9. PERSONNEL INJURIES/PROPERTY LOSS:	:			
<ul> <li>a. SOURCE OF RELEASE BEEN STOPPE</li> <li>b. RELEASED MATERIAL BEEN RETAIN</li> <li>c. REACH ENVIRONMENT (CHECK ALL</li> <li>d. NAME OF RECEIVING WATERS:</li> <li>e. PASS THE INSTALLATION BOUNDAN</li> <li>f. NPDES PERMITS POINTS INVOLVED</li> <li>g. SAMPLE BEING TAKEN FOR LEGAL</li> <li>11. DAMAGE/IMPACT ON SURROUNDINGS</li> </ul>	D? NED? _ THAT APPLY)? RY? ? RECORDS?	Yes Yes Navigable Ground w Land surf Yes Yes Yes	□ No         □ No         e waters       □ Surface water         vater       □ Drinking water supply         ``ace (soil)       □ Ambient air         □ No       □ No         □ No       □ No         □ No       □ No	
12. REMEDIAL ACTION TAKEN:	$\Theta$			
13. REMEDIAL ACTION PLANNED:			14. DATE OF REMEDIAL ACTION COMPLETION:	
15. NOTIFICATIONS:         a. NRC       Yes         b. ACO STAFF         c. STATE         d. LEPC         e. EPA	No DATE/TIME: No DATE/TIME: No DATE/TIME: No DATE/TIME: No DATE/TIME:		POC: POC: POC: POC: POC:	
16. NRC INCIDENT NUMBERS:	·	17. REACTION BY NEWS MEDIA/PUBLIC:		
18. DOLLAR VALUE OF MATERIAL SPILLI	ED:	19. TOTAL COST OF	CLEANUP ACTIVITIES (EST/ACTUAL) :	
20. WHAT STEPS ARE BEING TAKEN TO PR WHAT AGENCY) :	REVENT FUTURE OCO	CURRENCES OF THIS	TYPE AND DATE FORMAL REPORT IS DUE (TO	
21. FORWARD REPORT TO: (1) JMC-OPCT (3) AMSJM-IS	R-OP@AFSC.army.mil M@AFSC.army.mil	<ul><li>(2) AMSJM-IS@A</li><li>(4) Dennis.Versluy</li></ul>	AFSC.army.mil s@us.army.mil	

APPENDIX G

# **GUIDELINES FOR RELEASING INFORMATION**

Attachment 7 – Hazardous Waste Contingency PlanTooele Army Depot30

August 26, 2019 UT3213820894

#### **GUIDELINES FOR RELEASING INFORMATION**

Although prompt action is essential in coping with any accident or incident, the potential impact on public health and the public's perceptions of spills of hazardous substances magnify this importance. Regarding release of information concerning chemical surety material and accidents resulting in casualty, specific guidance is in AR 360-5. Release of information regarding spills of hazardous substances will be conducted per the following guidelines:

- 1. The public is entitled to all unclassified information concerning a spill of a hazardous substance. Furnishing such information in a timely, positive manner that assures accuracy and reflects consideration of the public welfare is in the national interest and is a function of the command.
- 2. In the event that a spill of a hazardous substance poses an imminent threat to the public health or welfare, or to the environment, the Installation Commander has the authority to approve the release of information.
- 3. For spills that are contained within the installation boundaries and pose no threat to the public health and welfare, or the environment in the surrounding community, release of information will be made at the discretion of the Installation Commander. However, prompt release of factual information is encouraged. Even if no information is formally disseminated to the public, any unclassified information that may be obtained under the Freedom of Information Act should be made readily available to any person who requests it.
- 4. The responsible official who releases information about the spill should ensure that such releases of information will be prepared to:
  - a. Ensure public safety.
  - b. Prevent or reduce widespread public alarm.
  - c. Ensure public understanding of the extent and nature of the public hazard resulting from the spill.

# APPENDIX H

**EVACUATION ROUTES Figures A-1 through A-11** 



TEAD EVACUATION MAP Figure A-1





Evacuation Route for A-101, C-514, C-815, and C-816 Figure A-3



Evacuation Route for 1205, 1368, 1369, 1370, 1371, K-401, K-402, K-403, K-404, K-801, K-802, and K-803 Figure A-4



Evacuation Route for 1320 Figure A-5



# **Building 1320**

Figure A-6



Figure A-7



Evacuation Route for OD Pits, OB Pans, and Static Fire Pads Figure A-8



Fig A-9 Building 1400 Evacuation Routes



Figure A-11

# Building 1335 Evacuation Route

# **ATTACHMENT 8**

I

**CLOSURE PLAN** 

#### **Table of Contents**

1.0 Closure Performance Standard 1
2.0 Maximum Waste Inventory
2.1 Building 528 4
2.2 Igloos
A-101, C-514, C-815, C-816, K-401, K-402, K-403, K-404, K-801,
K-802, K-803; Service Magazines 1368, 1369, 1370, and 1371A-101, C-815, C-816;
Service Magazines 1368, 1370; Above
Ground Magazine 1205; and Building 13205
2.3 1236 Deactivation Furnace (Bldg. 1320)
2.4 Small Caliber Disassembly Lines (Bldgs. 1325 and 1335)
2.5 Hydrolysis Facility (Bldg. 1400)
2.6 OB/OD Unit
3.0 Disposal or Decontamination of Equipment, Structures, and Soils
3.1 Building 528
3.2 Igloo A-101
3.3 Igloos
A-101, C-514, C-815, C-816, K-401, K-402, K-403, K-404, K-801,
K-802, K-803; Service Magazines 1368, 1369, 1370, and 1371A-101, C-815, C-816;
Service Magazines 1368, 1370; Above
Ground Magazine 1205; and Building 13209
3.4 1236 Deactivation Furnace (Bldg. 1320)
3.5 Small Caliber Disassembly Lines (Bldgs. 1325 and 1335) 11
3.6 Hydrolysis Facility (Bldg. 1400) 11
3.7 Material Handling Equipment11
3.8 OB/OD Unit 12
3.9 Inventory Removal and Disposal of Burn Pans14
3.10 Removal and Decontamination of Static Silos
3.11 Determination of the Presence, Nature and Extent of Contamination
3.12 Procedures/Methods to Perform Decontamination
3.13 Procedures to Evaluate Effectiveness of Decontamination
4.0 Description of Additional Activities Performed During Closure
4.1 Groundwater and Surface Water Monitoring 19
4.2 Run-on and Runoff Control
5.0 Schedule for Closure
5.1 Building 528 19
5.2 Igloo A-101
5.3 Igloos
A-101, C-514, C-815, C-816, K-401, K-402, K-403, K-404, K-801,
K-802, K-803; Service Magazines 1368, 1369, 1370, and 1371A-101, C-815, C-816;
Service Magazines 1368, 1370; Above
Ground Magazine 1205; and Building 1320 20
5.4 1236 Deactivation Furnace (Bldg. 1320) 21

Attachment 8 -- Closure Plan Tooele Army Depot

I

August 26, 2019 UT3213820894

5.5 Small Caliber Disassembly Lines (Bldgs. 1325 and 1335)	. 21
5.6 Hydrolysis Facility (Bldg. 1400)	. 21
5.7 OB/OD Unit	. 21
6.0 OB/OD Unit Contingent Closure Plan	. 22
7.0 Certification of Closure	. 25
8.0 Post-Closure & Closure Cost Estimate	. 25
9.0 Contingent Post-Closure Plan for OB/OD Unit	25
9.1 Inspection Plan	. 25
9.2 Post-Closure Monitoring	. 26
9.3 Post-Closure Maintenance	. 26
9.4 Post-Closure Security	. 27
9.5 Post-Closure Contact	. 27
9.6 Notices Required for Disposal Facilities	. 27

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#### 1.0 Closure Performance Standard

1.1 The Hazardous Waste Management Units (HWMUs) at the Tooele Army Depot (TEAD) shall be closed according to the requirements of Condition II.N, Utah Admin. Code R315-264-110 through 120 and the following closure and post-closure plan. Prior to closure of any or all HWMUs, when necessary, this plan shall be modified to add detailed procedures for sampling and decontamination or removal of all contaminated soil, groundwater, equipment and structures. The closure information in this document is general and is based on current information and future estimates of the use, current inventory and potential contamination and remediation of each of the HWMUs.

1.2 When necessary, prior to initiating closure, a baseline-sampling program shall be completed to determine background concentrations of contaminants in all appropriate media, equipment, structures and decontamination waters. Any sampling and analysis plans will be approved by the Director of the Division of Waste Management and Radiation Control (Director) prior to implementation.

1.3 The HWMUs operated by the Permittee shall be closed in a manner that minimizes the need for further maintenance and eliminates, minimizes, or controls the possible hazards to human health and the environment. When Open Burn/Open Detonation (OB/OD) operations at the Facility are terminated, the unit shall be closed in a manner that eliminates the need for post-closure care. Closure of the OB/OD unit shall comply with the environmental performance standards of R315-264-601 relative to closure activities and post-closure facility conditions.

1.4 This plan does not address corrective actions concerning past activities that are identified as Solid Waste Management Units (SWMUs) with Known Releases and SWMUs with Suspected Releases since these SWMUs are addressed in the Industrial Waste Lagoon Post Closure Permit issued by the Director January 7, 1991, and the TEAD Federal Facilities Agreement.

1.5 The removal of all hazardous waste inventories, and the treatment and disposal of all hazardous wastes stored at the Facility, at either HWMUs operated by the Permittee or off-site Treatment, Storage and Disposal Facilities (TSDFs), will minimize the need for further maintenance, and eliminate the possibility of a post closure escape of hazardous constituents from the HWMUs included in this permit.

1.6 The HWMU's included in this closure plan are:

- 1.6.1 <u>Building 528</u> Container storage of wastes with free liquids.
- 1.6.2 <u>Ammo Igloo A-101</u> Container storage of wastes with free liquids.
  - 1.6.3 <u>Ammo Igloos A-101, C-514, C-815, C-816, K-401, K-402, K-403, K-404, K-801, K-802, and K-803A-101, C-815, C-816</u>. Container storage of wastes without free liquids.

1.6.4 <u>Service Magazines 1368, 1369, 1370, &  $1371\frac{1368, 1370}{1368, 1370}$ </u> - Container storage of wastes without free liquids.

1.6.5 <u>Above Ground Magazine 1205</u> - Container storage of wastes without free liquids.

1.6.6 <u>APE-1236 Deactivation Furnace (incinerator at Bldg.1320)</u> – Thermal treatment of reactive (D003, explosive) wastes. Wastes are limited to Propellant Explosive and Pyrotechnic (PEP) items having military application. Container storage of wastes without free liquid.

1.6.7 <u>Small Caliber Disassembly Line</u> – Initiation of primers after the propellant is removed from the projectile.

1.6.8 <u>OB/OD Unit</u> – Open burn and open detonation treatment of waste propellant and conventional military munitions and components in burn pans, static silos and open detonation pits.

1.6.9 <u>Hydrolysis Facility</u> – Destruction of explosives by hydrolysis in a sodium hydroxide solution.

1.7 Throughout closure of any HWMU, all operations shall be performed in a manner that will protect personnel, human health, and the environment. The necessary level of protection shall be achieved by ensuring that various precautions are put in place and properly implemented. Precautions will include:

1.7.1 Security: All existing security (e.g., signs, gates) will be maintained and, as necessary, supplemented.

1.7.2 Inspections: The facility inspection program will inspect areas where hazardous waste and residues are temporarily stored during remediation and decontamination.

1.7.3 Personnel Training: All personnel associated with facility closure will receive the training necessary to perform their duties.

1.7.4 Preparedness and Prevention: During closure activities, all equipment necessary to respond to potential emergencies at the facility will remain available. The facility will be maintained in such a manner as to minimize the potential for emergencies during closure.

1.7.5 Contingency Plan and Emergency Procedures: The facility Contingency Plan will be maintained, and, as necessary, augmented to describe proper responses in the event of emergencies during closure.

## 2.0 Maximum Waste Inventory

2.0.1 The maximum inventory each container storage HWMU will have is determined from the

Attachment 8 -- Closure Plan Tooele Army Depot maximum permitted storage capacity for each unit as contained in Attachment 9 (Containers) and is listed below:

- 2.0.1.1 Building 528 57,800 gallons.
- 2.0.1.2 Igloo A-101 8,544 cubic feet.
- 2.0.1.3 Igloo C-514, C-815, C-816, K-401, K-402, K-403, K-404, K-801, K-802, and K-803 – 11,616 cubic feet each. Igloo C-815, C-816 – 12,960 cubic feet each.

2.0.1.4 Service Magazines 1368, 1369, 1370, & 1371 – 480 cubic feet each. Service Magazines 1368, 1370 – 800 cubic feet each.

- 2.0.1.5 Above Ground Magazine 1205 72,000 cubic feet.
- 2.0.1.6 Building 1320 720 cubic feet.

2.0.2 The maximum inventory of wastes on site at the 1236 Deactivation Furnace (Bldg. 1320) at the time prior to closure is the sum of two waste streams. The first waste stream is comprised of the waste PEP item (munitions) that will be deactivated in the furnace and the second is comprised of the ash that results from furnace operations. The furnace can treat reactive (explosive) waste at a Net Explosive Weight (NEW) feed rate of 200 to 300 lbs/hr. Only the amount of waste PEP items that can be treated in one day are stored at the furnace site. Using 250 lbs/hr NEW feed rate, and 8 hours of operation/day as a basis, the maximum inventory of waste awaiting treatment stored at the furnace site is 2,000 pounds NEW.

2.0.3 Ash resulting from furnace operations is collected in the cyclone, the baghouse, and the containers into which this equipment empties. At the time of closure, the baghouse and cyclone will be emptied and all the bags shall be removed from the baghouse. Less than ten 55 gallon drums will be required to contain the residue resulting from this clean-up activity.

2.0.4 The total maximum inventory of wastes that may be at the 1236 Deactivation Furnace (Bldg. 1320) when closure begins is 550 gallons (ash) plus 320 gallons (PEP items), for a total of 870 gallons.

2.0.5 The maximum inventory of waste on site at the Small Caliber Disassembly Lines (Bldgs. 1325 and 1335) at the time prior to closure is the sum of two waste streams. The first waste stream is comprised of the PEP (munitions) that will be disassembled and the second is comprised of residue collected in the pollution abatement system. Only the amount of waste PEP that can be disassembled in a day will be stored at the facility. The maximum amount that will be disassembled in one day is 50,000 rounds.

2.0.6 The maximum inventory of wastes on-site at the Hydrolysis Facility (Bldg. 1400) at the time prior to closure is the sum of two waste streams. The first waste stream is comprised of the waste PEP items (CADs and PADs) that will be deactivated via hydrolysis reaction, and the

second is comprised of the hydrolysate solution used to process the Reactive (explosive) waste. The hydrolysis facility can treat the explosives at an average NEW feed rate of 163 lbs/hr (average rate takes bath heat up time into account, normal processing rate is 250 lbs/hr). Only the amount of waste PEP items that can be treated in one day is stored at the hydrolysis facility. Using 163 lbs/hr NEW feed rate, and 10 hours of operation/day as a basis, the maximum inventory of waste awaiting treatment stored at the hydrolysis site is 1,630 pounds NEW.

2.0.7 Hydrolysis facility residues from hydrolysis operations remain in their respective tanks until collected. At the time of closure, the hydrolysis tanks shall be emptied. The total maximum inventory of wastes that may be at the Hydrolysis Facility (Bldg. 1400) when closure begins is therefore ~2,200 gallons (hydrolysate), plus 300 gallons (PEP items), 2,500 gallons total.

2.0.8 The inventory of waste at the OB/OD unit is discussed in Sections 2.6 and 3.9.

## 2.1 Building 528

2.1.1 The Permittee does not operate any HWMU capable of treating or disposing of the types of wastes stored in Building 528. All wastes stored in Building 528 require some type of treatment before land disposal. Wastes shall be treated and disposed of at off-site TSDFs.

# 2.2 Igloos <u>A-101, C-514, C-815, C-816, K-401, K-402, K-403, K-404, K-801, K-802, K-803; Service Magazines 1368, 1369, 1370, and 1371A-101, C-815, C-816; Service Magazines 1368, 1370; Above Ground Magazine 1205; and Building 1320</u>

2.2.1 The Permittee does operate HWMUs capable of treating the types of wastes stored in Igloos <u>A-101, C-514, C-815, C-816, K-401, K-402, K-403, K-404, K-801, K-802, K-803;</u> Service Magazines 1368, 1369, 1370, and 1371<u>A-101, C-815, C-816; Service Magazines 1368,</u> 1370; Above Ground Magazine 1205; and Building 1320 (Reactive, D003 (explosive)). Wastes stored in these HWMUs will be treated at either the 1236 Deactivation Furnace (the incinerator located at Bldg. 1320), the Hydrolysis Facility, or the Open Burn/ Open Detonation areas operated by the Permittee. There will be no need to transport the wastes stored at these HWMUs off-site, since the deactivation of these waste can be done at the Facility.

## 2.3 1236 Deactivation Furnace (Bldg. 1320)

2.3.1 At closure, the 1236 Deactivation Furnace (Bldg. 1320) shall be dismantled, and components that were in contact with hazardous waste and treatment residues shall be decontaminated and then recycled as scrap metal. This is an appropriate method of management of these components since they are made of metal and there is a market for scrap metal.

## 2.4 Small Caliber Disassembly Lines (Bldgs. 1325 and 1335)

2.4.1 At closure, the Small Caliber Disassembly Lines (Bldgs. 1325 and 1335) shall be disassembled, decontaminated and the components that were in contact with hazardous waste

and treatment residues shall be recycled as scrap metal. This is an appropriate method of management of these components since they are made of metal and there is a market for scrap metal.

#### 2.5 Hydrolysis Facility

2.5.1 At closure, the Hydrolysis Facility (Building 1400) shall be disassembled, and the components that were in contact with hazardous waste and treatment residues shall be decontaminated and recycled as scrap metal. This is an appropriate method of management of these components since they are made of metal and there is a market for scrap metal.

## 2.6 **OB/OD** Unit

2.6.1 Waste ordnance and munitions are not accumulated at the OB/OD Unit. Because these waste materials are transported to the OB/OD Unit on the day of treatment and treated on that day, there will be no inventory of such materials at this unit at closure. The maximum daily inventory of explosive material subject to OB/OD at the facility is also limited by the environmental performance standards specified in Module VI.

2.6.2 Shrapnel on the surface of the range created as a result of OD activities shall be collected and recycled at the time of unit closure. Ash generated from OB activities shall be collected, analyzed, and disposed of appropriately at the time of closure. Soil contaminated above risk-based or background levels (whichever are higher), shall be removed for off-site treatment.

## 3.0 Disposal or Decontamination of Equipment, Structures, Soils and Residues

3.0.1 Prior to any sampling of media or structures, historical records including the operating record shall be reviewed to determine if any spills or releases or hazardous waste or constituents has occurred. The HWMU shall be inspected for the presence of any stains or other discoloration that may indicate the potential release of a hazardous constituent or waste. This information will be used in a sampling and analysis plan to help determine the number and location of samples to be collected as well as the potential contaminates to be analyzed. If there is no evidence of a spill or release then sampling may not be required.

# 3.1 Building 528

3.1.1 Building 528 stores hazardous wastes containing free liquids. The EPA waste codes that describe the type of wastes stored there, and also define the nature of the possible contaminants and hazardous constituents expected to be present as a result of spills or leaks from containers can be found below in Table 1.

TABLE 1						
EPA Waste Codes						
D001	D006	D018	D028	D035	D043	F001
D002	D007	D019	D029	D036		F002

Attachment 8 -- Closure Plan Tooele Army Depot August 26, 2019 UT3213820894

D003	D008	D022	D030	D039	F003
D004	D009	D023	D032	D040	F004
D005	D011	D026	D033	D042	F005

3.1.2 Possible contaminated areas are; 1) the secondary containment base, 2) soil beneath the secondary containment base, 3) the containment trench surrounding Building 528, and 4) the load/unload area located directly in front of the entrance gate to Building 528.

3.1.3 To determine the need to decontaminate the secondary containment storage base of Building 528, samples shall be taken and analyzed and the operating record reviewed. Thirtyseven samples of the concrete base shall be taken, the location of which shall be based on a hexagonal sampling pattern developed using the methodology described in EPA-560/5-86-017, "EPA Field Manual for Grid Sampling of PCB Spill Sites". The 36 samples shall be combined into 4 composite samples which shall be analyzed for the constituents described by the EPA waste codes found in Table 1. If these samples show contamination to be present, the secondary containment base of Building 528 shall be decontaminated.

3.1.4 Decontamination of the secondary containment base shall be done by steam cleaning. Steam cleaning will provide adequate decontamination considering the following:

3.1.4.1 The base is sealed with a coating that prevents the concrete from absorbing spill residue.

3.1.4.2 Required inspections lessen the possibility of a spilled waste contacting the base for long periods of time.

3.1.4.3 The only wastes that come into contact with the base are those that are spilled from containers (i.e. there are no waste piles stored in Building 528), and the condition of containers used to store hazardous waste makes this an infrequent occurrence.

3.1.4.4 Any volatile contamination will be driven off by the steam

3.1.4.5 Other types of waste stored in Building 528 will be suspended in the steam condensate.

3.1.5 Condensate generated while steam cleaning the secondary containment base of Building 528 shall be collected, sampled and either taken to the Tooele City Wastewater Treatment Plant or to an off-site TSDF, depending on the sampling results.

3.1.6 After procedures have been performed to decontaminate the secondary containment base of Building 528, 36 samples shall be taken using the same location determination described above. The 36 samples shall be combined into 4 composite samples that shall be analyzed for the constituents described by the EPA waste codes found in Table 1.

3.1.7 The contamination of soil beneath the secondary storage base of Building 528 is

minimized by the integrity of both the containment base and the containers used to store the hazardous waste. Permit conditions require the weekly inspection of the base of Building 528 for any cracks or structural defects, and the condition of containers stored in Building 528 to ensure they are in good condition and closed.

3.1.8 Any discolored areas of the floor (or areas where the concrete sealant deteriorated) shall be grit blasted until all discoloration is removed. The operator will be able to determine the depth of penetration of contamination by observing the color change of the blasted concrete. Should the discoloration continue to the soil underlying the concrete base, soil samples shall be taken at the soil surface and 1 foot below. Any soil samples shall be analyzed for the constituents described by the EPA waste codes found in Table 1. The building shell will hold the spent blast grit, which shall be containerized and managed depending on the results of the analysis of the spent blast grit. Any contaminated soil shall be removed and sent to an off-site TSDF.

3.1.9 To determine the extent of possible contamination in soil of the exterior containment trench, samples shall be taken from the centerline of the trench. When viewed from above, the trench forms a square around the secondary containment base. Both squares share the same center. Since the only source of contamination of the soil in the containment trench is the pipes found at the corner of the secondary containment base, any contamination present would be found at the highest concentration at the four corners of the square formed by the centerline of the exterior containment trench. Nineteen samples shall be taken at each corner of the exterior containment trench. The samples shall be taken along the centerline, at one-foot intervals.

3.1.10 The sample area shall be the area along the centerline 10 feet prior to the corner and 10 feet past the corner. The 19 samples from each corner shall be combined into 2 composite samples. Four corners will therefore yield 8 composite samples for analysis of the constituents described by the EPA waste codes found in Table 1.

3.1.11 The load/unload area shall be sampled to determine the extent of possible soil contamination. The sample area size shall be the entire area where hazardous wastes have been handled, and shall be determined by the TEAD Environmental Office. The appropriate number of samples and sampling points shall be determined using the methodology mentioned above for PCB spills, and is based on the size of the area to be sampled. Samples shall be analyzed for the parameters described by the EPA waste codes listed in Table 1.

3.1.12 If necessary, action and cleanup levels regarding contaminated soils shall be negotiated with the Director and presented in a detailed closure plan that shall be submitted to the Director one year prior to the commencement of closure activities.

## 3.2 Igloo A-101

3.2.1 Steam cleaning shall be used to decontaminate the secondary containment base of Igloo A-101. All wastes stored in A-101 are containerized (i.e. no waste piles). The only way for waste to contact the secondary containment base directly is if a container fails. This is not a

common occurrence. The base is coated with a concrete sealant that is impermeable to moisture, and therefore impermeable to condensate. The condensate will be collected in the drain ditches that run the length of the igloo, down both sides. A portable sump pump will be used to containerize the condensate. The collected condensate shall be analyzed for explosive contamination.

3.2.2 Whether the condensate is a hazardous waste or not shall be based on the concentration of 2,4-dinitrotoluene (D030), and hexachlorobenzene (D032), the constituents of concern present in explosives. If the concentration of either of these two constituents is above that specified in Table 1 of 40 CFR 261.24, then the condensate shall be managed as a toxicity characteristic hazardous waste and disposed of at an off-site TSDF. Sampling of the containment base shall be conducted to determine the effectiveness of the decontamination procedures. The number and the method of sampling shall be the same as for Building 528.

3.2.3 The possibility of soil contamination is remote, however the most likely place for contamination to exist is where the plugged drain ditches once exited the igloo, and at the boundary where the concrete apron meets the dirt. Samples shall be taken at one-foot intervals along the concrete apron/dirt boundary (the apron is in front of the igloo entrance). These samples shall be composited into two samples.

3.2.4 Action and cleanup levels shall be negotiated with the Director and presented in a detailed closure plan that shall be submitted by the Permittee to the Director one year prior to the commencement of closure activities.

# 3.3 Igloos <u>A-101, C-514, C-815, C-816, K-401, K-402, K-403, K-404, K-801, K-802, K-803; Service Magazines 1368, 1369, 1370, and 1371A-101, C-815, C-816; Service Magazines 1368, 1370; Above Ground Magazine 1205; and Building 1320</u>

3.3.1 Since these HWMUs store containerized wastes that do not contain free liquids and, wastes only contact the floor if a container fails (i.e. no waste piles), and neither of these areas has secondary containment capability, the floor sweepings shall be collected and analyzed for explosive contamination. If not present, the concrete bases of the HWMU shall be considered clean because the floor sweepings give a representative sample of what has been in contact with the floor surface.

3.3.2 If explosive contamination is present, the concrete floor shall be sandblasted. This method is chosen because there are no methods to contain liquids at any of these HWMUs. The spent grit blast will be collected and managed as a hazardous waste if upon analysis the blast grit is toxicity characteristic for the constituents 2,4-dinitrotoluene (D030) and/or hexachlorobenzene (D032) (constituents found in explosives).

3.3.3 Samples of the blasted concrete base shall be taken from Igloos <u>A-101, C-514, C-815, C-816, K-401, K-402, K-403, K-404, K-801, K-802, K-803; Service Magazines 1368, 1369, 1370, and 1371A-101, C-815, C-816; Service Magazines 1368, 1370; Above Ground Magazine 1205; and Building 1320. The sample number and method used shall be that described in the section</u>

relating to Building 528. Due to the small size of Service Magazines <u>1368</u>, <u>1369</u>, <u>1370</u>, <u>and</u> <u>1371</u><u>1368</u>, <u>1370</u>, only 9 samples shall be taken of each building. Samples taken in Igloos <u>A-101</u>, <u>C-514</u>, <u>C-815</u>, <u>C-816</u>, <u>K-401</u>, <u>K-402</u>, <u>K-403</u>, <u>K-404</u>, <u>K-801</u>, <u>K-803</u><u>A-101</u>, <u>C-815</u>, <u>C-816</u>; Above Ground Magazine 1205; and Building 1320, shall be composited into four samples, while samples taken from the Service Magazines shall be composited into one sample.

3.3.4 Action and cleanup levels shall be negotiated with the Director and be presented in a detailed closure plan which shall be submitted by the Permitee to the Director one year prior to the commencement of closure activities.

## 3.4 1236 Deactivation Furnace (Bldg. 1320)

3.4.1 The components of the Deactivation Furnace which continually come into contact with hazardous wastes are the, Rotary Kiln, Waste Feed Conveyor, Waste Feed Housing, Kiln Discharge Conveyor, All duct work associated with the Pollution Abatement System (PAS), Cyclone and Bag House and the Afterburner.

3.4.2 At closure, the waste feed conveyor and the waste feed housing shall be dismantled and fed through the 1236 Deactivation Furnace. During this time the furnace's operating parameters shall be those specified through permit conditions. The waste feed conveyor and the waste feed housing shall be fed through the furnace since these pieces of process equipment function prior to the rotary kiln (which is where PEP wastes are deactivated). This will ensure that any possible explosive residues that may be present on this process equipment are deactivated.

3.4.3 After the waste feed conveyor and the waste feed housing have been fed through the rotary kiln, the furnace shall be operated at parameters specified through permit conditions for one hour. During this time waste shall not be fed to the furnace. This will ensure that any possible PEP residue remaining in the furnace is deactivated.

3.4.4 The rotary kiln, kiln discharge conveyor, Pollution Abatement System (PAS) duct work, afterburner, cyclone, and bag house function after the rotary kiln. Therefore no explosive contamination will be present in the treatment residue (ash) contacting their surfaces. The process equipment listed above shall be dismantled and cleaned of any loose, accumulated treatment residue (ash) that may be present.

3.4.5 The collected treatment residue (ash) shall be containerized and managed in the same way as ash that was generated throughout the operational life of the furnace.

3.4.6 The disassembled 1236 Deactivation Furnace process equipment shall then be sold as scrap metal through the Defense Reutilization and Marketing Office (DRMO).

3.4.7 The room housing the waste feed conveyor shall be swept and the sweepings shall be collected and analyzed. Sweeping will be adequate because the furnace does not treat wastes containing free liquids. If the analysis of the floor sweepings does not show the presence of explosives, the room housing the waste feed conveyor shall be considered clean.

3.4.8 If analysis shows the floor sweepings to contain the Toxicity Characteristic waste mentioned in paragraph 3.3.2, or the presence of explosives, the room that housed the waste feed conveyor shall be decontaminated by sandblasting the floor to the bare concrete. Solutions or steam cleaning cannot be used since there are no provisions for capturing liquids (i.e. no secondary containment). The spent blast grit shall be characterized and disposed properly based on the characterization.

3.4.9 Action and cleanup levels shall be negotiated with the Director and be presented in a detailed closure plan that shall be submitted by the Permittee to the Director one year prior to the commencement of closure activities.

3.4.10 A concrete apron is found at the unload area to the 1236 Deactivation Furnace Waste Feed Conveyor Room (Building 1320). Soil samples shall be taken along the concrete apron/dirt boundary at one foot intervals. These samples shall be analyzed for the presence of explosives and the constituents of concern described by the EPA waste codes D004 through D011 (i.e. Toxicity Characteristic Metals).

#### 3.5 Small Caliber Disassembly Lines (Buildings 1325 and 1335)

3.5.1 All filter media shall be removed and disposed of as hazardous waste. Any residues present on the process of material handling equipment shall be removed with brushes. The residues and the filter media shall be disposed of based on an analysis of its characteristics. The equipment shall be disposed of as scrap metal.

#### 3.6 Hydrolysis Facility

3.6.1 All equipment that came into contact with the hydrolysis solution shall be rinsed with water to remove any contaminants. The rinse water shall be collected, sampled and properly managed. The equipment shall be disposed of as scrap metal.

#### 3.7 Material Handling Equipment

3.7.1 If necessary, forklifts and trucks used to transport hazardous waste within the facility boundaries will be decontaminated on-site. The Permittee does not operate any disposal HWMUs and waste handled by material handling equipment (MHE) is in containers. The only way hazardous waste can contact the surface of MHE is if a container fails. The failure of a hazardous waste container is not a regular occurrence; therefore the MHE is not expected to be contaminated.

3.7.2 The determination as to the necessity of decontaminating MHE used in hazardous waste operations shall be made by a review of HWMU operating records, and spill report records. If it is demonstrated through this record review that no container failures occurred involving hazardous waste loading/unloading operations, no decontamination of MHE will be done.

3.7.3 The MHE shall be steam cleaned in a temporary facility erected with a containment system for the residues. Residues from the cleaning of the MHE shall be handled as hazardous waste until it can be properly characterized by sampling and analysis. Based upon the results of the analysis, the residues shall be appropriately managed.

## 3.8 **OB/OD** Unit

3.8.1 Methods for determining the presence of contamination, performing decontamination, and evaluating the effectiveness of decontamination procedures during closure of the OB/OD Unit are described in this section. Closure activities will be conducted in phases. Activities to be conducted during the first phase include the identification and removal of visible and/or readily identifiable waste residues from the area. This is followed by the classification, sorting, containerization, labeling, and storage of those materials.

3.8.2 The second phase of closure involves the sampling and analysis of soils and groundwater to determine whether contamination associated with OB/OD is present at statistically significant concentrations above risk-based or background levels (whichever are higher). A baseline characterization of the site shall be conducted prior to closure of the OB/OD unit. In addition, prior to closure of the OB/OD Unit, sampling will be needed to delineate the extent of contamination and to determine the extent of any remediation needed at closure.

3.8.3 The background area to be sampled is located on a 4-acre tract to the northeast of the OB/OD Unit, completely outside any potential impact area This area was chosen because of the similar soil type (same alluvial fan morphology) as the OB/OD Unit, and the undisturbed nature (i.e., non-graded ridge and swale) with no roads or buildings. The determination of risk-based or background levels shall be discussed prior to closure and presented in a baseline Sampling and Analysis Plan (SAP). Equipment that may have become contaminated shall be decontaminated if sampling determines this is necessary. The analytical results from the equipment samples shall be compared to appropriate performance standards.

3.8.4 Should sample analysis indicate the presence of contaminants in the OB/OD Unit and/or soils at concentrations above risk-based or background levels (whichever are higher) that are statistically significant, remediation shall be required. Contaminated materials shall be classified, sorted, containerized, and sent off-site for treatment or (if appropriate) for disposal. If surface contamination of equipment is found, an appropriate cleaning agent shall be used. All of the equipment and decontamination residues shall be containerized prior to off-site transport.

3.8.5 The third phase of closure will involve verification sampling. Sampling shall be done to confirm that the closure remediation and decontamination were adequate. If contamination above risk-based or background levels (whichever are higher) is still present, additional remediation and decontamination shall be done, followed by an additional round of verification sampling.

3.8.6 The wastes generated during closure will fall into one of four categories: (1) reactive or explosive materials that must be treated by OB/OD; (2) solid materials or soils that are not

reactive, or explosive, but which may be contaminated with constituents (e.g., lead, TNT, and RDX) remaining as a result of OB/OD and which require treatment to remove this contamination; (3) contaminated liquids resulting from closure activities, primarily equipment decontamination; and (4) solid, nonhazardous wastes that require no further treatment.

3.8.7 Any unstable materials detected shall be either detonated in-place or burned in the pans. Following removal of the burn pans and contaminated soil (if determined to be appropriate to meet risk-based levels or background conditions) and unexploded ordinance (UXO), the unit shall be re-graded using native soils to match the contours of the remainder of the surrounding area and it shall be re-vegetated.

3.8.8 As stated previously, four categories of wastes will be expected to be generated during closure. The categories are:

- 3.8.8.1. UXO These are items that pose a risk of explosion or detonation. These materials may be detonated in place; however, if any such materials are brought to the staging area, they shall be segregated and moved to the open detonation (OD) area for detonation.
- 3.8.8.2. Contaminated Materials or Soils These are materials, debris, and contaminated soils that are generated after OD activities have reached completion and cannot be reinitiated. These materials or soils are not reactive or explosive, but may be contaminated with constituents (e.g., lead, TNT, and RDX) remaining as a result of OB/OD and which require treatment to remove this contamination.
- 3.8.8.3. Contaminated Liquids These are liquids resulting from closure activities, primarily equipment decontamination and any collected run-on or runoff.
- 3.8.8.4. Solid, Nonhazardous Wastes These are wastes that require no further treatment and shall be disposed of in a Subtitle D Landfill.

3.8.9 UXO may be detonated in place at the OD area. Contaminated materials/soils shall be removed from the OB/OD Unit and brought to the temporary staging area located near the water tank and trailer outside the perimeter of the OB/OD Unit. Materials shall be sorted, if necessary, at the staging area as they arrive. Sorting is done to divide wastes into similar categories for management and disposition. The method used for sorting will include, if necessary, the use of screens of varying mesh size, selection and removal of discrete items by hand, and other methods that protect workers while permitting the separation of wastes. At the staging area, the contaminated materials/soils shall be placed in U.S. Department of Transportation (DOT)-approved drums, roll-off boxes, or other suitable containers for off-site transport. Similar materials will be consolidated to the maximum extent practical to minimize the number of containers that must be handled. Only compatible wastes of similar nature shall be placed in the same container.

3.8.10 These materials/soils shall be analyzed for the Toxicity Characteristic Leaching
Procedure (TCLP) characteristics of arsenic, barium, cadmium, chromium, lead, mercury, and energetics. If these materials/soils exhibit a characteristic of a hazardous waste, they shall be managed in accordance with state and federal regulations. The hazardous materials/soils shall be sent off-site to a permitted treatment, storage, disposal, or recycling facility.

3.8.11 All liquids shall be consolidated into appropriate leak-proof shipping containers. A representative sample shall be collected for chemical analysis. If the liquid is determined to exhibit a hazardous characteristic, the liquids shall be sent off-site for treatment and disposal in accordance with state and federal regulations.

3.8.12 Any solid, nonhazardous wastes that do not require further treatment shall be managed in accordance with the State of Utah solid waste regulations. These solid wastes shall be sent to an off-site solid waste management facility. Materials to be managed as solid wastes may include personal protective equipment and materials/soils that do not exhibit a characteristic of a hazardous waste.

3.8.13 Wastes shall be packed into metal or plastic shipping containers, except for unreacted and ignitable wastes that shall be detonated. The shipping containers shall meet appropriate DOT shipping and labeling requirements, as specified in 49 CFR Parts 172, 173, and 179. Items classified as hazardous waste shall be labeled in accordance with 49 CFR Section 172.304 and Utah Admin. Code R315-262-31.

# 3.9 Inventory Removal and Disposal of Burn Pans

3.9.1 The maximum amount of waste materials present at the OB area at any one time would be 12,000 pounds NEW of material. The quantity can be treated in one treatment event using 12 of the 15 burn pans. Prior to closure of the OB area, this material shall be treated. Therefore, no untreated material will be in the OB area when closure activities begin.

3.9.2 After treatment of the final volume of wastes the burn pans will contain treatment residuals. These materials shall be managed as follows:

3.9.2.1	The treatment residue in each burn pan shall be collected and a composite sample shall be analyzed for energetics.
3.9.2.2	If the treatment residue fails the reactivity characteristic test, it shall be re-burned. Step 1 shall be repeated until the treatment residue passes the reactivity characteristic test.
3.9.2.3	If the treatment residue passes the reactivity test, the treatment residue shall be analyzed for the TCLP. The TC constituents include arsenic, barium, cadmium, chromium, lead, mercury, selenium, silver, 2,4-dinitrotoluene, and nitrobenzene.
3.9.2.4	If the treatment residue results exceed the regulatory TC levels, the treatment residue shall be removed from the pan(s), placed into containers, and disposed of

at an off-site hazardous waste landfill.

3.9.2.5 If the treatment residue results are below the regulatory TC levels, the treatment residue shall be removed from the pans and placed into containers. The material shall be disposed of in a solid waste landfill.

3.9.3 After all of the treatment residue has been removed from the burn pans, the burn pans shall be inspected, certified as explosive-free, and sold for recycling as scrap metal. The steel lids shall be certified as explosive-free and sold as scrap metal. The pan supports shall be disposed of as a solid waste after certification as explosive-free.

## 3.10 Inventory Removal and Decontamination of Static Silos

3.10.1 The below ground, concrete static silos shall be removed and either decontaminated, sampled and sent to either a solid waste disposal facility or a hazardous waste TSDF, depending on sampling results. The remaining soil shall be sampled, analyzed and remediated depending on the sampling results. Details of the removal, decontamination and remediation of all contaminated materials, soils and equipment shall be presented by amending this plan in accordance with Utah Admin. Code R315-264-112.

## 3.11 Determination of the Presence, Nature, and Extent of Contamination

3.11.1 For all sampling events certified explosive personnel shall be on site. Because of the nature of the operations at the OB/OD unit, the potential exists for surface and subsurface unexploded ordnance (UXO) and metal objects related to munitions, propellants, pyrotechnics and explosives from the treatment operations. A UXO survey shall be performed to provide access for the closure field investigation and sampling activities and a UXO survey and evaluation shall be performed prior to the excavation or removal of any unidentified contaminated soils. Prior to any sampling, the OB/OD Unit shall be swept using a magnetometer and cleared of all metal objects to ensure that the surface and subsurface are clear of UXO. Once this is done, sampling activities may commence.

3.11.2 At closure, the OB/OD Unit shall be inspected for the presence of visible and/or readily identifiable wastes and residues. The inspection shall include a search for stained, discolored, or other visibly affected soils. The presence of liquids, debris, UXO, and other related items shall be noted.

3.11.3 A baseline environmental characterization of the site was conducted during 1997-1998. In addition, prior to closure of the OB/OD Unit, sampling will be needed to delineate the extent of contamination and to determine the extent of any remediation needed at closure. For practical purposes, the results of the baseline investigation and routine monitoring sampling results shall be used for evaluating closure sampling activities. Many of the sampling strategies may to be incorporated into a pre-closure sampling plan.

## 3.12 Procedures/Methods to Perform Decontamination

Attachment 8 -- Closure Plan Tooele Army Depot 3.12.1 Any contaminated residue/soil at the OB/OD Unit exceeding background or risk-based levels shall be treated on site or shall be removed using backhoes or other excavation equipment. Soil shall be removed in layers up to 2 feet in thickness. After a layer of contaminated soil is removed confirmation sampling/analysis shall be conducted to determine if clean-up goals have been attained. If goals are not attained, additional layers of soil shall be removed until closure goals are attained. If closure goals cannot be attained, the unit shall be closed in accordance with the Contingent Closure Plan as described in Section 6.0. At present, removal by excavation is proposed. Treatment technologies for contaminated soils cannot be determined at this time. Potential treatment technologies may include incineration, soil washing, open burning in pans, bioremediation, etc. The decision whether treatment is appropriate shall be determined in the future. This decision will depend on the contaminants present, the nature and extent of contamination, and the status of available technology at the time of closure.

3.12.2 If treatment, either on-site or off-site, is considered to be an appropriate alternative to offsite disposal, the Closure Plan shall be amended in accordance with Utah Admin. Code R315-264-112 and submitted to the Director for approval. The residue or soil shall then be managed in accordance with the amended plan.

3.12.3 The staging location for closure activities shall be the area near the entrance by the water tank and trailer outside the perimeter of the OB/OD Unit. Contaminated materials shall be removed from the OB/OD Unit and brought to the staging area. The staging area shall consist of a graded, compacted earthen foundation surrounded by earthen berms or temporary concrete berms to prevent run-on and runoff from the staging area. The foundation and berms shall be overlain by a 30-mil thickness (minimum) liner of sufficient durability to withstand all activities to be conducted in this area (e.g., sorting, storage). Plywood or a similar material shall be laid on top of the liner to prevent tearing. The staging area shall be covered in a manner that prevents accumulation of precipitation while allowing work to continue. Full drums of contaminated material shall be temporarily stored at the staging area away from sorting activities to prevent contamination by loose material.

3.12.4 Materials shall be sorted, if necessary, at the staging area as they arrive. Sorting is done to divide wastes into similar categories for management and disposition. Materials shall be sorted into the following categories: UXO, contaminated materials/soils, contaminated liquids, and nonhazardous solid wastes. The method used for sorting will include, if necessary, the use of screens of varying mesh size, selection and removal of discrete items by hand, and other methods that protect workers while permitting the separation of wastes.

3.12.5 Hand tools shall be decontaminated first by brushing, scraping, and shaking, because all contaminated wastes/media are expected to be solids. Hand tools shall then be decontaminated in buckets or tubs using water and an appropriate cleanser.

3.12.6 Large equipment shall be decontaminated prior to leaving the remediation area and entering a clean area. Any contamination present is expected to be in the form of solids. These solids shall be mechanically removed from the equipment. After mechanical removal of the

solids, high-pressure steam shall be used to complete decontamination of equipment.

3.12.7 All drilling equipment used for collection of soil samples shall be steam or pressure cleaned prior to beginning work, between soil boring locations, and prior to leaving the OB/OD Unit. All sampling equipment shall be decontaminated prior to sampling and between samples using the following decontamination steps:

- 1) Potable water rinse.
- 2) Alconox or liquinox detergent wash.
- 3) Potable water rinse.
- 4) Distilled/deionized water rinse.
- 5) 10% nitric acid rinse diluted with distilled and deionized water.
- 6) Distilled/deionized water rinse.
- 7) Isopropanol double rinse.
- 8) Distilled/deionized water rinse.
- 9) Air dry.
- 10) Wrap in aluminum foil.

3.12.8 All decontamination shall be conducted in an area near the entrance to the unit by the water tank and trailer inside the perimeter of the OD area. A decontamination pad shall be constructed in this area to prevent impact to the surrounding soils. The decontamination pad shall consist of a compacted earthen foundation surrounded by earthen berms to prevent any decontamination solutions from exiting the area. The foundation and berms shall be overlain by a 30-mil thickness (minimum) liner of sufficient durability to withstand decontamination activities.

3.12.9 Sand or similar material shall be placed on top of the liner to prevent tearing. Ramps shall be positioned at the entrance and exit of the decontamination pad to allow vehicles to pass over the berms. The pad shall be graded to slope toward a corner, where the liner forms a sump in a depression that has been dug in the ground, to allow collection of decontamination fluids.

3.12.10 Discolored and stained liquids (from equipment or tools decontamination) shall be collected using buckets or pumps. If only small quantities are present, an absorbent may be used to collect the liquid. If it is determined that unstable materials may be created by drying of liquids, absorbents shall not be used. The liquids shall be collected in 5-gallon (minimum) drums or other appropriate containers and transported to the staging area.

# 3.13 **Procedures To Evaluate Effectiveness of Decontamination**

3.13.1 During closure, excavation and sampling of the OB/OD Unit shall continue until all soil above background or risk-based levels has been removed. The effectiveness of decontamination shall be determined on the basis of the results of tests on soil samples. Decontamination shall be considered effective when concentrations of all samples are at or below background or risk-based levels (whichever is higher) and the distribution of contamination shows no pattern of increasing contaminant concentrations.

3.13.2 Hand tools, drilling equipment, and heavy equipment shall be sampled if there is significant potential for contamination with explosive or ordnance-related compounds. The preferred method is to collect samples from the final decontamination rinse. These samples shall be either the collected liquids from the final rinse or the cloths used for final wipe-down of the cleaned equipment. In addition, preferential samples shall be collected from areas where contaminants may have collected.

3.13.3 Closure sampling activities shall be conducted in accordance with a SAP, which shall be submitted as a separate document. Surface soil, subsurface soil, and sediment sampling shall be conducted immediately prior to closure and at completion of closure to demonstrate that closure has been successfully accomplished.

3.13.4 As discussed previously, a baseline environmental characterization of the OB/OD Unit was conducted during 1997-1998. In addition, prior to closure of the OB/OD Unit, sampling will be needed to delineate the extent of contamination and to determine the extent of any remediation needed at closure. For practical purposes the results of the baseline investigation and the routine monitoring results shall be used for evaluating closure sampling activities. Many of the sampling strategies may be incorporated in a pre-closure sampling plan.

3.13.5 Any contaminated residue/soil at the OB/OD Unit exceeding background or risk-based levels, whichever is higher, shall be treated on site or shall be removed using backhoes or other excavation equipment. Excavated soils shall be placed in containers in the staging area where they shall be sampled to determine whether they need to be disposed of as a hazardous waste. Soil shall be removed in layers up to 2 feet in thickness. After a layer of contaminated soil is removed, sampling and analysis shall be conducted to determine if clean-up goals have been attained. If goals are not attained, additional layers of soil shall be removed until closure goals are attained or the unit is closed in accordance with the Contingent Closure Plan described in Section 6.0. At present, removal by excavation is proposed. Treatment technologies for contaminated soils cannot be determined at this time. Potential treatment technologies may include incineration, soil washing, open burning in pans, bioremediation, etc. The decision whether treatment is appropriate shall be determined in the future. This decision will depend on the contaminants present, the nature and extent of contamination, and the status of available technology at the time of closure.

# 4.0 Description of Additional Activities Performed During Closure

# 4.1 Groundwater and Surface Water Monitoring

4.1.1 Closure sampling activities shall be conducted in accordance with an approved SAP. Both groundwater and surface water samples shall be collected immediately prior to closure and at completion of closure to demonstrate that closure has been successfully accomplished. If the unit cannot be clean closed and routine groundwater monitoring is required, it shall be conducted in accordance with an approved SAP.

4.1.2 Groundwater and surface water sample locations and collection methods, analytical parameters, analytical methods, and quality assurance/quality control (QA/QC) procedures shall be discussed in an approved SAP.

## 4.2 Run-on and Runoff Control

4.2.1 All decontamination shall be conducted in an area near the entrance inside the perimeter of the OB/OD Unit. A decontamination pad shall be in accordance with paragraph 3.12.8 and 3.12.9.

## 5.0 Schedule for Closure

5.1 The time required to complete closure activities for any one of the HWMUs shall not exceed 90 days. The time for closure will be shorter if the OB/OD HWMU is used to treat some of the wastes in storage that comprise the inventories of Igloos <u>A-101, C-514, C-815, C-816, K-401, K-402, K-403, K-404, K-801, K-802, K-803; Service Magazines 1368, 1369, 1370, and 1371A-101, C-815, C-816; Service Magazines 1368, 1370; Above Ground Magazine 1205; and Building 1320. The time required to complete closure may be extended if requested approved by the Director in accordance with Utah Administrative Code R315-264-113.</u>

5.2 The Permittee will notify the Director in writing at least 60 days prior to the date on which he expects to begin closure of a surface impoundment, waste pile, land treatment unit or landfill unit. The Permittee shall notify the Director in writing at least 45 days prior to the date on which he expects to begin closure of treatment or storage tanks, container storage areas or an incinerator. Closure of the OB/OD Unit will follow the schedule outlined in Table 2.

Attachment 8 -- Closure Plan Tooele Army Depot

Step	Description	Latest cumulative time (days)
1	Notify the Director of the Division of Waste Management and Radiation Control of intent to close	-60
2	Treatment of final wastes by OB/OD	0
3	Begin closure	0
4	Construction of decontamination pad and staging area	10
5	Cleanup of residues at the OB/OD Unit and store residue in on-site interim status storage facilities	30
6	Soil/groundwater/surface water/sediment sampling events	30
7	Digging of test pits to explore for and remove any explosive materials (if necessary)	40
8	OD of any explosive material found during test pit excavation (if necessary), decontaminate OB pans	40
9	Removal of contaminated soil in depths of 2 feet	130
10	Perform confirmation soil sampling to determine if clean-up goals are met**	130
11	Dispose of any contaminated soil off site	140
12	Decontamination of equipment used during closure	140
13	Disposal of decontamination solutions and any solid waste off site	160
14	Regrading and seeding of OB/OD Unit following cleanup	160
15	U.S. Army certifies that closure is completed in accordance with plan	165
16	Independent registered professional engineer certifies closure completed in accordance with plan	180

## Table 2. Schedule for Closure of the OB/OD Unit\*

\*Note that should monitoring data available at the time of closure indicate that substantial remediation will need to be conducted, an extension of the 180-day timeframe for closure will be requested.

\*\*Note that the steps of soil removal and confirmation sampling may be repeated several times as necessary to ensure clean closure.

Attachment 8 -- Closure Plan Tooele Army Depot

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## 6.0 OB/OD Unit Contingent Closure Plan

6.1 The Permittee plans to remediate the surface and subsurface soil at the OB/OD Unit to risk-based or background levels (whichever are higher) during the closure period. As part of this process, all UXO shall be removed or detonated in-place. If the soil cannot be remediated to risk-based or background levels the Permittee plans to implement the Contingent Closure Plan discussed in this section.

6.2 Under this Contingent Closure Plan, the OB/OD Unit shall be closed in a manner that will minimize or eliminate threats to human health and the environment, and the potential for escape of any possible hazardous waste, hazardous constituents, leachate, or waste decomposition products to groundwater, surface water, or the atmosphere upon cessation of operations. The unit shall not undergo partial closure; all closure activities shall take place following cessation of operations. The need for further maintenance after closure is addressed in the Contingent Post-Closure Plan in Section 9.0.

6.3 This Contingent Closure Plan shall be implemented only after it has been determined that the closure as described in Sections 3.8 through 3.13 is not feasible. Data describing the nature and extent of any contamination shall be evaluated in order to determine the extent to which the unit requires capping, run-on and run-off controls, and other closure actions. A final cover shall be placed over the unit if it is determined to contain hazardous waste or hazardous constituents above risk-based or background levels (whichever are higher).

6.4 For this Contingent Closure Plan, the Permittee proposes to install a final cover over the OB/OD Unit. It is currently proposed that this cover shall consist of a multilayer clay cap with a synthetic liner. The cover will be constructed with a permeability of less than or equal to  $1 \times 10^{-6}$  centimeter per second. The cap shall be installed following grading of the area. The synthetic liner shall be constructed of 50-mil high-density polyethylene (HDPE) and shall be placed over the unit after grading. The remainder of the cover shall consist of 12 inches of natural clay overlain by sufficient native topsoil to support growth of natural grasses. The area shall be reseeded with native grasses and contoured in an effort to promote drainage and minimize erosion. The entire cover, including the final topsoil cover material, shall be of sufficient thickness and elasticity to accommodate settling and subsidence. The cover design shall be provided and approved by the Director prior to being constructed.

6.5 The unit to be closed under this Contingent Closure Plan shall also have a run-on and runoff control system to divert run-on from entering the unit area and to keep runoff leaving the unit from adversely affecting adjacent areas. This system may consist of a dike that shall be a natural extension of the clay cover system, described above. The dike shall be designed to prevent runon from entering the unit area during peak discharge from at least a 24-hour, 25-year storm event.

6.6 The runoff management system shall be designed to divert at least the water volume resulting from a 24-hour, 25-year storm.

6.7 A groundwater monitoring well has been installed near the unit. This same groundwater monitoring well shall be used to monitor the groundwater down-gradient of the unit during the post-closure period.

6.8 Access to the unit shall be controlled through locked gates, and a warning sign shall be placed at the gate. All other aspects of closure under this Contingent Closure Plan are identical to closure as described in Sections 3.8 through 3.13.

## 7.0 Certification of Closure

7.1 Within 60 days of the completion of closure of each HWMU, the Permittee shall provide the Director, by registered mail, a certification by an independent, registered professional engineer that the unit has been closed in accordance with the specifications of the approved closure plan. The certification shall be signed by the Installation Commander and by an independent, registered professional engineer. Documentation supporting the engineer's certification shall be furnished upon request.

## 8.0 **Post-Closure and Closure Cost Estimate**

8.1 A post-closure plan will not be needed for the seven storage HWMUs and the deactivation furnace (incinerator) since all wastes shall have been removed and the HWMUs shall have been decontaminated.

8.2 Closure and post-closure cost estimates are not provided because TEAD is an entity of the federal government and therefore exempt from this requirement.

## 9.0 Contingent Post-Closure Plan for OB/OD Unit

9.0.1 The Permittee plans to remediate the surface and subsurface soil at the OB/OD Unit to below risk-based or background levels (whichever are higher) during the closure period. As part of this process, all UXO shall be removed and detonated in-place. If the soil cannot be remediated to risk-based or background levels (whichever are higher) at the OB/OD Unit, the Permittee plans to implement the Contingent Closure Plan described in Section 6.0 and the Contingent Post-Closure Plan described herein. The post-closure care period will span the required 30 years. The following activities shall be conducted during the 30-year period.

## 9.1. Inspection Plan

9.1.1 Inspections shall be conducted during the post-closure care period to mitigate the potential for migration of contaminants into soil, groundwater, surface water, and air, and to protect public health, safety, and the environment. Inspections shall be conducted semiannually at a minimum. Inspections shall also occur following all 25-year storm events. Items to be inspected are as follows:

9.1.1.1 Security: The OB/OD Unit shall have a locked gate on the access roads leading onto the ground. The gate and warning sign shall be checked for damage.

9.1.1.2 Erosion: The cover shall be inspected for signs of erosion damage, such as might be due to washouts. Erosion damage shall be repaired.

9.1.1.3 Settlement: The cover shall be inspected for ponding and other indications of settlement, subsidence, or displacement.

9.1.1.4 Vegetative Cover: The condition of the vegetative cover shall be inspected for adequacy and bare spots.

9.1.1.5 Run-on and Runoff Controls: Drainage channels designed to divert and collect storm water shall be checked to assure good drainage. The overall integrity of the dike system shall be checked.

• 9.1.1.6 Monitoring Wells: The condition of the well casing, cap, and lock shall be checked as the well is sampled.

9.1.2 The various inspection findings and actions shall be documented in the facility postclosure inspection logbook.

## 9.2. Post-Closure Monitoring

9.2.1 Groundwater monitoring at the closed OB/OD unit shall be conducted once every five years. Measurements to be performed, tests to be performed, constituents to be analyzed, methods to be used, and QA/QC controls to be applied will be detailed in an approved SAP.

## 9.3. Post-Closure Maintenance

9.3.1 Security: Signs shall be replaced as they become illegible. The gate shall be repaired or replaced as necessary to maintain the unit security.

9.3.2 Erosion: Washouts shall be repaired when they are detected. If the cap integrity is in question, repair activities shall be initiated immediately. Restoration of the vegetative cover shall be performed as needed.

9.3.3 Cover Settlement: Differential settlement shall be repaired by replacing cover materials and reseeding.

• 9.3.4 Vegetative Cover: Maintenance of the vegetative cover shall include seeding, watering, and fertilizing, as needed. Tree or bush growth shall be controlled by mowing. Mowing shall be performed as necessary to control the growth of the vegetative cover and to maintain it at a reasonable height above the cover.

- 9.3.5 Run-on and Runoff Controls: Drains and ditches shall be cleaned and maintained to allow free drainage so that retention of storm water does not occur. High rate runoff areas (if any) shall be protected by placing coarse stone, if needed, to ensure that erosion is minimal.
- 9.3.6 Monitoring Wells: Any damage to monitoring wells shall be repaired. If necessary, a damaged monitoring well shall be replaced.

## 9.4. Post-Closure Security

9.4.1 Access to the unit shall be controlled through a locked gate and a warning sign at the gate. All other aspects of post-closure security under this Contingent Post-Closure Plan are identical to closure as described in Sections 3.8 through 3.13.

## 9.5. Post-Closure Contact

9.5.1 The point of contact during post-closure care will be the TEAD Environmental Management Division.

9.5.2 A copy of the post-closure plan will be stored by the Environmental Management Division. The Environmental Management Division is responsible for updating the plan as necessary.

## 9.6. Notices Required for Disposal Facilities

9.6.1 The following post-closure notices shall be appropriately filed and submitted if clean closure cannot be demonstrated:

9.6.1.1 A record of the type, location, and quantity of hazardous wastes disposed of shall be submitted to the local zoning authority (or the authority with jurisdiction over local land use) and to the Director no later than 60 days after certification of closure.

9.6.1.2 A notation in the deed to the facility property shall be made that shall, in perpetuity, notify any potential purchasers of the property that (1) the land has been used to manage hazardous waste; (2) use of the land is restricted to activities that will not disturb integrity of the final cover system or monitoring system during post-closure care period; and (3) a survey plat and record of waste disposal have been submitted to the local zoning authority (or the authority with jurisdiction over local land use) and to the Director. The survey plat shall indicate the location and dimensions of the unit with respect to permanently surveyed benchmarks. The plat shall be prepared and certified by a professional land surveyor and shall contain a note, prominently displayed, which states the owner's/operator's obligation to restrict disturbance of the disposal unit in accordance with applicable Utah Admin. Code R315-264-116 regulations. This notation must be placed within 60 days after certification of closure.

ATTACHMENT 9

CONTAINERS

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## **Table of Contents**

1.0	Container Management	for Building 528	3
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2.0 Container Management for Ammunition Igloos <u>Igloos A-101, C-514, C-815</u> and C-816, K-401, K-402, K-403, K-404, K-801, K-802, K-803; <u>Service</u> <u>Magazines 1368, 1369, 1370</u>, and <u>1371A-101, C-815</u> and <u>C-816</u>; <u>Service</u> <u>Magazines 1368, 1370</u>; Above Ground Magazine 1205; and Building 1320............8

#### Appendices

Appendix A Container Storage Configurations

Attachment 9 – Containers Tooele Army Depot

#### 1.0 Container Management for Building 528

#### **1.1 Use and Management of Containers**

#### 1.1.1 Description of Containers [Utah Admin. Code R315-264-171, R315-264-172]

1.1.1.1 Hazardous wastes generated on site shall be stored and offered for transportation in containers conforming to Department of Transportation (DOT) specifications.

1.1.1.2 The applicable DOT specification code can be found on each container. Containers used to store and transport hazardous waste shall be either new, or recycled (that is the empty shipping container is saved and used to store and transport the material after use, e.g. trichloroethane).

1.1.1.3 The containers that are used are:

- 1. 55 gallon steel drums with removable heads.
- 2. 55 gallon steel drums without removable heads.
- 3. 55 gallon polyethylene drums without removable heads.
- 4. 85 gallon steel drums with removable heads (overpack drums).
- 5. 85 gallon polyethylene drums with removable heads (overpack drums).
- 6. 8, 15, 20 and 30 gallon polyethylene drums without removable heads.
- 7. 8, 15, 20 and 30 gallon steel drums with removable heads.

8. Other applicable DOT approved containers (to be determined on a case by case by the Tooele Army Depot (TEAD) Environmental Management Division (EMD)).

1.1.1.4 The selection of the appropriate container for a particular waste is based on the compatibility of the container with the waste the container will hold. As an example, wastes that are corrosive (subcategory acidic) are stored and offered for transportation in polyethylene drums. Liquid wastes are collected in drums without removable heads.

## 1.1.2. Container Management Practices [Utah Admin. Code R315-264-172]

1.1.2.1 Containers used to store hazardous waste shall be managed in such a way as to not cause the containers to release their contents. To insure that hazardous waste does not escape the container it is stored in, the Permittee manages containers in the following manner:

1.1.2.1.1 Drums issued to store hazardous wastes shall be new or recycled. Recycled drums must be in good condition and meet DOT standards. This insures the drums are free from severe defects (corrosion, dents and holes). Recycled drums shall only be used to contain waste that is compatible with the previous contents of the drum.

1.1.2.1.2 Drums used to store hazardous waste shall be selected based on the compatibility of the material of fabrication of the drum (or drum liner) and the physical and chemical characteristics of the wastes they are to store.

1.1.2.1.3 The lids to containers shall be kept closed and opened only when waste is added, removed or sampled.

Attachment 9 – Containers Tooele Army Depot

page 2

1.1.2.1.4 Liquid wastes shall be stored in drums without removable heads. This ensures that the liquid contents will not be released if the drums are accidentally tipped over.

1.1.2.1.5 Reactive hazardous wastes (explosive subcategory) shall be stored in containers designed specifically to hold explosives and propellants.

1.1.2.1.6 Containers filled with reactive hazardous wastes (explosive subcategory) shall be stored in container storage Hazardous Waste Management Units (HWMUs) designed specifically for Propellant, Explosives and Pyrotechnic (PEP) materials (i.e. ammunition igloos and service magazines).

1.1.2.2 Movement of containers of hazardous waste shall be tracked by a unique container number that appears on the hazardous waste container label. Each container and its associated hazardous waste label shall be issued concurrently by the TEAD EMD. This enables the EMD to track the movement of containers from satellite accumulation points to 90-day storage areas, and if necessary, to permitted container storage HWMUs. This system; 1) generates operating records, 2) insures that wastes in the 90-day storage area are moved to an off-site Treatment Storage and Disposal Facility (TSDF), or to an on-site permitted container storage HWMU before 90 days have expired, and 3) insures that the container contents match the container label since the container and label are issued to a pre designated location generating a defined and named waste stream.

1.1.2.3 To facilitate ease in movement and lessen the possibility of a forklift operator accidentally piercing a container with the forklift forks, containers shall be placed on pallets (maximum, three containers per pallet) before moving. When containers are weighed, tongs are attached to the forklift to lessen the possibility of dropping or rupturing a container.

1.1.2.4 Containerized hazardous waste is transported from the generation points to the less than 90-day storage yard, or to the permitted storage facility at building 528 by a 1 ton or appropriate flatbed-truck. The perimeter of the bed of the truck is slotted to allow for side boards.

1.1.2.5 Waste is loaded on to the truck by forklift, with the containers being placed on pallets before loading. The routes the truck uses to transport waste across the facility are graded/compacted dirt roads, asphalt, or concrete paved roads.

1.1.2.6 Building 528 shall be used to store containerized hazardous wastes that do and do not have free liquids. The storage arrangement to be used in building 528 is as follows:

1.1.2.6.1 All containerized hazardous waste shall be stored on pallets to elevate the containers being stored from any liquids that may accumulate on the storage area base. 55 gallon drums shall be stored no more than three to a pallet, 85 gallon drums shall be stored no more than 170 gallons of combined container volume shall be stored per pallet.

1.1.2.6.2 There are four containment areas or bays in Building 528. Each containment area shall have a maximum of six rows of pallets.

Attachment 9 – Containers Tooele Army Depot

page 3

1.1.2.6.3 At a maximum, each row shall be configured as seven pallets per row (with the exception being that the rows against the north wall shall be configured with eight pallets per row. Bay 3 and 4 shall each have one row of eight pallets).

1.1.2.6.4 At a maximum, pallets shall be stacked two high.

1.1.2.6.5 A minimum of 2.5 feet shall be maintained between rows to allow for container inspection.

1.1.2.6.6 The container stacking arrangement used in Building 528 is shown in Appendix A.

# <u>1.1.3. Secondary Containment System Design and Operation [Utah Admin. Code R315-270-15(a)(1), R315-264-175(a), R315-264-175(d)]</u>

1.1.3.1 The design of Building 528 allows for the secondary containment of any liquids that may leak from containers stored there, the segregation of incompatible hazardous wastes and the prevention of the accumulation of precipitation.

1.1.3.2 A drawing of the base of Building 528 and the bays that are used to segregate incompatible wastes is in Appendix A. Bay 1 shall be used to store wastes that are sludges or solids and that are hazardous wastes by Toxicity Characteristic Metals (D004 through D011). Bay 2 shall be used to store corrosive wastes (D002 alkaline). Bay 3 shall be used to store ignitable and solvent wastes (D001 and F001 through F005). Bay 4 shall be used to store corrosive (D002, acidic) wastes. Hazardous wastes with U or P codes shall be placed in the appropriate bay using the aforementioned criteria.

1.1.3.3 Any wastes placed into storage that are reactive (D003, sulfide or cyanide producing) shall be stored in Bay 2.

## **<u>1.1.4. Requirement for the Base or Liner to Contain Liquids [Utah Admin. Code R315-264-</u> <u>175(b)(1)]</u>**

1.1.4.1 The containment system of Building 528 is comprised of a square concrete slab, 75 feet on edge. The base is steel reinforced concrete six inches thick. The base shall be maintained free of cracks or gaps. A six inch high, six inch wide berm (or curb) runs along the perimeter of the base to provide containment. The base is crowned in the center to cause any liquids that may be spilled to drain to one of the four corners.

1.1.4.2 A six inch high, six inch wide berm divides the base into four bays to allow for the storage of wastes with free liquids and the segregation of incompatible wastes. Each bay is equal in available secondary containment storage volume and storage area. Each bay is square shaped and has an available storage area of 36.75 ft x 36.75 ft = 1350 ft<sup>2</sup>.

1.1.4.3 The impermeability of the concrete base is enhanced by a polyamide cured coating applied to the surface which is compatible with the types of waste that will be stored on the base.

page 4

1.1.4.4 An example of an acceptable coating is Semstone 245 High Performance Coating, or equivalent. The base of the secondary containment area shall receive at least two applications to provide a thickness of 40 mils when dry. The specifications of the example coating mentioned above, along with a compatibility table can be found in the TEAD EMD.

# <u>1.1.5. Containment System Drainage</u> [Utah Admin. Code R315-270-15(a)(2), R315-264-175(b)(2)]

1.1.5.1 Drainage of the base of Building 528 is provided by each cell draining to the corner that is diagonal to the corner of the cell that is at the center of the base (refer to figure in Appendix A).

## <u>1.1.6. Containment System Capacity</u> [Utah Admin. Code R315-270-15(a)(3), R315-264-175(b)(3)]

1.1.6.1 The volume of available secondary containment provided by the base of Building 528 is 5,051 gallons per bay calculated as follows: Each of the four cells comprising the base is 36.75 feet in length and 36.75 feet in width, with a 6 inch high berm. The capacity of secondary containment for a single bay is  $(36.75 \times 36.75)(ft)^2 \times (12)^2 \times (12)^2 (in)^2 (ft)^2 \times 6 (in) \times 1 (gal)/231 (in)^3 = 5,051$  gallons of secondary containment capacity per bay. The total available secondary containment volume is: 4 cells x 5,051 gallons/cell = 20,205 gallons.

1.1.6.2 The volume of containers stored in Bays 3 and 4 is calculated as follows: Bays 3 and 4 each have one row that has 1 more pallet per row than Bays 1 and 2. Both Bays 3 and 4 store containers stacked 2 high, therefore the maximum volume of containers stored in either Bay 3 or Bay 4 is 2 x ((6 rows/cell x 7 pallets/row x 170 gallons/pallet) + (1 pallet x 170 gallons/pallet)) = 14,620 gallons per bay.

1.1.6.3 The volume of containers stored in Bays 1 and 2 is calculated as follows: Bays 1 and 2 store containers of hazardous waste similar to the arrangement used in Bays 3 and 4, except the maximum number of pallets for all rows is 7, stacked 2 high. Therefore, the maximum volume of containers stored in either Bay 1, or Bay 2 is 2 x (6 rows/cell x 7 pallets/row x 170 gallons/pallet) = 14, 280 gallons per bay.

1.1.6.4 The total volume of waste stored in Building 528 is calculated as follows: Bays 1 and 2 = 2 cells x 14,280 gallons/cell = 28,560 gallons, Bays 3 and 4 = 2 cells x 14,620 gallons/cell = 29,240 gallons, Total capacity = 57,800 gallons.

1.1.6.5 The required secondary containment storage capacity is 10% of the volume of the waste to be stored which is 5,780 gallons. The available secondary containment capacity is 20,205 gallons which is more than enough to compensate for any secondary containment volume that is unavailable because of pallets or floor ramps.

## 1.1.7. Control of Run-on [Utah Admin. Code R315-270-15(a)(4), R315-264-175(b)(4)]

Attachment 9 – Containers Tooele Army Depot

page 5

1.1.7.1 Run-on into the containment system of Building 528 is prevented by the elevation of the secondary containment base relative to the surrounding terrain and the building shell.

1.1.7.2 The building shell of 528 completely covers the secondary containment base and is constructed of walls of metal siding and a gable roof which limit precipitation from contacting the secondary containment base.

1.1.7.3 As stated in Attachment 1 (Facility Description) there is no flood hazard within the boundaries of TEAD. In addition, the base of Building 528 is above the surrounding grade. The entrance used to move containers in and out of the building slopes up from the surrounding grade to the overhead door entrance.

1.1.7.4 Photographs of Building 528 (the building shell and the secondary containment base) can be found in Appendix B.

1.1.7.5 There is also a lined containment ditch surrounding Building 528. To allow for drainage away from the building, the side of the ditch next to the building is higher than the side which is opposite and away from the building. The liner installed beneath the base of Building 528 also runs beneath the containment ditch and extends 1 foot beyond the outer edge.

# 1.1.8. Removal of Liquids from Containment System [Utah Admin. Code R315-270-15(a), R315-264-175(b)(5)]

1.1.8.1 Liquid accumulating in the corners of any cell can be removed by use of an absorbent material or by means of a portable pump, depending of the size of the spill.

1.1.8.2 The collected liquid shall be analyzed unless it has been determined by generator knowledge that it is not a hazardous waste. All containers in the storage area are labeled, and an analysis exists for the stored hazardous waste, so user knowledge as to the composition of any liquid hazardous waste accumulated in the secondary containment area will be sufficient in most circumstances.

# <u>1.1.9. Special Requirements for Ignitable and Reactive Wastes [Utah Admin. Code R315-264-176]</u>

1.1.9.1 Figure 4 in Attachment 1 (Facility Description) shows that all HWMUs used to store ignitable or reactive wastes are located at least 50 feet from the property line.

2.0 <u>Container Management for Ammunition Igloos A101, C-514, C-815, C-816, K-401, K-402, K-403, K-404, K-801, K-802, K-803; Service Magazines 1368, 1369, 1370, and 1371, A101, C-815, C-816; Service Magazines 1368, 1370, Above Ground Magazine 1205; and Building 1320 Container Storage Facilities for Reactive (explosive) Wastes Without Free Liquids</u>

## 2.1 Use and Management of Containers

## 2.1.1. Test for Free Liquids [Utah Admin. Code R315-270-15(b)(1)]

Attachment 9 – Containers Tooele Army Depot

page 6

2.1.1.1 Igloos <u>A101, C-514, C-815, C-816, K-401, K-402, K-403, K-404, K-801, K-802, K-803; Service Magazines 1368, 1369, 1370, and 1371, A101, C-815, C-816; Service Magazines 1368, 1370, Above Ground Magazine 1205; and Building 1320 will be used to store hazardous wastes. There are no provisions for secondary containment in the design of these structures, therefore these areas shall be limited to the storage of Reactive (explosive subcategory) hazardous wastes without free liquids, and debris contaminated with explosive residues without free liquids. If the need arose to store explosive, or explosive contaminated, wastes with free liquids, they can be stored on a secondary containment pallet that meets R315-264-175.</u>

2.1.1.2 In most cases, Igloos <u>A101, C-514, C-815, C-816, K-401, K-402, K-403, K-404, K-801, K-802, K-803; Service Magazines 1368, 1369, 1370, and 1371, A101, C-815, C-816; Service Magazines 1368, 1370, Above Ground Magazine 1205; and Building 1320 will be used to store PEP materials scheduled for demilitarization (thermal treatment) at either the Subpart X (Open Burning/Open Detonation), or Subpart O (Incinerator) Hazardous Waste Management Units operated by the Permittee. These storage areas will also be used to store treatability study samples that are Reactive (explosive subcategory).</u>

2.1.1.3 The determination as to whether or not a waste contains free liquids can be made in 2 different ways:

2.1.1.3.1 Generator Knowledge - If the waste is an off-spec ammunition or off-spec PEP material previously stored at TEAD or Tooele Army Depot South Area (TEAD-S), the Permittee will have knowledge as to the characteristics of the waste relating to the presence or absence of free liquids. PEP materials that become hazardous waste were manufactured to government standards and this information is available through ammunition specification sheets and drawings. Therefore in most circumstances, knowledge can be applied to determine if a waste has free liquids.

2.1.1.3.2. Physical Analysis - If there is doubt as to whether a waste contains free liquids the waste will be analyzed for the presence of free liquids by using the Paint Filter Liquid Test (SW-846 method 9095).

## 2.1.2. Description of Containers [Utah Admin. Code R315-264-171, R315-264-172]

2.1.2.1 Containers used to store Reactive (explosive subcategory) hazardous waste in Igloos A101, C-514, C-815, C-816, K-401, K-402, K-403, K-404, K-801, K-802, K-803; Service Magazines 1368, 1369, 1370, and 1371A101, C 815, C 816; Service Magazines 1368, 1370, Above Ground Magazine 1205; and Building 1320 are such that if the wastes were to be transported over public highways, no repackaging would be required. In other words, wastes are placed into storage in the same containers they are shipped in. The containers used to store hazardous wastes comply with DOT regulations for class A, B, and C explosives.

2.1.2.2 Hazardous wastes stored in Igloos <u>A101, C-514, C-815, C-816, K-401, K-402, K-403, K-404, K-801, K-802, K-803; Service Magazines 1368, 1369, 1370, and 1371A101, C-815, C-816; Service Magazines 1368, 1370, Above Ground Magazine 1205; and Building 1320, will be generated both on and off site. Wastes generated on site come from: 1) off-spec PEP materials that were previously stored at TEAD as usable stock, or 2) wastes generated from the reconfiguration of munitions.</u>

Attachment 9 – Containers Tooele Army Depot

page 7

2.1.2.3 In the first case, the PEP materials were packaged to conform with DOT regulations for Class A, B, or C explosives at the time they were shipped to TEAD as usable product.

2.1.2.4 In the second case, the containers that shall be used to store PEP materials that are no longer useful because they were damaged during reconfiguration shall be:

- 1. Containers designed specifically for PEP materials.
- 2. 55 gallon steel drums with removable heads.
- 3. 85 gallon steel drums with removable heads.
- 4. 8 and 15 gallon steel drums with removable heads.

### 2.1.3. Container Management Practices [Utah Admin. Code R315-264-172]

2.1.3.1 Containers used to store hazardous waste shall be managed in such a way as not to cause the containers to release their contents. To insure that hazardous waste does not escape the container it is stored in, the Permittee manages containers in the following manner:

2.1.3.1.1 Drums issued to store hazardous wastes in shall be new <u>or reconditioned</u> drums. This ensures that the drums used to store hazardous waste are free from severe defects (corrosion, dents, and holes) and non-compatible wastes were not stored prior to <u>use</u>.

2.1.3.1.2 Drums used to store hazardous waste shall be selected based on the compatibility of the material of fabrication of the drum (or drum liner) and the physical and chemical characteristics of the wastes they are to store.

2.1.3.1.3 The lids to containers shall be kept closed and opened only when waste is added, removed or sampled.

2.1.3.1.4 Reactive hazardous wastes (explosive subcategory) shall be stored in containers designed specifically to hold explosives and propellants.

2.1.3.1.5 Containers filled with reactive hazardous wastes (explosive subcategory) shall be stored in container storage Hazardous Waste Management Units (HWMUs) designed specifically to hold PEP materials (i.e. ammunition igloos and service magazines).

2.1.3.2 Movements of containers of hazardous waste shall be tracked by a unique container number that appears on the hazardous waste container label. Each container and its associated hazardous waste label shall be issued concurrently by the TEAD EMD. This enables the EMD to track the movement of containers from satellite accumulation points to 90 day storage areas, and if necessary to permitted container storage HWMUs. This system; 1) generates operating records, 2) ensures that wastes in the 90 day storage area are moved to an off-site TSDF, or to an on-site permitted container storage HWMU before 90 days have expired, and 3) ensures that the container contents match the container label since the container and label are issued to a predesignated location generating a defined and named waste stream.

Attachment 9 – Containers Tooele Army Depot

page 8

2.1.3.3 To facilitate ease in movement and lessen the possibility of a forklift operator accidently piercing a container with the forklift forks, containers are placed on pallets. Single containers are handled with tongs that are attached to the forklift to lessen the possibility of dropping or rupturing the container.

2.1.3.4 Containerized hazardous wastes are moved from generation points to the appropriate HWMU by truck, tractor trailer, or van. The perimeter of open trailers and truck beds are slotted to allow for the placing of side rails (i.e. side boards). The vans and trailers used to move PEP items have rollers fabricated into the floor of the cargo area. This allows for ease in loading and unloading, however during transportation pallets must be kept in place by wood blocks positioned in such a way as to prevent the rollers from moving.

2.1.3.5 The containers are loaded onto trucks by forklift by first placing the containers on pallets. All roads used by vehicles transporting hazardous waste are made of graded/compacted dirt, asphalt, or concrete.

2.1.3.6 The geometry of Igloos A101, C-514, C-815, C-816, K-401, K-402, K-403, K-404, K-801, K-802, K-803; Service Magazines 1368, 1369, 1370, and 1371A101, C 815, C 816; Service Magazines 1368, 1370, (semi-circular in cross section); Above Ground Magazine 1205, and Building 1320 allows for varying storage capacity depending on container dimensions (small containers give a tighter packing arrangement). Since different types and sizes of containers are used to store hazardous waste, and all containers of hazardous waste shall be stored on pallets, a volume per pallet basis is used to determine the storage capacity of the HWMUs. The volume for Above Ground Magazine 1205 and Building 1320 is chosen is based on a theoretical ammunition pallet of 4 feet long, by 4 feet wide, by 5 feet high, having a total volume of 80 cubic feet. The three most frequently used pallets are 40 inches long by 48 inches wide, 42 inches long by 53 inches wide; and 36 inches long by 40 inches wide. The Permittee used 4 feet wide because the ammunition containers banded to the pallet can extend over a few inches and used four feet long because the 48 and 40 inch wide pallets are the most common and the 53 inch wide pallet the least common. The volume of Igloos A-101, C-514, C-815, C-816, K-401, K-402, K-403, K-404, K-801, K-802, and K-803, and Service Magazines 1368, 1369, 1370, and 1371 is based on a theoretical ammunition pallet of 4 feet long by 4 feet wide by 3 feet high, having a total volume of 48 cubic feet.

2.1.3.7 The management practices and storage arrangement for containerized waste with <u>or</u> <u>without</u> free liquids that are stored in Igloo A-101 is as follows:

2.1.3.7.1 All containers of hazardous waste shall be stored on pallets to elevate the container above any accumulated liquids. Eighty cubic feet of combined container volume will be stored per pallet. Liquids containing explosives can be stored on a secondary containment pallet that meets R315-264-175.

2.1.3.7.2 At a maximum, each row shall be configured as three pallets per row, with two pallets at floor level and one pallet stacked on top of the pallet closest to the storage areas central aisle space.

2.1.3.7.3 Each side of tThe igloo shall have at a maximum 9 rowsof 178 pallets.

Attachment 9 – Containers Tooele Army Depot

page 9

2.1.3.7.4 A minimum of 2.5 two feet shall be maintained between rows to allow for container inspection.

2.1.3.7.5 <u>This arrangement allows for a storage capacity of 178 pallets x 48 cubic</u> <u>feet /pallet = 8,544 cubic feet (or their equivalent). This arrangement allows for a storage</u> <u>capacity of: 2 sides x 9 row/side x 4 pallets/row x 80 cubic feet /pallet = 5,760 cubic feet.</u>

2.1.3.7.6 A figure that shows the container storage arrangement used in Igloo A-101 is in Appendix A.

2.1.3.8 The management practices and storage arrangement for containerized wastes without free liquids that are stored in Igloos C-514, C-815, C-816, K-401, K-402, K-403, K-404, K-801, K-802, and K-803 are as follows:

2.1.3.8.1 All containers of hazardous waste will be stored on pallets to elevate the container above any accumulated liquids. <u>Forty eight Eighty</u> cubic feet of combined container volume <u>will can</u> be stored per pallet.

2.1.3.8.2 At a maximum, 242 pallets will be stored in each igloo. 54 pallets per row, 18 pallets long and three high will be stored.

2.1.3.8.3 Rows will be spaced a minimum of <u>2.5two</u> feet apart and from the walls.

2.1.3.8.4 Use of the above storage arrangement gives Igloos <u>C-514</u>, <u>C-815</u>, <u>C-816</u>, <u>K-401</u>, <u>K-402</u>, <u>K-403</u>, <u>K-404</u>, <u>K-801</u>, <u>K-802</u>, and <u>K-803C 815</u>, <u>C-816</u> a storage capacity of <u>242</u> pallets x 48 cubic feet/pallet = 11,616 cubic feet (or their equivalent): 3 rows x 54 pallets/row x 80 cubic feet/pallet = 12,960 cubic feet.

2.1.3.8.5 A figure that shows the container storage arrangement used in Igloos C-514, C-815, C-816, K-401, K-402, K-403, K-404, K-801, K-802, and K-803C-815, C-816-is in Appendix A.

2.1.3.9 The management practices and storage arrangements for containerized wastes without free liquids that are stored in Service Magazines 1368, <u>1369</u>, 1370, and <u>1371</u> are as follows:

2.1.3.9.1 All containers of hazardous waste shall be stored on pallets to elevate the containers from any accumulated liquids. No more than <u>80-48</u> cubic feet of combined container volume shall be stored per pallet.

2.1.3.9.2 At a maximum, ten pallets shall be configured in a single row down the middle of each magazine with the maximum length of five pallets and a maximum height of two pallets.

2.1.3.9.3 A minimum of 2.5 two feet shall be maintained clear between the rows and sidewalls to allow for container inspections.

Attachment 9 – Containers Tooele Army Depot

page 10

2.1.3.9.4 Use of the above storage arrangement gives Service Magazines  $\underline{1368}$ ,  $\underline{1369}$ ,  $\underline{1370}$ , and  $\underline{1371}$ ,  $\underline{1368}$ ,  $\underline{1370}$  a storage capacity of <u>10</u> pallets each, with 48 cubic feet per pallet, for a total of 480 cubic feet per service magazine (or their equivalent), or 1920 cubic feet for all four service magazines.: 1 row x 10 pallets/row x 80 cubic feet/pallet = 800 cubic feet each.

2.1.3.9.5 A figure that shows the container storage arrangement used in Service Magazine 1368, <u>1369</u>, 1370, and <u>1371</u> is in Appendix A.

2.1.3.10 The management practices and storage arrangements for containerized wastes without free liquids that are stored in Above Ground Magazine 1205 are as follows:

2.1.3.10.1 All containers of hazardous waste shall be stored on pallets to elevate the containers above any accumulated liquids. No more than 80 cubic feet of combined container volume shall be stored per pallet.

2.1.3.10.2 At maximum, 900 pallets shall be stored. 150 pallets shall be stored per row, fifty pallets long and three high...

2.1.3.10.3 Rows spaced a minimum of 2.5<u>two</u> feet apart and from the walls shall be stored in Above Ground Magazine 1205.

2.1.3.10.4 Use of the above storage arrangement gives Above Ground Storage Magazine 1205 a storage capacity of 900 pallets x 80 cubic feet/pallet = 72,000 cubic feet (or their equivalent).
: 6 rows x 150 pallets/row x 80 cubic feet/pallet = 72,000 cubic feet.

2.1.3.10.5 A figure that shows the container storage arrangement used in Above Ground Storage Magazine 1205 is in Appendix A.

2.1.3.11 The management practices and storage arrangements for containerized wastes without free liquids that are stored in Building 1320 are as follows:

2.1.3.11.1 All containers of hazardous waste shall be stored on pallets to elevate the containers above any accumulated liquids. No more than 80 cubic feet of combined container volume shall be stored per pallet.

2.1.3.11.2 At maximum, only 9 pallets may be stored, with a total of 8 pallets between the two roll-off doors, and one pallet will be stored next to the feeding area.

2.1.3.11.3 A maximum of 9 pallets shall be stored in the building with a minimum of  $\frac{2.5 \text{two}}{2.5 \text{two}}$  feet apart from walls or walking obstruction.

2.1.3.11.4 Use of the above storage arrangement gives building 1320 a storage capacity of: (8 pallets + 1 pallet) x 80 cubic feet/pallet = 720 cubic feet (or their equivalent).

Attachment 9 – Containers Tooele Army Depot

page 11

2.1.3.11.5 A figure that shows the container storage arrangement used in Building 1320 is in Appendix A.

# 2.2. Container Storage Area Drainage [Utah Admin. Code R315-270-15(b)(2), R315-264-175(c)]

2.2.1 Drainage for the storage area in Igloos A-101, C-514, C-815, C-816, K-401, K-402, K-403, K404, K-801, K-802, and K-803A-101, C-815, C-816 is provided by the crowned floor and the varying drainage gradient of the gutters which run down the length of both sides of the igloos. Igloos A-101, C-514, C-815, C-816, K-401, K-402, K-403, K404, K-801, K-802, and K-803-A-101, C-815, C-816 are orientated relative to the drain field of the surrounding area so that the back of the igloo is at a higher elevation than the front (entrance) so that water cannot drain into the igloo.

2.2.2 An additional operational procedure which enhances the limited drainage capabilities of Igloos <u>A-101, C-514, C-815, C-816, K-401, K-402, K-403, K-404, K-801, K-802, and K-803A-101, C-815, C-816</u> is the use of pallets to store containers. Pallets raise the container holding hazardous waste above any liquid that may be introduced into the storage area.

2.2.3 Similar methods are used to keep moisture out of Service Magazines<u>1368</u>, <u>1369</u>, <u>1370</u>, <u>and 1371</u>-<u>1368</u>, <u>1370</u>. Pallets are used to store containers and the floor is sloped to cause the liquids to run towards the entrance. Water cannot drain into the service magazine.

2.2.4 The Above Ground Service Magazine 1205 is elevated off the ground and water cannot drain into the structure. In addition, the containers are on pallets that elevate them off the floor.

2.2.5 Building 1320 is an enclosed structure where pallets are used to store containers and the floor is sloped which allows liquids to run towards the entrance. Storm water cannot drain into the building.

# 2.3. Special Requirements for Ignitable and Reactive Wastes [Utah Admin. Code R315-264-176]

2.3.1 Figure 4 in Attachment 1 (Facility Description) shows that all HWMUs used to store ignitable or reactive wastes are located at least 50 feet from the property line.

Appendix A Container Storage Configurations

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Figure A-2 Igloo A-101 Container Storage Configuration



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Figure A-3 Igloos C-514, C-815, C-816, K-401, K-402, K-403, K-404, K-801, K-802, and K-803 Container Storage Configuration







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