

## **MODULE IV – THERMAL TREATMENT OF ENERGETIC WASTES**

### **IV.A. APPLICABILITY**

- IV.A.1. The requirements of this permit module apply to the thermal treatment of energetic or reactive hazardous waste at the ATK Launch Systems – Promontory facility, Box Elder County, Utah. The Permittee shall comply with R315-264 and all conditions of this module and Permit.
- IV.A.2. The Permit conditions of this module allow thermal treatment at the two Hazardous Waste Management Units, designated as the M-136 and M-225 Thermal Treatment Areas, as designed and described in the drawings and specifications in Attachments 6 and 11. The M-136 Thermal Treatment Area consists of 14 burn stations and 2 open detonation areas. The M-225 Thermal Treatment Area consists of 4 burn stations and 1 open detonation area.
- IV.A.3. Thermal treatment at both of the Promontory Thermal Treatment Areas shall only be accomplished by properly trained ATK personnel in accordance with the conditions of this Permit and its Attachments.
- IV.A.4. This Permit has been developed in accordance with the applicable requirements of Title R315 of the Utah Administrative Code. All conditions in this Permit shall supersede conflicting statements, requirements, or procedures found in Title R315 of the Utah Administrative Code or the Attachments to this Permit.

### **IV.B. PERMITTED AND PROHIBITED WASTE IDENTIFICATION**

- IV.B.1. The Permittee may treat energetic or reactive hazardous waste by open burning at the M-136 and M-225 Thermal Treatment Areas; open detonation at M-136, stations 13 and 14 and open detonation at M-225, station 1. These energetic and reactive hazardous wastes are generated from the following sources:
  - IV.B.1.a. Class 1.1 and 1.3 propellants and explosives manufactured by or owned by Promontory, Bacchus, other ATK facilities, DOD, NASA or other U.S. Government and private facilities (e.g. cured and uncured propellants, excess propellants and propellant scraps);
  - IV.B.1.b. Production materials contaminated with class 1.1 and 1.3 propellants and explosives and reactive residues (e.g., rags, gloves, other personal protective equipment, plastics, rubber and paper that were contaminated with explosive materials during the manufacturing process);
  - IV.B.1.c. Large and small class 1.1 and 1.3 rocket motors and initiating devices;
  - IV.B.1.d. Class 1.3 Pyrotechnic, Illuminants, Metal Powders;
  - IV.B.1.e. Production materials contaminated with class 1.3 Pyrotechnic, Illuminants, Metal Powders, and other reactive residues (e.g., rags, gloves, other personal protective equipment, plastics, rubber and paper that were contaminated with explosive materials during the manufacturing process);
  - IV.B.1.f. Reactive laboratory wastes which may contain solvents;

- IV.B.1.g. Wastewater treatment sludge generated from the processing of explosive ingredients and propellants defined in R315-261-32 as a K044 listed hazardous waste;
- IV.B.1.h. Reactive bag house dust generated from the processing of explosive ingredients and propellants; and
- IV.B.1.i. Waste developmental propellants, explosives and associated contaminated production materials.
- IV.B.2. Only reactive hazardous waste as defined by R315-261 may be treated at the Promontory Thermal Treatment Areas. Reactive hazardous waste thermally treated at the Promontory Thermal Treatment Areas may contain the follow EPA waste codes: D001, D003, D005, D007, D008, D030, D038, F001, F002, F003, F004, F005 and K044.
- IV.B.3. The Permittee is prohibited from thermally treating reactive hazardous waste classes and compositions not included in Conditions IV.B.1. and IV.B.2. including wholly inert items, improvised explosive devices (e.g. homemade bombs) and chemical wastes.
- IV.B.4. The Permittee is prohibited from thermally treating any reactive hazardous waste that does not have a designated waste profile.
- IV.B.5. The Permittee is prohibited from thermally treating decoy flare molds with less than 4% propellant contamination.
- IV.B.6. The addition of hazardous waste codes to Condition IV.B.2. requires modification of the permit as specified in R315-124-5 and Condition I.D.
- IV.B.7. The Permittee shall comply with the waste compatibility requirements of Condition II.I.

**IV.C. GENERAL OPERATING CONDITIONS**

- IV.C.1. Based on the results of the Human Health Risk Assessment, identified in Condition II.G.1.e., the Permittee shall comply with the following treatment limits for the M-136 Thermal Treatment Area:
  - IV.C.1.a. The Permittee shall not treat, by open burning (OB), in the M-136 Thermal Treatment Area more than a total combined amount of 122,000 pounds of reactive hazardous waste in a calendar day, under treatment scenario M-136-A as outlined in Table 1 of Attachment 11;
  - IV.C.1.b. The Permittee shall not treat by OB in the M-136 Thermal Treatment Area more than 96,000 pounds total of reactive hazardous waste in a calendar day at any six burn stations of burn stations 1 through 12, at 16,000 pounds in each station, under treatment scenario M-136-A as outlined in Table 1 of Attachment 11;
  - IV.C.1.c. The Permittee shall not treat by OB in the M-136 Thermal Treatment Area more than 10,000 pounds total of reactive hazardous waste in a calendar day at burn station 13 under treatment scenario M-136-A as outlined in Table 1 of Attachment 11;

- IV.C.1.d. The Permittee shall not treat by OB in the M-136 Thermal Treatment Area more than 16,000 pounds total of reactive hazardous waste in a calendar day, at burn station 14 under treatment scenario M-136-A as outlined in Table 1 of Attachment 11;
- IV.C.1.e. The Permittee shall not treat by OB in the M-136 Thermal Treatment Area more than 125,000 pounds total of reactive hazardous waste in a calendar day at burn station 14 under treatment scenario M-136-B as outlined in Table 1 of Attachment 11; and
- IV.C.1.f. The Permittee shall not treat by OD in the M-136 Thermal Treatment Area more than 600 pounds total of reactive hazardous waste in a calendar day at each burn station, 13 and 14 as outlined in Table 1 of Attachment 11.
- IV.C.2. In any one calendar day, the Permittee shall not operate more than one treatment scenario, M-136-A, M-136-B, or M-136-C, in the M-136 Thermal Treatment Area.
- IV.C.3. When operating the M-136 Thermal Treatment Area, the Permittee shall maintain the minimum safe “quantity-distance” spaces as specified in Attachment 11, Section 5.
- IV.C.4. The Permittee shall not treat more than 10,000,000 pounds of reactive hazardous waste at the M-136 Thermal Treatment Area in a calendar year. This 10,000,000 pound limit shall be established by adding the Net Explosive Weight (NEW) and all donor and initiator materials. Donor material shall include all pallets, cardboard, packaging material, absorbents and diesel fuel.
- IV.C.5. Based on the results of the Human Health Risk Assessment, identified in Condition II.G.1.e., the Permittee shall comply with the following treatment limits for the M-225 Thermal Treatment Area:
  - IV.C.5.a. The Permittee shall not treat, by open burning (OB), in the M-225 Thermal Treatment Area more than 4,500 pounds of reactive hazardous waste per calendar day under treatment scenario M-225-A as outlined in Table 1 of Attachment 11;
  - IV.C.5.b. The Permittee shall not treat by OB in the M-225 Thermal Treatment Area more than 4,500 pounds total of reactive hazardous waste in a calendar day at burn stations 1 through 4, at 1,125 pounds in each station under treatment scenario M-225-A as outlined in Table 1 of Attachment 11; and
  - IV.C.5.c. The Permittee shall not treat, by open detonation (OD), in the M-225 Thermal Treatment Area more than 600 pounds of reactive hazardous waste in a calendar day under treatment scenario M-225-B as outlined in Table 1 of Attachment 11.
- IV.C.6. The Permittee shall not operate more than one treatment scenario, M-225-A, or M-225-B in a calendar day.
- IV.C.7. When operating the M-225 Thermal Treatment Area, the Permittee shall maintain the minimum safe “quantity-distance” spaces as specified in Attachment 11, Section 5.
- IV.C.8. The Permittee shall not treat more than 55,000 pounds, by open burning, and 10,000 pounds, by open detonation, of reactive hazardous waste at the M-225 Thermal Treatment Area in a calendar year. This limit shall be established by adding the Net Explosive Weight

(NEW) and all donor and initiator materials. Donor material shall include all pallets, cardboard, packaging material, absorbents and diesel fuel.

- IV.C.9. The Permittee shall maintain the integrity of the Promontory Thermal Treatment Areas to ensure that they meet the performance standards of R315-264-601 and minimize the potential impacts to human health and the environment. The Permittee shall adhere to applicable provisions of Attachments 2 and 11 and the following conditions:
- IV.C.9.a. The Permittee shall conduct all open burn operations within the secure areas designated as the M-136 or M-225 Thermal Treatment Areas with controlled access as identified in Attachment 11;
- IV.C.9.b. The Permittee shall post warning signs around both of the Thermal Treatment Areas to keep unauthorized personnel out;
- IV.C.9.c. The Permittee shall maintain the egress paths for both of the Thermal Treatment Areas identified in Attachment 4;
- IV.C.9.d. The Permittee shall disable the firing system whenever operators are in the Quantity Distance restricted area (QD) as defined in Section 11.5 of Attachment 11, for this treatment unit. The firing system shall only be active or armed when operators are conducting a pre-burn continuity check, as specified in Attachment 11, Section 8.2.3, or when the firing system is being maintained and no waste is present in the treatment area, or after all operators have exited the treatment unit and retreated to the firing control room in preparation of initiating an ignition as specified in Condition IV.F.2.e;
- IV.C.9.e. The Permittee shall assess and monitor meteorological conditions to ensure operators are not exposed to risks from lightning strikes or other adverse weather conditions that would preclude the safe operation of the M-136 or M-225 Thermal Treatment Areas. The Permittee shall record the temperature, wind speed, wind direction, sky conditions and clearing index prior to each burn in the Facility operating record;
- IV.C.9.f. The Permittee shall comply with all requirements for pre-placement of waste, placement of waste in treatment units, wiring and ignition and the post-burn inspection and clean-up activities identified in Conditions IV.D, E, F, G, H and I;
- IV.C.9.g. The Permittee shall provide operators with access to a functional radio or telephone that can be used to contact support personnel, including security, safety and fire-fighting units, whenever the operators are inside the M-136 or M-225 Thermal Treatment Areas;
- IV.C.9.h. The Permittee shall maintain the integrity of the two Promontory Thermal Treatment Areas and support equipment through regular inspections and in accordance with the inspection plan in Attachment 2. Inspection records shall be maintained at the facility;
- IV.C.9.i. The Permittee shall train all operators of the Promontory Thermal Treatment Areas in accordance with Condition II.H. and Attachment 3 of this Permit;
- IV.C.9.j. The Permittee shall not operate either of the Promontory Thermal Treatment Areas without containment measures (e.g. firebreaks) to ensure the confinement and control of any fire resulting from the open burn and open detonation operations at the Promontory Thermal Treatment Areas; and

- IV.C.9.k. The Permittee shall not treat propulsive items at the Promontory Thermal Treatment Areas, unless the item has been rendered non-propulsive or is contained in accordance with Attachment 11.
- IV.C.10. The Permittee shall operate the Promontory Thermal Treatment Areas to prevent unacceptable risk of cancer and non-cancer effects to on-site workers and off-site residents and to minimize significant effects to the ecosystem surrounding the Promontory Thermal Treatment Areas. The Permittee shall maintain compliance with the environmental performance standards listed in R315-264-601.
- IV.C.11. The Permittee shall adhere to the following conditions to prevent unacceptable risk of cancer and non-cancer effects due to exposure to emissions from the open burning operations:
- IV.C.11.a. The excess cumulative carcinogenic risk to on-site workers shall not exceed  $1.0 \times 10^{-4}$  (one in ten thousand) or a Hazard Index of 1.0 for the potential workers positioned at the point of on-site maximum exposure, as calculated according to the methodology in the approved HHRA. The maximum amount treated at the burning grounds shall not exceed the treatment scenarios outlined in Table 1, Attachment 11; and
- IV.C.11.b. The excess cumulative carcinogenic risk to actual or potential off-site receptors shall not exceed  $1.0 \times 10^{-6}$  (one in a million). The cumulative non-carcinogenic hazard to actual or potential off-site receptors shall not exceed a hazard index of 1.0 for any 24-hour period following initiation of a burn or detonation, as calculated according to the methodology in the approved HHRA. The maximum amount treated at the burning grounds shall not exceed the annual maximum quantities outlined in Table 1, Attachment 11.
- IV.C.12. Based on the air dispersion and deposition modeling and the human health risk assessment, identified in Section II.G., the Permittee shall adhere to the following conditions:
- IV.C.12.a. The Permittee shall notify the Box Elder County Dispatch prior to each treatment operation involving reactive material and record the clearing index that shall be obtained from the National Weather Service in the Operating Record;
- IV.C.12.b. The Permittee may conduct burns and open detonations only between the hours of 9:00 am Mountain Time (MT) and 6:00 pm MT;
- IV.C.12.c. The Permittee shall only conduct burns when the surface wind speed is greater than 3 miles per hour (mph) and less than 15mph unless Permit Condition IV.C.13.a. applies; and
- IV.C.12.d. The Permittee may conduct burns and open detonations only when the Clearing Index (CI) is greater than 500 unless Permit condition IV.C.13. applies.
- IV.C.13. The Permittee may treat Class 1.1, Class 1.3 and Class 1.3 flare wastes that are time-sensitive reactive wastes, as defined by I.A.17., by open burning at M-136, Station 13, when the Clearing Index is less than 500 in accordance with the following scenarios:
- IV.C.13.a. Scenario 1: 1,000 pounds or less with a maximum wind speed of 15 mph;
- IV.C.13.b. Scenario 2: 1,500 pounds or less with a maximum wind speed of 15 mph and a minimum wind speed of 3 mph.

**IV.D.        WASTE TRACKING**

- IV.D.1.        The Permittee shall track all reactive hazardous waste in accordance with Attachment 11 and maintain this information in the operating record for both of the Promontory Thermal Treatment Areas.

**IV.E.        PRE-BURN ACTIVITIES**

- IV.E.1.        Prior to bringing any reactive hazardous waste into either of the Promontory Thermal Treatment Areas, M-136 or M-225, for thermal treatment, the Permittee shall conduct pre-burn activities in accordance with the requirements identified in Attachment 11, and the pre-burn inspection requirements in accordance with the inspection schedule included in Attachment 2. The Permittee shall also comply with the following conditions:
- IV.E.1.a.        If the treatment units have not been inspected the same day the unit is loaded, the treatment unit shall be inspected prior to placing reactive waste in the treatment unit;
- IV.E.1.b.        Any treatment unit that fails one or more of the inspection criteria shall be removed from service until the problem is corrected;
- IV.E.1.c.        No treatment is permitted unless the Permittee verified that either radio or telephone communication with emergency services is available and will be in effect throughout the duration of the treatment;
- IV.E.1.d.        No treatment is permitted if the emergency equipment listed in Attachment 2, Table II-B, “Inspection Schedule for Thermal Treatment Area at M-136” or Table II-C, “Inspection Schedule for Thermal Treatment Areas at M-225” is not available for use at each respective location;
- IV.E.1.e.        All leaks or spills of diesel fuel shall be cleaned up before the Promontory thermal treatment areas can be operated; and
- IV.E.1.f.        The loss of the flashing light will require that the unit be shut down until the problem is corrected. If the Permittee must use the treatment unit when the flashing light is not working, the supervisor shall visually inspect the area within the QD of the treatment unit and ensure that no unauthorized employees are present in the area. If any unauthorized employees are found within this area, they will be escorted from the area. Treatment operations can commence once the supervisor verifies in the operating record that the area is clear.

**IV.F.        PREPARING WASTE FOR THERMAL TREATMENT BURN**

- IV.F.1.        Prior to placing any reactive hazardous waste in a treatment unit located in Promontory Thermal Treatment Areas, M-136 or M-225, the Permittee shall comply with all provisions of Conditions IV.C, D and E of this Permit. The Permittee shall also comply with the following conditions:
- IV.F.1.a.        The Permittee shall provide at least two trained operators when a treatment unit is in the process of being loaded with reactive hazardous wastes as defined in Condition IV.B.1;

- IV.F.1.b. The Permittee shall load the treatment unit in accordance with all internal safety procedures and requirements and the provisions identified in Attachment 11.8.2.2;
- IV.F.1.c. The Permittee shall account for all cardboard, wood and diesel used as donor material to ensure a complete burn. The donor material shall be counted towards the daily treatment limits, and recorded in the operating record; and
- IV.F.1.d. All reusable propellant buckets used as accumulation containers for reactive waste shall be inspected after use. If there is any contamination in the containers they shall be cleaned or decontaminated in accordance with the procedures identified in Attachment 11 before being reused; and
- IV.F.1.e. The Permittee shall identify in the operating record the burn station used for each container of reactive hazardous waste treated.
- IV.F.2. Prior to beginning the final preparations for an open burn, the Permittee shall comply with the following conditions:
  - IV.F.2.a. The Permittee shall ensure all non-essential personnel leave the treatment area prior to preparing the reactive waste for ignition, as described in Attachment 11.8.2.3;
  - IV.F.2.b. All wiring and ignition operations, described in Attachment 11.8.2.3, shall be conducted by at least two employees;
  - IV.F.2.c. The Permittee may reactivate the firing system treatment areas only after all operators have exited the QD for the treatment unit;
  - IV.F.2.d. As the operators leave the treatment area following operations described in Attachment 11, Section 8.2.3, they shall close the gate to the treatment area;
  - IV.F.2.e. After all operators have exited the treatment area and retreated to the firing control room, the operators may replace the firing system interlock in the firing system control console and activate the firing system;
  - IV.F.2.f. After activating the firing system, the operators shall confirm that the flashing red light was activated to alert all personnel that a treatment event is about to start and that they should vacate the QD area for the treatment area. If the flashing light is not operational, the Permittee shall comply with Condition IV.E.1.f. before initiating the thermal treatment;
  - IV.F.2.g. After the warning identified in Condition IV.F.2.f. has been completed, the Permittee shall conduct a pre-ignition continuity check of the firing system to ensure that the igniters have been installed correctly into the hard-wired portion of the firing system. If any firing circuit fails this test, the Permittee shall perform the following tasks:
    - IV.F.2.g.i. Remove the interlock for the firing control system, deactivating the firing control system;
    - IV.F.2.g.ii. At least two operators shall reenter the treatment area, and correct the problem;
    - IV.F.2.g.iii. If the resistance problem cannot be immediately corrected, the operators may connect a separate igniter wire to an adjacent stanchion; and

- IV.F.2.g.iv. After the problem with the firing circuit has been corrected the operators shall repeat the steps described in Conditions IV.F.2.g.
- IV.F.2.h. The treatment units shall be fired in accordance with the provision of Attachment 11, Section 8.2.3 of this Permit;
- IV.F.2.i. All thermal treatment events shall be observed with a video camera from the firing control room or immediately outside the firing control room;
- IV.F.2.j. In the event that none of the treatment units ignite, the operators shall wait 30 minutes before removing the firing system interlock and reentering the treatment area to correct the problem. After correcting the problem, the operators shall repeat the steps described in Conditions IV.F.2.c, d, e, f and g, and proceed with activating the firing system;
- IV.F.2.k. If at least one treatment unit ignites, then the operators shall wait at least 16 hours before reentering the treatment area and correcting the problem. After the problem has been corrected, the operators shall repeat the steps described in Conditions IV.F.2.c, d, e, f and g, and proceed with activating the firing system;
- IV.F.2.l. Prior to ignition, the area supervisor or designee, shall review the placement of the waste on the treatment units; and
- IV.F.2.m. All treatment data shall be maintained in accordance with the requirements of R315-264-73 and shall be entered into the operating record for the Promontory Facility in accordance with attachment 11.6.

**IV.G. POST-BURN ACTIVITIES**

- IV.G.1. Following treatment, the Permittee shall: (a) conduct the post-burn inspection activities identified in Attachment 2 of this Permit, and (b) conduct clean-up activities identified in Attachment 11 of this Permit.
- IV.G.2. The Permittee shall conduct a post-burn inspection, including the tasks specified below, within 24 hours of completing a treatment event unless one of the exceptions identified in IV.G.2.i. or IV.G.2.j. applies:
  - IV.G.2.a. Prior to entering the treatment area, the operators shall deactivate the firing control system and remove the interlock;
  - IV.G.2.b. Document in the Operating Record any treatment unit with an open flame, hot spot or smoldering residue;
  - IV.G.2.c. Document in the Operating Record any treatment unit with unburned residue;
  - IV. G.2.d. Document in the Operating Record any treatment unit with unburned reactive hazardous waste and identify if possible why the waste did not burn;
  - IV.G.2.e. Inspect for any unburned waste that was ejected from a treatment unit during the last treatment event. Such waste shall be picked up and placed in a treatment unit;



- IV.G.2.f. Clean the treatment units in accordance with Attachment 11 and record on the inspection form the date that the treatment units were cleaned, or the reason why the units were not cleaned within 24 hours after completing the treatment event;
- IV.G.2.g. Identify the treatment unit on the inspection form where any unburned waste is being stored;
- IV.G.2.h. Inspect the condition of the safety equipment identified in Attachment 2, Table II-B and Table II-C;
- IV.G.2.i. The Permittee may postpone post-burn activities if lightning strikes or adverse weather conditions prohibit the safe operation of the treatment areas. Lightning strikes closer than 30 miles restrict attended operations at the Promontory Facility. The Permittee shall document the reasons for the delay in the facility's operating record; and
- IV.G.2.j. The Permittee may delay the post-burn inspection for burns involving bulk propellant that occurred on a Thursday, if it is the end of the work week or Friday. The post-burn inspection shall be conducted on the following Monday, unless the meteorological conditions identified in Condition IV.G.2.i. prohibit re-entry into the treatment area. The Permittee shall document the reasons for the delay in the facility's operating record.
- IV.G.3. Within 24 hours of completing an open burn that generates a characteristic or listed ash or residue, the Permittee shall remove all characteristic or listed residues from the treatment area and manage the waste in accordance with R315-262.
- IV.G.4. Except as allowed in Conditions IV.G.2.i. or IV.G.2.j., the Permittee's area supervisor, or designee, shall review the Promontory Thermal Treatment Areas log and post-burn inspection forms within 24 hours of completing each thermal treatment event. The review shall ensure that all of the recorded information is correct and identify any items that may require corrective action including any treatment unit that failed to ignite, had an ignition problem or misfired, had an unplanned detonation, where the burn did not propagate as expected or any other unexpected event. The Permittee shall document the review and need for any corrective action in the Operating Record.
- IV.G.5. If post-burn requirements are postponed, as allowed in Conditions IV.G.2.j. or IV.G.2.i., the Permittee shall document the following information in the operating record:
  - IV.G.5.a. The reason for the delay in performing the post-burn requirements specified in Condition IV.G.2.; and
  - IV.G.5.b. The date when the Permittee cleaned the treatment unit and completed the post-burn requirements specified in Condition IV.G.2.
- IV.G.6. Open burn operations at the Promontory Thermal Treatment Areas may result in the generation of untreated residue and unburned wastes. The Permittee shall manage these residues and wastes in accordance with the following provisions:
  - IV.G.6.a. Small amounts of untreated residue shall be considered newly generated waste and shall be logged and tracked as such in the explosive waste tracking system. This small amount is defined as less than 5% of the total volume placed treatment unit. The primary option for managing this waste is to burn it by 6:00 pm of the following calendar day. If the untreated

residue cannot be treated by 6:00 pm of the following calendar day then it shall be managed in accordance with R315-262;

- IV.G.6.b. Unburned waste resulting from a misfire or an interrupted ignition shall be treated by 6:00 pm of the calendar day following the date of the first attempt to treat this waste. For the purposes of this Permit, an interrupted ignition occurs when anything greater than 5% of the waste placed on a treatment unit or in a station fails to ignite. This unreacted waste shall not be considered a newly generated residue. If the Permittee is unable to treat the unburned waste by 6:00 pm of the following calendar day, the Permittee shall cover the waste and manage the treatment unit or station in accordance with R315-262. For operations at M-225, if the cumulative storage time for the unburned waste both while in storage prior to treatment and while on the treatment unit or in the burn station is greater than 90 days, the Permittee shall request an emergency storage permit in accordance with R315-270-61 (this requirement is not applicable to operations at M-136);
- IV.G.6.c. For reactive hazardous wastes that have been in storage for greater than 90 days when they are placed on in a treatment unit or in a burn station and which do not completely burn, the Permittee shall treat all unburned or unreacted waste by 6:00 pm of the calendar day following the date of the initial attempt to treat the waste. For operations at M-225, if the Permittee is unable to treat the unburned or unreacted waste by 6:00 pm of the following calendar day, the Permittee shall request an emergency storage permit in accordance with R315-270-61 (this requirement is not applicable to operations at M-136); and
- IV.G.6.d. The Permittee shall manage all treatment residues generated from the treatment of listed and/or characteristic wastes during post-burn activities in accordance with this Permit and R315-262.

**IV.H. STORM WATER MANAGEMENT AND RUN-ON AND RUN-OFF CONTROLS**

- IV.H.1. The Permittee shall manage all storm water collected from treatment units in accordance with this Permit, Attachment 11, Section 11 and R315-262.
- IV.H.2. The Permittee shall maintain run-on diversion structures in accordance with this Permit and R315-264-601. The Permittee shall inspect the condition of those structures annually to ensure that they are in good repair. The annual inspection shall be documented in the Operating Record for Promontory Thermal Treatment Areas.
- IV.H.3. Run-off from precipitation that falls within the operating area of the Promontory Thermal Treatment Areas shall be managed in accordance with R315-264-601, using berms and ground slope.

**IV.I. TREATMENT RESIDUE AND ASH MANAGEMENT**

- IV.I.1. All treatment residue and ash generated from the Promontory Thermal Treatment operations shall be managed in accordance with Condition IV.G.6.d. and the procedures identified in Attachment 11.
- IV.I.2. Sampling and analysis of treatment residues and ash generated during operations at the thermal treatment areas shall be performed in accordance with Attachments 1 and 11 of this Permit.

**IV.J.            INSPECTION SCHEDULES AND PROCEDURES**

IV.J.1            The Permittee shall conduct inspections of the Promontory Thermal Treatment areas in accordance with Attachments 2 and 11 of this Permit.

**IV.K.            ENVIRONMENTAL MONITORING REQUIREMENTS**

IV.K.1.            The Permittee has completed a Human Health Risk Assessment based on the results of emissions sampling and air dispersion modeling. The primary documents that were completed in the risk assessment process, and approved by the Director, are listed in Section II.G. of this Permit.

IV.K.2.            The Permittee shall conduct soil monitoring in accordance with the Soil Monitoring Plan (referenced in Condition II.G.1.h.), in order to further assess the risk to human health from thermal treatment operations at the Promontory facility.

IV.K.3.            The Permittee shall complete the initial sampling event, as directed by the Soil Monitoring Plan, and submit a written report to the Director for approval on the soil monitoring results no later than January 31, 2019.

IV.K.4.            The Soil Monitoring Report shall contain: (a) the validated analytical data, (b) a soil sampling location map, (c) a detailed analysis of the data as described in the Soil Monitoring Plan, including a comparison of the results of the soil monitoring with the maximum off-site concentrations predicted by the air dispersion model, EPA Regional Screening Levels and background soil concentrations, and (d) a recommendation on the need for additional monitoring.

IV.K.5.            The Director may require the Permittee to conduct additional soil monitoring based on the results of the Soil Monitoring Report.

IV.K.6.            The Permittee shall submit a Soil Monitoring Plan addendum in writing to the Director for approval within 90 days of being notified by the Director in writing that a Soil Monitoring Plan addendum is required.

IV.K.7.            The Permittee shall conduct groundwater monitoring in accordance with Module IV of the Permittee's Post-Closure Permit.

IV.K.8.            The Permittee shall evaluate the potential impacts to groundwater from thermal treatment operations at the M-136 Burn Grounds in accordance with the Groundwater Monitoring Plan as approved by the Director on May 21, 2018.

IV.K.9.            Based on the results of the evaluation required by Condition IV.K.8., the Director may require the Permittee to submit a plan in writing to the Director for approval to mitigate impacts to groundwater from thermal treatment operations.

IV.K.10.           The Permittee shall submit a Groundwater Monitoring Plan addendum in writing to the Director for approval within 90 days of being notified by the Director in writing that additional work is required to demonstrate that thermal treatment operations at the Promontory facility do not impact groundwater.

**IV.L.            ECOLOGICAL RISK**

- IV.L.1. Based on the justifications presented by the Permittee, on December 19, 2016, in support of its request to waive the ecological risk assessment for the Promontory Thermal Treatment area (referenced in Condition II.G.1.f.), the Director approved the waiver request on August 29, 2017.

**IV.M HUMAN HEALTH RISK**

- IV.M.1. The Human Health Risk was evaluated as identified in Condition II.G.1. The Permittee shall annually evaluate emission factors, dose-response factors and human health risk scenarios as directed by Conditions II.G.3.g., II.G.3.h. and II.G.3.i.

**IV.N. FACILITY MODIFICATION/EXPANSION**

- IV.N.1. Modification of the design plans and specifications in Attachment 6 or construction of additional treatment units shall be allowed only in accordance with Condition I.D.4. and R315-124-5.

**IV.O. CLOSURE AND POST CLOSURE**

- IV.O.1. The Permittee shall close the Promontory Thermal Treatment Areas in accordance with Condition II.O., Attachment 5 of this Permit, R315-264-110 and R315-264-178.

**IV.P. PROMONTORY THERMAL TREATMENT AREAS OPERATING RECORD**

- IV.P.1. The Permittee shall maintain an Operating Record at the Promontory Facility that describes the operation of the Thermal Treatment areas. The operating records for the M-136 and M-225 Thermal Treatment Areas shall, at a minimum, include the following information:
- IV.P.1.a. All information required by R315-264-73;
  - IV.P.1.b. Copies of all inspections required by this module;
  - IV.P.1.c. All waste tracking information maintained in the electronic Waste Tracking Record identified in Attachment 11;
  - IV.P.1.d. A description of the meteorological conditions described in Condition IV.C.9.e. during each burn;
  - IV.P.1.e. Copies of all reports identified in Condition II.G.1. and required by Condition II.G.3. and IV.K and IV.L; and
  - IV.P.1.f. A running total of the type and quantity of reactive hazardous waste that has been treated at both of the Promontory Thermal Treatment areas during the calendar year.