ATTACHMENT E

INSPECTION SCHEDULE, PROCESS AND FORMS

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ATTACHMENT E

INSPECTION SCHEDULE, PROCESS AND FORMS

Introduction

This Permit Attachment describes the facility inspections (including container inspections) that are conducted to detect malfunctions and deterioration, operator errors, and discharges which may be causing—or may lead to—(1) release of hazardous waste constituents to the environment or (2) a threat to human health, in accordance with 20.4.1.500 New Mexico Administrative Code (**NMAC**) (incorporating Title 40 of the Code of Federal Regulations (**CFR**) §264.15(a)).

E-1 Inspection Schedule

Equipment instrumental in preventing, detecting, or responding to environmental or human health hazards, such as monitoring equipment, safety and emergency equipment, security devices, and operating or structural equipment are inspected.

The Permittees have developed and maintain a series of written procedures that include all the detailed inspection procedures and forms used to comply with 20.4.1.500 NMAC (incorporating 40 CFR §264.15(b)), during the Disposal Phase. Tables E-1 and E-1a list each item or system requiring inspection under these regulations, the inspection frequency, the organization responsible for the inspection, the applicable inspection procedure, and what to look for during the inspection. The regulations at 20.4.1.500 NMAC (incorporating 40 CFR §§264.15(b), 264.174, and 264.602) list requirements that are applicable to the Waste Isolation Pilot Plant (**WIPP**) facility. Permit Attachment D, Table D-2, *Emergency Equipment Maintained at the Waste Isolation Pilot Plant*, identifies the emergency equipment and corresponding locations to be inspected in accordance with Table E-1.

The Permittees maintain operational procedures detailing the inspections required under 20.4.1.500 NMAC (incorporating 40 CFR §§264.15(a) and (b)), in electronic format on the WIPP computer network and, as appropriate, in controlled document locations at the WIPP facility. Frequency of inspections is discussed in detail in Section E-1a(2). Inspections are conducted often enough to identify problems in time to correct them before they pose a threat to human health or the environment and are based on regulatory requirements. The operational procedures assign responsibility for conducting the inspection, the frequency of each inspection, the types of problems to be watched for, what to do if items fail inspection, and directions on record keeping. Inspection records are maintained at the WIPP facility for three years. Beginning with the effective date of this Permit, records that are over the three-year retention period are either maintained at the WIPP facility or transferred to the WIPP Records Archive located in Carlsbad, New Mexico until closure. The records maintained at the WIPP Records Archive are stored in facilities that are temperature and humidity controlled especially for the long-term storage of records and readily retrievable and available for inspection.

Waste handling equipment inspections and area inspections are conducted in accordance with established procedures. Operators are trained to determine the operational status of waste handling equipment prior to its use. Once the status of a piece of equipment is determined to be operable, a preoperational or pre-evolution inspection is initiated in accordance with the appropriate inspection procedure in Tables E-1 and E-1a. Inspection results as described

below, are recorded in an inspection log or summary (e.g., equipment logbooks, inspection forms, procedure attachments) in accordance with 20.4.1.500 NMAC (incorporating 40 CFR §264.15(d)).

Inspections include identifying malfunctions or deteriorating equipment and structures. Inspection results and data, including deficiencies, discrepancies, or needed repairs are recorded. A negative inspection result does not necessarily lead to a repair. A deficiency, such as low fluid level, may be corrected by the inspector immediately. A discrepancy, such as an increasing trend of a data point, may necessitate additional inspection prior to the next scheduled frequency. The actions taken (corrected, additional inspection, procurement action, or Action Request (**AR**) for repair submitted) are recorded on the inspection form, the WIPP automated maintenance management tracking program work order sheet, or the equipment logbook, whichever is applicable.

Items that are operational with restrictions are operated in accordance with applicable compensatory measures. Items that are not operational are scheduled for repair or replacement in accordance with work authorization procedures. In such cases, compensatory measures may be needed until the equipment is returned to service. These compensatory measures will provide an equivalent level of protection, be documented in WIPP facility files (e.g., equipment logbook, inspection forms, procedure attachments), and include an appropriate inspection schedule, when applicable.

Normally, the individual inspecting the equipment/system is not qualified to make repairs and consequently, prepares an AR if repairs are needed. The AR is tracked by the WIPP automated maintenance management tracking program through the work-control process. When parts are received and work instructions are completed, the work order can be scheduled and work coordinated with other facility activities in order to complete the items.

Work orders are released for work by the responsible organization. When repairs are complete the responsible organization tests the equipment to ensure the repairs corrected the problem, then closes out the work order and returns the equipment to an operational status. Implementation of these procedures constitutes compliance with 20.4.1.500 NMAC (incorporating 40 CFR §264.15(c)).

Requirements of 20.4.1.500 NMAC (incorporating 40 CFR §264.15(d)), are met by the inspections for each item or system included in Tables E-1 and E-1a. Beginning with the effective date of this Permit, the results of the inspections are maintained in the Operating Record for three years and are then transferred to the WIPP Records Archive where they are maintained until closure. The inspection logs or summary records include the date and time of inspection, the name of the inspector, a notation of the observations made, and the date and nature of any repairs or other remedial actions. Major pieces of waste handling equipment are inspected using established procedures. Current copies of inspection forms are on file at the WIPP facility. Non-administrative changes to inspections (i.e., changes that affect the frequency or content of the inspection schedules) must be submitted to the NMED in accordance with the appropriate portions of 20 NMAC 4.1.900 (incorporating 40 CFR §270.42). Equipment inspectors identify the operational status of waste handling equipment prior to beginning an inspection. Waste handling equipment inspection results are maintained in the Operating Record. Contact-handled transuranic (**TRU**) mixed waste equipment and areas that are subject to inspections are listed in Table E-1. This equipment includes the waste handling forklifts, waste handling cranes, the adjustable center of gravity lift fixture, the CH TRU waste

underground transporter, the transfer vehicles, the trailer jockey, the Ten-Drum Overpack (**TDOP**) Upender, the Payload Transfer Station, and the push-pull attachment. Remote-handled TRU mixed waste equipment and areas that are subject to inspections are listed in Table E-1a. This equipment includes the 140/25-ton RH Bay overhead bridge crane, cask transfer cars, 25-ton cask unloading room crane, transfer cell shuttle car, RH Bay cask lifting yoke, facility grapple, 6.2- ton overhead hoist, facility cask rotating device, hot cell overhead powered manipulator, 15-ton hot cell crane, facility cask transfer car, 41-ton forklift, facility cask, and emplacement equipment. Inspections of the Cask Unloading Room, Hot Cell, Transfer Cell, Facility Cask Loading Room, and RH Bay are recorded in an inspection log or summary (e.g., equipment logbook, inspection forms, procedure attachments). In addition to the inspections listed in Tables E-1 and E-1a, many pieces of equipment are subject to regular preventive maintenance, which includes more in-depth inspections of mechanical systems, load testing of lifting systems, calibration of measurement equipment and other actions as recommended by the equipment manufacturer and/or as required by DOE Orders. These preventive maintenance activities, along with the Permit-required inspections in Tables E-1 and E-1a, make mechanical failure of waste handling equipment unlikely. The WIPP Documented Safety Analysis (DOE/WIPP-3372) contains the results of a systematic analysis of waste handling equipment and the hazards associated with potential mechanical failures. The inspection procedures kept on file at the WIPP facility for operational and preventive maintenance are implemented to assure the equipment is maintained.

E-1a General Inspection Requirements

Tables E-1 and E-1a list the major categories of monitoring equipment, safety and emergency systems, security devices, and operating and structural equipment that are important to the prevention or detection of, or the response to, environmental or human health hazards caused by hazardous waste. These systems may include numerous subsystems. These systems are inspected according to the frequencies listed in Tables E-1 and E-1a. , which are based on the nature of the equipment or the hazard and regulatory requirements.

As required in 20.4.1.500 NMAC (incorporating 40 CFR §264.33), the WIPP facility inspection procedures for communication and alarm systems, fire-protection equipment, and spill control and decontamination equipment include provisions for testing and maintenance to ensure that the equipment will be operable in an emergency.

E-1a(1) Types of Problems

The inspections for the systems, equipment, and structures, listed in Tables E-1 and E-1a, include the types of problems (e.g., malfunctions; visible cracks in tubing, coatings, welds; and deterioration) to be looked for during the inspection of each item or system, if applicable, and are in compliance with 20.4.1.500 NMAC (incorporating 40 CFR §264.15(b)(3)).

E-1a(2) Frequency of Inspections

Tables E-1 and E-1a list the inspection frequencies and monitoring schedule for equipment and systems subject to the 20.4.1 NMAC hazardous waste management requirements. The frequency is based on the rate of possible deterioration of the equipment and the probability of an environmental or human health incident if the deterioration or malfunction, or any operator error, goes undetected between inspections. When in use, daily inspections are made of areas subject to spills, such as TRU mixed waste loading and unloading areas in the Waste Handling

Building (**WHB**) Unit, and involve looking for deterioration in structures, mechanical items, floor coatings, equipment, malfunctions, etc., in accordance with 20.4.1.500 NMAC (incorporating 40 CFR §264.15(b)(4)).

When RH TRU mixed waste is present in the RH Complex, inspections are conducted visually and/or using closed-circuit video cameras in order to manage worker dose and to minimize occupational radiation exposures to as low as reasonably achievable (**ALARA**). More extensive inspections of these areas are performed at least annually during routine maintenance periods and when RH TRU mixed waste is not present, as identified in Table E-1a.

E-1a(3) Monitoring Systems

There are two monitoring systems used at the WIPP facility to provide assurance that facility systems are operating correctly, that areas can be used safely, and that there have been no releases of hazardous waste constituents. These systems include the geomechanical monitoring system and the central monitoring system (**CMS**). The geomechanical monitoring system is used to assess the condition of mined excavations to identify the development of unsafe conditions. The CMS continuously assesses the status of electrical power, fire alarm systems, ventilation system, and other facility systems including water tank levels. In addition, the CMS collects data from the meteorological monitoring system. Key equipment monitored by these two systems are identified in Table E-1 and include a specified inspection frequency.

E-1b Specific Process Inspection Requirements

The regulation at 20.4.1.500 NMAC (incorporating 40 CFR §264.15(b)(4)), requires inspections of specific portions of a facility, rather than the general facility. These include container storage areas and miscellaneous units. Both are addressed below.

E-1b(1) Container Inspection

The Permittees use containers to manage TRU mixed waste at the WIPP facility. These containers are described in Permit Part 3, Section 3.3.1, and Permit Attachment A1, Section A1-1b.The waste containers are visually inspected to ensure that the waste containers are in good condition and that there are no signs that a release has occurred. This visual inspection does not include the center drums of seven-packs and waste containers positioned such that visual observation is precluded due to the arrangement of waste assemblies on the facility pallets. If CH TRU mixed waste handling operations should stop for any reason with containers located in the CH package (e.g., at the TRUDOCKs or in Room 108), primary waste container inspections cannot be accomplished until the containers of waste are removed from the CH package.

As described in Permit Attachment A1, Section A1-1d(3), off-site waste managed and stored as RH TRU mixed waste arrives in a Nuclear Regulatory Commission-certified cask. The cask is visually inspected upon arrival. Following removal of the canisters or drums, the interior of the cask is inspected and surveyed for evidence of contamination that may have occurred during transport.

Off-site waste managed and stored as RH TRU mixed waste is managed and stored in the RH Complex of the WHB. The RH Complex includes the following: RH Bay, the Cask Unloading Room, the Hot Cell, the Transfer Cell, and the Facility Cask Loading Room. Inspections of RH TRU mixed waste in these areas occurs remotely via closed-circuit cameras a minimum of once

weekly when stored waste is present. The floors in the RH Complex (including the RH Bay, Facility Cask Loading Room and Cask Unloading Room) are coated concrete and during normal operations (i.e., when waste is present), the floor of the RH Complex is inspected visually or by using close-circuit cameras on a weekly basis to verify that it is in good condition and free of visible cracks and gaps.

Inspections of RH TRU mixed waste containers stored in the Hot Cell and Transfer Cell are conducted using remotely operated cameras. Remote-handled TRU mixed waste in the Hot Cell is stored in either drums or canisters. The containers in the Hot Cell are inspected to ensure that they are in acceptable condition. Remote-handled TRU mixed waste in the Transfer Cell is stored in the RH-TRU 72-B cask or shielded insert; therefore, inspections in this area focus on the integrity of the cask or shielded insert. Remote-handled TRU mixed waste in the Facility Cask Loading Room is stored in the facility cask; therefore, inspections in this area focus on the integrity of the facility cask.

Inspections are conducted in the Parking Area Unit (**PAU**) at a frequency not less than once weekly when waste is present and focus on the inventory and integrity of the shipping containers and the spacing between trailers carrying the CH or RH packages. This aisle spacing is maintained at a minimum of four feet. These inspections are applicable to loaded CH and RH packages. Since TRU mixed waste to be stored in the PAU is in sealed CH or RH packages, there are no additional requirements for engineered secondary containment systems.

Container inspections are included as part of the surface TRU mixed waste handling areas inspections described in Tables E-1 and E-1a. These inspections also include the Derived Waste Storage Areas of the WHB Unit. A satellite accumulation area (**SAA**) may be required in an area adjacent to the TRUDOCKs for CH TRU mixed waste. An SAA may also be required in the RH Bay and Hot Cell for RH TRU mixed waste. These SAAs will be set up on an as needed basis at or near the point of generation and the derived waste will be discarded into the active derived waste container. Satellite accumulation areas are inspected in accordance with 20.4.1.300 NMAC (incorporating 40 CFR §262.17).

E-1b(2) Miscellaneous Unit Inspection

The regulation at 20.4.1.500 NMAC (incorporating 40 CFR §264.602) requires that the inspection requirements of 20.4.1.500 NMAC (incorporating 40 CFR §264.15 and §264.33), as well as any additional inspection requirements needed to protect human health and the environment, be met. The requirements of 20.4.1.500 NMAC (incorporating 40 CFR §264.15 and §264.33) are discussed in Section E-1 of this Permit Attachment, along with how the WIPP facility complies with those requirements for standard types of inspections. Inspection of the geomechanical instrumentation system is addressed in Table E-1. As described in Permit Attachment A2,Section A2-b(2), the geomechanical monitoring program at the WIPP facility is an integral part of the ground-control program. Hazardous waste disposal units, access drifts, the Waste Shaft Station, and the underground transport route are monitored to provide confirmation of structural integrity. Geomechanical data on the performance of the repository shafts is collected as part of the shaft inspections. The results of geomechanical monitoring are reported annually, as identified in Permit Attachment A2, Section A2-b(2).

References

DOE/WIPP-3372. *Waste Isolation Pilot Plant Documented Safety Analysis*.

TABLES

Table E-1
Inspection Schedule/Procedures

System/Equipment Name	Responsible Organization	Inspection[a] Frequency	Procedure Number and Inspection Criteria[h]
Air Intake Shaft and Shaft #5 (Utility Shaft) Hoist	Underground Operations	Preoperational[c]	WP 04-HO1004 HW Hoist Operations Log Inspecting for Deterioration[b], Safety Equipment, Communication Systems, and Mechanical Operability[m] in accordance with Mine Safety and Health Administration (MSHA) requirements
Ambulance (Surface) and Medical Cart (Underground)	Emergency Services	Weekly	WP 12-FP0030 Inspecting for Mechanical Operability[m], Deterioration[b], and Required Equipment[n]
Adjustable Center of Gravity Lift Fixture	Waste Operations	Preoperational[c]	WP 05-WH1410 Inspecting for Mechanical Operability[m] and Deterioration[b]
Backup Power Supply Diesel Generators	Facility Operations	Monthly	WP 04-ED1301 Inspecting for Mechanical Operability[m] and Leaks/Spills by starting and operating both generators. Results of this inspection are recorded on EA04AD3008-47-0
Facility Inspections (Water Diversion Berms)	Facility Engineering	Annually	WP 10-WC3008 Inspecting for Damage, Impediments to water flow, and Deterioration[b]
Central Monitoring Systems (CMS)	Facility Operations	Continuous	Automatic Self-Checking
CH TRU Underground Transporter	Waste Operations	Preoperational [c]	WP 05-WH1603 WP 05-WH1604 Inspecting for Leaks/Spills, Mechanical Operability[m], Deterioration[b], area around transporter clear of obstacles, and on-board automatic fire suppression system
Conveyance Loading Car	Waste Operations	Preoperational [c]	WP 05-WH1406 Inspecting for Mechanical Operability[m], Deterioration[b], path clear of obstacles, and guards in the proper place

System/Equipment Name	Responsible Organization	Inspection[a] Frequency	Procedure Number and Inspection Criteria[h]
Facility Transfer Vehicle	Waste Operations	Pre-evolution[p]	WP 05-WH1204 Pre-evolution Checks and Operating Instructions, Inspecting for Mechanical Operability[m], Deterioration[b], path clear of obstacles, and guards in the proper place
Emergency Lighting	Emergency Services	Monthly/Annually	WP 12-FP0051 Inspecting for Deterioration[b], and Operability of indicator lights in accordance with NFPA 101
Exhaust Shaft	Underground Operations	Quarterly	PM041099 Inspecting for Deterioration[b]
Eye Wash and Shower Equipment	Environmental, Safety, Industrial Health	Weekly	WP 12-IS1832 Inspecting for Deterioration[b]
		Semi-annually	WP 12-IS1832 Inspecting for Deterioration[b] and Fluid Levels–Replace as Required
Fire Detection and Alarm System	Fire Protection Engineering	Semi-annually/Annually	WP 12-FP0027 Inspecting for Deterioration[b] and Operability of underground fuel station fire suppression system in accordance with NFPA 17 (semi-annual inspection); Inspecting for Deterioration[b] and Operability of the alarm panel, audible/visual alarm devices, detectors, and pull stations in accordance with NFPA 72 (annual inspection)
		Monthly/Quarterly/Annually	WP 12-FP0028 Inspecting for Deterioration[b], and Operability of the alarm panel, audible/visual alarm devices, detectors, and pull stations in accordance with NFPA 72
Fire Extinguishers[j]	Emergency Services	Monthly	WP 12-FP0036 Inspecting for Deterioration[b], Leaks/Spills, Expiration, seals, fullness, and pressure
Fire Hoses	Emergency Services	Annually (minimum)	WP 12-FP0031 Inspecting for Deterioration[b] and Leaks/Spills

System/Equipment Name	Responsible Organization	Inspection[a] Frequency	Procedure Number and Inspection Criteria[h]
Fire Hydrants	Fire Protection Engineering	Semi-annual/Annually	WP 12-FP0034 Inspecting for Deterioration[b] and Leaks/Spills
Fire Pumps	Fire Protection Engineering	Weekly	WP 12-FP0026 Inspecting for Deterioration[b], Leaks/Spills, fire water valve position(s), and panel light status
		Annually (Electric Pump)	WP 12-FP5113 Inspecting for Deterioration[b], operability, flow, discharge pressure, suction pressure, and pump speed
		Annually (Diesel Pump)	WP 12-FP5114 Inspecting for Deterioration[b], operability, flow, discharge pressure, suction pressure, and pump speed
Fire Sprinkler Systems	Fire Protection Engineering	Monthly	WP 12-FP0023, WP 12-FP0063, and WP 12-FP0064 Inspecting for Deterioration[b], Leaks/Spills, and water pressures
		Quarterly	WP 12-FP0024, WP 12-FP0063, and WP 12-FP0064 Inspecting for Deterioration[b], Leaks/Spills, and water pressures
		Annually	WP 12-FP0025, WP 12-FP0063, and WP 12-FP0064 Inspecting for Deterioration[b], Leaks/Spills, water pressures, and main drain test
Fire and Emergency Response Vehicles (Fire Trucks, Fire Suppression Cart, and Rescue Cart)	Emergency Services	Weekly	WP 12-FP0033 Inspecting for Mechanical Operability[m], Deterioration[b], Leaks/Spills, and Required Equipment[n]
Electric Forklifts Used for Waste Handling	Waste Operations	Preoperational[c]	WP 05-WH1401 WP 05-WH1402 WP 05-WH1403 Inspecting for Leaks/Spills, Mechanical Operability[m], Deterioration[b], and presence of on-board fire extinguisher

System/Equipment Name	Responsible Organization	Inspection[a] Frequency	Procedure Number and Inspection Criteria[h]
Diesel Forklifts Used for Waste Handling	Waste Operations	Preoperational [c]	WP 05-WH1201 WP 05-WH1207 WP 05-WH1412 Inspecting for Leaks/Spills, Mechanical Operability[m], Deterioration[b], and on-board automatic fire suppression system
Automatic on-board fire suppression systems	Fire Protection Engineering	Monthly/Semi-annually	WP 12-FP0085 WP 12-FP0060 Inspecting for Mechanical Operability[m] and Deterioration[b]
Hazardous Material Response Equipment	Emergency Services	Monthly	WP 12-FP0033 Inspecting for Deterioration[b], and Required Equipment[n]
Head Lamps	Facility Personnel	Daily[i]	Head lamps are operated daily and are repaired or replaced upon failure
Miners First Aid Station	Emergency Services	Quarterly	WP 12-FP0035 Inspecting for Required Equipment[n]
Mobile Phones	Facility Personnel	Daily[i]	Mobile Phones are operated daily and are repaired or replaced upon failure
Mine Pager Phones (between surface and underground)	Facility Operations	Monthly/Annually[o]	WP 04-PC3017 WP 04-PC3018 Testing of Mine Pager Phones at essential locations
MSHA Air Quality Monitor	Maintenance/ Underground Operations	Daily[l]	WP 12-IH1828 Inspecting for Air Quality Monitoring Equipment Functional Check
Perimeter Fence, Gates, Signs	Security	Daily	WP 17-SPO1023 Inspecting for Deterioration[b] and Required Permit Part 2, Section 2.6.4 warning signs
Mine Rescue Self-Contained Breathing Apparatus (**SCBA**)	Mine Rescue Team	30 days	WP 12-ER3007 Inspection for Deterioration[b] and Pressure[g]
Emergency Services SCBA	Emergency Services	Weekly/Monthly	WP 12-FP0029 Inspecting for Deterioration[b] and Pressure

System/Equipment Name	Responsible Organization	Inspection[a] Frequency	Procedure Number and Inspection Criteria[h]
Site Notification System; Underground Evacuation Alarm System	Facility Operations	Monthly/Annually	WP 04-PC3017 WP 04-PC3018 Testing of PA and Underground Alarms
Radio Equipment	Facility Personnel	Daily[i]	Radios are operated daily and are repaired or replaced upon failure
Salt Handling Shaft Hoist	Underground Operations	Preoperational [c]	WP 04-HO1002 WP-04-HO1005 Inspecting for Deterioration[b], Safety Equipment, Communication Systems, and Mechanical Operability[m] in accordance with MSHA requirements
Self-Rescuers and Self-Contained Self-Rescuers	Underground Operations	Quarterly	WP 04-AU1026 Inspecting for Deterioration[b] and Functionality in accordance with MSHA requirements
Surface CH TRU Mixed Waste Handling Area [k]	Waste Operations	Preoperational[c] or Weekly[e]	WP 05-WH1101 Inspecting for Deterioration[b], Leaks/Spills, Required Aisle Space[q], Required Permit Part 2, Section 2.6.4 warning signs, Communication Systems, Container Condition, and Floor coating integrity
TRU Mixed Waste Decontamination Equipment	Waste Operations	Annually	WP 05-WH1101 Inspecting for Required Equipment[n]
Underground Openings—Roof Bolts and Travelways	Underground Operations	Weekly	WP 04-AU1007 Inspecting for Deterioration[b]
Underground— Geomechanical Instrumentation System (GIS)	Geotechnical Engineering	Monthly	WP 07-EU1301 Inspecting for Deterioration[b]
Underground TRU Mixed Waste Disposal Area	Waste Operations	Preoperational [c]	WP 05-WH1810 Inspecting for Deterioration[b], Leaks/Spills, mine pager phones, unobstructed access, required Permit Part 2, Section 2.6.4 warning signs, debris, and ventilation

System/Equipment Name	Responsible Organization	Inspection[a] Frequency	Procedure Number and Inspection Criteria[h]
Uninterruptible Power Supply (Central UPS)	Facility Operations	Daily	WP 04-ED1542 Inspecting for Mechanical Operability[m] and Deterioration[b] with no malfunction alarms. Results of this inspection are recorded on EA04AD3008-20-0
TDOP Upender	Waste Operations	Pre-evolution[p]	WP 05-WH1010 Pre-evolution Checks and Operating Instructions, Inspecting for Mechanical Operability[m] and Deterioration[b]
Waste Handling Cranes	Waste Operations	Preoperational[c]	WP 05-WH1407 Inspecting for Mechanical Operability[m], Deterioration[b], and Leaks/Spills
Waste Hoist	Underground Operations	Preoperational[c]	WP 04-HO1003 Inspecting for Deterioration[b], Safety Equipment, Communication Systems, and Mechanical Operability[m], Leaks/Spills, in accordance with MSHA requirements
Water Tanks	Facility Operations	Daily	WP 04-AD3008 Inspecting for Deterioration[b], valve lineup, and water levels. Results of this inspection are recorded on EA04AD3008-12-0 and EA04AD3008-13-0
Push-Pull Attachments	Waste Operations	Preoperational[c]	WP 05-WH1401 WP 05-WH1412 Inspecting for Damage, Mechanical Operability[m], and Deterioration[b]
Trailer Jockey	Waste Operations	Preoperational[c]	WP 05-WH1405 Inspecting for Leaks/Spills, Mechanical Operability[m] and Deterioration[b]
Closure Bulkheads	Underground Operations	Semi-annually	PM000011Integrity and Deterioration[b]
Bolting Robot	Waste Operations	Preoperational [c]	WP 05-WH1203 Mechanical Operability[m]

System/Equipment Name	Responsible Organization	Inspection[a] Frequency	Procedure Number and Inspection Criteria[h]
SCA Handler	Waste Operations	Preoperational [c]	WP 05-WH1450 Inspecting for Mechanical Operability[m] and Deterioration[b]
Yard Transfer Vehicle	Waste Operations	Pre-evolution[p]	WP 05-WH1205 Pre-evolution Checks and Operating Instructions, Mechanical Operability[m], Deterioration[b], Path clear of obstacles and Guards in proper place
Payload Transfer Station	Waste Operations	Pre-evolution[p]	WP 05-WH1208 Pre-evolution Checks and Operating Instructions, Mechanical Operability[m], Deterioration[b], and Guards in proper place
Monorail Hoist	Waste Operations	Pre-evolution[p]	WP 05-WH1202 Pre-evolution Checks and Operating Instructions, Mechanical Operability[m], Deterioration[b], and Leaks/Spills
Bolting Station	Waste Operations	Preoperational [c]	WP 05-WH1203 Mechanical Operability[m], Deterioration[b], and Guards in proper place

Table E-1 (Continued)
Inspection Schedule/Procedures Notes

[a] Inspection may be accomplished as part of or in addition to regularly scheduled preventive maintenance inspections for each item or system. Certain structural systems of the WHB and Waste Hoist are also subject to inspection following severe natural events including earthquakes, tornados, and severe storms. Structural systems include columns, beams, girders, anchor bolts and concrete walls.

[b] Deterioration includes: obvious visible cracks, erosion, salt build-up, damage, corrosion, loose or missing parts, malfunctions, and structural deterioration.

[c] "Preoperational" signifies that inspections are required prior to the first use during a calendar day. For calendar days in which the equipment is not in use, no inspections are required. For an area this includes: area is clean and free of obstructions (for emergency equipment); adequate aisle space; emergency and communications equipment is readily available, properly located and sign-posted, visible, and operational. For equipment, this includes: checking fluid levels, pressures, valve and switch positions, battery charge levels, pressures, general cleanliness, and that all functional components and emergency equipment is present and operational.

[e] These weekly inspections apply to container storage areas when containers of waste are present for a week or more.

[g] Inspections are performed per manufacturer's maintenance instructions.

[h] Inspections and preventative maintenance are not required for equipment that is out of service, located in an inaccessible area, or for underground areas or structures that are not accessible.. However, if compensatory measures have been established to ensure an equivalent level of protection during the period that the equipment is out of service (e.g., required equipment/supplies from an out-of-service emergency vehicle have been temporarily relocated), appropriate inspections will be scheduled, conducted, and documented in the Operating Record, in accordance with Attachment E, Section E-1.

[i] Head Lamps, Mobile Phones, and Radios are not routinely "inspected." They are typically used in day-to-day operations. They are used until they fail, at which time they are replaced and repaired.

[j] Fire extinguisher inspections are performed in accordance with NFPA 10.

[k] Surface CH TRU mixed waste handling areas include the PAU, the WHB unit, and unloading areas.

[l] No log forms are used for daily readings. However, readings that are out of tolerance are reported to the CMR and logged by CMR operator. Inspection includes daily functional checks of portable equipment.

[m] Mechanical Operability means that the equipment has been checked and is operating in accordance with site safety requirements (e.g., proper fluid levels and tire pressure; functioning lights, alarms, sirens, and power/battery units; and belts, cables, nuts/bolts, and gears in good condition), as appropriate.

[n] Required Equipment means that the equipment identified in Table D-2 is available and usable (i.e., not expired/depleted and works as designed).

[o] Mine pager phones in non-essential locations are not routinely "inspected". Many are used in day-to-day operations. They are used until they fail, at which time they are repaired. Mine pager phones are used routinely by Underground Operations.

[p] "Pre-evolution" signifies that inspections are required prior to equipment use in the waste handling process. A TRUPACT-III shipment evolution is considered to be the process that begins with placing a loaded TRUPACT-III package on the Yard Transfer Vehicle (**YTV**) in the PAU, includes waste storage in the WHB Unit, and ends when the empty TRUPACT-III is removed from the YTV in the PAU. Additionally, a TDOP-Upender evolution is considered to be the process that begins with the empty TDOP placed on the Upender and ends with storage of the overpacked waste container in the WHB Unit.

[q] In the PAU, the aisle spacing between trailers carrying the CH or RH packages are maintained at a minimum of four feet. In the CH Bay Storage Area of the WHB Unit, a minimum aisle space of 44 inches between loaded facility pallets in maintained. Also, in the CH Bay, a minimum aisle space of 44 inches is maintained between the walls of the CH Bay and a loaded facility pallet.

Table E-1a
RH TRU Mixed Waste Inspection Schedule/Procedures

System/ Equipment Name	Responsible Organization[j]	Inspection[a] Frequency	Procedure Number (Latest Revision)[l]	Inspection Criteria		
				Deterioration[b]	Leaks/ spills	Other
Cask Transfer Car(s)	Waste Operations	Pre-evolution[c,d,e]	WP 05-WH1701	Yes	NA	Pre-evolution Checks and Operating Instructions.
RH Bay Overhead Bridge Crane	Waste Operations	Preoperational[c,d,e,i]	WP 05-WH1741	Yes	Yes	Pre-operational Checks and Operating Instructions.
Facility Cask	Waste Operations	Pre-evolution[c,d,e,f]	WP05-WH1713	Yes	Yes	Pre-evolution Checks and Operating Instructions.
RH Bay Cask Lifting Yoke	Waste Operations	Preoperational[c,d,e,i]	WP 05-WH1741	Yes	NA	Pre-operational Checks and Operating Instructions.
Facility Cask Transfer Car	Waste Operations	Pre-evolution[c,d,e,f]	WP 05-WH1704	Yes	Yes	Pre-evolution Checks and Operating Instructions.
Facility Cask Rotating Device	Waste Operations	Pre-evolution[c,d,e,f]	WP05-WH1713	Yes	Yes	Pre-evolution Checks and Operating Instructions.
Facility Grapple	Waste Operations	Pre-evolution[c,d,e,f]	WP 05-WH1721	Yes	NA	Pre-evolution Checks and Operating Instructions.
6.25-Ton Grapple Hoist	Waste Operations	Pre-evolution[c,d,e,f]	WP05-WH1721	Yes	Yes	Pre-evolution Checks and Operating Instructions.
Transfer Cell Shuttle Car	Waste Operations	Pre-evolution[c,d,e,f]	WP 05-WH1705	Yes	Yes	Pre-evolution Checks and Operating Instructions.
Hot Cell Overhead Powered Manipulator	Waste Operations	Preoperational[c,d,e,i]	WP 05-WH1743	Yes	Yes	Pre-operational Checks and Operating Instructions.
Hot Cell Bridge Crane	Waste Operations	Preoperational[c,d,e,i]	WP 05-WH1742	Yes	Yes	Pre-operational Checks and Operating Instructions.
Closed Circuit Television Camera	Waste Operations	Preoperational[c,i]	WP 05-WH1757	NA	NA	Operability

System/ Equipment Name	Responsible Organization[j]	Inspection[a] Frequency	Procedure Number (Latest Revision)[l]	Inspection Criteria		
				Deterioration[b]	Leaks/ spills	Other
Cask Unloading Room Crane	Waste Operations	Preoperational[c,d,e,i]	WP 05-WH1719	Yes	Yes	Pre-operational Checks and Operating Instructions.
Horizontal Emplacement Machine or functionally equivalent equipment	Waste Operations	Pre-evolution[c,d,e,f]	WP 05-WH1733*	Yes	Yes	Assembly and Operating Instructions. * Procedure WP 05-WH1733 is currently not active. The procedure number has been designated for the Horizontal Emplacement Machine when activities are initiated to support resumption of RH waste emplacement.
41-Ton Forklift	Waste Operations	Preoperational[c,d,e,i]	WP 05-WH1602	Yes	Yes	Pre-Operational Checks and on-board automatic fire suppression system
Surface RH TRU Mixed Waste Handling Area	Waste Operations	Preoperational[c,d,e,f,g,h,i]	WP-05 WH1744	Yes	Yes	Inspecting for Deterioration[b], Leaks/Spills, Required Aisle Space[m], Required Permit Part 2, Section 2.6.4 warning signs, Communication, Systems, Container Conditions, and Floor Coating Integrity.

Table E-1a (Continued)
RH TRU Mixed Waste Inspection Schedule/Procedures Notes

[a] Inspection may be accomplished as part of or in addition to regularly scheduled preventive maintenance inspections for each item or system. Certain structural systems of the WHB are also subject to inspection following severe natural events including earthquakes, tornados, and severe storms. Structural systems include columns, beams, girders, anchor bolts, and concrete walls.

[b] Deterioration includes: visible cracks, erosion, salt build-up, damage, corrosion, loose or missing parts, malfunctions, and structural deterioration.

[c] "Pre-evolution" signifies that inspections are required prior to equipment use in the waste handling process. (An evolution is considered to be the process that begins with the receipt of a cask into the RH Bay through canister emplacement in the underground.) For an area, preoperational inspection includes: area is clean and free of obstructions (for emergency equipment); adequate aisle space; emergency and communications equipment is readily available, properly located and sign-posted, visible, and operational. For equipment, this includes: checking fluid levels, pressures, valve and switch positions, battery charge levels, pressures, general cleanliness, and that functional components and emergency equipment are present and operational. When the equipment is not in use, no inspections are required.

[d] When equipment needs to be inspected while handling waste (i.e., during waste unloading or transfer operations), general cleanliness and functional components are inspected to detect any problem that may harm human health or the environment. The inspection verifies that emergency equipment is present.

[e] Inspection of RH TRU mixed waste equipment and areas in the RH Complex applies only after RH TRU mixed waste receipt begins.

[f] The inspection/maintenance activities associated with these pieces of equipment are performed when the RH Complex is empty of RH TRU mixed waste. If contamination is present, a radiation work permit may be needed.

[g] For the Hot Cell and Transfer Cell, if RH TRU mixed waste is present, camera inspections will be performed in lieu of physical inspection.

[h] The integrity of the floor coating will be inspected weekly if RH TRU mixed waste is present.

[i] "Preoperational" signifies that inspections are required prior to the first use in a calendar day. For an area, preoperational inspection includes: area is clean and free of obstructions (for emergency equipment); adequate aisle space; emergency and communications equipment is readily available, properly located and sign-posted, visible, and operational. For equipment, this includes: checking fluid levels, pressures, valve and switch positions, battery charge levels, pressures, general cleanliness, and that functional components and emergency equipment are present and operational. When the equipment is not in use, no inspections are required.

[j] Responsible organizations refers to the organization that owns the equipment. Preventive Maintenance (PM) procedures are conducted by either mine maintenance or surface operations maintenance personnel and Instrument Calibration (IC) procedures are conducted by instrument and calibration maintenance personnel.

[k] Inspection will be performed after 250 evolutions (actual and training emplacements), if such usage occurs prior to the semi-annual inspection.

[l] Inspections are not required for equipment that is out of service.

[m] In the RH Bay of the WHB Unit, a minimum aisle space of 44 inches between loaded casks in maintained. For other locations within the RH Complex, sufficient aisle space is maintained to assure that emergency equipment can be assessed or moved to the necessary locations.