

Region 6 Compliance Assurance and Enforcement Division

INSPECTION REPORT

Inspection Date(s):	April 8-12, 2019		
Media:	RCRA		
Regulatory Program(s)	LQG TSD		
Company Name:	US Department of the Army (DoD)		
Facility Name:	McAlester Army Ammunition Plant (MAAP)		
Facility Physical Location:	1 C Tree Road		
(city, state, zip code)	McAlester, OK 74501-5000		
Mailing address:	JMMC-EM/Building 22, 1 C Tree Road		
(city, state, zip code)	McAlester, OK 74501-5000		
County/Parish:	Pittsburg County		
Facility Contact:	Darrell Elliott	Director, Environmental Management	
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FRS Number:	110000455702		
Identification/Permit Number:	61004		
Media Number:	OK6213822798		
NAICS:	61004		
SIC:			
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	Jeff Yurk		Date

Section I – INTRODUCTION

PURPOSE OF THE INSPECTION

During the week of April 8, 2019, EPA Region 6 inspectors Joyce Johnson, Gabriel Salinas and Carol Johnson, accompanied by Oklahoma Department of Environmental Quality (ODEQ) inspectors Jon Fields, Tory Smith, John Brown, and Jason Ma, conducted an announced inspection at the McAlester Army Ammunition Plant (MAAP) hazardous waste treatment, storage, and disposal facility (TSDF) located in McAlester, Oklahoma. This inspection was performed to evaluate the facility's compliance with the requirements of the Resource Conservation and Recovery Act (RCRA).

Beginning on April 8, 2019, we met with representatives of MAAP, including Darrell Elliott, Director of Environmental Management; Colonel Blanding, Base Commander; and Brian Lott, Deputy Commander; and conducted an opening inspection briefing followed by a facility presentation, safety briefing, and a tour of the facility. During this briefing we presented our credentials to the representatives and explained that the inspection was being conducted under the authority of §3007 of RCRA. The inspection included walkthroughs of the facility's hazardous waste storage and treatment units and a review of facility records related to hazardous waste management with Mr. Elliott, Ms. Anamari Holcomb, and Mr. Cody Camp. We concluded the inspection on April 12, 2019, with a closing conference where we presented the areas of concern to the facility representatives. A full list of MAAP personnel that attended the closing conference is included as Appendix 1.

This report serves as documentation of onsite activities and observations. Photographs taken during the inspection to document onsite observations are included as Appendix 2. A summary of all areas of concern identified during the inspection is provided in Section III.

FACILITY DESCRIPTION

The MAAP has been in operation since 1943, manufacturing bombs and ammunition for the Department of Defense. The site also treats and demilitarizes older, out-of-date ammunition and explosives. Onsite RCRA-permitted demilitarization units include a deactivation furnace, one open burning (OB) unit containing five burning pads with pans and three rocket static-firing pads, and two open detonation (OD) units with 26 pits for each unit.

The purpose of MAAP is to produce and renovate quality conventional missile ammunition and ammunition-related components, perform engineering and product assurance in support of production, and receive, store, ship, demilitarize, and dispose of conventional and missile ammunition and related items. MAAP is also the group general technology center for bomb loading, assembling, packing, manufacturing, engineering, product assurance, and production support. This installation is an active government-owned and government-operated facility and is the home for the US Army Defense Ammunition Center (DAC).

MAAP occupies 44,965 acres (approximately 70 square miles) in a sparsely populated area of southeast Oklahoma, 9 miles southwest of the city of McAlester (population 18,383) in Pittsburg County (2010 population 44,837). The closest major cities are more than 100 miles away (Tulsa is 113 miles north, Oklahoma City is 120 miles northwest, and Dallas is 180 miles southwest). The surrounding area has been used for strip mining coal but is currently used for agricultural purposes. MAAP is one of the

larger employers in the area with approximately 1200 employees and operates 10 hours each day, Monday through Thursday. During special campaigns the facility can operate 24 hours each day, 7 days a week. A map of the facility is included in Appendix 3.

The MAAP is classified as a Large Quantity Generator (LQG) of hazardous waste and a Treatment Storage and Disposal Facility as defined by RCRA. The facility is assigned EPA ID number OK6213822798. Hazardous wastes associated with the manufacturing operations are baghouse dust from bomb coating operations, ash from open burn/open detonation (OB/OD) units; furnace and storage areas, paint and solvent wastes, demilitarization, to name a few. Wastes generated at the facility related to pink water are described in Appendix 4. In addition to all generator requirements, the facility must comply with the specific conditions of its permit. ODEQ last inspected this site in 2018. The most current annual waste generation statistics from the Biennial Report are dated 2015 and are located in Appendix 5.

Section II – OBSERVATIONS

We conducted the onsite inspection during the normal business hours from April 8-12, 2019. During the period of this inspection, the facility was conducting normal operations and all active sites at the facility were in use. We also reviewed the facility's operating records pertaining to the facility's RCRA applicability and compliance requirements. This section provides a detailed description of EPA's observations of the areas assessed throughout the inspection. Our primary points of contact during the inspection were Mr. Darrell Elliott, Ms. Anamari Holcomb, and Mr. Cody Camp. This section provides a detailed description of the observations of the inspectors at the individual units assessed throughout the inspection. Unless otherwise specified, the statements cited in this section reflect those claims made by facility personnel or documents reviewed during the inspection.

Areas Observed

Following the opening conference and bus tour of the site on April 8, 2019, we began our evaluation of the facility that encompassed storage and manufacturing areas of the facility. This walkthrough of the facility continued throughout the inspection, in phases, concluding on April 12, 2019.

OB/OD Less Than 90-Day Storage Area (37AT403) (#1)

On Monday, April 8, we visited the open burn/open detonation (OB/OD) less-than-90-day storage area and the active OD Area #2 to review them for compliance with the general facility and unit specific standards. This area is used for storing hazardous waste explosives awaiting detonation or burn. The concrete floor of the storage area serves as the secondary containment and appeared to be intact and free of cracks or gaps. All safety and emergency response equipment was functional and appeared to be adequately maintained. We observed cardboard boxes contaminated with explosives residue. No inventory log was in the area and containers were missing hazardous waste labels and accumulation start dates. The inspectors were told that this is not a requirement since the hazardous waste is not going off base for disposal.

Less Than 90-Day Storage Unit (53SH-207) (#2) (Non-Explosive/Non-Mixed Hazardous waste. This building is separated into two separate units by a wall.)

On Tuesday, April 9, we inspected the non-explosive, less-than-90-day storage unit. The first hazardous waste container storage unit is divided into five bays, each separated by a concrete wall. The bays are numbered 1-5. The concrete floor serves as the secondary containment and appeared to be intact and free of cracks or gaps. All the safety and emergency response equipment were functional and appeared to be adequately maintained.

Bay #1 – Analytical Bay. All drums are received, inspected, weighed, labeled and segregated by waste characteristic in this area. Tracking documents are used to ensure labels are correct, and drums are not damaged. We inspected some of the drums and they were labeled as non-hazardous waste, paint related waste, and Universal Wastes (alkaline batteries, and mercury items).

Bay #2 – Toxic Bay. Drums containing toxic hazardous waste are moved from the Analytical Bay to this area. Drums were labeled as paint chips, crushed bulbs containing mercury, and chromium waste solids. Additionally, the inspectors observed two satellite accumulation areas (SAAs) and one (1) Universal Waste SAA, per Mr. Elliott, in this Bay within five feet of each other. The hazardous waste drums in the SAA area are labeled Waste Solids (Chromium), and the drums in the Universal Waste area were labeled paint chips and crushed bulbs containing mercury.

Bay #3 – Non-Regulated Waste for Shipment. The drums in this area were labeled as oil and grease, Tuff Seal, Elastomer A & B, rags and gloves contaminated with MIL PRF 680, solid oil filters, astringent, and spent carbon. There were approximately 56, 55-gallon drums.

Bay #4 – Non-Regulated Waste Overflow for Shipment from Bay #3. Drums are moved from Bay #3 when it is full to this Bay.

Bay #5 – Universal Waste Bay. Thermal lithium batteries (Asbestos) and calcium chromate batteries were stored in wooden ammunition boxes. Some of the labels date back to 2017.

The second hazardous waste storage unit has two (2) Bays.

Bay #1 – Flammables Bay. Plastic bags previously containing ammonium perchlorate, desiccant packets, paint thinner, flammable liquids, oil-based solvents, and clean-up thinner were observed in this area.

Bay #2 – Aluminum powder is stored in this area. Two 55-gallon drums were observed by the inspectors. This bay is also an oxidizer storage area.

Static Vertical and Horizontal Burn Area

The facility encountered a rocket explosion at one of its static burn units over one year ago. The inspector requested the specific date of the incident, but it was not received during the time of the inspection. Mr. Elliott stated that Mr. Bruce Schultz would provide the date of the incident to the inspector. In the static burn unit, we observed unburned residue which was a result of the accident involving a Mark 12 rocket that had exploded during disposal. According to Mr. Schultz, the residue remaining in the burn unit was hazardous waste. Potentially reactive (D003) or lead (D008) residual ash

and residue was not managed in the rocket cradle or on the pans of the burn unit. It was observed that no attempt was made to make a hazardous waste determination on the ash, residue from the ordinance which exploded and scrap metal, or to remove it in a timely manner. Approximately 2-4 inches of ash and residue from the accidental explosion over 1 year ago remained intact in this area. No hazardous waste determinations have been made, neither have analytical testing been performed. The permit states this site is for treatment and disposal only, not for storage. Mr. Elliott stated the facility has soil extraction kits with color metric indicators and/or EXPRAY explosives detection field test kits, but they were not used. We re-visited this area at the request of the facility on Wednesday, April 10, to observe that the residue in and around the rocket cradle had been incinerated.

The MAAP permit states that the area is managed per the facility Standard Operating Procedure (SOP) and that the area will be policed following disposal to identify and collect scrap metal. In addition, the SOP states that 100% of scrap metal will be removed yearly. Inspectors were told that copies of pages in the SOP could not be copied and shared.

The inspector asked Mr. Schultz if the Contingency Plan was implemented at the time of the rocket explosion and he stated that was not required due to the location in the burn area. (Contingency Plan, Parts G-3.8 & G-8 - Appendix 6).

OB/OD Area

Munitions designated for destruction are covered with dirt in the open detonation area and then blown up. The area is recovered every three (3) months. Rocket stands, cradle and burn pans were observed in this area. Periodically analytical testing is performed on the ash at the OB pads (TCLP) and is hazardous for chromium and/or lead. The permit allows storage of 25-100 drums of ash and nothing leaves the area without analysis per the environmental manager of the area. In the less than 90-day storage area, we observed several 55-gallon drums with labels identifying contents as Pavarsol contaminated with TNT, contaminated media, PBX scrap, and other contaminated waste containing explosives.

Pink Water Treatment Plant

Pink water, wastewater associated with trinitrotoluene (TNT), is produced from equipment washing processes after munitions filling or demilitarization operations. Due to the toxicity of TNT, discharge of pink water to the environment is prohibited. It has traditionally been disposed of by evaporation to dryness followed by incineration.

According to the facility's process flow diagram, pink water is trucked in and stored in a reservoir tank from which it is pumped into the TNT pretreatment plants equalization tank. Alum is fed into the equalization tank where wastewater enters the flocculation tank. It then passes through the multimedia filters and granular activated carbon (GAC) filters. At the clarifier, solids are separated, and pretreated wastewater is discharged into the sanitary sewer. Sediments from the flocculation tank are removed to a drying bed. Additionally, the spent carbon from the GAC system is removed and dried. When dry, the GAC is sent to the facility's on-site non-hazardous landfill for disposal.

In 2015, MAAP conducted UN card gap and ignition tests and determined that the solids from on-site treatment of explosive laden wastewater was not a dangerous good for transportation purposes. In addition, MAAP cited a 2002 EPA call center report (EPA530-R-02-005j) (Appendix 7) stating that K045

loses its listing if it does not exhibit a characteristic. Based upon the ignition tests and the 2002 call center document, MAAP began to manage Pink Water (K047), carbon from wastewater treatment containing explosives (K045), and sludges from wastewater treatment containing explosives (K044) as non-hazardous waste. MAAP then registered the various previously listed sludges as a “special waste” – specifically “spent carbon-filter media.” In an ODEQ NHIW Certification (Appendix 8), MAAP stated that approximately 40,000 pounds of spent carbon-filter media from pink water filtration is generated annually. On-site generation and management of this waste was observed.

Less Than 90-Day Storage Unit, Mixed Waste (71BT-403) (#4)

The facility stated that this unit is not being utilized at this time but is still inspected weekly per the ODEQ permit. Two medium sized containers and two drums were being stored in this area. The two medium sized containers held low level radiation exit signs and night vision scopes. One of the drums was labeled hazardous wastes from barrel heaters, hoses, buckets, and rags. The second drum was labeled hazardous waste solid N.O.S. ash containing lead and cadmium from the bag house.

OB/OD Less Than 90-Day Storage Unit (#5) (37AT102)

MAAP stated this building was empty, not being utilized, and there was no reason to inspect it. The Inspector asked to observe it as part of the inspection. The building contained 16 pallets, each containing 6, 55-gallon drums of M-67 Propelling Charge for a total of 2,304 pounds. The drums were not labeled as hazardous waste nor did they have an accumulation start date. Aisle space was inadequate. The inspector was told that the propellant was moved to the location two days ago and that MAAP has a memo from ODEQ authorizing this building to be conditionally exempt to store low grade munitions as “product”. The inspector requested a copy of the memo. The propellant consists of two bad lots that are unusable and was placed there until it can be disposed of in a “burn” per the Munitions Destroyer staff person, Mr. Bernie Underwood, who unlocked the building for us.

B-Line East Bomb Plant

Cameras are prohibited in the area due to explosives handling in the bomb assembly area. The inspectors observed the explosive mix and cast fill, cap off, cure and palletization, and melt and pour for Tritonal areas only. Assembly lines in the plants mirror each other and SAAs are located near the point of generation. At the end of the shift, hazardous waste from the SAA is transferred to a container storage unit behind the building. From this unit it is transferred to a less than 90-day storage unit. Hazardous waste generated from this production are solvents, paint related waste, Tuff Seal, and gloves contaminated with PD 680 Type 2.

Satellite Accumulation Areas (SAAs)

We inspected approximately eight (8) SAAs at MAAP. With the exception of the Railcar Maintenance Facility, the production lines were set up the same and generated the same waste streams. SAAs are set up near the point of generation, hazardous waste is transferred to storage unit in the back of building and picked up for transfer to a less than 90-day storage unit. Hazardous wastes generated are aerosol cans, paint waste, contaminated rags and gloves with MIL PRF-680.

Aluminum powder is removed from the air from the Aluminum Preparation Building (Screen Building) and goes through a bag house where it dumps into a container.

Railcar Maintenance Locomotive repair and rail maintenance generates hydraulic oil and oil filters. Oil is pumped directly into a 5,000-gallon capacity oil tank that is hooked up to piping. Safety Kleen picks up the used oil from the oil tank. Used oil filters are placed in containers and picked up by Safety Kleen. We observed one 55-gallon drum of aerosol cans. Unpunctured cans are placed in containers until full, then moved to a staging area in Building 9. From Building 9 they are transferred to "Outside Storage" to get punctured, compacted into cubes, and picked up by New Phoenix Metals in Greenville, Texas for recycling.

All Universal Waste such as disinfectants, mold release, and unpunctured cans are transferred to Outside Storage where they are crushed, bailed and sent to New Phoenix Metals for recycling. Universal waste labeled with pesticides expanding foams are collected in separate drums for disposal.

Facility Operating Records

Throughout the course of this inspection we collected and reviewed the facility's operating records as they pertained to compliance with the RCRA regulatory requirements. Where noted, we collected copies of these records which are included as appendices to this report. The report appendices are listed in Section IV. (Appendix 9)

Section III – AREAS OF CONCERN

1. OB/OD Less Than 90-Day Storage Area (37AT403) (#1)

None of the containers were labeled as hazardous waste, nor did they have accumulation start dates. Additionally, when asked about the lack of labels, the facility personnel stated that their training specifically told them that labels were not required because the waste was not being shipped off-site for disposal. [40 CFR 262.17(a)(5)]

2. Less Than 90-Day Storage Unit (53SH-207) (#2) (Non-Explosive/Non-Mixed Hazardous waste. This building is separated into two separate units by a wall.)

Bay #2 – The waste containers in this have the potential to be hazardous waste and the drum with the paint chips would not be considered Universal Waste [40 CFR 262.11].

Bay #5 – Universal waste has been stored for greater than one year [40 CFR 273.35].

Bay #2 – Two 55-gallon drums of aluminum powder were stored in an area which is also used for storage of oxidizers. Upon review of a Safety Data Sheet (SDS) for aluminum powder, it was noted that the powder and oxidizers are incompatible materials. [40 CFR 262.15(a)(3)(iii)]

3. OB/OD Less Than 90-Day Storage Area (37AT102) (#5)

The storage area contained 16 pallets of M-67 propellant that was being stored, awaiting disposal. The pallets were missing hazardous waste labels, hazardous waste determinations/codes, and accumulation start dates. [40 CFR 262.17(a)(5)] We observed inadequate aisle space between the pallets [40 CFR 262.255]. We observed an in-house inventory sheet that read "Magazine Data Card" and that it was a defective lot for destruction. Weekly inspection logs were unavailable during the time of the inspection. [40 CFR 264.15(d)]

4. Static Vertical and Horizontal Burn Area

A mishap occurred in which a Mark 12 rocket exploded in the static burn area. This resulted in the production of ash, residual explosive material (per facility management) and shrapnel. The potentially hazardous waste had been “stored” at this point of generation for greater than one year before the facility performed a “burn” to dispose of the residual explosive material. Actual date of the mishap was not provided to the inspectors.

In the case of an unexpected fire or explosion, the Contingency Plan is supposed to be activated. This did not take place following the accidental explosion. [40 CFR 264.51(b)]

Waste determinations were not performed on the residual material (ash, residual explosive and shrapnel) following the accidental explosion. [40 CFR 262.11]

5. Pink Water Treatment Plant

Pink water is treated as a nonhazardous waste. There will be more discussions with ODEQ on this waste stream.

6. Satellite Accumulation Areas (SAA)

Contaminated personal protective equipment (PPE) is placed in a 5-gallon container at the point of generation. At the end of each day, containers are taken outside and placed in a 55-gallon drum. When the 55-gallon drums are full, they are transported to the less than 90 Day Storage Unit. Both locations are being treated as SAAs. [40 CFR 262.15]

Section IV – LIST OF APPENDICES

Appendix	Document
1	Opening /Closing Conference Facility Sign-in Sheet
2	Inspection Photographic Log
3	Map of Facility
4	Process Flow Diagram for Management of Pink Water
5	2015 Biennial Report
6	Contingency Plan, Parts G-3.8 & G-8
7	2002 EPA Call Center Report (EPA530-R-02-005j) - Management of Pink Water
8	ODEQ NHIW Certification - Management of Pink Water
9	Documents Requested, Received and/or Reviewed

Documents Requested for Review:

1. Map of Facility
2. Organization Chart
3. State Permit
4. Documentation for all Hazardous waste generation and management to include flow charts
5. Process flow diagrams for the treatment, storage, and handling of all waste streams
6. Hazardous waste Profiles
7. Date rocket exploded in rocket cradle.
8. Contingency Plan
9. Arrangements with all emergency responders and emergency medical responders (local, state & federal)
10. Documentation to show how Contingency Plan was implemented after the rocket explosion incident. Not received from the facility.
11. Manifests (2014 – 2018)
12. LDR (notices/certifications) and analysis/determination of underlying Hazardous waste constituents
13. Bills of Lading (2014 – 2018)
14. Weekly inspections at 90-day storage (2014 – 2018)
15. Training records (OSHA, RCRA and DOT) and position descriptions for all Hazardous waste handlers (2014 – present)
16. Hazardous waste determinations to include wastes that have been classified as non-hazardous
17. MDS if used for Hazardous waste determinations
18. Recycling certification to include Universal Waste, if applicable (Appendix IV)