DEPARTMENT OF THE AIR FORCE
HEADQUARTERS 36TH WING (PACAF)
ANDERSEN AIR FORCE BASE GUAM

13 September 2024

Brigadier General Thomas B. Palenske
Commander, 36th Wing
Andersen Air Force Base
Unit 14003
APO AP 96543-4003

Ms. Michelle C.R. Lastimoza
Administrator
Guam Environmental Protection Agency
17-3304 Mariner Avenue, Tiyan
Barrigada, Guam 96913-1617

Dear Ms. Lastimoza

The 36th Wing, with the support of the Department of Air Force, would like to thank you for taking the time to provide substantive comments on the Permit renewal package for the Andersen Air Force Base (AAFB) Hazardous Waste Facility Permit (GUS Permit 002) for the Open Burn and Open Detonation (OB/OD) of waste energetic materials submitted May 2021. The 36th Wing is also appreciative to both Guam EPA (GEPA) and US EPA Region 9 for taking the time to visit AAFB's permitted unit and work collaboratively with Air Force staff in order to comply with Guam's Hazardous Waste Management Program.

In a letter dated August 6, 2024, GEPA and U.S. EPA Region 9 outlined several deficiencies within the Permit renewal package and required Andersen AFB to submit a revised Permit renewal package within 45 days of receipt of the letter per 40 CFR § 270.30(h) and Permit Condition I.E.7. Given the substantive nature of the comments provided, the 36th Wing requests a 75-day extension to further evaluate them and collaboratively engage with GEPA and U.S. EPA prior to submitting a revised Permit renewal package. An estimated timeframe to address the required revisions to the Permit renewal package is provided in Attachment 1 and a draft of an updated Waste Analysis Plan has been provided in Attachment 2. Additionally, we request at least one virtual meeting leading to an in-person meeting to discuss the next steps and a path forward to ensure we fulfill our environmental stewardship obligations and protect the health and safety of the citizens of Guam and our Air Force personnel.

The 36th Wing remains committed to working with GEPA and U.S. EPA to ensure compliance with Guam's Hazardous Waste Management Program and we look forward to working through your concerns in an expedited manner.

Sincerely

THOMAS B. PALENSKE
Brigadier General, USAF
Commander

2 Attachments:
1. Estimated Timeframe to Address Required Revisions to Andersen AFB Hazardous Waste OB/OD Permit GUS002
2. Draft OD Waste Analysis Plan

cc:
Martha Guzman, Administrator, US EPA Region 9

Attachment 1
Estimated Timeframe to Address Required Revisions to Andersen AFB
Hazardous Waste OB/OD Permit GUS002

Item	Description	Date Projected	Estimated Completion Date
1	Environmental Performance Discussion - Meeting with Guam EPA and Region 9 to address the applicable regulatory requirements for design, construction, and operations for the OD unit and demonstrate that AAFB can continue to operate the OD unit within the applicable regulatory framework including groundwater, flood plain and OB closure considerations.	Propose Virtual Meeting 9 Oct 24 Propose in-person 20 Nov 24	Further actions and timeline TBD
2	Establish and Maintain a Public Webpage – Provide information to the public for permitted OD activity, including the quantity treated from each OD event no later than 5-days after the treatment and pertinent permit documents.	24 Nov 24	
3	Alternative Technologies Evaluation – AAFB plans to include the alternative technologies evaluation, including the final revised waste analysis plan, in the AAFB's revised permit renewal application submittal.	Est Contract award 30 Sept 24	September 2025
4	Draft Waste Analysis Plan – An updated draft of the waste analysis plan, provided as Attachment 2, provides the basis for the alternative technology evaluation by providing detailed characterization of the energetic materials to be treated. The updated waste analysis relies on historical items treated in the last three calendar years for characterization and removes all OB references.	N/A	13 September 2024

ATTACHMENT 2

Appendix A OD

Waste Analysis Plan

Table of Contents

APPENDIX A - OD WASTE ANALYSIS PLAN

1.0 Purpose

Andersen Air Force Base (AAFB) Explosive Ordnance Disposal (EOD) treats waste munitions materials via open detonation (OD) that meet the U.S. Environmental Protection Agency and Guam Environmental Protection Agency definition of hazardous waste under a Resource Conservation and Recovery Act (RCRA) permit. AAFB is a self-generating facility, treating hazardous waste through ammunition disposition request only for munitions deemed unsuitable or unstable for transport off-island. Emergency detonations and detonations for EOD proficiency training are not covered under this permit application.

In addition to waste munitions treatment, the EOD range is also used for EOD proficiency training and EOD emergency response operations. All OD operations are conducted within a 1M by 1M OD unit that is located within the EOD range boundary.

This Waste Analysis Plan will be used to determine the treatability of the hazardous waste materials at Andersen AFB's EOD range.

The Waste Analysis Plan presents a procedurally oriented process for waste identification and determination of the treatability of the hazardous waste materials at Andersen AFB's EOD range. Waste sampling and analysis procedures are not necessary since the waste composition is already well documented for each waste to be treated. Furthermore, sampling and analysis procedures are normally not feasible due to the inherent safety issues associated with further undue handling of waste ordnance materials.

2.0 Related Documents

2.1 Technical Order (T.O.) 11A-1-42 General Instructions for Emergency Destruction of Munitions (EDM) This document provides information on accident prevention, description of demolition materials and firing system procedures (not releasable).

2.2 T.O. 1lA-1-46 This document provides supplementary technical information on each type of munition, including net explosive weight (NEW), National Stock Number (NSN), hazard classification, and compatibility group (not releasable).

2.3 EOD 60 Series T.O.'s - These documents provide technical information for each type of munition regarding chemical and physical components and construction. These documents provide information on type, description of hazardous components, functioning, markings, and render safe procedures (not releasable).

3.0 Definitions and Acronyms

AAFB: Andersen Air Force Base

ADR: Ammunition Disposition Requisition This is the request for the EOD Flight to dispose of munitions. This request is evaluated with respect to acceptability of waste for treatment prior to acceptance at EOD Flight.

AFK: Munitions Supply

DODIC: Department of Defense Identification Code

DOD: Department of Defense

DLA-DS: Defense Logistics Agency, Disposition Services

Energetic Material: Any explosive material, whether contained within an ordnance or separate from the ordnance.

EPS: Environmental Performance Standards, a set of operational criteria presented within the AAFB EOD RCRA Part B Application. These criteria include Limits on the amounts; types; and/or item constituents which are allowable for treatment at this OD Unit.

EOD: Explosive Ordnance Disposal

EOD Flight: Group of Andersen AFB personnel tasked with munitions disposal.

EOD Range: The area used by EOD personnel to perform treatment operations, EOD mission training, and emergency operations. The EOD Range is surrounded by a safety exclusion zone to minimize risk to human life during operations.

Explosive (Explosive Ordnance): Any chemical compound, mixture, or device whose primary purpose is to function by detonation or deflagration with instantaneous release of heat and gas.

Hazardous Waste: A solid waste that exhibits any of the characteristics of hazardous waste (ignitability, corrosivity, reactivity, and toxicity) or is a listed hazardous waste under RCRA (40 CFR 261.3).

Munitions and Explosives of Concern (MEC): A term distinguishing specific categories of military munitions that may pose unique explosives safety risks: UXO, as defined in section 101(e)(5) of Title 10, U.S.C.; DMM, as defined in section 2710(e)(2) of Title 10, U.S.C.; or munitions constituent (e.g., TNT, cyclotrimethylenetrinitramine (RDX)), as defined in section 2710(e)(3) of Title 10, U.S.C., present in high enough concentrations to pose an explosive hazard.

Metallic Fragment: Any metallic material that remains following ordnance treatment. Metallic fragment can include items remaining in the OD treatment units or ejecta thrown out during treatment.

Military Munition: all ammunition products and components produced or used by or for the U.S. Department of Defense or the U.S. Armed Services for national defense and security, including military munitions under the control of the Department of Defense, the U.S. Coast Guard, the U.S. Department of Energy (DOE), and National Guard personnel. The term military munitions includes: confined gaseous, liquid, and solid propellants, explosives, pyrotechnics, chemical and riot control agents, smokes, and incendiaries used by DOD components, including bulk explosives and chemical warfare agents, chemical munitions, rockets, guided and ballistic missiles, bombs, warheads, mortar rounds, artillery ammunition, small arms ammunition, grenades, mines, torpedoes, depth charges, cluster munitions and dispensers, demolition charges, and devices and components thereof.

Munitions Squadron: The AAFB unit responsible for munitions-related activities.

NEW: Net Explosive Weight is the mass of the explosive material within the particular munitions item.

Non-hazardous Waste: A solid waste that does not exhibit characteristics of hazardous waste.

NSN: National Stock Number, an internal DOD tracking number for each type of munitions.

Open Detonation (OD): Unconfined, violent reaction of PEP or explosive ordnance without the control of combustion air, containment of the combustion reaction in an enclosed device, or control of emission of gaseous and particulate combustion products.

PEP: Term used to refer collectively to propellants, explosives, and pyrotechnics.

Residue: Any material remaining from OD activities. Residue may include materials from non-RCRA treatment OD operations (i.e. training, or emergency operations) which may also take place on the EOD Range.

T.O. Documents: DOD Technical Order documents.

4.1 Waste Evaluation

The following steps are used by the 36th Munitions Squadron (36th MUNS) to determine whether or not a waste explosive should be evaluated for treatment at the RCRA-permitted OD unit.

- General item identification
- Comparison to a pre-evaluated list
- NEW quantity determination
- Specific component chemical identification
- Evaluation of viable disposal methods
- Evaluation of any required treatment by OD
- Submission for evaluation to the appropriate Designated Disposition Authority (DDA)

This evaluation is then followed by a decision by the DDA to dispose of a given munition via other methods or to proceed with treatment of waste explosives by OD at the RCRA permitted unit. A graphic presentation of these steps is shown in the Waste Evaluation Flow Chart (Ref. Attachment As shown in the Flow Chart, if the waste munitions have not been pre-evaluated, several additional evaluation steps are required.

4.2 EOD Flight Notification

The EOD Flight Notification is a trackable communication process by with the 36th MUNS issues an order to dispose of munitions that are designated to be a waste. The waste evaluation is initiated when EOD Flight receives notification from 36th MUNS of a requirement to treat waste explosives. This notification includes operational identification information such as Ammunition Disposition Requisition (ADR) number, lot number(s), stock number, Department of Defense Identification Code (DODIC), common name, NEW, condition code, and quantity of each item.

4.3 General Item Identification

EOD Flight researches each individual munition type listed in the ADR by using the 60-series T.O. that covers the munition item and/or T.O. 11A-1-46. The information in these documents is used to confirm the identification of each type of munition on the basis of physical description, characteristic markings, DODIC number (analogous to make and model number), and matching stock number.

4.4 Comparison to Pre-Evaluated List

Following identification of each munition, EOD determines whether each item has been pre-evaluated as acceptable for treatment by OD.

4.5 The munitions items which have been pre-evaluated as acceptable for treatment at AAFB's RCRA permitted OD unit are listed in Table III-7.**Treatment of Pre-Evaluated Munitions**

The following steps are followed for treatment events which include only pre-evaluated waste munitions.

4.4.1 NEW Quantity Research

EOD Flight researches the Net Explosive Weight (NEW) of the explosive materials within each munition using T.O. 11A-1-46 and/or the 60 Series T.O.s.

4.4.2 Evaluation of Environmental Performance Standard Restrictions

For a treatment event composed entirely of pre-evaluated items, the only additional evaluation is comparison of the munitions and quantities slated for treatment to the limitations presented in Table EPS- 21 (for OD treatment events) as appropriate. These Environmental Performance Standards restrict the quantity of certain specific munitions per treatment event. (Item numbers refer to those presented in Table III-7).

4.4.3 Evaluation of Viable Disposal Methods

EOD Flight will conduct an evaluation to assess alternative means of disposal of waste explosives in lieu of OD, to include shipment off-island. Ammunition Disposition Request (ADR) represent the entirety of all permitted detonations at the OD unit. Figure 1 shows total annual NEW of items at the permitted unit from 2021 to 2023.

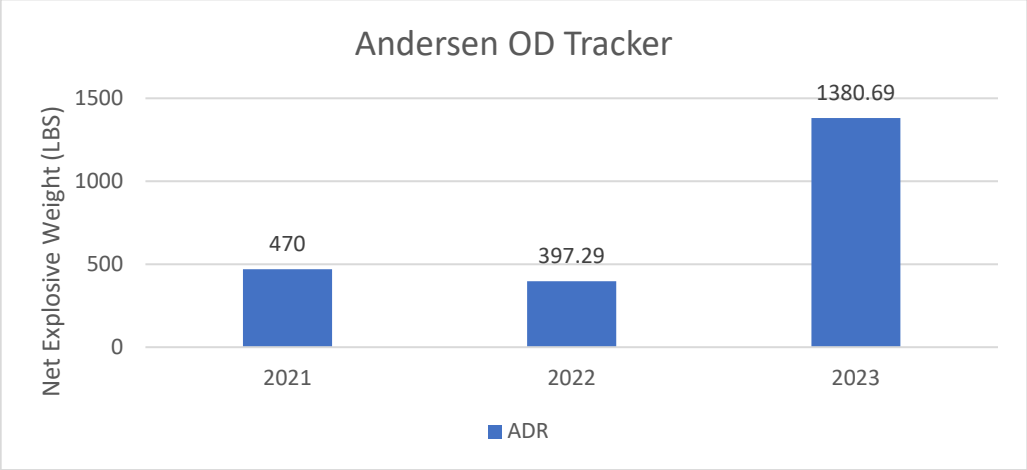


Figure 1. Total annual NEW (CY) of items treated at the permitted unit from 2021 to 2023.

Table 1
Maximum NEW per Open Detonation Treatment Event
Andersen AFB EOD Range, RCRA Waste Treatment Operations

The maximum NEW for each OD event is 600 lbs, except for the following items.		
Total NEW (lbs) For OD Event	Maximum Munition Item NEW (lbs)	
	Grenade, MK1, Illuminating	Cap, Electric/Non Electric blasting
1	0.26	1.0
5	0.54	2.7
20	0.64	3.2
50	1.4	7.0
100	2.1	10
200	3.5	17
300	5.0	25
400	6.7	33
500	8.3	42
600	10.0	50

(reference: E)

4.4.4 Treatment

Providing all munitions are listed in Table IV, the proposed treatment event proceeds as required.

4.5 Treatment Events Including Waste Munitions Not Pre-evaluated

For munitions not listed as pre-evaluated, additional evaluation must be accomplished as follows for all munitions in the proposed treatment event.

EOD Flight researches the specific chemical components which makeup the explosive materials within each munition using the 60 Series EOD T.O.'s. Data gathered from the appropriate T.O. includes both chemical constituents and quantity of each constituent.

4.5.1 Treatment Events including Munitions Not Pre-evaluated Without Compounds of Concern

If the research of the munitions which were not pre-evaluated reveal no compounds of concern (metals and sulfur), the NEW of the munitions is totaled, and the proposed treatment event may proceed.

4.5.2 Treatment Events including Munitions not Pre-evaluated with Compounds of Concern

If the research of the munitions which were not pre-evaluated reveals they contain compounds of concern (metal and sulfur compounds), these compounds must then be evaluated for all munitions in the proposed treatment event.

The totals for each of the chemical components of concern are compared to the maximum permissible quantity of metals and sulfur per treatment event as specified in Table III (for OD treatment).

Following this evaluation, the proposed treatment event may proceed under the restrictions imposed by Table III (for OD treatment).

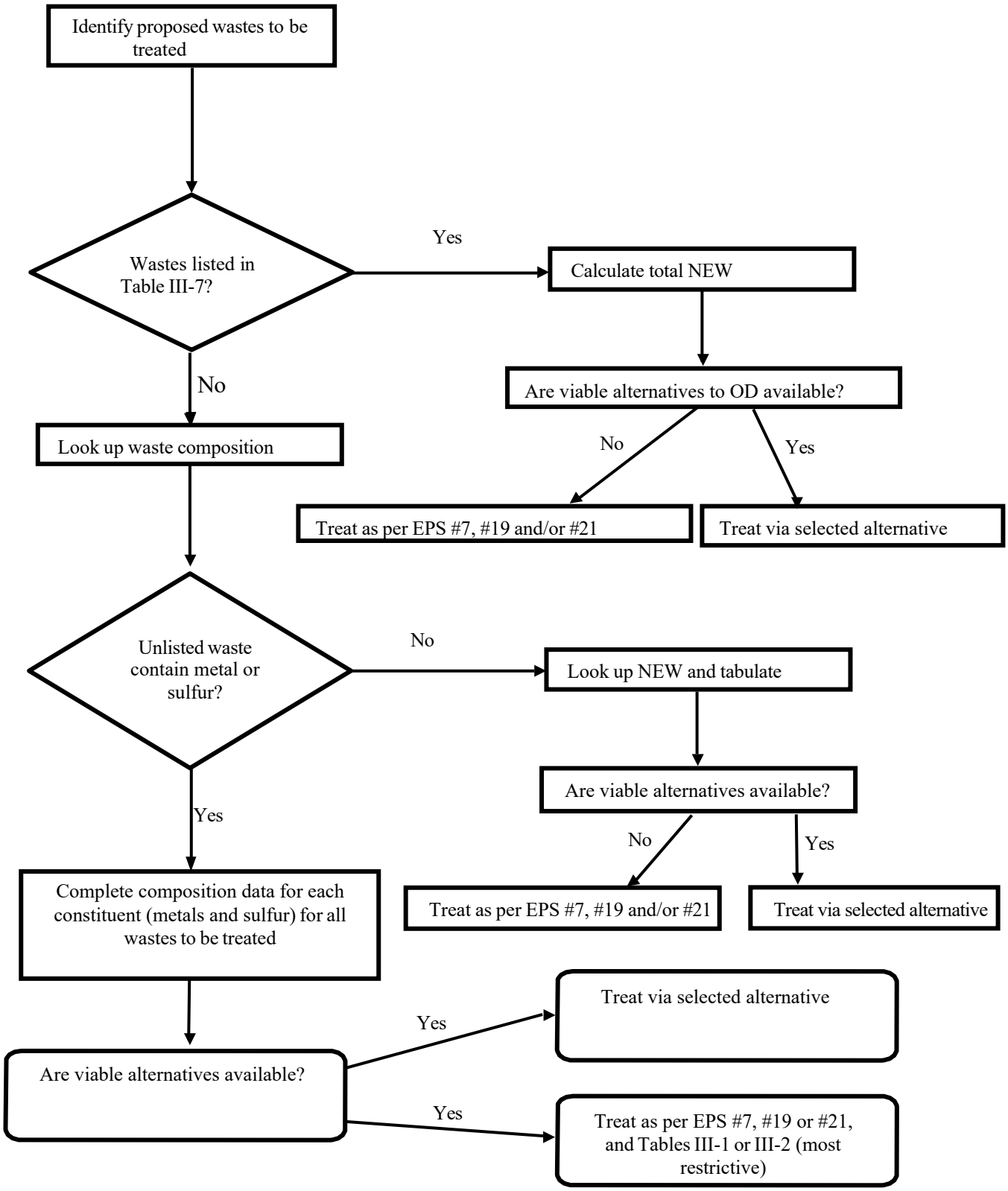
5.0 Documentation

The procedures completed for evaluating the acceptability of the proposed waste munitions for treatment by OD are documented using the Waste Munitions Analysis Checklist (see Attachment 5).

Attachment 1

Waste Evaluation Flow Chart

Waste Evaluation Flow Chart



Attachment 2

Table II Historical Quantities of Munitions Treated per OD CY21-23, AAFB RCRA Part B Application

APPENDIX A - OD WASTE ANALYSIS PLAN

TABLE II
Total Quantity of Munitions Treated per OD FY21-23 Andersen AFB OD Unit, RCRA Waste Treatment Operations

Nomenclature	NSN	DODIC	Primary Explosive Constituent	NEW (LBS)	Qty Treated	Unit	Total Event NEW (LBS)
CY23							
BOMB GP 500LB MK82-1	1325005407629	E480	TRITONAL (80% TNT 20% Aluminum)	192	4	EA	768
L462 FLARE, IR CM MJU-23 A/B	1370014358569	L462	BLACK POWDER	0.01	1788	EA	17.88
LA21 MJU-53/B, FLARE, DECOY	1370015031455	LA21	N/A	0.52	1140	EA	592.8
BTV-1EL/MK 13 Mod 0, HAND, STUN	N/A	N/A	BLACK POWDER	0.003	4	EA	0.012
SMOKELESS POWDER	1376007721370	MY57	BLACK POWDER	1	2	EA	2
CHG DEMO M112 COMP 4 1.25 LBS	1375013893854	M023	COMPOSITION C-4	1.25	217	EA	271.25
CORD ASSEMBLY, DETONATING, PETN	1375001809356	M456	PETN	0.007	314	FT	2.198
CAP, BLASTING, ELECTRIC, SPECIAL, M6	1375013161229	M130	RDX	0.002	12	EA	0.024
CAP, BLASTING, NON-ELECTRIC, SPECIAL, M7	1375013151335	M131	RDX	0.002	15	EA	0.03
LHFLSC, MK 149 MOD 0 5400gr/ft	1375013288049	MM54	PETN	0.771	40	EA	30.84
CY 22							
CORD ASSEMBLY, DETONATING, PETN	1375001809356	M456	PETN	0.007	130	FT	
CAP, BLASTING, ELECTRIC, SPECIAL, M6	1375013161229	M130	RDX	0.002	8	EA	
CHG DEMO M112 COMP 4 1.25 LBS	1375013893854	M023	COMPOSITION C-4	1.25	8	EA	
CHARGE, DEMOLITION, ECT, MK 149	1375013288049	MM54	PETN	0.98	80	FT	
TYPE 91, PROJECTILE, 105 MM, HE	N/A	N/A	TNT	5.2	1	EA	
MK 2, GRENADE, HAND, FRAG	N/A	N/A	TNT	0.13	2	EA	

APPENDIX A - OD WASTE ANALYSIS PLAN

TYPE 99, HAND, FRAG	N/A	N/A	TNT	0.13	1	EA	
MK 3 MOD 1, PROJECTILE, 20 MM, HE, AA	N/A	N/A		0.02	2	EA	
Mk 123 Mod 0	1377012465280	MT30			9	EA	0
M19 Detonator, Non-Electric	N/A	N/A			6	EA	0
TYPE 94, 37-MM, APHE	N/A	N/A		0.02	1	EA	0.02
MK 81 MOD 0, 250-LB, GPLD	1325005801776	F226	TRITONAL	100	1	EA	100
M84, HAND, STUN, NON LETHAL	1330014598141	GG09			1	EA	0
Mk 107 Mod 1	1330014598141	M943	BLACK POWDER	168		EA	
9MM FX Marking, Red	1305016704963	AC37	SMOKELESS POWDER	0.0011	480	EA	0.528
CTG 5.56MM FX Blue	1305015365822	AB09		0	3607	EA	0
Primer, Percussion, 12 Gauge	1390014669197	AX14			39	EA	
CTG 5.56MM Ball M855	1305014574589	AA33			1200	EA	
FLARE, IR CM MJU-23 A/B CARTRIDGE, IMPULSE BBU-46 A/B	1370014358569 1377014361106	L462 MT40	BLACK POWDER BLACK POWDER	0.01 0.01	720 13	EA EA	7.2 0.13
BOMB GP 500LB MK82-1	1325005407629	E480	TRITONAL	192	1	EA	192
CARTRIDGE, IMPULSE, CCU-145/A	1377014812010	WB24	HMX	0.01	90	EA	0.9
CTG, IMPULSE, ARD, 863-1A1W	1377013692492	M189		0.009	26	EA	0.234
CARTRIDGE, IMP, ARD 446-1B	1377014821555	WB33		0.027	43	EA	1.161
CHG DEMO LIN SHAPED 125 GR/FT	1375010829922	ML14	PETN	0.07	45	EA	3.15
CORD ASSEMBLY, DETONATING, PETN	1375003163636	M977	PETN	0.007	30	FT	0.21
CHG DEMO M112 COMP 4 1.25 LBS	1375013893854	M023	COMPOSITION C-4	1.25	3	EA	3.75
CHARGE DEMO BLOCK TNT 1/2 LB	1375009269316	M031	TNT	0.5	5	EA	2.5

CHARGE, DEMO .5LB SEMTEX A	1375014869430	MN82	SEMTEX	0.5	7	EA	3.5
CY21							
CORD ASSEMBLY, DETONATING, PETN	1375001809356	M456	PETN	0.007	100	FT	0.7
CHG DEMO M112 COMP 4 1.25 LBS	1375013893854	M023	COMPOSITION C-4	1.25	6	EA	7.5
CAP, BLASTING, ELECTRIC, SPECIAL, M6	1375013161229	M130	RDX	0.002	14	EA	0.028
GRENADE, HAND, INCENDIARY, AN-M14	1330002198557	G900	TH3	0	24	EA	0
9MM BLUE MARKING CARTRIDGE	1305016704234	AC36	SMOKELESS POWDER	0.0011	78000	EA	85.8
BOMB GP 500LB MK82-1	1325005407629	E480	TRITONAL	192	1	EA	192
AMMONIUM NITRATE EMULSION 75P	1375014949223	MN85	AMMONIUM NITRATE	0.6	9	EA	5.4
MK 2, GRENADE, HAND, FRAG	N/A	N/A	TNT	0.13	2		0.26
TYPE 100 MOD 2, 20 MM, ITSD	N/A	N/A	N/A	0	1	EA	0
AN-M103A1, BOMB, NOSE	N/A	N/A	N/A	0	1	EA	0
MK 107 IMPULSE CARTRIDGE	1377012824676	M943		0.05	240	EA	12

*Table includes donor charges used to treat ADR munitions. Items with N/A have no associated NSN/DODIC or information listed in TICMS or GACP.

Attachment 3

Table III Maximum Permissible Quantity of Metals and Sulfur that can be Treated per OD Event, AAFB EOD RCRA Part B Application

TABLE III
Maximum Permissible Quantity of Metals and Sulfur that can be Treated per OD Event
Andersen AFB EOD Range, RCRA Waste Treatment Operations

	Maximum Quantity per Event (lbs)							
Constituent	Total Event NEW 1 lb	Total Event NEW 5 lb	Total Event NEW 20 lb	Total Event NEW 50 lb	Total Event NEW 100 lb	Total Event NEW 200 lb	Total Event NEW 400 lb	Total Event NEW 600
Aluminum Cpds, as Al	4.03	8.36	13.98	21.62	32.43	54.04	101.33	152.00
Antimony Cpds, as Sb*	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Barium Cpds, as Ba	0.07	0.14	0.23	0.36	0.54	0.89	1.67	2.51
Calcium Cpds, as Ca	0.20	0.42	0.71	1.10	1.64	2.74	6.13	7.70
Copper Cpds, as Cu	0.01	0.01	0.02	0.03	0.05	0.08	0.15	0.22
Iron Cpds, as Fe	8.32	17.26	28.87	44.66	66.99	111.64	209.33	314.00
Lead Cpds, as Pb	0.47	0.98	1.64	2.53	3.80	6.33	11.87	17.80
Magnesium Cpds, as Mg	8.47	18.14	30.34	46.93	70.40	117.33	220.00	330.00
Potassium Cpds, as K	0.36	0.75	1.25	1.93	2.90	4.84	9.07	13.60
Silver Cpds, as Ag*	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Sodium Cpds, as Na	5.59	11.60	19.40	30.01	45.01	75.02	140.67	211.00
Strontium Cpds, as Sr	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Sulfur Cpds, as S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tin Cpds, as Sn*	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Uranium Cpds, as U*	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Zinc Cpds, as Zn	3.02	6.27	10.48	16.21	24.32	40.53	76.00	114.00

* Noted compounds not evaluated
Historically, no items containing these compounds have been treated by OD

Attachment 4

Table IV Ordnances Pre-Evaluated Andersen

AFB EOD RCRA Treatment Operations

Table IV
Ordnances Pre-Evaluated
Andersen AFB EOD RCRA Treatment Operations
For Open Detonation (Page 1 of 3)

Ordnance #	Name
1	Cartridge, 5.56 mm Ball
2	Cartridge, 5.56 mm Ball/tracer
3	Cartridge, 5.56 mm Blank
4	Cartridge, 7.62 mm Blank
5	Cartridge, 7.62 Ball
6	Cartridge, 9 mm Para
7	Cartridge, 12 gauge
8	Cartridge, .30-06
9	Cartridge, .357 Magnum
10	Cartridge, 20 mm HEI
11	Cartridge, 40 mm
12	M58A3 40mm
13	Simulator, Booby Trap
14	Cap, Electric blasting
15	Cap, Non-electric blasting
16	Cord, detonating
17	FLSC 100 to 600 GPF
18	Fuse, time
19	Igniter, M60
20	Charge, demolition, M112 (C4)
21	Charge, demolition, TNT
22	Charge, assembly, demolition
23	Demolition kit, Bangalore torpedo, M1A1
24	Charge, demolition block, M118
25	Charge, demolition roll
26	Deta Sheet
27	Charge, demolition, shaped 15lb
28	Charge, demolition, shaped 40lb
29	Cratering charge M180
30	Demolition kit, projected charge, M1
31	Dynamite, military, M1
32	Water Gel Explosive
33	Single-base smokeless powder
34	Black powder
35	Fireworks, seal
36	Firing device, M1
37	Firing device, demolition, M1A1
38	Firing device, demolition, M5
39	Firing device, demolition, M3
40	Firing device, demolition, M1

Table III-7
Ordnances Pre-Evaluated
Andersen AFB EOD RCRA Treatment Operations
For Open Detonation (Page 2 of 3)

Ordnance #	Name
41	Cartridge, Fire Extinguisher
42	Detonator, percussion, M2A1
43	Detonator, percussion, M1A2
44	Cutter, line M21
45	Detonator kit, M1
46	Cartridge, impulse
47	Cartridge set, impulse
48	Cartridge, initiator
49	Cartridge, actuator
50	Primer, percussion, cap
51	Firing device, demolition, M142
52	Simulator, ground, M115/M116
53	Smoke Pot
54	Squib, Fire Extinguisher
55	Squib, M1
56	Signal, Smoke/illuminating
57	Kit, Aot Deploy
58	2 Bomblet
59	M74 Bomblet
60	AN/M50
61	Bomb, MK 82
62	Bomb,M117
63	Fuze, Type 93
64	Fuze, FMU 113/B
65	Fuze, FMU 54A/B
66	Fuze, MK 28
67	Fuze, MK18
68	Fuze, M905
69	Booster, M147/M148
70	Mortar, M49A2
71	Mortar, Type 97
72	Projectile, 5 inch
73	Projectile, high explosive
74	Projectile, MK28
75	Projectile, MK34
76	Projectile, MK35
77	Projectile, MK44
78	Projectile, MK45

Table III-7
Ordnances Pre-Evaluated
Andersen AFB EOD RCRA Treatment Operations
For Open Detonation (Page 3 of 3)

Ordnance #	Name
79	Projectile, MK165, 76 mm
80	Projectile, White Phosphorus
81	Rocket, LAW
82	Rocket, LAW-35mm subcaliber
83	Mine, antipersonnel, M16
84	Mine, antipersonnel, M14
85	Mine, antipersonnel, M26
86	Mine, antitank, M15
87	Mine, antitank, M19
88	Mine, Claymore, M18
89	Flare, MK25
90	Flare, AN-M 26
91	Flare, MK124
92	Flare, Personal distress
93	Flare, ALA17/B
94	MK 24 Cluster
95	Grenade, MK1, Illuminating
96	Grenade, M14
97	Grenade, MK-2
98	Grenade, Smoke, M18
99	Grenade, Type 97
100	Grenade, Type 99
101	Grenade, fragmentation
102	Grenade, offensive, MK3A2
103	Weapons, Confiscated
104	Ethylene Oxide

Attachment 5

Waste Munitions Analysis Checklist

Date of Request for Disposition of Waste Munitions: _____
Proposed date of Waste Munitions Treatment Event: _____

1. Complete Proposed Waste Treatment Event Munitions Evaluation Form 1.

Form 1. Proposed Waste Treatment Event Munitions Evaluation

Item	Table III-7 Item #	Quantity	Individual Item NEW	Total NEW	Contaminants of Concern?
Munitions Pre-Evaluated					
Munitions Not Pre-Evaluated					
	n/a				
	n/a				
	n/a				
			Total NEW		

2. Are all proposed wastes pre-evaluated?

a. YES_____ …. continue to STEP 3 ….

b. NO _____ …. go to STEP 8 ….

3. Total NEW for proposed event _____

4. Verify acceptability with EPS #7. _____

_____ _____

5. Verify acceptability with EPS #21 (Open Detonation Treatment) _____

6a. Any Item # 30 _____

6b. Any Items # 12, 13, and/or 95 _____

6. Proceed with Treatment Event

7. Does research indicate any contaminants of concern (metals and sulfur) contained within waste munitions not pre-evaluated??

a. YES_____ .... continue to STEP 9 ....

b. NO_____ .... return to STEP 2 and complete evaluation ....

8. Complete FORM 2 detailing quantities of contaminants of concern.

9. Do any quantities of contaminants of concern exceed limits presented in Table III-2?

a. YES_____ …. revise proposed waste munitions treatment and repeat STEP ….

b. NO_____ …. return to STEP 2 and complete evaluation ….

APPENDIX A - OD WASTE ANALYSIS PLAN
Form 2
Determination of Quantity of Metals and Sulfur for Proposed Event
Andersen AFB EOD Range, RCRA Waste Treatment Operations

	Item:		Item:		Item:		Item:		
	No. of Items:		No. of Items:		No. of Items:		No. of Items:		
Contaminant of Concern	Amount per Item	Total for Items	Amount per Item	Total for Items	Amount per Item	Total for Items	Amount per Item	Total for Items	All Items
Aluminum Cpds, as Al									
Antimony Cpds, as Sb									
Barium Cpds, as Ba									
Calcium Cpds, as Ca									
Copper Cpds, as Cu									
Iron Cpds, as Fe									

Proposed Treatment Event Date: _____

APPENDIX A - OD WASTE ANALYSIS PLAN

Contaminant of Concern

Lead Cpds, as Pb

Magnesium Cpds, as Mg

Potassium Cpds, as K

Silver Cpds, as Ag

Sodium Cpds as Na

Strontium Cpds, as Sr

Sulfur Cpds, as S

Tin Cpds, as Sn

Uranium Cpds, as U

Zinc Cpds, as Zn

Proposed Treatment Event Date: _____