ATTACHMENT 22

AGENT MONITORING PLAN

AGENT MONITORING PLAN

22.1 POLICY/GOALS OF MONITORING OPERATIONS

22.1.1 Purpose

22.1.1.1 This revision to the TOCDF Agent Monitoring Plan corresponds with the current operational status of the TOCDF. The plan is abridged since liquid (i.e., neat) chemical agent is no longer managed in the TOCDF Munition Demilitarization Building (MDB) and the processing of secondary wastes in Area 10 is complete.

22.1.1.2 The TOCDF processing of the Tooele Army Depot South (TEAD-S) stockpile of chemical-agent-filled bulk containers and munitions is complete. The Liquid Incinerators (LIC1 and LIC2) and the Deactivation Furnace System (DFS) have been shut down pending decommissioning and demolition. The processing of agent-contaminated secondary wastes in the Metal Parts Furnace (MPF) is limited to those wastes that can be managed in sealed containers from the time the wastes are received in the MDB until they are fed into the Primary Combustion Chamber (PCC) of the MPF; the heat in the PCC destroys the containers the wastes are fed in. The potential to expose workers to chemical agents is therefore greatly reduced.

22.1.1.3 The purpose of agent monitoring associated with incinerator exhaust ducts, the MPF Discharge Air Lock (DAL), the Common Stack, and the MDB Heating, Ventilation, and Air Conditioning (HVAC) System exhaust stack is to prevent and minimize the release of chemical agent to the environment. The agent monitoring associated with the carbon filter system located in Area 10 is for the same purpose.

22.1.1.4 The initial purpose of the agent monitoring within the MDB and Area 10 locations where chemical agents and/or secondary wastes were managed was to limit/prevent and document exposure of personnel and physical areas to chemical warfare agents and protect the environment from the introduction of agents. Monitors located in areas where equipment used to manage liquid chemical agents were also used at one time to identify equipment leaks as required by Title 40 of the Code of Federal Regulations (CFR), Part 264, Subpart BB. The data collected from these monitors over the operational life of the TOCDF are now used to determine what areas require an Unventilated Monitoring Test (UMT) evaluation prior to the structures being demolished.

22.2.2 TOCDF Station Numbering and Locations

22.2.2.1 This Monitoring Plan includes a table for each monitoring location (Tables 22-1 through 22-6) that lists the station number(s), required number and type of monitoring systems, and the management requirements specific to the monitoring location. These tables are located at the end of this plan.

22.2.2.2. The monitoring locations referenced in this plan are those that have specific permit conditions applicable to them in Modules 1, VIII, and X of the permit.

22.3 OBJECTIVES OF THE MONITORING PLAN

22.3.1 This Monitoring Plan provides identification of monitoring devices and sampling locations for those monitors with associated conditions of operation imposed on them by conditions found in the RCRA Permit modules.

22.3.2 The objectives of the agent monitoring at the TOCDF are described in the TOCDF Monitoring Concept Plan (see Attachment A of the Laboratory Quality Control Plan).

22.3.2 The objective of this Monitoring Plan is to present compliance-related information that is applicable to each monitoring location in a concise format to allow for what is required for compliant operations to be readily determined by both the Permittee and the regulating agency.

22.4 SAMPLING PARAMETERS

22.4.1 The operational control limits for sampling parameters such as sample flow rate and duration of sample time are under configuration control and documented in precision and accuracy (P&A) studies before "Base Line" monitoring is performed and can only be changed by the Monitoring Manager following approved procedures.

22.4.2. The TOCDF shall provide the DSHW with the results of P&A studies that are conducted to change the configuration or sampling parameters of operational monitoring systems identified in this monitoring plan.

22.5 QUALITY CONTROL

22.5.1 The quality control parameters and limits are described in the Laboratory Quality Control Plan (LQCP) and the Laboratory Operating Procedures (LOPs) applicable to the monitoring systems. The referenced documents are incorporated into and identified in Attachment 3 of the TOCDF RCRA Permit.

22.6. AIRBORNE EXPOSURE LIMITS (AEL)

22.6.1. The agent monitoring levels that are specified in the tables appearing in this plan are shown below.

	G-agents (mg/m^3)	**VX (mg/m^3)**	**H-agents (mg/m^3)**	**Lewisite (mg/m^3)**
Source Emission Limit (SEL)	0.0003	0.0003	0.03	0.03
Vapor Screening Limit (VSL)	0.0001	0.00001	0.003	0.003
Worker Population Limit (WPL) (12 hours)	0.00002	0.0000006	0.00027	0.003

22.7. Suspension and Discontinuation of Monitoring

22.7.1 Monitoring at the MPF duct and Common Stack may be suspended if the conditions appearing in the applicable tables are met (see Section a). These are the only monitoring locations identified in this plan where monitoring may be temporarily suspended.

22.7.2. Monitoring at each location identified in this plan may be discontinued when the conditions appearing at the bottom of the associated table are met. Note the DSHW must be notified before monitoring for a specific agent or at a location is discontinued.

Table 22-1
Common Stack Agent Monitoring

Monitoring Configuration	2 NRT Monitor and 1 Standby Monitor for each agent type contaminating the wastes being processed
	1 Confirmation DAAMS for each agent type contaminating the wastes being processed
NRT Monitoring Requirements	
Station Number:	PAS 701AG, PAS 701BG, PAS 701CG (GB)
	PAS 706AV,PAS 706BV, PAS 706CV (VX)
	PAS 707AH, PAS 707BH, PAS 707CH (HD)
Alarm Level:	0.2 SEL for all agents
Challenge Frequency:	4 hr ± 30 minutes
Support Equipment	
Air Dilution Controller	
V/G Pad (VX Sampling Systems Only)	
Change out Frequency:	4 hr ± 30 minutes
DAAMS Requirements	**Continuous Monitoring**
Station Number:	701DG, 701EG
	707DH, 707EH
	706DV, 706EV
Maximum Aspiration Time:	4 hr ± 30 minutes
Support Equipment	
Air Dilution Controller	
NOx Filter (Required for HD sampling systems only)	
Change out Frequency :	24 ± 4 hrs
V/G Pad (Required for VX sampling systems only)	
Change out Frequency:	4 hr ± 30 minutes

Requirement Specific to Monitoring Location

a. Staggered Monitoring

Three NRT monitors are assigned to each agent being processed with two of the monitor for each agent being on-line constantly. Their operating cycles are staggered to allow one unit to be in the analysis mode while the other is sampling. An AWFCO is initiated and DAAMS analysis is required for the period the ACAMS was not staggered sampling the common Stack.

b. Suspension of Monitoring When Exhaust Gas Flow is Maintained

Table 22-1
Common Stack Agent Monitoring

Agent Monitoring may be suspended if:

1. There have been no confirmed agent alarms 24 hours prior to the intended time of monitoring suspension.
2. The primary and secondary combustion chambers are maintained at operating temperature for a minimum of one hour after the waste feed residence time has expired.
3. If waste is present in the MPF Charge or Discharge Air Lock, procedures approved by the CMA Project Manager or designee are implemented to isolated the contaminated wastes from the MPF combustion chambers.

c. Termination of Monitoring

1. Monitoring for specific agents may be terminated when there have been no confirmed agent alarms for 48 hours after management of waste contaminated with the specific agent is completed.
2. The Division of Solid and Hazardous Waste shall be notified when monitoring is terminated for a specific agent.

Table 22-2 MPF Duct Agent Monitoring	
Monitoring Configuration	1 NRT Monitor and 1 Stand-by Monitor for each agent type contaminating the wastes being processed
	1 Confirmation DAAMS for each agent type contaminating the wastes being processed; one backup (Title V)
NRT Monitoring Requirements	
Station Number:	PAS 703AG, PAS 703BG (GB)
	PAS 703AV,PAS 703BV (VX)
	PAS 703AH, PAS 703BH (HD)
Alarm Level:	0.2 SEL for Agents GB and HD 0.5 SEL for Agent VX
Challenge Frequency:	Once daily for Agent GB and HD 4 hr ± 30 min. for Agent VX
Support Equipment	
Air Dilution Controller	
NOx Filter: Not Required	
V/G Pad (VX Sampling Systems Only)	
Change out Frequency:	4 hr ± 30 min.
DAAMS Requirements	
Station Number:	703AG, 703BG (GB)
	703AV, 703BV (VX)
	703AH, 703BH (HD)
Maximum Aspiration Time:	4 hr ± 30 min. for all agents
Support Equipment	
Air Dilution Controller	
NOx Filter (Required for HD Sampling Systems Only)	
Change out Frequency :	24 ± 4 hrs
V/G Pad (Required for VX Sampling Systems Only)	
Change out Frequency:	4 hr ± 30 min.
Requirement Specific to Monitoring Location	
a. Suspension of Monitoring When Exhaust Gas Flow is Maintained	

Table 22-2
MPF Duct Agent Monitoring

Agent Monitoring may be suspended if:

1. There have been no confirmed agent alarms 24 hours prior to the intended time of monitoring suspension.
2. The primary and secondary combustion chambers are maintained at operating temperature for a minimum of one hour after the waste feed residence time has expired.
3. If waste is present in the MPF Charge or Discharge Air Lock, procedures are implemented to isolate the contaminated wastes from the MPF combustion chambers.

b. Termination of Monitoring

1. Monitoring for specific agents may be terminated when there have been no confirmed agent alarms for 48 hours after management of waste contaminated with the specific agent is completed.
2. The Division of Solid and Hazardous Waste shall be notified when monitoring is terminated for a specific agent.

Table 22-3
MDB HVAC Stack Agent Monitoring

Monitoring Configuration	1 NRT Monitor for most recent agent campaign (HD); 1 backup (Title V)
	1 Confirmation/Historic DAAMS for most recent agent campaign (HD); 1 backup (Title V) 1 Historic DAAMS for each previous agent campaign (VX and GB); 1 backup (Title V)
NRT Monitoring Requirements	
Station Number:	FIL 601CH, FIL 601DH (HD)
Monitoring Level:	VSL for Agent HD
Alarm Level:	0.5 VSL for Agent HD
Challenge Frequency:	Daily
Support Equipment	
NOx Filter: Not Required	
V/G Pad (VX Sampling Systems Only)	
Change out Frequency:	Daily
DAAMS Requirements	
Station Number:	FIL 601EG, FIL 601FG (GB)
	FIL 601AV, FIL 601BV (VX)
	FIL 601CH, FIL 601DH (HD)
Reporting Limit	0.5 VSL for each agent
Maximum Aspiration Time:	12 hours for all agents
Support Equipment	
NOx Filter (Required for HD Sampling Systems Only)	
Change out Frequency :	≤ 14 days
V/G Pad (Required for VX Sampling Systems Only)	
Change out Frequency:	Daily

Requirement Specific to Monitoring Location

a. Filter stack DAAMS samples shall be collected and analyzed every 12 hours.

b. Termination of Monitoring

1. Monitoring may be terminated when the final HVAC Filter Unit has been successful closed in accordance with the Decommissioning Work Package.
2. The Division of Solid and Hazardous Waste shall be notified when monitoring is terminated for a specific agent.

Table 22-4
MPF DAL Agent Monitoring

Monitoring Configuration	1 NRT Monitor for each agent type contaminating the waste being processed
	1 Confirmation DAAMS for each agent type contaminating the waste being processed
NRT Monitoring Requirements	
Station Number:	AL 468G (GB)
	AL 468V (VX)
	AL 468H (HD)
Alarm Level:	0.5 VSL for each agent being processed
Challenge Frequency:	Daily
Support Equipment	
NOx Filter: Not Required	
V/G Pad (VX Sampling Systems Only)	
Change out Frequency:	prior to each waste tray monitored in the DAL
DAAMS Requirements	
Station Number:	AL 468G (GB)
	AL 468V (VX)
	AL 468H (HD)
Reporting Limit	0.5 VSL for each agent
Maximum Aspiration Time:	12 hours
Support Equipment	
NOx Filter (Required for HD Sampling Systems Only)	
Change out Frequency :	≤ 14 days
V/G Pad (Required for VX Sampling Systems Only)	
Change out Frequency:	prior to each waste tray monitored in the DAL that contained VX contaminated waste

Requirement Specific to Monitoring Location

a. NRT Alarm Response:

MPF DAL alarms require the waste tray being monitored to be returned to Zone 3 of the Primary Combustion Chamber for a minimum of 15 minutes.

b. Suspension of Monitoring:

1. Monitoring may be suspended for agent types that are not present in the wastes being treated.
2. The Division of Solid and Hazardous Waste shall be notified when monitoring is terminated for a specific agent.

Table 22-5 Area 10 HVAC Filters Support Igloo 1631and 1632 Operations	
Monitoring Configuration	1 NRT Monitor and standby monitor for each agent type contaminating the waste being processed at exhaust stack. 1 NRT Monitor for each agent type contaminating the waste being processed at Mid-Bed locations.
	1 Confirmation DAAMS for each agent type contaminating the waste being processed on exhaust stack. 1 Confirmation /Historic DAAMS for each agent type contaminating the waste being processed at Mid-Bed locations.
NRT Monitoring Requirements	
Station Number (Common Stack):	TEN 093AG, TEN 093BG (GB)
	TEN 092AV, TEN 092BV (VX)
	TEN 011AH, TEN 011BH (HD)
Station Number (Filter 101 Mid-Bed):	TEN 094G (GB)
	TEN 094V (VX)
	TEN 094H (HD)
Station Number (Filter 102 Mid-Bed):	TEN 094GS (GB)
	TEN 094VS (VX)
	TEN 094HS (HD)
Alarm Level:	0.5 VSL for each agent being processed
Challenge Frequency:	Daily
Support Equipment	
NOx Filter: Not Required	
V/G Pad (VX Sampling Systems Only)	
Change out Frequency:	28 days for < 1.0 VSL 7 days for > 1.0 VSL
DAAMS Requirements	
Station Number (Common Stack):	TEN 093AG, TEN 093BG (GB)
	TEN 092AV, TEN 092BV (VX)
	TEN 011AH, TEN 011BH (HD)
Station Number (Filter 101 Mid-Bed):	TEN 094G (GB)
	TEN 094V (VX)
	TEN 094H (HD)
Station Number (Filter 102 Mid-Bed):	TEN 094GS (GB)
	TEN 094VS (VX)
	TEN 094HS (HD)
Reporting Limit	0.5 VSL for each agent

Table 22-5
Area 10 HVAC Filters Support Igloo 1631and 1632 Operations

Maximum Aspiration Time:	12-hours for each agent
Support Equipment	
NOx Filter (Required for HD Sampling Systems Only)	
Change out Frequency :	≤ 14 days
V/G Pad (Required for VX Sampling Systems Only)	
Change out Frequency:	Mid-beds - 28 days for < 1.0 VSL; 7 days for > 1.0 VSL Stack - Daily

a. Requirement Specific to Monitoring Location

1. Agent monitoring is required for past agent campaigns in the stack and mid-beds for the Area 10 Igloo Carbon Adsorption Filtration Systems until the carbon filters have been replaced.
2. The online Area 10 Filter midbed locations (i.e., primary filter and backup filter) shall have the DAAMS sampled and analyzed daily.

b. Termination of Monitoring:

Monitoring may be terminated when both igloos and associated equipment within the igloos have been decontaminated sufficiently to achieve a WPL monitoring level; and 2) the filter system activated carbon banks that have been exposed to chemical agent have been removed from the filter system (see Condition VIII.D.7.5.c).

Table 22-6
ATLIC Facility HVAC Filters

Monitoring Configuration	1 NRT Monitor and standby monitor for each agent type (GA and L)
	1 Confirmation/Historic DAAMS for each agent type (GA and L)
NRT Monitoring Requirements	
Station Number (Common Stack):	TEN 750AK, TEN 750BK (GA)
	TEN 750AL, TEN 750BL (L)
Alarm Level:	0.5 VSL for GA; 0.4 VSL For L
Challenge Frequency:	Once per 12-hour shift (L) Daily (GA)
Support Equipment	
V/G Pad (GA Sampling Systems Only)	
Change out Frequency:	28 days
DAAMS Requirements	
Station Number (Common Stack):	TEN 750AK, TEN 750BK (GA)
	TEN 750AL, TEN 750BL (L)
Reporting Limit	0.5 VSL for GA; 0.4 VSL For L
Maximum Aspiration Time:	12-hours for each agent
Support Equipment	
V/G Pad (GA Sampling Systems Only)	
Change out Frequency:	28 days

Requirement Specific to Monitoring Location

a. All DAAMS removed are required to be analyzed; Historic DAAMS become Confirmation DAAMS when NRT monitors alarm.

b. Termination of Monitoring:

1. Monitoring may be terminated when the final HVAC Filter Unit has been successful closed in accordance with the Decommissioning Work Package.
2. The Division of Solid and Hazardous Waste shall be notified when monitoring is terminated.