Subpart X
General Technical Issues

(Part I)

Facility General Information

- The purpose of this information is for you to become familiar with the facility.
- General information at all Subpart X facilities is described in 40 CFR §270.14 and Part 264, Subpart B.
- The information relates to all types of treatment facilities.

General Information includes:

ID Number/description
Waste analysis
Inspections
Ignitable/reactive/incompatible requirements
Locations standards
Construction quality assurance
Preparedness & prevention
Contingency plan
Corrective action
Financial assurance
Notices
Security
Personnel training
Record keeping
Closure/post-closure
Waste minimization

Application Review

- The areas that are more unique to Subpart X units include:
  - Closure/post-closure (clean closure may be difficult for OB/OD)
  - Ignitable/reactive/incompatible requirements (OB/OD sites must consider larger safety zones from the boundary due to volume of wastes)
  - Locations standards (ecological risk is considered)

The following sections should be treated like any other treatment facility:

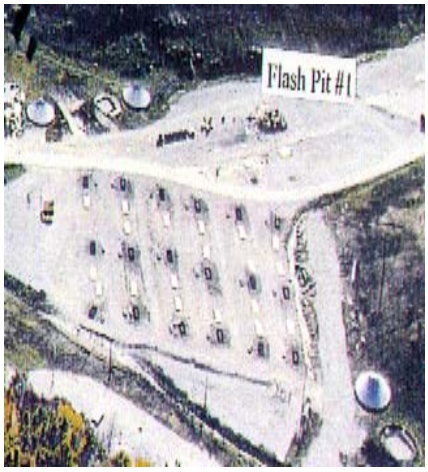
ID Number/description
Notices
Inspections
Financial assurance
Construction quality assurance
Preparedness & prevention
Corrective action
Contingency plan
Record keeping
Waste minimization
Security
Personnel training

Facility Mission

- A general description of the facility should be included in the application to understand facility operations and manufacturing.
- Example for a military facility: Ammunition renovation, storage, demilitarization, and the design, fabrication, and testing of ammunition equipment. New activities include rebuilding and refurbishing of military equipment.

The mission of the facility should describe the general operation of the facility in a manner that the general public will understand what is happening at the facility.

Location



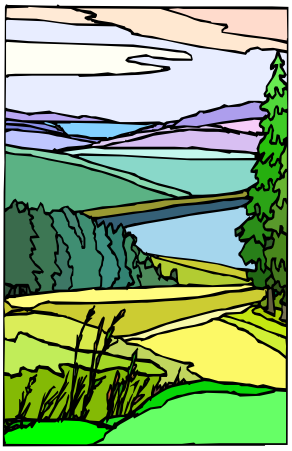
- Acreage of the facility and the unit if OB/OD.
- A general location map is provided in a figure.
- Location of the Subpart X unit(s) on a map.
- Maps should include treatment area and all units.
- A variety of scales may be necessary.

Because some facilities are extremely large, several maps at different scales may be necessary to show features of the facility. Even though the regulation requires a certain scale, the permit writer needs to be flexible requiring the detailed scale map of the unit versus the facility in these cases. Just make sure all the features required are shown on the maps.

Example: Permitting Subpart X Area versus Unit by Unit

This is an example of a facility that was permitted as an open burning area with several types of burning units within the area. (Site is Naval Surface Warfare Center, Crane, Indiana)

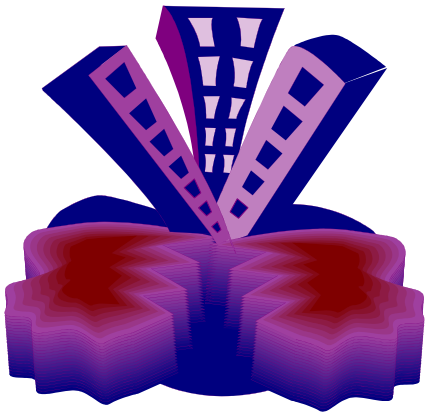
Land Use: Entire Facility Coverage is Necessary On-site and Off-site



- Risk assessments will need detailed information on populations and ecology off-site, especially down wind and down gradient of the unit being permitted.
- Other geologic locational issues should be considered, including rock and mud slide areas, and wetland locations. Volcanic and karst areas are not preferred.

Seismic Standard

- 40 CFR §264.18 regulations apply.
- No faults within 200 feet of the facility that has had Holocene displacement.
- Fault systems should be identified, even if not active recently, since in some locations new activity could occur.



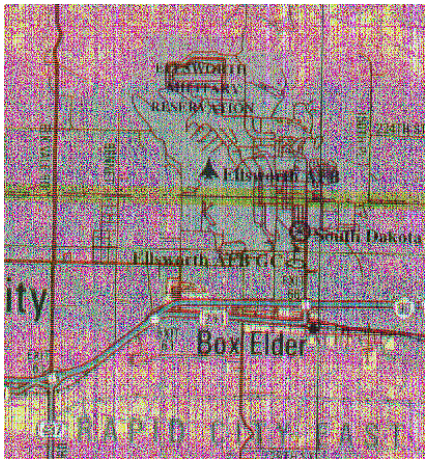
The United States Geological Survey is a source of information on earthquake activity in an area of the United States.

Floodplain Standard

- A floodplain map must be provided. The map can be incorporated into other facility maps. Floodways should be considered in designs.
- Any well-defined channels existing in the vicinity of the unit that would carry or direct water to or through any of the hazardous waste management units (HWMUs) should be clearly identified.

Floodplain and floodway locations can be checked through the local county surface water agency.

Topographic Map



- All 40 CFR §270.14 requirements must be met.
- Scales of the maps may be dependant on the size of the facility.
- Understanding topography is important for the risk assessments and air models.

Precipitation for area.

Types of soils.

Run-on and run-off patterns.

Location of any well (monitoring, process, drinking, other uses).

Location of any springs, karst zones.

Location of any headwaters or intermittent streams near the unit.

General drainage patterns at the unit, and the surrounding area, including gradients.

Location of any wetland vegetation.

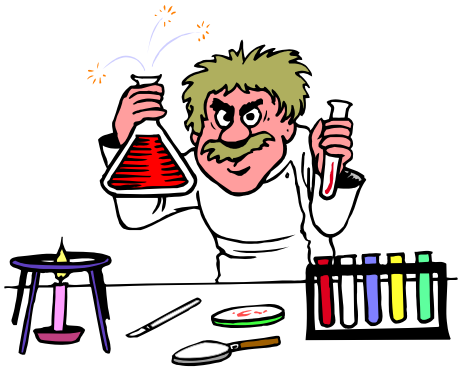
Location of closest water bodies.

RCRA Regulated Units At The Facility

- Every type of unit should be listed (storage, treatment, disposal).
- If permitted units already exist they should be identified.

The application should describe what units already have operating or post-closure permits. The unit seeking a permit should have other regulatory permits identified, such as Clean Water Act or Clean Air Act permits.

Waste Analysis Plan and Waste Characterization



The permittee may characterize its wastes either through analytical procedures or by generator knowledge.

Generator knowledge may be necessary for munitions that are reactive and no testing procedures may exist.

When generator knowledge is used, the permittee should document how those decisions were made for auditing purposes during an inspection. This information typically will relate back to the process of how the waste was generated.

Off-Site Waste

- Any off-site wastes accepted for treatment at the facility need to be included in the application. Waste characterization is required.
- Waste Analysis Plans (WAPs) need to anticipate any and all waste types. Otherwise, the WAP will have to be modified prior to acceptance of the waste.

If wastes are only accepted from certain sources, such as other military bases or State emergency response units, then they should be identified, and the permit should limit these sources. Otherwise, the facility would be considered a commercial treatment facility and would be able to accept those permitted waste types from anyone.

Waste Appropriate For Treatment

- Open burning (OB)/open detonation (OD) and popping furnace (ammunition) operations at the facility should be limited to the treatment of munitions (energetic wastes).
- Federal Explosives Law and Regulations, BATF (2000) identifies a list of explosive materials.

ATF P 5400.7 (09/00) Federal Explosives Law and Regulations – 2000 is available on the Bureau of Alcohol, Tobacco and Firearms website (www.atf.treas.gov).

§55.23 of this guidance provides a list of explosive materials.

Munition Components

A complete munition and/or ordnance item includes several components. All parts need to be described in the Waste Analysis Plan to support the air and risk assessments. Example:

- Typical components may include:
  - a projectile,
  - a propellant charge, and
  - a primer that ignites the propellant.
- Other components frequently include:
  - a casing,
  - fuzes, and
  - bursting charge.

The permittee should supply as complete a listing as possible of all the components that go into a munition that may be treated in a unit. These "extra" parts may be drivers in the risk assessment.

An example would be for Naval Surface Warfare Center, located in Crane, Indiana. It was the metal casing components that emitted lead and manganese during open detonation that limited the operational treatment rates. Metals and not explosives were the key to ecological risk in that case.

Reactivity: DOT vs. U.S.EPA Regulations

- The DOT regulations were updated to include DOD hazard classes and are in effect for transportation.
- U.S. EPA's reference to DOT's classification system has not been updated. (see 40 CFR §261.23(a)(8)).
- In order to determine reactivity, the permittee can not use the new classification system at this time (see FAXBACK 13735).
- Criteria for determining reactivity is listed in 40 CFR §261.23(a)(1) through (7).
- There is no approved EPA test method for reactivity at this time.

64 FR 27266 (May 16, 2001) explains that listed wastes which are solely listed for a characteristic are not listed if they do not exhibit the characteristic at the point of generation. This affects a number of listed wastes which were listed solely on the basis of reactivity, including:

- K044 Waste waste treatment sludges from explosives
- K045 Spent carbon from treating explosive waste waters
- K047 Pink/red water from TNT operations
- P081 Nitroglycerine
- P112 Tetranitromethane
- P009 Ammonium Picrate
- U096 Cumene hydroperoxide
- U189 Sulfur phosphide

Class 1 Explosives

- The waste is one of the following Class 1 explosives as defined by the Department of Transportation in 49 CFR §173.50, 1994 ed.
- The waste is readily capable of detonation or explosive decomposition or reaction at standard temperature and pressure.

The following series of slides identifies DOT's classification of explosives. The EPA Classes A, B and C are shown in reference to the new DOT classification. The DOT rules are in effect and explosive handlers, including waste explosives, must comply with the new rules for transportation.

The slides give a pictorial view of what the explosives look like.

Class 1 Explosives (cont'd)

- The waste is considered a forbidden explosive as defined by 49 CFR §173.54.

Link to the http://dot.gov web site for the list of forbidden explosives.

This list includes illegal fireworks such as M-80s.

Class 1 Explosives that are Appropriate for Treatment by OB/OD are:

- Division 1.1 (Class A) - consists of explosives that have a mass explosion hazard. A mass explosion hazard is one that affects almost the entire load instantaneously.

Examples: dynamite, detonator (cap) sensitive emulsions, slurries, water gels, cast boosters, mass detonating detonators.

Class 1 Explosives that are Appropriate for Treatment by OB/OD are (cont'd):

- Division 1.2 (Class A or B) - consists of explosives that have a projection hazard but not a mass explosion hazard.

Examples: Certain types of ammunition, mines, grenades.

Class 1 Explosives that are Appropriate for Treatment by OB/OD are (cont'd):

- Division 1.3 (Class B) - consists of explosives that have a fire hazard and either a minor blast hazard or a minor projection hazard or both.

Examples: Certain types of fireworks, propellants, and pyrotechnics.

Class 1 Explosives that are Appropriate for Treatment by OB/OD are (cont'd):

- Division 1.4 through 1.6, explosives and blasting agents.

Examples: detonators, consumer fireworks.

Handling of Free Liquids (Run-on) in Open Burning

- Subpart X units can be designed to handle munitions with free liquids. These are typically wastes that need to be transported wet for safety reasons, decanted in the Subpart X unit designed similar to a tank, and burned when dried sufficiently.
- In the event of free liquids in the waste by precipitation, SOPs must be created to explain how the contact water will be managed.

Handling Precipitation:

Corrective action methods to resolve free liquids should be in an SOP.

Removal method must be described: siphoning, draining, decanting, solidification, etc.

Effect of precipitation on the treatment process and the waste needs to be described.

The liquid must be containerized in an approved liquid container (i.e., steel closed-top drum with threaded bung and special liner, or ABS, polyurethane, or similar inert plastic drum with threaded bung).

Management of Wastes with Free Liquids in Open Burning

- Sludges with free liquids that have to be transported for safety reasons in a semi-solid form need to be managed in a dewatering style of burn pan.
  - Dewatering units must meet the secondary containment requirements of tanks.
  - The units also must be able to withstand the effects of burning.
- Secondary containment would be required if liquid bearing wastes are allowed.
- Open burning of solvents is not preferred due to the creation of dioxins in the thermal process.

Free Liquids are Prohibited in OD

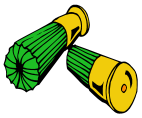
Photo of the surface of the Open Detonation range at Jefferson Proving Grounds, located in Indiana.

Munition Family Groupings

- Munitions and ordnance items that may be treated at the OB/OD unit can be grouped into consolidated families.
- These families are based on EPA, 1992 Special Studies Report and are explained in the following slides...

If the permittee wants to develop its waste analysis plan (WAP) based on munition family groupings, you still need to have identification of the components related to that family.

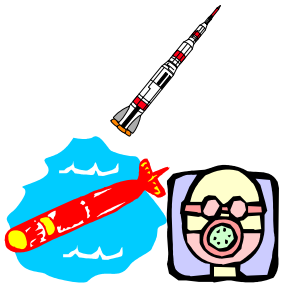
Munition Families



- Small arms, fuzes, and primers
  - Small arms ammunition less than or equal to 50 caliber, all types (not classified as a hazardous waste and therefore not candidates for OB/OD)
  - Fuzes, all types
  - Primers, squibs, detonators, and other devices used to initiate detonation
- Smokes and dyes
- Pyrotechnics

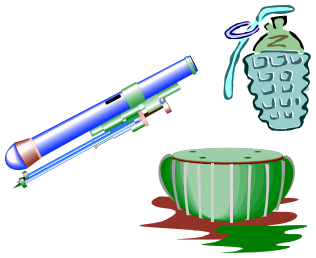
Munition Families (cont'd)

- High-explosive loaded projectiles
  - Gun ammunition greater than 50 caliber and less than or equal to 40 mm, all types except smoke, riot control agents, or chemical
  - Gun ammunition greater than 40 mm, all types except smoke, riot control agents, or chemical
- Rockets and missiles
- Bombs, torpedoes, and depth charges
- Riot control agents



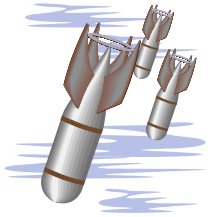
Munition Families (cont'd)

- Bulk explosives (except fuzes, detonators, and related items)
- Grenades and mines (all types except smoke, riot control agents, chemical, or fuzes)
- Navy gun ammunition (all types except propellant charges)
- Special function projectiles
- Propellants and propellant charges

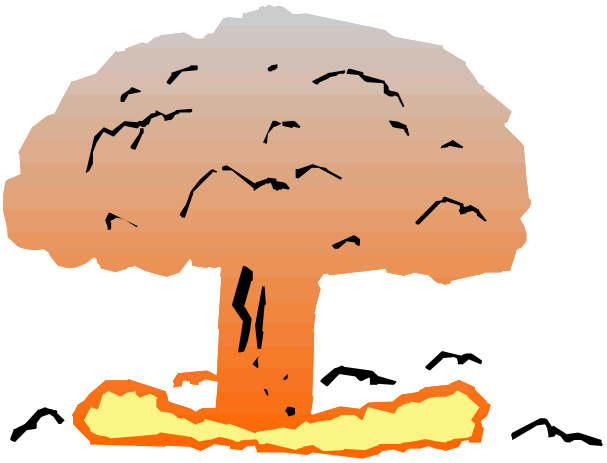


Munition Families (cont'd)

- Inert loaded items (not energetics and not appropriate for OB/OD)
- Miscellaneous items
  - Miscellaneous items (primarily related to aircraft ejection systems)
  - Miscellaneous items (primarily not related to aircraft ejection systems)



Munitions Prohibited From Treatment



Open Detonation of Emergency Response Wastes/Prohibitions

- A description of materials that are absolutely prohibited may be listed in the permit application and/or the permit.
- Example: OD of the following munitions does not occur, except in emergency situations as approved by the installation commander.
  - Hexachloroethane (HC),
  - White phosphorus (WP),
  - Depleted uranium (DU), and
  - Riot control munitions are prohibited.
  - Colored smoke,
  - Bulk red phosphorous (RP),

If the permit writer decides, based on the risk assessment or other information, that certain wastes need to be prohibited, the permit writer can list these prohibitions in the permit.

An example would be a permittee requesting to treat explosive contaminated solvents. The permit writer could justify not allowing treatment of this waste based on the potential dioxin creation that could not be controlled and would add significant risk to the unit.

Open Burning Prohibitions

- A description of materials that are absolutely prohibited may be listed in the permit application or the permit.
- Example: OB is not permitted for the following wastes:
  - Spent halogenated solvents and non-halogenated solvents that are not constituents in an explosive
    - (i.e., diesel fuel, gasoline, paint thinner, trichlor, solvents, etc.).
  - Hexachloroethane (HC),
  - Colored smoke, and
  - Riot control munitions (CS, CN)

Open Burning Emergency Response Waste/Prohibitions

- If emergency response treatment occurs at the facility these materials must be incorporated into the permit application. This includes use of a range by law enforcement or other agencies under RCRA exemptions or emergency permits.
- Example: OB of the following munitions will be allowed only for emergency destruction purposes and by authorization of the installation commander.
  - White Phosphorus (WP),
  - Red Phosphorus (RP),
  - Class 1.4g Consumer Fireworks

Wastes Characterization and Analysis for Mechanical Units

- Most analysis will be similar to treatment facilities such as incinerators or tanks.
- Special consideration needs to be made concerning safety of crushing and shredding effects on the wastes, especially if combustible.
- Atmospheres need to be monitored.

Waste analysis needs to address what goes in and what comes out.

Compatibility during the treatment process needs to be considered, especially if residues remain in the unit during different treatment events.

Watch for build up of gases during the treatment process.

Watch process rates so that waste does not build up to cause an unusual reaction.

Waste Characterization for Other Subpart X Units

- On any type of unit, the incoming waste needs to be defined for its constituents. Treatment residues also need to be defined. Especially if treatment is rendering the material non-hazardous.
- Special consideration for vitrification needs to be made since sampling of the vitrified material might have problems showing the treatment is effective, due to the analysis process. CERCLA projects should be referred to for waste analysis plan details.

Land Disposal Restrictions (LDRs)

- Munitions treated at OB/OD will tend to have the characteristics of reactivity, or ignitability and possibly toxicity characteristic for lead. The Land Disposal Restrictions (LDR) treatment requirements listed in 40 CFR §268.40 for explosives subcategory D003 wastes is deactivation and attainment of the treatment standards listed in 40 CFR §268.48.
- Underlying hazardous constituents that may be present in the wastes treated are listed in 40 CFR §268.48.

LDRs (cont'd)

- OB/OD achieves the LDR treatment standard for deactivation.
- LDR standards for mechanical or other Subpart X units should be looked up in 40 CFR §268 for the particular waste type.
- Geologic repositories need to consider reactions of spilled wastes on the formation.

Quality Assurance

- Test Methods for Evaluating Solid Waste, Physical/Chemical Methods SW-846, 3rd Edition (SW-846), and the most recent edition will be used.
  - Method 8330 is used for explosives
  - Other specific explosive methods need to be approved by the Agency chemistry/QAP team member.
- Strict chain-of-custody procedures that conform with the U.S. EPA requirements contained in SW-846 will be applied.
- U.S. EPA Regional or State QAPs may be required.

Unit Designs

Open Burning Unit Design

- Burning units (pans, cages, pits, dewatering tanks)
  - Blueprints of unit and containment (all dimensions, seals, welding, fabrication details, etc.)
  - Construction materials (1 inch thick steel is typical)
  - Maximum number to be used in an area
  - Maximum number treating during any period (at least half the total number to have alternating pan scenario)
  - Secondary containment

Typical Pan Design

- A schematic of a typical burn pan
- Material: steel
- Cover: steel
- Raised or placed on the ground
- Placed in groups or alone
- Size varies

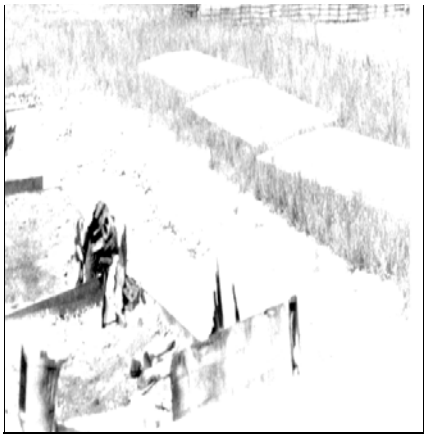
In the photo: each pan is elevated approximately 1 foot. The position of the legs of the structure allows for easy inspection of the bottom of the pan and the surface of the ground beneath it.

In the photo: the burn pan is situated above ground on two I-beams to allow visual inspection for leaks.

Not all pans are raised.

Secondary Containment

- Many burn units do not have secondary containment.
- The permittee will give excuses why not to have it.



Examples of excuses:

There is no need to construct secondary containment in the OB area to be fully protective of the environment.

Any ejecta is collected during the post-burn inspection and is reburned the same day.

Secondary Containment (cont'd)

- Secondary containment is preferred at all burning units to control wind dispersal, popout, and immediate fall out.
- Construction types:
  - concrete pads
  - synthetic liners with clay overlays

Secondary containment at dewatering burn units must meet the tank standards.

Secondary containment can be enforced if soil sampling shows that explosives are entering the soil. Continued deposition can cause a risk. Since explosives are not naturally occurring, an impact from the unit is clear. It will pose a human or ecological risk based on the concentration. The unit must be designed and operated to provide protection to the environment, concentration is not a key factor (see 40 CFR §264.601).

Open Burning Leak Detection

- Measures to prevent a release from the burning device by the development of a leak, a break, or a crack.
- Procedures if deterioration is found.

Release prevention:

Performance of a pre-burn and post-burn integrity inspection.

Placement of the pans above ground on two I-beams to allow visual inspection for leaks.

Performance of structural integrity tests of steel pans or other burning containment devices. Tests results should be submitted or available for review.

Deterioration: The burning device is removed from use. Damaged burning devices are repaired prior to being returned to use.

Open Detonation Unit Design Typical Types

- Soil area or concrete structure
- Soil areas
  - Pits dug as needed.
  - Maximum number of pits.
  - Soil coverage, if any.
  - Topographic map needs to show maximum number of pit locations, safety zones and fragmentation zones, distances between pits.
  - Chart of size of pits based on wastes to be detonated.

Open Detonation Unit Design Typical Types (cont'd)

  - Tracking system what was detonated where?
  - Geologic description of the area including any saturated zones, soil types, anticipated effect of detonation vibrations
- Concrete structures or silos
  - Used for detonating munitions such as missiles
  - Blueprints of the design must be included, illustrating seals, holding devices, covers, etc.
- Locate the OD unit far from public roads and inhabited housing.

Earth Cover?

- Charts calculating earth coverage should be included in the application.
- This data is incorporated into risk management for exposure.

- Example:
  - 0-50 lbs. NEW (including donor) requires no earth cover
  - 51-750 lbs. NEW (including donor) requires 15 feet of earth cover.

Example Treatment Without Burial

Table. Distances from above ground detonations to unprotected personnel

Material to detonate	Blast distance	Fragment/ debris
Non-frag explosive material	D = 328 W**1/3	1,250 feet
Bombs and projectile with a diameter less than 5 inches	D = 328W**1/3	2,500 feet
Bombs and projectiles with a diameter of 5 inches or more	D = 328W**1/3	4,000 feet
All other ammunition	D = 328W**1/3	2,500 feet

In lieu of the formula specified above, column A of the following table may be used for above ground detonations.

This table is an example from a Utah permit application.

Example Treatment Without Burial (cont'd)

Table. Required blast overpressure protection distances to nonessential personnel

NEW in lbs.	Distance in feet for various burial depth								
	0 FT COL A	1 FT COL B	2 FT COL C	3 FT COL D	4 FT COL E	5 FT COL F	7 FT COL G	10 FT COL H	15 FT COL I
1	328	79	16	16	16	16	16	16	16
5	561	261	104	41	28	28	28	28	28
10	707	398	191	92	44	35	35	35	35
20	890	464	326	182	102	57	45	45	45
30	1019	566	368	260	157	94	51	51	51
40	1122	650	439	329	208	131	62	56	56
50	1208	721	501	349	255	166	71	60	60
100	1522	984	737	553	414	326	165	76	76
150	1743	1171	911	708	550	428	256	105	87

This example is from a Utah permit application.

This table addresses the required blast overpressure protection distances to nonessential personnel from ranges used for detonating ammunition for the purposes of demilitarization, demonstration, or explosives ordinance disposal.

OB On The Ground Surface Where Unit Incorporates Soil As Part Of Unit

- U.S.EPA does not approve of this method. (EPA 1997 Guidance)

Mechanical Unit Designs

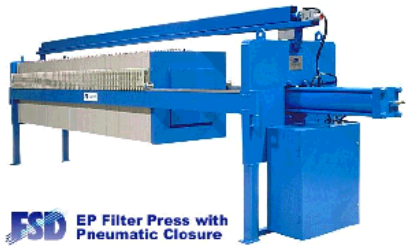
Example: Sludge Dryer

- Special consideration for seals and welding for units with high vibrations.
- Units handling liquids need to address containment during the mechanical process and have secondary containment for failures.
- Air emissions and controls need to be addressed.

Detailed blueprints must be included in the permit application.

Mechanical Unit Designs (cont'd)

Example: Filter Presses



- Presses, shredders and crushers all need to have units attached or placed properly to catch residual materials.
- Designs should consider the movement of the material in order to prevent releases (e.g., plastic catch cloths)

Other Subpart X Unit Designs

- Miscellaneous units cover a unique range of processes (including microwaves, oxidation, repositories, etc.).
- Design blueprints must be included for all types.
- Designs should help explain the function of the unit and show equipment and processes to prevent releases to any environmental media.

Treatment Spacing

- Applies to OB/OD.
- Spacing requirements could also apply to geologic repositories.
- Safety of the treatment process dictates compliance conditions.

Burning Device Spacing

- Distances physically apart from each other.
- Distance of safety zone.
- Distance of devegetation.

Treatment spacing also needs to be described.

Pans are arranged so that the propellants burn in the opposite direction from which the prominent wind direction is blowing.

Example: pans are approximately 60 feet apart.

Detonation Spacing

- The permittee should justify the distance between pits being used during a single event.
- Detonation effects should also be described using distances
  - Proximity to closest windows, structures, etc.

Wind Dispersion

(applies to OB/OD, units with outdoors exposures)

Controls to Prevent Wind Dispersion of Ash and Other Residue

- Waste Type:
  - Wind dispersion of these energetic wastes is not a problem, due to their physical form.
  - Propellants are generally in the form of pellets,
  - Other energetic materials are contained in casings.
- Operational Weather Limits

Controls to Prevent Wind Dispersion of Ash and Other Residue (cont'd)

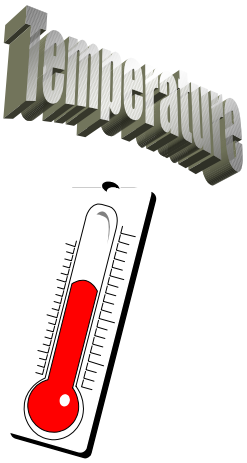
- Unit Construction:
  - The high sides of the burn pan reduce the potential for wind erosion during pre- and post-burn conditions when the cover is off.
- Unit Management:
  - The cover of the burn pan is replaced after completion of the burn (after a wait time for safety reasons).

Wind Control Guidance

- EPA has reported the efficiency of barriers with a 50% porosity to control wind-blown dust to range from 0% to about 90% based on limited tests (USEPA, 1988c).
- The zone of protection provided by test wind barriers was approximately 10 times the barriers' height.
- Solid barriers that have a 0% porosity are expected to provide an even greater control efficiency.

Operational Weather Conditions
(applies to all outdoor units)

Rain and Snow



Operation Weather Conditions

- Prior to conducting OB or OD, or outside treatment in other Subpart X units, certain meteorological conditions must be met.
- Acceptable meteorological conditions for conducting treatment are in the permit application and in the SOP. Tables may be used to condense the information. These can easily be referenced as permit conditions.

Example of Meteorological Parameters

Parameters	XXX Requirement
Wind speed for propellant burn	3-20 mph/gusts to 30 mph
Wind speed for detonation	3-15 mph/gusts to 30 mph
Cloud cover (see note)	<80%
Ceiling	>2,000 ft.
Precipitation	<75% chance
Snow	
Thunderstorm/electrical storm	<50% chance
Clearing index	>500
Visibility	1 mile

Note: Cloud cover and ceiling limits are in conjunction with each other. Operations shall not be carried out when the cloud cover is greater than 80% and the cloud ceiling is less than 2,000 ft.

Change:_____ Date: _____

Fig. 4. Meteorological Parameters for Triple X Facility

This is an example from a Utah permit application.

Weather Data Collection

- Meteorological data should be obtained from on-site and within the unit boundary. Nearby weather stations can be assessed but local conditions are critical especially in complex terrains.
- Data needs to be collected as a part of the permit application in order to complete the air and risk assessments and to establish operational weather restrictions.

A weather station should be placed at the unit, and located in an area to address any complex terrains.

Weather conditions such as wind direction and speed, air temperature, humidity, precipitation, cloud coverage, ceiling, and visibility need to be collected to determine a “go” or “no go” for treatment. These parameters are fairly uniform between sites but are also based on site-specific conditions of the type and amount of treatment allowed. Some sites may have tighter weather provisions if there are noise concerns.

Weather Determination

- A determination is made prior to treatment time whether to cease operations or to continue based on these meteorological data.
- This information is recorded on a form shown in an SOP figure. (Example on next slide)
- The treatment operations are determined “GO” or “NO GO” by weather forecasts and site weather conditions.

Example of Weather Determination Form

	Forecast for Today		Today's Actual Conditions at:				
Area for	Loc.	Loc.	Loc.	Loc.	Loc.	Loc.	Loc.
Information received from	NWS/OBT	NWS/OBT	NWS/OBT	NWS/OBT	NWS/OBT	NWS/OBT	NWS/OBT
Projected time of detonation	Time:	Time:	Time:	Time:	Time:	Time:	Time:
Wind speed							
Wind direction surface							
Wind direction 10,000 ft.							
Cloud cover							
Ceiling							
Temperature							
Inversion height							
Clearing index							
Visibility							
Precipitation problem							
Thunder problem							

General Forecast:_____

Forecaster:_____ Sources_____

Demil. Planner_____ Go_____ No Go _____

“GO” For Weather

When forecasts indicate a “GO” condition, treatment proceeds.

"NO GO" for Weather

- If the weather conditions deteriorate a determination is made whether to continue the treatment operation; with the munitions already in the pan or to leave the munitions in the pan and burn it the following day, or if there are munitions already in the detonation range.
- If the wastes are held over until the next day, the Environmental Management Division should be notified so that it can brief the state permitting and inspection personnel about why the munitions were left untreated.
- Under no circumstances is propellant placed in open burning or open detonation after weather conditions have deteriorated.