



HDS Facility Expansion Engineering & Permitting

HERITAGE DISPOSAL & STORAGE, LLC

DWIGHT MILLER, PARAMETRIX

MARK VESS, HDS

May 24, 2016

PRESENTATION OUTLINE



1. Factors considered in this presentation
2. Additional factors
3. Permitting/approvals
4. Project schedule
5. Q&A

FACTORS BEING DISCUSSED



#2 The function and management of the facility

#3 Technologies that will be used

#5 Environmental implications

Related Factors:

#4 Site characteristics

#8 Enforcement and regulation

#2 THE FUNCTION AND MANAGEMENT OF FACILITY



- Facility management
- Wastes to be handled
- Relationship of treatment technology to the overall site master plan
- Plans for future expansion

FACILITY MANAGEMENT



- Owned and operated by Heritage Disposal & Storage, LLC
- Mark Vess - Founder and President
- Founded in 2003 at the Former Cornhusker Army Ammunition Plant, Alda, NE
- Facility operations follow strict federal (Army) requirements for safety and security

FACILITY MANAGEMENT (CONT.)



- Explosives materials property receipt
- Storage (ATF / Nebraska certified facilities)
- Inventory / accountability controls
- Destruction / Material Documented As Safe (MDAS) recycling certification
- Photographic validation

WASTES TO BE HANDLED

- Primary: HC-Smoke (hexachloroethane)
- Future: Related military smoke munitions (colored)
- Law enforcement and civilian materials
- Each will require air quality permit modification

OVERALL SITE MASTER PLAN



- 900-acre facility with controlled access
- High security / 24-hour armed guard
- ATF Explosive Manufactures License
- 16 M Net Explosive Weight (NEW) storage in 60 licensed bunkers
- Ammunition decommissioning (small arms)
- Hydrolysis facility (fireworks)

PLANS FOR FUTURE EXPANSION

- Facility sized to handle 15,000 tons/yr.
- Approximately 50% greater than Army contract
- Facility's business plan based on the proposed facility capacity
- Potential to add second thermal treatment line using same air pollution control equipment
 - Provide feedstock flexibility
 - Does not significantly increase capacity

#3 TECHNOLOGIES THAT WILL BE USED



- Receiving/storage
- Pre-processing
- Thermal treatment
- Air pollution control (APC)
- Recycling and residuals disposal
- Incorporate existing facilities and processes

THERMAL TREATMENT AND APC

- Rotary kiln
 - 12-foot diameter
 - 5 tons/hr capacity
 - Indirect fired
 - Ram feeder with air lock
- After-burner
 - Sized to rotary kiln
 - Direct fired
- Bottom ash removal

AIR POLLUTION CONTROL



- Direct-fired after-burner
- Scrubber
- Mist Eliminator
- Absorption Tower
- Stack – 120'

RESIDUALS RECYCLING AND DISPOSAL

- Up to 40% recyclable metals
- Beneficial reuse – based on analytical study
 - Bottom ash – structural fill
 - Fly ash (from APC) – cement additive
- Off-site landfill disposal
 - Solid waste landfill – if not hazardous
 - Hazardous waste landfill
- Reuse water and pond evaporate

#5 ENVIRONMENTAL IMPLICATIONS



- Surface water
- Groundwater protection
- Air emissions
- Meet and exceed all environmental

SURFACE WATER

- All active operations on paved surfaces
- Most operations indoors/under cover
- Process water – quench and APC
- Treatment/evaporation of process water
- National Pollution Discharge Elimination Permit (NPDES)
 - Wastewater treatment and discharge
 - Surface water general permit

GROUNDWATER PROTECTION



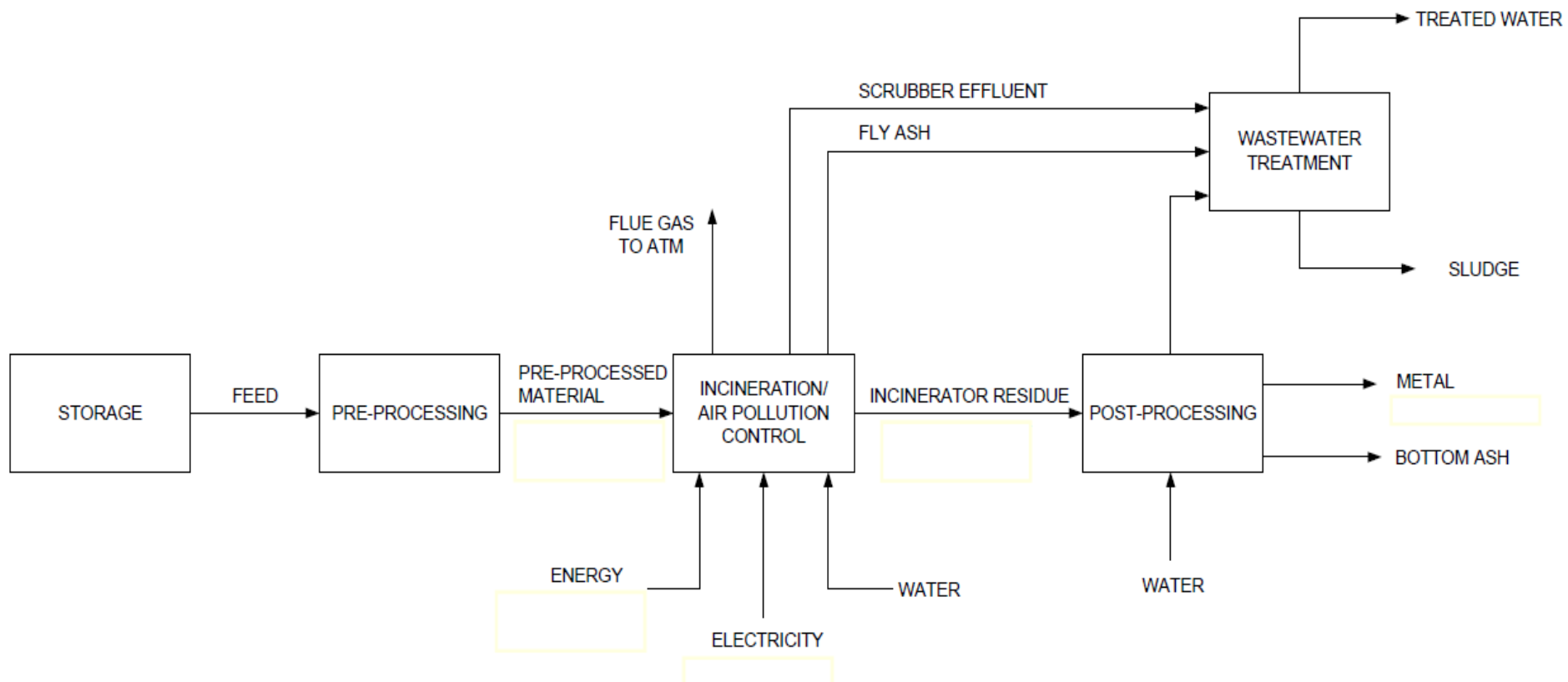
- Fully paved active operations areas
- No onsite landfilling of residuals
- Fully lined process water and surface water ponds
- Active spill prevention and cleanup protocols under NPDES

AIR EMISSIONS



- Permitting under NDEQ
- Using best available control technology (BACT)
- Process engineering will define emissions and identify final BACT equipment
- Air modeling will determine air impacts

Block Flow Diagram



DRAFT DESIGN BASIS – THERMAL TREATMENT

Incinerator		
Ram feed system		Semi-continuous
Minimum batch size (NEW)	lbs	15
Maximum batch size (NEW)	lbs	25
Items per hour		
Feed capacity (Gross)	lbs/hr	
Average feed, NEW	lbs/hr	
Average feed, non-NEW	lbs/hr	
Incinerator type		Indirect-fired
Drum dimensions	feet	12'd x 18'
Maximum operating temperature	°F	2,600
Drum burner capacity	MMBTU/hr	20
Incinerator residence time	minutes	
After burner type		Direct-fired
Afterburner chamber size	feet	12'd x 16'
Afterburner capacity	MMBTU/hr	5
Afterburner residence time	seconds	>2
Destruction and removal efficiency	%	99.99
Air pollution control equipment		Venturi scrubber
Air pollution control equipment		Mist eliminator
Air pollution control equipment		Absorption Tower
Stack dimensions	feet	8'd x 120'
Draft fan	CFM	26,000
Electricity requirement	kW	2,500

CURRENT WORK ACTIVITIES



- Site plan
- General arrangement of equipment and utilities/infrastructure
- Process design basis
- Performance of thermal treatment equipment
- Process flow diagram
- Mass and energy balance

PERMITTING/APPROVALS



1. Local (Hall County)

Land-use, building, fire, electrical, flood plain

2. State (NDEQ)

Site Review Committee Report

Air Quality, NPDES, RCRA Subtitle C TSD/DF Permit

3. Federal (ATF, DOD, EPA)

NEXT STEPS



1. Data/process modeling (determine emissions for air permitting)
2. NDEQ air permit pre-application meeting
3. Test facsimile material (Hazen Research)
4. Mass and energy balance (MEB) for final process engineering and equipment specification
5. Permit application and submittal package
6. Piping and instrumentation diagram (P&ID), and facility and site design

SCHEDULE



- Site Review Committee (SRC) – 180 days from notice of intent (April-October)
- Hall County review/decision – Up to 180 days from SRC Report
- Permit package – submit 8 weeks from SRC Report
- Final facility and site design – spring 2017
- Construction – begin summer 2017
- Production – begin summer/fall 2018



Questions?

DETAILED HDS SCHEDULE

Item	Schedule Item\Month	Dates	Apr-16	May-16	Jun-16	Jul-16	Aug-16	Sep-16	Oct-16	Nov-16	Dec-16	Jan-17	Feb-17	Mar-17	Apr-17	May-17	Jun-17	Jul-17	Aug-17	Sep-17	Oct-17	Nov-17	Dec-17	Jan-18	Feb-18	Mar-18	Apr-18	May-18	Jun-18	Jul-18	Aug-18		
1	Contract Award	15-Jan-16																															
2	NDEQ Initial Meeting for RCRA Permit	Nov 15-Jan 16																															
3	Submit Letter of Intent to NDEQ	Apr 16	█																														
4	NDEQ Charters Specific Site Review Committee	Apr 16	█																														
5	Fact Finding, Review, Report	Apr 16-Oct 16	█	█	█	█	█	█	█																								
6	Hall County Review	Oct 16 - Mar 17							█	█	█	█	█																				
7	RCRA Permit 1st Public Meeting	Oct 16							█																								
8	RCRA Permit Application Preparation	Aug 16-Dec 16					█	█	█	█	█																						
9	RCRA Permit App. Review by NDEQ with 1 Revision Round	Jan 16-Sep 17											█	█	█	█	█	█	█	█	█	█											
10	Permit Drafting by NDEQ and Public Review	Jul 17-Sep 17																	█	█	█												
11	ACO Plans and Submissions Acceptance	Jan-Apr 16	█																														
12	HC Smoke Canister Samples Received for Testing	TBD																															
13	Air Emissions Testing (third-party lab)	TBD																															
14	Civil Design and Local Permitting	May 16-Dec 16			█	█	█	█	█	█	█																						
15	Process Final Equipment Design	Aug 16-Dec 16					█	█	█	█	█																						
16	Prepare NDEQ Air Permit	Sep 16-Oct 16						█	█																								
17	Submit NDEQ Air Permit and NDEQ Review	Nov 16-Apr 17																															
18	Equipment Manufacture	Jan 17-Sep 17																															
19	NDEQ Air Permit Approval	Apr 17																															
20	Heritage Site Construction - Site work and security systems	Jun 17-Nov 17																															
21	Heritage Site Construction - Thermal Processing Unit	Oct 17-May 18																															
22	Equipment Arrival, Installation, and Commissioning	Jan 18-Jul 18																															
23	Stack Testing	Jun 18-Jul 18																															
24	Training, Maint., and Safety/Security and 1st Article Approvals	Sep 18-Nov 18																															
25	Base Period Processing (9 months)	Sep 18-May 19																															
26	Option Period 1 Processing (9 months)	Jun 19-Feb 20																															
27	Option Period 2 Processing (9 months)	Mar 20-Nov 20																															
28	Complete Contract Period (Jan 15, 2016 to end)	1752																															

- Legend:
- Army Contracting
 - RCRA TSDF Permitting
 - Air Quality Permitting
 - Design and Equipment Fabrication
 - Site Construction