



State of Utah

Department of  
Environmental Quality

Dianne R. Nielson, Ph.D.  
*Executive Director*

DIVISION OF AIR QUALITY  
Richard W. Sprott  
*Director*

JON M. HUNTSMAN, JR.  
*Governor*

GARY HERBERT  
*Lieutenant Governor*

DAQE-AN3100001-05

July 19, 2005

Phil Theriault  
Environmental Soil Management of New York, LLC  
304 Towpath Road  
Fort Edward, New York 12828

Dear Mr. Theriault:

Re: Approval Order: Low Temperature Thermal Desorption Unit, Utah County, CDS B; NON ATT;  
HAPs. Project Code: N3100-001

The attached document is the Approval Order (AO) for the above-referenced project.

Future correspondence on this Approval Order should include the engineer's name as well as the DAQE number as shown on the upper right-hand corner of this letter. Please direct any technical questions you may have on this project to Mr. Jon Black. He may be reached at (801) 536-4047.

Sincerely,

Richard W. Sprott, Executive Secretary  
Utah Air Quality Board

RWS:JB:jc

cc: Utah County Health Department

**STATE OF UTAH**

**Department of Environmental Quality**

**Division of Air Quality**

**APPROVAL ORDER: Low Temperature Thermal  
Desorption Unit**

**Prepared By: Jon Black, Engineer  
(801) 536-4047  
Email: jlblack@utah.gov**

**APPROVAL ORDER NUMBER**

**DAQE-AN3100001-05**

**Date: July 19, 2005**

**Environmental Soil Management Inc**

**Source Contact  
Phil Theriault  
(518) 747-5500**

**Richard W. Sprott  
Executive Secretary  
Utah Air Quality Board**

### *Abstract*

*Environmental Soil Management of New York, L.L.C. (ESMI), has submitted a Notice of Intent for installation of a low temperature thermal desorption unit at The Ensign-Bickford Company facility located in Spanish Fork, Utah. This unit will remediate soils contaminated with residual compounds from the production and manufacturing of energetic materials (explosives). This unit will operate as a temporary source with operations not to exceed 364 days. This unit is located in Utah County, which is a non-attainment area of the National Ambient Air Quality Standards (NAAQS) for PM<sub>10</sub>. New Source Performance Standards (NSPS), National Emission Standards for Hazardous Air Pollutants (NESHAP) and Maximum Available Control Technology (MACT) regulations do not apply to this source. Title V of the 1990 Clean Air Act does not apply to this source. Best Available Control Technology will require dual cyclones and a baghouse for control of particulate matter (PM<sub>10</sub> emission) from this operation and a thermal oxidation unit to oxidize the vaporized contaminants. Wet suppression methods (water sprays) will be used to control fugitive dust associated with this process area. The proposed controlled potential to emit emissions, in tons per year, will be as follows: PM<sub>10</sub> (+) 5.23, NO<sub>x</sub> (+) 19.50, SO<sub>2</sub> (+) 0.06, CO (+) 4.26, VOC (+) 0.23, HAPs (+) 0.0023.*

The project has been evaluated and found to be consistent with the requirements of the Utah Administrative Code Rule 307 (UAC R307). A public comment period was held in accordance with UAC R307-401-4 and no comments were received. This air quality Approval Order (AO) authorizes the project with the following conditions, and failure to comply with any of the conditions may constitute a violation of this order.

#### **General Conditions:**

1. This Approval Order (AO) applies to the following company:

##### Corporate Office Location

Environmental Soil Management of New York (ESMI)  
304 Towpath Road  
Fort Edward, New York 12828

Phone Number (518) 747-5500  
Fax Number (518) 747-1181

The equipment listed in this AO shall be operated at the following location:

The Ensign-Bickford Company, 8305 South U.S. Hwy 6, Spanish Fork, Utah County

Universal Transverse Mercator (UTM) Coordinate System: UTM Datum NAD27  
4,437.7 kilometers Northing, 450.8 kilometers Easting, Zone 12

2. All definitions, terms, abbreviations, and references used in this AO conform to those used in the Utah Administrative Code (UAC) Rule 307 (R307) and Title 40 of the Code of Federal Regulations (40 CFR). Unless noted otherwise, references cited in these AO conditions refer to those rules.
3. The limits set forth in this AO shall not be exceeded without prior approval in accordance with R307-401.

4. Modifications to the equipment or processes approved by this AO that could affect the emissions covered by this AO must be reviewed and approved in accordance with R307-401-1.
5. All records referenced in this AO or in applicable NSPS and/or NESHAP and/or MACT standards, which are required to be kept by the owner/operator, shall be made available to the Executive Secretary or Executive Secretary's representative upon request, and the records shall include the two-year period prior to the date of the request. Records shall be kept for the following minimum periods:
  - A. All records Two years
6. ESMI shall install and operate the low temperature thermal desorption unit and shall conduct its operations of this unit in accordance with the terms and conditions of this AO, which was written pursuant to ESMI's Notice of Intent submitted to the Division of Air Quality (DAQ) on March 2, 2005 and additional information submitted to the DAQ on March 22, 2004.
7. The approved installations shall consist of the following equipment or equivalent\*:
  - A. One (1) Thermal Desorption Unit\*,  
Manufacturer: Astec  
Model/ID#: TDU 90-043  
Production Rate: 80,000 pounds per hour  
Burner Rating: 42 MMBtu/hr  
Fuel Source: Natural Gas
  - B. Two (2) Cyclones\*  
Manufacturer: Astec  
Model/ID#: TDU 90-043
  - C. One (1) Afterburner\*  
Manufacturer: Astec  
Model/ID#: TDU 90-043  
Burner Rating: 42 MMBtu/hr  
Fuel Source: Natural Gas
  - D. One (1) evaporative cooling chamber/spray quench tower
  - E. One (1) baghouse\*  
Manufacturer: Astec  
Model/ID#: TDU 90-043  
Flow Rate: 50,000 acfm
  - F. One (1) soil feeder with vibrating screen
  - G. One (1) pugmill mixer
  - H. Associated water pumps, conveyors, control booth etc..

\* Equivalency shall be determined by the Executive Secretary.

8. The baghouse shall control process streams from the primary treatment unit, dual cyclones, thermal oxidizer, pugmill mixer, and evaporative cooler. This baghouse shall be sized to handle at least 50,000 ACFM for the existing conditions. All exhaust air from the thermal desorption unit shall be routed through the baghouse before being vented to the atmosphere.
9. The following operating parameters shall be maintained within the indicated ranges:
  - A. Baghouse
    - 1) The pressure drop shall not be less than 1.0 inches of water column or more than 10.0 inches of water column.
    - 2) The gas exit temperature shall not exceed 500 degrees Fahrenheit.
  - B. Afterburner
    - 1) The outlet temperature shall remain above 1500 degrees Fahrenheit at all times of processing soil in the plant. During the demonstration period (data collection period), alternate outlet temperatures will be allowed as long as acceptable treatment levels are being met.
  - C. Desorber
    - 1) The soil exit temperature shall remain above 700 degrees Fahrenheit at all times of processing soil in the plant. During the demonstration period (data collection period), alternate soil exit temperatures will be allowed as long as acceptable treatment levels are being met.

They shall be monitored with equipment located such that an inspector/operator can safely read the output any time. The readings shall be accurate to within the following ranges:

D. Pressure drop - Plus or minus 0.5 inches of water column

E. Gas temperature - Plus or minus 25 degrees Fahrenheit

All instruments shall be calibrated according to the manufactures instructions at least once every 30 days. Continuous recording, via circle strip charts, of the desorber and afterburner outlet temperature is required.

#### Demonstration Testing

The operating parameters of this condition shall be verified through the demonstration of successful treatment of soils. Demonstration tests can be used to show that alternative operating parameters may be allowed in this process as long as equivalent emission reductions and acceptable soil cleanup levels are being achieved. The demonstration test data will be evaluated and approved by the Executive Secretary.

10. ESMI shall notify the Executive Secretary in writing when the installation of the equipment listed in Condition #7 has been completed and is operational, as an initial

compliance inspection is required. To insure proper credit when notifying the Executive Secretary, send your correspondence to the Executive Secretary, attn: Compliance Section.

If construction and/or installation has not been completed within eighteen months from the date of this AO, the Executive Secretary shall be notified in writing on the status of the construction and/or installation. At that time, the Executive Secretary shall require documentation of the continuous construction and/or installation of the operation and may revoke the AO in accordance with R307-401-11.

### **Limitations and Tests Procedures**

11. Visible emissions from the following emission points shall not exceed the following values:
  - A. Soil feeder - 10% opacity
  - B. All screens - 10% opacity
  - C. All baghouses – 10% opacity
  - D. All conveyor transfer points - 10% opacity
  - E. All diesel engines - 20% opacity
  - F. Conveyor drop points - 20% opacity
  - G. All other points - 20% opacity

Opacity observations of emissions from stationary sources shall be conducted according to 40 CFR 60, Appendix A, Method 9.

12. The following operating limits shall not be exceeded:
  - A. 110,000 tons of explosive contaminated soils shall be processed in the thermal desorber system.
  - B. 2,500 hours of total plant operation once contaminated soil remediation has began.
  - C. Additional quantities of soil and/or hours of operation may be added to this AO if it can be demonstrated that compliance with air emission criteria will be maintained. Supporting data and calculations shall be submitted to the Executive Secretary accompanied by a request for additional operating quantities and/or hours of operation.

Compliance records of soil processed shall be kept for all periods when the plant is in operation. The records of soil processed shall be kept on a daily basis. Hours of operation shall be determined by supervisor monitoring and maintaining of an operations log.

### **Roads and Fugitive Dust**

13. ESMI shall abide by a fugitive dust control plan acceptable to the Executive Secretary for control of all dust sources associated with The Ensign-Bickford Company remediation site. ESMI shall abide by the most current fugitive dust control plan submitted on March 1, 2005 and approved by the Executive Secretary.

14. The facility shall abide by all applicable requirements of R307-309 for PM<sub>10</sub> non-attainment areas for Fugitive Emission and Fugitive Dust sources. The full text of R307-309 is included as Appendix A. However, to be in compliance, this facility must operate in accordance with the most current version of R307-309.
15. The feed conveyors, which introduce the contaminated soil material to the primary treatment unit, shall be covered<sup>1</sup>.

### **Fuels**

16. The owner/operator shall use natural gas as a fuel source.

### **Records & Miscellaneous**

17. At all times, including periods of startup, shutdown, and malfunction, owners and operators shall, to the extent practicable, maintain and operate any equipment approved under this Approval Order including associated air pollution control equipment in a manner consistent with good air pollution control practice for minimizing emissions. Determination of whether acceptable operating and maintenance procedures are being used will be based on information available to the Executive Secretary which may include, but is not limited to, monitoring results, opacity observations, review of operating and maintenance procedures, and inspection of the source. All maintenance performed on equipment authorized by this AO shall be recorded.
18. The owner/operator shall comply with R307-107. General Requirements: Unavoidable Breakdowns.

The Executive Secretary shall be notified in writing if the company is sold or changes its name.

Under R307-150-1, the Executive Secretary may require a source to submit an emission inventory for any full or partial year on reasonable notice.

This AO in no way releases the owner or operator from any liability for compliance with all other applicable federal, state, and local regulations including R307.

A copy of the rules, regulations and/or attachments addressed in this AO may be obtained by contacting the Division of Air Quality. The Utah Administrative Code R307 rules used by DAQ, the Notice of Intent (NOI) guide, and other air quality documents and forms may also be obtained on the Internet at the following web site:

<http://www.airquality.utah.gov/>

The annual emissions estimations below include point source and fugitive emissions. These emissions are for the purpose of determining the applicability of Prevention of Significant Deterioration, non-attainment area, maintenance area, and Title V source requirements of the R307. They are not to be used for determining compliance.

---

<sup>1</sup> Covered is defined as being enclosed on three sides.

The controlled Potential To Emit (PTE) emissions for this source (the entire thermal desorption unit) are currently calculated at the following values:

	<u>Pollutant</u>	<u>Tons/yr</u>
A.	PM <sub>10</sub> .....	5.23
B.	SO <sub>2</sub> .....	0.06
C.	NO <sub>x</sub> .....	19.50
D.	CO.....	4.26
E.	VOC.....	0.23
F.	HAPs	
	Phenol.....	0.0008
	Napthalene.....	0.0015
	Total HAPs.....	0.0023

Approved By:

Richard W. Sprott, Executive Secretary  
Utah Air Quality Board

## Appendix A

### **R307. Environmental Quality, Air Quality.**

#### **R307-309. Davis, Salt Lake and Utah Counties, Ogden City and Any Nonattainment Area for PM10: Fugitive Emissions and Fugitive Dust.**

##### **R307-309-1. Applicability and Definitions.**

(1) Applicability. R307-309 applies to all sources of fugitive dust and fugitive emissions located in Davis, Salt Lake and Utah Counties, Ogden City, and any nonattainment area for PM10, except as specified in (2) below. Any source located in those areas for which limitations for fugitive dust or fugitive emissions are assigned pursuant to R307-401 is subject to R307-309 on May 4, 1999, unless the source has an operating permit issued under R307-415 prior to that date. If the source has an operating permit, the source is subject to R307-309 on the date of permit renewal or permit reopening as specified in R307-415, whichever occurs first.

(2) Exemptions.

(a) The provisions of R307-309 do not apply to agricultural or horticultural activities.

(b) Any source which is subject to R307-305-2 through 7 or R307-307 is exempt from all provisions of R307-309 except for R307-309-4.

(c) Any source regulated by R307-205-5 or R307-205-6 is exempt from all provisions of R307-309 except for R307-309-4.

(3) The following additional definitions apply to R307-309:

"Material" means sand, gravel, soil, minerals or other matter which may create fugitive dust.

"Road" means any public or private road.

##### **R307-309-2. Fugitive Emissions.**

Fugitive emissions from any source shall not exceed 15% opacity.

##### **R307-309-3. General Requirements for Fugitive Dust.**

(1) Opacity caused by fugitive dust shall not exceed: (a) 10% at the property boundary; and (b) 20% on site unless an approval order issued under R307-401 or a dust control plan specifies a lower level; except when the wind speed exceeds 25 miles per hour and the owner or operator is taking appropriate actions to control fugitive dust. If the source has a dust control plan approved by the executive secretary, control measures in the plan are considered appropriate. Wind speed may be measured by a hand-held anemometer or equivalent device.

(2) Any source with a dust control plan approved by the executive secretary prior to March 4, 1999, shall review and revise the plan in accordance with R307-309-4 below. The revised plan shall be submitted to the executive secretary no later than May 4, 1999.

##### **R307-309-4. Fugitive Dust Control Plan.**

(1) Any person owning or operating a new or existing source of fugitive dust, including storage, hauling or handling operations or engaging in clearing or leveling of land one-quarter acre or greater in size, earthmoving, excavation, or movement of trucks or construction equipment over cleared land one-quarter acre or greater in size or access haul roads shall submit a plan to control fugitive dust to the executive secretary no later than 30 days after the source becomes subject to the rule. The plan shall address fugitive dust control strategies for the following operations as applicable:

(a) Material Storage;

(b) Material handling and transfer;

(c) Material processing;

(d) Road ways and yard areas;

- (e) Material loading and dumping;
- (f) Hauling of materials;
- (g) Drilling, blasting and pushing operations;
- (h) Clearing and leveling;
- (i) Earth moving and excavation;
- (j) Exposed surfaces;
- (k) Any other source of fugitive dust.
- (2) Strategies to control fugitive dust may include:
  - (a) Wetting or watering;
  - (b) Chemical stabilization;
  - (c) Enclosing or covering operations;
  - (d) Planting vegetative cover;
  - (e) Providing synthetic cover;
  - (f) Wind breaks;
  - (g) Reducing vehicular traffic;
  - (h) Reducing vehicular speed;
  - (i) Cleaning haul trucks before leaving loading area;
  - (j) Limiting pushing operations to wet seasons;
  - (k) Paving or cleaning road ways;
  - (l) Covering loads;
  - (m) Conveyor systems;
  - (n) Boots on drop points;
  - (o) Reducing the height of drop areas;
  - (p) Using dust collectors;
  - (q) Reducing production;
  - (r) Mulching;
  - (s) Limiting the number and power of blasts;
  - (t) Limiting blasts to non-windy days and wet seasons;
  - (u) Hydro drilling;
  - (v) Wetting materials before processing;
  - (w) Using a cattle guard before entering a paved road;
  - (x) Washing haul trucks before leaving the loading site; or
  - (y) Terracing.

(3) Each source shall comply with all provisions of the fugitive dust control plan as approved by the executive secretary.

**R307-309-5. Storage, Hauling and Handling of Aggregate Materials.**

Any person owning, operating or maintaining a new or existing material storage, handling or hauling operation shall prevent, to the maximum extent possible, material from being deposited onto any paved road other than a designated deposit site. Any such person who deposits materials which may create fugitive dust on a public or private paved road shall clean the road promptly.

**R307-309-6. Construction and Demolition Activities.**

Any person engaging in clearing or leveling of land with an area of one-quarter acre or more, earthmoving, excavating, construction, demolition, or moving trucks or construction equipment over cleared land or access haul roads shall prevent, to the maximum extent possible, material from being deposited onto any paved road other than a designated deposit site. Any such person who deposits materials which may create fugitive dust on a public or private paved road shall clean the road promptly.

**R307-309-7. Roads.**

(1) Any person responsible for construction or maintenance of any existing road or having right-of-way easement or possessing the right to use the same whose activities result in fugitive dust from the road shall minimize fugitive dust to the maximum extent possible. Any such person who deposits materials which may create fugitive dust on a public or private paved road shall clean the road promptly.

(2) Unpaved Roads.

(a) When unpaved roads have an average daily traffic volume of less than 150 vehicle trips per day, averaged over a consecutive 5-day period, fugitive dust shall be minimized to the maximum extent possible.

(b) When unpaved roads have an average daily traffic volume of 150 vehicle trips per day or greater, averaged over a consecutive 5 day period, control techniques shall be used which are equal to or better than 2-inch bituminous surface.

(c) Any person responsible for construction or maintenance of any new or existing unpaved road shall prevent, to the maximum extent possible, the deposit of material from the unpaved road onto any intersecting paved road during construction or maintenance. Any person who deposits materials which may create fugitive dust on a public or private paved road shall clean the road promptly.

**KEY: air pollution, dust\***

**1999**

**19-2-101**

**19-2-104**

**19-2-109**