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| **Stamped date on doc:** | 9/14/2018 |

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**Form Completed by:** Joanne Draudt 9/14/2018

**Comments**
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**Form Completed by:** Joanne Draudt 5/14/2018

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Form Completed by: Joanne Draudt 5/2/2016

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Form Completed by: Joanne Draudt 11/6/2015

Data Ingestion Form Version 1.3 – May 2015
Part B Permit Application

Issue Date: December 30, 2011
Effective Date: December 30, 2011
Expiration Date: December 30, 2021
Austin Powder Company
Red Diamond Plant
McArthur, Ohio

U.S. EPA ID OHD 004 293 775

Part B Permit Renewal Application
June 7, 2011

Permit Expiration Date of December 4, 2011
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Attachment I-3: Letter of Credit
Attachment I-4: Certificate of Liability Insurance

Section J: Corrective Action

Section K: Other Federal Laws

Section L: Certification
United States Environmental Protection Agency

Hazardous Waste Permit Information Form

1. Facility Permit Contact
   - First Name: Larry
   - MI: G
   - Last Name: McCorkle
   - Contact Title: Safety & Regulatory Manager
   - Phone: 740-596-5286
   - Ext.: 7430
   - Email: larry.mccorkle@austinpowder.com

2. Facility Permit Contact Mailing Address
   - Street or P.O. Box: P.O. Box 317
   - City, Town, or Village: McArthur
   - State: Ohio
   - Country: USA
   - Zip Code: 45651

3. Operator Mailing Address and Telephone Number
   - Street or P.O. Box: P.O. Box 317
   - City, Town, or Village: McArthur
   - State: Ohio
   - Phone: 740-596-5286
   - Country: USA
   - Zip Code: 45651

4. Facility Existence Date
   - Facility Existence Date (mm/dd/yyyy): 01/01/1930

5. Other Environmental Permits
   - A. Facility Type (Enter code)
   - B. Permit Number
   - C. Description
     - N OH0006173 NPDES PERMIT
     - E PWSID8230412 DRINKING WATER PERMIT
     - E PWSID8231012 DRINKING WATER PERMIT
     - E O B0682100 OPEN BURNING PERMIT
     - R 04820643 RCRA

6. Nature of Business:
   - MANUFACTURE EXPLOSIVES
7. Process Codes and Design Capacities – Enter information in the Section on Form Page 3

A. **PROCESS CODE** – Enter the code from the list of process codes below that best describes each process to be used at the facility. If more lines are needed, attach a separate sheet of paper with the additional information. For "other" processes (i.e., D99, S99, T04 and X99), describe the process (including its design capacity) in the space provided in Item 8.

B. **PROCESS DESIGN CAPACITY** – For each code entered in Item 7.A, enter the capacity of the process.

1. **AMOUNT** – Enter the amount. In a case where design capacity is not applicable (such as in a closure/post-closure or enforcement action) enter the total amount of waste for that process.

2. **UNIT OF MEASURE** – For each amount entered in Item 7.B(1), enter the code from the list of unit of measure codes below that describes the unit of measure used. Select only from the units of measure in this list.

C. **PROCESS TOTAL NUMBER OF UNITS** – Enter the total number of units for each corresponding process code.

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<th>Treatment (Continued)</th>
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<td>D79</td>
<td>Underground Injection</td>
<td>Gallons; Liters; Gallons Per Day; or Liters Per Day</td>
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<td>D80</td>
<td>Well Disposal Landfill</td>
<td>Acre-feet; Hectares; or Acres</td>
<td>T82 Lime Kiln</td>
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<td>D81</td>
<td>Land Treatment</td>
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<td>T83 Aggregate Kiln</td>
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<td>D82</td>
<td>Ocean Disposal</td>
<td>Gallons Per Day or Liters Per Day</td>
<td>T84 Phosphate Kiln</td>
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<td>D83</td>
<td>Surface Impoundment Disposal</td>
<td>Gallons; Liters; Cubic Meters; or Cubic Yards</td>
<td>T85 Coke Oven</td>
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<td>D99</td>
<td>Other Disposal Storage</td>
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<td>T04</td>
<td>Other Treatment</td>
<td>Gallons Per Day; Liters Per Day; Pounds Per Hour; Short Tons Per Hour; Kilograms Per Day; Metric Tons Per Day; Short Tons Per Day; BTU Per Hour; Gallons Per Day; Metric Tons Per Day; BTU Per Hour; Liters Per Hour; Pounds Per Hour; or Million BTU Per Hour</td>
<td></td>
</tr>
<tr>
<td>T80</td>
<td>Boiler</td>
<td>Gallons; Liters; Gallons Per Hour; Liters Per Hour; BTU Per Hour; or Million BTU Per Hour</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Unit of Measure</th>
<th>Unit of Measure Code</th>
<th>Unit of Measure</th>
<th>Unit of Measure Code</th>
<th>Unit of Measure</th>
<th>Unit of Measure Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gallons</td>
<td>G</td>
<td>Gallons Per Hour</td>
<td>E</td>
<td>Gallons Per Hour</td>
<td>L</td>
</tr>
<tr>
<td>Liters</td>
<td>L</td>
<td>Liters Per Hour</td>
<td>H</td>
<td>Liters Per Hour</td>
<td>V</td>
</tr>
<tr>
<td>Short Tons Per Hour</td>
<td>D</td>
<td>Short Tons Per Day</td>
<td>N</td>
<td>Metric Tons Per Hour</td>
<td>S</td>
</tr>
<tr>
<td>Pounds Per Hour</td>
<td>J</td>
<td>Kilograms Per Hour</td>
<td>X</td>
<td>Million BTU Per Hour</td>
<td>X</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Miscellaneous (Subpart X)</th>
<th>Process</th>
<th>Appropriate Unit of Measure for Process Design Capacity</th>
<th>Treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td>X01</td>
<td>Open Burning/Open Detonation</td>
<td>Gallons Per Day; Liters Per Day</td>
<td>Any Unit of Measure Listed Below</td>
</tr>
<tr>
<td>X02</td>
<td>Mechanical Processing</td>
<td>Short Tons Per Hour; Metric Tons Per Hour; Gallons Per Hour; Liters Per Hour; BTU Per Hour; Pounds Per Hour; Short Tons Per Day; Kilograms Per Day; Gallons Per Day; Metric Tons Per Day; or Million BTU Per Hour</td>
<td></td>
</tr>
<tr>
<td>X03</td>
<td>Thermal Unit</td>
<td>Gallons Per Day; Liters Per Day; Pounds Per Hour; Short Tons Per Hour; Kilograms Per Hour; Metric Tons Per Day; Short Tons Per Day; BTU Per Hour; or Million BTU Per Hour</td>
<td></td>
</tr>
<tr>
<td>X04</td>
<td>Geologic Repository</td>
<td>Cubic Yards; Cubic Meters; Acre-feet; Hectare-meter; Gallons; or Liters</td>
<td>Any Unit of Measure Listed Below</td>
</tr>
<tr>
<td>X05</td>
<td>Other Subpart X</td>
<td>Any Unit of Measure Listed Below</td>
<td></td>
</tr>
</tbody>
</table>
7. Process Codes and Design Capacities (Continued)

**EXAMPLE FOR COMPLETING Item 7 (shown in line number X-1 below):** A facility has a storage tank, which can hold 533.788 gallons.

<table>
<thead>
<tr>
<th>Line Number</th>
<th>A. Process Code (From list above)</th>
<th>B. PROCESS DESIGN CAPACITY</th>
<th>C. Process Total Number of Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>X</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>(1) Amount (Specify)</td>
<td>(2) Unit of Measure</td>
</tr>
<tr>
<td>1</td>
<td>S 0 2</td>
<td>533.788</td>
<td>G</td>
</tr>
<tr>
<td>1</td>
<td>X 0 1</td>
<td>0.5</td>
<td>D</td>
</tr>
<tr>
<td>2</td>
<td></td>
<td></td>
<td></td>
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<td>3</td>
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<td>1 0</td>
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<td>1 1</td>
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<td>1 2</td>
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<td></td>
</tr>
<tr>
<td>1 3</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Note: If you need to list more than 13 process codes, attach an additional sheet(s) with the information in the same format as above. Number the line sequentially, taking into account any lines that will be used for “other” process (i.e., D99, S99, T04, and X99) in Item 8.*

8. Other Processes (Follow instructions from Item 7 for D99, S99, T04, and X99 process codes)

<table>
<thead>
<tr>
<th>Line Number (Enter #s in sequence with Item 7)</th>
<th>A. Process Code (From list above)</th>
<th>B. PROCESS DESIGN CAPACITY</th>
<th>C. Process Total Number of Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>X 2 T 0 4</td>
<td></td>
<td>100.00</td>
<td>U</td>
</tr>
</tbody>
</table>
A. EPA HAZARDOUS WASTE NUMBER – Enter the four-digit number from 40 CFR, Part 261 Subpart D of each listed hazardous waste you will handle. For hazardous wastes which are not listed in 40 CFR, Part 261 Subpart D, enter the four-digit number(s) from 40 CFR Part 261, Subpart C that describes the characteristics and/or the toxic contaminants of those hazardous wastes.

B. ESTIMATED ANNUAL QUANTITY – For each listed waste entered in Item 9.A, estimate the quantity of that waste that will be handled on an annual basis. For each characteristic or toxic contaminant entered in Item 9.A, estimate the total annual quantity of all the non-listed waste(s) that will be handled which possess that characteristic or contaminant.

C. UNIT OF MEASURE – For each quantity entered in Item 9.B, enter the unit of measure code. Units of measure which must be used and the appropriate codes are:

<table>
<thead>
<tr>
<th>ENGLISH UNIT OF MEASURE</th>
<th>CODE</th>
<th>METRIC UNIT OF MEASURE</th>
<th>CODE</th>
</tr>
</thead>
<tbody>
<tr>
<td>POUNDS</td>
<td>P</td>
<td>KILOGRAMS</td>
<td>K</td>
</tr>
<tr>
<td>TONS</td>
<td>T</td>
<td>METRIC TONS</td>
<td>M</td>
</tr>
</tbody>
</table>

If facility records use any other unit of measure for quantity, the units of measure must be converted into one of the required units of measure, taking into account the appropriate density or specific gravity of the waste.

D. PROCESSES

1. PROCESS CODES:
   For listed hazardous waste: For each listed hazardous waste entered in Item 9.A, select the code(s) from the list of process codes contained in Items 7.A and 8.A on page 3 to indicate all the processes that will be used to store, treat, and/or dispose of all listed hazardous wastes.
   For non-listed waste: For each characteristic or toxic contaminant entered in Item 9.A, select the code(s) from the list of process codes contained in Items 7.A and 8.A on page 3 to indicate all the processes that will be used to store, treat, and/or dispose of all the non-listed hazardous wastes that possess that characteristic or toxic contaminant.

   NOTE: THREE SPACES ARE PROVIDED FOR ENTERING PROCESS CODES. IF MORE ARE NEEDED:
   1. Enter the first two as described above.
   2. Enter "000" in the extreme right box of Item 9.D(1).
   3. Use additional sheet, enter line number from previous sheet, and enter additional code(s) in Item 9.E.

2. PROCESS DESCRIPTION: If code is not listed for a process that will be used, describe the process in Item 9.D(2) or in Item 9.E(2).

   NOTE: HAZARDOUS WASTES DESCRIBED BY MORE THAN ONE EPA HAZARDOUS WASTE NUMBER – Hazardous wastes that can be described by more than one EPA Hazardous Waste Number shall be described on the form as follows:
   1. Select one of the EPA Hazardous Waste Numbers and enter it in Item 9.A. On the same line complete Items 9.B, 9.C, and 9.D by estimating the total annual quantity of the waste and describing all the processes to be used to store, treat, and/or dispose of the waste.
   2. In Item 9.A of the next line enter the other EPA Hazardous Waste Number that can be used to describe the waste. In Item 9.D.2 on that line enter “included with above” and make no other entries on that line.
   3. Repeat step 2 for each EPA Hazardous Waste Number that can be used to describe the hazardous waste.

EXAMPLE FOR COMPLETING Item 9 (shown in line numbers X-1, X-2, X-3, and X-4 below) – A facility will treat and dispose of an estimated 900 pounds per year of chrome shavings from leather tanning and finishing operations. In addition, the facility will treat and dispose of three non-listed wastes. Two wastes are corrosive only and there will be an estimated 200 pounds per year of each waste. The other waste is corrosive and ignitable and there will be an estimated 100 pounds per year of that waste. Treatment will be in an incinerator and disposal will be in a landfill.

<table>
<thead>
<tr>
<th>Line Number</th>
<th>A. EPA Hazardous Waste No. (Enter code)</th>
<th>B. Estimated Annual Qty of Waste</th>
<th>C. Unit of Measure (Enter code)</th>
<th>D. PROCESSES</th>
</tr>
</thead>
<tbody>
<tr>
<td>X 1</td>
<td>K 0 5 4</td>
<td>900</td>
<td>T 0 3 D 8 0</td>
<td></td>
</tr>
<tr>
<td>X 2</td>
<td>D 0 0 2</td>
<td>400</td>
<td>T 0 3 D 8 0</td>
<td></td>
</tr>
<tr>
<td>X 3</td>
<td>D 0 0 1</td>
<td>100</td>
<td>T 0 3 D 8 0</td>
<td></td>
</tr>
<tr>
<td>X 4</td>
<td>D 0 0 2</td>
<td></td>
<td>Included With Above</td>
<td></td>
</tr>
</tbody>
</table>
9. Description of Hazardous Wastes (Continued. Use additional sheet(s) as necessary; number pages as 5a, etc.)

<table>
<thead>
<tr>
<th>Line Number</th>
<th>A. EPA Hazardous Waste No. (Enter code)</th>
<th>B. Estimated Annual Qty of Waste</th>
<th>C. Unit of Measure (Enter code)</th>
<th>D. PROCESSES</th>
<th>(2) PROCESS DESCRIPTION (If code is not entered in 9.D(1))</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>D 0 0 3</td>
<td>62.0</td>
<td>T</td>
<td>X 0 1</td>
<td>Open Burning</td>
</tr>
<tr>
<td>2</td>
<td>K 0 4 4</td>
<td>4.0</td>
<td>T</td>
<td>X 0 1</td>
<td>Open Burning</td>
</tr>
<tr>
<td>3</td>
<td>K 0 4 5</td>
<td>5.0</td>
<td>T</td>
<td>X 0 1</td>
<td>Open Burning</td>
</tr>
</tbody>
</table>
10. Map

Attach to this application a topographical map, or other equivalent map, of the area extending to at least one mile beyond property boundaries. The map must show the outline of the facility, the location of each of its existing intake and discharge structures, each of its hazardous waste treatment, storage, or disposal facilities, and each well where it injects fluids underground. Include all spring, rivers, and other surface water bodies in this map area. See instructions for precise requirements.

11. Facility Drawing

All existing facilities must include a scale drawing of the facility (see instructions for more detail).

12. Photographs

All existing facilities must include photographs (aerial or ground-level) that clearly delineate all existing structures; existing storage, treatment, and disposal areas; and sites of future storage, treatment, or disposal areas (see instructions for more detail).

13. Comments

REVISION OF PREVIOUSLY FILED PART A TO INCREASE ANNUAL QUANTITIES. THIS REVISION INCREASE DOES NOT INCREASE THE TREATMENT UNIT CAPACITY OR THE TREATMENT RATE OF THE PERMITTED UNIT. THE REVISION INCREASE DOES NOT EXCEED THE PROCESS DESIGN CAPABILITIES SPECIFIED IN THE FIRST PART A SUBMISSION.
United States Environmental Protection Agency

**RCRA SUBTITLE C SITE IDENTIFICATION FORM**

1. **Reason for Submittal**
   - [ ] To provide an initial Notification (First time submitting site identification information to obtain an EPA ID number for this location)
   - [ ] To provide a Subsequent Notification (to update site identification information for this location)
   - [ ] As a component of a First RCRA Hazardous Waste Part A Permit Application
   - [X] As a component of a Revised RCRA Hazardous Waste Part A Permit Application (Amendment #__________)
   - [ ] As a component of the Hazardous Waste Report (if marked, see sub-bullet below)
   - [ ] Site was a TSD facility and/or generator of >1,000 kg of hazardous waste, >1 kg of acute hazardous waste, or >100 kg of acute hazardous waste spill cleanup in one or more months of the report year (or State equivalent LQS regulations)

2. **Site EPA ID Number**
   - **EPA ID Number:**
     
     | O | H | D | 0 | 0 | 4 | 2 | 9 | 3 | 7 | 7 | 5 |

3. **Site Name**
   - **Name:** AUSTIN POWDER COMPANY RED DIAMOND PLANT

4. **Site Location Information**
   - **Street Address:** 430 Powder Plant Road St. Rt. 677
   - **City, Town, or Village:** McArthur
   - **State:** Ohio
   - **Country:** USA
   - **County:** Vinton
   - **Zip Code:** 45651

5. **Site Land Type**
   - [X] Private
   - [ ] County
   - [ ] District
   - [ ] Federal
   - [ ] Tribal
   - [ ] Municipal
   - [ ] State
   - [ ] Other

6. **NAICS Code(s) for the Site**
   - **A.**
     - 3 | 2 | 5 | 9 | 2 | 0
   - **C.**
     - 2 | 6 | 0 | 0 | 0
   - **B.**
     - 3 | 2 | 5 | 9 | 2 | 0
   - **D.**
     - 3 | 2 | 5 | 9 | 2 | 0

7. **Site Mailing Address**
   - **Street or P.O. Box:** P.O. Box 317 430 Powder Plant Road
   - **City, Town, or Village:** McArthur
   - **State:** Ohio
   - **Country:** USA
   - **Zip Code:** 45651

8. **Site Contact Person**
   - **First Name:** Larry
   - **Middle Name:** G.
   - **Last Name:** McCorkle
   - **Title:** Safety & Regulatory Manager
   - **Street or P.O. Box:** P.O. Box 317
   - **City, Town, or Village:** McArthur
   - **State:** Ohio
   - **Country:** USA
   - **Zip Code:** 45651
   - **Email:** larry.mccorkle@austinpowder.com
   - **Phone:** 740-596-5286 Ext.: 7430
   - **Fax:** 740-596-4050

9. **Legal Owner and Operator of the Site**
   - **A. Name of Site's Legal Owner:** Austin Powder Company
   - **Date Became Owner:** 01/01/1930
   - **Owner Type:** [X] Private
   - **Street or P.O. Box:** 25800 Science Park Drive
   - **City, Town, or Village:** McArthur
   - **State:** Ohio
   - **Country:** USA
   - **Zip Code:** 44122
   - **B. Name of Site's Operator:** Austin Powder Company
   - **Date Became Operator:** 01/01/1929
   - **Operator Type:** [X] Private

EPA Form 8700-12, 8700-13 A/B, 8700-23 (Revised 11/2009)
10. Type of Regulated Waste Activity (at your site)
Mark "Yes" or "No" for all current activities (as of the date submitting the form); complete any additional boxes as instructed.

A. Hazardous Waste Activities; Complete all parts 1-7.

Y X N X 1. Generator of Hazardous Waste
If "Yes", mark only one of the following – a, b, or c.

a. LQG: Generates, in any calendar month, 1,000 kg/mo (2,200 lbs./mo.) or more of hazardous waste; or generates, in any calendar month, or accumulates at any time, more than 1 kg/mo (2.2 lbs./mo) of acute hazardous waste; or generates, in any calendar month, or accumulates at any time, more than 100 kg/mo (220 lbs./mo) of acute hazardous spill cleanup material.

b. SQG: 100 to 1,000 kg/mo (220 – 2,200 lbs./mo) of non-acute hazardous waste.

c. CESQG: Less than 100 kg/mo (220 lbs./mo) of non-acute hazardous waste.

If "Yes" above, indicate other generator activities.

Y X N X d. Short-Term Generator (generate from a short-term or one-time event and not from on-going processes). If "Yes", provide an explanation in the Comments section.

Y X N X e. United States Importer of Hazardous Waste

Y X N X f. Mixed Waste (hazardous and radioactive) Generator

Y X N X 2. Transporter of Hazardous Waste
If "Yes", mark all that apply.

a. Transporter
b. Transfer Facility (at your site)

Y X N X 3. Treater, Storer, or Disposer of Hazardous Waste
Note: A hazardous waste permit is required for these activities.

Y X N X 4. Recycler of Hazardous Waste

Y X N X 5. Exempt Boiler and/or Industrial Furnace
If "Yes", mark all that apply.

a. Small Quantity On-site Burner Exemption
b. Smelting, Melting, and Refining Furnace Exemption

Y X N X 6. Underground Injection Control

Y X N X 7. Receives Hazardous Waste from Off-site

B. Universal Waste Activities; Complete all parts 1-2.

Y X N X 1. Large Quantity Handler of Universal Waste (you accumulate 5,000 kg or more) [refer to your State regulations to determine what is regulated]. Indicate types of universal waste managed at your site. If "Yes", mark all that apply.

a. Batteries
b. Pesticides
c. Mercury containing equipment
d. Lamps
e. Other (specify) 
f. Other (specify) 
g. Other (specify) 

Y X N X 2. Destination Facility for Universal Waste
Note: A hazardous waste permit may be required for this activity.

C. Used Oil Activities; Complete all parts 1-4.

Y X N X 1. Used Oil Transporter
If "Yes", mark all that apply.

a. Transporter
b. Transfer Facility (at your site)

Y X N X 2. Used Oil Processor and/or Re-refiner
If "Yes", mark all that apply.

a. Processor
b. Re-refiner

c. Processor

d. Re-refiner

e. Other (specify) 

Y X N X 3. Off-Specification Used Oil Burner

Y X N X 4. Used Oil Fuel Marketer
If "Yes", mark all that apply.

a. Marketer Who Directs Shipment of Off-Specification Used Oil to Off-Specification Used Oil Burner
b. Marketer Who First Claims the Used Oil Meets the Specifications
D. Eligible Academic Entities with Laboratories—Notification for opting into or withdrawing from managing laboratory hazardous wastes pursuant to 40 CFR Part 262 Subpart K

- You must check with your State to determine if you are eligible to manage laboratory hazardous wastes pursuant to 40 CFR Part 262 Subpart K

1. Opting into or currently operating under 40 CFR Part 262 Subpart K for the management of hazardous wastes in laboratories

   See the item-by-item instructions for definitions of types of eligible academic entities. Mark all that apply:

   - College or University
   - Teaching Hospital that is owned by or has a formal written affiliation agreement with a college or university
   - Non-profit Institute that is owned by or has a formal written affiliation agreement with a college or university

2. Withdrawing from 40 CFR Part 262 Subpart K for the management of hazardous wastes in laboratories

11. Description of Hazardous Waste

A. Waste Codes for Federally Regulated Hazardous Wastes. Please list the waste codes of the Federal hazardous wastes handled at your site. List them in the order they are presented in the regulations (e.g., D001, D003, F007, U112). Use an additional page if more spaces are needed.

<table>
<thead>
<tr>
<th>D003</th>
<th>K044</th>
<th>K045</th>
<th>K047</th>
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</table>

B. Waste Codes for State-Regulated (i.e., non-Federal) Hazardous Wastes. Please list the waste codes of the State-Regulated hazardous wastes handled at your site. List them in the order they are presented in the regulations. Use an additional page if more spaces are needed.
Are you notifying under 40 CFR 260.42 that you will begin managing, are managing, or will stop managing hazardous secondary material under 40 CFR 261.2(a)(2)(ii), 40 CFR 261.4(a)(23), (24), or (25)?

If "Yes", you must fill out the Addendum to the Site Identification Form: Notification for Managing Hazardous Secondary Material.

13. Comments

14. Certification. I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fines and imprisonment for knowing violations. For the RCRA Hazardous Waste Part A Permit Application, all owner(s) and operator(s) must sign (see 40 CFR 270.10(b) and 270.11).

Signature of legal owner, operator, or an authorized representative

Name and Official Title (type or print)

Date Signed (mm/dd/yyyy)

Keith P. Mills  Director of Manufacturing  05/09/2011
SECTION B – FACILITY DESCRIPTION

B-1. GENERAL DESCRIPTION:

OAC 3745-50-44 (A)(1)

The Austin Powder Company's Red Diamond Plant is located on a 1358-acre tract of land in rural Vinton County, Elk Township. It is approximately 2 1/2 miles east of McArthur, Ohio on U.S. Route 50 and 1 1/2 miles north on State route 677, which is also known as Powder Plant Road. Austin Powder Company is the owner and operator of the facility. A site map that provides a general layout of the plant is included as Attachment B-1.

McArthur is located approximately 60 miles southeast of Columbus, Ohio, and is the county seat of Vinton County. The county had a 2009 population of 13,228, and a population density of 30.9 people per square mile. It is the least densely populated county in the state. By comparison, Cuyahoga County, which comprises the greater Cleveland area, has a population density of 3,043.6 people per square mile.

Vinton County is an unglaciated part of the Appalachian Plateau consisting of prominent hills and generally narrow valleys with forests typical of the Appalachian foothills.

The facility, including support facilities, currently employs 205 people in the manufacture and sale of explosives. It is an on-site facility that includes a hazardous waste treatment unit (permitted open burn area). This permitted open burn area has been operated since December 1988, and it is currently in operation at the facility. The wastes that have been managed at this permitted open burn area are explosives and explosive-contaminated material. The types of packaging that have been treated at the permitted open burn area include cardboard boxes, plastic bags and liners, primarily polyethylene, paper, and occasional wooden boxes. Wastewater generated at the facility is managed in wastewater treatment units associated with 90-day accumulation provisions, and thus no storage permit is required.

In September 1997 Austin Powder Company achieved ISO 9001 Certification by SGS International Certification Services, Inc. for all products manufactured at the Red Diamond Plant in McArthur, Ohio. This achievement is a testimonial to the long-term commitment to quality and cooperation by all of the Red Diamond associates.

Five topographic maps have been included in Attachment B-1 of this section as required by OAC 3745-50-44 (A)(19). These maps show the precise location of sensitive areas such as storage, manufacturing buildings and access routes for explosive raw materials (i.e. ammonium nitrate). As a security precaution it is becoming more important to restrict distribution of this type of information, hence building names are not included on these maps.
Water Supply

The facility water system is composed of a well field of four (4) active wells which provide water to the majority of the plant. The wells are tapped into the Logan Formation Aquifer at 320 to 475 feet below the surface depending upon the site elevation. These wells are separated into two distribution systems and are classified as non-transient/non-community public water systems by the Ohio EPA (OEPA) as set forth in Chapter 6109 of the Ohio Revised Code.

The water system is licensed by the OEPA as: Austin Powder, Main System PWSID: 8230412 and Austin Powder Emulsion PWSID: 8231012. The Dope House Well (No. 3) is a non-potable water supply.

The water is tested quarterly for total coliform and periodically for volatile organic chemicals (VOC), nitrate, nitrite, synthetic organic chemicals (SOC), MCL inorganics, asbestos, sulfate, lead, and copper as required by the OEPA. No treatment of the water is required. A map illustrating the identification number, location, well depth, and year drilled is included in the maps provided in Attachment 11.

A new A.O. Smith Aquastone 142,000 gallon permaglass coated vertical above ground water storage tank was put into service on December 20, 1993. This tank services the old Booster Line and the Detonating Cord area with potable water for drinking, process and fire control. It can also optionally provide back-up water for the plant boilers.

A new Belding Tank Technologies 2,274 gallon Isophthalic Polyester coated vertical above ground water storage tank was installed mid-July of 2015. This tank services the PETN Production facilities, and is utilized for emergency purposes and process water only.

The LeAx water district provides water to the new section of the plant, including the New Booster Production and Change-house Buildings.

Description of Facility Processes and Activities

The operations at the facility are subdivided into thirteen (13) main areas:

1. Special Products Area (SPA), Detonating Cord
2. Special Products Area (SPA), Boosters
3. Emulsion Plant
4. Mix Plant (Heet and ANFO)
5. Dynamite
6. Detonator Assembly Area
7. Rockbuster Assembly
8. Balloons/Top Hat and Sleeve Assembly
9. Magazine Area
10. Indirect Area
11. McArthur Sales
12. PETN Area
13. PETN Wastewater Treatment Plant Area

1. Special Products Area (SPA), Detonating Cord

Detonating cord was manufactured at Austin Powder’s Glenwillow Plant in Ohio beginning in 1956. A large military contract for 400-grain cord resulted in the transfer of this technology to the Red Diamond Plant.

Detonating Cord is a flexible cord containing a center core of high explosive and is used to initiate other explosives, such as an explosive charge in a blast hole or other lines of detonating cord. It is normally made with PETN, but RDX, HMX, or other explosives may also be employed.

The manufacturing procedure requires that the granular explosive (PETN) be dried to less than 0.15% moisture. Additives such as flow enhancers, water resistant compounds, or desensitizers may also be added if required. The explosive is then transported to the production buildings in specially marked plastic containers.

The granular explosive is loaded through a funnel die on a spinning machine. This device forms a continuous cord by forming a piece of polypropylene tape around the explosive and subsequently wrapping it with two additional layers of fibrillated polypropylene yarn. The cord is rolled onto a spool in 4000 to 6000 foot lengths. The spool is taken to the next operation for extrusion with a layer of plastic. Polyethylene, polyvinylchloride or similar types of plastic are employed. The next step is sizing, where the particle size and core density are controlled.

The next operation is called over spinning and is optional, depending upon the needs of the customer. If required, two layers of cotton or polyester yarn are wrapped around the cord in opposite directions. A colored wax layer is subsequently applied to the cord to hold the yarn in place. This improves handling qualities and provides a quick means of size identification.

The finished cord is then transported to the rewind/inspection operation. Here, the cord is visually inspected and simultaneously rewound onto 1,000 ft spools and boxed for customer use. At this point, any defects are cut out, short lengths are discarded, and the beginning and end of each production spool are cut off and examined for explosive content (grain load) and then discarded.

These remnants (short lengths) contain high explosives and must be destroyed by open burning at the permitted open burn area. Other hazardous wastes that may be generated in this area include explosives-contaminated materials that may meet the hazardous characteristic of reactivity. Further details on wastes in the detonating cord area are included in the process diagram that has been added to Attachment B-2.1 to this section.
The mop water from the Detonating Cord Production Building is transported to an NPDES Permitted wastewater treatment system by a 200-gallon polyethylene tank fastened to a small trailer. The tank is labeled “Cord Line Waste Water” and has the yellow Hazardous Waste label affixed to it stating “EPA Waste No. K044” “The sludge in this tank is K044 Hazardous Waste.”

Approximately 100-300 gallons of water per week is generated at the East Building. The portable tank is transported to the PETN drier catch box. Any sludge is transferred to the catch box at the PETN drier area where the effluent water is discharged to a NPDES permitted wastewater treatment facility. The residual sludge is periodically (within 90 days) removed from the catch box and destroyed via open burning.

The PETN dryer is located within this detonating cord area, and the dryer is used to dry the PETN that is used to make the detonating cord. Potential hazardous wastes generated in this activity include filter bags. Further details on waste management associated with the PETN driers are included in the process diagram appearing in Attachment B-2.2 of this section.

2. Special Products Area (SPA), Booster

This facility manufactures TNT based cast boosters. The raw materials are received in a variety of containers including, but not limited to, paper bags, plastic bags, fiberboard or wooden boxes. All of these raw materials and the finished product are classed by the U.S. Department of Transportation (DOT) as Explosives 1.1D and are used to initiate detonation of less sensitive explosives. These materials may be initiated by heat, friction, impact, or shock.

The TNT is melted in steam-jacketed kettles and formulated with PETN, RDX, or similar explosives. Various proportions are used depending upon market conditions and the performance required. The molten explosive is poured into a variety of ¼ ounce to 5-pound boosters, typically cylindrical in shape with one or more channels through the axis of the cylinder to accept either a detonator or detonating cord.

During the melt-pour operation, explosive dust and chips may fall on the floor and either be swept up or washed into a catch box. This material is classified as K044, hazardous waste due to the characteristic of reactivity.

Potential hazardous wastes that may be generated in this area include spent filter bags, spent charcoal, and scrubber and floor washings that have resulted from TNT operations. Further details on wastes in the booster area are included in the process diagram Attachment B-2.3 of this section.

Austin Powder Company currently employs a water recycle system at the Booster Plant. The system includes a catch box, filtration, and absorption on granular activated carbon (GAC). The clean water is directed to a polyethylene or stainless steel holding tank fitted with a polyethylene lid. Pumps, associated plumbing and valves, and a gun and lance
designed to deliver a maximum of 8 GPM will provide recycled water for floor cleaning in the Booster Line.

3. Emulsion Plant

The precursor to the Emulsion type of explosive was a slurried explosive that was produced at Red Diamond from 1976 to 1985. Popular trade names were Slurmex, Slurmite, and Coalmex. The manufacture of these products ceased on July 19, 1985 with the advent of Emulsion technology. Portions of the facility were converted to the manufacture of Emulsions.

Emulsion explosives represent the latest, state-of-the-art in the rapidly changing explosive industry. In addition to the more favorable cost and performance characteristics, the process does not generate any wastewater.

The Emulsion explosives have trade names including, but not limited to, Coalmex, AXE, Hydromite, Emulex, and Emuline. The projected production rate of emulsion explosives is 2,500,000 pounds per month.

The Austin Powder water-in-oil emulsion explosives consist of minute sized droplets of an aqueous solution of inorganic oxidizer salts that are surrounded by a very thin layer of a continuous oil phase medium. The emulsion is stabilized with an emulsifying agent to prevent liquid separation. A typical emulsion would have 65 to 75% ammonium nitrate, 0 to 10% sodium nitrate, 3 to 9% oil/wax, approximately 1% emulsifier and optionally 1 to 3% glass micro balloons and also optionally 3 to 10% aluminum. The balance of the mix will be water.

By employing practical water conservation methods and dry cleanup techniques, only a minimum of cleanup water is used. This is a continuous manufacturing process which allows the mixing device to be easily purged with the new formulation. Small quantities of Dawn detergent are used as an emulsion breaker or cleaning agent as required. All of the cleanup water or spillage is retained in one of two retention tanks.

The retained water from the ammonium nitrate storage tank dike contains those two components and is utilized directly as a fertilizer for either agricultural purposes or reclamation of strip-mined lands.

The dike around the ammonium nitrate storage tanks consists of a concrete block wall high enough to contain at least the volume of the largest tank. The dike is fitted with a drain valve that is normally closed. Rainwater is only drained out under responsible supervision and only after the supervisor is assured that the water is uncontaminated by process waste. Spillage of contaminated water is directed into a 1,000-gallon retention tank or, in some cases, the solidified material may be taken to the permitted open burn area for treatment.
The adjacent diked area at the Emulsion plant contains emulsifier/oil tanks. The emulsifier and oil are premixed by the supplier. The diked area around the emulsifier/oil tanks consists of a concrete pad with a concrete block wall high enough to contain at least the volume of the largest tank. The dike is fitted with a drain valve that is normally closed. Rainwater is only drained out under responsible supervision and only after the supervisor is assured that the water is uncontaminated by process waste. Minor spills are cleaned up with inert absorbent materials such as vermiculite or equivalent. In the event of a major spill, the oil will be pumped out of the dike and sent to an oil reprocessor or industrial waste disposal facility or treated in another acceptable manner.

The production building wash water from the emulsion plant goes to a 560-gallon catch box where the solids are removed and destroyed in the permitted open burn area.

The liquid portion gravity flows to a 6588-gallon covered, retention tank. This enables the plant to accumulate water for several months before further processing is required. During this time, any oils will float to the surface and the aqueous nitrate solution can be removed and used as a fertilizer. The upper portion that may contain emulsifier/oil is shipped to an oil reprocessor or industrial waste disposal facility or treated in another acceptable manner.

None of the emulsion components are molecular explosives and are therefore not explosives unless mixed with the other materials in a carefully controlled manner. After dispersion in water with the aid of an emulsion breaker, all components, both the aqueous portion and the solid portions, are again non-explosives and do not meet the criteria for reactivity as defined in 40 C.F.R. §261.23.

Hazardous wastes that maybe generated in the emulsion area include explosive-contaminated materials that may exhibit the characteristic of reactivity. Further details on wastes in the Emulsion plant are included in the process diagram included as Attachment B-2.4 of this section.

4. Mix Plant (HEET and ANFO)

The Red Diamond Mix Plant is located in the old ammonium nitrate processing building previously used in the production of dynamite. Production started in 1988.

ANFO is a 94% ammonium nitrate and 6% fuel oil mixture. HEET is a blend of ANFO and emulsion. The ammonium nitrate is in the form of prill or porous beads which readily absorb the fuel oil.

Any spillage generated in this operation is swept up and immediately packaged for use as originally intended. Hazardous waste that may be generated in the HEET and ANFO areas include explosive-contaminated materials that may exhibit the characteristic of reactivity. Further details on wastes in this area are included in the process diagram as Attachment B-2.5 of this section.
5. Dynamite

The Austin Powder Company began manufacturing dynamite and gelatin type explosives at this plant on September 19, 1931. Production ceased on May 4, 1984. Portions of the plant were razed. Currently dynamite is stored at this facility and small quantities are repackaged. Potential hazardous wastes generated at the dynamite area (now located at the former detonator building) include contaminated materials such as containers and bag liners, etc. and off-specification materials that may exhibit the characteristic of reactivity. Further details on these wastes are provided in the process diagram for Rockbuster production Attachment B-2.7 of this section.

6. Detonator Assembly Area

The Detonator building is used to assemble and test small quantities of specialized detonators or detonator assemblies. Detonators can be assembled with safety fuse, containing a core of black powder, shock tubing, or an electrical ignition system. Testing and evaluation includes but is not limited to tensile testing, x-ray evaluation, electrostatic ignition tests, electrical ignition and measurement of delay times. When these units are detonated in the delay time measurement chamber the air is filtered through two Torit model SOF6 high efficiency particulate air (HEPA) filters at a rate of 600 cfm per filter. The collected dust (hazardous waste code - D008) will be sent to a hazardous waste disposal facility within 90 days after a 55-gallon drum of material is accumulated.

Special instructions are used for the open burning of detonator match heads. A layer of straw is to be placed on the bottom of a cast iron frying pan that has been placed in a burn pan. The straw is to be covered with a paper towel then the match heads are to be placed on top of the paper towel and sprinkled with a small amount of fuel oil. The match head screen is to be placed over the frying plan. A wick, as described in the open burning and procedures, is used to ignite the material. After a suitable cooling period the ash from the match heads is transported to the detonator building and placed in the 55-gallon drum with the other D008, will be sent to a hazardous waste disposal facility within 90 days after a 55-gallon drum of material is accumulated.

The building is equipped with conductive flooring and humidity controls to minimize static electricity. Personnel working with detonators are required to wear conductive shoes.

Short ends of shock tubing (hazardous waste code - none) or safety fuse (hazardous waste code - D003) may occasionally be generated within this facility and are managed and treated as waste explosives via open burning. More details are provided in the process diagram included as Attachments B-2.10 and B-2.11 to this section.
7. Balloon/Top Hat and Sleeve Assembly

Balloon assembly may produce some hazardous waste in the form of PETN contaminated floor sweepings or contaminated balloons (hazardous waste code - D003). The Top Hats and Sleeves may produce some out of spec units and these units are recycled in the Booster melt pour process. More details are provided in the process diagram included as Attachment B-2.6 to this section.

8. Rockbuster Assembly

Rockbuster production involves the placement of dynamite sticks into a waterproof bag lined with flame retardant gel. Hazardous waste may be generated as defective sticks of dynamite, hazardous waste code D003. More details are provided in the process diagram included as Attachment B-2.7 to this section.

9. Magazine Area

The Red Diamond Plant has 47 magazines for storage of high explosives, blasting agents, and detonators. These items include incoming explosive raw materials and outgoing finished explosive products. These magazines are licensed with the Regional Regulatory Administrator, Bureau of Alcohol, Tobacco, and Firearms, Atlanta, Georgia, License No. 40H822001C-00074. Hazardous wastes that may be generated in this area may include out-of-date, off-specification or unmarketable explosives that are discarded and sent to the permitted open burn area for treatment. Further details on this process appear in the process diagram for the magazine area included as Attachment B-2.8 of this section.

No hazardous wastes are stored in raw material or finished product magazines. Hazardous waste is stored only in the permitted less-than-90-day Hazardous Waste Storage Magazines or in short term magazines located at a production unit. These magazines are satellite accumulation areas and the waste is taken to the Permitted less-than-90-day Hazardous Waste storage magazine, at the end of each shift.

10. Indirect Area

The Indirect Area is the area surrounding the plant office building and includes the following units:

a. Main Plant Office
b. Laboratory Buildings
c. Receiving
d. Non-explosive Raw Material Storage
e. Boiler House, Gas and Oil-Fired Boilers
f. Garage

g. Weld Shop, Carpenter Shop, and Machine Shop

h. Gate House

The Laboratory generates and accumulates waste chemical liquids in a closed container that is picked up by a permitted treatment/storage/disposal facility. The chemicals are 1,1,1 trichloro-trifluoroethane, chloroform, xylene, No. 2 fuel oil, propanol, Karl Fisher Reagent, toluene, methanol, less than 1% ammonium nitrate, methyl ethyl ketone, and ethyl ether. The mixture meets the characteristics of ignitability and has the EPA hazardous waste number of D001. When the container is full the treatment/storage/disposal facility is notified and a properly placarded truck picks up the material from the laboratory. Manifests are maintained on site. More details are provided in the process diagram included as Attachment B-2.9 of this section.

The garage does maintenance on vehicles and thus generates and temporarily stores used oil and hydraulic fluid. These fluids are picked up by a licensed environmental services company for proper processing. Manifests are maintained on site.

11. McArthur Sales

McArthur Sales consists of an office building, two 60-ton ammonium bins, a product storage magazine and a designated parking area for loaded vehicles. The majority of the McArthur Sales staff are typically off plant during the day, servicing local customers. Vehicles are loaded at the facility and driven to the local customers. McArthur Sales does not manufacture any explosives on this site nor does it generate, treat, or store any hazardous waste.

12. PETN Area

PETN is manufactured by reacting Pentaerythritol with strong Nitric Acid, then driving off the acid by the use of Acetone which forms re-crystallized PETN. Crude PETN can also be produced by eliminating the Acetone phase leaving a small amount of occluded acid within the crystal. Re-crystallized PETN is used in producing Detonators, Detonating Cord, and Cast Boosters. It is produced for both internal uses by Austin Powder and for external sales to other explosive manufacturers. Crude PETN is used only in the production of Cast Boosters. The lower concentration of Spent Nitric Acid and spent Acetone from the process is recovered, and by using a Nitric Acid Concentrator and an Acetone distillation column these lower concentrations are then boosted and used in the process again.

Hazardous Waste that may be generated in the PETN area may include explosive contaminated materials that may exhibit the characteristic of reactivity. Further details on wastes in the PETN area are included in the process diagram included as Attachment B-2.10 of this section.
13. PETN Wastewater Treatment Plant Area

The PETN Wastewater Treatment Plant (WWTP) is a Moving Bed Biological Reactor (MBBR) Packaged Plant System designed to treat carbonaceous process constituents (BOD/COD), Ammonia-Nitrogen and Nitrate from the PETN manufacturing process. Influent will be made up of process wastewater, Boiler blow-down, and Cooling Tower blow-down. The WWTP includes the following components:

- Equalization Tanks;
- Aerobic MBBR Tank;
- Anoxic MBBR Tank;
- Re-Aeration Tank;
- Clarifier Tank; and,
- Sludge Holding Tank

The Equalization Tanks act as a flow rate buffer, and provide additional retention time for the influent process flow. Influent will further be equalized to the remainder of the MBBR biological process. Flow will be pumped at a rate of 25 gallons per minute (gpm) during production. Each tank has a 12,250 gallon operating capacity, for a total of 25,000 gallons. From the Equalization Tank the influent is pumped to the Anoxic MBBR Tank. This tank reduces the COD/BOD and Ammonia-Nitrogen compounds from the influent flow. Dissolved Oxygen (DO) instrumentation will provide a 4-20mA signal to MCP for automated DO loop and control. This monitors and adjusts the blower speed as necessary to achieve the desired DO level. Next, the flow is fed into the Anoxic Tanks. These operate in series and provide the denitrification capacity to reduce Nitrate Compounds. A chemical feed system provides sufficient carbon for the denitrification. Once the wastewater is denitrified, it goes into the Re-Aeration Tank. The Re-Aeration Tank provides additional aerobic retention time to reduce any remaining BOD/COD prior to secondary clarification. From the Re-Aeration tank the wastewater is sent to the Clarifier Tank. The tank is designed with a 60° sloped bottom and is coated with non-stick paint to aid in settling out suspended solids. It is connected to a Wasted Activated Sludge (WAS) pump. The pump will transfer sludge into a separate sludge holding tank for further compaction and disposal preparation. The Sludge Holding Tank will receive WAS from the proceeding clarifier system. The tank includes an internal aeration manifold to periodically mix the sludge contents prior to decant and sludge removal to ensure the process does not go anaerobic. A sludge pump will convey solids from the sludge holding tank to final sludge processing. A dedicated sludge holding blower will provide mixing energy and oxygen into the sludge holding process on a periodic basis. The sludge generated during the treatment of the PETN process wastewater will be shipped off-site for disposal. Further details on wastes generated from the PETN Wastewater Treatment area are included in the process diagram included as attachment B-2.10 of this section.
Management of Fluorescent Lamps/Universal Waste

Austin Powder collects spent bulbs, ballasts, batteries and other Universal Waste in a large cabinet labeled “Universal Waste” located in a secure location. In addition, the materials are containerized and labeled to record their collection dates or the date which a collection box was first put into use. Austin Powder arranges for the collection of these items by permitted waste handler no less than once per year.

A list of common Explosive and Non-Explosives Raw Materials can be found as Table B-1 of this Section.

B-2a. Traffic Information:

OAC 3745-50-44 (A)(10)

The main access to the Red Diamond Plant is from State Route #677, a two-lane highway that passes through the plant property. Traffic traveling north on State Route #677 turns right onto a gravel road, to the gatehouse. Traffic at the gatehouse is controlled by a motorized gate. Access to the plant is controlled by security guards on duty 24 hours per day, seven days a week. Approximately 500 vehicles per day enter the plant. A guard escorts all visiting contractors and delivery vehicles to their destination and back to the gate. Plant personnel are permitted to travel only to their designated parking areas. Two to three vehicles access the permitted open burn area as needed for operations.

The trucks used to transport the explosives and/or explosives-contaminated material for open burning are ¼ to ½ ton pickup trucks fitted with a covered bed, the appropriate hazard warning signs and two fire extinguishers. These trucks travel from the less-than-90-day-storage-magazine (HW-26) to the on-plant permitted open burn area 2 to 10 times per week over plant roads. Only those vehicles necessary for the operation of the plant travel these roads. Access to the permitted open burn area is via the fire road, which is considered a remote area of the plant. All gravel roads, including the fire road, are capable of maintaining traffic in excess of 80,000 pounds. There are no roads within the permitted open burn area itself, although the fire road provides access to it.

B-2b. Seismic Considerations:

OAC 3745-54-18(A)

This facility is not located in a political jurisdiction listed in Appendix VI of 40 CFR § Part 264. Facilities that are not listed have therefore demonstrated compliance with 40 CFR § 264.18(a).

In addition to being located within a low risk region for seismic activity, the explosives and/or explosive-contaminated materials are solids containing no free liquids and hence earthquake activity could not release any of these materials to the environment.
B-2c. Floodplain Information:
OAC 3745-50-44 (A)(11), OAC 3745-54-18 (B)

The attached Federal Insurance Administration (FIA) Flood Hazard Boundary Map of Panel 5 of Vinton County, Ohio demonstrates that the Austin Powder Company’s Red Diamond plant is not located within a 100-year flood plain area. The FIA flood map is included ATTACHMENT B-3

B-3. Certain Waste Placement Prohibitions:
OAC 3745-54-18 (C)

N/A

B-4. Topographic Map:
OAC 3745-50-44 (A)(19)

The topographical maps appear as ATTACHMENT B-1.
ALL WEATHER WIND ROSE

WIND OBSERVATION DATA
SOURCE: National Climatic Center, U.S. Department of Commerce Asheville, NC
STATION: Port Columbus International Airport
PERIOD: Jan. 1, 1965 to Dec. 31 1974
Wind speeds are shown in Knots/Hour
Calm prevail approximately 30% of the time.

Coverage: 97.76%
LAND USE MAPS

The map identified as Figure 1 shows the nearest residence to the OB area. It lies 3700 feet in a Southerly direction. In the Westerly direction the nearest residence is 5500 feet. The nearest residence in the Northerly direction is 5000 feet. To the East is State Forest land with no residences.

The second map identified as Figure 2 shows the nearest community to the OB area. Prattsville, an unincorporated area with a declining population still appears on some maps. It is located 1.8 miles Southeast of the OB area and has an estimated population of 25 people. The entire Madison Township, including Prattsville and Zaleski, has a population of 715 people. Zaleski itself has a population of 302 people and lies 2.18 miles Northeast of the OB area. To the West 2.65 miles lies McArthur, with a population of 1541 people.
Wind Obervation Data

Location: Columbus, Ohio

Period: January 1, 1965 to December 31, 1974

The map includes contour lines, legend, and various symbols indicating different features such as strip mines, gate, and water well. The map is designed to show the geographical layout and changes over the specified period.

Legend:
- North West Quadrant
- Facility Map Additions
- Strip Mine
- Gate
- Water Well
--Year Filed Plan

Please refer to the map for detailed information and locations.
AUSTIN POWDER COMPANY
RED DIAMOND PLANT
HARARDOUS WASTE STREAM PROCESS DIAGRAM
PETN DRYER

WATER WET PETN FOR DET CORD / OR BOOSTERS

PETN DRIER

CATCH BOX 443Gal.

BAG FILTER WASHING

HOLDING TANK 1000 Gal.

15 MICRON BAG FILTER 2 PUMPS

AERATOR / HOLDING TANK 1800 Gal.

PROCESS WATER TO NPDES PERMITTED EXTENDED AERATION WATER TREATMENT PLANT

RECYCLED PETN FROM CATCH BOX

WORN OUT BAG FILTERS K044

OB AREA

ASH DISPOSAL-SOLID WASTE LANDFILL

Ohio EPA DMWM DEC 30 2011 00038
AUSTIN POWDER COMPANY
RED DIAMOND PLANT
HARDOUS WASTE STREAM PROCESS DIAGRAM
EMULSION PRODUCTION

EMULSION EXPLOSIVES
CONTAINING NO
MOLECULAR EXPLOSIVES

OFF SPECIFICATION
PRODUCT

NON
CONTAMINATED
RECYCLED

SPILLAGE AND PROCESS
EQUIPMENT CLEAN UP

CONTAMINATED
MATERIALS
D003

CONTAMINATED

CATCH
BOX

LIQUID
RETENTION
TANKS

SOLIDS
MIXED WITH
SAWDUST

MINERAL OIL / FUEL
OIL/WATER/CLAY/
EMULSION WITH
MICROBALLOONS AND
AMMONIUM NITRATE TO
RECLAIMER OR
INDUSTRIAL WASTE
DISPOSAL FACILITY

AQUEOUS PHASE
TO FERTILIZER

OB
AREA

ASH DISPOSAL – SOLID
WASTE LANDFILL

Ohio EPA DMWM DEC 30 2011
AUSTIN POWDER COMPANY
RED DIAMOND PLANT
HAZARDOUS WASTE STREAM PROCESS DIAGRAM
MIX PLANT (HEET AND ANFO)

HEET AND ANFO EXPLOSIVES CONTAINING NO MOLECULAR EXPLOSIVES

RECycled INTO PRODUCT

SPillage AND OFF SPECIFICATION MATERIALS

CONtaminated MATERIALS: BAGS, GLOVES, RAGS, ETC. D003

OB AREA

ASH DISPOSAL - SOLID WASTE LANDFILL
AUSTIN POWDER COMPANY
RED DIAMOND PLANT
HARARDOUS WASTE STREAM PROCESS DIAGRAM
BALLOON / TOP HAT ASSEMBLY

PETN FROM DRIER

BALLOONS ARE FILLED WITH PETN

TOP HAT & SLEEVE UNITS FROM EXPLOSIVE MAGAZINES

INDIVIDUAL TOP HAT & SLEEVE UNITS ARE TAPE TOGETHER

PROCESS WATER TO PETN DRIER

NPDES PERMITTED EXTENDED AERATION WATER TREATMENT PLANT

PETN / BALLOON WASTE D003

OB AREA

BROKEN TOP HAT & SLEEVE WASTE D003

ASH DISPOSAL-SOLID WASTE LANDFILL

Ohio EPA DMWM DEC 30 2011
AUSTIN POWDER COMPANY
RED DIAMOND PLANT
HARMOUS WASTE STREAM PROCESS DIAGRAM
ROCK-BUSTER PRODUCTION

PACKAGED DYNAMITE CARTRIDGES FROM FINISHED PRODUCT MAGAZINES

INSERTION OF THREE (3) DYNAMITE CARTRIDGES INTO INTERIOR COMPARTMENT OF A MULTI-COMPARTMENT BAG

BROKEN DYNAMITE CARTRIDGES D003

OUTER BAG SURROUNDING DYNAMITE FILLED WITH A FLAME SUPPRESSANT GEL

OB AREA

BAG UNIT IS PLACED INSIDE ANOTHER PLASTIC BAG AND TAPE CLOSED WITH REINFORCED TAPE

ASH DISPOSAL-SOLID WASTE LANDFILL

THIS BAG UNIT IS PLACED INTO WOVEN POLYPROPYLENE BAG WHICH IS SEWN CLOSED
AUSTIN POWDER COMPANY
RED DIAMOND PLANT
Hazardous Waste Stream Process Diagram
Magazine Area

OUT OF DATE, OFF SPECIFICATION OR UNMARKETABLE EXPLOSIVES
D003

HAZARDOUS WASTE MAGAZINES

OB AREA

ASH DISPOSAL - SOLID WASTE LANDFILL
AUSTIN POWDER COMPANY
RED DIAMOND PLANT
Hazardous Waste Stream Process Diagram
Laboratory

Laboratory Experiments,
Testing, Analysis and Evaluations

Waste Chemical Liquids F002, F003, F005 & D001

Hazardsus Waste Disposal Facility
AUSTIN POWDER COMPANY
RED DIAMOND PLANT
HARARDOUS WASTE STREAM PROCESS DIAGRAM
PETN MANUFACTURING PLANT

- BOILER
- COOLING WATER TOWER
- BIO WASTE WATER
  - SLUDGE FROM WASTE WATER TREATMENT PROCESS COLLECTED AND DISPOSED OF BY CONTRACTED EMPLOYEE

- ACETONE TANK FARM
  - ACID RECOVERY
    - ACID TANK FARM

- UTILITY BUILDING / ACIDIC WASTE TREATMENT
  - SLUDGE FROM ACID WATER NEUTRALIZATION COLLECTED AND DISPOSED OF BY CONTRACTED EMPLOYEE

- PETN MANUFACTURING
  - D003 HAZARDOUS WASTE
    - OB AREA
      - ASH DISPOSAL - SOLID WASTE LANDFILL
AUSTIN POWDER COMPANY
RED DIAMOND PLANT
HAZARDOUS WASTE STREAM PROCESS DIAGRAM
ELECTRIC DETONATOR PRODUCTION

WIRE
→ Wire Coiling (Puppet Winders) (Currently inactive)
→ MS Delay Tag Application (Currently inactive)

Fuse Head
→ Fuse Head Crimp (Currently inactive)

PVC Plug

Detonator Element

Packaging and Defective Fuse (Match) Heads
→ OB Area
→ Ash Disposal - Solid Waste Landfill

Detonator Crimp
→ Continuity Testing
→ Shunting - Packaging
→ Magazine Storage or Field Distribution

Ballistic Firing
→ Go-No Go Time Delay Testing
→ Particulate Matter D008
→ Hazardous Waste Disposal Facility

Original: NOV 1990
AUSTIN POWDER COMPANY
RED DIAMOND PLANT
HAZARDOUS WASTE STREAM PROCESS DIAGRAM
NON-ELECTRIC DETONATOR PRODUCTION

SHOCKSTAR TUBING AND SAFETY FUSE

COILING AND LABELING

ULTRASONIC SEALING AND SAFETY FUSE CONNECTOR (CURRENTLY INACTIVE)

MS DELAY TAG APPLICATION (CURRENTLY INACTIVE)

PACKAGING

SHORT ENDS OF SHOCK TUBING AND SAFETY FUSE

OB AREA

ASH DISPOSAL - SOLID WASTE LANDFILL

DETONATOR ELEMENT

CRIMPER

VACUUM PACKAGING

CONNECTOR BLOCKS

BALLISTIC FIRING GO-NO GO TIME DELAY TESTING

PARTICULATE MATTER D008

HAZARDOUS WASTE DISPOSAL FACILITY

MAGAZINE STORAGE OR FIELD DISTRIBUTION
## Explosive Raw Materials

### Molecular Explosives

<table>
<thead>
<tr>
<th>Common Name</th>
<th>Chemical Name</th>
<th>Formula</th>
<th>CAS NO.</th>
</tr>
</thead>
<tbody>
<tr>
<td>TNT</td>
<td>Trinitrotoluene</td>
<td>C₇H₅N₃O₆</td>
<td>118-96-7</td>
</tr>
<tr>
<td>PETN</td>
<td>Pentaerythritol Tetranitrate</td>
<td>C₅H₈N₄O₁₂</td>
<td>78-11-5</td>
</tr>
<tr>
<td>RDX</td>
<td>Cyclotrimethylene-Tetranitramine (Cyclonite)</td>
<td>C₃H₆N₆O₆</td>
<td>121-82-4</td>
</tr>
<tr>
<td>HMX</td>
<td>Cyclotetramethylene-Tetranitramine (Octogen)</td>
<td>C₄H₈N₈O₈</td>
<td>2691-41-0</td>
</tr>
<tr>
<td>*NG</td>
<td>Nitroglycerine</td>
<td>C₃H₅O₃(NO₂)₃</td>
<td>55-63-0</td>
</tr>
<tr>
<td>*EGDN</td>
<td>Ethylene Glycol Dinitrate</td>
<td>C₂H₄O₂(NO₂)₂</td>
<td>626-96-6</td>
</tr>
<tr>
<td>EDDN</td>
<td>Ethylene Diamine Dinitrate</td>
<td>C₂H₁₀N₄O₆</td>
<td>505-71-5</td>
</tr>
</tbody>
</table>

### Typical Composite Explosives

<table>
<thead>
<tr>
<th>Composition B</th>
<th>TNT/RDX</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hexolite</td>
<td>TNT/RDX</td>
</tr>
<tr>
<td>Pentolite</td>
<td>PETN/TNT</td>
</tr>
<tr>
<td>Cyclotol</td>
<td>TNT/RDX</td>
</tr>
<tr>
<td>Torpex or Hexotonal</td>
<td>TNT/RDX/Aluminum</td>
</tr>
<tr>
<td>Octol</td>
<td>TNT/HMX</td>
</tr>
</tbody>
</table>

None of these compounds or composite explosives contain any heavy metals.

*Currently dynamite containing these compounds is only being re-packaged at this facility

LIST IS NOT INTENDED TO REPRESENT ALL RAW MATERIALS ON THE FACILITY.
Table B-1

Non-Explosive Raw Materials

<table>
<thead>
<tr>
<th>Common Name</th>
<th>Chemical Name</th>
<th>Formula</th>
<th>CAS No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ammonium Nitrate</td>
<td>Same</td>
<td>NH₄NO₃</td>
<td>6484-52-2</td>
</tr>
<tr>
<td>Sodium Nitrate</td>
<td>Same</td>
<td>NaNO₃</td>
<td>7631-99-4</td>
</tr>
<tr>
<td>No. 2 Fuel Oil</td>
<td>Petroleum Hydrocarbons</td>
<td>----------</td>
<td>68476-30-2</td>
</tr>
<tr>
<td>Microballoons</td>
<td>Soda lime, Borosilicate</td>
<td>----------</td>
<td>----------</td>
</tr>
<tr>
<td>Glass &amp; Amorphous Silicate</td>
<td></td>
<td>----------</td>
<td>----------</td>
</tr>
<tr>
<td>ANSOL</td>
<td>Ammonium Nitrate Solution</td>
<td>NH₄NO₃</td>
<td>648476-30-2</td>
</tr>
<tr>
<td>Blended Mineral Oils</td>
<td>Same</td>
<td>Mixture</td>
<td>----------</td>
</tr>
<tr>
<td>Aluminum</td>
<td>Same</td>
<td>Al</td>
<td>7429-90-5</td>
</tr>
<tr>
<td>EDA</td>
<td>Ethylenediamine</td>
<td>C₂H₈N₂</td>
<td>107-15-3</td>
</tr>
<tr>
<td>Hexamine</td>
<td>Hexamethylene Tetramine</td>
<td>C₆H₁₂N₄</td>
<td>100-97-0</td>
</tr>
<tr>
<td>Nitric Acid</td>
<td>Same</td>
<td>HNO₃</td>
<td>7697-37-2</td>
</tr>
<tr>
<td>Methylamine</td>
<td>Aminomethane</td>
<td>CH₃NH₂</td>
<td>74-89-5</td>
</tr>
<tr>
<td>Ethanolamine</td>
<td>Monoethanolamine</td>
<td>C₂H₇NO</td>
<td>141-43-5</td>
</tr>
<tr>
<td>Glycerin</td>
<td>Glycerol</td>
<td>C₃H₈O₃</td>
<td>56-81-5</td>
</tr>
<tr>
<td>Ethylene Glycol</td>
<td>Same</td>
<td>C₂H₄O₂</td>
<td>107-21-1</td>
</tr>
</tbody>
</table>

Packaging materials, such as polyethylene, other plastics, and paper, are not listed.

LIST IS NOT INTENDED TO REPRESENT ALL RAW MATERIALS ON THE FACILITY.
C-1. CHEMICAL AND PHYSICAL ANALYSES:
OAC 3745-50-44 (A)(2), 3745-54-13

Identification/EPA Classification and Quantities of Hazardous Wastes Generated

During the manufacture of explosives, this plant generates varying amounts and types of waste explosives that exhibit the characteristic of "reactivity" and have the EPA Hazardous Waste Number of D003. These materials may detonate when subject to fire, friction, impact or to a strong initiating source. The plant also generates certain wastes that may meet the descriptions of a listed hazardous waste, such as K044, K045 or K047, that have been listed due to the potential characteristic of reactivity. Table C-1 of this section provides a summary of the identification/EPA classification of the hazardous wastes.

No Analysis for reactivity is deemed necessary in these cases since the material is known and intended to be an explosive, and therefore is known to have reactive properties.

Typical Analysis of Waste Explosives
1. Boosters
   30-80% TNT (trinitrotoluene)
   70-20% PETN (pentaerythritol tetranitrate), RDX (trimethylene trinitramine) or similar explosives
   Variable foreign material (sand, dirt, etc.)

2. Detonating Cord
   28 to 64% PETN (pentaerythritol tetranitrate)
   72 to 36% inert (plastic, paper, yarn and wax)
   The lower explosive value is for 15-grain cord while the higher value is typical of 200-grain cord.

3. Miscellaneous Explosives
   Includes other categories of explosives including, but not limited to, dynamite, black powder, emulsions, slurries, smokeless powder, blasting agents and explosive laboratory wastes, etc. These waste materials are open burned.

4. Explosive-Contaminated Materials
   This category of waste includes boxes, liners and other materials that are neither listed wastes nor characteristically hazardous (reactive) wastes. This category of wastes also includes supplies (such as gloves or containers) that have incidentally contacted an explosive product or intermediate product, and it includes empty boxes that have held detonators or other products that contain explosives (but the explosives are securely contained within the product and do not come into contact with the box they are
packaged in). For safety reasons, industry practice for management of these wastes is to include them in the wastes that are open burned at a facility.

Tables C-2 and C-3 provide a list of the explosive and non-explosive raw materials used in the manufacturing process and the typical compositions of explosives produced/stored at this facility.

**Description of Hazardous Waste Management Units**

All of the hazardous wastes that are thermally treated by open burning (OB) are explosives or explosives contaminated materials that are produced within the Red Diamond Plant.

These materials are stored (accumulated) for a period not exceeding 90 days in the Hazardous Waste Accumulation Magazines and are then transported a short distance to the permitted open burn area. All activities, including generation, accumulation, transportation, and treatment are performed within the plant boundaries.

The areas of the facility where temporary storage of hazardous waste occurs are protected by the security procedures at the facility's entrances. These magazines are bulletproof buildings and are labeled as containing "hazardous wastes." The buildings are made of steel and wood and range in size from 23 feet by 7 feet to 29 by 6 feet. They have one large door for access, which is securely locked with a padlock and is opened with a key that is available only to authorized associates, such as the environmental supervisor, the plant managers and assistant managers, and other designated foremen, supervisors or open burning personnel. The magazines themselves are located in a fairly isolated portion of the facility, along a road leading between various plant operations. The buildings are only opened when necessary for inspection or for adding or removing materials in storage. The approach roads to the magazines have signs stating "Danger" - No Smoking Beyond this Point."

All of the wastes stored and treated are solids that are contained within plastic bags or fiberboard boxes during the storage, transportation, and treatment operations.

The active portion of the permitted open burn area is a cleared vegetation free, flat, 200-foot diameter area of soil containing six burn pans (See Figure C-1 and C-2 of this section). The area is surrounded by a diversion ditch to prevent the entry of run-on water. The perimeter of the permitted open burn area, which extends to 300 feet from the center, has been planted in grass that is kept mowed for fire control. There are no trees or brush within this 600-foot diameter circle.

A minimum distance of 16 feet separates the burn pans. The pans are cut from reclaimed cylindrical tanks and have a bowl shaped bottom with six to 24 inch high side wall (See Figure C-2 of this section). They are a minimum of ¼ inch thick steel and have three six-inch steel support legs welded to the bottom. A ½ inch diameter hole is drilled in the center of each pan to drain precipitation which otherwise would accumulate in the pan during periods of non-use. Six pans are required due to explosive quantity limitation per
burn, the need for ash to be totally extinguished prior to reloading and the requirement that different types of explosives be burned separately.

This design, as opposed to a flat rectangular pan, allows for a more substantial structural integrity and better heat dissipation since the pan is raised above the ground. To date the pan has not been subjected to the warping encountered with the earlier flat rectangular pans. The six to 24 inch high side walls and the bowl shaped bottom allow for improved containment of both the materials being burned and the final ash without permitting confinement of the explosives that might result in a deflagration to detonation transition.

The cylindrical ash cage, which is six to eight feet high, is fitted directly to the outer edge of the circular pan. To allow access to the pan for both loading materials to be burned and ash removal, the cage is fitted with a door nominally three feet wide by six and one half feet high. The cages are constructed of nine gage galvanized steel wire mesh with openings approximately one inch by one inch. The wire mesh is held in place by eight steel posts welded to the burn pan. The cage serves to contain the larger burning embers and ash, thereby reducing fire hazards and fugitive ash. The ash cage will also prevent access to any stray livestock.

A covered metal ash container has also been provided within the 200-foot diameter open burning area. This thermal treatment completely consumes any reactive constituents and renders any treatment residues non-reactive. The treatment residue, which consists primarily of ash, is collected and sent to an off-site solid waste landfill. The ash has been tested for the Hazardous Waste Characteristics of Ignitability, Corrosivity, Reactivity and Toxicity and determined to be a non-hazardous solid waste suitable for landfill disposal. An in-depth discussion of the test methods is included in the WAP in Section C-2 of this application.

C-2. WASTE ANALYSIS PLAN:
OAC 3745-50-44 (A)(3), 3745-54-13 (A), (B), & (C)

SELECTING WASTE ANALYSIS PARAMETERS

C-2a. Criteria and Rationale for Parameter Selection:
OAC 3745-54-13 (B)(1)

All of the materials treated at this facility are either explosives or explosive-contaminated materials. Neither the explosives nor the explosive-contaminated materials contain any heavy metals as evidenced by an examination of the chemical formulae of the explosive and non-explosive raw materials listed in Table C-2 of this section.

The explosives are specifically formulated to produce heat and gasses (i.e. carbon dioxide, nitrogen and water vapor) and do not produce an ash residue. Literature to
support this statement is listed in Attachment C-1. At the time of treatment, the type of explosive and its general formulation is taken into consideration. The open burning procedures are designed by management to ensure safe, efficient, and complete destruction of the material under controlled conditions.

All of the waste explosives treated at the permitted open burn area are considered hazardous wastes due to the characteristic of reactivity. D003 (Reactive waste), and K Wastes: K044 (Wastewater treatment sludges from the manufacturing and processing of explosives) and K045 (Spent carbon from the treatment of wastewater containing explosives) are listed hazardous wastes (based upon potential reactive properties), and all are treated as reactive wastes. The materials are known and intended to be explosives therefore, having reactive properties. Thus, no specific additional analyses of these materials are performed.

Open burning of these materials completely consumes any reactive constituents and renders any treatment residues non-reactive. The treatment residue, which consists primarily of ash is collected and sent to an off-site solid waste landfill. The ash residue from OB treatment of these wastes is sampled and analyzed via TCLP on an annual basis as required by the terms and conditions of the permit, to assure they non-hazardous solid wastes and suitable for landfill disposal.

In addition to the required analysis, if there are changes in the production process or in the composition of the explosives and raw materials, management will review this waste analysis plan to assure that the criteria and rational for parameter of the waste continue to be appropriate.

C-2b. Test Methods:
OAC 3745-54-13(B)(2)

SELECTING A LABORATORY AND LABORATORY TESTING AND ANALYTICAL METHODS

A. Selecting a Laboratory

All analyses performed at off-site laboratories will be conducted by laboratories that comply with all applicable US EPA and OEPA guidelines. These laboratories have existing quality assurance/quality control plans that are specific to the particular laboratory. These plans will be used and required as part of contracting for their services.

B. Selecting Testing and Analytical Methods

Table C-5 of this section provides a listing of the testing and analytical methods that will be used to detect and quantify the selected parameters.

The following tests have been conducted to evaluate the ashes.
1. Characteristics of Ignitability  

OAC 3745-51-21

During January 1999, Austin Powder Company performed three Bureau of Mines Internal Ignition Tests for Solids in Evaluating Explosive Reactivity of Explosive-Contaminated Solid Waste Substances on the emulsion ash, the detonating cord ash, booster line waste ash and triple burned spent granular activated carbon (GAC) from the treatment of booster line waste water from the Red Diamond open burning area. All four of these ashes failed to show any of the criteria required for the Characteristic of Ignitability. The pipes were completely undamaged. The test procedure, along with photographs, is included in Attachment C-1 of this section.

2. Characteristics of Corrosivity.  

OAC 3745-51-22

This test was conducted by Wilson Environmental Laboratories, Inc. with the following results. The regulation requires that the pH be between 2 and 12.5 to be characterized as non-corrosive. None of the ashes met the characteristics of corrosivity.

<table>
<thead>
<tr>
<th>Ash Type</th>
<th>pH</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emulsion Ash</td>
<td>9.53</td>
</tr>
<tr>
<td>Detonating Cord Ash</td>
<td>7.97</td>
</tr>
<tr>
<td>Booster Line Ash</td>
<td>10.64</td>
</tr>
<tr>
<td>Triple Burned GAC Ash</td>
<td>9.23</td>
</tr>
</tbody>
</table>


OAC 3745-51-23 (a) (6) and (7)

Austin Powder Company performed three Bureau of Mines Gap Tests for Solids in Evaluating Explosive Reactivity of Explosive-Contaminated Solid Waste Substances on each of the 4 ashes from the Red Diamond open burning area. The test procedure, along with photographs, is included in Attachment C-1 of this section.

All of the four ashes failed to show any of the criteria required for the Characteristic of (Explosive) Reactivity:

a. The schedule 80 seamless steel pipes were not fragmented along the entire length.
b. No holes were punched in the 0.125-inch thick mild steel witness plates.
c. A detonation velocity was not developed.

All four ash samples were also evaluated using a TA Instruments Model DSC 2920 that employs Differential Scanning Calorimetric (DSC) methodology. This is an enthalpy-change method in which the difference in energy inputs into a substance and a reference material is measured as a function of temperature, while the substance and the reference material are subjected to a controlled temperature program.
The thermoscans (Attachment C-1 of this section) show that the samples were heated to 400°C and no exotherms were detected. Concurrently, an ash sample spiked with 19.3% of PETN gave clear evidence of an exothermic reaction commencing at 155.3°C.

4. Characteristic of Toxicity OAC 3745-51-24

All four of the ashes have been evaluated by an outside laboratory according to The Toxicity Characteristic Leaching Procedure (TCLP). The samples were quantitatively tested for the 25 organics and 8 metals on the TCLP list, excluding the pesticides.

Additional tests were also conducted for the spent carbon (K045) ashes and the booster (D003) ashes including analysis for 2,4-dinitrotoluene, 2,6-dinitrotoluene, trinitrotoluene, HMX (cyclotetramethylene tetranitramine) and RDX (trimethylene trinitramine). The tests revealed that the samples did not contain any of the contaminants at a concentration equal to or greater than the respective value given in Table 1 of OAC 3745-51-24. Therefore the ash does not meet the characteristics of toxicity. The test report is included in Attachment C-1 of this section of the application.

C-2c. Sampling Methods:
OAC 3745-54-13(B)(3) and SW-846 Ch 9

SELECTING SAMPLING PROCEDURES

A. Sampling Strategies and Equipment

Sampling methods and equipment used are presented in an in-depth discussion in Attachment C-1 of this section.

Only trained Austin Powder Company associates are allowed to perform field sampling. These associates must undergo the Introductory Training Program for all new associates as well as be instructed through on-the-job-training under close supervision and the Hazardous Waste Personnel Training Program. Additional training is conducted using a J.S.A. (Job Safety Analysis) for the specific job assignment.

B. Sample Preservation and Storage

Sample preservation and storage specifications are illustrated in Table C-4 of this section.

C. Sampling QA/QC Procedures
General laboratory quality assurance/quality control procedures are in accordance with the specific analytical methods for individual parameters as described in the EPA publication SW-846 Test Methods for Evaluating Solid Wastes and the Bureau of Mines Publication, RI 9217 Methods of Evaluating Explosive Reactivity of Explosive-Contaminated Solid Waste Substances.

C-2d. Frequency of Analysis:
OAC 3745-54-13(A)(3) & (B)(4)

SELECTING WASTE RE-EVALUATION FREQUENCIES

Due to the strict specifications and standards for manufacturing explosives sufficient information is available regarding their composition. Table C-2 of this section lists the explosive and non-explosive raw materials used in the various processes and the typical composition of explosive products manufactured/stored at the Red Diamond Plant. Thus process knowledge is used to identify the hazardous constituents of the products and the wastes.

The wastes that are generated and treated at the Austin Powder Company are considered hazardous due to the characteristic of reactivity (D003) or due to their listing as a hazardous waste, based upon potential reactive properties. Thus, all are treated as reactive wastes. Due to this, no specific additional analysis of these materials is performed. The ash residue from OB treatment of these wastes is sampled and analyzed via TCLP on an annual basis as required by the terms and conditions of the permit, to assure they non-hazardous solid wastes and suitable for landfill disposal.

In addition, if there are changes in the manufacturing processes or in the composition of the explosive and non-explosive raw materials Austin Powder Company Management will review this WAP to assure the procedures for treatment of the wastes continue to be appropriate and the conditions of the Part B permit are being met.

C-2f. Additional Requirements for Ignitable, Reactive, or Incompatible Wastes:
OAC 3745-54-13(B)(6), 3745-54-17

SPECIAL PROCEDURAL REQUIREMENTS
Procedures for Ignitable, Reactive, and Incompatible Wastes

Austin Powder Company has evaluated the explosive and explosive-contaminated wastes in addition to the ash that is generated from the thermal treatment of these wastes. There are strict specifications and standards for manufacturing explosives, and sufficient information is available regarding their composition; therefore process knowledge is used to identify the hazardous constituents of the products and the wastes. No additional
analysis is deemed necessary for the explosive wastes since the material is known and intended to be an explosive and therefore, is known to have reactive properties.

Austin Powder Company associates are very familiar with the precautions necessary to prevent accidental ignition or reaction of the ignitable, reactive or incompatible wastes given that the nature of their business involves the proper handling of reactive materials. Section F (Procedures to Prevent Hazards) of the application lists the procedures for prevention of unintended ignition or reaction of wastes and Attachment H-1 of the application lists operating procedures for open burning.

The ash that is generated from the thermal treatment of the explosive and non-explosive wastes has been tested for the hazardous waste characteristics of ignitability, corrosivity, reactivity, and toxicity. The results of these tests determined the ash to be a non-hazardous solid waste suitable for landfill disposal.

C-3 Waste Analysis Requirements Pertaining to Land Disposal Restriction

C-3a. Applicability of Treatment Standards:

Hazardous wastes D003, K044, and K045 are treated at the permitted open burn area before being land disposed in a RCRA Subtitle C permitted facility. As noted in Section C-1, these wastes are considered hazardous due to the characteristic of reactivity. The treatment for D003 waste is DEACT and meet §268.48 standards (Universal Treatment Standards). Treatment via open burning achieves Deactivation, removing the characteristic of reactivity. Ash samples are submitted as required to the TCLP to assure compliance with the Universal Treatment Standards. The TCLP results from the year 2010 appear as Attachment C-2. The treatment for K044 and K045 is DEACT. DEACT for each waste is achieved via Open Burning.

Procedures to Ensure Compliance with LDR Requirements

Open burning will be performed on all explosive and explosive-contaminated waste. Listed (K044, K045) wastes are treated separately from the D003 wastes. K044 wastes are open burned on a bed of combustible material, typically contaminated fiberboard boxes that have previously contained explosives but are not classed as D003. The K045 wastes, spent carbon, are triple burned within the original plastic drums on a bed of combustible materials such as scrap wood pallets to insure complete destruction of any residual explosives. Procedures are in place to prevent the mixing of the listed and characteristic hazardous wastes. These procedures are listed in Section F-5a. of this application.

The resultant ashes from the open burning operation are tested as required by the solid waste landfill and meet the applicable LDR treatment standards. The results of the 2010
tests are in Attachment C-3 of this section. These wastes will be land disposed in a RCRA Subtitle C permitted facility without further treatment.

Per OAC 3745-270-07, Austin Powder Company maintains the notice sent to the disposal facility and the yearly certification of the residual ash on premises.

Any other wastes generated at the plant (such as out of date chemicals) are properly stored in accordance with applicable hazardous waste regulations and permit conditions (for no longer than 90 days), labeled and disposed of by a licensed waste disposal company.

**C-3a (1). Waste Characterization:**

OAC 3745-54-13 (A)

Please see Section C-2 as well as Attachment C-2 of this section.

**C-3b. Prohibitions:**

OAC 3745-270-03 and OAC 3745-270-30-39

Only D003, K044, K045 are treated at this facility. These wastes are treated at the Permitted Open Burn Unit and are subject only to treatment via open burning; therefore, none of the prohibitions apply.

**C-3c. Sampling and Analytical Requirements for Treatment Residues:**

OAC 3745-270-07 (B)

**C-3c (1). Sampling and Analytical Procedures:**

Appendix to OAC 3745-270-07 (B)

See Section C-2b

**C-3c (2). Wastes or Contaminated Soils with Treatment Standards Expressed as Concentrations In the Waste Extract:**

OAC 3745-270-07 (B)(1)

N/A

**C-3c (3). Wastes or Contaminated Soils with Treatment Standards Expressed as Concentrations:**

OAC 3745-270-07 (B)(2)

N/A

**C-3c (4). Frequency of Analysis:**

OAC 3745-54-13 (A)(3), OAC 3745-270-07 (B)
See Section C-2d

C-3d. Notification and Certification Requirements:  
OAC 3745-270-07 (A), (B)(3), (B)(4), and (B)(5)

C-3d (1). Retention of Generator Notices and Certification:  
OAC 3745-270-07 (A)

See Section C-3a

C-3d (2). Notification requirements for Treatment Residue shipped to land disposal Facilities:  
OAC 3745-270-07 (B)(3) and (B)(4)

See Section C-3a and Attachment C-2

C-3d (3) – C-3g (4)

N/A
CHARACTERIZATION OF THE ASH FROM THE OPEN BURNING OF
EMULSION, DETONATING CORD, BOOSTER LINE WASTE AND TRIPLE
BURNED SPENT GRANULAR ACTIVATED CARBON FROM THE
TREATMENT OF BOOSTER LINE WASTE WATER

Report Date: January 15, 1999

By: Robert J. Belock

The following tests have been conducted to evaluate these ashes.

1. Characteristics of Ignitability 40 CFR 261.21

During January 1999, Austin Powder Company performed three Bureau of Mines Internal Ignition Tests for Solids in Evaluating Explosive Reactivity of Explosive -Contaminated Solid Waste Substances on the emulsion ash, the detonating cord ash, booster line waste ash and triple burned spent granular activated carbon (GAC) from the treatment of booster line waste water from the Red Diamond open burning area. All four of these ashes failed to show any of the criteria required for the Characteristic of Ignitability. The pipes were completely undamaged. The test procedure along with photographs are attached.


This test was conducted by Wilson Environmental Laboratories, Inc. with the following results. The regulation requires that the pH be between 2 and 12.5 to be characterized as non-corrosive. None of the ashes met the characteristics of corrosivity.

<table>
<thead>
<tr>
<th>Ash Type</th>
<th>pH Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emulsion Ash</td>
<td>9.53</td>
</tr>
<tr>
<td>Detonating Cord Ash</td>
<td>7.97</td>
</tr>
<tr>
<td>Booster Line Ash</td>
<td>10.64</td>
</tr>
<tr>
<td>Triple Burned GAC Ash</td>
<td>9.23</td>
</tr>
</tbody>
</table>

3. Characteristics of Reactivity. 40 CFR 261.23 (a) (6) and (7)

Austin Powder Company performed three Bureau of Mines Gap Tests for Solids in Evaluating Explosive Reactivity of Explosive -Contaminated Solid Waste Substances on each of the 4 ashes from the Red Diamond open burning area. The test procedure along with photographs are attached.
All of the four ashes failed to show any of the criteria required for the Characteristic of (Explosive) Reactivity:

a. The schedule 80 seamless steel pipes were not fragmented along the entire length.
b. No holes were punched in the 0.125 inch thick mild steel witness plates.
c. A detonation velocity was not developed.

All four ash samples were also evaluated using a TA Instruments Model DSC 2920 which employees Differential Scanning Calorimetric (DSC) methodology. This is an enthalpy-change method in which the difference in energy inputs into a substance and a reference material is measured as a function of temperature, while the substance and the reference material are subjected to a controlled temperature program.

The attached thermoscans show that the samples were heated to 400° C and no exotherms were detected. Concurrently, an ash sample spiked with 19.3% of PETN gave clear evidence of an exothermic reaction commencing at 155.3° C.


All four of the ashes have been evaluated by an outside laboratory according to The Toxicity Characteristic Leaching Procedure (TCLP) at a cost of X.XX. The samples were quantitatively tested for the 25 organics and 8 metals on the TCLP list, excluding the pesticides. Additional tests were also conducted for 2, 6 Dinitroololue and 1, 3, 5 trinitrobenzene for the booster line waste and the triple burned GAC ash. The tests revealed that the samples did not contain any of the contaminants at a concentration equal to or greater than the respective value given in Table I of 40 CFR 261.24. Therefore the ash does not meet the characteristics of toxicity. The test report is attached.

GAP TEST PROCEDURE FOR REACTIVITY

The apparatus for the Bureau's gap test is shown in figure 1. The test sample is contained in a cylinder 16 in. (40.6 cm) long, made of 1 1/2 in. diameter schedule 80 black seamless steel mechanical pipe. The mechanical tubing holds a 425 ml sample. A mild steel witness plate 6 in. (15.24 cm) square and 0.125 in. (0.32 cm) thick is mounted at the upper end of the sample tubing and seperated from it by spacers of 0.062 in. (0.16 cm) thickness. The bottom of the cylinder is closed with two layers of 0.003 in. (0.008 cm) thick polyethylene sheet held in place with gum rubber bands and polyvinyl chloride electrical insulating tape. There is no other gap between the pentolite booster and the test sample as used in this test. Rate probes are attached to the charge as shown in figure 1.
The sample is loaded to the top of the steel tube. Solid samples are loaded to the density attained by tapping the cylinder until further settling becomes imperceptible. The sample, at $25^\circ \pm 3^\circ \text{C}$, is subjected to the shock wave generated by the detonation of a pentolite (50:50 PETN:TNT) pellet, 2 in. (5.08 cm) diameter and 2 in. (5.08 cm) thick, having a density of $1.6 \pm 0.05 \text{g/cm}^3$. The pentolite pellet is butted against the bottom of the test sample and initiated with a No. 8 strength electric detonator. The detonator is held in place by a cork detonator holder. Three tests are performed on each sample.

The criteria for detonation propagation are as follows:

a. The sample tube is fragmented along its entire length
b. A hole is punched in the witness plate, and
c. A stable propagation velocity greater than 4,900 ft/s (1.5 km/s) is observed.

INTERNAL IGNITION TEST PROCEDURE FOR IGNITABILITY

The experimental arrangement is shown in figure 3. The sample to be tested is contained in an 18-in. (45.7 cm) long by 3 -in diameter schedule 80 carbon-steel pipe with a 2.9 in. (7.37 cm) ID, a wall thickness of 0.30-in. (0.76 cm), and capped at both ends with 3,000 lb. forged steel pipe caps. The pipe holds a 1,950 mL sample.

The sample is subjected to the thermal and pressure stimuli generated by an igniter consisting of 0.7 oz. (20 g) of FFFg black powder located at the center of the sample vessel. The igniter assembly consists of a cylindrical container 0.81 in (2.06 cm) in diameter and 2.5 in (6.4 cm) long, which is made of 0.01 in (0.0254 cm) thick cellulose acetate sheet held together by two layers of nylon-filament-reinforced cellulose acetate tape. The igniter capsule contains an ignition source that is a resistance heater. The resistance heater consists of a small loop formed from a 1 in (2.54 cm) long nickel-chromium alloy resistance wire 0.012 in (0.030 cm) in diameter having a resistance of 0.343 ohm. This loop is attached to two insulated tinned copper lead wires 0.026 in (0.066 cm) in diameter. The overall wire diameter including insulation is 0.05 in (0.127 cm). The lead wires for the igniter are fed out through a 1/8 in. schedule 40 seamless-steel pipe attached to one of the pipe caps.

For gelatinous samples, the substance is packed as nearly as possible to its normal shipping density. For granular samples, the substance is loaded the the density obtained by repeated tapping of the pipe against a hard surface. The igniter is fired by a current of 15 A obtained from a 20-V transformer. Three tests are performed on each sample. The sample is tested at a temperature of $25^\circ \pm 3^\circ \text{C}$.

The criterion used for interpretation of a positive result is that either the pipe or at least one of the end caps be fragmented into at least two distinct pieces. Results in which the pipe is merely split or laid open or in which the pipe or caps are distorted to the point at which the caps are blown off are considered to be negative results.
Figure 1.—Bureau of Mines' gap test for solids.
Figure 3.—Bureau of Mines' Internal Ignition test.
Differential Scanning Calorimetry (DSC)

Differential Scanning Calorimetry - An enthalpy-change method in which the difference in energy inputs into a substance and a reference material is measured as a function of temperature, while the substance and the reference materials are subjected to a controlled temperature program.

The Differential Scanning Calorimeter is a TA Instruments Model DSC 2920. Specifications for the calibrated system are as follows:
- Temperature Range: -70°C to 725°C
- Temperature Reproducibility: ± 0.05°C
- Maximum sensitivity: 0.2 µW
- Temperature Accuracy: ± 0.1°C

Calibration of the system is required a minimum of every 6 months to assure accurate temperatures. Calibration is performed by running a sample of pure standard with a known melt temperature. A two point calibration is done using two standards for more accurate temperatures over a selected temperature range. Calibration is performed using indium and lead standards as follows:

1. The indium and lead standard samples of known weight (approx. 10 mg) are run under the same conditions (ramp @ 10°C/min) as regular samples. The temperature range includes the total melt range for the specified standard. The cell is cleaned before running standards and a clean, empty aluminum reference pan is used.
2. The data is analyzed using the manufacturer's DSC Calibration software program. Integration of the curve is required for each standard. The program will calculate the melt temperature and the cell constant after the data is analyzed. The results are plotted.
3. The Instrument Control program is updated after both standards have been run and analyzed. The observed and correct melting temperatures are entered for both standards. The cell constant is entered from the indium standard. The DSC is properly calibrated after the corrections have been entered.

Between 1.5 to 2.5 mg of a representative and homogeneous sample is accurately weighed to a hundredth of a milligram in a clean, dry aluminum pan. The pan is then hermetically sealed with a clean, dry aluminum reference pan sealed in the same manner as above without any sample.

Data from DSC runs are analyzed using the manufacturer's General Analysis software program. The data is plotted on charts as temperature vs. heat flow. Heat flow exhibits one of three main characteristics; exothermic, endothermic or baseline tendencies. The characteristics are defined as follows:
Baseline - The baseline represents the portions of the curve where differential heat flow is approximately zero.

Exothermic Peak - The peak is the point where the sample's temperature rises above the temperature of the reference material due to a physical or chemical change. An exotherm is when the sample gives off heat.

Endothermic Peak - The peak is the point where the sample's temperature falls below that of the reference material due to a physical or chemical change. An endotherm is when the sample absorbs heat.

Reactivity is defined by the characteristics being sought for a particular sample. The chemical decomposition reaction is determined by the start of an exotherm. The reaction between substances is evaluated by the start of an exotherm or by the amount of shift of an exotherm of a mixture with regards to the exotherm of one of the individual substances.

The criteria used to determine reactivity in soils or ash is the presence of an exothermic reaction between ambient and 3000C. An exotherm in this area could indicate the presence of PETN, TNT, RDX or HMX.
GAP TEST COMPONENTS

GAP TEST ASSEMBLED UNIT

GAP TEST RESULTS
INTERNAL IGNITION TEST COMPONENTS

INTERNAL IGNITION ASSEMBLED UNIT

INTERNAL IGNITION TESTED UNIT (NO CHANGE)
Sample: BOOSTER ASH
Size: 3.2400 mg
Method: General400
Comment: ASH FROM THE BURNING OF WASTE BOOSTER MATERIALS

File: C:\TA\Data\DSC\Epa.01
Operator: MF
Run Date: 15-Dec-98 09:50
Sample: DETONATING CORD ASH
Size: 3.3000 mg
Method: General400
Comment: ASH FROM THE BURNING OF WASTE DETONATING CORD

File: C:\TA\Data\DSC\Epa.02
Operator: MF
Run Date: 15-Dec-98 14:05

Heat Flow (cal/sec/g)

Temperature (°C)

Exo Up

Universal V2.4F TA Instruments
Sample: EMULSION ASH
Size: 3.3200 mg
Method: General400
Comment: ASH FROM THE BURNING OF WASTE EMULSION

File: C:\TA\Data\DSC\Epa.03
Operator: MF
Run Date: 15-Dec-98 15:14

DSC

Heat Flow (cal/sec/g)

Temperature (°C)

Exo Up

Universal V2.4F TA Instruments
Sample: SPENT CARBON ASH
Size: 3.4800 mg
Method: General400
Comment: ASH FROM THE BURNING OF WASTE SPENT CARBON

File: C:\TA\Data\DSC\Epa.04
Operator: MF
Run Date: 16-Dec-98 08:18
Sample: SPIKED ASH SAMPLE
Size: 2.2300 mg
Method: General400
Comment: ASH FROM OPEN BURNING SPIKED WITH 19.3% PETN

File: C:\TA\Data\DSC\Epa.05
Operator: MF
Run Date: 11-Jan-99 11:42

Exo Up Ohio EPA DMVM DEC 30 2011
Universal V2.4F TA Instruments
INDUSTRIAL WASTE REVIEW SUMMARY

Rumpke Disposal Facility:
Beech Hollow Sanitary Landfill
28 AW Long Road
Wellston, OH 45692
Phone: (740) 384-4400

Generator:
Austin Powder Company

Waste Stream:
Non-hazardous Burn Ash

Waste Description:
Ash Meeting RCRA Exclusion 40 CFR 261.3(g)(2)(ii) Rendering Potentially Reactive Waste
Non-reactive; From Explosive Manufacturing Facility

Approval Number:
08-0423-132

Re-certification Date:
9/13/13

Technical Supporting Information:
- 9/07 analytical results for TCLP RCRA Metals, TCLP RCRA VOC, TCLP RCRA SVOC, Reactive Cyanide, Reactive Sulfide, pH, Flashpoint, Corrosivity; LDR Certification/Notification; MSDS for raw materials
- 8/09 analytical results for TCLP RCRA Metals, TCLP RCRA VOC, TCLP RCRA SVOC, Reactive Cyanide, Reactive Sulfide, Corrosivity, Ignitability
- 8/17/10 analytical results for pH, Reactive Cyanide, Reactive Sulfide, TCLP RCRA Metals, TCLP RCRA VOC, TCLP RCRA SVOC

Conditions of Approval:
- Wastes may not contain any free liquids
- A Rumpke Nonhazardous Industrial Waste manifest or similar manifest with Rumpke approval number must accompany each load of material
- Waste must be treated to remove all hazardous waste characteristics; no hazardous waste listings may be applicable to the waste
- Any changes in the process generating the waste require notification to the Rumpke Industrial Waste Group
- Empty drums (and other containers) must be “RCRA Empty” and open at one end, cut in pieces, and/or crushed

Requirements for Drummed Waste:
- Each drum must be labeled with a completed Rumpke nonhazardous waste label
- The number of drums in the shipment must be identified on the manifest
- Any inapplicable labeling on drums must be removed or obscured
- No bulging drums are acceptable
- Sludge and/or wet solids must be shipped within 7 days of being placed in drum

Waste Code: 018

Comments: None

Rumpke Decision: Renewed

Ohio EPA DMWW DEC 30 2011

08-0423-132 Austin Powder Co. 9.10 re-cert
July 22, 2010

To: Austin Powder Co. Fax: (740) 596-2882
Jennifer Squires Phone: (740) 596-5286
From: Rumpke Engineering and Environmental Affairs Division
RE: Waste Approval Re-certification

Dear Rumpke Industrial Waste Customer:

Our records indicate your below Rumpke approval is due for re-certification.

<table>
<thead>
<tr>
<th>Waste Stream</th>
<th>Approval Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non-Haz. Burn Ash</td>
<td>08-0423-132</td>
</tr>
</tbody>
</table>

To renew your approval, please submit the following information:

1. A copy of new (or within 1 year) analytical results for the following:

   - TCLP RCRA Metals
   - TCLP RCRA VOC
   - TCLP RCRA SVOC
   - TCLP RCRA Pesticides
   - TCLP RCRA Herbicides
   - Paint Filter
   - PCB
   - Total Benzene
   - Reactive Cyanide
   - Reactive Sulfide

   - Density
   - Total 8260 VOC
   - Total Metals – Antimony, Arsenic, Barium, Beryllium, Cadmium, Chromium, Cobalt, Lead, Manganese, Mercury, Nickel, Selenium, Silver
   - Flashpoint
   - pH
   - TOX
   - Other:

2. Analytical report must be final, signed by the laboratory reviewer, and include the chain of custody.

3. **DO NOT SHIP** any of the sampled waste until the results are submitted, reviewed, and approved.

4. Are there any changes to your contact information (name of company, phone #, fax #, etc.)?
   - Yes
   - No

   If yes, please specify:

Please note if no response is received, the Rumpke approval will be deactivated and the waste will not be accepted until re-certified.

Please submit a copy of this letter along with the information above to:

Joe Wheeler
Phone: 304-767-4606
Fax: 304-722-1046 Email: joe.wheeler@rumpke.com
Waste Characterization Data Sheet

1. GENERATOR INFORMATION
   - Company Name: Austin Powder Company
   - Email: jennifer.squires@austinpowder.com
   - Street Address: 430 Powder Plant Road
   - City: McArthur
   - County: Vinton
   - State: OH
   - Zip: 45651
   - Company Contact: Jennifer Squires
   - Phone: 740-596-5286 ext 7416
   - Fax: 740-596-2882

2. WASTE GENERATION LOCATION
   - Generating Facility Location: same
   - Street Address: PO Box 317
   - City: McArthur
   - County: Vinton
   - State: OH
   - Zip: 45651
   - Facility Contact Name: Brenda Preston
   - Phone: 740-596-5286
   - Fax: 740-596-2882

3. BILLING INFORMATION
   - Company Name: same
   - Street Address: PO Box 317
   - City: McArthur
   - County: Vinton
   - State: OH
   - Zip: 45651
   - Billing Contact: Brenda Preston
   - Phone: 740-596-5286
   - Fax: 740-596-2882

4. WASTE STREAM INFORMATION
   - a. Waste Description: Mixed ash from treatment of waste explosives
   - b. Process Generating the Waste: Open burning
   - c. Chemical Composition (Please list the complete composition of the waste. Total should be at least 100%. Ranges are acceptable.)

<table>
<thead>
<tr>
<th>Constituent</th>
<th>%</th>
<th>Constituent</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ash</td>
<td>100%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- d. Virgin Product? [ ] Yes [ ] No
- e. MSDS attached? [ ] Yes [ ] No
- f. Physical Form: [ ] Solid [ ] Semi-solid/Sludge [ ] Powder [ ] Liquid
- g. Amount: [ ] Tons [ ] Cubic Yards [ ] Gallons [ ] Other
- h. Frequency: [ ] Once a month [ ] Weekly [ ] Monthly [ ] Other: As needed
- i. Method of Shipment: [ ] Bulk/Loose [ ] Drum [ ] Bagged/Boxed [ ] Other: roll off box
- j. Transportation by: [ ] Rumpke [ ] Other
- k. Recommended Special Handling:

<table>
<thead>
<tr>
<th>Constituent</th>
<th>%</th>
<th>Constituent</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- l. Does the waste contain free liquids? [ ] Yes [ ] No
- m. Any other hazardous constituents? [ ] Yes [ ] No
- n. Material Safety Data Sheets applicable to the waste been reviewed to determine if the material should be managed as a RCRA, TSCA, and/or other regulated waste? [ ] Yes [ ] No
- o. Does the waste contain asbestos material? [ ] Yes [ ] No
- p. Does the waste generate heat, fugal dust, or exhibit a strong odor? (please specify) [ ] Yes [ ] No
- q. Is this waste a listed DOT hazardous material? (please specify) [ ] Yes [ ] No
- r. Does the waste contain radioactive material, including NORM? [ ] Yes [ ] No
- s. Does the waste contain any concentrations of PCBs? [ ] Yes [ ] No
- t. Does the waste contain any infectious agents, DEA regulated substances, or FIFRA regulated substances? (please specify) [ ] Yes [ ] No
- u. Is this a CERCLA regulated waste? [ ] Yes [ ] No
1. Has the waste been treated? If yes, please describe (attach additional information if necessary): Waste Explosives treated by open burning (under APC's RCRA Permit) [☐ Yes] [☐ No]

### SAMPLING & ANALYSIS

a. Has a representative sample (or samples) been analyzed to characterize this waste? [☐ Yes] [☐ No]

b. Representative Sample Certification:
   1. Was the sample obtained in accordance with 40 CFR 261 or equivalent methods? [☐ Yes] [☐ No]
   2. Type of sample(s): ☐ Grab □ Composite
   3. Applicable sample ID names/numbers: MIXED ASH
   4. If multiple samples, briefly describe sampling protocol (attach additional information if necessary):

   c. Please attach a copy of the final, signed laboratory report with case narrative and chain of custody. Preliminary reports will not be accepted.

### GENERATOR CERTIFICATION

I certify I personally have examined and am familiar with the waste stream identified above and all information is true, accurate, and complete to the best of my knowledge. All analytical results, Material Safety Data Sheets, and other supporting information submitted are truthful and representative of the waste. No waste classified as hazardous waste, regulated PCB waste, infectious waste, or any other waste prohibited from being accepted by the disposal facility will be delivered for disposal. I am aware of the significant penalties for submitting a false certification, including the possibility of fine and imprisonment. I will immediately notify Rumpke of any changes to this waste that may impact its regulatory classification.

[☐] I am an employee of the company identified in Section 1 Generator Information.

[☐] I am an agent signing on behalf of the company identified in Section 1 Generator Information. Proof of authorization is available upon request.

Name: Jennifer Squires
Signature: [Signature]
Title: Environmental Manager
Date: 8-19-10

### RUMPKE DECISION

Approved by: Brian Burgemeir 2010.08.13 10:13:33 -04'00'

Disposal Facility: Beech Hollow

Approval Number: 08-0423-132

Re-certification Date: 9/13/13

Rumpke Waste Characterization Data Sheet
Page 7 of 4

Ohio EPA DMWM DEC 30 2011

08-0423-132 Austin Powder Co. 9.10 re-cert Page 4 of 10
Report Summary

Tuesday August 17, 2010

Report Number: L473241
Samples Received: 08/11/10
Client Project:
Description: Mixed Ash Sample

The analytical results in this report are based upon information supplied by you, the client, and are for your exclusive use. If you have any questions regarding this data package, please do not hesitate to call.

Entire Report Reviewed By:

Mark W. Beasley, ESC Representative

Laboratory Certification Numbers

AZLA - 1461-01, AIHA - 100799, AL - 40660, CA - I-2327, CT - PH-0137, FL - K87487
GA - 923, IN - C-TM-01, KY - 90010, KYUST - 0016, NC - ENV375/DW21704, ND - R-140
AZ - 0612, MN - 047-999-395, NY - 11742, WI - 998095910, NV - TN000032006A

Accreditation is only applicable to the test methods specified on each scope of accreditation held by ESC Lab Sciences.

Note: The use of the preparatory EPA Method 3511 is not approved or endorsed by the CA ELAP.

This report may not be reproduced, except in full, without written approval from ESC Lab Sciences.

Where applicable, sampling conducted by ESC is performed per guidance provided in laboratory standard operating procedures: 060302, 060303, and 060304.
## REPORT OF ANALYSIS

**Jennifer Squires**  
**Austin Powder Company**  
**430 Powder Plant Rd**  
**McArthur, OH 45651**

**Date Received:** August 11, 2010  
**Description:** Mixed Ash Sample  
**Sample ID:** MIXED ASH  
**Collected By:** Mark Fox  
**Collection Date:** 08/09/10 11:00

### Parameter Table

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Result</th>
<th>Det. Limit</th>
<th>Units</th>
<th>Limit</th>
<th>Method</th>
<th>Date/Time</th>
<th>By Dil</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>pH</strong></td>
<td></td>
<td>12</td>
<td>su</td>
<td>9045D</td>
<td>08/12/10 1547 MCH</td>
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<td></td>
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<tr>
<td>Reactive CN (SW846 7.3.3.2)</td>
<td></td>
<td>BDL 0.125</td>
<td>mg/kg</td>
<td>9012B</td>
<td>08/17/10 1640 CMP</td>
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<td></td>
</tr>
<tr>
<td>Reactive Sulf. (SW846 7.3.4.1)</td>
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<td>BDL 25</td>
<td>mg/kg</td>
<td>9034/90</td>
<td>08/16/10 2130 TNF</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td><strong>TCLP Extraction</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td><strong>Mercury</strong></td>
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<td>BDL 0.0010</td>
<td>mg/l</td>
<td>0.20</td>
<td>7470A</td>
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<td>Barium</td>
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<tr>
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<tr>
<td>Lead</td>
<td></td>
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<tr>
<td>Selenium</td>
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<td><strong>TCLP ZHE Extraction</strong></td>
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<td><strong>Benzene</strong></td>
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<td>mg/l</td>
<td>0.50</td>
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<tr>
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<td></td>
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<td>mg/l</td>
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<tr>
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<tr>
<td>2-Butanone (MEK)</td>
<td></td>
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<td>200</td>
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<td>0.70</td>
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<td>mg/l</td>
<td>0.50</td>
<td>8260B</td>
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<tr>
<td>Vinyl chloride</td>
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<tr>
<td><strong>Surrogate Recovery</strong></td>
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<tr>
<td>Toluene-d8</td>
<td></td>
<td>102.</td>
<td>% Rec.</td>
<td>114.</td>
<td>8260B</td>
<td>08/16/10 0850 BB</td>
<td>1</td>
</tr>
<tr>
<td>Dibromofluoromethane</td>
<td></td>
<td>94.5</td>
<td>% Rec.</td>
<td>125.</td>
<td>8260B</td>
<td>08/16/10 0850 BB</td>
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<tr>
<td>a,a,a-Trifluorotoluene</td>
<td></td>
<td>106.</td>
<td>% Rec.</td>
<td>114.</td>
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<td>08/16/10 0850 BB</td>
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<tr>
<td>4-Bromo fluoro benzene</td>
<td></td>
<td>97.4</td>
<td>% Rec.</td>
<td>126.</td>
<td>8260B</td>
<td>08/16/10 0850 BB</td>
<td>1</td>
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<tr>
<td><strong>TCLP Semi-Volatiles</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>1,4-Dichlorobenzene</td>
<td></td>
<td>BDL 0.10</td>
<td>mg/l</td>
<td>7.5</td>
<td>8270C</td>
<td>08/15/10 1903 JAB</td>
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<tr>
<td>2,4-Dinitrotoluene</td>
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<td>BDL 0.10</td>
<td>mg/l</td>
<td>0.13</td>
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<td>BDL 0.10</td>
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<td>0.13</td>
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<tr>
<td>Hexachloro-1,3-butadiene</td>
<td></td>
<td>BDL 0.10</td>
<td>mg/l</td>
<td>5.0</td>
<td>8270C</td>
<td>08/15/10 1903 JAB</td>
<td>1</td>
</tr>
<tr>
<td>Hexachlorethane</td>
<td></td>
<td>BDL 0.10</td>
<td>mg/l</td>
<td>5.0</td>
<td>8270C</td>
<td>08/15/10 1903 JAB</td>
<td>1</td>
</tr>
</tbody>
</table>

**L473241-01 (PH) = 12.2824.8c**
**REPORT OF ANALYSIS**

**August 17, 2010**

**ESC Sample #:** L473241-01

**Date Received:** August 11, 2010

**Sample ID:** MIXED ASH

**Collected By:** Mark Fox

**Collection Date:** 08/09/10 11:00

<table>
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<tr>
<th>Parameter</th>
<th>Result</th>
<th>Det. Limit</th>
<th>Units</th>
<th>Limit</th>
<th>Method</th>
<th>Date/Time</th>
<th>By</th>
<th>Dil</th>
</tr>
</thead>
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<tr>
<td>Nitrobenzene</td>
<td>BDL</td>
<td>0.10</td>
<td>mg/l</td>
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<td>Pyridine</td>
<td>BDL</td>
<td>0.10</td>
<td>mg/l</td>
<td>5.0</td>
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<td>08/15/10 1903 JAB</td>
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<td>1</td>
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<tr>
<td>3,4-Methyl Phenol</td>
<td>BDL</td>
<td>0.10</td>
<td>mg/l</td>
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<tr>
<td>2-Methylphenol</td>
<td>BDL</td>
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<td>mg/l</td>
<td>200</td>
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<td>1</td>
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<td>Pentachlorophenol</td>
<td>BDL</td>
<td>0.10</td>
<td>mg/l</td>
<td>100</td>
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<td>2,4,5-Trichlorophenol</td>
<td>BDL</td>
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<td>mg/l</td>
<td>400</td>
<td>8270C</td>
<td>08/15/10 1903 JAB</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>2,4,6-Trichlorophenol</td>
<td>BDL</td>
<td>0.10</td>
<td>mg/l</td>
<td>2.0</td>
<td>8270C</td>
<td>08/15/10 1903 JAB</td>
<td>1</td>
<td>1</td>
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<tr>
<td>Surrogate Recovery</td>
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<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>2-Fluorophenol</td>
<td>31.8</td>
<td>% Rec.</td>
<td>87.0</td>
<td>8270C</td>
<td>08/15/10 1903 JAB</td>
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<tr>
<td>Phenol-d5</td>
<td>20.1</td>
<td>% Rec.</td>
<td>67.0</td>
<td>8270C</td>
<td>08/15/10 1903 JAB</td>
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<td>1</td>
<td></td>
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<tr>
<td>Nitrobenzene-d5</td>
<td>72.2</td>
<td>% Rec.</td>
<td>120.0</td>
<td>8270C</td>
<td>08/15/10 1903 JAB</td>
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<td>1</td>
<td></td>
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<tr>
<td>2-Flurodiphenyl</td>
<td>82.9</td>
<td>% Rec.</td>
<td>122.0</td>
<td>8270C</td>
<td>08/15/10 1903 JAB</td>
<td>1</td>
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<td>2,4,6-Tribromophenol</td>
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<td>% Rec.</td>
<td>148.0</td>
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<td>1</td>
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<td>p-Terphenyl-d14</td>
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<td>% Rec.</td>
<td>149.0</td>
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<td>08/15/10 1903 JAB</td>
<td>1</td>
<td>1</td>
<td></td>
</tr>
</tbody>
</table>

**BDL** - Below Detection Limit

**Det. Limit** - Estimated Quantitation Limit (EQL)

**Limit** - Maximum Contaminant Level as established by the US EPA

**Note:**

The reported analytical results relate only to the sample submitted. This report shall not be reproduced, except in full, without the written approval from ESC.

**Reported:** 08/17/10 17:40  **Printed:** 08/17/10 17:40

L473241-01 (PH) – 12.2026.6c

---

**Ohio EPA DMWM DEC 30 2011**

08-0423-132 Austin Powder Co. 9.10 re-cert

Page 7 of 10
Sample: L473241-01 Account: AUSPOWMOR Received: 08/11/10 09:00 Due Date: 08/18/10 00:00 RPT Date: 08/17/10 17:40
null
Engineering and Environmental Affairs Division
Industrial Waste Profile Transmittal Cover Page

To: Brian Burgemeir, EEAD Fax: Primary (513) 245-2248, Secondary: (859) 472-1397

1. Date Submitted: 9-2-10 Total Number of Pages: 9
2. Submitted by: ☑ Brad Marlow  ☑ Lisa Settles  ☑ Greg Spurlock  ☐ Other:
   ☑ Joe Wheeler  ☐ Carl Walter  ☐ Richard Chandler

3. Disposal Site:

<table>
<thead>
<tr>
<th>Ohio</th>
<th>Kentucky</th>
<th>Indiana</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beech Hollow LF</td>
<td>◐ Montgomery Co. LF</td>
<td>☑ Medora LF – Direct Landfill</td>
</tr>
<tr>
<td></td>
<td>☑ Pendleton Co. LF – Direct Landfill</td>
<td>☑ Medora LF – Solidification</td>
</tr>
<tr>
<td></td>
<td>☑ Pendleton Co. LF – Solidification</td>
<td></td>
</tr>
<tr>
<td></td>
<td>☑ Ohio Valley TS</td>
<td></td>
</tr>
<tr>
<td></td>
<td>☑ Brown Co. LF</td>
<td></td>
</tr>
<tr>
<td></td>
<td>☑ Miami Co. TS</td>
<td></td>
</tr>
<tr>
<td></td>
<td>☑ Noble Road LF</td>
<td></td>
</tr>
<tr>
<td></td>
<td>☑ Harvard Road TS</td>
<td></td>
</tr>
<tr>
<td></td>
<td>☑ Richland Co. TS</td>
<td></td>
</tr>
<tr>
<td></td>
<td>☑ Rumpke Sanitary LF (RSL)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>☑ Greenville TS</td>
<td></td>
</tr>
<tr>
<td></td>
<td>☑ Pendleton Co. LF – Direct Landfill</td>
<td></td>
</tr>
<tr>
<td></td>
<td>☑ Pendleton Co. LF – Solidification</td>
<td></td>
</tr>
</tbody>
</table>

4. Type of Information Being Submitted:
   ☐ New Profile
   ☐ Additional information for previously submitted profile
   ☑ Amendment to Current Approval
   ☑ Re-certification

5. Attached Documents (not all are required):
   ☐ Waste Characterization Data Sheet (required for all new profiles)
     - All blanks must be complete
     - "Waste Description" should include name of material and specific contaminants/chemical composition
     - "Process Generating the Waste" should describe the specific process how the waste is generated and address individual chemicals/materials present in the waste
   ☑ Approval Amendment Request (required when amending an existing approval)
   ☑ Recertification form (required for renewing due or overdue approvals)
   ☑ Analytical results
     - Must be final report with lab reviewer's signature
     - Must include chain of custody report
     - If any sample results are not applicable, it must be noted
     - If multiple samples, sampling and analysis plan
     - Results must be below federal and state limits
   ☐ Material Safety Data Sheets (MSDS)
   ☑ Sampling and analysis plan (required if multiple samples)
   ☑ Other documentation: Sample COC

6. Generator Name: Austin Powder

7. Comments: Waste Ash from Burn Area
Figure C-1

**SHELTER**

POSTED AT ACCESS ROAD:
DANGER, NO SMOKING
BEYOND THIS POINT

**DIVERSION DITCH**

**OB AREA**
+ NO VEGATATION

**DRAINAGE**

---

**Figure 1**
OPEN BURNING AREA
RED DIAMOND PLANT

DESIGN BY: A. SMITH

CHECKED BY: RJB

DRAWN BY: A. SMITH

PROJECT NO.:
PART B

DATE: 08/01/00

SCALE: AS SHOWN

---

POSTED SIGNS: DANGER - UNAUTHORIZED PERSONNEL KEEP OUT

- NO VEGATATION

- GRASS - TO BE KEPT MOWED FOR FIRE CONTROL

---

Ohio EPA DMWMM DEC 30 2011
## AUSTIN POWDER COMPANY WASTE ANALYSIS PLAN SUMMARY

### GENERATION BASIS FOR HAZARD WASTE STREAM SOURCE CLASSIFICATION

- **Wastes Requiring On-Site Treatment**
  - 1. Explosive Contaminated Materials
    - Booster Production
    - Generator knowledge based on process specification
    - EPA WASTE CODE: D003
    - HAZARDOUS PROPERTIES OF WASTE: Reactivity
    - LDR: X
    - CHEMICAL ANALYSIS: Manufacturing Specifications
    - LDR TREATMENT: Deactivation and meet §268.48 standards
      - Treatment Standard: Open Burning Unit
  - 2. Pink/Red Water from TNT Operations
    - Booster Production
    - Generator knowledge based on process specification
    - EPA WASTE CODE: K047
    - HAZARDOUS PROPERTIES OF WASTE: Reactivity
    - LDR: X
    - CHEMICAL ANALYSIS: Manufacturing Specifications
    - LDR TREATMENT: Deactivation
      - Treatment Standard: Granulated Activated Carbon
  - 3. Spent Filters from Booster Production
    - Booster Production
    - Generator knowledge based on process specification
    - EPA WASTE CODE: K044
    - HAZARDOUS PROPERTIES OF WASTE: Reactivity
    - LDR: X
    - CHEMICAL ANALYSIS: Manufacturing Specifications
    - LDR TREATMENT: Deactivation
      - Treatment Standard: Open Burning Unit
  - 4. Spent Activated Carbon
    - Booster Production
    - Generator knowledge based on process specification
    - EPA WASTE CODE: K045
    - HAZARDOUS PROPERTIES OF WASTE: Reactivity
    - LDR: X
    - CHEMICAL ANALYSIS: Manufacturing Specifications
    - LDR TREATMENT: Deactivation
      - Treatment Standard: Open Burning Unit
  - 5. Explosive Contaminated Materials
    - Detonating Cord Production
    - Generator knowledge based on process specification
    - EPA WASTE CODE: D003
    - HAZARDOUS PROPERTIES OF WASTE: Reactivity
    - LDR: X
    - CHEMICAL ANALYSIS: Manufacturing Specifications
    - LDR TREATMENT: Deactivation and meet §268.48 standards
      - Treatment Standard: Open Burning Unit
  - 6. Detonating Cord Remnants
    - Detonating Cord Production
    - Generator knowledge based on process specification
    - EPA WASTE CODE: D003
    - HAZARDOUS PROPERTIES OF WASTE: Reactivity
    - LDR: X
    - CHEMICAL ANALYSIS: Manufacturing Specifications
    - LDR TREATMENT: Deactivation and meet §268.48 standards
      - Treatment Standard: Open Burning Unit
  - 7. Cleaning Water Sludge
    - Detonating Cord Production
    - Generator knowledge based on process specification
    - EPA WASTE CODE: K044
    - HAZARDOUS PROPERTIES OF WASTE: Reactivity
    - LDR: X
    - CHEMICAL ANALYSIS: Manufacturing Specifications
    - LDR TREATMENT: Deactivation
      - Treatment Standard: Open Burning Unit
  - 8. Explosive Contaminated Materials
    - Emulsion Production
    - Generator knowledge based on process specification
    - EPA WASTE CODE: D003
    - HAZARDOUS PROPERTIES OF WASTE: Reactivity
    - LDR: X
    - CHEMICAL ANALYSIS: Manufacturing Specifications
    - LDR TREATMENT: Deactivation and meet §268.48 standards
      - Treatment Standard: Open Burning Unit
  - 9. Explosive Contaminated Materials
    - Mix Plant
    - Generator knowledge based on process specification
    - EPA WASTE CODE: D003
    - HAZARDOUS PROPERTIES OF WASTE: Reactivity
    - LDR: X
    - CHEMICAL ANALYSIS: Manufacturing Specifications
    - LDR TREATMENT: Deactivation and meet §268.48 standards
      - Treatment Standard: Open Burning Unit
  - 10. Explosive Contaminated Materials
      - Dynamite Repackaging
      - Generator knowledge based on process specification
      - EPA WASTE CODE: D003
      - HAZARDOUS PROPERTIES OF WASTE: Reactivity
      - LDR: X
      - CHEMICAL ANALYSIS: Manufacturing Specifications
      - LDR TREATMENT: Deactivation and meet §268.48 standards
        - Treatment Standard: Open Burning Unit
  - 11. Safety Fuse
      - Detonators
      - Generator knowledge based on process specification
      - EPA WASTE CODE: D003
      - HAZARDOUS PROPERTIES OF WASTE: Reactivity
      - LDR: X
      - CHEMICAL ANALYSIS: Manufacturing Specifications
      - LDR TREATMENT: Deactivation and meet §268.48 standards
        - Treatment Standard: Open Burning Unit
  - 12. Matchheads
      - Detonators
      - Generator knowledge based on process specification
      - EPA WASTE CODE: D003
      - HAZARDOUS PROPERTIES OF WASTE: Reactivity
      - LDR: X
      - CHEMICAL ANALYSIS: Manufacturing Specifications
      - LDR TREATMENT: Deactivation and meet §268.48 standards
        - Treatment Standard: Open Burning Unit
      - Magazine Area
      - Generator knowledge based on process specification
      - EPA WASTE CODE: D003
      - HAZARDOUS PROPERTIES OF WASTE: Reactivity
      - LDR: X
      - CHEMICAL ANALYSIS: Manufacturing Specifications
      - LDR TREATMENT: D E A C T and meet §268.48 standards; or
        - Treatment Standard: Open Burning Unit

---

Ohio EPA DMMW DEC 30 2011

Rev 1
May 2011
### AUSTIN POWDER COMPANY WASTE ANALYSIS PLAN SUMMARY

<table>
<thead>
<tr>
<th>WASTE STREAM</th>
<th>GENERATION SOURCE</th>
<th>BASIS FOR HAZARD CLASSIFICATION</th>
<th>EPA WASTE CODE</th>
<th>HAZARDOUS PROPERTIES OF WASTE</th>
<th>LDR</th>
<th>CHEMICAL ANALYSIS</th>
<th>LDR TREATMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Detonator Particulates and Matchhead Ashes</td>
<td>Detonators</td>
<td>Generator knowledge based on process specification</td>
<td>D008</td>
<td>Lead</td>
<td>X</td>
<td>Manufacturing Specifications</td>
<td>RLEAD</td>
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<tr>
<td>2. Waste Chemical Liquids</td>
<td>Laboratory</td>
<td>Generator knowledge based on process specification</td>
<td>D001</td>
<td>Ignitability</td>
<td>X</td>
<td>Manufacturing Specifications</td>
<td>DEACT and meet §268.48 standards; or RORGS; or CMBST</td>
</tr>
</tbody>
</table>

**EPA WASTE HAZARDOUS CODE PROPERTIES OF WASTE**

**CHEMICAL ANALYSIS**

**Treatment Standard**

**Designated Treatment Facility**
### Table C-2

**AUSTIN POWDER COMPANY**  
**RED DIAMOND PLANT**  
**EXPLOSIVE RAW MATERIALS**

#### Molecular Explosives

<table>
<thead>
<tr>
<th>Common Name</th>
<th>Chemical Name</th>
<th>Formula</th>
<th>CAS NO.</th>
</tr>
</thead>
<tbody>
<tr>
<td>TNT</td>
<td>trinitrotoluene</td>
<td>C₇H₅N₃O₆</td>
<td>118-96-7</td>
</tr>
<tr>
<td>PETN</td>
<td>pentaerythritol tetranitrate</td>
<td>C₅H₁₂N₄O₁₂</td>
<td>78-11-5</td>
</tr>
<tr>
<td>RDX</td>
<td>cyclotrimethylene</td>
<td>C₃H₆N₆O₈</td>
<td>121-82-4</td>
</tr>
<tr>
<td>HMX</td>
<td>trinitramine (cyclonite)</td>
<td>C₃H₆N₆O₈</td>
<td>2691-41-0</td>
</tr>
<tr>
<td>EDDN</td>
<td>cyclotetramethylene tetranitramine (octogen)</td>
<td>C₄H₈N₈O₈</td>
<td></td>
</tr>
<tr>
<td><em>NG</em></td>
<td>nitroglycerine</td>
<td>C₃H₅O₃(NO₂)₃</td>
<td>55-63-0</td>
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<tr>
<td><em>EGDN</em></td>
<td>ethylene glycol dinitramine</td>
<td>C₂H₄O₂(NO₂)₂</td>
<td>628-96-6</td>
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</tbody>
</table>

#### Typical Composite Explosives

<table>
<thead>
<tr>
<th>Composition B</th>
<th>Hexolite</th>
<th>TNT/RDX</th>
<th>TNT/RDX</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pentolite</td>
<td></td>
<td>PETN/TNT</td>
<td></td>
</tr>
<tr>
<td>Cyclotol</td>
<td></td>
<td>TNT/RDX</td>
<td></td>
</tr>
<tr>
<td>Torpex or Hexotonal</td>
<td></td>
<td>TNT/RDX/Aluminum</td>
<td></td>
</tr>
<tr>
<td>Octol</td>
<td></td>
<td>TNT/HMX</td>
<td></td>
</tr>
</tbody>
</table>

**NOTE:** None of these compounds or composite explosives contain any heavy metals.

* Currently dynamite containing these compounds is only being re-packaged at this facility.
<table>
<thead>
<tr>
<th>Common Name</th>
<th>Chemical Name</th>
<th>Formula</th>
<th>CAS NO.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aluminum</td>
<td>same</td>
<td>Al</td>
<td>7429-90-5</td>
</tr>
<tr>
<td>Ammonium Nitrate</td>
<td>same</td>
<td>NH₄NO₃</td>
<td>6484-52-2</td>
</tr>
<tr>
<td>ANSOL</td>
<td>ammonium nitrate solution</td>
<td>NH₄NO₃</td>
<td>6484-52-2</td>
</tr>
<tr>
<td>Blended Mineral Oils</td>
<td>same</td>
<td>Mixture</td>
<td></td>
</tr>
<tr>
<td>EDA</td>
<td>ethylene diamine</td>
<td>C₂H₄N₂</td>
<td>107153</td>
</tr>
<tr>
<td>Ethanolamine</td>
<td>monoethanolamine</td>
<td>C₂H₇NO</td>
<td>141-43-5</td>
</tr>
<tr>
<td>Ethylene Glycol</td>
<td>same</td>
<td>C₂H₄O₂</td>
<td>107-21-1</td>
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<td>Glacial Acetic Acid</td>
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<td>CH₃CO₂H</td>
<td>64-19-7</td>
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<td>Glycerin</td>
<td>glycerol</td>
<td>C₃H₈O₃</td>
<td>56-81-5</td>
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<td>Hexamine</td>
<td>hexamethylene tetramine</td>
<td>C₈H₁₂N₄</td>
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<td>Methylamine</td>
<td>aminomethane</td>
<td>CH₃NH₂</td>
<td>74-89-5</td>
</tr>
<tr>
<td>Microballoons</td>
<td>soda lime, borosilicate glass</td>
<td>HNO₃</td>
<td>7697372</td>
</tr>
<tr>
<td></td>
<td>and amorphous silicate</td>
<td>petroleum hydrocarbons</td>
<td>68476-30-2</td>
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<tr>
<td></td>
<td>same</td>
<td>NaNO₃</td>
<td>7631-99-4</td>
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</table>
# Typical Compositions of Explosives

<table>
<thead>
<tr>
<th>EXPLOSIVE</th>
<th>TYPICAL COMPOSITION</th>
</tr>
</thead>
</table>
| 1. Detonating Cord         | 35 - 75% PETN⁰                                                                                       11 - 42% Polypropylene  
13 - 33% Polyethylene/Wax  
0 - 1% Cotton  
** external covering consists of polypropylene and polyethylene, and/or cotton or polyester yarns |
| 2. Booster                 | 9 - 34% TNT³                                                                                           63 - 79% PETN⁰, RDX⁰, or similar explosive  
0 - 2% Natural Rubber  
3 - 11% Paper  
* may contain sand, grit and/or other inert foreign materials  
** packaging consists of paper cylinders |
| 3. Emulsion                | 39 - 76% Ammonium Nitrate  
5 - 18% Water  
1 - 3% Microballons (Silica Glass)  
3 - 12% Fuel/Blended Mineral Oils  
* may also contain various percentages of the following:  
Aluminum  
Sodium Nitrate  
EDDN⁰  
** packaging consists of paper tubes or polyethylene film with steel or aluminum clips |
| 4. Ammonium Nitrate/Fuel Oil (ANFO) | 3 - 8% Fuel Oil  
92 - 97% Ammonium Nitrate  
* may also contain various percentages of the following:  
Aluminum  
Emulsion  
** packaging consists of paper and polyethylene bags with aluminum clips |
## Table C-3

**AUSTIN POWDER COMPANY**  
**RED DIAMOND PLANT**  
**TYPICAL COMPOSITIONS OF EXPLOSIVES**  
**AUGUST 2000**

<table>
<thead>
<tr>
<th>EXPLOSIVE</th>
<th>TYPICAL COMPOSITION</th>
</tr>
</thead>
</table>
| 5. Dynamite     | 2 - 5% Nitroglycerin  
|                 | 7 - 40% Ethylene Glycol Dinitrate  
|                 | 0 - 70% Ammonium Nitrate  
|                 | **packaging consists of paper tubes**                                                |
| 6. Safety Fuse  | 75% Potassium Nitrate  
|                 | 10% Charcoal  
|                 | 15% Sulfur  
|                 | **packaging consists of cotton yarns and a polyethylene extruded layer**             |
| 7. Matchheads   | 5 - 20% Lead Picramate  
|                 | 10 - 30% Zirconium  
|                 | 30 - 60% Potassium Perchlorate  
|                 | 20 - 35% Nitrocellulose  
|                 | 30 - 50% Steel Wire                                                             |
| 8. Shock Tube   | < 0.4% explosives such as HMX/Aluminum  
|                 | 99.96% Polyethylene  
|                 | **external covering consists of polyethylene tubing**                              |

^a PETN = pentaerythritol tetranitrate; C$_5$H$_9$N$_4$O$_{12}$  
^b TNT = trinitrotoluene; C$_7$H$_5$N$_3$O$_6$  
^c RDX = cyclotrimethylene trinitramine (cyclonite); C$_3$H$_6$N$_6$O$_6$  
^d EDDN = ethylene diamine dinitrate; C$_2$H$_10$N$_4$O$_6$  
^e HMX = cyclotetramethylene tetranitramine (octogen); C$_4$H$_8$N$_8$O$_8$
### Table C-4

**AUSTIN POWDER COMPANY**  
**RED DIAMOND PLANT**  
**SAMPLE PRESERVATION AND STORAGE**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Container</th>
<th>Preservative</th>
<th>Recommended Holding Times</th>
<th>Amount of Sample Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ignitability</td>
<td>Polyethylene</td>
<td>None Required</td>
<td>Analyze As Soon As Possible</td>
<td>1950 mL</td>
</tr>
<tr>
<td>Reactivity</td>
<td>Polyethylene</td>
<td>None Required</td>
<td>Analyze As Soon As Possible</td>
<td>425 mL</td>
</tr>
</tbody>
</table>

*All other tests for hazardous wastes are conducted by an outside laboratory that complies with all applicable US EPA and OEPA guidelines.*
<table>
<thead>
<tr>
<th>Analyte(s)</th>
<th>Method</th>
<th>Description/Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arsenic</td>
<td>SW-846 7060</td>
<td>Arsenic by Atomic Absorption (AA) - furnace technique</td>
</tr>
<tr>
<td>Barium</td>
<td>SW-846 7080</td>
<td>Barium by Atomic Absorption (AA) - direct aspiration</td>
</tr>
<tr>
<td>Cadmium</td>
<td>SW-846 7130</td>
<td>Cadmium by Atomic Absorption (AA) - direct aspiration</td>
</tr>
<tr>
<td>Chromium</td>
<td>SW-846 7190</td>
<td>Chromium by Atomic Absorption (AA) - direct aspiration</td>
</tr>
<tr>
<td>Lead</td>
<td>SW-846 7421</td>
<td>Lead by Atomic Absorption (AA) - direct aspiration</td>
</tr>
<tr>
<td>Mercury</td>
<td>SW-846 7470</td>
<td>Mercury in Liquid Waste (Manual Cold Vapor Technique)</td>
</tr>
<tr>
<td>Selenium</td>
<td>SW-846 7740</td>
<td>Selenium by Atomic Absorption (AA) - gaseous hydride</td>
</tr>
<tr>
<td>Silver</td>
<td>SW-846 7760</td>
<td>Silver by Atomic Absorption (AA) - direct aspiration</td>
</tr>
<tr>
<td>Corrosivity</td>
<td>SW-846 9045</td>
<td>pH - Soil and Non-Liquids</td>
</tr>
<tr>
<td>Toxic Metals and Organics</td>
<td>SW-846 1311</td>
<td>Toxicity Characteristic Leaching Procedure</td>
</tr>
<tr>
<td>Semivolatile Organics</td>
<td>SW-846 8270</td>
<td>Semivolatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC/MS): Capillary Column Technique</td>
</tr>
<tr>
<td>Volatile Organics</td>
<td>SW-846 8260</td>
<td>Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC/MS): Capillary Column Technique</td>
</tr>
<tr>
<td>2,6-Dinitrotoluene</td>
<td>SW-846 8270</td>
<td>Semivolatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC/MS): Capillary Column Technique</td>
</tr>
<tr>
<td>Trinitrotoluene</td>
<td>SW-846 8270</td>
<td>Semivolatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC/MS): Capillary Column Technique</td>
</tr>
<tr>
<td>HMX and RDX</td>
<td>SW-846 8330</td>
<td>Nitroaromatics and Nitrarnines by High Performance Liquid Chromatography</td>
</tr>
</tbody>
</table>
Section D- Permitted Open Burn Area

D-1. Hazardous Waste Management Activities:

All of the hazardous wastes that are thermally treated through open burning (OB) are explosives or explosives contaminated materials (D003, K044, and K045) that are generated within the Red Diamond Plant.

These materials are stored (accumulated) for a period not exceeding 90 days in the Hazardous Waste Accumulation Magazines, described in Section F-1a of this application, and are then transported a short distance to the Permitted Open Burn Area. All activities, including generation, accumulation, transportation, and treatment are performed within the plant boundaries.

All of the wastes treated at this unit are solids, which are contained within plastic bags or fiberboard boxes during the storage, transportation and treatment operations.

D-2. Open Burn Area Description:

The active portion of the Permitted Open Burn Area is a flat, cleared and vegetation free, 200-foot diameter area of soil and gravel, containing six (6) burn pans. It is surrounded by a diversion ditch to prevent the entry of run-on water. The perimeter of the Permitted Open Burn Area, which extends to 300 feet from the center, has been planted in grass which is kept mowed for fire control. There are no trees or brush within this 600-foot diameter circle. A diagram is provided as Figure D-1 of this section.

D-3. Burn Pan Description:

Six pans are required due to the explosive limitation per pan, the need for the ash to be totally extinguished prior to reloading and the requirement that different types of explosives be burned separately. A minimum distance of 16 feet separates the burn pans.

The pans are cut from reclaimed, stainless steel, cylindrical tanks and have a bowl shaped bottom with a 6 to 24 inch high side-wall. They are a minimum of ¼ inch thick stainless steel and have three 6 inch steel support legs welded to the bottom. A one-half inch diameter hole is drilled in the center of each pan to drain precipitation that would otherwise accumulate in the pan during periods of non-use.

The cylindrical ash cage, which is 6 to 8 feet high, is fitted directly to the outer edge of the circular pan. To allow access to the pan for both loading materials and ash removal the cage is fitted with a door approximately 3 ft wide by 6 ½ feet high. The cages are constructed of 9 gage galvanized steel wire mesh with openings approximately 1 inch by 1 inch. The wire mesh is held in place by 8 steel posts welded to the burn pan. The cage serves to contain the larger burning embers and ash, thereby reducing fire hazards and
fugitive ash. The cage will also prevent access to any stray livestock. Diagrams showing the design of the burn pans are included as Figures D-2 of this section.

**D-4 Ash Disposal:**

A covered, metal container has been provided within the 200-foot diameter Permitted Open Burn Area. This thermal treatment completely consumes any reactive constituents and renders any treatment residues non-reactive. The treatment residue, which consists primarily of ash, is collected and sent off-site to a permitted solid waste landfill. The ash is submitted to the TCLP yearly to assure compliance with the LDRs and is recertified by the landfill.
SHELTER

POSTED AT ACCESS ROAD:
DANGER, NO SMOKING
BEYOND THIS POINT

DIVERSION DITCH

OB AREA
+ NO VEGATATION

DRAINAGE

** POSTED SIGNS: DANGER - UNAUTHORIZED PERSONNEL KEEP OUT

- NO VEGATATION

** GRASS - TO BE KEPT MOWED FOR FIRE CONTROL

FIGURE 1
OPEN BURNING AREA
RED DIAMOND PLANT

DESIGN BY:

CHECKED BY:
RJB

DRAWN BY:
A.SMITH

PROJECT NO.: PART B

DATE: 08/01/00
SCALE: AS SHOWN
SIDE VIEW

6' 6"

2" x 1/4" FLAT STEEL BAR

6 GAUGE STEEL WIRE MESH 1" x 1"

STEEL BOWL 3/8" THICK

STEEL PLATE 1/4" THICK

STEEL BASE PLATE 1/4" THICK

2" DIAMETER STEEL PIPE

_DRAWN BY:_

_FIGURE 2_ BURN PAN DESIGN
RED DIAMOND PLANT

PUT DRAWING ON CADD 08/01/00 ARS RJB

DATE

DESCRIPTION DATE BY APP

REVISIONS

DRAWN BY: A SMITH

AS SHOWN

Ohio EPA DMWM DEC 30 2011
Permitted Open Burn Unit: Six burn pans and ash disposal container

Permitted Open Burn Area Shelter
Permitted Open Burn Unit: Six burn pans and ash disposal container

Permitted Open Burn Area Shelter
SECTION F – PROCEDURES TO PREVENT HAZARDS

F-1. Security

F-1a. Waiver:
   OAC 3745-50-44 (A)(4), 3745-54-14 (A)

Security Procedures and Equipment

The Red Diamond plant is accessible through the main gate, which is attended by a guard who identifies every employee and registers every visitor that enters and exits the plant. At the guardhouse, all matches, cigarette lighters and cameras are taken away from plant visitors and are held at the guardhouse until the visitor exits the plant. There are Austin Powder employees staffing the guardhouse and patrolling the property 24 hours a day and 7 days a week.

The entry gate with the guardhouse is a significant distance away from the active portion of the facility (Permitted Open Burn Area). All other entries to the large acreage encompassed by the facility are also a significant distance from the Permitted Open Burn Area, since it is somewhat centrally located with in the 1358-acre site. The other entry roads are marked with signs stating “Danger—Unauthorized Personnel Keep Out” and are blocked by locked gates. The entire plant perimeter is posted with “No Trespassing” warning signs. In addition, the majority of the plant is surrounded by six-foot tall chain linked fence, topped with barbed wire.

The guardhouse at the main gate and the posted signs and gates at the other entries to the plant are effective in preventing the unknowing entry and minimizing the unauthorized entry of persons or livestock onto the active portion of the facility. The roads to the Permitted Open Burn Area are fairly rugged, winding and isolated in the midst of wooded acreage. Therefore, the chance that a person or livestock could come in physical contact with the waste is remote.

The hazardous wastes to be treated at the Permitted Open Burn Area are only taken to the area immediately before the burning operation is to begin. Since the burning activity is not an ongoing activity and occurs at intervals of a few days, in accordance with specific meteorological conditions, there are not many times when waste is actually within the Permitted Open Burn Area. Even if a person or livestock contacted the waste, it would not be expected to burn or detonate without an initiating spark, force or impact. In summary, it is Austin Powder’s belief that this information demonstrates that physical contact with the waste or disturbance of the waste by the unknowing or unauthorized entry of persons or livestock is unlikely to cause injuries or to cause violations of 40 CFR Part 264.

When an Open Burning activity is occurring at the Permitted Open Burn Area, the roads to the area are blocked and signs are posted saying “Danger Keep Out”. The entry and number of personnel in the Permitted Open Burn Area is strictly controlled. Explosives
wastes and explosive-contaminated materials are only present in the Permitted Open Burn Area when a treatment operation is about to begin. Open Burning personnel are always in attendance when wastes to be treated are present in the unit. The Open Burning personnel perform constant visual checks of the unit and the surrounding area to assure that the treatment is conducted in a safe manner and that no breaches of security occur. This practice provides surveillance of the facility by continually monitoring and controlling entry on the active portion of the facility. After the activity is completed, the burning area is visually inspected by qualified personnel to verify that no explosive material remains in the area.

The areas of the facility where temporary storage of hazardous waste occurs are similarly protected by the security procedures at the facility’s entrances. In addition the wastes are packaged and stored in bulletproof buildings or “magazines” labeled as containing “hazardous waste”. These buildings are securely locked and are accessible only by authorized employees. The buildings are made of steel and wood and range in size from 23 feet by 7 feet to 29 by 6 feet. They have one large door for access, which is locked with a padlock and is opened with a key that is available only to authorized employees, such as the environmental supervisor, the plant managers and assistant managers, and other designated foremen, supervisors or open burning personnel. The magazines themselves are located in a fairly isolated portion of the facility, along a road leading between various plant operations, and they are bulletproof. The buildings are only opened when necessary for inspection or for adding or removing materials in storage. The approach roads to the magazines have signs stating “Danger” — “No Smoking Beyond this point”.

Austin Powder hereby requests a waiver of the specific security requirements set forth in 40 CFR § 264.14 and OAC 3745-54-14. The description of security provided in this application effectively demonstrates that physical contact with the waste, structures or equipment associated with the Permitted Open Burn Area and temporary storage areas (magazines) will not injure unknowing or unauthorized persons or livestock that may enter the areas, and that disturbance of the waste or equipment by the unknowing or unauthorized entry of persons or livestock onto the active portion of the facility will not cause a violation of the hazardous waste permitting standards. At the Permitted Open Burn Area unknowing or unauthorized persons or livestock cannot enter the area while waste is present. At other times, there is no risk of harm to persons or livestock who may enter the Permitted Open Burn Area since the treatment and cleanup operations occur so that no waste remains and therefore there is no threat posed by walking or driving in the area.

F-2 Inspection Schedule

F-2a. General Inspection Requirements:
OAC 3745-50-44 (A)(5), 3745-54-15 (A), (B)(1) & (B)(2), 3745-54-33
Austin Powder inspects the facility for malfunctions, deteriorations, operator errors, and discharges that could lead to release of hazardous waste constituents to the environment or a threat to human health. These inspections are conducted on a regular basis in order to identify and correct potential problems before they can harm human health and the environment. Austin Powder follows a written schedule developed for inspecting safety and emergency equipment; communication and security devices; and operating and structural equipment, which are important in preventing, detecting, and/or responding to environmental or human health hazards.

The inspection schedule varies depending on the likelihood of deterioration of the equipment between inspections and upon the probability of an impact on human health or the environment if a release of waste should go undetected between inspections. To safeguard against undetected releases all personnel are trained to report possible releases, equipment deterioration or any other unusual conditions as soon as they are detected.

The Permitted Open Burn Area is visually inspected after each open burning event. The inspection is recorded on the “Daily Report Form For Open Burning”. The Daily Report Form is included as Attachment F-1.

Austin Powder inspects hazardous waste storage areas (magazines) weekly, additionally employees place materials in these areas daily and are cautioned to report any abnormal conditions that they observe. The Magazine Inspection Checklist (Form 308) is included as part of Attachment F-2.

These inspection and checklists will be maintained at the facility for three years.

In addition, the following items are also inspected:

*Portable fire extinguishers* are visually inspected monthly and are subjected to an annual maintenance check
*Fire hoses* are pressure tested annually
*Two-way radio and base station* used for communication are inspected and verified as operational each morning prior to the start of operations

F-2a (1) Types of Problems:
OAC 3745-54-15 (B)(3)

F-2a (2) Frequency Of Inspection:
OAC 3745-54-15 (B)(4)

F-2a (3) Remedial Action:
OAC 3745-54-15 (C)

F-2a (4) Inspection Logs:
OAC 3745-54-15 (D)
(1) Each magazine containing waste explosives or explosive-contaminated materials is inspected weekly by supervisory personnel for the items listed on Form 308, entitled “Magazine Inspection Check List”, which appears as Attachment F-2.

Additionally, employees place materials in these areas daily and are cautioned to report any abnormal conditions that they observe.

(2) The Permitted Open Burn Area is visually inspected after each open burning event for any unburned or ejected wastes, which are then collected and burned. Only after the flames subside may the operator approach the burn pans to inspect for any unburned or ejected materials. The steel pans used for the open burning process are inspected before each open burning event to ensure that they have not lost their containment integrity. The person conducting the open burning activity performs this visual inspection prior to the open burning, and verifies his observations on the “Daily Report Form For Open Burning”. The Daily Report Form, which includes the inspection schedule for the Permitted Open Burn Area, appears as Attachment F-1.

These inspection and checklists will be maintained at the facility for three years.

(3) Portable fire extinguishers are visually inspected monthly and are subjected to an annual maintenance check. Dry chemical extinguishers are emptied and subjected to applicable maintenance procedures every 6 years, with hydrostatic testing every 12 years. The inspection program is in compliance with the OSHA provisions of 29 CFR § 1910.157 concerning portable fire extinguishers.

(4) Fire hoses are pressure tested annually.

(5) The facility’s two-way radio and base station used for communication are inspected and verified as operational each morning prior to the start of operations.

(6) The facility’s primary external communication devices are provided by the Time Warner Communications Company. Any telephone problems within the plant are immediately reported to the telephone company.

F-2b. Specific Process Unit Inspections

N/A

F-3. Exemption from or Documentation of Preparedness & Prevention Requirements:

OAC 3745-50-44 (A)(6), 3745-54-30 to 3745-54-37
The facility is not pursuing an exemption from the preparedness and prevention requirements.

F-3B. Design and Operation of the Facility:
OAC 3745-54-31

The facility is designed, constructed, maintained, and operated to minimize the possibility of fire, explosion, or any release of hazardous waste or constituents to air, soil or surface water which could threaten human health or the environment. Equipment and inspection procedures are discussed above in Section F-2. Additional items are discussed in Section F-4 of this application.

F-3c. Emergency Equipment Requirements:
OAC 3745-54-32

The facility is equipped with the emergency equipment and communication devices required by OAC 3745-54-32; including internal communications and alarm systems, telephones, hand-held two-way radios, portable fire extinguishers, and adequate water supply (volume and pressure).

F-3c(l). Internal Communications:
OAC 3745-54-32 (A)

The Red Diamond plant is equipped with an internal alarm system, consisting of sirens to warn of potential dangers in the various plant areas. Telephones are located throughout the plant, in offices and various production buildings but they are not located at the Permitted Open Burn Unit. The Permitted Open Burn Unit is intentionally located in a remote part of the facility. When open burning activities are occurring, at least two plant personnel will be present at all times. A hand-held two way radio will be used at the Permitted Open Burn Unit. If there is an emergency, personnel at the Permitted Open Burn Unit can utilize their two-way radios or can rush to the nearest alarm system, at the Booster Line or the Emulsion Line, to communicate the hazard to the rest of the facility and local fire department, if appropriate. The two-way radios are capable of summoning emergency assistance from local police departments, fire departments, or Ohio EPA or local emergency response teams, as appropriate, by communicating to one or more of the three base stations within the plant.

The portable radio system currently in use at Red Diamond is an IB business radio service with the call letters WQHB486. The license is valid through June 19, 2017 and will be renewed after that date, a copy of the license is included as Attachment F-4. There are three portable base stations, which are currently located at the Gate House, the Conference Room at the Main Office and the Transportation Office. Forty-four hand-held units are available for plant use, including by the open burn unit operators.
F-3c(2). External Communications:
OAC 3745-54-32 (B)

Telephones are located throughout the plant, in offices and various production buildings but they are not located at the Permitted Open Burn Unit. If there is an emergency, personnel at the Permitted Open Burn Unit can utilize their two-way radios or can rush to the nearest alarm system, at the Booster Line or the Emulsion Line, to communicate the hazard to the rest of the facility and local fire department, if appropriate. The two-way radios are capable of summoning emergency assistance from local police departments, fire departments, or Ohio EPA or local emergency response teams, as appropriate, by communicating to one or more of the three base stations within the plant.

F-3c(3). Emergency Equipment:
OAC 3745-54-32 (C)

The Austin Powder plant has a few localized systems (sprinkler systems, fire hoses at buildings, rakes etc.) to be used for a fire not involving explosives-related material such as in the garage or office areas. The facility has agreements with the McArthur and Zaleski Fire Departments for the purpose of fighting brush fires or other non-explosives-related fires, and to respond to plant emergencies. The Chief of the Zaleski Fire Department has copies of plant maps and is familiar with the plant layout, see Section G ECM-10-D for more details. A certification from the Fire Chief is included as Attachment F-3. If there were a fire in or around a hazardous/explosive waste area, facility personnel have been instructed to evacuate the area and sound the alarm. These procedures are further described in the Contingency Plan that appears in Section G of this application.

An extensive list of Emergency Equipment is located in Section G (Contingency Plan) of this application.

The trucks used to transport explosives, explosive waste and explosive-contaminated materials are each equipped with two portable fire extinguishers. Explosive hazardous waste are solid materials having no free liquids, and the appropriate decontamination methods for these wastes involves open burning. Brooms and shovels, which are readily available at the plant site, are the proper spill control equipment and decontamination equipment for this hazardous waste. Spilled wastes will be contained in bags or boxes and managed in the same manner that the other explosive wastes are managed.

These procedures are further described in the Contingency Plan that appears in Section G of this application.

F-3c(4). Water for Fire Control:
OAC 3745-54-32
If a fire threatens to engulf explosive materials, the proper procedure is to evacuate the area. These procedures are further described in the Contingency Plan that appears as Section G of this application.

In the event of a brush fire in the surrounding area, no activity would be conducted at the Permitted Open Burn Unit.

F-3d. Access to Communications or Alarm Systems:
OAC 3745-54-34

If there is an emergency, personnel at the Permitted Open Burn Unit can utilize their two-way radios or can rush to the nearest alarm system, at the Booster Line or the Emulsion Line, to communicate the hazard to the rest of the facility and local fire department, if appropriate.

F-3e. Aisle Space Requirement:
OCA 3745-54-35

Aisle space to allow the unobstructed movement of personnel, fire protection and other equipment is available at the facility, which consists of various buildings separated by distances necessary to meet the requirements for explosives handling. There is also a fire road traversing the facility for access to more remote areas. Aisle space is not needed within the temporary waste storage area or within the Permitted Open Burn Unit, since they are discrete units, accessible by road, in which the safety procedures for waste management are expected to preclude the need for entry by emergency equipment. In fact, the safety procedure for response to fires involving explosives is to evacuate the area entirely.

F-3f. Arrangements with Local Authorities:
OAC 3745-54-37

Austin Powder has made arrangements with local police and fire departments and emergency medical facilities as described on page ECM-10-D of the Contingency Plan (Section G of this Application) to respond to emergencies. Austin Powder has made arrangements with state and local authorities to satisfy the requirements set forth in OAC 3745-54-37, as described in detail in the Contingency Plan, in Section G of this application.

F-4. Preventative Procedures, Structures, and Equipment:
OAC 3745-50-44 (A)(8)

F-4a. Unloading Operations:
OAC 3745-50-44 (A)(8)(a)
Loading and unloading hazards at the Permitted Open Burn Area include the possibility of spillage or accidental ignition or detonation during loading and unloading the hazardous wastes onto vehicles that transport the waste to the temporary storage areas or to the Permitted Open Burn Area. To minimize the hazards, all personnel exercise the level of extreme care that they exercise with explosive products. Spillage is easily cleaned up since the materials are solids and do not contain free liquids. No smoking is allowed at any time on the plant.

All of the hazardous wastes are contained in bags or boxes. Prior to unloading the vehicle used for transporting hazardous waste, the engine is turned off and smoking is prohibited in the entire area.

The hazardous waste is separated and protected from sources of ignition including but not limited to: Open flames, smoking, sparks (static, electrical, or mechanical), spontaneous ignition from heat producing chemical reactions, radiant heat, and impact.

No specialized equipment is used in unloading bags or boxes other than manual labor. This practice avoids sparks and other initiating forces that could pose hazards in the operation.

The Permitted Open Burn Area consists of a circular section of land 100 feet in radius which is un-vegetated. The perimeter of this area, which extends to 300 feet from the center of the OB area, has been planted in grass which is kept mowed for fire control. There are no trees or brush within this 600-foot diameter circle.

**F-4b. Run-off:**

OAC 3745-50-44 (A)(8)(b)

The Permitted Open Burn Area is not located within the 100-year flood plain as described elsewhere in this application. In addition, the Permitted Open Burn Area is located on the top of a hilly area that is not subject to even more localized flooding that could occur during a short duration, high intensity run-off events.

The treatment of explosives waste and explosives contaminated materials in the Permitted Open Burn Area will be conducted on 6-8 foot diameter circular burn pans consisting of a steel bowl with a 6 to 24 inch high side wall to contain the materials being treated and to eliminate the potential of a run-on/run-off event.

All of the hazardous waste is burned on steel burn pans designed to contain the waste as it is treated. The steel burn pans will also contain any molten materials or ash generated by the burning of non-hazardous explosive contaminated materials. Any ash generated from the treatment of non-hazardous waste is removed after a suitable cooling period and shipped off-site for disposal as a non-hazardous waste. This procedure prevents any hazardous waste or non-hazardous ash from contacting surface water and therefore prevents any run-off of hazardous waste or other waste.
Neither explosives nor the explosive-contaminated materials contain any heavy metals as evidenced by an examination of the chemical formulae of the explosive and non-explosive raw materials listed in Table B-1 of this application.

To control run-on and run-off, a diversion ditch has been provided directly above (uphill of) the Permitted Open Burn Area. As a further precaution, open burning activities are not conducted during rain events. Since there is no ash or waste in contact with the ground, no additional run-on/run-off controls are required.

At the end of each day’s operation, the area is inspected for any residual explosives or unburned explosive-contaminated materials. This material, if any, is either burned, or removed and stored at another location (in the temporary storage magazines) for treatment at a later date. Since no hazardous waste remains in the area, there can be no run-off of hazardous waste.

Spent carbon (K045) is triple burned. After the first burn the characteristic of reactivity is eliminated. The two subsequent burns take place over a period of several days. Residual heat from the embers evaporates any rainwater that may fall into the burn pan. All embers remain in the pan and there is no contact with run-on water nor is there any run-off water. Furthermore, the K045 residue is in the form of granules which are not easily moved by air currents. Neither the carbon nor the TNT is significantly soluble in water and each burn pan has an 8-inch high lip to prevent run-off. The residue has been found to contain only 1.89 ppm of TNT, therefore, this ash poses no threat to ground or surface water due to its small content of explosive.

**F-4c. Water Supplies:**

OAC 3745-50-44 (A)(8)(c)

Since the open burning activity for treatment of these reactive wastes occurs in such a way that no significant residues remain, the threat to surface water or groundwater in the area is non-existent. The treatment of these wastes results in virtual disappearance of these materials.

The groundwater in the vicinity of the plant is approximately 300 feet below the surface. This provides the water supply for the surrounding area of the county.

The nearest surface water body is a small intermittent flow creek that is approximately 800 feet east of the Permitted Open Burn Area. As discussed elsewhere in this application, the waste is present in the unit only for a short time prior to its burning. Open burning will not be conducted during rain events.

**F-4d. Equipment and Power Failure:**

OAC 3745-50-44 (A)(8)(d)
Power failures or outages have no affect on the open burning activities at the facility, since there is no electrical power used to conduct the activities. Burning is initiated by a lighted match or fuse.

The base radio station, located in the main office and used for communication with the open burn operators, is electronically operated. However, in the event of a power failure, an emergency generator located at the boiler house is activated. This generator provides power to the base station and to on or off-plant communications equipment.

The hand held radios are battery operated and not dependent upon external electrical power sources.

In addition, all of the production areas have specific shut down procedures for power failure, and the systems are designed to minimize or eliminate the danger of fire or explosion.

F-4e. Personnel Protection Equipment and Prevention of Undue Exposure of Personnel to Hazardous Waste:

OAC 3745-50-44 (A)(8)(e)

Procedures governing undue personnel exposure to the hazardous waste are specifically defined in the Hazardous Waste Personnel Training Program, which appears as Attachment H-1 of this application.

The personal protective equipment required during hazardous waste handling includes hardhat, safety shoes, gloves and safety glasses. A shelter is located on the perimeter of the Permitted Open Burn Area next to the access road and 300 feet from the burning pans. The operator, after igniting the waste, withdraws to this shelter and controls access to the area.

The wastes are stored in bulletproof buildings or “Magazines” labeled as containing “Hazardous Waste”. These buildings are securely locked and are accessible only by authorized employees. The buildings are made of bulletproof steel and wood and consist of 7ft x 10ft compartments. They each have one large door for access, which is locked with two padlocks and is opened with a key that is available only to authorized employees, such as the Environmental Supervisor, the Plant Managers, and Assistant Managers, and other designated foreman, supervisors or open burning personnel. The magazines are located in a fairly isolated portion of the facility, along a road leading between various plant operations. The buildings are only opened when necessary for inspection or for adding or removing materials in storage. The approach roads to the magazines have signs stating “Danger—No Smoking Beyond This Point”.

Ohio EPA DMWM DEC 30 2011
The truck used to transport the explosives and/or explosives-contaminated material to the Permitted Open Burn Area are ¼ to 2 ton trucks fitted with a covered bed, the appropriate hazard warning signs, and two fire extinguishers.

F-5. Prevention of Reaction of Ignitable, Reactive, and Incompatible Wastes

F-5a. Precautions to Prevent Ignition or Reactive and Incompatible Wastes:
OAC 3745-50-44 (A)(9), 3745-54-17 (A)

The Austin Powder Company employees are very familiar with the precautions to prevent accidental ignition or reaction of the ignitable, reactive or incompatibles wastes, since the nature of their business involves the proper handling of reactive materials.

From the point of generation and up to the point of final treatment (i.e. Intentional ignition at the Permitted Open Burn Unit), the material is protected from unintended ignition or reaction by the following procedures:

1. The hazardous waste is placed in securely closed containers and labeled in accordance with the instructions specified in the hazardous waste personnel training program, which appears as in Section H of the permit application.

2. The hazardous waste is transported in trucks designed for safe transportation of explosives as described in Section B-2a, Traffic Information, of this application.

3. Throughout the life of the waste, the material is kept isolated from electrical sources. There is no electricity in the storage magazines or at the Permitted Open Burn Unit. The covered truck beds contain no electricity and are lined with wood or other non-sparking material, and contain no exposed spark producing material.

4. The bulletproof storage magazines are fully described in Section F-1a Security.

5. These explosives or explosive-contaminated wastes are in a solid form and are not classed as flammable.

6. Smoking is prohibited throughout the facility. In addition “No Smoking” signs are posted when the Permitted Open Burn Unit is in use as well as near all areas where explosives maybe stored.

F-5b. General Precautions for Handling Ignitable or Reactive Waste and Mixing of Incompatible Waste:
OAC 3745-50-44 (A)(9), 3745-54-17 (B)

Since the material is separately packaged and isolated throughout its life, there is no chance for it to come into contact with acids, bases, or other chemicals that may include spontaneous reactions. Acids, bases or other chemicals that could induce spontaneous
reactions with the waste are not handled in the same location or in the same general areas as the reactive wastes.

**F-5c. Documenting Compliance with General Requirements for Ignitable, Reactive or Incompatible Waste:**

OAC 3745-50-44 (A)(9), 3745-54-17 (C)

The methods employed by Austin Powder to prevent unintended ignition or reaction of wastes are effective in achieving compliance with the regulations governing this issue, as demonstrated by the long history of safe experience using these procedures in the industry and at Austin Powder.

**F-5d. – F-5o.**

N/A
DAILY REPORT FORM FOR OPEN BURNING OF EXPLOSIVES
AND/OR EXPLOSIVES CONTAMINATED MATERIALS

Generator's Name and Mailing Address

Austin Powder Company
P.O. Box 317
430 Powder Plant Road
McArthur, OH 45651

USEPA ID NO - OH004293775
STATE ID NO - 04-82-0643
FACILITY - Red Diamond
PHONE - 740-596-5286

<table>
<thead>
<tr>
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</tbody>
</table>

The burn pans have been inspected prior to today's burning to insure that the pans have not lost their containment integrity. No tall grass, weeds, excessive standing water, foreign objects or debris were in the open burning (OB) area prior to operations. Wind velocity must be less than 15 MPH.

The above explosives and/or explosive contaminated materials have been completely destroyed by open burning (OB). No unburned waste or ejected waste remained after the completion of operations.

PRINTED NAME SIGNATURE DATE TIME

WASTE NO: D003 if greater than 3% explosives.
None if less than 3% explosives and
Includes shock tubing
K044 Waste Water Treatment Sludge
K045 Spent Carbon

*CF: Fiber or plastic boxes, cartons, cases.
*BA: Burlap, cloth, paper or plastic bags.

HW Form 201
Approved By:

HW-8 05/23/11 Rev. 3

Ohio EPA DMWM DEC 30 2011
**HAZARDOUS WASTE MAGAZINE INSPECTION CHECKLIST**

<table>
<thead>
<tr>
<th>Location:</th>
<th>Date:</th>
<th>Time:</th>
<th>Magazine</th>
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<th>Magazine</th>
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<tr>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

1. Is barricade grass short, and have leaves, undergrowth, etc., been removed?
2. Is ground within 50 ft. of magazine free of debris, dunnage, lumber, gloves, etc.?
3. Are magazine ventilator in good condition?
4. Are platforms and docks in good condition?
5. Do doors open without difficulty?
6. Is interior of magazine clean?
7. Any damaged or leaking containers present?
8. Any evidence of powder instability?
9. Are cases properly stacked?
10. Are conveyors in good condition?
11. Is floor in need or repair?
12. Any unauthorized object in magazine? (Look for tools, nails, boxes, stencils)
13. Are rule cards and posted instructions legible, clean and less than 5 years old?
14. Any loose powder or open cases in magazines?
15. Are doors kept locked except when men are working inside?
16. Any powder on hand more than one year old?
17. Any barricades in need of repair?
18. Does brickwork around doors need repaired?
19. Are roofs in need of repair?
20. Powder limit in magazine is?
21. Production Quality - meets requirements?
22. Any evidence of rodent activity?
23. Weather conditions
24. Quantity of waste in magazine (Empty, 1/4 full, 1/2 full, 3/4 full, full)
25. Is each container closed?
26. Is each container labeled Hazardous Waste and Proper Waste Code?

**INSPECTOR**

Approved By: [Signature]

HW-9 05/27/11 Rev. 2
I, James Shively, Fire Chief of Zaleski Fire Department, being familiar with the Austin Powder Company McArthur Red Diamond Plant and fire fighting equipment, do hereby certify that the water volume and pressure at the plant facility is more than adequate to fight brush fires on the facility. Additionally, the Zaleski Fire Department has mutual aid agreements with the McArthur Fire Department and the departments of the surrounding communities.

I hereby certify that all of the above is true and correct to the best of my knowledge.

SIGNED: 

James Shively, Zaleski Fire Chief

Date 6-1-11
RADIO STATION AUTHORIZATION

LICENSEE: AUSTIN POWDER

ATTN: NICK RUPERT, MANAGER
AUSTIN POWDER
430 POWER PLANT ROAD
MCARTHUR, OH 45651

FCC Registration Number (FRN): 0016477440

<table>
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<th>Grant Date</th>
<th>Effective Date</th>
<th>Expiration Date</th>
<th>Print Date</th>
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STATION TECHNICAL SPECIFICATIONS

Fixed Location Address or Mobile Area of Operation

Loc. 1 Address: 430 POWDER PLANT ROAD
City: MC ARTHUR County: VINTON State: OH
Lat (NAD83): 39-16-24.0 N Long (NAD83): 082-25-03.0 W
ASR No.: Ground Elev: 278.0

Loc. 2 Area of Operation
Operating within a 40.0 km radius around fixed location 1

Antennas

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Control Points

Control Pt. No. 1
Address: 430 POWDER PLANT ROAD
City: MC ARTHUR County: VINTON State: OH Telephone Number: (740)596-5286

Waivers/Conditions:
Grant of the request to update licensee name is conditioned on it not reflecting an assignment or transfer of control (see Rule 1.948); if an assignment or transfer occurred without proper notification or FCC approval, the grant is void and the station is licensed under the prior name.

Conditions:
Pursuant to §309(h) of the Communications Act of 1934, as amended, 47 U.S.C. §309(h), this license is subject to the following conditions: This license shall not vest in the licensee any right to operate the station nor any right in the use of the frequencies designated in the license beyond the term thereof nor in any other manner than authorized herein. Neither the license nor the right granted thereunder shall be assigned or otherwise transferred in violation of the Communications Act of 1934, as amended. See 47 U.S.C. § 310(d). This license is subject in terms to the right of use or control conferred by §706 of the Communications Act of 1934, as amended. See 47 U.S.C. §606.

Ohio EPA DMWM  DEC 3 0 2011
I certify under penalty of law that this document and all attachments were prepared under my direction or supervision according to a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Keith Mills
Director of Manufacturing
Austin Powder Company
Contingency Plan & Emergency Control Manual

This Contingency Plan and Emergency Manual provide further details on the management of hazardous waste at the facility as well as the facility's plans for emergency situations.

STEWART, GERALD
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<td>Fire</td>
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<td>Fire Fighting Equipment for Brush Fires</td>
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<td>When Fire Warning Alert/Siren is sounded</td>
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<tr>
<td>If the Distribution Break Area or the approach to it is considered to be an unsafe area:</td>
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Approved by: GS

Page ECM-2

1/8/18 Rev. 2
The following pages contain the procedures, which will take effect during an emergency situation. These procedures have been established from company experience and the knowledge of the Explosive Industry, and will be reviewed annually to assure that they will meet the emergency and safety requirements as changes occur throughout the McArthur facility.

Approved:

Keith Mills  
Director of Manufacturing

DATE: 2/21/2018

Next Review Date: February 2019

NOTE: If there are any question(s) as to roles or responsibilities in the Contingency & Emergency Plan, please contact Environmental Health and Safety Manager at plant extension 7430 or 7416.

Inquiries from off plant agencies or 1st responders such as EMS, Fire Department, Sheriff, etc. are directed to Environmental, Health & Safety Manager at 740-596-5286, extension 7430 or 7416.
Facility Description

<table>
<thead>
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<th>Facility Name:</th>
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<tbody>
<tr>
<td>Facility Address</td>
<td>430 Powder Plant Road McArthur, OH 45601</td>
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<tr>
<td>Phone</td>
<td>(740) 596-5286</td>
</tr>
<tr>
<td>Municipality</td>
<td>McArthur</td>
</tr>
<tr>
<td>County</td>
<td>Vinton</td>
</tr>
<tr>
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<td>Elk</td>
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<tr>
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<tr>
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<td>1000 0023 2928</td>
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The Austin Powder Company’s Red Diamond Plant is located on a 1385-acre tract of land in rural Vinton County, Elk Township. A recent lease agreement signed with ODNR in 2006, acquired 568 acres for a safety buffer zone. Total acreage of land is now 1953 acres. Plant is approximately 2 1/2 miles east of McArthur, Ohio on U.S. Route 50, 1 1/2 miles north on State Route 677, which is also known as Powder Plant Road. Austin Powder Company is the owner and operator of the facility.

McArthur is located approximately 60 miles southeast of Columbus, Ohio, and is the county seat of Vinton County. The county had a 2006 population of 13,519, and a population density of 30.9 people per square mile and is the least densely populated county in the State of Ohio. For comparison, Cuyahoga County, which comprises the greater Cleveland area, has population of density of 3,043 people per square mile.

Vinton County is an un-glaciated part of the Appalachian Plateau consisting of prominent hills and generally narrow valleys with forests typical of the Appalachian foothills.

The facility currently employs 250 people in the manufacture, transportation and sales of explosives.

The products that Austin Powder manufactures are listed below:

Detonating cord is a flexible cord containing a center core of high explosive and is used to initiate other explosives, such as an explosive charge in a blast hole or other lines of detonating cord. It is normally made with PETN but RDX, HMX, or other explosives may also be employed.

Boosters are manufactured by mixing PETN, RDX or HMX with TNT in steam-jacketed kettles.
Various proportions are used depending upon market conditions and the performance required. The molten explosive is poured into a variety of 1/4 ounce to 5-pound boosters, typically cylindrical in shape with one or more channels through the axis of the cylinder to accept either a detonator or detonating cord.

Emulsion explosives represent the latest state of the art in the rapidly changing explosive industry. The Emulsion explosives have trade names such as Hydromite, HEET, Emulex, and Emuline. These water-in-oil emulsions explosives consist of minute sized droplets of an aqueous solution of inorganic oxidizer salts that are surrounded by a very thin layer of a continuous oil phase medium.

PETN is manufactured by reacting Pentaerythritol with strong Nitric Acid, then driving off the acid by the use of Acetone which forms re-crystallized PETN. Re-crystallized PETN is used in producing Detonators, Detonating Cord and Cast Boosters and produced for both internal uses by Austin Powder and for external sales to other explosive manufacturers. The lower concentration of Spent Nitric Acid and spent Acetone from the process is recovered, and by using a Nitric Acid Concentrator and an Acetone distillation column these lower concentrations are then boosted and used in the process again.

Another category of explosives is manufactured at the Mix Plant. These products are a mixture of ammonium nitrate and fuel oil blended with an explosive emulsion.

The Red Diamond Plant will continue to be a distribution point for finished dynamite and gelatin dynamite explosives. There will continue to be operations involving processing prepackaged gelatin dynamites in stick form, which results in no environmental releases other than open burning of contaminated packages.

All of the above manufacturing operations generate varying amounts and types of waste explosives and explosives contaminated materials. Waste explosives are destroyed on-site, by open burning. These explosives may be either raw materials, sweepings, or production items that are either contaminated, off-specification, out-of-date, or considered unmarketable by management.
Please Note: Pages of this document which contain sensitive information such as personal information, home addresses and phone numbers, and policy or account numbers have been removed from this web-available version of the document.

To review redacted copies of these removed pages, please contact DMWM's record management staff at 614-644-2621.

Thank you,
2. Discontinue with further notification of plant personnel until a more accurate appraisal of the emergency situation has been made and wait further instruction.

The Emergency Coordinator will also assure that telephone calls will be made to the appropriate off-plant emergency numbers.

Whenever there is an emergency situation consisting of imminent or actual harm or hazard to human health or the environment, the Emergency coordinator or Alternate Emergency Coordinator shall:

1. Activate the internal facility alarm system and/or plant communication systems to notify all plant facility personnel.

2. Notify the appropriate local agencies:

Vinton County Sheriff  
Zaleski Fire Department  
McArthur Fire Department  
National Response Center

Vinton County Emergency Medical Service  
Ohio EPA Southeast District  
OSHA

If the Emergency Coordinator or Alternate Emergency Coordinator determines that the plant facility has had a release, fire, or explosion, which threatens human health, or the environment outside the facility, the Coordinator, EHS Manager, or Environmental Engineer will notify:

Vinton County Sheriff  
McArthur Fire Department  
Zaleski Fire Department  
Emergency Medical Service

Vinton County LEPC  
Ohio EPA Emergency Response Team  
National Response Center  
Ohio EPA Southeast Office

Notify appropriate local authorities as needed

Adena Medical Center Hospital  
State Highway Patrol  
Ohio Dept. of Natural Resources  
National Forest Administration

⚠️ In event of an explosion, notify sheriff that a no fly zone needs declared via Federal Aviation Agency in Indianapolis Center. Sheriff's dispatcher has phone number on file.

In case Sheriff's Office needs FAA phone number, see listed number: FAA 317-247-2242

Red Diamond facility longitude and latitude is: 39°15.280N & 082°25.834W
Emergency Phone Numbers Plant Personnel

If the Emergency Coordinator determines that a full response is necessary, the following plant personnel are to be notified as designated by the Emergency Coordinator.

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<thead>
<tr>
<th>Special Products Area – Cord Line</th>
<th>Lab Group</th>
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<tbody>
<tr>
<td>Beth Lenegar 740-418-2129</td>
<td>Mark Fox 740-384-3696</td>
</tr>
<tr>
<td>Sara Pelfrey 740-978-6228</td>
<td>Roberta Yates 740-596-4337</td>
</tr>
<tr>
<td>SPA – Booster Line</td>
<td>Tube Mill/Rockbuster</td>
</tr>
<tr>
<td>Bobbi Jo Smith 740-887-4067</td>
<td>Charles Perkins, Jr 740-669-4401</td>
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<tr>
<td>Stephanie Barney 740-331-0231</td>
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<tr>
<td>Brenda Faulkner 740-596-5966</td>
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<td>Emulsion Production</td>
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<tr>
<td>Heath Henderson 740-475-7862</td>
<td>Cyrus Carr 740-418-9518</td>
</tr>
<tr>
<td>Mike Sharp 740-596-1310</td>
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<tr>
<td>Tech/Product Development</td>
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<tr>
<td>John Capers 740-591-3799</td>
<td>Leif Thompson 423-330-4626</td>
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<td>Josiah Hauck 740-412-8706</td>
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<td>Margit Chevalier 740-596-0452</td>
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<tr>
<td>Robert Hivick 740-596-4396</td>
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<td>Bulk Systems</td>
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<tr>
<td>Sara Kingsbury 740-978-3469</td>
<td>Tom Leach 740-418-1950</td>
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Emergency Crew Phone Numbers

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<tr>
<td>Ian Lenegar</td>
<td>SPA Maintenance (740) 418-9685</td>
</tr>
<tr>
<td>Ryan Prater</td>
<td>Garage Supervisor (740) 384-0292</td>
</tr>
<tr>
<td>Clarence Chesser</td>
<td>Garage Lead/Mechanic (740) 596-4988</td>
</tr>
<tr>
<td>Richard Owings</td>
<td>Garage Mechanic (740) 596-5460</td>
</tr>
<tr>
<td>Richard Remy</td>
<td>Maintenance (740) 596-0480</td>
</tr>
<tr>
<td>Brian Bias</td>
<td>Mechanical Integrity (740) 384-1165</td>
</tr>
<tr>
<td>Don Hays</td>
<td>Electrician (740) 286-6526</td>
</tr>
<tr>
<td>Nick Hunter</td>
<td>Electrician (614) 209-5557</td>
</tr>
</tbody>
</table>

Assigned Telephone Stations

Each department Manager is to be stationed at a location at which a telephone station number will be available for communication.
Station number will be reserved for the direct communication with the Command Post. Communications with supervisor/lead person at designated assembly areas will be two way radio, or by runners from Command Post.

### Assigned Emergency Assembly Area

<table>
<thead>
<tr>
<th>Assigned Emergency Assembly Area</th>
<th>EXT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Special Products (Maintenance Shop Area)</td>
<td>7314</td>
</tr>
<tr>
<td>Special Products (SPA Cord Line Change House)</td>
<td>7326</td>
</tr>
<tr>
<td>Special Products (Booster Change House)</td>
<td>7316</td>
</tr>
<tr>
<td>Emulsion Production (Change House)</td>
<td>7301</td>
</tr>
<tr>
<td>Red Diamond Distribution (Break Area)</td>
<td>7300</td>
</tr>
<tr>
<td>Red Diamond Office (Executive Conference Room)</td>
<td>7262</td>
</tr>
<tr>
<td>McArthur Sales Office</td>
<td>7343</td>
</tr>
<tr>
<td>Gate House (Conference Room)</td>
<td>7265</td>
</tr>
<tr>
<td>PETN Plant (Control Room)</td>
<td>7801</td>
</tr>
</tbody>
</table>

### Off-Plant Emergency Numbers

<table>
<thead>
<tr>
<th>Local Assistance</th>
<th>Location</th>
<th>Telephone Numbers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vinton County Sheriff</td>
<td>McArthur</td>
<td>911 or (740) 596-5242</td>
</tr>
<tr>
<td>McArthur Fire Department</td>
<td>McArthur</td>
<td>911 or (740) 596-5333</td>
</tr>
<tr>
<td>Zaleski Fire Department</td>
<td>Zaleski</td>
<td>911 or (740) 596-5300</td>
</tr>
<tr>
<td>Emergency Medical Services</td>
<td>McArthur</td>
<td>911 or 1-888-596-9911</td>
</tr>
<tr>
<td>Adena Occupational Health</td>
<td>Jackson</td>
<td>(740) 395-8060</td>
</tr>
<tr>
<td>Adena Medical Center Hospital</td>
<td>Chillicothe</td>
<td>(740) 779-7813 (Front Desk)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(740) 779-7619 (After Hours)</td>
</tr>
<tr>
<td>Hocking Valley Community Hospital</td>
<td>Logan</td>
<td>(740) 385-5631</td>
</tr>
<tr>
<td>Doctor's Hospital</td>
<td>Nelsonville</td>
<td>(740) 753-1931</td>
</tr>
<tr>
<td>State Highway Patrol</td>
<td>Athens</td>
<td>(740) 593-6611</td>
</tr>
<tr>
<td>Ohio Department of Natural Resources</td>
<td>Zaleski</td>
<td>(740) 596-5781 or 5478 or 4670</td>
</tr>
<tr>
<td>National Forest Administration</td>
<td>Athens</td>
<td>(740) 593-7273 or (740) 593-4295</td>
</tr>
<tr>
<td>U.S. Rail (Office)</td>
<td></td>
<td>(740) 384-3388</td>
</tr>
<tr>
<td>(Locomotive)</td>
<td></td>
<td>(740) 352-1236</td>
</tr>
<tr>
<td>(After Hours Mike Clair)</td>
<td></td>
<td>(419) 930-7095 Cell</td>
</tr>
<tr>
<td>Ohio EPA, Southeast District Office</td>
<td>Logan</td>
<td>(740) 385-8501</td>
</tr>
<tr>
<td>Ohio EPA, Emergency Response Team</td>
<td></td>
<td>1-800-282-9378</td>
</tr>
<tr>
<td>National Response Center</td>
<td></td>
<td>1-800-424-8802</td>
</tr>
<tr>
<td>CHEMTREC</td>
<td></td>
<td>1-800-424-9300</td>
</tr>
<tr>
<td>ERTS</td>
<td></td>
<td>1-800-924-6804</td>
</tr>
<tr>
<td>State Fire Marshal’s Office – Fire &amp; Explosive Investigation</td>
<td>1-800-589-2728</td>
<td></td>
</tr>
<tr>
<td>ATF</td>
<td>Columbus</td>
<td>(614) 827-8400</td>
</tr>
<tr>
<td>Occupational Safety Health Administration</td>
<td>Columbus</td>
<td>(614) 469-5582</td>
</tr>
<tr>
<td>Occupational Safety Health Administration</td>
<td>National</td>
<td>1-800-321-6742</td>
</tr>
<tr>
<td>McArthur Firehouse (Family Gathering Area)</td>
<td>(740) 596-2346</td>
<td></td>
</tr>
<tr>
<td>Cleveland Office Emergency Number</td>
<td>(216) 464-2400 day</td>
<td></td>
</tr>
<tr>
<td>----------------------------------</td>
<td>-------------------</td>
<td></td>
</tr>
<tr>
<td>Cleveland Office Emergency Number</td>
<td>(216) 464-2407 night</td>
<td></td>
</tr>
<tr>
<td>Red Diamond Plant Number</td>
<td>(740) 596-5286 or 800-458-6144</td>
<td></td>
</tr>
</tbody>
</table>

⚠️ No outside fire agency is to be called to fight an explosive fire. They are to be called only as a defensive measure to protect the surrounding area from fire. This should be stated when agency is called.
# APC Red Diamond Telephone Directory

<table>
<thead>
<tr>
<th>Last Name</th>
<th>First Name</th>
<th>Building</th>
<th>Area</th>
<th>Phone #</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mills</td>
<td>Keith</td>
<td>Main Office</td>
<td>Director of Manufacturing</td>
<td>7412</td>
</tr>
<tr>
<td>Chaney</td>
<td>Bern</td>
<td>Main Office</td>
<td>Office Manager</td>
<td>7421</td>
</tr>
<tr>
<td>Stewart</td>
<td>LJ</td>
<td>Main Office</td>
<td>EHS Manager</td>
<td>7430</td>
</tr>
<tr>
<td>Kingsbury</td>
<td>Sara</td>
<td>Main Office</td>
<td>Environmental Engineer</td>
<td>7416</td>
</tr>
<tr>
<td>Braglin</td>
<td>Sherry</td>
<td>Main Office</td>
<td>Human Resource Manager</td>
<td>7414</td>
</tr>
<tr>
<td>Cochran</td>
<td>Chad</td>
<td>Main Office</td>
<td>Purchasing Manager</td>
<td>7405</td>
</tr>
<tr>
<td>Messick</td>
<td>Debbie</td>
<td>Main Office</td>
<td>Red Diamond</td>
<td>7439</td>
</tr>
<tr>
<td>Park</td>
<td>Aprille</td>
<td>Main Office</td>
<td>Red Diamond</td>
<td>7267</td>
</tr>
<tr>
<td>Covert</td>
<td>Jessica</td>
<td>Main Office</td>
<td>Red Diamond</td>
<td>7432</td>
</tr>
<tr>
<td>Chamblin</td>
<td>Jon</td>
<td>Main Office</td>
<td>Booster/SPA Manager</td>
<td>7423</td>
</tr>
<tr>
<td>Fee</td>
<td>Shawn</td>
<td>Main Office</td>
<td>Emulsion/Mix Plant Manager</td>
<td>7443</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Phone Room</td>
<td>Red Diamond</td>
<td>7308</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Down Stairs Conference Room</td>
<td>Red Diamond</td>
<td>7261</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Main Conference Room</td>
<td>Red Diamond</td>
<td>7262</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Purchasing Office</td>
<td>Red Diamond</td>
<td>7419</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Computer Main Office</td>
<td>Red Diamond</td>
<td>7270</td>
</tr>
<tr>
<td></td>
<td></td>
<td>West Magazine</td>
<td>Red Diamond</td>
<td>7329</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Pond Area</td>
<td>Red Diamond</td>
<td>7313</td>
</tr>
<tr>
<td></td>
<td></td>
<td>South Trailer Bay</td>
<td>Red Diamond</td>
<td>7326</td>
</tr>
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</table>

## SPA Booster & Cord Area

<table>
<thead>
<tr>
<th>Last Name</th>
<th>First Name</th>
<th>Area</th>
<th>Phone #</th>
</tr>
</thead>
<tbody>
<tr>
<td>Smith</td>
<td>Bobbie Jo</td>
<td>Booster Supervisor</td>
<td>7303</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Building #1</td>
<td>7339</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Building #2</td>
<td>7335</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Building #3</td>
<td>7336</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Bangalore Building</td>
<td>7320</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Laundry Room</td>
<td>7318</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Booster Change House</td>
<td>7316</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Booster Warehouse</td>
<td>7328</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Supervisor Office</td>
<td>7321</td>
</tr>
<tr>
<td>Lenegar</td>
<td>Ian</td>
<td>SPA Maintenance</td>
<td>7314</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Cord Line Change House</td>
<td>7326</td>
</tr>
<tr>
<td></td>
<td></td>
<td>SPA Rewind</td>
<td>7327</td>
</tr>
<tr>
<td></td>
<td></td>
<td>East Building</td>
<td>7310</td>
</tr>
<tr>
<td></td>
<td></td>
<td>West Building</td>
<td>7312</td>
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<tr>
<td></td>
<td></td>
<td>R&amp;D Building</td>
<td>7302</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Far Building (Balloons)</td>
<td>7322</td>
</tr>
</tbody>
</table>

## Emulsion/Mix Plant

<table>
<thead>
<tr>
<th>Area</th>
<th>Phone #</th>
</tr>
</thead>
<tbody>
<tr>
<td>Package Plant</td>
<td>7307</td>
</tr>
<tr>
<td>Box House</td>
<td>7323</td>
</tr>
<tr>
<td>Bulk Plant</td>
<td>7315</td>
</tr>
<tr>
<td>Change House</td>
<td>7301</td>
</tr>
<tr>
<td>Case House</td>
<td>7306</td>
</tr>
<tr>
<td>Maintenance</td>
<td>7311</td>
</tr>
<tr>
<td>R&amp;D Building</td>
<td>7437</td>
</tr>
<tr>
<td>Mix Plant</td>
<td>7330</td>
</tr>
<tr>
<td>Shell &amp; Tube Mill</td>
<td>7332</td>
</tr>
<tr>
<td>Midway Bulk Plant (Jerry Sheline)</td>
<td>423-422-3173</td>
</tr>
</tbody>
</table>

Approved by: GS

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<table>
<thead>
<tr>
<th>Name</th>
<th>Title</th>
<th>Phone</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reed</td>
<td>Main Office</td>
<td>7427</td>
</tr>
<tr>
<td>Bentley</td>
<td>Main Office</td>
<td>7403</td>
</tr>
<tr>
<td></td>
<td>(Tom Justice old office)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Pump Shop</td>
<td>7415</td>
</tr>
<tr>
<td></td>
<td>Engineering</td>
<td>7309</td>
</tr>
<tr>
<td>Abele</td>
<td>Lab</td>
<td>7413</td>
</tr>
<tr>
<td>Fox</td>
<td>Lab</td>
<td>7420</td>
</tr>
<tr>
<td>Hamon</td>
<td>Lab</td>
<td>7422</td>
</tr>
<tr>
<td>Hivic</td>
<td>Lab</td>
<td>7425</td>
</tr>
<tr>
<td>Walker</td>
<td>Lab</td>
<td>7434</td>
</tr>
<tr>
<td>Yates</td>
<td>Lab</td>
<td>7222</td>
</tr>
<tr>
<td></td>
<td>Shooting Area</td>
<td>596-9409</td>
</tr>
<tr>
<td>Young</td>
<td>Maintenance Building</td>
<td>7428</td>
</tr>
<tr>
<td>Bias</td>
<td>Break Area</td>
<td>7309</td>
</tr>
<tr>
<td>Hays</td>
<td>Electric Room</td>
<td>7309</td>
</tr>
<tr>
<td></td>
<td>Maintenance Building</td>
<td>7264</td>
</tr>
<tr>
<td></td>
<td>Maintenance Building</td>
<td>7444</td>
</tr>
<tr>
<td></td>
<td>Boiler Personnel</td>
<td>7271</td>
</tr>
<tr>
<td>Thompson</td>
<td>Main Office</td>
<td>7442</td>
</tr>
<tr>
<td></td>
<td>PETN Plant Manager</td>
<td>7429</td>
</tr>
<tr>
<td></td>
<td>PETN Office</td>
<td>7431</td>
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<tr>
<td></td>
<td>PETN Office</td>
<td>7448</td>
</tr>
<tr>
<td></td>
<td>PETN Plant</td>
<td>7449</td>
</tr>
<tr>
<td></td>
<td>Control Room</td>
<td>7801</td>
</tr>
<tr>
<td>Biggs</td>
<td>PSM Office</td>
<td>7431</td>
</tr>
<tr>
<td>McArthur</td>
<td>Sales</td>
<td>7343/7344</td>
</tr>
<tr>
<td></td>
<td>First Aid/UPS Room</td>
<td>7313</td>
</tr>
<tr>
<td></td>
<td>Conference Room</td>
<td>7265</td>
</tr>
<tr>
<td></td>
<td>Inbound Gate</td>
<td>7001</td>
</tr>
<tr>
<td></td>
<td>Outbound Gate</td>
<td>7101</td>
</tr>
<tr>
<td></td>
<td>Lobby</td>
<td>7340</td>
</tr>
<tr>
<td>Seitz</td>
<td>Main Office</td>
<td>7334</td>
</tr>
<tr>
<td>Dickerson</td>
<td>Main Office Library</td>
<td>7260</td>
</tr>
<tr>
<td>Capers</td>
<td>Main Office</td>
<td>7407</td>
</tr>
<tr>
<td>Hauck</td>
<td>Main Office</td>
<td>7408</td>
</tr>
<tr>
<td>Leach</td>
<td>Main Office</td>
<td>7437</td>
</tr>
<tr>
<td>Chevalier</td>
<td>Main Office</td>
<td>7417</td>
</tr>
<tr>
<td></td>
<td>Tech Department</td>
<td>7424</td>
</tr>
<tr>
<td></td>
<td>Tech Department</td>
<td>7404</td>
</tr>
<tr>
<td></td>
<td>Tech Department</td>
<td>7438</td>
</tr>
<tr>
<td>Gilliland</td>
<td>Main Office</td>
<td>7433</td>
</tr>
<tr>
<td></td>
<td>Transportation Manager</td>
<td>7433</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>----------------</td>
<td>-------</td>
<td>---------------</td>
</tr>
<tr>
<td>Crabtree</td>
<td>Mike</td>
<td>Main Office</td>
</tr>
<tr>
<td>Crabtree</td>
<td>Mike</td>
<td>Main Office</td>
</tr>
<tr>
<td>Prater</td>
<td>Ryan</td>
<td>Garage</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Garage Wall Phone</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Truckers Trailer</td>
</tr>
</tbody>
</table>
Emergency Location

When an emergency situation occurs, the exact location is to be determined and reported by referring to the plant area plot plan and the detailed map of the specific area. The plant area is to be referred to initially, so as to identify the general area:

**Emulsion Area**
- Bulk Plant - Production Bldg. 2
- Bulk Plant Tank Farm
- Bulk Plant Bins
- Production Building 1
- Production Tank Farm
- Case House
- Magazine 9
- Emulsion YM-1 & YM-2 Magazines
- Inert Emulsion Warehouse #1

**SPA Cord Area**
- Det. Cord and Assembly
- Production Bldg. #1, East
- Production Bldg. #2, West
- Production Bldg. #3, Far (Balloon & Rockbuster)
- Inert Warehouse #1, #2, #3

**Indirect Area-Red Diamond**
- Shell and Tube Assembly
- Garage
- Main Office and Lab
- Break Area and Fabrication Area
- Carpenter Shop
- Pump Rebuild Shop
- Gate House
- Fire Trail

**Booster Area**
- Production Building #1, #2, #3
- Inert Warehouse/Box assembly
- Booster Change House
- Booster Production #1
- Inert Warehouse/Box assembly

**West Magazine Area**
- Magazines 14, 15, 16, 17, 18, 13, and 3
- No 7 West Trailer Lot
- Mix Plant Area
- Mix Plant Production
- Mix Plant AN bins
- Mix Plant warehouse

**Trailer Hold Areas**
- No 1 Trailer Lot
- No 2 Trailer Lot
- No 3 Trailer Lot
- No 4 Trailer Lot
- No 5 Trailer Lot
- No 6 Trailer Lot
- No 8 Trailer Lot
- No 9 Trailer Lot
- No. 10 Trailer Lot
- Magazine 38 above No 9 Lot

**PETN Plant Area**
- PETN Plant

The detailed map of the specific area will be referenced to indicate the precise location of the building or area. See detailed maps of specific areas starting on page ECM-63.
Notification of Red Diamond Drivers, McArthur Sales, Delivery Drivers, and Blast Crew

Red Diamond Transportation Manager or designee is to notify Red Diamond Austin drivers in route to plant to divert returning vehicles to the following areas off plant:

⚠️ *Lot 1 Non-placarded vehicles*

* R&C Quick Stop Rt. 50 West

Notification to drivers is made via an electronic on-board recorder (EOBR), text message, or cell phone.

All placarded vehicles containing hazardous materials, i.e., 1.1 B, 1.1 D, 1.4 B, 1.4S, 1.5 D, 5.1 Oxidizers, ANSOL, or any placarded materials (includes residues) are diverted to Kempton’s Repair located 4 miles west of McArthur on Rt. 50. All placarded vehicles are to be parked at lot on left side of Rt. 50 West.

All non-placarded vehicles (empty) are diverted to R&C Quick Stop Rt. 50 West end of McArthur.

McArthur Sales Manager or designee is to notify McArthur Sales shot service delivery drivers or blast crew in route to plant to divert returning vehicles to the areas listed above:

⚠️ *Lot 1 Non-placarded vehicles*

* R&C Quick Stop Rt. 50 West

Maintain a call log of contacts for Emergency Coordinator.

Phone numbers:

| R&C Quick Stop | 740-596-2240 |

Approved by: GS

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Responsibility

The Emergency Coordinator will have total responsibility and authority during an emergency situation.

During the absence of the Emergency Coordinator, the first Alternate Emergency Coordinator contacted will have the responsibility and authority during an emergency. (See the Emergency Coordinator list on page ECM-8, Line Responsibility flow diagram below.) The highest rank Emergency Coordinator on the plant will be in charge.

Line Responsibility

The following emergency line responsibility chart will be used by the Emergency Coordinator to establish line responsibility during an emergency situation.
Emergency Command Personnel Post Assignments

Set up Command Post - Main Office - Keith Mills

Set up Alternate Command Post (If Needed at Security, SPA Office, or Emulsion Maintenance Office) – Chad Cochran

Personnel that are required to report to the Command Post:

Keith Mills  Sherry Braglin  Chad Cochran  Gerald Stewart  
Bern Chaney  Sara Kingsbury

Note: Use designated laboratory personnel as a runner to main gate. Duties are to use phone for admittance request to plant, instead of using 2-way radio.

Personnel Assignments:

Traffic Control:

Mike Abele or assigned at discretion of Emergency Coordinator

Main Gate:

Brian Gilliland or assigned at discretion of Emergency Coordinator

Managers/Supervisors/lead person at a production area or with a work crew at the time of emergency are to perform the supervisor/lead person duties as spelled out in manual.

⚠️ All portable radios operate on Channel 1 during an emergency. If you don't know radio call number, ask for person by name.
<table>
<thead>
<tr>
<th>Assigned Portable Radio List</th>
</tr>
</thead>
</table>

**Portable Radios KZX 857**

<table>
<thead>
<tr>
<th>Name</th>
<th>Radio No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Keith Mills</td>
<td>1</td>
</tr>
<tr>
<td>Ian Lenegar</td>
<td>2</td>
</tr>
<tr>
<td>Jon Chamblin</td>
<td>3</td>
</tr>
<tr>
<td>LJ Stewart</td>
<td>4</td>
</tr>
<tr>
<td>John Young</td>
<td>5</td>
</tr>
<tr>
<td>Tom Reed - Engineering</td>
<td>6</td>
</tr>
<tr>
<td>Unassigned</td>
<td>7</td>
</tr>
<tr>
<td>SPA PETN Prep</td>
<td>8</td>
</tr>
<tr>
<td>Roberta Yates/Lori Hamon</td>
<td>9</td>
</tr>
<tr>
<td>Emulsion Bulk Plant</td>
<td>10</td>
</tr>
<tr>
<td>Emulsion Production 3rd Shift</td>
<td>11</td>
</tr>
<tr>
<td>Heath Henderson</td>
<td>12</td>
</tr>
<tr>
<td>Shawn Fee</td>
<td>13</td>
</tr>
<tr>
<td>Emulsion Production</td>
<td>14</td>
</tr>
<tr>
<td>Emulsion Case House</td>
<td>15</td>
</tr>
<tr>
<td>Chad Cochran</td>
<td>16</td>
</tr>
<tr>
<td>Cord Production Bldg. 1 - East</td>
<td>17</td>
</tr>
<tr>
<td>Balloons</td>
<td>18</td>
</tr>
<tr>
<td>Brian Gilliland</td>
<td>19</td>
</tr>
<tr>
<td>Mike Sharp/Mike Perry (Emul. Maint.)</td>
<td>20</td>
</tr>
<tr>
<td>Unassigned</td>
<td>21</td>
</tr>
<tr>
<td>Booster Supervisor/Lead Person</td>
<td>22</td>
</tr>
<tr>
<td>Hank Hale (Maintenance)</td>
<td>23</td>
</tr>
<tr>
<td>Dick Remy (Maintenance)</td>
<td>24</td>
</tr>
<tr>
<td>Shell/Tube</td>
<td>25</td>
</tr>
<tr>
<td>Anthony Mullins (Maintenance)</td>
<td>26</td>
</tr>
<tr>
<td>Garage</td>
<td>27</td>
</tr>
<tr>
<td>Mix Plant</td>
<td>28</td>
</tr>
<tr>
<td>Jason Justice - Load Crew Lead</td>
<td>29</td>
</tr>
<tr>
<td>Mike Abele/Belinda Walker</td>
<td>30</td>
</tr>
<tr>
<td>Scott Vires (Emulsion Load Crew)</td>
<td>31</td>
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<tr>
<td>Mix Plant &amp; Mix Plant Lead (Cyrus Carr)</td>
<td>32</td>
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<tr>
<td>Security Escort (Mike Roush)</td>
<td>33</td>
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<tr>
<td>Don Hays - Electrician</td>
<td>34</td>
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<tr>
<td>Load Crew</td>
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<td>Load Crew</td>
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<td>Brian Bias</td>
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<td>Security Escorts</td>
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<td>Bulk Load Crew</td>
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<tr>
<td>Cory Six - Load Crew</td>
<td>40</td>
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<tr>
<td>Steve Dickerson - Emulsion R&amp;D</td>
<td>41</td>
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<tr>
<td>Cord Line Supervisor</td>
<td>42</td>
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<tr>
<td>Booster Production Bldgs. 2 &amp; 3</td>
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<td>Booster Weigh Bldg. 1</td>
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<tr>
<td>Cord Line Pole Barn</td>
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<td>46</td>
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<tr>
<td>Anthony Bentley</td>
<td>47</td>
</tr>
<tr>
<td>Shane Riffle (Pump Shop)</td>
<td>48</td>
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<tr>
<td>Emulsion Expander Room</td>
<td>49</td>
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<tr>
<td>Lauren Biggs</td>
<td>50</td>
</tr>
<tr>
<td>Leif Thompson</td>
<td>51</td>
</tr>
<tr>
<td>PETN</td>
<td>52</td>
</tr>
<tr>
<td>(PETN)</td>
<td>53</td>
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<tr>
<td>PETN Plant (unassigned)</td>
<td>54</td>
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<td>PETN Plant (unassigned)</td>
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<td>58</td>
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<td>PETN Plant (unassigned)</td>
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<tr>
<td>PETN Office</td>
<td>60</td>
</tr>
<tr>
<td>Sara Kingsbury - Environmental</td>
<td>61</td>
</tr>
<tr>
<td>Nick Hunter - Electrician</td>
<td>62</td>
</tr>
<tr>
<td>Steven Sperry (Maintenance)</td>
<td>63</td>
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<tr>
<td>Mark Bentley (Maintenance)</td>
<td>64</td>
</tr>
<tr>
<td>Frank Cantrell</td>
<td>65</td>
</tr>
</tbody>
</table>

**Base Station KZX 857**

| Base 1                          | Main Office (Emergency Command) |
| Base 2                          | Main Office (Transportation)     |
| Base 3                          | Security Office                  |

Approved by: GS  
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Initial Responsibilities

Hazard Assessment

When an emergency situation occurs, the Emergency coordinator will have the immediate responsibilities for:

1. Determine exact location of the emergency:
2. The type of emergency:
   a. Explosion
   b. Fire
   c. Other
3. Obtain an accurate appraisal of the emergency scene with respect to:
   a. Initial Severity
   b. Personnel Injury
   c. Existing Conditions
   d. Potential Hazards to human health or the environment, including hazards from indirect effects of the emergency, including amount and extent of any released materials.

Implementation of the Contingency Plan

Implementation of the Contingency Plan will be the responsibility of the Emergency Coordinator. The plan will be implemented immediately whenever there is a fire, explosion, or release of hazardous waste or hazardous waste constituents, which could threaten human health or the environment. The severity and location of the incident will determine the exact nature of the response, including the need for activation of the alarms or communication systems.

The Emergency Coordinator shall implement the emergency procedures that are necessary to ensure that fires, explosions and unplanned releases do not occur, recur or spread to other hazardous waste or hazardous materials at the facility. To achieve this purpose, the Emergency Coordinator will oversee these procedures:

1. Stopping the processes and operations in the work area at risk from the emergency.
2. Collecting and containing released hazardous materials.
3. Notification of Sheriff’s office to shut down SR677 from Route 50 to Infirmary Road.
4. Notification of Sheriff to establish a No Fly Zone for McArthur facility.

Take the appropriate action to notify:
   Emergency Crew
   Plant Personnel
   Emergency Agencies as required

Approved by: GS
Whenever there is a release, fire, or explosion, the Emergency Coordinator is responsible for ensuring that the character, exact source, amount, and area extent of any released materials is immediately identified. This task will be accomplished by observation of the released material and by observation of the labels of the containers or trucks that may be handling the material. Waste receptacles at the point of generation of hazardous wastes within the plant are labeled with a yellow label reading "HAZARDOUS WASTE". The wastes that meet the definition of "Hazardous" within this plant are all characterized as reactive wastes or listed wastes (D003, K044, and OR K045). Vehicles used to transport hazardous waste within the plant are placarded on the front, and back and on both sides with an "Explosive 1.1D" placard. These vehicles are also marked with a "HAZARDOUS WASTE" label. K044 IS WASTE WATER TREATMENT SLUDGE AND K045 IS SPENT CARBON.

In addition, Austin Powder keeps an inventory of the wastes stored temporarily in the Type 2 storage magazines. These inventories and other records are maintained in locations such as the Main Office that are at a safe distance from the waste management areas. All records are maintained at a significant distance from the open burning/open detonation area.

If the Hazard Assessment indicated that evacuation of local areas may be advisable, the Emergency Coordinator must immediately notify the appropriate local authorities. If the Hazard Assessment indicates that the emergency could threaten human health or the environment on-site or outside of the facility, the Emergency Coordinator must immediately notify the National Response Center and the Ohio EPA Emergency Response Team and give:

1. The name and telephone number of the reporter.
2. The name and address of the facility.
3. The time and type of incident (e.g.), explosion, fire, release).
4. The name and quantity of materials involved, to the extent known.
5. The extent of injuries, if any.
6. The possible hazards to human health or the environment outside the facility.

Establish the Emergency Command Post.

Initiate the appropriate Emergency Warning System for the Entire Plant.
Assigned Responsibilities

The following responsibilities will be preassigned to appropriately qualified personnel and monitored by the Emergency Coordinator.

- Review and make an assessment of the emergency conditions.
- Dispatch emergency equipment as required.
- Remove all trucks and trailers from the emergency area.
- Assign personnel to the first aid room.
- Implement traffic control procedures within the plant and at plant entrances.
- Establish the Emergency Command Post.
- Initiate the communication systems:
  - Base station with portable units;
  - Internal telephone;
  - External communications through the switchboard
- Maintain the Emergency Command Post - Personnel Assignments (FORM-EAP-002) and the Emergency Checklist (FORM-EAP-001) at the Command Post to insure that all persons on plant have been accounted for and qualified personnel are on station at their preassigned responsibility.

At the appropriate time, transfer the responsibility for notifying the following personnel from the Security Personnel to the Command Post:

- Emergency Crew
- Plant Personnel
- General Emergency Numbers as required
Manager Responsibility

Each department Manager or the senior personnel assigned by a department are to immediately report to their assigned emergency posts in the event of an alert and await dispatched instructions from the Emergency Coordinator.

The Special Products and Emulsion supervisors/lead person are to report to their respective office areas and contact the Command Post via telephone. If telephones are not functional, then contact shall be made via the base station using the hand-held portables radios.

The Garage supervisor/lead person will immediately contact the Command Post, and await further instructions from the Emergency Coordinator.

The Manager whose area is directly affected by the alert or emergency condition will, through communications with the Supervisor, relay to the Command Post:

1. The exact location of the emergency.
   a. General area to be referenced by the plant area.
   b. Specific area to be referenced by the detailed drawing of emergency area.

2. The type of emergency
   a. Explosion
   b. Fire
   c. Other

3. Appraisal of:
   a. Initial severity
   b. Existing condition
   c. Personnel injury
   d. Potential hazards to human health or the environment (including hazards from indirect effects of the emergency and including amount and extent of any released materials).

Each department Manager is to be available for obtaining the status of their respective areas through communication with their supervisor/lead person and responsible to relay this information to the Command Post.
Supervisor/Lead Person Responsibility

In the event of an emergency in your work area:

The building siren is to be activated by any associate within the area or building. Siren is activated by flipping siren switch upward, or if a pull station, by pulling the siren switch.

The supervisor/lead person is to immediately insure that the proper evacuation plan for the area is being followed and proceed with the associates to the designated safe area. An accounting of all employees in your area is to be made.

The following information is to be provided to the Emergency Coordinator.

1. The exact location of the emergency by using the Building name, building number or at minimum the general plant area of the emergency.

2. The type of emergency:
   a. Explosion
   b. Fire
   c. Other

3. An appraisal of the emergency
   a. Initial Severity
   b. Existing Conditions
   c. Personnel Injury
   d. Potential Hazards to human health or the environment (including hazards from indirect effects of the emergency, including amount and extent of any released materials).

4. Accountability of all employees in your work area.

The supervisor/lead person is not to return or allow any unauthorized associates to approach the emergency site. This area is to be RESTRICTED and only those associates with assigned duties will be permitted to enter. The supervisor/lead person is to remain with the associates at the designated safe area and await further instructions from the Emergency Coordinator.

In the event of an emergency not at the respective work area:

The area siren is activated upon direction from Emergency Coordinator.

The supervisor/lead person is to immediately insure that the proper evacuation plan for the area is being followed and proceed with the associates to the designated safety area. An accounting is to be made of the associates.
Report via 2-way radio to Emergency Coordinator, once the plant area siren has stopped the following:

Area is secure.
Accounting of Austin employees at assembly area.
Accounting of contractors, carriers, or visitors at assembly area.

The supervisor/lead person is to remain with personnel at the designated safety area and await further instructions from the Emergency Coordinator.

Keep the radio communications quiet after reporting. This way all areas can report to Emergency Coordinator in a timely manner.

Do not release personnel from assembly area, until so instructed by the Emergency Coordinator.

All clear is issued only by the Emergency Coordinator.

Red Diamond Emergency Crew Responsibilities

The Red Diamond emergency crew may be used to fight an incipient brush fire until local fire department arrives. The emergency crew may block access to emergency areas to keep unauthorized personnel away from emergency site. Assist in securing of equipment or utilization of equipment as instructed by emergency coordinator.

Training of Emergency Crew

The emergency training must be conducted once each quarter.

Training should include:
1. Instruct in use of backpack water pump extinguishers.
2. Instruct in securing and blocking of plant areas.
3. Instruct in utilization and securing of equipment.

The following items should be covered with any new associates on Emergency Crew:

1. Use of back pack extinguisher.
2. Use of the ABC chemical extinguisher.
3. Instruct on safety of firefighting.
4. Care of equipment.
5. Location of all fire hydrants.
Post-Emergency Responsibility

Immediately after an emergency and in accordance with applicable laws, the Emergency Coordinator will provide for treating, storing or disposing of recovered waste, contaminated soil or surface water, or any other material that results from the response to an emergency at the Red Diamond facility.

If an unplanned hazardous waste release has occurred, the Emergency Coordinator must ensure that no waste which is incompatible with the released material is treated or stored at the emergency site until cleanup procedures are completed. An associate trained in hazardous waste management will remain at the area and block the access road and maintain radio contact with the Emergency Coordinator until cleanup procedures are completed.

Before operations are resumed at the emergency site, the Emergency Coordinator must ensure that all emergency equipment listed in this contingency plan is cleaned and fit for its intended use. Explosive hazardous wastes are solid materials having no free liquids, and the appropriate decontamination methods for these wastes involves open burning or open detonation. Brooms and shovels, which are readily available at the plant site, are the proper spill control equipment and decontamination equipment for this hazardous waste.

Spilled wastes or contaminated equipment will be contained in bags or boxes and managed in the same manner that the other explosive wastes are managed.

None of the equipment on the emergency equipment list is expected to become contaminated with explosives during an emergency, nor is any of the equipment considered to be disposable. However, in the event any equipment is contaminated to such a degree that sweeping, wiping up rags, etc., is not effective, the item will be treated as an explosive contaminated hazardous waste and treated in the OB area. A visual inspection will be conducted by the Emergency Coordinator or the Alternative Emergency Coordinator of all potentially contaminated equipment to determine if decontamination efforts have been successful.

An emergency in the hazardous waste treatment area such as fire or detonation presents no hazard to other areas because of the remoteness of the site and the fact that open burning is the treatment method. A fire or explosion would not leave any residual waste that would not be cleaned up and handled as explosive hazardous waste within a short period of time. During this time, the site would be secured by plant personnel. Incompatible materials or wastes are not permitted in this area.

Austin Powder must notify the Regional EPA Administrator and appropriate state (Director of the Ohio EPA) and local authorities that the foregoing condition has been satisfied before resuming operations at the emergency site.
The Emergency Coordinator will assist in the preparation of the report required by OAC-3245-54-56 (j) and 40 C.F.R. & 264.56 (j). This report will be submitted to the Director of the Ohio EPA and the regional EPA Administrator within 15 days after an incident that requires implementing this contingency Plan. This report will contain the following information:

1. Name, address and telephone number of the owner or operator.
2. Name, address and telephone number of the facility.
3. Date, time and type of incident (e.g. fire, explosion, spill).
4. Name and quantity of materials involved.
5. The extent of injuries, if any.
6. An assessment of actual or potential hazards to human health or the environment, where this is applicable.
7. Estimated quantity and disposition of recovered material that resulted from the incident; and
8. Any other information as the Director of the Ohio EPA may require.
Arrangements with Local Authorities

Austin Powder has made arrangements with local authorities, as appropriate for the nature of the explosive waste handled at the facility and the potential need for the services of these organizations.

Austin Powder has made arrangements to familiarize the Vinton County Sheriff with the layout of the facility and its associated hazards, the places where facility personnel are normally working, entrances to and roads inside the facility, and possible evacuation routes. The Sheriff, Mr. Shawn Justice 911 or (740) 596-5242, has agreed with the company policy on evacuation of all personnel when experiencing an explosive fire. In addition, the Sheriff’s Office has been provided with a plant map and copies of forms and correspondence regarding chemical inventories and locations. The Sheriff has also observed the open burning area and the storage magazines for waste explosives, in addition to a display of detonators and products that are produced at the plant.

Austin Powder has made arrangements to familiarize Mark Peters, Zaleski Fire Chief, and Charles Fri, McArthur Fire Chief with the layout of the facility, the properties of the hazardous wastes handled at the facility and its associated hazards, the places where facility personnel are normally working, entrances to and road inside the facility, and possible evacuation routes. The Zaleski Fire Department 911 or (740) 596-5300, has agreed with the company policy on evacuation of all personnel when experiencing an explosive fire. In addition, Chief Mark Peters has been provided with a plant map and copies of forms and correspondence regarding chemical inventories and locations. He has also observed the open burning area and the storage magazines for waste explosives, in addition to a display of detonators and products that are produced at the plant.

Although no specific arrangements have been made with State Emergency Response teams, Emergency Response contractors or equipment suppliers due to the nature of the wastes and other materials handled at the facility and the expertise for handling such materials within the plant, Austin Powder personnel are participating in the preparation of the Emergency Response plan for the Local Emergency Planning Committee (LEPC) for Vinton County. Outside agencies response assistance are never requested for a fire involving explosives, since the proper procedure involves evacuation of the area, and securing the area by Austin Powder personnel. The State Emergency Response team is located in Cambridge, Ohio, approximately three hours traveling time from the plant site.

Arrangements have been made to familiarize Adena Health Center with the properties of the hazardous waste handled at the facility and the types of injuries or illnesses that could arise from fires, explosions or releases at the plant.

An agreement has been made with the Zaleski Fire Department designating that Fire Department as the primary emergency authority for plant fires that do not involve explosives. The McArthur Fire Department will provide assistance to the Zaleski Fire Department if needed.
Specified below are the agreements designating primary emergency authority to a specific police and a specific fire department, in cases where more than one police and fire department might respond to an emergency. Also specified below are agreements with any others to provide support to the primary emergency authority:

<table>
<thead>
<tr>
<th>Law Enforcement</th>
<th>Vinton County Sheriff's Department</th>
</tr>
</thead>
<tbody>
<tr>
<td>Address</td>
<td>S. Market Street, McArthur, OH, 45651</td>
</tr>
<tr>
<td>Person Contacted</td>
<td>Sheriff Shawn Justice</td>
</tr>
<tr>
<td>Phone Number:</td>
<td>911 or 740-596-5242</td>
</tr>
</tbody>
</table>

AGREED ARRANGEMENTS: The Sheriff's Department shall provide assistance to halt and direct traffic as needed on Route 677 E. and Route 50 for proper access or egress to and from the main plant entrance road. No assistance is required from the Sheriff's Department for on-plant roads or plant admittance at the main gate. In an event of explosion, Sheriff, EMS director, Fire Chiefs or representatives, Vinton County Emergency coordinator will have a crisis office set up in the Security Buildings Conference Room. Also, rear area of the Security Building is set up to provide triage care for injured employees.

<table>
<thead>
<tr>
<th>Emergency Response Agency</th>
<th>Zaleski Fire Department</th>
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<tbody>
<tr>
<td>Address</td>
<td>Zaleski, OH, 45698</td>
</tr>
<tr>
<td>Person Contacted</td>
<td>Mark Peters, Fire Chief</td>
</tr>
<tr>
<td>Phone Number:</td>
<td>911 or 740-596-2025</td>
</tr>
</tbody>
</table>

AGREED ARRANGEMENTS: Zaleski Fire Department will answer fire calls from Austin Powder Company and provide fire apparatus and firemen. No assistance in fighting an explosive fire is ever requested.

<table>
<thead>
<tr>
<th>Emergency Response Agency</th>
<th>McArthur Fire Department</th>
</tr>
</thead>
<tbody>
<tr>
<td>Address</td>
<td>McArthur, OH, 45651</td>
</tr>
<tr>
<td>Person Contacted</td>
<td>Charles Fri, Fire Chief</td>
</tr>
<tr>
<td>Phone Number:</td>
<td>911 or 740-596-5333</td>
</tr>
</tbody>
</table>

AGREED ARRANGEMENTS: McArthur Fire Department will answer fire calls for assistance from the Zaleski Fire Department to assist on Austin premises. Fire apparatus and firemen will be provided. No assistance in fighting an explosives fire is ever requested.

<table>
<thead>
<tr>
<th>Emergency Response Agency</th>
<th>Adena Medical Center Hospital</th>
</tr>
</thead>
<tbody>
<tr>
<td>Address</td>
<td>272 Hospital Drive, Chillicothe, OH, 45601</td>
</tr>
<tr>
<td>Person Contacted</td>
<td>Mary Chaney, Director Occupational Health</td>
</tr>
<tr>
<td>Phone Number:</td>
<td>740-772-7250</td>
</tr>
</tbody>
</table>

AGREED ARRANGEMENTS: To provide medical treatment and emergency care to Austin associates on an as-needed basis after 4:30 P.M. Monday - Friday, and all day care on Saturdays and Sunday through the Emergency Room.

<table>
<thead>
<tr>
<th>Emergency Response Agency</th>
<th>Adena Health Center</th>
</tr>
</thead>
<tbody>
<tr>
<td>Address</td>
<td>1000 Veterans Drive, Jackson, OH, 45640</td>
</tr>
<tr>
<td>Person Contacted</td>
<td>Dr. Derling</td>
</tr>
<tr>
<td>Phone Number:</td>
<td>740-395-8060</td>
</tr>
</tbody>
</table>

AGREED ARRANGEMENTS: To provide medical treatment and emergency care to Austin associates on an as-needed basis Monday - Friday, 8:30 A.M. - 4:30 P.M. Doctor is aware of the properties of the chemicals used, the explosive products manufactured, and the waste explosives generated at the Austin Powder Company.
Crisis Office

In the event of a plant emergency, a Crisis Office is set up in the Security Buildings' Conference Room. The Sheriff, Fire Chiefs, EMS Director, and Vinton County Emergency Coordinator or representatives shall coordinate response efforts from this area.

An Austin representative will be at Crisis Office to assist the Crisis Team. This Crisis Office provides a direct link to Responders and Austin Powder to better coordinate communications during an emergency.

Responders are provided telephone communications, computer hookups, a 24-hour clock, a dry erase board, plant monitor for viewing the situation and access to 2-way radio communication (on plant) via an Austin representative. A triage center is also located at the Security Building for responders.

The emergency site status is to be reported by an associate within the immediate emergency area to the Manager/Supervisor/Lead Person and relayed to the Emergency Coordinator so that the appropriate emergency action can be taken.

An after action review will be conducted by all parties involved to determine if any corrective actions or improvements can be made to the emergency action plan. The After Action Improvement Form will be used to track the deficiencies noted during the after action review.

Annual Drill and Plan Evaluation

Austin Powder Company conducts a mock disaster with responders to prepare for an on plant emergency. Annual mock disaster(s) are part of crisis training going forward. An after action review will be conducted by all parties involved to determine if any corrective actions or improvements can be made to the emergency action plan. The After Action Report and Improvement Plan Form will be used to track the deficiencies noted during the after action review. This form is located in the forms section of this emergency plan.

Emergency Site Status

Type of emergency

Explosion

1. Immediately activate the area siren or emergency warning system.

2. Initiate the evacuation plan for all associates to the designated safety area.

3. Do not approach the site or allow any associates to approach it. The emergency area is a
RESTRICTED area and only personnel with assigned duties will be permitted to enter.

4. Report the emergency:
   a. Provide the exact building location.
   b. Describe the area with reference to adjacent buildings.

5. Provide an evaluation of the:
   a. Initial severity
   b. Existing and threatening conditions

6. Indicate the extent of serious bodily injury

7. Do not allow any associate to leave the plant until they have been accounted for and released by the authorized person in charge.

**Fire - Explosives Area**

1. All fires in or near buildings containing explosives must be considered as potential explosion sites.

2. Do not attempt to fight fires involving explosives.

3. Immediately activate the area siren or emergency warning system.

4. Initiate the evacuation plan for all associates to the designated safety areas

5. Report the emergency:
   a. Provide the exact location.
   b. Describe the type of fire
      - Electrical
      - Wood, paper, debris, etc.
      - Brush, forest

6. Give an accurate evaluation of:
   a. The existing conditions.
   b. All potential hazardous conditions.

7. Indicate the extent of serious bodily injury.

8. Turn off power to the building having the emergency.

9. Associates are not to leave the designated safety area.

**Electrical Fire**

Approved by: GS
Any associate within the immediate area of the electrical fire is to make the judgment based upon existing conditions and the potential hazard to the associate to either:

1. Follow the emergency plan outlined for fires occurring in explosive areas or:

2. Attempt to extinguish the fire if an imminent danger is not apparent. If fire cannot be controlled, activate the siren and vacate.

**If minor fire occurs involving electrical equipment:**

1. Turn off the power to the equipment:

2. Pull the appropriate disconnect switch.

3. If the fire continues to burn, use a dry chemical fire extinguisher.

4. When the electrical fire has been brought under control:
   a. Secure the area siren.
   b. Report the fire to the supervisor or authorized person in charge.
   c. Provide the exact building location and the electrical equipment causing the fire.
   d. Give an accurate evaluation of the damage and existing conditions.
   e. Indicate the extent of any injuries.

**Minor Class "A" Fires (Wood, paper, debris, etc.)**

Any trained associate within the immediate area of a minor class "A" fire is to make the judgment based upon existing conditions and the potential hazard to the associates to either:

1. Follow the emergency plan outlined for fires occurring in explosives area.

2. Attempt to extinguish the fire if an imminent danger is not apparent. If fire cannot be controlled, activate the siren and evacuate.

**If a minor class "A" fire occurs:**

1. Extinguish the fire with either:
   a. Water
   b. A dry chemical extinguisher

2. When the fire has been brought under control:
   a. Secure the area siren.
   b. Report the fire to the supervisor or authorized person in charge
   c. Provide the exact building location and a description of fire cause.
d. Give an accurate evaluation of the damage and existing conditions.

e. Indicate the extent of any injuries.

f. Maintain a constant surveillance of the extinguished fire to prevent rekindling until trained personnel arrive.

**Brush Fire**

Any associate within the immediate area of a brush fire is to:

1. Report the fire immediately.
   a. Provide an accurate description of the fire location with reference to buildings, roadways and other appropriate landmarks
   b. Give an accurate evaluation of the existing conditions and potential hazards.
   c. Police the area for possible sparks resulting in secondary fires.
   d. Be prepared to systematically follow the emergency evacuation plan for fires occurring in explosives area.

**Transportation Vehicle Fire**

If a fire occurs on a vehicle containing explosives and fire is such that it cannot be fought safely:

1. Turn on the nearest warning alarm.

2. Warn others away from the emergency site.

3. Evacuate the area to a safe position and notify Management.
   a. Provide an accurate location of the vehicle with reference to adjacent buildings, roadways, or other appropriate landmarks.
   b. Describe the existing condition and all potential hazards.
   c. Indicate the extent of bodily injury.

If a fire occurs on a vehicle containing explosives and fire is such that time permits fire-fighting i.e. carburetor or electrical):

1. Evacuate personnel from the area.

2. Only those persons necessary for control of fire are to remain at scene.

3. Notify Management via 2-way radio, phone or send a messenger.

4. Disconnect the battery cable and use dry chemical fire extinguisher to fight the fire.

5. If fire cannot be extinguished or explosives removed from vehicle to safe location, turn on the nearest warning alarm and evacuate to a safe location.

6. Warn others away from emergency site.

If fire occurs on vehicle which does not contain explosives:

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1. Move vehicle far enough away so there will be no further danger to any
   a. building or other vehicles
2. Notify Management of the fire.
   a. Provide an accurate location of the vehicle with reference to appropriate
      landmarks.
   b. Describe the existing condition and all potential hazards.
3. Disconnect battery cable and use dry chemical fire extinguisher to fight fire.

If a fire occurs in a vehicle containing explosives at the Red Diamond Main Gate and fire is such
that it cannot be fought safely:

1. Turn on the nearest warning alarm.
2. Warn others away from the emergency site.
3. Evacuate the area to a safe position and notify Management.
   a. Provide an accurate location of the vehicle with reference to adjacent buildings,
      roadways, or other appropriate landmarks.
4. Describe the existing condition and all potential hazards.
5. Call 911 and notify Sheriff to block off SR 677 from Rt. 50 to Infirmary Road.
**PETN Plant**

**Control Room Operators**

1) If an emergency occurs at the PETN plant, control room operators must contact Security and define the Emergency. If emergency occurs in other areas of the plant the Emergency Coordinator will instruct the control room operators to perform a safe shutdown and evacuate or shelter in place as needed.

2) Perform a head count and location, based on the employee’s badges on the badge board and report to the emergency coordinator or security, if emergency occurs during off hours/weekends/holidays.

3) Bring all the operations within the PETN Complex to safe shutdown condition and wait for further directions. The operational areas in order of critically, are as follows:
   a. Biazzi – PETN Production
   b. Plinke – Acid Recovery
   c. MegTec – Acetone recovery
   d. Boilers
   e. Utilities – in the utility room
   f. Waste Water Facility

**NOx Release**

NOx is a poisonous gas that can cause serious health problems in exposures of greater than 100 ppm. It can easily be identified because of its yellowish to reddish orange color. The PETN Control room will be responsible for the detection of NOx fumes with the use of security cameras in the Acid Recovery and PETN Manufacturing Buildings. If a release is detected the following actions will take place.

1. The PETN Control Room operators will notify all personnel of the NOx release and notify APRD management of the release
2. PETN Control Room operators will safely shut down the Acid Recovery Building per the emergency shut down operations.
3. Any employees in or around the Acid Recovery Building will report to the Control Room or to one of the two evacuation points opposite of the wind directions (see wind socks for wind directions)
4. PETN Control Room operators will place the PETN Manufacturing Building into a standby mode.
5. PETN Manufacturing Employees will then evacuate to the Control Room or to one of the two evacuation points opposite of the wind directions (see wind socks for wind directions)
6. Once at the evacuation points, the control room will verify all employees are accounted for
7. Once the NOx fumes have been vented off and APRD management has given the all clear, restart the plant per operating procedures.
NOTE: Oxides of Nitrogen have RQ limits of 10 pounds.

Fire
In case of a fire, all areas that contain combustible materials has smoke detection, as well as pull stations that notify employees of a fire. In case of a fire the following actions will take place.

1. The main area alarm will announce a fire is currently in progress
2. Control Room operators will emergency stop the Acid Recovery Building and place the PETN Manufacturing Building in a standby sequence
3. All employees will evacuate to one of the two evacuation points, depending on the location of the fire.
4. Once a radio check has been initiated and APRD management gives the all clear control room will restart the plant based on the operating procedures.

High Concentration of Acetone
Acetone is a very flammable has that can cause some irritations, such as light headedness and headaches. Detection instruments are located throughout the PETN Manufacturing Building which will notify the control room of the high concentrations of Acetone. In case of high concentrations of Acetone the following actions will take place

1. Alarm will notify the control room about high concentrations of Acetone
2. The control room will notify all employees and APRD management of the alarm
3. Employees outside the control room will evacuate to the control room or one of the two evacuation points.
4. Once at the evacuation points, the control room will verify all employees are accounted for
5. Control room employees will then place the PETN Manufacturing Building in a standby sequence
6. Once the alarm has been deactivated and APRD Management has given the all clear, restart the plant per the operating procedure.

Ammonia Gas Release
Ammonia is a color gas with a strong odor. Exposure to Ammonia gas can cause, lightheadedness, headaches, and at high concentrations it can be a sever health risk. Ammonia gas sensors are located in the PETN Manufacturing building in case of a leak. In the case of a leak an alarm will alert the control room operators and the following actions will take place

1. The control room will notify all PETN Plant employees and APRD Management of the alarm
2. All employees in or around the PETN Manufacturing Plant will evacuate to the control room or to one of the two evacuation points.
3. Once at the evacuation points, the control room will verify all employees are accounted for.
4. Control room employees will place the PETN Manufacturing building into a safe shut down state.
5. Once the ammonia alarm has been deactivate and APRD Management has given the all clear, restart the plant per operating procedures.

Nitric and Sulfuric Acid Spills
General Information
- Nitric and Sulfuric Acids are corrosive liquids that are toxic by all routes of entry and particularly harmful to the eyes and skin.
- Nitric Acid is non-flammable but may react with oxidizers or combustible materials.
- Sulfuric Acid can react with bare metals to produce hydrogen gas.
- Both Nitric Acid and Sulfuric Acid emit toxic fumes when heated to decomposition as in a fire.

Reporting General Guidelines
- Report the leaks or releases immediately to the Control Room Operators and to Security.
- Security will notify on duty management personnel or the Emergency Coordinator if the release happens after normal business hours, weekends, or holidays.
- Remove any non-essential persons from the area.
- The Control Room operators will estimate the release amount and determine whether the release can be handled by trained site personnel or whether additional resources are needed.
- Control Room Operators must complete the release form and turn that form into the Environmental Office by the next business day unless the amount of release is ≥ 1000 pounds then the Emergency Coordinator must be notified immediately.

Handling of Spills or Releases
- Stop spills
- Contain leaks
- Small leaks must be reported immediately to the operator. Unit shutdown may be required to relieve the pressure on the system in order to safely stop the release.
- Avoid breathing vapors by wearing full-face respirator with Acid Gas cartridges or SCBA.
- Wear SCBAs for fires or fuming of either acid.
- Alert others in the spill area and prevent entry by unprotected persons.
- Do not touch or walk through the spilled material.
- Wear eye and skin protection. Use gloves compatible with acids.
- As quickly as possible, dike the spilled liquid to prevent spreading.
- Acids may be treated with a weak acid neutralizer such sodium carbonate (soda ash), sodium bicarbonate, or calcium carbonate at the direction of the Shift Supervisor.
- Add neutralizer slowly and work from edges of spill inward. Use caution because the reaction can cause splattering.
- Mix the neutralizer thoroughly to assure material is neutralized.
- Test pH to determine level of neutralization.
- Check with EHS for disposal options for spilled material and materials used for cleanup.

NOTE: Both Nitric and Sulfuric Acid have RQs of 1,000 pounds.

Spills
For any major or minor spills refer to the APRD spill procedure General Operating Procedures.

Explosion
In case of an explosion, an alarm will sound notifying to employees that an incident has occurred. The PETN control room will also announce an explosion has occurred. In case of a fire the following actions will take place.

1. The main area alarm will announce an explosion has occurred
2. Control Room operators will emergency stop the Acid Recovery Building and place the PETN Manufacturing Building in a standby sequence
3. All employees will evacuate to one of the two evacuation points, depending on the location of the Explosion.
4. Once a radio check has been initiated and APRD management gives the all clear control room will restart the plant based on the operating procedure.

NOTE: All Spills must be reported immediately to the Environmental Engineer, EHS Manager, or Security.
Unplanned Releases of Hazardous Waste

If an unplanned sudden release of hazardous waste occurs, the associate within the immediate area of the unplanned release is to:

1. Consider the release a potential explosion hazard and treat the release with the same caution that would be accorded any other explosive.
   a. Report the release to plant management.
   b. Provide the exact location.
   c. Describe the type of release.
   d. Evaluate all potential hazardous conditions.

2. An associate that is trained in the proper handling of hazardous waste will recover all spilled materials D003, REACTIVE (EXPLOSIVE), K044 (WASTE WATER TREATMENT SLUDGE), OR K045 (SPENT CARBON), including adequate soil to insure that no hazardous waste remains at the site.

   THESE MATERIALS ARE ALL SOLIDS AND ARE TO BE TREATED AS AN EXPLOSIVE.

3. Safety Data Sheets are available for all materials processed on this plant.

All Other Unplanned Releases

For all other unplanned sudden releases of raw materials, explosive material, or material not specifically listed refer to the Spill Clean Up Procedures (LP-APC-021) located in the general operating procedures.
Contingency Plan for the Parts Cleaner

Located in the Austin Powder Company Garage
McArthur, Ohio - Red Diamond Plant.

The parts cleaning unit is of rugged steel construction and uses Safety-Kleen Premium Gold Solvent. The parts cleaning unit contains less than 30 gallons of solvent within a 30-gallon steel drum.

If a fire should occur, the cover will close automatically due to a fusible link in a spring-loaded mechanism. The closed lid deprives the solvent of oxygen and extinguishes the fire. The Safety-Kleen Premium Gold solvent has a flash point of 148 deg. Fahrenheit (64 degrees Celsius) SETA and therefore classed as a combustible liquid.

Spills will be contained by spreading absorbent material on and around the spilled liquid. A supply of floor absorbent material is maintained within the garage building. A large aluminum scoop is stored in the container for quick application of the absorbent. Clean up is affected by shoveling the material up with a non-sparking tool into a closable metal drum. The Safety-Kleen Company or a sub-contractor would be utilized for proper disposal of this material.

This unit contains a distillation unit that provides clean solvent, as needed, by refreshing used solvent though the distillation process. Therefore, eliminating the need to manifest the used solvent, Hazardous Waste No. D001 and D039, to be shipped off site for recycling.

In the event of a fire, explosion or release of hazardous waste or hazardous waste constituents which could threaten human health or the environment, garage associates would follow the building evacuation plan shown on the attached sheet. At this point the applicable elements of the Contingency Plan and Emergency Control Manual for Austin Powder Company, Red Diamond Plant would take effect. The phone numbers of the Emergency Coordinator and emergency agencies are located beginning on page ECM – 8.

Additional assistance may be obtained from:

Safety-Kleen Corp.
777 Big Timber Road
Elgin, Illinois 60123

(24 Hour Medical Emergency Telephone) 1-800-752-7869
(Safety-Kleen Spill Clean-Up) 1-800-669-5740 (EXT 7500)
Emergency Equipment

The Emergency Coordinator is responsible to coordinate and dispatch any and all emergency equipment to the emergency scene.

The portable emergency equipment located at the FIRST AID area will be made available to the Emergency Coordinator or other qualified, trained personnel as the need arises.

The Emergency Coordinator is responsible for the disbursement of the portable emergency equipment.

The Emergency Coordinator will have the responsibility of maintaining the portable emergency equipment and insuring that authorized personnel have been sufficiently trained to use it.

General Plant Fire Fighting Equipment

1. All buildings are equipped with 10 lb. type ABC dry chemical extinguishers.
2. Fire hydrants and fire standpipes are located strategically throughout the plant premises.
3. Several water storage reservoirs and ponds are located throughout the plant premises also.

⚠️ AUSTIN POWDER POLICY IS TO NEVER FIGHT AN EXPLOSIVES FIRE!!! EVACUATE IMMEDIATELY AND SET ALARM SYSTEM ON WHEN LEAVING AREA!!!

Emergency Equipment in Gate House

Emergency Cabinet

TOP SHELF
1-W72 10 inch Ampo crescent wrench
1-Portable auto antenna with magnet base connected to antenna, with Antenna Specialist Co., 18A1, RG - 58/U cable
1-NI-AL-BRZ-W31 Amco Crowbar

2ND SHELF
2-Rolls of polypro 6 rope 1/2" - 50' rolls LCG - 156
6-Bright Star No. 2217, 2 cell flashlights for hazardous locations for Class 1, Group CID
6-Bright Star No. 2208, Permissible Safety Lanterns Class 21, Group G, 6-Pr. 13 Replacement bulbs

3RD SHELF
2-First Aid Kits
6-Web battery carrying belts.

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4TH SHELF
1-Bushnell Spotting Scope Shooters Stand No. 78-3010
1-Spotting Scope-Redfield No. 718388 15X -60 X 60 Japan
1-Tripod stand - portable
2-Wilkie M107F Peikompass Bearing Compass
1-Pr. Bushnell Binoculars 7 X .50 MM Field 7 deg. 30 deg. with carrying case

Emergency Warning System

General Alert Area Siren – Main Plant Alert - Activated at Gate House

This warning siren is activated at main gate. This siren is to alert all plant areas there is an emergency on plant. Security is to activate the Main Plant Area Siren immediately upon notification there is a siren activated anywhere on plant. Security escorts are to notify Gate House immediately upon hearing a siren on plant site.

Fire Warning Alert/Siren

A fire warning alert on plant perimeter shall be done using plant base stations and portable radios. In the event of an explosive building or magazine becoming involved in a fire, an area siren shall be activated on orders from Emergency Coordinator. Area is then evacuated immediately.

Explosive Area Sirens - Mix Plant, Emulsion R&D

These sirens are so located that when one is activated, the signal will indicate the building or area in which the emergency exists.

Cord Line Warning Alarms/Sirens

These warning alarms are so located that when one is activated, the signal will indicate the building or area in which the emergency exists by activating an exterior building siren and strobe light.

When warning alarm is activated at the East Building, West Building, or Cord Line, R&D Building, indicating the emergency, it will also activate the main cord line siren by Lunch Room in Cord Area, which activates the SPA area siren at PETN Area, which in turn the booster pour building siren.

Booster Pour Building and PETN Dryer and PETN Screening and Weighing Sirens

When alarm is turned on at the PETN area and Booster area, it activates the exterior building Siren and also activates SPA Area siren located top of hill in PETN Area.

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Emulsion Line Warning Alarms/Sirens – Production and Case House

These warning alarms operate so that when one is activated, the signal will indicate the building or area in which the emergency exists by activating building siren and strobe light. When siren warning is turned on at the Emulsion Production Building or Emulsion Case House, indicating an emergency, it will also activate warning alarms in both buildings and the main area siren. When siren is activated at Emulsion Bulk Plant it indicates building only and activates main area siren.

Emergency Procedures

The following are the procedures to be followed by all personnel in the event of an explosion, fire, the sounding of an area siren or other serious emergency occurring within the confines of the Red Diamond Plant, or emergencies of a similar nature in the surrounding area.

The Manager and Supervisor/Lead Person will follow their respective assigned emergency responsibilities and maintain the communication system as indicated until otherwise notified by the Emergency Coordinator.

Emergency Crew

1. The Emergency Crew and all personnel having assigned emergency duties are to report to Red Diamond Break Area.

2. The supervisor/lead person in charge of emergency crew will be stationed at the Red Diamond Break Area to receive instructions from the Emergency Coordinator.

The Responsibility of the Garage Supervisor/Lead Person is to:

1. Upon instructions from the Emergency Coordinator, facilitate moving equipment as required.

2. Evaluate whether the Red Diamond equipment will be adequate or if additional outside emergency assistance will be required. Provide the Emergency Coordinator with this information. No outside fire agency is to be called to fight an explosive fire.

3. Make all necessary assignments as qualified personnel become available.

4. Insure that the emergency site location is restricted to authorized personnel only.

5. Insure that all authorized personnel entering the restricted area have hard hats.

6. Maintain accessibility to the emergency site location for emergency and authorized vehicles.
7. Establish a communication link between the emergency site locations and forward all information to the Emergency Coordinator.

Office Personnel

1. The office personnel having assigned emergency duties are to report to their preassigned responsibility location and inform the Command Post that they are on station.

2. The office personnel not having assigned emergency duties are to remain in their office or work area until notified otherwise by the Emergency Coordinator.

Evacuation

The instructions outlined the evacuation procedures to be followed in the event of an emergency. Area maps showing the evacuation routes are posted in all process buildings.

When Fire Warning Alert/Siren is sounded

1. The Emergency Crew, maintenance group, mechanics, loading crew, and mix plant are to report to Red Diamond Distribution Break Area.

2. Office personnel having assigned emergency duties are to report directly to their assigned responsibility and inform the Command Post that they are on station.

3. Area and department supervisors/lead person are to proceed to their assigned emergency location and report to the Command Post.

4. All associates on RD plant are to evacuate to designated assembly area(s) and remain there until released by Emergency Coordinator.

If the Distribution Break Area or the approach to it is considered to be an unsafe area:

1. The Emergency Crew are to report to the nearest of the following:
   a. Special Products Maintenance Area - Extension 7321
   b. Emulsion Change House - Extension 7301
   c. SPA Maintenance Shop - Extension 7314
   d. SPA Cord Line Break/Change House - Extension 7326

2. Office personnel having assigned emergency duties are to report directly to their assigned responsibility and inform the Command Post that they are on station.
3. Area and department supervisor/lead person are to proceed to their assigned
evengency location and report to the Command Post.

4. Personnel in the Indirect or Safety Areas will travel in a North or South direction away
from the danger scene.
   a. Those traveling South shall proceed down main road to the Emulsion Change
      House and await further instructions from management.
   b. Those traveling North shall follow main road to the Special Products Area and
      assemble at the Emulsion R&D/Special Products Office Building and wait further
      instructions from management.
   c. Security/Escort Personnel are to remain at the Gate House and wait for
      instructions, unless notified to evacuate by the Emergency Coordinator.

5. Emulsion R&D personnel shall systematically evacuate to the Special Products
   Maintenance Shop and await further instructions.

6. Special Products Area
   a. The Cord Line personnel are to immediately and systematically evacuate their
      building and proceed away from the danger scene to either the:
          i. Special Products Cord Line Break/Change House
          ii. Special Products Maintenance Area
   b. The Booster Line personnel are to immediately and systematically evacuate their
      building and proceed away from the danger scene to either the:
          i. Special Products Booster Break/Change House
          ii. Barn located past Magazine 40

7. Evacuation Procedure for Emulsion Production Areas:
   a. Emulsion personnel are to immediately and systematically evacuate their
      building and proceed away from the danger scene to Emulsion Change House.
      **Do not proceed by the Emergency Scene.** Evacuate in a manner moving away
      from the scene to designated assembly area.

8. Evacuation Procedure for Emergency in Lab:
   a. Activate warning alarm. Personnel in Lab, Main Office, and Mix Plant evacuate in
      a northerly direction and assemble at Cord Line Maintenance Area. On plant
      traffic shall be blocked off at the South Trailer Park by designated lab personnel
      and at the Main Gate by designated lab personnel. Personnel at Ballistics area
      and West Magazine area are to remain in their areas until all clear is given. Other
      personnel in immediate area and Indirect Area evacuate in a northerly or
      southerly direction; those evacuating in a northerly direction shall assemble at
      the Cord Line Maintenance Area: those evacuating in a southerly direction shall
      assemble at Emulsion Change House. Always go away from the danger scene.
      McArthur Sales Office personnel are to evacuate on road past inert warehouse
9. Evacuation for fire or possible explosion of tractor and trailer at Main Gate.
   a. In case of fire or possible explosion of tractor and trailer at RD Main Gate, guard and persons at Main gate should evacuate in a southerly direction on main road past office. continue south on Main Road and assemble at Emulsion Change House. Personnel at Mix Plant, Cord Line Maintenance Area, Cord Production Buildings and Booster Areas evacuate along main road and assemble at Special Products Cord Change House.
   b. Red Diamond Distribution Office Personnel (Main Office), Lab, Indirect Area, and McArthur Sales Office evacuate in southerly direction by using the main road to Emulsion Change House and assemble at the Emulsion Change House.
   c. Personnel in West Magazine Area across State Route 677 and personnel in Ballistics Test Area are to remain in those areas in those areas until all clear given.

10. Evacuation Procedure for Emergency at McArthur Sales Office
   a. In case of a fire, notify Emergency Coordinator. Emergency Coordinator shall make a decision to activate a warning alarm/siren. McArthur Sales personnel are to evacuate in an Easterly direction along Main Plant Road to Booster Change House and assemble at Booster Change House. On plant traffic shall be blocked at Main Road next to Mix Plant Area and GARAGE AREA. The main road coming from Cord Area and Emulsion R&D shall be blocked to plant traffic above Emulsion R&D warehouse.
   b. Office personnel and Indirect Area personnel are to follow main plant road in a northerly direction to SPA Products Maintenance Area.

11. Evacuation Procedure for Emergency at Ballistics Shooting Area
   a. In case of a fire, notify Emergency Coordinator. Emergency Coordinator shall make a decision to activate main plant warning alarm/siren. Ballistics personnel are to evacuate to SR 677 via the gravel road. All access to Ballistics Test Area is blocked. Continue up SR677 to plant entrance and assembly at Gate House conference room.
   b. In case of an unplanned detonation during testing, notify Emergency Coordinator immediately. Emergency Coordinator shall make a decision to activate main plant warning alarm/siren. Ballistics test personnel are to evacuate to SR 677 via the gravel road. All access to Ballistics Test Area is locked. Continue up SR677 to plant entrance and assembly at Gate House conference room. If assistance is required, notify Gate House to call appropriate 1st responders and/or Austin responders.

When an Explosives Area Siren is sounded

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1. The Emergency Crew is to report to **RD Break Area**. Emergency Crew are not to leave Building unless directed by Emergency Coordinator.

2. Office personnel having assigned emergency duties are to report directly to assigned station, and inform the Emergency Coordinator that they are on station.

3. Area and department supervisors/lead person are to proceed to their assigned emergency location and report to the Emergency Coordinator.

4. Personnel working in the Explosive Area will systematically and immediately evacuate their areas and directly report to their designated safety areas. Personnel are to remain in these safe areas for further instructions unless otherwise notified by their Manager or Supervisor/Lead Person.

5. Mix plant employees are to go to RD Break Area.

6. Special Products
   a. Personnel on the Cord Line are to immediately and systematically evacuate their building and proceed away from the danger scene to either the:
      i. **Special Products Cord Line Break/Change House**
      ii. **Special Products Maintenance Area**
   b. The Booster Line personnel are to immediately and systematically evacuate their building and proceed away from the danger scene to either the:
      i. **Special Products Booster Break/Change House**
      ii. Barn located past Magazine 40

7. Emulsion R & D
   a. Personnel at Emulsion R & D are to immediately and systematically evacuate the R & D Building and proceed away from the danger scene to:
      i. **Special Products Cord Line Break/Change House**
      ii. **Special Products Maintenance Area**

8. Loading Crew
   a. The Loading Crew personnel are to report to RD Break Area.
   b. The Loading Crew personnel are to park and secure explosive laden vehicles away from the emergency scene at the direction of the Emergency Coordinator.
   c. **Explosive laden vehicles are NOT to be brought to or parked at garage.**

9. Indirect Area
   a. The Indirect Personnel having assigned emergency duties are to report immediately to:
      i. Assigned emergency location or,
      ii. The Command Post.

10. Emergency Crew associates are to report to the RD Break Area.
11. Maintenance associates are to report to RD Break Area

12. Garage associate are to report to the RD Break Area.

13. Office and Laboratory personnel not having assigned emergency duties are to remain in their work station until otherwise notified by their supervisor/lead person.

14. Security Escorts are to report to Gate House unless notified to evacuate by the Emergency Coordinator.

15. Emulsion Production Areas
   a. Emulsion personnel are to immediately and systematically evacuate their building and proceed away from the danger scene to Emulsion Change House. Do not proceed by the Emergency Scene. Evacuate in a manner moving away from the scene to designated assembly area.

Associates are not permitted to leave the plant until they have been released by the Emergency Coordinator.

16. Area Evacuations
   a. Specific building evacuations are located in the area quality manuals.
   b. Specific instructions are posted in designated buildings as per the area.

Fires in Emulsion Magazine Areas and Warehouse Area

1. **Fire in Y-M-4 McArthur Sales BA Magazine Area**
   a. All associates on the Emulsion Line are to cease operations. Turn off operating machinery and proceed to Emulsion Change House via main road by Maintenance Shop until otherwise instructed by their Manager or Supervisor/Lead Person.

2. **Fire in YM-9 Magazine Area**
   a. All associates on the Emulsion Line are to cease operations. Turn off operating machinery.

   i. **Production Building and Boiler Room Building**
      1. These associates are to evacuate east along the pipeline to the water tank area.

   ii. **Case House and Warehouse and Tote Building.**
1. These associates are to evacuate to A-Line pond area.

   iii. **Change House and No. 6 Magazine**

1. These associates are to evacuate to the Burma Road Gate Area.

3. **Fire in Warehouse**

   a. All associates on the Emulsion Line area are to cease operations. Turn off operating machinery and proceed to Emulsion Change House until otherwise instructed by their Manager or Supervisor/Lead Person.

4. **Fire in YM-1 or YM-2 Emulsion Magazine Area**

   a. All associates on the Emulsion Line area are to cease operations. Turn off operating machinery and proceed to A-Line pond area for further instructions.

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**Traffic Control**

The following responsibilities will be pre-assigned to appropriately qualified personnel and monitored by the Emergency Coordinator.

1. Two personnel will be assigned to maintain traffic control at the plant entrance.
   a. One associate will be stationed at the Gate.
      i. The gate is to be immediately closed.
      ii. A "log" or record is to be initiated for all incoming and outgoing traffic, plant personnel and vehicles.
      iii. Only authorized personnel and vehicles are permitted to enter the plant, unless approved by the Emergency Coordinator.
      iv. The associate stationed at the Gate, upon instructions from the Emergency Coordinator, will assist with the notification of the emergency to:
         1. The Fire and Emergency Crew.
         2. Plant Personnel
      v. The associate at the Gate is to stay at this post for further instructions from the Emergency Coordinator.

2. The second associate will be stationed at the plant entrance at State Route 677.
   a. Only authorized personnel and vehicles will be permitted to approach the plant entrance.
b. The intersection of the plant entrance and S.R. 677 is to be open at all times to permit access of:
   i. Emergency vehicles entering or leaving the plant.
   ii. Explosive laden vehicles leaving the plant for the magazine area west of S.R. 677.
   iii. Authorized plant personnel.
   iv. Emergency responders which includes, fire departments, EMS, sheriff’s department, Life Flight and other agencies to assist with emergency response.

3. All non-company emergency vehicles are to be accompanied, or escorted to the emergency site by a Red Diamond associate.

4. If there has been an explosion or one is probable, the Sheriff’s Office is requested to give assistance with traffic on SR677 until Sheriff shuts down traffic.

5. The associate stationed at the plant entrance will remain at this post until notified by the Emergency Coordinator.

6. All explosive laden vehicles are to be moved to a safety area as designated by the Emergency Coordinator.

The responsibility for the safe relocation of these vehicles will be assigned by the Emergency Coordinator to:

1. The Loading Crew and
2. Garage associates,
3. Or other qualified personnel.

The Garage supervisor/lead person will have the initial responsibility of establishing traffic control procedures within the plant.

These responsibilities include:

1. Restricting the emergency site location.
2. Maintain accessibility to the emergency site for emergency and authorized vehicles.
3. Provide directional control personnel at the plant road intersections leading to the Emergency site.

Communications

The Emergency Coordinator will have the responsibility and total authority for all external, incoming and outgoing communications.
External - Outgoing Telephone Communication

a. When an emergency occurs during the SECOND SHIFT, THIRD SHIFT, OR NON-OPERATIONAL TIME (night, weekend, holiday), the procedures on ECM-8 are to be followed for the notification of the Emergency Coordinator.

b. Personnel having the preassigned responsibility of notifying the plant personnel will proceed immediately to the office command post and inform the Emergency Coordinator of their availability and, upon instructions, proceed to notify:

1. The Emergency Crew, as per ECM-10

2. Plant personnel and office personnel having assigned emergency duties.

3. Other general emergency numbers as dictated by the type and severity of the emergency as authorized by the Emergency Coordinator.

c. The personnel assigned to make the external notifications should be located within the immediate area of the Command Post.

d. The personnel assigned to the Gate will be able to assist with these telephone communications as required.

e. Communications to the Emergency Crew, plant and office personnel is to be limited. Detailed information is NOT to be given out.

f. Notification to these associates should be in the form of: "AN EMERGENCY HAS OCCURRED AT THE RED DIAMOND PLANT AND YOU ARE NEEDED AT ONCE'.

g. It must be confirmed by the caller that the message has been understood.

h. No further information is to be furnished. It is extremely critical that all of the external calls be completed as soon as possible.

External - Incoming Telephone Communications

1. Incoming phone calls to any Red Diamond associate or Austin personnel cannot be received unless authorized by the Emergency Coordinator.

2. No information is to be given out by anyone.

3. The Emergency Coordinator will assign qualified personnel to respond to all external incoming telephone calls.

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4. The location of the station assigned to receive incoming calls should be within the immediate area or close proximity to the Emergency Coordinator.

**Internal – Communications**

1. The internal telephone system and portable radios will be the primary source for communication throughout the plant area.
2. The Emergency Coordinator will communicate with each department or area supervisor by means of the pre-assigned emergency telephone station number.
3. Each department or area Manager will communicate with his/her Supervisor/Lead Person by means of a second pre-assigned emergency telephone station number located at his/her emergency location.
4. The pre-assigned emergency telephone station numbers are located on page ECM-15 of this manual.

**Internal – Portable Communication System**

1. The assignment of the portable units will be at the discretion of the Emergency Coordinator based upon:
   2. The type of emergency; and
   3. The location of the emergency.
4. The initial priority for assigning the portable units is the Emergency Coordinator’s. All portable radios are to be operated on Channel I during the emergency.

**Internal – Emergency**

1. There are four telephones strategically located on the plant for emergency use. The location of each telephone is:

   **Magazine Area – A – Pond Area**

   An emergency phone is located on the pole between the first and Second trailer bays in the safety area adjacent to the "A" line pond. **Station number is 7313**.

   **Emulsion Area – Change House**

   An emergency phone is located at Emulsion Area Change House. **Station number is 7301**

   **Main Office Area – Executive Conference Room**

   An emergency phone is located at Main Office Area in Executive Conference Room. **Station number is 7262**.
Special Products Area – Maintenance Area

An emergency phone is located Special Products Maintenance Area. Station number is 7314.

News Media

1. All communications to any type of news media, newspaper, radio, television, other, are to be released only by the corporate officer, Michael Gleason.

Medical Attention

The qualified plant personnel assigned to staff the First Aid Room are to report directly to this area. Once on station, inform the Emergency Coordinator.

In the event of a serious injury:

1. Make the injured person as comfortable as possible.
2. Do not attempt to move a seriously injured person unless it becomes necessary to do so to prevent further injury, or to remove them from a potentially hazardous area.
3. Whenever possible, transport a seriously injured person using a stretcher.
   a. Stretcher are located in:
      i. The Plant First Aid Room
      ii. Booster Area.
      iii. Special Products Lunch Room
      iv. Special Products Change House
      v. Emulsion Supervisor’s Office.
4. All first responders responding to a serious injury: Blood borne Pathogens
5. Any potential exposure to blood or blood-contaminated items is reported to Safety & Regulatory Manager, or his/her designee. Record potential exposures immediately.
6. 1st responders require access to immediate medical evaluation or medical follow-up. EMS responder personnel provide this immediate medical evaluation.
7. Follow up medical examinations provided by Adena Occupational Health and occupational health doctors.
8. Complete an exposure incident report to document.

Transportation of Injured Associates

Injuries, treatment and transport

Vinton County EMS Squad is to be contacted to respond to injuries. Injuries requiring transport such as suspected fracture of back, fractured neck, suspected heart attack, spinal injuries, severe
shock, profuse bleeding, severe head injuries or breathing difficulties shall be treated and transported by EMS.

A triage center for EMS is established at the Security First Aid/UPS receiving area at rear of the Security Building.

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**Life Flight Landing Zones**

Life Flight assistance if needed is requested via local responders.

There are two (2) pre-established Life Flight landing zones located on the Red Diamond facility. These landing zones are located as listed below:

**Landing Zone 1 - Located in landfill field located across from Mix Plant.**

WGS84 coordinates are: Latitude 39.258683 Longitude: -82.426683

Degrees, Minutes & Seconds coordinates are: N39 15 31 W82 25 36

GPS coordinates are: N 39 15.521 W 82 25.601
Landing Zone 2 - Located in field by SPA water tower.

WGS84 coordinates are: Latitude: 39.257583 Longitude: -82.421733

Degrees, Minutes & Seconds coordinates are: N39 15 27 W82 25 18

GPS coordinates are: N 39 15.455 W 82 25.304
All Clear

The Emergency Coordinator will have the responsibility to make the determination when the "ALL CLEAR" is to be announced.

A. This determination will be based upon:
   a. The type of emergency.
   b. The location of the emergency site.
   c. Total and positive assurance that there is no further potential danger.

B. Associates are to be instructed to remain in their assigned assembly areas until notified and released by their Manager.

C. The Emergency Coordinator will indicate which areas are to return to work and those Plant Areas restricted from further activity.

D. The Supervisor/Lead Person are to provide to their Manager the Name(s) of any associate not accounted for. These names will be relayed to the Emergency Coordinator.

E. The Supervisor/Lead Person and Manager of the area in which the Emergency occurred are not to allow any associates to approach the emergency site.

F. The emergency site is to remain a RESTRICTED AREA and only authorized associate with assigned duties will be permitted to enter.

G. The emergency site is to remain a RESTRICTED AREA until the Emergency Coordinator and other authorized Austin personnel are assured that no potential hazard exists and an investigation and determination of the "CAUSE" has been completed.

H. The Emergency Coordinator will have the responsibility of contacting the necessary and appropriate local, state, and federal agencies.

I. The Emergency Coordinator will ensure that, in the affected area(s) of the facility, all emergency equipment listed in this Contingency Plan is cleaned and fit for its intended use before operations are resumed. The Emergency Coordinator will ensure that the other emergency equipment affected by the emergency is inspected and thoroughly decontaminated by washing to remove any dirt, mud or other foreign material.

The Emergency Coordinator will also ensure that any needed equipment or supplies that cannot be reused will be expeditiously replaced.
### Indirect Area

#### General

<table>
<thead>
<tr>
<th>BUILDING NUMBER</th>
<th>BUILDING NAME</th>
</tr>
</thead>
<tbody>
<tr>
<td>W5</td>
<td>Well House #5 by Mix Plant</td>
</tr>
<tr>
<td>I-1</td>
<td>Laboratory Area &amp; Magazines 19 &amp; 30</td>
</tr>
<tr>
<td>I-2</td>
<td>Lab Storage Building</td>
</tr>
<tr>
<td>I-3</td>
<td>Driver's Trailer</td>
</tr>
<tr>
<td>I-4</td>
<td>Main Office</td>
</tr>
<tr>
<td>I-5</td>
<td>Ballistics/Mortar Test Area</td>
</tr>
<tr>
<td>I-6</td>
<td>Warehouse across RR from Office</td>
</tr>
<tr>
<td>I-7</td>
<td>Air Compressor/Transformer Area</td>
</tr>
<tr>
<td>I-9</td>
<td>Pump Rebuild Shop &amp; Electrical Shop</td>
</tr>
<tr>
<td>I-10</td>
<td>Bulk Equipment Shop</td>
</tr>
<tr>
<td>I-11</td>
<td>Scale House/Weigh Area</td>
</tr>
<tr>
<td>I-12</td>
<td>Auxiliary Power Generator for Office/Garage</td>
</tr>
<tr>
<td>I-13</td>
<td>Garage</td>
</tr>
<tr>
<td>I-14</td>
<td>Maintenance Shop #3 Carpenter Shop</td>
</tr>
<tr>
<td>I-15</td>
<td>Maintenance Shop #4 Wood Storage</td>
</tr>
<tr>
<td>I-16</td>
<td>Maintenance Shop #2 Fabrication/Assembly Metal Storage</td>
</tr>
<tr>
<td>I-17</td>
<td>Maintenance Shop #1 Fabrication/Assembly Area</td>
</tr>
<tr>
<td>I-18</td>
<td>RD Distribution Break Area/Shower</td>
</tr>
<tr>
<td>I-19</td>
<td>Oxygen &amp; Acetylene Storage</td>
</tr>
<tr>
<td>I-20</td>
<td>Gate House</td>
</tr>
<tr>
<td>I-21</td>
<td>Equipment Pole Barn Distribution</td>
</tr>
<tr>
<td>I-22</td>
<td>Inert Warehouse for Mix Plant</td>
</tr>
<tr>
<td>I-23</td>
<td>Distribution Small Equipment Storage</td>
</tr>
<tr>
<td>I-25</td>
<td>Sales AN Bins</td>
</tr>
<tr>
<td>I-26</td>
<td>#1 Warehouse for gassing (Sales)</td>
</tr>
<tr>
<td>I-27</td>
<td>Sales Truck Parking Area (1.5 D Only)</td>
</tr>
<tr>
<td>I-28</td>
<td>Sales Trailer Parking Area (1.5 D Only)</td>
</tr>
<tr>
<td>I-29</td>
<td>#9 Well House</td>
</tr>
<tr>
<td>W-12</td>
<td>Tube &amp; Shell Mill Storage Bldg.</td>
</tr>
<tr>
<td>I-30</td>
<td>Electrician Storage Building</td>
</tr>
<tr>
<td>I-31</td>
<td>Air Receiver Building outside RD break area</td>
</tr>
<tr>
<td>I-32</td>
<td>Well House #3</td>
</tr>
<tr>
<td>I-33</td>
<td>Well House #2</td>
</tr>
<tr>
<td>I-34</td>
<td>Well House #1</td>
</tr>
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</table>

#### Warehouse

<table>
<thead>
<tr>
<th>BUILDING NUMBER</th>
<th>BUILDING NAME</th>
</tr>
</thead>
<tbody>
<tr>
<td>I-8</td>
<td>Shell/Tube Assembly and Warehouse</td>
</tr>
<tr>
<td>I-6</td>
<td>Warehouse across RR from Office</td>
</tr>
<tr>
<td>I-14</td>
<td>Maintenance Shop #3 – Carpenter Shop</td>
</tr>
<tr>
<td>I-15</td>
<td>Maintenance Shop #4 - Wood Storage</td>
</tr>
<tr>
<td>I-16</td>
<td>Maintenance Shop #2 – Metal Storage</td>
</tr>
<tr>
<td>I-17</td>
<td>Maintenance Shop #1 – Break Area &amp; Fab</td>
</tr>
</tbody>
</table>

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### Laboratory Buildings and Magazines

<table>
<thead>
<tr>
<th>BUILDING NUMBER</th>
<th>BUILDING NAME</th>
</tr>
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<tbody>
<tr>
<td>I-1</td>
<td>Laboratory</td>
</tr>
<tr>
<td>I-2</td>
<td>Lab Magazine</td>
</tr>
<tr>
<td>I-5</td>
<td>Ballistics/Mortar Test Area</td>
</tr>
</tbody>
</table>

### Mix Plant Area

<table>
<thead>
<tr>
<th>BUILDING NUMBER</th>
<th>BUILDING NAME</th>
</tr>
</thead>
<tbody>
<tr>
<td>MP-1</td>
<td>Mix Plant</td>
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<tr>
<td>MP-2</td>
<td>Supervisory Office</td>
</tr>
<tr>
<td>MP-3</td>
<td>Fuel oil storage</td>
</tr>
<tr>
<td>MP-4</td>
<td>Inert Warehouse #1</td>
</tr>
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</table>

### Trailer Area

<table>
<thead>
<tr>
<th>TRAILER AREA</th>
<th>LOCATION DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>NO 1 LOT-DT-002</td>
<td>PLANT SIDE OF 677 - AT POND AREA – LOWER LOT – 1.1 D &amp; 1.5 D</td>
</tr>
<tr>
<td>NO 2 LOT-DT-002</td>
<td>PLANT SIDE OF 677 - AT POND AREA - ABOVE NO 1 LOT – UPPER</td>
</tr>
<tr>
<td></td>
<td>LOT – 1.1 D &amp; 1.5 D</td>
</tr>
<tr>
<td>NO 3 LOT-DT-002</td>
<td>PLANT SIDE OF 677 - ABOVE 7 MAGAZINE – 1.5 D ONLY</td>
</tr>
<tr>
<td>NO 4 LOT-DT-002</td>
<td>PLANT SIDE OF 677 ABOVE NO 3 LOT – UPPER A LINE LOT 1.1 D &amp;</td>
</tr>
<tr>
<td></td>
<td>1.5 D</td>
</tr>
<tr>
<td>NO 5 LOT-DT-002</td>
<td>PLANT SIDE OF 677 ABOVE MIX PLANT PRODUCTION – BESIDE B-</td>
</tr>
<tr>
<td></td>
<td>LINE LOT 1.5 D ONLY</td>
</tr>
<tr>
<td>NO 6 LOT-DT-002</td>
<td>PLANT SIDE OF 677 EAST OF NO 5 LOT -1.5 D OR 5.1</td>
</tr>
<tr>
<td>NO 7 LOT-DT-002</td>
<td>WEST SIDE OF 677 ABOVE #13 MAGAZINE 1.1 D OR 1.5 D</td>
</tr>
<tr>
<td>NO 8 LOT-DT-002</td>
<td>PLANT SIDE OF 677 -ABOVE NO 5 &amp; NO 6 LOTS - 1.5 D OR 5.1</td>
</tr>
<tr>
<td>NO 9 LOT-DT-002</td>
<td>PLANT SIDE OF 677 ACROSS FROM EMULSION INERT WAREHOUSE #1 –</td>
</tr>
<tr>
<td></td>
<td>1.5 D OR 1.1 D OR 5.1</td>
</tr>
<tr>
<td>NO 10 LOT-DT-002</td>
<td>PLANT SIDE OF 677 BELOW PRODUCTION BUILDING #2 BULK</td>
</tr>
<tr>
<td></td>
<td>PLANT 1.1 D OR 1.5 D</td>
</tr>
<tr>
<td>NO 11 LOT-DT-002</td>
<td>PLANT SIDE OF 677 - AT PREVIOUS SITE FOR BINS 5,6, 5.1</td>
</tr>
<tr>
<td></td>
<td>1.5 D OR 5.1</td>
</tr>
<tr>
<td>LOT 1 SALES-DT-002</td>
<td>PLANT SIDE OF 677 BELOW YM-1 MAGAZINE</td>
</tr>
</tbody>
</table>

### McArthur Sales Magazine Area

<table>
<thead>
<tr>
<th>MAGAZINE NUMBER</th>
<th>BUILDING NAME</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-TH-084</td>
<td>McArthur Sales - Magazine #2</td>
</tr>
<tr>
<td>3-TH-084</td>
<td>McArthur Sales - Magazine #3</td>
</tr>
<tr>
<td>6-BD-084</td>
<td>McArthur Sales - Magazine 6</td>
</tr>
<tr>
<td>MAG F</td>
<td>McArthur Sales - Detonator Magazine</td>
</tr>
</tbody>
</table>
### Cord Line Area

<table>
<thead>
<tr>
<th>BUILDING NUMBER</th>
<th>BUILDING NAME</th>
</tr>
</thead>
<tbody>
<tr>
<td>C-1</td>
<td>Maintenance Building</td>
</tr>
<tr>
<td>C-2</td>
<td>SPA OFFICE</td>
</tr>
<tr>
<td>C-3</td>
<td>Magazine 32-PH-002</td>
</tr>
<tr>
<td>C-4</td>
<td>SPA R&amp;D</td>
</tr>
<tr>
<td>C-5</td>
<td>SPA Break Room #1</td>
</tr>
<tr>
<td>C-6</td>
<td>SPA Change House &amp; Shower</td>
</tr>
<tr>
<td>C-7</td>
<td>SPA Utility Building</td>
</tr>
<tr>
<td>C-8</td>
<td>#13 Boiler Building</td>
</tr>
<tr>
<td>C-9</td>
<td>Magazine 25-PH-002 (East PETN Magazine)</td>
</tr>
<tr>
<td>C-10</td>
<td>Production Building #1 (East)</td>
</tr>
<tr>
<td>C-11</td>
<td>Magazine 24-PH-002 (East)</td>
</tr>
<tr>
<td>C-12</td>
<td>Magazine 23-PH-002 &amp; Magazine 33-PH-002 (East)</td>
</tr>
<tr>
<td>C-13</td>
<td>Production Building #2 (West Detonator Assembly)</td>
</tr>
<tr>
<td>C-14</td>
<td>Magazines 37-PH-002 (West) Production Building #2</td>
</tr>
<tr>
<td>C-15</td>
<td>Production Building #3 (Far) Balloons, PETN, Rockbuster</td>
</tr>
<tr>
<td>C-16</td>
<td>Magazine 35-PH-002 (East)</td>
</tr>
<tr>
<td>C-17</td>
<td>Magazine 41-PH-002 (Far)</td>
</tr>
<tr>
<td>C-18</td>
<td>Magazine 21-PH-002 (Far)</td>
</tr>
<tr>
<td>C-19</td>
<td>SPA Inert Warehouse #1</td>
</tr>
<tr>
<td>C-20</td>
<td>SPA INERT WAREHOUSE #2</td>
</tr>
<tr>
<td>C-21</td>
<td>SPA Rewind Building</td>
</tr>
<tr>
<td>C-22</td>
<td>#21 Boiler for Production Building #3 &amp; Production #2</td>
</tr>
<tr>
<td>C-23</td>
<td>Building L6 – Test Building</td>
</tr>
<tr>
<td>C-24</td>
<td>Tool Building for SPA Maintenance</td>
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</tbody>
</table>

### PETN Dryer Area

<table>
<thead>
<tr>
<th>BUILDING NUMBER</th>
<th>BUILDING NAME</th>
</tr>
</thead>
<tbody>
<tr>
<td>P-1</td>
<td>PETN Dryer Building #3</td>
</tr>
<tr>
<td>P-2</td>
<td>Storage for additive building</td>
</tr>
<tr>
<td>P-3</td>
<td>Blender Control Building</td>
</tr>
<tr>
<td>P-4</td>
<td>#12 Boiler Bldg. – Supports Dryer &amp; PETN PREP</td>
</tr>
<tr>
<td>P-5</td>
<td>Collection tank and filter system for #3 dryer</td>
</tr>
<tr>
<td>P-6</td>
<td>Pre-filter and aeration tank building</td>
</tr>
</tbody>
</table>

### Booster Line

<table>
<thead>
<tr>
<th>BUILDING NUMBER</th>
<th>BUILDING NAME</th>
</tr>
</thead>
<tbody>
<tr>
<td>B-1</td>
<td>Change House #2</td>
</tr>
<tr>
<td>B-2</td>
<td>Well House #4</td>
</tr>
<tr>
<td>B-3</td>
<td>Inert Warehouse #3</td>
</tr>
<tr>
<td>B-4</td>
<td>Supervisor’s Office</td>
</tr>
<tr>
<td>B-5</td>
<td>Bangalore Booster Production Building #1</td>
</tr>
<tr>
<td>B-6</td>
<td>Magazine 22-PH-002</td>
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<tr>
<td>B-7</td>
<td>Inert Warehouse #2</td>
</tr>
<tr>
<td>B-8</td>
<td>Inert Warehouse #1</td>
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<tr>
<td>B-9</td>
<td>Change House #1</td>
</tr>
<tr>
<td>NB-1</td>
<td>#23 Boiler</td>
</tr>
<tr>
<td>NB-2</td>
<td>Weigh Building – Booster Bldg. #1</td>
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</table>

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<table>
<thead>
<tr>
<th>MAGAZINE ID NUMBER</th>
<th>STORANGE NAME/TYPE/LOCATION</th>
</tr>
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<tbody>
<tr>
<td>No 1 Lot-DT-002</td>
<td>NO 1 TRAILER AREA (1.1 &amp; 1.5)</td>
</tr>
<tr>
<td>No 2 Lot-DT-002</td>
<td>NO 2 TRAILER AREA (1.1 &amp; 1.5)</td>
</tr>
<tr>
<td>No 3 Lot-DT-002</td>
<td>NO 3 TRAILER AREA (1.5 ONLY)</td>
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<tr>
<td>No 4 Lot-DT-002</td>
<td>NO 4 TRAILER AREA (1.1 &amp; 1.5)</td>
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<tr>
<td>No 5 Lot-DT-002</td>
<td>NO 5 TRAILER AREA (1.5 ONLY)</td>
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<tr>
<td>No 6 Lot-DT-002</td>
<td>NO 6 TRAILER AREA (1.5 ONLY)</td>
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<tr>
<td>No 8 Lot-DT-002</td>
<td>NO 8 TRAILER AREA (1.5 ONLY)</td>
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<tr>
<td>No 9 Lot-DT-002</td>
<td>NO 9 TRAILER AREA (1.1 &amp; 1.5)</td>
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<tr>
<td>No 10 Lot-DT-002</td>
<td>NO 10 TRAILER AREA (1.1 &amp; 1.5)</td>
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<tr>
<td>No 11 Lot-DT-002</td>
<td>NO 11 TRAILER AREA (1.5)</td>
</tr>
<tr>
<td>No 12 Lot-DT-002</td>
<td>NO 12 TRAILER AREA (1.5 ONLY)</td>
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<tr>
<td>Lot 1 Sales-DT-002</td>
<td>LOT 1 SALES (1.5)</td>
</tr>
<tr>
<td>7-BH-002</td>
<td>Magazine 7 (Located below No 3 Lot)</td>
</tr>
<tr>
<td>9-BH-002</td>
<td>Magazine 9 (Below maintenance shop)</td>
</tr>
<tr>
<td>HW26-PH-002</td>
<td>Magazine 26 (Above Magazine 7)</td>
</tr>
<tr>
<td>LM19-PH-002</td>
<td>Magazine 19 (At rear of Analytical Lab)</td>
</tr>
<tr>
<td>LM31-PH-002</td>
<td>Magazine 31 (Hot/cold Magazine)</td>
</tr>
<tr>
<td>38-BA-002</td>
<td>Magazine 38 (1.5 ONLY)</td>
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<tr>
<td>2-TH-084</td>
<td>McArthur Sales Magazine 2</td>
</tr>
<tr>
<td>3-TH-084</td>
<td>McArthur Sales Magazine 3</td>
</tr>
<tr>
<td>6-BD-084</td>
<td>McArthur Sales Magazine 6</td>
</tr>
<tr>
<td>Mag F</td>
<td>McArthur Sales Magazine (Detonators)</td>
</tr>
<tr>
<td>YM1-BB-002</td>
<td>Magazine 1 (Emulsion products only)</td>
</tr>
<tr>
<td>YM2-BB-002</td>
<td>Magazine 2 (Emulsion products only)</td>
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<tr>
<td>27-PH-002 &amp; 28-PH-002</td>
<td>Magazine 27 &amp;28 (Emulsion Production)</td>
</tr>
<tr>
<td>11-PH-002</td>
<td>Magazine 11 (Emulsion Case House)</td>
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**East Side of State Route #677**

**West Side of State Route #677**

<table>
<thead>
<tr>
<th>MAGAZINE ID NUMBER</th>
<th>MAGAZINE NAME</th>
</tr>
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<tbody>
<tr>
<td>3-BH-002</td>
<td>Magazine 3</td>
</tr>
<tr>
<td>13-BH-002</td>
<td>Magazine 13</td>
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<td>14-BD-002</td>
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<td>15-BH-002</td>
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<td>17-BH-002</td>
<td>Magazine 17</td>
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<td>18-BH-002</td>
<td>Magazine 18</td>
</tr>
<tr>
<td>No 7 West Mag-DT-002</td>
<td>NO 7 TRAILER AREA (1.5 ONLY)</td>
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Approved by: GS
## Emulsion Production Area

<table>
<thead>
<tr>
<th>Building Number</th>
<th>Emulsion Area</th>
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</thead>
<tbody>
<tr>
<td>E-1</td>
<td>Emulsion Production Building #2 - Bulk Plant</td>
</tr>
<tr>
<td>E-2</td>
<td>Emulsion Tank Farm #2</td>
</tr>
<tr>
<td>E-3</td>
<td>Emulsion Bins 3 &amp; 4</td>
</tr>
<tr>
<td>E-4</td>
<td>Emulsion Bulk Utilities</td>
</tr>
<tr>
<td>E-5</td>
<td>Emulsion Boiler/Compressor</td>
</tr>
<tr>
<td>E-6</td>
<td>Emulsion Tank Farm #1</td>
</tr>
<tr>
<td>E-7</td>
<td>Emulsion Production Building #1</td>
</tr>
<tr>
<td>E-8</td>
<td>Emulsion Bin 2</td>
</tr>
<tr>
<td>E-9</td>
<td>Emulsion Ammonium Nitrate Bin #1</td>
</tr>
<tr>
<td>E-10</td>
<td>Emulsion Production Staging Building</td>
</tr>
<tr>
<td>E-11</td>
<td>Magazines 27 &amp; 28</td>
</tr>
<tr>
<td>E-12</td>
<td>Emulsion Case House</td>
</tr>
<tr>
<td>E-13</td>
<td>Magazine 11</td>
</tr>
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<td>E-14</td>
<td>Emulsion Maintenance Shop</td>
</tr>
<tr>
<td>E-15</td>
<td>Magazine 9</td>
</tr>
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<td>E-16</td>
<td>Emulsion Inert Warehouse #1</td>
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<td>E-17</td>
<td>Emulsion Inert Warehouse #2</td>
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<td>M38</td>
<td>Magazine 38</td>
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<td>Emulsion Box Warehouse</td>
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<td>E-18A</td>
<td>Emulsion Tote Building</td>
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<tr>
<td>E-20</td>
<td>Magazine YM1</td>
</tr>
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<td>E-21</td>
<td>Emulsion Repack Building</td>
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<tr>
<td>E-22</td>
<td>Magazine YM2</td>
</tr>
<tr>
<td>E-23</td>
<td>No 9 Trailer Area</td>
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<td>E-24</td>
<td>No 10 Trailer Area</td>
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<td>E-25</td>
<td>Transformer Station #8</td>
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<td>TS-1</td>
<td>Tech Inert Storage Building by Lot 1</td>
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## Emulsion R&D Area

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<thead>
<tr>
<th>Building Number</th>
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<tbody>
<tr>
<td>E-27</td>
<td>Emulsion R&amp;D Production Building (RD2)</td>
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<td>E-28</td>
<td>Emulsion R&amp;D Inert Warehouse #1 (RD3)</td>
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<td>E-29</td>
<td>Magazine 29</td>
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<td>E-30</td>
<td>Magazine 20</td>
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## PETN Plant

<table>
<thead>
<tr>
<th>Building Number</th>
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<tbody>
<tr>
<td>CM-10</td>
<td>PETN Nitration</td>
</tr>
<tr>
<td>CM-20</td>
<td>Control Center/Utilities</td>
</tr>
<tr>
<td>CM-25</td>
<td>Boilers</td>
</tr>
<tr>
<td>CM-28</td>
<td>Standby Generator, Cooling, &amp; Process Water</td>
</tr>
<tr>
<td>CM-30</td>
<td>Acid Tank Farm</td>
</tr>
<tr>
<td>CM-40</td>
<td>Acid Recovery</td>
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<tr>
<td>CM-50</td>
<td>Acetone Recovery</td>
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<tr>
<td>CM-60</td>
<td>Waste Water Treatment</td>
</tr>
<tr>
<td>CM-70</td>
<td>Acid Off Load Station</td>
</tr>
<tr>
<td>I-24</td>
<td>PETN Office &amp; Change House</td>
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<tr>
<td>I-8</td>
<td>PETN Maintenance Building</td>
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</tbody>
</table>
Open Burn & Emergency Landing Zone 2
PROCEED ALONG DESIGNATED ROUTE
PROCEED ALONG DESIGNATED ROUTE

Safe Area: Booster Break Room

Booster Warehouse

Approved by: GS
PROCEED ALONG DESIGNATED ROUTE
PROCEED ALONG DESIGNATED ROUTE

Safe Area: Emulsion Change House

Emulsion Packaging

Primary Route

Secondary Route

APC Red Diamond Emulsion Packaging 12/15/2014 Rev. 1

Imagery Date: Jun 14, 2012

© 2014 Google

39°14'49.31"N 82°16'55.20"W elev. 648 ft.

Eye alt. 2440 ft.
PROCEED ALONG DESIGNATED ROUTE

Emulsion Maintenance

Safe Area: Emulsion Change House

APC Red Diamond Emulsion Maintenance 12/15/2014 Rev I

Approved by: GS

Page ECM- 81

1/8/18 Rev. 2
NEVER FIGHT AN EXPLOSIVE FIRE

Emergency Phone Number
Dial 0 - Security
Or use two-way radio

Primary Route To
Assembly Area

Alternate Route - use if building siren is between you and the primary assembly area

Assembly Area - Carpenter Change House

For questions contact your manager or the safety department.

You are here

Proceed to the SPA maintenance shop

SPA CORD LINE BUILDING #1
PROCEED ALONG DESIGNATED ROUTE

Safe Area:
Cord Line Maintenance Shop

Warehouse #3
PROCEED ALONG DESIGNATED ROUTE

Primary Route
Secondary Route

Garage

Safe Area: Maintenance Break Room

 Proceed to Emulsion Change House

Approved by: GS
Page ECM- 85
1/8/18 Rev. 2
PROCEED ALONG DESIGNATED ROUTE

Safe Area:
Booster Change House

Old Booster Pour Building

APC Red Diamond
Old Booster Pour Bldg.
06/01/2015 Rev 2
Emergency Phone Number
Dial 0 - Security
Or use two-way radio

Primary Route To Assembly Area

Alternate Route - use if building siren is between you and the primary assembly area

Assembly Area - Booster
Change House

NEVER FIGHT AN EXPLOSIVE FIRE

Proceed to the rear gate
Safe Area: SPA Maintenance

PROCEED ALONG DESIGNATED ROUTE

Emulsion R&D

Primary Route

Secondary Route

APC Red Diamond Emulsion R&D 12/15/2014 Rev 1
Emergency Phone Number
Dial 0 - Security
Or use two-way radio

Primary Route to Assembly Area

Alternate Route – use if EMERGENCY is between you and the primary assembly area

Assembly Area – PETN Change House

For questions contact your manager or the safety department.

NEVER FIGHT AN EXPLOSIVE FIRE

PETN PLANT

Approved by: GS
Forms
EMERGENCY CHECKLIST

DATE: ______________________________
COMPLETED BY: ______________________________

REASON FOR EMERGENCY:
☐ DRILL ☐ RELEASE ☐ SIREN SOUNDED ☐ OTHER: ______________________________

CHECK OFF AREAS AS THEY REPORT:
☐ DET CORD ☐ PETN PREP ☐ BALLOONS ☐ IAN LENEGAR ☐ CAROLYN RIFFLE
☐ BOOSTER ☐ WEIGH TEAM ☐ BOBBIE JO SMITH ☐ BOOSTER LOAD CREW
☐ EMULSION ☐ LOAD CREW ☐ TUBE MILL ☐ MIX PLANT ☐ EM. MAINTENANCE
☐ PETN PLANT ☐ LEIF THOMPSON

☐ LOAD CREW ☐ GARAGE ☐ MAINTENANCE ☐ LAB ☐ SECURITY
☐ PUMP SHOP ☐ CONTRACTORS ☐ DRIVERS ☐ OFFICE ☐ ENGINEERING
☐ PSM ☐ TECH GROUP ☐ EMULSION R&D ☐ M'ARTHUR SALES

2ND SHIFT
☐ BOOSTER ☐ GARAGE ☐ SECURITY

3RD SHIFT
☐ BOOSTER ☐ GARAGE ☐ SECURITY ☐ MAINTENANCE

REASON FOR SIREN:
________________________________________
________________________________________
________________________________________
________________________________________

NOTES:
________________________________________
________________________________________
________________________________________
________________________________________

Approved By: ______________________________ FORM-EAP-001 07/11/16 Rev. 2

EMERGENCY CHECKLIST

DATE: ______________________________
COMPLETED BY: ______________________________

REASON FOR EMERGENCY:
☐ DRILL ☐ RELEASE ☐ SIREN SOUNDED ☐ OTHER: ______________________________

CHECK OFF AREAS AS THEY REPORT:
☐ DET CORD ☐ PETN PREP ☐ BALLOONS ☐ IAN LENEGAR ☐ CAROLYN RIFFLE
☐ BOOSTER ☐ WEIGH TEAM ☐ BOBBIE JO SMITH ☐ BOOSTER LOAD CREW
☐ EMULSION ☐ LOAD CREW ☐ TUBE MILL ☐ MIX PLANT ☐ EM. MAINTENANCE
☐ PETN PLANT ☐ LEIF THOMPSON

☐ LOAD CREW ☐ GARAGE ☐ MAINTENANCE ☐ LAB ☐ SECURITY
☐ PUMP SHOP ☐ CONTRACTORS ☐ DRIVERS ☐ OFFICE ☐ ENGINEERING
☐ PSM ☐ TECH GROUP ☐ EMULSION R&D ☐ M'ARTHUR SALES

2ND SHIFT
☐ BOOSTER ☐ GARAGE ☐ SECURITY

3RD SHIFT
☐ BOOSTER ☐ GARAGE ☐ SECURITY ☐ MAINTENANCE

REASON FOR SIREN:
________________________________________
________________________________________
________________________________________
________________________________________

NOTES:
________________________________________
________________________________________
________________________________________
________________________________________

Approved By: ______________________________ FORM-EAP-001 07/11/16 Rev. 2
This form must be filled out in the event of an actual emergency. This form will serve as a reference that all Post assignments have/had Austin Powder Company Personnel Assigned to each location. Blank areas on this form will be assigned on an as needed basis.

**Command Post Assigned Duties:**

<table>
<thead>
<tr>
<th>Position</th>
<th>Assignee</th>
<th>Alternate Assignee</th>
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<tbody>
<tr>
<td>Emergency Coordinator</td>
<td>Keith Mills</td>
<td>Gerald Stewart</td>
</tr>
<tr>
<td>Assistant Emergency Coordinator</td>
<td>John Young</td>
<td>Alternate Assistant E.C.</td>
</tr>
<tr>
<td>Coordinate Information &amp; Activities to and from Office</td>
<td>Bern Chaney</td>
<td>Debbie Messick</td>
</tr>
<tr>
<td>Emergency Documentation</td>
<td>Sara Kingsbury</td>
<td>Alternate Emergency Documentation</td>
</tr>
<tr>
<td>Traffic Control</td>
<td>Mike Abele</td>
<td>Alternate Traffic Control</td>
</tr>
<tr>
<td>Security Plant Boundaries</td>
<td></td>
<td>SPA RD Emulsion</td>
</tr>
<tr>
<td>Red Diamond First Aid Room</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Command Post Liaison at Security</td>
<td>Brian Gilliland</td>
<td>Alternate Command Post Liaison</td>
</tr>
<tr>
<td>Vinton County Old High School Gymnasium, Austin</td>
<td>Sherrie Braglin</td>
<td>Alternate Vinton County Old High School Gymnasium, Austin</td>
</tr>
</tbody>
</table>

**Note:** An Austin Powder Company employee is assigned to the Vinton County Old High School Gymnasium in McArthur Ohio as a liaison for family members of Austin employees. This is only if employees are transported from the facility. All Austin employees called to the plant are to report to Security for clearance to enter the plant site. Emergency Coordinator or designee approves clearance to the plant site. Communications are maintained with personnel at the designated assembly areas via use of Channel 1 on company 2-way radio.
## AFTER ACTION REVIEW & IMPROVEMENT PLAN

<table>
<thead>
<tr>
<th>Objective</th>
<th>Recommendation</th>
<th>Improvement/ Corrective Action</th>
<th>Responsible Party/Agency</th>
<th>Projected Completion Date</th>
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</tr>
</tbody>
</table>

Approved By: [Signature]

FORM-EAP-003

02/2015 REV. 1
I have received a copy of the Red Diamond Contingency Plan and Emergency Control Manual for my review and information.

I understand this manual is to be strictly followed in the event of an emergency situation.

A yearly review is required by all manual holders and changes or updates made are to be inserted into the manual, and the old pages turned into the Safety Department.

Date Reviewed  Printed Name  Signature
To:
Mike Abele  Stephanie Barney  Sara Pelfrey  Mark Fox  Margit Chevalier
Brian Gilliland  Shawn Fee  Brenda Faulkner  Ohio EPA  Beth Lenegar
Ian Lenegar  Bobbie Jo Smith  McArthur Sales  Jon Chamblin  Ryan Prater
Engineering  Mix Plant  Keith Mills (2)  Security  John Young
PETN Plant  Sara Kingsbury  Mike Sharp  Leif Thompson  Heath Henderson
Zaleski Fire Dept.  VC Sheriff Dept.  LJ Stewart  PSM Team  Vinton LEPC

From: Red Diamond Safety Manager

Subject: Update to the Contingency Plan & Emergency Control Manual

Please remove pages from manuals and replace in manual with new pages. Sign this sheet and attach outdated pages. Return to the EHS Manager.

<table>
<thead>
<tr>
<th>Remove Page Number</th>
<th>Add Page Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>All Pages</td>
<td>All Pages</td>
</tr>
</tbody>
</table>

Attached are outdated pages removed from my assigned Contingency Plan and Emergency Control Manual. I have reviewed changes as appropriate and updated the Contingency Plan and Emergency Control Manual as required

Printed Name  Signature  Date

If a shared manual please sign below as needed.

Printed Name  Signature  Date

---

Approved By:  FORM-EAP-005  09/18/2017 Rev. 2
OPEN BURN AREA AND EMERGENCY
LANDING ZONE #2 – LIFE FLIGHT LOCATION

Approved By: MAPS ECM-25-H
11/19/12 REV 4
Booster Area Production Buildings Evacuation Routes and Designated Assembly Areas
Mix Plant & Indirect Area & Sales Evacuation Routes and Designated Assembly Areas

Continue to Designated Assembly Area #2

Approve By: 

EVAC MAP ECM-26-C

12/13 Rev 0
Cord & PETN Dryer & Bangalore Booster Production Evacuation Routes and Designated Assembly Areas

Approved By: WVAC MAP ECM-26-D 12/13 Rev 0
Section H- Personnel Training

H-1a. Outline of the Training Program:
OAC 3745-50-44 (A)(12), 3745-54-16 (A)(1)

Training Program Outline:

All new employees receive classroom training on the Hazardous Waste Regulatory Program during their introductory training. The Hazardous Waste Personnel Training Program is covered in detail with all new employees. After review, the program is again summarized and the employees sign the training records. The training records are kept on file in the main office building on the plant and will be reviewed yearly with the employee.

In addition, all employees review the Contingency Plan and Emergency Control Manual and aspects of preparedness and prevention (procedures to prevent hazards) discussed in Section F of this application on a yearly basis after their initial training on the contents of the plan. The employees acknowledge the receipt and review of the plan in a page that is included in the plan and then removed and filed in the employee’s training file. A copy of this page is included in Attachment H-1 to this Section. All current employees involved in the generation or management of explosive waste or explosive-contaminated waste have experienced the Hazardous Waste Personnel Training Program, which is also reviewed with them on a yearly basis.

Refer to Attachment H-1 to this Section to review the Hazardous Waste Training Program.

H-1b. Training Director:
OAC 3745-54-16 (A)(2)

Larry McCorkle is responsible for personnel training at the facility. Mr. McCorkle is the Safety and Regulatory Manager for the facility, and has been the Personnel Training Manager for more than 25 years. He is also trained in Hazardous Waste Management procedures and is certified in OSHA’s Hazardous Waste Operations and Emergency Response. As an Emergency Coordinator for the facility, Mr. McCorkle is extremely familiar all aspects of the Contingency Plan.

H-1c. Relevance of Training to Job Position:
OAC 3745-54-16 (A)(2)

Introductory Training Program: During their first week of employment, all new employees receive classroom training on the Right-To-Know Regulations, Plant Operating Procedure, Plant Safety Rules, Evacuation Routes, and the Hazardous Waste Personnel Training Program, and observe actual ballistics demonstration showing the...
effects of detonating eight (8) grams of high explosives. The supervisory staff reviews the Contingency and Emergency Control Manual annually. This classroom instruction involves about 10-12 hours of a new employee’s time.

Additional training is conducted using a J.S.A. (Job Safety Analysis) for the employee’s specific job assignment. This training ensures that the employee is able to respond effectively to emergencies, since he or she will be familiar with emergency procedures, equipment, and systems.

All personnel involved in the generation, storage or treatment (OB) of explosives or explosive-contaminated waste are also instructed through on-the-job training under close supervision and the Hazardous Waste Personnel Training Program, that appears as Attachment H-1 to this section. The on-the-job training involves about 30 minutes of an employee’s time.

Continuing Training Program: All employees attend monthly safety meetings and annually review the Plant Safety Rules, Evacuation Routes, and Hazardous Waste Personnel Training Program. The supervisory staff reviews the Contingency Plan and Emergency Control Manual annually. All personnel involved in the generation, storage, or treatment (OB) of explosives or explosives-contaminated waste also review and sign the Hazardous Waste Personnel Training Record (HW-Form 101) included in Attachment H-1 to this section. Austin Powder maintains the documents and records specified in 40 CFR §264.16 (e) / OAC 3745-54-16(E) in its offices in accordance with the following procedure.

Training records on current personnel shall be kept until closure of the facility; Training records on former employees shall be kept for at least three years from the date the employee last worked at the facility. Personnel training records may accompany personnel transferred with in the same company.

H-1d. Emergency Response Training:
OAC 3745-54-16 (A)(3)

All employees review the Contingency Plan and Emergency Control Manual on a yearly basis after their initial training on the contents of the plan. The employees acknowledge the receipt and review of the plan in a page that is included in the plan and then removed and filed in the employee’s training file. See Section G of the application to review the Contingency Plan.

H-2. Implementation of Training Program:
OAC 3745-54-16 (B)

See Section H-1a of this application.
H-3. Training Frequency:
OAC 3745-54-16 (C)

The Facility’s Hazardous Waste Training is reviewed by all persons involved in generating, storing or treating (Open Burning) hazardous waste on an annual basis (each January). A copy of HW-Form 101, used to record the training of each employee is included as Attachment H-1 to this section.

H-4. Training Records and Documents:
OAC 3745-54-16 (D) & (E)

H-4a. Job Titles:
OAC 3745-54-16 (D)(1)

H-4b. Job Descriptions:
OAC 3745-54-16 (D)(2)

H-4c. Training Descriptions:
OAC 3745-54-(D)(3)

Vice President and General Manager

Establishes corporate marketing and economic criteria with ultimate responsibility for quality, safety, and environmental concerns

Director of Manufacturing

Directs manufacturing with primary concerns for product marketability, safety, quality, and environmental concerns.

Managers

Enforce manufacturing, maintenance, safety, quality, and environmental operating procedures. Perform product inspection duties resulting in pass/fail decisions on explosive commodities. Directly responsible for designating which items are hazardous waste, and ensuring correct labeling and packaging of wastes.

Amount of introductory training: 6 hours
Continuing Training: Yearly refresher
OB Operators

Responsible for transportation of explosive and/or explosive-contaminated materials from magazine-storage facilities to Permitted Open Burn Area, treatment via open burning and daily site inspection as specified in the Hazardous Waste Personnel Training Program.

Amount of introductory training: 6 hours
Continuing Training: Yearly refresher

Quality Assurance Personnel

Responsible for testing and evaluating raw materials and finished products resulting in pass/fail decision on hazardous materials. Technical assistance from this group enables management to choose the optimum utilization or treatment method for hazardous waste. Standards established by this group are enforced by Managers.

Amount of introductory training: 6 hours
Continuing Training: Yearly refresher

Environmental Manager

Responsible for environmental regulatory compliance, recordkeeping, and advising all levels of management of their environmental responsibilities. Responsible for quality assurance personnel and laboratory facilities.

Amount of introductory training: 6 hours
Continuing Training: Yearly refresher

Maintenance of Training Records: Training records on current personnel shall be kept until closure of the facility; Training records on former employees shall be kept for at least three years from the date the employee last worked at the facility. Personnel training records may accompany personnel transferred with in the same company.
OPEN BURN OPERATING PROCEDURE

BURNING GROUNDS

REVISION NO. 6
04/18/2018

By signing this document, I certify that I have read and approved this operating procedure

<table>
<thead>
<tr>
<th>REV</th>
<th>DESCRIPTION OF CHANGE</th>
<th>MOC NO</th>
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<tr>
<td>2</td>
<td>Updated format. Cover page and Table of Contents added. MSDS information updated. Procedure updated to include the delayed ignition apparatus</td>
<td>N/A</td>
<td>3/25/2015</td>
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<tr>
<td>3</td>
<td>Procedure updated to include use of infrared thermometer to make sure burn trays are cool before loaded. Updated Warnings, Notes, Cautions</td>
<td>N/A</td>
<td>10/26/2015</td>
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<tr>
<td>4</td>
<td>Added consequences of deviation to all warnings and cautions</td>
<td>N/A</td>
<td>11/4/2015</td>
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<td>5</td>
<td>Updated Section 7.1</td>
<td>N/A</td>
<td>8/2/2017</td>
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<tr>
<td>6</td>
<td>Updated Section 6.0 Approved burning time 8am-5pm. Updated section 10 for steps to take when burn trays fail to ignite.</td>
<td>MOC-18115-MS</td>
<td>4/25/18</td>
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# OPEN BURN OPERATING PROCEDURE

## TABLE OF CONTENTS

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<th>TITLE BLOCK</th>
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<tbody>
<tr>
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<td>SECTION 2: PERSONNEL AND MAXIMUM INTENDED INVENTORY</td>
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<td>SECTION 3: PREREQUISITE TRAINING</td>
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<tr>
<td></td>
<td>SECTION 13: STARTUP AFTER AN EMERGENCY SHUTDOWN</td>
<td>15</td>
</tr>
<tr>
<td></td>
<td>SECTION 14: EMERGENCY OPERATIONS</td>
<td>15</td>
</tr>
</tbody>
</table>
SECTION 1: TITLE BLOCK

Open Burn Operating Procedure

File Name: Open Burn Operating Procedure Rev 4.docx

SECTION 2: PERSONNEL AND MAXIMUM INTENDED INVENTORY

<table>
<thead>
<tr>
<th>PERSONNEL LIMITS:</th>
<th>MAXIMUM INTENDED INVENTORY:</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Operators:</td>
<td>a. Location/Station: (Explosives/Components)</td>
</tr>
<tr>
<td>2</td>
<td>b. Type: Total Hazardous Waste Explosive</td>
</tr>
<tr>
<td></td>
<td>c. Amount: 1000 lbs</td>
</tr>
<tr>
<td>b. Transients:</td>
<td>Emulsion Waste Hazardous Waste Explosives per pan</td>
</tr>
<tr>
<td></td>
<td>200 lbs</td>
</tr>
<tr>
<td>c. Total:</td>
<td>Detonating Cord Waste Hazardous Waste Explosives per pan</td>
</tr>
<tr>
<td>2</td>
<td>300 lbs</td>
</tr>
<tr>
<td>d. Minimum:</td>
<td>Explosive Waste Hazardous Waste Explosives per pan</td>
</tr>
<tr>
<td>2</td>
<td>100 lbs</td>
</tr>
</tbody>
</table>

SECTION 3: PREREQUISITE TRAINING

All employees are required to complete orientation before starting any work. The orientation training can be found in the Safety Managers Office.

SECTION 4: GENERAL EMERGENCY PROCEDURES

<table>
<thead>
<tr>
<th>CONDITION</th>
<th>ACTION</th>
<th>NOTIFICATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fire/Explosion</td>
<td>1. Evacuate to assigned assembly point.</td>
<td>1. Dial 0, Report the Building No and/or the Location or by using the Radio to notify the guard house.</td>
</tr>
<tr>
<td></td>
<td>2. Do not fight fires involving Explosives.</td>
<td>2. Notify Supervisor.</td>
</tr>
<tr>
<td>Serious Injury</td>
<td>1. Render assistance until help arrives.</td>
<td>1. Dial 0, Report the Building No and/or the Location or by using the Radio to notify the guard house.</td>
</tr>
<tr>
<td></td>
<td>2. Render first aid if trained.</td>
<td>2. Notify Supervisor.</td>
</tr>
<tr>
<td>Unplanned</td>
<td>1. Stop leak if safe and you are trained.</td>
<td>1. Dial 0, Report the Building No and/or the Location or by using the Radio to notify the guard house.</td>
</tr>
<tr>
<td>Release</td>
<td>2. Keep other employees away until help arrives.</td>
<td>2. Notify Supervisor.</td>
</tr>
<tr>
<td>After Hours</td>
<td>N/A</td>
<td></td>
</tr>
</tbody>
</table>
### SECTION 5: PERSONAL PROTECTIVE EQUIPMENT (PPE)

<table>
<thead>
<tr>
<th>PPE</th>
<th>All Steps</th>
<th>Only Steps</th>
</tr>
</thead>
<tbody>
<tr>
<td>Safety Glasses</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Cotton Gloves</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Safety Shoes</td>
<td></td>
<td>X</td>
</tr>
</tbody>
</table>

### SECTION 6: SAFE OPERATING LIMITS

<table>
<thead>
<tr>
<th>Safe Operating Limits</th>
<th>Consequence of Deviation</th>
<th>Prevention and Avoidance</th>
</tr>
</thead>
<tbody>
<tr>
<td>1000 lbs in the Open Burn Area</td>
<td>Violation Environmental Permit</td>
<td>Training</td>
</tr>
<tr>
<td>Less than 15 mile per hour winds</td>
<td>Violation Environmental Permit</td>
<td>Training</td>
</tr>
<tr>
<td>Approved Burn Times: 8am – 5 pm</td>
<td>Violation Environmental Permit</td>
<td>Training</td>
</tr>
</tbody>
</table>

### SECTION 7: SAFETY AND HEALTH CONSIDERATIONS

7.1. Hazardous Chemicals

<table>
<thead>
<tr>
<th>a. Chemical Name</th>
<th>b. Hazards</th>
<th>c. Safety Precautions</th>
<th>d. Actions if Exposed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emulsion Products</td>
<td>See SDS for individual product</td>
<td>See SDS for individual product</td>
<td>See SDS for individual product</td>
</tr>
<tr>
<td>a. Chemical Name</td>
<td>b. Hazards</td>
<td>c. Safety Precautions</td>
<td>d. Actions if Exposed</td>
</tr>
<tr>
<td>------------------</td>
<td>--------------------------</td>
<td>------------------------------------------------------------</td>
<td>----------------------------------------------------------</td>
</tr>
<tr>
<td>#2 Diesel Fuel</td>
<td>Combustible liquid and vapor</td>
<td>Wear proper PPE and follow the operating procedures</td>
<td>Eye Contact: No specific first aid measures are required. As a precaution, remove contact lenses, if worn, and flush eyes with water.</td>
</tr>
<tr>
<td></td>
<td>Eye:</td>
<td></td>
<td>Skin: Wash skin with water immediately and remove contaminated clothing and shoes. Get medical attention if any symptoms develop. To remove the material from skin, use soap and water. Discard contaminated clothing and shoes or thoroughly clean before reuse.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Ingestion: Get immediate medical attention. Do not induce vomiting. Never give anything by mouth to an unconscious person.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Inhalation: Move the exposed person to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention if breathing difficulties continue.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### 7.1. Hazardous Chemicals

<table>
<thead>
<tr>
<th>a. Chemical Name</th>
<th>b. Hazards</th>
<th>c. Safety Precautions</th>
<th>d. Actions if Exposed</th>
</tr>
</thead>
<tbody>
<tr>
<td>TNT</td>
<td><strong>Explosion:</strong> May explode when subjected to heat, friction, shock, or ESD</td>
<td>Wear proper PPE and follow the operating procedures</td>
<td><strong>Fumes:</strong> Remove to fresh air.</td>
</tr>
<tr>
<td></td>
<td><strong>Eye:</strong> Dust and vapor cause lacrimation, pain and conjunctiva reddening with risk of cornea injury</td>
<td></td>
<td><strong>Eyes:</strong> Rinse eyes with large quantities of cool water.</td>
</tr>
<tr>
<td></td>
<td><strong>Skin:</strong> Dust and vapor can cause reddening as well as slowly intensifying blue coloring of skin, lips, and nails</td>
<td></td>
<td><strong>Skin:</strong> Take off clothing and rinse skin with large quantities of cool, running water. Apply aseptic dressing on harmed skin. Get medical attention.</td>
</tr>
<tr>
<td></td>
<td><strong>Ingestion:</strong> Can cause consumption pain, salivation, loss of appetite, pollakiuria, nausea, and vomiting</td>
<td></td>
<td><strong>Ingestion:</strong> Give plenty of water or water with activated charcoal and cause vomiting. Do not administer milk or alcohol. Get medical attention.</td>
</tr>
<tr>
<td></td>
<td><strong>Inhalation:</strong> Can cause methemoglobinemia, allergy, headaches and vertigo, dyspnea, and cough</td>
<td></td>
<td><strong>Inhalation:</strong> Remove person from contaminated area and ensure inflow of fresh air. Ensure respiratory tract is not blocked and if need be, use a respirator. Protect person against heat loss. Get medical attention.</td>
</tr>
<tr>
<td></td>
<td><strong>Prolonged Exposure:</strong> Can cause hemolytic and aplastic anemia, liver damage. Can also cause polyneural changes, chronic skin inflammation and cataracts</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
# 7.1. Hazardous Chemicals

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>b. Hazards</th>
<th>c. Safety Precautions</th>
<th>d. Actions if Exposed</th>
</tr>
</thead>
</table>
| **RDX**      | **Explosion:** May cause explosion when subjected to heat, sparks, impact, friction, or ESD  
**Eye:** Unlikely route of entry. Can cause irritation  
**Skin:** Can cause allergic skin reaction  
**Ingestion:** Can result in systemic poisoning, usually affecting the bone marrow and the liver  
**Inhalation:** Can result in systemic poisoning, usually affecting the bone marrow and the liver  
**Overexposure:** May cause convulsions, unconsciousness | **Wear proper PPE and follow the operating procedures** | **Eyes:** Flush with water for 15 minutes. Remove contact lenses prior to flushing, if applicable. Get medical attention.  
**Skin:** Wash with soap and warm water. Get medical attention for rash or irritation.  
**Ingestion:** If conscious, drink large quantities of water and induce vomiting immediately. Contact a physician or Poison Control Center immediately.  
**Inhalation:** Remove to fresh air. Give oxygen if necessary. Get medical attention. |
| **HMX**      | **Explosion:** May cause explosion when subjected to heat, sparks, impact, friction, or ESD  
**Eye:** Unlikely route of entry. Can cause irritation  
**Skin:** Can cause allergic skin reaction  
**Ingestion:** Can result in systemic poisoning, usually affecting the bone marrow and the liver  
**Inhalation:** Can result in systemic poisoning, usually affecting the bone marrow and the liver  
**Overexposure:** May cause convulsions, unconsciousness | **Wear proper PPE and follow the operating procedures** | **Eyes:** Flush with water for 15 minutes. Remove contact lenses prior to flushing, if applicable. Get medical attention.  
**Skin:** Wash with soap and warm water. Get medical attention for rash or irritation.  
**Ingestion:** If conscious, drink large quantities of water and induce vomiting immediately. Contact a physician or Poison Control Center immediately.  
**Inhalation:** Remove to fresh air. Give oxygen if necessary. Get medical attention. |
### 7.1. Hazardous Chemicals

<table>
<thead>
<tr>
<th>a. Chemical Name</th>
<th>b. Hazards</th>
<th>c. Safety Precautions</th>
<th>d. Actions if Exposed</th>
</tr>
</thead>
<tbody>
<tr>
<td>PETN</td>
<td><strong>Explosion:</strong> May cause explosion when subjected to heat, friction, shock, or ESD</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Eye:</strong> May cause irritation</td>
<td>Wear proper PPE and follow the operating procedures</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Skin:</strong> May cause mild irritation</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Inhalation:</strong> Irritation to the respiratory tract</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Ingestion:</strong> Not an expected route of exposure</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Eye:** Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do so. Continue rinsing. Get medical attention if irritation persists.

**Skin:** Wash contact areas with soap and water. Remove contaminated clothing. Wash contaminated clothing before reuse.

**Inhalation:**
Move to open air, keep at rest and in a position comfortable for breathing. Get medical attention. Ventilate suspected area.

**Ingestion:** Rinse mouth. DO NOT induce vomiting. Get medical attention.

### 7.2. Safety Systems

<table>
<thead>
<tr>
<th>a. Safety Systems</th>
<th>b. Function of Safety System</th>
</tr>
</thead>
<tbody>
<tr>
<td>Danger Sign</td>
<td>Warn employees not to enter area during burn events</td>
</tr>
<tr>
<td>Fire Extinguisher</td>
<td>Must be in truck</td>
</tr>
<tr>
<td>Eyewash bottles</td>
<td>Must be in truck</td>
</tr>
</tbody>
</table>
### SECTION 8: INITIAL STARTUP

#### 8.1. Equipment

<table>
<thead>
<tr>
<th>a. Equipment</th>
<th>b. Equipment Settings and/or Picture</th>
<th>c. Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Two-way radio</td>
<td><img src="image1.png" alt="Two-way radio" /></td>
<td>N/A</td>
</tr>
<tr>
<td>Wind gauge</td>
<td><img src="image2.png" alt="Wind gauge" /></td>
<td>1</td>
</tr>
<tr>
<td>Delay Initiation Apparatus</td>
<td><img src="image3.png" alt="Delay Initiation Apparatus" /></td>
<td>1</td>
</tr>
<tr>
<td>Igniter Match/Resistor Assembly</td>
<td><img src="image4.png" alt="Igniter Match/Resistor Assembly" /></td>
<td>As needed</td>
</tr>
</tbody>
</table>
### 8.1. Equipment

<table>
<thead>
<tr>
<th>a. Equipment</th>
<th>b. Equipment Settings and/or Picture</th>
<th>c. Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>&quot;OAKTON&quot; Infrared Thermometer</td>
<td><img src="image.png" alt="Image of OAKTON Infrared Thermometer" /></td>
<td>1</td>
</tr>
</tbody>
</table>

### 8.2. Materials

<table>
<thead>
<tr>
<th>a. Material</th>
<th>b. Quality Control Requirements</th>
<th>c. Maximum Intended Inventory</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wooden Pallet</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Fuel Oil</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Hay/Straw</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Matches</td>
<td>N/A</td>
<td>N/A</td>
</tr>
</tbody>
</table>

### Definitions Used in Procedures

<table>
<thead>
<tr>
<th>Warnings</th>
<th>Safety Related (Consequences of deviations)</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAUTIONS</td>
<td>Equipment or process upset</td>
</tr>
<tr>
<td>NOTES</td>
<td>Additional Information</td>
</tr>
</tbody>
</table>

### Startup Checks and Settings

#### 8.3. Open Burn Checks

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>8.3.</td>
<td>Check all three steel burn pans for containment integrity, debris, moisture, etc. prior to removing waste materials from vehicle. If burn pans are not in the proper or expected condition, notify a supervisor for further instructions.</td>
</tr>
<tr>
<td>8.3.</td>
<td>Inspect burn pans for any unburned material</td>
</tr>
<tr>
<td>8.3.</td>
<td>Inspect the OAKTON Thermometer to make sure it is in working order before using. If any issues arise, consult the manufacturer’s operating manual.</td>
</tr>
<tr>
<td>9.1.1.</td>
<td>Waste explosives must be destroyed by Open Burning (OB) at the Permitted Open Burn Unit. These explosives may be raw materials, sweepings or production items that are either contaminated, off-specification, out-of-date or considered unmarketable by management. Only waste explosives that are expected to undergo combustion without detonation are destroyed by OB.</td>
</tr>
<tr>
<td>9.1.2.</td>
<td>Explosive-contaminated materials including empty boxes and liners containing more than three percent (3%) explosives must be destroyed by OB.</td>
</tr>
<tr>
<td>9.1.3.</td>
<td>Open burning must not be conducted during rain events or in winds above 15 MPH. Burning is to be done between the hours of 8:00 am and 5:00 pm.</td>
</tr>
<tr>
<td>9.1.4.</td>
<td>All OB operations must be conducted on steel burn pans with ash cages that must be inspected prior to each day’s burning activity to insure that they have not lost their containment integrity and there is no accumulation of unburned explosives in cracks and crevices.</td>
</tr>
<tr>
<td>9.1.5.</td>
<td>Only experienced OB personnel who are trained in compliance with the Open Burning Hazardous Waste Program are to conduct OB activities.</td>
</tr>
<tr>
<td>9.1.6.</td>
<td>When conducting OB activities the operator must have a portable two-way radio on site.</td>
</tr>
<tr>
<td>9.1.7.</td>
<td>Determine if weather conditions are appropriate to conduct Open Burning. Begin to fill out Form 201.</td>
</tr>
<tr>
<td>9.1.8.</td>
<td>Personnel are to inspect the truck to assure that it is in safe operating condition before driving and transporting hazardous waste to be destroyed at the Permitted Open Burn Unit.</td>
</tr>
<tr>
<td>9.1.9.</td>
<td>Personnel are to check to see that the proper hazardous waste sticker is properly displayed on the truck that is to transport hazardous waste to be destroyed at the Permitted Open Burn Unit.</td>
</tr>
<tr>
<td>9.1.10.</td>
<td>Igniter Match/Resistor assemblies are to be picked up from the safe in the lab area immediately prior to conducting OB activities and returned as soon as the operation is complete.</td>
</tr>
<tr>
<td>9.1.12.</td>
<td>If there is any spillage on the floor of the magazine clean it up immediately.</td>
</tr>
<tr>
<td>9.1.13.</td>
<td>Load the contents of the magazine into the truck. WARNING: NOT MORE THAN ONE THOUSAND (1,000) POUNDS OF EXPLOSIVES OR EXPLOSIVE CONTAMINATED MATERIALS IS ALLOWED ON THE PERMITTED OPEN BURN UNIT AT ANY TIME. FAILURE TO DO SO COULD CAUSE SERIOUS INJURY OR DEATH.</td>
</tr>
<tr>
<td>9.1.14.</td>
<td>Record what type of waste has been loaded onto the truck and record the weight of each type of explosive (slurry/emulsion/ANFO/dynamite/detonating cord/shock tubing/safety fuse/booster mix/etc.). Close and lock the magazine doors after the truck has been loaded.</td>
</tr>
<tr>
<td>9.1.15.</td>
<td>Once hazardous waste has been loaded onto the truck the vehicle must be placarded “Explosives 1.1D” Bags must be labeled EPA Waste No. D003, K044 or K045.</td>
</tr>
</tbody>
</table>
### 9.1. Open Burn

<table>
<thead>
<tr>
<th>Section</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>9.1.16.</td>
<td><strong>Post sign reading “Danger! Burning in Progress! Keep Out!” on the access road.</strong></td>
</tr>
<tr>
<td>9.1.17.</td>
<td><strong>Drive to the Permitted Open Burn Unit and position the truck to begin off loading of hazardous waste materials. Re-evaluate weather conditions and begin filling out Form 201.</strong></td>
</tr>
</tbody>
</table>
| 9.1.18. | **Inspect burning pans and cages for structural integrity and there is no accumulation of unburned explosives in cracks and crevices. Only structurally sound pans may be used for burning.**  
**WARNING:** NOT MORE THAN ONE HUNDRED (100) POUNDS OF EXPLOSIVES, THREE HUNDRED POUNDS (300) POUNDS OF DETONATING CORD WASTE OR TWO HUNDRED (200) POUNDS OF EMULSION-PLASTIC BAG WASTE MAY BE BURNED ON ANY SINGLE BURN PAN AT ONE TIME. FAILING TO DO SO COULD CAUSE SERIOUS INJURY OR DEATH. |
| 9.1.19. | **Stir the ashes in the pan with a nonmetallic tool. The temperature of the pan then needs to be taken using the OAKTON infrared thermometer before loading any hazardous waste into the pan. Obtain the temperature of the pan/ashes by pointing the thermometer at the pan/ashes and press the “ON” button (this also takes a reading while also powering the device). Ensure the pan and the ashes remaining in the pan are no more than ambient temperature.**  
**If over ambient temperature, DO NOT BURN and contact the Area Manager for further instructions.**  
**WARNING:** IF MATERIALS ARE ADDED TO A HOT PAN/HOT CONTENTS (OVER AMBIENT TEMPERATURE), THE EXPLOSIVE WASTE MAY CATCH ON FIRE AND POTENTIALLY CAUSE INJURY TO PERSONNEL. |
| 9.1.20. | **To burn booster mix, dynamite, etc. put a layer of straw down on the center of a burn pan. Place hazardous waste on top of the layer of straw.**  
**WARNING:** BOOSTER MIX IS NOT TO BE BURNED WITH ANY OTHER TYPES OF HAZARDOUS WASTE. FAILURE TO DO SO COULD CAUSE SERIOUS INJURY OR DEATH OR EXPLOSION. |
### 9.1. Open Burn

<table>
<thead>
<tr>
<th>Paragraph</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>9.1.21.</td>
<td>Place booster line waste such as box liners, filter bags and cartridges, and contaminated non-explosive materials used in making boosters in the center of a burn pan. This material may be burned alone or with Emulsion/Slurry/ANFO wastes only. This material may require a small amount of fuel oil sprinkled on the material to ensure quick and complete ignition. <strong>WARNING:</strong> DETONATING CORD WASTE IS NOT TO BE BURNED WITH ANY OTHER TYPES OF HAZARDOUS WASTE. FAILURE TO DO SO COULD CAUSE SERIOUS INJURY OR DEATH OR EXPLOSION.</td>
</tr>
<tr>
<td>9.1.22.</td>
<td>Place detonating cord waste in the center of a burn pan. <strong>WARNING:</strong> SHOCK TUBING IS NOT TO BE BURNED WITH OTHER TYPES OF HAZARDOUS WASTE. FAILURE TO DO SO COULD CAUSE SERIOUS INJURY OR DEATH OR EXPLOSION.</td>
</tr>
<tr>
<td>9.1.23.</td>
<td>Place shock-tubing waste in the center of a burn pan. <strong>WARNING:</strong> DYNAMITE IS NOT TO BE BURNED WITH OTHER TYPES OF HAZARDOUS WASTE. FAILURE TO DO SO COULD CAUSE SERIOUS INJURY OR DEATH OR EXPLOSION.</td>
</tr>
<tr>
<td>9.1.24.</td>
<td>Place dynamite waste in the center of a burn pan.</td>
</tr>
<tr>
<td>9.1.25.</td>
<td>Slurry/emulsion/ANFO waste and explosive contaminated equipment are not to be burned (flashed) with each other or other types of hazardous waste. Slurry/emulsion/ANFO waste and explosive contaminated equipment require additional solid supplemental fuel in the form of wooden pallets, kindling, paper or other materials. The solid supplemental fuel must be placed on the burn pan prior to the addition of the materials to be open burned. Typically, two (2) wooden pallets are placed side by side in the center of the burn pan. A layer of hay is spread over the two wooden pallets and four (4) additional wooden pallets are placed on top of the supplemental fuel and sprinkled lightly with fuel oil. Place emulsion/slurry waste in the center of a burn pan atop the supplemental fuel.</td>
</tr>
<tr>
<td>9.1.26.</td>
<td>With the exception of detonating cord and shock tubing hazardous waste, sprinkle fuel oil on the other hazardous waste to help it burn better.</td>
</tr>
<tr>
<td>9.1.27.</td>
<td><strong>Special instructions for the open burning of detonator match heads:</strong> Place a layer of straw on the bottom of a cast iron frying pan. Cover the straw with a paper towel; pour the match heads on to the straw. Sprinkle with a small amount of fuel oil. Place the match head screen over the frying pan and place in the center of the burn pan. Proceed at 9.1.31.</td>
</tr>
</tbody>
</table>
9.1. Open Burn

**9.1.29.** Special instructions for open burning of Booster Line carbon absorption Drums: Drums are to be triple burned. Drums drained of excess water are to be taken to the OB area. Supplemental fuel is to be placed in the center of the burn pan. Several pallets and a layer of hay are sprinkled with fuel oil. The drums are placed on top of the supplemental fuel and the delayed ignition apparatus is used to ignite the material (as described starting at 9.1.31). After the material has burned and the embers have cooled, the material is pushed to the side and supplemental fuel is added in the center of the pan. The carbon material is placed on top of the fuel and is burned again. The process is completed a third time to assure complete combustion of all explosive materials.

**9.1.30.** Notify the Gate by two-way radio that you are ready to burn.

**WARNING:** TWO PEOPLE MUST BE PRESENT WHEN LIGHTING THE BURN PANS. PERSONNEL INJURY COULD OCCUR IF NOT FOLLOWED.

**WARNING:** ONCE BURNING IS IN PROGRESS NO ONE IS TO ENTER THE OPEN BURNING AREA. FAILURE TO DO SO COULD CAUSE SERIOUS INJURY OR DEATH.

**9.1.31.** Retrieve combustible material such as paper, straw, hay, etc. and place in a pile on top of material to be burned in the burn pan. Fuel oil may be added if necessary.

**9.1.32.** Place the Igniter match/resistor with attached legwires on the combustible material and cover loosely with about one (1) inch of combustible material. Do not block air flow to the Igniter device.

**9.1.33.** At the Igniter apparatus, check the resistances of each igniter assembly using an ohm meter. Each resistance should be less than twelve (12) ohm. If higher than twelve (12) ohm, walk back towards the burn pan and verify proper connection at each splice. If the re-inspection of the connection and reattachment does not reduce the resistance below twelve (12) ohm, then replace the faulty unit with a new igniter.

**9.1.34.** Verify that all personnel and vehicles are clear of the open burning area.

**9.1.35.** Attach the legwires to the Igniter apparatus (right hand side of unit one wire on red post one wire on black post), using the key switch, turn the unit “on” (Key switch is on left hand side front and labeled “Power”) Observe the PLC screen noting that it says “Run” on the top right.

**9.1.36.** Once ready (green LED is lit on left front and PLC screen says “Run”), press the Green “fire” button (right hand side front). The ignition of the combustibles will occur beginning at 3 minutes.

**NOTE:** At any time before three (3) minutes, the initiation sequence can be aborted by powering off the unit or by disconnecting the legwires from the unit.

**9.1.37.** After the initiation sequence has begun, quickly walk to the designated area 300 feet away.

**WARNING:** AT LEAST TWO PEOPLE MUST BE PRESENT WHEN LIGHTING ANY BURN PANS OR CONDUCTING ANY TESTS. SERIOUS INJURY COULD OCCUR IF NOT FOLLOWED.

**9.1.38.** In order to have the ash dumpster transported from the burn grounds to the sanitary landfill, notify the Environmental Manager. A special waste manifest is needed to accompany the shipment and copies must be maintained in the office. The Environmental Manager will make arrangements for the driver to pick up the manifest from the guard when he or she checks in at the gate. An escort will accompany the landfill’s driver to the burn grounds. The driver may not enter the burn grounds during burning activities.
SECTION 10: TEMPORARY OPERATIONS

10.1. Failure of Burn Tray to Ignite When Using Only One Burn Tray

10.1.1. If only one burn tray is being used and fails to ignite after delay time has expired, approach burn area and turn key off to delay ignition apparatus and remove failed match head apparatus from burn cage.

10.1.2. Follow section 9.1.32 through 9.1.37 above to replace Igniter Match/Resistor Assembly.

10.2. Failure of Burn Tray to Ignite When Using More Than One Burn Tray

10.2.1. If using more than one burn tray and any of the burn tray's fail to ignite after delay time has expired, DO NOT approach the burn area. Wait until all the other trays that have caught fire have burnt all the way down before approaching the burn area.

10.2.2. Follow section 9.1.32 through 9.1.37 above to replace Igniter Match/Resistor Assembly.

SECTION 11: NORMAL SHUTDOWN

N/A

SECTION 12: EMERGENCY SHUTDOWN

N/A

SECTION 13: STARTUP AFTER AN EMERGENCY SHUTDOWN

N/A

SECTION 14: EMERGENCY OPERATIONS

IN THE CASE OF ANY EMERGENCY, REFER TO THE EMERGENCY SHUT DOWN PROCEDURES. NO OPEN BURN OPERATIONS ARE TO TAKE PLACE DURING AN EMERGENCY.
I certify under penalty of law that this document and all attachments were prepared under my direction or supervision according to a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Keith Mills
Director of Manufacturing
Austin Powder Company
Section I - Closure Plan and Financial Requirements

Section I-1. Closure Plan:
OAC 3745-44(A)(13)

A copy of this facility's closure plan is included as Attachment I-1 of this section.

A report titled “Background Lead Level Determination” was prepared for Austin Powder Company by Sharp Environmental Engineers and scientists on January 12, 1995. On February 16, 1995 the Ohio EPA determined that the report was acceptable and requested that it be incorporated into the Closure Plan. The report “Background Lead Level Determination” is included as Attachment I-2 of this section.

Financial Requirements:

A copy of the Letter of Credit intended to assure closure is included as Attachment I-3.

Liability Insurance:
OAC 3745-50-44(A)(17)

The facility’s Certificate of Insurance complies with all of the liability requirements of OAC 3745-50-44(A)(17) that requires coverage for sudden accidental occurrences. The Certificate is included as Attachment I-4 of this section.
1. Introduction

The area of waste treatment is a circular area approximately 200 feet in diameter, located at 39°15'10" Longitude and 82°25'15" Latitude. The area is used for the open burning of explosives and explosives-contaminated materials and represents the maximum extent of hazardous waste management operations that will be conducted during the active life of the facility. During the active life of this facility, the maximum inventory of hazardous waste that may be on-site is estimated to be 23,000 pounds. In addition, the maximum inventory of hazardous waste in treatment at any time is estimated to be limited to 1,000 pounds (or 1,000 pounds per treatment activity).

The waste treatment facility will be closed in a manner that eliminates the need for further maintenance, since the waste and waste residues that were present at the waste treatment area will be destroyed by open burning. The ash generated by the open burning process is contained within the steel burn pans, accumulated in a covered metal container and transported off site for disposal in a sanitary landfill. The ash has been evaluated for the hazardous waste characteristics of ignitability, corrosivity, reactivity, and toxicity and has been found to be non-hazardous. The handling procedures are such that soil contamination is extremely unlikely. Any remaining waste residues or contaminants in soil will be removed as part of the closure process. The treatment area will be graded and vegetated to restore it to its natural condition, and thus it will require no further maintenance. This closure process, resulting in removal of all hazardous waste and waste residues, will therefore eliminate post-closure escape of hazardous waste, hazardous constituents and contaminated run-off to surface water, groundwater and the atmosphere.

Partial closure of the facility is not anticipated. This open burning (OB) area is the only hazardous waste management unit subject to permitting at the facility, and thus the closure of this unit would represent final closure of the permitted hazardous waste management units within the facility. If the OB area is relocated at some future time, Austin Powder Company will amend its hazardous waste permit accordingly. Austin Powder estimates that the OB area that is the subject of this permit application may be closed in the next 3 to 20 years.

2. Background Sampling

In order to determine at closure whether the permitted activities have contaminated soils in the vicinity of the OB unit, Austin Powder will conduct background sampling within 90 days of permit journalization. Background sampling will consist of collecting samples within the upper six inches of soil at sixteen different locations for each soil type generally upwind from the OB unit. Sampling locations shall be selected in
consultation with Ohio EPA, SEDO. The soil samples will be analyzed for total lead. Upon receipt of the analytical data, Ohio EPA shall have the right to reject any sampling point and require replacement samples where analytical data reveal abnormally high concentration of total lead.

3. Verification Sampling

To demonstrate clean closure of the permitted facility, Austin Powder will conduct verification soil sampling at the time of closure. The location of initial soil samples shall be determined as follows. As depicted on Exhibit A, the OB area will be separated into 25 foot center grid units, thereby creating 49 separate potential sampling locations. If there is visual evidence of contamination within any grid unit, samples will be taken at the center of the area of visible contamination, at the nearest sampling location and at all adjacent sampling locations. A random number generator will be used to select 16 sampling locations from the remaining grid points. The verification soil samples will be analyzed for total lead, nitrates, TNT, RDX, HMX, 2,4 DNT and 2,6 DNT.

4. Sampling and Analytical Methods

Both background and verification soil samples will be taken using a new spade and collected in new 500 milliliter glass bottles with teflon-lined lids. Each sample will be analyzed in accordance with the methods described in USEPA Publication SW-846 "Test Methods for Evaluating Solid Waste: Physical/Chemical Methods, Third Edition." Samples shall be representative of the top 6 inches of soil at the selected sampling points.

5. Determination of Contamination

For purposes of determining whether contamination has occurred as a result of OB activities, the verification sampling results will be evaluated as follows:

A. Lead

Soils containing lead shall be considered to be contaminated if lead concentrations exceed the mean of lead concentrations in the background samples plus two standard deviations.

To determine if the background population effectively reflects a normal data distribution, Austin Powder will complete the following statistical tests on the sample population:

Austin Powder will use the following statistical procedure to calculate an action level or upper confidence limit for the determination of a clean standard for lead present in background soils:

Action level (upper confidence limit) = mean of the background population + two times the standard deviation of the background population.
The above test assumes that the two populations being compared are normally distributed. Therefore, Austin Powder will demonstrate, through probability plots and either the Shapiro-Wilk test or the Kolmogorov-Smirnov test with the Lilliefors critical values (Conover, 1980), that both populations are normally distributed.

If it is discovered that the populations are not normally distributed, Austin Powder will search for a transformation that makes the populations approximately normal. The same transformation will be applied both to the background data as well as the data collected from the closure area(s). If the data cannot be transformed to normality, Austin Powder will develop an alternative statistical procedure(s) to calculate an action level, and submit it to Ohio EPA for review and approval. If lead is found to be non-detectable in the background soils, then the analytical detection limit for lead will constitute the action level for lead contamination.

B. TNT, RDX, HMX, 2,4 DNT AND 2,6 DNT

Soils which contain TNT, RDX, HMX, 2,4 DNT or 2,6 DNT above analytical detection limits will be considered to be contaminated.

6. Remediation of Contaminated Soil

If verification sampling as described above indicates the presence of soil contamination, Austin Powder will first determine the extent of contamination by sampling all grid points adjacent to those reflecting the presence of soil contamination until such sampling produces grid points where analytical results are below the action levels described above. If necessary to complete this sampling, the grid depicted on Exhibit A shall be extended through creation of additional 25-foot center grid units. In those units where contamination exceeds the action levels, Austin Powder will collect samples at depth in one-foot intervals until analytical results are below the action level. Once the horizontal and vertical extent of contamination has been defined, Austin Powder will excavate the contaminated soils and manage such soils in compliance with all applicable laws and regulations. A backhoe will be used to excavate contaminated soils. If less than 10 cubic yards of contaminated soil is excavated, the soil will be placed in drums. If more than 10 cubic yards of contaminated soil is excavated, the soil will be placed in roll-offs. The soil will then be characterized as either hazardous or non-hazardous waste and will be transported to and disposed of at either a hazardous or non-hazardous waste landfill, depending on the characterization.

7. Grading and Cover

When the area is closed, the land utilized for open burning will be graded such that the slope is not greater than 25% nor less than 1%. The area will then be seeded as many times as necessary to establish a vegetative cover.
The vegetative cover to be established during closure of the OB unit will require the following:

A. For soil with nitrate concentrations less than or equal to 200 Mg/L:

1. 2 to 4 tons/acre of lime.
2. 500 pounds/acre of 19-19-19 fertilizer
3. 2 1/2 tons/acre of straw
4. 60 pounds of grass seed/acre with the following typical analysis seasonally adjusted:

   Kentucky 31 Fescue    23%
   Annual Rye grass     17%
   Medium Red Clover    15%
   Perennial Rye grass  14%
   Orchard Grass        14%
   Alsike Clover        6%
   Yellow Sweet Clover  4%
   Timothy              3%
   Inert                4%

This is the same grass mixture used in this area for both highway construction and strip mine reclamation and is known to thrive in this type of soil and climate. Additionally, this grass mixture has been established and is currently thriving at the perimeter of the OB unit. The only maintenance required will be to lime and reseed any barren areas. It is anticipated that the components of the vegetative cover will provide the necessary nutrients to supplement the existing soil base to establish this vegetative cover.

B. For soil with nitrate concentrations greater than 200 Mg/L:

If nitrate concentrations in soil at the OB unit exceed 200 Mg/L, a good nitrogen-demanding crop will be planted to aid in depletion of the nitrates. Upon maturation of the crop, samples will be taken and analyzed for nitrates. If nitrate levels less than 200 Mg/L are not achieved upon maturation of the cover crop, the crop residue will be cut and removed. This crop residue will not be used as a food chain crop. The soil will be disked to a depth of 6 inches and replanted and analyzed as many times as necessary to achieve nitrate levels less than 200 Mg/L through the bioremediation process.

8. Decontamination of Structures and Equipment

The unit will be closed in such a way that there are no hazardous wastes or hazardous waste constituents, including ash residue, remaining on the OB area. Final removal of the hazardous waste inventory will require exactly the same treatment (OB) as performed throughout the life of the facility. Additionally, all of the storage magazines and the trucks will be thoroughly swept out to remove any of the explosives that may have fallen on the floor. These sweepings will then be either burned or detonated as previously described for this type of
The hazardous waste is burned on steel pads so that soil contamination does not occur. The steel pads will be decontaminated through the treatment process itself, which results in removal of all explosive hazardous wastes. In other words, no waste having waste codes "D003", indicating the characteristic of reactivity, will remain.

If either the trucks or storage magazines are significantly contaminated with explosives, burning may be required. This is not expected, since all of the hazardous wastes are solids and are easily swept up and collected for treatment in the OB unit. The burning area will be visually inspected prior to site grading to assure that all pieces of explosive materials have been properly collected and treated in the area.

9. Certification of Closure

Within 60 days of completion of closure of the burning area, Austin Powder Company will submit to the Director, by registered mail, a certification signed by the Plan Manager and an independent registered professional engineer that the unit has been closed in accordance with this closure plan.

10. Schedule of Closure Activities

When closure occurs, it is expected to proceed under the following schedule, which will extend over a period of approximately 25 weeks.

A. Visual inspection of the OB unit and surrounding area in presence of certified independent professional engineer to confirm absence of hazardous wastes (explosive wastes) and explosive-contaminated materials (non-hazardous wastes) -- Completed within two weeks after receipt and treatment of last quantity of wastes.

B. Verification soil sampling -- Completed after completion of Step A and within six weeks after receipt and treatment of last quantity of wastes.

C. Chemical and statistical analysis of background samples and verification samples -- Completed within six weeks of completion of Step B and within 12 weeks after receipt and treatment of last quantity of wastes.

D. Contaminated soil removal and site grading, if required, in presence of certified independent professional engineer to provide uniform ground surface -- Completed within two weeks of Step C and within 20 weeks after receipt and treatment of last quantity of wastes.

E. Establishment of vegetative cover -- Initiated within two weeks of grading surface and completed
within 180 days after receipt and treatment of last quantity of wastes.

11. Closure Cost Estimate

The estimated cost for closing the burning area is $247,591 as detailed below. For purposes of establishing and maintaining financial assurance for closure, this estimate will be rounded off to $250,000. This estimate includes the cost of verification sampling and analysis, grading and establishing a vegetative cover and a contingency for removing, transporting and disposing contaminated soil. Although Austin Powder does not expect that any soil contamination attributable to operation of the burning area will be present at closure, it has estimated the costs for addressing approximately 9,260 cubic feet of soil. This amount represents the volume of soil to a depth of 6 inches across the area depicted on Exhibit B. This soil will only be removed if it is determined to be contaminated in accordance with Section 5 hereof.

The following closure cost estimates are based upon an independent third party performing the closure activities:

- Final inspection for residual explosives and certification by an independent registered professional engineer: $2,000.00
- Two soil evaluations (16 samples each): 2,000.00
- Obtaining samples and writing a report on final closure certification by an independent registered professional engineer: 4,000.00
- Regrading to a slope not greater than 25% nor less than 1% including labor; 300 ft. diameter area - 1.6 acres: 2,407.00
- Removal of steel burn pads, including labor: 500.00
- Seeding and re-seeding, if necessary, to establish a vegetative cover (1.62 acres) including labor and materials: 4,684.00
- Cutting and removal of existing vegetative cover to reduce potential nitrates, if required, including labor: 500.00
- Removal and disposal of 9,260 cu. ft. of contaminated soil at $25/cu. ft, if required: 231,500.00

Total: $247,591.00
Differential Scanning Calorimetry (DSC)

Differential Scanning Calorimetry - An enthalpy-change method in which the difference in energy inputs into a substance and a reference material is measured as a function of temperature, while the substance and the reference materials are subjected to a controlled temperature program.

The Differential Scanning Calorimeter is a TA Instruments Model DSC 2920. Specifications for the calibrated system are as follows:
- Temperature Range: -70°C to 725°C
- Temperature Reproducibility: ± 0.05°C
- Maximum sensitivity: 0.2 µW
- Temperature Accuracy: ± 0.1°C

Calibration of the system is required a minimum of every 6 months to assure accurate temperatures. Calibration is performed by running a sample of pure standard with a known melt temperature. A two point calibration is done using two standards for more accurate temperatures over a selected temperature range. Calibration is performed using indium and lead standards as follows:

1. The indium and lead standard samples of known weight (approx. 10 mg) are run under the same conditions (ramp @ 10°C/min) as regular samples. The temperature range includes the total melt range for the specified standard. The cell is cleaned before running standards and a clean, empty aluminum reference pan is used.
2. The data is analyzed using the manufacturer's DSC Calibration software program. Integration of the curve is required for each standard. The program will calculate the melt temperature and the cell constant after the data is analyzed. The results are plotted.
3. The Instrument Control program is updated after both standards have been run and analyzed. The observed and correct melting temperatures are entered for both standards. The cell constant is entered from the indium standard. The DSC is properly calibrated after the corrections have been entered.

Between 1.5 to 2.5 mg of a representative and homogeneous sample is accurately weighed to a hundredth of a milligram in a clean, dry aluminum pan. The pan is then hermetically sealed with a clean, dry aluminum reference pan sealed in the same manner as above without any sample.

Data from DSC runs are analyzed using the manufacturer's General Analysis software program. The data is plotted on charts as temperature vs. heat flow. Heat flow exhibits one of three main characteristics; exothermic, endothermic or baseline tendencies. The characteristics are defined as follows:
Baseline - The baseline represents the portions of the curve where differential heat flow is approximately zero.

Exothermic Peak - The peak is the point where the sample's temperature rises above the temperature of the reference material due to a physical or chemical change. An exotherm is when the sample gives off heat.

Endothermic Peak - The peak is the point where the sample's temperature falls below that of the reference material due to a physical or chemical change. An endotherm is when the sample absorbs heat.

Reactivity is defined by the characteristics being sought for a particular sample. The chemical decomposition reaction is determined by the start of an exotherm. The reaction between substances is evaluated by the start of an exotherm or by the amount of shift of an exotherm of a mixture with regards to the exotherm of one of the individual substances.

The criteria used to determine reactivity in soils or ash is the presence of an exothermic reaction between ambient and 3000°C. An exotherm in this area could indicate the presence of PETN, TNT, RDX or HMX.
Background Lead Level Determination

for

Austin Powder Company
430 Powder Plant Road
McArthur, Ohio 45651

January 12, 1995
AUSTIN POWDER
BACKGROUND LEAD LEVEL DETERMINATION

1.0 INTRODUCTION

Background soils samples were obtained from eighteen sampling points in areas not directly affected by the RCRA unit or any other concentrated waste management or product handling activity. These sample points were approved by the Ohio Environmental Protection Agency and the locations are marked on the site map in Figure 1.

2.0 BACKGROUND DATA ANALYSES

Data collected for the background samples are reported in Table 1. The data were reviewed for laboratory and sampling errors and no errors were detected. Since no specific error was detected, all data were used to determine background.

TABLE 1: DATA FROM BACKGROUND SAMPLES

<table>
<thead>
<tr>
<th>SAMPLE POINT</th>
<th>LEAD LEVEL (MG/KG)</th>
<th>SAMPLE POINT</th>
<th>LEAD LEVEL (MG/KG)</th>
</tr>
</thead>
<tbody>
<tr>
<td>BG-1</td>
<td>17.3</td>
<td>BG-10</td>
<td>12.8</td>
</tr>
<tr>
<td>BG-2</td>
<td>12.6</td>
<td>BG-11</td>
<td>12.2</td>
</tr>
<tr>
<td>BG-3</td>
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<tr>
<td>BG-9</td>
<td>14.1</td>
<td>BG-18</td>
<td>11.5</td>
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In order to compute the background lead concentrations, the background data must be normally distributed (OEPA, 1991). Data were ranked in ascending order and plotted using the Kolmogorov-Smirnov method with Lilliefors normalization (Figure 2). Since the data appeared to be approximately normal according to the Kolmogorov-Smirnov Plot, the data were tested for normality using the Shapiro Wilk Test for normality (Conover, 1981). Background data were determined to be approximately normal by using the following criteria:
H₀: The random sample has an approximate normal distribution with an unspecified mean and variance.

H₁: The distribution function of the $X_i$s not approximately normally distributed.

Reject H₀ at the level of significance $\alpha$ if $T_3$ is less than the $\alpha$ quantile as calculated by $\alpha$ from G using Tables A19 and A1 from Conover (1981).

As indicated from Table 2, the normalized background and sample data were determined to be approximately normal.

**TABLE 2: SHAPIRO-WILK CRITICAL VALUES FOR NORMALIZED BACKGROUND DATA**

<table>
<thead>
<tr>
<th>INTERVAL</th>
<th>$T_3$</th>
<th>$\alpha$</th>
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<tbody>
<tr>
<td>0-1</td>
<td>0.82222</td>
<td>0.002</td>
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3.0 BACKGROUND DETERMINATION

If background data are approximately normally distributed, then site specific background may be defined as the mean of all sample points added to twice the standard deviation (OEPA, 1991). For this site, the background was determined to be 17.67 MG/KG.

4.0 REFERENCES


FIGURE 1
BACKGROUND SOIL SAMPLING LOCATIONS
AUSTIN POWDER COMPANY
McARTHUR, OHIO

BG-1
BG-17 (DUP)
BG-13
BG-2
BG-3
BG-4
BG-5
BG-6
BG-7
BG-8
BG-9
BG-10
BG-12
BG-11

ROAD

OPEN BURN (OB)

WIND DIRECTION

DRAINAGE

SCALE: 1" = 50'

Ohio EPA DMIW M DEC 30 2011

CO214
FIG. 2: KOLMOGOROV-SMIRNOV PLOT

BACKGROUND DATA

chart uses Lilliefors normality transformation
REPORT OF ANALYTICAL RESULTS

<table>
<thead>
<tr>
<th>SAMPLE DESC</th>
<th>MATRIX</th>
<th>SAMPLED BY</th>
<th>SAMPLED DATE/TIME</th>
<th>RECEIVED</th>
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<th>METHOD</th>
<th>ANALYZED</th>
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<td>mg/KG</td>
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* Detection Limit
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* Detection Limit
**PROJECT: AUSTIN POWDER SOIL SAMPLING**

### REPORT OF ANALYTICAL RESULTS

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* Detection Limit
**REPORT OF ANALYTICAL RESULTS**

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Wilson T. Walker
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<td>7421</td>
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Wilson Environmental Laboratories, Inc.

Wilson T. Walker
**REPORT OF ANALYTICAL RESULTS**

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Wilson Environmental Laboratories, Inc.

Wilson T. Walker
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* Detection Limit
Please Note: Pages of this document which contain sensitive information such as personal information, home addresses and phone numbers, and policy or account numbers have been removed from this web-available version of the document.

To review redacted copies of these removed pages, please contact DERR's record management staff at 614-644-2621.

Thank you,
## AUSTIN POWDER COMPANY – RED DIAMOND PLANT
### CLOSURE COST FOR THE YEAR 2018

**TOTAL CLOSURE COST ESTIMATE FOR 2011**  
$334,000

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<td>2013</td>
<td>1.7%</td>
<td>$346,811</td>
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<td>1.4%</td>
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<td>2017</td>
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<td>2018</td>
<td>1.8%</td>
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11. Closure Cost Estimate

The estimated cost as of September 15, 2014, for closing the burning area is $351,666.00 as detailed below. This estimate includes the cost of verification sampling and analysis, grading and establishing a vegetative cover and a contingency for removing, transporting and disposing of contaminated soil. Although Austin Powder does not expect that any soil contamination attributable to operation of the burning area will be present at closure, it has estimated the costs for addressing approximately 9,260 cubic feet of soil. This amount represents the volume of soil to a depth of 6 inches across the area depicted on Exhibit B. This soil will only be removed if it is determined to be contaminated in accordance with Section 5 hereof.

Final inspection for residual explosives and certification by an independent registered professional engineer

1 Engineer $100/hr x 28 hr = $2,811

Two soil evaluations (16 samples each)

32 Samples for explosives (HP/LC) $139/ea x 32 = $4,447
32 Samples for metal analyte (ICP/AIDS)- Lead $21/ea x 32 = $673
32 Samples Anion (IC) Nitrate $19/ea x 32 = $606

Obtaining samples and writing a report on final closure certification by an independent registered professional engineer

1 Engineer $100/hr x 40 hr = $4,001

Regarding to a slope not greater than 25% nor less than 1%, including labor; 300 ft. diameter area - 1.6 acres

2 Laborers $21/hr x 80 hr = $1,685
1 equipment rental $132/day x 5 day = $658

Removal of steel burn pads, including labor

2 Laborers $21/hr x 80 hr = $1,685
1 Truck $44/hr x 10 hr = $442

Seeding and re-seeding, if necessary, to establish a vegetative cover (1.62 acres including labor and materials)

4 Laborers $21/hr x 32 hr = $673
12 Grass Seed $399/bag x 12 bag = $4,789

Cutting and removal of existing vegetative cover to reduce potential nitrates, if required

2 Laborers $21/hr x 16 hr = $338
4 Trucks for Transportation $5/mi x 64 mi = $338

Removal and disposal of contaminated soil (if needed)

Removal of soil $9/cuft x 9,260 cuft = $87,699
20 Trucks for Transportation $5/mi x 320 mi = $1,685
Treatment of contaminated soil $22/cuft x 9,260 cuft = $204,746

Subtotal $317,278

Contingency (10%) $31,726
Administration Cost $2,662

TOTAL $351,666
Section J - Corrective Action:

At the request of US EPA, Austin Powder Company completed an RFA for the Red Diamond facility in 1991. The RFA prompted an RFI, which initially identified 24 SWMUs at the facility. These are listed and described in the Final Preliminary Review/Visual Inspection Report, dated November 1990, for the RCRA facility assessment of the Austin Powder Co. Red Diamond Plant in McArthur, Ohio. Of the 24 initial SWMUs in the Draft Permit the US EPA requested corrective action at only 9 SWMUs. Based on Austin Powder’s comments, US EPA deleted 3 SWMUs and in the Final Permit requested corrective action at only 6 SWMUs. These included: SWMU 6- Landfill; SWMUs-9-12- PETN dryer house and storage; and SWMU 17 - Booster line.

This resulted in the development of an Interim Measures Work Plan and Corrective Measures Study being conducted. These documents are on file with Ohio EPA. The Work Plan was completed and the SWMU were closed. In December 2006 the Ohio EPA determined that the remedies performed by the facility constituted completion of Corrective Measures and that no further action need be taken. This letter can also be found on file at the OEP A. Currently, there are no Corrective Actions at the facility.
Section K- Other Federal Laws:
OAC 3745-50-44(A)(20)

OAC 3745-50-44 (A)(20) and 40 CFR 270.3 require consideration of Federal Laws that may apply to the issuance of permits under the RCRA rules. Austin Powder Company’s McArthur, Ohio facility is in compliance with the following laws:

*The Wild and Scenic Rivers Act (16 USC 1273 ET SEQ.) Section 7 of the Act prohibits the regional administrator from assisting by license or otherwise the construction of any water resources project that would have a direct, adverse effect on the values for which a National Wild and Scenic River was established. This permit application does not call for construction of a water resources project. Therefore, further consideration of this law is not required.

*The National and Historic Rivers Act (USC 470 ET SEQ.) Section 106 of the Act and implementing regulations (36 CFR Part 800) require the regional administrator, before issuing a license, adopt measures when feasible to mitigate potential adverse effects of the licensed activity and properties listed or eligible for listing in the Register of Historic Places. The Act’s requirements are to be implemented in cooperation with state historic preservation officers and upon notice to, and when appropriate, in consultation with the Advisory Counsel on Historic Preservation. Since the activities covered in this permit application do not call for further construction, land development, or infringement on historical places, no impact from the operation of the open burning unit will be incurred. Therefore, further consideration of this law is not required.

*The Endangered Species Act (16 USC 1531 ET SEQ.) Section 7 of the Act and implementing regulations (50 CFR Part 402) require the regional administrator to ensure, in consultation with Secretary of the Interior or Commerce, that any action authorized by EPA is not likely to jeopardize the continued existence of any endangered or threatened species or adversely affect its critical habitat. Austin Powder Company is not aware of any plants or animals or exemplary natural communities that would be adversely affected by the RCRA permitting project for the McArthur, Ohio facility. In addition, the activity covered in this permit application does not call for further construction or land development which may impact endangered species. Therefore, further consideration of this law is not required.

*The Costal Zone Management Act (16 USC 1451 ET CEQ.) Section 307(c) of the Act and implementing regulations (15 CFR Part 930) prohibit EPA from issuing a permit for an activity affecting land or water use in the costal zone until the applicant certifies that the proposed activity complies with the State Costal Zone Management Program, and the state or its designated agency concurs with the certification (or the Secretary of Commerce overrides the state’s nonconcurrence). This permit application does not call for construction or land development affecting land or water use in the costal zone. Therefore, further consideration of this law is not required.
* The Fish and Wildlife Coordination Act (16 USC 661 ET SEQ.) The Act requires that the regional administrator, before issuing a permit proposing or authorizing the impoundment, diversion, or other control or modification of any body of water, consult with the appropriate state agency exercising jurisdiction over the wildlife resources to conserve those resources. The activities covered in this permit application do not call for construction of a water resource project, nor for the impoundment, diversion, or other control or modification of any body of water. Therefore, further consideration of this law is not required.
"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

Keith Mills
Director of Manufacturing
Austin Powder Company

Date
1/3/2011
Module F- Additional Conditions

F.1. Scientific Literature Search

Austin Powder Company remains confident that treatment of waste explosives is best conducted by open burning. This treatment remains the industry standard due to the hazards of the explosive reactivity of the materials. Open burning provides deactivation of the materials in a safe and effective manner.

In the US, one facility exists where disposal of waste explosives is conducted by incineration. This facility is currently owned by General Dynamics* and is located in Joplin, Mo. The risk of transporting explosive hazardous waste over 700 miles to this facility has been deemed an unacceptable safety risk to the public. The facility its self has suffered several accidents at the incinerator through its years of existence and various collection of owners/operators**.

Many experimental technologies for the treatment of explosive wastes are being researched by the commercial explosives industry and by the US military. Austin Powder Company will continue to monitor these developing technologies.

* http://www.ebveec.com/customerservice.html
