MATERIAL CONTAINMENT PLAN

for the

PIÑON RIDGE MILL
16910 HIGHWAY 90
BEDROCK, CO 81411

Prepared by:

ENERGY FUELS RESOURCES CORPORATION

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1.0 INTRODUCTION

The Piñon Ridge Mill Facility (Mill) processes uranium and vanadium ore from nearby area mines. The milling operation involves grinding the ore into a fine slurry and then leaching it with sulfuric acid to separate the metals from the remaining rock. Uranium and vanadium are then recovered from solution and precipitated as concentrates, which are sealed in 55-gallon, steel drums and transported off site. Production capacity of the Mill is 500 tons per day of uranium ore with an estimated life of 40 years.

The Mill is located in Montrose County approximately 12 miles west of Naturita, Colorado on an 880 acre property in Paradox Valley (see Figure 1). The restricted area of the Mill totals approximately 310 acres and consists of the ore pad, Mill facility buildings, tailings cells, and evaporation ponds. The Mill facility buildings consist of the Boiler Building, the SAG Mill/Leach Tank Building, the Pre-Leaching Area, the CCD Thickeners Area, the Solvent Extraction Building, and the Precipitation/Packaging Building. The site property outside of the restricted area consists of the access roads, environmental and meteorological monitoring network, groundwater production well network, soil storage area, administration building, laboratory, change room, Mill offices, warehouse, truck maintenance building, and propane, ammonia, and kerosene storage areas. The Site Plan is presented in Figure 2.

The Material Containment Plan has been prepared to provide employees at the Piñon Ridge Mill site the necessary information to store and handle materials and provide expedient and complete response to spills of materials that may cause harm to employees, the public, or the environment. This plan should be used in conjunction with the Piñon Ridge Mill Emergency Response Plan (ERP) and Spill Prevention Control and Countermeasure (SPCC) Plan. The ERP outlines the measures to be taken in response to various potential emergency situations at the Mill, including chemical spills. In addition, the ERP describes the means available to respond to emergencies including roles and responsibilities, on-site and off-site emergency response personnel, equipment and supplies stock and locations, communication protocol, training requirements, emergency response drill and exercise protocol, and reporting requirements. The SPCC Plan provides measures for storing and responding to spills of oils (i.e. diesel fuel, gasoline, kerosene, and other oils).

Mill chemicals and reagents are located in the Mill Facility Area, Tailings Cells, and Evaporation Pond. These areas are designed as zero-discharge areas capable of retaining the full stormwater run-off of the 1,000-year, 24-hour storm event. In addition, deluge water from firefighting activities and large spills escaping secondary containment in these
areas are retained in on-site impoundments. No drain system is located on the Mill site. Floor sumps are located in various process areas within the secondary containment structures. The floor sumps are double contained. Precipitation and chemicals that collect in the floor sumps and secondary containment structures are pumped back to storage tanks, a tailings cell or to containers for proper disposal, as appropriate.

Information sheets for the reagents and process chemicals used at the Mill are provided with this plan for easy and rapid reference in an emergency situation. In addition, Material Safety Data Sheets (MSDSs) for the chemical reagents are provided in Appendix A and available process material data (e.g. analytical results) are provided in Appendix B.
2.0 MATERIALS USED ON-SITE

The materials used, processed, or stored at the Mill site that may have an adverse impact to the environment are identified in Table 1. Information sheets for each of these materials are provided in the attachments identified in the table and MSDSs are provided in Appendix A. Refer to Figure 3 for storage locations of these materials.

Table 1
On-Site Materials List

<table>
<thead>
<tr>
<th>Attachment</th>
<th>Material</th>
<th>Maximum Quantity On-site</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Kerosene</td>
<td>38,100 gal.</td>
<td>West of Solvent Extraction Building</td>
</tr>
<tr>
<td>2</td>
<td>Anhydrous Ammonia</td>
<td>12,000 gal.</td>
<td>West of Solvent Extraction Building</td>
</tr>
<tr>
<td>3</td>
<td>Ammonium Sulfate</td>
<td>6,280 CF (solid)</td>
<td>Precipitation and Packaging Building</td>
</tr>
<tr>
<td></td>
<td></td>
<td>11,800 gal. (sol’n)</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Sodium Hydroxide</td>
<td>1,100 gal. (50%)</td>
<td>Solvent Extraction Building</td>
</tr>
<tr>
<td></td>
<td></td>
<td>4,500 gal. (8%)</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Sodium Carbonate</td>
<td>26,400 gal. (31%)</td>
<td>Southeast of Precipitation and Packaging Building</td>
</tr>
<tr>
<td></td>
<td></td>
<td>15,200 gal. (15%)</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Sulfuric Acid</td>
<td>258,000 gal.</td>
<td>Southeast of Mill Facility</td>
</tr>
<tr>
<td>7</td>
<td>Sodium Chlorate</td>
<td>98,100 gal. (39%)</td>
<td>Precipitation and Packaging Building</td>
</tr>
<tr>
<td>8</td>
<td>Hydrogen Peroxide</td>
<td>7,100 gal. (50%)</td>
<td>Precipitation and Packaging Building</td>
</tr>
<tr>
<td>9</td>
<td>Alamine 336</td>
<td>1,100 gal.</td>
<td>Warehouse</td>
</tr>
<tr>
<td>10</td>
<td>Isodecanol</td>
<td>1,100 gal.</td>
<td>Warehouse</td>
</tr>
<tr>
<td>11</td>
<td>Diesel Fuel</td>
<td>15,900 gal.</td>
<td>Northwest of Solvent Extraction Building, Fire Water Pump, and Emergency Generator</td>
</tr>
<tr>
<td>12</td>
<td>Gasoline</td>
<td>2,000 gal.</td>
<td>Northwest of Solvent Extraction Building</td>
</tr>
<tr>
<td>13</td>
<td>Propane</td>
<td>30,000 gal. 6,000 gal.</td>
<td>West of Reagent Unloading Area Administration Building</td>
</tr>
</tbody>
</table>
The information sheets for each material summarize the following material specific information:

- Maximum Quantity Stored On-Site
- Description of Material
- Synonyms
- Potential Health Hazards
- Potential Safety/Environmental Hazards
- Handling Instructions
- First Aid Measures
- Containment Provided
- Maintenance Requirements
- Spill Response Instructions
- Spill Notification Requirements
3.0 PROCESS CHEMICALS

The Mill processes ore, typically containing less than one percent uranium and up to approximately 10 percent vanadium, to produce purified uranium compounds including U₃O₈, UO₂, UO₃, and UO₄ (collectively referred to as yellowcake or U₃O₈) and vanadium oxide (V₂O₅). Various mixtures of ore and chemical reagents are present throughout the milling process. For the purposes of material containment, these process chemicals have been segregated into groups by corrosivity, flammability, temperature and toxicity. The process chemical groups have been identified in Table 2 below. Information sheets for each of these process chemicals are provided in the attachments identified in the table. Refer to Figures 2 and 3 for process areas that contain these process chemicals.

Table 2
Process Chemicals List

<table>
<thead>
<tr>
<th>Attachment/Process Area</th>
<th>Processes/Location(s)</th>
<th>Material(s)</th>
<th>Maximum Quantity On-site</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Ore Handling and Grinding</td>
<td>Ore, Ore Slurry</td>
<td>100,000 tons</td>
</tr>
<tr>
<td>B</td>
<td>Pre-Leaching and CCD Thickener</td>
<td>Ore/Acid Solution</td>
<td>2,086,000 gal.</td>
</tr>
<tr>
<td>C</td>
<td>Leaching</td>
<td>Ore/Acid Solution</td>
<td>310,000 gal.</td>
</tr>
<tr>
<td>D</td>
<td>Uranium Solvent Extraction</td>
<td>Acid Solution, Organic Solution, NaCO₃ Solution</td>
<td>69,000 gal., 151,000 gal., 4,000 gal.</td>
</tr>
<tr>
<td>E</td>
<td>Vanadium Solvent Extraction</td>
<td>Organic Solution, NaCO₃/NaOH Solution</td>
<td>159,000 gal., 5,000 gal.</td>
</tr>
<tr>
<td>F</td>
<td>Uranium and Vanadium Precipitation and Packaging</td>
<td>Uranium Solution, Vanadium Solution, Yellowcake, Vanadium</td>
<td>117,000 gal., 48,000 gal., 110,000 lb., 114,000 lb.</td>
</tr>
<tr>
<td>G</td>
<td>Tailings Cells and Evaporation Pond</td>
<td>Tailings Liquor, Raffinate</td>
<td>150 ac-ft, 256 ac-ft</td>
</tr>
</tbody>
</table>

The information sheets for each material summarize the following material specific information:

- Maximum Quantity Stored On-Site
- Location
- Process Description
- Potential Health Hazards
- Potential Safety/Environmental Hazards
- Handling Instructions
- First Aid Measures
• Containment Provided
• Maintenance Requirements
• Spill Response Instructions
• Spill Notification Requirements

Information on the process chemical mixtures can be found in MSDSs for the reagent chemicals in Appendix A and process chemical data in Appendix B. Design values for flow rate, temperature, pH, uranium content and vanadium content of all the process chemicals were obtained from the “Basic Engineering and Cost Estimates Report, Volume III, Drawings and Equipment Lists” prepared by CH2MHiIl for the Piñon Ridge Mill on February 4, 2008. Available analytical data was also used to characterize ore, water treatment precipitate, tailings liquor and raffinate. This data includes:

Ore (See Appendix B1)
• Analytical Data - Seven samples from five area mines
• Typical of ore expected to be processed at the Mill
• Average ore grade to be processed at the Mill is expected to be 0.23% U₃O₈
• Includes major ions, total metals and radionuclides, and SPLP extractable metals and radionuclides

Water Treatment Precipitant (See Appendix B2)
• Small amount may be processed with ore
• Analytical Data - Four samples from the Whirlwind Mine
• Product of a barium chloride treatment process, commonly used at uranium mines
• Will make up less than 0.1% of “ore” to be processed at the Mill
• Includes major ions, total metals and radionuclides, and TCLP extractable metals

Tailings Liquor (See Appendix B3)
• Analytical Data - Twelve samples from the White Mesa Mill
• Similar process to that to be used at the Piñon Ridge Mill
• Includes major ions, pH, total metals and total radionuclides

Raffinate (See Appendix B4)
• Study of “Amenability of Uravan Mineral Belt Ore Samples to Piñon Mill Leach Conditions”
• Includes total metals concentrations in raffinate at various pH levels including pH 4.5, the expected pH of the Mill raffinate

The above referenced data including summary tables is available in Appendix B of this plan.
4.0 SPILLS

Prevention of spills of materials potentially harmful to people, property, and the environment is a top priority when storing, handling, and using any of these materials. For the purpose of this plan a spill is defined as “The unintentional release of a material in use, process, or storage at the Piñon Ridge Mill that may result in an adverse impact on the environment.” Should a spill occur, it is of utmost importance that information regarding the containment and clean-up of the spilled material be readily available to employees. This Material Containment plan serves as a guide to timely and appropriate actions to be taken for spills of potentially harmful materials stored and used at the Piñon Ridge Mill.

4.1 Spill Categories

Spills will be classified in one of three categories based on their size and potential affects to human health and the environment. The categories used to classify spills at the Mill are:

Category I Spill

- The spill is small and can be controlled and cleaned-up by immediate personnel, does not include impacts to off-site property or the public, and does not exceed the appropriate reportable quantity(s).
- A Category I spill may include leakage from a tank or piping or a small spill not exceeding the appropriate reportable quantity(s).

Category II Spill

- The spill can be controlled or cleaned up with on-site personnel and does not include impacts to off-site property or the public.
- May or may not exceed the appropriate reportable quantity(s).
- A Category II spill may include one in which a substantial volume of a chemical or solution is spilled, but is contained in secondary containment and can be cleaned up by Mill personnel.

Category III Spill

- The spill requires off-site emergency responders because the Mill cannot supply an adequate number of trained personnel to:
  - Safely mitigate the spill in a timely manner,
  - Prevent injury to other Mill personnel or the public,
  - Prevent further damage to the Mill and/or off-site property, or
  - Minimize damage to the environment.
• May or may not exceed the appropriate reportable quantity(s).
• A Category III spill may include a rupture or major leak from a reagent tank with impacts to off-site property.

Reportable quantities of materials are based on the content of one or more chemicals in the material. Reportable quantities that are provided on the information sheets are based on conservative values of chemicals expected to be in the material based on MSDSs, design values and available analytical data. The reportable quantities indicated on Table 3 and in the Material information Sheets should be considered guidelines and should be used for initial reporting. Actual reportable quantities should be calculated based on current analytical data for the process chemical, when available. Sample calculations for reportable quantities are provided in Appendix C.

### Table 3
**Reportable Quantities (RQ)**

<table>
<thead>
<tr>
<th>MATERIAL</th>
<th>RQ</th>
<th>RQ equivalent</th>
<th>Basis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kerosene/ Diesel Fuel/ Gasoline</td>
<td>25 gal</td>
<td>25 gal</td>
<td>---</td>
</tr>
<tr>
<td>Anhydrous Ammonia</td>
<td>100 lb</td>
<td>19 gal</td>
<td>99.5% Solution (1)</td>
</tr>
<tr>
<td>Sodium Hydroxide</td>
<td>1,000 lb</td>
<td>157 gal</td>
<td>50% Solution (1)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1,230 gal</td>
<td>8% Solution (1)</td>
</tr>
<tr>
<td>Sulfuric Acid</td>
<td>1,000 lb</td>
<td>70 gal</td>
<td>93% Solution (1)</td>
</tr>
<tr>
<td>Ore</td>
<td>1 lb As</td>
<td>1.3 ton</td>
<td>387 mg/kg Arsenic (2)</td>
</tr>
<tr>
<td></td>
<td>10 lb Pb</td>
<td>3.4 ton</td>
<td>1,470 mg/kg Lead (2)</td>
</tr>
<tr>
<td></td>
<td>0.1 Ci U</td>
<td>32 ton</td>
<td>5,100 mg/kg Uranium (2)</td>
</tr>
<tr>
<td></td>
<td>0.1 Ci Ra$^{226}$</td>
<td>94 ton</td>
<td>1,170 $\rho$Ci/g Radium$^{226}$ (2)</td>
</tr>
<tr>
<td></td>
<td>100 lb Se</td>
<td>122 ton</td>
<td>410 mg/kg Selenium (2)</td>
</tr>
<tr>
<td>Water Treatment Precipitant</td>
<td>1 lb As</td>
<td>1.6 ton</td>
<td>311 mg/kg Arsenic (3)</td>
</tr>
<tr>
<td></td>
<td>0.1 Ci U</td>
<td>160 ton</td>
<td>1,010 mg/kg Uranium (3)</td>
</tr>
<tr>
<td>Pre-leaching and CCD Thickener Solutions</td>
<td>1 lb As</td>
<td>820 gal</td>
<td>146 mg/L Arsenic (4)</td>
</tr>
<tr>
<td></td>
<td>1,000 lb H$_2$SO$_4$</td>
<td>2,240 gal</td>
<td>5% Sulfuric Acid (1)</td>
</tr>
<tr>
<td></td>
<td>100 lb NH$_4$</td>
<td>2,650 gal</td>
<td>4,520 mg/L (4)</td>
</tr>
<tr>
<td></td>
<td>0.1 Ci U</td>
<td>52,000 gal</td>
<td>0.75 g/L Uranium (1)</td>
</tr>
<tr>
<td></td>
<td>0.01 Ci Th$^{230}$</td>
<td>96,000 gal</td>
<td>27,500 $\rho$Ci/L Thorium$^{230}$ (4)</td>
</tr>
<tr>
<td>MATERIAL</td>
<td>RQ</td>
<td>RQ equivalent</td>
<td>Basis</td>
</tr>
<tr>
<td>-----------------------------------------</td>
<td>-------------</td>
<td>---------------</td>
<td>--------------------------------------------</td>
</tr>
<tr>
<td>Leaching Solutions</td>
<td>1,000 lb H₂SO₄</td>
<td>660 gal</td>
<td>17% Sulfuric Acid (¹)</td>
</tr>
<tr>
<td></td>
<td>1 lb As</td>
<td>820 gal</td>
<td>146 mg/L Arsenic (⁴)</td>
</tr>
<tr>
<td></td>
<td>100 lb NH₄</td>
<td>2,650 gal</td>
<td>4,520 mg/L Arsenic (⁴)</td>
</tr>
<tr>
<td></td>
<td>0.1 Ci U</td>
<td>23,000 gal</td>
<td>1.67 g/L Uranium (¹)</td>
</tr>
<tr>
<td></td>
<td>0.01 Ci Th²³⁰</td>
<td>96,000 gal</td>
<td>27,500 pCi/L Thorium²³⁰ (⁴)</td>
</tr>
<tr>
<td>Organic Solution</td>
<td>25 gal Kerosene</td>
<td>26 gal</td>
<td>96% Kerosene (¹)</td>
</tr>
<tr>
<td>Loaded Organic Solution</td>
<td>0.1 Ci U</td>
<td>22,000 gal</td>
<td>1.77 g/L Uranium (¹)</td>
</tr>
<tr>
<td>Loaded Sodium Carbonate Solution</td>
<td>0.1 Ci U</td>
<td>540 gal</td>
<td>71.7 g/L Uranium (¹)</td>
</tr>
<tr>
<td>Yellowcake (wet)</td>
<td>0.1 Ci U</td>
<td>500 lb</td>
<td>35% Uranium by weight (¹)</td>
</tr>
<tr>
<td>Yellowcake (dry)</td>
<td>0.1 Ci U</td>
<td>325 lb</td>
<td>100% Uranium by weight (¹)</td>
</tr>
<tr>
<td>Tailings Liquor and Raffinate</td>
<td>1 lb As</td>
<td>820 gal</td>
<td>146 mg/L Arsenic (⁴)</td>
</tr>
<tr>
<td></td>
<td>100 lb NH₄</td>
<td>2,650 gal</td>
<td>4,520 mg/L Arsenic (⁴)</td>
</tr>
<tr>
<td></td>
<td>0.01 Ci Th²³⁰</td>
<td>96,000 gal</td>
<td>27,500 pCi/L Thorium²³⁰ (⁴)</td>
</tr>
</tbody>
</table>

(¹) Based on design values from Piñon Ridge Basic Engineering Report (CH2M Hill 2009)
(²) Based on analytical data values of Salt Wash ore from five area uranium mines (see Appendix B)
(³) Based on analytical data values of water treatment precipitant from the Whirlwind Mine (see Appendix B)
(⁴) Based on analytical data values of tailings liquor from the White Mesa Mill (see Appendix B)

4.2 Spill Response Procedures

4.2.1 Employee Actions

Employees will take the following actions in response to chemical reagent or process chemical spills. These actions include initiation of the Mill Incident Command System. Refer to the Emergency Response Plan for a detailed description of the Mill Incident Command System.

1) Determine the category classification of the spill (see Section 4.1).
2) Notify the Mill Control Room of the spill. Give the specifics of the incident including the chemical(s) involved, the category classification of the spill, the type (leak, spill, containment failure, etc.), location, and if there are any injuries. The Mill Incident Commander will proceed to the location of the spill. If requested by the Mill Incident Commander, an announcement of the spill will be made to employees over the Mill PA system and hand-held radios.
3) Evacuate to the Assembly Area (gravel parking lot south of the laboratory/change room building) if instructed to do so by means of the phone, PA system, hand-held radios, or other evacuation signal. If the pathway to the Assembly Area is blocked by hazards (e.g. smoke, fire or spill), proceed to the Assembly Area by an alternate route (see Emergency Response Plan or Evacuation Map posted at the Mill). If instructed to do so or if the Assembly Area is compromised, proceed to the Alternate Assembly Area (gravel area west of the truck shop).

For a Category I Spill, employees who have been trained in chemical handling will take the following actions. These actions should only be performed if they can be done so safely.

- Control the Spill – Attempt to control the source of the leak or spill by shutting valves, diverting process flows, or otherwise minimizing the source of the spill.
- Contain the Spill – Attempt to contain the spill by directing material towards sumps, berming the area to prevent spread, or covering the spill to isolate the spilled material.
- Clean the Spill – Attempt to direct the material to a sump area or otherwise collect the material. This may consist of shoveling up solid materials or spreading absorbent material over liquid spills. Refer to the material information sheet or MSDS for material-specific information.

Spill response materials available to operational personnel include numerous spill response kits located throughout the site that include absorbents, disposal bags, PPE, and other materials as appropriate. These kits are located near each reagent storage area and in all process areas. In addition, high-pressure hoses, squeegees, and shovels are located throughout the facility for directing spilled materials into containment sumps.

For a Category II or III Spill, employees will wait for arrival of the Mill Incident Commander unless instructed to evacuate. Employees may attempt to control the source of the leak or spill only if they can do so in a safe manner. Employees not trained in emergency response should not attempt to perform any actions in the immediate vicinity of the spill unless directed to do so by a Foreman or the Mill Incident Commander. Employees will follow instruction as provided by the Mill Incident Commander upon arrival.

All Mill personnel are trained to control and contain chemical reagent leaks and spills that are defined as Category I and some Category II Spills. Mill emergency response personnel receive additional training that includes responding to Category II and III Spills. This
training is documented on the personnel training forms.

4.2.2 Mill Incident Command Actions

The Mill Control Room will initiate the Mill Incident Command System and the following actions will be taken:

Notify the Mill Incident Commander.

The Mill Incident Commander will proceed immediately to the location of the spill and will:

- meet with the person(s) that discovered and reported the spill;
- evaluate the size and extent of the spill, the impact on the building, process or Mill operations and check on treatment for any injured persons;
- determine if off-site support from the fire department or emergency responders is necessary;
- assume command of the emergency and direct employees in controlling and cleaning up the spill; and
- continue to evaluate the size and extent of the spill and contact off-site support as necessary.

If the Mill Incident Commander determines that the incident is a Category III spill, the local fire department hazmat team will be contacted by dialing 911. The hazmat team will request the following information at a minimum:

- the spill location, type, and size
- any injuries, and
- any initial actions that have already taken place.

If support of the fire department hazmat team is necessary, the Mill Incident Commander will turn over command of the spill response to the senior fire department officer upon arrival and will provide whatever assistance possible. Mill personnel will provide whatever assistance they can as provided by their training, knowledge of site chemicals, hazards, processes, buildings and site hazardous material containers.

The Mill Incident Commander will assign an employee to make the necessary off-site notifications to agencies (see Section 4.2.4) and/or nearby residents as required by the specifics of the incident outlined above. Refer to the ERP for contact information for Mill emergency response personnel, off-site emergency response personnel and regulatory agencies that may require notifications. Off-site agency notification information in also
available in the material information sheets.

The Mill Incident Commander will assign an employee to begin calling, by phone or hand-held radio, management employees and other employees as necessary to notify them of the spill or to request that they return to the Mill to assist with the incident.

4.2.3 Control and Containment Measures

General spill control and containment measures that can be employed by Mill emergency response personnel for liquid, solid, and gaseous spills are presented in the following sections. Refer to the material information sheets or MSDS for spill and containment control measures specific to the material spilled.

Liquid Spills

Follow steps above to initiate the Incident Command System and perform a preliminary analysis of the incident.

Isolate the area and make sure non-essential personnel are evacuated from the hazard area.

Be familiar with the hazards of the chemical(s) and the personal protective equipment (PPE) needed before any actions are taken that could cause a chemical exposure.

Determine if the container that is leaking or the spill is in secondary containment that is capable of containing the leak or spill. All reagent tanks and process chemicals have secondary containment that is capable of holding the largest tank in the containment plus a minimum of 10 percent more volume. In addition, secondary containment is provided around all piping, trenches, and sumps. If it is evident that the secondary containment will not be able to contain the volume of the chemical, then determine if an overflow will occur and if its direction of travel presents any additional problems.

If additional problems are evident, take preventive measures at the direction of the Mill Incident Commander in appropriate PPE to lessen or eliminate the additional problem. This could require the movement of equipment, erecting berms, creating a channel to divert flow, building a dam, removing other chemicals, etc.

Take corrective measures to contain, collect, and/or divert the spilled material. This may involve shutting off valves, using absorbent materials, operating pumps (shut off to stop flow or turn on to divert or collect material), directing material to containment trenches and sumps, or any number of other methods.

Determine the cause of the loss of containment (valves, piping, equipment, etc.) after the material is contained or under control and take corrective actions. Corrective actions may
include repair of damaged container, replacement of damaged container, repair of containment berms, etc.

Initiate cleanup procedures. The degree of cleanup will depend on the amount of material spilled, the location of the spill and the feasibility of cleanup.

**Gaseous Leaks**

Follow steps above to initiate the Mill Incident Command System and perform a preliminary analysis of the incident.

A large release of a chemical as a gas will most likely require off-site assistance (i.e. will be a Category III Spill).

Check Mill site windsocks or wind flags for wind direction. Isolate the area and make sure everybody is evacuated from the hazard area to an upwind location.

Be familiar with the hazards of the chemical(s) and the PPE needed before any actions are taken that could cause a chemical exposure. Although most gaseous leaks will dissipate quickly, there may be meteorological conditions that could cause the leak to move in a concentrated cloud to downwind residents.

Special precautions must be taken when materials such as anhydrous ammonia, natural gas, and propane are involved.

If a plan is developed to send a team of people in to fix the leak, the Radiation Safety Officer or his delegate will determine the appropriate PPE based on chemical compatibility and amount and type of chemical exposure including determining the degree of respiratory protection required. For example, a gas leak may only require a full face respirator if it is relatively small and localized, but a major leak, such as a ruptured line, tank or transport carrier liquid valve may require a self-contained breathing apparatus (SCBA) and chemical protective clothing.

The use of a water spray from a fire hose and nozzle may be helpful to prevent gases or vapors from traveling distances or from leaving the Mill site. Prior to the use of a water spray, consult the attached material information sheet or MSDS for the chemical to determine if this is an appropriate control method.

Develop a plan for mitigating the chemical release.

Implement corrective actions.

Determine the cause of the loss of containment (valves, piping, equipment, etc.) after the leak is under control and take corrective actions. Corrective actions may include repair or
replacement of a damaged container, piping, equipment, etc.

Initiate cleanup procedures, if necessary. The degree of cleanup will depend on the amount of material spilled, the location of the spill and the feasibility of cleanup.

**Solid Material Spills**

Follow steps above to initiate the Mill Incident Command System and perform a preliminary analysis of the incident.

Check Mill site windsocks or wind flags for wind direction. Isolate the area and make sure everybody is evacuated from the hazard area.

Be familiar with the hazards of the chemical(s) and the PPE needed, before any actions are taken that could cause a chemical exposure.

Determine whether immediate corrective measures should be taken. Chemicals in a solid form generally do not present an immediate danger to health and/or the environment.

If warranted and if it can be done safely, initiate actions to prevent the solid from being blown into the air. This usually involves lightly wetting the spilled material or covering it with plastic sheeting or other readily available materials. Consult the material information sheet or MSDS(s) to determine the most appropriate means of handling the chemical(s) and the necessary appropriate chemical protective clothing.

Initiate cleanup procedures. The degree of cleanup will depend on the amount of material spilled, the location of the spill and the feasibility of cleanup.

4.2.4 *Monitoring and Incident Follow-up*

Mill Safety personnel will monitor for radiation and/or chemical exposure as necessary. Monitoring will be performed such that the safety of the individuals performing the monitoring will not be compromised. Personnel and equipment involved in the emergency response will be monitored for radiation prior to leaving the site. See the Mill Health & Safety Plan for procedures for beta and/or gamma exposure rate surveys; alpha and beta contamination surveys; release of equipment to unrestricted areas; and personnel surveys.

In the event that injured people are being transported to the hospital, monitoring will be conducted based on the degree of injury. In the event of a life and death situation, monitoring can be conducted on equipment and personnel at the hospital, when feasible. Under no circumstances will monitoring supersede life saving efforts.

If determined necessary by safety personnel, monitoring of the atmosphere for radiation or toxic chemicals will be conducted. In the event that sample results indicate that personnel
could have been exposed to levels in excess of regulatory limits or individuals become symptomatic of chemical exposure, then these individuals will be referred to the local hospital for evaluation by staff physicians. Exposure of off-site individuals will be evaluated in the same manner.

The Mill Incident Commander will determine when the incident has ended and the plant can return to normal operations. An employee will be assigned to notify the appropriate government agencies, local responders and nearby residents that the incident is over. Safety personnel will investigate the cause of the spill or leak and develop corrective measures to prevent future occurrences.

Follow-up reporting of the incident to government agencies will be conducted under direction of the Vice President of Regulatory Affairs.

4.2.5 Reporting Requirements
Some spills may have to be reported to one or more agencies following the immediate internal notifications that are required. Any reporting to external agencies should be conducted under the direction of the Vice President of Regulatory Affairs.

The information sheets in this plan provide the requirements for reporting spills based on the type of chemical spilled, the quantity spilled and the location of the spill (i.e. into waters of the State, including dry gullies). Many reporting requirements are triggered by spills to the environment of a reportable quantity.

All spills, including those that are not required to be reported based on the above criteria, will be summarized and reported to the Colorado Radiation Control Program in the annual report.

Refer to Appendix D for a History of Spills that have occurred at the Piñon Ridge Mill. This form is updated following any spill incidents.

A Spill Notification Form is provided in Appendix E. This form contains the information that will be required for notification of a spill.
5.0 PLAN UPDATES

The Material Containment Plan will be updated whenever additional chemicals are stored on-site that may pose a threat to people, property, or the environment. In addition, the plan will be reviewed annually to ensure that all potentially harmful materials are included in the plan.

Following response to a Category II or III spill, the response procedures will be evaluated to determine their adequacy and updated to, if necessary, to incorporate lessons learned from the spill response.