

# Alaska Gold Company

A NovaGold Subsidiary

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## ROCK CREEK MINE PLAN OF OPERATIONS VOLUME 3 WASTE MANAGEMENT PLANS



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*Placer mining on the Rock Creek deposit, 1902.*



**Waste  
Management Plan  
Rock Creek  
Mine/Mill Complex  
And  
Big Hurrah Mine**

*for*

**Alaska Gold  
Company**

Nome, Alaska

**May 2006**

# **Waste Management Plan**

**Rock Creek Mine  
and**

**Big Hurrah Mine**

For

**Alaska Gold Company**

*Prepared by*  
Hoefler Consulting Group  
Anchorage, Alaska

**May 2006**

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## **INTRODUCTION**

This Waste Management Plan, along with appended or referenced documents, outlines the Alaska Gold Company (AGC) Waste Management Program. The Program was developed in accordance with applicable regulations, permits and AGC policies governing the generation, storage and disposal of hazardous and non-hazardous wastes. It is intended to achieve the following:

- Establish a pollution prevention plan aimed at minimizing wastes, substituting hazardous materials with non-hazardous materials, optimizing container usage, recycling wastes, controlling contractor wastes and managing wastes appropriately;
- Educate personnel on the regulations and practices involved in responsible waste management;
- Communicate policies and procedures aimed at reducing the amount of waste generated;
- Decrease the environmental liability associated with waste management;
- Increase the level of safety associated with handling waste;
- Recover value from waste.

This plan is a working document that sets guidelines for handling waste. The contents will be subject to revision and modification as new practices are applied and as new ideas are formed. It may be necessary to review and revise this plan after a permit is issued for an on-site solid waste landfill.

*If there are sections that are outdated, incomplete or inaccurate, please notify the Environmental Department. Suggestions for new procedures that would result in further minimization of waste or a more efficient manner of handling waste are appreciated.*

## **1 WASTE MANAGEMENT POLICIES**

### **1.1 WASTE MINIMIZATION**

AGC encourages waste minimization through source reduction. It is the responsibility of each supervisor to ensure that his/her department uses materials efficiently. Waste minimization examples achieved at the mines are listed below:

**Table 1 Waste Minimization**

| <b>Type</b>          | <b>Examples</b>   |
|----------------------|---|
| Air emissions        | <ul style="list-style-type: none"> <li>▪ Fugitive dust has been reduced by applying dust suppressants.</li> </ul>   |
| Hazardous wastes     | <ul style="list-style-type: none"> <li>▪ Non-hazardous materials are preferentially purchased over hazardous materials or a less hazardous material is purchased in lieu of an acutely hazardous material.</li> </ul> |
| Heat and energy loss | <ul style="list-style-type: none"> <li>▪ Buildings are well insulated where heat is required.</li> </ul>  |
| Solid wastes         | <ul style="list-style-type: none"> <li>▪ Styrofoam cups are not available in break rooms.</li> <li>▪ Tires, metal, oil, batteries and glycol are recycled for reuse when feasible and practicable.</li> </ul>         |
| Spills/leaks         | <ul style="list-style-type: none"> <li>▪ Fuel containers associated with used-oil burners include secondary containment.</li> </ul>   |
| Wastewater           | <ul style="list-style-type: none"> <li>▪ Wastewater from the tailings storage facility is treated and reused in the mill.</li> </ul>  |

### **1.2 HAZARDOUS MATERIALS MINIMIZATION**

Non-hazardous alternative materials will be substituted for hazardous materials where practicable. New products being ordered will be evaluated for hazardous status. Non-hazardous alternatives will be requested for products determined to be hazardous, as practicable.

Hazardous materials will also be evaluated for efficiency. The preferred product is one that will complete the job with a lower consumption at the lowest cost.

### **1.3 HAZARDOUS MATERIALS CONTAINER OPTIMIZATION**

Management will consider container options to ensure safety, to minimize the number of containers used, and to allow for reuse or recycling of hazardous materials where practical.

Bulk ordering will take into consideration the quantity of hazardous materials that will be utilized. Bulk ordering will not be done if it is likely to result in excess stores. Examples of preferred container specifications are listed below:

**Table 2 Container Optimization**

| <b>Specification</b>   | <b>Example</b>   |
|------------------------|--|
| Largest Size Practical | ▪ Bladders and totes of petroleum products (instead of fifty-five gallon drums) are used and refilled as needed. |
| Burnable               | ▪ Burnable reagent bags can be used in place of drums for easier handling and/or disposal.                       |
| Reusable               | ▪ Drums may be cleaned and reused on the property for collecting scrap metal.                                    |
| Safety                 | ▪ Plastic acid totes are enclosed in metal screening.  |

#### **1.4 RECYCLING**

Waste minimization is achieved through recycling when economically feasible. Raw materials and waste will be recycled, and recyclable materials will be purchased if it is economically feasible.

Potential products for which recycling may be available include:

- Batteries
- Used oil
- Used glycol
- Pallets
- Scrap metal
- Ore or concentrate-contaminated media

#### **1.5 CONTRACTORS**

Contractors will be required to follow all AGC environmental policies as well as local, state and federal regulations and permits.

Unless otherwise arranged, any material brought to the mines by a contractor must either be used by the contractor or shipped off-site by the contractor at contractor's expense. This will include, but is not limited to, the following: unused material, used oil, fuel, glycol, solvent, paint and batteries and general construction waste.

Contractors with established long-standing agreements with AGC will formalize operating procedures for waste management that reflect AGC's policies.

## 2 HAZARDOUS WASTE\HAZARDOUS MATERIALS

Handling, storage and disposal of waste are regulated by the Alaska Department of Environmental Conservation (ADEC) regulations and by the US Environmental Protection Agency (EPA) regulations in 40 CFR 260 through 40 CFR 299 through the Resource Conservation and Recovery Act (RCRA). Offsite transportation of wastes is regulated by the Department of Transportation and/or the US Coast Guard. Transportation regulations are not covered in this document.

### 2.1 GENERATOR STATUS FOR HAZARDOUS WASTE

Classifications of Hazardous Waste Generators:

- Conditionally Exempt Small Quantity Generator (CESQG)
- Small Quantity Generator (SQG)
- Large Quantity Generator (LQG)

Conditions defining the different types of generators and storage limitations are explained in the table below.

**Table 3 Generator Status**

| Generator Type                        | Waste Generated per Month  | Waste Quantity Stored On Site  | Time Limit for Waste Accumulation                                 |
|---------------------------------------|--|--|---|
| <b>Conditionally Exempt (CESQG)</b>   | ≤ 100 kg non-acute<br>≤ 1 kg acute<br>≤ 100 kg acute cleanup residues  | 1000 kg non-acute<br>1 kg acute<br>100 kg acute cleanup residues<br>If exceeded, site is a SQG | N/A   |
| <b>Small Quantity Generator (SQG)</b> | < 1000 kg non-acute<br>≤ 1 kg acute<br>≤ 100 kg acute cleanup residues | 6000 kg maximum<br>If exceeded, site is a TSDF   | 270 <sup>1</sup> days<br>If exceeded, site is a TSDF <sup>2</sup> |
| <b>Large Quantity Generator (LQG)</b> | ≥ 1000 kg non-acute<br>> 1 kg acute<br>> 100 kg acute cleanup residues | No Limit   | 90 days<br>If exceeded, site is a TSDF <sup>2</sup>               |

Notes: 1. Normally 180 days; 270 days if waste shipped over 200 miles  
 2. TSDF = Treatment, Storage and Disposal Facility

Rock Creek Mine/Mill Complex will maintain small quantity generator (SQG) or conditionally exempt small quantity generator (CESQG) status as defined and regulated in 40 CFR 262.3. As a small quantity generator, the mines are exempted from a significant amount of reporting, documentation, training and other requirements. Regulations as set forth in this

manual refer to the small quantity generator. For any month a facility exceeds the SQG quantities, it is subject to the full requirements of an LQG for that month.

A SQG status will be maintained if the following is conducted:

- Identify all hazardous waste generated by performing hazardous waste determinations;
- Generate no more than 1000 kg of non-acute hazardous wastes or more than 1 kg of acute hazardous wastes per month;
- Store no more than 6,000 kg of non-acute wastes on-site at any time and never for more than 270 days; and
- Manifest hazardous waste to an appropriate offsite treatment or disposal facility.

A CESQG status, which allows exemption from many of the hazardous waste regulations, will be maintained if the following is accomplished:

- Identify all hazardous waste generated by performing hazardous waste determinations;
- Generate no more 100 kg of non-acute hazardous wastes per month;
- Store no more than 1,000 kg of non-acute hazardous wastes on-site at any time; and
- Ensure that the hazardous waste produced is sent to an appropriate offsite treatment or disposal facility.

Either mine site will sacrifice the CESQG exemptions if it generates 100 kilograms, or approximately half of a drum, of waste per month,. It may store a drum or more of hazardous waste until the drum is full, and still retain the CESQG status, if less than 100 kilograms was generated each month and no more than 1,000 kg of waste is stored on-site at any time.

Storage time on-site is dependent upon the facility's generator status.

- CESQG: No deadline for storage
- SQG: a maximum of 270 days
- LQG: 90 days

If 1,000 kilograms or more waste is generated in a month, all waste generated during that month must be shipped off-site within 90 days.

An accounting of hazardous wastes generated will be conducted each month to determine the generator status on a monthly basis. If the CESQG status is sacrificed one month, it can be re-established the following month if compliance with appropriate guidelines can be documented. The only wastes subject to the SQG regulations are those that were generated during the particular month in which the CESQG status was lost. In addition to monthly counting, inventories must be maintained to ensure that the

total allowable limits are not exceeded. The Environmental Department is responsible for maintaining an inventory of hazardous wastes and for notifying the shipping department when the next shipment of hazardous wastes is required.

## **2.2 IDENTIFYING HAZARDOUS WASTES**

A hazardous waste is a solid waste that could potentially cause harm to life, environment or property. In summary, a material is a hazardous waste if it meets the following criteria:

1. Meets the definition of a solid waste;
2. Is not exempt; and
3. Meets one of the following criteria:
  - a. Exhibits a hazardous characteristic;
  - b. Is listed in 40 CFR 261, subpart D;
  - c. Is a mixture of solid waste and hazardous waste, unless it meets an exemption.

### **2.2.1 Definition of Solid Waste**

A material must meet the definition of *Solid Waste* before it can be considered a *Hazardous Waste*. A Solid Waste is any material – solid, liquid, semi-solid or contained gaseous material – that is abandoned (e.g. thrown away), recycled or “inherently waste-like” as described below.

*Abandoned Materials:* materials disposed of, burned or incinerated, or accumulated, stored or treated before or in lieu of disposal.

*Recycled Materials:* materials that may be RCRA-regulated when recycled include spent materials, sludges, by-products, commercial chemical products and scrap metal.

*Inherently Waste-Like Materials:* includes recycled dioxin wastes and secondary materials fed to halogen acid furnaces.

Exemptions to the definition of Solid Waste are listed in the section below.

### **2.2.2 Exclusions and Exemptions**

Exemptions to the RCRA Hazardous Waste regulations are listed in 40 CFR 261.4 and include the following:

Materials that are not solid wastes:

1. Domestic sewage (untreated sanitary wastes that pass through a sewer system);
2. National Pollutant Discharge Elimination System (NPDES)-regulated discharges;
3. Materials subject to in-situ mining techniques that are not removed from the ground as part of the extraction process;
4. Secondary materials that are reclaimed and returned to the original process in which they were generated where they are reused in the production process;
5. Excluded scrap metal being recycled;
6. Secondary materials generated within the primary mineral processing industry from which minerals, acids, cyanide, water or other values are recovered by mineral processing or beneficiation.

Solid wastes that are not hazardous wastes:

1. Household wastes;
2. Mining overburden returned to the mine site;
3. Drilling fluids, produced waters and other wastes associated with the exploration, development or production of crude oil, natural gas or geothermal energy;
4. Solid waste from the extraction, beneficiation and processing of ores and minerals;
5. Non-terne plated used oil filters that are gravity hot-drained.

Other exemptions:

1. Mixtures of solid waste from the extraction, beneficiation and processing of ores/minerals exempt under 40 CFR 261.33(b)(7) and (a) listed hazardous waste, listed solely because it exhibits a characteristic or (b) characteristic hazardous waste, provided the resulting mixture does not exhibit a characteristic that was present in wastes (a) or (b) prior to the mixture;
2. Mixtures of solid waste and (a) listed hazardous waste, listed solely because it exhibits a hazardous waste characteristic or (b) characteristic hazardous waste, provided the resulting mixture does not exhibit hazardous waste characteristics;
3. Mixtures of wastewater regulated under a NPDES permit and small quantities of (a) certain spent solvents, (b) de minimis losses of discarded commercial chemical products/intermediates listed in 40 CFR 261.33 from manufacturing operations, or (c) laboratory wastewaters containing toxic listed wastes;
4. Wastes in active tanks, vessels and pipelines prior to their removal from the unit;
5. Analytical samples while being handled by the sample collector, transporter and laboratory for the purposes of waste characterization;
6. Treatability study samples while being handled by the sample collector, transporter and laboratory or while undergoing treatability studies (this allows process developers to treat small quantities of hazardous wastes without a RCRA permit);

7. Dredged material subject to the requirements of a permit issued under 404 of the Federal Water Pollution Control Act or Section 103 of the Marine Protection, Research, and Sanctuaries Act.

### **2.2.3 Listed Hazardous Waste**

Certain wastes are typically hazardous and can cause toxic, carcinogenic, mutagenic or teratogenic effects. Based on hazardous characteristics and potential danger to humans, EPA developed three lists of wastes (40 CFR 261) of approximately 850 wastes that are always considered hazardous. These lists are as follows:

- F-Wastes: hazardous wastes from nonspecific sources, 40 CFR 261.31 (e.g., spent solvents),
- K-Wastes: hazardous wastes from specific sources, 40 CFR 261.32, and
- P- and U-Wastes: commercial chemical products, 40 CFR 261.33 (**P-Wastes are acute hazardous wastes** and U-Wastes are toxic, but non-acute).

### **2.2.4 Characteristic Hazardous Waste**

Wastes that are not listed may still be considered hazardous if they exhibit a characteristic of ignitability, corrosivity, reactivity or toxicity, as defined below.

#### ***Ignitability Characteristic***

A waste is considered to exhibit an ignitable characteristic if one of the following is true:

1. It is a liquid with a flash point less than 140 °F (other than an aqueous solution containing less than 24 percent alcohol by volume);
2. It is not a liquid and is capable, under standard temperature and pressure, of causing fire through friction, absorption of moisture or spontaneous chemical changes and, when ignited, burns so vigorously and persistently to create a hazard;
3. It is an ignitable, compressed gas;
4. It is an oxidizer.

Ignitable wastes are assigned an EPA Hazardous Waste Number of D001. Examples of ignitable wastes are methanol or gasoline.

#### ***Corrosivity Characteristic***

A waste is considered hazardous if it exhibits a corrosive characteristic. A waste is corrosive if it is aqueous and has a pH less than or equal to 2 or greater than or equal to 12.5, or if it is a liquid that corrodes steel at a rate greater than 6.35 millimeters per year.

Corrosive wastes are assigned an EPA Hazardous Waste Number of D002. Examples of corrosive wastes are lime and sulfuric acid.

### ***Reactivity Characteristic***

A waste is considered to exhibit a reactive characteristic if one of the following is true:

1. It is unstable and readily undergoes violent change without detonating;
2. It reacts violently with water;
3. It forms a potentially explosive mixture with water;
4. It generates toxic gases, fumes, or vapors in a quantity sufficient to present a danger to human health or the environment when mixed with water;
5. It is a cyanide or sulfide-bearing waste, which when exposed to a pH between 2 and 12.5 can generate toxic gases, vapors, or fumes sufficient to present a danger to human health or the environment;
6. It is capable of detonation or explosive reaction when subjected to a strong initiating source or if heated under confinement;
7. It is capable of detonation, explosive decomposition, or reaction at standard temperature and pressure;
8. It is a forbidden explosive as defined in 49 CFR 173.51, a Class A explosive as defined in 49 CFR 173.53, or a Class B explosive as defined in 49 CFR 173.88.

Reactive wastes are assigned an EPA Hazardous Waste Number of D003. Examples of reactive wastes are lime, sulfuric acid and sodium metabisulfide.

### ***Toxicity Characteristics***

A solid waste is considered to exhibit a toxicity characteristic if an extract from a representative sample of the waste contains a contaminant listed in Table 1 of 40 CFR 261.24(b) at a concentration equal to or greater than the value listed in the table. The table contains eight heavy metals, ten pesticides, and twenty-two organic chemicals and is created in the table below. A sample is subjected to a Toxicity Characteristic Leaching Procedure (TCLP) to determine the concentrations of the leachable toxins.

To determine if a waste exhibits a hazardous characteristic, it is not always necessary to analyze the waste for a full set of forty TCLP parameters. Knowledge of the process generating the waste can be used to reduce the number of potential parameters. For example, absorbents soaked with oil may be analyzed for benzene, a common constituent in petroleum products. If the absorbents are also contaminated with ore, they may be analyzed for arsenic in addition to benzene. Arsenic is proposed because it is present in development rock at concentrations close to the TCLP limit. However, if future rock analyses reveal that metal concentrations have changed, then selection of TLCP metals should change also to reflect the most current data.

Table 4 TCLP Limits of Characteristic Toxins

| RCRA # | Contaminant           | CAS #     | Level (mg/L) |
|--------|-----------------------|-----------|--------------|
| D004   | Arsenic               | 7440-38-2 | 5.0          |
| D005   | Barium                | 7440-39-3 | 100.0        |
| D006   | Cadmium               | 7440-43-9 | 1.0          |
| D007   | Chromium              | 7440-47-3 | 5.0          |
| D008   | Lead                  | 7439-92-1 | 5.0          |
| D009   | Mercury               | 7439-97-6 | 0.2          |
| D010   | Selenium              | 7782-49-2 | 1.0          |
| D011   | Silver                | 7440-22-4 | 5.0          |
| D012   | Endrin                | 72-20-8   | 0.02         |
| D013   | Lindane               | 58-89-9   | 0.4          |
| D014   | Methoxychlor          | 72-43-5   | 10.0         |
| D015   | Toxaphene             | 8001-35-2 | 0.5          |
| D016   | 2,4-D                 | 94-75-7   | 10.0         |
| D017   | 2,4,5-TP (Silvex)     | 93-72-1   | 1.0          |
| D018   | Benzene               | 71-43-2   | 0.5          |
| D019   | Carbon tetrachloride  | 56-23-5   | 0.5          |
| D020   | Chlordane             | 57-74-9   | 0.03         |
| D021   | Chlorobenzene         | 108-90-7  | 100.0        |
| D022   | Chloroform            | 67-66-3   | 6.0          |
| D023   | o-Cresol              | 95-48-7   | 200.0        |
| D024   | m-Cresol              | 108-39-4  | 200.0        |
| D025   | p-Cresol              | 106-44-5  | 200.0        |
| D026   | Cresol                |           |              |
| D027   | 1,4-Dichlorobenzene   | 106-46-7  | 7.5          |
| D028   | 1,2-Dichloroethane    | 107-06-2  | 0.5          |
| D029   | 1,1-Dichloroethylene  | 75-35-4   | 0.7          |
| D030   | 2,4-Dinitrotoluene    | 121-14-2  | 0.13         |
| D031   | Heptachlor            | 76-44-8   | 0.008        |
| D032   | Hexachlorobenzene     | 118-74-1  | 0.13         |
| D033   | Hexachlorobutadiene   | 87-68-3   | 0.5          |
| D034   | Hexachloroethane      | 67-72-1   | 3.0          |
| D035   | Methyl ethyl ketone   | 78-93-3   | 200.0        |
| D036   | Nitrobenzene          | 98-95-3   | 2.0          |
| D037   | Pentachlorophenol     | 87-86-5   | 100.0        |
| D038   | Pyridine              | 110-86-1  | 5.0          |
| D039   | Tetrachloroethylene   | 127-18-4  | 0.7          |
| D040   | Trichloroethylene     | 79-01-6   | 0.5          |
| D041   | 2,4,5-Trichlorophenol | 95-95-4   | 400.0        |
| D042   | 2,4,6-Trichlorophenol | 88-06-2   | 2.0          |
| D043   | Vinyl chloride        | 75-01-4   | 0.2          |

Chemical analyses for TLCP parameters can be expensive. RCRA regulations allow running a less expensive total analysis for a parameter and comparing twenty times the total concentration detected to the TCLP limits. If a parameter is present at concentrations greater than twenty times the total analysis, then the waste can either be assumed to be hazardous and managed accordingly or a TCLP analysis can be conducted on the waste to

confirm its hazardous status. This is particularly significant for silver which requires an expensive preparation prior to TCLP analysis.

## **2.3 ACCUMULATION REQUIREMENTS**

### **2.3.1 Satellite Accumulation**

In accordance with RCRA regulations, a generator may accumulate up to 55 gallons of hazardous waste or 1 quart of acutely hazardous waste at or near the point of generation where wastes initially accumulate for an unlimited time. This is unlike normal hazardous waste accumulation areas, which have a maximum accumulation time limit of 270 days for small quantity generators (for waste shipped over 200 miles) or 90 days for large quantity generators. These points of generation are called Satellite Accumulation Areas and are governed by the requirements listed below.

1. The container must be under the control of the operator at all times and must be stored at or near the point of generation. The operator is the person in charge of the equipment, vehicle or process that generates the waste at the time the waste is generated.
2. Each volume of waste added to the container shall be recorded and kept with the container.
3. Label each container with the words "Hazardous Waste" or with other words that identify the contents, supervisor, department and container number. This must be done before any waste is added to the container.
4. The container must be in good condition, made of or lined with materials that will not react with, and are otherwise compatible with, the hazardous waste to be stored.
5. The maximum allowable container size is 55 gallons (or 1 quart for acutely hazardous waste).
6. Keep the container closed at all times, except when adding waste.
7. Immediately after the container is full, record the date on the label.
8. As soon as the container is full, place it in a Hazardous Waste Accumulation Area. The 270-day (SQG) or 90-day (LQG) accumulation time limit starts when the container is filled to capacity. The container must be placed in a Hazardous Waste Accumulation area within three days from the date the container is full.
9. Send a copy of the waste log along with the full container. Fill in the location where the container was delivered and the date the container was filled to capacity. The person receiving the container shall sign and date the log and forward it to the Environmental Department.

10. In addition to the above requirements, AGC also requires monthly inspections of satellite accumulation areas.

### **2.3.2 Hazardous Waste Accumulation Area**

The hazardous waste accumulation area should conform to the requirements for a small quantity generator in the event that greater than 100 kilograms of hazardous waste is generated in a month. The Hazardous Waste Accumulation Area must comply with the following RCRA accumulation and containment regulations:

1. Each container of hazardous waste must be labeled. Label with the following: 1) the words "HAZARDOUS WASTE" if it is known to be hazardous, 2) a description of its contents, 3) supervisor, 4) department, and 5) the date that waste was placed in the container or when the container was filled to a 55-gallon capacity if in a Satellite Accumulation Area.
2. Containers must be in good condition, well sealed, and made of or lined with materials that will not react with, and are otherwise compatible with, the hazardous waste to be stored.
3. Containers must be kept sealed at all times.
4. The containers must be inspected for leaks and corrosion weekly. If a container is leaking, it must be replaced immediately. Management will appoint someone to be responsible for inspections. Copies of the inspection forms are to be forwarded to the Environmental Department at the end of each month.
5. Accumulation areas must have restricted access. Unknown entry can be prevented by posting signs at each entrance to the hazardous waste storage area. Unauthorized entry can be minimized by the continuous operation of the facility 24 hours per day and 365 days per week.
6. Liquid hazardous wastes shall be stored on an impermeable concrete or otherwise lined pad or lined connex or in a plastic tote or overpack.
7. Ignitable wastes shall be shaded from direct sunlight.
8. Incompatible chemicals must not be stored next to each other.
9. Chemicals must be stored in accordance with the National Fire Protection Association flammable and combustible code.
10. A fire extinguisher must be mounted near the accumulation area.
11. The area must have controlled drainage and allow for the cleanup of spills.
12. Adequate aisle space must be provided within connexes or accumulation areas to allow for inspection of individual drums, and to allow for quick response to spills and leaks.
13. HMIS-regulated placards should be placed on the outside of buildings or connexes where hazardous waste is stored.

14. Hazardous wastes may be kept on-site for no more than 270 days (SQG) or 90 days (LQG).
15. Inventories must be maintained to ensure that no more than 6,000 kg of waste is stored on-site at any time, including wastes stored at satellite accumulation areas.

The following procedures are encouraged as safe practices for the accumulation and containment of hazardous wastes:

- Protect containers from weathering so labels do not wear off. If the label becomes illegible, the container may need to be re-tested;
- Choose the optimum container size for accumulation. Under- and over-sized containers contribute to waste through loss in transferring, contamination, material evaporation, spills and empty container residue;
- Prepare a location map of all accumulation areas. Indicate areas of accumulation for chemicals, flammables, reactive materials and toxic materials.

## **2.4 UNIVERSAL WASTE**

Hazardous waste batteries, lamps and thermostats will be managed as Universal Waste. The Universal Waste regulations are less stringent than the standard hazardous waste regulations and are meant to encourage recycling. Two of the key differences with Universal Waste management are that a manifest is not required for shipment and Universal Waste can be stored up to one year, as opposed to the normal 270-day limit for SQG.

### **2.4.1 Accumulation Time Limits**

Universal Waste may be accumulated for no longer than one year from the date the universal waste is generated, or received from another handler.

A Universal Waste handler must demonstrate the length of time that the universal waste has been accumulated from the date it becomes a waste or is received by one of the following:

1. Placing the universal waste in a container and marking or labeling the container with the earliest date that any universal waste in the container became a waste or was received;
2. Marking or labeling each individual item of universal waste (e.g., each battery or thermostat) with the date it became a waste or was received;
3. Maintaining an inventory system on-site that identifies the date each universal waste became a waste or was received;

4. Maintaining an inventory system on-site, that identifies the earliest date that any universal waste in a group of universal waste items or a group of containers of universal waste became a waste or was received;
5. Placing the universal waste in a specific accumulation area and identifying the earliest date that any universal waste in the area became a waste or was received; or
6. Any other method which clearly demonstrates the length of time that the universal waste has been accumulated from the date it becomes a waste or is received.

#### **2.4.2 Employee Training**

Employees who handle or have responsibility for managing universal waste must be informed. The information must describe proper handling and emergency procedures appropriate to the type(s) of universal waste handled at the facility.

#### **2.4.3 Response to Releases**

All releases of universal wastes and other residues from universal wastes must be immediately contained. A hazardous waste determination must be made for any material resulting from a release. If it is hazardous, it must be managed in compliance with the hazardous waste regulations.

#### **2.4.4 Off-Site Shipments**

Universal Waste may only be sent to another universal waste handler, destination facility, or foreign destination.

If Universal Waste offered for off-site transportation meets the definition of hazardous materials under 49 *CFR* parts 171 through 180, it must be packaged, labeled, marked and placarded, and proper shipping papers must be prepared in accordance with the applicable Department of Transportation regulations.

Prior to sending a shipment of universal waste to another universal waste handler, the originating handler must ensure that the receiving handler agrees to receive the shipment.

If a small quantity handler of universal waste sends a shipment of universal waste to another handler or to a destination facility and the shipment is rejected by the receiving handler or destination facility, the originating handler must either:

- Receive the waste back when notified that the shipment has been rejected, or
- Agree with the receiving handler on a destination facility to which the shipment will be sent.

### **2.4.5 Tracking Universal Waste**

A manifest is not required for shipments of Universal Waste. Copies of bills of lading should be maintained on file.

### **2.4.6 Universal Waste Batteries**

General-use, undamaged alkaline batteries will not be considered as Universal Waste, and will be disposed as inert waste according to procedures described in the attached Inert Waste Disposal Operations Plan.

Following are the requirements for managing Universal Waste batteries:

1. Place any battery that shows evidence of leakage, spillage, or damage that could cause leakage, in a container that is closed, structurally sound, compatible with the contents of the battery, and lacks evidence of leakage, spillage, or damage that could cause leakage.
2. The following activities may be conducted provided the casing of each individual battery cell is not breached and remains intact and closed (except that cells may be opened to remove electrolyte, but must be immediately closed after removal):
  - Sorting batteries by type;
  - Mixing battery types in one container;
  - Discharging batteries so as to remove the electric charge;
  - Regenerating used batteries;
  - Disassembling batteries or battery packs into individual batteries or cells;
  - Removing batteries from consumer products; or
  - Removing electrolyte from batteries.
3. If electrolyte is removed from batteries, or other solid waste is generated (e.g., battery pack materials, discarded consumer products) as a result of the activities listed above, determine whether the electrolyte and/or other solid waste exhibit a characteristic of hazardous waste.
  - If the electrolyte and/or other solid waste exhibit a characteristic of hazardous waste, it is subject to all applicable requirements of 40 *CFR* parts 260 through 272.
  - If the electrolyte or other solid waste is not hazardous, the handler may manage the waste in any way that is in compliance with applicable federal, state or local solid waste regulations.

4. Universal waste batteries (i.e., each battery), or a container in which the batteries are contained, must be labeled or marked clearly with anyone of the following phrases: "Universal Waste Battery(ies), or "Waste Battery(ies)," or "Used Battery(ies)".

#### **2.4.7 Universal Waste Thermostats**

Following are the requirements for managing Universal Waste thermostats:

1. Place any Universal Waste thermostat that shows evidence of leakage, spillage, or damage that could cause leakage, in a container that is closed, structurally sound, compatible with the contents of the thermostat, and lacks evidence of leakage, spillage, or damage that could cause leakage.
2. The mercury-containing ampules may be removed from a Universal Waste thermostat provided:
  - The ampules are removed in a manner designed to prevent breakage of the ampules;
  - The ampules are removed only over or in a containment device (e.g., tray or pan sufficient to collect and contain any mercury released from an ampule in case of breakage);
  - A mercury clean-up system is readily available to immediately transfer any mercury resulting from spills or leaks from broken ampules, from the containment device to a container that meets the requirements of 40 *CFR* 262.34;
  - Any mercury resulting from spills or leaks from broken ampules is immediately transferred from the containment device to a container that meets the requirements of 40 *CFR* 262.34;
  - The area in which ampules are removed is well ventilated and monitored to ensure compliance with applicable OSHA exposure levels for mercury;
  - Employees removing ampules are thoroughly familiar with proper waste mercury handling and emergency procedures, including transfer of mercury from containment devices to appropriate containers;
  - Ampules are stored in closed, non-leaking containers that are in good condition;
  - Removed ampules are packed in the container with packing materials adequate to prevent breakage during storage, handling, and transportation.
3. If mercury-containing ampules are removed from thermostats, determine whether the following exhibit a characteristic of hazardous waste:

- Mercury or clean-up residues resulting from spills or leaks; and/or
  - Other solid waste generated as a result of the removal of mercury-containing ampules (e.g., remaining thermostat units).
  - If the mercury, residues, and/or other solid waste exhibit a characteristic of hazardous waste, it must be managed in compliance with all applicable requirements of the hazardous waste regulations.
  - If the mercury, residues, and/or other solid waste are not hazardous, the handler may manage the waste in any way that is in compliance with applicable federal, state or local solid waste regulations.
4. Universal waste thermostats (i.e., each thermostat), or a container in which the thermostats are contained must be labeled or marked clearly with anyone of the following phrases: "Universal Waste-Mercury Thermostat(s)", "Waste Mercury Thermostat(s)" or "Used Mercury Thermostat(s)".

#### **2.4.8 Universal Waste Lamps**

Following are the requirements for managing Universal Waste lamps:

1. Contain lamps in containers or packages that are structurally sound, adequate to prevent breakage, and compatible with the contents of the lamps. Such containers and packages must remain closed and must lack evidence of leakage, spillage or damage that could cause leakage. *Return lamps to original containers if possible.*
2. Immediately clean up and place any lamp that is broken or any lamp that shows evidence of breakage, leakage, or damage that could cause the release of mercury or other hazardous constituents to the environment in a container. The container must be closed, structurally sound, compatible with the contents of the lamps and must lack evidence of leakage, spillage or damage that could cause leakage or releases of mercury or other hazardous constituents to the environment.
3. Each lamp or a container or package in which such lamps are contained must be labeled or marked clearly with one of the following phrases: "Universal Waste-Lamp(s)", "Waste Lamp(s)" or "Used Lamp(s)".

#### **2.5 HAZARDOUS MATERIALS**

AGC will store and utilize hazardous materials as part of mining and milling operations at the Rock Creek Mine Project. Hazardous materials will be managed according to the attached Hazardous Materials Plan.

### **3 ON-SITE SOLID WASTE DISPOSAL**

#### **3.1 WASTE SEGREGATION**

Wastes for on-site disposal will be placed in one of two dumpster sets according to the waste type. One set of dumpsters will receive wastes for the inert waste landfill. The other set will receive Wastes for the Smart-Ash Burner. Wastes that will be burned in the burn pit will be hauled directly to the burn pit.

#### **3.2 WASTE LANDFILL**

These dumpsters hold the material that will be buried in the solid waste landfill. Details for inert waste handling and disposal, as well as for inert landfill operations and closure activities, are presented in the attached Inert Waste Disposal Operations Plan.

#### **3.3 SMART-ASH BURNER**

Disposal of the following materials is permitted in Smart-Ash Burner dumpsters:

- General office refuse, and
- Oily absorbents or rags drained of free flowing oil.

Smart-ash burner emissions are not allowed to exceed 20% opacity (a measure of smoke visibility) at any time.

Materials that may not be incinerated include:

- Batteries;
- Used oil (unless it meets burning specifications);
- Liquids;
- Hazardous wastes;
- Aerosol Cans.

#### **3.4 BURN PIT**

Wood, paper and paper products can be burned at the burn pit. Burning must be kept at least 100 feet from the working face of the landfill and must be conducted in a burn box, burn cage or designated, bermed-off area. Items that generate black smoke at opacity greater than 20%, such as tires, are prohibited from burning in the burn pits.

### **3.5 DEVELOPMENT ROCK**

Laboratory data indicate development rock generated at the Rock Creek Mine/Mill Complex likely is as non-acid generating and, thus, is not a designated solid waste. This material will be stockpiled at the Rock Creek Mine/Mill Complex. Portions of the development rock at the Big Hurrah Mine may be potentially acid generating. Therefore development rock generated at the Big Hurrah facility will be evaluated and disposed according to the attached Development Rock Handling Plan.

## **4 HANDLING PROCEDURES FOR SPECIFIC WASTES**

Specific procedures for handling the wastes generated at the mines are described in the following sections. Hazardous wastes must be shipped off-site for handling. The following requirements must be met:

- All material must be in sealed containers that are in good condition (not rusting or capable of leaking) and are compatible with the wastes contained;
- All containers must be labeled with the following:
  - Container number (if assigned);
  - Contents;
  - Process Generating Waste;
  - Department
  - Date container was filled to capacity or the product was no longer useable;
- In addition to labeling, some containers will require placement in an overpack.
- The drums should be delivered within 24 hours of the drum being filled. If the material is hazardous, the hazardous regulations state that it must be placed within proper hazardous waste storage within 3 days of the drum being filled.

A full set of chemistry is not needed for each waste type. Certain wastes are known to be non-hazardous based on knowledge of the material. For example, cardboard boxes that were not in contact with any hazardous materials are presumed to be non-hazardous and may be disposed on-site.

The hazardous status of other wastes is not so evident. For example, ash from the smart-ash burner contains residues from many wastes and should be analyzed for hazardous characteristics prior to disposal on-site. General sampling guidelines are described in Section 2.2.4. Specific sampling guidelines are listed with each waste type.

### **4.1 ABSORBENTS AND FLOOR DRY**

Absorbents and floor dry soaked in diesel or oil must be tested for benzene to determine if they are non-hazardous. At least one to three samples of used absorbents and floor dry should be collected and analyzed. Sampling should be repeated once every three to five years, or earlier if the diesel or oil chemistry changes significantly or if the types of use changes from that at the time of sampling. Special Note: if absorbents or floor dry are contaminated with ore, then they should be analyzed for arsenic.

If they are non-hazardous, they may be burned in the smart-ash burner after free flowing oil or diesel has been removed from absorbents.

Absorbents soaked with glycol and non-hazardous solvents (e.g. Citrus solvent) can also be incinerated after free liquids have been removed.

For absorbents soaked in methanol, hazardous solvents or other materials, contact the Environmental Department for disposal options.

#### **4.2 AEROSOL CANS**

Aerosol cans should be replaced with pump bottles if possible. When pump bottles are not available, the use of larger bulk containers should be considered. Aerosol cans are difficult to manage as waste and may explode if incinerated. Used aerosol cans should be emptied by using an aerosol can device that punctures the can, removing propellants and liquid, after which the can is an empty cylinder that can be landfilled.

Due to safety reasons and regulatory restrictions, aerosol cans cannot be emptied by puncturing with a sharp object such as a screw driver. (The volatile organics must be captured.)

#### **4.3 GLYCOLS**

Used ethylene glycol can be recycled as long as it is not significantly contaminated and is still usable. Glycol that has become contaminated and cannot be recycled must be shipped off-site for disposal. Glycol will cause mill process upsets, and should never enter the tailings storage facility or mill feed.

Glycols may pick up benzene and metals during use, rendering it hazardous. Glycol being collected in a container for future disposal must be managed as a Satellite Accumulation Area. Sampling and analysis will show it to be hazardous or non-hazardous.

#### **4.4 METHANOL**

Methanol or mixtures of methanol and water that can not be used must be shipped offsite for disposal. Methanol and many mixtures of methanol and water are ignitable. Such products being collected in a container for future disposal must be managed in a Satellite Accumulation Area.

#### **4.5 SMART-ASH BURNER ASH**

Ash from the smart-ash burner must be analyzed to determine its hazardous status. It is recommended to collect one sample of ash per week for four weeks and analyze them for TCLP metals. If the ash is determined to be non-hazardous, it can be placed in the landfill. Sampling should be repeated if there is a significant change in waste types being burned or at least once every three to five years.

## **4.6 BATTERIES**

### **4.6.1 Alkaline Batteries**

General-use, non-damaged alkaline batteries will be disposed as inert waste. Damaged or specialty alkaline batteries must be analyzed for TCLP cadmium and mercury. If they are determined to be non-hazardous, they can be landfilled, otherwise they will be disposed as hazardous waste. No alkaline batteries should be incinerated, because they may cause metals to be concentrated in the ash.

### **4.6.2 Lead-Acid Batteries**

Used lead-acid batteries are managed as Universal Waste.

Vehicle batteries should be placed in plastic spill skids, or totes, lined with absorbent material to absorb battery leakage and then shipped offsite for recycling.

### **4.6.3 Nickel-Cadmium Batteries**

Used nickel-cadmium batteries sent off-site for recycling. These batteries are excluded from hazardous waste storage requirements according to 40 CFR 261.2(e) and 261.6(a)(3) as long as they are being recycled for re-use as batteries.

## **4.7 CHEMICALS AND REAGENTS**

Chemical wastes will need to be checked for listed hazardous components and for land-banned components, and may have to be shipped offsite for disposal as hazardous wastes. All spilled reagent chemicals should be used in the mill if possible. Spilled chemicals that are beneficially used are exempt from most hazardous waste regulations.

Chemicals that are not mill reagents should never be disposed in the mill feed because their mixing with the mill feed may invalidate the Bevill exemption of the tailings.

## **4.8 CONCENTRATE**

Concentrate that has become contaminated due to a spill should be recycled through the mill to reclaim the metals. It can be placed on a stockpile after confirming with Mill Operations.

## **4.9 CONTAMINATED SOIL**

Contaminated soil removed from a spill site within the active Pit areas can be blast-remediated or placed on a stockpile for mill processing.

Outside the Pit areas, contaminated soil associated with oil or diesel spills shall be excavated, treated appropriately and placed in a waste dump, or hauled into the pit for blast-remediation.

Petroleum contaminated soils may also be bioremediated in accordance with the latest Alaska Department of Environmental Conservation (ADEC) guidelines located at [http://www.dec.state.ak.us/spar/csp/guidance/soiltreat\\_2002\\_10\\_07.pdf](http://www.dec.state.ak.us/spar/csp/guidance/soiltreat_2002_10_07.pdf).

#### **4.10 CONTAINERS**

AGC has adopted a policy to minimize the generation of drums by choosing alternative methods of packaging where feasible. However, this has not completely eliminated the requirement for drummed packaging.

Some drums, if emptied sufficiently, can be reused as a container for scrap metal. If there is no demand for a drum, it should be cleaned to less than 5% of capacity, crushed and disposed of in the landfill.

A container or inner liner removed from a container that held an **acute** hazardous waste (e.g. sodium cyanide) is empty if:

- The container or inner liner has been triple rinsed using a solvent capable of removing the product; or
- In the case of a container, the inner liner that prevented contact of the product with the container has been removed.

The rinsate may be a hazardous waste if it is not recycled through the mill. (Only rinsates from mill reagents may be recycled through the mill.)

Mill reagent containers may be able to be sent back to the supplier.

##### **4.10.1 Compressed Gas Cylinders – Empty**

A container that held a hazardous waste that is a compressed gas is empty when the pressure in the container approaches atmospheric. If the contents of the container are a hazardous waste, they must be handled accordingly.

Small, non-refillable compressed cylinders can be disposed of in the landfill once emptied and no longer under pressure. The needle valve must be opened and the decommissioning pin removed to ensure the cylinder is no longer under pressure.

##### **4.10.2 Compressed Gas Cylinders – Not Empty**

Compressed gas cylinders that are not empty should be returned to the vendor. If they can not be returned, they must be handled as hazardous waste. The compressed gas renders the cylinder reactive, which is a characteristic of hazardous waste. In addition, some contents of cylinders are hazardous wastes themselves. Knowingly venting gases to the atmosphere to “empty” a cylinder is against the Clean Air Act regulations.

#### **4.11 EQUIPMENT and MATERIALS**

##### **4.11.1 Mill Equipment**

Mill equipment is exempt from RCRA hazardous waste regulations under the Bevill Amendment and can be disposed of in the landfill.

##### **4.11.2 Desiccant**

Used desiccant is non-hazardous and can be landfilled.

#### **4.12 Air Filters**

Equipment air filters and filters from air handling units associated with the extraction and beneficiation of ore are Bevill-exempt and can be landfilled.

Air filters from vehicles and from equipment not used exclusively for ore extraction or beneficiation should be stored following the requirements for Satellite Accumulation Areas. These filters will be evaluated to determine the appropriate method of disposal.

##### **4.12.1 Oil Filters**

Used oil filters are exempt from the hazardous waste regulations and can be disposed of in the landfill if they are gravity drained using one of the following methods:

1. puncturing the filter anti-drain back valve or the filter dome end and draining;
2. draining and crushing;
3. dismantling and draining; or
4. any other equivalent draining method that will remove used oil.

If the filters must be stored before one of the above methods of handling is complete, they must be stored as “Used Oil” until the method is complete. Once the method is complete, they can be disposed of in the landfill. Oil filters that can not be handled by one of the above methods must be treated as Used Oil.

Drained oil shall be collected in a drum marked “USED OIL” and burned on-site.

#### **4.12.2 Fuel Filters**

Diesel fuel filters must be analyzed for benzene and arsenic. If they are found to be non-hazardous, they can be drained of fuel and dismantled in a heavy equipment shop. Metal filter canisters may be segregated as scrap metal if cleaned sufficiently. The rest of the filter is incinerated. Rubber gaskets can either be incinerated or put in the non-burnable dumpsters and taken to the landfill for disposal.

Gasoline fuel filters must be analyzed for benzene and arsenic. Because of the possibility of being hazardous waste, they must be stored in the Satellite Accumulation Areas. Upon return of analytical data, the appropriate disposal method will be determined.

#### **4.13 LAB WASTE**

Extra mill reagents used in the laboratory should be recycled through the mill.

#### **4.14 LAMPS**

Many used lamps exhibit a hazardous waste characteristic due to lead or mercury. Such lamps can be managed as Universal Waste, provided they are not broken. Broken, hazardous lamps must be handled under the more stringent hazardous waste requirements.

#### **4.15 OVER-SIZED MATERIAL**

##### **4.15.1 Vehicles**

Vehicles to be disposed will be drained of all liquids prior to sending to the landfill or sent off-site for disposal. AGC may crush vehicles on-site before shipping to either location..

##### **4.15.2 Tanks and Large Damaged Containers**

Tanks and damaged containers requiring disposal of will be cleaned, cut into pieces and sent out as scrap metal.

#### **4.16 PAINTS AND PAINTING MATERIALS**

The disposal of liquid paints in the landfill is prohibited. However, dry paint residue and dry painting materials (e.g. rags, etc.) may be disposed of in the landfill, provided it is not lead-based paint or paint containing a hazardous constituent.

#### **4.17 PAPER PRODUCTS**

##### **4.17.1 Cardboard**

Cardboard will be burned on-site.

##### **4.17.2 Paper**

Paper will be burned in the smart-ash burner on-site or put in the landfill.

#### **4.18 PETROLEUM PRODUCTS**

##### **4.18.1 Used Grease**

Grease may become hazardous with use due to ore contamination. Used grease should be analyzed for hazardous characteristics to determine the appropriate disposal method.

##### **4.18.2 Used Oil**

The requirements for handling and storing used oil are as follows:

1. All containers used to accumulate or transfer used oil must be labeled "USED OIL".
2. Logs must be kept identifying sources of all oil added to containers.
3. Secondary containment must be provided for all used oil storage.
4. Weekly inspections of used oil storage areas are required.

Used oil meeting the specifications in Table 5 is considered on-specification (on-spec) and non-hazardous. All sources of used oil should be sampled to determine if the used oil is uniformly on-spec. Subsequently, sampling can be reduced to two samples per month: 1) one random sample from the Rock Creek Mine and 2) one sample from the Big Hurrah Mine.

**Table 5 Specifications for Used Oil**

| <b>Constituent/Property</b> | <b>Allowable Level</b> |
|-----------------------------|------------------------|
| Arsenic                     | 5 ppm maximum          |
| Cadmium                     | 2 ppm maximum          |
| Chromium                    | 10 ppm maximum         |
| Lead                        | 100 ppm maximum        |
| Flash Point                 | 100 °F minimum         |
| Total Halogens              | 1,000 ppm maximum      |

Used oil with a halogen content greater than 1,000 ppm is presumed to be a hazardous waste because it has been mixed with halogenated hazardous waste (listed in subpart D of Part 261 of RCRA), unless it can be demonstrated that the used oil does not contain hazardous waste. It must be labeled as “Hazardous Waste” and handled and disposed of accordingly.

If used oil is mixed with hazardous substances, it must be sampled for TCLP metals and organics to determine if it is hazardous. Hazardous materials should never be purposely mixed with used oil.

There are two options available for used oil: recycling and disposal. Recycling consists of burning used oil in a heater for energy recovery. Disposal consists of burning used oil in a Smart-Ash Burner. AGC’s preferred option consistent with its waste minimization guidance is to recycle used oil in a heater.

Used oil that is considered on-specification and non-hazardous can be burned for energy recovery in used oil heaters.

Used oil that will be burned in the Smart-Ash burner is considered to be disposed rather than burned for energy recovery. Required management practices are identical to those for recycled used oil with the following exception:

- Used oil will require testing for TCLP parameters as listed in Table 4. Pesticides may be excluded from the parameter list if it can be documented that pesticides are not used at the facility. Every source should be sampled and analyzed. If all sources are non-hazardous, then a repeat of sampling should be conducted every time the process changes in such a manner that could change the pollutant types or concentrations in used oil, or at a minimum, once every three to five years. Please note that this sampling is in addition to the monthly sampling for parameters listed in Table 5.

#### **4.19 RADIOACTIVE MATERIALS**

There are radioactive materials on-site in the mill on-line instrumentation and in self-luminous exit signs (tritium). These materials must be shipped back to the factory for disposal.

#### **4.20 SCRAP METAL**

Used metal and equipment that may be used in the future will be stored on-site. All remaining scrap metal will be disposed in the inert waste landfill.

All materials, whether salvageable or for disposal, shall be cleaned until the surface is free of any visible contaminated soil and waste. Residual staining from soil and waste, consisting of light shadows, slight streaks, or minor discolorations, and soil and waste in cracks, crevices and pits may be present if limited to no more than 5% per square inch of surface area.

If the material is steam cleaned, rinse water and/or solids that contain potential ore generated from the cleanup will be collected and recycled through the mill circuit or hauled to the pit for blast remediation.

Small scrap metal pieces to be recycled shall be placed in open top drums. Examples of small pieces include metal pipe ends, steel shapes, and small pieces of plate.

The generator of the scrap shall:

1. Clean pieces, if contaminated with ore particles or dust, mill feed or reagents.
2. Segregate by metal type (ferrous/non-ferrous);
3. Place metal in a clean 55-gallon drum or open dumpster;

#### **4.21 WATER TREATMENT PRECIPITATES**

Precipitates from water treatment activities at both the Rock Creek Mine/Mill Complex and the Big Hurrah Mine will be disposed in the Tailings Storage Facility.

#### **4.22 SOLVENTS**

Solvents can never be placed in the tailings storage facility, regardless of their hazardous status. Solvents can be reused, if feasible. Hazardous solvents must be shipped off-site as hazardous waste for disposal if they cannot be reused beneficially.

#### **4.23 TIRES**

Tires can be recycled or can be disposed of in the inert waste landfill.

#### **4.24 WOOD PRODUCTS**

Pallets in good condition can be recycled or burned on-site.

#### **4.25 TAILINGS**

Tailings from milling operations will be managed according to procedures described in the attached Tailings Storage Facility Operations and Maintenance Manual.

## **5 PURCHASING PROCEDURES**

Purchasing will be done in such a manner so as to minimize environmental liability. Unless otherwise stated these procedures are the responsibility of the Purchasing Department.

### **5.1 PURCHASING**

#### **5.1.1 Pre-Purchase Review**

Evaluate materials with the manufacturer prior to purchase to ensure they are the least costly non-toxic (or the least toxic) materials to handle. The requester may have experience with different types of products and could offer advice to the Purchasing purchaser.

#### **5.1.2 Inventory Control**

Control chemical inventories to decrease the potential for spills, over purchasing, and the resulting costs for disposal of these materials. This is the joint responsibility of Purchasing for warehoused supplies and the responsibility of the user for storage within the usage area. Each department supervisor, not the Purchasing Department, is responsible for determining the least amount of products necessary for their jobs, and order no greater quantities with the exception of products vital to production.

#### **5.1.3 Centralized Purchasing**

Channel all material purchases through the Purchasing Department to eliminate unnecessary purchases and ensure that all waste minimization policies are followed. The Purchasing Department informs the user of the potential dangers of a product, and the supervisor, superintendent or manager approves the purchase.

#### **5.1.4 MSDS Sheets**

Obtain Material Safety Data Sheets (MSDS's) from distributors. These sheets are required to be on-site to comply with state and federal laws. Mark with the supply code and file in an easily retrievable manner. Keep one copy in the Purchasing files, send one to the user and one copy to the Environmental Department so that materials containing a Section 313 chemical can be identified. The attached Hazardous Materials Plan B includes MSDS sheets for materials anticipated for use at the mines.

### **5.1.5 Dangerous Goods**

Keep the GenCID database current with UN numbers. The UN numbers are used to track usage of hazardous materials for permitting requirements and for proper shipping of material.

## **5.2 DELIVERY**

### **5.2.1 Designated Receiving Area**

Each department that receives hazardous substances should designate a single area for receiving and storage, with precautions taken to reduce accidents and spills. If liquids are involved they must be kept on an impermeable floor. Spill response equipment, emergency phone numbers and a communication system (phone or radio) should be located within the receiving area.

### **5.2.2 Trained Materials Handlers**

It is recommended to train employees who conduct deliveries in proper hazardous materials handling methods.

### **5.2.3 Delivery Documents**

Hazardous materials are required to be inspected upon delivery, and subsequently the receiving notice or transport voucher should be signed.

## **5.3 RECEIVING**

It is recommended to train employees to properly handle shipments to prevent property losses, injuries, and costly waste disposal.

## **5.4 INVENTORY**

### **5.4.1 Dangerous Goods Inventory**

Maintain the inventory of hazardous materials at the lowest practicable levels required for operating. This will help to reduce worker exposures and safety problems such as spills and fires. Inventory levels should not exceed the capacity of the emergency controls on-site to handle spills.

#### **5.4.2 Material Shelf Life**

Adjust inventory levels of hazardous materials to prevent out-dated stock. Unused inventory with limited shelf-life will have to be disposed of or sent back to suppliers. This is monitored by Purchasing and the user.

#### **5.5 PRODUCT STORAGE**

Following are the general requirements for product storage. Proper storage procedures will minimize the unnecessary generation of wastes due to spills or contamination of products.

1. Each container must be labeled with the contents. Containers should be protected from weathering so labels do not wear off;
2. Containers must be in good condition, well sealed, and inspected for leaks and corrosion regularly. If they are leaking, they should be replaced immediately;
3. Containers should be sealed at all times, except when adding or removing products;
4. Storage areas shall have restricted access;
5. Liquid hazardous materials shall be stored on an impermeable concrete pad or lined area or in a plastic tote or overpack;
6. When storing hazardous materials, the storage area must have controlled drainage and allow for the cleanup of spills;
7. Ignitable wastes shall be shaded from direct sunlight;
8. Heated storage should be provided for those items subject to freezing to prevent ruptures;
9. Incompatible chemicals must not be stored next to each other;
10. Adequate aisle space must be provided within storage areas to allow for inspection of individual containers, and to allow for quick response to spills and leaks;
11. Chemicals must be stored in accordance with the National Fire Protection Association flammable and combustible code;
12. A location map of all storage areas should be prepared. Areas of storage for chemicals, flammables, reactive materials and toxic materials should be indicated.