

# **SITE SPECIFIC HEALTH AND SAFETY PLAN**

## **Mineral County Fairgrounds Creede, Colorado**

May 2, 2005

Prepared for

**Mineral County Fairgrounds Association  
c/o Willow Creek Reclamation Committee  
P.O. Box 518  
Creede, CO 81130**

Prepared by:

**American Geological Services, Inc.  
3222 S. Vance Street, Suite 100  
Lakewood, CO 80227  
Tel: (303) 988-1845  
Fax: (303) 986-2898**

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# **1 GENERAL**

## **1.1 Applicability and Scope**

This site-specific health and safety plan (SSHSP) extends to all American Geological Services, Inc. (AGS) employees who will work onsite during the Investigation, remediation, and construction activities at the Mineral County Fairgrounds in Creede, Colorado. All contractors and subcontractors are required to have their own health and safety program in place that meets or exceeds the applicable site-specific safety requirements. All on-site personnel including employees of AGS, Mineral County Fairgrounds Association (MCFA), Willow Creek Restoration Committee (WCRC), subcontractors, and visitors shall be informed of site emergency response procedures and any potential fire, explosion, health, or safety hazards of the operation. This SSHSP has been prepared to summarize the physical and chemical hazards and define protective measures planned for sampling activities to be conducted at the site. This plan must be reviewed and an agreement to comply with the requirements must be signed by all AGS personnel prior to conducting field work.

## **1.2 Project Tasks**

The Mineral County Fairgrounds Association (MCFA) submitted a voluntary cleanup application (VCUP) to the Colorado Department of Health and Environment (CDPHE) in accordance with the State of Colorado Voluntary Cleanup and Redevelopment Act (VCRA) (CRS 25-16-301). This VCUP was prepared by URS on March 19, 2004. The purpose of this document was to supply the CDPHE with adequate information for making a decision concerning VCUP of the Mineral County Fairgrounds Property located at the Creede Airport Corner Site in Creede, Colorado. Soil at the Property contains lead concentrations above CDPHE's proposed industrial land use cleanup level of 400 parts per million (ppm). The MCFA's objective is to remediate the Site, which will serve as the Mineral County Fairgrounds for Mineral County, Colorado.

This Health and Safety Plan addresses the following tasks.

- Soil/tailings sampling
- Oversight of soil/tailings excavation
- Oversight of soil/tailings repository construction
- Oversight of sewage treatment plant effluent discharge re-routing

## **1.3 Site Description**

The Property is located two miles south of Creede, Mineral County, Colorado in the vicinity of the Mineral County Airport. The legal description of the Property is Southwest Quarter of Section 6, Township 41 North, Range 1 East. The

Property consists of an upper bench and a lower bench; with the upper bench being the terraces of Willow Creek and the lower bench being the floodplain of Willow Creek. The Property is located on a relatively flat field that slopes gently toward the south and southeast along the Rio Grande Valley. Elevations at the property range from approximately 8,600 feet above mean sea level (msl) to 8,680 feet above msl.

## **2 CONTACTS**

### **2.1 Emergencies**

In the event of an emergency, personnel should dial emergency telephone numbers as indicated below.

#### **EMERGENCY TELEPHONE NUMBERS**

<b>Condition</b>	<b>Contact Organization</b>	<b>Telephone Number</b>
Employee injury	Emergency Dispatch	911
Fire, gas leak	Emergency Dispatch	911
Public danger	Emergency Dispatch	911

### **2.2 Nearest Hospital**

SLV Regional Medical Center  
106 Blanca Avenue  
Alamosa, CO 81101  
Phone: 719-589-2511

To get to the SLV Regional Medical Center in Alamosa, follow Highway 149 south to Highway 160. Turn left and follow the Highway 160 east for approximately 46 miles to Alamosa, Colorado. Travel approximately 0.2 miles and turn left (North) onto Blanca Ave. Proceed to 106 Blanca Ave. A map depicting the route to this facility is included in Attachment A.

### **2.3 MCFA and WCRC Contacts**

Ms. Leigh Ann Vradenburg: Office: (719) 658-0178; Mobile: (719) 580-5217

### **2.4 American Geological Services, Inc.**

AGS personnel can be reached through AGS's Lakewood office at (303) 988-1845, or toll free at 888-748-7488. When in the field, AGS personnel carry

cellular phones. To determine individuals' cellular phone numbers on a given day, contact AGS's office at (303) 988-1845.

Jack Johnson, AGS Project Manager, Mobil: (303) 748-1760

Mark A. Arnold, AGS Health and Safety Manager, Office: (303) 988-1845,  
Mobil: (303) 829-2101

### 3 CHEMICAL HAZARDS

A review of information based on known conditions from previous investigations indicates that should be no chemical hazards at the work site

### 4 PHYSICAL HAZARDS

Field personnel may be exposed to a number of potential physical hazards. Following is a summary of several potential physical hazards and preventive measures:

<b>Hazard</b>	<b>Source or Cause</b>	<b>Recommended Solution</b>
slips, trips or falls	Moisture, waste rock residues, native soils equipment or vehicles	clean soles of boots before climbing on or into equipment or vehicles, exercise caution when working or traveling through wet areas.
slips, trips or falls	Waste rock, debris piles or steep slopes	maintain awareness of surroundings, watch where you are walking
strains and sprains	moving hand tools, equipment or other heavy objects	use proper lifting techniques, get help with heavy lifts
dust inhalation	Dry waste rock fines, road dust or native soils	apply moisture to control dust, work upwind of dust, wear appropriate respiratory protection
hearing loss	operation of equipment, exposure to noise	wear appropriate hearing protection
heat stress	working conditions including temperatures above 79°F	drink plenty of fluids, dress properly and maintain good physical health
cold stress/hypothermia	cool, wet, and/or windy working conditions	wear appropriate clothing, wear rubber boots, keep dry and maintain good physical health
sunburns, eye stress	Altitude above 7,000 feet	wear proper clothing, headgear, sunglasses, use sun block
burns	maintenance of and work near equipment	shut off equipment while fueling, wear proper clothing while servicing, be aware of potentially hot surfaces

crushing	operation of and work near equipment	ensure that backup alarms are working and operators are qualified, avoid pinch points around equipment
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## 5 SAFETY AND HEALTH CONTROLS

### 5.1 Accident Prevention

#### 5.1.1 General

- The following will be provided or available on site:
  - 1) sufficient supplies of potable water;
  - 2) air monitoring when required;
  - 3) fire extinguishers and orientation on their proper use and care;
  - 4) site-specific safety orientation with weekly tailgate safety briefings, with emphasis on physical and chemical hazard recognition, heat stress, and cold stress;
  - 5) Material Safety Data Sheets (MSDSs) for petroleum products or other materials used onsite.
- First Aid and safety equipment will be provided as listed in section 5.2.1 below.
- Personal protective equipment (PPE) will be used as needed, as outlined in section 5.2.2 below.
- No alcoholic beverages or illegal drugs are allowed on site.
- Personnel using prescription medications may be asked to leave the site if such medications cause drowsiness or otherwise interfere with judgment and the ability to conduct work activities in a safe manner.
- Accidents shall be reported to the Site Health & Safety Officers and the Project Manager in a timely fashion.
- Tools and equipment will be maintained and used in accordance with normal safe working procedures. This includes equipment inspection before use, and will normally require the use of eye protection.
- Safe lifting and carrying procedures shall be followed. Lift with your legs, not with your back.
- Potential hazards may exist due to slick and muddy conditions on surfaces within and adjacent to the pond complex. Exercise caution when walking and/or driving vehicles onto such surfaces.
- Insect and spider bites can be minimized at the work site by the use of insect repellants, and observing where insects or spiders may be located.

### **5.1.2 Falling Hazards**

Reclamation projects present numerous potential falling hazards, these include the following:

- Collapse Zones
- Cave-ins
- Unsafe Ladders, platforms, headframes and other structures
- Pools of water
- Highwalls and Steep Pit Walls
- Waste Rock, Ore, or Tailings Piles

### **5.1.3 Fire Protection**

Portable fire extinguishers shall be provided at the job site or carried in company vehicles. These fire extinguishers will be inspected and maintained in accordance with National Fire Protection Agency Regulation 10, *Portable Fire Extinguishers*.

### **5.1.4 Construction Hazards**

Construction activities must meet OSHA safety regulations and regulations outlined in the AGS Safety and Health Program Manual. In particular, excavations should not exceed five feet in depth, unless the walls are braced or otherwise stabilized to prevent collapse. The slope of excavation walls should not exceed 1:1. Vehicles should not be allowed closer than 10 feet from the edge of an excavation. Any underground or overhead utilities shall be located prior to excavation activities.

### **5.1.5 Sunburns**

Sunburns are caused by the exposure to the rays of the sun and can be exacerbated by the high elevation. Preventive measures include proper attire to minimize skin exposure, liberal use of a sun screen and sunglasses for eye protection.

### **5.1.6 Heat Stress**

Heat stress is caused by various factors, which include environmental conditions, what a person wears (including PPE), workload, and even a person's individual characteristics. Susceptibility to heat stress can vary between individuals depending on factors such as lack of physical fitness, obesity, alcohol and drug use, age, rest and others. Preventative measures and proper training will help avoid serious heat stress related

illnesses. To avoid heat stress the following steps will be taken.

- Adjust work schedules and tasks as necessary depending on ambient conditions.
- Provide shelter or shaded areas for the protection of site workers during rest periods.
- Maintain worker's body fluids at normal levels. The fluid intake must approximately equal the amount of water and electrolytes lost in sweat. The following steps are recommended to accomplish this.
  - Maintain water temperature at 50 to 60 degrees F.
  - Have workers drink 16 ounces of water or dilute drinks (e.g., electrolyte solutions such as Gatorade) prior to commencing work activities.
  - Encourage workers to drink eight ounces of plain water or dilute drinks at each rest period.
- Encourage workers to maintain an optimal level of physical fitness. Acclimatize workers to work conditions where indicated. Site personnel should be trained to recognize the signs and symptoms of heat stress and then be able to take appropriate action. Many of these signs and symptoms are covered in the OSHA/NIOSH/EPA/USCG Occupational Safety and Health Guidance Manual for Hazardous Waste Site Activities. Some of the signs and symptoms are described below.

### **5.1.7 Heat Exhaustion**

- Signs and Symptoms:
  - Pale, cool, and moist skin
  - Heavy sweating
  - Light headedness
  - Slurred speech
  - Weakness (fatigue)
  - Confusion
  - Fainting
  - Nausea
- Corrective Action
  - Remove victim to a cool and uncontaminated area
  - Remove PPE
  - Cool the victim with water and/or fanning
  - Give water to drink as soon as reasonably possible
  - Allow victim to rest



### 5.1.8 Heat Stroke

- Signs and Symptoms:
  - Red, hot, usually dry skin
  - Lack of or reduced perspiration
  - Incoherent, delirious
  - Mental confusion and dizziness
  - Unconsciousness
  - Staggering gait
  
- Corrective Action:
  - Remove the victim to a cool and uncontaminated area
  - Remove PPE
  - Cool the victim with water and/or fanning
  - Give water as soon as reasonably possible
  - Transport to medical facility for further treatment since Heat Stroke is a medical emergency

### 5.1.9 Cold Stress

Anticipated weather conditions during the majority of project activities are such that the likelihood of personnel developing cold stress is relatively low. Depending on ambient weather conditions, personnel should be prepared to wear layered clothing and be aware of the symptoms of cold stress and frostbite. Various degrees of cold stress are described below.

***Frostnip*** is characterized by a sudden blanching of the skin. First aid requires covering the affected area with warmth until symptoms subside.

***Frostbite*** is characterized by white or waxy skin which feels firm to the touch. First aid procedures call for covering the affected area with warmth, and moving the victim to a heated shelter when possible. A physician's care should be sought as soon as possible.

***Mild hypothermia*** is characterized by shivering, numbness and drowsiness. For first aid, apply heat and move the victim to a heated shelter.

### 5.1.10 Altitude Sickness

Safety at altitude depends on common sense. This dictates that project personnel) - especially newcomers - should acclimatize cautiously and not proceed to higher altitudes if feeling unwell. Project personnel should be familiar with the symptoms of serious altitude sickness, monitor the condition of fellow workers, and know what action to take if a problem arises. All personnel should be aware that altitude can affect the judgment of individuals, sometimes

dangerously.

### **Minor Symptoms**

- mild shortness of breath
- dizziness
- lightheadedness
- headaches
- a change in visual activity
- palpitations
- chest tightness
- nausea

### **Major Symptoms**

- shortness of breath
- sudden onset of severe unrelenting headaches
- chest pain
- abdominal pain

### **Major Signs**

- slurred speech
- visual disturbance
- loss of coordination
- paralysis
- seizures
- collapse
- slow or rapid heart beat
- labored breathing
- unrelenting nausea or vomiting

### **Corrective Action**

Treatment for mild symptoms includes rest, increased fluid intake, and small, high-carbohydrate meals. For more extreme symptoms, the person should descend to an altitude below 6,000 feet and seek medical help.

### **Prevention**

To reduce your chances of experiencing symptoms of altitude sickness, try the following:

- Reduce alcohol, caffeine and salty food consumption for two days prior to ascent.
- Drink three to four times more water than usual.
- Get plenty of rest before and during your stay at high altitude.
- Don't overexert yourself. Your heart works harder at higher altitudes, so quit when you get tired.

- Wear sunscreen. You get 30 percent more ultraviolet radiation in high altitudes than you do at sea level.
- Eat high-carbohydrate meals, limiting fat and protein, for the first few days at high altitude.
- Take your time ascending. Those who will spend more than one day at a higher altitude, or those who plan strenuous activity at a high altitude, should spend one day acclimating for every 2,000 feet they go up, beginning at 8,000 feet.

**5.1.11 Confined Spaces**

This work is not anticipated to require entry into confined spaces, as defined by 29 CFR 1910.146.

**5.2 Chemical Hazard Minimization**

It is anticipated that no chemical hazards will be encountered during the remediation and construction activities.

**5.2.1 First Aid and Safety Equipment**

At a minimum, the following first aid and safety equipment shall be available at the work site, and all onsite personnel shall be informed of their location:

fire extinguishers
first-aid kits
cellular phones

**5.2.2 Personal Protective Equipment**

It is anticipated that the requirement for protective clothing and equipment will be minimal for the majority of project tasks. At a minimum, level "D" protection shall be used. All personnel will be prepared to upgrade to a modified level "C" if necessary. The following personal protective equipment (PPE) shall be used as appropriate:

Level of Protection	Hazard Condition	Required Clothing and Gear
Level "D"	Minimal hazard of exposure to skin  No respiratory hazards	<ol style="list-style-type: none"> <li>1. Long trousers</li> <li>2. Long sleeved shirt</li> <li>3. Work shoes with safety toes</li> <li>4. Hard hat</li> <li>5. Safety glasses</li> </ol>

		<ul style="list-style-type: none"> <li>6. Work gloves</li> <li>7. Safety vest</li> <li>8. Hearing protection</li> </ul>
Modified Level "C"	<p>Minimal to moderate exposure to skin hazards</p> <p>Minimal to moderate respiratory hazards associated with dust from alum and/or lime reagent</p>	<ul style="list-style-type: none"> <li>1. Long trousers</li> <li>2. Long sleeved shirt</li> <li>3. Work shoes with safety toes, rubber boots where required.</li> <li>4. Hard hat</li> <li>5. Safety glasses, face shield where required</li> <li>6. Work gloves, rubber gloves where required</li> <li>7. Safety vest</li> <li>8. Hearing protection</li> <li>9. Tyvek or Saranex coveralls where required</li> <li>10. Half face or full face respirator with applicable canisters when dust and mists have a time weighted average of not less than 0.05 mg per cubic meter</li> </ul>

### 5.2.3 Respiratory Protection

It is not anticipated that respiratory protection will be required to perform the project tasks under normal conditions. The project tasks are not expected to generation significant quantities of dust under normal conditions. Work practices will be controlled to minimize the generation of dusts. To the extent practical, working upwind of visible dust can further reduce exposure to airborne dust. However, if visible observation and/or air monitoring indicates excessive concentrations of airborne particulates, dust masks or a half-face or full-face respirator fitted with particulate canisters shall be used as deemed necessary by the Site Safety Officer or Project Manager. Only workers who are currently qualified to wear a respirator in accordance with the employer's respiratory protection program will be allowed to wear a respirator and work in the area(s) where respiratory hazards require the use of a respirator.

### 5.2.4 Training

All project personnel assigned to field activities in the designated **exclusion zones** during this project shall meet the following minimum qualifications:

- Successful completion of a 40-hour training program as required by 29 CFR 1910.120.
- Successful completion of an 8-hour refresher training course in the past 12 months provided the 40-hour training occurred over 12 months ago.
- Successful completion of an 8-hour supervisor training course, for site supervisors.
- Current qualification to wear a respirator in accordance with the employer's respiratory protection program.
- Successful completion of Hazard Communication training.

Subcontracted personnel assigned to this project should meet the training requirements established by their employer's Health and Safety program.

### **5.2.5 Air Monitoring**

The potential exists for inhalation and/or ingestion of airborne dust from the mine waste dumps, particularly during the sampling activities. Inhalation and ingestion of dusts may cause irritation to the respiratory and gastrointestinal tracts. Work activities conducted in areas and activities that do not result in dust generation are not anticipated to pose a chemical hazard to personnel. Worker exposure through inhalation and ingestion of dusts will be minimized through the use of exposure reduction practices consisting primarily of limiting sampling to areas without fine material that could become airborne during sampling.

The SSO or Project Manager will conduct routine visual monitoring for dust. Should dusty conditions be noticed, a water truck will be dispatched to moisten the surface for dust control.

### **5.2.6 Decontamination**

It is anticipated that decontamination of equipment, tools and personnel will not be necessary on this project.

### **5.2.7 Hazard Communication**

The use, handling, and storage of potentially harmful materials by project personnel during this project will be limited to small quantities of detergents and dilute hydrochloric acid for use in sampling equipment decontamination, which will be conducted in accordance with a Hazard Communication Program which includes the following elements:

- Inventory of all chemical products used in the workplace;
- MSDSs for each chemical used in the workplace, which must be readily accessible during each work shift;

- Labeling of each container of chemical products including a legible and prominent identification of the container contents and appropriate hazard warnings; and
- Training to inform employees of operations in the work area involving harmful chemicals; inform employees of the location of the written hazard communication program, chemical inventory, and MSDSs; inform employees how to detect the presence of harmful chemical in the work area; and inform employees of appropriate protection methods.

### **5.3 Site Control**

The site is not secured from public access. Most mine shafts and adits have been sealed. Site control zones will be established as necessary to maintain site control. Due to the anticipated low probability of exposure to significant levels of contamination at the site, control zones will not be established.

### **5.4 GENERAL SAFETY AND HEALTH REQUIREMENTS**

- All project personnel shall follow this site-specific Health and Safety Plan.
- A brief safety meeting will be held initially at the site and periodically as needed to address health and safety issues. At a minimum, the following information will be reviewed:
  - Overview of SSHSP including any changes
  - Overview of chemical/physical hazards and mitigation
  - Discussion of hazards associated with upcoming work tasks
  - Overview of emergency procedures
  - Decontamination procedures
- No personnel other than those approved by the Site Health and Safety Officer shall be allowed on the site during remedial activities
- A minimum of two persons are required on-site when activities are taking place.
- No smoking, eating, drinking, or chewing gum within the exclusion zone or the contaminant reduction zone. Wash hands and face before engaging in these activities outside of these restricted areas.
- Avoid touching known or potentially contaminated materials, walking through known or suspected "hot zones" or contaminated puddles or liquids, kneeling or sitting on the ground, sitting or leaning against potentially contaminated equipment or machinery.

- Personnel shall contact the site Health and Safety Officer or project manager if any unsafe condition or practice occurs.

## **6 AUTHORIZATION**

### **6.1 Site Safety Officer**

The Site Safety Officer has the authority to enforce all rules and regulations applicable to project personnel assigned to this project and to ensure the appropriate policies and procedures are followed.

### **6.2 Project Manager**

The Project Manager has the responsibility for making sure that all aspects of the Health and Safety Plan are reviewed prior to starting field activities.

### **6.3 Contractors and Subcontractors**

All contractors and subcontractors are responsible for the health and safety of their personnel, and are required to have their own health and safety program in place that meets or exceeds the applicable site-specific safety requirements.

## 6.4 Signatures

I state that I have read, have had all my questions and concerns answered, and understand and will abide by the contents of the Site-Specific Health and Safety Plan for the Mineral County Fairgrounds Site located approximately 1 mile north of Creede, Colorado.

Site Safety Officer: \_\_\_\_\_

Project Manager: \_\_\_\_\_

Field Personnel \_\_\_\_\_

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Attachments: A: Route to Hospital

**Starting from:** Creede, CO

**Arriving at:** 106 Blanca Ave, Alamosa, CO 81101

**Distance:** 68 miles      **Approximate Travel Time:** 1 hour 25 minutes

### **Directions**

1. Starting at **Mineral County Fairgrounds**
2. Turn **Right** (South) on **Highway 149** - go ~ **1.0** mi to south end of Creede
3. Follow **Highway 149** (South) to **Highway 160** ~ **21** mi
4. Turn **Left** (East) on **Highway 160**
5. Continue on **Highway 160** to **Alamosa** ~ **46** mi
6. Continue through Alamosa to **Blanca Ave** ~ **0.2** mi
6. Turn **Left** on **Blanca Ave**
7. Arrive at **106 Blanca Ave, Alamosa**

When using any driving directions or map, it's a good idea to do a reality check and make sure the road still exists, watch out for construction, and follow all traffic safety precautions. This is only to be used as an aid in planning.

