

## 4.6 HAZARDS AND HAZARDOUS MATERIALS

This section provides information on potential hazards and hazardous materials that occur or could potentially occur within the Park, and could be impacted by Program Actions of the Project. Section 4.0 provides a description of DPR's analytical methodology that is applied to each resource category, including Hazards and Hazardous Materials, from a program and area-specific perspective.

### 4.6.1 EXISTING CONDITIONS

Section 4.0 provides a regional overview of the Park's existing conditions. A brief reiteration of regional features affecting the Park's impacts associated with hazards and hazardous materials is included below.

#### 4.6.1.1 Existing Conditions at the Park

The Park is within a semi-Mediterranean climatic zone and has relatively cold, moist winters and hot dry summers. A majority of the 856-acre Park supports forested hills that are dominated by conifers with scattered oaks. The combination of hot dry summers (summers range from an average 71°F to an average of 87°F), wind, topography, and vegetative fuels could increase hazards associated with wildland fires. This issue will be addressed in greater detail in Section 4.6.4, Environmental Impacts and Mitigation Measures.

The Park lies within the foothills of the Sierra Nevada Mountain Range. Two fundamental groups of rocks are recognized in the Sierra foothills, the "Bedrock Series" and the "Superjacent Series." Serpentine rock is known to occur within Nevada County but does not occur within the Park (DPR 2009, Clark 1970).

Various roads and State Routes (SR) occur adjacent to and nearby the Park. East Empire Street traverses the Park in an east-west direction. North of Empire Street, SR 174 traverses the Park from the northwest to southeast and then extends along the eastern boundary of the Park and the Union Hill area. Two additional SRs are located in the vicinity of the Park, SR 49 and SR 20 (see Section 4.11, Transportation, Circulation, and Traffic, for additional information regarding circulation within the vicinity of the Park).

Historic gold mining operations at the Park represent a potential source of soil and groundwater contamination. Historic mining operations have left behind pockets of mine waste rock and mill tailings containing Potential Constituents of Concern (PCOC) (see Section 4.4 for an in-depth discussion of mining history at the Park).

The land uses surrounding the Park include open space, residential, and limited commercial and industrial operations. Union Hill Elementary School is approximately ¼ mile from the Park

Nine municipal airports, private airfields, and heliports exist throughout Nevada County (Hometown Locator 2008; USGS 2006). Of these, two private heliports are within 2 miles of the Park – the Grass Valley Service Center Heliport and the Shaws Hill Heliport (Google Maps 2008).

Nevada County Air Park is located approximately 2.8 miles northeast of the Park, off Loma Rica Drive (Google Maps 2008). The Air Park has an adopted Master Plan, which identifies five safety areas. The Park’s property line is not located within any of the five air park safety areas, which extend a total of 5,000 feet from the runway surface (Nevada County 1992).

**4.6.1.2 Hazardous Materials Definition**

A material is considered hazardous if it appears on a list of hazardous materials prepared by a federal, state, or local agency, or if it has characteristics defined as hazardous by such an agency. A hazardous material is defined in Title 22 of the California Code of Regulations (CCR) as:

“...A substance or combination of substances which, because of its quantity; concentration; or physical, chemical, or infectious characteristics, may either:

1. Cause or significantly contribute to an increase in mortality or an increase in serious irreversible or incapacitating reversible illness; or
2. Pose a substantial present or potential hazard to human health or environment when improperly treated, stored, transported, or disposed of, or otherwise managed (CCR, Title 22 § 66260.10).”

Department of Toxic Substance Control (DTSC), under the authority of the California Environmental Protection Agency (Cal EPA), maintains a list of hazardous materials sites referred to as the Cortese List. The Park is listed as a Hazardous Waste and Substance Site in the DTSC Envirostor Database (Cal EPA 2009).

Chemical and physical properties that can cause a substance to be considered hazardous include toxicity, ignitability, corrosiveness, and reactivity. Factors that influence the health effects of exposure to hazardous materials include the dosage received, frequency of exposure, the way sensitive receptors (humans, wildlife, plants, and aquatic species) are exposed and individual susceptibility.

### **4.6.1.3 Discussion of Constituents of Concern at the Park**

Water sampling conducted by DPR at the Magenta Drain for the Regional Water Quality Control Board (RWQCB) on June 9, 2003 determined that the water contained aluminum, antimony, arsenic, barium, cadmium, chromium, cobalt, copper, iron, lead, manganese, mercury, nickel, thallium, vanadium, and zinc greater than cleanup goals and/or water quality objectives as described in the Central Valley Water Board's *Water Quality Control Plan for the Sacramento River and San Joaquin River Basins*, Fourth Edition (Basin Plan) (RWQCB 2007).

The Preliminary Endangerment Assessment (PEA), prepared by DPR for Department of Toxic Substance Control (DTSC), evaluated a portion of the Park roughly bounded by the Sand Dam to the west, Little Wolf Creek to the south, the former Cyanide Plant to the north and the stamp mill to the east (see Figure 2.0-4). Testing conducted for the PEA determined that soils contained arsenic, lead, mercury, and cadmium at concentrations above United States Environmental Protection Agency (U.S. EPA) Region 9 Residential Soil Preliminary Remediation Goals (PRGs) (DTSC 2006).

Surface Water Monitoring conducted during the 2007/2008 wet season for the Conveyance Corridor indicated that dissolved metal concentrations for aluminum, cadmium, copper, lead, and zinc exceeded the EPA stormwater benchmarks (MFG 2008).

Table 4.6-1, Identified Constituents of Concern, defines COC found in the 10 Remediation Areas of the Park. COC are identified for each Remediation Area when the concentrations of PCOC exceed screening levels for protection of human health or water quality objectives. Residential CHHSLs have been used to identify COC in soil for the Mine Yard and Stamp Mill, Historic Grounds, and Residences and Residences' Yards, while the commercial/industrial CHHSLs or industrial PRG for lead and cyanide have been used for the other Remediation Areas. EPA storm water benchmarks or Basin Plan water quality objectives have been used to identify COC for waters. COC could potentially be discharged to waters of the state and cause, or threaten to cause, pollution or a nuisance, including impacts to beneficial uses of waters of the state. Release of COC could pose unacceptable risk to human health and the environment. Table 4.6-2, Definitions and Toxicity of Known Potential Constituents of Concern, provides additional information regarding PCOC at the Park.

### **4.6.1.4 Exposure Pathway**

An exposure pathway describes the route a COC could take from its source to its end point and how human and ecological receptors (wildlife, aquatic life, and plants) can come into contact with (or be exposed to) the COC along the route. An exposure pathway has five parts:

1. A source of COC, such as mine and mill related materials;

2. A way for the COC to travel to the point of contact (e.g., water transporting a COC downstream, or wind blowing a COC through the air);
3. A point of exposure or contact with the constituent;
4. A route of exposure such as ingestion (eating, drinking), inhalation (breathing), or dermal contact (touching); and
5. A receptor, such as humans or sensitive wildlife, birds, and plants.

The exposure pathway is considered to be complete when all five parts are present. Conversely, if any one of these five parts is not present, the exposure pathway is considered to be incomplete.

### **4.6.1.5 Interim Actions Completed at the Park**

Due to the presence of COC, several interim and time critical response actions have been conducted to protect the public, DPR personnel, and the environment.

- Interim actions at the Mine Yard and Stamp Mill Area (Remediation Area 1), which are described in Section 2.6.4.1;
- Interim actions in the Conveyance Corridor and Adit Project Area (Remediation Area 3), which are described in Section 2.6.4.3;
- Interim actions in the Residences and Residences' Yards Area (Remediation Area 9), which are described in Section 2.6.4.9;
- Interim Actions along trails sections (Remediation Area 10) that are described in Section 2.6.4.10;
- Interim exclusionary, closure, and notice actions with the Sand Dam (Remediation Area 4), Magenta Drain (Remediation Area 6), and Osborne Hill Trails areas that are described in Sections 2.6.4.4, 2.6.4.6, and 2.6.4.10, respectively; and
- Interim and time critical response actions at the Red Dirt Pile, pursuant to the Joint Order discussed in Section 2.3.3.4, above (DTSC 2007, DPR 2008).

**TABLE 4.6-1  
IDENTIFIED CONSTITUENTS OF CONCERN**

Potential Constituents of Concern	Remediation Areas									
	Mine Yard and Stamp Mill (Area 1)	Cyanide Plant (Area 2)	Conveyance Corridor and Adit Project (Area 3)	Sand Dam (Area 4)	Historic Mine and Mill Areas (Area 5)	Magenta Drain (Area 6)	Stacy Lane Pond (Area 7)	Historic Grounds (Area 8)	Residences and Residences' Yards (Area 9)	Trails (Area 10)
Aluminum	SW	SW	SW							
Antimony										
Arsenic	S	S, SW	S, SW	S	S	W	S	S	S	S
Barium										
Cadmium	S	S, SW	S, SW	S	S			S	S	S
Chromium										
Cobalt										
Copper		SW	SW			W				
Cyanide										
Iron	SW	SW	SW			W				
Lead	S	S, SW	S, SW	S	S	W		S	S	S
Manganese		SW	SW			W				
Mercury	S	S, SW	SW							
Nickel										
Thallium										
Vanadium										
Zinc	SW	SW	SW			W				

**Key:**

S = Soils (where concentration of at least one soil sample within the Mine Yard, Residences and Historic Grounds Remediation Areas exceeded Residential CHHSLs and at least one soil sample within other Remediation Areas exceeded Commercial/Industrial CHHSLs or Industrial PRG for lead and cyanide).

SW = Storm Water Samples (where concentration of at least one sample exceeded EPA Storm Water Benchmarks).

W = Water Sample (where concentration of at least one water sample from the Magenta Drain exceeded Basin Plan Water Quality Objectives).

**TABLE 4.6-2**  
**DEFINITIONS AND TOXICITY OF POTENTIAL CONSTITUENTS OF CONCERN**

<b>Potential Constituents of Concern</b>	<b>Definition</b>	<b>Toxicity</b>
<b>Aluminum</b>	Aluminum is a metallic element noted for its thermal and electrical conductivity.	Not harmful unless prolonged high dose exposure. The toxicity of this element is related to overexposure and is linked to reduced skeletal mineralization in infants.
<b>Antimony</b>	Antimony is a metallic element frequently used in alloys and medicine.	Chronic exposure can cause headache, sleeplessness, dizziness, metallic taste, ulcers, weight loss, nausea, vomiting, diarrhea, impairment of sense of smell and tightness of chest. Acute exposure can cause gastrointestinal pain, loss of appetite, itching, skin eruptions, and irritation of the skin, eyes, nose and throat.
<b>Arsenic</b>	Arsenic is a metallic element having three allotropic forms, yellow, black, and gray and is used in insecticides and weed-killers.	Through ingestion, inhalation and skin permeation, arsenic can cause minor to serious health effects. Inorganic arsenic compounds are known cancer-causing compounds. Non-cancer effects from arsenic exposure include irritation of the eyes, nose and bronchi, vascular disorders (hemolysis), neurological disturbances, adverse reproductive effects, and liver or kidney damage.
<b>Barium</b>	Barium is a malleable metallic element that occurs naturally in combination with other metallic elements. Barium and its compounds are used in the drilling and medical industries.	Barium is typically found very often as a late-state vein-filling material and also tend to be ubiquitous in many areas. Barium is commonly used in X-ray analysis of the digestive tract.
<b>Cadmium</b>	Cadmium is a malleable metallic element that is used in the production of protective plating and bearing metals.	Repeated or long-term exposure to cadmium dust may cause loss of sense of smell, ulceration of the nose, shortness of breath, kidney damage or mild anemia, and an increase in the rate of prostate cancer in men. Inhalation symptoms can range from irritation of the nose and throat at low exposure to death at very high exposure, with varying symptoms in between. Ingestion can result in nausea, vomiting, diarrhea and abdominal cramps. Toxicity is most

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Potential Constituents of Concern	Definition	Toxicity
		frequently associated with inhalation.
<b>Chromium</b>	Chromium is a metallic element found organically only in combination and used in alloys and electroplating.	Chromium is not toxic, symptoms to elevated levels can result in skin rash, pulmonary changes. Various chromium compounds (typically hexavalent chromium), are known carcinogens. However, these forms are not typically present in mining waste.
<b>Cobalt</b>	Cobalt is a silver or gray ferromagnetic metal. A magnetic metallic element related to iron and nickel and used in alloys.	Cobalt can be absorbed through ingestion, inhalation, or through the skin and is toxic at high concentrations.
<b>Copper</b>	Copper is a common metallic element that is a conductor of heat and electricity.	A low level of toxicity is associated with overexposure to copper, which can be especially damaging to marine life. Short term exposure to elevated copper can cause chills and stuffiness of the head and eye irritation, discoloration and damage. Long term exposure may cause skin irritation and discoloration of the skin and hair.
<b>Cyanide</b>	Cyanide is usually found joined with other chemicals to form compounds. Depending on local environmental conditions cyanide in soil may occur bonded with numerous metals. Free cyanide rapidly degrades upon oxidation at pH ranges typically measured in outdoor settings.	Exposure to low levels of cyanide may result in breathing difficulties, chest pains, nausea and vomiting, blood changes, headaches, and enlargement of the thyroid gland. If low level exposure is long-term, paralysis can occur. Exposure to high levels for a short time can harm the brain and heart, and may cause coma and death. Skin contact can irritate and produce sores, Cyanide is not a carcinogen.

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<b>Potential Constituents of Concern</b>	<b>Definition</b>	<b>Toxicity</b>
<b>Iron</b>	Iron is a heavy malleable and ductile metallic element that rusts easily. Iron is used in most metals and is vital to many biological processes.	Exposure to high concentrations of iron oxide dust can cause changes in the lungs. Liver failure can result from ingesting high concentrations of iron resulting in death.
<b>Lead</b>	Lead is a soft malleable but inelastic metallic element found in naturally occurring combinations. Lead is used in shields against radioactivity and for piping.	Short term exposure to elevated lead may cause decreased appetite, headache, insomnia, muscle and joint pain, colic and constipation. Long term exposure may cause weakness, weight loss, nausea, vomiting, constipation, pigmentation of the gums, severe headache and abdominal cramps, delirium, convulsions and coma..
<b>Manganese</b>	Manganese is a brittle metallic element that resembles iron in its properties but is not magnetic.	Manganese has a lower toxicity than many other common metals, but prolonged exposure to manganese compounds is associated with impaired motor skills. Short term inhalation or ingestion may cause chills, fever, vomiting, cough, weakness and aching
<b>Mercury</b>	Mercury is a heavy metallic element that is liquid at normal temperatures and is often used in scientific instruments.	Exposure at low levels can cause tremors, changes in vision or hearing, insomnia, weakness, difficulty with memory, headache, irritability, nervousness, and acrodynia. Exposure to mercury at high levels can cause neurologic damage and damage to a developing fetus.
<b>Nickel</b>	A ductile metallic element that is resistant to corrosion. Nickel is used in alloys and as a catalyst.	Inhalation of high concentrations may cause respiratory irritation and pneumonitis and possibly lung and sinus cancer. Skin contact may cause skin irritation.

Potential Constituents of Concern	Definition	Toxicity
Thallium	Thallium is a metallic element that resembles lead in its physical properties and is used in insecticide.	Inhalation, ingestion or skin exposure can be very toxic and cause a variety of symptoms. Liver, kidney, neurologic damage and death can occur from prolonged or acute exposure.
Vanadium	Vanadium is a malleable and ductile metallic element found organically in mineral combinations. Vanadium is used in alloys, such as steel.	Short term exposure may cause irritation of the eyes, nose, throat and respiratory tract, including bronchitis. Repeated exposure may cause chronic bronchitis or allergic skin rash..
Zinc	Zinc is a crystalline metallic element that occurs abundantly in many minerals. Zinc is a micronutrient for many organisms, and is used as a protective coating for iron and steel.	Flu like symptoms may occur from exposure to long- term exposure. Zinc is often a major constituent of cold-prevention medications.

**4.6.2 REGULATORY SETTING**

Laws and regulations governing environmental hazards and hazardous materials can originate with federal or state regulatory agencies, but are generally implemented and enforced at the local or regional level. Most hazardous materials regulation and enforcement in the County is managed by the Nevada County Department of Environmental Health (NCDEH); extensive or multi-jurisdictional cases are referred to the RWQCB or DTSC. Situations involving air quality, asbestos abatement, or toxic air contaminants would be referred to the NSAQMD and both the federal and state Occupational Safety and Health Administrations (OSHA). The Office of Emergency Services requires immediate notification of any inadvertent discharge of any hazardous material, in accordance with the spill reporting provision of the state toxic disaster contingency plan. Reporting requirements and response for hazardous material discharges are specified in the California Water Code Division 7, Chapter 4, Article 4, Sections 13260-13274.

**4.6.2.1 Federal**

**U.S. Environmental Protection Agency**

The USEPA is the federal agency responsible for enforcement and implementation of federal laws and regulations pertaining to hazardous materials. The legislation includes the Resource Conservation and Recovery Act of 1986 (RCRA), the Superfund Amendments and Reauthorization Acts of 1986 (SARA), and the Comprehensive Environmental Response, Compensation and Liability

Act (CERCLA) of 1980. The federal regulations are primarily codified in Title 40 of the Code of Federal Regulations (40 CFR). The USEPA provides oversight and supervision for site investigations and remediation projects, and has developed land disposal restrictions and treatment standards for the disposal of certain hazardous wastes.

### **4.6.2.2 State**

#### **California Department of Transportation**

Caltrans manages interregional transportation, including management of construction activities within or above the California highway system. In addition, Caltrans is responsible for permitting and regulating the use of state roadways. The proposed Project area includes roadways that fall under Caltrans' jurisdiction (e.g., I-80, SR 20/49, and SR 174). Caltrans requires that permits be obtained for transportation of oversized loads and transportation of certain materials, and for construction-related traffic disturbances. Caltrans regulations would apply to the transportation of oversized loads on state roadways (e.g., I-80, SR 20/49 and SR 174) associated with the construction of the Project (ESA 2008).

#### **California Highway Patrol and the California Vehicle Code**

The Hazardous Materials Transportation Act (HMTA) is the federal legislation that regulates transportation of hazardous materials. The HMTA regulations are enforced by the California Highway Patrol (CHP). Common carriers of hazardous materials are licensed by the CHP, pursuant to the California Vehicle Code (CVC), Section 32000. Section 32000 requires licensing of every motor (common) carrier who transports, for a fee, in excess of 500 pounds of hazardous materials at one time, if not for hire, who carries more than 1,000 pounds of hazardous material of the type requiring placards. Other relevant sections of the CVC include:

- Sections 31303 through 31309 regulate the highway transportation of hazardous materials and hazardous waste, route restrictions, and the use of placards. CVC Section 31303 requires hazardous materials to be transported on state or interstate highways that offer the shortest overall transit time possible.
- Sections 31600-31620 regulate the transportation of explosive materials.
- Sections 32050-32053 regulate the licensing of carriers of hazardous materials and include notification requirements.
- Sections 32100-32109 establish special requirements for the transportation of substances presenting inhalation hazards and poisonous gases.

- Sections 34000-34100 establish requirements for transporting flammable and combustible liquids over public roads and highways (DMV 2008).

### **Central Valley Regional Water Quality Control Board**

The Park is located in the jurisdiction of the Central Valley RWQCB. The RWQCB is authorized by the California Porter-Cologne Water Quality Act of 1969 to implement water quality protection laws. The RWQCB provides oversight for sites where the quality of groundwater or surface waters is threatened, and has the authority to require investigations and remedial actions.

### **Clean-Up and Abatement Order, Imminent and/or Substantial Endangerment Determination and Partial Consent Order**

The Project Proponents have entered into a Clean-up and Abatement Order, Imminent and/or Substantial Endangerment Determination and Partial Consent Order (Joint Order) with the DTSC and RWQCB, which requires the Project Proponents to remediate COC at the Park (see Section 2.3.3.3 and Appendix B for additional details).

### **Department of Toxic Substances Control**

DTSC protects public health, public safety and the environment from hazardous waste and hazardous substances works in conjunction with the USEPA to enforce and implement specific laws and regulations pertaining to hazardous wastes. The California legislation, for which DTSC issues permits and regulates hazardous waste from generation to disposal, cleanup and recycling under has primary enforcement authority, includes the Hazardous Waste Control Act (HWCA) and its federal counterpart, the Resource Conservation and Recovery Act. DTSC also takes action and oversees emergency and other hazardous substance cleanups under the Hazardous Substance Account Act (HSAA), the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), and other applicable laws. Most state DTSC hazardous waste regulations are contained in Title 22 of the California Code of Regulations (22 CCR), which also refers to and incorporates other relevant regulations such as worker safety requirements. DTSC generally acts as the lead agency for overseeing soil cleanup projects, and DTSC establishes cleanup and action levels for subsurface contamination that are equal to, or more restrictive than, protect as well as or better than, federal levels.

## **Empire Mine State Historic Park Resource Management, General Development Plan, and EIR**

Policy Number 10 of the resource management goals at the Park requires:

“Fire Protection – a fuel reduction zone is presently located near portions of the unit boundary for fire protection. This zone shall be maintained in order to retain its effectiveness. High concentrations of dead plant material shall be removed wherever they present a fire hazard. This will help protect both cultural and natural resources. All Fuel reduction measures shall be carried out in accordance with the Wildland Fuel Management Guidelines of the State Park System (DPR 1978).”

Mitigation Measure Number 10 Resource Management Plan and General Development Plan EIR provides, “fire mitigation measures will include a clearing of vegetation around the perimeter of the property, training Park personnel, and providing adequate equipment” (DPR 1978).

### **Office of Environmental Health Hazards Assessment**

While the Office of Environmental Health Hazards Assessment (OEHHA) does not promulgate environmental regulations directly, it is responsible for developing and providing risk managers in state and local government agencies with toxicological and medical information relevant to decisions involving public health. State agency users of such information include all boards and departments within Cal/EPA, as well as the Department of Health Services, the Department of Food and Agriculture, the Office of Emergency Services, the Department of Fish and Game, and the Department of Justice. OEHHA also works with Federal agencies, the scientific community, industry and the general public on issues of environmental as well as public health.

### **State-Adopted Fire Protection Regulations**

State-adopted fire protection regulations establish minimum wildfire protection standards to reduce the potential for wildland fires, decrease response times, and improve firefighter’s chances of extinguishing wildland fires. These regulations are applicable in all California Department of Forestry and Fire Protection (Cal Fire) service responsibility areas and would be followed at the Park.

### **State Fire Responsibility Act**

The State Board of Forestry classifies all lands within the state of California, pursuant to the State Fire Responsibility Act (SFR Act) based on factors such as cover, beneficial use of water from watersheds, probable damage from erosion, fire risks and hazards (PRC § 4125). These classifications are used to determine areas where the state or local agencies are primarily responsible for preventing and suppressing fires. The Park is designated as “Very High Fire Hazard Zone” (VHFHSZ), within a designated Local Responsibility Area. However, Cal Fire is responsible for fire containment and emergency medical service for all California Parks; therefore, the Park is within a State Responsibility Area.

### **Worker Health and Safety**

Worker health and safety in California is regulated by the California Occupational Safety and Health Administration (Cal-OSHA). California standards for workers dealing with hazardous materials are contained in Title 8 CCR and include practices for all industries (General Industry Safety Orders), and specific practices for construction, hazardous waste operations, and emergency response (ESA 2008).

#### **4.6.2.3 Local**

As a state agency, DPR is exempt from local regulations, including general plans, specific plans, and zoning ordinances, to the extent that such requirements conflict with DPR’s own General Plan for the Park (California Constitution Article XI Section 7). However, DPR must comply with the Park’s General Plan, as well as applicable state and federal rules and regulations governing historic buildings, structures, and districts and any local regulations applicable to impacts located outside the Park boundaries.

#### **Nevada County General Plan**

Objective 10.7 of the Safety Element of Nevada County General Plan contains the following requirement that would apply to the Project: “Provide means for the identification, safe use, storage, transport, and disposal of hazardous materials (Nevada County 1996).”

#### **City of Grass Valley General Plan**

Policy 7-SP of the Safety Element of the City of Grass Valley General Plan contains the following requirement that would apply to the Project: “Identify, maintain, and mark evacuation routes for use in case of disasters or emergencies.”

### 4.6.3 THRESHOLDS OF SIGNIFICANCE

The following thresholds have been prepared based on the State CEQA Guidelines (Appendix G) and Section 15065 of the State CEQA Guidelines. The Project would have a significant impact on hazards and hazardous materials resources if it will:

- Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials.
- Create a significant hazard to the public or the environment through reasonably foreseeable upset or accident conditions involving the release of hazardous materials into the environment.
- Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within ¼ mile of an existing or proposed school.
- Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code § 65962.5 and, as a result, would create a significant hazard to the public or the environment.
- Locate the Project within an airport land use plan or, where such a plan has not been adopted; within 2 miles of a public airport or public use airport; or within the vicinity of a private airstrip, in such a manner as to result in a safety hazard for people residing or working in the Project area.
- Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.
- Expose people or structures to a significant risk of loss, injury or death involving wildlands fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands.

### 4.6.4 ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

#### 4.6.4.1 Programmatic and Area-Specific EIR Impact Assessment

Program and area-specific environmental impacts are the same for hazards and hazardous materials; therefore, all Standard and Specific Project Requirements and Mitigation Measures identified for each impact below would apply to both Program and Area-Specific Actions.

To identify potentially significant impacts resulting from Program Actions, each proposed Program Action was assessed against the significance thresholds listed in Section 4.6.3. Table 4.6-2, Program and Area-Specific EIR Hazards and Hazardous Materials Impacts Analysis, indicates the potential significance of environmental impacts with implementation of Program and Project Actions are discussed in detail in Section 2.6.3 of the Draft PEIR. The discussion below lists each type of potential hazards and hazardous materials impacts and provides an analysis of potential impacts from each

Program Action, assesses the significance of each impact, and if necessary, identifies measures that would mitigate impacts to a level below significance.

### **Impact 4.6-1: Program Actions Could Create a Significant Hazard to the Public or the Environment Through the Routine Transport, Use, or Disposal of Hazardous Materials**

A hazard to the environment or public through the transport, use or disposal of hazardous materials could primarily occur in two situations. First, Program Actions that require the disturbance, transport, or disposal of soils containing COC. Second, Program Actions that require the use of hazardous materials such as fuels, oils or other vehicle fluids. Twelve of the thirteen remediation options would involve one or both of the above situations. These materials would be used for vehicles and equipment, such as generators and heavy equipment, and would be present in containers engineered for safe storage. Project Actions necessary to complete Program Actions that could also create these hazards include:

- Operation of heavy construction equipment;
- Transportation of contaminated soils leaving the Park and importation of clean fill material entering the Park;
- Mobilization and demobilization of heavy construction equipment to the Park;
- Demolition and/or removal of any structures, including temporary facilities; Importation of supplies and materials that could be used for remediation activities;
- Grading activities;
- Boring activities;
- Excavation activities;
- Blasting activities;
- Scarifying activities;
- Dredging and sediment removal;
- Removal of trees and other vegetation;
- Construction of ancillary structures, including utilities for either a temporary or permanent active water treatment facility;
- Construction and installation of permanent exclusion barriers; and/or
- Construction and maintenance of access roads.

Highways, railways, and commercial and military aviation routes constitute a major threat from transportation of hazardous materials because of the multitude of chemicals and hazardous substances transported along them. In Nevada County I-80 and SR 20,

49, 89, 174, and 267 are areas of concern, as are the Union Pacific railroad tracks, which roughly parallel I-80 (Cassella 2006).

As discussed above, twelve of the thirteen remediation options would incorporate one or more Project Actions that could potentially cause a substantial adverse impact to the environment from the release of hazardous materials. However, DPR has incorporated several Standard and Project Specific Requirements into the Project to minimize potential impacts.

Specific Project Requirement HAZMAT-1 requires that any excess native soil generated during remediation from areas exceeding cleanup goals and/or water quality objectives will be removed and properly disposed of on-site or transported to a licensed disposal facility in accordance with applicable federal, state, and local regulations. HAZMAT-1 also requires that prior to the start of Program Actions, the Project Proponents will prepare and submit a Materials Management Plan that will avoid or minimize risks to include protocols and procedures that will protect human health and the environment from the potential exposure to metals and dust during remediation and/or maintenance activities that cause disturbances to the native soil and/or mine and mill materials. The protocols and procedures that will be implemented will meet the specific applicable requirements of RWQCB and DTSC.

**TABLE 4.6-2  
PROGRAM AND AREA-SPECIFIC  
EIR HAZARDS AND HAZARDOUS MATERIALS IMPACTS ANALYSIS**

	Thresholds of Significance							
	Use of hazardous materials that could create a significant hazard to public or environment	Release of hazardous materials that could, through accident or upset, create a significant hazard to people or environment	Hazardous emissions, materials, or substances would be handled within 1/4 mile of an existing or proposed school	Located on an identified hazardous materials site	Location in the proximity of a public airport and could subject people to air safety hazard	Located in the proximity of a private airstrip and could subject people to air safety hazard	Conflict with an adopted emergency response or evacuation plan	Exposure of people or structures to wildlands fires
<b>CHARACTERIZATION</b>								
Characterization (e.g., soil sampling)	NI	LS	LS	LS	NI	NI	NI	NI
<b>EVALUATION</b>								
Evaluation (e.g., bench scale testing)	NI	LS	NI	LS	NI	NI	NI	NI
<b>INTERIM OPTIONS</b>								
Fences	NI	LS	NI	NI	NI	NI	NI	NI
Signs	NI	LS	NI	NI	NI	NI	NI	NI
Installation of Zeolite Treatment Cells	NI	LS	NI	NI	NI	NI	NI	NI
Installation of Straw Wattles	NI	NI	NI	NI	NI	NI	NI	NI
Use of soil tackifiers/binding agents	LS	NI	NI	NI	NI	NI	NI	NI
Construction of a temporary plant at the Magenta Drain Area	LS	LS	NI	NI	NI	NI	NI	LS
<b>REMEDIATION OPTIONS</b>								
Selective Removal and/or Replacement of Surface Materials	LS	LS	LS	LS	NI	NI	NI	LS
Complete Removal and/or Replacement of Surface Materials	LS	LS	LS	LS	NI	NI	NI	LS
Placement of Cover over Selected Areas	LS	LS	LS	LS	NI	NI	NI	LS
Use of Institutional Controls	NI	NI	NI	NI	NI	NI	NI	NI
Implement Active Treatment Measures.	LS	LS	NI	LS	NI	NI	NI	LS
Implement Passive Treatment	LS	LS	NI	LS	NI	NI	NI	NI

4.6 Hazards and Hazardous Materials

	Thresholds of Significance							
	Use of hazardous materials that could create a significant hazard to public or environment	Release of hazardous materials that could, through accident or upset, create a significant hazard to people or environment	Hazardous emissions, materials, or substances would be handled within 1/4 mile of an existing or proposed school	Located on an identified hazardous materials site	Location in the proximity of a public airport and could subject people to air safety hazard	Located in the proximity of a private airstrip and could subject people to air safety hazard	Conflict with an adopted emergency response or evacuation plan	Exposure of people or structures to wildlands fires
Measures								
In-Situ Cover Establishment and Stabilization	LS	LS	LS	LS	NI	NI	NI	LS
Stormwater Collection and Diversion Structures	LS	LS	NI	LS	NI	NI	NI	LS
Other Water Treatment Measures	LS	LS	NI	LS	NI	NI	NI	LS
Remediation of Structures	LS	LS	NI	NI	NI	NI	NI	NI
Use of Engineering Controls to Prevent Access	NI	NI	NI	NI	NI	NI	NI	NI
On-site Removal and/or Replacement of Material	LS	LS	LS	LS	LS	LS	LS	LS
Maintenance and Enhancement of Existing Cover	LS	LS	LS	LS	LS	LS	LS	LS

**Notes:**

PSU = Potentially Significant and Unavoidable Impact

PS = Potentially Significant Impact

LS = Less than Significant Impact – with Project Specific and Standard Project Requirements

LSM = Less than Significant Impact with Mitigation Incorporated

NI = No Impact

NA = Not Applicable

Components of the Materials Management Plan will avoid or minimize human health and environmental risks from the potential exposure to metals and dust resulting from materials disturbances. All work will be performed in accordance with a Site Health and Safety Plan. The Materials Management Plan will include, but not be limited to the following (where applicable):

- Requirement for staff to have appropriate training in compliance with 29 CFR, §§1910, et seq. (Occupational Safety and Health Standards), 1926 et seq (Safety and Health Regulations for Construction) and 8 CCR § 5192 (Hazardous Waste Operations and Emergency Response);
- Methods to assess risks prior to starting work;
- Procedures for the management and disposal of waste soils generated during construction activities or other activities that might disturb contaminated soil;
- Monitoring requirements;
- Storm water controls;
- Record keeping; and
- Emergency response.

Per Standard Project Requirement HAZMAT-2, all Project Actions will be suspended during heavy precipitation events (at least ½ inch of precipitation in a 24-hour period) or when heavy precipitation events are forecasted.

Per Standard Project Requirement HAZMAT-3, the Project Proponents will set up decontamination areas for vehicles and equipment at any entry/exit points and maintain the existing decontamination wash facility located in the Maintenance Yard. The decontamination areas will be designed to completely contain all wash water generated from washing vehicles and equipment. The Project Proponents will install BMPs, as necessary, to prevent the dispersal of wash water runoff beyond the boundaries of the decontamination area, including over spray.

With implementation of the above Standard and Specific Project Requirements the potential impacts from hazardous materials would be less than significant and will not require additional mitigation measures.

**Level of Significance Before Mitigation:** Less than Significant

**Mitigation Measures:** None Required

**Impact 4.6-2: Program Actions Could Create a Significant Hazard to the Public or the Environment Through Reasonably Foreseeable Upset and Accident Conditions Involving the Release of Hazardous Materials into the Environment**

Program Actions would use limited quantities of miscellaneous hazards substances, such as gasoline, diesel fuel, hydraulic fluid, solvents, oils, etc., to fuel and maintain vehicles and motorized equipment. An accidental spill of any of these substances could impact water and/or groundwater quality. Depending on the relative hazard of the material, if a spill were to occur of significant quantity, the accidental release could pose a hazard to DPR staff, construction workers, and the public, as well as the environment. In addition, as illustrated in Table 4.6-2, above, COCs are known or have a potential to exist at all Remediation Areas. The type and degree of COC is dependent on the particular Remediation Area. Project Actions involving the use of hazardous substances or disturbance of soils necessary to complete Program Actions include:

- Operation of heavy construction equipment;
- Mobilization and demobilization of heavy construction equipment to the Park;
- Demolition and/or removal of any structures, including temporary facilities;
- Importation of supplies and materials that could be used for remediation activities;
- Grading activities;
- Boring activities;
- Excavation activities;
- Blasting activities;
- Scarifying activities;
- Dredging and sediment removal;
- Stormwater BMP installation and maintenance activities;
- Removal of trees and other vegetation;
- Construction of ancillary structures, including utilities for either a temporary or permanent active water treatment facility;
- Construction and installation of permanent exclusion barriers; and/or
- Construction and maintenance of access roads.

To avoid creating a significant hazard to the public or the environment through reasonably foreseeable upset and accidental conditions involving the release of hazardous materials into the environment, the Project Proponents will comply with Standard and Specific Project Requirements HAZMAT-1 through 3, which are discussed in detail under Impact 4.6-1, above.

With implementation of the above Standard and Specific Project Requirements, potential impacts from hazardous materials would be less than significant and will not require additional mitigation measures.

**Level of Significance Before Mitigation:** Less than Significant

**Mitigation Measures:** None Required

**Impact 4.6-3: The Project Could Emit Hazardous Emissions or Handle Hazardous or Acutely Hazardous Materials, Substances, or Waste Within ¼ Mile of an Existing or Proposed School**

Union Hill Elementary School is located approximately ¼ mile from the Park. Exposure levels of toxic air contaminants generated by Program Actions were analyzed and addressed in Section 4.2 of the Draft PEIR in addition to the analysis provided below.

As illustrated in Table 4.6-2 above, COC are known or have a potential to exist at all Remediation Areas. The type and degree of COC is dependent on the Remediation Area. Project Actions include off-site transport of soils which could contain COC. In the event that Program Actions require transportation of contaminated soil off-site, the Standard and Specific Project Requirements discussed under Impact 4.6-1 (HAZMAT-1 through -3) will be incorporated into the Project. Project Actions necessary to complete Program Actions that could emit hazardous materials include:

- Operation of heavy construction equipment;
- Transportation of contaminated soils leaving the Park and importation of clean fill material entering the Park;
- Mobilization and demobilization of heavy construction equipment to the Park;
- Demolition and/or removal of any structures, including temporary facilities;
- Importation of supplies and materials that could be used for remediation activities;
- Grading activities;
- Boring activities;
- Excavation activities;
- Blasting activities;
- Scarifying activities;
- Dredging and sediment removal;
- Stormwater BMP installation and maintenance activities;
- Removal of trees and other vegetation;

- Construction of ancillary structures, including utilities for either a temporary or permanent active water treatment facility;
- Construction and installation of permanent exclusion barriers; and/or
- Construction and maintenance of access roads.

With implementation of Standard and Specific Project Requirements HAZMAT-1 through 3, the potential impacts from hazardous materials would be less than significant and will not require additional mitigation measures.

**Level of Significance Before Mitigation:** Less than Significant

**Mitigation Measures:** None Required

**Impact 4.6-4: Be Located on a Site Which is Included on a List of Hazardous Materials Sites Compiled Pursuant to Government Code § 65962.5 and, as a Result, Would Create a Significant Hazard to the Public or the Environment**

The Park is included on a current site cleanup list of hazardous materials sites compiled by DTSC pursuant to Government Code § 65962.5 (i.e., Cortese List). The Park has identified areas where both soil and surface water have been impacted by metals, see Table 4.6-2 above. The Project is part of the ongoing assessment and response efforts at the Park designed to prevent significant hazards to the public or environment from contaminants related to past mining operations.

To reduce environmental impacts Standard and Specific Project Requirements HAZMAT-1 through 3, discussed in detail in Impact 4.6-1 (above), will be incorporated into the Project.

Implementation of the Standard and Specific Project requirements listed above would meet the requirements of DTSC and RWQCB as well as reduce any impact to the public and the environment to a less than significant level (DPR 2008).

**Level of Significance Before Mitigation:** Less than Significant

**Mitigation Measures:** None Required

**Impact 4.6-5: Expose People or Structures to a Significant Risk of Loss, Injury or Death Involving Wildland Fires, Including Where Wildlands are Adjacent to Urbanized Areas or Where Residences are Intermixed with Wildlands**

The Park is located within a forested area, is bounded on the east, west, and south sides by private land, much of it containing homes on large lots in wooded areas. Figure 4.6-1, Wildland Fires, displays areas of substantial forest fire risk in relation to the Park. All structures within the Park, and many homes and their occupants in the surrounding area could be at immediate risk if a fire started in or migrated through the Park. In the event of a fire, people using the park trail system could be trapped and in danger of being harmed. Program Actions, and the Project Actions necessary to implement these actions, could increase this fire danger through increased heavy equipment use, or other actions that could spark a fire. Project Actions that would increase this risk include:

- Operation of heavy construction equipment;
- Transportation of contaminated soils leaving the Park and importation of clean fill material entering the Park;
- Mobilization and demobilization of heavy construction equipment to the Park;
- Demolition and/or removal of any structures, including temporary facilities;
- Grading activities;
- Boring activities;
- Excavation activities;
- Blasting activities;
- Dredging and sediment removal;
- Stormwater BMP installation and maintenance activities;
- Removal of trees and other vegetation;
- Construction of ancillary structures, including utilities for either a temporary or permanent active water treatment facility;
- Construction and installation of permanent exclusion barriers; and/or
- Construction and maintenance of access roads.

If a fire occurs during implementation of the Project, Cal Fire has primary jurisdiction for fire suppression in units of the State Park System, including the Park (Cal Fire 2007). Three local fire protection agencies, including the Grass Valley Fire Department (GVFD), Nevada County Consolidated Fire District (NCCFD), and Ophir Hill Fire District (OHFD), provide service within the Grass Valley General Planning Area (Quad Knopf 1999). OHFD would likely respond first to a fire emergency at the Park (DPR 2009); however, firefighting units from any of the three local agencies could be the first

responders depending upon availability. DPR rangers would have primary responsibility for directing any necessary evacuations, designating routes of ingress, egress and staging areas for fire control, and for traffic control and public safety.

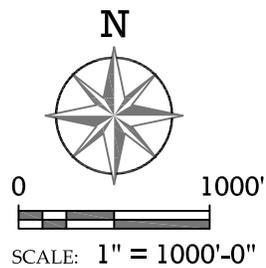
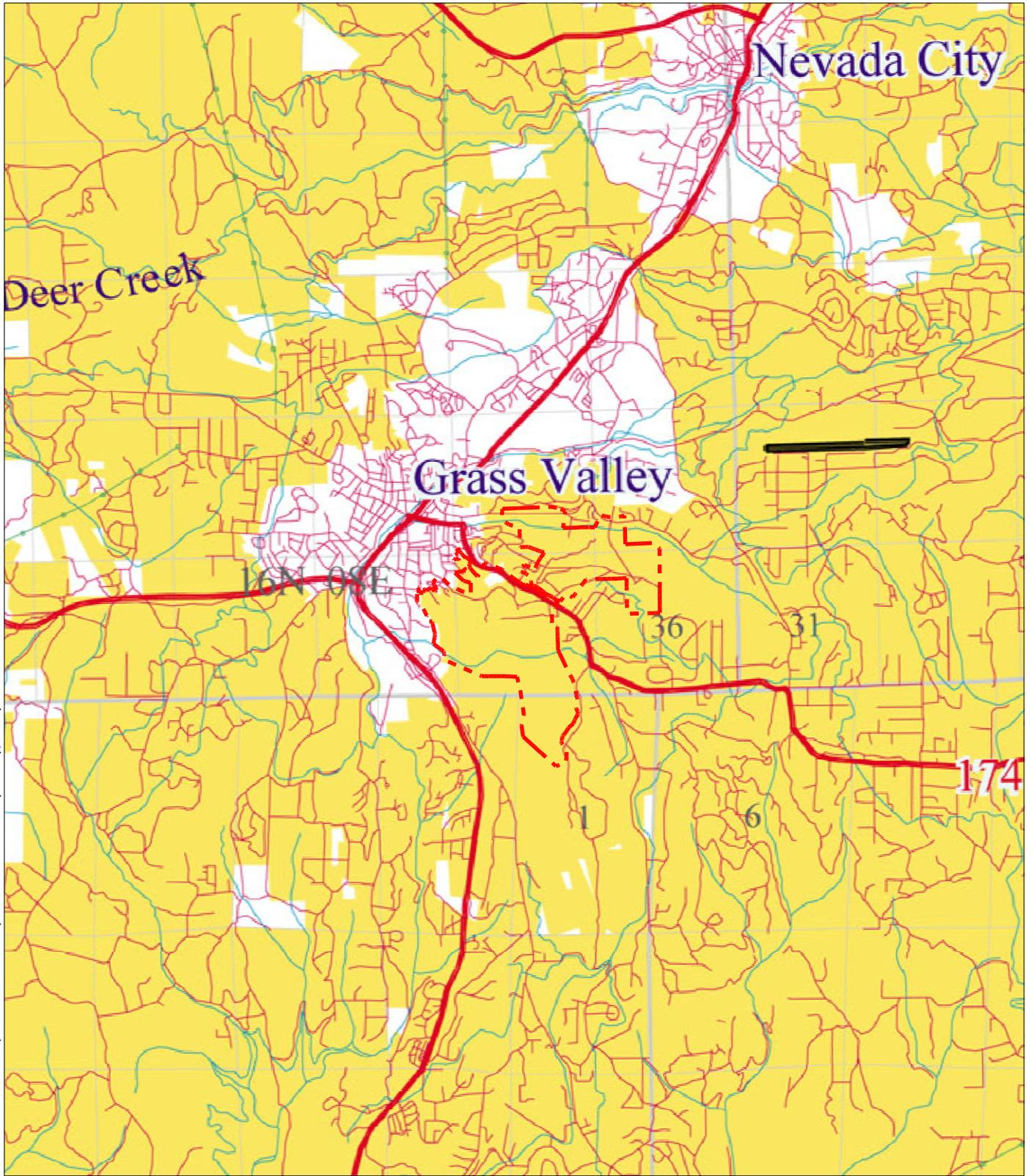
Standard Project Requirement HAZMAT-4 requires that prior to the start of Program Actions, the Project Proponents will develop a Fire Safety Plan to be submitted to the DPR Sector Superintendent for approval. HAZMAT-4 further requires that spark arrestors or turbo-charging, as well as fire extinguishers be required for all heavy equipment at the Park. Additionally, HAZMAT-4 requires that construction crews implementing Program Actions park their vehicles away from flammable or combustible materials, and that heavy equipment be parked over a non-combustible surface at the end of each workday. Pursuant to HAZMAT-4, DPR personnel will have a State Park radio at the Park, which allows direct contact with Cal Fire and a centralized dispatcher to facilitate the rapid dispatch of control crews and equipment in case of a fire. In the event that conditions are dry at a particular Remediation Area, HAZMAT-4 requires that a filled water truck be at the Park for all Project Actions involving equipment with the potential to start a fire.

Implementation of the Standard Project Requirement HAZMAT-4 would meet the requirements of DTSC and RWQCB as well as reduce any impact to the public and the environment to a less than significant level (DPR 2008).

**Level of Significance Before Mitigation:** Less than Significant

**Mitigation Measures:** None Required

SOURCE: California Department of Forestry and Fire Protection (January, 2006)



-  Empire Mine SHP Boundary
-  Wildland area that may contain substantial forest fire risks and hazards.
-  Very high fire hazard severity zone - AB 337

**Figure 4.6-1  
Wildland Fires**  
EMPIRE MINE SHP  
SITE CHARACTERIZATION  
AND REMEDIATION PROJECT

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#### **4.6.5 EFFECTS CONSIDERED NO IMPACT OR LESS THAN SIGNIFICANT WITHOUT PROJECT REQUIREMENTS**

The following describes environmental effects that were determined to be less than significant without Project Requirements or no impact; therefore, they are not discussed in detail in the Draft PEIR:

- Impact to Airports: The Project is more than 2 miles from any airport. No new structures or construction would result creating a new air safety hazard.

#### **4.6.6 FINDINGS**

For hazards and hazardous materials evaluated as part of this environmental document, the potential exists for an inadvertent release of fuel or other hazardous substances, resulting in a significant hazard to the public and the environment; ignition of a wildland fire, exposing people or structures to a significant risk of loss, injury, or death, as a direct or indirect result of Program Actions. However, implementation of Standard and Specific Project Requirements has been incorporated into the Project to eliminate or substantially lessen these potentially significant environmental effects to a less than significant level.