3.5 HAZARDOUS MATERIALS

3.5.1 BLM Hazardous Materials Management Program Goals

Hazardous materials are defined as any material that, because of its quantity, concentration, or physical or chemical characteristics, may pose a real hazard to human health or the environment. Hazardous materials include flammable or combustible material, toxic material, corrosive material, oxidizers, aerosols, and compressed gases.

The Hazardous Materials Management Program, a program that provides guidance supplemental to the National Contingency Plan (EPA 1994), typically supports and guides other programs or agencies to ensure that they adhere to all federal and state environmental laws and regulations regarding hazardous materials. The Hazardous Materials Management Program would review this document, the VPA RMP EIS and would also review all National Environmental Policy Act (NEPA) compliance documents produced for actions within the VPA for hazardous materials management environmental compliance. If the Hazardous Materials Management Program found within the VPA sites that contained hazardous substances, all surface and/or subsurface activities would be suspended until the VPA obtained direction from the appropriate federal and/or state regulatory agency. Monitoring would be carried out in response to assessment, cleanup, and restoration of a contaminated site. Monitoring would be coordinated with other programs to ensure that those program objectives were met.

The owners and operators of oil, gas, and coal bed methane (CBM) wells within the VPA are required to have emergency plans that cover potential emergencies including fires, employee injuries, chemical releases, and other potential hazards related to hazardous materials. Emergency plans typically contain phone numbers for all medical and emergency services and a list of responsible personnel to contact in the case of emergency. The plans would be posted at all emergency facilities, and employees would be trained in emergency response upon being hired by minerals exploration and development, and maintenance companies.

There are no approved hazardous waste disposal facilities on public lands within the VPA. All hazardous wastes are transported out of the VPA to approved disposal facilities that are constructed and operated in accordance with state and federal regulations. Oil and gas operators are required to comply with a Hazardous Substance Management Plan, as directed by the regulations of the Resource Conservation and Recovery Act (RCRA), which regulates transportation and disposal of hazardous wastes. All private business and organizations that handle hazardous materials would be required to comply with EPA regulations pertaining to the storage, use, transportation, and disposal of these materials.

The current BLM, Vernal Field Office declaration statement regarding hazardous materials management within the VPA is as follows:

> Less than 10,000 pounds of any chemical(s) from EPA's Consolidated list of Chemicals Subject to Reporting Under Title III of the Superfund Amendments and Reauthorization Act [SARA] of 1986, and less than the Threshold Planning Quantity [TPQ] of any extremely hazardous substance(s), as defined in 40 CFR 355, would be used, produced, transported, stored, disposed, or associated with the proposed operation annually. Vehicle and equipment fuel, lubricants, antifreeze and battery acid would be the only hazardous material used or associated with the proposed action. Risk of a release would be very low, and the

adverse environmental affect of a release would be minimal because it would be cleaned up immediately and disposed of in an approved waste disposal facility (BLM 2001).

3.5.2 Hazardous Materials Risks within the VPA

There are two types of hazardous materials risks: those risks associated with unauthorized releases, and other hazardous materials risks from controlled uses of materials listed under SARA and 40 CFR 355.

The remote nature of VPA lands creates an opportunity for illegal dumping of hazardous materials. These unauthorized releases could include materials from illegal drug laboratories or the illegal dumping of hazardous materials by private companies or individuals. When these types of dumps are encountered, the dumpsite is secured to ensure public safety, appropriate agencies are contacted, and clean up is conducted in accordance with established BLM plans and procedures. If the source responsible for the dumping is identified, that information would be released to the appropriate authorities for prosecution.

Controlled releases of hazardous materials could be the result of programs conducted by the Vernal Field Office, state or local governments, or operations of local businesses and industries. Authorized sources of hazardous materials could include oil and gas development, mineral extraction and processing operations, landfills and hazardous material disposal sites, aboveground and underground storage tanks, abandoned mine lands (AML), and small businesses.

3.5.2.1 Landfills and Hazardous Waste Disposal Facilities

There are no approved hazardous materials waste facilities on public lands in the VPA. However, a hazardous materials disposal site is located on private land near Altamont, Utah. BLM policy has been to either close or transfer ownership of all landfills that were historically on Vernal Field Office-administered lands. The Vernal Field Office is currently in compliance with this policy. In order to meet compliance, Red Wash and Jensen landfills were closed; ownership of the Vernal City/County landfill was transferred from BLM ownership; and dumps at the White River oil shale facility were covered and revegetated.

3.5.2.2 Storage Tanks

The use of aboveground storage tank (AST) and underground storage tank (UST) operations is regulated by the EPA and administered by the state of Utah. Operators are responsible for understanding and complying with the EPA regulations. Underground storage tanks within the VPA are concentrated primarily within the towns of Vernal and Naples, and along the Highway 40 and 191 travel corridors (UDERR 2004).

3.5.2.3 Small Businesses

The types of small businesses and organizations that generate or use hazardous materials include (but are not limited to) automotive shops, dry cleaning businesses, print shops, and hospitals. These operations are regulated by the EPA and administered by the state of Utah. It is the responsibility of the business/organization owner to understand and comply with EPA

regulations pertaining to hazardous materials used or hazardous wastes that are generated by that business or organization.

3.5.2.4 Oil and Gas

An increased risk of hazardous materials is an indirect effect of oil, gas, and mineral development. As oil and gas development increases so does the use, generation, and transportation of hazardous materials (Table 3.5.1). For descriptions of areas that may be affected by particular kinds of development, see Section 3.8, Mineral Resources.

3.5.2.5 Tar Sand

In the early 1980s, certain tar sand deposits in the Uinta Basin were divided into seven Special Tar Sand Areas (STSAs), as designated by the USGS under direction from Congress pursuant to the Combined Hydrocarbon Leasing Act of 1981. These STSAs are: (1) Pariette, (2) Sunnyside, (3) Argyle Canyon - Willow Creek, (4) Asphalt Ridge - Whiterocks, (5) Hill Creek, (6) P.R. Spring, and (7) Raven Ridge - Rim Rock (BLM 2002).

Tar sands may be extracted via in-situ methods or via surface mining, depending on the depth. In-situ extraction and processing may involve chemicals similar to those for conventional oil and gas (see Table 3.5.1). Hazardous materials associated with surface mining are those primarily used in vehicle and equipment operation, such as battery acid, fuels, lubricants, and antifreeze.

3.5.2.6 Gilsonite

Gilsonite mining operations within the VPA do not conduct mineral processing on the mine site. Therefore, the only hazardous materials used for Gilsonite mining are those associated with vehicle and equipment operation.

3.5.2.7 Oil Shale

No oil shale projects occur on BLM lands within the VPA; however, on SITLA lands, northeast of Bonanza (Sections 10 and 15 of T9S, R25E), is an oil shale project owned by Oiltech. This project is a pilot plant running processing tests of White River Oil Shale. Thus far, the plant has used no hazardous materials and has not been in commercial operation. However, Oiltech has developed a plan for a mining operation near the pilot plant (though the Utah Division of Oil, Gas and Mining [UDOGM] has not yet received a permit application for such a project), during which small amounts of benzene would be used. This substance would be controlled within the laws and regulations as described above.

TABLE 3.5.1. HAZARDOUS CONSTITUENTS POTENTIALLY USED OR PRODUCED DURING CONSTRUCTION, DRILLING, PRODUCTION, AND RECLAMATION OPERATIONS ASSOCIATED WITH OIL AND GAS PRODUCTION

Use	Material	Hazardous Constituents
Drilling Materials	Barite	Barium compounds, Fine mineral fibers
	Bentonite	Fine mineral fibers
	Caustic Soda	Sodium hydroxide
	Glutaraldehyde	Isopropyl alcohol

TABLE 3.5.1. HAZARDOUS CONSTITUENTS POTENTIALLY USED OR PRODUCED DURING CONSTRUCTION, DRILLING, PRODUCTION, AND RECLAMATION OPERATIONS ASSOCIATED WITH OIL AND GAS PRODUCTION

Use	Material	Hazardous Constituents
	Lime	Calcium hydroxide
	Mica	Fine material fibers
	Phophate Esters	Methanol
	Polyacrylamides	Acrylamide, Polycyclic aromatic hydrocarbons (PAHs), Petroleum distillates, Polycyclic organic matter (POM), “Fine mineral fibers
	Retarders	Fine mineral fibers
	Anionic Polyacrylamide	Acrylamide
	Polyanionic Cellulose	Fine mineral fibers
Cement/Plug	Anti-foamer	Glycol ethers
	Bentonite	Fine mineral fibers
	Calcium Chloride Flake	Fine mineral fibers
	Cellophane Flake	Fine mineral fibers
	Cements	Aluminum oxide, Fine mineral fibers
	Chemical Wash	Ammonium oxide, Glycol ethers
	Diatomaceous Earth	Fine mineral fibers
	Extenders	Aluminum oxide, Fine mineral fibers
	Fluid Loss Additive	Acrylamide, Fine mineral fibers, Naphthalene
	Friction Reducer	Fine mineral fibers, Naphthalene, PAHs, POM
	Mud Flash	Fine mineral fibers
	Retarder	Fine mineral fibers
	Salt	Fine mineral fibers
	Silica Flour	Fine mineral fibers
Fracturing Material	Biocides	Fine mineral fibers, PAHs, POM
	Breakers	Ammonium persulphate, Ammonium sulphate, Copper compounds, Ethylene glycol, Fine mineral fibers, Glycol ethers
	Clay stabilizer	Fine mineral fibers, Glycol ethers, Isopropyl alcohol, Methanol, PAHs, POM
	Crosslinkers	Ammonium chloride, Methanol, Potassium hydroxide, Zirconium nitrate, Zirconium sulfate
	Foaming Agent	Glycol ethers
	Gelling Agent	Benzene, Ethylbenzene, Methyl tert-butyl ether (MTBE), Naphthalene, PAHs, POM, Sodium hydroxide, m-Xylene, o-Xylene, p-Xylene
	PH buffers	Acetic acid, Benzoic acid, Fumeric acid, Hydrochloric acid, Sodium hydroxide

TABLE 3.5.1. HAZARDOUS CONSTITUENTS POTENTIALLY USED OR PRODUCED DURING CONSTRUCTION, DRILLING, PRODUCTION, AND RECLAMATION OPERATIONS ASSOCIATED WITH OIL AND GAS PRODUCTION

Use	Material	Hazardous Constituents
	Sands	Fine mineral fibers
	Solvents	Glycol ethers
	Surfactants	Glycol ethers, Isopropyl alcohol, Methanol, PAHs, POM
Production Product/Fuel	Natural Gas	n-Hexane, PAHs, POM
	Produced water/drill cuttings	Barium, Cadmium, Chromium, Lead, Manganese, Radium 226, Uranium, Other radionuclides
	Liquid hydrocarbons	Benzene, Ethyl benzene, n-Hexane, PAHs, POM, Toluene, m-Xylene, o-Xylene, p-Xylene
Fuel	Diesel fuel	Benzene, Cumene, Ethylbenzene, MTBE, Naphthalene, PAHs, POM, Toluene, m-Xylene, o-Xylene, p-Xylene
	Gasoline	Benzene, Cumene, Cyclohexane, Ethylbenzene, n-Hexane, MTBE, Naphthalene, PAHs, POM, Tetraethyl lead, Toluene, m-Xylene, o-Xylene, p-Xylene
	Jet A	Benzene, Cumene, Cyclohexane, Ethylbenzene, n-Hexane, MTBE, Naphthalene, PAHs, POM, Toluene, m-Xylene, o-Xylene, p-Xylene
	Propane	Propylene
Geophysical Survey Materials	Explosives, fuses, detonators, boosters, fuels	Aluminum, Ammonium nitrate, Benzene, Cumene, Ethylbenzene, Ethylene glycol, Lead compounds, MTBE, Naphthalene, Nitric acid, Nitroglycerine, PAHs, POM, Toluene, m-Xylene, o-Xylene, p-Xylene
Pipeline Material	Coating	Aluminum oxide
	Cupric sulfate solution	Cupric sulfate, Sulfuric acid
	Diethanolamine	Diethanolamine
	LP Gas	Benzene, n-Hexane, Propylene
	Molecular sieves	Aluminum oxide
	Pipeline primer	Naphthalene, toluene
	Potassium hydroxide solution	Potassium hydroxide
	Rubber resin coatings	Acetone, Coal tar pitch, Ethyl acetate, Methyl ethyl ketone (MEK), Toluene, Xylene
Emissions	Gases	Formaldehyde, Nitrogen dioxide, Ozone, Sulfur dioxide, sulfur trioxide
	Hydrocarbons	Benzene, Ethylbenzene, n-Hexane, PAHs, Toluene, m-Xylene, o-Xylene, p-Xylene
	Particulate Matter	Barium, Cadmium, Copper, Fine mineral fibers, Lead, Manganese, Nickel, POM, Zinc
Miscellaneous	Acids	Acetic anhydride, Formic acid, sodium chromate, Sulfuric acid

TABLE 3.5.1. HAZARDOUS CONSTITUENTS POTENTIALLY USED OR PRODUCED DURING CONSTRUCTION, DRILLING, PRODUCTION, AND RECLAMATION OPERATIONS ASSOCIATED WITH OIL AND GAS PRODUCTION

Use	Material	Hazardous Constituents
	Antifreeze, Heat Control, and Dehydration Agents	Acrolein, Cupric sulfate, Ethylene glycol, Freon, Phosphoric acid, Potassium hydroxide, sodium hydroxide, Triethylene glycol
	Batteries	Cadmium, Cadmium oxide, Lead, Nickel hydroxide, Potassium hydroxide, Sulfuric acid
	Biocides	Formaldehyde, Isopropyl alcohol, Methanol
	Cleaners	Hydrochloric acid
	Corrosion Inhibitors	4-4' Methylene dianiline, Acetic acid, Ammonium bisulfite, Basic zinc carbonate, Diethylamine, Dodecylbenzenesulfonic acid, Ethylene glycol, Isobutyl alcohol, Isopropyl alcohol, Methanol, Naphthalene, Sodium nitrite, Toluene, Xylene
	Emulsion Breakers	Acetic acid, Acetone, Ammonium chloride, Benzoic acid, Isopropyl Alcohol, Methanol, Naphthalene, Toluene, Xylene, Zinc chloride
	Fertilizers	Unknown
	Herbicides	Unknown
	Lead-free thread compound	Copper, zinc
	Lubricants	1,2,4-Trimethylbenzene, Barium, Cadmium, Copper, n-Hexane, Lead, Manganese, Nickel, PAHs, POM, Zinc
	Methanol	Methanol
	Motor Oil	Zinc compounds
	Paints	Aluminum, Barium, n-Butyl alcohol, Cobalt, Lead, Manganese, PAHs, POM, Sulfuric acid, Toluene, Triethylamine, Xylene
	Paraffin Control	Carbon disulfide, Ethylbenzene, Methanol, Toluene, Xylene
	Photoreceptors	Selenium
	Scale inhibitors	Acetic acid, Ethylene diamine tetra, Ethylene glycol, Formaldehyde, Hydrochloric acid, Isopropyl alcohol, Methanol, Nitrilotriacetic acid
	Sealants	1,1,1-Trichloroethane, n-Hexane, PAHs, POM
	Solvents	1,1,1-Trichloroethane, Acetone, t-Butyl alcohol, Carbontetrachloride, Isopropyl alcohol, MEK, Methanol, PAHs, POM, Toluene, Xylene
	Starting Fluid	Ethyl ether
	Surfactants	Ethylene diamine, Isopropyl alcohol, Petroleum naphtha

3.5.2.8 Phosphate

Phosphate deposits exist in the Uinta Basin within the Meade Peak Member of the Permian Park City Formation. Simplot Phosphate (formerly known as SF Phosphate) owns and mines a phosphate deposit that is located on private land within the VPA.

The Utah Division of Water Quality regulates Simplot Phosphate's phosphate mining operation, including the large tailings pond disposal area. Samples of tailings water taken indicate concentrations of phosphate, fluoride, total dissolved solids (TDS), and chromium to have been higher than the Utah Water Quality Standards (UDDW 2003). These standards are the most stringent of the applicable numeric criteria for Big Brush Creek, the nearby creek.

In 1996 Simplot (then SF Phosphate) performed a full-spectrum chemical analysis on a grab sample of the mine's tailings water. With the available data, it is not possible to know if the standards for cyanide, chromium, or zinc exceeded limits because the testing methods did not meet the accuracy levels for those determinations; however, the results indicate that TDS and phosphorus exceeded the limits. Although analyses of tailings solids show that the 1996 tailings solids are non-toxic, non-acid-forming, and non-saline, data showed higher levels of sulfates, hardness, calcium, and TDS in tailings water than those found in Big Brush Creek. This indicates that should tailings water migrate past the seepage collection system into Big Brush Creek, the creek's water would be degraded.

Open plan of operation UTU76097 involves a planned phosphate mill tailings disposal from Simplot Phosphate's milling of phosphate from patented mining claims onto mill sites.

3.5.2.9 Mineral Materials

Mineral materials include sand, gravel, and building stone. There is currently one open notice under the CFR 3809 BLM Surface Management regulations on public lands within the VPA. This notice, UTU66378, regulates a stone quarry that employs motorized vehicles to extract and haul the stone. Materials used for vehicle and equipment operation, such as battery acid, fuels, lubricants and antifreeze are the hazardous materials associated with surface mining.

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