



Map 3.19-1. Permitted sand, gravel, and scoria mines within and near the CD-C project area

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3.20 HEALTH AND SAFETY

Existing health and safety concerns in and adjacent to the project area include occupational hazards associated with natural gas exploration and operations, the operation of vehicles on improved and unimproved roads, natural gas pipeline operations, winter driving and working conditions, hunting-related firearms accidents, collisions with livestock and big game, and low-probability natural hazards associated with events such as landslides, flash-floods, range fires, or winter blizzards.

3.20.1 Worker Safety

Health and safety concerns within the existing project area are primarily the occupational hazards associated with oil and gas development and production activities. Operators and service companies working within the field are governed by the State of Wyoming Department of Employment Workers Occupational Health and Safety Administration (WOSHA) program. WOSHA has adopted the federal Occupational Safety and Health Administration (OSHA) general construction program rules and regulations and has special rules for oil and gas well drilling, well servicing, and special servicing operations.

The project workforce can be divided into two groups: those associated with drilling and completion activities and those involved in production operations. Drilling services employment categories had a non-fatal accident rate of 6.8 per 100 employees in 2004 compared to the operations support category non-fatal accident rate of 2.7 in the same year (U.S. Bureau of Labor Statistics 2007). Due to the high level of accidents (greater than three lost work-day injuries and illness, or LWDII) experienced in these occupations, oil and gas well drilling is one of the OSHA target industries in a cooperative effort between OSHA and industry partners to reduce accident and fatality rates. By 2009, these accident levels had dropped to 1.9 and 2.2, respectively. By comparison, all private industry workplaces reported a LWDII injury rate of 4.0 per 100 employees in 2009 (U.S. Bureau of Labor Statistics 2009).

Natural gas gathering, compression, stabilization, and transmission operations currently take place in the project area. Most natural gas transmission and gathering pipeline operations are regulated by the U.S. Department of Transportation (USDOT) Office of Pipeline Safety (OPS). In 2006 there were 133 onshore natural gas transmission and gathering line accidents reported nationwide, resulting in three fatalities and four injuries; in 2010 there were 92 such accidents including eight fatalities in the transmission line system (USDOT 2011). The OPS regulations require stringent system maintenance programs, emergency response planning, risk management planning, and individual personnel operations and maintenance training for each natural gas pipeline system.

3.20.2 Public Health and Safety

The project area is attractive to local residents as a recreation area for such pursuits as bird and big game hunting, rock-hounding, and seeking solitude. The area is also home for scattered rural families and their ranching operations.

The roads within the project area see a wide variety of use. BLM and county roads have historically been built to the appropriate standards for the anticipated use, as have the private roads in the area. Single-lane dirt roads provide access to individual well sites and are used primarily by site workers but may be used by bird and big game hunters. In an effort to protect their employees, as well as the public, the Operators have safe driving policies in place. The project area is intersected by I-80. This very high-volume interstate highway provides access to the project area for contractors, drilling crews, production personnel, and the general public. This topic is more fully discussed in **Section 3.16 Transportation**.

The OPS regulates some aspects of gas-gathering and transmission pipelines operated in the field and beyond. USDOT regulations also address the safe transportation of hazardous materials (i.e. condensate, crude oil, methanol, drilling mud and chemicals) on the national roads and highways. The gas produced in

the project area is generally “sweet,” meaning it does not contain hydrogen sulfide (H₂S), and therefore it does not pose a H₂S hazard to the general public or to site workers.

Fire is always a concern and the BLM maintains year-round restrictions on activities that are at risk of causing fire to occur. Those that are applicable to natural gas drilling and operations include the prohibition of the following actions: (1) Burn, ignite, or cause to burn any tire, wire, magnesium, or any other hazardous or explosive material, and (2) Operate any off-road vehicle on public lands unless the vehicle is equipped with a properly installed spark arrestor pursuant to 43 CFR 8343.1 (c). A standard operating procedure generally applied at pipeline and construction sites during the summer season includes using equipment with spark arrestors, welding in cleared areas only, and the ready availability of fire extinguishers or water trucks in the event fire occurs. The BLM requires extra precautions in the event of drought or high fire danger. These fire restrictions are imposed as conditions dictate. Current fire danger and restrictions can be found at the RFO or on the BLM website:

http://www.wy.blm.gov/wy_fire_restrictions/.

Local and state emergency responders are annually provided information regarding the location and nature of hazardous materials that are held in quantities in excess of their regulatory threshold planning quantity or 10,000 pounds, as appropriate. All Operators and their contractors are required to supply this information under the Community Right-to Know Laws (40 CFR 355 and 370, as amended). Each Operator has an Emergency Action Response Plan as well as access to the trained personnel and equipment needed to respond to releases of hazardous materials or other hazardous conditions in the project area.

3.20.3 Other Risks and Hazards

Any firearm-related accidents would occur primarily during hunting season. No data were available to estimate or discuss the likelihood of risk for gas-field workers to be injured by hunters.

3.21 WASTE AND HAZARDOUS MATERIALS MANAGEMENT

Numerous companies operate within the project area; all Operators and their contractors are responsible for compliance with all local, state, and federal regulations applicable to their operations for environmental protection. Different companies have different compliance philosophies, ranging from minimal compliance to compliance programs that exceed regulatory requirements.

3.21.1 Waste Management

The management of non-exempt hazardous and non-hazardous (solid) wastes is regulated under the Resource Conservation and Recovery Act (RCRA) (40 CFR Part 260-268) while the management of releases of hazardous materials into the environment is regulated under the Comprehensive Environmental Response, Compensation, and Liabilities Act (40 CFR Part 300-374). Oil and gas exploration, production, gas-gathering, processing wastes, and releases of hazardous materials into the environment are generally considered to be RCRA-exempt and are regulated by the WOGCC or WDEQ and the BLM. All wastes are to be treated or disposed of in an approved manner consistent with existing laws and regulations (Gold Book, BLM 2007c). Non-exempt wastes will not be mixed with exempt wastes. BLM Wyoming has established policy regarding the management of exploration and production wastes (WY 2012-007, November 15, 2011), and the applicable standards from the IM would be considered and evaluated at the time APDs or Sundry Notices are reviewed by the BLM. In addition, the WOGCC has promulgated rules regarding background ground water sampling in an effort to monitor potential water quality impacts from well drilling/completion and injection activities.

A number of permitted solid or hazardous waste sites in the project area are identified in the WDEQ Solid and Hazardous Waste Division database. These range from the historic Wamsutter landfill to active disposal facilities for specific gas-field operational areas.

Non-hazardous solid waste typically includes waste produced in oil and gas exploration, production, and gas-gathering, as well as processing wastes and releases of hazardous materials into the environment. They are considered RCRA-exempt. These materials are variously regulated by WDEQ, WOGCC, and the BLM. Buried materials may also be present in association with historic homestead locations. Non-hazardous solid wastes generated from operations are hauled to municipal landfills in Wamsutter, Rock Springs, and Rawlins.

Hazardous wastes are generated in association with some gas-processing operations in the CD-C project area. These wastes and disposal sites are permitted and managed in compliance with the WDEQ hazardous waste program regulations.

Non-hazardous trash and debris are collected in dumpsters or trash cages at individual well sites, compressor stations, construction sites, and man camps. Trash is also collected in individual containers or bags for off-site disposal. These waste materials are disposed of in accordance with state standards as imposed by the county sanitarian.

Drilling Mud – Portions of the project area have been producing natural gas and oil since at least 1958. Regulations and industry standards for the management of wastes have changed substantially since that time. Until the 1980s waste materials generated during drilling, production, and processing operations would typically have been buried near the point of generation within the field area. Reserve pit contents may have been buried at older producing or plugged-and-abandoned well sites. The disposal of these materials is now regulated and approved by the WOGCC and the BLM. More recently some of the Operators have recycled drilling mud between wells for re-use. This practice reduces the volume of material to be disposed of. Historically, the BLM required drilling pits to be fenced upon rig release and backfilled within six months of well completion. If a liner has been used in the reserve pit, any liner material must be removed to below ground-level before being covered. Completion fluids are also recycled to the extent possible to minimize waste disposal but are generally produced to an open pit onsite for disposal. Reserve-pit and well-completion wastes are generally classified by the EPA as “exempt non-hazardous” and are not regulated by the RCRA (40 CFR 261.4).

In the event **flaring or venting of natural gas** is required to facilitate safe operations, Operators must comply with the notification provisions of BLM Notice to Lessee (NTL)-4A, which allows the flaring of gas in emergencies for up to 30 days or 50 MMcf. Longer duration or higher-volume flaring events would require subsequent BLM approval. Operators must also follow WDEQ Air Quality and WOGCC rules.

Produced water within the project area is currently managed through the use of private and commercially permitted evaporation ponds and injection/disposal wells. These facilities have been permitted by the WOGCC, WDEQ, and the BLM as applicable. The specific permitting mechanism depends on facility ownership, source of produced water, and location. Historically, water may have been allowed to evaporate onsite using individual produced-water disposal pits; this practice is no longer common.

Sanitary wastes are disposed of in permitted septic systems for permanent and long-term temporary facilities such as offices and man camps. Portable toilets are provided for long-term construction, drilling, and completion operations; these wastes are hauled to municipal sewage-treatment plants for disposal.

3.21.2 Hazardous Materials Management

The affected environment for releases of wastes or hazardous materials includes air, water, soil, and biological resources that may be impacted by the release in the course of transportation, use, or storage of the material in construction or field operations. Areas that are particularly vulnerable to the release of

such materials include wetlands, water bodies, areas of shallow groundwater and areas where wildlife and humans could be directly impacted.

Hazardous materials are used in drilling, field development, construction, completion, and production operations. The BLM requires that NEPA documents list and describe any materials categorized as Hazardous or Extremely Hazardous that would be produced, used, stored, transported, or disposed of as a result of a proposed project (IM 1994-081, WY Information Bulletin 1997-011 and IM WY-94-059). This compilation for the CD-C project can be found in **Appendix K**. Operators are encouraged to substitute less-toxic yet equally effective products when available (BLM 2007c) in all phases of operations. Substitutions are not always available; therefore, it is acknowledged that hazardous materials may be used in the project area.

Numerous companies operate within the project area; each has a responsibility to comply with the state and federal regulations applicable to its operations. Different companies have different compliance philosophies, ranging from minimal compliance to compliance programs that exceed regulatory requirements. Each company is required to provide the RFO with an Emergency Response Plan that covers its operations within the RFO. These documents serve two purposes: to ensure that company personnel are aware of the need to notify the RFO in the event of an emergency involving hazardous substances, produced water, and/or hydrocarbons; and to verify that contingency planning for such an emergency is in place. Company documents regarding spill-response planning, Community Right-to-Know reports, Spill Prevention, Control, and Countermeasure (SPCC) plans, and documents containing other relevant information are maintained by the individual Operators.

3.21.3 Hazardous Materials Releases and Spill Response

The Operators have trained personnel and/or contractors as well as the equipment needed to respond to releases of hazardous materials in the project area. Wells in the project area are completed in a number of different hydrocarbon reservoirs and produce a variety of fluids including condensate and oil in addition to natural gas and water. There is potential for these produced fluids as well as materials brought in for operations such as fuel, lube oils, mud products, and completion fluids to be released into the environment. Releases of materials are reported to state and federal regulators as required. BLM NTL-3A is the appropriate mechanism for reporting spills (of hydrocarbons, produced water, or other hazardous materials), accidents, blowouts, or other undesirable events that occur from federal minerals or on BLM-managed surface; otherwise, spills of hydrocarbon, produced water, and/or hazardous materials are reported to WDEQ (Section 4 of Chapter 4 of WDEQ Wyoming Water Quality Rules and Regulations) and WOGCC (Section 3 of Chapter 4 of WOGCC Rules). Remediation of contaminated soils or off-site disposal of contaminated material is approved by the BLM prior to the management action. Operators must comply with the applicable provisions of the EPA's SPCC regulations found at 40 CFR 112. These regulations require secondary containment for mobile and non-mobile equipment as well as some transportation-related activities that contain oil in volumes greater than 1,320 gallons that could impact navigable waters of the U.S. in the event the material is released. This rule applies to compressor stations, drilling and production operations, as well as other activities within the project area. All Operators are required to have Spill Prevention Control and Countermeasure (SPCC) plans that would be implemented should there be an emergency or hazardous materials release.

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