Section 1.0
Introduction

1.1 INTRODUCTION

Energy Fuels Resources Corporation (Energy Fuels) proposes to construct and operate the Piñon Ridge Mill Facility (Mill Facility) to process uranium/vanadium ore mined from its existing nearby operations and from area mines owned and operated by other entities in order to produce both uranium oxide (U₃O₈) concentrate and vanadium oxide (V₂O₅) concentrate and to dispose of the resulting processing wastes in on-site tailings cells (the Proposed Action). The Property Boundary for the Proposed Action encompasses approximately 880 acres in Montrose County, Colorado (Site) and is located approximately 12 miles west of Naturita and approximately 7 miles east of Bedrock, along State Highway (SH) 90. The Site address is 16910 Highway 90, Bedrock, Colorado 81411 (see Figure 1.1-1).

The operating life of the Mill Facility is 40 years at a projected milling rate of 500 tons per day (tpd); however, the life could be extended with regulatory approval of additional tailings cells and evaporation ponds. In addition to the Mill, proposed facilities include tailings cells, evaporation ponds, an ore stockpile pad, access roads, and administration, maintenance and warehouse buildings. The Mill Facility is expected to employ up to 85 people and operate 24 hours per day, 350 days per year.

The Proposed Action would involve a milling operation that would begin with the receipt of the uranium/vanadium ore at the ore pad. The ore would be mixed with water and ground into a fine slurry, which in turn would be treated (i.e., leached) with sulfuric acid to dissolve the metals from the solid material. Uranium and vanadium would be recovered from the leach solution using a solvent extraction process and then precipitated as concentrates. The concentrates would be sealed in U.S Department of Transportation (USDOT) approved 55-gallon, steel drums and transported off-site for further enrichment and processing. The slurry containing the barren solids would be pumped to the lined tailings cells where the fine-grained solids would settle out of solution and the clarified solution would be pumped back to the Mill for reuse. The majority of the wastewater (i.e., raffinate) from the solvent extraction process would be recycled. The remaining raffinate would be disposed of in lined evaporation ponds. At the conclusion of milling, the mill buildings and equipment would be demolished and placed in the final tailings cell. In addition, the ore pad, evaporation pond, and other materials contaminated with radionuclides would be placed in the final tailings cell. The tailings cells would be capped with a radon soil barrier and an evapo-transpiration (ET) cover consisting of soil, rock, and vegetation. A detailed description of the Proposed Action is provided in Section 2.0. The potential uses of uranium include fuel for electric power generation, while the potential uses for vanadium include manufacturing of industrial chemicals, medical applications, and the formation of high strength alloy steels, amongst others.

Construction of the Mill Facility would commence following full regulatory approval, which is anticipated in early 2011, with milling operations following through approximately 2051. The operating life could be extended by an additional 10 years or more if economic conditions warrant. The company would initiate closure following the productive life of the Mill Facility.

Energy Fuels is a State of Colorado Corporation with offices in Nucla and Lakewood, Colorado and Kanab, Utah and is a wholly-owned United States subsidiary of Energy Fuels Inc., a publicly traded Canadian Corporation based in Toronto, Ontario. The principal business activity
Figure 1.1-1

General Location
of the company is mineral exploration, development, and mining of uranium and vanadium properties located in the states of Colorado, Utah, and Arizona. Energy Fuels has acquired property interests covering 12 former operating uranium mines and, since September 2006, has been taking steps to bring these former mines into production. In July 2007, Energy Fuels purchased the Site in Montrose County with the intent to license, construct, and operate the Mill Facility for processing uranium/vanadium ore from Energy Fuels' mines and mines operated by other entities.

The Colorado Department of Public Health and Environment (CDPHE) is the primary licensing authority for uranium mills in the State of Colorado pursuant to an agreement with the U.S. Nuclear Regulatory Commission (NRC) under Section 274 of the Atomic Energy Act of 1954, as amended. This Environmental Report (ER) has been prepared in compliance with the applicable regulations implemented by CDPHE for the licensing of uranium processing including 6 Colorado Code of Regulations (CCR) 1007-1, Parts 3, 4 and 18 (CDPHE, 2005a, 2005b, and 2001) and NRC Regulatory Guide (NUREG) 3.8 (NRC, 1982a). Where applicable, NUREG-1748 (NRC, 2003a) and other applicable guidance have been used to guide the preparation of this ER.

1.2 LOCAL MINING HISTORY

The Settlement of Paradox Valley. Paradox Valley, located in western Montrose County, Colorado, was named by surveyor A.C. Peale in 1875. Peale recognized the paradox in the way that the Dolores River ran perpendicular to the valley instead of parallel to the valley, as rivers usually do (Rockwell, 1965). "The result of this paradox is to leave the eastern two-thirds of the valley a desert. The western third of the valley likewise cannot be irrigated by the uncooperative river, but the springs which rise there in the valley and the creek which flows into it from the La Sal Mountains have made this area habitable" (Gramlich, 1908). Paradox Valley was part of the Ute Indian Reservation until September 1881 when it was opened for settlement. The part of Paradox Valley west of the Dolores River became a farming country while that portion east of the river was used as grazing land (Rockwell, 1965).

In the fall of 1877, Thomas Goshorn and Riley Watson were the first to settle in what is now known as West Paradox from the Blue Mountains of eastern Utah. In 1879, Frank Steele arrived in the valley bringing cattle, and Prescott Stevens relocated his family to the area in 1880, partnering with Steele to form the Stevens and Steele Cattle Company (Rockwell, 1965). The early years of settlement were colorful, to say the least, as "outlaws and men on the dodge" frequented the area “due to its proximity and quick access into the State of Utah and particularly the outlaw trail” (Greager, 1992). There were also disputes over water rights, cattle rustling, and claim jumping which resulted in gun fights and untimely deaths (Greager, 1992 and Rockwell, 1965).

The Cashin Mine, which was situated a few miles west of Bedrock on La Sal Creek, played an important role in the early history of Paradox Valley. Around 1895, a copper deposit was discovered in the area. By 1899, the Cashin Mine was in full operation, producing copper ore. The ore initially had to be transported to a mill 70 miles away in Placerville by horse freight wagons and pack-trains. The trip required approximately 6 days to complete. Eventually, a mill was built closer to the Cashin Mine. Coke ovens were built on Dry Creek near a coal mine, 4 miles west of Naturita, to supply coke for the Cashin Mine Mill. The copper boom, which lasted from 1899 to 1908, attracted many settlers to the area (Rockwell, 1965).
Late 1890’s to 1920’s. The beginnings of the uranium/vanadium industry revolved around the radioactivity research by French scientists, Antoine Henri Becquerel and Pierre and Marie Curie. It started in 1896 when Becquerel discovered that uranium emitted particles and energy as it decayed and concluded that it was radioactive. Soon after, Pierre and Marie Curie isolated radium from uranium ore and discovered that it could be utilized in the treatment of certain cancers. In 1900, Charles Poulot and another Frenchman named Voilleque conducted experimental work on extracting vanadium and uranium oxides from carnotite ores at the camp of the Cashin copper mine on La Sal Creek (Chenoweth, 1981). It was believed that the ore with which the Curies conducted their research was the carnotite ore that originated from the Colorado Plateau. These discoveries sparked a world-wide interest in the search for radioactive materials especially in southwestern Colorado and southeastern Utah, which would come to be known as the Uravan Mineral Belt.

By 1910, miners had developed operations along the Dolores and San Miguel rivers in western Colorado to mine carnotite ores which contained rich concentrations of uranium, vanadium, and radium. The Standard Chemical Company (Standard Chemical) established its headquarters at the old Coke Ovens, 4 miles west of Naturita, Colorado (Rockwell, 1965). Standard Chemical began acquiring mining claims in east Paradox Valley in 1910, including the Thunderbolt group of claims on the southwest side of the valley, which are part of the claim group to be known later as the Joe Dandy Camp (Hahne, 1989). In 1913, Standard Chemical purchased land in the San Miguel Valley, near the confluence of the San Miguel and Dolores rivers, east of Paradox Valley, to begin a concentrating mill, lab, and boarding house. The small town was named Joe Junior after the son of the company president.

The demand for radium got into full swing when the federal government entered the picture in 1913 by creating the National Radium Institute. Its primary objective was to conduct extensive experiments in radium therapy with special reference to the cure of cancer. During the “radium era” of 1913 to 1921, the chief fields of activity were at Long Park, situated on the north mesa above east Paradox Valley, the San Miguel Club Ranch near Joe Junior, and in Bull Canyon, which was reached by a trail up the south side of Paradox Valley and then down a long narrow canyon (Rockwell, 1965). The Bull Canyon ore was packed by burro to the top of Monogram Mesa (just southeast of the Piñon Ridge Site), where it was loaded on the Joe Dandy Tram. The ore buckets on the tram took the ore to the valley floor in east Paradox Valley. There, the ore wagons with six-horse teams would be loaded up, and the ore would be hauled to Placerville or Joe Junior for concentrating. With the increase in demand for radium, miners poured into the San Miguel Valley and Paradox Valley from the nearby town of Bedrock (Rockwell, 1965).

By 1919, four main companies produced 95 percent of the radium ore mined in Colorado: Standard Chemical operated along the lower San Miguel River, in Long Park and Bull Canyon; The Radium Luminous Material Corporation operated around Long Park; The Radium Company of Colorado operated in Long Park and Roc Creek; and The Carnotite Reduction Company operated near Gateway. Radium was also mined in Utah mainly around the Thompsons, San Rafael, and Henry Mountains mining districts.

Radium ore production came to a halt in 1922 when Union Minere du Haut Katanga of Belgium (Union Minere) announced that it had discovered a rich new source of ore containing uranium and radium in its mines in the Belgium Congo. This ore was 40 to 100 times more pure than the Colorado carnotite. With refineries in place before the announcement of the discovery, Union Minere easily cornered the radium market after the announcement. The Belgian monopoly
forced the American producers off the market. In 1923, Standard Chemical closed the Joe Junior Mill and camp.

Mining officials in the United States continued to study the carnotite’s vanadium content, which led to the use of vanadium as an alloy to strengthen steel. It was also found that vanadium was easily extracted from the carnotite mined in Colorado. Seeing the new market potential, in 1927, Union Carbide and Carbon Corporations purchased the United States Vanadium Company (USV) and made it a wholly-owned subsidiary. A year later they expanded holdings by purchasing the Joe Junior Mill and adjacent claims from Standard Chemical. Between 1934 and 1935, the assets of the Colorado Radium Company and the Radium Luminous Metals Company were acquired by the Vanadium Corporation of America (VCA) (Chenoweth, 1981). This was the beginning of the revival of the mining industry in the region.

1930's to 1945. Most of the established mines in the area were reopened by 1935 including mine operations near and within Paradox Valley at Longs Park, Bull Canyon, and Monogram Mesa. VCA built a new town and vanadium mill at Vancorum, west of Naturita. USV moved its vanadium processing plant from Rifle to the Joe Junior site in 1936, thus founding the townsite of Urravan (the name was derived from Uranium and Vanadium). North Continent Mines Company built a mill in the Slick Rock area, as did International Vanadium Corporation in Dry Valley, Utah. Many new mines were developed throughout the area during the 1930s and early 1940s. A small vanadium mill was built at Gateway, Colorado by Gateway Alloys, Inc. (Chenoweth, 1981).

The United States' entry into World War II in 1941 gave the vanadium industry new impetus, as vanadium alloy steel was used in tanks and other military applications. In order to stimulate the production of vanadium and other strategic metals, the federal government formed the Metals Reserve Company (Metals Reserve) in 1942. Metals Reserve began an ore purchasing program and two vanadium mills were constructed for the program by VCA and USV in Monticello, Utah and Durango, Colorado, respectively. The Metals Reserve program lasted from 1942 to 1944 and greatly stimulated vanadium mining and milling; however, vanadium mining all but ended in the area after the termination of the program (Chenoweth, 1981).

With the advancements that were taking place in the research and development of controlled nuclear fission technology, uranium became one of the most important components for military use and power generation. In August 1942, the U.S. Army Corps of Engineers’ (USACE) Manhattan Engineer District (MED) arrived in Uravan to begin reprocessing the vanadium tailings to recover uranium as part of a top-secret mission to develop the atomic bomb. This mission was referred to as the Manhattan Project.

The initiation of the Manhattan Project created strategic laborers out of uranium miners and millers. The project transformed the communities that they worked in into national security towns. In May 1943, the U.S government signed a top-secret contract with USV to operate plants in Uravan for the procurement of uranium. The uranium was extracted from vanadium tailings at Uravan and tailings were shipped in from other vanadium mills in the area in 1943 and 1944. This uranium was concentrated in Grand Junction and then shipped to military facilities where it was used to manufacture atomic bombs. The dropping of atomic bombs at Hiroshima and Nagasaki in August 1945 ended World War II (Amundson, 2002). The Uravan Mill remained open until October 1945 when both the mill and the town were closed. According to a confidential MED report, the best and most easily accessible uranium ore had already been mined. The federal government withdrew, closing and dismantling the plant (Amundson, 2002).
1945 to 1970. The federal government, with the advent of the Cold War, initiated a new and aggressive government uranium-buying program in 1946. With the program, came the Atomic Energy Commission (AEC), created by President Truman in October of 1946. The AEC’s objectives were to keep uranium mills, which were formerly used to process vanadium, in operation by developing a U.S. uranium reserve base and increasing production capabilities (Hahne, 1989). The AEC designed procurement programs that helped prolong programs implemented during wartime to ensure the post-war survival of the uranium industry. Additional details of these programs are presented in Appendix A, U.S. Regulatory History of Uranium Mills.

In response to the AEC programs, a prospecting boom occurred in 1947, which eventually led to the emergence of hundreds of small underground mine start-ups. The Uravan Mill reopened a year later. VCA procured its first uranium concentration for the mill at Naturita, Colorado in 1947. USV signed a contract for a mill in Rifle, Colorado. In the same year, the AEC established the Colorado Raw Materials office in Grand Junction, along with an Exploration Branch (Odell, 1999). In April of 1948, the government approved a plan to expand uranium production on the Colorado Plateau and its surrounding areas. As a result, the Metals Reserve Mill at Monticello was modified by the AEC to recover uranium. Climax Uranium Company began operating the first mill in the United States designed primarily for the production of uranium with vanadium as a byproduct at Grand Junction in 1951.

During the late 1940s and early 1950s, the AEC obtained mineral rights on approximately 700 square miles – mi² (1,800 square kilometers - km²) of land on the Colorado Plateau. Exploration was conducted on these lands by the AEC and the U.S. Geological Survey (USGS), and when significant ore bodies were found, the land was leased for mining. Most of the land was eventually returned to the public domain, however; approximately 40 mi² (104 km²) was retained for the leasing program, of which over 80 percent was in the Uravan area (Chenoweth, 1981) including large tracts in the Joe Dandy District along the south side of Paradox Valley and in the Long Park District on the north side of Paradox Valley.

Moab, in east central Utah, became a hub for uranium prospecting in the late 1940s and early 1950s. In 1952, Charlie Steen’s discovery of the now famous Mi Vida Mine in the Lisbon Valley area of Utah resulted in an economic boom for the area. The Uranium Reduction Company (URECO) opened an ore buying station in May 1954 in Moab and built and began operating a new mill at the same location in October 1956. This mill was later sold to Atlas Minerals and renamed the Atlas Mill.

In the mid-1950’s, the AEC authorized the expansion of nuclear research for the production of electricity. More companies began to shift their focus to developing electricity-producing reactor technologies. The nuclear power industry continued to grow at a rapid rate through the late 1950’s (U.S. Department of Energy - DOE, 2009).

Between 1956 and 1961, the AEC made several announcements that changed the uranium market. In 1957, the AEC announced that the federal government was no longer interested in the expansion of uranium production (Odell, 1999) for the purposes of building a U.S. uranium reserve base and maintaining maximum production capacities. Previously offered incentives were no longer available and expansion efforts were limited. All of the AEC mine leases expired by March 1962. The prosperous uranium period gradually came to a halt as the AEC ended its ore buying program and stretched out and eventually ended its purchase of uranium concentrates on December 31, 1970 (DOE, 2009 and Chenoweth, 1981). During this period many of the older mills, mines, and buying stations closed including the Naturita Mill, which...

1970 to 1990. Research in nuclear power experienced rapid growth during the early 1960’s, being seen as a new form of electricity production that was not only economical but also environmentally clean and safe. However, nuclear power generation did not develop as rapidly as had been anticipated and uranium production continued to decline into the early 1970s. The demand for vanadium kept the mining industry in the Uravan area from collapsing completely. In 1970, the Climax Mill at Grand Junction closed, and most of the Climax mine properties were acquired by Atlas Minerals.

By the mid-1970’s, uranium mining and milling began to pick up again as the AEC began to partially release market controls, allowing sales of uranium to private utilities and increasing the authorized number of nuclear power plants (Odell, 1999). Production in the Uravan area reached an all time low of 371 tons (740,000 pounds) of U$_3$O$_8$ in ore in 1973. Following this, the rise in uranium prices to new record levels by the mid-1970s resulted in a surge of activity and increasing production. The Uravan Mill was expanded in 1976 to process 1,300 tpd of ore. A buying station was established by General Electric’s Nuclear Division at the Naturita Mill site. Cotter Corporation, then a wholly owned subsidiary of Commonwealth Edison, built a crushing and sampling plant in Whitewater, just south of Grand Junction. This facility received ore from Cotter’s mines, many of which were located on AEC lease blocks in Paradox Valley, and shipped the ore by train to its mill in Cañon City, Colorado (Chenoweth, 1981).

In 1976, Ranchers Exploration and Development Corporation purchased the old vanadium tailings at Vancorum (i.e., the Naturita Mill). They moved these tailings to a lined heap leach facility in the southeast end of Paradox Valley near the Coke Ovens where the tailings were leached to recover uranium (American Institute of Petroleum Geologists, 2009). This facility was later reclaimed in place.

In eastern Utah, Rio Algom developed the Lisbon Valley Mine and Mill complex north of Monticello in 1972. A vanadium circuit was added by Atlas at its Moab Mill in 1976. In June 1980, Energy Fuels Nuclear opened the White Mesa Mill near Blanding, Utah (Chenoweth, 1981). With the addition of the White Mesa Mill and Rio Algom Mill, and the continued operation of the Atlas and Uravan mills, ore produced in the area increased to 5,500 to 6,500 tpd (i.e., more than 10 times the capacity of the proposed Piñon Ridge Mill) (Kuestermeyer, 1984).

Amidst growing concern by congress regarding the health and safety aspects of the uranium industry, the Energy Reorganization Act of 1974 was passed. This Act resulted in the creation of the NRC in January 1975, which assumed the regulatory control of uranium milling as well as enrichment operations and nuclear power generation. Other non-regulatory functions of the AEC, such as the promotion of atomic energy, were transferred to the Energy Research and Development Agency, which, in 1977, became the U.S. Department of Energy (DOE).

In 1978, congress enacted the Uranium Mill Tailings Radiation Control Act (UMTRCA), which established a joint federal/state-funded program for remedial action at abandoned uranium tailings sites where tailings resulted primarily from the weapons program. This program, called Title I (see Appendix A for more details), required DOE to design and implement cleanup and remediation of the abandoned sites with the NRC evaluating the plans for compliance with NRC and U.S. Environmental Protection Agency (EPA) standards. UMTRCA also established a Title II program (see Appendix A for more details) that regulated the operation and eventual closure of private-sector uranium mill sites licensed by the NRC or Agreement States (NRC, 2009).
Agreement States, which currently include Colorado and Utah, are those states that have entered into agreements with the NRC to exercise regulatory authority over uranium recovery operations. Under UMTRCA, the DOE is responsible for long-term care and maintenance of closed Title I and Title II sites.

By the late 1970’s into the 1980’s, growth and interest in nuclear power slowed due to lower than expected electric generating needs and rising health and environmental concerns (DOE, 2009). Safety concerns regarding the Three Mile Island Nuclear Power Plant incident in March 1979, where a partial core meltdown occurred, played an important role in a decreasing public acceptance of new nuclear power plants. This, along with sale of stockpiled uranium by the federal government and lower-cost uranium imports from Canada and Australia, resulted in the shutdown and closure of most of the mines and mills in the area.

Because of the severe downturn in demand for fuel for the nuclear power industry, the Uravan Mill operated only about 6 months per year from 1981 to 1984 when the town and mill permanently closed. In 1986, Union Carbide reached an agreement with the State of Colorado, which had assumed regulatory authority from the NRC as an Agreement State, to begin a 15-year cleanup project. The project would cost about $140 million, split almost equally between Umetco Minerals Corporation (a Union Carbide subsidiary) and the federal government. The federal government was responsible for a share of the cleanup because a large portion of the tailings and other mill wastes were produced as part of the uranium production for the government’s weapon program. Under the agreement, Umetco officially closed the town in 1988 and leveled the town to pre-mining and milling conditions. Most other mines in the area were also reclaimed or operations were put on standby. Tailings and residual radioactive material from both the Naturita Mill and the Gateway Mill were hauled to Uravan and disposed of in a constructed disposal cell (EIA, 2009a).

The Atlas Mill in Moab also closed in 1984. The Rio Algom Mill cut back its production from the Lisbon Valley Mine starting in 1981, but was able to continue toll milling (i.e., processing uranium for another owner without taking title to the uranium) until 1988, when it too closed (Amundson, 2002).

1990 to Present. The White Mesa Mill was able to continue milling into the late 1990s due to the processing of higher grade ores from the breccia pipe mines in northern Arizona and occasional spikes in the price of vanadium. The mill and associated mine properties were acquired by International Uranium Corporation (IUC). IUC discontinued their milling of ore, but was able to keep the mill operating by processing alternate feeds. Alternate feeds are uranium-bearing materials that contain other radionuclides or hazardous substances. The mill recovers the uranium from the alternate feed, but also charges the generator of the material, which typically originates from environmental cleanup actions, a fee for disposal of the waste product.

The 1990s and early 2000s saw most of the Title I and Title II mills in the area closed and reclaimed including the Uravan Mill and the Lisbon Valley Mill. In some cases, where the facilities were located in poor physical locations or in close proximity to population centers, the tailings were removed from the site during reclamation and placed in off-site repositories. Cleanup was also complicated in those areas where mill tailings had been used for building foundations and backfill, as was the case with the Climax tailings in Grand Junction. As a result, cleanup and removal of tailings was also required for many residential and commercial buildings in those areas where tailings had been used for these purposes.
The Atlas Mill in Moab is one of the few unreclaimed tailings facilities left in the area. This facility was a Title II facility with both private and federal funding obligations for closure; however, Atlas went into bankruptcy and its bond and Moab assets were managed by a bankruptcy trustee with the intent of conducting in-place closure of the facility. Ultimately, however, Congress made the Moab site a Title I site and DOE decided to move the tailings to an off-site repository due to the facility’s location on the Colorado River floodplain. This work, which is funded by the federal government, was started in May 2009.

Uranium prices were severely depressed through most of the 1990s and early 2000s reaching a low of about $7/pound on the spot market in 2000. Between 2000 and 2004, the price gradually rose to about $20/pound. Starting in 2005, the price rose rapidly reaching an all-time high of $137/pound in June, 2007. Since that point in time, the spot price has fallen back to between $40/pound and $50/pound in 2009. As a result of the price increase, Cotter reopened a number of its mines in Montrose County between 2003 and 2005 and shipped ore to its Cañon City Mill. This effort was unsuccessful due to a number of factors including the long haul distance. In 2006 and 2007, IUC reopened mines in both Colorado and Utah and began shipping ore to the White Mesa Mill. IUC, which merged with Denison Mines Corporation (Denison) in late 2006, also announced that it would refurbish and restart its conventional milling circuit for uranium ore. This circuit was restarted in April 2008. Since that time, the mill has alternated between conventional and alternate feed depending on contractual requirements (Louis Berger Group - Berger, 2009). At this time, the White Mesa Mill is the only operating mill in the area and obtains most of its ore from its own mines. Some smaller mining companies sell their ore to Denison under purchase agreements, but Denison has not agreed to toll mill ore for other companies.

1.3 Purpose and Need

The purpose and need for Energy Fuels’ proposal is to develop the uranium and vanadium resources of the area in support of the Energy Policy Act of 2005 (Public Law 109-58), which emphasizes the reestablishment of nuclear power (Sections 601 through 657). The Proposed Action is consistent with the following:

- The Domestic Minerals Program Extension Act of 1953 - stipulates that each department and agency of the federal government charged with responsibilities concerning the discovery, development, production, and acquisition of strategic or critical minerals and metals shall undertake to decrease further, and to eliminate where possible, the dependency of the United States on overseas sources of supply of each such material.
- The Mining and Minerals Policy Act of 1970 - declares that it is the continuing policy of the federal government to foster and encourage private enterprise in the development of a stable domestic minerals industry and the orderly and economic development of domestic mineral resources.
- The National Materials and Minerals Policy, Research and Development Act of 1980 - requires the Secretary of the Interior to improve the quality of minerals data in federal land use decision-making.
- The Energy Policy Act of 2005 - encourages energy efficiency and conservation; promotes alternative and renewable energy sources; reduces dependence on foreign sources of energy; increases domestic production; modernizes the electrical grid; and encourages the expansion of nuclear energy.
Uranium. Uranium provides the majority of the fuel for power-generating nuclear reactors. Worldwide, there are currently 436 power-generating nuclear reactors operating and producing 15 percent of the global electrical power demand. In the United States, 104 nuclear reactors are operating and producing 20 percent of the domestic electrical demand (World Nuclear Association, 2009a). World electricity demand is forecast to increase about 50 percent by 2030 (EIA, 2007). Nuclear power plants are the only source of carbon free, reliable base-load electricity. Uranium is also used in small nuclear reactors to produce isotopes for medical, industrial, and research purposes around the world. Figure 1.3-1, which was prepared by the World Nuclear Association (2007), shows the projected available uranium supply at currently forecast prices, broken down by various sources compared with the projected demand scenarios from Year 2006 until Year 2030. Yellowcake from the Mill Facility would be included in the “Primary Uranium Reference” category. The shortfall in uranium supply for both the base case (Requirements Reference) and the most aggressive case (Requirements Upper) beginning in the 2014 to 2016 timeframe are obvious and lead one to conclude that, in order for uranium supplies to grow to meet projected demand, prices higher than forecast will be required. The uranium demand for the least aggressive case (Requirements Lower) is assumed to be conformed to the available supply. The only expanding source of uranium supply for the future is found in the “Primary Uranium” (i.e. “newly mined”) category.

Figure 1.3-1
Projected World Uranium Supply and Demand

Uranium is mined from the earth and concentrated into $\text{U}_3\text{O}_8$ or (yellowcake) in facilities like the proposed Mill Facility. The yellowcake is the raw material for nuclear fuel that, after enrichment, is further processed into fuel rods. The fuel rods, when placed in a reactor, provide the heat to produce steam for generating electricity.

Yellowcake is a totally fungible, high-valued commodity that is able to move great distances in global trade. In 2008, the U.S. nuclear industry purchased 53 million pounds of yellowcake, while the U.S. uranium mining industry produced only 4 million pounds (EIA, 2009a). In 2008, worldwide there were 181 million pounds of yellowcake consumed but only 115 million pounds mined. The difference came from stockpiled uranium inventories from around the world which are approaching depletion (RBC Capital Markets, 2009).

Almost 60 percent of the world’s primary (or newly mined) uranium supply is mined in just three countries: Canada, Australia, and Kazakhstan; just four companies produce 60 percent of the world’s uranium supply: Rio Tinto, Cameco, Areva, and KazAtomProm; and 41 percent of the world supply comes from just four mines: McArthur River in Canada; Ranger and Olympic Dam in Australia; and Rossing in Namibia (World Nuclear Association, 2009b).

**Vanadium.** The primary use of $\text{V}_2\text{O}_5$ is as an alloying agent in the manufacture of high strength, low-alloy steels, which are known for their increased strength and durability. Vanadium consumption in China, the primary steel-producing country, is growing at a significantly higher rate than overall steel consumption, because of the shift to better quality steels with higher strength to weight ratios than basic carbon steels. Vanadium is also used in several applications, including surgical instruments, tool and die steels, engineering alloy steels used in axles, crankshafts and gears, stainless steels, rail steels, and titanium alloys. Additionally, vanadium serves as a catalyst in numerous industrial processes. Currently, there is work underway to develop a new, large-scale battery technology, the vanadium redox battery, which would find application in the pursuit for renewable energy supplies. The vanadium battery has the ability to store large quantities of electrical energy with minimum storage losses and can put that energy back out quickly as demanded by the electrical grid.

**Uranium/Vanadium Milling.** As provided in the *Socioeconomic Baseline and Impact Analysis Report* (Berger, 2009), as uranium/vanadium mines reopen, a potential bottleneck exists due to the lack of conventional mills to process the ore. Table 1.3-1 summarizes the status of all conventional uranium processing mills in the U.S. as reported by the EIA (2009a). Currently, the only conventional mill operating in the U.S. is the White Mesa Mill in Blanding, Utah which reopened in April 2008 and is owned by Denison. Denison invested approximately $31 million in new mill equipment in refurbishing this facility. In 2008, they produced 791,000 pounds of uranium and 1,233,000 pounds of vanadium from processed ores. Denison has been processing ores primarily from its underground mine operations in Utah and Colorado with some purchase of ores from other companies. The company also recently announced that it would start milling ore from its higher grade mines in Arizona, starting with the Arizona 1 Mine.
### Table 1.3-1


<table>
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<th>Mill Owner</th>
<th>Mill Name/Location</th>
<th>Capacity (short tons or ore per day)</th>
<th>Status</th>
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<td>Cañon City Mill Cañon City, CO</td>
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<td>Standby</td>
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<tr>
<td>Denison White Mesa</td>
<td>White Mesa Mill Blanding, UT</td>
<td>2,000</td>
<td>Operating</td>
</tr>
<tr>
<td>Energy Fuels Resources</td>
<td>Piñon Ridge Mill Western Montrose County, CO</td>
<td>1,000 ³</td>
<td>Developing</td>
</tr>
<tr>
<td>Kennecott Uranium Corp</td>
<td>Sweetwater Uranium Mill Sweetwater County, WY</td>
<td>3,000</td>
<td>Standby</td>
</tr>
<tr>
<td>Uranium One</td>
<td>Shootaring Canyon Uranium Mill Ticaboo, UT</td>
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<td>Changing license to operational</td>
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<td><strong>Total</strong></td>
<td></td>
<td><strong>7,150</strong></td>
<td></td>
</tr>
</tbody>
</table>

¹ Source: EIA, 2009b.
² Earlier reports show capacities as high as 1,500 tpd.
³ The Piñon Ridge Mill would initially be permitted to process 500 tpd; however, the Mill Facility is designed for expansion to 1,000 tpd.

Cotter Corporation announced in March that it intends to reopen the mill in Cañon City in 2014, although they stated that the ore would come from their Mount Taylor Mine in New Mexico by train and made no mention of its mining properties in Montrose County (Cotter, 2009). The Sweetwater Uranium Mill is on standby and could restart; however, it is located in southern Wyoming and it would not be economical to ship ore from the Uravan Mineral Belt to this mill. The Shootaring Canyon Mill in south central Utah, although closer than Sweetwater, is approximately 250 miles by highway from the center of the Uravan Mineral Belt and has been partially decommissioned. In addition, neither the Shootaring nor Sweetwater mills have vanadium circuits, which would make processing or the uranium/vanadium ore uneconomical at today’s prices even if the mills were located closer.

The Piñon Ridge Mill Facility is necessary because it is currently uneconomical for the uranium mines in western Colorado to haul ore to Cañon City for processing, and capacity availability is uncertain at the White Mesa Mill, especially with the restarting of their Arizona mining operations. White Mesa is also reluctant to provide toll milling for other companies; therefore, mines in western Colorado are left with no alternatives economically. The Mill Facility would provide an economical alternative due to its location and its intent to provide toll milling services.

#### 1.4 APPLICABLE REGULATORY REQUIREMENTS, PERMITS, AND REQUIRED CONDITIONS

Since August 2007, Energy Fuels has been conducting environmental baseline studies at the Site and preparing Mill Facility designs in preparation towards submitting a Radioactive Material License application (Mill License Application) to the Radiation Management Program of the CDPHE. Table 1.4-1 provides a list of the required permits for the Mill Facility, the respective regulating authorities, and the status of the regulatory processes. Table 1.4-2 provides a list of other government agencies that regulate specific aspects of the Mill Facility construction and operation in compliance with state and federal regulations. Detailed descriptions of the individual permit requirements are also provided.
<table>
<thead>
<tr>
<th>Permit</th>
<th>Regulated Aspect</th>
<th>Government Agency</th>
<th>Regulatory Reference</th>
<th>Current Status</th>
</tr>
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<tbody>
<tr>
<td>Mill License</td>
<td>All media, including air, water, soil, radiation, waste disposal</td>
<td>Radiation Management Program of CDPHE</td>
<td>6 CCR 1007-1 Parts 4, 14, &amp; 18</td>
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<td>Special Use Permit</td>
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<td>Planning Division of Montrose County Land Use Department</td>
<td>Montrose County Zoning Resolution</td>
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<td>Colorado Department of Transportation</td>
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<td>Air Emissions Permits</td>
<td>Air Quality</td>
<td>Air Pollution Control Division of CDPHE</td>
<td>5 CCR 1001-3, -5, -8, -9, &amp; -10</td>
<td>Application submitted July 2009</td>
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<td>Stormwater Discharge Permit</td>
<td>Stormwater Runoff</td>
<td>Water Quality Control Division of CDPHE</td>
<td>5 CCR 1002-61</td>
<td>Application will be submitted prior to the start of construction activities</td>
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<tr>
<td>Water Well Permits</td>
<td>Well Installation</td>
<td>Division of Water Resources of Colorado Department of Natural Resources</td>
<td>2 CCR 402-2</td>
<td>Approvals Received in 2007 and 2008</td>
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<tr>
<td>Water Rights</td>
<td>Water Use and Consumption</td>
<td>District Court, Water Division No. 4</td>
<td>2 CCR 402-15</td>
<td>Application submitted November 2009</td>
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<td>Tank Permits</td>
<td>Aboveground Storage Tanks</td>
<td>Division of Oil and Public Safety of Colorado Department of Labor and Employment</td>
<td>7 CCR 1101-14</td>
<td>Application to be submitted at later date</td>
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<td>Potable Water System</td>
<td>Drinking Water</td>
<td>Water Quality Control Division of CDPHE</td>
<td>5 CCR 1003-1</td>
<td>Application to be submitted at later date</td>
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<tr>
<td>Building Permits</td>
<td>Building Design and Construction</td>
<td>Building Division of Montrose County Land Use Department</td>
<td>Montrose County Resolution No. 55-00</td>
<td>Application to be submitted at later date</td>
</tr>
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<td>Septic System Permit</td>
<td>Septic Design and Construction</td>
<td>Building Division of Montrose County Land Use Department</td>
<td>Montrose County Resolution No. 13-2006</td>
<td>Application to be submitted at later date</td>
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<td>Government Agency</td>
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<td>Regulated Aspect</td>
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<td>----------------------------------------------------------</td>
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<tr>
<td>Radiation Management Program of CDPHE</td>
<td>30 CFR</td>
<td>Worker Health and Safety (radiological)</td>
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<td></td>
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<tr>
<td>U.S. Mine Safety and Health Administration</td>
<td>Subparts C, D, &amp; O MINER Act</td>
<td>Worker Health and Safety (nonradiological)</td>
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<tr>
<td>U.S. Department of Transportation</td>
<td>6 CCR</td>
<td>Transportation of ore, process chemicals and processed yellowcake</td>
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<td></td>
<td>1007-1</td>
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<tr>
<td></td>
<td>Part 4</td>
<td></td>
<td></td>
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<tr>
<td>U.S. Environmental Protection Agency</td>
<td>49 CFR</td>
<td>Regulation of emissions, spills or other containment issues</td>
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<td></td>
<td>Parts 100 - 185</td>
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<tr>
<td>U.S. Nuclear Regulatory Commission</td>
<td>40 CFR</td>
<td>Oversight of the CDPHE Radiation Management Program</td>
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<td>Parts 60, 61, 63, 68, 192, 302, &amp; 355</td>
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<tr>
<td>U.S. Army Corps of Engineers</td>
<td>10 CFR</td>
<td>Protection of U.S. Waters and Wetlands</td>
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<td></td>
<td>Parts 20 &amp; 40</td>
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<td>U.S. Fish and Wildlife Service</td>
<td>33 CFR</td>
<td>Protection of threatened, endangered and sensitive species</td>
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<td></td>
<td>Part 328</td>
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<tr>
<td>Colorado Division of Wildlife</td>
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<td>Protection of State threatened, endangered and sensitive species</td>
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<td></td>
<td>406-10</td>
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<td></td>
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<tr>
<td>Colorado Office of Archaeology and Historic Preservation</td>
<td>8 CCR</td>
<td>Protection of historic and prehistoric cultural resources</td>
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<td></td>
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<td></td>
<td>1504-7</td>
<td></td>
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<tr>
<td>Colorado Hazardous Materials and Waste Management Division</td>
<td>6 CCR</td>
<td>Regulation of the off-site disposal of solid wastes</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>1007-3</td>
<td></td>
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<tr>
<td></td>
<td>Part 273</td>
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</tbody>
</table>
Radioactive Material License, Radiation Management Program – Hazardous Materials and Waste Management Division of the CDPHE. The State of Colorado establishes performance objectives and procedural requirements for uranium milling and recovery operations through its radioactive material licensing program. This program establishes specific technical and financial requirements for siting, constructing, operating, decontaminating and closing, and reclaiming uranium recovery facilities. The program also addresses license transfer and termination following closure with long-term site surveillance and monitoring conducted by either CDPHE or DOE.

The Mill License Application submitted by Energy Fuels includes comprehensive baseline studies and impact analyses, detailed engineering plans for the Mill Facility, radiation modeling, environmental monitoring plans, health and safety procedures, emergency response and spill control plans, and closure and reclamation plans including a financial assurance cost estimate. Collected baseline data for surface water, groundwater, geology, seismology, cultural resources, livestock, wildlife, vegetation, soils, climate, air quality, radiological background levels, socioeconomics, and traffic are provided in the application.

Once the CDPHE considers the application to be complete, a minimum of two public meetings would be held at a local level and public comment and participation would be solicited. Montrose County would have an opportunity to participate in the review and comment process with county funding of up to $50,000 provided by Energy Fuels. The CDPHE is required to make a timely decision on the license application which could be to approve the application, approve the application with conditions, or deny the application.

Special Use Permit, Planning Division of the Montrose County Land Use Department. The Site is located within the General Agricultural zone district. Within each zone district, uses are listed as a “use-by-right,” a “special use,” or a “prohibited use.” The proposed use of “Mineral Processing” is not listed as a use-by-right or a prohibited use under the General Agricultural zone district; therefore, a “Mineral Processing” operation requires authorization subject to a Special Use Permit (SUP) through Montrose County under the listed special use of “New mineral resource development and extraction operations and facilities.”

Energy Fuels submitted a Special Use Permit Application to Montrose County in July 2008, which included general plans for roads, parking areas, buildings, stockpile pads, processing facilities, tailings cells, evaporation ponds, and water, septic, power, and heating systems. The Land Use Department commented on the application and Energy Fuels revised the application in response to the comments. The revised Special Use Permit Application was submitted to the Planning Commission for review and discussion in May 2009 (Visus Consulting Group - Visus, 2009). Following unanimous recommendations for approval by the West End Planning and Advisory Committee (WEPAC) and the Planning Commission, the application was forwarded to the Board of County Commissioners for final review and decision, for which approval was issued September 30, 2009. Reviews were conducted by both the Planning Commission and Board of County Commissioners as part of six public hearings, which included testimony from more than 300 individuals, agencies, and organizations.

In reaching a determination on Energy Fuels’ Special Use Application based on the applicable criteria, the Board of County Commissioners made several land use findings in their Resolution (Montrose County, 2009a) some of which included:

- The use and its location as proposed and subject to the conditions of approval as provided herein are in conformance with the County’s Master Plan as the area in which
the mill is to be located is in an area that has a long history of mining related operations and facilities;

- The site plan conforms to the district design standards of the Zoning Resolution and other applicable regulations and any variations are approved as part of the special use conditional approval;
- All on and off-site impacts have been satisfactorily mitigated either through agreement, public improvements, site plan requirements, buffering, mandatory compliance with state and/or federal licensing requirements, conditions of approval as specified herein and other mitigation measures implemented by the applicant;
- The special use proposed is not planned to be developed on a nonconforming parcel;
- The proposed special use addresses a demonstrated community need in fostering job creation and economic development on the west end of Montrose County; and
- The geographic and geological nature of the area is suitable for the proposed special use.

**Access Permit, Colorado Department of Transportation.** Access roads off State of Colorado highways must be permitted with the Colorado Department of Transportation (CDOT). CDOT has strict requirements for highway access roads, depending on the existing traffic levels on the highway, the proposed increase in traffic, and the physical characteristics of the highway and land in the vicinity of the proposed access. These regulations are designed to maximize vehicle safety and provide for efficient routing of traffic.

Energy Fuels obtained an Access Permit for the Mill Facility from CDOT in May 2008 (CDOT, 2008). The access permit to SH 90 includes a traffic study of the highway incorporating future projections of the increased traffic that would occur from the Mill Facility and other sources (LANDesign Consulting Engineers, 2008). Based on these evaluations, access to and from the Site was designed in accordance with CDOT guidelines. This included the addition of a de-acceleration lane that would allow westbound vehicles to slow down and turn into the Site without slowing traffic and a 10-foot wide shoulder on the eastbound lane of SH 90 starting at the Site entrance and proceeding eastward.

Final design drawings were submitted to CDOT in November 2009 (Del-Mont Consultants, Inc., 2009). Energy Fuels would be required to post a performance bond for these improvements prior to receiving a Notice to Proceed from CDOT. Construction of the access improvements is expected to occur in 2010 prior to the start of the Mill Facility construction.

**Air Emission Permits, Air Pollution Control Division of the CDPHE.** The Colorado Air Pollution Control Division (APCD) of CDPHE requires that proposed processing facilities monitor ambient air quality and meteorological conditions and then calculate projected emissions and air quality impacts for the facility based on ambient conditions and the proposed processing activities. The APCD then makes a determination as to whether the proposed activities meet state air quality regulations for control of air emissions.

Air Pollution Emission Notices (APENs) were filed for the Mill Facility in July 2009 with the APCD for estimated stack emissions from the Mill Facility and fugitive dust from the roads, stockpiles, evaporation ponds, and tailings cells (Kleinfelder, 2009a). In response to comments received from the APCD, additional APENs, lists and quantities of materials, and a Reasonable Available Control Technology (RACT) analysis were submitted in November 2009 (Kleinfelder, 2009j). Air modeling results, which predict the impact of the Mill Facility on ambient air quality, will be submitted once the APENs have been accepted by APCD. The modeling will be based on the data collected from two meteorological stations located at the Site.
The majority of the mineral processing systems would be equipped with the best available control technology to reduce emissions to the lowest practical level. Roads, stockpiles, and tailings cells would be sprayed with water and treated, as necessary, with chemical dust suppressants to minimize fugitive dust. Air monitors have been installed at three on-site locations and two off-site locations both east and west of the Site. These air monitoring stations were used initially to establish background levels and would later be used to verify compliance with the Site’s air emission permit limits.

The APCD is expected to review and comment on the additional APENs and supporting information provided by Energy Fuels. Energy Fuels would then respond to APCD’s questions and concerns and conduct air modeling in accordance with APCD protocols. If all issues were resolved, the APCD would prepare draft permits and solicit public comment. Final permits would be issued after the resolution of any public comments received by the APCD.

**Colorado Construction Stormwater Discharge Permit, Water Quality Control Division of the CDPHE.** The Water Quality Control Division (WQCD) of CDPHE requires that construction sites over 1 acre in size obtain a stormwater construction permit and develop and implement a Stormwater Management Plan (SWMP). These regulations are designed to protect streams from sedimentation that may result in physical, chemical, and biological harm to the State’s waters. The above-referenced general permit will be filed with the WQCD when final construction plans have been generated. A SWMP for the construction phase will be developed for the Site prior to application for this permit. During construction, the construction contractors would be required to install and maintain the necessary BMPs to control stormwater runoff from leaving the site.

Under Colorado water quality regulations, a stormwater discharge permit is not required for mill operations because the Mill Facility is a “zero-discharge facility.” Although not required by the WQCD, a SWMP for operations and minor construction occurring during operations has been prepared and is submitted with the Mill License Application to the Radiation Management Program (Golder Associates Inc. – Golder, 2009a). The SWMP includes stormwater monitoring of both contained and diverted stormwater.

**Well Permits and Water Rights, Division of Water Resources of the Colorado Department of Natural Resources.** The water supply for the Mill Facility would come from a series of groundwater production wells. Process water would be recycled and reused where feasible to minimize the amount of water needed for milling. Three production wells have been installed to date, two at the south end of the Site and one in a designated well field west of the Site. Up to four additional production wells would be added in the designated well field with the agreement of the landowner. All production and monitoring wells installed to date have been permitted with the Colorado Department of Natural Resources (CDNR) Division of Water Resources. The proposed Mill Facility is located in eastern Paradox Valley, which is designated by the Colorado Division of Water Resources as a non-critical area; therefore, neither augmentation nor a water right is required under Colorado water law to use the water. However, Energy Fuels applied for water rights for the existing and future production wells in November 2009 to secure a priority for these wells (Energy Fuels, 2009a). This also was done to meet Condition 11 of the September 30, 2009 Resolution of the Montrose County BOCC (Montrose County, 2009a) approving the Special Use Permit, specifically that “Water rights for all wells to be used at the mill shall be obtained prior to operation of the facility.” Surface water rights for the direct precipitation falling on the zero-discharge portions of the site (see stormwater above) were also included in the water rights application.
Aboveground Fuel Storage Tank Permits, Division of Oil and Public Safety of the Colorado Department of Labor and Employment. The Colorado Division of Oil and Public Safety (CDOPS) of the Colorado Department of Labor and Employment (CDLE) regulates aboveground storage tanks that store substances such as petroleum products and chemical reagents that are not otherwise classified as hazardous wastes or radioactive materials, which are regulated by CDPHE. The CDOPS regulations establish rules for the design, installation, registration, construction, and operation of these storage tanks. The regulations are intended to reduce potential damage to the environment and risk to the public caused by leaking storage tanks and to mitigate such damage when it occurs. CDOPS also inspects and certifies boilers and pressure vessels to ensure their safe operation. CDOPS rules for boilers and pressure vessels are based on nationally recognized codes and standards.

Energy Fuels would be required to permit and register its fuel, oil, and chemical reagent tanks containing between 660 and 40,000 gallons with CDOPS. These tanks would be installed above ground and would be provided with secondary containment, puncture protection, and fire suppression equipment. A Spill Prevention, Control and Countermeasure (SPCC) Plan has been prepared for the Site in accordance with federal Oil Pollution Prevention regulations (Energy Fuels, 2009b). The SPCC Plan include measures for preventing petroleum spills and releases, personnel training, containment and cleanup of spills, and reporting of spills. A Material Containment Plan has also been prepared for the Site to address the storage and use of chemical reagents (Energy Fuels, 2009c).

In addition to CDOPS' aboveground storage tank requirements, the storage tanks would also be inspected by Mine Safety and Health Administration (MSHA) safety inspectors as part of the non-radiation health and safety program. Processing and storage tanks that contain radioactive compounds would be regulated and inspected by the Colorado Radiation Management Program under the provisions of 6 CCR 1007-1 and the Radioactive Material License. Boilers and pressure vessels would be installed in accordance with state regulations and would be inspected and certified by state inspectors.

Potable Water System Permit, Water Quality Control Division of the CDPHE. The WQCD has established drinking water standards for potable water systems serving more than 25 people. These standards are designed to protect water users from drinking water containing harmful constituents. The groundwater on Site does not meet all drinking water standards for a potable water system serving more than 25 people. Rather than attempt to treat the on-site water, Energy Fuels would transport treated water from the Town of Naturita and use that as the water source for the potable systems at the Administration Building and Mill. The potable water systems would be designed and constructed in accordance with the “State of Colorado Design Criteria for Potable Water Systems.” CDPHE decisions regarding the review and approval of plans and specifications of the system would be based upon compliance with these criteria. Within 45 days after the receipt of a request for approval of the complete set of final plans and specifications, the CDPHE would review the submitted documents and render its decision.

Building Permits and Septic System Permits, Building Division of the Montrose County Land Use Department. Montrose County requires that all building and wastewater disposal systems meet building and state codes for safety and hygiene. The Building Division provides plan review, inspections, and enforcement of the currently adopted building codes and is responsible for review and approval of individual sewage disposal systems (septic systems). Detailed building and septic system plans would be developed and submitted to Montrose County once the Radiation Management Program of CDPHE reviews and approves the Mill
Facility layout and design. The septic systems would be designed and constructed according to state and county health and sanitation requirements.

1.5 PUBLIC PARTICIPATION

1.5.1 Public Meetings and Information

Table 1.5-1 provides a summary of the public meetings held to-date for the Piñon Ridge Project. Early in the process, Energy Fuels voluntarily hosted two open houses on March 25 and March 26, 2008 in Naturita, Colorado and Montrose, Colorado, respectively, to inform the public of its plans. The meetings were advertised in local newspapers and flyers were posted on bulletin boards. In these meetings, Energy Fuels’ President, provided a 20-minute overview of the project, and technical specialists at separate tables provided more detailed information to the public on the permitting process and public involvement, environmental aspects, radiation health and safety, and project economics. At the request of the San Miguel Board of County Commissioners, Energy Fuels attended the county’s board meeting in Norwood, Colorado on May 28, 2008 and gave an abbreviated version of the March presentations.

<table>
<thead>
<tr>
<th>Meeting Sponsor</th>
<th>Location</th>
<th>Date</th>
<th>Approximate Number of Attendees</th>
</tr>
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<tbody>
<tr>
<td>Energy Fuels</td>
<td>Naturita Community Bldg. Naturita, CO</td>
<td>March 25, 2008</td>
<td>80</td>
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<tr>
<td>Energy Fuels</td>
<td>Montrose Pavilion Montrose, CO</td>
<td>March 26, 2008</td>
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<td>San Miguel County</td>
<td>Town Hall Norwood, CO</td>
<td>May 28, 2008</td>
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<tr>
<td>Montrose County</td>
<td>Montrose Pavilion Montrose, CO</td>
<td>September 24, 2008</td>
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<td>Montrose County</td>
<td>Nucla High School Nucla, CO</td>
<td>May 19, 2009</td>
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<td>Montrose County</td>
<td>Friendship Hall Montrose, CO</td>
<td>June 10, 2009</td>
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<td>Montrose County</td>
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</table>

Energy Fuels launched “The Piñon Ridge Mill” website concurrently with the submittal of its SUP application to Montrose County. The SUP application was also posted on the Montrose County website and the CDPHE’s website. Energy Fuels’ website presents information about the Proposed Action as well as the company, and Energy Fuels provides a contact page where the public can ask questions or request additional information. Energy Fuels submitted numerous reports to the CDPHE during 2008 and 2009, which contained environmental baseline studies and engineering designs for the Proposed Action; they have been posted on CDPHE’s website.
On September 24, 2008, the CDPHE Radiation Management Program, at the request of Montrose County, attended a meeting in Montrose where four of the Radiation Management Program’s staff gave an overview of the agency’s regulation of uranium milling facilities. After the formal presentation, the program’s staff answered questions from county personnel including the planning department, engineering department, WEPAC, planning commission, and county commissioners. After adjournment of the meeting, state personnel answered questions from the general public.

Starting on May 19, 2009, a total of six public meetings were held by Montrose County in their review of the SUP application. These meetings consisted of presentations by Energy Fuels and its technical consultants and testimony by members of the public, both for and against the project. Written comments were also taken by the county during the public comment period.

1.5.2 Summary of Issues

Numerous comments, both written and verbal, have been made regarding the Mill Facility. Comments for and against the project have been fairly equally divided, with the pro positions mostly socioeconomic-based and the con positions more varied. Issues, concerns, and positive comments provided by the public, industry, interested groups, and agencies regarding the Mill Facility are generally summarized below by resource or topic. The comments raising technical issues have been addressed in the applicable resource sections of the ER.

Land Use

- Mill would harm tourism;
- Mill is inappropriate land use in agricultural area;
- Potential for mill to impact cattle;
- Mill is appropriate, because it is central to existing uranium mines in the area; and
- Mill is appropriate, because it is located in a historic mining district.

Transportation

- Increased local traffic, including truck traffic;
- Danger posed by material being transported; and
- Potentially less traffic from ore trucks than from tourism to Telluride.

Geology and Soils

- Site unsuitability due to numerous faults that parallel the mesa; and
- Site unsuitability due to the Paradox Valley Unit deep injection well near Bedrock creating earthquakes that have reached as high as 4.3 in magnitude.

Water Resources

- Inadequacy of water supply for construction, operation, and dust suppression;
- Inadequacy of pumping tests;
- Potential for groundwater consumption to negatively affect the groundwater and rivers;
- Potential of site runoff contaminating East Paradox Creek and the Dolores River;
- Necessity for water quality monitoring including third-party monitoring;
- Inadequacy of groundwater characterization under the tailings cells;
- Potential groundwater contamination due to leakage from the mill, tailings facility (liners), and other areas;
- Potential for neighboring well water/springs contamination and/or drawdown;
• Need to set parameters establishing when Energy Fuels must use alternate water source;
• Groundwater is deep or not present and would not be impacted by operations;
• Susceptibility of liners to puncture and degradation;
• Current liner technology is much improved and would provide sufficient protection;
• Need for liner leakage monitoring and shutdown procedures;
• Inadequacy of underdrains only on portions of the tailings cells;
• Need water rights for supply water;
• Need water rights for retained stormwater; and
• Legality of Naturita transferring water rights to Energy Fuels for the mill.

Ecological Resources
• Potential for wildlife to be killed by exposure to toxic chemicals;
• Potential wildlife mortality increase due to increased truck and auto traffic;
• Potential for ore truck or truck hauling yellowcake to spill near a river contaminating fish and other aquatic species;
• Potential for pumping of groundwater wells to deplete the groundwater flowing into the Dolores River and impact Sensitive Species of Fish; and
• Potential for depletion of San Miguel River to impact Sensitive Species of Fish if water is trucked from the San Miguel River.

Meteorology, Climatology, and Air Quality
• Potential for sediments in the evaporation ponds to blow away;
• Potential for dust storms to carry radioactive dust to Paradox Valley farms and to Telluride and to contaminate snowpack providing water supply for the region;
• Potential for rock crushing in open air to negatively affect air quality; and
• Potential for mill to emit 700 tons of radioactive and toxic chemicals annually.

Noise and Visual/Scenic Resources
• Potential for mill to cause noise and visual impacts.

Socioeconomics
• Need for financial ability to reclaim or clean-up the site when the mill closes;
• Capability of Energy Fuels to build and operate the mill;
• Financial success will profit Canada;
• Need for long-term, not just short-term, economic benefit to the area;
• Cost competitiveness of renewable energies such as solar and wind;
• Necessity of government subsidies for nuclear power to be economically viable;
• Volatility and failure of energy-based economies;
• Inadequacy, in terms of equipment and training, of the local firefighters and emergency response teams to deal with a major emergency/radiation contamination at the mill;
• Mill would increase jobs in the area;
• Mill would benefit local economy;
• Mill would diversify economy;
• Mining has deep roots in the local communities;
• Potential to create negative perception of organic crops grown in area;
• Potential to negatively affect tourism and agricultural business; and
• Potential to benefit local medical clinic with additional insurance coverage.
Public and Occupational Health

- Current and historical health risks, specifically cancer risks, of uranium mining and milling to workers and people in the area;
- Health risks associated with evaporation ponds – sulfuric acid harming to lungs;
- Potential for ore trucks to leak radioactivity and radioactive dust causing an increased cancer risk to county residents;
- Radiation from cigarettes is greater than from mill tailings;
- Mining and milling risks are known and manageable in this region; and
- Existing risks of naturally-occurring uranium (uranium dust) in the area.

Waste Management

- Potential that Energy Fuels would dispose of hazardous waste at the mill;
- Need for verification that ore is uranium/vanadium ore;
- Potential for mill to accept water treatment residuals coming from mines or other sources;
- Need for containment of spills/accidents;
- Potential for Energy Fuels to import mixed hazardous and radiological wastes (alternate feeds) to the mill; and
- Toxins permanently left on site after cessation of milling operations.

General

- Need for off-site monitoring
- Potential for sulfuric acid odor to emanate from the mill;
- Need for Environmental Impact Statement (EIS);
- Need for cumulative analysis based on large number of mines feeding the mill;
- Need to consider carbon footprint of nuclear energy life cycle (i.e. mining, mill construction, nuclear power plant construction);
- Mill design is for 1,000 tpd rather than 500 tpd;
- Uranium may be exported to foreign countries;
- Inadequacy of uranium ore supply to feed the mill;
- Risk that production of uranium domestically would curtail dismantling of Russia’s nuclear arsenal;
- Preference of renewable energy;
- Inability of renewable energy to supply sufficient baseload energy;
- Energy Fuels’ inability to pay for accidents or problems;
- Nuclear power provides a clean energy source
- Need for nuclear power in the U.S. energy mix;
- Nuclear power contributes to energy independence;
- Need for security of ore and yellowcake shipments;
- Security weakness of chainlink fence to deter terrorists that could use the yellowcake to build a dirty bomb; and
- Need for security verification.