

## DIVISION OF RECLAMATION, MINING & SAFETY

Department of Natural Resources

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### ***Uranium Mining in Colorado 2012 (Updated January 13, 2012)***

The Uravan mineral belt is the oldest uranium mining area in the U.S., and historically the most productive uranium and vanadium region in Colorado. The Uravan mineral belt has an estimated 1,200 historic mines that produced over 63 million pounds of uranium and 330 million pounds of vanadium from 1948 to 1978. In Eastern Colorado, “roll-front” type uranium deposits similar to those in the Uravan belt are found primarily in the northeast section of the state. Colorado ranks third among the states for uranium reserves, behind Wyoming and New Mexico.

#### ***Recent Activity Overview:***

In 2005, the Colorado Geological Survey (CGS) estimated total Colorado uranium production to be 255,544 pounds. This production came primarily from the four Cotter Corporation mines in Western Colorado. The 2005 uranium production from these mines had a gross value of \$7.3 million based on the average 2005 uranium ( $U_3O_8$ ) price of \$28.52 per pound. The uranium-vanadium ore was trucked from the Western Slope mines to Cotter’s mill in Cañon City. Cotter’s Cañon City uranium ore mill is one of only four uranium mills in the U.S. The company ceased production at all four of these mines in November 2005. High energy costs and the long haulage distance (~ 300 miles) from the mines to the Cañon City mill played a large role in the economic difficulties of the operations. In December 2011, Cotter indicated that it would not seek renewal of its expiring radioactive materials license from the Colorado Department of Public Health and Environment (CDPHE) Radiation Control Division, and would begin the process of mill closure.

In 2007 Denison Mines (USA) Corp., formerly International Uranium (USA) Corporation began producing ore from three mines in San Miguel County. Denison shipped ore from these sites to its White Mesa Mill near Blanding, Utah. Ore production activities were halted in the fall of 2009 due to decreased uranium prices. Denison is currently finishing up Environmental Protection Plans (EPP) for all of its Colorado permits.

In January of 2011, the CDPHE’s Radiation Control Division approved Energy Fuels’ application to build a uranium mill in the Paradox Valley of Western Colorado. The Environmental Protection Agency (EPA) approved an application for the design and construction of the mill tailings and evaporation ponds on October 27, 2011. The Piñon Ridge Mill will be the first uranium mill constructed in the United States in almost 25 years if all permits are issued. Energy Fuels hopes to begin construction in late 2012.

No uranium ore production in Colorado was reported from 2009 through 2011. Rimrock Exploration and Development completed an Environmental Protection Plan (EPP) to comply with Designated Mining Operation requirements in 2010. The J-Bird Mine is currently developing access drifts and construction of surface EPP infrastructure. A uranium reclamation project by Nuvemco, LLC began in Mesa County but ore grade issues suspended the project indefinitely for re-evaluation. Energy Fuels Corporation gained approvals in September of

2008 for the Whirlwind Mine also in Mesa County. The mine is not in production but Energy Fuels continues to do maintenance in the mine and on the surface while monitoring groundwater as required.

Mine permitting and regulations have changed significantly since the last uranium boom in the 1970's. On August 12, 2010, the Mined Land Reclamation Board (MLRB) approved changes to the Rules and Regulations of the Colorado Mined Land Reclamation Board for Hard Rock, Metal, and Designated Mining Operations that became effective on September 30, 2010. The new Rules implement changes to the Colorado Mined Land Reclamation Act, which was amended by the passage of three bills in 2008: SB 08-228, SB 08-169 and HB 08- 1161. The trio of laws established new rules to protect Colorado's groundwater during in-situ uranium mining, revised existing rules regarding the disclosure of additional information during prospecting activities, and updated hard rock mining fees.

***Prospecting Notice of Intent Activity:***

The Division has seen a decline in uranium prospecting activities. At the end of 2011, there are 76 total uranium prospect Notices of Intent (NOI) in Weld, Summit, Fremont, Grand, San Miguel, Mesa, Montrose, Dolores, and Moffat counties. This is a decline from a peak of 101 active prospecting NOIs in 2009. An overwhelming number of the projects have been completed and are in the final reclamation phase. In-situ-leach exploration projects in Weld County have been suspended for the foreseeable future primarily due to economics.

***Current Reclamation Permit Activity:***

There are 33 actively permitted uranium mining projects in Colorado. There is one new 110d permit under review. There are no mines currently producing ore; however, two mines are conducting development activities such as underground access and ore body characterization. The Division is in the final review stage for six active permits for inclusion of Environmental Protection Plans (EPP) to their respective 110d and 112d DMO permits. These should be completed by mid-February 2012.

On September 30, 2011, the Division notified all uranium operators that an EPP must be submitted, file for an exemption, or commence final site reclamation by October 1, 2012. On October 18, 2011, the U.S. District Court issued an injunction regarding the Department of Energy (DOE) uranium leasing program (ULP). The injunction prohibits any activities on the DOE ULP tracts until the DOE fully complies with the National Environmental Policy Act (NEPA) and Endangered Species Act (ESA). At this juncture, it is unclear what process will be required or how long that process will take. While the injunction prohibits active site activity it does not preclude the Division from moving forward with the implementation of the State law requirements for EPP submittals, review, and approvals. The Division is also currently evaluating the permit status for the mines to ensure proper classification in reference to Temporary Cessation or Intermittent Status as well as working with operators who have DOE leases. A list of permits, operators, and EPP status is attached to this report.

Currently the Division is working with the CDPHE and numerous local jurisdictions on environmental impacts at Cotter's Schwartzwalder Mine in Jefferson County.

The Division notes that the uranium industry has been significantly affected by the economic downturn. If the proposed Piñon Ridge Mill in Paradox Valley is constructed, the Division anticipates a surge in uranium mining and exploration operation and associated permitting activities.

Permit No.	Site name	Permittee	Permit Status*	land oversight	County	Site Status**	EPP***
M1989068	Centennial	B-Mining Company	INT	BLM	San Miguel	Maintenance	31-Oct-12
M1977284	Mineral Joe Claims	Cotter Corporation	INT	BLM	Montrose	Tied to JD-6	NO
M1977300	Schwartzwalder	Cotter Corporation	AC	Private	Jefferson	Reclamation	Pending
M1977305	C-LP-21 Mine	Cotter Corporation	INT	DOE	Montrose	Reclaimed	No
M1977306	JD-9 Mine	Cotter Corporation	INT	DOE	Montrose	Maintenance	NO
M1977307	CM-25 Mine	Cotter Corporation	INT	DOE	Montrose	Reclaimed	NO
M1977308	C-JD-7	Cotter Corporation	INT	DOE	Montrose	Maintenance	NO
M1977310	JD-6 Mine	Cotter Corporation	INT	DOE	Montrose	Maintenance	NO
M1977311	SR-13A Mine	Cotter Corporation	INT	DOE	San Miguel	Reclaimed	Release
M1977451	Ike No 1 Mine	Cotter Corporation	INT	DOE	San Miguel	Maintenance	NO
M1978116	SM-18 Mine	Cotter Corporation	INT	DOE	Montrose	Maintenance	NO
M1979094HR	JD-7 Pit	Cotter Corporation	INT	DOE	Montrose	Maintenance	NO
M1979118HR	Wright Group	Cotter Corporation	INT	Private	Montrose	Tied to SM-18	NO
M1984014	C-JD-8	Cotter Corporation	INT	DOE	Montrose	Maintenance	Pending
M1977285	Sunday Mine	Denison Mines (USA) Corp.	TC	BLM	San Miguel	Maintenance	Pending
M1977416	Carnation Mine	Denison Mines (USA) Corp.	TC	BLM	San Miguel	Maintenance	Pending
M1978039HR	St Jude Mine	Denison Mines (USA) Corp.	TC	BLM	San Miguel	Maintenance	Pending
M1980055HR	Topaz Mine	Denison Mines (USA) Corp.	TC	BLM	San Miguel	Maintenance	Pending
M1981021	West Sunday Mine	Denison Mines (USA) Corp.	TC	BLM	San Miguel	Maintenance	Pending
M1997032	Van 4 Shaft	Denison Mines (USA) Corp.	AC	BLM	Montrose	Maintenance	Pending
M2007044	Whirlwind Mine	Energy Fuels Resources Corporation	INT	BLM	Mesa	Maintenance	Yes
M1977248	C-JD-5	Gold Eagle Mining, Inc.	INT	DOE	Montrose	Maintenance	NO
M1977297	Burros Mine	Gold Eagle Mining, Inc.	INT	DOE	San Miguel	Maintenance	NO
M1978311	Hawkeye Mine	Gold Eagle Mining, Inc.	INT	DOE	San Miguel	Maintenance	NO
M1978342	Ellison Mine	Gold Eagle Mining, Inc.	INT	DOE	San Miguel	Maintenance	NO
M1977004	Pitch Project	Homestake Mining Company	AC	Private	Saguache	Reclamation	Release
M2008012	Last Chance #3 & #4	Nuvmco LLC	AC	BLM	Montrose	development	Yes
M1977293	Monogram-Jo Dandy	Nuvmco, LLC	INT	Private	Montrose	Reclaimed	NO
M1978222UG	Monogram Mines	Nuvmco, LLC	INT	Private	Montrose	Maintenance	Yes
M2008050	October Ore Pile Reclamation	Nuvmco, LLC	INT	BLM	Mesa	Maintenance	Yes
M2005050	J Birds	Rimrock Exploration & Development, Inc.	INT	BLM	Montrose	development	Yes
M1977417	Sego Mine	Sutherland Drilling	INT	BLM	San Miguel	Maintenance	31-Oct-12
M1977288	Deremo-Snyder	Umetco Minerals Corporation	INT	Private	San Miguel	Reclaimed	Release

\* TC or INT does not include approved development or production activities. All sites in Intermittent Status (INT) are currently under status review by the Division.

\*\* Maintenance includes general upkeep as required for operations in Temporary Cessation (TC).

\*\*\* "Release" indicates site is reclaimed or in full reclamation and operator will be seeking a full release of site.

Permit Status Codes: AC= Active; AW= Awaiting Warranty; TC= Temporary Cessation; INT= Intermittant