

Review of Mine Permitting Requirements in Major Uranium-Producing States

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REGULATORY COMMISSION (NRC) URANIUM RECOVERY
WORKSHOP
Denver, Colorado

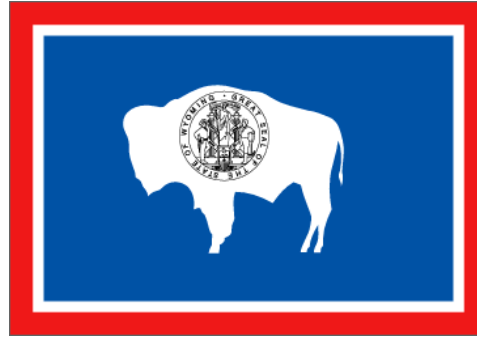
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Based on historical activity and apparent trends in recent activity, future mining for uranium will occur primarily in Wyoming, Colorado, Utah, Arizona, and New Mexico. In-situ uranium recovery will occur in any of these states and in Texas. Each of these states regulates mining to some extent, but there are large differences between these states in attitudes toward mining and the regulatory approaches taken.

This presentation summarizes the key features of mine permitting in each of these states. Permitting that is unique to mining is included; other types of permits not unique to mining (air quality, surface water discharge, solid waste, hazardous waste) may be required but are not covered in this presentation. For additional information, contact the author at 505 344 7373 or akuhn@kleinfelder.com.



WYOMING



LEAD AGENCY OF MINE PERMITTING:

Land Quality Division, Dept. of Environmental Quality

CONTACT PERSON (S):

RICK CHANCELLOR, ADMINISTRATOR – 307 777 7046

DISTRICT OFFICES: contacts for permit baseline requirements

Cheyenne: Lowell Spackman 307 777 7756
122 West 25th St, Herschler Building
Cheyenne, WY 82002

Lander: Mark Moxley 307 332 3047
510 Meadowview Dr.
Lander WY. 82520

Sheridan: Mark Rogaczewski
1866 South Sheridan Avenue
Sheridan, WY. 82801

REGULATORY BASIS

Environmental Quality Act, §§35-11-101, *et seq.* 1997, as amended; LQD Non-Coal Rules and Regulations

- Ch. 1 - Noncoal Authorities and Definitions
- Ch. 2 - Regular Noncoal Mine Permit Applications
- Ch. 3 - Environmental Protection Performance Standards
- Ch. 4 - Noncoal Underground Mining
- Ch. 5 - Exploration by Dozing
- Ch. 6 - Self-Bonding Program
- Ch. 7 - Permit or Research & Development Testing License Revisions
- Ch. 8 - Noncoal Exploration by Drilling
- Ch. 9 - Noncoal Small Mining Operations



- Ch. 10 - Noncoal Limited Mining Ops Ten Acres or Less of Affected Land
- Ch. 11 - Noncoal In Situ Mining
- Ch. 12 - Noncoal Letters of Credit

Get copy of regulations from: <http://deq.state.wy.us/lqd.htm>

TYPES OF PERMITS

Limited Mining Exemption (ET permit)

- 10 acres or less *total lifetime* surface disturbance - **NOT AVAILABLE FOR URANIUM**

Small Mining Permit

- Not more than 10,000 cy overburden removed or more than 10 acres disturbed *per year*
- Public notice required
- Many regular-mine permit requirements waived
- Reclamation bond based on estimated site-specific costs

Regular Mining Permit

- Requires detailed baseline studies of land, water, vegetation, wildlife, and cultural values
- Mine plan and reclamation plan
- Public notice and 30-day comment period
- Reclamation bond based on estimated site-specific costs

In Situ Mining

- UIC Class III for injection wells in ground not previously mined conventionally, Class V for wells leaching from older conventional workings.
- Baseline requirements are comparable to those for conventional mines to the extent “consistent with the extent and nature of the surface disturbance”.



FORMS

Form 1 - Mining Permit

Form 1(s) - Small Mine Permit

Form 1UIC - In Situ Permit to Mine

Form 3 - License to Mine

Form 4 - License to Explore by Dozing

Form 5RD - In Situ R&D Testing License

Form 9DN - Notification of Intent to Explore by Drilling

KEY POINTS

- Provision for an R&D Testing License for ISL
- Comprehensive set of guidelines and SOPs
- Exploration requires NOI and license
- Mine operators must obtain a license AS WELL AS A MINE PERMIT.
- LQD emphasizes early contact and discussions with district staff
- Baseline for conventional mine will emphasize soil, vegetation, surface water; ISL baseline will emphasize groundwater

COLORADO



LEAD AGENCY OF MINE PERMITTING:

Department of Natural Resources, Division of Minerals and Geology, Mined Land Reclamation Board

CONTACT PERSON: Bruce Humphries, Minerals Program Supervisor , 303 866 3567. After 7/1, Russ Means, 970 241 1117

REGULATORY BASIS:

Title 34, Mineral Resources, Article 32, Colorado Mined Land Reclamation Act for Hard Rock, Metal and designated Mining Operations, Sections 34-32-101 to 127, C.R.S.

Hard Rock Rules 2 CCR 407-1

Get rules from: <http://mining.state.co.us/Rules%20and%20Regs.htm>

TYPES OF PERMITS

Designated Mining Limited Impact Operation

- Affects less than 10 acres and extracts less than 70,000 tons of mineral and/or overburden per year
- Uses or stores designated chemicals or acid-producing materials OR has the potential to produce AMD

Designated Mining Regular Operation

- Affects more than 10 acres and extracts more than 70,000 tons of mineral and/or overburden per year
- Uses or stores designated chemicals or acid-producing materials OR has the potential to produce AMD



Hard Rock/ Metal Mining Limited Impact Operation

- Affects less than 10 acres and extracts less than 70,000 tons of mineral and/or overburden per year

Hard Rock/ Metal Mining Regular Operation

- Affects more than 10 acres and extracts more than 70,000 tons of mineral and/or overburden per year

FORMS

Designated Mining Limited Impact (110d) Operation Reclamation Permit Application

Designated Mining Regular (112d) Operation Reclamation Permit Application
Limited Impact Operation (110(2)) Reclamation Permit Application

Hard Rock/ Metal Mining Regular (112) Operation Reclamation Permit Application

Notice of Intent for exploratory drilling (for areas greater than 1600 ft²).

KEY POINTS

- Rules place special emphasis on impacts of chemicals and potential for acid generation.
- Regular Operation permits require baseline information.
- Senate Bill 181 recently increased regulatory emphasis on ground water impacts and runoff from waste piles
- Submit a sound mining and reclamation plan that pays attention to “water and weeds”.
- Approval times are 30 days for limited impact, 90 days for regular operations permits
- Designated Mining Operations require specific environmental protection measures. Uranium mines might be DMO, determined on case-by-case basis (3 of 4 uranium permits are DMO)
- A few guidelines are available.
- Contact the Minerals Program before starting the permit process.

UTAH



LEAD AGENCY OF MINE PERMITTING:

Department of Natural Resources; Division of Oil, Gas and Mining; Minerals Regulatory Program

CONTACT PERSON:

Susan White, Mining Program Coordinator, 801 538 5306
Division of Oil, Gas and Mining
P.O. Box 145801
Salt Lake City, Utah 84114-5801
susanwhite@utah.gov

REGULATORY BASIS

UAC Title R647 Oil, Gas and Mining; Non-Coal.

1. R647-2. Exploration.
2. R647-3. Small Mining Operations
3. R647-4. Large Mining Operations

Get from <http://www.rules.utah.gov/publicat/code/r647/r647-004.htm>

TYPES OF PERMITS

Small Mining – Notice of Intent

- Limited to not more than 5 acres
- Brief operations plan required
- Reclamation required

Large Mining Operation – Notice of Intent

- DOGM may approve or disapprove
- Requires operation plan and reclamation plan
- Simple baseline information and impact assessment required



Exploration – Notice of Intent

- Detailed exploration and reclamation plan if more than 5 acres disturbed
- Valid for one year

FORMS

MR- EXP - Notice of Intention to Conduct Exploration

MR-SMO - Small Mining Operation

MR-LMO - Large Mining Operation

FORM MR- RC - Reclamation Contract

MR-REV - Notice of Intention to Revise Mining Operations

KEY FEATURES

- The large mine NOI is effectively a permit.
- Old mine works require a new application unless under a current approved NOI.
- Approval times range from 2-4 weeks for a small mine to 6 months for a large mine.
- Surety amount is affected by baseline and mine plan – more details support a tighter bond amount.
- Interagency coordination will be important. Start communications with DGOM early.
- *The Practical Guide to Reclamation in Utah* is the state's go-by and is available online.

ARIZONA



LEAD AGENCY OF MINE PERMITTING:

Arizona State Mine Inspector

CONTACT PERSON

Pat Fitch, 602 542 5971

REGULATORY BASIS

Arizona Administrative Code

- Title 11, Chapter 2 Mined Land Reclamation
- Title 18, Chapter 11 Water Quality Standards
- Title 27, Chapter 5

TYPES OF PERMITS

- Aquifer Protection Permit
 - APPs required for:
 - Surface impoundments
 - Injection wells.
 - Facilities which add a pollutant to a formation or underground mine.
 - Mine tailings piles and ponds
 - Mine leaching operations

Includes:

- 2.02 General Permit for Intermediate Stockpiles at Mining Site
- 3.01 General Permit for Lined Impoundments
- 3.06 General Permit for Constructed Wetlands to Treat Acid Rock Drainage at Mining Sites
- Mineral Exploration Permit
- Mined Land Reclamation Plan

FORMS

Notice of Start-up, Move or Stop For Portable Equipment and Mine Operations
Individual Aquifer Protection Permit Application
Application for mineral exploration permit



KEY POINTS:

- Arizona system is based on NOIs instead of permits.
- Regulation is centered on groundwater protection.
- Reclamation plan required for any mining with more than 5 acres disturbance.
- *Arizona Mining BADCT Guidance Manual* from ADEQ is guidebook for groundwater protection.
- BLM's *Guide to Permitting Mining Operations* is useful.

NEW MEXICO



LEAD AGENCY OF MINE PERMITTING:

Energy Minerals and Natural Resources Department, Mining and Minerals Division, Mining Act Reclamation Program (MARP)

CONTACT PERSON

Karen Garcia, MARP Program Chief (505) 476-3435
1220 S. St. Francis Drive
Santa Fe, NM 87505
karen.garcia@state.nm.us

Mining and Environmental Compliance Section (MCES), Ground Water Quality Bureau, New Mexico Environment Department
Maryanne Menetrey 505-827-2944
Harold Runnels Building N2250
1190 St. Francis Drive
Santa Fe, New Mexico 87502

REGULATORY BASIS

Mining Act of 1993, NMAC, Title 19 Chapter 10 Non-coal Mining

- 19.10.3 Minimal Impacts Operations – **would not apply to uranium**
- 19.10.4 Exploration
- 19.10.6 New Mining Operations

See <http://www.emnrd.state.nm.us/emnrd/Mining/MARP/MARPMainPage.htm>

Water Quality Control Commission (WQCC) Regulations (20.6.2 NMAC)

- 20.6.2 NMAC WQCC Regulations
- 20.6.2.3103 NMAC Water Quality Standards
- 20.6.2.4103 Abatements Standards



TYPES OF PERMITS

General Mining Permit for Dry Conditions

General Mining Permit for Wet Conditions (within wetland or drainage course)

Exploration Permit

Minimal Impact Exploration Permit (<1000cy)

Minimal Impact New Mining Permit (< 10 acres disturbance)

Ground Water Discharge Plan

FORMS

General Mining Permit Application, Dry Conditions or Wet Conditions

Exploration Permit Application

Minimal Impact Exploration Permit Application

Minimal Impact New Mining Permit Application

Ground Water Discharge Permit Application

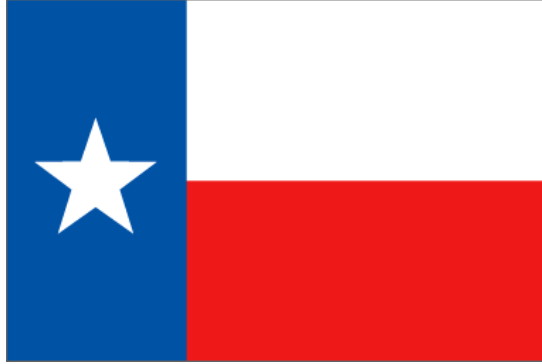
Notice of Intent to Discharge



KEY POINTS

- In situ was specifically excluded when Act was written: “ ...regulate hardrock mining reclamation activities for all minerals exceptbyproduct materials or wastes or other activities regulated by the federal Nuclear Regulatory Commission.” MARB is examining what activities of uranium in situ mining aren’t regulated by NRC or NMED; they might claim regulatory authority over these.
- See *Permit requirements for Energy and Minerals in New Mexico, 2002*
- Baseline requirements are similar to an EIS
- MARP will act as coordinator for permitting with all agencies by organizing a Permitting Team with other agencies and applicant
- Public involvement is critical.
- Start early, maintain interaction with MARP
- No new mine has been permitted under the Mining Act. Only one application has been submitted; withdrawn due to bankruptcy.
- Ground water will be a key issue.
- Uranium standard is 0.03 ppm or background, down from 5ppm. Get the baseline on record.

TEXAS



LEAD AGENCY OF MINE PERMITTING:

Texas Commission on Environmental Quality, TCEQ Water Permits Div.; Office of Permitting, Remediation and Registration

CONTACT PERSON

UIC

Ben Knape, 512 239 6633
Underground Injection Control Program
MC-130
Texas Commission on Environmental Quality
PO Box 13087
Austin TX 78711-3087
E-mail: uic@tceq.state.tx.us

Surface Mining and Reclamation Division

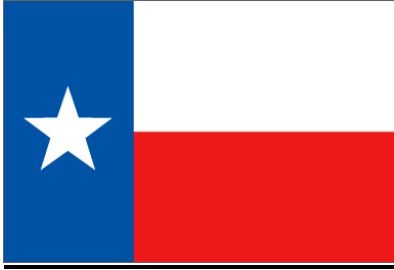
John Caudle, Applications and Permits Manager, 512 463 6900
Surface Mining and Reclamation Division
P.O. Drawer 12967
Austin, Texas 78711-2967

REGULATORY BASIS

In situ

Texas Administrative Code Title 30, Part 1

- Chapter 27, Texas Water Code
- Chapter 281, Applications Processing
- Chapter 305, Consolidated Permits
- Chapter 331, Underground Injection Control
- Chapter 106, Rules 106.4 (PBR) and 106.416 (Uranium Recovery Facilities - Air)



Surface Mining

Texas Administrative Code Title 16, Part 1, Chapter 11, Surface Mining and Reclamation

- Subchapter A, Rules of Practice and Procedure
- Subchapter B, Special Exceptions to the Rules of Practice and Procedure – Uranium Mining
- Subchapter C, Substantive Rules – Uranium Mining
 - Division 3, Surface Mining Permits
 - Division 5, Exploration Activities
 - Division 6, Reclamation
 - Division 7, Designation of Lands Unsuitable for Surface Mining

TYPES OF PERMITS

In Situ

IUC Class III Permit to Conduct In Situ Mining of Uranium

Production Area Authorization (PAA) for each producing area within the UIC permit boundary

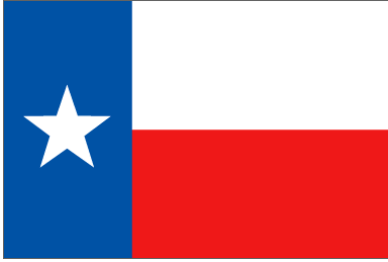
Air PBR 106.416: Uranium Recovery Facilities

Surface Mining

Uranium Surface Mine Permit

Uranium Exploration Permit

TNRCC General Permit # TXR050000 – Storm Water Discharges from Industrial Activity (surface mining)



FORMS

In Situ

- Permit Application to Conduct In Situ Mining of Uranium
- TCEQ Core Data Form
- 106.4 PBR Applicability Checklist
- Exemption 106.14 Checklist for Uranium In situ Solution Recovery Facilities
- Form PI -7 Registration for PBR

Surface Mining

- SMRD-1U, Application for Uranium Surface Mining Permit
- SMRD-3U, Application – Uranium Exploration Activities

KEY POINTS

- Regulations revolve around protection of water and air
- Be aware of the 20 Points of Light Project regarding resolution of issues involving IUC
- TCEQ is looking at possibly updating regulations regarding:
 - Complaints from operators about multiple opportunities for Contested Case Hearings (at each issuance and amendment of IUC permit and each PAA)
 - Public participation in decisions about restoration of groundwater to near baseline levels (driven by case law)
 - Rolling up PAAs into the UIC permit
- Radiation Advisory Board has oversight of uranium mining radiation exposures through the Radiation Safety Program
- “Lands designated as being unsuitable for surface mining” by TNRCC