

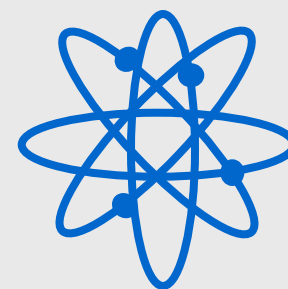
Review of Mine Permitting Requirements in Major Uranium-Producing States

Alan Kuhn, Kleinfelder
Albuquerque, NM

2006 NATIONAL MINING ASSOCIATION (NMA)/ NUCLEAR
REGULATORY COMMISSION (NRC) URANIUM RECOVERY
WORKSHOP
Denver, Colorado



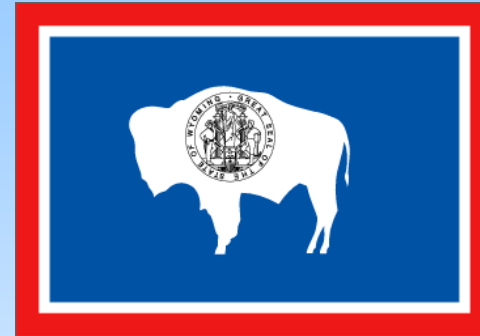
June 27, 2006



K L E I N F E L D E R

> EXPECT MORE

WYOMING



LEAD AGENCY OF MINE PERMITTING:

Land Quality Division, Dept. of Environmental Quality

CONTACT PERSON (S):

RICK CHANCELLOR, ADMINISTRATOR – 307 777 7046

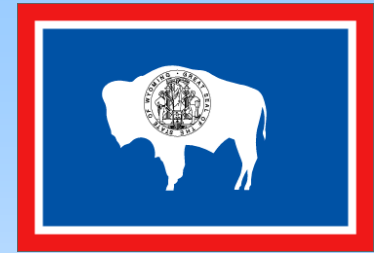
DISTRICT OFFICES: contacts for permit baseline requirements

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 307-673-9337
1866 South Sheridan Avenue, Sheridan, WY. 82801

REGULATORY BASIS

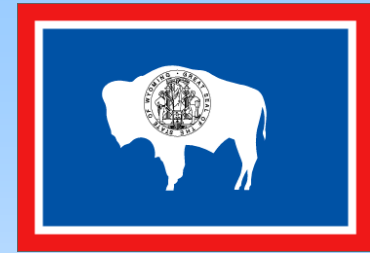


Environmental Quality Act, §§35-11-101, *et seq.* 1997, as amended; LQD Non-Coal Rules and Regulations

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

- 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 for 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

TYPES OF PERMITS



Limited Mining Exemption (ET permit) -10 acres or less *total lifetime* surface disturbance - **NOT AVAILABLE FOR URANIUM**

Small Mining Permit

- <10,000 cy overburden removed or < 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

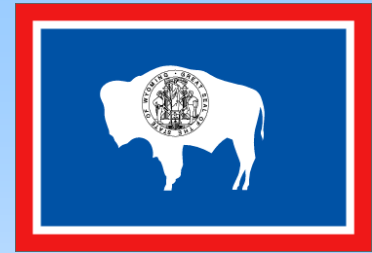
Form 1UIC - In Situ Permit to Mine

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
- Reclamation to “highest previous use”

COLORADO



LEAD AGENCY OF MINE PERMITTING:

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

CONTACT PERSON:

Bruce Humphries, Minerals Program Supervisor , 303 866 3567.
1313 Sherman St., Rm. 215, Denver, CO 80203

After 7/1, Russ Means, 970 241 1117
101 South 3rd, Suite 301, Grand Junction, CO 81501

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

- <10 acres and extracts < 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

- > 10 acres and extracts >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

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

Hard Rock/ Metal Mining Regular Operation

- >10 acres and extracts > 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 (DOGM)

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

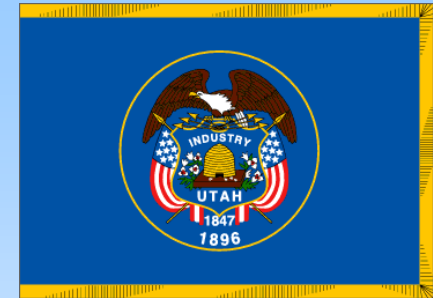


UAC Title R647 Oil, Gas and Mining; Non-Coal

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

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

TYPES OF PERMITS



Exploration – Notice of Intent

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

Large Mining Operation – Notice of Intent

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

Small Mining Operation – Notice of Intent

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



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 POINTS



- 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
1700 W. Washington Street 4th Floor
Phoenix, Arizona 85007-2805
pfitch@mi.state.az.us



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

- Mineral Exploration Permit

- Aquifer Protection Permit (APP)

- Surface impoundments
- Injection wells.
- Facilities which add a pollutant to a formation or underground mine.
- Mine tailings piles and ponds
- Mine leaching operations

(Includes General Permits for facilities like Intermediate Stockpiles, Lined Impoundments, and Constructed Wetlands to Treat Acid Rock Drainage)

- Mined Land Reclamation Plan



FORMS

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

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.

* Best Available Demonstrated Control Technology

NEW MEXICO



LEAD AGENCY OF MINE PERMITTING:

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

CONTACT PERSON

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

New Mexico Environment Department), Ground Water Quality Bureau,
Mining and Environmental Compliance Section (MCEs)

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 – **not applicable 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..3103 NMAC Water Quality Standards
 - § 20.6.2.4103 Abatements Standards

TYPES OF PERMITS

- Exploration Permit
- Minimal Impact Exploration Permit (<1000cy)
- General Mining Permit for Wet Conditions (within wetland or drainage course)
- General Mining Permit for Dry Conditions
- Minimal Impact New Mining Permit (< 10 acres disturbance)
- Ground Water Discharge Plan

FORMS

- Exploration Permit Application
- Minimal Impact Exploration Permit Application
- General Mining Permit Application, Dry Conditions or Wet Conditions
- Minimal Impact New Mining Permit Application
- Ground Water Discharge Permit Application
- Notice of Intent to Discharge

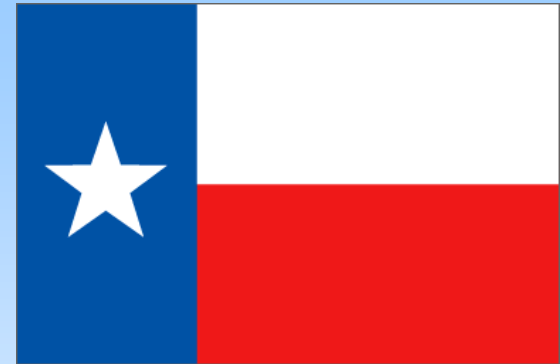


KEY POINTS



- In situ was specifically excluded when Act was written. MARB might claim regulatory authority over uranium in situ mining activities not regulated by NRC or NMED
- 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
- Public involvement is critical.
- Start early, maintain interaction with MARP
- No new mine has been permitted under the Mining Act.
- Ground water will be a key issue.
- Uranium standard is 0.03 ppm or background, down from previous 5ppm. Get the baseline on record.

TEXAS



LEAD AGENCY OF MINE PERMITTING FOR IN SITU:

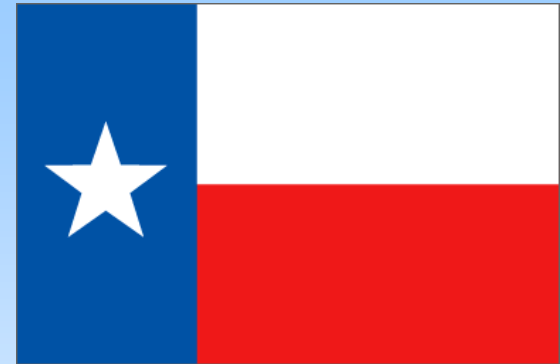
Texas Commission on Environmental Quality, TCEQ Water Permits Div.;
Office of Permitting, Remediation and Registration

CONTACT PERSON

Ben Knape, 512 239 6633

Underground Injection Control Program, Texas CEQ
MC-130, PO Box 13087
Austin TX 78711- 3087

TEXAS



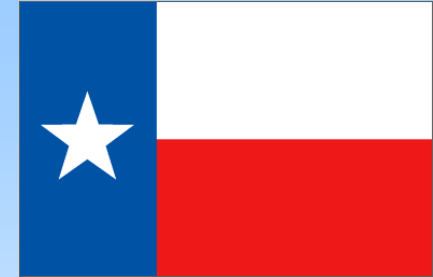
LEAD AGENCY OF MINE PERMITTING FOR SURFACE MINING

Surface Mining and Reclamation Division, Texas Railroad Commission

CONTACT PERSON

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

REGULATORY BASIS



In Situ

Texas Administrative Code Title 30, Part 1

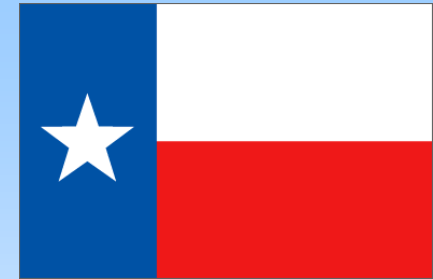
- Chapter 27, Texas Water Code
- Chapter 281, Applications Processing
- Chapter 305, Consolidated Permits
- Chapter 331, Underground Injection Control
- Chapter 106, Rules 106.4 (PBR) and 106.416 (Uranium Recovery Facilities - Air)

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
 - o Division 3, Surface Mining Permits
 - o Division 5, Exploration Activities
 - o Division 6, Reclamation
 - o Division 7, Designation of Lands Unsuitable for Surface Mining

TYPES OF PERMITS



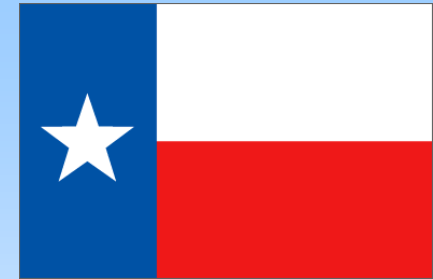
In Situ

- 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 Exploration Permit
- Uranium Surface Mine Permit
- TNRCC (now TCEQ) General Permit # TXR050000 – Storm Water Discharges from Industrial Activity (surface mining)

FORMS



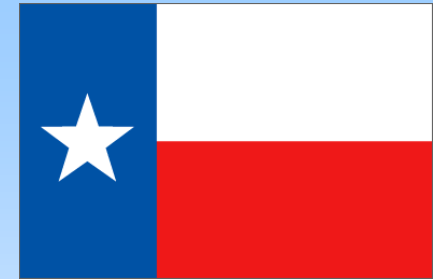
In Situ

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

KEY POINTS



- In situ and surface mining have separate permitting tracks
- Regulations revolve around protection of water and air.
- Be aware of the 20 Points of Light Project regarding resolution of issues involving IUC Class I, as a possible model for III and V issues resolution.
www.tceq.state.tx.us/assets/public/permitting/waste/uic/20_points_of_light.pdf
- 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 TCEQ

For Questions or Assistance, contact:

Alan Kuhn

Senior Principal Consultant

Program Manager, Mining Services

Kleinfelder, Inc.

8300 Jefferson NE, Suite B

Albuquerque, NM 87113

505 344 7373

akuhn@kleinfelder.com

KLEINFELDER