



North Dakota Geological Survey

Edward C. Murphy - State Geologist

APPENDIX C

Department of Mineral Resources

Lynn D. Helms - Director

North Dakota Industrial Commission

<https://www.dmr.nd.gov/ndgs/>

Administrative Rules Committee

Testimony of

Edward C. Murphy

North Dakota Geological Survey

September 11, 2008

Administrative Rules Committee Chairman and Committee Members:

Following please find my written testimony concerning the adoption of administrative rules by the ND Geological Survey of the Department of Mineral Resources and North Dakota Industrial Commission. The items listed are pursuant to Mr. John Walstad's letter of August 28, 2008.

1. *Whether the rules resulted from statutory changes made by the Legislative Assembly.*

Neither the amendments to the Subsurface Mineral Program (NDAC 43-02-02) nor the creation of a new chapter entitled In Situ Leach Uranium Mining (NDAC 43-02-02.2) were a result of statutory changes.

2. *Whether the rules are related to any federal statute or regulation.*

Neither of the rule changes is directly related to any federal statute or regulation.

3. *A description of the rule making procedure followed in adopting the rules.*

July thru December, 2007 -- Wrote rules and rec'd comments on proposed rules from NDS DH, NDSWC, NDPSC, and USNRC.

March 10, 2008 -- Presented general summary of proposed rules at public informational meeting in Belfield.

April 22, 2008 -- Industrial Commission gave approval to proceed with proposed rules.

April 23, 2008 -- Filed full notice and rules with Legislative Council.

April 24, 2008 -- Wrote regulatory analysis.

May 2, 2008 -- Wrote small entity regulatory analysis and small entity impact statement.

May 7, 2008 -- All papers (10 daily + 42 weekly) published proposed rules notice between May 1 -- May 7.

May 1 thru September, 2008 -- The proposed rules were posted on the ND Geological Survey website.

May 27, 2008 -- Held a rules hearing in DMR Conference Room (Case no. 10092).

July 11, 2008 -- Completed response to all comments received.

July 16, 2008 -- The North Dakota Industrial Commission adopted the rules as approved (order no. 12008).

July 16, 2008 -- Submitted final rules to Attorney General for an opinion.

August 8, 2008 -- The Attorney General approved the legality of the proposed rules and a copy of the rules were sent to the Legislative Council.

August 11, 2008 -- Notified all parties of Administrative Rules Hearing and posted on the web.

September 11, 2008 -- Administrative Rules Hearing.

October 1, 2008 -- Rules become effective.

4. *Written or oral concerns, objections, or complaints for agency consideration with regard to these rules.*

Comments were received from two parties at the hearing (Cindy Klein, with the Dakota Resource Council, and Slope County Commissioner Mike Teske) and written comments were received from one party (on June 6, 2008, written comments were received from Liliias Jarding (NP PhD, nonprofit doctor) on behalf of the Dakota Resource Council) during the 10-day comment period. There were a total of 101 comments, 19 oral and 82 written. Liliias Jarding incorporated all but one of Cindy Klein's oral comments into her written comments. A 34-page response was prepared for the comments. That response is summarized in an attached table (pages 5 - 8).

Of the 101 comments:

- Two were directed to the rule changes regarding bonding under the subsurface mineral program (43-02-02-11).
- Eight were general comments on uranium mining.
- The remaining 91 comments were directed towards the newly created chapter on in situ leach uranium mining (43-02-02.2). These include:
 - a) 18 comments having to do with word definitions.
 - b) 15 comments on hearings and notices.
 - c) 6 comments were related to flexibility in the rules – ie., changing the phrase “*the department may*” to “*the department shall*” and the weighting of hydrogeologic or environmental criteria against each other.

Response to the comments:

- One was a positive comment regarding the proposed changes to subsurface mineral bonds (43-02-02-11).
- 11 were not within department jurisdiction and/or fell within other regulatory programs. These include:
 - a) Requiring the operator of an ISL facility to pay for specialized training of first responders.
 - b) Addressing the principles of “*in good faith*” and surface owner rights.
 - c) Air quality issues.
 - d) Surface facilities including retention ponds.
 - e) The potential for temporary and permanent devaluation of property in mining areas.
- 23 changes were made to the proposed rules based on these comments. The incorporated comments include:
 - a) Ten were changes to word definitions.
 - b) Two requested mandatory notice and hearings (one for aquifer exemptions, one at the end of the postclosure period).
 - c) A more detailed accounting of proposed water usage (NDSWC will require this same information for a water use permit).
 - d) The majority of the remaining 10 dealt with clarification and consistency issues (i.e., using

the same language and phrases throughout the rules).

- 66 of the comments were not incorporated into the proposed rules for various reasons.

Many of these were rejected on the grounds that the suggested revisions would be overly restrictive and unduly burdensome for the department to administer and implement. Additionally, the suggested revisions would negatively impact the flexibility within the rules that the department believes is necessary in order to properly regulate a site based upon the local and site-specific hydrogeologic conditions. A number of suggested revisions to definitions and replacement of the word “*may*” with “*shall*” were rejected in order to maintain that flexibility.

Examples of comments not incorporated into the rules:

- a) The department should look back more than five years when investigating operational history of companies submitting an ISL permit application.
- b) The department should consider the operational history of companies in other countries.
- c) Concerns that ISL bonds may be set too low.
- d) The public should be notified and a hearing set for any of the following: when new injection wells are authorized, when there are permit revisions, when any remedial action takes place, when uncontrolled excursions occur, and where company records will be stored. Additionally, it was suggested that any member of the general public should have the right to request a public hearing “*at all critical junctures in the mining process.*”
- e) The public should have at least 60 days notice prior to each hearing and 120 days for a hearing on a permit application.
- f) Notices should be posted in newspapers in all counties which are contiguous to the land encompassed within the proposed permit application area.
- g) Companies should have to keep records for at least 25 years.
- h) The definition of “*occupied dwelling.*”
- i) Criteria for remedial action plans, etc. should be weighted against each other.
- j) Groundwater sampling, etc. should be done by a third party, rather than be performed by the company; should be done more frequently than currently proposed; and there should be a shortened duration of time between sampling and analysis of samples.
- k) The initial groundwater baseline values and restoration values should remain one and the same.
- l) A broadening of the definition of “*contiguous land*” to include all land within a 10-mile-radius of the proposed permit application area.
- m) Significant enlargement of time for review of an application from 180 days to 270 days or more.

5. *The approximate cost of giving public notice and holding any hearings.*

The total cost to the North Dakota Geological Survey, beyond staff time, was \$1,198 to advertise in the state’s newspapers.

6. *An explanation of the subject matter of the rules and reasons for adopting those rules.*

43-02-02-11 The purpose of the proposed amendments are to change the way we determine bond amounts within the subsurface mineral program. The proposed amendments will base the amount of the bond on the number of drill sites and total footage and will eliminate single well and blanket bonds. The subsurface mineral program regulates drilling projects that range in scope from an auger hole that is only a few feet deep to a 16,000 foot-deep well. Under these amendments, the bond will more accurately reflect reclamation costs.

43-02-02.2 Prior to the creation of chapter 43-02-02.2, in situ leach uranium mining could have been permitted under both 43-02-02 (subsurface minerals) and 43-02-02.1 (Underground Injection Control – Class III Wells). This new chapter more effectively regulates in situ leach uranium mining than both those chapters would have.

7. *Regulatory Analysis*

A regulatory analysis was not requested by the Governor or another agency. Even though the proposed amendments likely would not have an impact on the regulated community in excess of \$50,000, an analysis was still done on these rules (see attached pages 9 and 10).

8. *Small Entity Regulatory Analysis*

A small entity regulatory analysis was completed for the amended rule as well as the new chapter (see attached pages 11 - 13).

9. *Whether a constitutional takings assessment was prepared as required by NDCC section 28-32-09.*

Neither of these rule changes constitutes a takings.

10. *If these rules were adopted as emergency rules under NDCC section 28-32-03.*

These rules were not adopted as emergency rules.

Thank you for your consideration of the ND Geological Survey's rule changes.

Sincerely,

Ed Murphy
State Geologist

NDAC	PROPOSED AMENDMENT or SECTION TITLE	COMMENT RECEIVED	ACTION TAKEN
43-02-02	SUBSURFACE MINERALS		
43-02-02-11	Bond	DRC Supports this amendment. DRC feels the proposed bond of \$5,000 per acre in this section was inadequate.	The proposed amendments will be adopted without any further modifications. The proposed amendments will be adopted without any further modifications.
	GENERAL COMMENTS ON URANIUM MINING		
		Slope County Commissioner Teske conveyed general concerns from his constituents relative to surface owner rights. Commissioner Teske conveyed general concerns from his constituents relative to temporary and permanent devaluation of property that might occur from mining. Commissioner Teske conveyed general concerns from his constituents relative to the site being returned back to its original condition. Commissioner Teske conveyed general concerns from his constituents relative to the need for additional law enforcement and additional security needs. Commissioner Teske conveyed general concerns from his constituents relative to additional training such as hazmat training for first responders. Commissioner Teske conveyed general concerns from his constituents relative to testing of wells for baseline conditions. He prefers that be done by a third party and not by the uranium company. Commissioner Teske conveyed general concerns from his constituents relative to air quality. Commissioner Teske conveyed general concerns from his constituents relative to open pit mining.	The DMR has been instructed by the Commission to draft separate legislation to address surface damage compensation. The proposed amendments will be adopted without any further modifications. The proposed amendments will be adopted without any further modifications. The proposed amendments will be adopted without any further modifications. The proposed amendments will be adopted without any further modifications. The proposed amendments will be adopted without any further modifications. The proposed amendments will be adopted without any further modifications. The proposed amendments will be adopted without any further modifications. The proposed amendments will be adopted without any further modifications. The proposed amendments will be adopted without any further modifications.
43-02-02.2	IN SITU URANIUM MINING PROGRAM		
	Background and Baseline	DRC requested the definitions for "background" and "baseline" be clarified as to whether they include contamination from past operations.	The proposed amendments will be adopted without any further modifications.
	Baseline Well	DRC requested the definition of "baseline well" be clarified as to how wells will be selected for consideration.	The proposed amendments will be adopted without any further modifications.
	Contiguous Land	DRC requested the definition of "contiguous land" be expanded to include land within ten miles of the permit area.	The proposed amendments will be adopted without any further modifications.
	Mechanical Integrity	DRC requested the definition for "mechanical integrity" include horizontal leaks, that mechanical integrity be removed from the definition, and that the word "significant" be defined.	The proposed amendments will be adopted without any further modifications.
	Negative Pressure Gradient	DRC requested the word "provide" be replaced with "can provide" in the definition of "negative pressure gradient." – In the last sentence.	The definition was changed to read in part: ...The purpose of this pressure gradient is to contain the recovery fluid by.... The proposed amendments will be adopted without any further modifications.
	Nonproduction Zone	DRC requested the definition of "nonproduction zone" include aquifers that are horizontal to the production zone.	The proposed amendments will be adopted without any further modifications.
43-02-02.2-01	Definitions		
	Occupied Dwelling	DRC believes the definition "occupied dwelling" should be the same as that outlined by the Office of Surface Mining and the N.D. Admin. Code for any type of mining.	The proposed amendments will be adopted without any further modifications.
	Perennial Drainage	DRC requested the definition of "perennial drainage" allow for the fact that streams in North Dakota may freeze for a period of time.	The proposed amendments will be adopted without any further modifications.
	Plugging	DRC requested the definition of "plugging" include preventing migration within formations.	Definition was changed by replacing "formations" with the word "strata".
	Beneficial Use	DRC requested that "beneficial use" be defined separately and more clearly.	A definition for beneficial use was added to this section.
	Production Rate	DRC requested that the term "production rate" should be clarified and the word "significant" should be defined in this context.	The phrase "overburden production rate" was deleted from the rules.
	Processing Facilities	DRC requested that the term "processing facilities" be defined.	The proposed amendments will be adopted without any further modifications.
	Restored Aquifer	DRC requested that the term "restored aquifer" be redefined.	Definition amended to read: "restored aquifer means that portion of an aquifer within a restoration area where the water quality has, by natural or artificial processes, returned to restoration values."
	Satellite Facility	DRC requested that the term "satellite facility" be clarified to define the word "remote."	Added the following sentence to the definition: "Many of the 1st facilities operating today process the yellow cake at the plant site and do not utilize satellite facilities."

NDAC	PROPOSED AMENDMENT or SECTION TITLE	COMMENT RECEIVED	ACTION TAKEN
	Surface Mine Facilities	DRC requested that the term "surface mining facilities" be defined and that it include drill rigs, drill cuttings, wellheads, all facilities associated with uranium production and processing, and retention ponds.	The proposed amendments will be adopted without any further modifications.
	Tailings	DRC requested that the "tailings" be defined.	The definition amended to: "Tailings may include drill cuttings and all wastes from uranium exploration, mining, and processing."
	Technical Revision	DRC requested that the word "minimal" be clarified in the definition of "technical revision," noting it could mean different things to different people.	The proposed amendments will be adopted without any further modifications.
	Underground Source of Drinking Water	DRC requested that the definition of "underground source of drinking water" be amended to include private water sources, as most wells in uranium mining areas are private.	The proposed amendments will be adopted without any further modifications.
43-02-02.2-5	Permit Application – General Contents	DRC requested that past issues be considered for a much longer time period than five years.	The proposed amendments will be adopted without any further modifications.
		DRC requested operations in other nations, where much of recent uranium activity has occurred, be considered.	The proposed amendments will be adopted without any further modifications.
43-02-02.2-06	Review Period	DRC requested since most companies are new, "applicant" should be clarified to include a company's officers, executive personnel, subcontractors, and those who will be project managers.	The proposed amendments will be adopted without any further modifications.
		DRC believes the review period suggested is too short for adequate consideration of the complex issues that arise with in situ leach mining.	The proposed amendments will be adopted without any further modifications.
43-02-02.2-08	Notice of Hearing	DRC believes the public notice provisions in the proposed rules are too limited in scope – that notice is only provided to landowners within the permit application area before the initial hearing.	The proposed amendments will be adopted without any further modifications.
		DRC wants all public notices posted on the State's website at a specific location.	The proposed amendments will be adopted without any further modifications.
43-02-02.2-09	Information Added After the Filing Date.	DRC suggested at least 120 day public notice on a permit application hearing.	The proposed amendments will be adopted without any further modifications.
		DRC wanted the rules to expressly grant the public the right to request a hearing – not only at the time a permit application is filed, but at all critical junctures in the mining process.	The proposed amendments will be adopted without any further modifications.
43-02-02.2-11 43-02-02.2-13 43-02-02.2-18	Bond, Permit Application - Reclamation Plan, Bond	DRC wanted notice required at all stages of the regulatory process.	The following sentence was added: "The department shall give notice to the public of the additional information at least 15 days before the scheduled hearing date."
43-02-02.2-13	Bond	DRC feels the proposed rules could lead to a bond amount that is too low and too short-term to protect the public or the State's interests and should be amended.	The proposed amendments will be adopted without any further modifications.
		DRC believes bonding should reflect that many of the new uranium companies are not organized in the United States.	The proposed amendments will be adopted without any further modifications.
		DRC felt that some reclamation and bonding issues that are specific to the in situ uranium process and the uranium industry are not addressed directly in the proposed rules.	The rule was changed to read: "The permit applicant shall give notice by certified mail to surface and subsurface owners."
43-02-02.2-15	Permit Application – General Contents	DRC believes that the definition of "contiguous land," should be expanded to list owners of both surface and subsurface interests within ten miles of the proposed permit area.	The Department of Mineral Resources has been instructed by the Commission to draft separate legislation to address surface damage compensation.
		DRC wants a new subsection to be added that requires information on whether the deposit to be mined includes other contaminants commonly found with uranium.	The proposed amendments will be adopted without any further modifications.
43-02-02.2-16	Permit Application - Additional Baseline Information	DRC wants a requirement added to identify historical and cultural resources present in and within one mile of the proposed permit area.	The proposed amendments will be adopted without any further modifications.
		DRC wants a to require detailed information on pump tests designed to indicate any vertical movement of water into or out of the proposed production area.	The proposed amendments will be adopted without any further modifications.
		DRC wants a new subsection added to require information on the amount of water to be used during the mining process, consumed by the mining process, used during the reclamation process, consumed by the restoration process, and disposed.	The rule was amended to read: "An estimate of the water requirements including flow rates and volumes for each phase of the mining and restoration operation."
		DRC wanted the word "air" added after the phrase "to prevent pollution of" in this section.	The rule was amended to read: "... disposed of in a manner designed to prevent pollution of air, surface water, or ground water."
		DRC wanted water quantity added to this section.	The rule was amended to read: "Ground water quantity and quality."
43-02-02.2-17	Permit Application - Mine Operations Plan	DRC wanted a subsection added that requires a description of the steps that will be taken to protect historical and cultural sites as part of the site monitoring plan.	The proposed amendments will be adopted without any further modifications.
		DRC wanted a subsection added requiring information on the proposed spacing and placement of monitoring wells.	The proposed amendments will be adopted without any further modifications.

NDAC	PROPOSED AMENDMENT or SECTION TITLE	COMMENT RECEIVED	ACTION TAKEN
43-02-02.2-17	Permit Application - Mine Operations Plan	DRC wanted the words "and production" added after "all injection" in this section. DRC wanted the words "identifying and" added before "replugging these wells." DRC wanted a subsection added that includes provisions for mitigation of adverse impacts on soil quality, plants, and livestock. DRC wanted this rule reworded to read "Minimizing the production of mine waste, the amount of time it is present on the surface of the ground, and the possibilities for its transport by wind; and..." to include information on all the potential impacts of mine wastes during operations.	The rule was amended to read: "...maintain mechanical integrity of all injection and production wells..." The proposed amendments will be adopted without any further modifications. The proposed amendments will be adopted without any further modifications. The proposed amendments will be adopted without any further modifications.
43-02-02.2-18	Permit Application - Reclamation Plan	DRC requested that "cost analysis" be defined.	Added to the end of 43-02-02.2-18 the following: "...and is subject to department approval".
43-02-02.2-20	Ground Water Restoration Values	DRC stated that the estimated cost of water should be included in this section. DRC believes that the proposed rules rely too much on the concept of best available technology for the restoration of ground water.	The proposed amendments will be adopted without any further modifications. The proposed amendments will be adopted without any further modifications. The proposed amendments will be adopted without any further modifications.
43-02-02.2-22	Request to extend 30 day notice period to 60 days	The DRC wanted the public to have at least 60 days notice for the following: information added after the initial permit filing date, proposed revisions to the permit, department actions on aquifer exemption, authorization of new injection wells, remedial action plans for excursions, and postclosure plans.	The proposed amendments will be adopted without any further modifications.
43-02-02.2-23	Designation of Exempted Aquifers	DRC wanted the public notified separately about department actions on aquifer exemption.	The rules were amended to read: "The department may after notice and hearing, exempt an aquifer or a portion of an aquifer..." The proposed amendments will be adopted without any further modifications.
43-02-02.2-23	Designation of Exempted Aquifers	DRC believes the rules should allow for the possibility that water that is now considered too deep, poorly situated, or economically or technologically impractical to be used as drinking water could be retrieved under future conditions.	The proposed amendments will be adopted without any further modifications.
43-02-02.2-22	Technical Revisions to an In Situ Leach Mine Permit Well Construction Requirements - General	DRC wanted the public notified separately about proposed revisions to the permit.	The proposed amendments will be adopted without any further modifications.
43-02-02.2-26	Well Construction Requirements - General	DRC did not want the well construction requirements to be the same as requirements for water wells or oil and gas wells.	The proposed amendments will be adopted without any further modifications.
43-02-02.2-27	Construction Requirements - Injection Wells	DRC wants the monitoring well requirements in this section clarified.	The proposed amendments will be adopted without any further modifications.
43-02-02.2-28	Monitoring Wells - Minimum Requirements	DRC wanted "radioactive materials" included in the list of potential contaminants in this section.	The proposed amendments will be adopted without any further modifications.
43-02-02.2-29	Excursions - Controlled	DRC wanted "may" to be replaced with "shall" in the discussion involving when the department allows a well to be plugged or requires the operator to prevent fluid from moving into unauthorized water zones.	The section was amended to read: "...The department will either require the plugging of the well or require the operator to perform such work as necessary to prevent the movement of fluid into unauthorized zones..."
43-02-02.2-30	Mechanical Integrity	DRC wanted "may" to be replaced with "shall" in the discussion involving when the department allows a well to be plugged or requires the operator to prevent fluid from moving into unauthorized water zones.	The section was amended to read: "...The department will either require the plugging of the well or require the operator to perform such work as necessary to prevent the movement of fluid into unauthorized zones..."
43-02-02.2-33	Corrective Actions for Improperly Sealed Wells	DRC wants the monitoring well requirements in this section clarified.	The proposed amendments will be adopted without any further modifications.
43-02-02.2-34	Authorizing New Injection Wells Within Permit Area Boundary.	DRC wants the rules to specify how adequacy criteria would be weighted in relationship to each other. DRC wanted the public notified separately about the authorization of new injection wells.	The proposed amendments will be adopted without any further modifications. The proposed amendments will be adopted without any further modifications.
43-02-02.2-36	Construction Quality Assurance Plan	DRC wants the inclusion of the same information for company staff as required for contractors.	The rule was amended to read: "...key personnel including the level of experience and training..."
43-02-02.2-43	Production Area Operational Monitoring Requirements	DRC felt that this section should specifically include measurement of ammonia, total alpha radiation, total beta radiation, uranium, radium-226, and radium-228.	The proposed amendments will be adopted without any further modifications.
43-02-02.2-46	Subsidence Monitoring	DRC wanted the public notified separately regarding any evidence of subsidence discovered as part of the monitoring process.	The proposed amendments will be adopted without any further modifications.
43-02-02.2-48	Excursions - Reporting Requirement	DRC stated that reporting should be required within 24 hours of detection of any noncompliance with a permit or malfunction of the injection system that may cause fluid migration.	The Commission amended the proposed rule to read: "...The operator shall report within 24 hours any noncompliance with a permit or malfunction of the injection system that may cause fluid migration into or between unauthorized zones..."

NDAC	PROPOSED AMENDMENT or SECTION TITLE	COMMENT RECEIVED	ACTION TAKEN
43-02-02.2-50	Excursions - Sampling Frequency	DRC believes that the provision for analysis within one week is too long.	The proposed amendments will be adopted without any further modifications.
43-02-02.2-51	Excursions - Remedial Action	DRC wanted the public notified separately about remedial action plans for excursions.	The proposed amendments will be adopted without any further modifications.
43-02-02.2-52	Excursions - Controlled	DRC believes the following sentence is unclear. "The department could determine that clean up was not necessary if a change in water quality was due to any impact of the mining process other than recovery fluids."	The proposed amendments will be adopted without any further modifications.
43-02-02.2-53	Excursions - Not Controlled	DRC believes the section should be rewritten and "shall" should replace "may" to require the department to take action when an excursion is not controlled.	The rule was amended to read: "... or a combination of approaches to assure clean up is accomplished in a timely manner."
43-02-02.2-54	Criteria for Determination of Adequacy of Remedial Action	DRC wanted the public notified separately about any uncontrolled excursion. DRC wants the rules to specify how adequacy criteria would be weighted in relationship to each other.	The proposed amendments will be adopted without any further modifications.
		For consistency, DRC wanted this section to include references to "animals, wildlife, aquatic life, and plant life"	The rule was amended to read: "Whether or not any person, animal, wildlife, aquatic life, and plant life is potentially affected by the injection."
43-02-02.2-55	General Reporting Requirements	DRC wants the operator to be required to provide an updated potentiometric map for all aquifers.	The Commission amended the proposed rule to read: an updated potentiometric surface map for all aquifers that are or may be affected by the mining operation.
		DRC believes the confidentiality granted under this section should not be extended beyond a total of one year.	The proposed amendments will be adopted without any further modifications.
43-02-02.2-58	Maintenance and Retention of Records	DRC wanted the public notified separately about the location of records on an operation unless this information is incorporated into the proposed rules. DRC wanted the rules to designate where records will be retained after a mining operation closes and to extend the three-year record retention period to at least twenty-five years. DRC wanted the word "shall" substituted for the word "may" in this rule so that the public and the State are assured of receipt of all records.	The proposed amendments will be adopted without any further modifications.
		DRC wanted the rules to state that all monitoring records are available to the public, both during and after operations.	The proposed amendments will be adopted without any further modifications.
43-02-02.2-63	Restoration Values Not Achieved	DRC believes that the proposed rules rely too much on the concept of best available technology for the restoration of ground water.	The proposed amendments will be adopted without any further modifications.
43-02-02.2-65	Postclosure Plan, Postclosure Bond - Estimated Costs for Postclosure Care.	DRC wanted the public notified separately about postclosure plans.	The rule was amended to read: "The commission will give notice of public hearing to determine if the postclosure period shall end..."
43-02-02.2-70	Postclosure Operation of Monitoring Systems	DRC did not think the proposed rule required a sufficient number of reports on water quality monitoring on an annual basis after closure.	The proposed amendments will be adopted without any further modifications.
43-02-02.2-71	Ground Water Contamination During the Postclosure Period	DRC wanted the rules to include specialized training for first responders in areas where uranium and its associated minerals and elements might be mined, transported, or processed. DRC wants the criteria for determining remedial action during the postclosure period to be weighted in relation to each other.	The proposed amendments will be adopted without any further modifications.
43-02-02.2-71	Ground water contamination during the postclosure period.	DRC requested that "economic reasonableness" and "technical practicability" be defined.	The wording of 42-02-02.2-71(d) was changed to read, in part: "The technical means required to, and the cost of, reducing or eliminating the contamination."
43-02-02.2-72	Approval of the End of the Postclosure Period	DRC wants a minimum requirement established for the postclosure period.	The proposed amendments will be adopted without any further modifications.
43-02-02.2-78	Hearings - Complaint Proceedings - Emergency Proceedings - Other Proceedings	DRC wanted public notice provided in all newspapers in counties where a permit is proposed and in contiguous counties.	The proposed amendments will be adopted without any further modifications.
GENERAL COMMENTS ON IN SITU URANIUM MINING			
	Third Party Sampling	DRC believes that many of the activities described in the proposed rules should require third party involvement.	The proposed amendments will be adopted without any further modifications.
	Enforcement and Penalties	DRC believes there is no provision for enforcement of these rules or for penalties to those who violate them.	The proposed amendments will be adopted without any further modifications.
	Excursion Cleanup	DRC believes there should be a requirement that operators complete clean up of excursions.	The proposed amendments will be adopted without any further modifications.

North Dakota Geological Survey
REGULATORY ANALYSIS
April 24, 2008

NDAC 43-02-02-11

NDAC 43-02-02.2

2.2.1 – Classes of Persons Impacted by These Rule Changes

NDAC 43-02-02-11 Subsurface Mineral Program Bond Change

The classes of persons impacted by these proposed rule changes are companies exploring for subsurface minerals exploration. We are proposing changing the way that we determine the bond amount for a subsurface mineral permit. Under the existing program, operators can obtain blanket bonds or bonds based on the number of individual wells. The current system lacks the flexibility in bonding that is needed for such a wide-ranging program that includes everything from shallow auger-holes to deep oil wells.

NDAC 43-02-02.2 New Rules for In Situ Uranium Leach Mining

The classes of persons impacted by this newly created chapter are companies planning to mine for uranium in North Dakota using in situ leach (isl) technology. Although we have authority to regulate this type of mining under the existing subsurface mineral and underground injection control class III programs, these new rules explicitly point out what is required of a company beginning with the permit application phase and carrying all the way through to postclosure.

2.2.2 – Probable Impact

NDAC 43-02-02-11 Subsurface Mineral Program Bond Change

For small exploration programs, this new method of determining will likely decrease the amount of the bond for the project. For large projects, the bond amount will be increased. The annual premiums on a \$100,000 or \$300,000 surety bond would likely range from \$1,200 to \$3,600 as compared to \$150 premium for a \$10,000 surety bond. Companies can avoid the premium increase by posting cds at the Bank of North Dakota. The bank charges a \$100 initial fee on cds regardless of the amount.

No operator will see an annual premium increase of more than \$5,000 for a surety bond under the proposed rules. Because we have issued only two subsurface mineral permits in the last 25 years, the proposed rule change will have a yearly impact of less than \$50,000.

NDAC 43-02-02.2 New Rules for In Situ Uranium Leach Mining

The new rules will require groundwater monitoring for one year prior to submittal of a permit application, a detailed permit application, a \$20,000 permit application fee, installation of

monitoring wells in the production horizon as well as aquifers above and below that horizon, extensive groundwater monitoring during and after the life of the facility, and a facility bond that would likely be in the tens of millions of dollars.

Most monitoring well installation and groundwater sampling would take place under the existing rules and therefore do not represent additional costs to the operator. The annual premiums on a twenty million dollar surety bond would likely be in the hundreds of thousands of dollars. Therefore, in a given year these proposed rules would have an impact of over \$50,000.

2.2.3 Estimated Cost to the Agency

NDAC 43-02-02-11 Subsurface Mineral Program Bond Change

The proposed change in bonding will add an additional hour of staff time to determine the proper bond amount during the course of the permit review.

NDAC 43-02-02.2 New Rules for In Situ Uranium Leach Mining

It will take hundreds of hours of staff time for geologists to review an in situ leach uranium mine permit application. We have estimated 800 hours at \$25 per hour to arrive at the \$20,000 isl application fee.

2.2.4 Alternate Methods Explored

NDAC 43-02-02-11 Subsurface Mineral Program Bond Change

We reduced the blanket bond amounts for the shallow well portion of this program four years ago because we saw that a small project was over-bonded. As a result of that change, a larger project is now potentially under-bonded. We could find no other way to fix this delimna than to charge by the drilled-foot and by the drill site.

NDAC 43-02-02.2 New Rules for In Situ Uranium Leach Mining

We considered writing these requirements into NDAC 43-02-02 and decided that it would be much cleaner for them to stand alone as a separate chapter.

North Dakota Geological Survey
SMALL ENTITY REGULATORY ANALYSIS
May 2, 2008

NDAC 43-02-02-11

NDAC 43-02-02.2

The majority, if not all, subsurface mineral operators in North Dakota are likely to be defined as large entities. For a small entity to become involved in a subsurface mineral venture, especially a uranium in situ leach (isl) facility, they would have to have substantial financial backing. The resulting premium increase on subsurface mineral exploration surety bonds is small enough that it should not be burdensome to small entities.

Minimize the adverse impact on small entities by establishing less stringent compliance or reporting requirements.

The compliance and reporting requirements for these rule changes are needed to prevent significant environmental problems or to catch and control problems as they arise.

Minimize the adverse impact on small entities by establishing less stringent schedules or deadlines for compliance or reporting requirements.

Because of the potential for significant environmental problems and the need to identify problems quickly, it is not possible to establish less stringent schedules or deadlines for small entities.

Minimize the adverse impact on small entities by consolidating or simplifying compliance or reporting requirements.

The bond form for the subsurface mineral program is one page and is very straight forward. Due to the potential for adverse impacts on the environment from a uranium isl facility, it is not practical to consolidate or simplify our permitting requirements.

Minimize the adverse impact on small entities by establishing performance standards that replace design or operational standards required in the proposed rules.

We can not lower performance standards due to the significant threat to the environment posed by an in situ uranium mining facility.

Minimize the adverse impact on small entities by exempting small entities from all or part of the rule's requirements.

Exempting a small entity from all or part of these proposed rules could not only have a negative impact on the environment, it could also lead to increased liability of the small entity for cleanup costs.

North Dakota Geological Survey
SMALL ENTITY ECONOMIC IMPACT STATEMENT
May 2, 2008

NDAC 43-02-02-11

NDAC 43-02-02.2

Small entities that may be subjected to the proposed rules.

Small entities that would be subjected to the bond changes in 43-02-02-11 would include small exploration companies or small manufacturing companies that utilize natural resources such as clay (brick manufacturers). I do not think that a small entity would have the capital to operate a moderate-sized isl uranium facility (43-02-02.2).

The administrative or other costs for small entities to comply with the proposed rules.

NDAC 43-02-02-11

There would be no administrative costs for the proposed bond changes if a company posted a cd at the Bank of North Dakota. Increased bond costs for larger projects would result in \$1,000-\$3,000 increase in premiums for a surety bond.

NDAC 43-02-02.2

A small entity could not operate a moderate-sized isl uranium facility.

The probable cost and benefit to private persons and consumers who may be affected by the proposed rules.

NDAC 43-02-02-11

Surety companies will benefit from increased surety bonds for large projects and operators will benefit from reduced premiums for small projects. Increased annual premiums on surety bonds for large projects will likely be within the range of \$100 to \$3,000.

NDAC 43-02-02.2

It will cost operators \$20,000 to submit an isl uranium permit application, \$19,900 more than under the existing rules. A facility bond will be in the tens of millions of dollars and will generate an annual premium for the surety companies in the hundreds of thousands of dollars. The benefit to the general public is that these rules explicitly offer better protection of the environment than do the existing rules.

The probable effect of the proposed rule on state revenues.

NDAC 43-02-02-11

There would be no effect on state revenue from the proposed change in bonding.

NDAC 43-02-02.2

The state would receive a \$20,000 fee per permit application and a \$1,000 fee to accompany permit amendments. It is anticipated that no more than two isl facilities would operate within a period of twenty years. A half dozen to a dozen amendments could be expected over this same time period. Total revenue to the state over a twenty year period would be approximately \$50,000.

Whether there are any less intrusive or less costly methods of achieving the proposed rule's purpose.**NDAC 43-02-02-11**

We had tried previously to adjust the bond amounts downward so that small projects were not over-bonded, but that has resulted in large projects potentially being under-bonded. The proposed method will give us the most flexibility that we need for a program which encompasses such a wide array of drilling depths.

NDAC 43-02-02.2

We determined the best means of safeguarding the environment was to use the new isl uranium rules from South Dakota as a template for isl uranium rules in North Dakota.

1. The first part of the report is a general introduction to the subject of the study. It discusses the importance of the study and the objectives of the research. It also provides a brief overview of the methodology used in the study.

2. The second part of the report is a detailed description of the methodology used in the study. It discusses the data sources, the data collection methods, and the data analysis methods.

3. The third part of the report is a detailed description of the results of the study. It discusses the findings of the study and the conclusions drawn from the results. It also provides a brief overview of the limitations of the study.

4. The fourth part of the report is a detailed description of the conclusions drawn from the study. It discusses the implications of the findings and the recommendations for future research.