

## TCEQ Comments on Docket ID No. EPA-HQ-OAR-2012-0788

On behalf of the State of Texas, the Texas Commission on Environmental Quality (TCEQ) submits these comments on the proposed rules in 40 Code of Federal Regulations Part 192. The State of Texas is uniquely affected by the proposed rules because: 1) there is an active *in situ* uranium mining industry in the state; 2) Texas has primacy for the Underground Injection Control program (UIC) under the Safe Drinking Water Act (SDWA); and 3) Texas is an Agreement State under the Atomic Energy Act for the licensing of uranium recovery facilities.

- I. EPA should withdraw the proposed rules; study historic uranium mining sites and review existing data; and if necessary, re-propose any rules under the UIC program under the authority of the SDWA.

EPA has previously determined that protection of groundwater from the underground operation of *in situ* uranium mining is regulated under the UIC program of the SDWA and not under EPA's Uranium Mill Tailings Radiation Control Act (UMTRCA) authority.

TCEQ remains particularly concerned that EPA's proposed rules impose an unnecessary jurisdictional reorganization in the regulation of the *in situ* uranium mining industry. As TCEQ noted in comments on the original proposed rule<sup>1</sup>, on page 4167, EPA stated: "EPA has always held the position that UMTRCA is the controlling legal authority for protection of groundwater and NRC is obligated to implement the 40 CFR Part 192 standards to carry out that function at ISR sites." EPA has not always held this position as this statement contradicts a previous EPA determination that groundwater from ISR (*in situ* recovery) sites is protected by the UIC program under the SDWA. When first implementing new rules under UMTRCA, EPA previously determined that "rules for the protection of groundwater from the underground operations of *in situ* mining are provided by the UIC program promulgated under Sections 1421 and 1422 of the Safe Drinking Water Act."<sup>2</sup> EPA stated that the Part 192 regulations "are not intended to apply to the underground ore bodies depleted by *in situ* uranium mining operations."<sup>3</sup> Following EPA's 1983 directions, the State of Texas structured its regulatory program for *in situ* mining so that the protection of groundwater from *in situ* uranium operations is regulated under the authority of the UIC program. Since the time of receiving UIC primacy and entering an agreement with the Nuclear Regulatory Commission (NRC) for the licensing of uranium recovery in the early 1980s, the State of Texas has protected groundwater from the underground operations at *in situ* facilities under the UIC program. The state UIC program and the state radioactive licensing program work closely together to assure that an injection well permittee and radioactive materials licensee at *in situ* uranium mining sites comply with all applicable requirements and that the sites are sited, designed, operated, monitored, restored, and decommissioned so that human health, radiation safety, and the environment are protected.

TCEQ's UIC rules in 30 Texas Administrative Code Chapter 331 already contain requirements for establishing pre-mining baseline water quality, establishing monitor wells for excursion detection, establishing excursion corrective action, establishing groundwater restoration water quality goals, establishing post-restoration stability, and considerations for changing restoration goals. EPA has approved these rules as the UIC program for the State of Texas under the SDWA. EPA has never indicated that TCEQ's UIC rules for the protection of groundwater at *in situ* uranium mining operations are inadequate.

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<sup>1</sup> 80 Fed. Reg. 4156, January 26, 2015

<sup>2</sup> 48 Fed. Reg. 45932. October 7, 1983

<sup>3</sup> 48 Fed. Reg. 45933. October 7, 1983

Furthermore, the proposed rules under Part 192 are more suited to the injection operations than the management and disposal of by-product material. It is the underground injection that changes existing groundwater chemistry. It is the injected fluids that must be monitored for excursion. And, it is the changed groundwater from the injection operations that must be restored. As discussed below, the proposed regulations in Part 192 have nothing to do with the processing, possession, transfer and disposal of byproduct material. If EPA intends to move forward with these types of regulations, TCEQ requests that EPA withdraw the proposed rules in Part 192 promulgated under UMTRCA and re-propose under the UIC requirements in 40 CFR Parts 144-148 under SDWA.

**EPA does not correctly characterize the authority of the UIC program under SDWA or what an aquifer exemption does.**

EPA states that the UIC rules are inadequate for addressing groundwater at *in situ* uranium mining operations. As discussed above, EPA has previously determined that rules for the protection of groundwater from the underground operations of *in situ* mining are provided by the UIC program promulgated under SDWA. In the re-proposal of the rule, EPA continues its characterization of the UIC program protections as inadequate, as it did on page 4167 of the original rule proposal in which EPA stated "Reliance on the requirements of the UIC program alone would not adequately address groundwater protection at ISR facilities, given that the purpose of the UIC program is to prevent endangerment of underground sources of drinking water (USDWs), not to address the restoration of groundwater. Moreover, if the groundwater is not considered a USDW, as is typically the case at ISR sites, it is not protected under the Safe Drinking Water Act." On page 7413 of the preamble, EPA states "As discussed in section I.B., the scope and level of protection of the SDWA differs from the UMTRCA as groundwater at uranium ISR sites could have beneficial uses even if the aquifer has been exempted from protection under the SDWA."

TCEQ is surprised that EPA summarily dismisses the protections afforded under the UIC program requirements. Groundwater is still protected even though the groundwater in the injection zone does not meet the definition of a USDW (because it is situated within an exempted aquifer or naturally contains total dissolved solids in excess of 10,000 mg/l). For example, a Class I injection well does not inject fluids into a USDW, but there are numerous requirements for the siting, design, construction, operation, monitoring, and closure of Class I injection wells for the protection of groundwater. The TCEQ's Class III injection well program has similar requirements for siting, design, construction, operation, monitoring and closure for Class III injection wells, even though the injection zone may be within an exempted aquifer. And further, the TCEQ's Class III injection well program includes requirements for determining baseline water quality, excursion monitoring within and beyond the vertical and horizontal extent of the exempt aquifer, corrective action, groundwater restoration, and stability demonstration.

TCEQ is not aware of any instance where the EPA has permitted *in situ* uranium mining in a direct-implementation state, so it may be correct that EPA's own UIC regulations in 40 CFR Parts 144-148 are inadequate. However, in Texas, the UIC program implemented under the SDWA is the TCEQ's program under Title 30 of the Texas Administrative Code that EPA has approved as provided in 40 CFR §147.2200. TCEQ's approved UIC program already addresses the groundwater issues that EPA now attempts to address under its UMTRCA authority. EPA has never informed the State of Texas that its approved UIC program is inadequate for protecting groundwater at *in situ* uranium mining operations. If EPA is concerned that UIC primacy states, like Texas, Wyoming and Nebraska, have UIC programs that are not consistent with each other as indicated on p. 4167 of the original proposal, then EPA should revise the minimum requirements for Class III injection wells in 40 CFR Parts 144-148. TCEQ recommends that EPA propose these rules for the UIC program under SDWA instead of Part 192 under UMTRCA.

**Byproduct material is not generated from the underground operations at *in situ* uranium mining sites.**

EPA's authority under UMTRCA does not extend to the underground operations at *in situ* uranium operations because byproduct material is not yet generated in the uranium recovery process in the subsurface. On page 7406 of the preamble, EPA cites its authority under Section 275 of the Atomic Energy Act, as amended by Section 206 of UMTRCA. Under Section 275(b), the administrator is required to promulgate standards of general application for the protection of public health, safety and the environment from radiological and nonradiological hazards associated with *the processing and with the possession, transfer, and disposal of byproduct material*, as defined in Section 11(e)(2), at sites where ores are processed primarily for their source material content or which are used for the disposal of such byproduct material. Under Section 11(e)(2), byproduct material means the *tailings or wastes* produced by the extraction or concentration of uranium or thorium from any ore processed primarily for its source material content. EPA's own definition of byproduct material further states that "the ore bodies depleted by uranium ISR operations and which remain underground do not constitute uranium byproduct material."

Section 11(e)(2) byproduct material is the waste generated from the uranium recovery operations. UMTRCA was enacted to provide EPA with legal authority to develop standards associated with the processing and the possession, transfer and disposal of byproduct material for inactive and active uranium recovery operations.

As TCEQ did in a comment on the original rule proposal, TCEQ again emphasizes that the NRC's regulation in 10 CFR Section 40.4 defines "uranium milling" as any activity that generates byproduct material. In the stage of operations that EPA now tries to regulate in the new rules in Subpart F, there is no byproduct material that has been generated. As defined, byproduct is the tailings or wastes. Tailings are waste materials from processing ore for their mineral content. Tailings are the portion of the extracted and processed ore that are regarded as too poor to be treated further. Wastes are materials that are unwanted or discarded. UMTRCA was enacted to address problems associated with historic and ongoing operations where surface impoundments holding vast quantities of tailings were leaching contaminants or emitting pollutants into the environment. Because byproduct material is not yet generated in the subsurface process, EPA's authority under UMTRCA does not extend to the underground operations at *in situ* recovery sites as EPA recognized in the 1983 UMTRCA rulemaking.

Byproduct material is generated at *in situ* mining operations; it just isn't generated in the subsurface arising from the injection activity. Byproduct material in liquid forms is generally processed and disposed in a Class I injection well: this can include reject wastewaters from reverse osmosis treatment, wastewater withdrawn from the aquifer to maintain a hydraulic sink, wastewaters from the processing of ion-exchange resins and wastewaters from the processing of the extracted uranium. Byproduct material in solid forms is generally removed for offsite disposal and can include contaminated soils, solids filtered and removed from mining solutions in the associated surface facilities, piping, well components and other equipment that becomes contaminated in connection with the extraction of the uranium.

**EPA's proposed rules in Sections 192.53, 192.54, and 192.55 exceed its authority under UMTRCA to promulgate *standards of general application for the protection of the public health, safety and the environment*.**

EPA should withdraw proposed Sections 192.53, 192.54, and 192.55 because they exceed EPA's authority to promulgate standards. UMTRCA confers the NRC and Agreement State programs in Section 206(d), not EPA, with authority to implement and enforce EPA's standards. EPA's

proposed rules in new Subpart F go beyond the promulgation of standards and address how those standards should be implemented and enforced.

The proposed rule in new §192.53 requires a groundwater monitoring program to establish pre-mining water quality, operational phase monitoring to detect excursions, restoration phase monitoring to monitor groundwater restoration progress, stability phase monitoring to monitor the stability of restored aquifers, and long-term stability monitoring to confirm stable conditions. Proposed §192.53 reflects EPA's attempt to implement the groundwater protection standard it established in §192.52 by establishing requirements for pre-operational, operational, restoration, and stability monitoring. The NRC or Agreement State program should be able to implement its own groundwater monitoring program requirements to address EPA's standards without regard to §192.53. In fact, the TCEQ's UIC program already addresses these requirements through the issuance of a Production Area Authorization and enforcement of rules in 30 Texas Administrative Code Chapter 331. The promulgation of requirements for a groundwater monitoring program exceeds EPA's authority to promulgate standards for groundwater protection.

Proposed §192.54 requires establishment of provisional and alternate concentration limits (ACLs) regarding water quality constituents within the production zone. Under proposed §192.54(a)(2), a provisional ACL "cannot pose a substantial present or future hazard to human health or the environment as long as the provisional alternate concentration limit is not exceeded." In this provision, EPA ignores the possibility that a constituent concentration may have posed a risk to human health and the environment prior to initiation of any ISR activities. At proposed §192.54(a)(3), this standard must be met at all points of exposure, including within the wellfield.

None of the uranium ISR sites in Texas had groundwater within the production zone that met federal drinking water standards prior to ISR activities<sup>4</sup>. Given this fact, it would be impossible for a licensee to meet the standard proposed for a constituent that exceeded federal drinking water standards prior to ISR activities. For example, groundwater within the production zone at all ISR sites in Texas exceeded the federal drinking water standard for radium. That is to say, this groundwater, with respect to radium, naturally was not protective of human health and the environment. Therefore, the requirement at proposed §192.54(a)(2) is impossible to meet with respect to radium. This same requirement applies to final ACLs under proposed 192.54(b)(1).

Proposed §192.55 requires a licensee to develop and implement a corrective action program to respond to excursion and exceedance scenarios detected during operation, restoration or stability phases at a site. Proposed §192.55 reflects EPA's attempt to enforce the groundwater protection standard it established in §192.52. Proposed §192.55 establishes requirements for when corrective action must be implemented, where it should occur, and the duration of the program. The TCEQ's UIC program already addresses corrective action required for detected excursions and restoration requirements in 30 Texas Administrative Code Chapter 331. The NRC or Agreement State program should be able to implement its own corrective action program requirements to enforce EPA's standards without regard to §192.55. The promulgation of requirements for a corrective action program exceeds EPA's authority to promulgate standards for groundwater protection.

**EPA should study current and historic *in situ* uranium mining sites before promulgating any rules.**

In the original rule proposal, EPA stated (p. 4165) that the behavior of a restored wellfield in the long-term, i.e. decades or longer after the ISR operations end, has not been examined. As

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<sup>4</sup> Hall, Susan. *Groundwater Restoration at Uranium In-Situ Recovery Mines, South Texas Coastal Plain*. USGS Open-file Report 2009-1143, p. 11.

discussed below, EPA's explanation of the proposed rules is based on conjecture and contradictory information. TCEQ again recommends that EPA conduct actual studies or investigations on historic or ongoing operations before promulgating any rules. There are sites in Texas that can be studied and TCEQ is available to assist EPA in reviewing information about particular former licensed and permitted *in situ* uranium mines.

**There is no evidence that *in situ* mining uranium operations in Texas have contaminated underground sources of drinking water.**

In comments on the original rule proposal, TCEQ noted that on page 4164, EPA stated, "the alteration of large subsurface areas through injection of chemical solutions also has the potential to cause changes in groundwater at significant distances downgradient." EPA offered no information to substantiate this claim, nor did EPA define what is meant by use of the term "significant." In Texas, the first permit for *in situ* uranium mining was issued in 1975. Since that time, the state has issued 41 Class III injection well permits for *in situ* uranium mining operations, and within those permitted areas, 64 production areas (similar to EPA's "wellfield") have been mined or are being mined. None of this mining activity has resulted in contamination of a USDW, downgradient or otherwise. There is no evidence, at least in Texas, that *in situ* uranium mining has affected groundwater any distance downgradient of an *in situ* uranium mining area. EPA has cited no examples of groundwater contamination resulting from *in situ* uranium mining operations to support its concerns. TCEQ reasserts its suggestion that rather than relying on conjecture and speculation, EPA should substantiate this claim with relevant evidence, such as an investigation at one or more closed *in situ* mine areas. Again, TCEQ is available to assist EPA in reviewing information about particular former licensed and permitted *in situ* uranium mines in Texas.

**EPA does not consider whether adoption of the proposed rules will result in a loss of available groundwater to future users.**

EPA states in the preamble (p. 7424) that "the proposal would protect valuable groundwater resources for future generations." However, adoption of the proposed rules will result in the depletion of large quantities of water from the aquifers that EPA is intending to protect.

TCEQ recommends that EPA consider both the qualitative and quantitative assessment of the proposed rules on groundwater. EPA should conduct a water availability study of the *in situ* uranium mining process and examine each proposed rule against the availability of water in the mined aquifer for future users. Extended operations, extended restoration, and additional well sampling will all result in a loss of water from the mined aquifer and additional wastewater disposal in a Class I injection well where the water will no longer be available for future users.

EPA refers to the importance of maintaining an inward hydraulic gradient to prevent excursions (pp. 7409 and 7414). For Texas *in situ* uranium operations, the operators maintain the inward gradient or "sink" during mining operations, restoration and the stability period. To maintain this sink, more water is withdrawn from the mined aquifer than is injected. The sink pulls in water from outside the mine area that was previously unaffected by the operations. The excess water is disposed in a Class I injection well in a formation with groundwater with total dissolved solids in concentration in excess of 10,000 mg/l. Extending periods of operation, restoration, and stability will increase the withdrawal of water from the mined aquifer so that it is no longer available. Restoration activities greatly increase the withdrawal of groundwater from the mined aquifer. All operators in Texas use reverse osmosis treatment in the restoration process. Reverse osmosis treatment produces a byproduct material waste stream. Approximately 20-30% of the water that is run through the reverse osmosis treatment process is reject wastewater that is disposed in a Class I injection well as byproduct material. Increasing or prolonging restoration requirements will increase the amount of groundwater

removed from the mined aquifer and disposed in a deep formation so that it is unavailable for future users. And finally, sampling protocols require well purging techniques to assure that collected samples are representative for formation water. Each sampling event requires a volume of water to be collected and disposed as wastewater. The volume of water lost is small compared to the water lost in maintaining a sink or restoration activities, but increasing the number of sampling and extending the duration of sampling requirements will also result in a loss of water from the mined aquifer. EPA should conduct a quantitative analysis on the groundwater that will be lost for future users as a result of the proposed rules. TCEQ recommends that EPA withdraw its proposed rules and perform quantitative studies before proposing new rules.

**EPA does not explain its authority and applicability of the proposed new subpart to the management of byproduct materials “prior to” the processing of uranium ores.**

Proposed rule at 192.50(b) (p. 7426) states that the subpart applies to the management of uranium byproduct materials “prior to” the processing of uranium ores utilizing *in situ* recovery methods. However, EPA provided no explanation of proposed Section 192.50 with regards to management of byproduct materials prior to the processing of uranium ores. As explained above, UMTRCA does not provide EPA authority to promulgate rules in the uranium recovery process prior to the generation of byproduct material. Byproduct material is not generated until source material is recovered. TCEQ requests clarification on EPA’s statutory authority to regulate the management of byproduct materials “prior to” the generation of such waste and recommends revision of the section so that it does not apply to the management of uranium “byproduct” materials prior to the processing of source material. It is not apparent that the proposed rules in Subpart F address byproduct materials at all.

**EPA does not include the consumption of groundwater resources during further restoration as a consideration in approving a provisional alternate concentration limit in §192.52(c)(4).**

Under proposed rules §§192.54 (c)(1) and (2), EPA lists the factors that may be considered in approval of an alternate concentration limit when a restoration goal for a constituent cannot be met. It appears that these factors do not include consideration of the consumption of groundwater resources during further restoration. As discussed previously, restoration activities result in a loss of groundwater, through deep well disposal. TCEQ recommends that proposed rules §§192.54(c)(1) and (2) be amended to add the following consideration—the consumption of groundwater during further restoration—to the factors considered when establishing an alternate concentration limit.

Similarly, TCEQ notes that under §192.54 (c)(1), when establishing an alternate concentration limit, no consideration is allowed regarding the current and future suitability of the use of the groundwater. A person could currently be using groundwater for irrigation, even though the groundwater is not suitable for such use. The suitability of the groundwater should be a consideration in establishing an alternate concentration limit. TCEQ recommends proposed rule §192.54 (c)(1) be amended to add the following consideration—the current and future suitability of the use of the groundwater—to the factors considered when establishing an alternate concentration limit.

**Current and future use are factors in consideration of approving an alternate concentration limit in §192.52(c)(4)(i)(E) and (ii) (E) , yet EPA states that class-of-use restoration goals are inconsistent with the requirements of 40 CFR Part 192 and 10 CFR part 40, Appendix A.**

Although under proposed rule §192.54(c)(1)(v) current and future use are considerations for establishing an alternate concentration limit, EPA provides no proposed standards for various

classes-of-use. TCEQ is unsure how the factors at §192.54(c)(1)(v) can be considered if an alternate concentration limit cannot be based on class-of-use. Current and future use may be for drinking water for human consumption, water for various types of livestock, irrigation of specific types of crops, aquatic life, wildlife, recreational use, or industrial use. TCEQ notes that under Criterion 5B(5), cited by EPA in the preamble, at (c) under this criteria, alternate concentration limits are allowed, and at Criterion 5B(6)(a)(v), current and future use are considerations in making a hazard finding under Criterion 5B(6). TCEQ agrees with the language in NUREG-1569<sup>5</sup> that class-of-use is an appropriate standard for groundwater restoration when original restoration values cannot be achieved.

**Section 192.52(a): It is not possible for all of the new requirements in Subpart F to be applied to wellfields that have already been mined.**

In the original rule proposal, EPA stated that proposed rule in §192.52(a) and the rest of Subpart F will apply to all new wellfields, operating wellfields and expansion of wellfields, except for those currently in restoration, stability monitoring or long-term monitoring. In response to this proposed rule, TCEQ commented that there are wellfields in Texas that currently are being mined. When permitted, the site operators were required to establish baseline groundwater quality for 26 water quality parameters according to applicable TCEQ requirements. This list does not include four of the constituents in proposed Table 1 to Subpart F: barium, chromium, silver, and gross alpha particle activity. Because mining of these wellfields has begun, establishment of baseline groundwater quality for these four constituents no longer is possible. TCEQ suggested that any standards for determination of baseline groundwater quality only apply to new mining areas. However, on page 7421 of the preamble, EPA states "The EPA sees no need to omit existing ISR facilities from this rule due to preoperational considerations. The NRC already requires ISR facilities to establish background conditions prior to beginning operations under 10 CFR 40, Appendix A, Criterion A." TCEQ is unsure as to the reference to Criterion A, as there is no such criterion in 10 CFR 40, Appendix A. TCEQ requests clarification as to the specific criterion or criteria to which EPA was referring in this statement. EPA continues by stating that for facilities that have begun ISR operations but that are not yet in the restoration phase can use background data collected prior to mining to set their constituent concentration standards.

TCEQ notes the criteria in Appendix A that address groundwater monitoring requirements apply only to the uppermost aquifer at a site<sup>6</sup>. Uranium mineralization (and, therefore, *in situ* mining) is not always in the uppermost aquifer. At those sites where uranium mineralization is in deeper aquifers but not in the uppermost aquifer, geochemical information from analysis of groundwater samples from a non-mineralized, uppermost aquifer would not be representative of the geochemical character of a deeper, mineralized aquifer. The groundwater constituents for which background must be established<sup>7</sup> are those commonly associated with uranium mineralization. Concentrations or activities of these constituents will be lower in a non-mineralized zone than in a mineralized zone. Using geochemical data from a non-mineralized zone to characterize the background geochemical character of a mineralized zone will result in underestimation of the background values for the mineralized zone. In such a situation, a mine operator would be required to restore groundwater in a mined zone to values that are unachievable. TCEQ again recommends below in Section II of these comments that the requirements of proposed §192.52(a) be revised to apply to new sites or to sites that have been licensed, but at which mining has not commenced.

<sup>5</sup> NUREG-1569, *Standard Review Plan for In Situ Leach Uranium Extraction License Applications*. U.S. Nuclear Regulatory Commission. June 2003. p. 6-9.

<sup>6</sup> See definition of the term "point of compliance, and criteria 5B(1) and 5B(2), Appendix A, 10 CFR Part 40, Appendix A.

<sup>7</sup> Proposed rule 40 CFR §192.52(c)(1) at 82 FedReg 7428, January 19, 2017.

**The proposed rules are too vague and subjective. Agreement State regulatory agencies and operators do not have sufficient direction about what is required in the proposed regulations.**

The State of Texas and the NRC have entered an agreement under Section 274(b) of the Atomic Energy Act. As an Agreement State, Texas implements the radioactive materials licensing program for *in situ* mining operations. The TCEQ's state licensing program must be compatible with the NRC's requirements and, the NRC retains authority to make the final determination that all applicable standards and requirements have been met prior to the termination of a TCEQ license.

EPA's proposed rules present too much uncertainty and subjectivity in the application of the requirements so that TCEQ may not know whether it is maintaining a compatible program. Further, TCEQ's interpretation of these very subjective rules may lead to second-guessing by the NRC (or EPA) when it comes to time to terminate a license. The licensee and the Agreement State regulatory agency may undertake significant effort to demonstrate groundwater restoration and stability only to learn later that the NRC (or EPA) desires different information to make the same determination. The applicable requirements should be certain, specific, and predictable so that an operator, an Agreement State regulatory agency, and the NRC all know the applicable requirements and can implement them consistently.

For example, in the proposed rule §192.53(a)(1) (p. 7429) for preoperational phase monitoring, EPA proposes, "A *sufficient* number of wells, at *appropriate* locations and depths, shall be installed *in such a manner* as to yield representative samples in order to define the ground flow regime and measure preoperational conditions and water quality for use in statistical tests during operations, restoration, stability, and long-term stability." The lack of specificity in this requirement presents too much uncertainty for a license applicant or the regulatory agency. How many wells are sufficient? What locations are appropriate? Should the wells be spaced randomly or on a grid pattern? Should the wells be located throughout the wellfield or located in areas with uranium ore? Should the wells be screened through the entire thickness of the mined aquifer or screened at intervals that correspond to the location of the ore bodies? If the Agreement State interprets this provision differently than the NRC, is the Agreement State maintaining a compatible program?

There are many other examples where uncertainty and subjectivity are present in the proposed rules. Proposed §192.53(a)(4) (p. 7429) states, "During the monitoring effort, *relevant* data documenting geology, hydrology and geochemistry for radiological and non-radiological constituents shall be collected...." Proposed §192.53(a)(4)(i) (p. 7429) states, "the monitoring effort shall be of *sufficient* duration of no less than one year and of *sufficient* scope to *adequately* characterize temporal and spatial variations in groundwater...." Proposed §192.53(a)(5) (p. 7429) states, "the licensee shall employ *appropriate* statistical techniques...." Who determines what relevant data is required or what statistical techniques are appropriate? What if the NRC and the Agreement State differ about what data is required or what statistical techniques are appropriate? The proposed rules present too much uncertainty for an Agreement State program to implement and maintain a compatible program. TCEQ recommends that EPA re-propose the rules and provide more specific requirements.

**The timing of applicability of the proposed rules is not consistent with UMTRCA.**

The proposed rule at 40 CFR 192.56 (p. 7430) provides that Subpart F shall be effective 60 days after publication of the final rule in the Federal Register. Section 275(b)(2) of the Atomic Energy Act provides that "within three years after such revision [by the Administrator], the Commission and any State permitted to exercise authority under section 2021(b)(2) of this title shall apply such revised standard in the case of any license for byproduct material as defined in



section 2014(e)(2) of this title or any revision thereof.” EPA does not explain how the effective date of the proposed rules complies with the three-year implementation allowed under UMTRCA.

As noted above, as applied to the State of Texas, the proposed rules shift requirements from one regulatory program (the UIC program) to another (the radioactive materials licensing program). To implement the proposed rules, TCEQ would require an extensive rulemaking project to revise the rules for both programs. In addition, because of the many instances where the proposed rules are subjective, the Agreement State regulatory program may need to wait for NRC interpretation or guidance on the implementation of these rules in order to maintain a compatible program. If EPA decides to adopt the rules, TCEQ requests that the rules not be effective for a period of three years to allow time for state rulemaking to implement the requirements.

**II. If EPA must move forward on the rules in Subpart F of Part 192, essential changes are necessary to the rules for an Agreement State to be able to implement them.**

As discussed above, the TCEQ, on behalf of the State of Texas, recommends that EPA withdraw the proposed rules and carefully study active and historic uranium mining sites *before* proposing any changes to regulation of *in situ* uranium mining. If EPA decides to move forward on the adoption of new rules in Subpart F of Part 192 despite the numerous problems presented, the TCEQ requests the following changes to the rules. EPA has the luxury of proposing rules under its UMTRCA authority that it never has to implement or enforce. In Texas, implementation and enforcement of the rules would be accomplished by the Agreement State program run by TCEQ. The following changes would be essential for TCEQ to be able to implement the new rules of Subpart F.

**EPA should revise its proposed definition of the term “point(s) of exposure.”**

Under proposed rule §192.51(y), groundwater at the point of exposure must be protective of the receptor. For humans, the standard for protection is the primary drinking water standards. TCEQ emphasizes that groundwater quality, unaffected by in-situ uranium mining, may not meet drinking water standards at a point of exposure<sup>8</sup>. Because of this possibility, TCEQ suggests the definition at §192.51(y) be revised to remove the last sentence of the definition:

“Used in setting ACLs, points of exposure are locations identified by the regulatory agency that represent possible future areas of exposure where the receptor can come into contact with groundwater (*e.g.* areas of recoverable groundwater). ~~The groundwater at that point of exposure must be protective of the receptor.~~”

The new requirements of Subpart F should only apply to new *in situ* uranium mines that have not been previously licensed by the NRC or an Agreement State program. The applicability section in §192.50(b) should be revised to state: “This subpart applies to the in-situ recovery of uranium at a new site that is authorized under a license issued by the regulatory agency on or after January 1, 2021. In-situ recovery of uranium at sites authorized under a license issued by a regulatory agency prior to January 1, 2021 are not subject to this subpart.”

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<sup>8</sup> For example, see NURE Study at <https://pubs.usgs.gov/of/1997/ofr-97-0492/>.

Existing *in situ* uranium mines should be allowed to continue to operate and decommission under the requirements that applied when the applicable permits and licenses were issued. Changing the rules after-the-fact risks abandonment of the existing sites. Existing operators may be unable to secure lease extensions or financing that would be required to extend the projected life of a planned project to include the proposed additional long-term stability monitoring period or to achieve changed restoration requirements. Despite best efforts, existing operators may be unable to comply with new requirements and abandon licensed projects. Abandoned sites leave a problem for others, such as the state or landowners, to take responsibility for the decommissioning and closure requirements. Abandoned sites would lead to delays in decommissioning and would reduce protections of public health, safety and the environment. If the new rules applied only to new sites licensed on or after January 1, 2021, risk of abandonment at existing operations would be reduced.

As previously discussed under Section I of these comments, proposed §192.52(a) should be revised to exclude application of this section to sites at which mining has occurred, but that are not in restoration. Using geochemical data from an unmineralized zone to establish restoration requirements for a mineralized zone will result in unachievable restoration requirements.

Planned *in situ* uranium mining projects should have sufficient time to prepare for compliance with the new requirements of Subpart F. The development of an *in situ* uranium mine takes many years of planning: exploration, delineation of minerals, acquisition of property rights and leases, financing, facility design, construction, personnel training, permitting, licensing, and marketing of the product. Establishing an effective date of January 1, 2021 would provide extra time to allow operators to plan for any new requirements imposed in Subpart F.

**The effective date of the rules should be changed to allow sufficient time for the NRC and Agreement States to adopt implementing rules. Section 192.56 should be revised to state “Subpart F shall be effective on January 1, 2021.”**

Section 275(b)(2) of the Atomic Energy Act provides that “within three years after such revision [by the Administrator], the Commission and any State permitted to exercise authority under section 2021(b)(2) of this title shall apply such revised standard in the case of any license for byproduct material as defined in section 2014(e)(2) of this title or any revision thereof.”

Establishing an effective date of January 1, 2021 would be consistent with UMTRCA’s three year allowance for NRC or Agreement State implementation. Because of the significant revision to the regulation of *in situ* uranium mining operation in the proposed rules, the TCEQ and the state of Texas would need sufficient time to: reorganize the existing UIC and Radioactive Materials licensing programs, review any NRC implementation or guidance issued on new subpart F, and then undertake corresponding rulemaking. If statutory changes are required in Texas to implement new requirements, a regular session of the Texas legislature would also be available during the period that extends the effective date of the rules.

Bryan W. Shaw, Ph.D., P.E., *Chairman*  
Toby Baker, *Commissioner*  
Jon Niemann, *Commissioner*  
Richard Hyde, P.E., *Executive Director*



## TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

*Protecting Texas by Reducing and Preventing Pollution*

-Date-

Attn: Docket ID No. EPA-HQ-OAR-2012-0788  
Health and Environmental Protection Standards for Uranium and Thorium Mill Tailings  
Air and Radiation Docket  
U. S. Environmental Protection Agency  
Mail Code 2822T  
1200 Pennsylvania Avenue NW  
Washington, DC 20460

Re: 40 Code of Federal Regulations (CFR) Part 192; Health and Environmental Protection  
Standards for Uranium and Thorium Mill Tailings; Proposed Rule

Dear Sir or Madam:

The Texas Commission on Environmental Quality (TCEQ) appreciates the opportunity to respond to the United States Environmental Protection Agency's (EPA) request for comments in the notice of proposed rulemaking published in the January 19, 2017 edition of the *Federal Register*, entitled "40 CFR Part 192 Health and Environmental Protection Standards for Uranium and Thorium Mill Tailings."

Enclosed, please find TCEQ's detailed comments relating to EPA's action referenced above. If you have comments or questions concerning the enclosed comments, please contact Mr. Charles Maguire, Director of the Radioactive Materials Division, Office of Waste, (512) 239-5308 or [charles.maguire@tceq.texas.gov](mailto:charles.maguire@tceq.texas.gov).

Sincerely,

Richard Hyde, P.E.  
Executive Director

Enclosure