

## **Introduction**

This response is issued in accordance with Section 124.17(a) of Title 40 of the Code of Federal Regulations (40 C.F.R. § 124.17), which requires that at the time any final U.S. Environmental Protection Agency (EPA) permit decision is issued, the Agency shall: (1) describe and respond to all significant comments on the draft permit decision raised during the public comment period; (2) specify which provisions, if any, of the draft decision have been changed and the reasons for the change; (3) include in the administrative record any documents cited in the response to comments; and (4) make the response to comments available to the public.

## **Background**

On November 7, 2015, EPA issued a draft Class I permit renewal to inject commercial non-hazardous waste and brine (permit number MI-119-1I-C002) to Northeastern Exploration, Inc. (“Northeastern”) for its Davis #1-19 well, and invited public comment. The public comment period ended December 8, 2015.

Northeastern submitted the only comments EPA received on the draft permit renewal, in a letter dated December 4, 2015, signed by Mr. Paul Husted, the Site Manager for Northeastern (the December 4, 2015, Correspondence). The December 4, 2015, Correspondence requested the opportunity to hold a conference call. EPA responds to those comments and the request in this document.

## **General and Out of Scope Comments**

EPA regulations at 40 C.F.R. Parts 144 and 146 state the requirements and standards that a permit applicant must meet to have an Underground Injection Control (UIC) permit application approved. Those regulations define the general scope of EPA’s authority and review process.

EPA received no general comments or comments that were deemed outside the scope of the UIC Program’s purview.

## **Specific comments**

### **Comment #1**

*... Northeastern would appreciate the opportunity to assist with developing mutually agreeable modified final permit conditions by having conference calls, and/or having meetings, and/or providing technical and regulatory summaries and analysis of materials that are already available in the compliance file of the Davis No.1-19 well and in publically available literature, so that the draft permit can be finalized. Northeastern Exploration, Inc. is not requesting any public hearing by the submittal of this comment letter. Please note that since Northeastern was not given the opportunity to provide additional information about the*

*new permit conditions regarding waste analysis proposed in the draft permit, we would appreciate the opportunity to have a dialog regarding these critical changes before the permit is finalized.*

**The December 4, 2015, Correspondence, at p.1.**

**Response to Comment #1**

On May 23, 2016, EPA held a conference call with Northeastern's representatives, Ken Cooper (Petrotek Engineering) and Colleen Allen (Northern A1 Environmental Services), to ensure mutual understanding of the draft permit and Northeastern's December 4 comments letter. By mutual consent, this conference call was audio recorded. A brief written description and an audio file of the conference call (saved as a CD-R disc) were made part of the permit record.

Northeastern's comments were added to the record, along with this response to those comments, the documents referenced in those responses, and the changes EPA is making to the permit in response to those comments.

**Comment #2**

*The Northeastern Davis No. 1-19 well is used to manage non-hazardous waste water derived from industrial sources and to also inject RCRA exempt fluids derived from upstream oil and gas related activities. The water managed in this well is typical of other Class I and Class II non-hazardous well operations in Michigan and other states. The "Class II" fluids managed in the well are not dependent on sampling results for RCRA characterization and, have no potential to be hazardous wastes because they are exempt due to the source. Both pre-screening and waste sampling of ongoing sources has been evaluated by Northeastern; sampling performed for the Davis No.1-19 substantially more rigorous for the Davis No 1-19 well than is typically conducted for competitor POTW and waste treatment operations in Michigan where discharge at surface is the ultimate fate of the waste water. Based on these circumstances, if our interpretation of certain new permit conditions is correct, some of the new conditions may subject Northeastern to compliance requirements that will not enhance protection of the environment, may be contrary to and inconsistent with historical implementation of regulatory requirements at the site for almost 20 years, are potentially inconsistent with the net effect of other regulatory requirements imposed on competing technologies, and will compromise the ability of Northeastern to remain competitive. Depending on clarification and our understanding of these conditions, we are also concerned that certain proposed permit conditions may not accurately reflect applicable legal and regulatory requirements, thus we request the specific basis for the determinations made to impose modified permit conditions.*

The December 4, 2015, Correspondence, at pp.1-2.

## Response to Comment #2

This comment does not specify which conditions Northeastern reads to be contrary to or inconsistent with historical implementation and/or potentially inconsistent with the net effect of other regulatory requirements imposed on competing technologies. EPA acknowledges that some of the language of the current permit differs from the permit EPA issued in 2005. The language is consistent with and derived from the Safe Drinking Water Act (SDWA) and UIC regulations. It is similar to language that EPA has placed or will place in permits for all commercial Class I non-hazardous well operators. EPA is not imposing any special conditions on Northeastern. Please note that UIC permits for injection wells are governed by the SWDA and the regulations promulgated thereunder, whereas conditions imposed on users of Publicly Owned Treatment Works (POTWs) are derived from the General Pretreatment Regulations for Existing and New Sources of Pollution, 40 C.F.R. Part 403.

EPA addresses Northeastern's requests for changes to specific conditions below. With respect to Northeastern's assertion that the Class II fluids it manages in its well are not dependent on sampling results for RCRA characterization and have no potential to be hazardous wastes, the draft permit Summary of Operating, Monitoring, and Reporting Requirements (Attachment A) incorporates the same sampling and analysis protocol set forth in the Waste Analysis Plan that Northeastern submitted as part of its application (Attachment F). In general, the exempt status of an exploration and production waste under RCRA depends on how the material was used or generated as a waste, rather than whether it is hazardous or toxic. See Environmental Protection Agency, Office of Solid Waste, *Exemption of Oil and Gas Exploration and Production Wastes from Federal Hazardous Waste Regulations* (October 2002), at p. 8.

## Comment #3:

### Page 1 of 18

*We request that the permitted injection Zone continue to be defined as it was previously: "Dundee Limestone and the Detroit River Group at depths between 2,365 feet and 3,400 feet". We see no reason for a new requirement that restricts injection to a depth of 2,710' when the open hole rat hole of the well continues to a depth of 3,004' as indicated in the application and the original permits all authorized injection to 3,400' to address the cleaned-out total depth of the well in the open hole and in the casing stub.*

The December 4, 2015, Correspondence, at p.2.

**Response to Comment #3**

The 2,710' depth was used in the draft permit because the well bore schematic diagram (Page E-1 of the draft permit) shows that to be the depth of wellbore fill as a result of a well workover performed in 2006. Assuming that the wellbore fill does not interfere with injectivity down to the original 3,400 feet depth, EPA accepts Northeastern's request to redefine the permitted injection zone as in the Dundee Limestone and Detroit River Group at depths between 2,365 feet and 3,400 feet. EPA has amended the injection bottom depth to 3,400 feet in the final permit, as Northeastern can clear the wellbore fill generated by its 2006 activities if it interferes with injectivity down to that depth.

**Comment #4**

**Page 16 of 18**

*We request that since operations may be curtailed at the facility [under Part II. D. "Monthly Reports"] Item 1 (b) to allow for "a measurement of annulus tank level once daily on each day during which injection occurs. If injection does not occur, an annulus tank measurement will be taken not less than once every seven calendar days". This would be consistent with the conditions already listed in Attachment A, on Page A-1 of 5.*

The December 4, 2015, Correspondence, at p.2.

**Response to Comment #4**

EPA accepts this explanation, and the language change has been made in the final permit, as requested. EPA believes this change in annulus tank fluid level measurement is consistent with the Operating, Monitoring and Reporting requirements of Attachment A and 40 C.F.R. Parts 144 and 146 and is protective of underground sources of drinking water (USDWs).

**Comment #5**

**Page 17 of 18**

*We request that item 3 be clarified. Should the word "within" be changed to "with"?*

The December 4, 2015, Correspondence, at p.2.

**Response to Comment #5**

The text of Page 17, Item 3 of the draft permit reads as follows:

“3. Reports on Well Tests and Workovers – Within forty-five (45) calendar days or within the next quarterly report after the activity, the permittee shall report to the Director the results of

demonstrations of mechanical integrity, any well workover, or results of other tests required by this permit.”

EPA has changed the language of II. D. 3 to read as follows:

“3. Reports on Well Tests and Workovers – Within forty-five (45) calendar days or with the next quarterly report after the activity, the permittee shall report to the Director the results of demonstrations of mechanical integrity, any well workover, or results of other tests required by this permit.”

EPA replaced “within” by “with” in the first line at the permittee’s request. This change does not alter the schedule.

**Comment #6**

**Page A-1 of 5**

*We request that the Temperature Monitoring Frequency list a caveat of "during injection" to be consistent with the permit text.*

The December 4, 2015, Correspondence, at p.2.

**Response to Comment #6**

EPA has changed the listing on Temperature at Page A-1 to add “(during injection),” as requested. This change is consistent with the language at II. C. 5 of the Permit.

**Comment #7**

**Page A-3 of 5**

*We request that Item 2 of the Class I waste stream sampling/testing requirements be altered to clarify that the parameter list and the second paragraph allow some characteristic tests to not be run based on process knowledge and/or historical generator data. Perhaps the first paragraph could be "As applicable, all new Class I waste..."*

The December 4, 2015, Correspondence, at p.3.

**Response to Comment #7**

The comment does not specify for which characteristic tests the Permittee requests this flexibility, and suggests language adding it for all the parameters. Page A-3, Item 2 of the draft permit already includes the language “(if applicable, based on process knowledge)” for the following four

Characteristic parameters: Corrosivity, Reactivity, Ignitability, and Toxicity. EPA has amended Page A-3, Item 2 of the final permit to add the same language to the following parameters: Conductivity, Chloride, Sulfate, Bicarbonate, Calcium, Potassium, and Sodium. EPA believes that these changes will provide a reasonable degree of flexibility to Northeastern to allow these tests to not be run based upon process knowledge and/or historical generator data. The language was added to parameters the potential presence or absence of which can be predicted by process knowledge. No change has been made to the requirements to run tests for Total Dissolved Solids, Total Suspended Solids, pH, and Specific Gravity, which are inherent properties that can be measured in all water samples, even in distilled water.

**Comment #8**

***Waste Analysis Plan and Attachment F***

*We request that the Waste Analysis Plan (WAP, Attachment F), be accepted as submitted in June of 2015 without modification and that Northeastern have the opportunity to confirm that all pre-existing waste approvals will remain in effect. We also seek to clarify how the new approval and testing process would be implemented. Based on inclusion of the WAP and Attachment G, Northeastern understands that prior Class I and Class II source codes and generator approval numbers will remain unchanged. However, the following table was provided by USEPA and it is unclear how this fits with the remainder of the draft permit.*

<b><i>Changes made in the Northeastern Exploration Waste Analysis Plan, incorporated as Attachment F of draft permit renewal, MI-119-II-C002</i></b>		
<b><i>WAP Page</i></b>	<b><i>Text Affected</i></b>	<b><i>Reason(s)</i></b>
<i>1-4</i>	<i>Last sentence of paragraph 1. C now reads: “Revisions to the WAP, upon acceptance by USEPA, will become part of the administrative record and constitute a major modification of the permit.”</i>	<i>Revisions to the WAP are not allowed under the criteria for minor permit modification.</i>
<i>2-13</i>	<i>Deleted the entire last paragraph from Page 2-13: “Approval shall continue to be granted for Class II produced brine sources on a county-by-county basis for produced water from a particular formation. . . ”</i>	<i>This type of new source approval (“by county”) is not allowable under UIC regulations.</i>

The December 4, 2015, Correspondence, at p.3.

**Response to Comment #8**

EPA confirms that all pre-existing waste approvals are to remain in effect in the permit renewal. EPA has also determined that certain specific parts of the Waste Analysis Plan (WAP) as submitted were not acceptable. The above table was provided via email by EPA to Northeastern via Petrotek (contractor consultant) to summarize the changes EPA had made to Northeastern's WAP, which was incorporated in large part as Attachment F of the permit. The above table is not part of the permit, but was provided to notify Northeastern which specific parts of the WAP, as originally submitted, were not acceptable to EPA.

New waste sources proposed by Northeastern may be approved by EPA via minor permit modification without having to modify the WAP (Attachment F). The List of Approved Sources (Attachment G) does not need to be duplicated nor updated within the WAP, and therefore, the WAP does not need to be amended when new waste sources are proposed for approval to EPA. When new commercial waste sources are approved, EPA will update and append the new sources only to the List of Approved Sources (Attachment G). Please see Response to Comment #9.

**Comment #9*****WAP Item 1, Page F-6 (WAP Page 1-4)***

*The modification on Page F-6 removes the statement pertaining to WAP revisions being minor modifications stating that "revisions to the WAP are not allowed under the criteria for minor permit modification. Please refer to 40 CFR Part 144.41(e), which states:*

*§144.41 Minor modifications of permits.*

*Upon the consent of the permittee, the Director may modify a permit to make the corrections or allowances for changes in the permitted activity listed in this section, without following the procedures of part 124. Any permit modification not processed as a minor modification under this section must be made for cause and with part 124 draft permit and public notice as required in §144.39. Minor modifications may only:*

*(e) Change quantities or types of fluids injected which are within the capacity of the facility as permitted and, in the judgment of the Director, would not interfere with the operation of the facility or its ability to meet conditions described in the permit and would not change its classification.*

*Clearly, minor permit modification regulations allow changes to items that may be captured in a waste analysis plan, i.e. changes in quantities or types of fluids injected that are within the capacity of the facility, as permitted. The Northeastern WAP outlines in detail, how changes to the quantities and types of fluids would be characterized, and clearly states that information pertaining to these increased or different type of fluids must be approved by USEPA prior to disposal. Changes to the type and quantity of fluids injected pertains to the*

*acceptance of waste from new generator sites, and past permits have always required EPA approval. Northeastern proposed no change to this process which has been successfully implemented for approximately 20 years.*

*The following modification to the Agency-initiated modification clarifies the intent of the last sentence in paragraph l . C (permit page F-6, WAP page 1. 4) without removing the ability to accept changes in quantities and types of fluids as allowed under regulation:*

*"Revisions to the WAP pertaining to changes in quantity and types of fluid in accordance with 40 CFR Part 144.41 (e) and upon approval by USEPA will become part of the administrative record and constitute a minor modification of the permit. "*

The December 4, 2015, Correspondence, at pp.3 -4.

### **Response to Comment #9**

40 C.F.R. § 144.41 lists the changes that can be made through a minor permit modification: a) correct typographical errors, b) require more frequent monitoring or reporting, c) change an interim compliance date that is not more than 120 days after the date specified, d) allow for a change in ownership or operational control if certain conditions are met, e) change to the quantities or types of fluids injected which are within the capacity of the facility as permitted and, in the judgment of the Director, would not interfere with the operation of the facility or its ability to meet conditions described in the permit and would not change its classification, f) change in construction requirements approved by the Director pursuant to § 144.52(a)(1) (establishing UIC permit conditions), provided that any such alteration shall comply with the requirements of Parts 144 and 146(g) amend a plugging and abandonment plan which has been updated under § 144.52(a)(6), h) amend a Class VI injection well testing and monitoring plan, plugging plan, post-injection site care and site closure plan, or emergency and remedial response plan where the modifications merely clarify or correct the plan. The changes to the Waste Analysis Plan noted in the tables above do not fall within the changes allowable under minor permit modification.

Changing the quantities and types of fluids injected differs from changing the procedures a facility uses to analyze fluids to be injected. Northeastern can still change the quantities or types of fluids using a minor modification if the change falls within 40 C.F.R. § 144.41(e). Waste analysis procedures, when established in the permit as issued, would apply to the collection and analysis of samples of such fluids.

Northeastern seeks to extend 40 C.F.R. § 144.41(e) to cover not only changes to quantities and type of fluids injected, but also changes to waste analysis procedures. If Northeastern cannot meet the waste analysis conditions procedures described in the permit, which include the Waste Analysis Plan requirements, or wants to use alternative procedures, then EPA will need to process a major modification to the permit to incorporate those alternative procedures.

New waste sources proposed by Northeastern may be approved by EPA via minor permit modification without having to modify the WAP (Attachment F). The List of Approved Sources (Attachment G) does not need to be duplicated nor updated within the WAP, and therefore, the WAP does not need to be amended when new waste sources are proposed for approval to EPA. When new commercial waste sources are approved, EPA will update and append the new sources only to the List of Approved Sources (Attachment G). If the permit, as it existed prior to the minor modification, does not specify waste analysis procedures for the new sources, then EPA will append the required procedures for the sources in the same minor modification action.

### **Comment #10**

#### ***WAP Item 2, Page F-20 (WAP Page 2-13)***

*The Agency-initiated modification to Section 2. B. 2 removes the county-by-county Class II produced brine source approval that has been in place and successfully implemented for approximately 20 years, stating that "this type of new source approval ("by county") is not allowable under UIC regulations. "*

*Clearly, this practice is allowable under UIC regulations since multiple permits have been issued to Northeastern by Region 5 allowing this county/formation approval for approximately 20 years. Class II regulations were examined specifically for this exclusion and none could be found. Clarification by USEPA as to the specific citation within UIC regulations that do not allow this type of source approval is requested. Northeastern assumes that the Agency may be relying on the following requirement to support the Agency's determination:*

*§ 146.13 Operating, monitoring and reporting requirements.*

*(b) Monitoring requirements. Monitoring requirements shall, at a minimum, include:*

*(1) The analysis of the injected fluids with sufficient frequency to yield representative data of their characteristics...*

*Northeastern has obtained many waste samples and analyses required by permit for each approved source over the years, and has obtained representative data to characterize each source for approvals. It must be pointed out that Northeastern has operated under the current by county approval process for over twenty years, and this approach allows streamlining and economizing of the waste characterization process without any compromise regarding waste composition characterization. Therefore, the requirements at 146. 13 (b) have been and would continue to be met using the previously approved "by county" approach. Non-well-specific characterization is allowed in other states and this change will have severe financial consequences with no benefit to further ensuring the safety of human health and the environment.*

The December 4, 2015, Correspondence, at pp.4-5.

**Response to Comment #10**

While the previous 2005 permit allowed “by county” waste characterization for the earliest Class II brine sources (only the first four Class II sources listed in Attachment G are listed by county), EPA does not allow “by county” waste characterization in UIC permits we issue currently. Each new proposed source of waste must be defined by specific township and range coordinates, and individually screened and analyzed in accordance with permit conditions. EPA now requires this of all Class II commercial disposal well operators. A “by county” analysis is not representative. An analysis of extensive oil field brine data from two counties in Michigan showed that there were significant variations in specific gravity, pH and bicarbonate values in different brine samples within the same county, with a trend towards heavier brines in the southern parts of those counties. See Jeremy Brill, *The Geographic and Geologic Distributions of Brines in Michigan* (2007) (unpublished research project, NNEMS Fellowship Program, Office of Water/Underground Injection Control Branch, U. S. EPA – Region 5). A more comprehensive 1986 report on analysis of brines, conducted for EPA by Purdue University, showed that concentrations of nearly all brine parameters varied across the same county in eighteen different counties in Indiana. See Geosciences Research Associates, Inc. and Department of Earth and Atmospheric Sciences, Purdue University, *Chemical Analysis of Oil Field Brines in Indiana* (1986). The appendices to that report show significant variation in the chemical constituents of brine samples within the same county. EPA has added these studies to the Administrative Record for the final permit decision. Based upon this data, it is not valid to conclude that limited or past sampling of brine can be representative of an entire county, nor representative of a new brine source within the same county. Therefore, Northeastern must screen and analyze each new source of waste in accordance with permit conditions, instead of relying on “by county” Class II produced brine source approval.

**Comment #11****Page G-1 thru 10 of 10**

*We request that the Waste Analysis Parameter list provided as Attachment G simply refer to or be modified to be consistent with the waste-specific parameter list for each source approval that has been presented as Attachment F in Table WAP-3 of the Waste Analysis Plan or that the footnote refer to Table WAP-3 to ensure clarity.*

The December 4, 2015, Correspondence, at p.5.

**Response to Comment #11**

As requested, Attachment G (List of Approved Sources) has been amended in the final permit by listing the source-specific waste analysis parameters as they are listed in Attachment F, Table WAP-3 of the Waste Analysis Plan. Future new waste sources approved by EPA will be formally appended only to the List of Approved Sources (Attachment G), via minor permit modification.

## Determination

After consideration of all public comments, EPA has determined that none of the comments submitted have raised issues which would alter EPA's basis for determining that it is appropriate to re-issue Northeastern a permit to continue to operate the Davis #1-19 injection well. Therefore, EPA is issuing a final permit to Northeastern. As a result of comments, there are a number of changes made to the final permit from the draft permit, as described in the above responses to comments.

## Appeal

In accordance with 40 C.F.R. § 124.19(a), any person who filed comments on the draft permit may petition the Environmental Appeals Board (EAB) to review any condition of the final permit decision. Additionally, any person who failed to file comments on the draft permit may petition the EAB for administrative review of any permit conditions set forth in the final permit decision, but only to the extent that those final permit conditions reflect changes from the proposed draft permit. Any petition shall identify the contested permit condition or other specific challenge to the permit decision and clearly set forth, with legal and factual support, petitioner's contentions for why the permit decision should be reviewed, as well as a demonstration that any issue raised in the petition was raised previously during the public comment period (to the extent required), if the permit issuer has responded to an issue previously raised, and an explanation of why the permit issuer's response to comments was inadequate as required by 40 C.F.R. § 124.19(a)(4). If you wish to request an administrative review, documents in EAB proceedings may be filed by mail (either through the U.S. Postal Service ("USPS") or a non-USPS carrier), hand-delivery, or electronically. The EAB does not accept notices of appeal, petitions for review, or briefs submitted by facsimile. All submissions in proceedings before the EAB may be filed electronically, subject to any appropriate conditions and limitations imposed by the EAB. To view the Board's Standing Orders concerning electronic filing, click on the "Standing Orders" link on the Board's website at [www.epa.gov/eab](http://www.epa.gov/eab). All documents that are sent through the USPS, except by USPS Express Mail, must be addressed to the EAB's mailing address, which is: Clerk of the Board, U.S. Environmental Protection Agency, Environmental Appeals Board, 1200 Pennsylvania Avenue, NW, Mail Code 1103M, Washington, D. C. 20460-0001. Documents that are hand-carried in person, delivered via courier, mailed by Express Mail, or delivered by a non-USPS carrier such as UPS or Federal Express must be delivered to: Clerk of the Board, U.S. Environmental Protection Agency, Environmental Appeals Board, 1201 Constitution Avenue, NW, WJC East Building, Room 3332, Washington, D.C. 20004.

A petition for review of any condition of a UIC permit decision must be filed with the EAB within 30 days after EPA serves notice of the issuance of the final permit decision. 40 C.F.R.

§ 124.19(a)(3). When EPA serves the notice by mail, service is deemed to be completed when the notice is placed in the mail, not when it is received. However, to compensate for the delay caused by mailing, the 30-day deadline for filing a petition is extended by three days if the final permit decision being appealed was served on the petitioner by mail. 40 C.F.R. § 124.20(d). Petitions are deemed filed when they are received by the Clerk of the Board at the address specified for the appropriate method of delivery. 40 C.F.R. § 124.19(a)(3) and 40 C.F.R.

§ 124.19(i). The request will be timely if received within the time period described above. For this request to be valid, it must conform to the requirements of 40 C.F.R. § 124.19. A copy of these requirements is enclosed. This request for review must be made prior to seeking judicial review of any permit decision. Additional information regarding petitions for review may be found in the Environmental Appeals Board Practice Manual (August 2013) and A Citizen's Guide to EPA's Environmental Appeals Board, both of which are available at:

[http://yosemite.epa.gov/oa/EAB\\_Web\\_Docket.nsf/General+Information/Environmental+Appeals+Board+Guidance+Documents?OpenDocument](http://yosemite.epa.gov/oa/EAB_Web_Docket.nsf/General+Information/Environmental+Appeals+Board+Guidance+Documents?OpenDocument)

The EAB may also decide on its own initiative to review any condition of any UIC permit. The EAB must act within 30 days of the service date of notice of the Regional Administrator's action. Within a reasonable time following the filing of the petition for review, the EAB shall issue an order either granting or denying the petition for review. To the extent review is denied, the conditions of the final permit decision become final agency action when a final permit decision is issued by the EPA pursuant to 40 C.F.R. § 124.19(l).

#### Final Permit

The final permit and Response to Comments document are available for viewing at the Atlanta Public Library, 11901 Haymeadow, Atlanta, Michigan.

Please contact William Tong of my staff at (312) 886-9380, or via email at [tong.william@epa.gov](mailto:tong.william@epa.gov) if you have any questions about the Northeastern Exploration Inc. Davis #1-19 Class I commercial injection well permit.

  
Tinka G. Hyde  
Director, Water Division  
U. S. Environmental Protection Agency  
Region 5

Date 6/17/2014