



Mr. Rick Sauve, MA, CHMM  
Republic Industrial and Energy Solutions, LLC  
28470 Citrin Drive  
Romulus, Michigan 48174

January 25, 2022  
NTH Project No. 62-210446-00

**RE: 2021 Compliance Audit  
REIS Facility  
Romulus Michigan**

Dear Mr. Sauve:

We are pleased to submit this compliance audit for the two underground injection wells at the Republic Industrial and Energy Solutions, LLC (RIES) hazardous waste treatment, storage and disposal facility in Romulus, Michigan. We performed this audit in accordance with the scope of services outlined in our proposal (NTH Proposal No. 62-210446) dated October 29, 2021.

This audit was conducted to fulfill the requirements of permit condition Part II C.(8) of the U.S. Environmental Protection Agency's (U.S. EPA's) in each of the Underground Injection Control (UIC) Permits MI-163-1W-C010 and MI-163-1W-C011. This permit condition requires that, at least every 24 months after the initial 12 months after commencing injection, the permittee (REIS) obtain a compliance audit, including an on-site review, from an independent third party. The paragraph further states that the auditor's report evaluate the permittee's compliance with all provisions of the permit and shall be submitted to the permittee and the Director (of the U.S. EPA Region 5) within 2 months of the audit.

The audit identified several record keeping issues / findings that are inconsistent with permit conditions, which are described herein. In accordance with the permit conditions, the permittee must expeditiously address the noted items.

## **INTRODUCTION**

The REIS facility is licensed by the State of Michigan to receive and treat nonhazardous fluids, characteristic hazardous waste fluids, and listed hazardous waste fluids. The REIS facility is permitted by the U.S. EPA to inject the fluids into two underground injection wells. This audit satisfies the requirement of the U.S. EPA injection well permits for a third party audit. There is a separate permit for the State of Michigan Hazardous Waste Management Facility Operating License that is not covered by this audit. The U.S. EPA permit references the following documents, the conditions of which we also evaluated as part of this audit to the extent they were referenced in the permit; a separate comprehensive review of facility compliance with these documents was not made:



- Waste Analysis Plan (prepared as part of the State of Michigan Operating Permit), Revision 4.0, dated January 20, 2012
- Document Repository Plan, January 20, 2012
- Corrosion Monitoring Plan, dated July 16, 2013

REIS injects fluids under pressure into sandstone formations between approximately 4,000 and 4,500 feet below the ground surface. The injection tubing is fiberglass and is surrounded by an annulus leak detection fluid (diesel fuel). The annular fluid is maintained at a pressure exceeding that of the injected fluids. Therefore, a leak in the injection tubing would be identified by a decrease in the pressure differential between the injection and annular fluids. The U.S. EPA permits for the injection wells include a maximum allowed injection pressure, a minimum allowed annular pressure, as well as a minimum pressure differential between the annular and injection fluids.

The U.S. EPA permits require that REIS continuously monitor parameters associated with the injection well. Injections are conducted in batches, and a sample is required to meet certain physical and chemical parameters for compatibility prior to injection. In addition to documenting injection characteristics, the U.S. EPA permits require REIS to maintain documentation of received wastes, waste acceptance profiles, training, financial assurance, and mechanical integrity.

## **METHODOLOGY**

NTH Consultants, Ltd. (NTH) completed the Audit on December 9, 2021. The audit record review period was 24 months starting at the time of the previous audit (December 2019 through November 2021).

The Audit Team reviewed a portion of the following items:

- Approved waste profiles
- Records on the nature and composition of received wastes
- Records on the nature and composition of injected fluids
- Records of continuous injection monitoring devices
- Mechanical integrity test reports
- Calibration reports for injection monitoring devices
- Reporting and other permit required documents generated
- Financial assurance documentation
- Records of personnel training
- Required monthly reports
- Required annual report

Due to the large volume of monthly report documents generated during the audit period, a thorough review of representative example documents was coupled with spot check reviews of the remaining documents in these categories for consistency with the records for which



detailed reviews were conducted. Approximately 10 percent of monthly reports (which include chemical “fingerprints” of injected wastes) were randomly selected and reviewed in detail.

The audit team and the staff interviewed are identified in the table below. Resumes for the NTH audit team members are attached.

Name	Title
Steve Innes, CHMM, P.E.	Senior Project Engineer (NTH)
Andrew Kelly	Senior Staff Engineer (NTH)
Rick Sauve, MA, CHMM	Compliance Specialist (REIS)

The NTH audit team conducted the required on-site review on December 9, 2021. The on-site portion of the audit lasted approximately 8 hours. During the on-site portion of the audit, the audit team toured the facility, including the receiving area, the laboratory, the treatment area, and the injection wells. While most documents were reviewed on-site, some documents were downloaded from REIS’ online document repository after the on-site portion of the audit was completed.

To aid in the efficient completion of the audit, we used a checklist that incorporated the requirements of the U.S. EPA permits. The completed checklist allowed for easy identification of permit condition compliance and deficiencies.

## SUMMARY OF AUDIT FINDINGS

The audit checklist is attached. The line items listed on the checklist include the permit requirement, the document or method used to evaluate the requirement (where appropriate), the results of the review, and an indication of the result of the review. If the reviewed documentation identified a deviation from permit requirements, a “finding” is noted in the checklist. In addition to “findings”, some requirements are noted as “Document”. For these requirements, it appears that the requirement was met based on discussions with facility staff, but available documentation was not available to demonstrate compliance.

We summarize our findings and the related permit condition(s) below. Details for each item are included in the audit checklist. We note some items may refer to more than one finding as identified in the audit checklist.

- Recent calibration certificates were not available – **Part I E.9(a), Part II C.7**
- Monitoring records for analysis of injections (fingerprint forms) did not include the time of sampling – **Part I E.9.(e)(1)**.
- The 2021 Mechanical Integrity Test report was not submitted to the U.S. EPA within 30 days of the test – **Part I H.3, Part II D.3**



- An annual report was not submitted to the U.S. EPA for 2020 – **Part II B.2, Part II D.2**
- The annual report for 2019 did not include a certification of the Waste Analysis Plan accuracy and analysis representativeness – **Part II C.3**
- An internal audit was not conducted during the period between third party audits (in 2020) – **Part II C.8**
- There is no documentation that any of the findings from the 2019 third party audit were addressed – **Part II C.8**
- Some monthly reports were submitted late – **Part II D**
- Some documents required to be posted to the REIS website and/or office by the Document Repository Plan were not present, including MIT and warning / shutdown system test reports, documentation of well workover, calibration records, and notices to the Director – **Part II D**
- A statement of noncompliance regarding the low differential pressure on January 25, 2021 was not included in the corresponding monthly report – **Part II D.1(f)**
- Maintenance logs in the monthly reports did not include the reasons for performing the repair or maintenance, or the repair outcome and new life expectancy – **Part II D.1(h)**
- Discrepancies on two manifests that were not resolved were identified – **Waste Analysis Plan A.1(a)**
- Not every required parameter was recorded for each injection fingerprint – **Waste Analysis Plan D.1**

A summary of the items and related permit requirements for which documentation could be improved are presented below.

- The written 5-day report submitted subsequent to the low differential pressure on January 25, 2021 was not dated and no other submission information was available. Therefore, it was not possible to verify the submission occurred within the required timeframe. However, based on the content of the document, it appears that it was submitted on time. – **Part I E.12(d)**
- There was no documentation that the Director either witnessed the warning and shutoff system test or provided a waiver that the presence of the U.S. EPA was not required – **Part II B.4**
- Documentation of the well workover and well string replacement in 2020 did not indicate blowout prevention measures met the permit requirements – **Part II B.6(a)**



## LIMITATIONS

The investigations presented in this report have been completed in accordance with a proposal from NTH Consultants, Ltd. The evaluations and conclusions presented in this report have been made to assist the client in making a reasonable assessment of regulatory compliance with the specifically identified regulations at the identified property. Considering the identified scope of the present audit, our findings of compliance or non-compliance should not be construed as absolute certainties, but rather as probabilities based on our professional judgment.

This audit was completed for the purpose of determining regulatory compliance with the permit conditions of UIC Permits MI-163-1W-C010 and MI-163-1W-C011. In general, as they had already been reviewed and approved by the U.S. EPA and EGLE staff as part of the permit and operating license approval, NTH did not evaluate Republic's procedures and policies to determine if they were adequate or appropriate for use in the process at the site.

The findings, conclusions and recommendations presented in this report have been, in part, based on information provided by Republic personnel. NTH does not warrant the accuracy or completeness of the information provided by these individuals. This report presents NTH's opinion of the documents reviewed as of this date, based on the results of this audit.

Should you have any questions or require additional information, please call us at 248-553-6300.

Sincerely,

NTH Consultants, Ltd.

DocuSigned by:

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Steven Innes, CHMM, P.E.  
Senior Project Engineer

DocuSigned by:

D431240C939C423...

Richard L. Burns  
Senior Vice President

SI/RLB/clm

Attachment

**Environmental Geo-Technologies, LLC of Romulus, Michigan**  
**2021 Third-Party Audit in Compliance with U.S. EPA Permit Numbers: MI-163-1W-C010 and C011**

Permit Condition	Document Reviewed or Other Source. If audit of selected items, which selected and rationale	Result
<b>General</b>		
Has operation continued beyond the permit expiration date:	The US EPA permits were extended through October 26, 2021. Per permit condition I E 3(a), regulated activity can continue if a renewal application is submitted at least 180 days before expiration. A renewal application was submitted on 4/23/21, which is prior to the 180 day cutoff. Therefore, the facility can continue to operate in accordance with the permit.	OK
<b>Part I</b>		
E 9 Records		
a Were the following records maintained at least 5 years from the measurement		
Calibration	As described in II.C.7, recent calibration records were not available for review during the audit.	<b>Finding</b>
Maintenance	When conducted, records of maintenance activities are reported on the monthly reports submitted routinely to the agencies.	OK
Original chart recordings for continuous monitoring instrumentation	Original chart recordings were available for review at the facility.	OK
Copies of reports required by the permit	Reports were available for review unless otherwise noted herein.	OK
b Were records of data to complete the permit app retained for at least 5 years from permit date	The permit was approved more than 5 years prior to the audit.	N/A
c Were records of the nature and composition of injections retained for least 3 years after plugging	Records were observed at the facility.	OK
e Audit selected monitoring records for:	Injection monitoring is documented on standard forms that are included in the Monthly Reports. Since the last independent audit, 24 monthly reports were due to have been completed (December 2019 through November 2021). Representative monthly reports were selected for review during this audit at a rate of approximately 10%. Therefore, 2 reports were selected for a thorough review. By a random number generator, 2 and 22 were selected, which correspond to the January 2020 (2 months from December 2019) and September 2021 (22 months from December 2019) monthly reports.  No wastes were injected during January 2022, and as such there were no injection fingerprint forms for review for that month.	
1 Date, exact place and time of sampling or measurement	On the injection fingerprint forms reviewed, the date of the grab sampling is recorded, but time is not. For the automatic measurements recorded on the circle charts, the date and time are recorded. The place of sampling is indicated in the Waste Analysis Plan.	<b>Finding</b>

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Permit Condition	Document Reviewed or Other Source. If audit of selected items, which selected and rationale	Result
2 Names of individuals who performed sampling or measurements	On the injection fingerprint forms reviewed, the name of the sampler is indicated. The circle charts record the results of automated measurements and no sample is collected.	OK
3 Precise description of both sampling methodology and handling of samples	A description of the sampling methodology and handling of samples are indicated in the Waste Analysis Plan.	OK
4 Dates of analyses	On the injection fingerprint forms reviewed, the date of analysis is indicated.	OK
5 Names of individuals who performed the analyses	On the injection fingerprint forms reviewed, the name of the person who performed the analysis is included.	OK
5 Analytical techniques or methods used	The analytical techniques or methods used are indicated in the Waste Analysis Plan.	OK
7 Results of analyses	On the injection fingerprint forms reviewed, the results of the analysis are included.	OK
<b>E 10 Monitoring</b>		
Audit selected monitoring for:	See I E 9 e for a description of audit method.	
Were methods in App. I of 40 CFR 261 used	The analytical techniques or methods used are indicated in the Waste Analysis Plan, and are consistent with the requirements.	OK
Were the results reported at the intervals in Part II(D) and III(A) of the permit	The results were reported at the required intervals, unless otherwise noted in this report.	OK
Audit selected monitoring on the nature of injected fluids for:	See I E 9 e for a description of audit method.	
a Were methods in Tables I A, B and C of 40CFR136.3 or App. II of 40CFR 261 used	The analytical techniques or methods used are indicated in the Waste Analysis Plan, and are consistent with the requirements.	OK
b Did Sampling and analysis comply with Waste Analysis Plan	Staff interviewed indicated that the method of sampling and analysis complied.	OK
<b>E 11 Signatory Requirements</b>		
Audit monthly reports and other information required to be submitted for:		
Were they signed and certified in accordance with 40CFR144.32	The certification language matched the regulatory requirement.	OK

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Permit Condition	Document Reviewed or Other Source. If audit of selected items, which selected and rationale	Result
E 12 Reporting Requirements		
a <u>Were there physical alterations or additions</u>	Staff interviewed indicated that in 2020 July, a straddle packer was installed in Well 2 to replace the standard packer that had been originally installed, and that the well heads were rebuilt with stainless steel valves to replace the carbon steel originally installed.	N/A
<u>If so, was there written notice to the director</u>	An email indicating approval of the alteration was received on May 4, 2020.	OK
b <u>Were there planned changes to the facility or activity that might have resulted in noncompliance</u>	Staff interviewed indicated that there were no changes to the facility or activity that might have resulted in noncompliance.	
<u>If so, was there advance notice to the director</u>	N/A	N/A
c <u>Review permit for compliance schedule</u>	The permit contains no compliance schedule	
<u>Were compliance / progress reports on requirements in any compliance schedule of the permit submitted no later than 30 calendar days following each schedule date</u>	N/A	N/A
d <u>Did any of the following occur:</u>		
<u>Activities that may have endangered human health</u>	Staff interviewed indicated that no activities occurred that might have endangered human health.	
<u>Alarm or shutdown device activated</u>	The differential pressure between the annulus and injection string was below 100 psi on 1/25/21	
<u>If so was there:</u>		
<u>Oral notice within 24 hours</u>	Staff interviewed indicated that oral notice was provided for the alarm on the same day	OK
<u>Written report within 5 days (refer to permit for required contents of report)</u>	A written report was submitted. The letter indicates that it was sent within 5 days of the event, but it is not dated.	<b>Document</b>
e <u>Was there other noncompliance</u>	Staff interviewed indicated that no noncompliance occurred during the period subject to the audit.	
<u>If so, did reports contain information in I(E)(12)(d)(3) of the permit</u>	N/A	N/A

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Permit Condition	Document Reviewed or Other Source. If audit of selected items, which selected and rationale	Result
f Were there relevant facts not submitted with the application or incorrect information submitted?	Staff interviewed indicated that no relevant facts were not submitted or incorrect information was submitted.	
If so, was a report made within 10 days	N/A	N/A
g Was officer certification made that they have read and are familiar with permit within 30 days of receipt	The previous owner, EGT indicated that the permit was received on October 11, 2011. The certification was made in a letter to the U.S. EPA, dated October 25, 2011.	OK
E 13 Compliance with 40CFR144.14		
1 Notification	Provisions fulfilled by Permit	OK
2 Obtained EPA ID number		
Does the facility have an EPA ID Number	MIR000016055	OK
3 Comply with manifest system		
Audit selected manifests for compliance with 264.71	See I E 9 e for a description of audit method. The manifests for loads received during the audited months were consistent with the regulatory requirement.	OK
4 Manifest discrepancies		
Were there any manifest discrepancies (self reported or identified above)	Staff interviewed indicated that no manifest discrepancies were identified	
If so, were they addressed in accordance with 264.72	N/A	N/A
5 Does the operating record comply with 267.73 (a) and (b)		
Description and quantity of hazardous waste received,	See I E 9 e for a description of audit method. No haz waste received during audited months. However a cursory review of other months indicated that the description and quantity of hazardous waste is identified on the waste manifest.	OK
And method and date of treatment, storage or disposal in accordance with 40CFR 246 App I	The method of disposal is deep well injection as identified on the manifest by Management Method H134. The date of disposal is documented on the injection fingerprint.	OK
Location and quantity disposed, cross referenced with manifest number	The location of disposal is the sandstone formation between 3937 and 4550 feet. All manifested waste loads were disposed at this location during the audited period.	OK
6 Annual report		
Was biennial report submitted and did it contain the items required by 264.75	The most recent biennial report was submitted on February 28, 2020; the report was submitted in compliance with applicable regulations.	OK

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Permit Condition	Document Reviewed or Other Source. If audit of selected items, which selected and rationale	Result
7 Unmanifested waste report		
<u>Was any waste accepted without a manifest</u>	Staff interviewed indicated that no hazardous waste was accepted without a manifest.	
<u>If so, was a report submitted within 15 days and did it contain the items required by 264.76</u>	N/A	N/A
8 Personnel training		
<u>Is the program compliant with 264.16 (a)3</u>	HAZWOPER, RCRA and site-specific training were provided During February 2021.	OK
<u>Is it directed by a person trained in hazardous waste management procedures</u>	Dr. Harding from Integrated Environmental provided the required training.	OK
<u>Audit selected training records for:</u>	There was 1 operator throughout the time of the current audit period; his records were reviewed.	
<u>Was training received within 6 months of hire or job assignment</u>	Training records for the operator were reviewed and training was completed within the required timeframe.	OK
<u>Was there annual review</u>	Training records for the operators were reviewed and they received an annual review within the previous 12 months.	OK
<u>Is it documented as in 264.16 (d)</u>	The required items are in the EGLE issued operating license and on certificates provided in the Annual Report.	OK
H 2 Periodic Mechanical Integrity Testing		
a Long string casing, injection tubing and annular seal test within the last 12 months or	Records of the MIT testing for both wells conducted on July 26 - August 5, 2021, were reviewed.	OK
<u>whenever there is a well workover, the packer is reset or loss of integrity is suspected</u>	For Well 2-12, there was a workover in March 2020 and the packer was reset in July 2020. The required tests occurred in 10/2020, prior to resuming injection into this well.	OK
b Bottom hole cement tested by tracer survey within the last 12 months	The survey/testing completed during the July 26 - August 5, 2021 MIT confirmed a leak free condition of the tubing.	OK
c Temperature, noise, oxygen activation or other approved log within the last 24 months (or less if approved)	The survey conducted between July 26-August 5, 2021, did not indicate a loss of external mechanical integrity or indicate a sign of upward fluid movement.	OK
d Casing inspection after a workover in which the tubing is pulled	For Well 2-12, there was a workover in March 2020 and a casing inspection occurred.	OK

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**2021 Third-Party Audit in Compliance with U.S. EPA Permit Numbers: MI-163-1W-C010 and C011**

Permit Condition	Document Reviewed or Other Source. If audit of selected items, which selected and rationale	Result
H 3 Was Director notified at least 30 days prior to testing mechanical integrity	The director was notified at least 30 prior to the start of the testing that occurred during both 2020 and 2021, and provided an approval of the procedures by email.	OK
Were results reported within 30 days	The results of the 2021 MIT, completed on August 5, 2021, were submitted on September 22, 2021, which is more than 30 days from completion.	<b>Finding</b>
H 4 Were gauges calibrated to within 0.5% FS before the mechanical integrity test	A calibration certificate was included in the MIT Reports	OK
Is the gauge marked in no greater than 5psi increments	The gauge provided an accuracy of 2.4 psi and resolution of 0.15 psi	OK
H 5 Did a mechanical integrity test fail	Staff interviewed indicated that Well 2-12 failed mechanical integrity during a workover in March 2020. Staff indicated that no other such conditions has occurred, and a review of mechanical integrity documentation was consistent with this statement.	OK
If so, were operations halted and results reported	Well 2-12 was not used until after repairs had been made and MIT testing confirmed the well was suitable to resume service. The director was notified and approved the repair.	OK
I 1 Financial responsibility		
Has FAM been updated to include post closure costs	Staff interviewed indicated there are no post closure responsibilities for the wells.	N/A
a Is there a cost estimate for closure and post-closure in current dollars	The closure cost estimate was newly prepared on April 20, 2021, in current dollars.	OK
b Have the cost estimates been updated yearly within 30 days of the first estimate	The closure cost estimate was newly prepared on April 20, 2021, in current dollars.	OK
Was the estimate updated using the Oil and Gas Field Equipment Cost Index inflation factor	The update was conducted by obtaining a new cost estimate and is therefore current.	N/A
c Has the closure or post-closure plan changed	Staff interviewed indicated that the closure and post-closure plans have not changed.	N/A
If so has the cost estimate been updated	N/A	N/A
d Does the current cost estimate exceed the current FAM	The current cost estimate does not exceed the FAM.	OK
If so, has a revised FAM been submitted within 90 days	N/A	N/A
e Is a copy of the closure and post closure cost estimates available on site	A copy of the documents were available on-site for review during the audit.	OK

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Permit Condition	Document Reviewed or Other Source. If audit of selected items, which selected and rationale	Result
I 2    Insolvency		
Have any of the following occurred:		
<u>Bankruptcy of the trustee or FAM institution</u>	Staff interviewed indicated this condition has not occurred	OK
<u>Suspension or revocation of the authority of the trustee</u>	Staff interviewed indicated this condition has not occurred	OK
<u>Loss of the FAM institution to issue the instrument</u>	Staff interviewed indicated this condition has not occurred	OK
<u>If so, was the Director notified within 10 days</u>	N/A	N/A
I 3 <u>Has there been bankruptcy and if so was the Director notified</u>	Staff interviewed indicated this condition has not occurred	OK
I 4 <u>Was another FAM obtained within 60 days if 2 or 3 occurred</u>	N/A	N/A
J 3 <u>Has upward migration of fluids been discovered</u>	Staff interviewed indicated this condition has not occurred	OK
<u>If so, did operations cease and were EPA and MDEQ notified within 24 hours</u>	N/A	N/A
J 4 <u>Have any releases of hazardous waste occurred</u>	Staff interviewed indicated this condition has not occurred	OK
<u>If so, has corrective action been instituted</u>	N/A	N/A
K    Audit selected injections and determine if:		
1 <u>Land ban exemption is still in effect or concentrations below UTS</u>	Staff interviewed indicated that the land ban exemption is still in effect, and audit staff are not aware of the exemption being revoked.	OK

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Permit Condition	Document Reviewed or Other Source. If audit of selected items, which selected and rationale	Result
2 Are characteristics and concentrations below limits in permit Att. D	The reviewed injection fingerprints did not include characteristics or concentrations inconsistent with Attachment D of the Permit.	OK
Are monthly average injection range below limits in permit Att. A (166 GPM)	The reviewed injection ranges did not exceed the limits in Attachment A of the Permit.	OK
4 Has there been a false, inaccurate or incomplete information in a request for an exemption	Staff interviewed indicated that this condition has not occurred.	
If so, was the Director notified within 48 hours	N/A	N/A
5 Was an exemption terminated	Staff interviewed indicated that the land ban exemption is still effective and audit staff are not aware of the exemption being revoked.	
If so, was prohibited waste injected after that date	N/A	N/A

**Part II**

A Construction		
Has the construction of the well been altered since the notice to inject was received	Staff interviewed indicated that there have been no alterations have occurred to the well.	
If so, do the modifications comply with this section	N/A	N/A
B Operations		
Audit well operations reports for:		
B 1 Was injection pressure above the limit in Att. A.	The maximum pressures were below the limits in Attachment A.	OK
Have fractures been initiated	Staff interviewed indicated that this condition has not occurred.	OK
B 2 Have substances other than those in Att. E been injected	There was no indication in the documents reviewed that this condition occurred, and staff interviewed indicated that this condition has not occurred.	OK
Was certified statement attesting to this included in annual report	No annual report for 2020 was available for review, and staff interviewed indicated that this document was not submitted.	<b>Finding</b>

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Permit Condition	Document Reviewed or Other Source. If audit of selected items, which selected and rationale	Result
B 3 Was positive pressure maintained within annulus	Based on the reviewed and spot checked documents, positive pressure was maintained.	OK
Was annular fluid changed from what was originally approved	Staff interviewed indicated that this condition has not occurred.	OK
B 4 Warning and Shutoff System		
Was the warning and shutoff system modified since injection began	Staff interviewed indicated that the system was modified.	N/A
If so, does it meet the requirements of this section	Staff interviewed indicated the modified system meets the permit requirements.	OK
Has the system been continuously operated	Staff interviewed indicated the system has been continuously operated, except for periods of maintenance, repair and upgrade	OK
Has the system been tested within the last 12 months	The most recent system test was conducted on February 5, 2021.	OK
Did the test involve simulated failure conditions	Yes	OK
Was the test witnessed by the Director or representative	Documentation of the test indicated that facility staff were present, but not the Director or representative, and no communication indicating that the Director waived observing the test was available.	<b>Document</b>
B 5 Trained Operator		
Has a trained operator been onsite at all times during well operation	Staff interviewed indicated that operators were on-site during well operation.	OK
Has each operator undergone at least 24 hours of refresher training each year	Training records indicated that required refresher training was conducted	OK
B 6 Blowout Prevention		
a Has pressure been maintained to prevent return of injected fluids	Based on the reviewed and spot-checked documents, positive pressure was maintained. Staff interviewed indicated that the required pressure to prevent the return of fluids varied based on the previously injected fluids and that this requirement had been met.	OK
Has there been a well workover	There was a workover and the well string for well 2-12 was pulled in March 2020.	
If so, was the casing filled with a high SG fluid or a plug installed	Documentation for the well workover did not indicate if one of these prevention measures was used.	<b>Document</b>

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Permit Condition	Document Reviewed or Other Source. If audit of selected items, which selected and rationale	Result
Is an operational blowout preventer onsite during workovers	Documentation for the well workover did not indicate if a BOP was present.	<b>Document</b>
b Have injected wastes had the potential to reacted with the formation to generate gasses	Staff interviewed indicated that this condition has not occurred.	
If so has the temperate, pH or acidity been limited	N/A	N/A
If so have procedures been generated to assure pressure imbalances do not occur	N/A	N/A
c Has a blowout occurred	Staff interviewed indicated that this condition has not occurred.	
If so, has operation been suspended until written authorization is received from the Director	N/A	N/A
<b>C Monitoring</b>		
C 1 Sampling point		
Are injection fluid samples taken at the locations specified in the WAP	The WAP does not specify the location for sample collection. Staff interviewed indicated that samples are collected from the SST (location visually observed). This is the final tank before injections. This appears the be the proper collection point to the audit staff.	OK
C 2 Continuous Monitoring Devices		
Are the following monitored by continuous monitoring devices	Observed circle charts. An interpretative table is also included in the monthly reports	
Injection pressure	Yes	OK
Injection volume	Yes	OK
Sight glass level	Yes	OK
pH	Yes	OK
Flow rate	Yes	OK
Annulus pressure	Yes	OK
Have the results been submitted to the Director and maintained at the facility		
In accordance with permit II D	In monthly reports. Observed on-site and/or on the REIS website	OK

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Permit Condition	Document Reviewed or Other Source. If audit of selected items, which selected and rationale	Result
In accordance with Appendix A	In monthly reports. Observed on-site and/or on the REIS website	OK
<b>C 3 Waste Analysis Plan</b>		
Audit compliance with - See separate checklist	See Separate Checklist.	N/A
Is a copy at the facility	The plan was observed on-site.	OK
Was certification of WAP accuracy and analysis representativeness in annual report	Staff interviewed indicated that no annual report for 2020 was prepared. The certification was not included in the 2019 annual report.	<b>Finding</b>
<b>C 4 Ambient Monitoring</b>		
Has falloff monitoring been completed within the last 12 months	Falloff monitoring was conducted during the MIT that occurred between July 26-August 5, 2021	OK
Were plans submitted to the Director 30 days prior to testing	The director was notified at least 30 prior to the start of the testing, and provided an approval of the procedures by email.	OK
<b>C 5 Compatibility of Well Material</b>		
Have construction materials been subject to monthly testing for visual deterioration, weight or dimension change	Yes - documentation is provided in the Monthly Reports.	OK
Has there been loss of mass, thickness, cracking or other signs of corrosion	Yes - indications of corrosion were noted for both fiberglass and stainless steel.	
If so, have they been included in monthly reports	The indications of corrosion were reported in the monthly reports.	N/A
<b>C 6 Temperature Monitoring</b>		
Has temperature of injectate been monitored once per day,	Temperature is documented on the circle charts.	OK
Or every 6 hours if injecting for more than 8 hours	Temperature monitoring is continuous	OK
Are results submitted in accordance with permit II D	The circle charts are included in the Monthly Reports.	OK

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Permit Condition	Document Reviewed or Other Source. If audit of selected items, which selected and rationale	Result
<b>C 7 Calibration</b>		
Has there been calibration of the following within the last 12 months - or during maintenance		
flow meters	The 2020 calibration records were not available for flow meter for Well 1-12.	<b>Finding</b>
injection and annular pressure monitoring recorders	The 2020 calibration records were not available for either pressure sensor for Well 1-12.	<b>Finding</b>
pH meters	The 2020 calibration record was not available for the pH meter that tests the injectate prior to injection in both wells.	<b>Finding</b>
<b>C 8 Compliance Audit</b>		
Was there a compliance audit during the first 12 months of operation by a third party	Injection commenced on November 21, 2013. An audit was conducted completed on November 13, 2014.	OK
Was there a compliance audit during the past 24 months by a third party	A third party audit was conducted completed on December 6, 2019.	OK
Was there an internal audit between third party audits	Staff interviewed indicated that no internal audit was completed between the third party audits.	<b>Finding</b>
Were the audits submitted within 2 months of the audit	The 2019 annual report indicated that the audit was submitted to the EPA on December 26, 2019.	OK
Were deficiencies expeditiously addressed	No documentation that deficiencies identified in the December 6, 2019 audit were addressed.	<b>Finding</b>
<b>D Reporting</b>		
Have reports been submitted by the end of the following month	The following monthly reports were not submitted within the required timeframe: 9/2020, 10/2020, 11/2020.	<b>Finding</b>
Are reports publicly available nearby or on a website	The monthly reports are available on the website: <a href="https://detroitindustrialwell.com/resource_category/epa-egt/">https://detroitindustrialwell.com/resource_category/epa-egt/</a>	OK
In accordance with the January 20, 2012 Document Repository Plan, are the following present:		
Monthly reports	Monthly reports required to be available were available for on the website.	OK
Annual Reports	The annual reports for 2019 was available for on the website. No 2020 annual report was prepared.	OK

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Reports for MIT, well workovers, and other tests required by the permit, as required under Part II D.3.	The mechanical integrity test reports for the 2019 through 2021 MIT, report on the 2020 workover of Well 2-12 and calibration records were not available on the website.	<b>Finding</b>
Reports required under Parts I.E.12, II.B.3, II.B.4, II.C.6, and Attachments A and E	The following items were not available on the website: I.E.12 (a) Notice to the Director regarding the saddle packer installed in 2020 I.E.12 (d) (3) The 5 day notice to the Director regarding the shutdown on 1/25/21 II.B.4 Documentation of the test of the automatic warning and shutoff system	<b>Finding</b>
Proposed changes to plans required under the UIC Permits and correspondence with EPA regarding those changes	Staff interviewed indicated that no changes had been proposed.	N/A
EPA inspection reports and correspondence with EPA regarding the inspection reports	Staff interviewed indicated that no EPA inspection had occurred.	OK
Are 5 years of documents at the following locations and updated within the most recent quarter		
RIES offices	Some documents were not available at the offices, including the 2019 MIT, notices to the Director, documentation of tests of the automatic warning and shutoff system, and calibration records.	<b>Finding</b>
Internet	The documents (other than as indicated above), were available.	OK
Romulus Public Library	During the 2019 audit, staff interviewed indicated that the library was unwilling to accept documents, and in accordance with the Document Repository Plan, documents are not longer delivered.	N/A
<b>D 1</b> Audit select monthly reports for:	See I E 9 e for a description of audit method.	
a Results of injection fluid analysis specified in App. A and E and WAP including: waste components by common name chemical name, structure and concentration	The injection fingerprints do not include these items. However, Attachment A, Page 1 does not require these items. The fingerprint analysis was completed for each injected batch reviewed.	OK
b Tabulation of:		
maximum injection pressure	The item was included in the tabulation.	OK
maximum and minimum sight glass levels	The item was included in the tabulation.	OK
maximum and minimum annulus pressure	The item was included in the tabulation.	OK
injectate pH	The item was included in the tabulation.	OK
flow rate	The item was included in the tabulation.	OK

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minimum differential between simultaneous measurements of injection pressure and annulus pressure for each day	The item was included in the tabulation.	OK
c Scaled graphs representing the continuous monitoring of (from Permit II(C)2)		
Injection pressure	The item was included on the circle chart.	OK
Injection volume	The item was included on the circle chart.	OK
Sight glass level	The item was included on the circle chart.	OK
pH	The item was included on the circle chart.	OK
Flow rate	The item was included on the circle chart.	OK
Annulus pressure	The item was included on the circle chart.	OK
And Graph 1 daily maximum injection pressure and daily average flow for month	No graph with these items was included. However, the previous owner, EGT, indicated in the Findings with Corrective and/or Preventative Action(s) response to the 2016 audit: EPA has visited the site and accepted the data recording and tabulation system.	
And Graph 2 daily maximum and minimum sight glass levels	In support of this statement is that there is no record of communication from EPA to suggest that the information provided on a monthly basis does not meet the needs of the agency.	OK
d Statement of total volumes injected to date, in current year, and in current month		
Separate out wastewater and total	Staff interviewed indicated that no wastewater has been injected.	N/A
e Table of dates, amounts and types of liquid added and removed from annulus during the month		
cumulative additions and subtractions for the current month	There was no liquid added to the annulus during for the reviewed months. However, REIS has previously indicated the required items on the Monthly Maintenance Log.	OK
and cumulative for past 12 months	There was no liquid added to the annulus during for the reviewed months.	N/A

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f Indication of noncompliance including event that exceeds pressures or triggers alarm or shutdown	An event meeting this description occurred in January 2021	
If there has been noncompliance reported, verify it is in the corresponding monthly report	Although 24 hour and 5 day notices were provided to the Director, a statement of noncompliance was not included in the monthly report for January 2021.	<b>Finding</b>
g Results of continuous corrosion monitoring from Permit II(C)(5)	Results of the coupon testing are included.	OK
h Description of repair and maintenance on injection or annulus during the previous month	Monthly maintenance logs are included.	OK
Including the reasons for performing the repair or maintenance	The maintenance logs did not include the reasons for performing the repair or maintenance	<b>Finding</b>
If the component did or had the potential to fail, the repair outcome and new life expectancy	The maintenance logs did not include the repair outcome and new life expectancy	<b>Finding</b>
D 2 Annual Report		
Have annual reports been submitted at least every 12 months from the date of the permit (8/27/13)	Staff interviewed indicated that no annual report for 2020 was prepared. The evaluation below is for the 2019 annual report.	<b>Finding</b>
a Does it include injection analyses from monthly (a), above	The report incorporates by reference the previously submitted monthly reports.	OK
Does it include statements showing the requirements of I(E)10, II(B)2 and II(C)3 have been met	The statements are included.	OK
b Results of fall off testing, and temperature and noise from I(H)(2)c	The report incorporates by reference the previously submitted reports.	OK
c Results of calibration from II(C)7	The calibration testing was included.	OK
d Documentation of training required by II(B)5	The training certificates to document operator training were included.	OK
e Compliance report from II(C)8	The report incorporates by reference the previously submitted compliance report.	OK

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Permit Condition	Document Reviewed or Other Source. If audit of selected items, which selected and rationale	Result
D 3 Report on Well Tests and Workover		
Has there been a well test, demonstration of mechanical integrity or workover	MIT testing was conducted in 2020 and 2021.	
Were the results submitted within 30 days	The results of the 2021 MIT, completed on August 5, 2021, were submitted on September 22, 2021, which is more than 30 days from completion.	<b>Finding</b>

**Waste Analysis Plan - Version 4.0, dated 1/20/12 was the basis for this evaluation**

A1 Audit select generators waste profiles for	See I E 9 e for a description of audit method. Staff interviewed indicated that no hazardous waste was accepted during the months reviewed, which coincided with the available nonhazardous waste manifests (which were reviewed).	
Was Waste Profile Sheet provided by generator	A waste profile sheet was provided for the approval corresponding to each load.	OK
Was a representative sample submitted, or analytical provided by the generator	Profiles corresponding to each waste stream received were available and reviewed. Analysis of a submitted sample, or analytical reports or generator knowledge documentation were provided for each profile evaluated.	OK
Was sample analyzed by SW-846	A SW-846 method was used for the laboratory analysis.	OK
a Audit selected waste shipments (Receiving and Approval forms) for		
discrepancies from waste profile		
Are there discrepancies	Manifests dated 1/6/21 and 1/26/21 indicated a designated facility other than the REIS facility.	<b>Finding</b>
If so, verify resolution or waste rejection	N/A	N/A
b Audit selected annual review of waste characterization for discrepancies from waste profiles	No discrepancies were noted, staff indicated that each load is reviewed upon receipt.	OK
If so, verify resolution or waste rejection	N/A	N/A
c Audit selected generator waste profiles for		
To ensure REIS reviewed to evaluate if facility can accept the waste	Staff interviewed discussed the process by which profiles are accepted or rejected. The reviewed profiles were consistent with this process.	N/A
A2 Audit selected manifests to ensure waste only arrived by		
Drums, totes, tanker trucks, vacuum trucks or railcars	All manifests indicated one of these methods of transport.	OK

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Permit Condition	Document Reviewed or Other Source. If audit of selected items, which selected and rationale	Result
a Does facility review manifests and LDR notifications for		
completeness	The reviewed documents were complete	OK
compare manifest and LDR for consistency	N/A	N/A
compare manifest and waste profile for consistency	The reviewed documents were consistent	OK
compare analytical from the generator to that of the waste shipment for consistency	The reviewed documents were consistent	OK
compare manifest to the number of containers, volume and/or weight for consistency	The reviewed documents were consistent	OK
determination if the waste is Subpart CC and must go to receiving tank (RT-10)	Staff interviewed indicated that this is standard practice.	OK
b Does facility visually inspect between 1 and all containers for and compare the results to the waste profile	Staff interviewed indicated that every 6th container is inspected and sampled	
color	This item is included on the form.	OK
physical state	This item is included on the form.	OK
pH	This item is included on the form.	OK
consistency	This item is included on the form.	OK
oil	This item is included on the form.	OK
Are wastes with discrepancies rejected, reevaluated or transferred	Staff interviewed indicated that each load is reviewed upon receipt.	
Has facility had wastes that needed to be rejected, and what did they do	Staff interviewed indicated that no wastes needed to be rejected during the audit period.	N/A
c Audit selected waste shipments for compliance with screening in Table A3.A.1	The required analysis was performed and documented on the fingerprint form.	OK
ci Audit select Receiving and Approval Form to evaluate if wastes were accepted with nonconformance of		
variation greater than 10% if weight	Staff interviewed indicated that this condition did not occur.	N/A
variation in piece count	Staff interviewed indicated that this condition did not occur.	N/A
obvious difference in waste makeup of toxic constituents not reported on manifest	Staff interviewed indicated that this condition did not occur.	N/A
Have waste shipments other than one time variation occurred	Staff interviewed indicated that this condition did not occur.	N/A
Was the generator required to repeat pre-acceptance procedures	N/A	N/A
cii Has facility had loads where it had to evaluate potential nonconformance	Staff interviewed this has not occurred	N/A
Audit selected Receiving and Approval forms for conformance with this section	N/A	N/A
ciii Audit select Waste Profile information and lab analysis to		
verify PCB analysis and concentration below 50 ppm	The PCB concentration was less than 50 ppm, as indicted by either laboratory analysis or generator knowledge. In addition, staff interviewed indicated oily wastes are analyzed in house to verify PCB	OK

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d Audit select Receiving and Approval forms		
Comparison to waste profile (same as A1a)	See WAP A1A	N/A
Comparison to manifest	See WAP A1A	N/A
di Audit select loads of Containerized waste to verify the # of containers sampled matches the table	No containerized waste was identified in the reviewed documents.	N/A
dii Audit select bulk shipment loads to verify sampling is in accordance with Table A1 and A2	A description of the sampling methodology and handling of samples are indicated in the Waste Analysis Plan.	OK
A3 Audit select shipments of waste off-site to verify they have LDR notifications	Offsite waste shipments from June 2020 through November 2021 were reviewed and met the requirement.	OK
C1 Audit of waste profiles and LDR above fulfil this audit requirement	Offsite waste shipments from June 2020 through November 2021 were reviewed and met the requirement.	OK
C2 Audit select shipments of waste shipped off-site to verify the certifications are included	Offsite waste shipments from June 2020 through November 2021 were reviewed and met the requirement.	OK
C3 Audit select shipments of waste shipped off-site to verify the certifications are included	Offsite waste shipments from June 2020 through November 2021 were reviewed and met the requirement.	OK
C6 Audit select loads and verify the facility operating log includes at least:	See I E 9 e and I E 13 for a description of audit method.	
waste characterization	This item was included.	OK
profile	This item was included.	OK
analytical results	This item was included.	OK
fingerprint forms	This item was included.	OK
LDR	This item was included.	OK
approvals	This item was included.	OK
manifests	This item was included.	OK
Was a discrepancy was discovered in A1a or A2b, and it could not be resolved within 15 days	No discrepancies were identified.	
If so, was EPA and MDEQ notified	N/A	N/A
C7 Has waste from a foreign source been accepted	Staff interviewed indicated that no waste from foreign sources was accepted during the audit period.	
If so, was MDEQ and EPA notified at least 4 months before first shipment	N/A	N/A
Audit select waste profiles and verify that REIS sent notice of license and capacity, and acceptance of the waste	N/A	N/A
C8 Verify QA/QC plan is present	The QA/QC Plan was reviewed on site. A review of the contents of the QA/QC Plan was not conducted as part of this audit.	OK

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Permit Condition	Document Reviewed or Other Source. If audit of selected items, which selected and rationale	Result
D1 Audit select injection batches to verify fingerprint was tested and includes	See I E 9 e for a description of audit method.	
SG	This item was included.	OK
TSS	This item was included.	OK
pH	This item was included.	OK
Temperature	This item was included.	OK
TDS	This item was not indicated on the fingerprint form I09212103	<b>Finding</b>
Visual solids	N/A - this evaluation is not performed.	N/A
Flashpoint	This item was not indicated on the fingerprint form I09302104	<b>Finding</b>
Conductivity	This item was not indicated on the fingerprint form I09032101	<b>Finding</b>
D2 Were any loads received with constituents in App A page 3	The facility periodically received F039 waste	
If so, audit select monthly fingerprints to verify		
the test was performed on a treated batch containing the compound	A sample was analyzed for the required parameters each month F039 waste was accepted.	OK
the result of the analysis was below the limit on App A page 3	The results of the analysis were below the permit limits.	OK
D3 Verify during D1 and D2 that sampling and analysis was in accordance with 261 or 136.3	The analytical techniques or methods used are indicated in the Waste Analysis Plan, and are consistent with the requirements.	OK