

FACT SHEET

October 2021

EPA is proposing to approve a No Migration Petition Reissuance request from the land disposal restrictions for the following injection well facility:

Applicant: Occidental Chemical Corporation (OxyChem)
6200 South Ridge Road
Wichita, Kansas 67215

State Contact: Kansas Department of
Health & Environment (KDHE)
Bureau of Water, Geology & Well Technology Section
1000 SW Jackson St., Suite 420
Topeka, Kansas 66612-1367
Underground Injection Control (UIC)
Permit Numbers:
KS-01-173-0004
KS-01-173-0007
KS-01-173-008
KS-01-173-10
KS-01-173-11
KS-01-173-14

Issuing Office: U.S. Environmental Protection Agency
Region 7
11201 Renner Blvd.
Lenexa, Kansas 66219

OxyChem Contact
Nicholas E. Bell
Occidental Chemical Corporation
Wichita, Kansas, Plant
Office Phone: 316-529-7316
Cell Phone: 316-706-9736
Email: Nicholas_Bell@oxy.com

EPA Contact
Ben Meissner
Physical Scientist Office
Phone: 913-551-7992
Email: Meissner.Benjamin@epa.gov
U.S. Environmental Protection Agency, Region 7
11201 Renner Blvd.
Lenexa, Kansas 66219

I. Purpose of the Fact Sheet

The purpose of this fact sheet is to briefly describe the principal facts and the considerations that went into preparing the proposed No Migration Petition Reissuance. To meet these objectives, this fact sheet contains background information on the petition process, a description of the facility, a brief description of the petition conditions and the reasons for these petition conditions.

II. Petition Process

Application and Review Period

The U.S. Environmental Protection Agency, Region 7 (EPA) Director has authority to issue petitions for underground injection activities under Title 40 of the Code of Federal Regulations at Section 148.20 (40 CFR § 148.20). Occidental Chemical Corporation (OxyChem) is applying for a Class I hazardous UIC petition reissuance to its existing petition. The petition reissuance would include all existing wells (Wells No. 3, 8, 9, 10, and 11) and proposed Well No. 14.

The EPA land disposal restrictions promulgated under the Safe Drinking Water Act (SDWA) and Resource Conservation and Recovery Act (RCRA) authority as regulations in 40 CFR Part 148 prohibit the injection of hazardous waste unless a petitioner demonstrates to the EPA that there will be no migration of hazardous constituents from the injection zone and into an underground source of drinking water within 10,000 years or as long as the waste remains hazardous. Based on our review of the wells construction, operation standards, monitoring requirements and the existing geologic features, EPA believes the activities allowed under the proposed No Migration Petition Reissuance will prevent the migration of hazardous constituents from the injection zone for as long as the waste remains hazardous, which is 10,000 years as defined by 40 CFR § 148.20.

Public Participation

The public has 45 days to review and comment on the proposed Class I UIC petition reissuance (40 CFR § 124.10). The public comment period begins on October 15, 2021, and ends on December 3, 2021. During this period, all written comments on the proposed petition reissuance can be mailed, faxed, or emailed to Ben Meissner of EPA Region 7, using the contact information listed on the first page of this fact sheet. Ben Meissner is also available by phone for any questions regarding the proposed petition reissuance.

All persons, including the applicant, who object to any condition of the proposed petition reissuance or EPA's decision to propose reissuance of the existing petition must raise all reasonably ascertainable issues and submit all reasonable arguments supporting their position by the close of the comment period on December 3, 2021 (40 CFR § 124.13). EPA has scheduled a virtual public availability session and public hearing at the following time and location (40 CFR § 124.12):

November 18, 2021

Availability Session: 2:00 pm – 3:30 pm

Public Hearing: 4:00 pm

https://usepa.zoomgov.com/webinar/register/WN_yzkZCitFQTWUqRuonGo83A

The virtual public availability session will be structured as an open house and participants can join any time between 2:00 pm and 3:30 pm. EPA representatives will be available to answer questions and provide information about the proposed approval of the No Migration Petition Reissuance. The formal virtual public hearing to follow will bein at 4:00 pm and provide participants the opportunity to provide oral comments on EPA’s proposed approval of the No Migration Petition Reissuance. Copies of the Fact Sheet and Information Sheet will also be available online at: www.epa.gov/ks/region-7-public-notice during the public comment period.

The Administrative Record (AR) contains all the materials and data submitted by OxyChem and all materials upon which EPA has relied to make its proposed decision. It can be reviewed at the following locations and times during the public comment period:

www.regulations.gov

Docket Number: EPA-R07-OW-2021-0690

and

U.S. Environmental Protection Agency, Region 7

11201 Renner Blvd

Lenexa, Kansas 66219

Hours: Monday through Friday, 8:00 am–5:00 pm

Please note there may be possible COVID-19 restrictions in place, contact Ben Meissner for more information on COVID-19 protocols while visiting the Region 7 offices. All persons, including the applicant, who object to any condition of the proposed petition reissuance or EPA’s decision to propose reissuance of the existing petition must raise all reasonably ascertainable issues and submit all reasonable arguments supporting their position by the close of the comment period (40 CFR § 124.13). In order to be considered, all comments must be received by EPA no later than December 3, 2021.

Final Decision Making Process

After the close of the public comment period on December 3, 2021, EPA will review and consider all comments relevant to the proposed UIC petition reissuance and application. EPA will send a response to comments to the applicant and each person who has submitted written comments or requested notice of the final petition reissuance decision. The response to comments will contain a response to all significant comments received on the proposed petition

reissuance, EPA's final decision, any petition conditions that are changed and the reasons for the changes, and procedures for appealing the decision. EPA's final decision will also be published in the Federal Register.

III. Description of the Facility

OxyChem currently operates five hazardous waste disposal wells at the company's Wichita facility under an existing EPA exemption to the land disposal restrictions (also known as a No Migration Petition or Petition). OxyChem is a chloroalkali and chlorosolvent and related operations manufacturing facility. The deep wells have been used to inject and dispose of hazardous wastes safely for over 50 years. The original exemption was granted to the previous owner, Vulcan Chemicals, on August 7, 1990, and brought the existing hazardous waste injection wells, in operation at the facility since 1957, into compliance with EPA's then-newly developed land disposal restrictions, which went into effect in 1988. In August 2001, Vulcan Chemicals submitted a single-well No Migration Petition request for a new injection well (Well No. 10) to EPA. The Petition sought an additional exemption from the RCRA land disposal restrictions for that well. During the review of that Petition request by EPA, ownership of Vulcan Chemicals changed hands when the facility was bought by and became a subsidiary of OxyChem under the name Basic Chemicals, LLC. On January 1, 2007, Basic Chemicals, LLC, then changed its name to that of the parent company, OxyChem.

As the transition of ownership occurred, the Petition went through several revisions, including the incorporation of all of the hazardous waste injection wells at the facility (which at the time brought the total number of wells addressed to six) into one single Petition. The change from two separate Petitions to one was brought about by the need to renew the Petition granted by EPA back in 1990. This Petition was approved by EPA with an effective date of May 2, 2007. In March 2012, OxyChem completed the construction of Well No. 11 at the facility. OxyChem submitted a petition modification request to EPA to allow the use of Well No. 11 as a hazardous waste injection well that would serve as a replacement for Well No. 4 (which was plugged in 2008) at the facility. This petition modification was approved by EPA in 2017.

The approved 2007 petition modeled projected injection operations through December, 2020. Due to the modeling projections having reached their end date, OxyChem is required to submit a No Migration Petition Reissuance request in order to continue injection operations. In December 2020 EPA received this reissuance request for the five existing wells and one proposed well. OxyChem is not requesting an increase to injection volumes or additional wastes as part of this reissuance request.

It is EPA's conclusion that the Petition reissuance application and supplemental materials which were provided by OxyChem demonstrate that the well operations, geologic siting, and waste stream characteristics are in compliance with the requirements of 40 CFR Part 148. The demonstration included strategies which incorporated all the information discussed in this fact sheet and utilized mathematical equations and modelling to predict pressure buildup and waste movement within the authorized injection interval.

Therefore, after a detailed and thorough review of OxyChem's petition for exemption to the land disposal restrictions, the EPA proposes that OxyChem has demonstrated, to a reasonable degree of certainty, that there will be no migration of hazardous constituents from the injection zone for at least 10,000 years.

IV. Summary of State-Specific Well Permit Conditions

The EPA proposes to approve the OxyChem No Migration Petition Reissuance request to inject restricted hazardous waste into Wells No. 3, 8, 9, 10, 11, and proposed Well No. 14 subject to the following state-specific conditions and limitations:

1. Define the following regulatory depth intervals (below ground level):
 - Confining Zone: 2000' - 2241'
 - Injection Zone: 2241' - 4866'
 - Injection Interval: 3841' - 4866' (Simpson and Arbuckle Groups)
2. Limit the waste stream to a 13-week running volume weighted specific gravity average range of 1.01 to 1.08 with an average value of 1.04 at 77° F/25° C, inclusive;
3. Limit the waste stream volume for all OxyChem disposal wells injecting into the Arbuckle and Simpson to a maximum combined daily injection rate of 2,520,000 gallons, or 1,750 gallons per minute (gpm);
4. Approve injection of the following waste codes found at 40 CFR Part 261:
D002 D004 D005 D006 D007 D013 D016 D018 D019 D021 D022 D028
D029 D032 D033 D034 D037 D039 D040 D041 D042 D043 F001 F002
F003 F020 F021 F023 F024 F025 F026 F027 F032 F039 K001 K016
K043 K099 U029 U044 U045 U048 U075 U077 U079 U080 U081 U082
U084 U121 U129 U154 U188 U210 U211 U225 U226 U228 U240
5. Limit the maximum allowable wellhead injection pressure to 20 pounds per square inch gauge (psig).

V. Factors Considered in the Formulation of Proposed Petition Decision

Hydrogeology

Petitioners must submit hydro-geologic information in order to study the effects of the injection well activity pursuant to 40 CFR § 148.20(a). OxyChem provided hydro-geologic information in the petition which demonstrates that Underground Sources of Drinking Water (USDWs) are properly protected. The base of the lowermost USDW is at approximately 482 feet below ground level while the injection zone begins at 2,241 feet below ground level. Above the injection zone for all of OxyChem's injection wells there is a laterally extensive confining zone between 2,000-2,241 feet below ground level comprised of more than 200 feet of layered carbonates and inter-bedded shale.

Artificial Penetrations

OxyChem submitted updated information on all artificial penetrations (wells) which penetrate the injection or confining zones within the area of review (area within a 2.0-mile radius of the injection well pursuant to 40 CFR § 146.63) and the 10,000-year waste plume boundary. In fact, OxyChem submitted information on all artificial penetrations within a 2.5-mile radius of the injection wells as required by KDHE's permit requirement for hazardous Class I wells. All of these wells were evaluated and were either plugged or constructed to prevent any waste from migrating from the injection zone due to pressure, buoyancy, or molecular diffusion in an artificial penetration (40 CFR §§ 148.20(a)(1) and (2)(i)-(iii)).

Mechanical Integrity Testing (MIT) Information

To ensure that the wastes will reach the injection interval, OxyChem has submitted the annulus pressure test results for the five current injection wells to demonstrate mechanical integrity of the wells, and oxygen activation (OA) logging results to demonstrate the integrity of the bottom-hole cement. Upon the construction and completion of Well No. 14, OxyChem will submit the same test results as the five current wells.

Although Region 7 recognizes that the no migration requirements at 40 CFR § 148.20(a)(2)(iv) refer to the radioactive tracer survey (RTS), the non-endangerment requirements at 40 CFR § 146.68(d)(5) allows the Director discretion for alternative testing methods, the OA log being one such method. Region 7 has concluded that the OA log test satisfies Part 148 requirements based on the following rationale:

- (1) EPA's approval of the OA method in 1991 (Vol. 56, No. 22, pp 4063-4065 of the Federal Register (FR)) was intended to augment the current inventory of approved alternative mechanical integrity tests for determining significant fluid movement into an underground source of drinking water through vertical channels outside the casing, which is an indicator of bottom-hole cement integrity. According to the FR notice, the OA method affords an additional, reliable state-of-the-art technique for confirming the absence or presence of significant fluid movement through vertical channels adjacent to the well bore, etc.;
- (2) OA is essentially a radioactive tracer log where the gamma ray energy is manufactured

down-hole (not introduced as in the case of RTS) with high energy neutrons and measured using gamma ray detectors at the appropriate depth. Both OA and RTS, can identify, if present, water flow or channels behind the casing by detecting radioactive tracer materials released into the flowing stream;

- (3) The Schlumberger WFL approach, used by Petrotek for MIT of the injection wells at the OxyChem facility, is more like conventional tracer techniques;
- (4) KDHE has approved the use of OA logging as part of the procedures for conducting the required annual MITs of OxyChem’s Class I injection wells, and KDHE considers OA to be a dependable test for checking the bottom-hole cement of the long-string casing.
- (5) Region 7 and the State are sensitive to the public’s potential fears of radioactive materials and their introduction into the subsurface. In addition, there are inherent risks associated with the handling of radioactive tracer materials, hence, from a health and safety standpoint, the OA log method is a safer approach.

These tests demonstrated mechanical integrity of a well’s long string casing, injection tubing, annular seal, and bottom-hole cement. The tests confirm that all injected fluids are entering the approved injection interval and that no fluids are channeling up the well-bore out of the injection zone near the well-bore. This petition request demonstrates that OxyChem’s disposal wells were tested, and in the case of Well No. 14 will be tested and satisfies the above criteria before injection is allowed. Provided below is information regarding the dates mechanical integrity testing and casing inspection logs were conducted for each of the wells covered under this No Migration Petition Reissuance request.

Well Number	Pressure Test	Oxygen Activation Log	Casing Inspection Log
No. 3	6/28/19	8/29/19	6/25/19
No. 8	9/23/19	8/29/19	4/3/16
No. 9	9/24/19	8/27/19	11/15/19
No. 10	9/23/19	8/28/19	11/9/17
No. 11	9/23/19	8/30/19	Planned 2020
No. 14	TBD	TBD	TBD

Regional and Local Geology

Class I hazardous waste injection wells must be located in areas that are geologically suitable. The injection zone must have sufficient permeability, porosity, thickness, and areal extent to prevent migration of fluids into USDWs. The confining zone must be laterally continuous and free of transmissive faults or fractures to prevent the movement of fluids into a USDW and must contain at least one formation capable of preventing vertical propagation of fractures.

An evaluation of the structural and stratigraphic geology of the local and regional area determined that the OxyChem facility is located at a geologically suitable site. The injection zone is of sufficient permeability, porosity, thickness, and areal extent to meet the requirements stated in 40 CFR Part 148. The containment interval is laterally continuous and free of transecting, transmissive faults or fractures over an area sufficient to prevent the movement of fluids out of the injection zone.

The Arbuckle injection interval is thick and laterally continuous over a very large areal extent. The Arbuckle is naturally under-pressured and accepts injectate on a vacuum. The overlying intervals are higher pressured which would result in the downward flow of fluids into the Arbuckle if a conduit for such communication were to exist.

The geologic conditions for the OxyChem site were presented throughout the entire document with extensive discussions of the depositional environments, well logs, cross-sections, well tests, and geologic maps. The geologic cross-sections demonstrated the lateral relationships of the injection and confining zones. This information justified pressure buildup and 10,000-year modeling assumptions. Well pressure fall-off tests support the injection zone permeability values used in the modeling.

Approximate depths to the tops of the geologic zones below ground level are as follows:

Interval	Geologic Zone	Depth Below Ground Surface
Confining Zone	Shawnee/Heebner Shale	~2,000 ft
Injection Zone	Top of Heebner Shale	~2,241 ft
Injection Interval	Top of Simpson Sandstone	~3,841 ft

Seismic Information

Although not directly related to well operations, seismic information has been obtained both from the U.S. Geological Survey (USGS) and the Kansas Geological Survey (KGS) indicating that, since 2007, several small earthquakes with a magnitude of less than 3.8 have occurred within 38 miles from the site. Subsequent review of the KGS earthquake database did not identify any earthquakes within a 13-mile radius of the OxyChem site and well outside of the EPA area of review of 2.0 miles and the EPA monitoring radius of 10 miles from the site wells.

It is noteworthy that the largest seismic events that have occurred in southern Kansas and in neighboring Oklahoma have been felt in the Wichita area over the last few years. However, the epicenter of these seismic events have been significantly outside a 10-mile radius from the OxyChem Chemical's facility. The OxyChem wells are not at risk from such events due to the fact that none of the site wells were drilled through faults or significant fault-related structures, so any shear forces along such planes would not impact well casing. In addition, engineering controls, personnel inspections and automated safety systems have been installed and are operated by OxyChem Chemicals at each of the disposal wells to ensure that injection would stop immediately in the unlikely event of any well failure. As an additional and state-specific safety measure, the wells are required by KDHE to be operated with no injection pump, such that injection pressures are minimized to gravity flow. This allows the site to take advantage of the natural conditions of the Arbuckle such that the natural higher pressures in formations that overlie the injection zone, including the shallow USDW, would tend to cause flow downward into the Arbuckle in the highly unlikely event of a significant seismic event.

In addition to the ongoing testing, operational practices, and risk evaluations that OxyChem undertakes with regard to the injection wells, the company has joined the Kansas Seismic

Monitoring Consortium that is organized by the KGS. The goal of the Seismic Monitoring Consortium is to acquire and deploy additional seismic monitoring stations to obtain background seismic data and to analyze the data to provide useful information about Kansas seismicity and the potential for Class I wells to contribute to induced seismicity. As more seismic monitoring stations are installed, micro-seismic events not previously measurable or felt can be detected in various locations.

Recent investigations between increased seismicity and oilfield injection operations in Oklahoma and south-central Kansas indicate that increased seismicity appears to be linked with an increase in oilfield activity in Oklahoma and near the Kansas state line. Based on available scientific literature, lack of significant seismicity near the site, and operational history, there appears to be no suggestion of, or probability for, any relationship between historic or current Kansas seismic events and OxyChem injection well operations.

Modeling Strategy

The modeling strategy for OxyChem's No Migration Petition Reissuance request consisted of a combination of numerical and analytical models. All the models used were identified as being verified and validated according to the information submitted in the petition request. This information consisted of actual model documentation or references of methods or techniques that are widely accepted by the technical community. The petition document described the predictive models used and demonstrated that the above criteria are met in accordance with 40 CFR § 148.21(a)(3).

According to 40 CFR § 148.21(a)(5), reasonably conservative values shall be used whenever values taken from the literature or estimated on the basis of known information are used instead of site-specific measurements. Many variables are required to be quantified in order to use the models used in petition requests. All parameters were conservatively assigned to produce worst-case conditions for pressure buildup and waste movement.

According to 40 CFR § 148.21(a)(6), a petitioner must perform a sensitivity analysis in order to determine the effect of uncertainties associated with model parameters. OxyChem provided this sensitivity analysis in its No Migration Petition Reissuance request. Through conservative model parameter assignments within this analysis, worst-case scenarios for pressure buildup and waste movement were investigated and reported. OxyChem incorporated two time frames, the operational and post-operational periods, to complete the modeling demonstration for the petition request. The operational period included all historical injection at the facility and the projected future injection volumes starting from the end of the historical injection through January 2, 2040. The 10,000-year post-injection period was modeled to predict the maximum vertical molecular diffusion and the horizontal drift of the waste plume.

To determine appropriate values to be used in the No Migration Petition Reissuance demonstration, OxyChem reviewed site-specific data acquired during the drilling of their injection wells, annual well tests, and mechanical integrity tests. OxyChem also reviewed offset well information and applicable literature. Appropriate estimation techniques and testing

protocols were used in accordance with 40 CFR § 148.21(a)(2). A range was assigned to some parameters to maximize their impact on the demonstration. For example, higher permeabilities were assigned to maximize the lateral waste plume movement while lower permeabilities were assigned to maximize the predicted pressure buildup from injection operations in the injection interval.

An analytical model was used to predict the maximum pressure buildup in the reservoir to evaluate offset artificial penetrations in the petition reissuance. For the model, the maximum allowable rate for all facility wells combined (1,750 gpm) was equally injected at Wells No. 3, 8, 9, 10, 11, and proposed Well No. 14. Total injection into all the OxyChem wells was limited to 2,520,000 gallons per day (or 1,750 gpm). Using this approach for modeling future operations creates modeling results in maximized projections which thereby creates a more conservative model result.

A conservative 10,000-year plume demonstration was constructed using reasonably conservative reservoir characteristics for the injection interval to project the maximum movement of both the low- and high-density waste plumes. To maximize plume movement, these demonstrations included thinner net thickness, conservative dip rates, all historical and maximum future injection volumes, and higher mobility based on historical pressure transient test results. The low-density waste plume used the low-end of the requested density range and did not include a background gradient to maximize the up-dip plume movement.

In Kansas, state regulations limit Class I hazardous waste disposal wells to a positive surface pressure of 20 psig without the use of injection pumps (K.A.R. 28-46-28). The allowable 20 psig maximum surface pressure permitted to the gravity feed disposal system was applied down-hole and added to the hydrostatic weight of a column of maximum specific gravity waste fluid observed over the past decade in any facility well to maximize the pressure buildup in the reservoir. This pressure ignores friction loss in the wellbore and assumes no pressure loss due to near wellbore skin. This maximum pressure buildup was then presumed to be present for the historical and future operational life of the facility to calculate the maximum vertical extent of waste movement into the overlying strata resulting from advection.

A vertical diffusion demonstration was also included in this petition request that calculated the maximum vertical diffusive movement into intact strata and a brine-filled wellbore. The demonstrations (lateral plume and diffusion) demonstrated that the injected waste stream will not migrate vertically upward out of the injection zone or laterally within the injection zone to a point of discharge or interface with a USDW.

Quality Assurance

According to 40 CFR § 148.21(a)(4), the OxyChem petition must demonstrate that proper quality assurance and quality control plans were followed in preparing the petition demonstrations. Specifically, OxyChem followed appropriate protocol in identifying and locating records for artificial penetrations within the area of review. Information regarding the geology, waste characterization (40 CFR § 148.21(a)(1)), hydrogeology, reservoir modeling,

and well construction was adequately verified or bounded by reasonably conservative scenarios within the No Migration Petition Reissuance demonstration.

Geochemistry and Injected Waste Compatibility

According to 40 CFR § 148.21(b)(5), a petitioner must describe the geochemical conditions of the well site. The physical and chemical characteristics of the injection zone and the formation fluids in the injection zone were described in the petition. This description included a discussion of the compatibility of the injected waste with the injection zone. OxyChem also provided evaluations which demonstrated that the waste stream would not adversely alter the confining capabilities of the injection and confining zones.

Characteristics of Injected Fluids

According to 40 CFR § 148.22(a), the characteristics of the injection waste stream must be adequately described. These characteristics are described in the petition and the descriptions are adequate and complete. The demonstration included injectate waste analysis that conformed to the standards outlined in 40 CFR § 148.21(a)(1).

1. Operational Life

For the purpose of the required demonstration of no migration of hazardous waste out of the injection zone over a 10,000-year period, modeling and projections were based on an operational lifetime projection date of January 2, 2040.

Maximum Incremental Pressure Buildup: Maximum Incremental Pressure Buildup in Well No. 10 is projected to be 543 psi based on SWIFT modeling which was also used in the injection interval to maximize vertical penetration calculations.

2. 10,000 Year Post-Injection Period:

Background Gradient: 0 ft/yr to maximize projections

Offset Oil and Gas Activity: Negligible

Waste Density Effects: Yes

Movement Due to Hydrocarbon Production: No

Waste Concentration Reduction Factor: 1×10^{-8} mg/l

Maximum Lateral Waste Movement:

- Light Plume: Approximately 12 miles up-dip to the north

- Heavy Plume: Approximately 3 miles down-dip to the south

Maximum Upward Vertical Waste Movement:

- 40.5 feet into intact strata from advection

- 324 feet in a brine filled borehole from diffusion

VI. Proposed Petition Reissuance Approval Conditions

This proposed petition reissuance to allow the injection of restricted hazardous wastes is subject

to the following conditions, which are necessary to assure that the standard in 40 CFR § 148.20(a) is met. Non-compliance with any of these conditions is grounds for termination of the approval for the injection of restricted hazardous wastes in accordance with 40 CFR § 148.24(a)(1). This proposed petition reissuance is applicable to disposal Wells No. 3, 8, 9, 10, 11, and 14, located at the OxyChem facility in Wichita, Kansas.

1. Injection of restricted waste shall be limited by the following regulatory injection zone:
2241' - 4866' below ground level
The injection interval shall be defined by the following interval:
3841' - 4866' (Arbuckle Group and Simpson) below ground level
2. The total volume injected into Wells No. 3, 8, 9, 10, 11, and 14 should not exceed a maximum combined daily injection rate of 2,520,000 gallons (or 1,750 gpm).
3. The characteristics of the injected waste stream shall at all times conform to those described in the petition request for reissuance. The specific gravity of the injected waste shall be based on a 13-week running volume weighted specific gravity average range of 1.01 to 1.08 at 77° F/77° F, inclusive. The weekly average specific gravity value shall be obtained by testing the cumulative sample containing at least one daily representative grab sample.
4. The proposed approval for injection is limited to the following hazardous wastes:
D002 D004 D005 D006 D007 D013 D016 D018 D019 D021 D022 D028
D029 D032 D033 D034 D037 D039 D040 D041 D042 D043 F001 F002
F003 F020 F021 F023 F024 F025 F026 F027 F032 F039 K001 K016
K043 K099 U029 U044 U045 U048 U075 U077 U079 U080 U081 U082
U084 U121 U129 U154 U188 U210 U211 U225 U226 U228 U240
5. The facility must petition for approval to inject any additional hazardous wastes which are not included above. The facility must also petition for approval to increase the concentration of any waste which would necessitate the recalculation of the limiting concentration reduction factor and the extent of the waste plume. Petition reissuances and modifications should be made pursuant to 40 CFR § 148.20(e) or (f).
6. OxyChem shall annually submit to EPA the results of a bottom-hole pressure survey for Wells No. 3, 8, 9, 10, 11, and 14. The survey shall be performed after shutting in the well for a period of time sufficient to allow the pressure in the injection interval to reach equilibrium, in accordance with 40 CFR § 146.68(e)(1). The annual report should include a comparison of reservoir parameters determined from the falloff test with parameters used in the approved No Migration Petition.
7. Upon the expiration, cancellation, reissuance, or modification of KDHE's Underground Injection Control permit for Wells No. 3, 8, 9, 10, 11, and 14, this exemption is subject to review. A new demonstration may be required if information

shows that the basis for granting the exemption is no longer valid under 40 CFR §§ 148.23 and 148.24.

8. This final decision is subject to termination when any of the conditions occur which are listed in 40 CFR § 148.24, including noncompliance, misrepresentation of relevant facts, or a determination that new information shows that the basis for approval is no longer valid.