KANSAS UNDERGROUND INJECTION CONTROL PERMIT CLASS III INJECTION WELL

Pursuant to the provisions of Kansas Statutes Annotated (65-164, 65-165, 65-166, 65-170g and 65-171d) and Kansas Administrative Regulations (Chapter 28, Article 46 and Chapter 28, Article 43),

Owner:	Occidental Chemical Corporation
Owner's Address:	6200 South Ridge Road
Telephone No:	(316) 650-6093
Facility Name:	Occidental Chemical Corporation (Wichita Plant)
Facility Location:	Wichita, Kansas 67277
Well Identification:	Pauly 5-3
Well Location:	Lat: 37°29’59.83” Long: 97°33’48.40”

is authorized to use the above captioned well to mine salt from the Hutchinson Salt member of the Wellington formation by solution mining methods.

The permittee shall comply with all conditions in this permit, federal and state regulations governing Class III injection wells and the requirements of the Kansas Department of Health and Environment (KDHE).

This permit shall become effective _____ and will expire _____.

FACILITY DESCRIPTION: The facility produces brine.

_____
Secretary, Kansas Department of Health and Environment

_____
Date

I. INJECTION LIMITATIONS, MONITORING, REPORTING AND TESTING REQUIREMENTS

A. The permittee is authorized to mine salt at this facility by solution mining methods and mining shall be confined to the Hutchinson Salt member of the Wellington formation. The top of the cavity shall be no shallower than two hundred fifty (250) feet below land surface and solution mining operations (cavity development) shall not extend into the upper fifty (50) feet of the salt deposit.

B. This well is part of a gallery salt solution mining system consisting of wells 5-1, 5-2, 5-3, 5-4 and 5-5.

C. The operation of the well shall be controlled, limited and monitored by the permittee as specified in this permit. All monitoring reports shall be submitted to KDHE no later than twenty-eight (28) days after the last day of the quarter for which the monitoring data are being reported. All monitoring data shall be submitted on forms prescribed by KDHE. The monitoring reports submitted to KDHE shall be originally signed. Monitoring reports and other information required by this permit shall be directed to:

Kansas Department of Health and Environment
Bureau of Water, Geology and Well Technology Section
1000 SW Jackson, Suite 420
Topeka, Kansas 66612

D.

Injection and Operational Parameters	Injection or Parameter Limitation	Measurement or Analysis Frequency	Reporting Requirement	Sample or Measurement Type
Wellhead Injection Pressure (inches mercury or pounds per square inch (gauge)*	130 psig	Weekly	Monthly	Gauge or Continuous Recording Device **

* This parameter shall be measured and recorded weekly for each well or gallery system.

** The gauge or continuous recording device shall at all times be maintained operational and shall at all times be located to properly measure the activity being monitored.

E. The injected and withdrawn liquid volume shall be metered continuously and recorded weekly and the minimum and maximum injection pressure shall be measured continuously and recorded weekly for each well or gallery system. All information shall be reported in the quarterly monitoring report submitted to KDHE.

Calculations of the withdrawal/injection ratio shall be included in the monthly report. The gauges, meters or continuous recording devices shall at all times be maintained operational and shall at all times be located to properly measure the activity being monitored.

F. The chemical and physical characteristics of the injected and withdrawn liquid for the gallery system shall be determined at least once annually. A chemical analysis of a characteristic sample shall include at a minimum, pH, total dissolved solids, hardness, alkalinity, chloride, sodium and sulfate. The results of these analyses shall be submitted with the quarterly monitoring report submitted to KDHE. All analyses required by this permit shall be conducted by a laboratory certified by KDHE to analyze for the constituents listed in this permit.

G. An annual report of salt solution mining activities shall be submitted to KDHE. The report shall include a discussion of activities on drilling, plugging, gamma logging, sonar caliper surveys, mechanical integrity testing and an estimate of the percent of useful life remaining for each active well.

H. When calculations based upon a model theory approved by KDHE indicate that eighty (80) percent of the useful life of the well has been reached, the well shall be checked by the permittee to determine the dimensions of the cavity. The dimensions shall be determined thereafter upon growth increments of each twenty (20) percent of useful well life. A sonar caliper survey shall be used for this purpose. The results of such surveys shall be submitted to the Bureau of Water within thirty (30) days of the test completion.

I. The thickness of the salt roof shall be determined at least once every two (2) years by conducting an expanded gamma ray log or other KDHE approved log. The results shall be submitted to the Bureau of Water within thirty (30) days of test completion.

J. The surface elevation of the wellhead shall be determined annually. Results of the elevation survey shall be submitted to the Bureau of Water within thirty (30) days of completion.

K. The following shall also be reported to KDHE by the permittee:

1. Immediate notification of KDHE of all spills associated with the operation of the well or gallery system.

2. The results and interpretation of mechanical integrity tests and any other tests of the injection well or the cavity within thirty (30) days of completion.

3. Any abnormal liquid loss specific for the system shall be orally reported immediately to KDHE. A written report shall also be provided to KDHE within five (5) days of the permittee becoming aware of the circumstances.

4. When the permittee becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or in any report to KDHE, the permittee shall submit such facts or corrected information to KDHE within five (5) days of becoming aware of the circumstances.

II. MECHANICAL INTEGRITY TESTING

A hydraulic pressure mechanical integrity test (MIT) to check for internal integrity of the casing shall be conducted at least once every five (5) years. Whenever KDHE believes that because of a down-hole problem the continued use of the well constitutes a threat to human health, or the fresh and/or usable waters or the soils of the state, or the release of injected or withdrawn fluid into an unauthorized zone is occurring, the permittee shall be required to immediately cease operation of the well and the gallery system and conduct an MIT on the well. If determined necessary by KDHE, an MIT shall be conducted when there has been a well workover. An MIT plan shall be submitted to KDHE for review and approval prior to conducting any MIT. No MIT work shall commence until approval of the MIT plan has been obtained from KDHE. The MIT shall be witnessed by KDHE. If the well fails an MIT, the requirements of Section III, Part B, of this permit shall be implemented by the permittee. The results and interpretation of a MIT shall be submitted to KDHE within thirty (30) days of test completion.

III. ANOMALOUS OPERATIONAL DATA, LOSS OF MECHANICAL INTEGRITY

A. If anomalous operational or monitoring data indicating a loss of mechanical integrity occurs, the permittee shall: 1) immediately investigate and identify the cause of the anomalous data and, 2) notify KDHE within twenty-four (24) hours of becoming aware of the circumstances. The results of this investigation shall be reported to KDHE within twenty-four (24) hours of completion. If the well appears to be lacking mechanical integrity, the permittee shall:

1. Immediately cease operation of the well and the gallery system.

2. Take all steps required by KDHE to determine the presence or absence of mechanical integrity. If the well is determined to have mechanical integrity, operation of the well and the gallery system may resume after the permittee has obtained authorization from KDHE.

B. If a loss of mechanical integrity is determined pursuant to Section III, Part A, of this permit or as the result of a MIT, the permittee shall:

1. Immediately cease operation of the well and the gallery system.

2. Notify KDHE within twenty-four (24) hours of the determination.

3. Take all steps determined necessary by KDHE to determine whether there

may have been a release of fluid into any unauthorized zone. If there is evidence there may have been a release into an unauthorized zone, the permittee shall orally notify KDHE within twenty-four (24) hours of the determination. A written notice shall also be provided to KDHE within five (5) days of the determination including a description of the release.

4. Comply with any immediate corrective or remedial action specified by KDHE. If determined necessary by KDHE, the permittee shall submit to KDHE a remediation and corrective action plan and implementation schedule for review and approval. Work shall not commence until approval of the remediation and corrective action plan has been obtained from KDHE.

5. Restore and demonstrate mechanical integrity to the satisfaction of KDHE. A plan for any well workover or MIT shall be submitted to KDHE for review and approval. Work shall not commence until the permittee has obtained approval of the workover or MIT plan from KDHE.

6. Operation of the well and the gallery system shall resume only upon authorization from KDHE.

IV. PLUGGING, ABANDONMENT

The well shall be plugged and abandoned upon reaching the end of its useful life or when determined necessary by KDHE to protect human health, or the fresh and/or usable waters or the soils of the State. The permittee currently has a plugging and abandonment plan on file with KDHE. The permittee shall revise and update the plugging and abandonment plan when required by KDHE. The permittee shall notify KDHE at least sixty (60) days prior to plugging and abandonment of the well. With the notice, the permittee shall submit a revised and updated plugging and abandonment plan to KDHE for review and approval. The permittee shall conform to all plugging and abandonment requirements of state and federal regulations and KDHE. The well shall be plugged in a manner to prevent fluid migration and to protect soils and fresh or usable water from pollution. Plugging and abandonment work shall not commence until approval of the plugging and abandonment plan has been obtained from KDHE. The report of plugging and abandonment and related information shall be submitted to KDHE within thirty (30) days after completion of the plugging operation on forms provided by KDHE.

V. FINANCIAL RESPONSIBILITY FOR PLUGGING AND ABANDONMENT

The permittee shall maintain financial responsibility and financial resources to close, plug and abandon the underground injection well and appurtenances in a manner required by KDHE. The permittee shall show evidence of financial responsibility to KDHE by the submission of a surety bond or other adequate financial assurance such as financial statements or other materials acceptable to KDHE. Financial assurance documents shall be revised and updated when required by KDHE. The permittee currently demonstrates

financial assurance by financial test. The permittee must notify KDHE by certified mail of the commencement of voluntary or involuntary proceedings under Title 11 (Bankruptcy), U.S. Code, naming the owner or operator as debtor, within ten (10) business days after the commencement of the proceeding. A guarantor of a corporate guarantee must make such notification if named as debtor, as required under the terms of the guarantee.

VI. CONSTRUCTION REQUIREMENTS

A. The well shall be cased and cemented such that: 1) injected or withdrawn fluid does not cause deterioration of the water quality of fresh and/or usable water zones, 2) the loss of fresh and/or usable water due to downward migration is prevented, and 3) the release of injected or withdrawn fluids into an unauthorized zone is prevented.

Borehole, casing, tubing, and cement specifications for the well:

Bore Hole Size	Casing or Tubing Size & Material	Weight lbs/ft	Casing Seat Depth	Type of Cement & Additives	Number of Sacks of Cement
17 1/2"	13 3/8" Steel	54.5	140'	Class A w/3% $CaCl_2$	115
12 1/2"	8 5/8" Steel	32	490'	Class A Salt Sat. 6% Gyp. Seal + 1% Gel.	205

VII. SCHEDULE OF COMPLIANCE

1. This well shall not be operated until a pressure MIT approved and witnessed by KDHE has been conducted and deemed satisfactory.

2. This well shall not be operated until all drilling, casing, cementing records, logs and log interpretations have been submitted and approved by KDHE.

VIII. STANDARD CONDITIONS - ATTACHMENT I

In addition to the specified conditions stated herein, the permittee shall comply with the provisions of Attachment I.

IX. OTHER CONDITIONS

None.

Effective March 8, 2011

ATTACHMENT I

STANDARD CONDITIONS FOR
UNDERGROUND INJECTION CONTROL PERMITS

CLASS III SALT SOLUTION MINING WELLS

CONDITIONS APPLICABLE TO ALL PERMITS

A. Duty to Comply: The permittee shall comply with all conditions of this permit, Federal and State laws and regulations. Any permit noncompliance constitutes a violation of the appropriate act or regulations and is grounds for enforcement action, for permit termination, revocation and reissuance, modification of denial of a permit renewal application.

B. Duty to Reapply: If the permittee wishes to continue an activity regulated by this permit after the expiration date of this permit, the permittee must apply for and obtain a new permit. An application to renew this permit shall be filed with KDHE at least one hundred-eighty (180) days prior to its expiration date.

C. Duty to Halt or Reduce Activity: It shall not be an acceptable defense for a permittee, in an enforcement action, that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

D. Duty to Mitigate: The permittee shall take all reasonable steps to minimize or correct any adverse impact on the environment resulting from noncompliance with this permit.

E. Proper Operation and Maintenance: The permittee shall at all times properly operate and maintain all facilities and systems of monitoring, treatment and control (and related appurtenances) which are installed or used by the permittee to achieve compliance with the conditions of this permit. Proper operation and maintenance includes effective performance, adequate funding, adequate operator staffing and training, and adequate laboratory and process controls, including appropriate quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems when necessary to maintain compliance with the conditions of the permit.

F. Property Rights: This permit does not convey any property rights of any sort, or any exclusive privilege.

G. Duty to Provide Information: The permittee shall furnish to KDHE within a reasonable time, any information which KDHE may request to determine whether cause exists for modifying, revoking, reissuing or terminating the permit, or to determine compliance with this permit. The permittee shall also furnish to KDHE, upon request, copies of reports and information required to be kept by this permit.

H. Inspection and Entry: The permittee shall allow the Secretary, or any authorized representative, upon the presentation of credentials and other documents as may be required by law, to:

1. Enter upon the permittee's premises where a regulated facility or activity is located or conducted, or where records are kept under the conditions of this permit.

2. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit.

3. Inspect any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this permit; and

4. Sample or monitor for the purpose of assuring permit compliance or as otherwise authorized by the appropriate Act, any substances or parameters at any location.

I. Samples, Measurements and Records:

1. Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity.

2. The permittee shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this permit, and records of all data used to complete the application for this permit, for a period of at least three (3) years from the date of sample, measurement, report or application. This period may be extended by request of KDHE at any time.

3. The permittee shall retain records concerning the nature and composition of all injected and withdrawn fluids until three (3) years after the completion of any plugging and abandonment procedures. KDHE may require the owner or operator to deliver the records to KDHE at the conclusion of the retention period.

4. Records of monitoring information shall include:

   a. The date, exact place, and time of sampling or measurements;

   b. The individual(s) who performed the sampling or measurements;

   c. The date(s) analyses were performed;

   d. The individual(s) who performed the analyses;

   e. The analytical sampling, and sample preservation techniques or methods used; and

f. The results of such analyses.

J. Signatory Requirements: All permit applications, reports required by this permit, or other information requested by KDHE shall be signed or certified in accordance with the requirements of K.A.R. 28-46-22.

K. Reporting Requirements:

1. Except for all new wells authorized by an area permit under K.A.R. 28-46-18 and K.A.R. 28-43-3, a new well may not commence operation until construction is complete, and:

a. The permittee has submitted notice of completion of construction to KDHE; and

b. 1) KDHE has inspected or otherwise reviewed the new well and finds it is in compliance with the conditions of the permit: or

2) The permittee has not received notice from KDHE expressing the intent to inspect or otherwise review the new well within thirteen (13) days of the date of the receipt of the notice in paragraph a. of this section, in which case prior inspection or review is waived and the permittee may commence operation. KDHE shall allow for a reasonable time period in which the well shall be inspected.

L. Transfer of Permit: This permit is not transferable to any person except after notice and approval by KDHE. KDHE may require modification or revocation and reissuance of the permit to change the name of the permittee and incorporate such other requirements as may be necessary under the appropriate Act. In some cases, modification and reissuance is mandatory. The current owner shall notify KDHE at least thirty (30) days in advance of the proposed transfer date. The notice shall include a written agreement between the existing and new permittee containing a specific date for the transfer or permit responsibility, coverage and liability between them, and the notice demonstrates the financial requirements will be met by the new permittee. The new permittee shall submit to KDHE at least thirty (30) days prior to the proposed transfer date a new permit application including the financial assurance documents guaranteeing resources are available to properly plug and abandon the well.

M. Emergency Reporting: The permittee shall orally report to KDHE any noncompliance which may endanger human health or environment within twenty-four (24) hours of becoming aware of the circumstances. A written submission shall also be provided within five (5) days of the time the permittee becomes aware of the circumstances. The written submission shall contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times, corrective action taken, and, if the noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance. The permittee shall

comply with any corrective or remedial action required by KDHE.

N. Operational Requirements:

1. The operator of a well shall not allow the movement of fluid containing any contaminant into any formation or aquifer not permitted to receive fluid by this permit. The operator shall have the burden of showing the requirements of this paragraph are met.

2. If any water quality monitoring of an aquifer indicates the movement of any contaminant into any formation or aquifer not permitted to receive fluid by this permit, the operator shall take such action as required by KDHE, including taking the well out of service, closure of the well or plugging and abandonment of the well.

O. Permit Modifications and Terminations: After notice and opportunity for a hearing, this permit may be modified, suspended, or terminated in whole or in part during its term for cause as provided, but not limited to those set forth in K.A.R. 28-46-15 and K.A.R. 28-46-16 or if the KDHE or Environmental Protection Agency standards or regulations on which the permit was based have been changed by promulgation of new or amended codes, statutes, regulations or standards or by judicial decision after the permit was issued. The permittee shall furnish to KDHE, within a reasonable amount of time, any information which KDHE may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit or to determine compliance with this permit. The permittee shall also furnish, upon request, copies of all records required to be kept by this permit.

P. Severability: The provisions of this permit are severable and if any provisions of this permit and any circumstance is held invalid, the application of such provision to other circumstances and the remainder of the permit shall not be affected thereby.

Q. Anticipated Noncompliance: If for any reason, the permittee will be unable to comply with the permit requirements, the permittee shall give advance notice to KDHE. The notice shall include the reason for the anticipated noncompliance and a description of steps taken to reduce, eliminate and prevent recurrence of the noncompliance. Upon receiving proper notice from the permittee, KDHE may grant, for a specified time, a temporary waiver to a permit requirement for the purpose of testing or treating the well, or for conducting a well workover, or to protect human health or the environment.

R. Permit Actions: The filing of a request by the permittee for a permit modification, a notification of planned changes or anticipated noncompliance, does not stay any permit condition.