

U.S. ENVIRONMENTAL PROTECTION AGENCY

UNDERGROUND INJECTION CONTROL PERMIT: CLASS III

Permit Number AZS000000005

EPA ID Number AZD020681839

Pursuant to the Underground Injection Control regulations of the U.S. Environmental Protection Agency codified at Title 40 of the Code of Federal Regulations, Parts 124, 144, 146, and 147

Southwest Salt Co.
13000 W. Glendale Road
Glendale, Arizona 85307

is hereby authorized to operate a Class III injection well identified as

Roach-Baker #4

located at

T2N, R1W, SW 1/4 Sec. 2
Glendale
Maricopa County, Arizona

into Luke Salt Body, upon the express conditions that the permittee meet the restrictions set forth herein. Injection shall not commence until the permittee has received written permission from the Director to inject.

All references to Title 40 of the Code of Federal Regulations are to all regulations that are in effect on the date that this permit is effective. The following attachments are incorporated into this permit: Attachment O (Contingency Plan for Well Failure); Attachment Q (Plugging and Abandonment Plan); Attachment R (Financial Responsibility).

This permit shall become effective on 17 SEP 1987

This permit and the authorization to inject shall continue for the operating lifetime of the well, unless terminated, or until primary enforcement responsibility is delegated to the State of Arizona, unless that State chooses to adopt this permit as a State permit.

The Director shall review this permit at least once every five years from the date of issuance to determine whether it should be modified, revoked and reissued, terminated, or a minor modification made as provided in 40 CFR §§144.39, 144.40, and 144.41.

Signed on 8/18/87

Harry Seraydarian

Harry Seraydarian
Director
Water Management Division
EPA Region 9

PART I

GENERAL PERMIT COMPLIANCE

A. EFFECT OF PERMIT

The permittee is allowed to engage in underground injection in accordance with the conditions of this permit. The permittee, authorized by this permit, shall not construct, operate, maintain, convert, plug, abandon, or conduct any other injection activity in a manner that allows the movement of fluid containing any contaminant into underground sources of drinking water, if the presence of that contaminant may cause a violation of any primary drinking water regulation under 40 CFR Part 142 or may otherwise adversely affect the health of persons. Any underground injection activity not specifically authorized in this permit is prohibited. Compliance with this permit does not constitute a defense to any action brought under the SDWA, or any other common or statutory law or regulation. Issuance of this permit does not convey property rights of any sort or any exclusive privilege; nor does it authorize any injury to persons or property, any invasion of other private rights, or any infringement of State or local law or regulations. Nothing in this permit shall be construed to relieve the permittee of any duties under applicable regulations.

B. PERMIT ACTIONS

1. Modification, Revocation, Reissuance and Termination.

The Director may, for cause or upon request from the permittee, modify, revoke and reissue, or terminate this permit in accordance with 40 CFR 144.12, 144.39, and 144.40. Also, the permit is subject to minor modifications for cause as specified in 40 CFR 144.41. The filing of a request for a permit modification, revocation and reissuance, or termination, or the notification of planned changes, or anticipated noncompliance on the part of the permittee does not stay the applicability or enforceability of any permit condition. The Director may also modify, revoke and reissue, or terminate this permit in accordance with any amendments to the SDWA if the amendments have applicability to the conditions in this permit.

2. Transfer of Permits.

This permit is not transferrable to any person except in accordance with 40 CFR 144.38.

C. SEVERABILITY

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

D. CONFIDENTIALITY

In accordance with 40 CFR Part 2 and 144.5, any information submitted to EPA pursuant to this permit may be claimed as confidential by the submitter. Any such claim must be asserted at the time of submission by stamping the words "confidential business information" on each page containing such information. If no claim is made at the time of submission, EPA may make the information available to the public without further notice. If a claim is asserted, the validity of the claim will be assessed in accordance with the procedures in 40 CFR Part 2 (Public Information). Claims of confidentiality for the following information will be denied:

- 1) The name and address of the permittee:
- 2) Information which deals with the existence, absence or level of contaminants in drinking water.

E. DUTIES AND REQUIREMENTS

1. Duty to Comply.

The permittee shall comply with all applicable UIC Program regulations and conditions of this permit, except to the extent and for the duration such noncompliance is authorized by an emergency permit issued in accordance with 40 CFR 144.34. Any permit non-compliance constitutes a violation of the SDWA and is grounds for enforcement action, permit termination, revocation and reissuance, modification, or for denial of a permit renewal application. Such non-compliance may also be grounds for enforcement action under RCRA.

2. Penalties for Violations of Permit Conditions.

Any person who violates a permit requirement is subject to civil penalties, fines, and other enforcement action under the SDWA and may be subject to the such actions pursuant to RCRA. Any person who willfully violates permit conditions may be subject to criminal prosecution.

3. State Continuation.

An EPA permit issued for the operating lifetime of the injection well may continue in force at the time a State is authorized to

assume primary enforcement authority, providing that the State has the authority to do so under State law, and that the State chooses to adopt and enforce the permit. Otherwise, the injection activity is operating without a Federal UIC permit from the time that the State assumes primacy until the effective date of the State-issued new permit.

4. Need to Halt or Reduce Activity not a Defense.

It shall not be a defense, for 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.

5. 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.

6. Proper Operation and Maintenance.

The permittee shall at all times properly operate and maintain all facilities and systems of 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 only when necessary to achieve compliance with the conditions of this permit.

7. Duty to Provide Information.

The permittee shall furnish to the Director, within a time specified, any information which the Director 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 to the Director, upon request, copies of records required to be kept by this permit.

8. Inspection and Entry.

The permittee shall allow the Director, or an authorized representative, upon the presentation of credentials and other documents as may be required by law to:

(a) 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;

(b) Have access to and copy, at reasonable times, any records that are kept under the conditions of this permit;

(c) Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this permit; and

(d) Sample or monitor at reasonable times, for the purposes of assuring permit compliance or as otherwise authorized by SDWA, any substances or parameters at any location.

9. Records.

(a) The permittee shall retain records and all monitoring information, including all calibration and maintenance records and all original instrumented recordings for continuous monitoring and copies of all reports required by this permit for a period of at least five years from the date of the sample, measurement or report.

(b) The permittee shall maintain records of all data required to complete the permit application form for this permit and any supplemental information submitted under 40 CFR 144.31 for a period of at least five years from the date the application was signed. These periods may be extended by request of the Director at any time.

(c) The permittee shall retain records concerning the nature and composition of all injected fluids until three years after the completion of plugging and abandonment which has been carried out in accordance with the attached plugging and abandonment plan, and is consistent with 40 CFR 146.10.

(d) The permittee shall continue to retain the records after the retention period specified by paragraphs (a) to (c) above, unless he delivers the records to the Director or obtains written approval from the Director to discard the records.

(e) Records of monitoring information shall include:

- (1) The date, exact place, and time of sampling or measurements;
- (2) The individual(s) who performed the sampling or measurements;
- (3) A precise description of both sampling methodology and the handling (custody) of samples;
- (4) The date(s) analyses were performed;
- (5) The names of individual(s) who performed the analyses;

- (6) The analytical techniques or methods used; and
- (7) The results of such analyses.

10. Monitoring.

Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity. Monitoring results shall be reported at the intervals specified in Part II, Paragraphs C and D, of this permit.

(a) Monitoring of the nature of injected fluids shall comply with applicable analytical methods cited and described in Table I of 40 CFR 136.3 or in Appendix III of 40 CFR Part 261 or in certain circumstances by other methods that have been approved by the Administrator.

(b) The permittee shall submit, to the Director, all reports as required in Part II, Sections C and D of this permit. The permittee shall prepare a report describing the intended procedures that will be used for sample collection, handling, and analysis. This report must be submitted for approval by EPA a minimum of 30 days prior to collecting samples for the first Quarterly Report and any time the sampling procedures are changed or modified for subsequent reporting periods.

11. Signatory Requirements.

All reports or other information, required to be submitted by this permit or requested by the Director, shall be signed and certified in accordance with 40 CFR 144.32.

12. Reporting Requirements.

(a) Planned Changes. The permittee shall give written notice to the Director, as soon as possible, of any planned physical alterations or additions to the permitted facility.

(b) Anticipated Noncompliance. The permittee shall give advance notice to the Director of any planned changes in the permitted facility or activity which may result in noncompliance with permit requirements.

(c) Compliance Schedules. Reports of compliance or non-compliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of this permit shall be submitted no later than 30 days following each schedule date.

(d) Twenty-four Hour Reporting.

(1) The permittee shall report to the Director any non-compliance which may endanger health or the environment. Any information shall be provided orally within 24 hours from the

time the permittee becomes aware of the circumstances. The following shall be included as information which must be reported orally within 24 hours:

(i) Any monitoring or other information which indicates that any contaminant may cause an endangerment to an underground source of drinking water.

(ii) Any noncompliance with a permit condition, or malfunction of the injection system, which may cause fluid migration into or between underground sources of drinking water.

(2) A written submission shall also be provided within five 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, 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 recurrence of the noncompliance.

(e) Other Noncompliance. The permittee shall report all other instances of noncompliance not otherwise reported at the time monitoring reports are submitted. The reports shall contain the information listed in Permit Condition 12(d)(2) above.

(f) Other Information. When the permittee becomes aware that he failed to submit any relevant facts in the permit application or submitted incorrect information in a permit application or in any report to the Director, the permittee shall submit such facts or information within 10 days.

(g) Report of Permit Review. Within thirty (30) days of receipt of this permit, the permittee shall report to the Director that he has read and is personally familiar with all terms and conditions of this permit.

F. COMMENCING INJECTION.

An operator may not commence injection until:

1. All logs and tests required by Part II, Section A, Item 2 of this permit are completed and results submitted to the Director,
2. Mechanical integrity of the well has been demonstrated in accordance with Part I, Section H and Part II, Section B, Item 5,
3. Construction is complete as required by Part II, Section A, Item 1 and Part II, Section C, Item 6 of the permit, and the permittee has submitted to the Director, by Certified Mail with return receipt requested, a notice of completion of construction using EPA Form 7520-9, and either:

(a) The Director has inspected or otherwise reviewed the new injection well and finds it is in compliance with the conditions of the permit; or

(b) The permittee has not received, within 13 days of the date of the Director's receipt of the notice required above, notice from the Director of his or her intent to inspect or otherwise review the new injection well, in which case prior inspection or review is waived and the permittee may commence injection.

G. PLUGGING AND ABANDONMENT

1. Notice of Plugging and Abandonment.

The permittee shall notify the Director no later than 45 days before conversion or abandonment of the well.

2. Plugging and Abandonment.

Pursuant to 40 CFR §146.10, the Director shall prescribe aquifer cleanup and monitoring prior to plugging and abandonment where he deems it necessary and feasible to insure adequate protection of USDWs.

The permittee shall plug and abandon the well consistent with 40 CFR 146.10, as provided for in the attached plugging and abandonment plan (which is hereby incorporated as a part of this permit). Within 60 days after plugging a well, or at the time of the next quarterly report (whichever is shorter), the permittee shall submit a report to the Director. The report shall be certified as accurate by the person who performed the plugging operation, and shall consist of either:

(a) A statement that the well was plugged in accordance with the plan previously submitted to the Director; or

(b) If the actual plugging differed from the approved plan, a statement defining the actual plugging and why the Director should approve such deviation. Any deviation from a previously approved plan may be cause for the Director to require the operator to replug the well.

3. Inactive Wells.

After a cessation of injection for two years the permittee shall plug and abandon the well in accordance with the plan unless he:

(a) Provides notice to the Director; and

(b) Describes actions or procedures, which are deemed satisfactory by the Director, that the permittee will take to ensure that the well will not endanger USDWs during the period of

temporary abandonment. These actions and procedures shall include compliance with the technical requirements applicable to active injection wells unless waived, in writing, by the Director.

H. MECHANICAL INTEGRITY

1. Standards.

All injection well(s) must have and maintain mechanical integrity consistent with 40 CFR §146.8.

2. Prohibition Without Demonstration.

The permittee shall not commence injection activity after the effective date of this permit unless the permittee has demonstrated that the well covered by this permit has mechanical integrity in accordance with 40 CFR §146.8 and the permittee has received written notice from the Director that such demonstration is satisfactory.

3. Mechanical Integrity Request from Director.

The Director may, by written notice, require the permittee to demonstrate mechanical integrity at any time.

4. Subsequent Mechanical Integrity Demonstrations.

A demonstration of mechanical integrity in accordance with 40 CFR §§146.8 and 146.33(b)(3) shall be made no later than five years from the date of the last approved demonstration. Mechanical integrity shall also be demonstrated any time the tubing is removed from the well, the packer is reset, or a loss of mechanical integrity becomes evident during operation. The permittee shall notify the Director of his intent to demonstrate mechanical integrity at least 30 days prior to such demonstration. The permittee shall report the results of a mechanical integrity demonstration within 90 days after completion.

5. Loss Of Mechanical Integrity.

If the permittee or the Director finds that the well fails to demonstrate mechanical integrity during a test, or a loss of mechanical integrity as defined by 40 CFR §146.8 becomes evident during operation, the operation shall be halted immediately and shall not be resumed until the Director gives approval to recommence injection.

6. Emergency Removal of Tubing and Packer

In the event of emergency removal of the tubing or packer in which the removal was not planned or calculated, the Director shall be notified verbally within 24 hours and in writing within 5 days of the emergency removal. An EPA approved mechanical integrity demonstration shall be made and the results submitted within fifteen (15) days of such demonstration. Injection may recommence upon demonstration of mechanical integrity and approval by the Director. The Director, upon review of the submitted results may request further testing.

I. FINANCIAL RESPONSIBILITY

1. Financial Responsibility.

The permittee is required to maintain financial responsibility and resources to close, plug, and abandon the underground injection operation in a manner consistent with the underground injection control regulations and Attachment Q (Plugging and Abandonment Plan). The financial responsibility mechanism shall be updated periodically, upon request of the Director.

2. Insolvency.

In the event of:

(a) the bankruptcy of the trustee or issuing institution of the financial mechanism, or

(b) suspension or revocation of the authority of the trustee institution to act as trustee, or

(c) the institution issuing the financial mechanism loses its authority to issue such an instrument, the permittee must notify the Director, within ten (10) business days. The owner or operator must establish other financial assurance or liability coverage acceptable to the Director, within 60 days after such an event.

An owner or operator must also notify the Director 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 10 business days after the commencement of the proceeding. A guarantor of a corporate guarantee must make such a notification if he is named as debtor, as required under the terms of the guarantee.

PART II

WELL SPECIFIC CONDITIONS FOR UIC PERMITS

A. CONSTRUCTION

1. Casing and Cementing [40 CFR 146.32(a)].

Notwithstanding any other provisions of this permit, the permittee shall case and cement the well to prevent the movement of fluids into or between underground sources of drinking water. The casing and cement used in the construction of the well shall be designed for the life expectancy of the well. The permittee shall give advance notice of any planned changes in the construction of the permitted well to the Director. The following specifications apply to Roach Baker well #4.

- Conductor Casing - 20 inch conductor pipe driven to 20 ft below ground surface.
- Long String Casing - 13-3/8 inch J-55 steel, 42 lb/ft, .333 inch wall thickness, cemented in 18 inch hole from 1600 ft below ground surface to surface.
- Injection Tubing - 10-3/4 inch J-55 steel, 32 lb/ft, .312 inch wall thickness, or similar tubing from approximately 2600 ft to surface.
- Production Tubing - 6-5/8 inch J-55 steel, 14 lb/ft, .244 inch wall thickness, or similar tubing from approximately 3000 ft to surface.

2. Logs and Tests

The appropriate logs and tests shall be conducted during the drilling and construction of the well. A descriptive report interpreting the results of those logs and tests which specifically relate to (1) an USDW and confining zone and (2) the injection and adjacent formations, shall be prepared by a knowledgeable log analyst and submitted to the Director. The following logs and tests shall be conducted.

- a. Coring of anhydrite for core analysis, including lithologic description and hydrogeologic parameters,
- b. Resistivity, Gamma Ray and Spontaneous Potential Logs for detection of permeable beds, indication of bed shaliness, salinity profile approximation, location of lithologic boundaries, and density profile,

- c. Lithologic analysis of borings brought to surface during drilling of Roach Baker #4,
- d. Collection of formation water samples for chemical analysis,
- e. Mechanical integrity testing of the well in accordance with Part II, Section B, Item 5 of this permit, and
- f. A cement bond log (CBL) prior to operation to demonstrate adequate primary cementing.

B. OPERATIONS

1. Injection Formation.

Injection shall be limited to the Luke Salt Body in the interval between 1200 ft and ¹¹⁰⁰5000 ft below land surface. In no event shall the roof of the solution cavern be developed in such a manner that dissolution of the overlying anhydrite beds takes place or that injection brines or seal fluids are allowed to migrate into any formation overlying the Luke Salt Body.

2. Salt Cavern Roof.

The permittee shall maintain a minimum salt cavern roof thickness of 200 feet between the overlying anhydrite layer and salt cavern ceiling unless a written request is sent to the Director and written permission is given by the Director to maintain a thickness of less than 200 ft. Depth below ground surface of the salt cavern ceiling shall be determined once every two years. Control of dissolution of the cavern ceiling may include, but not be limited to injection of fuel-oil to act as a seal fluid blanket.

3. Injection Pressure Limitation [40 CFR §146.33(a)].

Injection pressure at the wellhead shall not exceed a maximum which shall be calculated so as to assure that the pressure in the injection zone during injection does not initiate new fractures or propagate existing fractures in the injection zone. In no case shall injection pressure initiate fractures in the confining zone or cause the movement of injection or formation fluids into an underground source of drinking water.

The maximum injection pressure measured at the wellhead, shall not exceed 586 psig during operation of the well. In the event of an increased salt cavity ceiling height or modification of the 10-3/4 inch tubing length, the permittee shall notify the Director. A reduced maximum injection pressure shall be calculated based on these changes and injection shall not commence until such calculations have been submitted to and approved by the Director.

4. Additional Injection Limitation.

Injection between the outermost casing protecting underground sources of drinking water and the well bore is prohibited.

5. Mechanical Integrity Test [40 CFR §146.8]

A Mechanical Integrity Test (MIT) shall be conducted prior to operation and once every five years to demonstrate the absence of significant leaks in the casing and to demonstrate the absence of significant fluid movement through vertical channels adjacent to the injection well. Sixty (60) days prior to conducting a mechanical integrity test, the permittee shall submit to the Director for approval, a plan to conduct a mechanical integrity test. Tests shall not proceed until the permittee receives the Director's written permission.

6. Ratio of Injected Volume to Produced Volume Limitation

Within one year following the effective date of operation of Roach Baker #4, the Director may prescribe a limitation of the ratio of injected fluid volume to produced volume. This value will be based upon data submitted by the permittee during the first year of operation of Roach Baker #4.

C. MONITORING

1. Monitoring Requirements [40 CFR §§144.51(j)(1) and 144.52(a)(5)].

Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity. The methods used to obtain a representative sample of the fluid to be analyzed and the procedures for analysis of the sample are as follows:

- Grab samples shall be collected at the sampling valve at the wellhead and used for laboratory analysis for physical and chemical characteristics.
- Temperature, annular pressure, and injection pressure shall be measured at the wellhead.
- The permittee shall identify the types of tests and methods used to generate the monitoring data as specified by 40 CFR §136.3 or Appendix III of 40 CFR §261. When the analytical method for a particular parameter is not specified in either 40 CFR §136.3 or Appendix III of 40 CFR §261, the permittee must obtain EPA approval of the types of tests and methods used to generate the monitoring data.

2. Injection Fluid Analysis [40 CFR §144.28(g)(3)(i)]

The permittee shall provide to the Director a qualitative analysis and ranges in concentrations of all constituents of injected fluids at least once within the first year of authorization and

thereafter whenever the injection fluids are modified to the extent that the initial data are incorrect or incomplete. The owner or operator may request Federal confidentiality as specified in 40 CFR Part 2. If the information is proprietary the owner or operator may in lieu of the ranges in concentrations choose to submit maximum concentrations which shall not be exceeded. In such a case the owner or operator shall retain records of the undisclosed concentrations and provide them upon request to the Regional Administrator as part of any enforcement investigation.

3. Demonstration of Mechanical Integrity [40 CFR §146.33(b)(3)]

A demonstration of mechanical integrity pursuant to 40 CFR §146.8 shall be conducted at least once every five years during the life of the well.

4. Modification of Injection Fluid [40 CFR §146.33(b)(1)].

Whenever the injection fluid is modified to the extent that the analysis required by §146.34(a)(7)(iii) is incorrect or incomplete, a new analysis as required by §146.34(a)(7)(iii) shall be provided to the Director.

5. Monitoring Frequency [40 CFR §146.33(b)(2) and (4)].

Monitoring shall be conducted no less frequently than indicated for the parameters listed below:

<u>Parameter</u>	<u>Monitoring Frequency</u>	<u>Sample Type</u>
injection rate, vol/time	continuous	Recorder
injection total volume, gallons	continuous	Totalizer
injection pressure, psig	continuous	Recorder
produced fluid total volume, gallons	continuous	Totalizer
water filled annular pressure, psig	continuous	Recorder
injection fluid temperature, °F	continuous	Recorder
produced fluid temperature, °F	continuous	Recorder
water filled annular temperature, °F	continuous	Recorder
seal fluid total volume injected, gallons	daily	Measured
maximum seal fluid injection pressure, psig	daily	Measured

6. Continuous Monitoring Devices.

Continuous recording devices shall be installed at the wellhead and used to monitor temperature of injection fluid, produced fluid and annular fluid, injection rate, injection and annular pressure, and volume of injected and produced fluids. Description, specifications, and location of the equipment shall be submitted to the Director for approval prior to operation. This equipment shall be installed and operating prior to operation of the well.

7. Seal Fluid Measurements.

Seal fluid injection shall be monitored on a daily basis when injection of such fluid occurs. Seal fluid volumes injected and pressure of seal fluid injection shall be reported for each incidence of seal fluid injection.

8. Salt Cavern Roof Thickness.

Measurement of the salt cavern roof thickness shall be taken once every two years. This value shall be measured from the ceiling of the salt cavern to the bottom of the overlying anhydrite layer.

9. Monitoring Modification.

Following one year of operation of the well, the permittee may request a modification of monitoring requirements. The request shall be in writing and shall state specifically the type of modification requested.

D. REPORTING REQUIREMENTS [40 CFR §146.33(c)(1)]

1. Quarterly reports

The permittee shall submit accurate quarterly reports to the Director containing the following information:

- (a) Results of the injection fluid analyses specified in Part II, Section C, item 2.
- (b) Monthly average, maximum and minimum values for injection fluid temperature, produced fluid temperature, annular temperature, injection pressure, injection rate, seal fluid volume, and total injection volume and production volume.
- (c) Daily and monthly ratio of injected to produced fluid volume

2. Reports on Well Tests and Workovers [40 CFR §146.13(c)(2)]

In the first quarterly report after the activity the permittee shall report to the Director the results of the following:

- (a) Mechanical integrity tests;
- (b) Other tests required by this permit;
- (c) Any well workover and removal or replacement of tubings.

3. Reporting of Monitoring Results

All pH values shall be reported to the nearest 0.1 pH unit. Observation and recording of parameters specified to be monitored periodically shall be done over equal time intervals over a 24 hour period. When computing a daily or monthly average value, as defined in the section of Definitions, for those parameters monitored continuously, the continuous recording charts shall be read once for every 2 hour measurement taken during periods of injection. The reporting of daily average, daily maximum, and daily minimum values shall be in a format acceptable to the Director.

Monitoring results obtained during each calendar month shall be summarized for each month and reported on EPA Form 7520-8. Forms shall be submitted for the reporting periods by the respective due dates as listed below:

<u>Reporting Period</u>	<u>Report Due</u>
July, Aug, Sept	Oct 28
Oct, Nov, Dec	Jan 28
Jan, Feb, Mar	Apr 28
Apr, May, June	Jul 28

The report shall also include the following information:

- 1. date and time of sample collection;
- 2. name of individual(s) who performed the sampling;
- 3. type of containers used and how samples were treated and preserved prior to transporting to the lab;
- 4. method of transportation to the lab;
- 5. name and location of the lab analyzing the samples;
- 6. the procedures used by the lab for analysis; (Note: If the procedures were different from the information submitted as required in Part I, Section E, item 10(b) of this permit, indicate these differences.) and
- 7. reference to established, published criteria should be made wherever possible.

Copies of the monitoring results required by Section C of Part I and all other reports required by Section B of Part II shall be submitted to the Director at the following address:

U.S. Environmental Protection Agency
Region 9
Water Management Division
Underground Injection Control Section (W-6-2)
215 Fremont Street
San Francisco, California 94105

PART III

SCHEDULE OF COMPLIANCE

A. SUBSIDENCE MONITORING PROGRAM

Within ninety (90) days of the effective date of this permit the permittee shall submit a plan to the Director for approval to develop a monitoring well network specifically for the purpose of monitoring subsidence.

Implementation of a subsidence monitoring program shall begin within one year of the effective date of the permit.

B. SALT ROOF CAVERN THICKNESS

Within ninety (90) days of the effective date of the permit the permittee shall submit a plan to the Director to measure the salt roof cavern thickness and salt cavern ceiling depth below ground surface. Plans shall include description of devices used to obtain the above values.

Definitions

1. BPD

BPD means barrels per day.

2. Daily Average of Parameters Monitored Continuously

Daily Average of Parameters Monitored Continuously means the sum of values observed and recorded periodically as specified in Part II, Section C of this permit, divided by the total number of values observed and recorded during the day.

3. Daily Average of Parameters Not Monitored Continuously

Daily Average of Parameters Not Monitored Continuously means the sum of all daily observed and recorded values divided by the total number of values observed and recorded during that day.

4. Daily or Monthly Maximum Value

Maximum Value means the highest value recorded during the day or month, respectively. For continuously monitored parameters the highest value recorded is the highest instantaneous value for the continuous monitoring record.

5. Daily or Monthly Minimum Value

Minimum Value means the lowest value recorded during the day or month, respectively. For continuously monitored parameters the lowest value recorded is the lowest instantaneous value from the continuous monitoring record.

6. GPM

GPM means gallons per minute.

7. Grab Sample

Grab Sample means a single portion which is not a composite sample. The sample(s) shall be collected at the period(s) most representative of the monitored activity.

8. Injection Tubing or Tubing

Injection Tubing means a system of pipes, of appropriate material, inserted into the well through the casing to convey the injection fluid to the injection zone and to prevent casing degradation.

9. Monthly Average of Parameters Monitored Continuously

Monthly Average of Parameters Monitored Continuously means the sum of values observed and recorded periodically as specified in Part II, Section C, item 1, divided by the total number of values observed and recorded during that month.

10. Monthly Average of Parameters Monitored Daily

Monthly Average of Parameters Monitored Daily means the sum of all daily observed and recorded values divided by the total number of values observed and recorded during the month.

11. PSIG

PSIG means pounds per square inch gauge.

12. Water Filled Annulus

Water Filled Annulus is the annular space between the injection tubing and the cemented long string casing filled with water.

Attachment O

Contingency Plan for Well Failure

The permittee has submitted the following contingency plans for implementation when any well failures that may cause the migration of fluids into any USDW are identified by testing, or are indicated by operations data:

1. Stop injection to identified well.
2. Investigate well failure.
3. Report as required.
4. Take corrective action to repair or plug well and protect USDW.