DEPARTMENT OF CONSERVATION

Managing California's Working Lands

LEGAL OFFICE

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February 6, 2015

Important Note Regarding The Memoranda Of Agreement On Primacy and Exempted Aquifers:

Questions have been raised about the precise contents of the Memorandum of Agreement (MOA) between the Department of Conservation and the United States Environmental Protection Agency respecting the exemtion of aquifers under the Safe Drinking Water Act. Unfortunately, historical files have disclosed two different versions of the MOA, each with the same signature page and dates (fully signed September 29, 1982.)

One of these MOAs has been on our web site for some time, and reflects, in Attachment 3 and related text, the denial of proposed exemptions for 11 key aquifers. That document appears first, below, as Document 1.

A second, competing version of the MOA also exists, which refers to only two attachments, and does not deny exemptions to the 11 aquifers. It was found in, among other places, US EPA documents disclosed September 30, 2014 pursuant to a Freedom of Information Act request. A December 13, 1982 memorandum from Region IX staff to US EPA headquarters, covers this competing version of the MOA, and refers to the MOA (and other enclosed documents) as resolving "all known issues" with California's primacy application. That document appears below, as Document 2.

Document 3 is a May 17, 1985 letter from US EPA to the Western Oil and Gas Association indicating, among other things, that no proposed exemptions of USDWs were denied at the time of the delegation of primacy. (Some aquifers did not receive exemptions simply because the water in question contained over 10,000 ppm TDS, and thus did not qualify.)

These documents are offered here together and, unless and until sufficient further, and more definitive documentation can be located, should be considered as a group.

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Document 1:

Memorandum of Agreement dated September 29, 1982, as originally posted to Department of Conservation FTP Site

Underground Injection Control Program
Memorandum of Agreement
Between
California Division of Oil and Gas
and
the United States Environmental Protection Agency
Region 9

I. General

This Memorandum of Agreement ("Agreement") establishes the responsibilities of and the procedures to be used by the Division of Oil and Gas ("Division") and the United States Environmental Protection Agency ("EPA") in administration of wells in the Class II portion ("Class II program") of the Underground Injection Control ("UIC") program in California. In general, this Agreement supplements the program described in the demonstration submitted in accordance with Section 1425(a) of the Safe Drinking Water Act ("1425 demonstration").

After it is signed by the Supervisor and the Regional Administrator, this Agreement shall become effective on the date notice of the Class II program approval is published in the Federal Register. The parties will review this Agreement at least once each year during preparation of the annual program update, during the State-EPA agreement ("SEA") process or at other times as appropriate (e.g. at mid-year review). The annual SEA shall be consistent with this Agreement and may not override this Agreement.

This Agreement may be modified upon the initiative of either party in order to ensure consistency with State or Federal statutory or regulatory modifications or supplements, or for any other purpose mutually agreed upon. Any such modifications or supplements must be in writing and must be signed by the Supervisor and Regional Administrator.

This Agreement shall remain in effect unless EPA determines that the Division's 1425 demonstration is no longer valid. Such a determination by EPA will be in accordance with Sec tion 1425(c) of the Safe Drinking Water Act ("SDWA").

Nothing in this Agreement shall be construed to alter any requirements of SDWA or to restrict EPA's authority to fulfill its oversight and enforcement responsibilities under SDWA or other Federal laws, or to restrict the Division's authority to fulfill its responsibilities under State statutes. Nothing in this Agreement shall require or be construed to require EPA to violate Federal law or the Division to violate State law.

II.

A. Policy Statement

The purpose of the UIC program is to prevent any underground injection that endangers an underground source of drinking water ("USDW").

The Division has primary responsibility and authority over all Class II injection wells in the State of California. This includes Class II wells drilled and operated on Federally owned lands, but does not include such wells on Indian lands. The Division is responsible for administering the Class II program including but not limited to reports, permits, monitoring and enforcement actions. Implementation of the Class II program will be as described in the 1425 demonstration and will be supported by an appropriate level of staff and resources.

The Supervisor and the Regional Administrator agree to maintain a high level of cooperation and coordination between Division and EPA staff to assure successful and effective administration of the Class II program.

The Division shall promptly inform EPA of any proposed or pending modifications to laws, regulations, or guidelines, and any judicial decisions or administrative actions that might affect the program and the Division's authority to administer the program. The Division shall promptly inform EPA of any resource allocation changes (e.g. personnel, budget, equipment) that might affect its ability to administer the program.

EPA shall promptly notify the Division of the issuance, content, and meaning of Federal statutes, regulations, guidelines, standards, judicial decisions, policy decisions, directives, and other factors (including budgetary changes) that might affect the Class II program.

B. Information Sharing

1. Division

The Division agrees that all information and records obtained or used in the administration of the Class II program including all UIC permit files shall be available for inspection by EPA or its authorized representative upon request. Division records may be copied by the EPA only when they are required by EPA to bring an enforcement action or for other such specific purpose. Any information obtained from the Division by EPA that is subject to a claim of confidentiality shall be treated by EPA in accordance with EPA regulations governing confidentiality (40 CFR Part 2 and 40 CFR 122.19).

The Division shall retain records used in the administration of the program for at least three years (40 CFR 30 and 40 CFR 35). If an enforcement action is pending, then all records pertaining to such action shall be retained until such action is resolved or the previously mentioned time period is met.

2. EPA

Copies of any written comments about the Division's program administration received by EPA from regulated persons, the public, and Federal, State, and local agencies will be provided to the Supervisor within thirty (30) days of receipt.

3. Emergency Situations

Upon receipt of any information that any Class II injection operation is endangering human health or the environment and requires emergency response, the party in receipt of such information shall immediately notify by telephone the other party of the existence of such a situation.

C. Permits

1. Division

Within 10 working days of receipt, the Division shall provide a written response to any written notice of intent to commence drilling.

2. EPA

Upon receipt by EPA, any Class II permit application and supporting information shall be immediately forwarded to the Division.

Some facilities and activities may require permits from the Division and EPA (and/or other State agencies) under different programs. When appropriate, the Division and EPA will participate in a joint permit processing procedure. The procedure will be developed on a case by case basis.

D. Compliance, Monitoring and Enforcement

1. Division

The Division shall adhere to the compliance monitoring, tracking, and evaluation program described in the 1425 Demonstration. The Division shall maintain a timely and effective compliance monitoring system including timely and appropriate actions on non-compliance.

Each year, 100% of the disposal wells will be inspected for mechanical integrity.

2. EPA

EPA shall conduct periodic site and activity inspections on injection operations, giving priority to operations having the greatest potential to endanger public health.

EPA may participate with the Division in the inspection of wells or operator records. EPA shall notify the Division usually at least ten (10) days prior to any proposed inspection and shall describe the well(s) or record (s) to be inspected and the purpose of such inspection. If the Division fails to take adequate enforcement action against a person violating the requirements for a Class II well, EPA may take Federal enforcement action. Federal enforcement actions will be in accordance with the State, facility and public notification procedures in Section 1423 of SDWA.

3. Emergency Situations

Situations endangering human health will receive immediate and paramount attention by the Division and EPA. The party with initial knowledge of such situation shall immediately notify the other party by telephone.

E. Program Review and Evaluation

1. Division

The Division shall provide EPA with an annual report on the recent operation of the Class II program. Specific contents of the report are described in Attachment #1 and may be renegotiated from time to time. The period to be covered by the annual report shall be the calendar year ending December 31, with reports completed and available to EPA no more than 60 days later (March 1).

In addition, the Division shall provide a separate report of preventive actions taken by operators of new Class II wells. At minimum, this report shall include:

a. the number and general type (e.g. injection pressure limit) of preventive actions proposed in the applications;

b. the number and general type of preventive actions actually taken; and

c. if necessary, a brief summary explaining the reason(s) for any differences between proposed and actual preventive actions (e.g., pending actions).

The report is due within 3 months after the second anniversary of the effective date of this Agreement. The final format will be negotiated at least 3 months prior to the due date.

If the Division proposes to allow any mechanical integrity tests other than those specified or justified in the 1425 Demonstration, the Division shall provide in advance to EPA sufficient information about the proposed test that a judgment about its usefulness and reliability can be made.

2. EPA

EPA shall conduct mid-year evaluations at least during the first 2 years of the Division's operation of the program. In part, the mid-year evaluations will be based on the reports provided above. At least 10 days prior to the evaluation, EPA shall notify the Division regarding the information, material, and program areas that will be covered. This may include selected permit files, budget records and public notification and complaint files. The evaluation may be conducted at either the Division's headquarters or one of its district offices.

F. Public Participation

1. Division

The Division shall provide adequate public notice for its proposed actions as described in the Division's 1425 Demonstration. At minimum, the Division shall provide a 15 day public comment period, and make the non-confidential portions of the project plan and the representative Report on Proposed Operations available for review. If the Supervisor determines that a public hearing is necessary, public notice shall be provided at least 30-days prior to the public hearing.

If there are any substantial changes to the approved project plan or representative Report on Proposed Operations, additional public notice will be provided. Examples of substantial changes include significant increases in injection pressures, changes in injection zone, or significant changes in injection fluid.

Copies of such notices shall also be sent to:

a. Director, Water Management Division, EPA-Region 9;

b. Chairperson, State Water Resources Control Board; and

c. Chairperson of the affected Regional Water Quality Control Board.

The Division's final decision on proposed actions shall contain a response to comments that summarizes the substantive comments received and the disposition of the comments. This shall become a part of that particular project file.

At a minimum, the Division shall apply these public participation procedures to applications for new underground injection projects, significant modifications to existing permits, and to aquifer exemptions.

2. EPA

EPA shall participate at any scheduled public hearing at the request of the Division. Such requests shall be made at least 10 days prior to the hearing.

Any appropriate comments on the proposed action shall be made by EPA within the normal fifteen day comment period. The exception is the designation of exempted aquifers (see the section on Aquifer Exemptions).

G. Program Revision

A program revision may be necessary when the Division's or EPA's statutory authority is modified or when there is a substantial modification to the program. The procedure for revising the program shall be that described in 40 CFR 123.13(b).

H. Aquifer Exemption

An Underground Source of Drinking Water (USDW) may be exempted for the purposes of a Class II injection well if it meets the criteria in 40 CFR 146.04.

Aquifers exempted by the Division and EPA under this Agreement shall only be applicable for the injection of fluids related to Class II activities defined in 40 CFR 146.05(b).

Aquifer exemptions made subsequent to the effective date of this Agreement shall not be effective until approved by the Administrator or Regional Administrator (if delegated) in writing.

After the effective date of this Agreement, an aquifer exemption must be in effect prior to or concurrent with

the issuance of a Class II permit for injection wells into that aquifer.

Aquifers which were proposed for exemption in the 1425 Demonstration and exempted are identified in Attachment #2. Aquifers proposed for exemption in the 1425 Demonstration and not exempted will be phased out within 18 months of the effective date of this Agreement (Attachment #3). Any aquifer or portion of an aquifer denied an exemption may be resubmitted for consideration. At minimum, the resubmission should include either new data, new boundaries or other modification to the original proposal.

All exempted aquifers are subject to review by the Division and by EPA. For good reason and by mutual agreement between the Division and EPA, the exemption status of an aquifer can be withdrawn. The public participation procedures in the 1425 Demonstration shall be applied prior to the withdrawal of any exemption status.

1. EPA

Within 10 days after receipt of the information on the aquifer(s) proposed by the Division for exemption, EPA shall notify the Division if any additional information is deemed appropriate. EPA shall either approve or disapprove the aquifer exemption within 60 days after receipt of all appropriate information. Any disapproval by EPA shall state the reasons for the decision. Requests for additional information and final determinations on aquifer exemptions shall be in written form.

If the new aquifer proposed for exemption is a non-hydrocarbon bearing USDW, EPA will coordinate its public participation activities on aquifer exemptions with the Division's public participation activities during project review.

I. Other Agency Involvement

The Division shall administer the Class II program and maintain close cooperation with California's State Water Resources Control Board (SWRCB) and the Minerals Management Service.

J. Definitions

1. Class II well is defined in 40 CFR 146.05(b).

2. Aquifer is defined in 40 CFR 146.03 and 122.3.

3. Day in this Agreement is defined as a working day.

4. Underground Source of Drinking Water (USDW) is defined in 40 CFR 146.03 and 122.3.

5. 1425 Demonstration includes:

a. the Division's primacy application dated April, 1981;

b. the additional information provided by letter dated March, 1982; and

c. the clarifying information provided by letter dated September, 1982.

Sonia F. Crow
Regional Administrator
Environmental Protection Agency
Region 9

Sept. 29, 1982
Date

for Simon Cordova
M.G. Mefferd
State Oil and Gas Supervisor
California Division of Oil and Gas

Sept. 28, 1982
Date

Attachment 1

Annual Report Contents

At a minimum, the Annual Report shall include:

a. an updated inventory;

b. a summary of surveillance programs including results of monitoring and mechanical integrity testing, the number of inspections conducted, the number of new wells, corrective actions ordered and witnessed, instances of wells out of compliance and their current status;

c. an account of all complaints reviewed by the Division and the actions taken;

d. results of the review of existing wells made during the year;

e. a summary and status of the enforcement actions taken;

f. number of emergency permits issued and current status; and

g. instances of variances and discretionary exemptions during the year.

Attachment 2

Exempted 1425 Demonstration Aquifers

All oil and gas producing aquifers identified in Volumes I, II, and III of the California Oil and Gas Fields submitted in the 1425 Demonstration dated April 20, 1981 are exempted.

In addition, the following aquifers are also exempted.

DISTRICT	FIELD	FORMATION/ZONE
2	Ramona	Pico
2	Oat Mountain	Undiff.
2	Simi	Sespe
3	San Ardo	Santa Margarita
3	San Ardo	Monterey "D" Sand
3	San Ardo	Monterey "E" Sand
3	Monroe Swell	Santa Margarita
4	Buena Vista	Tulare
4	Kern Bluff	Vedder
4	Kern River	Vedder*
4	Mountain View	Kern River
4	Pleito	Chanac
4	Pleito	Kern River
4	Poso Creek	Santa Margarita
5	Coalinga	Santa Margarita
5	Coalinga	Etchegoin-Jacalitos
5	Guijarral Hills	Etchegoin-Jacalitos*
5	Helm	Tulare-Kern River
5	Riverdale	Pliocene
5	Turk Anticline	San Joaquin
6	Sutter Buttes Gas	Kione*

* oil and/or gas producing

Attachment 3

1425 Demonstration Aquifers Not Exempted

DISTRICT	FIELD	FORMATION/ZONE
2	South Tapo Canyon	Pico
4	Blackwell's Corner	Tumey
4	Kern Bluff	Kern River
4	Kern Front	Santa Margarita
4	Kern River	Chanac
4	Kern River	Santa Margarita
4	Mount Poso	Walker
4	Round Mountain	Olcese
4	Round Mountain	Walker
6	Bunker Gas	Undiff.
6	Wild Goose	Undiff.

Document 2:

December 13, 1982 Memorandum From Region IX Staff To US EPA Headquarters Enclosing Competing MOA With No Exemptions Denied

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Environmental Protection Agency
Region 1X
215 Fremont St.
DEC 13 1982 San Francisco, CA. 94105

California's Application for Primacy Over Class II Wells in the Underground Injection Control (UIC) Program

William M. Thurston
Chief, Water Supply Section, Region 9

Phil Tate
UIC Review Coordinator
State Program Division (WH-550)

Attached are the State Attorney General's response to the UIC Review Team's comments dated November 5, 1982 and a copy of the Memorandum of Agreement between the Division of Oil and Gas and EPA, Region 9.

With the addition of these attachments, all known issues regarding the primacy application have been resolved. If you have any questions, please don't hesitate to call Nathan Lau at 454-8274 or me at 454-8221.

Attachments

CONCURRENCES								
SYMBOL		W-3	W-2	PSB				
SURNAME	N. Lau	Reames	Thurston	Mail Odd				
DATE	12/13/82	12/13/82	12/13/82	DEC 13 1982				

EPA Form 1320-1 (12-70)

OFFICIAL FILE COPY

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Environmental Protection Agency
Region 1X
215 Fremont St.
San Francisco, CA. 94105

DEC 13 1982

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State of California
Department of Justice
George Deukmejian
(PRONOUNCED DUKE-MAY-GIN)
Attorney General

1900 WILSHIRE BLVD.
LOS ANGELES 90010
(213) 736-2125

December 3, 1982

Richard E. Reavis, Chief
California Branch
Region IX
United States Environmental Protection Agency
215 Fremont Street
San Francisco, CA 94105

Re: California Application for Primacy,
Class II UIC Program

Dear Mr. Reavis:

The Headquarters Underground Injection Control (UIC) Primacy Review Team reviewed the responses made by the California Division of Oil and Gas (CDOG) to comments made by the Environmental Protection Agency (EPA) on CDOG's primacy application. Except for items 2 and 4, the CDOG's responses were found to be adequate. With respect to items 2 and 4, the Review Team indicated that the responses would be adequate if it could obtain from the California Attorney General's office, the legal representative of the CDOG, assurances on two matters. The first matter on which assurance is sought is that the CDOG can enforce the conditions set out in the letter of approval, which is the first step in the CDOG's two-step permitting process for underground injection. The second matter on which assurance is sought is that compliance by the operator with the letter of approval does not relieve the operator from compliance with all applicable statutes and regulations. We are able to give you the assurances you seek.

Under section 1724.6 of Title 14 of the California Administrative Code, prior approval of any underground injection or disposal project must be obtained from the CDOG before the project can begin. This prior approval is in the form of a letter setting forth the conditions upon which the approval to proceed is given. Failure of an operator to comply with any conditions set forth in the letter of approval would constitute proceeding with the project without the approval of the CDOG. This would be a violation by the operator of section 1724.6 of Title 14 of the California Administrative Code which would enable the CDOG to invoke the enforcement procedures available to it to

compel compliance with the terms of the letter of approval.

The letter of approval may set forth special operational requirements that relate specifically to the project being approved. These requirements are in addition to, not in lieu of, the requirements of statutes and regulations applicable to underground injection and disposal projects. All operators must comply with applicable provisions of the statutes and regulations, and the CDOG has no authority to exempt an operator from such compliance. The statutes and regulations (see for example section 1724.10 of Title 14 of the California Administrative Code) provide general requirements for underground injection projects. However, unique characteristics of each project site may necessitate, in addition, site-specific requirements which is the function of the letter of approval to provide.

If this office can be of any further assistance in the process of obtaining EPA approval of the CDOG's primacy application, please do not hesitate to call.

Very truly yours,

Alan V. Hager
Deputy Attorney General

AVH:mjp
cc: M. G. Mefferd

Underground Injection Control Program
Memorandum of Agreement
Between
California Division of Oil and Gas
and
the United States Environmental Protection Agency
Region 9

I. General

This Memorandum of Agreement ("Agreement") establishes the responsibilities of and the procedures to be used by the Division of Oil and Gas ("Division") and the United States Environmental Protection Agency ("EPA") in administration of wells in the Class II portion ("Class II program") of the Underground Injection Control ("UIC") program in California. In general, this Agreement supplements the program described in the demonstration submitted in accordance with Section 1425(a) of the Safe Drinking Water Act ("1425 demonstration").

After it is signed by the Supervisor and the Regional Administrator, this Agreement shall become effective on the date notice of the Class II program approval is published in the Federal Register. The parties will review this Agreement at least once each year during preparation of the annual program update, during the State-EPA agreement ("SEA") process or at other times as appropriate (e.g. at mid-year review). The annual SEA shall be consistent with this Agreement and may not override this Agreement.

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This Agreement shall remain in effect unless EPA determines that the Division's 1425 demonstration is no longer valid. Such a determination by EPA will be in accordance with Section 1425(c) of the Safe Drinking Water Act ("SDWA").

Nothing in this Agreement shall be construed to alter any requirements of SDWA or to restrict EPA's authority to fulfill its oversight and enforcement responsibilities under SDWA or other Federal laws, or to restrict the Division's authority to fulfill its responsibilities under State statutes. Nothing in this Agreement shall require or be construed to require EPA to violate Federal law or the Division to violate State law.

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c. Chairperson of the affected Regional Water Quality Control Board.

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1. EPA

Within 10 days after receipt of the information on the aquifer(s) proposed by the Division for exemption, EPA shall notify the Division if any additional information is deemed appropriate. EPA shall either approve or disapprove the aquifer exemption within 60 days after receipt of all appropriate information. Any disapproval by EPA shall state the reasons for the decision. Requests for additional information and final determinations on aquifer exemptions shall be in written form.

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I. Other Agency Involvement

The Division shall administer the Class II program and maintain close cooperation with California's State Water Resources Control Board (SWRCB) and the Minerals Management Service.

J. Definitions

1. Class II well is defined in 40 CFR 146.05(b).

2. Aquifer is defined in 40 CFR 146.03 and 122.3.

3. Day in this Agreement is defined as a working day.

4. Underground Source of Drinking Water (USDW) is defined in 40 CFR 146.03 and 122.3.

5. 1425 Demonstration includes:

a. the Division's primacy application dated April, 1981;

b. the additional information provided by letter dated March, 1982; and

c. the clarifying information provided by letter dated September, 1982.

Sonia F. Crow
Regional Administrator
Environmental Protection Agency
Region 9

Sept. 29, 1982
Date

for Simon Cardoza
M.G. Mefferd
State Oil and Gas Supervisor
California Division of Oil and Gas

Sept. 28, 1982
Date

Attachment 1

Annual Report Contents

At a minimum, the Annual Report shall include:

a. an updated inventory;

b. a summary of surveillance programs including results of monitoring and mechanical integrity testing, the number of inspections conducted, the number of new wells, corrective actions ordered and witnessed, instances of wells out of compliance and their current status;

c. an account of all complaints reviewed by the Division and the actions taken;

d. results of the review of existing wells made during the year;

e. a summary and status of the enforcement actions taken;

f. number of emergency permits issued and current status; and

g. instances of variances and discretionary exemptions during the year.

Attachment 2

Exempted 1425 Demonstration Aquifers

All oil and gas producing aquifers identified in Volumes I, II, and III of the California Oil and Gas Fields submitted in the 1425 Demonstration dated April 20, 1981 are exempted.

In addition, the following aquifers are also exempted.

DISTRICT	FIELD	FORMATION/ZONE
2	Ramona	Pico
2	Oat Mountain	Undiff.
2	South Tapo Canyon	Pico
2	Simi	Sespe
2	San Ardo	Santa Margarita
3	San Ardo	Monterey "D" Sand
3	San Ardo	Monterey "E" Sand
3	Monroe Swell	Santa Margarita
4	Blackwell's Corner	Tumey
4	Kern Bluff	Kern River
4	Kern Front	Santa Margarita
4	Kern River	Chanac
4	Kern River	Santa Margarita
4	Mount Poso	Walker
4	Round Mountain	Olcese
4	Round Mountain	Walker
4	Buena Vista	Tulare
4	Kern Bluff	Vedder
4	Kern River	Vedder*
4	Mountain View	Kern River
4	Pleito	Chanac
4	Pleito	Kern River
4	Poso Creek	Santa Margarita
5	Coalinga	Santa Margarita
5	Coalinga	Etchegoin-Jacalitos
5	Guijarral Hills	Etchegoin-Jacalitos*
5	Helm	Tulare-Kern River
5	Riverdale	Pliocene
5	Turk Anticline	San Joaquin
6	Sutter Buttes Gas	Koine*
6	Bunker Gas	Undiff.
6	Wild Goose	Undiff.

*Oil and/or gas producing

Document 3: May 17, 1985 letter from US EPA to the Western Oil and Gas Association Reflecting No Denials of Exemptions in Original Primacy Delegation

RECEIVED
JUN 10 1985
DIVISION OF OIL & GAS
BAKERSFIELD

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
215 Fremont Street
San Francisco, Ca. 94105

Mr. Tom Cornwell
Western Oil and Gas Association
727 West 7th Street
Los Angeles, CA 90017

17 MAY 1985

Dear Mr. Cornwell:

The staffs of EPA-Region 9 and the California Division of Oil and Gas (CDOG) have been meeting with members of the Western Oil and Gas Association (WOGA), the California Independent Producers Association (CAIPA), and the Independent Oil Producers Agency (IOPA) to determine how wells injecting specific types of oil field fluids will be regulated under the Underground Injection Control (UIC) program in California. The purpose of this letter is to clarify:

1. how wells injecting filter backwash (diatomaceous earth or multi-media filter backwash), water softener regeneration brine, or air scrubber waste will be classified and regulated under the UIC program in California;

2. the requirements, especially the regulatory deadlines for the submission of permit applications and inventory information for existing wells, for different classes of wells; and

3. which formations identified by CDOG in its primacy application were verified as Underground Sources of Drinking Water (USDW) and exempted and which formations were determined not to be USDWs and did not need to be exempted when primacy for CDOG was approved.

In general, the classification and regulation scheme for wells injecting filter backwash, water softener regeneration brine, or air scrubber wastes under the UIC program in California is:

° wells which inject filter backwash are Class II wells and are regulated by CDOG;

° wells which inject either water softener regeneration brine or air scrubber wastes for the purpose of enhancing oil or natural gas recovery are Class II wells and are regulated by CDOG; and

° wells which inject either water softener regeneration brine

or air scrubber wastes for disposal are either Class I or Class V wells and are regulated by EPA.

Attachment 1 provides: a precise statement about these well classifications; a brief description of each of the fluids being injected; clarification of how wells used to inject commingled fluids will be regulated; and a diagram which outlines how wells injecting the different types of fluids will be regulated and by whom in California.

Some, but not all, of the relevant requirements for Class I, II, and III wells under the UIC program implemented in California are:

- ° Class I wells - for existing wells (wells in operation prior to June 25, 1984) complete permit applications must be submitted to EPA by June 25, 1985 (40 CFR 144.31[c][1] and 147.251[B])
  - for new wells, permits must be in effect prior to any construction (40 CFR 144.11)
- ° Class II wells - CDOG has been delegated this portion of the UIC program and regulates this class of wells
- ° Class V wells - for existing wells, a completed inventory form and the required additional information must be submitted to EPA by June 25, 1985 (40 CFR 144.26[d][1] and 147.251[B])
  - for new wells, a complete inventory form and the required additional information should be submitted to EPA prior to construction.

Complete permit applications for existing Class I wells must be submitted to EPA by June 25, 1985. Considering the delays in classifying wells injecting filter backwash, water softener regeneration brine, or air scrubbing waste, allowances may be made for the submission of additional clarifying information after June 25, 1985. However, allowances can only be considered if an application has been been submitted by June 25, 1985 and if the application represents a reasonable and substantial effort toward a complete permit application.

Attachment 2 provides the exact definitions for the different classes of wells and other pertinent definitions in the UIC program. Attachment 3 and 4 are copies of the permit application and Class V Inventory Notification, respectively.

There appears to be some confusion about which formations in oil and gas fields are USDWs and which formations in oil and gas fields are not USDWs under the UIC program. When CDOG submitted

its application for the Class II portion of the UIC program, it submitted information about a large number of formations in oil fields to be considered for aquifer exemptions. These included formations which produced oil or gas and formations which did not produce any oil or gas. After reviewing the information from CDOG supporting the aquifer exemptions requests, all formations which were USDWs and produced oil or gas were exempted but only some of the formations which did not produce any oil or gas were granted aquifer exemptions. These latter formations were not exempted because the supporting information demonstrated that they were not USDWs as defined by the UIC program. They yielded water which had a Total Dissolved Solids concentration greater than 10,000 milligrams per liter.

Maps showing the lateral extent of any formation which was exempted can be found in California Oil and Gas Fields (Volumes I, II, and III) and Appendix B of CDOG's primacy application. They are available for review at the EPA office in San Francisco or at any of the CDOG district offices. A list of those formations, which did not produce any oil or gas and were considered for aquifer exemptions, is provided as Attachment 5. A list of those formations, which did not produce any oil or gas and which were USDWs and exempted, is provided as Attachment 6.

I would like to take this opportunity to thank those of your members who met and worked with us to clarify these points in the UIC program. If you have any further questions or need other points of clarification, please call Pete Uribe of my staff at (415) 974-7285.

Sincerely,

Frank M. Covington, Director
Water Management Division

ATTACHMENTS

1 - Well Classification and Regulation Scheme	(3 pages)
2 - UIC Definitions	(3 pages)
3 - Permit Application	(10 pages)
4 - Class V Inventory Notification	(7 pages)
5 - List of Formations Considered for Exemption	(3 pages)
6 - List of Formations Exempted	(1 page)

cc: M.G. Mefferd, CDOG
J. B. Braden, CAIPA
Les Clark, IOPA
Jim Cornelius, SWRCB
Bill Pfister, CVRWQCB
John Atcheson, EPA HQ

Policy Statement on Well Classifications

Wells which inject filter backwash (diatomaceous or multi-media filter backwash) are Class II wells.

Wells which inject water softener regeneration brine or air scrubber waste are not Class II wells, unless injection is for enhanced recovery, in which case the wells are Class II wells.

Wells which inject water softener regeneration brine or air scrubber waste commingled with other fluids (e.g. produced water or filter backwash) are not Class II wells, unless injection is for enhanced recovery, in which case the wells are Class II wells.

Description of Fluids being Injected

Filter backwash is a fluid with an elevated concentration of suspended solids which were removed from produced water. In general, produced water is passed through either diatomaceous or multi-media filters to remove suspended solids. Periodically, these filters are washed with either fresh or produced water, which has no additives, to remove the suspended solids concentrated in the filter resulting in a filter backwash.

Water softener regeneration brine is a fluid with high concentrations of total dissolved solids, especially calcium, magnesium, and chloride. In general, produced water is softened by passing it through a resin which replaces calcium and magnesium ions in the water with sodium ions. Periodically, the resin in the water softener unit is regenerated with concentrated solutions of sodium chloride, which replaces the calcium and magnesium ions captured on the resin with sodium ions in the solution, yielding a water softener regeneration brine.

Air scrubber waste is sulfur dioxide scrubber blowdown (also commonly known as scrubber liquor) with high concentrations of total dissolved solids (much greater than 10,000 ppm) In general, crude oil is burned for power to produce steam, which is injected to enhance the recovery of extremely heavy crude oil. Air scrubbers are required when the crude oil is burned because Kern County is a Non-Attainment Area for air quality with respect to sulfur dioxide.

Clarifying the Classification of Wells

Injecting Commingled Fluids

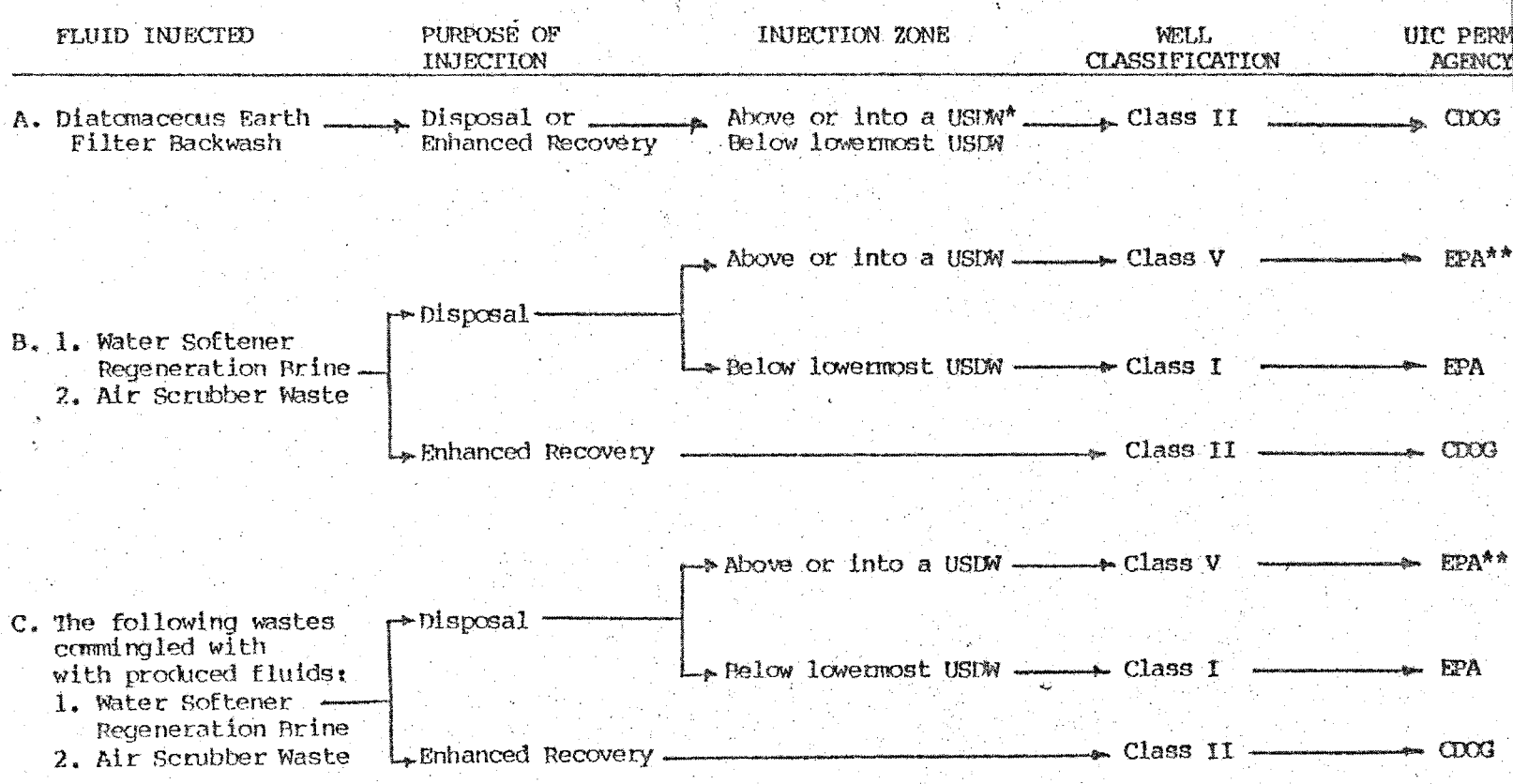
Wells injecting only filter backwash or filter backwash commingled with produced water will be Class II wells and will be regulated by CDOG.

Wells injecting fluids with either water softener regeneration brine or air scrubber wastes into oil and gas producing formations for the purpose of enhanced recovery will be Class II wells and will be regulated by CDOG.

Wells injecting only water softener regeneration brine or only air scrubber wastes into non-oil and gas producing formations are not Class II wells and will be directly regulated by the regional office as a Class I or V well.

Wells injecting either water softener regeneration brine or air scrubber wastes together with produced water into non-oil and gas producing formations are not Class II wells and will be directly regulated by the regional office as a Class I or V well.

On the next page is chart which summarizes whether CDOG or EPA is responsible for any given well based on the type of injectate and the injection formation.



* USDW (Underground Source of Drinking Water)- an aquifer or its portion that contains fewer than 10,000 mg/l total dissolved solids and is not an exempted aquifer (see 40 CFR 144.3 for full definition)

** EPA requirements for Class V wells are: submission of inventory information to EPA by operator (40 CFR 144.26) and that EPA assessment of those wells to determine the need for requirements or regulations (40 CFR 146.52(b)) There are currently no permitting requirements for Class V wells under EPA's UIC program. However, EPA has the option to require and the operator has the option to request a permit. EPA cannot preclude the State (CDOG) from regulating these wells under State laws or regulations, so CDOG's existing state program applies.

Region 9 UIC Program Information Sheet

General Information about the Underground Injection Control Program

The Safe Drinking Water Act (SDWA) of 1974, as amended, requires the U.S. Environmental Protection Agency (EPA) to establish a program which provides for the safety of our nation's drinking water. One part of this program, Underground Injection Control (UIC), has been established to prevent contamination of underground sources of drinking water due to improper design, construction and operation of injection wells. Although not recognized, the injection of waste materials is a very common practice. For example, the oil and gas industry operates tens of thousands of wells nationwide which inject brine or brackish wastewater in the production of oil and gas. Other types of injection wells include hazardous waste disposal operations wells, industrial waste disposal wells, municipal disposal operations wells, and nuclear storage and disposal wells.

Underground Sources of Drinking Water

By definition, an Underground Source of Drinking Water (USDW) is an aquifer or a portion of an aquifer:

which supplies any public water system; or

which contains significant quantity of ground water to supply a public water system; and

currently supplies drinking water for human consumption; or

contains fewer than 10,000 mg/l total dissolved solids (TDS) and is not an exempted aquifer.

An aquifer is a geological formation that is capable of yielding a significant amount of water to a well or to a springs. An exempted aquifer is an aquifer that cannot now and will not in the future serve as a source of drinking water, as determined by EPA.

Well Classification

A well is defined as a bored, drilled or driven shaft or dug hole whose depth is greater than the largest surface dimension. There are five classes of injection wells which are regulated by the UIC program. A specific well classification is made by determining the type of fluid to be injected and the geologic area into which the fluid is to be injected. Injection well classes are summarized as follows:

Class I — Class I wells are municipal and industrial disposal wells (including wells used by generators of hazardous waste and owners of hazardous waste management facillities) which inject fluids below the lowermost formation containing, within one quarter mile of the well bore, an underground source of drinking water.

Class II — Class II wells are associated with oil and gas production or liquid hydrocarbon storage. These wells inject fluids which are brought to the surface for the enhanced recovery of oil and natural gas and for the storage of hydrocarbons.

Class III — Class III wells inject fluids for the extraction of minerals and are used in conjunction with solution mining of minerals.

Class IV — Class IV wells are used by generators of hazardous and radioactive wastes. These wells inject into a formation which within one quarter of a mile of the well contains an underground source of drinking water. Class IV wells are prohibited.

Class V — Class V wells are wells which do not meet the criteria listed for classes I through IV. Generally, wells covered under this classification inject non-hazardous fluids into or above formations that contain underground sources of drinking water. Class V wells include the following, but are not limited to these types of wells:

1. air conditioning return flow wells used to return to the supply aquifer the water used for heating or cooling in a heat pump (Questionnaire II);

2. cesspools including multiple dwelling, community or regional cesspools, or other devices that receive wastes which have an open bottom and sometimes have perforated sides. The UIC requirements do not apply to single family residential cesspools nor to non-residential cesspools which receive solely sanitary wastes and have the capacity to serve fewer than 20 persons a day (Questionnaire II);

3. cooling water return flow wells used to inject water previously used for cooling (Questionnaire II);

4. dry wells used for injection of wastes into a subsurface formation (Questionnaire II);

5. drainage wells used to drain surface fluid, primarily storm runoff, into a subsurface formation (Questionnaire II);

6. recharge wells used to replenish the water in an aquifer (Questionnaire II);

7. salt water intrusion barrier wells used to inject water into a fresh water aquifer to prevent the intrusion of of salt water in the fresh water (Questionnaire II);

8. sand backfill and other backfill wells used to inject a mixture of water and sand, mill tailings or other solids into mined out portions of subsurface mines regardless of whether or not it is a radioactive waste (Questionnaire II);

9. septic system wells used to inject the waste of effluent from a multiple dwelling, business establishment, community or regional business establishment septic tank. The UIC requirements do not apply to single family residential septic system wells, nor to non-residential septic system wells which are used solely for the disposal of sanitary wastes and have the capacity to serve fewer than 20 persons a day (Questionnaire II);

10. subsidence control wells (not used for the purpose of oil or natural gas production) used to inject fluids into a non-oil or gas producting zone to reduce or eliminate subsidence associated with the overdraft of fresh water (Questionnaire II);

11. radioactive waste disposal wells other than Class IV (Questionnaire I);

12. injection wells associated with the recovery of geothermal energy for heating, aquaculture, and production of electric power (Questionnaire I);

13. wells used for solution mining of conventional mines such as stopes leaching (Questionnaire I);

14. wells used to inject spent brine into the same formation from which it was withdrawn after extraction of halogens or their salts (Questionnaire I);

15. injection wells used in experimental technologies (Questionnaire I);

16. injection wells used for in situ recovery of lignite, coal, tar sands, and oil shale (Questionnaire II);

17. agricultural drainage wells (Questionnaire II);

18. air scrubber waste disposal wells (except if injection is for enhanced recovery of oil and gas in California); and

19. water softener regeneration brine waste disposal wells (except if injection is for enhanced recovery of oil and gas in California).

Attachment 3

Form Approved. OMB No. 2000-0042. Expires 9-30-86
GSA No.

Form 4 UIC

EPA

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

UNDERGROUND INJECTION CONTROL PERMIT APPLICATION

(Collected under the authority of the Safe Drinking Water Act, Sections 1421, 1422, 40 CFR 144)

I. EPA ID NUMBER

		T/A	C
U			

READ ATTACHED INSTRUCTIONS BEFORE STARTING
FOR OFFICIAL USE ONLY

Application approved mo	day	year	Date Received mo	day	year	Permit/Well Number	Comments

II. FACILITY NAME AND ADDRESS

Facility Name

Street Address

City | State | ZIP Code

III. OWNER/OPERATOR AND ADDRESS

Owner/Operator Name

Street Address

City | State | ZIP Code

IV. OWNERSHIP STATUS *(Mark 'x')*

☐ A. Federal ☐ B. State ☐ C. Private ☐ D. Public ☐ E. Other *(Explain)*

V. SIC CODES

VI. WELL STATUS *(Mark 'x')*

☐ A. Operating — Date Started (mo, day, year) ☐ B. Modification/Conversion ☐ C. Proposed

VII. TYPE OF PERMIT REQUESTED *(Mark 'x' and specify if required)*

☐ A. Individual ☐ B. Area

Number of Existing wells	Number of Proposed wells	Name(s) of field(s) or project(s)

VIII. CLASS AND TYPE OF WELL *(see reverse)*

A. Class(es) *(enter code(s))*	B. Type(s) *(enter code(s))*	C. If class is "other" or type is code 'x,' explain	D. Number of wells per type (if area permit)

IX. LOCATION OF WELL(S) OR APPROXIMATE CENTER OF FIELD OR PROJECT

C I	A. Latitude Deg	Min	Sec	B. Longitude Deg	Min	Sec	Township and Range Twsp	Range	Sec	¼ Sec	Feet from	Line	Feet from	Line

X. INDIAN LANDS *(Mark 'x')* ☐ Yes ☐ No

XI. ATTACHMENTS

(Complete the following questions on a separate sheet(s) and number accordingly; see instructions)

FOR CLASSES I, II, III (and other classes) complete and submit on separate sheet(s) Attachments A — U (pp 2-6) as appropriate. Attach maps where required. List attachments by letter which are applicable and are included with your application:

XII. CERTIFICATION

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. (Ref. CFR 122.6)

A. Name and Title *(Type or Print)*	B. Phone No. *(Area Code and No.)*
C. Signature	D. Date Signed

Continued on Reverse

Well Class and Type Codes

Class I	Wells used to inject waste below the deepest underground source of drinking water.
Type "I"	Nonhazardous industrial disposal well
"M"	Nonhazardous municipal disposal well
"W"	Hazardous waste disposal well injecting below USDWs
"X"	Other Class I wells (not included in Type "I," "M," or "W")
Class II	Oil and gas production and storage related injection wells.
Type "D"	Produced fluid disposal well
"R"	Enhanced recovery well
"H"	Hydrocarbonn storage well (excluding natural gas)
"X"	Other Class II wells (not included in Type "D," "R," or "H")
Class III	Special process injection wells.
Type "G"	Solution mining well
"S"	Sulfur mining well by Frasch process
"U"	Uranium mining well (excluding solution mining of conventional mines)
"X"	Other Class III wells (not included in Type "G," "S," or "U")
Other Classes	Wells not included in classes above.
	Class V wells which may be permitted under §144.12
	Wells not currently classified as Class I, II, III, or V.

INSTRUCTIONS - Form 4 - Underground Injection Control (UIC) Permit Application

Form 4 must be completed by all owners or operators of Class I, II, and III injection wells and others who may be directed to apply for a UIC permit by the Director.

I. EPA I.D. NUMBER - Fill in your EPA Identification Number. If you do not have a number, leave blank.

II. FACILITY NAME AND ADDRESS - Name of well, well field or company and address.

III. OWNER/OPERATOR NAME AND ADDRESS - Name and address of owner/operator of well or well field.

IV. OWNERSHIP STATUS - Mark the appropriate box to indicate the type of ownership.

V. SIC CODES - List at least one and no more than four Standard Industrial Codes (SIC) that best describe the nature of the business in order of priority.

VI. WELL STATUS - Mark Box A if the well(s) were operating as injection wells on the effective date of the UIC Program for the State. Mark Box B if the well(s) existed on the effective date of the UIC Program for the State but were not utilized for injection. Box C should be marked if the application is for an underground injection project not constructed or not completed by the effective date of the UIC Program for the State.

VII. TYPE OF PERMIT - Mark "Individual" or "Area" to indicate the type of permit desired. Note that area permits are at the discretion of the Director and that wells covered by an area permit must be at one site, under the control of one person and do not inject hazardous waste. If an area permit is requested the number of wells to be included in the permit must be specified and the wells described and identified by location. If the area has a commonly used name, such as the "Jay Field", submit the name in the space provided. In the case of a project or field which crosses State lines, it may be possible to consider an area permit if EPA has jurisdiction in both States. Each such case will be considered individually, if the owner/operator elects to seek an area permit.

VIII. CLASS AND TYPE OF WELL - Enter in these two positions the Class and type of injection well for which a permit is requested. Use the most pertinent code selected from the list on the reverse side of Form 4. When selecting type X please explain in the space provided.

IX. LOCATION OF WELL - Enter the latitude and longitude of the existing or proposed well expressed in degrees, minutes, and seconds or the location by township, and range, and section, as required by 40 CFR 146. If an area permit is being requested, give the latitude and longitude of the approximate center of the area.

X. INDIAN LANDS - Place an "X" in the box if any part of the facility is located on Indian lands.

XI. ATTACHMENTS - Note that information requirements vary depending on the injection well class and status. Attachments for Class I, II, and III are described on pages 3-7 of this document and listed by Class on page 8. Place EPA ID number in the upper right hand corner of each page.

XII. CERTIFICATION - All permit applications (except Class II) must be signed by a responsible corporate officer for a corporation, by a general partner for a partnership, by the proprietor of a sole proprietorship, and by a principal executive or ranking elected official for a public agency. For Class II, the person described above should sign, or a representative duly authorized in writing.

INSTRUCTIONS - Attachments to Form 4

Attachments to be submitted with permit application for Class I, II, III and other wells.

A. AREA OF REVIEW METHODS - Give the methods and, if appropriate, the calculations used to determine the size of the area of review (fixed radius or equation). The area of review shall be a fixed radius of 1/4 mile from the well bore unless the use of an equation is approved in advance by the Director.

B. MAPS OF WELLS/AREA AND AREA OF REVIEW - Submit a topographic map, extending one mile beyond the property boundaries, showing the injection well(s) or project area for which a permit is sought and the applicable area of review. The map must show all intake and discharge structures and all hazardous waste, treatment, storage, or disposal facilities. If the application is for an area permit, the map should show the distribution manifold (if applicable) applying injection fluid to all wells in the area, including all system monitoring points. Within the area of review, the map must show the following:

Class I

The number, or name, and location of all producing wells, injection wells, abandoned wells, dry holes, surface bodies of water, springs, mines (surface and subsurface), quarries, water wells and other pertinent surface features, including residences and roads, and faults, if known or suspected. Only information of public record is required to be included on this map;

Class II

In addition to requirements for Class I, include pertinent information known to the applicant. Requirement does not apply to existing Class II wells;

Class III

In addition to requirements for Class I, include public water systems and pertinent information known to the applicant.

C. CORRECTIVE ACTION PLAN AND WELL DATA - Submit a tabulation of data reasonably available from public records or otherwise known to the applicant on all wells within the area of review, including those on the map required in B, which penetrate the proposed injection zone.

Such data shall include the following:

Class I

A description of each well's type, construction, date drilled, location, depth, record of plugging and/or completion, and any additional information the Director may require. In the case of new injection wells, include the corrective action proposed to be taken by the applicant under 40 CFR 144.55.

Class II

In addition to requirements for Class I, in the case of Class II wells operating over the fracture pressure of the injection formation, all known wells within the area of review which penetrate formations affected by the increase in pressure. This requirement does not apply to existing Class II wells.

Class III

In addition to requirements for Class I, the corrective action proposed under 40 CFR 144.55 for all Class III wells.

D. MAPS AND CROSS SECTIONS OF USDW'S - Submit maps and cross sections indicating the vertical limits of all underground sources of drinking water within the area of review (both vertical and lateral limits for Class I), their position relative to the injection formation and the direction of water movement, where known, in every underground source of drinking water which may be affected by the proposed injection. (Does not apply to Class II wells.)

E. NAME AND DEPTH OF USDW'S (CLASS II) - For Class II wells, submit geologic name, and depth to bottom of all underground sources of drinking water which may be affected by the injection.

F. MAPS AND CROSS SECTIONS OF GEOLOGIC STRUCTURE OF AREA - Submit maps and cross sections detailing the geologic structure of the local area (including the lithology of injection and confining intervals) and generalized maps and cross sections illustrating the regional geologic setting. (Does not apply to Class II wells.)

G. GEOLOGICAL DATA ON INJECTION AND CONFINING ZONES (CLASS II) - For Class II wells, submit appropriate geological data on the injection zone and confining zones including lithologic description, geological name, thickness, depth and fracture pressure.

H. OPERATING DATA - Submit the following proposed operating data for each well (including all those to be covered by area permits): (1) average and maximum daily rate and volume of the fluids to be injected; (2) average and maximum injection pressure; (3) nature of annulus fluid; (4) for Class I wells, source and analysis of the chemical, physical, radiological and biological characteristics, including density and corrosiveness, of injection fluids; (5) for Class II wells, source and analysis of the physical and chemical characteristics of the injection fluid; (6) for Class III wells, a qualitative analysis and ranges in concentrations of all constituents of injected fluids. If the information is proprietary, maximum concentrations only may be submitted, but all records must be retained.

I. FORMATION TESTING PROGRAM - Describe the proposed formation testing program. For Class I wells the program must be designed to obtain data on fluid pressure, temperature, fracture pressure, other physical, chemical, and radiological characteristics of the injection matrix and physical and chemical characteristics of the formation fluids.

For Class II wells the testing program must be designed to obtain data on fluid pressure, estimated fracture pressure, physical and chemical characteristics of the injection zone. (Does not apply to existing Class II wells or projects.)

For Class III wells the program must be designed to obtain data on fluid pressure, fracture pressure, and physical and chemical characteristics of the formation fluids if the formation is naturally water bearing. Only fracture pressure is required if the formation is not water bearing. (Does not apply to existing Class III wells or projects.)

J. STIMULATION PROGRAM - Outline any proposed stimulation program.

K. INJECTION PROCEDURES - Describe the proposed injection procedures including pump, surge, tank, etc.

L. CONSTRUCTION PROCEDURES - Discuss the construction procedures (according to §146.12(b) for Class I) to be utilized. This should include details of the casing and cementing program, logging procedures, deviation checks, and the drilling, testing and coring programs, and proposed annulus fluid. (Request and submission of justifying data must be made to use an alternative to a packer for Class I.)

M. CONSTRUCTION DETAILS - Submit schematic or other appropriate drawings of the surface and subsurface construction details of the well.

N. CHANGES IN INJECTED FLUID - Discuss expected changes in pressure, native fluid displacement, and direction of movement of injected fluid. (Class II and III wells only.)

O. PLANS FOR WELL FAILURES - Outline contingency plans (proposed plans, if any, for Class II) to cope with all shut-ins or well failures, so as to prevent migration of fluids into any USDW.

P. MONITORING PROGRAM - Discuss the planned monitoring program. This should be thorough, including maps showing the number and location of monitoring wells as appropriate and a discussion of monitoring devices, sampling frequency, and parameters measured. If a manifold monitoring program is utilized, pursuant to §146.23(b)(5), describe the program and compare it to individual well monitoring.

Q. PLUGGING AND ABANDONMENT PLAN - Submit a plan for plugging and abandonment of the well including: (1) describe the type, number, and placement (including the elevation of the top and bottom) of plugs to be used; (2) describe the type, grade, and quantity of cement to be used; and (3) describe the method to be used to place plugs, including the method used to place the well in a state of static equilibrium prior to placement of the plugs. Also for a Class III well that underlies or is in an exempted aquifer, demonstrate adequate protection of USDW's.

R. NECESSARY RESOURCES - Submit evidence such as a surety bond or financial statement to verify that the resources necessary to close, plug or abandon the well are available.

S. AQUIFER EXEMPTIONS - If an aquifer exemption is requested, submit data necessary to demonstrate that the aquifer meets the following criteria: (1) does not serve as a source of drinking water; (2) cannot now and will not in the future serve as a source of drinking water; and (3)

the TDS content of the ground water is more than 3,000 and less than 10,000 mg/l and is not reasonably expected to supply a public water system. Data to demonstrate that the aquifer is expected to be mineral or hydrocarbon producing, such as general description of the mining zone, analysis of the amenability of the mining zone to the proposed method, and time table for proposed development must also be included. For additional information on aquifer exemptions, see 40 CFR 144.7 and 146.04.

T. EXISTING EPA PERMITS - List program and permit number of any existing EPA permits, for example, NPDES, PSD, RCRA, etc.

U. DESCRIPTION OF BUSINESS - Give a brief description of the nature of the business.

Attachments to Permit Application

Class	Attachments
I	
new well	A, B, C, D, F, H - S, U
existing	A, B, C, D, F, H - U
II	
new well	A, B, C, E, G, H, M, Q, R; optional - I, J, K, N, O, P, U
existing	A, E, G, H, M, Q, R - U; optional - J, K, N, O, P, Q
III	
new well	A, B, C, D, F, H, I, J, K, M - S, U
existing	A, B, C, D, F, H, J, K, M - U
Other Classes	To be specified by the permitting authority

Attachment 4

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
215 Fremont Street
San Francisco, Ca. 94105

Re: Information on Class V Injection Wells for Underground Injection Control Program of the Environmental Protection Agency (EPA)

To whom it may concern:

As required by EPA regulations [Title 40 of the Code of Federal Regulations (CFR), Section 144.26], owners and operators of all Class V injection wells in American Samoa, Arizona, California, Hawaii, Nevada, and the Trust Territories must submit information about these wells to the EPA by June 25, 1985.

A well is defined as a "bored, drilled or driven shaft, or dug hole; whose depth is greater than the largest surface dimension (40 CFR 146.3)." Class V wells include a diverse group of wells used for residential, municipal or industrial purposes. A more detailed list of the types of Class V wells is enclosed (see attachment A).

Please provide EPA, Region 9 with information regarding Class V wells within your jursidiction or operation. Include information on all injection wells located in the states mentioned above. Questionnaire I should be completed for radioactive waste disposal wells, geothermal energy recovery wells, brine return flow wells, municipal and industrial disposal wells (other than those classified as Class I as defined in the enclosed attachment), air scrubbers waste disposal wells (except if injection is for enhanced recovery of oil and gas in California), water softener regeneration brine waste disposal wells (except if injection is for enhanced recovery of oil and gas in California), wells used in experimental technologies and solution mining. Questionnaire II should be completed for all other well types of Class V wells.

Please complete either or both of these questionnaires to the best of your ability and return the information in the self-addressed envelope by June 25, 1985. If you do not have any or know of any Class V wells, please note on the questionnaires that you have no or know of no Class V wells. Your cooperation in this effort will be greatly appreciated. This information could result in the prevention or improvement of a water quality problem in the ground water in your area. If you have any questions, please contact Jayne Carlin of my staff at (415) 974-7116.

Sincerely,

Pete Uribe, Chief
Underground Injection Control Section
Water Management Division

Enclosures

QUESTIONNAIRE I

1. Facility Name: _____

   Facility Address: _____

   (Include County) _____

   Telephone Number: ( ) _____

   Name of Legal Contact: _____

   Address of Legal Contact: _____

   _____

   Name of Owner: _____

   Address of Owner: _____

   _____

   If subsidiary, name of parent co.: _____

   Address of parent company: _____

   _____

2. Ownership: ____ Private ____ Public ____ State ____ Federal ____ Indian Lands

3. Provide general information about the well(s):

Name or Identification of the well	Exact Location of Well*	Type of Well**	Status of Well***

****

* Exact Location of Well by Latitude and longitude to the nearest second; or by Township, Range, Section, Quarter-Sections; or by street address if located at a private address.

** For assistance in determining type of well, see Attachment A - pages 2 and 3.

***Codes for Well Status:
UC = under construction
AC = active
TA = temporarily plugged (no longer used but not plugged)
PA = permanently plugged & abandoned and approved by state

4. Explain the construction features of the well(s):

Name or Identification of Well	Date of Completion of Well	Casing and Cementing Records	Total Depth of Well	Average and Maximum Injection Pressure at Well Head	Date of Last Mechanical Integrity Test*

5. List the nature and volume of the fluids injected into the well:

Name or Identification of Well	Description of Injected Fluids**	Identification and Depth of Formation into which well is injected	Average and Maximum Injection Rate

6. Are any of the following fluids injected into the well(s)? If so, what is the volume and frequency of the injected fluid?

Washdown:

Stormwater:

Spills:

7. Identify and discuss each location, purpose, frequency of use and depth of all disposal wells on the site:

_____

_____

_____

8. Name and Title of Preparer of Questionnaire _____

* Liquid and gas pressure tests, annulus pressure tests etc. which test for leaks in casing, tubing or packer or significant movement into an underground source of drinking water through vertical channels adjacent to injection well bore.

** Include in your answer the process or business that produces the fluid and the chemical constituents of the fluid.

QUESTIONNAIRE II

Facility Name: _____

Facility Address: _____

(Include County) _____

Telephone Number: ( ) _____

Name of Legal Contact: _____

Address of Legal Contact: _____

_____

Name of Owner: _____

Address of Owner: _____

_____

Ownership: ____ Private ____ Public ____ State ____ Federal ____ Indian Lands

Number of Well(s)	Type of Well(s)*	Location of Well(s)	Status of Well(s)**

Name and Title of Preparer of Questionnaire _____

****

* For assistance in determining type of well, see Attachment A - page 2 and 3.

**Codes for Well Status:

UC = under construction
AC = active
TA = temporarily abandoned (no longer used but not plugged)
PA = permanently plugged & abandoned and approved by state

ATTACHMENT A

Region 9 UIC Program Information Sheet

General Information about the Underground Injection Control Program

The Safe Drinking Water Act (SDWA) of 1974, as amended, requires the U.S. Environmental Protection Agency (EPA) to establish a program which provides for the safety of our nation's drinking water. One part of this program, Underground Injection Control (UIC), has been established to prevent contamination of underground sources of drinking water due to improper design, construction and operation of injection wells. Although not recognized, the injection of waste materials is a very common practice. For example, the oil and gas industry operates tens of thousands of wells nationwide which inject brine or brackish wastewater in the production of oil and gas. Other types of injection wells include hazardous waste disposal operations wells, industrial waste disposal wells, municipal disposal operations wells, and nuclear storage and disposal wells.

Underground Sources of Drinking Water

By definition, an Underground Source of Drinking Water (USDW) is an aquifer or a portion of an aquifer:

which supplies any public water system; or

which contains significant quantity of ground water to supply a public water system; and

currently supplies drinking water for human consumption; or

contains fewer than 10,000 mg/l total dissolved solids (TDS) and is not an exempted aquifer.

An aquifer is a geological formation that is capable of yielding a significant amount of water to a well or to a springs. An exempted aquifer is an aquifer that cannot now and will not in the future serve as a source of drinking water, as determined by EPA.

Well Classification

A well is defined as a bored, drilled or driven shaft or dug hole whose depth is greater than the largest surface dimension. There are five classes of injection wells which are regulated by the UIC program. A specific well classification is made by determining the type of fluid to be injected and the geologic area into which the fluid is to be injected. Injection well classes are summarized as follows:

Class I — Class I wells are municipal and industrial disposal wells (including wells used by generators of hazardous waste and owners of hazardous waste management facillities) which inject fluids below the lowermost formation containing, within one quarter mile of the well bore, an underground source of drinking water.

Class II — Class II wells are associated with oil and gas production or liquid hydrocarbon storage. These wells inject fluids which are brought to the surface for the enhanced recovery of oil and natural gas and for the storage of hydrocarbons.

Class III — Class III wells inject fluids for the extraction of minerals and are used in conjunction with solution mining of minerals.

Class IV — Class IV wells are used by generators of hazardous and radioactive wastes. These wells inject into a formation which within one quarter of a mile of the well contains an underground source of drinking water. Class IV wells are prohibited.

Class V — Class V wells are wells which do not meet the criteria listed for classes I through IV. Generally, wells covered under this classification inject non-hazardous fluids into or above formations that contain underground sources of drinking water. Class V wells include the following, but are not limited to these types of wells:

1. air conditioning return flow wells used to return to the supply aquifer the water used for heating or cooling in a heat pump (Questionnaire II);

2. cesspools including multiple dwelling, community or regional cesspools, or other devices that receive wastes which have an open bottom and sometimes have perforated sides. The UIC requirements do not apply to single family residential cesspools nor to non-residential cesspools which receive solely sanitary wastes and have the capacity to serve fewer than 20 persons a day (Questionnaire II);

3. cooling water return flow wells used to inject water previously used for cooling (Questionnaire II);

4. dry wells used for injection of wastes into a subsurface formation (Questionnaire II);

5. drainage wells used to drain surface fluid, primarily storm runoff, into a subsurface formation (Questionnaire II);

6. recharge wells used to replenish the water in an aquifer (Questionnaire II);

7. salt water intrusion barrier wells used to inject water into a fresh water aquifer to prevent the intrusion of of salt water in the fresh water (Questionnaire II);

8. sand backfill and other backfill wells used to inject a mixture of water and sand, mill tailings or other solids into mined out portions of subsurface mines regardless of whether or not it is a radioactive waste (Questionnaire II);

9. septic system wells used to inject the waste of effluent from a multiple dwelling, business establishment, community or regional business establishment septic tank. The UIC requirements do not apply to single family residential septic system wells, nor to non-residential septic system wells which are used solely for the disposal of sanitary wastes and have the capacity to serve fewer than 20 persons a day (Questionnaire II);

10. subsidence control wells (not used for the purpose of oil or natural gas production) used to inject fluids into a non-oil or gas producting zone to reduce or eliminate subsidence associated with the overdraft of fresh water (Questionnaire II);

11. radioactive waste disposal wells other than Class IV (Questionnaire I);

12. injection wells associated with the recovery of geothermal energy for heating, aquaculture, and production of electric power (Questionnaire I);

13. wells used for solution mining of conventional mines such as stopes leaching (Questionnaire I);

14. wells used to inject spent brine into the same formation from which it was withdrawn after extraction of halogens or their salts (Questionnaire I);

15. injection wells used in experimental technologies (Questionnaire I);

16. injection wells used for in situ recovery of lignite, coal, tar sands, and oil shale (Questionnaire II);

17. agricultural drainage wells (Questionnaire II);

18. air scrubber waste disposal wells (except if injection is for enhanced recovery of oil and gas in California); and

19. water softener regeneration brine waste disposal wells (except if injection is for enhanced recovery of oil and gas in California).

NONHYDROCARBON-PRODUCING ZONE INJECTION DATA

DIST.	FIELD	FORMATION & ZONE	TDS OF ZONE WATER PRIOR TO INJECTION	TDS OF INJECTED WATER	VOLUME INJECTED (Barrels)	INJECTI STARTEI
1	Belmont Offshore	Repetto	30,800			
1	Huntington Beach	Lakewood				
		Alpha 1	37,200			
		Alpha 2	12,500			
1	Sawtelle	Puente	25,500			
1	Seal Beach	Repetto	29,700			
		Recent Sands	30,200			
1	Wilmington	Gaspur	28,200			
1	"	River Gravels	30,800			
2	Ramona	Pico	5,000	15,300 ppm NaCl	1,793,000	6/51
2	South Tapo Canyon	Pico	1,900 ppm NaCl	600 ppm NaCl	1,903,000	1/48
2	Oat Mountain	Undiff.	4,800	23,800 ppm NaCl	91,000	4/56
2	Simi	Sespe	4,300	25,500 ppm NaCl	695,000	6/48
3	Guadalupe	Knoxville	30,500			
3	Lompoc	Lospe	119,000			
3	Lompoc	Knoxville	30,500			
3	Russell Ranch	Branch Canyon	13,000			
3	San Ardo	Santa Margarita	3,700	5,600	81,800,000	11/66
3	"	Monterey "D" Sand	4,600	5,600	13,795,000	7/59
3	"	Monterey "E" Sand	6,400	5,600	6,057,000	3/68
3	Santa Maria Valley	Lospe-Franciscan	119,000			
3	Monroe Swell	Santa Margarita	3,700 ppm NaCl	9,600	?	1981
3	Point Conception	Camino Cielo	26,200			
3	Guadalupe	Franciscan	30,500			
4	Bellevue	Etchegoin	26,500 (Analysis from adjacent field)			
4	Bellevue, West	Tulare	12,000*			
4	"	Etchegoin	26,500 (Analysis from adjacent field)			
4	Blackwell's Corner	Tumey	2,100 -2,600*	29,000 ppm NaCl	400,000	5/75
4	Buena Vista	Tulare	9,200	5,300-36,500	50,798,000	11/72
4	Cal Canal	Tulare-San Joaquin	Excess of 10,000*	22,000	537,000	5/79
4	Canfield Ranch	Etchegoin	≈12,800-26,500 (Analysis from adjacent fields)			

*"E" log calculation

17 MAY 19[illegible]

Attachment 5
Page 1 of 3

DIST.	FIELD	FORMATION & ZONE	TDS OF ZONE WATER PRIOR TO INJECTION	TDS OF INJECTED WATER	VOLUME INJECTED (Barrels)	INJECT STARTE
4	North Coles Levee	Tulare	12,900			
4	"	San Joaquin	40,000-45,600			
4	"	Etchegoin	30,100			
4	South Coles Levee	Tulare	12,000-13,300			
4	"	San Joaquin	12,000-16,900			
4	Greeley	Etchegoin				
4	Kern Bluff	Kern River	26,500			
			≈ 400- 900	(From Kern River Field) 600		
4	"	Vedder			551,500	7/80
4	Kern Front	Santa Margarita	≈ 7,800-16,100	" 11,700-213,000	4,099,000	3/80
4	Kern River	Chanac	2,300	1,100		9/75
			238- 925	374- 865	1,071,000	6/77
4	"	Santa Margarita	600- 2,600	475- 16,200	154,994,000	9/73
4	"	Vedder	7,800-16,200		33,204,000	
4	Lakeside	San Joaquin	21,500			
4	Los Lobos	Tulare	33,300*			
4	Midway-Sunset	Alluvium	No water	3,600- 25,700		7/59
4	Mount Poso	Walker	2,800*	830- 1,440	22,632,000	9/75
4	Mountain View	Kern River	4,660*	1,200- 3,800	3,681,000	12/65
4	Pleito	Chanac & Kern River	7,900-11,800	12,800-30,800	889,000	8/74
4	Poso Creek	Vedder	12,500			
4	Rio Viejo	San Joaquin	21,000*			
4	Rosedale	Etchegoin	26,500 (Analysis from adjacent field)			
4	Round Mountain	Olcese	2,700	1,337- 1,965	29,797,000	7/74
4	"	Walker	1,930	1,600 - 2,100	203,319,000	8/72
4	Seventh Standard	Etchegoin	17,100-30,000 (NaCl only)			
4	Strand	Etchegoin	8,600 (NaCl only)		1,195,000	7/62
4	"	San Joaquin		16,500-25,600 (NaCl only)		
4	Ten Section	San Joaquin	33,400			
			12,900			
5	Burrel	Santa Margarita	35,000 (Analysis from Helm field)			
5	"	Tulare-Kern River	20,500 (Analysis from S.E. Burrel field)			
5	Southeast Burrel	Tulare-Kern River	20,500			
5	Coalinga	Santa Margarita	8,244	3,100- 3,500	(145,000,000	2/63
5	"	Etchegoin-Jacalitos	2,650- 2,900	2,650-2,700	(	2/63
5	Gill Ranch Gas	Zilch	14,500			

"E" log calculation

MAY 1982

Attachment 5
Page 2 of 3

DIST.	FIELD	FORMATION & ZONE	TDS OF ZONE WATER PRIOR TO INJECTION	TDS OF INJECTED WATER	VOLUME INJECTED (Barrels)	INJECT STARTE
5	Guijarral Hills	Etchegoin-Jacalitos	9,400	20,500	931,000	4/67
5	Helm	Santa Margarita	35,900		(143,000,000	
5	"	Tulare-Kern River	5,100-23,900	11,600-43,400	(	12/52
5	Jacalitos	Etchegoin-Jacalitos	33,749	5,500 (Cl only)	180,000	10/78
5	Kettleman North Dome	San Joaquin-Etchegoin	10,000	23,800-31,200	48,608,000	8/64
5	Raisin City	Pliocene	12,800-34,000			
5	"	Santa Margarita	35,000	(Analysis from Helm field)		
5	Riverdale	Pliocene	4,788-16,200		(72,626,000	7/57
5	"	Santa Margarita	35,900	(Analysis from Helm field)	(	
5	San Joaquin	Pliocene	17,100			
5	San Joaquin,Northwest	Basal McClure	90,000	18,500	Test well-no injection	
5	Turk Anticline	San Joaquin	3,700- 4,440	9,500- 9,800	466,000	11/76
6	Bunker Gas	Undiff.	1,200	11,000	388,000	1/75
6	Grimes Gas	Kione	16,800			
6	Grimes, West, Gas	Kione	34,000*			
6	La Honda (South Area)	Vaqueros	41,000			
6	Lathrop Gas	Starkey	15,400*			
6	River Break Gas	Capay	6,900*	7,000	93,000	7/75
6	Roberts Island Gas	Undiff.	18,000*			
6	Sutter Buttes Gas	Kione	2,500	4,600-23,000	644,000	7/77
6	Union Island Gas	Mokelumne River	5,000-6,000*	7,800	471,000	7/77
6	Wild Goose	Undiff.	2,800-5,000*	21,400	823,000	11/69

* "E" log calculation

Attachment 2

Exempted 1425 Demonstration Aquifers

All oil and gas producing aquifers identified in Volumes I, II, and III of the California Oil and Gas Fields submitted in the 1425 Demonstration dated April 20, 1981 are exempted.

In addition, the following aquifers are also exempted.

DISTRICT	FIELD	FORMATION/ZONE
2	Ramona	Pico
2	Oat Mountain	Undiff.
2	South Tapo Canyon	Pico
2	Simi	Sespe
2	San Ardo	Santa Margarita
3	San Ardo	Monterey "D" Sand
3	San Ardo	Monterey "E" Sand
3	Monroe Swell	Santa Margarita
4	Blackwell's Corner	Tumey
4	Kern Bluff	Kern River
4	Kern Front	Santa Margarita
4	Kern River	Chanac
4	Kern River	Santa Margarita
4	Mount Poso	Walker
4	Round Mountain	Olcese
4	Round Mountain	Walker
4	Buena Vista	Tulare
4	Kern Bluff	Vedder
4	Kern River	Vedder*
4	Mountain View	Kern River
4	Pleito	Chanac
4	Pleito	Kern River
4	Poso Creek	Santa Margarita
5	Coalinga	Santa Margarita
5	Coalinga	Etchegoin-Jacalitos
5	Guijarral Hills	Etchegoin-Jacalitos*
5	Helm	Tulare-Kern River
5	Riverdale	Pliocene
5	Turk Anticline	San Joaquin
6	Sutter Buttes Gas	Kione*
6	Bunker Gas	Undiff.
6	Wild Goose	Undiff.

*Oil and/or gas producing