



EDMUND G. BROWN JR.
GOVERNOR

MATTHEW RODRIGUEZ
SECRETARY FOR
ENVIRONMENTAL PROTECTION

Central Valley Regional Water Quality Control Board

15 May 2015

CERTIFIED MAIL

7014 3490 0001 7023 3040

Joseph Butler
Macpherson Oil Company
P.O. Box 5368
Bakersfield, CA 93388

ORDER PURSUANT TO CALIFORNIA WATER CODE SECTION 13267. You are legally obligated to respond to this Order. Read this Order carefully.

Macpherson Oil Company is the operator of injection wells identified as American Petroleum Institute (API) numbers 02942612, 02946951, 02947362, 02947441, 02947543, 02969119, 02969120, 03009336, 03022157, 03031655, 03031656, 03033731, 03035699, 03037954, 03040869, 03041397, 03042188, 03043514, 03043896, 03044556, 03046642, 03046643, 03046653, 03049700, 03051196, 03051197, 03051959, 03051960, and 03054306 (hereinafter "injection wells subject to this Order"). The California Division of Oil, Gas, and Geothermal Resources (Division) has informed the Central Valley Regional Water Quality Control Board (Central Valley Water Board) that the injection wells subject to this Order have been injecting fluids produced by oil or gas extraction activities into an aquifer that may not have been properly designated as an exempt aquifer under the federal Safe Drinking Water Act (42 U.S.C. § 300f et seq.). The aquifer may be suitable for drinking water supply and other beneficial uses.

As described further below, for each injection well subject to this Order, Macpherson Oil Company is required to submit technical reports containing information about (1) the injection well, (2) the fluid that has been injected, (3) the quality of the groundwater within the zone(s) where fluids have been injected, and (4) nearby water supply wells. The issuance of this Order has been coordinated with the Division.

The Central Valley Water Board's authority to require technical reports derives from section 13267 of the California Water Code, which specifies, in part, that:

(a) A regional board...in connection with any action relating to any plan or requirement authorized by this division, may investigate the quality of any waters of the state within its region.

(b)(1) In conducting an investigation specified in subdivision (a), the regional board may require that any person who has discharged, discharges, or is suspected of having discharged or discharging, or who proposes to discharge waste within its region...that could affect the quality of waters within its region shall furnish, under penalty of perjury, technical or monitoring program reports which the regional board requires. The burden, including costs, of these reports shall bear a reasonable relationship to the need for the report and the benefits to be obtained from the reports. In requiring those reports, the regional board shall provide the person with a written explanation with regard to the

KARL E. LONGLEY ScD, P.E., CHAIR | PAMELA C. CREEDON P.E., BCEE, EXECUTIVE OFFICER

1685 E Street, Fresno, CA 93706 | www.waterboards.ca.gov/centralvalley

need for the reports, and shall identify the evidence that supports requiring that person to provide the reports.

The Central Valley Water Board is concerned about the potential threat to human health and potential impacts to water quality posed by the discharge of waste associated with the injection of fluids into aquifers that may be suitable for drinking water supply and other beneficial uses. The technical information and reports required by this Order are necessary to assess the potential threat to human health and potential impacts to water quality. The need to understand the potential threat to human health and potential impacts to water quality justifies the need for the information and reports required by this Order. Based on the nature and possible consequences of the discharges of waste, the burden of providing the required information, including reporting costs, bears a reasonable relationship to the need for the report, and the benefits to be obtained. Macpherson Oil Company is required to submit this information and reports because it is the operator of the injection wells subject to this Order. If Macpherson Oil Company and its predecessors in interest have never injected fluids into the injection wells subject to this Order, please advise Central Valley Water Board staff of this in writing as soon as possible.

Under the authority of California Water Code section 13267, the Central Valley Water Board hereby orders Macpherson Oil Company to:

21. **By 3 June 2015** submit a work plan that adequately describes the procedures to collect a representative groundwater sample from the injection zone(s) for each injection well subject to this Order. If a representative sample cannot feasibly be collected from one or more of the injection zones for any of the injection wells subject to this Order within the required timeframe (e.g., due to constraints posed by the design of the injection well), submit a technical report demonstrating that collection of a representative sample from those injection zones is not feasible within the required timeframe, and proposing an alternative sampling procedure and expeditious time schedule for obtaining a representative sample of groundwater from those injection zones. Alternative sampling procedures and time schedules are subject to approval by the Assistant Executive Officer of the Central Valley Water Board.
22. **By 3 August 2015**, submit a technical report that contains all of the following information:
 - a. The analyses of each of the groundwater samples from the injection zone(s) for each injection well subject to this Order, in accordance with the water quality analysis and reporting requirements contained in Attachment A to this Order.
 - b. If fluids have been injected into any of the injection wells subject to this Order, an analysis of a representative sample of those fluids in accordance with the water quality analysis and reporting requirements contained in Attachment A to this Order.
 - c. All available historical chemical analyses of the fluids injected into each injection well subject to this Order.
 - d. All previously obtained analytical data for groundwater samples collected from any injection zones within one (1) mile of each of the injection wells subject to this Order.
 - e. A list and location map of all water supply wells within one mile of each injection well subject to this Order.
 - f. Information for each identified water supply well, including the well owner name and contact information; type of well (i.e., domestic, irrigation, industrial, etc.); whether any of the water

is used for domestic purposes; status (i.e., active, idle, etc.); well construction; borehole geophysical logs; and all analytical results for any water sample(s) collected from each water supply well. Notify Central Valley Water Board staff within 24 hours upon determination that any water supply well information cannot be obtained from the California Department of Water Resources because it is confidential.

- g. For each injection well subject to this Order, the following information for items A-O shall be submitted in a spreadsheet, labeled with the capital letters indicated. The information for items P-R shall be submitted as attachments:
- A. The name of the owner and/or operator of the injection well;
 - B. API number for the injection well;
 - C. Injection well name and number
 - D. Name of the field in which the injection well is located;
 - E. County in the which the injection well is located;
 - F. Latitude and Longitude (decimal degrees) of well head location;
 - G. Latitude and Longitude Datum, indicate "1" for North American Datum of 1983 or "2" for North American Datum of 1927;
 - H. Injection well total depth (feet);
 - I. Top injection depth (feet);
 - J. Formation/Zone name at top injection depth;
 - K. Bottom injection depth (feet);
 - L. Formation/Zone name at bottom injection depth;
 - M. Date injection started in the well (Day/Month/Year, xx/xx/xxxx);
 - N. Total injection volume in barrels by calendar year (to present day);
 - O. Attach well construction diagram including all perforations, annular material, and seals;
 - P. Attach a description of all sources of fluid injected;
 - Q. Attach all data maintained in compliance with California Code of Regulations, title 14, section 1724.10, subdivision (h).
 - R. Attach documentation associated with each mechanical integrity test undertaken to comply with California Code of Regulations, title 14, section 1724.10, subdivision (j).

All required work plans and technical information must be submitted in an electronic format compatible with the State's GeoTracker system following the requirements of California Code of Regulations, title 23, section 3893 (available at http://www.waterboards.ca.gov/ust/electronic_submittal/docs/text_regs.pdf). A unique case identifier (Global ID) is assigned for each well subject to this Order contained in Attachment B.

Based on the information submitted in the work plan and/or technical report, additional information or action may be required.

Additionally, please submit a hard copy to the attention of:

Ron Holcomb
Central Valley Water Board
1685 E Street
Fresno, CA 93706

All information is to be copied to the Division, to the attention of:

Steven R. Bohlen, State Oil and Gas Supervisor
Department of Conservation, DOGGR
801 K Street
Sacramento, CA 95814-3500

Submissions pursuant to this Order need to include the following statement signed by an authorized representative of Macpherson Oil Company:

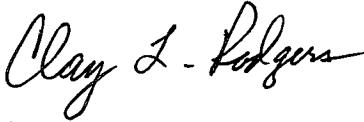
"I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment."

The failure to furnish the required report, or the submission of a substantially incomplete report or false information, is a misdemeanor, and may result in additional enforcement actions, including issuance of an Administrative Civil Liability Complaint pursuant to California Water Code section 13268. Liability may be imposed pursuant to California Water Code section 13268 in an amount not to exceed one thousand dollars (\$1,000) for each day in which the violation occurs.

Any person aggrieved by this Order of the Central Valley Water Board may petition the State Water Board to review the action in accordance with California Water Code section 13320. The State Water Board must receive the petition by 5:00 p.m., within 30 days after the date of this Order, except that if the thirtieth day following the date of this Order falls on a Saturday, Sunday, or state holiday, the petition must be received by the State Water Board by 5:00 p.m. on the next business day. Copies of the law and regulations, and instructions applicable to filing petitions, are at http://www.waterboards.ca.gov/public_notices/petitions/water_quality/index.shtml, or will be provided upon request.

Be advised that sections 13260 and 13264 of the California Water Code require any person who proposes to discharge waste that could affect waters of the state to submit a Report of Waste Discharge for any new discharge or change in the character, volume, or location of an existing discharge. Fluids produced by oil or gas extraction activities that can no longer be disposed of in the injection wells subject to this Order cannot be discharged to land or waters of the state prior to the issuance of Waste Discharge Requirements, and cannot be discharged to waters of the United States prior to the issuance of an National Pollutant Discharge Elimination System (NPDES) Permit. Failure to comply with these requirements may constitute a misdemeanor under Water Code section 13265 or a felony under Water Code section 13387, and may also subject Macpherson Oil Company to judicial or administrative civil liabilities.

Any questions regarding this matter should be directed to me at (559) 445-5116 or at Clay.Rodgers@waterboards.ca.gov.



Clay L. Rodgers
Assistant Executive Officer

Enclosure:

Attachment A - Water Quality Sampling, Analysis and Reporting

Attachment B - GeoTracker Upload Instructions and Assigned Global Identification Number(s)

ATTACHMENT A
Water Quality Sampling, Analysis, and Reporting

Water Quality Sampling

All groundwater sampling is to be performed by a qualified person. A qualified person is any person with the knowledge and training in proper sampling methods, chain of custody, and quality assurance/quality control protocols. Any person conducting groundwater sampling, other than personnel from a certified laboratory, shall consult with the certified laboratory to ensure that the sampler understands and follows the proper sampling collection procedures and protocols. All procedures to sample groundwater supply wells shall be consistent with US EPA Science and Ecosystem Support Division Operating Procedure for Groundwater Sampling (March 2013) (available at <http://www.epa.gov/region4/sesd/fbqstp/Groundwater-Sampling.pdf>).

Water Quality Analysis

Groundwater samples collected from wells and injection zones shall be analyzed by a laboratory certified by the Environmental Laboratory Accreditation Program, using current applicable EPA-approved analytical methods. The methods of analysis and the detection limits used shall be appropriate for the expected concentrations. The analytical method having the lowest method detection limit (MDL) shall be selected from among those methods that would provide valid results in light of any matrix effects or interferences. Analyze samples for the following:

- A. Total dissolved solids
- B. Metals listed in California Code of Regulations, title 22, section 66261.24, subdivision (a)(2)(A)
- C. Benzene, toluene, ethylbenzene, and xylenes
- D. Total petroleum hydrocarbons for crude oil
- E. Polynuclear aromatic hydrocarbons (including acenaphthene, acenaphthylene, anthracene, benzo[a]anthracene, benzo[b]fluoranthene, benzo[k]fluoranthene, benzo[a]pyrene, benzo[g,h,i]perylene, chrysene, dibenzo[a,h]anthracene, fluoranthene, fluorene, indeno[1,2,3-cd]pyrene, naphthalene, phenanthrene, and pyrene)
- F. Radionuclides listed under California Code of Regulations, title 22, Table 64442, which includes Gross Alpha particle activity (excluding radon and uranium), Uranium, Radium-226, and Radium-228.
- G. Methane
- H. Major and minor cations (including sodium, potassium, magnesium, and calcium)
- I. Major and minor anions (including nitrate, chloride, sulfate, alkalinity, and bromide)
- J. Trace elements (including lithium, strontium, boron, iron, and manganese)

Water Quality Reporting

Work plans, and technical reports and associated data shall be uploaded in an electronic format compatible with the State's GeoTracker system.

Technical Report that includes

- Site plan with the location(s) of the wells sampled
- Description of field sampling procedures
- Copies of analytical laboratory reports, including quality assurance/quality control procedures and analytical test methods.
- Waste management and disposal procedures
- Table(s) of analytical results organized by well number (including API number).
- A list and location map of all the water supply wells located within a one mile radius of the injection well(s)

All GeoTracker uploads should consist of a GeoReport, GeoMap(s), and an EDF of laboratory data, if applicable.

ATTACHMENT B
GeoTracker Upload Instructions and Assigned Global Identification Number(s)

Work plans, and technical reports and associated data shall be uploaded in an electronic format compatible with the State's GeoTracker system. To begin the process:

- Log in or create a password
- Claim your site(s) (i.e. global ID)
- Add field point name(s)
- Upload the following:
 - Work plan/Technical report and associated data (GeoReport)
 - *laboratory report (EDF)
 - *Site Maps (GeoMAP)

For more information, please contact the GeoTracker Help Desk at Geotracker@waterboards.ca.gov or (866) 480-1028.

Injection Well	Assigned Global ID number
02942612	T10000006875
02946951	T10000006876
02947362	T10000006877
02947441	T10000006878
02947543	T10000006879
02969119	T10000006880
02969120	T10000006881
03009336	T10000006882
03022157	T10000006883
03031655	T10000006884
03031656	T10000006885
03033731	T10000006886
03035699	T10000006887
03037954	T10000006888
03040869	T10000006889
03041397	T10000006890
03042188	T10000006891
03043514	T10000006892
03043896	T10000006893
03044556	T10000006894
03046642	T10000006895
03046643	T10000006896
03046653	T10000006897
03049700	T10000006898
03051196	T10000006899
03051197	T10000006900
03051959	T10000006901
03051960	T10000006902
03054306	T10000006903

*GeoTracker submittal may not be required for all document types.