



EDMUND G. BROWN JR.
GOVERNOR

MATTHEW RODRIGUEZ
SECRETARY FOR
ENVIRONMENTAL PROTECTION

Central Valley Regional Water Quality Control Board

4 March 2015

Thomas Cruise, Agent
Linn Operating, Inc.
5201 Truxtun Avenue, Suite 100
Bakersfield, CA 93309-0422

CERTIFIED MAIL
7013 2250 0002 0661 9990

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

Linn Operating, Inc. is the operator of injection wells identified as American Petroleum Institute (API) numbers 2958657, 3001169, and 3042399 (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, Linn Operating, Inc. 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

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

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provide the person with a written explanation with regard to the 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. Linn Operating, Inc. is required to submit this information and reports because it is the operator of the injection wells subject to this Order. If Linn Operating, Inc. 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 Linn Operating, Inc. to:

1. **By 23 March 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.
2. **By 22 May 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. 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), then **by 6 April 2015**, 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.
 - 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.

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- 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. The information for items A-O shall be in spreadsheet format, labeled with the capital letters indicated. The information for items P-S shall be in 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 from the date injection began through 31 December 2014;
 - O. Total injection volume in barrels for calendar year 2014;
 - P. Attach well construction diagram including all perforations, annular material, and seals;
 - Q. Attach a description of all sources of fluid injected;
 - R. Attach any and all data maintained in compliance with California Code of Regulations, title 14, section 1724.10, subdivision (h);

- S. Attach documentation associated with each mechanical integrity test undertaken to comply with California Code of Regulations, title 14, section 1724.10, subdivision (j).
3. **By 1 June 2015**, upload the technical report and groundwater quality data in the report to the State Water Resources Control Board's GeoTracker database in an electronic format that follows 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). Central Valley Water Board staff will provide a unique GeoTracker Global ID number assigned for each well subject to this Order. Your state-certified laboratory will need the assigned Global ID number to upload to GeoTracker the certified analytical results for each sampled well.

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

All required technical information must be submitted to the attention of:

Dane S. Johnson
Central Valley Water Board
1685 E Street
Fresno, CA 93706

In addition, 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 Linn Operating, Inc.:

"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 Resources Control Board (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, can be provided upon request and are at http://www.waterboards.ca.gov/public_notices/petitions/water_quality/index.shtml.

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 Linn Operating, Inc. to judicial or administrative civil liabilities.

By **12 March 2015**, you must contact Dane S. Johnson of this office at (559) 445-5525 to discuss: (1) any alternative method for discharge, reuse, or other disposition for the fluids that had previously been disposed of in the injection wells subject to this Order; and (2) your proposed work plan and technical reports.

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 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 which 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

Water quality information shall be submitted in a technical report that includes, at a minimum:

- A. Site plan with locations of well(s) sampled.
- B. Description of field sampling procedures.
- C. Table(s) of analytical results organized by well number (including API number).
- D. Copies of analytical laboratory reports, including quality assurance/quality control procedures and analytical test methods.
- E. Waste management and disposal procedures.