



EDMUND G. BROWN JR.
GOVERNOR

MATTHEW RODRIGUEZ
SECRETARY FOR
ENVIRONMENTAL PROTECTION

Los Angeles Regional Water Quality Control Board

September 15, 2016

Mr. R. Scott Price
Mirada Petroleum Incorporated
15500 West Telegraph Road, Suite D32
Santa Paula, California 93060

VIA CERTIFIED MAIL
RETURN RECEIPT REQUESTED
CLAIM NO. 7014 3490 0002 1289 2587

ORDER PURSUANT TO CALIFORNIA WATER CODE SECTION 13267. INVESTIGATIVE ORDER NO. R4-2016-0306. You are legally obligated to respond to this Order. Read this Order carefully. Mirada Petroleum Incorporated, Ojai Oilfield, Ventura County, California (Global ID No.: T1000009365) (Case No.: 11120684)

Dear Mr. Price:

Mirada Petroleum Incorporated is the operator of injection well identified as American Petroleum Institute (API) number 11120684 (hereinafter "injection well subject to this Order"). The California Division of Oil, Gas, and Geothermal Resources (Division) has informed the Los Angeles Regional Water Quality Control Board (Regional Board) that the injection well subject to this Order has been injecting Class II 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. § 300(f) et seq.).

The Regional 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 Class II fluids into aquifers that are hydraulically connected to aquifers suitable for drinking water supply or 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. Class II injection fluids may contain oil field waste and other pollutants that may threaten or degrade water of current or potential future beneficial use. The existing beneficial uses for the Upper Ojai Valley groundwater basin include municipal supply and domestic supply (MUN), industrial Service Supply (IND), industrial process supply (PROC), agricultural supply (AGR), and aquaculture (AQUA). Groundwater in the Upper Ojai Valley groundwater basin is typically 600 feet below ground surface and thus interacts with the injectate. Much of the information required by this Order should be within Mirada Petroleum Incorporated's possession, including the date injection started and information related to injection fluid volume and makeup. Other information required is related to the impact of the injected fluids on nearby water supplies. 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. Mirada Petroleum Incorporated is required to submit this information and reports because it is the operator of the injection well subject to this Order.

This Order requires that Mirada Petroleum Incorporated provide information demonstrating that the existing injection activities are protective of human health and the environment. This document is NOT an order to shut-in this injection well.

Statutory and Procedural Background

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

Under the authority of California Water Code section 13267, the Regional Board hereby orders Mirada Petroleum Incorporated to:

1. By **September 27, 2016**, if you believe that the directives outlined in this Order should not apply to the injection well subject to this Order, submit a written technical justification to the Regional Board staff, which documents at least one of the following acceptable justifications: 1) Mirada Petroleum Incorporated and its predecessors in interest have never injected fluids into the injection well subject to this Order, 2) previous or current injection into the injection well subject to this Order is within a currently exempt aquifer, or 3) previous or current injection into the injection well subject to this Order is within a zone that contains more than 10,000 mg/L total dissolved solids. Documentation in support of the second or third justifications must be consistent with criteria established under federal Safe Drinking Water Act (42 U.S.C. § 300(f) et seq.).
2. By **October 13, 2016**, if previous or current injection into the injection well subject to this Order is within an aquifer that may not have been properly designated as an exempt aquifer under the federal Safe Drinking Water Act, submit a work plan to Regional Board staff that adequately describes the procedures to collect a representative groundwater sample from the injection zone(s) for any or all injection wells that meet this definition. If a representative sample cannot feasibly be collected from one or more of the injection zones for the injection well 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 Executive Officer of the Regional Board.

3. Within 90 days of the work plan approval by the **Executive Officer**, if previous or current injection into the injection well subject to this Order is within an aquifer that may not have been properly designated as an exempt aquifer under the federal Safe Drinking Water Act, submit a technical report that includes, but not limited to, the following information:
 - a. The analyses of each of the groundwater samples from the injection zone(s) for the 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 the injection well 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 the 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 the injection well subject to this Order.
 - e. A list and location map of all water supply wells within one mile of the injection wells subject to this Order.
 - f. Information for each identified water supply well, including: well completion report records from the Department of Water Resources; 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. The information collected as part of this well survey is to be supplemented by an on-the-ground verification of the current condition or existence of the wells and any new wells not listed in the database(s) search. Exact locations of all the wells are to be provided on a scale map and clearly labeled. If exact locations are not available, an explanation as to why the locations were not provided must be included.
 - g. For the injection well subject to this Order, the following information for items A-N shall be submitted in a spreadsheet, labeled with the capital letters indicated. The information for items O-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); and,
 - R. Attach documentation associated with each mechanical integrity test undertaken to comply with California Code of Regulations, title 14, section 1724.10, subdivision (j).
- h. Test results of physical soil properties (porosity, permeability, moisture content, total pore fluid saturation, and hydraulic conductivity) in the injection zone. Calculated values are to be supplemented with available collected and correlated data;
 - i. A detailed map delineating:
 - i. lateral extent of injection zone,
 - ii. predicted extent of injected fluids,
 - iii. nearest drinking water aquifer, and
 - iv. location of all water supply wells within one mile of the project, including but not limited to domestic, irrigation, stock and industrial well;
 - j. At least two geologic cross-sections (perpendicular to one another) delineating the lateral and vertical extent of the injection zone. Geologic cross-sections are to indicate the depth to any confining lithologic layer(s);
 - k. An analysis of a representative sample of injected fluid(s); and,
 - l. Conduct a well completion report record search with the Department of Water Resources within at least one mile of the injection project.

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 the 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:

Barbara Guia
Los Angeles Regional Water Quality Control Board
320 W. 4th Street, Suite 200

Los Angeles, CA 90013

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

Kenneth Harris, 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 Mirada Petroleum Incorporated:

"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 Regional 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 well 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 Mirada Petroleum Incorporated to judicial or administrative civil liabilities.


R. Scott Price
Mirada Petroleum Incorporated

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September 15, 2016

Any questions regarding this matter should be directed to Ms. Barbara Guia at (213) 620-6361 or Barbara.Guia@waterboards.ca.gov, or Dr. Yue Rong at (213) 576-6710, or by email at yue.rong@waterboards.ca.gov

Sincerely:


Samuel Unger, P. E.
Executive Officer

Enclosure:

Attachment A - Water Quality Sampling, Analysis and Reporting

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

Copy by e-mail:

Mr. Jonathan Bishop, State Water Resources Control Board
Mr. John Borkovich, State Water Resources Control Board
Ms. Janice Zinky, State Water Resources Control Board
Mr. Eric Morita, State Water Resources Control Board
Ms. Julie Macedo, Office of Enforcement, State Water Resources Control Board
Mr. Eric Gillman, Office of Chief Counsel, State Water Resources Control Board
Mr. Kenneth Harris, California Department of Conservation, DOGGR, Headquarters
Mr. John Geroch, California Department of Conservation, DOGGR, Headquarters
Mr. Jerry Salera, California Department of Conservation, DOGGR, Headquarters
Mr. Ewan Beenham, California Department of Conservation, DOGGR, Coastal District
Ms. Pat Abel, California Department of Conservation, DOGGR, Coastal District
Mr. David Ortiz, California Department of Conservation, DOGGR, Coastal District

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/fbgstp/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 Reports should include, at a minimum, the following:

- 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 electronic deliverable format (EDF) of laboratory data, if applicable.

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

Technical justifications included in correspondence letters/reports, 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	Regional Board Case number
11120684		11120684

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