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SECRETARY FOR
ENVIRONMENTAL PROTECTION

State Water Resources Control Board

October 21, 2015

Mr. Michael Montgomery
United States Environmental Protection Agency
Region IX
75 Hawthorne Street
San Francisco, CA 94105-3901

Dear Mr. Montgomery:

This letter summarizes the current status of the Underground Injection Control (UIC) well review by the State Water Resources Control Board (State Water Board) and associated California Water Code section 13267 orders (information orders) issued by applicable Regional Water Quality Control Boards (Regional Water Boards) to oil and gas operators. The UIC well review has been conducted by the Division of Oil, Gas, and Geothermal Resources (Division) and the State Water Board, collectively known as the State, consistent with the approach outlined in the February 6, 2015 letter to the United States Environmental Protection Agency (USEPA).

UIC Well Review Status

The State employed a risk-based approach, as outlined in Enclosure D of the February 6, 2015 letter (Enclosure D) to review the UIC wells to help assure early determination of potential risks to groundwater with a current beneficial use. Water disposal wells permitted to inject into aquifers with less than 3,000 milligrams per liter (mg/l) of total dissolved solids (TDS) were evaluated first, followed by water disposal wells permitted to inject into 3,000 to 10,000 TDS aquifers, and lastly by enhanced oil recovery (EOR) wells permitted to inject into sub-10,000 mg/l TDS aquifers.

The Division identified 6,157 wells that were permitted to inject into non-exempt aquifers, of which 532 were permitted for water disposal and 5,625 permitted for EOR. The State has completed their review, the results of which are summarized in letters to the USEPA dated May 15, 2015 and July 31, 2015.

As part of the review process, and consistent with Enclosure D, information orders were issued by applicable Regional Water Boards to gather additional information on these wells prior to initiating any further action, if warranted. A summary of the status of the information orders issued and pending is also summarized below.

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Status of Issued Information Orders

Applicable Regional Water Boards have issued 40 information orders to the operators of 170 UIC wells. The attached table details the status of these orders. Most of these wells (155) were permitted to inject into sub-3,000 TDS aquifers. The remaining 15 wells were permitted to inject into 3,000 to 10,000 TDS aquifers and also were considered a "higher risk" by the State (relative to the risk associated with other water disposal wells perforated in 3,000 to 10,000 TDS aquifers) because the injection zone is within 500 vertical feet and one mile laterally of an identified water supply well. These 40 information orders were issued between July 2014 and August 2015 and required operators to submit water quality information on the injected fluids and the zone(s) of injection, and identify the location of any water supply wells within a one-mile radius of the injection wells.

The State Water Board and Regional Water Boards are currently evaluating data and information submitted by the operators. An injection well is not considered to be impacting current groundwater resources if any of the following conditions exist: 1) the well is either shown to be shut-in, idle, or converted to an oil and gas production well, 2) the well is shown to be currently perforated in an exempt zone, or 3) current injection practices demonstrate there are no impacts to groundwater resources.

Of the 170 injection wells associated with the information orders:

- Ninety-eight (98) wells were determined not to pose a potential risk to nearby water supply wells (based on the criteria outlined above).
- Operators for 72 wells have not submitted all of the required information to complete an evaluation for impacts to current groundwater resources. The majority of these operators are working cooperatively with Regional Water Board staff to resolve outstanding issues and assemble the required information.

The operators that have failed to respond to information orders have been issued Notices of Violations (NOVs) or will receive a NOV.

Notices of Violation

Between August 2014 and July 2015, the Central Valley Regional Board issued 13 NOV letters to the operators of 13 wells. The Central Valley Regional Board is in the process of drafting an additional three (3) NOV letters to the operators of 31 UIC wells. The attached table includes information on which operators received NOVs. In most cases, NOVs were issued due to incomplete or late work plans or technical reports.

Pending Information Orders

Information orders are planned to be issued in October 2015 to 43 operators for an additional 284 wells. Of these, 280 wells are permitted to inject into 3,000 to 10,000 TDS aquifers, and an additional four (4) wells are permitted for EOR.

The screening criteria used for non-thermal EOR wells (water flood) are consistent with the criteria outlined in Enclosure D. The Central Valley Regional Water Board is planning to issue an information order to the operator of one (1) non-thermal well.

For thermal EOR wells (steam flood and cyclic steam wells), the State is screening for water supply wells located within one-quarter mile and 300 feet, respectively, of the injection well. This screening distance represents the Division's determination of the lateral zone of endangering influence (ZEI) for these types of wells. Based on these criteria, three (3) thermal wells (cyclic steam and steam flood) are to receive information orders from the Central Valley Regional Water Board.

Summary

To date, 40 information orders (representing 170 wells) have been issued, and 43 additional information orders (representing 284 wells) are pending final approval. As mentioned previously, the Division identified a total of 6,157 wells; therefore, 5,703 wells will not be issued information orders because they did not meet Enclosure D criteria (for water disposal or water flood wells) or the criteria discussed above (for steam flood and cyclic steam wells). The table below summarizes the status of the State Water Board's review of the injection wells, status of issued information orders, and pending information orders.

Category of Well	Number of Wells Reviewed	Orders Issued	Orders Pending
1 (sub-3,000 TDS)	176 (water disposal)	34 (156 wells)	0
1 (3,000 to 10,000 TDS)	356 (water disposal)	6 (14 wells)	40 (280 wells)
2 (sub-10,000 TDS)	5,625 (EOR)	0	3 (4 wells)
Total	6,157	40 (170 wells)	43 (284 wells)

Please let us know if you have any questions regarding this information.

Sincerely,



Jonathan Bishop
Chief Deputy Director

cc: [Via email]

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