UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105-3901

July 18, 2011

Elena Miller
State Oil and Gas Supervisor
Department of Conservation
Division of Oil, Gas and Geothermal Resources
801 K Street, MS 20-20
Sacramento, CA 95814-3530

Dear Ms. Miller:

I am pleased to transmit to you a copy of the California Class II Underground Injection Control (UIC) Program Review final report (Final Report) dated June 2011 and EPA's findings and recommendations. As you know, EPA utilized a contract with the Horsley Witten Group to conduct an evaluation of California's implementation of the Class II UIC primacy program. The goals of this program evaluation were to review how the California Division of Oil, Gas, and Geothermal Resources (DOGGR) oversees and manages the permitting, drilling, operation, maintenance and plugging/abandonment of Class II UIC wells in the State, and identify program implementation recommendations. The Final Report incorporates additional material that was provided to EPA in early June 2011 from your staff.

EPA supports the recommendations that are listed in Section 5.0 Recommendations in the Final Report. I anticipate that some of the recommendations may require state regulatory revisions and others can be addressed through procedural clarifications and modifications. In particular, I want to highlight the following program deficiencies that require more immediate attention and resolution:

- **Federal Definition and Protection of Underground Source of Drinking Water (USDW):** DOGGR UIC regulations and primacy documents do not clearly require the District Offices to protect USDWs to the federally-defined standard of 10,000 mg/L total dissolved solids (TDS) in the permitting, construction, operation, and abandonment of Class II injection wells. Protection of potential drinking water sources which fall between TDS levels of 3,500 mg/L – the level recognized by the State's regulations as "fresh water" – and 10,000 mg/L is essential for DOGGR to demonstrate as a federal UIC primacy agency.

- **Zone of Endangering Influence (ZEI) and Area of Review (AOR):** EPA's review found that ZEI determinations are not being performed for injection wells throughout the state and AOR analyses are based almost exclusively on a fixed quarter-mile radius approach. Whereas the fixed radius approach may be appropriate for some injection wells, there are others where this approach will not adequately capture the

Printed on Recycled Paper

full extent of pressure influences from the injection activity (i.e., the ZEI, if calculated, would exceed a quarter-mile radius around the well) and will require an expanded AOR.

- **Step Rate Tests/Maximum Allowable Surface Pressure:** Both California and federal UIC regulations mandate that maximum surface injection pressure must be lower than the fracture pressure of the injection zone. However, EPA's review found that for most Class II injection wells and well fields overseen by DOGGR, the fracture pressure of the injection zone is determined by an estimate of the formation fracture gradient, rather than from a well or field/formation-specific step-rate test (SRT) that would yield a more accurate measurement of fracture pressure. Moreover, even in instances where a SRT was performed, DOGGR allowed operators to use only surface pressure measurements, rather than the more accurate combination of surface and bottom-hole measurement.

Additionally, the final report includes recommendations for DOGGR to ensure that the State's Class II UIC program meets all federal requirements. These recommendations request clarification, improved procedures, and consistent standardized implementation pertaining to several areas including UIC Staff Qualifications; Annual Project Reviews; Mechanical Integrity Surveys and Testing; Inspections and Compliance/Enforcement Practices and Tools; Idle Well Planning and Testing Program; Financial Responsibility Requirements; and, Plugging and Abandonment Requirements.

We request that you provide EPA with an action plan (Plan) that addresses the above noted deficiencies and other areas for improvement identified in the Final Report - Section 5.0 - Recommendations by September 1, 2011.

As part of the Horsley Witten Group's research and collection of materials to conduct the program evaluation, your staff provided an agency memorandum entitled Underground Injection Control (UIC) Program Expectations (Expectations Memo), signed by you and dated May 20, 2010. This memo addresses some of the program deficiencies discussed in EPA's Final Report and noted in Section 5.0 - Recommendations. Please include in the Plan a discussion of the Expectations Memo and the status of this document in relation to the EPA-approved DOGGR Class II UIC Program.

Additionally, after review of the Final Report my staff realized that a discussion of DOGGR's permitting and oversight procedures for Class II slurry-fracture injection was not included in the questionnaire which the Horsley Witten Group used to collect information for this program review, due to EPA's error. As we are still interested in this topic, my staff plans to reach out to each of the District Offices to learn more about Class II applications of slurry-fracture injection in California. Also, we are interested in following up with the appropriate District Offices on any outstanding material which the Final Report identifies, including the limited use of compressed bentonite for plugging and abandonment procedures in District 4.

ED_001000_00010129-00002

We look forward to any feedback you have on the Final Report and the submittal of your Plan to address the recommendations for program improvement. Once again, I wish to extend my sincere thanks to you and your staff for supporting this effort, and for the cooperation and resources all six District Offices provided to the Horsley Witten Group in responding to the Questionnaires, hosting site visits, and conducting follow-up as requested.

Sincerely,

David Albright, Manager
Ground Water Office

Enclosure

cc: Rob Habel, Deputy Oil and Gas Supervisor
District Deputies, Districts 1-6

ED_001000_00010129-00003