STATE OF CALIFORNIA
EDMUND G. BROWN JR., *Governor*

State of California • Natural Resources Agency
Department of Conservation
Division of Oil, Gas, and Geothermal Resources
Kenneth A. Harris Jr., *State Oil and Gas Supervisor*
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CALIFORNIA Water Boards
State Water Resources Control Board

October 26, 2018

Mr. David Albright
United States Environmental Protection Agency—Region IX
75 Hawthorne Street
San Francisco, CA 94105-3901

Dear Mr. Albright:

OCTOBER 2018 UPDATE ON COMPLIANCE REVIEW

The purpose of this letter is to provide an update to the United States Environmental Protection Agency (US EPA) regarding the status of actions taken by the Division of Oil, Gas, and Geothermal Resources (DOGGR) and the State Water Resources Control Board (State Water Board) (collectively, the State) to address the issue of class II injection wells identified by the State as currently permitted for injection into potentially non-exempt underground sources of drinking water (USDW).

As noted in our previous update letter, dated August 16, 2018, DOGGR continues to work in coordination with the State Water Board and the appropriate regional water quality control boards (collectively, Water Boards) to develop, where appropriate, aquifer exemption (AE) proposals as a process to address the issue of class II injection wells identified as currently permitted for injection into a potential USDW. The framework of the State process for evaluating aquifer exemption proposals is defined by California law, under Public Resources Code section 3131.

In our previous update letter, we identified a total of 30 AE proposals addressing the issue of currently permitted injection into a potential USDW, all of which fit into one of three broad status categories: those recently approved by the US EPA, those under US EPA review following submission by the State, and those still advancing within the State process for AE proposals and which the State believed continued to show merit at that time. **As of the date of this letter, that total number has since decreased to 28 AE proposals.** This is because two of the AE proposals that were advancing within the State AE process—the Lynch Canyon (Santa Margarita) and the South Belridge (East Area)—have now dropped out. Since our last update, additional information and analysis led the State to determine that, based on the data foreseeably available at this time, these AE proposals cannot meet the statutory prerequisite criteria for State recommendation to the US EPA. The State is in communication with the affected operators regarding implementation of permanent cessation of injection into the respective USDW areas associated with these two AE proposals.

The following list summarizes the current status of the remaining 28 AE proposals that have been approved by the US EPA, are under US EPA review, or are advancing within the State AE process.

- **Twelve (12)** proposals are complete and have been approved by the US EPA.
- **Two (2)** proposals have been submitted to the US EPA for approval.
  - *San Ardo and McCool Ranch*
  - *Arroyo Grande*
- **Two (2)** proposals are being readied for submission to the US EPA.
  - *Lynch Canyon (Lanigan Sand)*
  - *North Belridge*
- **Five (5)** proposals have been made available to the public for comment and the State is preparing responses to the comments.
  - *Edison Phase I*
  - *Lost Hills Phase I*
  - *Sespe*
  - *Edison Phase 2*
  - *Coalinga/Jacalitos*
- **Three (3)** proposals are being prepared for public comment.
  - *South Belridge (Western Area)*
  - *Midway-Sunset (deeper formations)*
  - *Cat Canyon*
- **Four (4)** proposals are under review by the Water Boards or being supplemented by DOGGR.
  - *Holser*
  - *Lompoc*
  - *Midway Sunset (Tulare)*
  - *Kern River*

DOGGR and the Water Boards are in regular communication regarding the AE proposals still advancing within the State AE process. Estimated milestone completion dates for these AE proposals are noted in the attached table.

In addition to the above-described AE proposals connected with the issue of class II injection wells identified as currently permitted for injection into a potential USDW, **there are also, presently either under US EPA review or advancing within the State AE process, seven (7) other AE proposals where currently permitted injection into a potential USDW is <u>not</u> an issue.** The following list summarizes the current status of those seven AE proposals.

- **One (1)** proposal has been submitted to the US EPA for approval.
  - *Livermore*
- **Two (2)** proposals are under review by the Water Boards or being supplemented by DOGGR.
  - *Oxnard*
  - *Casmalia*
- **Four (4)** proposals are in the early stages of review by DOGGR.
  - *Deer Creek*
  - *Round Mountain (South Area)*
  - *Northeast Edison*
  - *Lost Hills Phase 2*

We believe that our progress continues to demonstrate the State's commitment to protecting public health and the environment while avoiding unnecessary disruption of oil and gas production. If you have any questions or wish to discuss this matter further, please contact Mr. Ken Harris at (916) 323-1777, or Ken.Harris@conservation.ca.gov or Mr. Jonathan Bishop at (916) 341-5619 or Jonathan.Bishop@waterboards.ca.gov.

Sincerely

Kenneth A. Harris Jr.
State Oil and Gas Supervisor
Division of Oil, Gas, and Geothermal Resources

Jonathan Bishop
Chief Deputy Director
State Water Resources Control Board

Enclosure (1)

AQUIFER EXEMPTION PROPOSAL REVIEW STATUS (10/24/2018)

Field	Name of Formation(s) / Unit(s) Proposed for Exemption	Injection Types	Minimum TDS of Area Proposed for Exemption (mg/L)	Maximum TDS of Area Proposed for Exemption (mg/L)	Contains Hydrocarbons	Federal Criteria (40 CFR 146.4)	Preliminary Concurrence Letter to DOGGR[1]	Final Concurrence Letter to DOGGR	Status
Arroyo Grande	Dollie Sands	SC, SF, WD	980	2,800	Yes	(a), (b)(1)	8/7/2015; 11/28/2017 (Revised Package)	2/8/2016; 5/22/2018 (Revised Package)	Submitted to US EPA 5/25/2018.
Round Mountain	Jewett Sand	SC, SF	2,800	2,800	Yes	(a), (b)(1)	4/28/2016	11/29/2016	Approved by US EPA 2/9/2017.
	Pyramid Hill Sand	SC, SF, WF	1,000	2,400	Yes				
	Vedder	SC, SF, WF	1,200	4,000	Yes				
	Walker	WD	1,400	2,400	Yes				
Fruitvale	Santa Margarita	WD	5,630		Eastern Portion	(a), (c)	6/15/2016	11/7/2016	Approved by US EPA 2/9/2017.
Tejon	Transition Zone	WD	2,231	3,317	Yes	(a), (b)(1)	7/22/2016	11/30/2016	Approved by US EPA 2/9/2017.
Mount Poso	Pyramid Hill Sand	SF, WF	1,730		Yes	(a), (b)(1)	10/4/2016	2/8/2017	Approved by US EPA 4/17/2017. Revised 10/10/2018.
	Vedder	SF, WF	2,520		Yes				
San Ardo and McCool Ranch	Lombardi Sands	SF, WD	4,500		Yes	(a), (c)	12/1/2016	9/13/2017	Submitted to US EPA on 9/28/2017.
	Aurignac Sands	SC, WF, WD	4,842		Yes				
Lynch Canyon - Lanigan Sand	Lanigan Sand	SC, SF	3,439	4,658	Yes	(a), (b)(1)	2/3/2017	1/17/2018	DOGGR is preparing the final submittal for US EPA.
Sespe	Basal Sespe	WD	5,700	33,000	Yes	(a), (b)(1)	2/3/2017		DOGGR is preparing public comment summaries and responses.
Jasmin	Cantleberry Sands Member, Vedder Fm.	SF, SC, WD	380	410	Yes	(a), (b)(1)	2/7/2017	7/13/2017	Approved by US EPA 9/28/2017.
Kern Front	Vedder	WD	3,500	10,700	No	(a), (c)	2/23/2017	7/13/2017	Approved by US EPA 8/30/2017.
Elk Hills - Phase 1	Tulare (Lower)	WD	4,500	20,000	No	(a), (c)	6/13/2017	1/31/2018	Approved by US EPA 3/29/2018.
Elk Hills - Phase 2	Tulare (Lower)	WD	4,500	20,000	No	(a), (c)	6/13/2017	1/31/2018	Approved by US EPA 3/29/2018.

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Poso Creek	Basal Etchegoin and Chanac	SC, SF	260	680	Yes	(a), (b)(1)	8/17/2017	1/17/2018	Approved by US EPA 5/4/2018.
	Basal Etchegoin	SC, SF	480	1,300	Yes				
Cymric	Tulare	SF, WD	1,100	14,100	Yes	(a), (b)(1)	11/9/2017	6/6/2018	Approved by US EPA 9/28/2018.
McKittrick	Tulare	SF, SC, WD	1,412	34,685	Yes	(a), (b)(1)	11/9/2017	6/6/2018	Approved by US EPA 9/28/2018.
Kern Front	Upper Chanac	SC, SF, WD	320	350	Yes	(a), (b)(1)	1/25/2018	6/4/2018	Approved by US EPA 8/30/2018.
Edison - Phase 1	Pyramid Hills and Vedder	WF	1,110	20,775	Yes	(a), (b)(1)	3/7/2018	10/19/2018	DOGGR is preparing the final submittal for US EPA.
	Wicker Sands, Fruitvale Fm.	WD	3,300	3,300	Yes				
	Santa Margarita	SC, SF	440	820	Yes				
Lost Hills - Phase 1	Tulare	SC, SF	3,789	11,135	Yes	(a), (b)(1)	3/19/2018	10/19/2018	DOGGR is preparing the final submittal for US EPA.
North Belridge	Tulare	SC, SF, WF ,WD	8,055	22,540	Yes	(a), (b)(1)	3/19/2018	9/5/2018	DOGGR is preparing the final submittal for US EPA.
Jacalitos and Coalinga	Temblor	SF, WF	3,024	12,730	Yes	(a), (b)(1)	5/14/2018		DOGGR is preparing public comment summaries and responses.
South Belridge - Western Expansion Area	Tulare	SF, WD	3,498	32,788	Yes	(a), (b)(1)	6/6/2018		DOGGR is preparing public comment and hearing notice documents.
Midway-Sunset - Deeper Formations	Potter Sands	SC, SF, WD	3,010	22,347	Yes	(a), (c)	6/19/2018		DOGGR is preparing public comment and hearing notice documents.
	Spellacy Sands	SC, SF, WD	3,117	38,491	Yes				
	Miocene Shale	SC, SF, WF, WD	3,000	26,628	Yes				
	Lower Antelope Sands	WD	4,296	24,740	Yes				
Edison - Phase 2	Chanac	SC, SF	570	2,000	Yes	(a), (b)(1)	7/3/2018		DOGGR is preparing public comment summaries and responses.

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Cat Canyon	Monterey	SC, SF, WF, WD	6,333	12,314	Yes	(a), (b)(1)	10/11/2018		DOGGR is preparing public comment and hearing notice documents.
	Sisquoc	SC, SF, WF, WD	6,333	22,007	Yes				
Holser	Holser-Nuevo Zone, Modelo Fm.	WD	6,000	9,000	Yes	(a), (b)(1)	*December 2018*		Water Boards are preparing preliminary concurrence.
Lompoc	Monterey	WD	4,700	12,100	Yes	(a), (b)(1)	*March 2019*		Water Boards are reviewing the proposal.
Midway-Sunset - Tulare	Tulare	SC, SF, WD	3,588	30,337	Northern Portion, Lower Tulare	(a), (c)	*June 2019*		Water Boards are reviewing the proposal.
Kern River	Kern River	SC, WD	120	1,200	Yes	(a), (b)(1)	*2019*		DOGGR is preparing additional information to support proposal. Date of preliminary concurrence subject to receipt of the additional information.

ACRONYMS:
Enhanced Oil Recovery (EOR), Cyclic Steam (SC), Steam Flood (SF), Water Flood (WF), Waste Disposal (WD), Division of Oil, Gas, and Geothermal Resources (DOGGR), To Be Determined (TBD), milligrams per liter (mg/L),

[1] Italics indicate estimated dates of submittal based on prior reviews and are subject to change.