California
Department of Conservation
Geologic Energy Management Division

Gavin Newsom, Governor
David Shabazian, Director

California
Water Boards
STATE WATER RESOURCES CONTROL BOARD
REGIONAL WATER QUALITY CONTROL BOARDS

March 23, 2020

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

ANNUAL UPDATE ON COMPLIANCE REVIEW

Dear Mr. Albright:

The purpose of this letter is to provide an update to the United States Environmental Protection Agency (US EPA) regarding the status of aquifer exemption proposals being considered by the California Geologic Energy Management Division (CalGEM—previously known as the Division of Oil, Gas, and Geothermal Resources, or DOGGR) and the State Water Resources Control Board (State Water Board) (collectively, the State).

As noted in our previous update letter, dated October 26, 2018, CalGEM 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 underground source of drinking water (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 28 AE proposals addressing the issue of currently permitted injection into a potential USDW. This list was reduced from 30 after the Lynch Canyon (Santa Margarita) and South Belridge (East Area) proposals were determined to not meet the statutory prerequisite criteria in the State process for recommendation to the US EPA. In addition, the State determined an area of the Elk Hills aquifer exemption also did not meet the criteria.

The State has been working with operators on transitioning out of the above three areas. The operators of the South Belridge (East Area) and portion of Elk Hills that did not receive an exemption have submitted acceptable workplans for transitioning out of the areas and are continuing to work with the State.

It has been determined by the State that the operator's proposed timeline for discontinuing injection into the Lynch Canyon (Santa Margarita) aquifer was too lengthy. The State is continuing to work with the operator to evaluate transition alternatives and a workplan or otherwise ending injection.

In 2019, two AE proposals were confirmed to have moved to the list of existing injection into a possible USDW. These additions bring the previous count of 28 from October 2018 to 30 AE proposals (Enclosure 1). The Oxnard and Mt. Poso – Dorsey Area proposals were identified by the State as having wells permitted for injection into the aquifers proposed to be exempted. The Oxnard proposal has received preliminary concurrence from the Water Boards. The Mt. Poso – Dorsey Area AE was recently identified as having two wells injecting on the border of the 1973 primacy boundary with an area of influence extending beyond the exempted aquifer boundary. Due to some inconsistencies in nomenclature in the 2018 approved Main Mt. Poso AE, these wells were inadvertently missed in previous well identification efforts. Once aware of these wells, CalGEM immediately began work with the operator to process the AE proposal.

The following list summarizes the status of the above-mentioned 30 proposals:

- Twenty (20) have been approved by the US EPA

- One (1) proposals has completed the State review and been submitted to US EPA
    - Lynch Canyon (Lanigan Sand)

- Two (2) proposals are being readied for submission to the US EPA
    - Sespe
    - Coalinga/Jacalitos

- One (1) proposal has been made available to the public for comment and the State is preparing responses to the comments
    - Cat Canyon

- Five (5) proposals are under review by CalGEM and the Water Boards
    - Oxnard
    - Holser
    - Lompoc
    - Midway Sunset (Tulare)
    - Kern River

- One (1) proposal is in the early stages of review by CalGEM
    - Mt. Poso – Dorsey Area

CalGEM and the Water Boards are in regular communication regarding the AE proposals still advancing within the State AE process.

In addition to the above-described AE proposals associated with class II injection wells identified as currently permitted for Injection into a potential USDW, there are also eight other AE proposals where current Injection into a potential USDW has not been identified.

The following list summarizes the current status of these AE proposals:

- One (1) of these AE proposals has been approved by US EPA
    - Livermore

- Three (3) proposals are under review by CalGEM and the Water Boards
  - Casmalia
  - Deer Creek
  - Round Mountain (South Area)

- Four (4) proposals are in the early stages of review by CalGEM
  - Northeast Edison
  - Lost Hills Phase 2
  - Kern Bluff
  - Blackwell's Corner

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. Uduak-Joe Ntuk at (916) 323-1777 or Uduak-Joe.Ntuk@conservation.ca.gov,or Mr. Jonathan Bishop at (916) 341-5619 or Jonathan.Bishop@waterboards.ca.gov.

Sincerely,

Uduak-Joe Ntuk
State Oil and Gas Supervisor
Geologic Energy Management Division

Jonathan Bishop
Chief Deputy Director
State Water Resources Control Board

Enclosure (1)

Enclosure 1

AQUIFER EXEMPTION PROPOSAL REVIEW STATUS

Count	Field	Name of Formation(s) / Units Proposed for Exemption	Injection Types	Minimum Formation TDS (mg/L)	Maximum Formation TDS (mg/L)	Hydrocarbon Production	Federal Criteria (40 CFR 146.4)	Preliminary Concurrence Letter to CalGEM[1]	Final Concurrence Letter to CalGEM	Status
1	Arroyo Grande	Dollie Sands	SC, SF, WD	980	2,800	Yes	(a), (b)(1)	8/7/2015	5/22/2018 Revised Final Concurrence Letter	Approved by US EPA 4/30/2019.
2	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				
3	Fruitvale	Santa Margarita	WD	5,630		Eastern Portion	(a), (c)	6/15/2016	11/7/2016	Approved by US EPA 2/9/2017.
4	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.
5	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.
		Vedder	SF, WF	2,520		Yes				
6	San Ardo and McCool Ranch	Lombardi Sands	SF, WD	4,500		Yes	(a), (c)	12/1/2016	9/13/2017	Approved by US EPA 11/21/2018.
		Aurignac Sands	SC, WF, WD	4,842		Yes				
7	Jasmin	Cantleberry Sands member of the Vedder Fm.	SF, SC, WD	380	410	Yes	(a), (b)(1)	2/7/2017	7/13/2017	Approved by US EPA 9/28/2017.
8	Kern Front	Vedder	WD	3,500	10,700	No	(a), (c)	2/23/2017	7/13/2017	Approved by US EPA 8/30/2017.
9	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.
10	Elk Hills - Phase 1	Tulare	WD	4,500	20,000	No	(a), (c)	6/13/2017	1/31/2018	Approved by US EPA 3/29/2018.
11	Elk Hills - Phase 2	Tulare	WD	4,500	20,000	No	(a), (c)	6/13/2017	1/31/2018	Approved by US EPA 3/29/2018.
12	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				
13	Cymric	Tulare	SF, WD	1,100	14,100	Southeastern portion	(a), (b)(1)	11/9/2017	6/5/2018	Approved by US EPA 9/28/2018
14	McKittrick	Tulare	SC, SF, WD	1,412	34,685	Yes	(a), (b)(1)	11/9/2017	6/5/2018	Approved by US EPA 9/28/2018.
15	Edison - Phase 1	Pyramid Hills and Vedder	WF	1,110	20,775	Yes	(a), (b)(1)	3/7/2018	10/19/2018	Approved by US EPA 5/14/2019.
		Wicker Sands of Fruitvale Formation	WD	3,300	3,300	Yes				
		Santa Margarita	SC, SF	440	820	Yes				
16	Edison - Phase 2	Chanac	SC, SF	570	2,000	Yes	(a), (b)(1)	7/3/2018	2/4/2019	Approved by US EPA 6/27/2019.
17	Lost Hills - Phase 1	Tulare	SF, SF	3,789	11,135	No	(a), (c)	3/19/2018	11/9/2018	Approved by US EPA 5/20/2019.
18	North Belridge	Tulare	SC, SF, WF, WD	8,055	22,540	Yes	(a), (b)(1)	3/19/2018	9/5/2018	Approved by US EPA 6/7/2019.
19	Midway-Sunset - Deeper Formations	Potter Sands	SC, SF, WD	3,010	22,347	Western Portion	(a), (c)	6/19/2018	3/29/2019	Approved by US EPA 5/30/2019.
		Spellacy Sands	SC, SF, WD	3,117	38,491	Western Portion				
		Miocene Shale	Sc, SF, WF, WD	3,000	26,628	Yes				
		Lower Antelope Sands	WD	4,296	24,740	Yes				
20	South Belridge - Western Expansion Area	Tulare	SF, WD	3,498	32,788	No	(a), (b)(1)	6/5/2018	2/4/2019	Approved by US EPA 3/13/2020
21	Lynch Canyon - Lanigan Sand	Lanigan Sand	SC, SF	3,439	4,658	Yes	(a), (b)(1)	2/3/2017	1/17/2018	CalGEM transmitted final AE package to EPA (2/27/2020)

AQUIFER EXEMPTION PROPOSAL REVIEW STATUS

Count	Field	Name of Formation(s) / Units Proposed for Exemption	Injection Types	Minimum Formation TDS (mg/L)	Maximum Formation TDS (mg/L)	Hydrocarbon Production	Federal Criteria (40 CFR 146.4)	Preliminary Concurrence Letter to CalGEM[1]	Final Concurrence Letter to CalGEM	Status
22	Cat Canyon	Monterey	SC, SF, WF, WD	6,333	12,314	Yes	(a), (b)(1)	10/11/2018		Preparing responses to Public Comments.
		Sisquoc	SC, SF, WF, WD	6,333	22,007	Yes				
23	Sespe	Basal Sespe	WD	5,700	33,000	Yes	(a), (b)(1)	2/3/2017	1/15/2019	Waiting of Final Transmittal letter from CalGEM to EPA.
24	Holser	Holser-Nuevo Zone, Modelo Fm.	WD	6,000	9,000	Yes	(a), (b)(1)	12/7/2018		Water Boards reviewed revisions to the AE package based on EPA review comments (12/18/19), and suggested AE proposal be modified for clarification . Water boards will revise preliminary concurrence letter if needed. CalGEM is preparing documents for public hearing.
25	Jacalitos and Coalinga	Temblor	SF, WF	3,024	12,730	Yes	(a), (b)(1)	5/14/2018	2/26/2020	Preparing for transmittal of the package to US EPA.
26	Kern River	Kern River	SC, WD	120	1,200	Yes	(a), (b)(1)	***2020***		Operator preparing updated application based on the new proposed draft boundary.
27	Lompoc	Monterey	WD	4,700	12,100	Yes	(a), (c)	***2020***		Water Boards are reviewing application. CalGEM is awaiting preliminary concurrence letter from Water Boards.
28	Oxnard	Vaca Tar Sand - Pico Formation	SC	1,700	14,000	Yes	(a), (b)(1)	***2020***		CalGEM revised the application based upon EPA comments. Water boards reviewed minor revisions to proposal based on EPA review and had no comments. CalGEM is preparing enhanced water well survey and public documents.
29	Midway-Sunset - Tulare	Tulare	SC, SF, WD	3,588	30,337	Northern portion, Lower Tulare	(a), (c)	***2020***		Operator is responding to Water Board comments and updating application.
30	Mt. Poso (Dorsey Area)	Vedder	WF,WD	880	1,100	Yes	(a),(b) (1)			Received updated application. Currently under review by CalGEM.

ACRONYMS:

Enhanced Oil Recovery (EOR), Cyclic Steam (SC), Steam Flood (SF), Water Flood (WF), Waste Disposal (WD), California Geologic Energy Management Division (CalGEM), Department of Conservation (DOC), Water Boards (WBs),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.***

ED_013796_00001194-00005