State of California

THE RESOURCES AGENCY OF CALIFORNIA

Memorandum

To : ALL DEPUTIES

Date : May 14, 1982

Subject: Aquifer Exemptions Under the UIC

From : Department of Conservation—Division of Oil and Gas
Sacramento

The EPA has reviewed the data we recently submitted to support the granting of exemptions for certain aquifers from the provisions of the UIC program, and has indicated that the aquifers lined out on Attachment A qualify for exemption. The exemptions are based on the fact that the TDS of the approved aquifers originally exceeded 10,000 mg/l. However, the other aquifers that we have proposed for exemption still require further evaluation by the EPA because they do not exceed the 10,000 TDS standard.

To determine whether these aquifers can qualify for an exemption under the provisions of the UIC regulations, the EPA has developed criteria that will be used to evaluate each aquifer. On Attachment A, each aquifer needing an exemption is indicated by a Roman numeral III or IV. These numerals correspond to the list (Attachment B) of the minimum criteria that must be met in order to exempt a specific aquifer.

Using the criteria designated by the appropriate numerals, please obtain as much information as possible that can be used to support an exemption for each aquifer in your district.

If you have any questions concerning this process, please notify Bob Reid. These data should be collected prior to June 1, because they will be considered during the public hearings that are scheduled for June 1 and 3, 1982.

Si Cordova

for M. G. Mefferd
State Oil and Gas Supervisor

Attachments (2)

cc: Bob Reid

ATTACHMENT A

NONHYDROCARBON-PRODUCING ZONE INJECTION DATA

DIST.	FIELD	FORMATION & ZONE	TDS OF ZONE WATER PRIOR TO INJECTION	TDS OF INJECTED WATER	VOLUME INJECTED (Barrels)	INJE STAR
~~1~~	~~Delmont Offshore~~	~~Repetto~~	~~30,800~~			
~~1~~	~~Huntington Beach~~	~~Lakewood~~				
		~~Alpha 1~~	~~37,200~~			
		~~Alpha 2~~	~~12,500~~			
~~1~~	~~Sawtelle~~	~~Puente~~	~~25,500~~			
~~1~~	~~Seal Beach~~	~~Repetto~~	~~29,700~~			
		~~Recent Sands~~	~~30,200~~			
~~1~~	~~Wilmington~~	~~Gaspur~~	~~28,200~~			
~~1~~	~~"~~	~~River Gravels~~	~~30,800~~			
III 2	Ramona	Pico	5,000	15,300 ppm NaCl	1,793,000	6/51
IV 2	South Tapo Canyon	Pico	1,900 ppm NaCl	600 ppm NaCl	1,903,000	1/48
III 2	Oat Mountain	Undiff.	4,800	23,800 ppm NaCl	91,000	4/56
III 2	Simi	Sespe	4,300	25,500 ppm NaCl	695,000	6/48
~~3~~	~~Guadelupe~~	~~Knoxville~~	~~30,500~~			
~~3~~	~~Lompoc~~	~~Lospe~~	~~119,000~~			
~~3~~	~~Lompoc~~	~~Knoxville~~	~~30,500~~			
~~3~~	~~Russell Ranch~~	~~Branch Canyon~~	~~13,000~~			
III 3	San Ardo	Santa Margarita	3,700	5,600	81,800,000	11/66
III	"	Monterey "D" Sand	4,600	5,600	13,795,000	7/59
III	"	Monterey "E" Sand	6,400	5,600	6,057,000	3/68
~~3~~	~~Santa Maria Valley~~	~~Lospe Franciscan~~	~~119,000~~			
III 3	Monroe Swell	Santa Margarita	3,700 ppm NaCl	9,600	?	1981
~~3~~	~~Point Conception~~	~~Camino Cielo~~	~~26,200~~			
~~3~~	~~Guadalupe~~	~~Franciscan~~	~~30,500~~			
~~4~~	~~Bellevue~~	~~Etchegoin~~	~~26,500 (Analysis from adjacent field)~~			
~~4~~	~~Bellevue, West~~	~~Tulare~~	~~12,000*~~			
~~4~~	~~"~~	~~Etchegoin~~	~~26,500 (Analysis from adjacent field)~~			
IV 4	Blackwell's Corner	Tumey	2,100 -2,600*	29,000 ppm NaCl	400,000	5/75
III 4	Buena Vista	Tulare	9,200	5,300-36,500	50,798,000	11/72
~~4~~	~~Cal Canal~~	~~Tulare San Joaquin~~	~~Excess of 10,000*~~	~~22,000~~	~~537,000~~	5/79
~~4~~	~~Canfield Ranch~~	~~Etchegoin~~	~~~12,800 26,500 (Analysis from adjacent fields)~~			

*"E" log calculation

	FIELD	FORMATION & ZONE	TDS OF ZONE WATER PRIOR TO INJECTION	TDS OF INJECTED WATER	VOLUME INJECTED (Barrels)	INJE STAR
4	~~North Coles Levee~~	~~Tulare~~	~~12,900~~			
4	"	~~San Joaquin~~	~~40,000-45,600~~			
4	"	~~Etchegoin~~	~~30,100~~			
4	~~South Coles Levee~~	~~Tulare~~	~~12,000-13,300~~			
4	"	~~San Joaquin~~	~~12,000-16,900~~			
4	~~Greeley~~	~~Etchegoin~~	~~26,500~~			
III 4	Kern Bluff	Kern River	≈ 400- 900	(From Kern River Field) 600	551,500	7/80
III 4	"	Vedder	≈ 7,800-16,100	" 11,700-213,000	4,099,000	3/80
III 4	Kern Front	Santa Margarita	2,300	1,100		9/75
III 4	Kern River	Chanac	238- 925	374- 865	1,071,000	6/77
III 4	"	Santa Margarita	600- 2,600	475- 16,200	154,994,000	9/73
III 4	"	Vedder	7,800-16,200		33,204,000	
4	~~Lakeside~~	~~San Joaquin~~	~~21,500~~			
4	~~Los Lobos~~	~~Tulare~~	~~33,300*~~			
4	~~Midway Sunset~~	~~Alluvium~~	~~No water~~	~~3,600-25,700~~		7/59
IX 4	Mount Poso	Walker	2,800*	830- 1,440	22,632,000	9/75
III 4	Mountain View	Kern River	4,660*	1,200- 3,800	3,681,000	12/65
III 4	Pleito	Chanac & Kern River	7,900-11,800	12,800-30,800	889,000	8/74
4	~~Poso Creek~~	~~Vedder~~	~~12,500~~			
4	~~Rio Viejo~~	~~San Joaquin~~	~~21,000*~~			
4	~~Rosedale~~	~~Etchegoin~~	~~26,500 (Analysis from adjacent field)~~			
IV 4	Round Mountain	Olcese	2,700	1,337- 1,965	29,797,000	7/74
IV	"	Walker	1,930	1,600-2,100	203,319,000	8/72
4	~~Seventh Standard~~	~~Etchegoin~~	~~17,100-30,000 (NaCl only)~~			
III 4	Strand	Etchegoin	8,600 (NaCl only)	16,500-25,600 (NaCl only)	1,195,000	7/62
4	"	~~San Joaquin~~	~~33,400~~			
4	~~Ten Section~~	~~San Joaquin~~	~~12,900~~			
5	~~Burrel~~	~~Santa Margarita~~	~~35,000 (Analysis from Helm field)~~			
5	"	~~Tulare-Kern River~~	~~20,500 (Analysis from S.E. Burrel field)~~			
5	~~Southeast Burrel~~	~~Tulare-Kern River~~	~~20,500~~			
III 5	Coalinga	Santa Margarita	8,244	3,100- 3,500	(145,000,000	2/63
IV 5	"	Etchegoin-Jacalitos	2,650- 2,900	2,650-2,700	(	2/63
5	~~Gill Ranch Gas~~	~~Zilch~~	~~14,500~~			

"E" log calculation

	FIELD	FORMATION & ZONE	TDS OF ZONE WATER PRIOR TO INJECTION	TDS OF INJECTED WATER	VOLUME INJECTED (Barrels)	INJ STA
III 5	Guijarral Hills	Etchegoin-Jacalitos	9,400	20,500	931,000	4/6
~~5~~	~~Helm~~	~~Santa Margarita~~	~~35,900~~		~~(143,000,000~~	
III 5	"	Tulare-Kern River	5,100-23,900	11,600-43,400	(	12/5
~~5~~	~~Jacalitos~~	~~Etchegoin-Jacalitos~~	~~33,749~~	~~5,500 (Cl only)~~	~~180,000~~	10/7
~~5~~	~~Kettleman North Dome~~	~~San Joaquin-Etchegoin~~	~~10,000~~	~~23,800-31,200~~	~~48,608,000~~	8/6
~~5~~	~~Raisin City~~	~~Pliocene~~	~~12,800-34,000~~			
~~5~~	~~"~~	~~Santa Margarita~~	~~35,000 (Analysis from Helm field)~~			
III 5	Riverdale	Pliocene	4,788-16,200		(72,626,000	7/5
~~5~~	~~"~~	~~Santa Margarita~~	~~35,900 (Analysis from Helm field)~~		~~(~~	
~~5~~	~~San Joaquin~~	~~Pliocene~~	~~17,100~~			
	~~San Joaquin,Northwest~~	~~Basal McClure~~	~~90,000~~	~~18,500~~	~~Test well-no injection~~	
III	Turk Anticline	San Joaquin	3,700- 4,440	9,500- 9,800	466,000	11/7
IV 6	Bunker Gas	Undiff.	1,200	11,000	388,000	1/7
~~6~~	~~Grimes Gas~~	~~Kione~~	~~16,800~~			
~~6~~	~~Grimes, West, Gas~~	~~Kione~~	~~34,000*~~			
~~6~~	~~La Honda (South Area)~~	~~Vaqueros~~	~~41,000~~			
~~6~~	~~Lathrop Gas~~	~~Starkey~~	~~15,400*~~			
III 6	River Break Gas	Capay	6,900*	7,000	93,000	7/7
~~6~~	~~Roberts Island Gas~~	~~Undiff.~~	~~18,000*~~			
IV 6	Sutter Buttes Gas	Kione	2,500	4,600-23,000	644,000	7/7
III 6	Union Island Gas	Mokelumne River	5,000-6,000*	7,800	471,000	7/7
IV 6	Wild Goose	Undiff.	2,800-5,000*	21,400	823,000	11/6

* "E" log calculation

CRITERIA TO EXEMPT AQUIFERS

I. Not currently serving as a source of drinking water.

and II. It is mineral, hydrocarbon, or geothermal energy producing or bearing at commercial levels:

A. Declaration aquifer is not a current source of drinking water.

B. Mineral, hydrocarbon, or geothermal energy producing.

or III. TDS level is 3,000 to 10,000 Mg/L TDS and not <u>reasonably</u> expected to supply a public water system.

A. Declaration aquifer is not a current source of drinking water.

B. Depth (2X deepest drinking water well according to DWR).

C. Location

1. Surface distance to existing towns.

2. Ownership of land.

3. Alternate water source (surface and groundwater).

4. Unusual geology.

D. TDS level in formation fluid

E. Yield of water.

or IV. Less than 3,000 TDS. Aquifer situated at depth or location which makes recovery of water for drinking purposes economically or technolgically impractical.

A. Declaration aquifer is not a current source of drinking water.

B. TDS level in formation fluids.

C. Yield of water.

D. Depth (3X deepest well according to DWR).

E. Location

1. Surface distance to existing towns.

2. Ownership of land.

3. Alternative water sources (surface + gradient)

4. Unusual geology.

F. Economic analysis.

or V. So contaminated that it would be economically or technologically impractical to render that water fit for human consumption.

A. Declaration aquifer is not a current source of drinking water.

B. Startup date; volumes injected.

C. Formation fluid (initial, current)

D. Injected fluid characteristics.

E. Assess recoverability, treatment.

F. Economic analysis. (EPA has documents to indicate cost of treating water to raise it to drinking water standards.)