

**STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT
OIL CONSERVATION COMMISSION**

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**IN THE MATTER OF THE HEARING CALLED
BY THE OIL CONSERVATION COMMISSION FOR
THE PURPOSE OF CONSIDERING:**

**APPLICATION OF AGAVE ENERGY COMPANY
FOR AUTHORITY TO INJECT, LEA COUNTY,
NEW MEXICO.**

Case No. 14720

**KAISER-FRANCIS OIL COMPANY'S
PROPOSED FINDINGS AND CONCLUSIONS**

Kaiser-Francis Oil Company submits the following proposed findings and conclusions to the Oil Conservation Commission:

FINDINGS.

1. Agave Energy Company (Agave) requests approval to inject acid gas into its proposed Red Hills AGI Well No. 1 (the "injection well"), to be located 1600 feet from the south line and 150 feet from the east line (Unit I) of Section 13, Township 24 South, Range 33 East, N.M.P.M., Lea County, New Mexico.
2. Agave is currently constructing its Red Hills Gas Plant on a 79.69 acre tract in the SE/4 of Section 13. The natural gas processing facility will furnish to the injection well a gas stream comprised of 95% carbon dioxide and 5% hydrogen sulfide, which Agave plans to inject into the Delaware Cherry Canyon formation at approximate depths of 6200-6530 feet subsurface.
3. Kaiser-Francis Oil Company (Kaiser) is the operator of the South Bell Lake Unit, a nine section unit which lies immediately to the north of the injection well, including Section 12, Township 24 South, Range 33 East, N.M.P.M. and Sections 7 and 8, Township 24 South, Range 34 East, N.M.P.M.
4. The Delaware Cherry Canyon formation underlies the South Bell Lake Unit and is considered to be a continuous depositional feature with hydraulic communication between the injection well and South Bell Lake Unit wells in Sections 12, 7, and 8.
5. The injection plume will not be radial; rather the injectate will migrate toward the east and north based on (a) a thicker and higher reservoir quality to the east and north, (b) the reservoir trending north-northeast, and (c) the reservoir being updip to the north.

6. Injection will be into 5 separate sand packets totaling 177 feet of net pay. Due to the specific gravity of the injectate, it will tend to rise to the top of each sand packet, rather than spreading uniformly throughout each packet, thereby increasing the injection radius.

7. Injection of acid gas over 30 years will be approximately 37,500,000 barrels of fluid, much greater than volumes injected into normal salt water disposal wells. This increases the risk of the injection plume reaching the South Bell Lake Unit.

8. The gas plant is being built due to current and planned development in the immediate area. Virtually all of the development will be in formations deeper than the Delaware Cherry Canyon formation, including the Bone Spring and Wolfcamp formations.

9. The air quality permit for the gas plant does not require the injection well. Agave stated that it will vent carbon dioxide until it starts processing sour gas in the plant, which may take 1-2 years. Thus, the injection well is not being drilled to sequester carbon dioxide.

10. No economics were done by Agave on drilling the injection well versus installing an amine plant.

11. If the acid gas plume reaches offsetting acreage it will increase the cost of drilling new wells and it could damage existing wellbores.

12. There is no need to drill the injection well and put current and future producing wells in the area of the gas plant at risk.

13. Kaiser presented testimony that four wells which penetrate the Delaware Cherry Canyon formation in the area of review do not have sufficient cementing across the injection zone. Those wells, and a summary of their cementing information, are set forth on Exhibit A attached hereto.

14. Agave has not proven that the acid gas plume will not adversely affect existing and planned wells in the South Bell Lake Unit.

CONCLUSIONS.

1A. Alternative 1. The application of Agave Energy Company to inject acid gas into its proposed Red Hills AGI Well No. 1, to be located 150 feet FEL & 1600 feet FSL (Unit I) of Section 13, Township 24 South, Range 33 East, N.M.P.M., Lea County, New Mexico, is hereby denied.

1B. Alternative 2. The application of Agave Energy Company to inject acid gas into its proposed Red Hills AGI Well No. 1, to be located 150 feet FEL & 1600 feet FSL (Unit I) of Section 13, Township 24 South, Range 33 East, N.M.P.M., Lea County, New Mexico, is hereby approved, subject to the following conditions:

- (a) The approval granted herein shall automatically terminate 30 years from the date of this order.
- (b) Before commencing injection Agave shall re-enter the Sims Well No. 1, Government L Com. Well No. 1, Government L Com. Well No. 2, and Smith Fed. Well No. 1, and squeeze cement through the Delaware Cherry Canyon formation.
- (c) Agave shall conduct a mechanical integrity test on the injection well before commencing injection. Agave shall notify the Division and Kaiser of the date and time of the test.
- (d) Agave shall provide Kaiser with daily drilling reports, completion reports, pressure tests, DSTs, core data, and logs on the injection well when it is drilled, and if it is re-entered or re-worked.
- (e) Agave shall conduct annual shut-in build-up pressure tests, and report them to the Division.

Respectfully submitted,



James Bruce
Post Office Box 1056
Santa Fe, New Mexico 87504
(505) 982-2043

Attorney for Kaiser-Francis Oil Company

CERTIFICATE OF SERVICE

I hereby certify that a copy of the foregoing pleading was served upon the following counsel of record this 11th day of January, 2012 by facsimile transmission and United States Mail:

Gary W. Larson
Hinkle Law Firm
P.O. Box 2068
Santa Fe, New Mexico 87504
fax: (505) 982-8623



James Bruce

Application of Agave Energy Company for Authority to Inject, Lea County, New Mexico
 Red Hills AGI Well No. 1, 150' FEL & 1,600' FSL of Section 13-24S-33E
 Case No. 14270

Proposed zone of Injection 6,200' to 6,530' in the Delaware Cherry Canyon formation (CC)

Kaiser-Francis Oil Company Opposition to the application. Note that only one well, the Madera Ridge 24 001 has cement across the Delaware Cherry Canyon zone of acid gas injection.

Table B-1 from the C-108 filed by Agave***Modified to reflect calculated Top of Cement (TOC) across Delaware Cherry Canyon (CC) for offset wells within 1 Mile Area of Review

API Number	Operator	Plug	Spud	PBTD	ID	Well Name	Sec.Twp-Rge	Type	Status	Dist	Zone	Bit size for casing		Casing Size across CC		Casing Depth		Sxs of cement		KFOC		Reported TOC		CC cement coverage		
												NDE	NDE	NDE	NDE	NDE	NDE	TOC	TOC	TOC	TOC	TOC	TOC	TOC	TOC	TOC
3002508371	Brad Bennett	3/8/1961	2/24/1961		5425	J L Holland etal 001	13-24S-33E	G	D&A	0.34	Bell Canyon	12.25	9.625	12479	850	8584-9979	none	none	none	none	none	none	none	none	none	none
3002526958	BOPCO, LP	12/26/2007	4/13/1981	14916	15007	Sims 001	13-24S-33E	G	plugged	0.35	Morrow	12.25	9.625	12479	850	8584-9979	none	none	none	none	none	none	none	none	none	none
3002526369	EOG Resources Inc	10/8/1990	9/15/1979	13725	14689	Government L Com 002	18-24S-34E	G	plugged	0.38	Atoka	9.875	7.625	12800	630	8662-10100	none	none	none	none	none	none	none	none	none	none
3002525604	EOG Resources Inc	12/30/2004	10/3/1977	14590	17625	Government L Com 001	18-24S-34E	G	plugged	0.72	Morrow	12.25	10.75	13000	500	9315-10555	9900	9900	9900	9900	9900	9900	9900	9900	9900	9900
3002527491	Southland Royalty Co	8/10/1986	10/19/1981	15018	15120	Smith Federal 001	19-24S-34E	O	D&A	0.79	Morrow	12.25	9.625	12400	560	9900-10755	none	none	none	none	none	none	none	none	none	none
3002529008	EOG Resources Inc		11/7/1984	12894	15600	Madera Ridge 24 001	24-24S-33E	O	Active	0.99	Bone Springs	12.25	9.625	13250	3100	sfc-4150	5400	5400	5400	5400	5400	5400	5400	5400	5400	covered

Comments:

The only well with cement behind-casing string across the Delaware Cherry Canyon is the Madera Ridge 24 001 wellbore.

The Smith Federal 001 well in Section 19 was perforated during P&A operations at 8,985' and 6,900' and both times 100 sxs of cement were squeezed behind the 9.635" casing. The resulting TOC for the last squeeze in a perfect 12.25" hole without any hole washout is calculated to be 6,533' which is below the zone of injection at the AGI well.

The greatest risk of injected acid gas communicating to the surface is at the Sims 001 well and its virtual twin the J L Holland etal 001 well. Since there is no cement across the 9.625" casing over the Delaware Cherry Canyon injection zone at the Sims 001 well, it is certainly possible that acid gas injection will migrate to the base of the Castile and communicate to the J L Holland wellbore some 140' to the east which only has three small plugs and "heavy mud" protecting water sands.

NDE stands for not deep enough.

KFOC minimum TOC based on 1.15 cuft per sx for high strength cement. Maximum TOC reflects yield of 1.88 cuft per sx for all cement over 100 sxs, and the last 100 sxs being high strength @ 1.15 cuft per sx.

Reported TOC reflects information submitted by the operator on a sundry notice.

EXHIBIT A