



**Amoco Production Company (USA)**

Post Office Box 68  
Hobbs, New Mexico 88240

S. J. Okerson  
District Superintendent

August 4, 1983

**AUG 04 1983**

File: SJO-1437-WF

**O. C. D.**  
**ARTESIA, OFFICE**

Re: State "ET" Com No. 1

Mr. Les Clements  
New Mexico Oil Conservation Division  
P. O. Drawer DD  
Artesia, NM 88210

Dear Mr. Clements:

Three saltwater lakes located in Chaves and Eddy County, New Mexico are being considered as possible emergency brine water disposal sites for Amoco's State "ET" Com No. 1, located in Section 36, T-15-S, R-36-E.

These disposal sites are being considered based on massive saltwater flows experienced on Depco's Mesa State Com No. 1 located in Section 31, T-15-S, R-28-E and Mesa Petroleum's Mesa State Com No. 2 located in Section 32, T-15-S, R-28-E. Brine water flows were encountered while drilling between 1100'-1200' with flows estimated in excess of 4000 barrels per hour. Large reservoirs were constructed to contain these flows, disturbing large surface areas and resulting in exorbitant costs to the operators due to trucking and disposal of the brine water.

As per your request of August 2, 1983, these lakes were inspected for possible fresh water wells or springs which may be contaminated by an excessive volume of brine water being discharged into the lakes, natural surface fissures or fractures which would allow brine water to seep rapidly into subsurface strata or for any indication of possible pollution which might arise from utilizing one of these three lakes for brine water disposal.

The inspection, conducted by Malcolm Coleman, Leon Thomason, and Paul Lance of the Hobbs office, found no indications of surface springs in the area above the existing water level in the lake. All existing fresh water wells in proximity to the lakes are more than 50 feet higher in elevation than the lake, which would preclude any well contamination.

Due to a natural water level existing in all three lakes, it is assumed that the lake beds are consolidated to the extent that no abnormal amounts of brine water would seep into lower formations and/or the fresh water table from the effects of brine water disposal.

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Since one of these lakes would be utilized only in an emergency situation if referenced saltwater flow is encountered, estimated volume of disposed brine is 300,000 barrels. This amount would raise the water level in the smallest lake by only 7 inches (Reference Attachment 1).

A water sample was also taken from Lake Nakee Ishee (Reference attached water analysis) to determine the compatibility of the disposed water to that naturally occurring in the lakes. Based on the water analysis and a mud service company's report of a saturated brine water flow (185,000± PPM Chlorides count), we feel no pollution would be realized by entering brine water into the existing saltwater in the lake.

Amoco proposal is to run 3" plastic lines (number to be determined by severity of flow) from the "ET" location to one of the referenced lakes via existing roads (reference Map attachment) and to discharge the brine water into the lake. Trucks will be utilized if severity of flow dictates.

Lake Nakee Ishee is recommended due to it being the largest of the three lakes (less impact of the brine water on current water level) and the ease of ingress and egress to the lake by existing roads. Amoco has already received permission from the surface owner/lessee of the lakes for permission to dispose of said brine water in the event the water flow is encountered.

In summary, Amoco Production Company (USA) requests NMOCD approval to utilize Lake Nakee Ishee for emergency saltwater disposal in drilling its State "ET" Com No. 1, as we feel this would be the safest and most prudent method for disposing such large volumes of brine water.

Any questions pertaining to this subject should be directed to Malcolm Coleman in the Hobbs office, (505)393-1781.

Yours very truly,

*M. J. McKee HCL*

Attachments

APPROVE

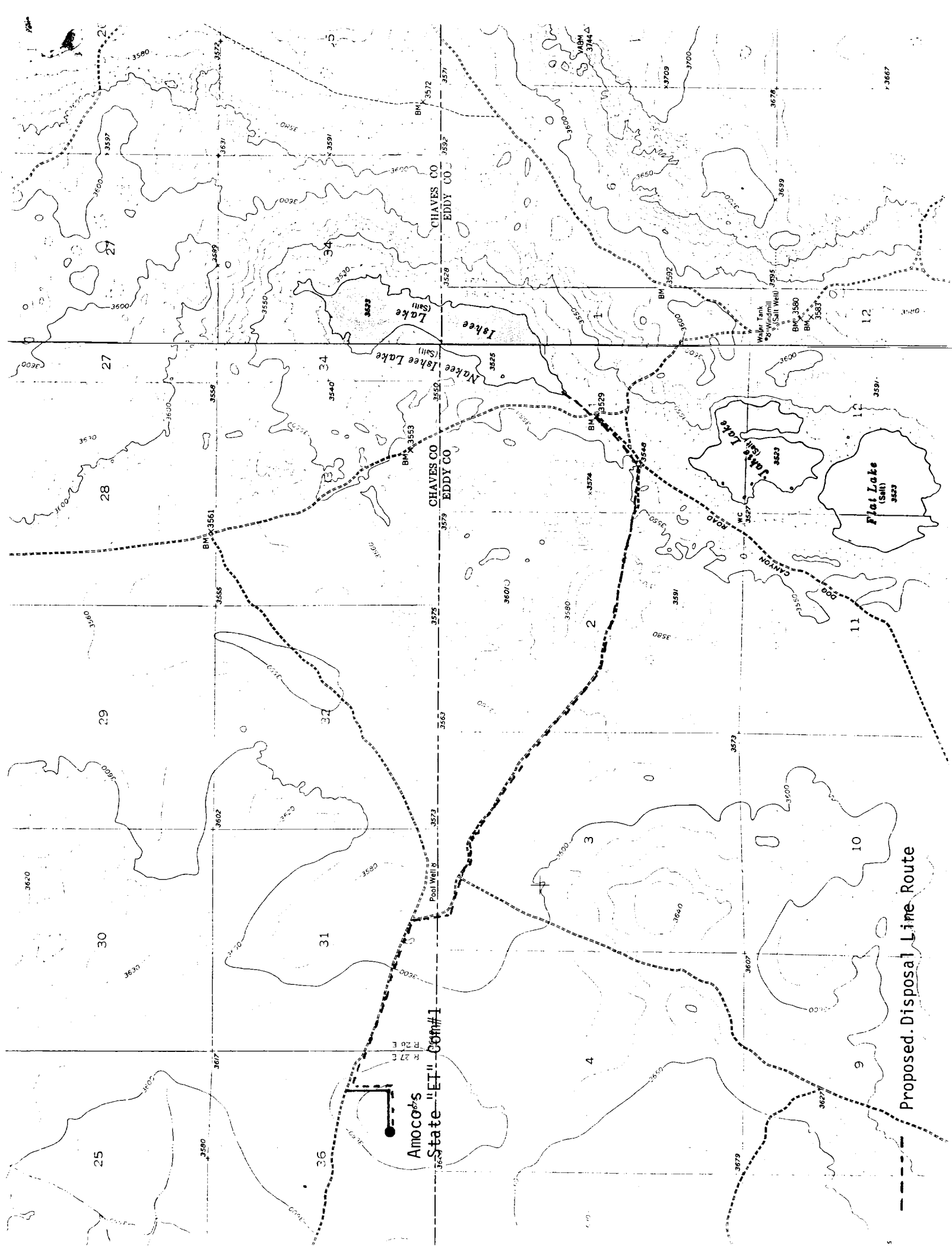
*Leslie H. Clement*

8/5/83

DISAPPROVE

ATTACHMENT 1

<u>LAKE</u>	<u>LOCATION</u>	<u>APPROXIAMATE SIZE (ACRES)</u>
Nakee Ishee	Sec. 34, T-15-S, R-28-E Sec. 1, T-16-S, <u>R-38-E</u>	106
Jahie	Secs. 1 & 12, T-16-S, R-28-E	69
Flat	Secs. 11 & 12, T-16-S, R-28-E	80



Proposed Disposal Line Route

Amoco's  
State "EI" Cont #1

Pool Well #1

Water Tank

CANYON ROAD

UNICHEM INTERNATIONAL

601 NORTH LEECH

P O BOX 1499

HOBBS, NEW MEXICO 88240

COMPANY : AMOCO  
DATE : 8-4-83  
FIELD, LEASE & WELL : NAKKE ISHEE LAKE  
SAMPLING POINT :  
DATE SAMPLED : 8-3-83

SPECIFIC GRAVITY = 1.187  
TOTAL DISSOLVED SOLIDS = 275912  
PH = 7.32

ME/L

MC/L

CATIONS

CALCIUM	(CA)+2	34	681
MAGNESIUM	(MG)+2	506	6150
SODIUM	(NA), CALC.	4176	96023

ANIONS

BICARBONATE	(HCO3)-1	5	305
CARBONATE	(CO3)-2	0	0
HYDROXIDE	(OH)-1	0	0
SULFATE	(SO4)-2	453	21785
CHLORIDES	(CL)-1	4258	150965

DISSOLVED GASES

CARBON DIOXIDE	(CO2)	NOT RUN
HYDROGEN SULFIDE	(H2S)	NOT RUN
OXYGEN	(O2)	NOT RUN

IRON(TOTAL)	(FE)		.5
BARIUM	(BA)+2	NOT RUN	
MANGANESE	(MN)	NOT RUN	

SCALING INDEX

TEMP

	30C
	86F
CARBONATE INDEX	-1.5
CALCIUM CARBONATE SCALING	UNLIKELY
SULFATE INDEX	13.3
CALCIUM SULFATE SCALING	LIKELY