

HALLIBURTON DIVISION LABORATORY

HALLIBURTON SERVICES

MIDLAND DIVISION

HOBBS, NEW MEXICO 88240

LABORATORY WATER ANALYSIS

New Mexico "30" Water Source Well

No. _____

To SageDate 2-4-88

This report is the property of Halliburton Company and neither it nor any part thereof nor a copy thereof is to be published or disclosed without first securing the express written approval of laboratory management; it may however, be used in the course of regular business operations by any person or concern and employees thereof receiving such report from Halliburton Company.

Submitted by _____ Date Rec. _____

Well No. _____ Depth _____ Formation _____

County _____ Field _____ Source _____

	NM St #3	Fresh	
Resistivity	.063 @ 70°	4.75 @ 70°	
Specific Gravity	1.105	1.000	
pH	6.2	7.4	
Calcium (Ca)	6650	500	*MPL
Magnesium (Mg)	690	Nil	
Chlorides (Cl)	89,000	400	
Sulfates (SO ₄)	2424	50	
Bicarbonates (HCO ₃)	216	204	
Soluble Iron (Fe)	34	Nil	

BEFORE EXAMINER SIGNATURE

Oil Conservation Director

Exhibit I
Case No. 9825+9826

Remarks:

*Milligrams per liter

Respectfully submitted,

Analyst: _____

HALLIBURTON COMPANY

cc:

By _____

CHEMIST

NOTICE

THIS REPORT IS LIMITED TO THE DESCRIBED SAMPLE TESTED. ANY USER OF THIS REPORT AGREES THAT HALLIBURTON SHALL NOT BE LIABLE FOR ANY LOSS OR DAMAGE, WHETHER IT BE TO ACT OR OMISSION, RESULTING FROM SUCH REPORT OR ITS USE.

GENERAL SCALE PROGRAM
MIXING OF TWO WATERS

SAGE
NM ST #3

TEMPERATURE(F)= 100.

N. Mexico State #3

Fresh Water Well

TYPE OF IONS	CONCENTRATION(MG/L)	
	WATER #1	WATER #2
SODIUM	51196.	0.
CALCIUM	6650.	500.
MAGNESIUM	69.	0.
IRON(FERROUS)	16.	0.
IRON(FERRIC)	16.	0.
CHLORIDE	89000.	400.
BICARBONATE	216.	204.
CARBONATE	0.	0.
SULFATE	2424.	50.
TOTAL DISSOLVED SOLIDS	149587.	1154.
PH	6.2	7.4
SPECIFIC GRAVITY	1.105	1.000

TYPE OF SCALE	AMT FORMED (GMS/L)	AMT SOLUBLE (GMS/L)	SCALE INDEX	SCALING TENDENCY
100.0 % WATER #1 0.0 % WATER #2				
CALCIUM SULFATE	4.345	3.295	1.049	POSITIVE = Yes
CALCIUM CARBONATE	-----	-----	0.169	POSITIVE "
90.0 % WATER #1 10.0 % WATER #2				
CALCIUM SULFATE	3.919	3.484	0.435	POSITIVE "
CALCIUM CARBONATE	-----	-----	0.067	POSITIVE "
80.0 % WATER #1 20.0 % WATER #2				
CALCIUM SULFATE	3.494	3.653	-0.159	NEGATIVE No
CALCIUM CARBONATE	-----	-----	-0.007	NEGATIVE "
70.0 % WATER #1 30.0 % WATER #2				
CALCIUM SULFATE	3.068	3.793	-0.725	NEGATIVE "
CALCIUM CARBONATE	-----	-----	-0.075	NEGATIVE "

SAGE
NM ST #3

TYPE OF SCALE	AMT FORMED (GMS/L)	AMT SOLUBLE (GMS/L)	SCALE INDEX	SCALING TENDENCY
60.0 % WATER #1	40.0 % WATER #2			
CALCIUM SULFATE	2.643	3.896	-1.254	NEGATIVE
CALCIUM CARBONATE	-----	-----	-0.121	NEGATIVE
50.0 % WATER #1	50.0 % WATER #2			
CALCIUM SULFATE	2.217	3.940	-1.731	NEGATIVE
CALCIUM CARBONATE	-----	-----	-0.146	NEGATIVE
40.0 % WATER #1	60.0 % WATER #2			
CALCIUM SULFATE	1.792	3.928	-2.136	NEGATIVE
CALCIUM CARBONATE	-----	-----	-0.137	NEGATIVE
30.0 % WATER #1	70.0 % WATER #2			
CALCIUM SULFATE	1.366	3.813	-2.447	NEGATIVE
CALCIUM CARBONATE	-----	-----	-0.083	NEGATIVE
20.0 % WATER #1	80.0 % WATER #2			
CALCIUM SULFATE	0.941	3.532	-2.592	NEGATIVE
CALCIUM CARBONATE	-----	-----	0.082	POSITIVE
10.0 % WATER #1	90.0 % WATER #2			
CALCIUM SULFATE	0.515	2.961	-2.446	NEGATIVE
CALCIUM CARBONATE	-----	-----	0.438	POSITIVE
0.0 % WATER #1	100.0 % WATER #2			
CALCIUM SULFATE	0.090	1.581	-1.492	NEGATIVE
CALCIUM CARBONATE	-----	-----	1.187	POSITIVE

SCALE PROGRAM FOR WATER

SAGE
NM ST #3
LEA
NEW MEXICO

ION	CONC. (MG/L)		
SODIUM	50004.		
POTASSIUM	0.		
CALCIUM	6650.		
MAGNESIUM	690.		
IRON	N.D.	PH	6.20
CHLORIDE	89000.	SPECIFIC GRAVITY	1.1050
BICARBONATE	216.	RESISTIVITY	0.06
CARBONATE	0.	IONIC STRENGTH	2.7841
SULFATE	2424.	TDS	148984.

TYPE OF SCALE	SOLUBILITY (PTB)	SCALE INDEX	SCALE (PTB)	SCALING TENDENCY
---------------	---------------------	----------------	----------------	------------------

TEMPERATURE(F)= 80.0

CALCIUM SULFATE	1157.	0.13	364.	STRONG
CALCIUM CARBONATE	158.	-0.11	-34.	NONE

TEMPERATURE(F)= 93.3

CALCIUM SULFATE	1158.	0.13	363.	STRONG
CALCIUM CARBONATE	110.	0.05	14.	SLIGHT

TEMPERATURE(F)= 106.7

CALCIUM SULFATE	1149.	0.14	372.	STRONG
CALCIUM CARBONATE	76.	0.21	48.	SLIGHT

TEMPERATURE(F)= 120.0

CALCIUM SULFATE	1137.	0.14	384.	STRONG
CALCIUM CARBONATE	50.	0.40	74.	SLIGHT

NOTE: PTB = POUNDS PER THOUSAND BARRELS