OIL CONSERVATION COMMISSION
Artesia DISTRICT

OIL CONSERVATION COMMISSION
BOX 2088
SANTA FE, NEW MEXICO

DATE Dec. 19, 1980

RE: Proposed MC _____
Proposed DHC _____
Proposed NSL _____
Proposed SWD 2
Proposed WFX _____
Proposed PMX _____

Gentlemen:

I have examined the application dated Dec. 15, 1980

for the Cities Service Co. Federal E #3 H-28-19-S
Operator Lease and Well No. Unit, S-T-R

and my recommendations are as follows:

Approve. Attached copies of water studies show that waters are compatible and unfit.

Yours very truly,

Frank J. Lang

Form C-108
Revised 1-1-65

NEW MEXICO OIL CONSERVATION COMMISSION

APPLICATION TO DISPOSE OF SALT WATER BY INJECTION INTO A POROUS FORMATION

OPERATOR	ADDRESS
Cities Service Company	Box 1919, Midland, TX 79702

LEASE NAME	WELL NO.	FIELD	COUNTY
FEDERAL "E"	3 SWD	Undesignated	McKinley

LOCATION

UNIT LETTER A ; WELL IS LOCATED 330 FEET FROM THE North LINE AND 330 FEET FROM THE East LINE, SECTION 28 TOWNSHIP 19N RANGE 5W NMPM.

DEC - 2 1980

SANTA FE

CASING AND TUBING DATA

NAME OF STRING	SIZE	SETTING DEPTH	SACKS CEMENT	TOP OF CEMENT	TOP DETERMINED BY
SURFACE CASING	9-5/8"	200'	110	Surface	Circulated
INTERMEDIATE					
LONG STRING	7"	3100'	700	Surface	Circulated
TUBING	3½"	2900'	NAME, MODEL AND DEPTH OF TUBING PACKER: Baker Lok-Set @ 2850'		

NAME OF PROPOSED INJECTION FORMATION	TOP OF FORMATION	BOTTOM OF FORMATION
Gallup Sandstone	2900'	3100'

IS INJECTION THROUGH TUBING, CASING, OR ANNULUS?	PERFORATIONS OR OPEN HOLE?	PROPOSED INTERVAL(S) OF INJECTION
Tubing	Perforations	2900-3100'

IS THIS A NEW WELL DRILLED FOR DISPOSAL?	IF ANSWER IS NO, FOR WHAT PURPOSE WAS WELL ORIGINALLY DRILLED?	HAS WELL EVER BEEN PERFORATED IN ANY ZONE OTHER THAN THE PROPOSED INJECTION ZONE?
Yes		No

LIST ALL SUCH PERFORATED INTERVALS AND SACKS OF CEMENT USED TO SEAL OFF OR SQUEEZE EACH

NONE

DEPTH OF BOTTOM OF DEEPEST FRESH WATER ZONE IN THIS AREA	DEPTH OF BOTTOM OF NEXT HIGHER OIL OR GAS ZONE IN THIS AREA	DEPTH OF TOP OF NEXT LOWER OIL OR GAS ZONE IN THIS AREA
150' Est.	NONE	5100'

ANTICIPATED DAILY INJECTION VOLUME (BBLS.) MINIMUM	MAXIMUM	OPEN OR CLOSED TYPE SYSTEM	IS INJECTION TO BE BY GRAVITY OR PRESSURE?	APPROX. PRESSURE (PSI)
500	7500	Closed	Pressure	750

ANSWER YES OR NO WHETHER THE FOLLOWING WATERS ARE MINERALIZED TO SUCH A DEGREE AS TO BE UNFIT FOR DOMESTIC, STOCK, IRRIGATION, OR OTHER GENERAL USE —	WATER TO BE DISPOSED OF	NATURAL WATER IN DISPOSAL ZONE	ARE WATER ANALYSES ATTACHED?
	No	No	Yes

NAME AND ADDRESS OF SURFACE OWNER (OR LESSEE, IF STATE OR FEDERAL LAND)

Federal Land - U.S.G.S. in Farmington, New Mexico

LIST NAMES AND ADDRESSES OF ALL OPERATORS WITHIN ONE-HALF (½) MILE OF THIS INJECTION WELL

Cities Service Company - Box 1919, Midland, TX

RECEIVED
DEC 15 1980
OIL CON. COM.
DIST. 3

HAVE COPIES OF THIS APPLICATION BEEN SENT TO EACH OF THE FOLLOWING? SURFACE OWNER	EACH OPERATOR WITHIN ONE-HALF MILE OF THIS WELL	THE NEW MEXICO STATE ENGINEER
No	N/A	No

ARE THE FOLLOWING ITEMS ATTACHED TO THIS APPLICATION (SEE RULE 701-B) PLAT OF AREA	ELECTRICAL LOG	DIAGRAMMATIC SKETCH OF WELL
Yes	Not Drilled	Yes

I hereby certify that the information above is true and complete to the best of my knowledge and belief.

E. Mulder — Region Operations Manager — 12/10/80

(Signature) (Title) (Date)

NOTE: Should waivers from the State Engineer, the surface owner, and all operators within one-half mile of the proposed injection well. not accompany this application, the New Mexico Oil Conservation Commission will hold the application for a period of 15 days from the date of receipt by the Commission's Santa Fe office. If at the end of the 15-day waiting period no protest has been received by the Santa Fe office, the application will be processed. If a protest is received, the application will be set for hearing, if the applicant so requests. SEE RULE 701.

P. O. BOX 1468
MONAHANS, TEXAS 79756
PHONE 943-3234 OR 563-1040

Martin Water Laboratories, Inc

709 W. INDIANA
MIDLAND, TEXAS 79701
PHONE 683-4521

RESULT OF WATER ANALYSES

LABORATORY NO. 68044

TO: Mr. Alex Innes
P.O. Box 1919, Midland, Texas

SAMPLE RECEIVED 6-4-80

RESULTS REPORTED 6-6-80

COMPANY Cities Service Company LEASE Federal "E" #1

FIELD OR POOL

SECTION BLOCK SURVEY COUNTY McKinley STATE New Mexico

SOURCE OF SAMPLE AND DATE TAKEN:

NO. 1 Recovered water - sample chamber, 6-4-80 (ENTRADA FORMATION)

NO. 2

NO. 3

NO. 4

REMARKS:

CHEMICAL AND PHYSICAL PROPERTIES

	NO. 1	NO. 2	NO. 3	NO. 4
Specific Gravity at 60° F.	1.0062			
pH When Sampled				
pH When Received	7.2			
Bicarbonate as HCO_3	708			
Supersaturation as $CaCO_3$				
Undersaturation as $CaCO_3$				
Total Hardness as $CaCO_3$	90			
Calcium as Ca	29			
Magnesium as Mg	7			
Sodium and/or Potassium	1,346			
Sulfate as SO_4	1,763			
Chloride as Cl	426			
Iron as Fe	83.3			
Barium as Ba				
Turbidity, Electric				
Color as Pt				
Total Solids, Calculated	4,276			
Temperature °F.				
Carbon Dioxide, Calculated				
Dissolved Oxygen, Winkler				
Hydrogen Sulfide	0.0			
Resistivity, ohms/m at 77° F.	1.90			
Suspended Oil				
Filtrable Solids as mg/l				
Volume Filtered, ml				

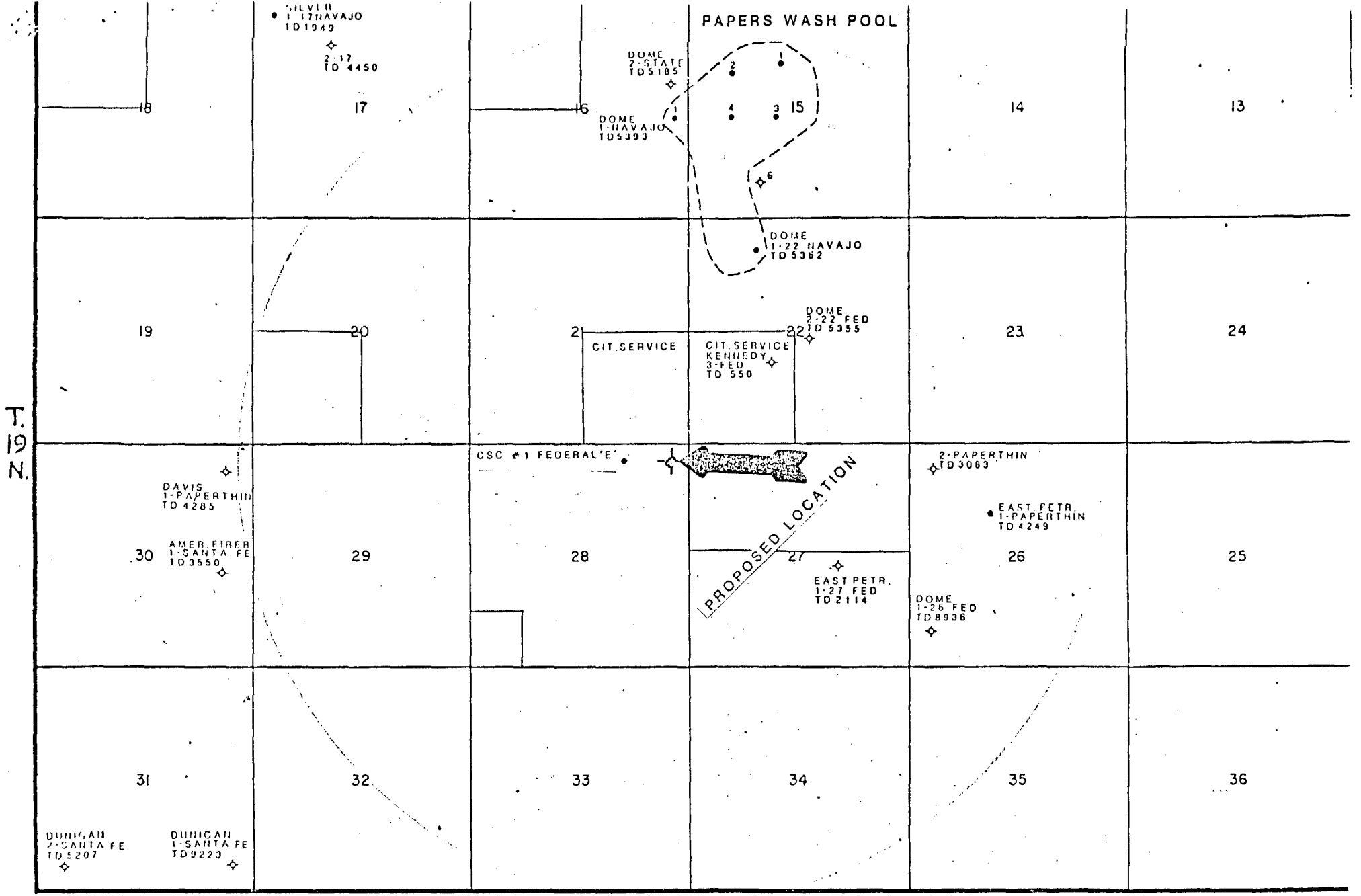
Results Reported As Milligrams Per Liter

Additional Determinations And Remarks Please contact us if we can be of any assistance in interpretation of the above results.

Form No. 3

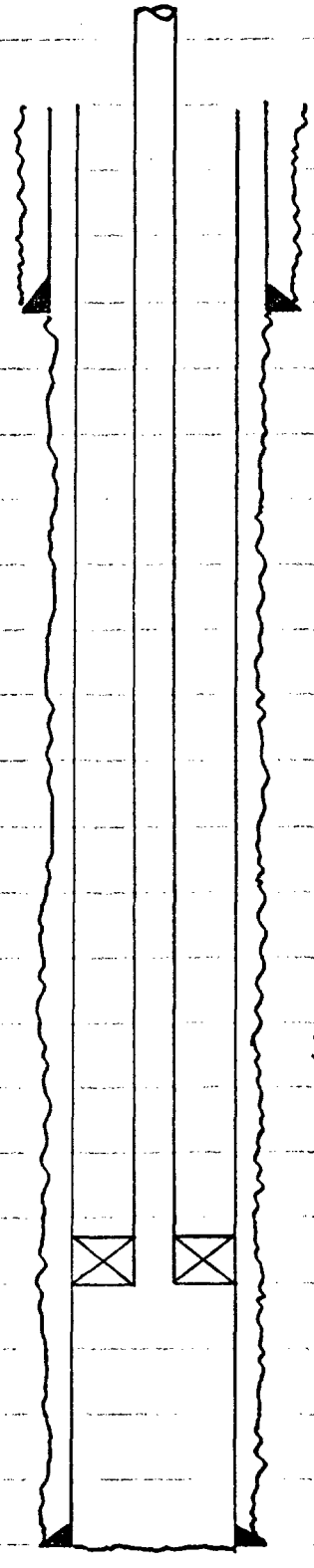
By

Waylan C. Martin, M. A.



Cities Service Company's
FEDERAL "E" No. 3 SWD
330' FNL & 330' FEL
Section 28-19N-5W
McKinley County, New Mexico
Lease No. NM-6999

CITIES SERVICE COMPANY
FEDERAL E #3 SWD
330' FNL AND 330' FEL
SEC 28 - T19N - R5W
McKINLEY COUNTY, NEW MEXICO



9 5/8" 32.3# H-40 @ 200'
CEMENT CIRC.

3 1/2" 9.3# J55 EUE TUBING @ 2850
w/BAKER LOCK SET PKR. @ 2850'

GALLUP S.S. PERF'S 2900'-3100'

7" 20# K55 @ 3100'

TD 3100'

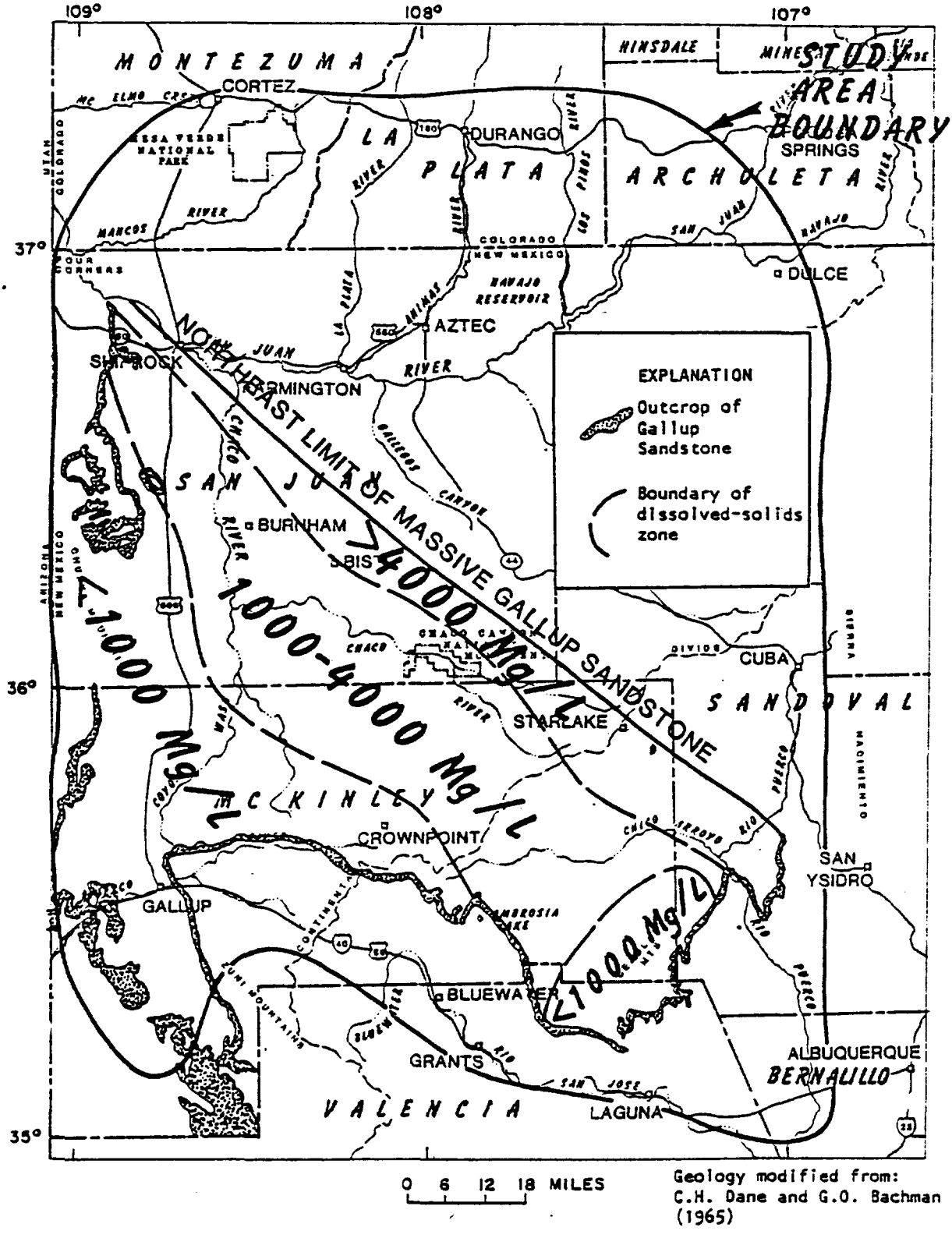


Figure 7.--Dissolved-solids concentration in the Gallup Sandstone of the Mesaverde Group.

This is from a paper by Lyford and others that is presently in colleague review and will eventually be printed in New Mexico Bur of Mines "Hydrologic Report 6"

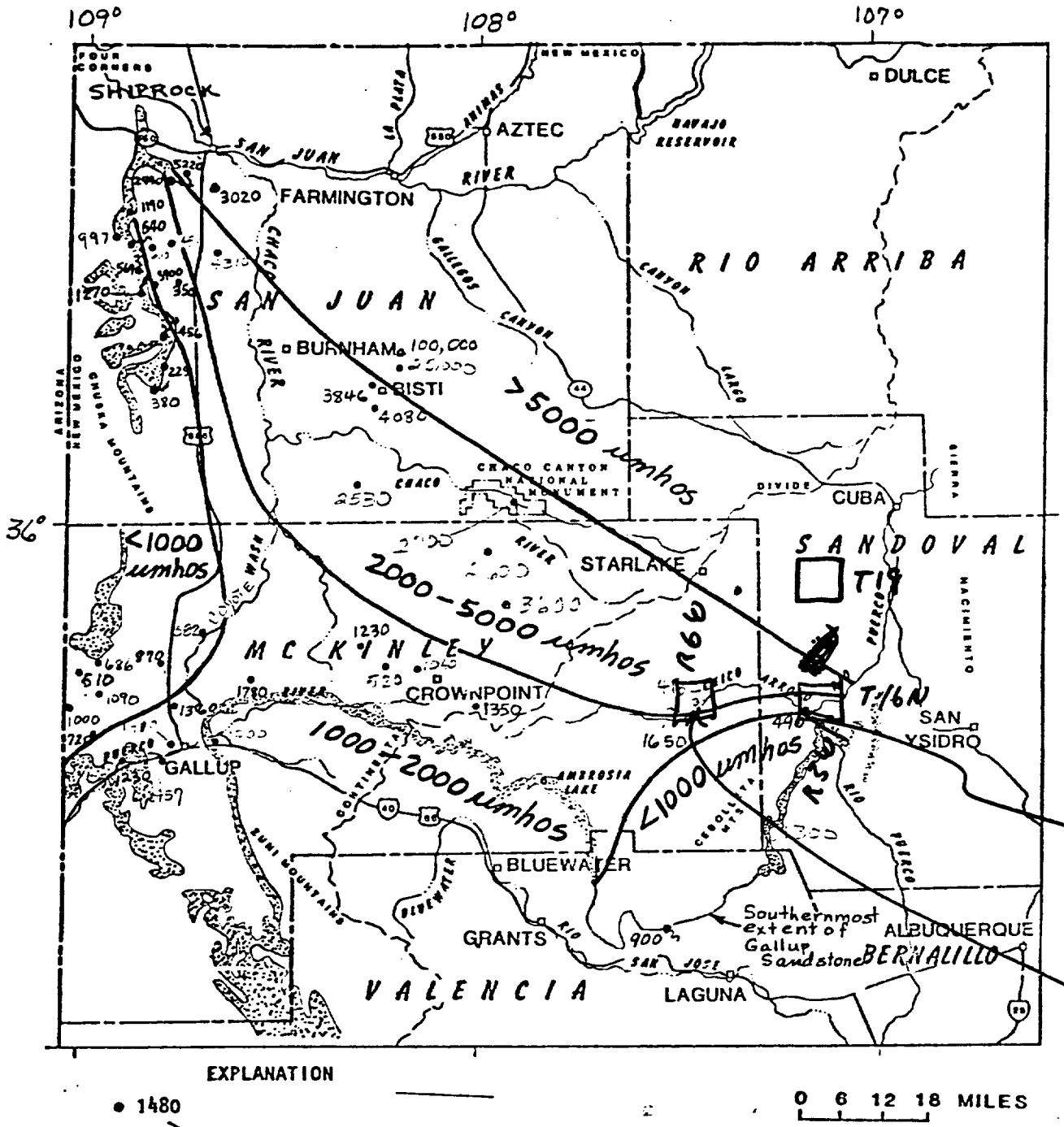


Figure 19.--Specific conductance of water from wells and springs in the Gallup Sandstone

CITIES SERVICE COMPANY
ENERGY RESOURCES GROUP

Box 1919
Midland, Texas 79702
(915) 685-5600

November 5, 1980

Energy & Minerals Dept.
Oil Conservation Div.
1000 Rio Brazos Road
Aztec, NM 87410

Attn: Mr. Chavez

Re: Information regarding
Application for Permit to
Drill Federal "E" No. 3 SWD,
McKinley County, New Mexico

Gentlemen:

In regard to our phone conversation concerning information for Permit to Drill the above captioned well please find attached a list and map of wells within a two mile radius of this proposed well and a water sample report of water from our Federal "E" Well No. 1, located in Sec 28-T19N-R5W of which we plan to dispose its produced water into our proposed disposal well.

Also, please be advised of our understanding that Dome Petroleum is disposing its produced Entrada water into the Gallup Sandstone of their Navajo "15" Well No. 6, located in Sec 15-T19N-R5W. This is the same formation of which we plan to dispose into in our proposed disposal well.

Very truly yours,

E. Y. Wilder
Region Operations Manager
Southwest Region
E & P Division

EYW:JME:sl

cc/attachments United States Dept. of the Interior
Geological Survey
Box 959
Farmington, NM 87401

WELLS WITHIN A 2 MILE RADIUS OF THE PROPOSED SWD WELL

OPERATOR	WELL NAME & NO.	LOCATION	PRODUCING FORMATION & INTERVAL
DOME PETROLEUM	FEDERAL 15 #1	F-Sec. 15-T19n-R5W	ENTRADA (5160-5169)
DOME PETROLEUM	FEDERAL 15 #2	E-Sec. 15-T19N-R5W	ENTRADA (5184-5192)
DOME PETROLEUM	NAVAJO 15 #3	K-Sec. 15-T19N-R5W	ENTRADA (5140-5148)
DOME PETROLEUM	NAVAJO 15 #4	L-Sec. 15-T19N-R5W	ENTRADA (5200-5207)
DOME PETROLEUM	NAVAJO 15 #6	N-Sec. 15-T19N-R5W	T.D. 5396 P&A
DOME PETROLEUM	NAVAJO 16 #1	I-Sec. 16-T19N-R5W	ENTRADA (5185-5190)
DOME PETROLEUM	STATE 2 #2	H-Sec. 16-T19N-R5W	T.D. 5383 P&A
DOME PETROLEUM	NAVAJO 22-A #1	C-Sec. 22-T19N-R5W	ENTRADA (5136-5143)
DOME PETROLEUM	NAVAJO 22-A #2	J-Sec. 22-T19N-R5W	T.D. 5355 P&A
CLAUDE C. KENNEDY	FEDERAL 22-A #3	K-Sec. 22-T19N-R5W	T.D. 550 P&A
EASTERN PETROLEUM	PAPERTHIN #1	F-Sec. 26-T19N-R5W	MANCOS (2892-2960)
SCHWETZ ET AL	PAPERTHIN #2	D-Sec. 26-T19N-R5W	T.D. 3083 P&A
DOME PETROLEUM	FEDERAL 26 #1	M-Sec. 26-T19N-R5W	T.D. 8936 P&A
EASTERN PETROLEUM	FEDERAL #1-27	J-Sec. 27-T19N-R5W	T.D. 2114 P&A
CITIES SERVICE CO.	FEDERAL E #1	B-Sec. 28-T19N-R5W	TODILTO (5168-5170) ENTRADA (5171-5173)