

EXHIBIT 3
Proposed Wtr.
Inj. Well

SIMULTANEOUS
**COMPENSATED NEUTRON-
FORMATION DENSITY**

Case 6161

COUNTY LEA
FIELD LEONARD
LOCATION LEONARD FEDERAL #6
WELL LEONARD FEDERAL #6
COMPANY TENNECO OIL CO.

COMPANY TENNECO OIL COMPANY
WELL LEONARD FEDERAL #6
FIELD LEONARD
COUNTY LEA STATE NEW MEXICO

LOCATION 560' FSL & 1980' FEL
API SERIAL NO. SEC. TWP. RANGE
 11 20-S 37-E

Other Services:
DLL
Elev.: K.B. 3012
D.F.
G.L. 3003

Permanent Datum: G.L.; Elev.: 3003
Log Measured From K.B., 9 Ft. Above Perm. Datum
Drilling Measured From K.B.

Date	7-25-77			
Run No.	ONE			
Depth-Driller	3600			
Depth-Logger	3606			
Btm. Log Interval	3605			
Top Log Interval	1600			
Casing-Driller	8 5/8 @ 500	@	@	@
Casing-Logger	510			
Bit Size	7 7/8			
Type Fluid in Hole	ZEOGEL			
Dens.	10.1	36		
Visc.				
pH	7	10 ml	ml	ml
Fluid Loss				
Source of Sample	CIRC			
Rm @ Meas. Temp.	.036 @ 112°F	@ °F	@ °F	@ °F
Rmf @ Meas. Temp.	.041 @ 83°F	.044 @ 80°F	@ °F	@ °F
Rmc @ Meas. Temp.	.027 @ 112°F	@ °F	@ °F	@ °F
Source: Rmf	M	C		
Rmc				
Rm @ BHT	.041 @ 99°F	@ °F	@ °F	@ °F
TIME	Circulation Stopped	1500		
	Logger on Bottom	2330		
Max. Rec. Temp.	99 °F	°F	°F	°F
Equip.	Location	7646 HOBBS		
Recorded By	BOROSS			
Witnessed By Mr.	SCHRECK, BRAZIE			

The well name, location and borehole reference data were furnished by the customer. FOLD HERE

EXHIBIT 3
Proposed Wtr.
Inj. Well

SIMULTANEOUS
**COMPENSATED NEUTRON-
FORMATION DENSITY**

LEA
COUNTY SOUTH LEONARD
FIELD
LOCATION LEONARD BROS. NO. 2
WELL
COMPANY TENNECO OIL CO.

COMPANY TENNECO OIL COMPANY
WELL LEONARD BROTHERS NO. 2
FIELD SOUTH LEONARD
COUNTY LEA STATE NEW MEXICO

LOCATION 1650' FSL & 990' FEL
Other Services:
DLL
API SERIAL NO. SEC. TWP. RANGE
13 26-S 37-E

Permanent Datum: G.L.; Elev.: 2998
Log Measured From K.B., 9 Ft. Above Perm. Datum Elev.: K.B. 3007
Drilling Measured From K.B. D.F. 2998
G.L. 2998

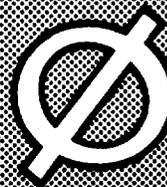
Date	2-25-77					
Run No.	ONE					
Depth-Driller	3590					
Depth-Logger	3600					
Btm. Log Interval	3599					
Top Log Interval	SURF					
Casing-Driller	8 5/8 @ 510	@	@	@		
Casing-Logger	510					
Bit Size	7 7/8					
Type Fluid in Hole	SALT GEL					
Dens.	10	62				
Visc.						
pH	7	7.5 ml	ml	ml	ml	
Fluid Loss						
Source of Sample	CIRC					
Rm @ Meas. Temp.	.056 @ 80 F	@ °F	@ °F	@ °F	@ °F	
Rmf @ Meas. Temp.	.047 @ 82 F	.048 @ 81 F	@ °F	@ °F	@ °F	
Rmc @ Meas. Temp.	@ °F	@ °F	@ °F	@ °F	@ °F	
Source: Rmf	M					
Rmc						
Rm @ BHT	.046 @ 96 F	@ °F	@ °F	@ °F	@ °F	
Circulation Stopped	1100					
Logger on Bottom	1330					
Max. Rec. Temp.	96 °F	°F	°F	°F	°F	
Equip.	7646 HOBBS					
Location						
Recorded By	WILSON					
Witnessed By Mr.	GRIFFITH					

The well name, location and borehole reference data were furnished by the customer. FOLD HERE

EXHIBIT 3
Proposed Wtr.
Inj. Well

ation Logging Systems

sensated **Densilog**
sensated **Neutron**



FILE NO.	COMPANY <u>TENNECO OIL COMPANY</u>	
	WELL <u>LEONARD BROTHERS NO. 7</u>	
	FIELD <u>SOUTH LEONARD</u>	
	COUNTY <u>LEA</u>	STATE <u>NEW MEXICO</u>
	LOCATION: <u>660' FSL & 660' FWL</u>	
SEC <u>13</u> TWP <u>26-S</u> RGE <u>37-E</u>		Other Services DLL/MLL/GR

Permanent Datum <u>GROUND LEVEL</u> Elev. <u>*</u>	Elevations: KB <u>*</u>
Log Measured from <u>K. B.</u> <u>10.4</u> Ft. Above Permanent Datum	DF <u>*</u>
Drilling Measured from <u>K. B.</u>	GL <u>*</u>

Date	<u>10-26-77</u>			
Run No.	<u>ONE</u>			
Service Order	<u>88027</u>			
Depth—Driller	<u>3800</u>			
Depth—Logger	<u>3832</u>			
Bottom Logged Interval	<u>3830</u>			
Top Logged Interval	<u>2250</u>			
Casing—Driller	<u>8 5/8@ 503</u>	@	@	@
Casing—Logger	<u>NOT LOGGED</u>			
Bit Size	<u>7 7/8</u>			
Type Fluid in Hole	<u>BRINE-GEL-LOID</u>			
Density and Viscosity	<u>10.2 36</u>			
pH and Fluid Loss	<u>7 9.6 cc</u>	cc	cc	cc
Source of Sample	<u>PIT</u>			
Rm @ Meas. Temp.	<u>.048 @ 78 °F</u>	@ °F	@ °F	@ °F
Rmf @ Meas. Temp.	<u>* @ °F</u>	@ °F	@ °F	@ °F
Rmc @ Meas. Temp.	<u>* @ °F</u>	@ °F	@ °F	@ °F
Source of Rmf and Rmc			°F	
Rm @ BHT	<u>.039 @ 95°F</u>	@ °F	@ °F	@ °F
Time Since Circ.	<u>8 HOURS</u>			
Max. Rec. Temp. Deg. F.	<u>95 °F</u>	°F	°F	°F
Equip. No. and Location	<u>6136 HOBBS</u>			
Recorded By	<u>JACKSON</u>			
Witnessed By	<u>JOSEPH</u>			

SIMULTANEOUS
**COMPENSATED NEUTRON-
FORMATION DENSITY**

EXHIBIT 5

Shumberger

LEA COUNTY SOUTH LEONARD
 FIELD SOUTH LEONARD
 LOCATION LEONARD BROS. NO. 2
 WELL LEONARD BROS. NO. 2
 COMPANY TENNECO OIL CO.

COMPANY TENNECO OIL COMPANY

WELL LEONARD BROTHERS NO. 2

FIELD SOUTH LEONARD

COUNTY LEA STATE NEW MEXICO

LOCATION	1650' FSL & 990' FEL			
API SERIAL NO.	SEC	TWP.	RANGE	
	13	26-S	37-E	

Other Services:

DLL

Permanent Datum: G.L. ; Elev.: 2998
 Log Measured From K.B. 9 Ft. Above Perm. Datum
 Drilling Measured From K.B.

Elev.: K.B. 3007
 D.F. 2998
 G.L. 2998

Date	2-25-77			
R. No.	ONE			
Depth - Driller	3590			
Depth - Logger	3600			
Btm. Log Interval	3599			
Top Log Interval	SURF			
Casing - Driller	8 5/8 @ 510	@	@	@
Casing - Logger	510			
Bit size	7 7/8			
Type Fluid - Hole	SALT GEL			
Dens.	10	62		
pH	7	7.5 ml	ml	ml
Source of Sample	CIRC			
Rm @ Meas. Temp.	.056 @ 80°F	@ °F	@ °F	@ °F
Rmf @ Meas. Temp.	.047 @ 82°F	.048 @ 81°F	@ °F	@ °F
Rmc @ Meas. Temp.	@ °F	@ °F	@ °F	@ °F
Source: Rmf	M			
Rm @ BHT	.046 @ 96°F	@ °F	@ °F	@ °F
Circulation Stopped	1100			
Logger on Bottom	1330			
Max. Rec. Temp.	96 °F	°F	°F	°F
Equip. Location	76.6 HOBBS			
Recorded By	WILSON			
Witnessed By Mr.	GRIFFITH			

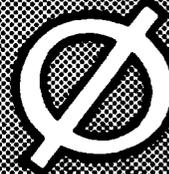
The well name, location and location of logs are furnished by the operator.

FOI C 1178

Combination Logging Systems

EXHIBIT 3

Compensated **Densilog**
Compensated **Neutron**



FILE NO.	COMPANY <u>TENNECO OIL COMPANY</u>	
	WELL <u>LEONARD BROTHERS NO. 7</u>	
	FIELD <u>SOUTH LEONARD</u>	
	COUNTY <u>LEA</u>	STATE <u>NEW MEXICO</u>
LOCATION: <u>660' FSL & 660' FWL</u>		Other Services DLL/MLL/GR
SEC <u>13</u> TWP <u>26-S</u> RGE <u>37-E</u>		

Permanent Datum <u>GROUND LEVEL</u>	Elev. <u>*</u>	KB <u>*</u>
Log Measured from <u>K. B.</u>	<u>10.4</u> Ft. Above Permanent Datum	DF <u>*</u>
Drilling Measured from <u>K. B.</u>		GL <u>*</u>

Date	10-26-77			
Run No.	ONE			
Service Order	88027			
Depth—Driller	3800			
Depth—Logger	3832			
Bottom Logged Interval	3830			
Top Logged Interval	2250			
Casing—Driller	8 5/8 @ 503	@	@	@
Casing—Logger	NOT LOGGED			
Bit Size	7 7/8			
Type Fluid in Hole	BRINE-GEL-VOID			
Density and Viscosity	10.2 36			
pH and Fluid Loss	7 9.6 cc	cc	cc	cc
Source of Sample	PIT			
Rm @ Meas. Temp.	.048 @ 78 °F	@ °F	@ °F	@ °F
Rmf @ Meas. Temp.	* @ °F	@ °F	@ °F	@ °F
Rmc @ Meas. Temp.	* @ °F	@ °F	@ °F	@ °F
Source of Rmf and Rmc			°F	
Rm @ BHT	.039 @ 95 °F	@ °F	@ °F	@ °F
Time Since Circ.	8 HOURS			
Max. Rec. Temp. Deg. F.	95 °F	°F	°F	°F
Equip. No. and Location	6136 HOBBS			
Recorded By	JACKSON			
Witnessed By	JOSEPH			

SIMULTANEOUS

COMPENSATED NEUTRON-FORMATION DENSITY

EXHIBIT

umberger

COUNTY LEA
FIELD LEONARD
LOCATION LEONARD FEDERAL #6
WELL LEONARD FEDERAL #6
COMPANY TENNECO OIL CO.

COMPANY TENNECO OIL COMPANY

WELL LEONARD FEDERAL #6

FIELD LEONARD

COUNTY LEA STATE NEW MEXICO

LOCATION 500' FSL & 1990' FEL

Other Services:

DLL

API SERIAL NO

SEC.

TWP.

RANGE

11

26-S

37-E

Permanent Datum: G.L. ; Elev.: 3003
Log Measured From K.B. , Ft. Above Perm. Datum
Drilling Measured From K.B.

Elev.: K.B. 3012
D.F.
G.L. 3003

Date	7-25-77			
Run No.	ONE			
Depth-Driller	3600			
Depth-Logger	3600			
Btm. Log Interval	3600			
Top Log Interval	1600			
Casing-Driller	8 5/8 @ 500	@	@	@
Casing-Logger	510			
Bit Size	7 7/8			
Type Fluid in Hole	ZEOGEL			
Dens.	10.1	36		
Visc.				
pH	7	10 ml	ml	ml
Fluid Loss				
Source of Sample	CTRC			
Rm @ Meas. Temp.	.036 @ 112 °F	@ °F	@ °F	@ °F
Rmf @ Meas. Temp.	.041 @ 83 °F	.044 @ 80 °F	@ °F	@ °F
Rmc @ Meas. Temp.	.027 @ 112 °F	@ °F	@ °F	@ °F
Source: Rmf	M	C		
Rmc				
Rm @ BHT	.041 @ 99 °F	@ °F	@ °F	@ °F
Circulation Stopped	1500			
Logger on Bottom	2330			
Max. Rec. Temp.	99 °F	°F	°F	°F
Equip. Location	7646 HOBBS			
Recorded By	BOROSS			
Witnessed By Mr.	SCHRECK, BRAZIE			

STATE OF NEW MEXICO

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION



BRUCE KING
GOVERNOR

POST OFFICE BOX 2088
STATE LAND OFFICE BUILDING
SANTA FE, NEW MEXICO 87504
(505) 827-5800

November 20, 1991

United Gas Search, Inc.
P.O. Box 151
Tulsa, Oklahoma 74101-0151

Re: Leonard Brothers Waterflood Project
Leonard Federal Waterflood Project

Dear Sir:

Reference is made to your recent request to consolidate the Leonard Brothers and Leonard Federal Waterflood Projects, both projects previously approved by Division Order No. R-5675 dated March 21, 1978. It is our understanding that the subject waterflood projects currently comprise the following described acreage in Lea County, New Mexico:

Leonard Brothers Waterflood Project
Township 26 South, Range 37 East, NMPM

Section 13: E/2, NW/4, N/2 SW/4, SW/4 SW/4
Section 14: N/2

Leonard Federal Waterflood Project
Township 26 South, Range 37 East, NMPM

Section 14: S/2

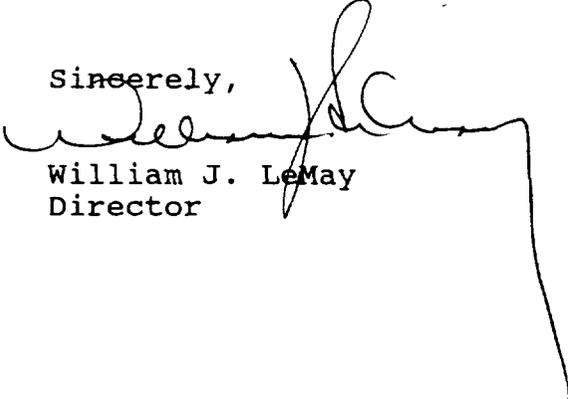
It is further our understanding that the subject acreage is one common Federal Lease (NM-7951), that all interest is common, that the Bureau of Land Management has approved your proposed consolidation, and that both projects involve only the South Leonard Queen Pool. It is further our understanding that you wish to redesignate the wells as "Glenn-Ryan" wells and amend the well numbers.

Authorization is hereby given to consolidate the Leonard Brothers and Leonard Federal Waterflood Projects as described above. The newly consolidated waterflood project is hereby designated the Glenn-Ryan Waterflood Project and shall comprise the following described acreage:

Glenn-Ryan Waterflood Project
Township 26 South, Range 37 East, NMPM

Section 13: E/2, NW/4, N/2 SW/4, SW/4 SW/4
Section 14: All

Sincerely,


William J. LeMay
Director

xc: OCD-Hobbs
BLM-Carlsbad
File-Case No. 6161 ✓
R. Brown
OCD-Data Processing