



WELEX

INDUCTION— ELECTRIC LOG

COMPANY Humble Oil & Refining Company
 WELL Cha-Cha Unit # 34-16
 FIELD Cha-Cha (Gallup)
 County San Juan State N. M.

COMPANY HUMBLE OIL & REFINING COMPANY

WELL CHA-CHA UNIT # 34-16

FIELD CHA-CHA (GALLUP)

COUNTY SAN JUAN STATE NEW MEXICO

Location 660' FSL 1830' FEL

Other Services:
CR-AV-
Caliper

Sec. 16 Twp. 29-N Rge. 14-W

Permanent Datum Ground Level Elev. 5180
 Log Measured From D. F. II Ft. Above Perm. Datum
 Drilling Measured From Derrick Floor

Elev.: K.B. 5192
 D.F. 5191
 G.L. 5180

Date	11-6-62			
Run No.	- One -			
Depth—Driller	4940			
Depth—Welex	4945			
Btm. Log Inter.	4940			
Top Log Inter.	207			
Casing—Driller	8-5/8" @ 207	@	@	@
Casing—Welex	207			
Bit Size	6-3/4"			
Type Fluid in Hole	Mud			
	Chem., Gel			
Dens. Visc.	9.5 155			
pH Fluid Loss	8.3 16.5ml	ml	ml	ml
Source of Sample	Circulated			
R _m @ Meas. Temp.	1.0 @ 100°F	@ °F	@ °F	@ °F
R _{mf} @ Meas. Temp.	.60 @ 68°F	@ °F	@ °F	@ °F
R _{mc} @ Meas. Temp.	1.10 @ 71°F	@ °F	@ °F	@ °F
Source R _{mf} R _{mc}	Measured			
R _m @ BHT	.91 @ 121°F	@ °F	@ °F	@ °F
Time Since Circ.				
Max. Rec. Temp.	21 °F @ 4940	°F @	°F @	°F @
Equip. Location	4002 Farmington			
Recorded By	F. Sloup			
Witnessed By	Mr. Bryson			

EXHIBIT E

To Application of Humble Oil & Refining Company
 for
 Approval of Expansion of Pressure Maintenance Project
 Northwest Cha Cha Unit.

SCHLUMBERGER**INDUCTION - ELECTRICAL LOG**

SCHLUMBERGER WELL SURVEYING CORPORATION

Houston, Texas

COUNTY <u>SAN JUAN, N.M.</u> FIELD or LOCATION <u>CHA CHA GALLUP</u> WELL <u>BRIMHALL # 1</u> COMPANY <u>EL PASO NATURAL GAS</u> <u>PRODUCTS COMPANY</u>	COMPANY <u>EL PASO NATURAL GAS</u> <u>PRODUCTS COMPANY</u>		Other Surveys <u>SL</u>	
	WELL <u>BRIMHALL # 1</u> FIELD <u>CHA CHA GALLUP</u> LOCATION <u>SEC. 17-29N-14W</u> COUNTY <u>SAN JUAN</u> STATE <u>NEW MEXICO</u>		Location of Well <u>258' FSL</u> <u>1980' FWL</u> <u>SEC. 17-29N-14W</u> Elevation: D.F.: <u>5164'</u> K.B.: <u>5165'</u> or G.L.: <u>5154'</u>	
FILING No. _____				

RUN No.	<u>ONE</u>																			
Date	<u>9-26-62</u>																			
First Reading	<u>4720</u>																			
Last Reading	<u>168</u>																			
Feet Measured	<u>4552</u>																			
Csg. Schlum.	<u>168</u>																			
Csg. Driller	<u>168</u>																			
Depth Reached	<u>4721</u>																			
Bottom Driller	<u>4720</u>																			
Depth Datum	<u>KB</u>																			
Mud Nat.	<u>CHEM. GEL</u>																			
Dens. Visc.	<u>9.2 48</u>																			
Mud Resist.	<u>.64 @ 92</u>				F	@	F	@	F	@	F	@	F	@	F	@	F	@		
Res. BHT	<u>.42 @ 137</u>				F	@	F	@	F	@	F	@	F	@	F	@	F			
Rmf	<u>.27 @ 137</u>				F	@	F	@	F	@	F	@	F	@	F	@	F			
Rmc	<u>.90 @ 137</u>				F	@	F	@	F	@	F	@	F	@	F	@	F			
pH	<u>8.0 @ --</u>				F	@	F	@	F	@	F	@	F	@	F	@	F			
Wtr. Loss	<u>7.4 CC 30 min.</u>					CC 30 min.		CC 30 min.		CC 30 min.		CC 30 min.		CC 30 min.		CC 30 min.				
Bit Size	<u>7 7/8"</u>																			
Specs.—AM	<u>16"</u>																			
MN	<u>34 1/6"</u>																			
IND.	<u>6FF40</u>																			
Opr. Rig Time	<u>1 1/2 HOURS</u>																			
Truck No.	<u>2515 FARM</u>																			
Recorded By	<u>TALLEY</u>																			
Witness	<u>MR. SPEER</u>																			

EXHIBIT "F"

To Application of Humble Oil & Refining Company
 for
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 Northwest Cha Cha Unit
 San Juan County, New Mexico

CONVERSION TO WATER INJECTION

	<u>Unit Well No. 34-16</u>	<u>Brimhall No. 1</u>
INJECTION FORMATION	Gallup "A" & "B"	Gallup "A" & "B"
KIND OF FLUID	Fresh Water	Fresh Water
ANTICIPATED INJECTION VOLUME	500 BPD	600 BPD
SOURCE OF INJECTION FLUID	Alluvian Wells San Juan River	Alluvian Wells San Juan River

EXHIBIT "C"

To: Production of Tumble Oil & Refining Company
for
Unleaded Expansion of Pressure Maintenance Project
Northwest Cha Cha Unit
San Juan County, New Mexico

GAS-OIL RATIO REPORT

OPERATOR Humble Oil & Refining Company POOL NW Cha Cha Unit

ADDRESS _____ MONTH OF _____, 19____

SCHEDULED TEST _____ COMPLETION TEST _____ SPECIAL TEST _____ (Check One)

(See Instructions on Reverse Side)

NW Cha Cha Unit wells which have responded to flood with increased oil production. Tests near flood start (6-1-62) and following a period of water injection are shown.

Lease	Well No.	Date of Test	Producing Method	Choke Size	Test Hours	Daily Allowable Bbls.	Production During Test			GOR Cu. Ft. Per Bbl.
							Water Bbls.	Oil Bbls.	Gas MCF	
Humble Navajo L	32-26	7-10-62	Pump	-	24	UNIT ALLOWABLE	0	12	199	16,583
		11-6-63	Pump	-	24		0	30	13	433
"	14-26	6-11-62	Pump	-	24		0	65	605	9,307
		11-5-63	Pump	-	24		0	158	25	158
"	12-25	7-3-62	Pump	-	24		0	73	679	9,301
		5-20-63	Pump	-	24		4	12	41	3,417
		10-9-63	Pump	-	24		2	54	142	2,630
"	14-25	6-20-62	Pump	-	24		0	69	572	8,290
		7-12-63	Pump	-	24		0	145	40	380
		10-20-63	Pump	-	24		33	48	11	229
"	34-25	9-2-62	Pump	-	24		0	10	53	5,300
		10-6-63	Pump	-	24		7	24	31	1,292
"	32-36	8-3-62	Pump	-	24		0	26	271	10,423
		9-7-63	Pump	-	24		0	54	82	1,519
"	32-35	8-8-63	Pump	-	24		0	40	383	9,575
		10-22-63	Pump	-	24		11	62	26	419
"	12-35	6-6-62	Pump	-	24		0	14	66	4,714
		6-6-63	Pump	-	24		0	5	34	5,667
		10-7-63	Pump	-	24		0	11	31	2,818
El Paso Ojo Amarillo	21-28	7-7-62	Pump	-	24	UNIT ALLOWABLE	0	73	1,122	15,370
		5-6-63	Pump	-	24		0	3	104	34,666
		10-4-63	Pump	-	24		0	58	66	1,138
"	41-28	6-26-62	Pump	-	24		0	37	220	5,946
		11-17-63	Pump	-	24		9	73	89	1,219
"	41-27	7-3-62	Pump	-	24		0	38	584	15,368
		11-7-63	Pump	-	24		0	57	141	2,474
"	23-27	7-9-62	Flow	Open	24		0	64	978	15,281
		10-2-63	Pump	-	24		0	97	57	588
"	43-27	6-21-62	Flow	-	24		0	81	148	1,827
		11-8-63	Pump	-	24		50	110	55	500
Pan American Navajo E	21-21	6-28-62	Pump	-	24	UNIT ALLOWABLE	0	50	639	12,800
		8-12-63	Pump	-	24		0	83	86	1,036
		10-5-63	Pump	-	24		0	82	NA	NA
"	34-16	12-21-62	Pump	-	24		0	10	68	6,800
		8-14-63	Pump	-	24		0	19	56	2,947
		11-1-63	Pump	-	24		0	17	NA	NA
Pan American Navajo E-Continued	42-21	6-27-62	Pump	-	24	UNIT ALLOWABLE	0	40	400	10,000
		8-16-63	Pump	-	24		0	63	31	492
		10-11-63	Pump	-	24		6	56	NA	NA
"	12-22	6-29-62	Flow	32/64	24		0	70	350	5,009
		4-5-63	Pump	-	24		0	101	34	337
		8-13-63	Pump	-	24		0	76	37	487
"	24-22	12-8-62	Pump	-	24		14	24	63	2,625
		7-15-63	Pump	-	24		32	2	23	11,500
		10-10-63	Pump	-	24		15	26	NA	NA
"	34-22	7-21-62	Pump	-	24		0	48	845	17,604
		9-7-63	Pump	-	24		23	6	NA	NA
		10-31-63	Pump	-	24		9	21	NA	NA
Pan American Navajo G	43-20	7-16-62	Pump	-	24	UNIT ALLOWABLE	0	23	351	15,261
		11-2-63	Pump	-	24		0	23	NA	NA
"	41-20	10-1-62	Flow	50/64	24		0	25	517	20,680
		8-6-63	Pump	-	24		0	30	296	9,867
		10-12-63	Pump	-	24		3	20	NA	NA

EXHIBIT "H"

To Application of Humble Oil & Refining Company
for
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Northwest Cha Cha Unit
San Juan County, New Mexico