

CALCULATION OF PARTICIPATION
SHOWN IN EXHIBIT "C" OF UNIT AGREEMENT
CENTRAL BISTI LOWER GALLUP SAND UNIT
SAN JUAN COUNTY, NEW MEXICO

<u>Company</u>	<u>Use</u>	<u>ML Oil in Place, Bbls</u>	<u>ML Oil in Place Fraction</u>	<u>SP Oil in Place, Bbls</u>	<u>SP Oil in Place Fraction</u>	<u>Current Oil Prod, Bbls</u>	<u>Current Oil Prod, Fraction</u>	<u>Formula* Fraction</u>	<u>Company</u>	<u>Use</u>
AMRD	18	1,144,631	0.0300940	2,222,424	0.0357104	12,908	0.0357791	0.0341945	AMRD	18
AMRD	19	1,416,037	0.0372297	2,587,446	0.0415756	18,272	0.0520629	0.0436227	AMRD	19
AMRD	20	345,092	0.0090730	2,104,778	0.0338200	5,499	0.0156685	0.0195205	AMRD	20
AMRD	21	1,333,130	0.0350499	2,232,639	0.0358745	18,272	0.0520629	0.0409958	AMRD	21
AMRD	22	1,741,952	0.0457985	2,771,765	0.0445373	18,272	0.0520629	0.0474662	AMRD	22
		5,980,842*	0.1572451*	11,919,052*	0.1915178*	73,223*	0.2086363*	0.1857997*		
LPAS	7	2,199,770	0.0578352	6,039,752	0.0970480	18,484	0.0526670	0.0691834	LPAS	7
LPAS	13	207,931	0.0054668	796,263	0.0127945	2,446	0.0069695	0.0084103	LPAS	13
		2,407,701*	0.0633020*	6,836,015*	0.1098425*	20,930*	0.0596365*	0.0775937*		
PHIL	11	1,864,817	0.0490288	2,539,014	0.0407974	18,272	0.0520629	0.0472964	PHIL	11
PHIL	12	2,171,346	0.0570879	2,958,030	0.0475302	11,899	0.0339041	0.0461741	PHIL	12
		4,036,163*	0.1061167*	5,497,044*	0.0883276*	30,171*	0.0859670*	0.0934705*		
PNAM	14	105,274	0.0027678	1,194,585	0.0191948	2,132	0.0060748	0.0093458	PNAM	14
PNAM	15	600,294	0.0157826	1,693,457	0.0272108	7,893	0.0224897	0.0218277	PNAM	15
		705,568*	0.0185504*	2,888,042*	0.0464056*	10,025*	0.0285645*	0.0311735*		
RESE	10	59,456	0.0015631	439,361	0.0070598	954	0.0027183	0.0037804	RESE	10
		59,456*	0.0015631*	439,361*	0.0070598*	954*	0.0027183*	0.0037804*		
SHEL	3	220,774	0.0058045	612,823	0.0098470	584	0.0016640	0.0057718	SHEL	3
SHEL	4	4,768,461	0.1253698	5,887,105	0.0945952	36,544	0.1041258	0.1080302	SHEL	4
		4,989,235*	0.1311743*	6,499,928*	0.1044422*	37,128*	0.1057898*	0.1138020*		
SNRY	1	17,977,471	0.4726540	23,588,839	0.3790303	157,707	0.4493589	0.4336811	SNRY	1
SNRY	2	911,750	0.0239712	2,096,362	0.0336848	2,550	0.0072658	0.0216406	SNRY	2
		18,889,221*	0.4966252*	25,685,201*	0.4127151*	160,257*	0.4566247*	0.4553217*		
SOUN	16	966,977	0.0254232	2,470,058	0.0396894	18,272	0.0520629	0.0390585	SOUN	16
		966,977*	0.0254232*	2,470,058*	0.0396894*	18,272*	0.0520629*	0.0390585*		
BIST		38,035,163	1.0000000	62,234,701	1.0000000	350,960	1.0000000	1.0000000	BIST	
		38,035,163*	1.0000000*	62,234,701*	1.0000000*	350,960*	1.0000000*	1.0000000*		

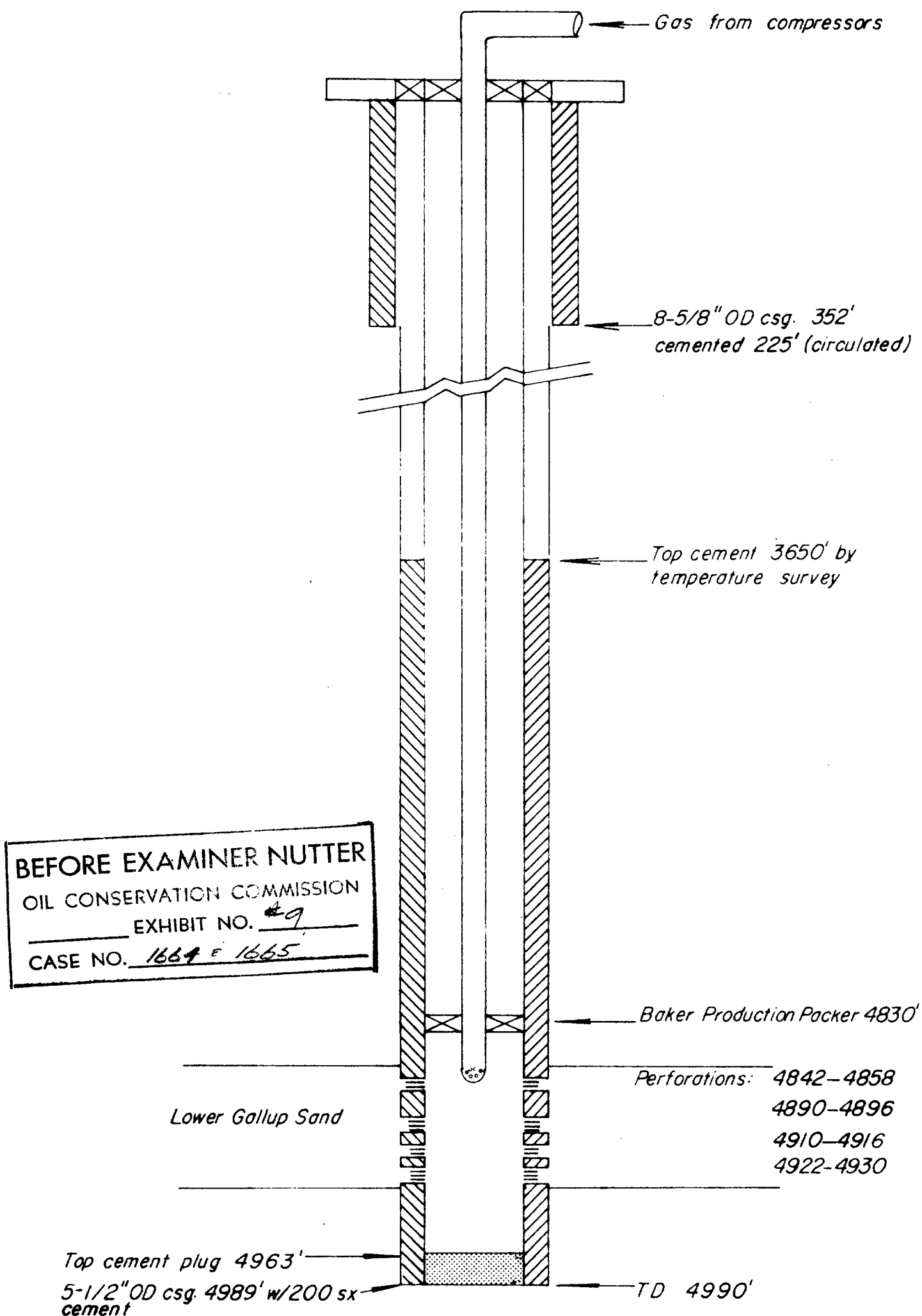
* FORMULA: $1/3$ ML Oil in Place + $1/3$ SP Oil in Place + $1/3$ Current Oil Production

AVERAGE RESERVOIR AND FLUID CHARACTERISTICS
CENTRAL BISTI LOWER GALLUP SAND UNIT
BISTI OIL POOL, SAN JUAN COUNTY, NEW MEXICO

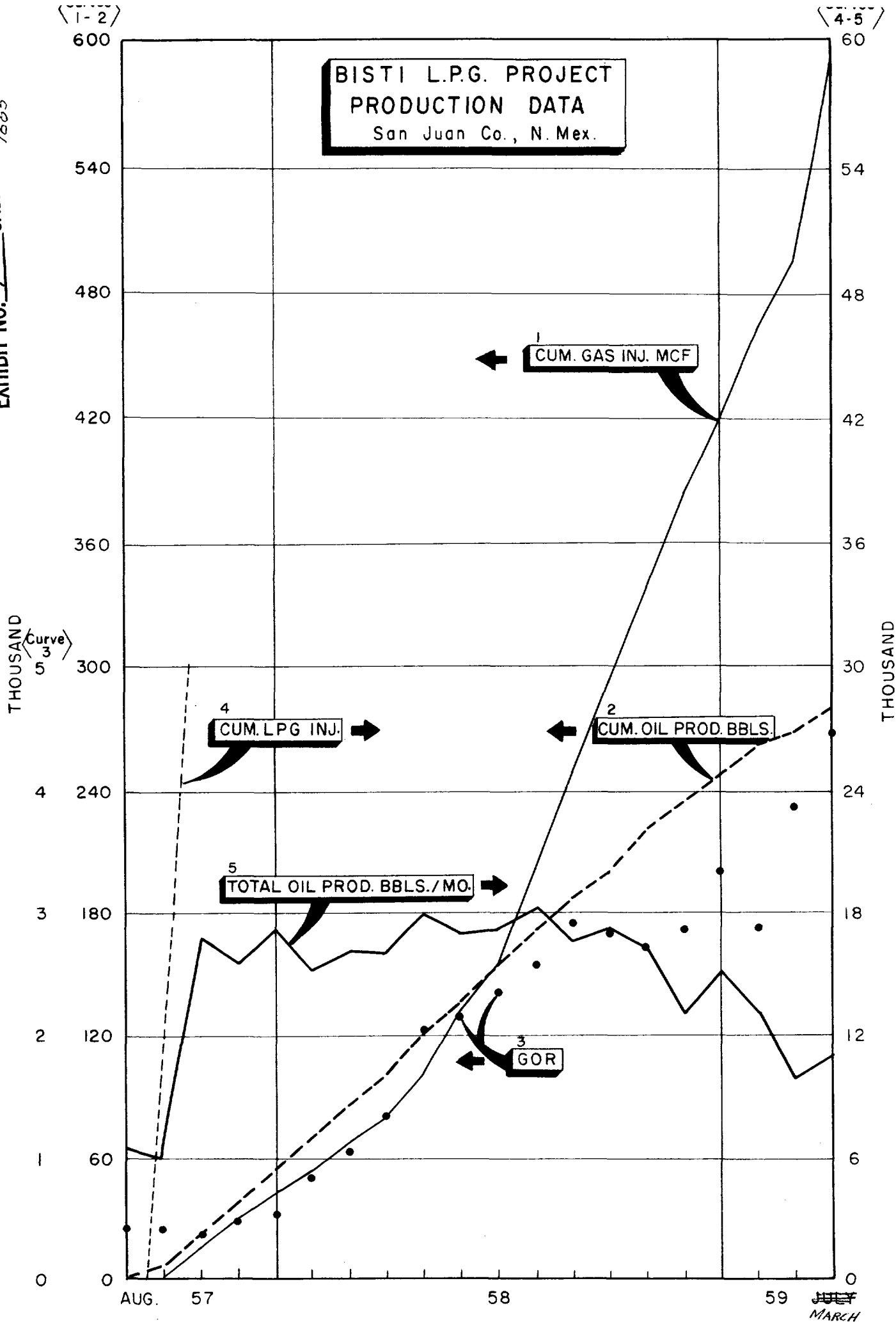
Acres in Unit Area	7,388.46
Acres in participating area	4,713.07
Porosity, percent	14.4
Connate water, percent	26
Permeability, md.	9
Bubble point pressure, psia	1,207
Reservoir temperature, °F	145° F
Solution gas-oil ratio at bubble point CF/bbl.	406
Formation volume factor RB/STB	1.261
Viscosity of oil at bubble point CP	0.83
Gravity of oil °API	39
Color of oil	Greenish Brown

SUNRAY MID-CONTINENT OIL COMPANY
EXHIBIT NO. 8 CASE NO. 1664
1665-

SCHEMATIC DRAWING
 PROPOSED GAS INJECTION WELL
 SUNRAY MID-CONTINENT OIL COMPANY
 FEDERAL "C" NO. 18
 BISTI-LOWER GALLUP POOL
 SAN JUAN, COUNTY NEW MEXICO



BEFORE EXAMINER NUTTER
 OIL CONSERVATION COMMISSION
 EXHIBIT NO. 29
 CASE NO. 1664 & 1665



THOUSAND
(Curve)
3
5

(Curves)
1-2
600

540

480

420

360

300

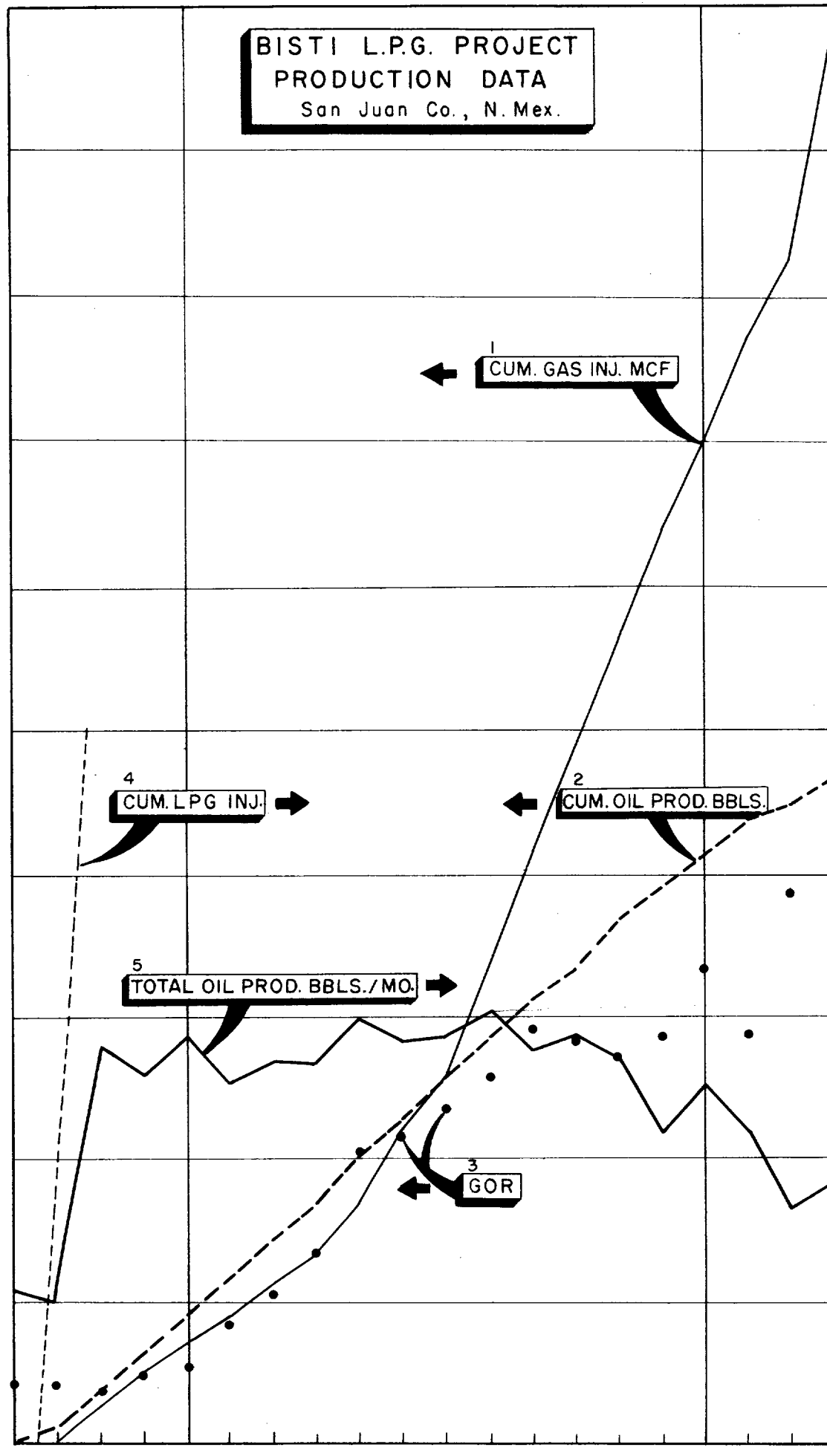
240

180

120

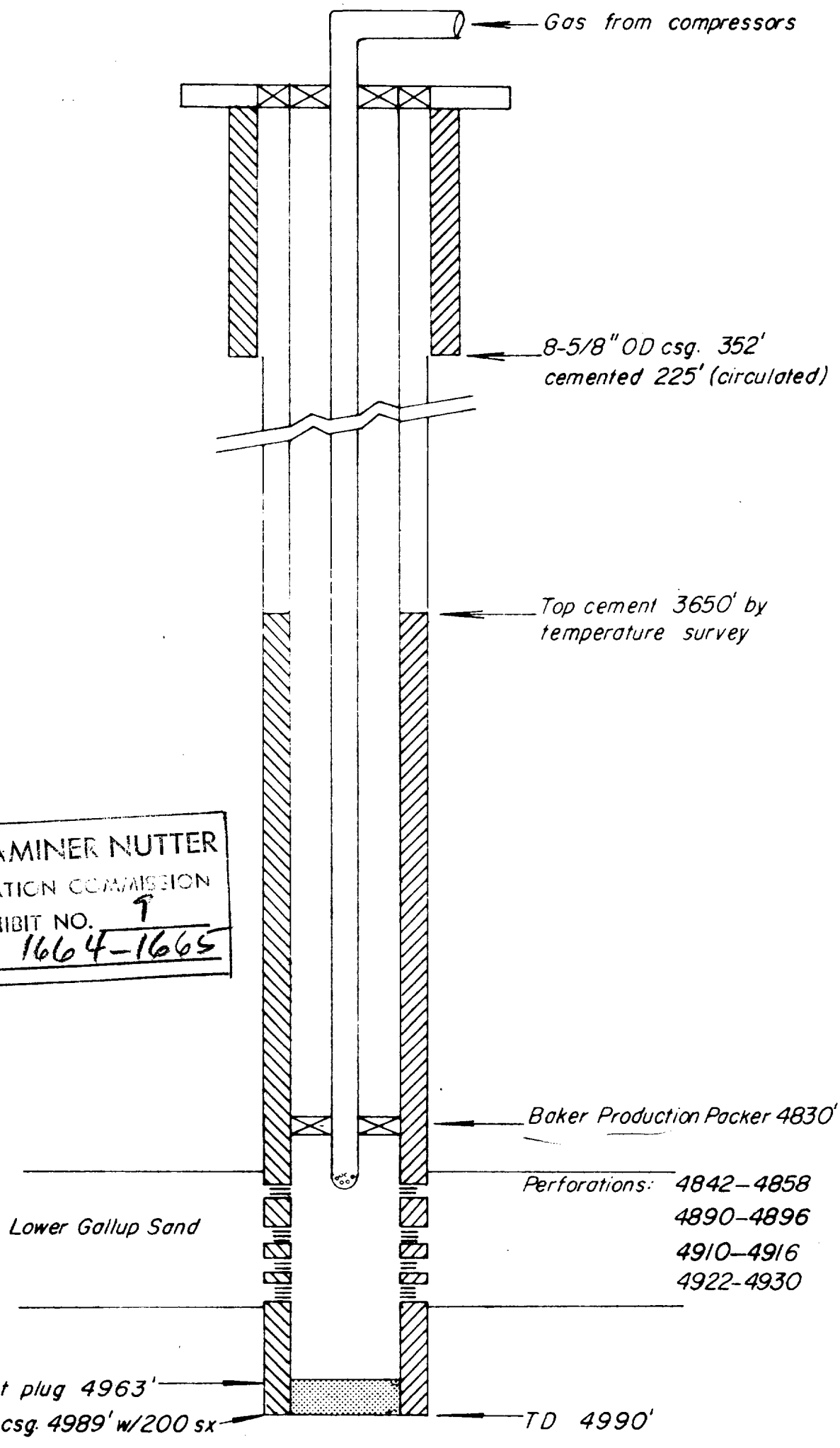
60

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~~JULY~~
MARCH

SCHEMATIC DRAWING
 PROPOSED GAS INJECTION WELL
 SUNRAY MID-CONTINENT OIL COMPANY
 FEDERAL "C" NO. 18
 BISTI-LOWER GALLUP POOL
 SAN JUAN, COUNTY NEW MEXICO



BEFORE EXAMINER NUTTER

OIL CONSERVATION COMMISSION

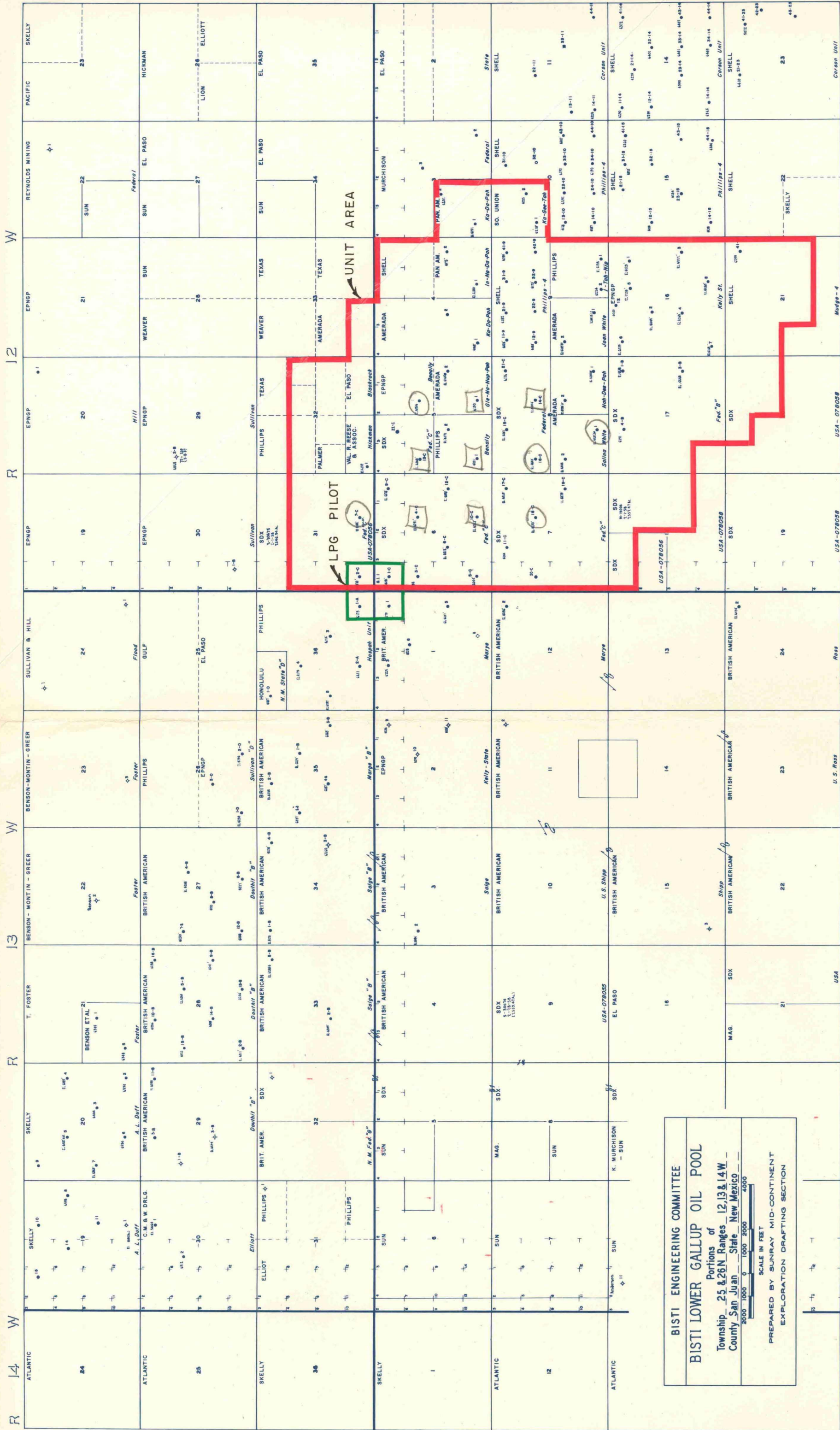
SDX EXHIBIT NO. 7

CASE NO. 1664-1665

AVERAGE RESERVOIR AND FLUID CHARACTERISTICS
CENTRAL BISTI LOWER GALLUP SAND UNIT
BISTI OIL POOL, SAN JUAN COUNTY, NEW MEXICO

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SUNRAY MID-CONTINENT OIL COMPANY
EXHIBIT NO. 8 CASE NO. 1664
1665-



BISTI ENGINEERING COMMITTEE
BISTI LOWER GALLUP OIL POOL
Portions of
Township 25 & 26 N Ranges 12, 13 & 14 W -
County San Juan State New Mexico
2000 1000 0 1000 2000 4000
SCALE IN FEET
PREPARED BY SUNRAY MID-CONTINENT
EXPLORATION DRAFTING SECTION

SCHLUMBERGER WELL SURVEYING CORPORATION

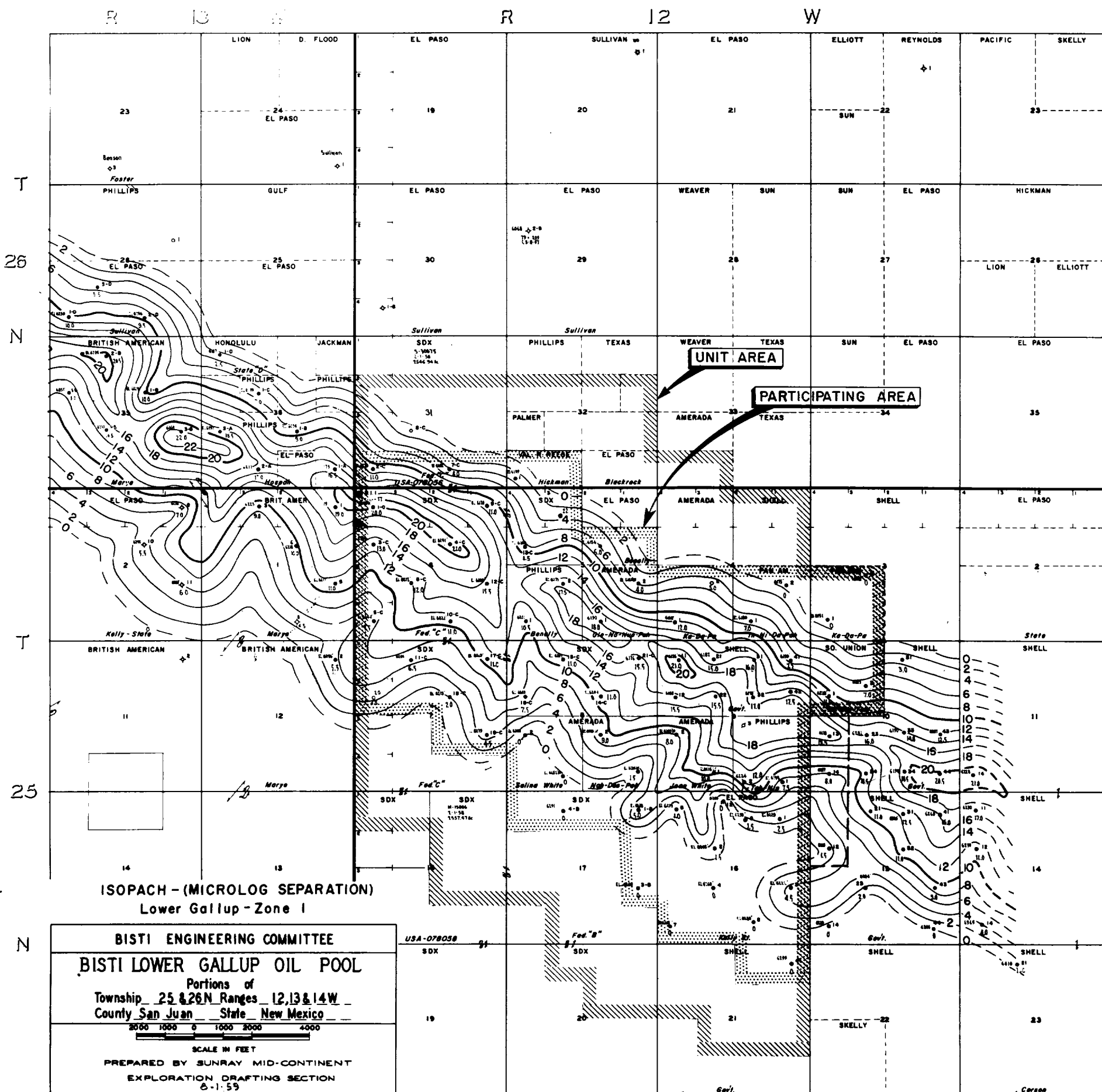
HOUSTON, TEXAS

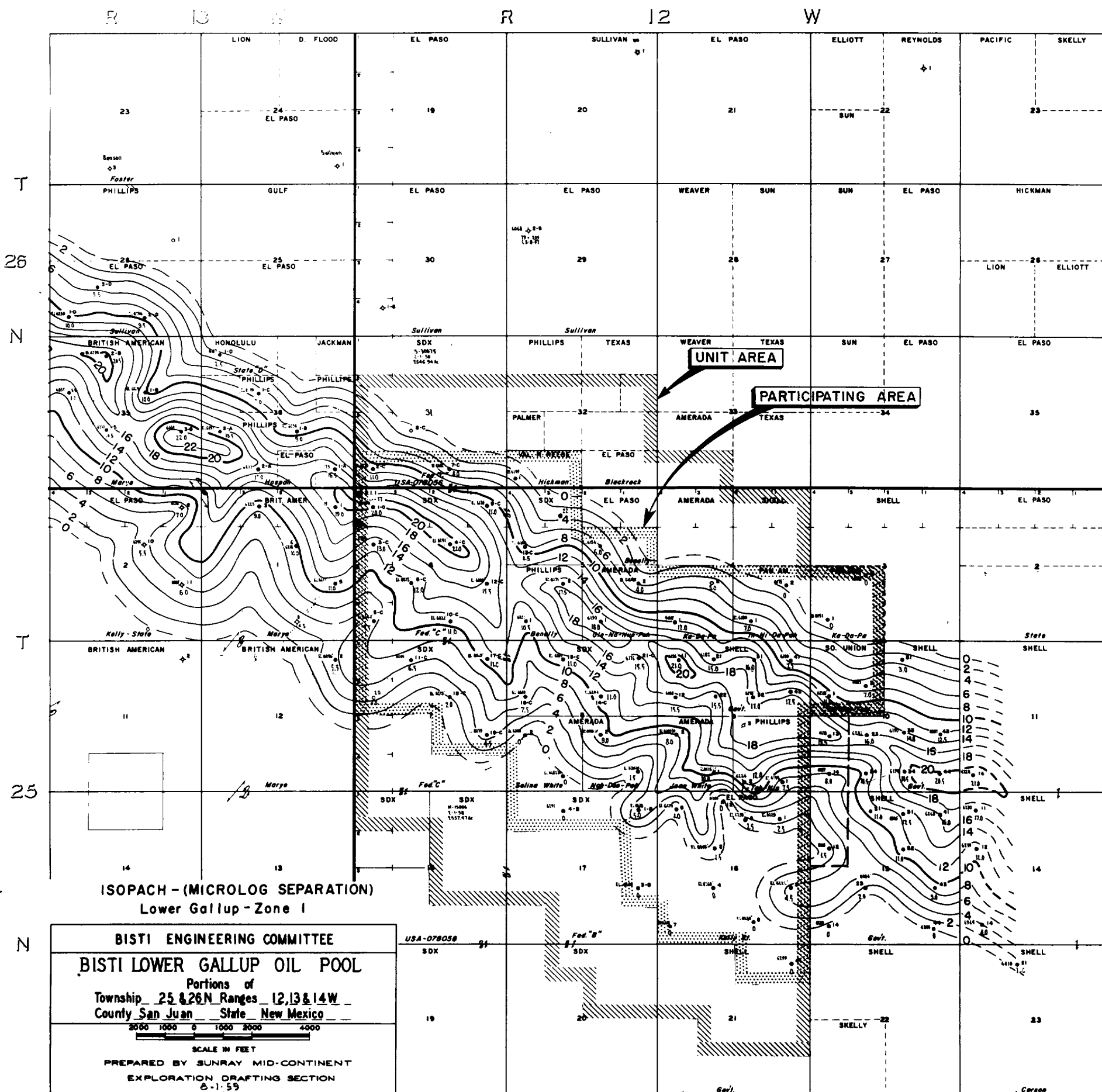


Electrical Log

COUNTY SAN JUAN, N.M. FIELD or LOCATION BISTI GALLUP WELL FEDERAL C #1 COMPANY SUNRAY MIDCONTINENT OIL COMPANY	COMPANY	SUNRAY	Location of Well	660' FR N/L 660' FR W/L SEC. 6-25N-12W
	MIDCONTINENT OIL COMPANY			
	WELL	FEDERAL #1-C		
	FIELD	BISTI GALLUP		ES (ML)
	LOCATION	SEC. 6-25N-12W		Elevation: D.F.: K.B. 6196' or G.L.:
	COUNTY	SAN JUAN		
	STATE	NEW MEXICO	FILING No.	

RUN No.	ONE	TWO			
Date	4-17-56	4-20-56			
First Reading	4734	5002			
Last Reading	212	4734			
Feet Measured	4522	268			
Csg. Schlum.	212	---	SUNRAY MID-CONTINENT OIL COMPANY		
Csg. Driller	212	---	EXHIBIT NO. 2 CASE NO. 1664		
Depth Reached	4735	5003	1665		
Bottom Driller	4800	5000			
Depth Datum	KB	KB			
Mud Nat	GEL CHEM	GEL CHEM			
Density	9.7	9.5			
Viscosity	67	70			
Resist.	3.0 @ 63 F	2.9 @ 62 F	(a) F	(a) F	(a) F
Res. BHT	1.6 @ 125 F	1.5 @ 128 F	(a) F	(a) F	(a) F
pH	9.0 @ F	8.5 @ F	(a) F	(a) F	(a) F
Wtr. Loss	7.0 CC 30 min	5.2 CC 30 min	CC 30 min	CC 30 min	CC 30 min
Max. Temp. F	125	128			
Bit Size	9"	9"			
Spccs.—AM	16"	16"			
AO	64"	64"			
	18' 8"	18' 8"			
Opr. Rig Time	1 1/2 HRS	1 HR			
Truck No.	1773 FARM	1714 FARM			
Recorded By	COVEY	KIMBALL			
Witnessed By	MARSHALL	LOW			

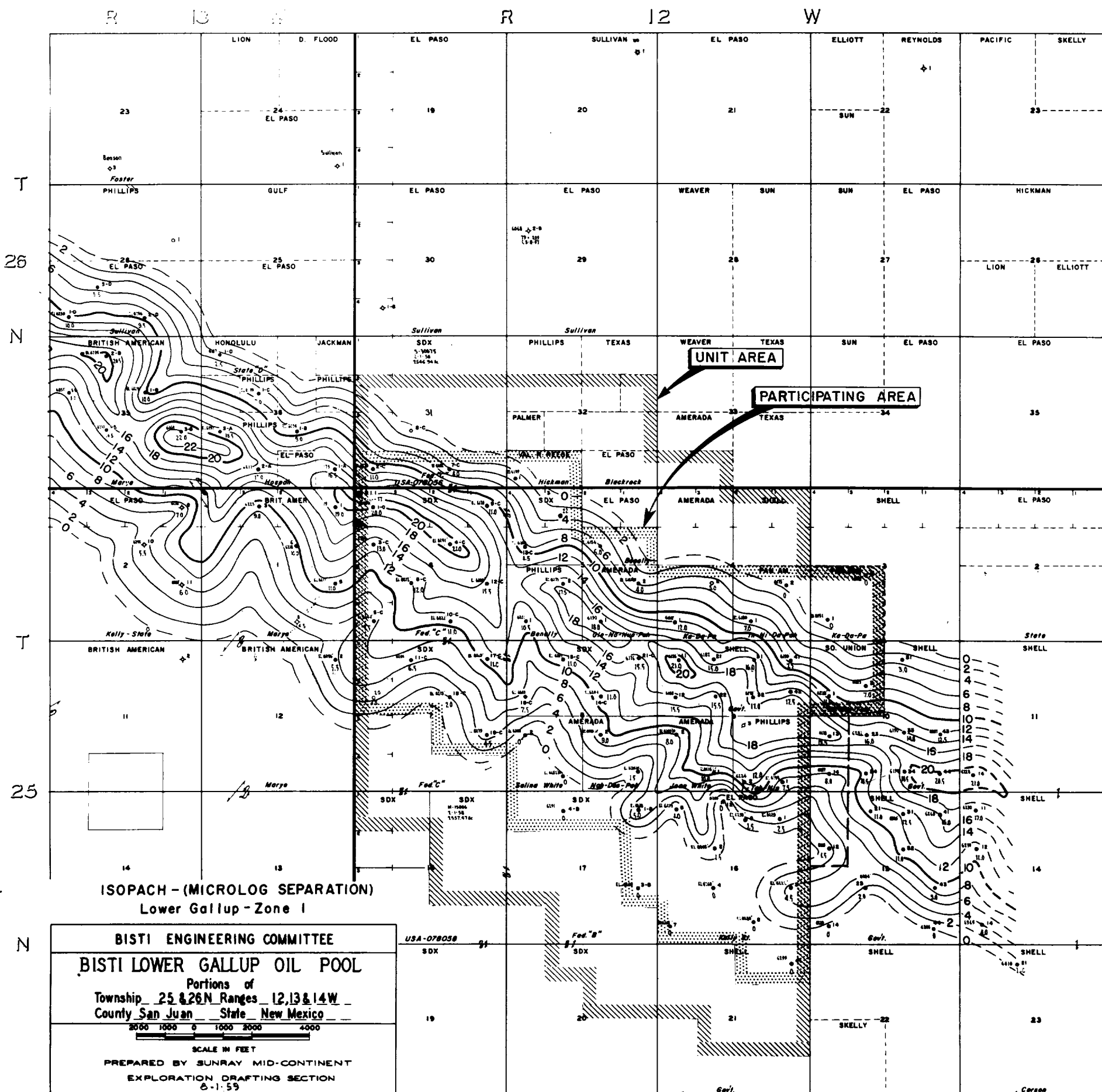


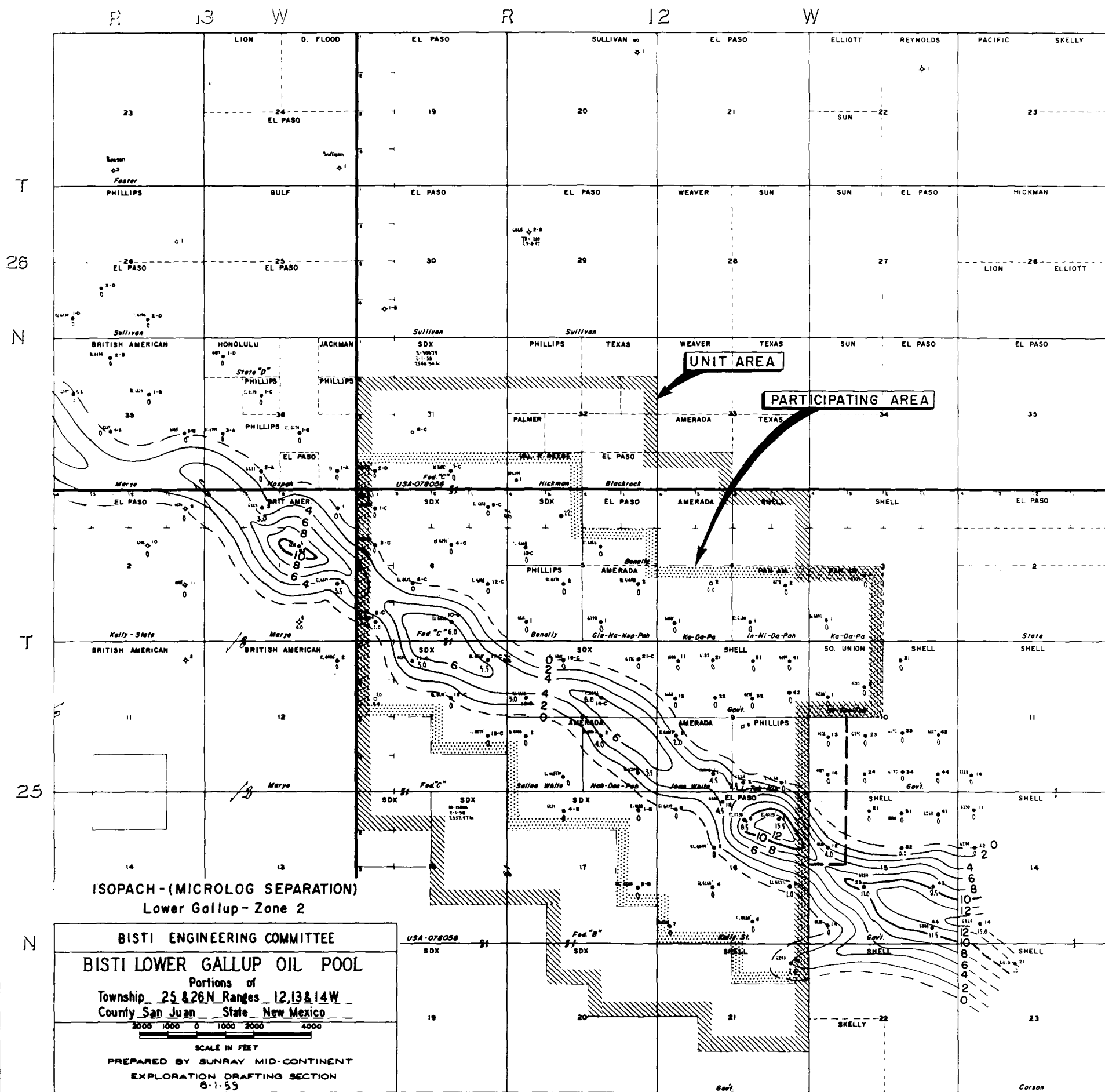


ISOPACH - (MICROLOG SEPARATION)
Lower Gallup - Zone 1

BISTI ENGINEERING COMMITTEE	
BISTI LOWER GALLUP OIL POOL	
Portions of Township 25 & 26 N Ranges 12, 13 & 14 W County San Juan State New Mexico	
SCALE IN FEET	
PREPARED BY SUNRAY MID-CONTINENT EXPLORATION DRAFTING SECTION 8-1-59	

SUNRAY MID-CONTINENT OIL COMPANY
EXHIBIT NO. 2 CASE NO. 1665





ISOPACH-(MICROLOG SEPARATION)
Lower Gallup-Zone 2

BISTI ENGINEERING COMMITTEE
BISTI LOWER GALLUP OIL POOL
Portions of
Township 25 & 26 N Ranges 12, 13 & 14 W
County San Juan State New Mexico

3000 1000 0 1000 2000 4000

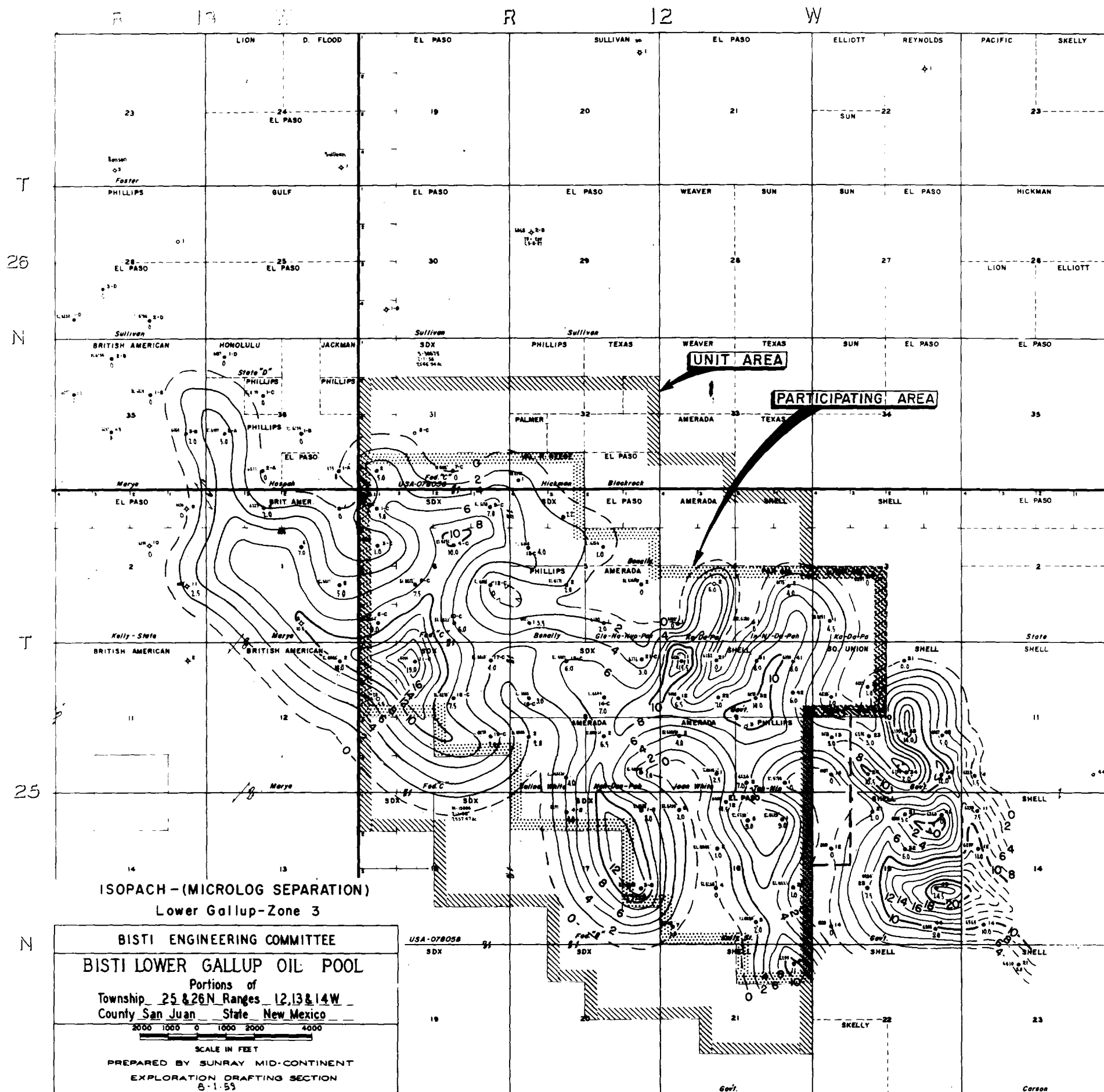
SCALE IN FEET

PREPARED BY SUNRAY MID-CONTINENT
EXPLORATION DRAFTING SECTION
8-1-59

SUNRAY MID-CONTINENT OIL COMPANY

EXHIBIT NO. 3 CASE NO. 1665

C2-206A

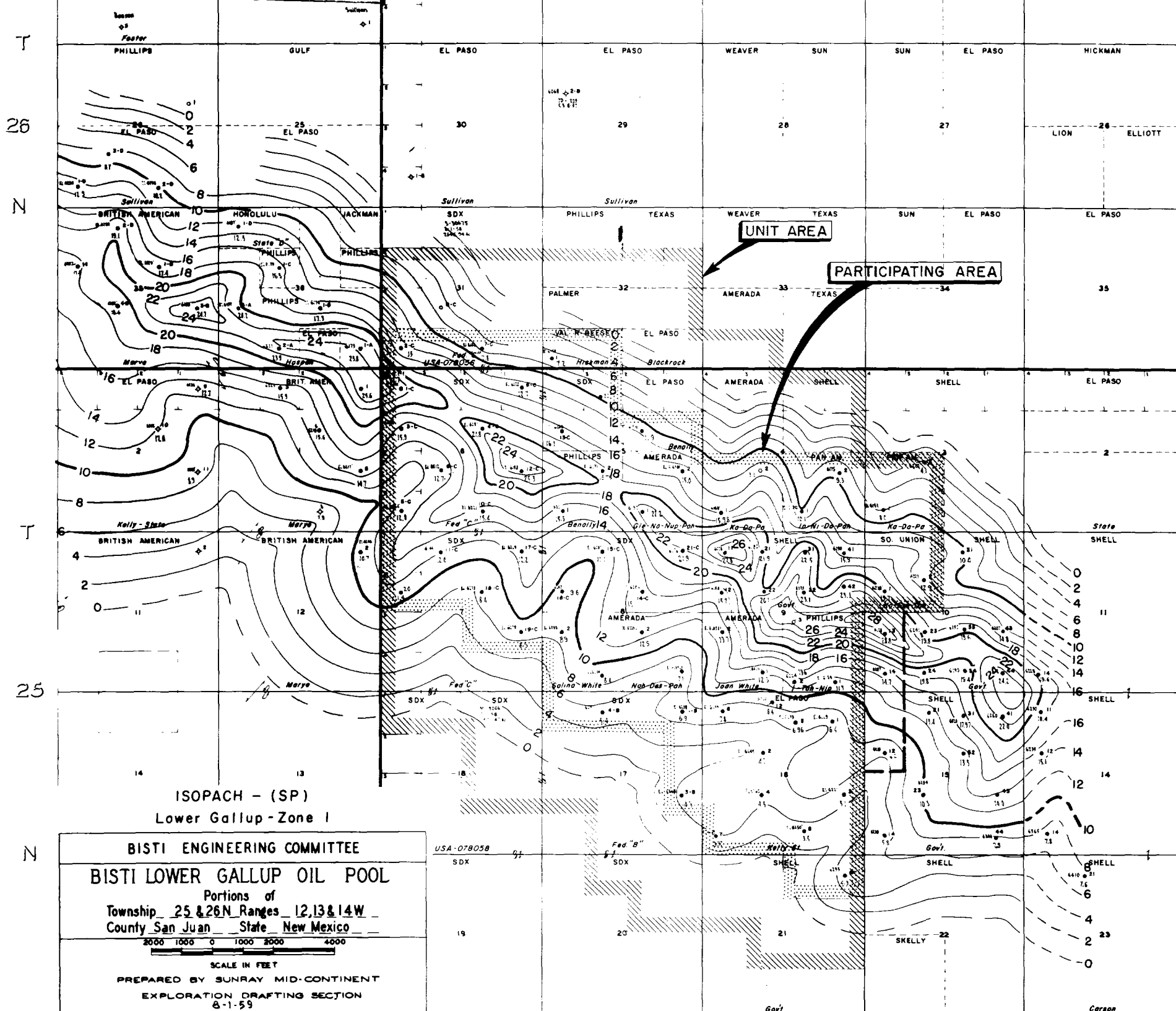


SUNRAY MID-CONTINENT OIL COMPANY

EXHIBIT NO. 4 CASE NO. 1665

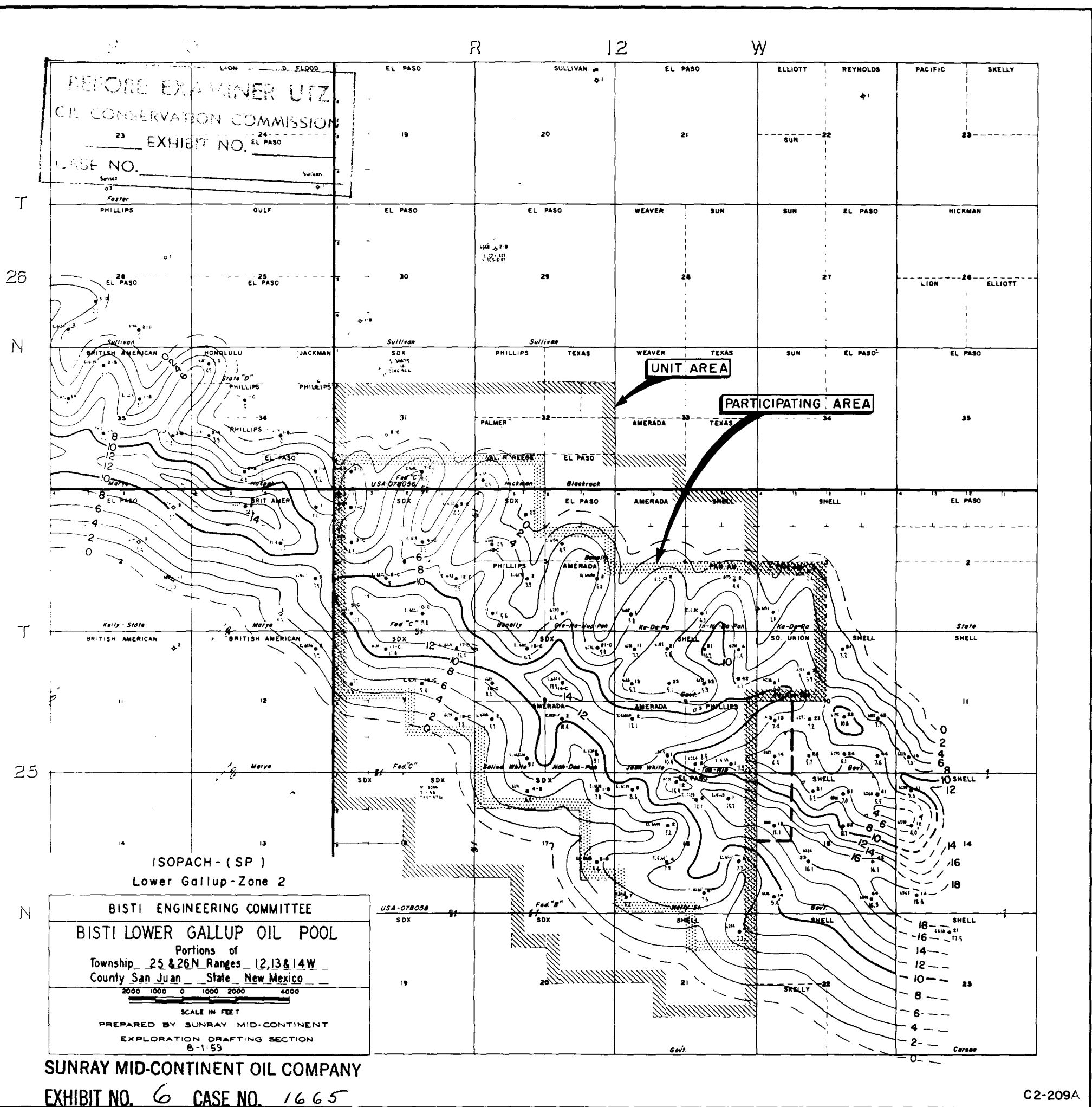
C2-207A

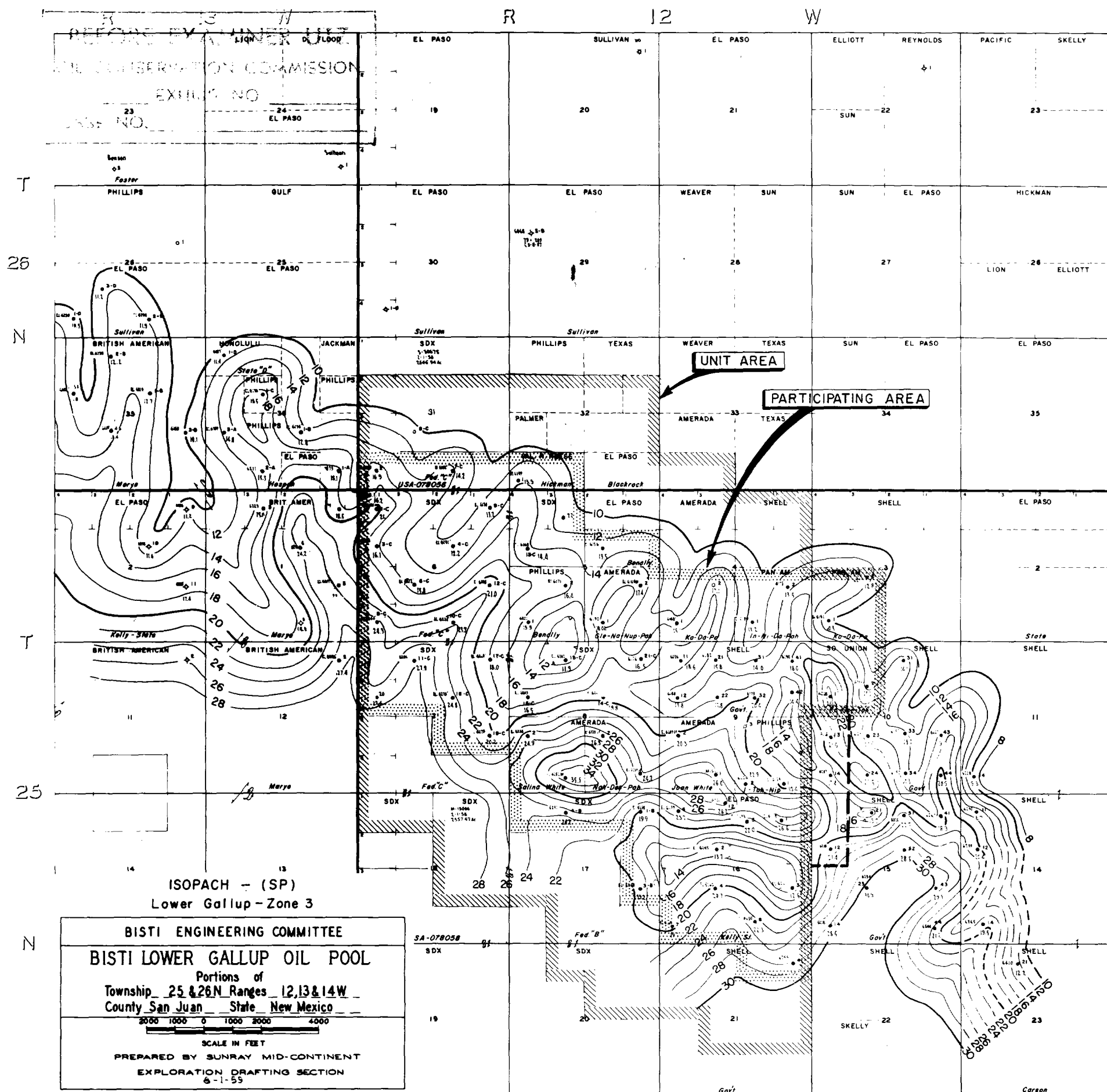
BEFORE EXAMINER UTZ
OIL CONSERVATION COMMISSION
EXHIBIT NO. _____
CASE NO. _____



SUNRAY MID-CONTINENT OIL COMPANY

EXHIBIT NO. 5 CASE NO. 1665





LARGE FORMAT
EXHIBIT HAS
BEEN REMOVED
AND IS LOCATED
IN THE NEXT FILE

LARGE FORMAT
EXHIBIT HAS
BEEN REMOVED
AND IS LOCATED
IN THE NEXT FILE

R 14 W

R

W

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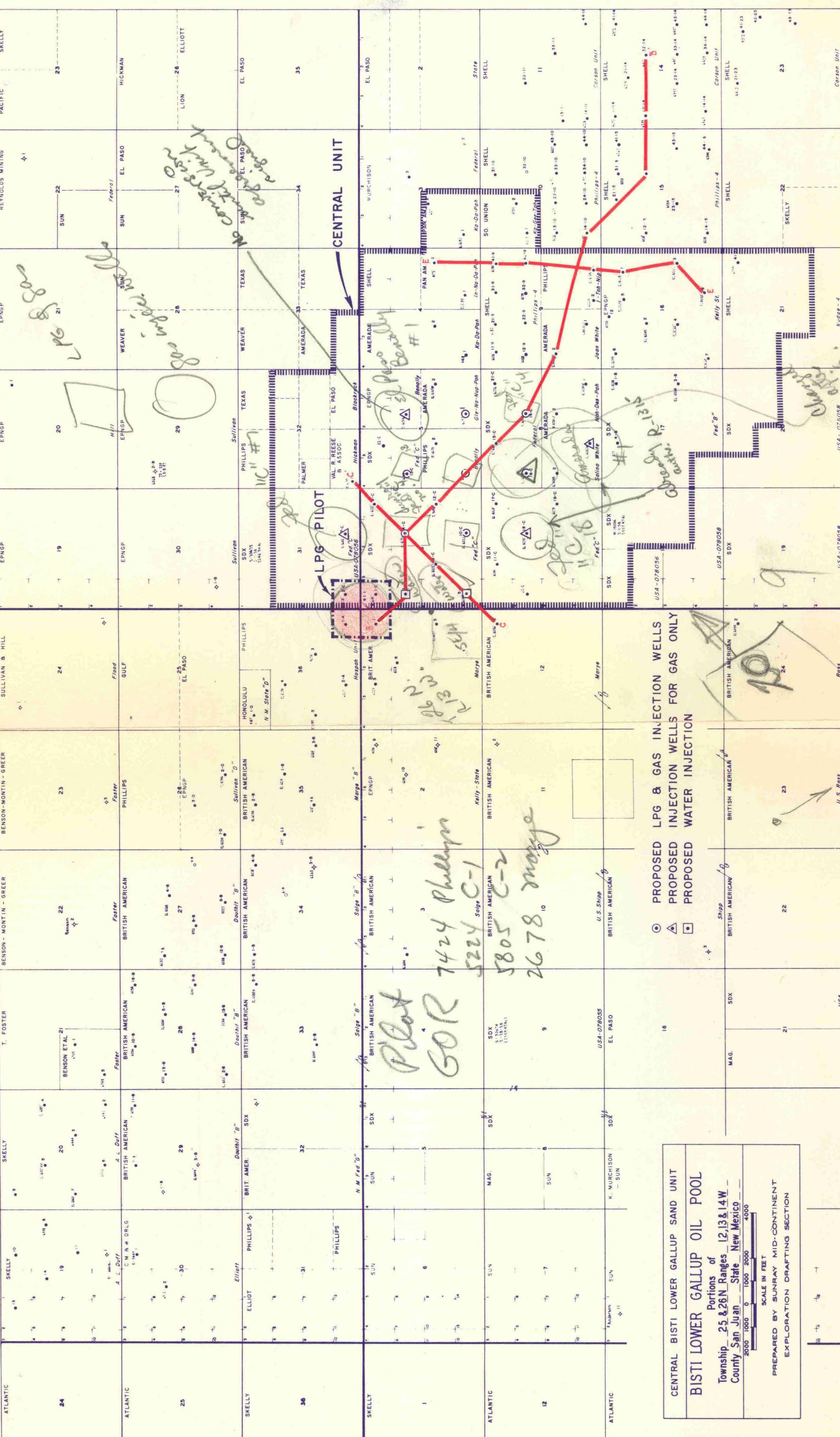
13

W

R

12

W



CENTRAL BISTI LOWER GALLUP SAND UNIT
BISTI LOWER GALLUP OIL POOL
Portions of
Township 25 & 26N Ranges 12, 13 & 14W -
County San Juan State New Mexico

2000 1000 0 1000 2000 4000
SCALE IN FEET
PREPARED BY SUNRAY MID-CONTINENT
EXPLORATION DRAFTING SECTION

BEFORE EXAMINER UTZ

OIL CONSERVATION COMMISSION

EXHIBIT NO. _____

CASE NO. 23

EL PASO

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25

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ISOPACH - (MICROLOG SEPARATION)
Lower Gallup - Zone I

BISTI ENGINEERING COMMITTEE

BISTI LOWER GALLUP OIL POOL

Portions of
Township 25 & 26 N. Ranges 12, 13 & 14 W.
County San Juan State New Mexico

3000 1000 0 1000 2000 4000

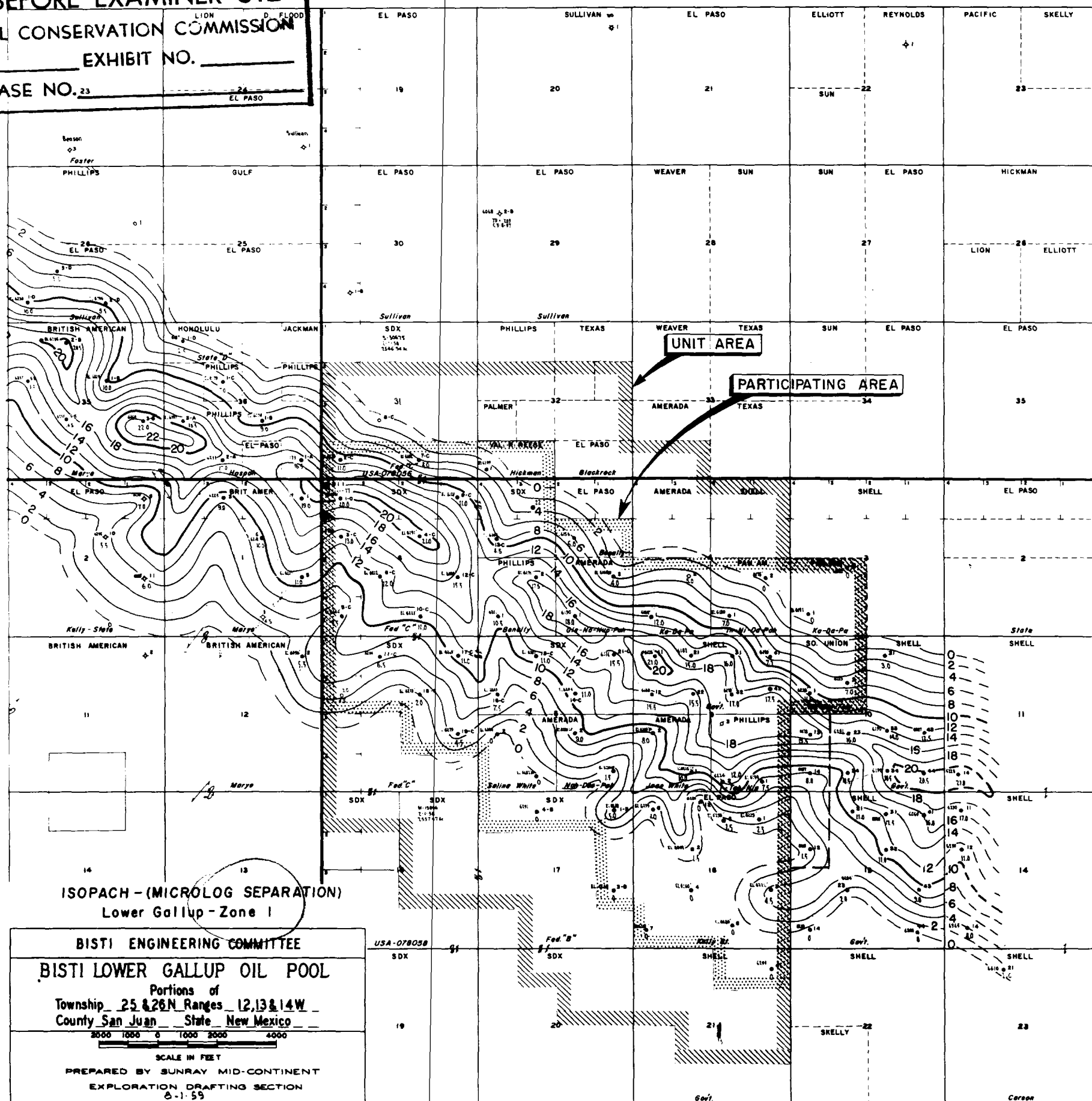
SCALE IN FEET

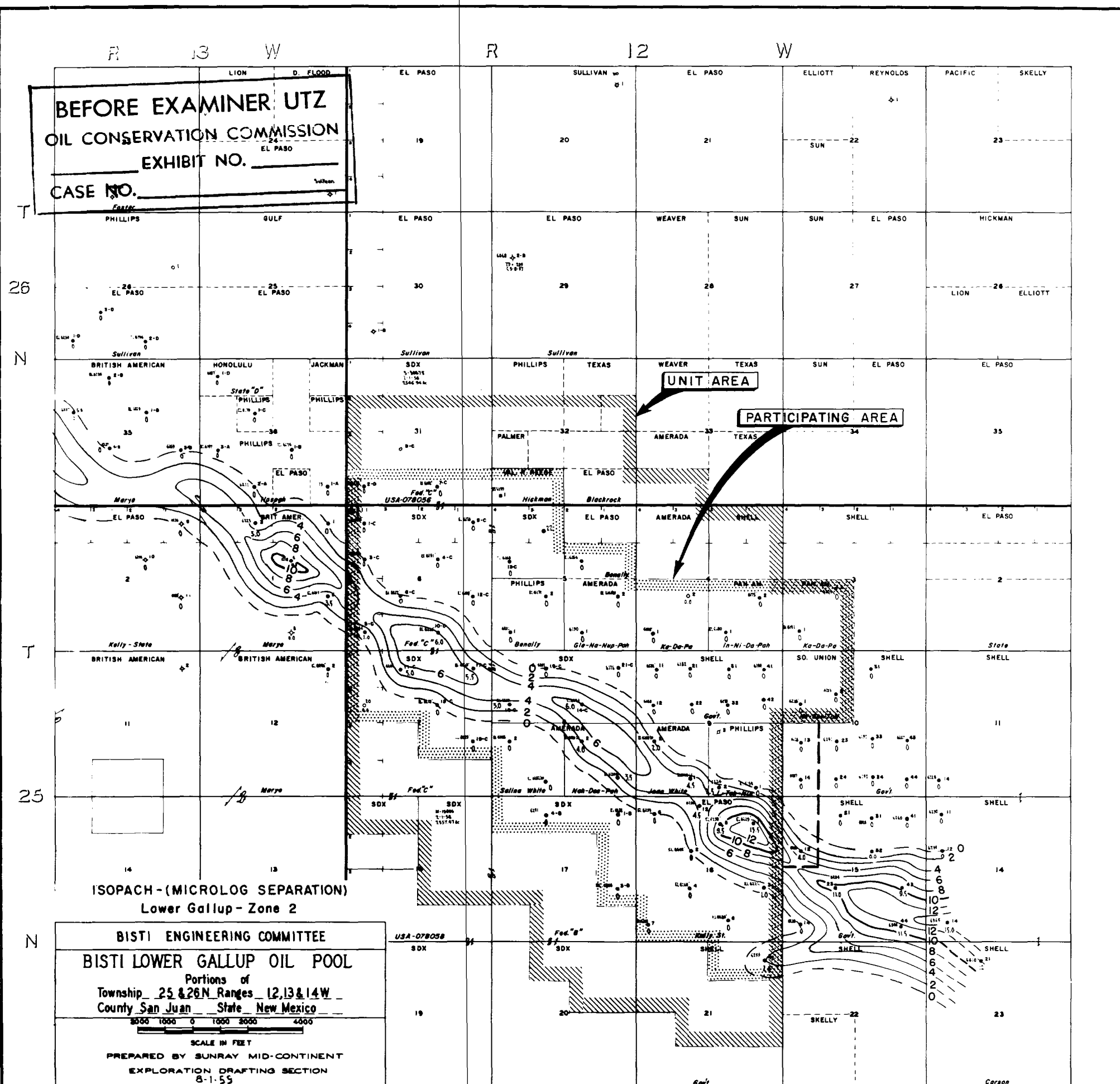
PREPARED BY SUNRAY MID-CONTINENT
EXPLORATION DRAFTING SECTION
6-1-59

SUNRAY MID-CONTINENT OIL COMPANY

EXHIBIT NO. 2 CASE NO. 1665

C-2-205A





BEFORE EXAMINER UTZ
OIL CONSERVATION COMMISSION

EXHIBIT NO. 23

CASE NO.

ISOPACH - (MICROLOG SEPARATION)
Lower Gallup-Zone 3

BISTI ENGINEERING COMMITTEE
BISTI LOWER GALLUP OIL POOL

Portions of
Township 25 & 26 N Ranges 12, 13 & 14 W
County San Juan State New Mexico

2000 1000 0 1000 2000 4000

SCALE IN FEET

PREPARED BY SUNRAY MID-CONTINENT
EXPLORATION DRAFTING SECTION
8-1-53

SUNRAY MID-CONTINENT OIL COMPANY

EXHIBIT NO. 4 CASE NO. 1665

UNIT AREA

PARTICIPATING AREA

C2-207A

