

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

N.M. Oil Cons. Div. Dist. 2
1301 W. Grant Avenue
Artesia, NM 88210

SUBMIT IN DUPLICATE

FOR APPROVED
OMB NO. 1004-0137
Expires: December 31, 1991

LEASE DESIGNATION AND SERIAL NO.

NM 19848

WELL COMPLETION OR RECOMPLETION REPORT AND LOG *

1a. TYPE OF WELL: OIL WELL ☐ GAS WELL ☒ DRY ☐ Other _____

1b. TYPE OF COMPLETION:

NEW WELL ☒ WORK OVER ☐ DEEP-EN ☐ PLUG BACK ☐ DIFF. REMVR. ☐ Other _____

2. NAME OF OPERATOR

Gruy Petroleum Management Co.

3. ADDRESS AND TELEPHONE NO.

P O Box 140907 Irving Tx. 75014-0907

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements)*

At surface 660' FNL & 660' FWL

At top prod. interval reported below 660' FNL & 660' FWL

At total depth 660' FNL & 660' FWL

14. PERMIT NO.

DATE ISSUED

RECEIVED
FEB 13 2005
ARTEZIA

6. IF INDIAN, ALLOTTEE OR TRIBE NAME

7. UNIT AGREEMENT NAME

33370

8. FARM OR LEASE NAME, WELL NO.

Laguna Grande Federal No. 4

9. API WELL NO.

30-015-33219

10. FIELD AND POOL, OR WILDCAT

Laguna Salado; Atoka (Gas)

11. SEC., T., R., M., OR BLOCK AND SURVEY OR AREA

Sec 29-T23S-R29E

12. COUNTY OR PARISH
Eddy

13. STATE
NM

15. DATE SPUNDED

04-26-04

16. DATE T.D. REACHED

05-25-04

17. DATE COMPL. (Ready to prod.)

01-14-05

18. ELEVATIONS (DF, RKB, RT, OR, ETC.)*

2968' GR

19. ELEV. CASINGHEAD

20. TOTAL DEPTH, MD & TVD

12333'

21. PLUG BACK T.D., MD & TVD

12025'

22. IF MULTIPLE COMPL., HOW MANY*

23. INTERVALS DRILLED BY

ROTARY TOOLS

CABLE TOOLS

All

24. PRODUCING INTERVAL(S). OF THIS COMPLETION—TOP, BOTTOM, NAME (MD AND TVD)*

11972' - 11979' Atoka

25. WAS DIRECTIONAL SURVEY MADE

Yes

26. TYPE ELECTRIC AND OTHER LOGS RUN

Dual Spaced Neutron, DLL Microguard, Cement Bond Log

27. WAS WELL CORED

Yes

28. CASING RECORD (Report all strings set in well)

CASING SIZE/GRADE	WEIGHT, LB./FT.	DEPTH SET (MD)	HOLE SIZE	TOP OF CEMENT, CEMENTING RECORD	AMOUNT PULLED
13 - 3/8" H-40	48#	430'	17-1/2"	400 sx Class C TOC 250' 1" to surf 298 sx	
9-5/8" J-55 STC	36#	3028'	12-1/4"	1200 sx Class C circ 168 sx	
7" P-110 LTC	26#	11000'	8-3/4"	200 sx Class H TOC 8365'	

29. LINER RECORD

SIZE	TOP (MD)	BOTTOM (MD)	SACKS CEMENT*	SCREEN (MD)	SIZE	DEPTH SET (MD)	PACKER SET (MD)
4-1/2" P-110	10875'	12333'	200		2-3/8"	11691'	11688'

31. PERFORATION RECORD (Interval, size and number)

11972' - 11979' 6 SPF 42 Holes Set CIBP @ 12060 w/ 35' cement

32. ACID, SHOT, FRACTURE, CEMENT SQUEEZE, ETC.

DEPTH INTERVAL (MD)	AMOUNT AND KIND OF MATERIAL USED
11972' - 11979'	2000 gal 15% NEFE HCL
11972' - 11979'	36000gal foam CO2 18750# 18/40 VProp

33.* PRODUCTION

DATE FIRST PRODUCTION 12-09-04 PRODUCTION METHOD (Flowing, gas lift, pumping—size and type of pump) Flowing

WELL STATUS (Producing or shut-in)

DATE OF TEST	HOURS TESTED	CHOKE SIZE	PROD'N. FOR TEST PERIOD	OIL—BBL.	GAS—MCF.	WATER—BBL.	GAS-OIL RATIO
12-29-04	24	20/64	→	-0-	1374	7	N/A
FLOW. TUBING PRESS.	CASING PRESSURE	CALCULATED 24-HOUR RATE	OIL—BBL.	GAS—MCF.	WATER—BBL.	OIL GRAVITY-API (CORR.)	
1000	200	→	-0-	1374	7	NA	

34. DISPOSITION OF GAS (Sold, used for fuel, vented, etc.)

Sold

TEST WITNESSED BY

LES BABYAK
PETROLEUM ENGINEER

35. LIST OF ATTACHMENTS

NM C-122, Electric logs and Inclination Summary

36. I hereby certify that the foregoing and attached information is complete and correct as determined from all available records

SIGNED

TITLE

Regulatory Analyst

DATE February 7, 2005

*(See Instructions and Spaces for Additional Data on Reverse Side)

37. SUMMARY OF POROUS ZONES: (Show all important zones of porosity and contents thereof; cored intervals; and all drill-stem, tests, including depth interval tested, cushion used, flowing and shut-in pressures, and recoveries):

FORMATION	TOP	BOTTOM	DESCRIPTION, CONTENTS, ETC.

38. GEOLOGIC MARKERS

NAME	TOP	
	MEAS. DEPTH	TRUE VERT. DEPTH
Delaware	2785'	
Bone Spring	6492'	
Wolfcamp	9826'	
Strawn	11696'	
Atoka	11920'	

Submit in duplicate to
appropriate district office.
See Rule 401 & Rule 1122

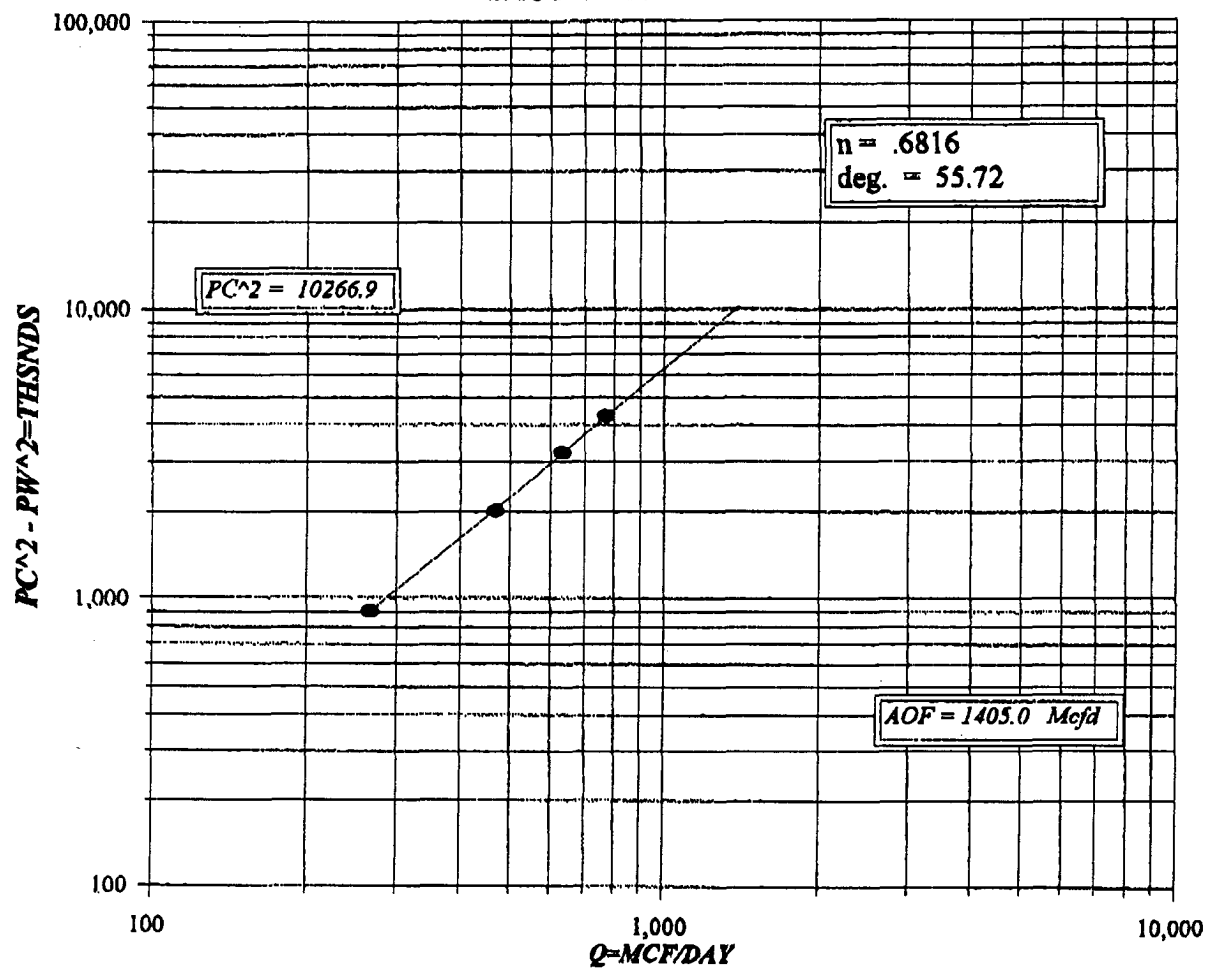
State of New Mexico
Energy Minerals and Natural Resources
Oil Conservation Division
2040 South Pacheco
Santa Fe, NM 87505

Form C-122
Revised October, 1999

MULTIPOINT AND ONE POINT BACK PRESSURE TEST FOR GAS WELL

Operator GRUY				Lease or Unit Name LAGUNA GRANDE FED			
Type Test ☒ Initial ☐ Annual ☐ Special				Test Date 12/29/2004		Well No. 4	
Completion Date 9/23/2004		Total Depth 12333		Plug Back TD		Elevation	
Csg. Size 4 1/2		Wt. 13.5		d 3.92		Set At 12333	
Tbg. Size 2 3/8		Wt. 4.7		d 1.995		Set At 11691	
Perforations: From: 11972 To: 11979				County EDDY			
Perforations: From: To:				Pool			
Type Well-Single-Bradenhead-G.G. or G.O. Multiple SINGLE				Packer Set At 11688		Formation	
Producing Thru TUBING		Reservoir Temp. 190.9		Mean Annual Temp. 60		Baro. Press. - P _a 13.2	
Connection SALES		L 11688		H 11688		Taps FLG	
Gig 0.583		%CO ₂ 0.459		%N ₂ 0.978		%H ₂ S 0	
Prover 0		Meter Run 4.026					
FLOW DATA				TUBING DATA		CASING DATA	
No.	Prover Line Size	Orifice x Size	Press p.s.i.g.	Diff. h _w	Temp.	Press p.s.i.g.	Temp.
SI						3191	
1		4.026 X 1.000	620	1.5	53	3046	1 HR
2		4.026 X 1.000	609	5	60	2858	1 HR
3		4.026 X 1.000	619	9.2	74	2642	1 HR
4		4.026 X 1.000	647	13.3	78	2427	1 HR
5							
RATE OF FLOW CALCULATIONS							
No.	COEFFICIENT (24 Hour)	$\sqrt{h_w P_m}$	Pressure P _m	Flow Temp. Factor Ft.	Gravity Factor F _g	Super Compress Factor F _{pv}	Rate of Flow Q, Mcfd
1							267
2							469
3	TOTAL	FLOW	METER				635
4							773
5							
No.	P _r	Temp. R	T _r	Z	Gas Liquid Hydrocarbon Ratio N/A Mof bbl.		
1					A.P. I. Gravity of Liquid Hydrocarbons N/A Deg.		
2	TOTAL	FLOW	METER		Specific Gravity Separator Gas 0.583 XXXXXXXX		
3					Specific Gravity Flowing Fluid XXXXXX N/A		
4					Critical Pressure 675 P.S.I.A. N/A P.S.I.A.		
5					Critical Temperature 346 R N/A R		
P _o	3204.2	P _w	10266.9				
No.	P _t ²	P _w	P _w ²	P _c ² - P _w ²	(1) $\frac{P_o^2}{P_o^2 - P_w^2} = \frac{2.392}{1.812}$		
1		3059.6	9361.2	905.7			
2		2872.5	8251.3	2015.6			
3		2657.8	7063.8	3203.1			
4		2444.3	5974.6	4292.3			
5							
				(2) $\left[\frac{P_o^2}{P_o^2 - P_w^2} \right]^n = \frac{1405}{0.6816}$			
				AOF = Q $\left[\frac{P_o^2}{P_o^2 - P_w^2} \right]^n = \frac{1405}{0.6816}$			
Absolute Open Flow 1,405				Mcfd @ 15.025		Angle of Slope (°): 55.72	
				Slope, n:		0.6816	
Remarks: NO LIQUID MADE DURING TEST.							
Approved By Division:		Conducted By: PRO WELL TESTING		Calculated By: MERV BUECKER		Checked By: BM	

GRUY PET.
LAGUNA GRANDE FED #4



COMPANY : GRUY

LEASE : LUGUNA GRANDE REBEL NO. 4

Pc = 3204.2 Pc2 = 10288.9

UNIT :

SECTION : 28

TOWNSHIP : 23E

P2 = 9359.7 Pw = 3089.8

L : 11888

H : 11888

LM : 1

G/GMIX : 0.583

8243.8

2872.5

%CO2 : 0.459

%N2 : 0.878

M2S :

DATE : 12/29/04

7050.1

2857.8

d : 1.985

Fr : 0.018231

QH : 8814.1

RANGE : 23E

5954.8

2444.3

VOL 1 : 287

P8IA 1 : 3059.2

RESV.TEMP 190.9

Pc2-Pw2 = 806.7

Pw2 = 9381.2

VOL 2 : 489

P8IA 2 : 2871.2

SHUT-IN PR = 3204.2

2015.8

8251.3

VOL 3 : 635

P8IA 3 : 2866.2

3203.1

7083.8

VOL 4 : 773

P8IA 4 : 2440.2

4282.3

5874.8

PCR : 875

TCR : 348

n = 0.882

Pc2/(Pc2-Pw2) = 11.336

3.084

3.208

2.392

Pc2/Pc2-Pw2[n = 5.233

3.033

2.212

1.812

AOP = Q

1.397

1.423

1.405

1.405

FORM C122-D

LINE		RATE 1		RATE 2		RATE 3		RATE 4	
		1ST	2ND	1ST	2ND	1ST	2ND	1ST	2ND
1	QM	0.287	0.287	0.489	0.489	0.635	0.635	0.773	0.773
2	TW	534	534	534	534	534	534	534	534
3	Ta	850.9	850.9	850.9	850.9	850.9	850.9	850.9	850.9
4	T	592.4	592.4	592.4	592.4	592.4	592.4	592.4	592.4
	PR (est)	4.53		4.28		3.93		3.62	
5	Z (est)	0.858	0.874	0.882	0.888	0.848	0.857	0.848	0.851
6	TZ	508.1	518.0	808.0	612.8	502.8	507.8	501.3	504.1
7	GM/TZ	13.411	13.154	13.492	13.289	13.559	13.420	13.882	13.519
8	e8	1.854	1.838	1.859	1.848	1.883	1.884	1.885	1.880
9	I-e8	0.386	0.389	0.387	0.382	0.389	0.385	0.389	0.388
10	Pi	3059.2	3059.2	2871.2	2871.2	2855.2	2855.2	2440.2	2440.2
11	Pi2 /1000	9359.7	9359.7	8243.8	8243.8	7050.1	7050.1	5954.8	5954.8
12	Fr	0.018231	0.018231	0.018231	0.018231	0.018231	0.018231	0.018231	0.0182312
13	Fc=FrTZ	9.283	9.444	9.207	9.348	9.182	9.257	9.140	9.188
14	FcQm	2.47	2.82	4.32	4.38	5.82	5.88	7.07	7.10
15	LM(FcQm)	6.1	8.4	18.8	19.2	33.8	34.8	48.9	50.5
16	Pw	2.417837	2.475891	7.40432	7.544211	13.4817	13.86376	18.83282	20.065852
17	Pw2	8961.1	8981.2	8251.2	8251.3	7083.8	7083.8	5874.5	5874.8
18	Pc2	15478.0	16330.4	13685.3	13581.4	11744.7	11684.0	9948.3	9918.2
19	Pa	3934.3	3815.4	3899.4	3885.3	3427.1	3418.2	3153.8	3149.5
20	P	3498.8	3487.3	3285.3	3278.2	3041.1	3038.7	2797.0	2784.8
21	Pr	5.18	5.17	4.87	4.88	4.81	4.50	4.14	4.14
22	Tr	1.71	1.71	1.71	1.71	1.71	1.71	1.71	1.71
23	Z	0.874	0.874	0.886	0.885	0.857	0.857	0.861	0.861



Laboratory Services, Inc.

2609 West Marland
Hobbs, New Mexico 88240

Telephone: (505) 397-3713

FOR: Pro Well Testing & Wireline
P. O. Box 791
Hobbs, New Mexico 88241

SAMPLE:
IDENTIFICATION Laguna Grande Fed. #4
COMPANY: Gruy Petroleum
LEASE:
PLANT:

SAMPLE DATA: DATE SAMPLED 12/29/04 12:30pm
ANALYSIS DATE: 12/30/04
PRESSURE - PSIG 608
SAMPLE TEMP. °F 65
ATMOS. TEMP. °F

GAS (XX) LIQUID ()
SAMPLED BY: Merv Buecker
ANALYSIS BY: Vickie Biggs

REMARKS:

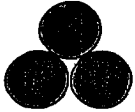
COMPONENT ANALYSIS

COMPONENT		MOL PERCENT	GPM
Hydrogen Sulfide	(H2S)		
Nitrogen	(N2)	0.978	
Carbon Dioxide	(CO2)	0.459	
Methane	(C1)	95.655	
Ethane	(C2)	2.268	0.605
Propane	(C3)	0.344	0.093
I-Butane	(IC4)	0.043	0.014
N-Butane	(NC4)	0.041	0.013
I-Pentane	(IC5)	0.020	0.007
N-Pentane	(NC5)	0.015	0.005
Hexane Plus	(C6+)	<u>0.179</u>	<u>0.078</u>
		100.000	0.817

BTU/CU.FT. - DRY 1028
AT 14.850 DRY 1024
AT 14.650 WET 1008
AT 14.73 DRY 1030
AT 14.73 WET 1012

MOLECULAR WT. 16.8919

SPECIFIC GRAVITY -
CALCULATED 0.583
MEASURED



SCAL, Inc.

SPECIAL CORE ANALYSIS LABORATORIES

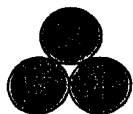
Tom Brown, Inc.

Sidewall Core Analysis Report

***Laguna Grande Fed #4
Eddy County, New Mexico***

The analysis, interpretations or opinions expressed in our reports represent the best judgement of Special Core Analysis Laboratories Inc.. Special Core Analysis Laboratories Inc. assumes no responsibility and makes no warranties of any kind as to the productivity, proper operation or profitability of any oil, gas, or any other mineral in connection which such a report is used or relied upon.

P.O. Box 9730 - MIDLAND, TX 79708-2730 - (915) 561-5406 - FAX (915) 561-5339



SCAL, Inc.

SPECIAL CORE ANALYSIS LABORATORIES

June 15, 2004

Mr. Lenny Wood

Tom Brown, Inc.
508 West Wall
Suite 500
Midland, Texas 79701

Reference:

Drilled Sidewall Core Analysis
File: 04248
Laguna Grande Fed #4
Eddy County, New Mexico

Dear Mr. Wood:

Please find enclosed the final core analysis report for the rotary sidewall core samples.

The following procedures were used:

The sample containers were opened and a gas detector was used to determine the presence and relative amount of flammable gas. The gas measurement of 500+ represents the point at which the gas detector filament becomes saturated. The ends of the samples were trimmed and UV and Natural light photographs were taken. The end piece of each sample was then photographed under natural light utilizing a microscope at a low (10x) and higher (30x) magnification. A Dean-Stark extraction was performed to remove pore water. A material balance was performed to determine the oil saturation. After drying, the porosity and air permeability (@ 500 and 3,850 psi confining pressures) were measured.

It was a pleasure performing these analysis for you. If you have any further questions please feel free to contact our laboratory.

Thank you for using SCAL, Inc.

Sincerely,

Landon Turnbow
Lab Supervisor

Mihai Vasilache
Petroleum Engineer/President

Drilled Sidewall Core Analysis Report

Company : Tom Brown, Inc. **Field:** Laguna Salado
File No. : 04248 **Formation:**
Well : Laguna Grande Fed #4 **County :** Eddy County, New Mexico
Location : 660' FNL & 660' FWL, Sec 29, T23S, R29E

Sample Number	Depth	Air Permeability	Klinkenberg Permeability	Porosity	Grain Density	Sw	So	Gas	Fluorescence	Sample Description
	ft	mD	mD	%	g/cc	%	%	Units	%	Description

Confining Pressure 3,850 psi

1	11,152.0	0.0306	0.0165	7.26	2.74	53.1	0.0	312	0	Ls:dkbrn sl ppp sm snd sm sh vf xln styl
2	11,153.0	0.0070	0.0027	4.59	2.75	46.2	0.0	358	0	Ls:dkbrn nvp sm cht sm sh styl vf xln
3	11,155.0	0.0194	0.0097	7.26	2.73	40.5	0.0	500+	0	Dol:dkbrn nvp chty sl pyr sm calc sm sh
4	11,589.0	0.0004	0.0001	0.80	2.59	51.3	0.0	213	0	Cht:blk nvp sm pyr sm calc sm sh styl vf xln
5	11,649.0	0.0003	0.0000	0.47	2.66	50.8	0.0	202	0	Cht:blk nvp calc sm pyr vf xln
6	11,709.0	0.3094	0.2291	3.33	2.78	43.5	0.0	69	0	Ls:tn-gry vuggy styl peld sl snd sl pyr
7	11,722.0	0.0006	0.0001	0.00	2.72	57.7	0.0	181	0	Ls:tn-gry nvp styl sm pyr xln
8	11,747.5	0.0005	0.0001	0.15	2.69	62.5	0.0	19	0	Ls:dkbrn nvp chty vf xln
9	11,752.5	0.0021	0.0006	1.70	2.72	48.6	0.0	151	0	Ls:brn sl ppp styl sm anhy xln
10	11,786.0	0.0037	0.0012	3.74	2.70	43.5	0.0	7	0	Ls:tn sl vugs styl foss xln
11*	11,792.0	tbfa	tbfa	4.88	2.71	47.9	0.0	30	0	Cht:blk nvp sm pyr sm calc sl sh
12	11,796.5	0.0005	0.0001	0.01	2.63	62.3	0.0	42	0	Cht:dkgry nvp pyr sl calc sl sh xln
13	11,798.5	0.0006	0.0001	0.23	2.70	52.6	0.0	124	0	Ls:gry nvp styl chty sl pyr xln
14	11,835.0	0.0027	0.0008	0.52	2.68	59.5	0.0	163	0	Ls:brn nvp styl foss sl anhy xln
15	11,838.0	0.0075	0.0029	1.41	2.70	50.0	0.0	198	0	Ls:brn sl ppp styl foss sl cht xln
16	11,871.0	0.0005	0.0001	3.23	2.60	48.3	0.0	19	0	Cht:blk nvp sl calc sm pyr sl sh xln
17	11,874.0	0.0005	0.0001	0.00	2.60	57.1	0.0	43	0	Cht:blk nvp sm dol sl calc frac sm pyr xln
18	11,875.0	0.0011	0.0003	0.22	2.58	56.2	0.0	77	0	Cht:blk nvp sm dol sl calc sm pyr styl xln
19	11,884.0	0.0006	0.0001	0.00	2.58	58.8	0.0	32	0	Cht:blk nvp sm dol sm pyr styl xln
20	11,972.0	0.0009	0.0002	0.00	2.72	44.7	0.0	72	0	Cht:brn nvp sm calc styl foss sl sh sl pyr

Drilled Sidewall Core Analysis Report

Company : Tom Brown, Inc.
File No. : 04248

Field: Laguna Salado

Formation:

Well : Laguna Grande Fed #4
Location : 660' FNL & 660' FWL, Sec 29, T23S, R29E

County : Eddy County, New Mexico

Sample Number	Depth ft	Air Permeability mD		Klinkenberg Permeability mD		Porosity %	Grain Density g/cc	Sw %	So %	Gas Units	Fluorescence		Sample Description
											%	Description	
21	11,973.0	0.0040	0.0014	0.0014	6.28	2.78	2.78	61.8	0.0	432	0		Sh:gry nvp sm musco pyr sl cht
22	11,974.0	0.0712	0.0458	0.0458	13.72	2.66	2.66	59.1	0.0	183	0		Ss:tn-gry vf-cg prly srt ang sl sh sl musco
23	11,975.0	0.0788	0.0517	0.0517	12.53	2.66	2.66	55.0	0.0	121	0		Ss:tn-gry vf-mg prly srt sbang sl calc styl sl sh
24	11,976.0	0.4387	0.3534	0.3534	13.05	2.70	2.70	57.6	0.0	130	0		Ss:iltgry xf-fg prly srt sbang sl sh styl sl hem
25	11,977.0	0.1127	0.0804	0.0804	2.19	2.69	2.69	46.9	0.0	51	0		Ss:iltgry vf-vcg prly srt sbang sl sh sm pyr sm calc styl
26	12,011.0	0.0108	0.0050	0.0050	3.06	2.66	2.66	47.4	0.0	500+	0		Ss:dkgry vf-vcg prly srt ang sm sh sl calc sm pyr styl
27*	12,069.5	tbfa	tbfa	tbfa	3.13	2.71	2.71	52.6	0.0	34	0		Ls:tn nvp styl foss sl pyr sl cht
28	12,070.5	0.0002	0.0000	0.0000	0.51	2.70	2.70	64.8	0.0	4	0		Ls:gry nvp styl sh peld sm pyr sl cht xln
29	12,071.5	0.0002	0.0000	0.0000	0.61	2.70	2.70	47.2	0.0	38	0		Ls:gry nvp styl sm sh sl cht sm pyr xln
30	12,072.5	0.0078	0.0033	0.0033	1.31	2.71	2.71	57.5	0.0	10	0		Ls:gry nvp styl foss xln
31	12,073.5	0.0002	0.0000	0.0000	0.61	2.70	2.70	55.6	0.0	12	0		Ls:gry nvp styl foss cht
32	12,076.0	0.0014	0.0004	0.0004	3.23	2.70	2.70	42.7	0.0	18	0	Gld mf	Dol:brn nvp frac mic xln
33	12,077.0	0.0388	0.0232	0.0232	3.76	2.72	2.72	48.8	0.0	16	0	Gld mf	Ls:brn nvp styl sl cht mic xln
34	12,078.0	0.0002	0.0000	0.0000	0.94	2.70	2.70	54.2	0.0	12	0	Gld mf	Ls:brn nvp sl cht xln sl anhy mic frac
35	12,079.0	0.0763	0.0520	0.0520	2.02	2.69	2.69	51.0	0.0	23	0	Gld mf	Ls:brn nvp chty mic xln sl anhy frac
36	12,080.0	0.0002	0.0000	0.0000	1.06	2.70	2.70	59.4	0.0	19	0	Gld mf	Dol:brn nvp chty mic xln sl anhy hal
37	12,082.5	0.0640	0.0421	0.0421	2.85	2.79	2.79	45.9	0.0	145	0	Gld mf	Ls:brn sm vugs frac sl cht mic xln
38	12,084.5	0.0722	0.0478	0.0478	4.58	2.72	2.72	40.8	0.0	69	0	Gld mf	Ls:iltgry sm ppp styl sl dol peld frac
39	12,085.0	0.0390	0.0236	0.0236	4.62	2.72	2.72	47.6	0.0	103	0	Gld mf	Ls:iltgry sl ppp styl peld
40	12,122.0	0.0001	0.0000	0.0000	0.50	2.60	2.60	50.6	0.0	3	0		Cht:brn nvp styl sl sh sl calc frac
41	12,125.0	0.0015	0.0004	0.0004	3.15	2.61	2.61	59.0	0.0	6	0		Cht:wht-blk intxln por sl sh peld sm pyr frac

Drilled Sidewall Core Analysis Report

Company : Tom Brown, Inc. Field: Laguna Salado
 File No. : 04248 Formation:
 Well : Laguna Grande Fed #4 County : Eddy County, New Mexico
 Location : 660' FNL & 660' FWL, Sec 29, T23S, R29E

Sample Number	Depth	Air Permeability	Klinkenberg Permeability	Porosity	Grain Density	Sw	So	Gas Units	Fluorescence	Sample Description
	ft	mD	mD	%	g/cc	%	%		%	Description
42	12,131.0	0.0088	0.0031	3.19	2.69	46.3	0.0	128	0	Ss:tn-gry vfg wl srt md styl sl pyr sl calc
43	12,208.0	0.0002	0.0000	0.71	2.70	55.9	0.0	6	0	Ls:blk nvp mic xln
44	12,239.0	0.0002	0.0000	0.50	2.69	45.5	0.0	79	0	Ls:dkbrn nvp frac styl chty peld xln
45	12,253.0	0.0001	0.0000	0.42	2.68	61.3	0.0	76	0	Cht/Ls:dkgry nvp peld styl sl pyr mic xln
46	12,259.0	0.0002	0.0000	0.38	2.66	57.5	0.0	9	0	Cht:dkgry nvp peld styl xln
47	12,260.0	0.0001	0.0000	0.42	2.64	53.6	0.0	25	0	Cht:dkgry nvp calc xln

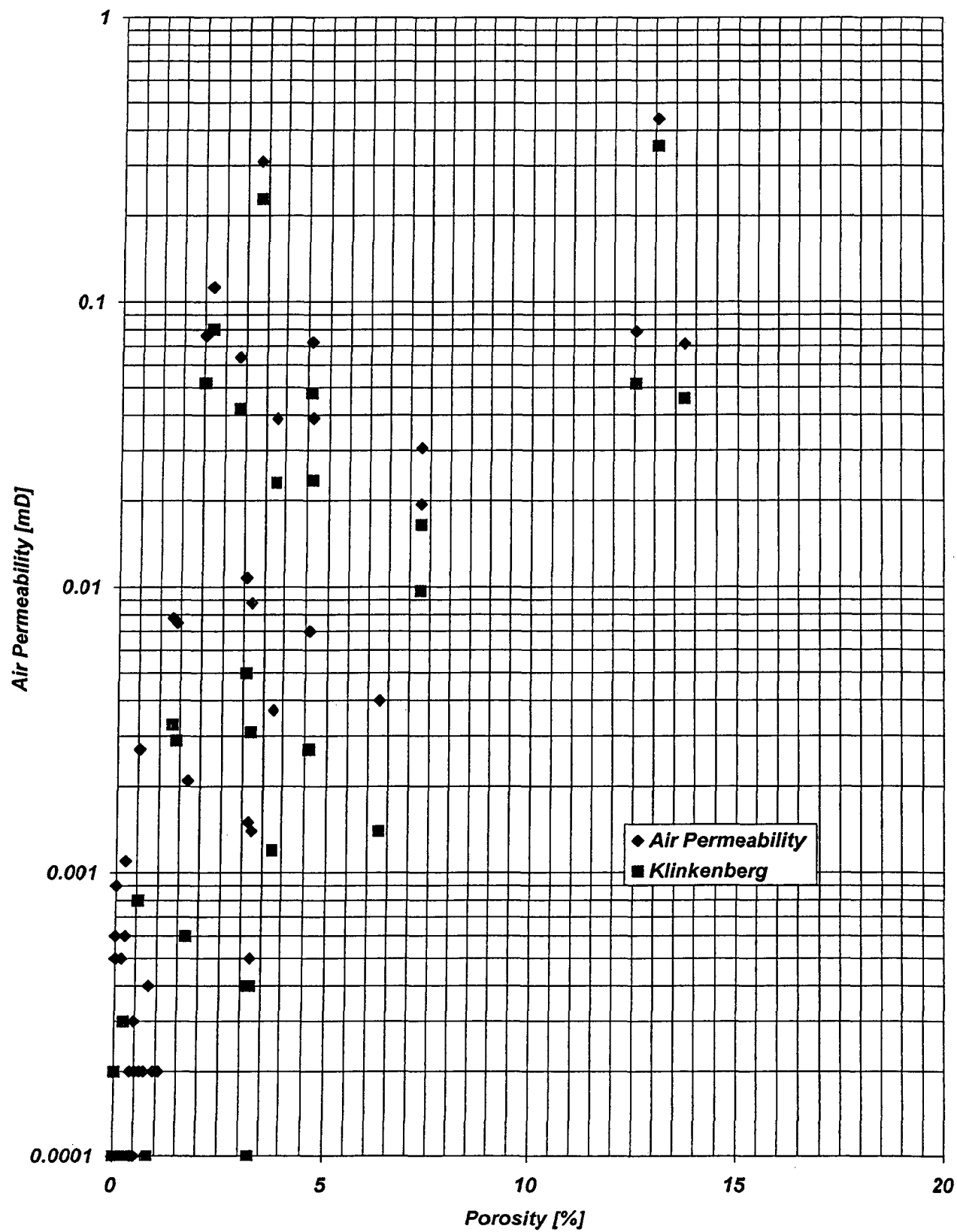
Note: 500+ gas reading represents a saturated detector filament

1% CH4 in air = 100 gas units

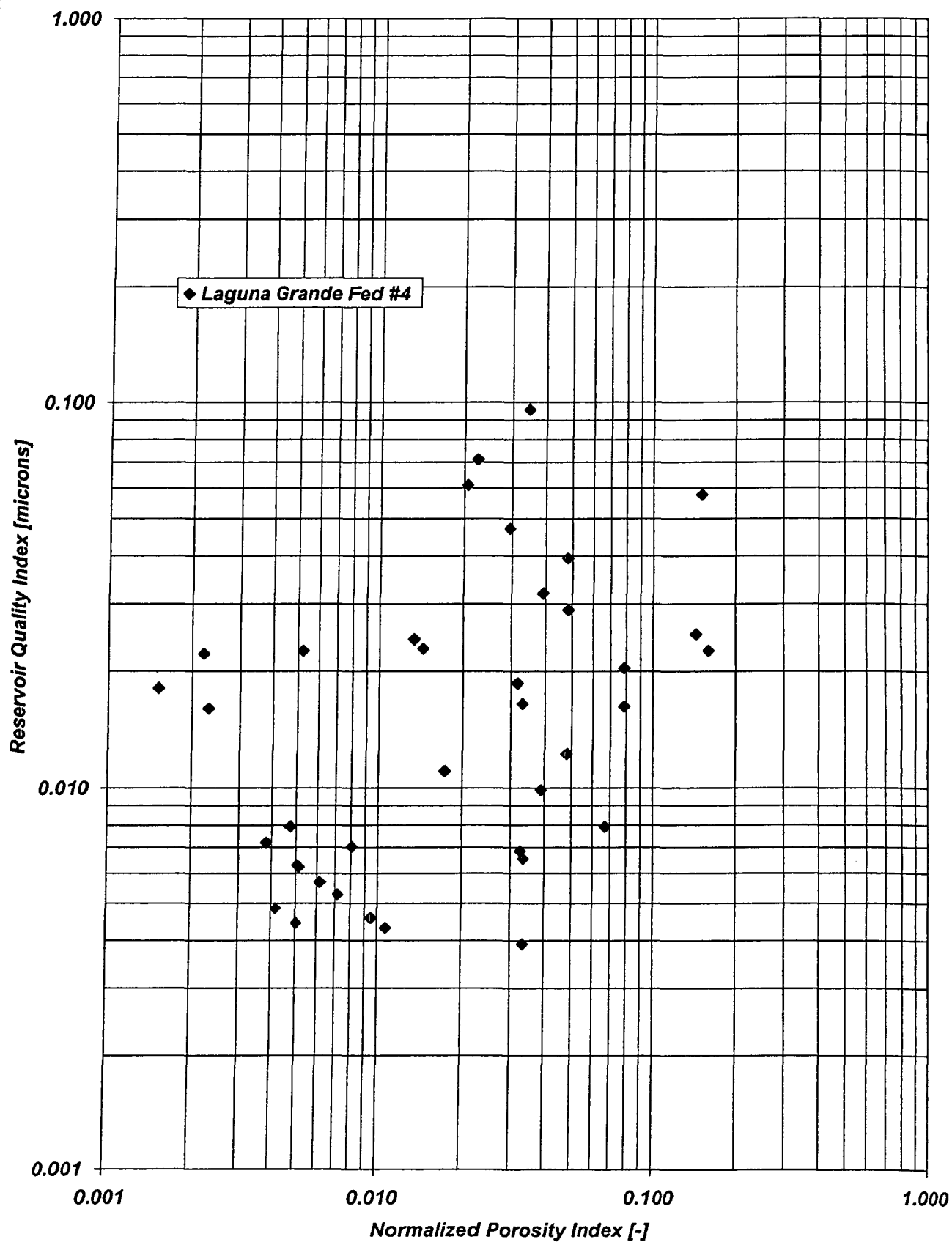
Core Description Abbreviations

ang	angular	grn	green	sbang	subangular
anhy	anhydrite	grst	grainstone	sc	surface contamination
ark	arkosic	gry	gray	sh	shale
arg	argillaceous	gyp	gypsum	strgr	stringer
bl	blue	h/frac	horizontally fractured	sbrnd	subround
bldgg	bleeding gas	hal	halite	scat	scattered
bldgo	bleeding oil	incl	inclusion	sd(y)	sand(y)
blk	black	intrgr	intergranular	sh	shale
blky	blocky	intrxn	intercrystalline	shy	shaley
brn	brown	ip	in part	sil	siliceous
brt	bright	lam	lamina(-ated)	sl	slight(ly)
bf	buff	ls	limestone	silty	silty
calc	calcareous	lt	light	sm	some
carb	carbonaceous	md	medium	sml	small
cem	cement	mf	mineral fluorescence	sp	spotty
cg	coarse grain	mg	medium grain	ss	sandstone
cgl	conglomerate	micr	micritic	siltst	siltstone
chky	chalky	mod	moderate	srt	sorted
chrt	cherty	mott	mottled	strks	streaks
com	common	mdst	mudstone	styl	strolite
conch	conchoidal	n/a	not available	suc	sucrosic
cnsl	consolidated	n/r	not recovered	tbfa	too broken for analysis
crm	cream	nod	nodules	tn	tan
cslt	coarse siltstone	nvp	no visible porosity	tr	trace
dk	dark	o	oil	v	very
dns	dense	ool	oolitic	vis	visible
dol	dolomite	ormg	orange	vfrac	vertically fractured
dolic	dolomitic	peld	peloid	vfg	very fine grain
dru	drusy	pisol	pisolitic	vug	vug(gy)
dul	dull	pk	pink	w/	with
fg	fine grain	pkst	packstone	wht	white
fiss	fissile	por	porosity	wk(-ly)	weak(-ly)
foss	fossiliferous	poss	possible	wkst	wackestone
frac	fractured	ppp	pinpoint porosity	wl	well
fri	friable	pr(-ly)	poor(-ly)	xln	crystalline
gil	gilsonite	ptg	parting	xfg	extremely fine grained
glauc	glauconite	pyr	pyrite	xl	crystal
		rnd	round	yl	yellow

Permeability versus Porosity @ 3,850psi Confining Pressure



Reservoir Quality Index versus Normalized Porosity



Company : Tom Brown, Inc.
File No. : 04248
Well : Laguna Grande I
Location : 660' FNL & 660' F

Field: Laguna Salado
Formation:
County : Eddy County, N

Sample Number	Depth	Grain Density	Porosity	Air Permeability	Klinkenberg Permeability	Porosity	Air Permeability	Klinkenberg Permeability
	ft	g/cc	%	mD	mD	%	mD	mD
			Confining Pressure 500psi					
1	11,152.0	2.74	8.47	0.0369	0.0207	7.26	0.0306	0.0165
2	11,153.0	2.75	6.33	0.0263	0.0144	4.59	0.0070	0.0027
3	11,155.0	2.73	11.41	0.0341	0.0195	7.26	0.0194	0.0097
4	11,589.0	2.59	3.52	0.0079	0.0034	0.8	0.0004	0.0001
5	11,649.0	2.66	3.49	0.0101	0.0046	0.47	0.0003	0.0000
6	11,709.0	2.78	8.91	0.7216	0.5804	3.33	0.3094	0.2291
7	11,722.0	2.72	1.58	0.0083	0.0036	0.00	0.0006	0.0001
8	11,747.5	2.69	2.31	0.0083	0.0036	0.15	0.0005	0.0001
9	11,752.5	2.72	3.69	0.0106	0.0048	1.70	0.0021	0.0006
10	11,786.0	2.70	5.08	0.0292	0.0165	3.74	0.0037	0.0012
11	11,792.0	2.71	tbfa	tbfa	tbfa	tbfa	tbfa	tbfa
12	11,796.5	2.63	1.85	0.0085	0.0037	0.01	0.0005	0.0001
13	11,798.5	2.70	1.66	0.0066	0.0028	0.23	0.0006	0.0001
14	11,835.0	2.68	2.86	0.0380	0.0226	0.52	0.0027	0.0008
15	11,838.0	2.70	6.21	0.0267	0.0149	1.41	0.0075	0.0029
16	11,871.0	2.60	9.76	0.0127	0.0060	3.23	0.0005	0.0001
17	11,874.0	2.60	1.04	0.0012	0.0003	0.00	0.0005	0.0001
18	11,875.0	2.58	1.67	0.0082	0.0036	0.22	0.0011	0.0003
19	11,884.0	2.58	0.58	0.0041	0.0016	0.00	0.0006	0.0001
20	11,972.0	2.72	1.43	0.0069	0.0029	0.00	0.0009	0.0002
			Confining Pressure 3,850psi					

Drilled Sidewall Core Analysis Report

Company : Tom Brown, Inc.
File No. : 04248

Field: Laguna Salado

Well : Laguna Grande Fed #4

Formation:

County : Eddy County, New Mexico

Location : 660' FNL & 660' FWL, Sec 29, T23S, R29E

Sample Number	Depth ft	Grain Density g/cc	Porosity		Air Permeability		Klinkenberg Permeability		Porosity		Air Permeability		Klinkenberg Permeability	
			%		mD		mD		%		mD		mD	
21	11,973.0	2.78	7.90		0.085		0.058		6.28		0.004		0.00	
22	11,974.0	2.66	16.76		0.1294		0.0935		13.72		0.0712		0.0458	
23	11,975.0	2.66	13.87		0.2210		0.1700		12.53		0.0788		0.0517	
24	11,976.0	2.70	13.92		0.6004		0.4918		13.05		0.4387		0.3534	
25	11,977.0	2.69	3.89		0.1523		0.1108		2.19		0.1127		0.0804	
26	12,011.0	2.66	4.83		0.1302		0.0936		3.06		0.0108		0.0050	
27	12,069.5	2.71	tbfa		tbfa		tbfa		tbfa		tbfa		tbfa	
28	12,070.5	2.70	1.99		0.0068		0.0029		0.51		0.0002		0.0000	
29	12,071.5	2.70	1.47		0.0070		0.0030		0.61		0.0002		0.0000	
30	12,072.5	2.71	4.36		0.0252		0.0140		1.31		0.0078		0.0033	
31	12,073.5	2.70	1.95		0.0034		0.0012		0.61		0.0002		0.0000	
32	12,076.0	2.70	6.77		0.0070		0.0029		3.23		0.0014		0.0004	
33	12,077.0	2.72	7.93		0.5961		0.4759		3.76		0.0388		0.0232	
34	12,078.0	2.70	1.71		0.0033		0.0012		0.94		0.0002		0.0000	
35	12,079.0	2.69	6.43		0.4830		0.3729		2.02		0.0763		0.0520	
36	12,080.0	2.70	2.04		0.0067		0.0028		1.06		0.0002		0.0000	
37	12,082.5	2.79	3.86		0.4901		0.4022		2.85		0.0640		0.0421	
38	12,084.5	2.72	5.55		0.1176		0.0843		4.58		0.0722		0.0478	
39	12,085.0	2.72	5.54		0.0717		0.0476		4.62		0.0390		0.0236	
40	12,122.0	2.60	1.27		0.0057		0.0024		0.50		0.0001		0.0000	
41	12,125.0	2.61	4.06		0.0457		0.0285		3.15		0.0015		0.0004	

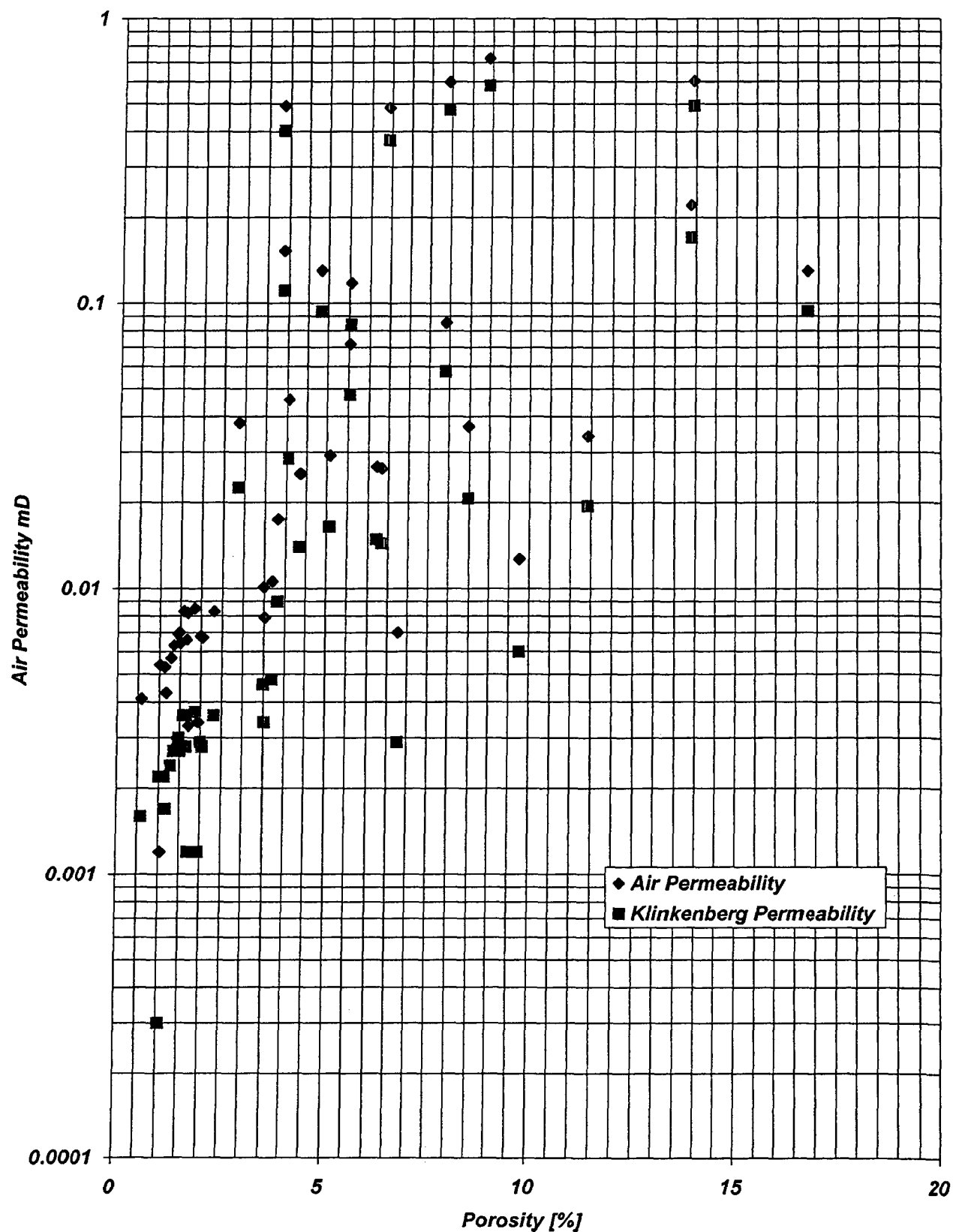
Drilled Sidewall Core Analysis Report

Company : Tom Brown, Inc.
File No. : 04248
Well : Laguna Grande Fed #4
Location : 660' FNL & 660' FWL, Sec 29, T23S, R29E

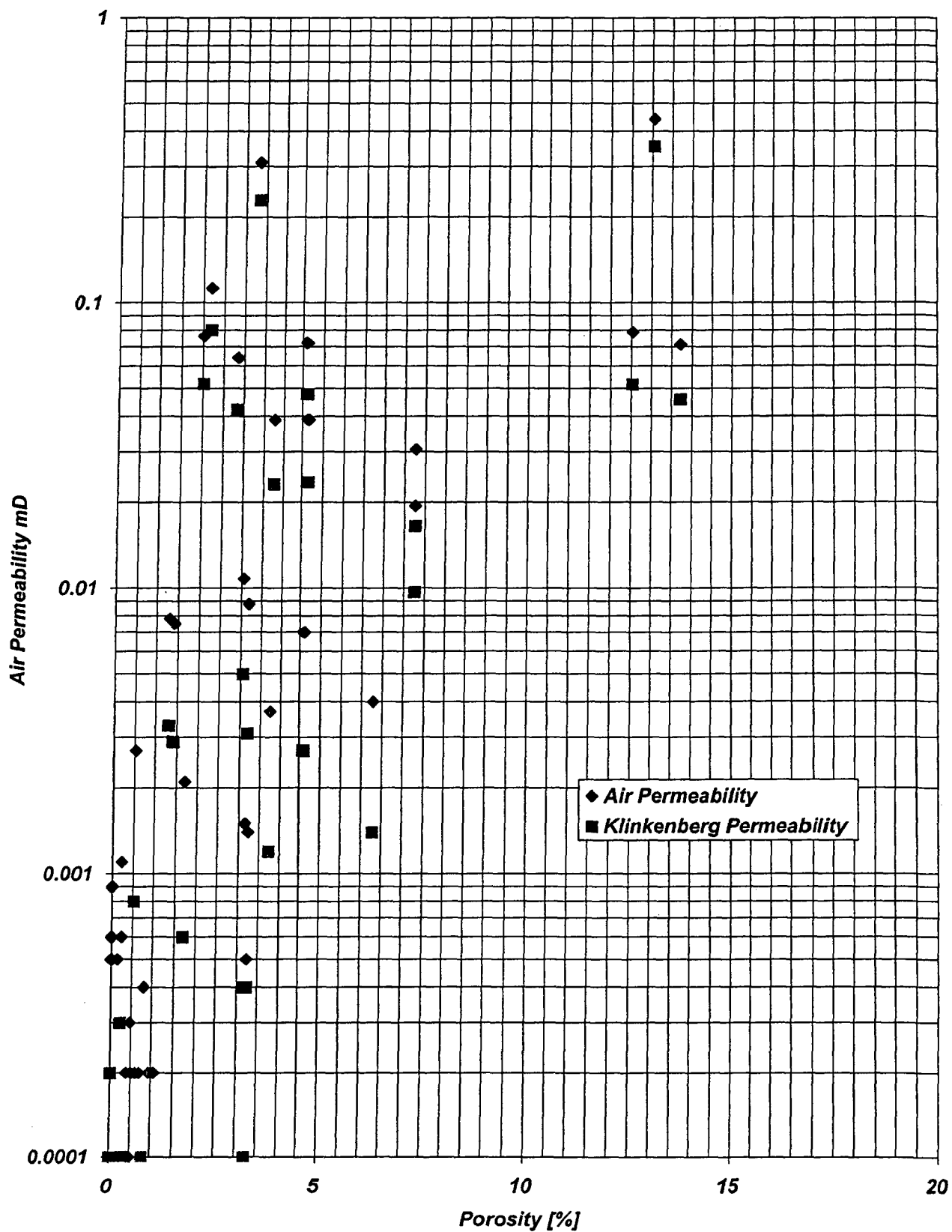
Field: Laguna Salado
Formation:
County : Eddy County, New Mexico

Sample Number	Depth ft	Grain Density g/cc	Porosity		Air		Klinkenberg		Porosity		Air		Klinkenberg	
			%		Permeability mD		Permeability mD		%		Permeability mD		Permeability mD	
42	12,131.0	2.69	3.81		0.0175		0.0090		3.19		0.0088		0.0031	
43	12,208.0	2.70	1.34		0.0063		0.0027		0.71		0.0002		0.0000	
44	12,239.0	2.69	1.50		0.0064		0.0027		0.50		0.0002		0.0000	
45	12,253.0	2.68	1.16		0.0043		0.0017		0.42		0.0001		0.0000	
46	12,259.0	2.66	1.12		0.0053		0.0022		0.38		0.0002		0.0000	
47	12,260.0	2.64	1.01		0.0054		0.0022		0.42		0.0001		0.0000	

Permeability versus Porosity @ 500 psi



Permeability versus Porosity @ 3,850 psi

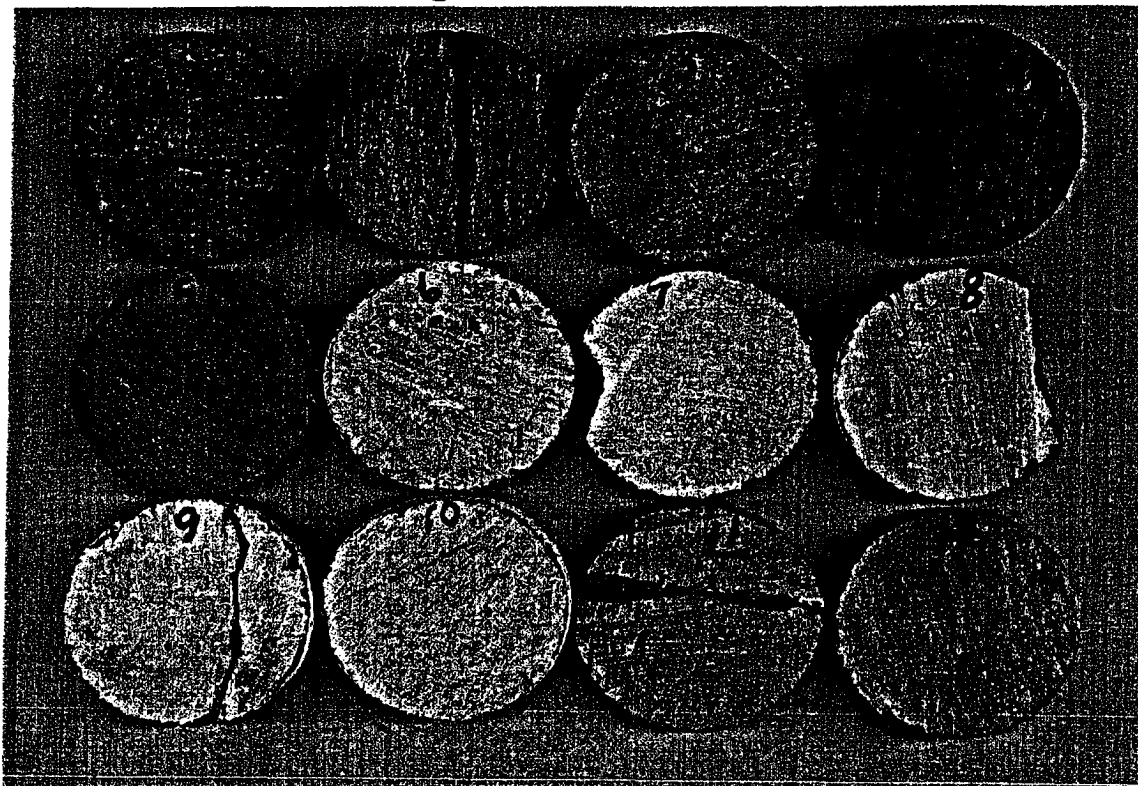




SCAL, Inc.

SPECIAL CORE ANALYSIS LABORATORIES

Laguna Grande Fed #4



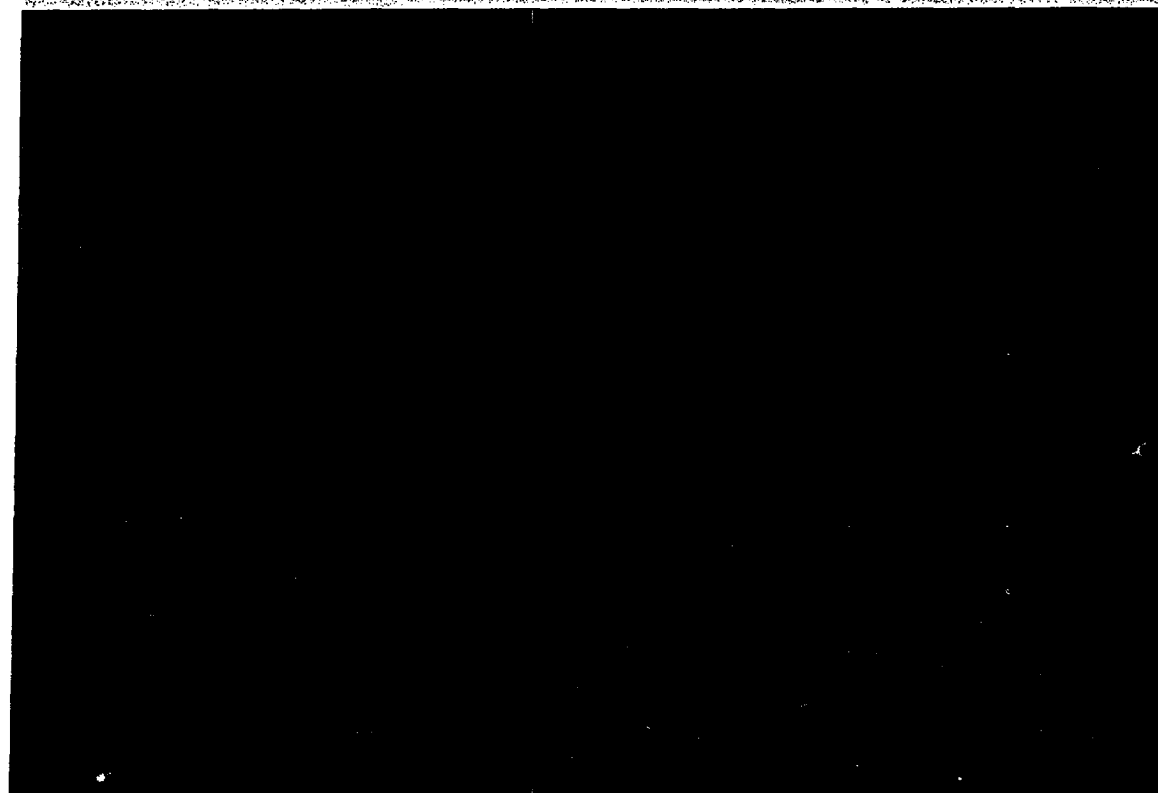
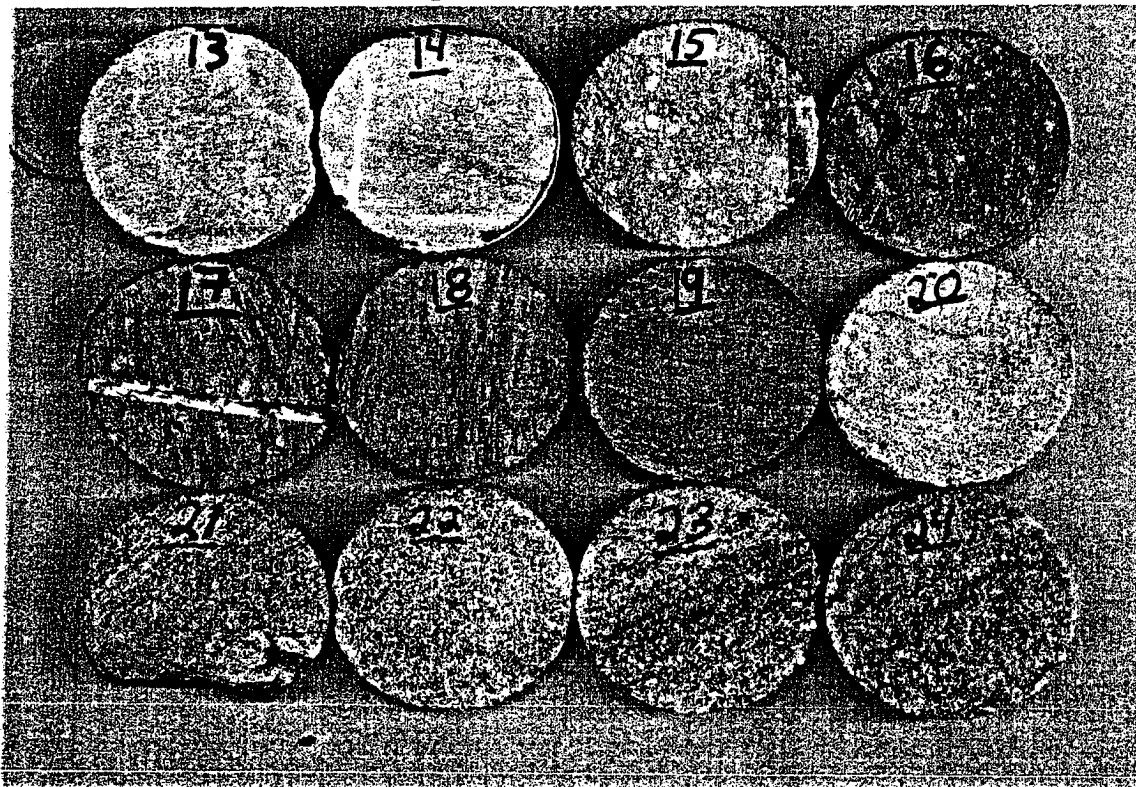
Samples	Depth	Sample	Depth	Sample	Depth	Sample	Depth
1	11,152.0	4	11,589.0	7	11,722.0	10	11,786.0
2	11,153.0	5	11,649.0	8	11,747.5	11*	11,792.0
3	11,155.0	6	11,709.0	9	11,752.5	12	11,796.5



SCAL, Inc.

SPECIAL CORE ANALYSIS LABORATORIES

Laguna Grande Fed #4



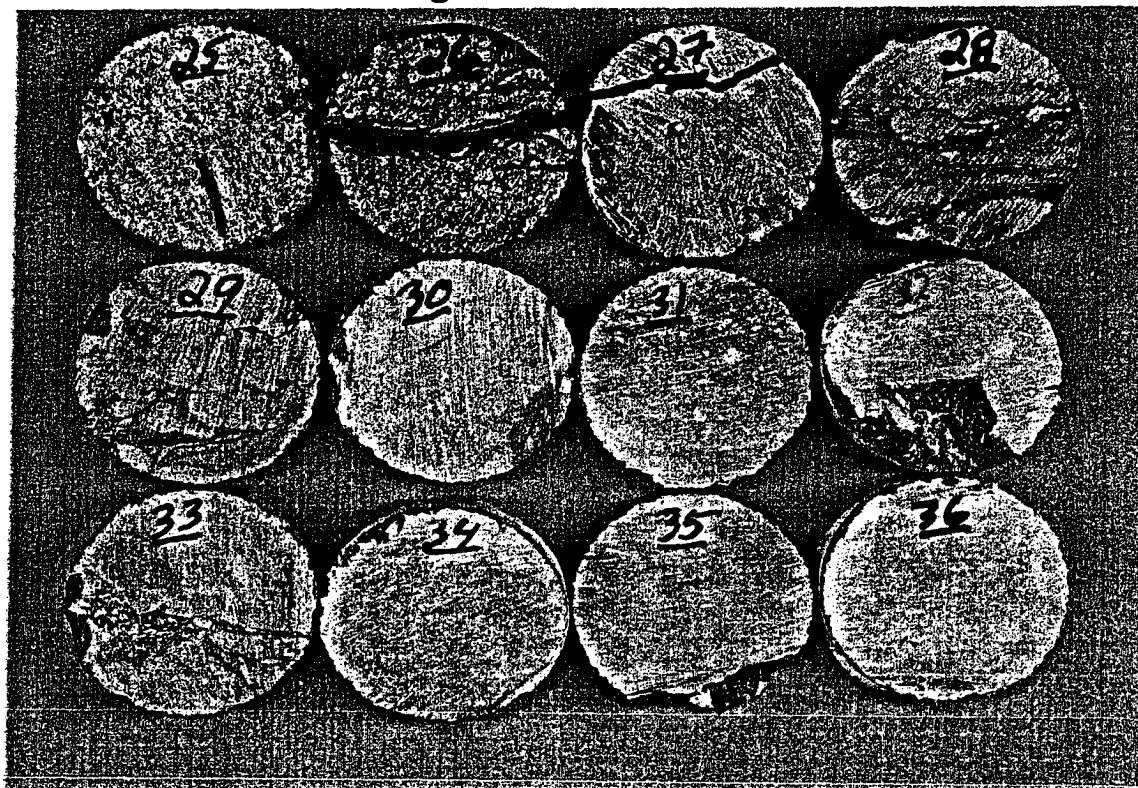
Sample	Depth	Sample	Depth	Sample	Depth	Sample	Depth
13	11,798.5	16	11,871.0	19	11,884.0	22	11,974.0
14	11,835.0	17	11,874.0	20	11,972.0	23	11,975.0
15	11,838.0	18	11,875.0	21	11,973.0	24	11,976.0



SCAL, Inc.

SPECIAL CORE ANALYSIS LABORATORIES

Laguna Grande Fed #4



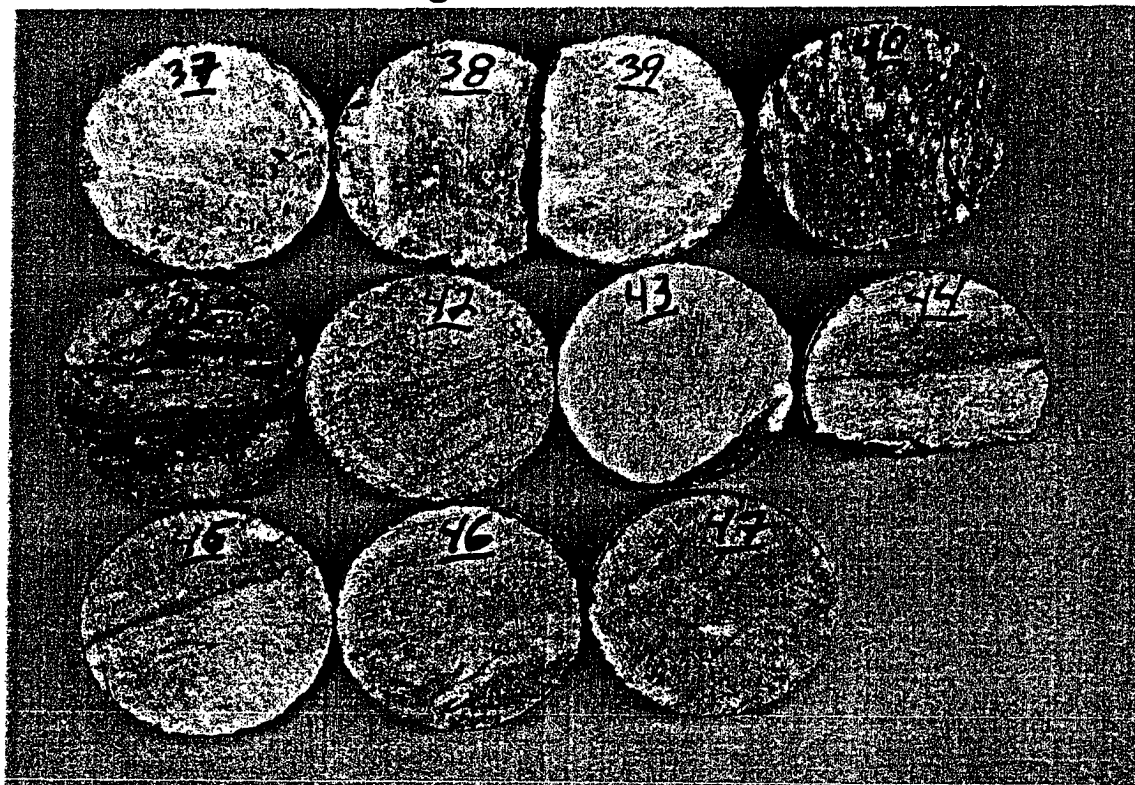
Sample	Depth	Sample	Depth	Sample	Depth	Sample	Depth
25	11,977.0	28	12,070.5	31	12,073.5	34	12,078.0
26	12,011.0	29	12,071.5	32	12,076.0	35	12,079.0
27*	12,069.5	30	12,072.5	33	12,077.0	36	12,080.0



SCAL, Inc.

SPECIAL CORE ANALYSIS LABORATORIES

Laguna Grande Fed #4



Sample	Depth	Sample	Depth	Sample	Depth	Sample	Depth
37	12,082.5	40	12,122.0	43	12,208.0	46	12,259.0
38	12,084.5	41	12,125.0	44	12,239.0	47	12,260.0
39	12,085.0	42	12,131.0	45	12,253.0		

OPERATOR: TOM BROWN, INC
WELL/LEASE: LAGUNA GRANDE FED 4
COUNTY: EDDY, NM

046-0026 RECEIVED
JUL 07 2004

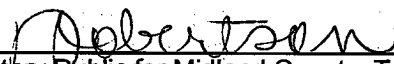
STATE OF NEW MEXICO
DEVIATION REPORT

142 1	2,758 1 1/4	8,099 3/4	10391 0.5
264 3/4	2,998 1 1/4	8,287 2	10645 0.5
411 1	3,476 1/2	8,319 2 1/4	10959 0.5
526 1	3,599 1/2	8,350 2 1/4	11164 0.5
707 1	3,725 1/2	8,382 2 3/4	11419 0.5
920 1/2	3,851 1/2	8,413 2 3/4	11642 0.5
1,439 2 1/2	4,007 1 1/4	8,445 2	11658 0.5
1,500 1 1/2	4,291 1 1/4	8,477 2	11865 0.5
1,689 1 1/2	4,512 1	8,508 2	12054 0.5
1,846 1 1/2	4,984 3/4	8,571 2 3/4	12335 0.5
1,970 1 1/4	5,457 3/4	8,603 2 3/4	
2,096 2 3/4	5,993 1	8,666 3	
2,191 3	6,276 1	8,698 2 3/4	
2,223 3 1/4	6,497 1	8,729 2 3/4	
2,254 3 1/2	6,969 1 3/4	8,761 2 3/4	
2,286 3 3/4	7,221 4	8,792 2 3/4	
2,318 3	7,251 4 1/2	8,824 2 1/4	
2,350 3	7,282 5 1/4	8,855 2	
2,380 3 1/4	7,314 5 1/4	8,887 1 1/2	
2,413 2 1/4	7,345 5	8,919 1 1/2	
2,444 1 3/4	7,377 4 1/4	8,950 1 3/4	
2,477 2 1/2	7,408 4 1/2	8,981 1 1/4	
2,508 2 3/4	7,440 4 3/4	9,014 1	
2,539 2 3/4	7,472 4	9,046 1	
2,571 3	7,503 3 3/4	9,141 1	
2,602 2	7,535 4	9,391 3/4	
2,634 2	7,567 3 1/4	9,891 3/4	
2,665 1 3/4	7,662 2 3/4	10,142 1/2	

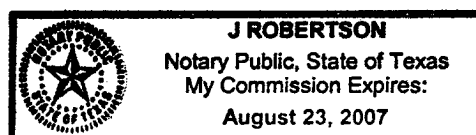
By: 

STATE OF TEXAS
COUNTY OF MIDLAND

The foregoing instrument was acknowledged before me on this 5th day of July, 2004, by Steve Moore on behalf of Patterson-UTI Drilling Company LP, LLLP.


Notary Public for Midland County, Texas

My Commission Expires: 8/23/2007



DISTRICT I
1625 N. French Dr., Hobbs, NM 88240

State of New Mexico

Form C-102

DISTRICT II
1301 W. Grand Avenue, Artesia, NM 88210

Energy, Minerals, and Natural Resources Department

Revised August 15, 2000

Submit to Appropriate District Office

State Lease - 4 copies

Fee Lease - 3 copies

DISTRICT III
1000 Rio Brazos Rd., Aztec, NM 87410

OIL CONSERVATION DIVISION

1220 South St. Francis Dr.

Santa Fe, New Mexico 87505

DISTRICT IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

¹ API Number 30-015-33219	² Pool Code	³ Pool Name Laguna Salado; Atoka (Gas)
⁴ Property Code	⁵ Property Name LAGUNA GRANDE FEDERAL	⁶ Well Number 4
⁷ OGRID No. 162683	⁸ Operator Name TOM BROWN, INC.	⁹ Elevation 2988'

¹⁰ Surface Location

UL or lot no. D	Section 29	Township 23 SOUTH	Range 29 EAST, N.M.P.M.	Lot Idn	Feet from the 660'	North/South line NORTH	Feet from the 660'	East/West line WEST	County EDDY
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¹¹ Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
¹² Dedicated Acres 320	¹³ Joint or Infill N	¹⁴ Consolidation Code	¹⁵ Order No.						

NO ALLOWABLE WELL BE ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATED OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION

¹⁶ Laguna Grande Federal 4	¹⁷ OPERATOR CERTIFICATION I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief. <i>Zeno L. Farris</i> Signature Zeno L. Farris Printed Name Mgr Operations Admin Title February 7, 2005 Date ¹⁸ SURVEYOR CERTIFICATION I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief. NOVEMBER 13, 2003 Date of Survey Signature and Seal of Professional Surveyor Certificate Number V. L. BEZNER R.P.S. #7920 JOB #91389 / 49 SE / J.C.P.
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