THE ANSCHUTZ CORPORATION

2400 ANACONDA TOWER
555 SEVENTEENTH STREET
DENVER, COLORADO 80202
TELEPHONE 303-825-6100
TWX 910-931-2620

December 5, 1980

Division of Oil Gas and Mining
Mr. Cleon B. Feight
1588 West North Temple
Salt Lake City, Utah 84116

RE: Anschutz Ranch East Field
Anschutz Ranch East #16-30U
SE 1/4; SEC. 30; T4N; R8E.
Summit County, Utah

Dear Jack:

Enclosed please find our application for permit to drill the above captioned well submitted in triplicate, along with the required survey plats. Should any problems or questions arise regarding this location please feel free to call at any time.

Sincerely,

Peter B. Doty,
Operations Coordinator

PBD/mmm
Enc.

RECEIVED
DEC 8 1980
DIVISION OF
OIL, GAS & MINING

Form 9-331 C
(May 1963)

SUBMIT IN TRIPLICATE
(Other instructions on reverse side)

Form approved.
Budget Bureau No. 42-R1425.

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

APPLICATION FOR PERMIT TO DRILL, DEEPEN, OR PLUG BACK

1a. TYPE OF WORK
DRILL [XX] DEEPEN [ ] PLUG BACK [ ]

b. TYPE OF WELL
OIL WELL [X] GAS WELL [ ] OTHER SINGLE ZONE [ ] MULTIPLE ZONE [ ]

2. NAME OF OPERATOR
The Anschutz Corporation

3. ADDRESS OF OPERATOR
555 17th St.; Suite #2400; Denver, Colo. 80202

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.*)
At surface
968' FEL and 1345' FSL SE 1/4
At proposed prod. zone
Pursuant to appropriate spacing order.

5. LEASE DESIGNATION AND SERIAL NO.
FEE

6. IF INDIAN, ALLOTTEE OR TRIBE NAME

7. UNIT AGREEMENT NAME

8. FARM OR LEASE NAME
Anschutz Ranch East

9. WELL NO.
16-30U

10. FIELD AND POOL, OR WILDCAT
~~Anschutz Ranch East~~ Wildcat

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA
Sec. 30; T4N; R8E

12. COUNTY OR PARISH
Summit

13. STATE
Utah

14. DISTANCE IN MILES AND DIRECTION FROM NEAREST TOWN OR POST OFFICE*
17 miles Southwest of Evanston, Wyoming

15. DISTANCE FROM PROPOSED* LOCATION TO NEAREST PROPERTY OR LEASE LINE, FT. (Also to nearest drlg. unit line, if any) 968'

16. NO. OF ACRES IN LEASE 640

17. NO. OF ACRES ASSIGNED TO THIS WELL 120

18. DISTANCE FROM PROPOSED LOCATION* TO NEAREST WELL, DRILLING, COMPLETED, OR APPLIED FOR, ON THIS LEASE, FT. 3034'

19. PROPOSED DEPTH 14,200 Nugget

20. ROTARY OR CABLE TOOLS
Rotary

21. ELEVATIONS (Show whether DF, RT, GR, etc.)
7822 GR ungraded 7838 KB Est.

22. APPROX. DATE WORK WILL START*
February 20, 1981

23. PROPOSED CASING AND CEMENTING PROGRAM

SIZE OF HOLE	SIZE OF CASING	WEIGHT PER FOOT	SETTING DEPTH	QUANTITY OF CEMENT
17 1/2	13 3/8	61	3500	To surface
12 1/4	9 5/8	36	11,400	1000 Sx.
8 1/2	5 1/2	15.5 - 17	14,200	Calc. from caliper

This well will be drilled to an approximate total depth of 14,200' to test the Nugget formation. BOP and mud programs will be those generally used in the area. Electric logs will be run to T.D. No cores are planned. Drill Stem Tests will be run at the discretion of the wellsite geologist. If production is obtained casing will be run through the productive intervals and selectively perforated. Fracing and or Acidizing may be required to stimulate production. Blanket bond is on file. Survey plat is attached.

APPROVED BY THE DIVISION
OF OIL, GAS, AND MINING
DATE: 12/18/80
BY: [signature]

DIVISION OF
OIL, GAS & MINING

IN ABOVE SPACE DESCRIBE PROPOSED PROGRAM: If proposal is to deepen or plug back, give data on present productive zone and proposed new productive zone. If proposal is to drill or deepen directionally, give pertinent data on subsurface locations and measured and true vertical depths. Give blowout preventer program, if any.

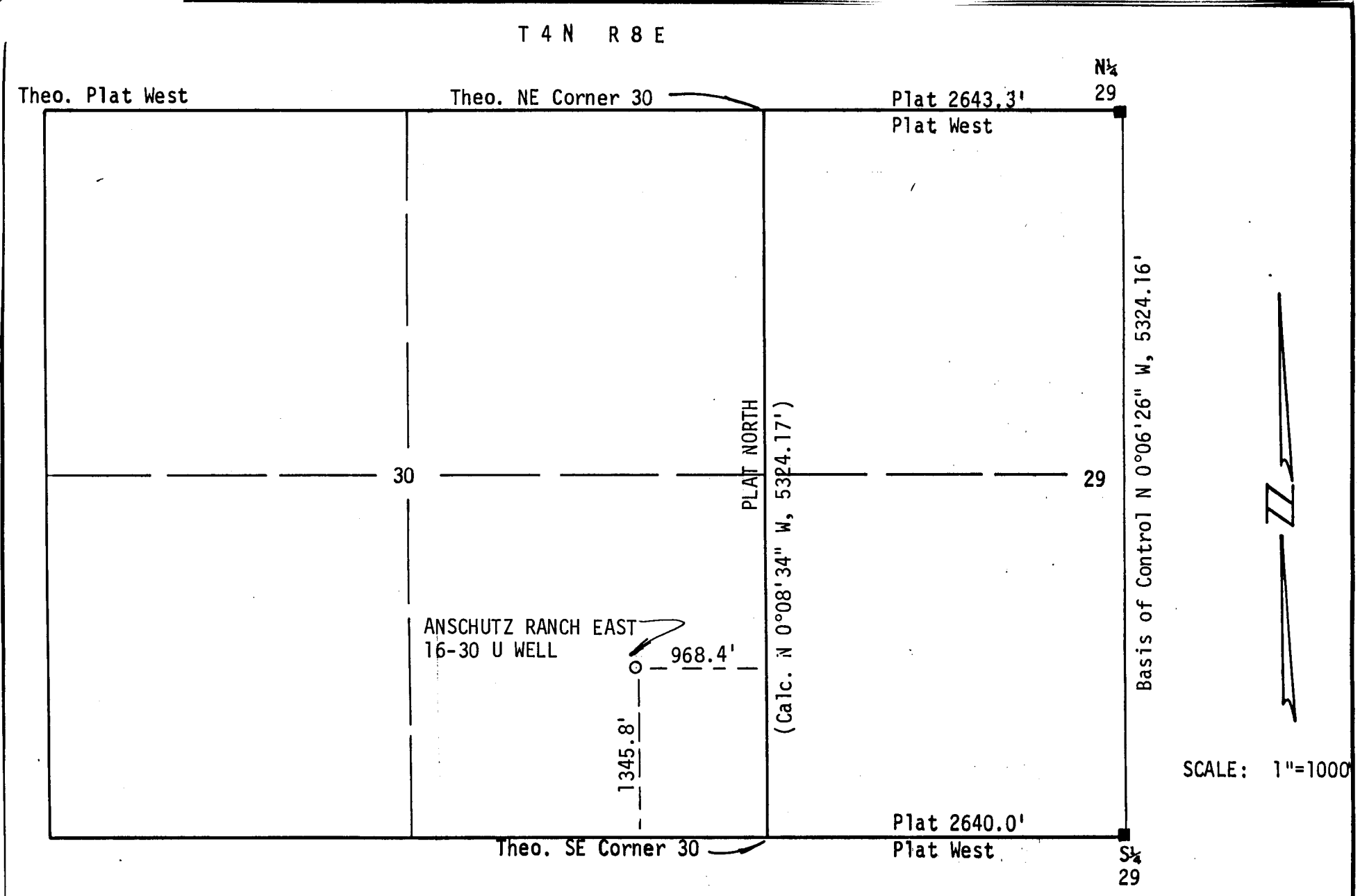
24.
SIGNED Peter B. Doty TITLE Operations Coordinator DATE 12/5/80

(This space for Federal or State office use)

PERMIT NO. APPROVAL DATE

APPROVED BY TITLE DATE
CONDITIONS OF APPROVAL, IF ANY:

*See Instructions On Reverse Side



LEGEND ■ Found Original Stone o Hub and Tack

NOTE: THE ACCURACY OF THIS SURVEY IS SUBJECT TO THE ACCURACY OF THE ORIGINAL PLAT.

I, John A. Proffit of Evanston, Wyoming certify that in accordance with a request from Pete Doty of Denver, Colorado for The Anschutz Corp. I made a survey on the 2nd & 16th days of October 1980 for Location and Elevation of the Anschutz Ranch East 16-30 U Well as shown on the above map, the wellsite is in the SE¼ of Section 30, Township 4N, Range 8E of the Salt Lake Base & Meridian, Summit County, State of Utah, Elevation is 7822 feet top of hub Datum U.S.G.S. Quad - Porcupine Ridge Utah-Wyoming, BM Elevation 7122', NE¼ Section 25 T13N, R121W, 6th P.M., Uinta County, Wyoming.

MAP
SHOWING LOCATION OF
ANSCHUTZ RANCH EAST 16-30 U WELL
IN
SE¼ OF SECTION 30, T4N, R8E
SALT LAKE BASE & MERIDIAN
SUMMIT COUNTY, STATE OF UTAH

John A. Proffit 11/24/80
JOHN A. PROFFIT, UTAH R.L.S. NO. 2860

Uinta Engineering & Surveying, Inc.
808 Main Street, Evanston, Wyoming

DATE: November 21, 1980
JOB NO.: 80-20-11

** FILE NOTATIONS **

DATE: Dec. 16, 1980

OPERATOR: Anschutz Corp.

WELL NO: Anschutz Ranch East 16-30U

Location: Sec. 30 T. 4N R. 8E County: Summit

File Prepared: ☐ Entered on N.I.D: ☐

Card Indexed: ☐ Completion Sheet: ☐

API Number 43-043-30156

CHECKED BY:

Petroleum Engineer:

Director: OK under the order issued in Cause 183-2 provided company plats filed.

Administrative Aide:

APPROVAL LETTER:

Bond Required: ☐ Survey Plat Required: ☐

Order No. 183-2, 4/10/80 O.K. Rule C-3 ☐

Rule C-3(c), Topographic Exception - company owns or controls acreage within a 660' radius of proposed site ☐

Lease Designation ☐ Plotted on Map ☐

Approval Letter Written ☑

Hot Line ☑ P.I. ☑

December 18, 1980

The Anschutz Corporation
555 17th Street, Suite 2400
Denver, Colorado 80202

Re: Well No. Anschutz Ranch East 16-30U
Sec/ 30, T. 4N, R. 8E
Summit County, Utah

Insofar as this office is concerned, approval to drill the above referred to oil well is hereby granted in accordance with the Order issued in Cause No. 183-2, dated April 10, 1980. However, said approval is condition tinnal upon a surveyor's plat being furnished withithis office in accordance with RulesC-4(a), General Rules and Regulations and Rules of Practice and Procedure.

Should you determine that it will be necessary to plug and abandon this well, you are hereby requested to immediately notify the following:

MICHAEL T. MINDER - Petroleum Engineer
Office: 533-5771
Home: 876-3001

Enclosed please find Form OGC-8-X, which is to be completed whether or not water sands (acquifers) are encountered during drilling. Your cooperation in completing this form will be appreciated.

Further, it is requested that this Division be notified within 24 hours after drilling operations commence, and that the drilling contractor and rig number be identified.

The API number assigned to this well is 43-043-30556.

Sincerely,

DIVISION OF OIL, GAS, AND MINING

Cleon B. Feight /ka

Cleon B. Feight
Director

/ka
cc:

THE ANSCHUTZ CORPORATION

2400 ANACONDA TOWER · 555 SEVENTEENTH STREET · DENVER, COLORADO 80202 · 303-825-6100 · TWX 910-931-2620

December 29, 1980

Mr. Cleon B. Feight
Division of Oil, Gas & Mining
1588 West North Temple
Salt Lake City, Utah 84116

RE: Anschutz Ranch East No. 16-30U
Sec. 30, T4N R8E
Summit County, Utah

Dear Mr. Feight:

Enclosed please find the surveyors plat for the above referenced well. If you have any further requirements please fell free to give us a call.

Sincerely,

Peter B. Doty
Operations Coordinator

PBD:ah
Enclosures (2)

DIVISION OF
OIL, GAS & MINING

DIVISION OF OIL, GAS AND MINING

BOP TEST

[redacted]

NAME OF COMPANY: Anschutz

WELL NAME: Anachutz Ranch 6-30U

SECTION 30 TOWNSHIP 4N RANGE 8E COUNTY Summit

DRILLING CONTRACTOR Parker

RIG # 116

[redacted]: DATE 9-2-81

TEST

TIME 4:30 pm

HOW

13 3/8" casing set at 5026'
Will test hydril at 1500# rams,
manifold, etc. at 3000#

DRILLING WILL COMMENCE immediately

REPORTED BY Gary Smith

TELEPHONE #

DATE 9-2-81 SIGNED M.T.M. M.T.M.

CORE LABORATORIES, INC.
Petroleum Reservoir Engineering
DALLAS, TEXAS

CORE ANALYSIS REPORT

FOR

ANSCHUTZ CORPORATION

16-30U ANSCHUTZ RANCH E.
ANSCHUTZ RANCH E. FIELD
SUMMIT COUNTY, UTAH

RECEIVED
NOV 23 1981
DIVISION OF
OIL, GAS & MINING

These analyses, opinions or interpretations are based on observations and materials supplied by the client to whom, and for whose exclusive and confidential use, this report is made. The interpretations or opinions expressed represent the best judgment of Core Laboratories, Inc. (all errors and omissions excepted); but Core Laboratories, Inc. and its officers and employees, assume no responsibility and make no warranty or representations, as to the productivity, proper operations, or profitableness of any oil, gas or other mineral well or sand in connection with which such report is used or relied upon.

CORE LABORATORIES, INC.
Petroleum Reservoir Engineering
DALLAS, TEXAS

NSCHUTZ CORPORATION
6-30U ANSCHUTZ RANCH E.
NSCHUTZ RANCH E. FIELD
UMMIT COUNTY, UTAH

DATE : 07-AUG-81
FORMATION : NUGGET
DRLG. FLUID: LSND
LOCATION : NE SE SEC 30-T4N-R8E

FILE NO : RP-4-6132
ANALYSTS : BERNDT
ELEVATION: 7837 KB

FULL DIAMETER ANALYSIS--BOYLE'S LAW POROSITY

AMPLE UMBER	DEPTH	PERM. TO AIR (MD) MAXIMUM	90 DEG	VERTICAL	POR. He	FLUID SATS. OIL	WTR	GRAIN DEN	DESCRIPTION	
1	12005.0-06.0	25.	14.	2.32	15.3	3.7	18.3	2.67	SS, LTBRN F-MG SL/CALC	
2	12006.0-07.0	35.	19.	3.07	15.2	5.3	22.7	2.66	SS, LTBRN F-MG	
3	12007.0-08.0	24.	15.	3.46	13.7	6.9	29.9	2.67	SS, LTBRN F-MG SL/CALC	
4	12008.0-09.0	4.37	3.71	0.68	9.6	4.1	14.3	2.67	SS, LTBRN F-MG SL/CALC	
5	12009.0-10.0	4.13	4.13	0.59	10.4	6.3	14.8	2.67	SS, LTBRN F-MG SL/CALC	
6	12010.0-11.0	12.	9.81	6.06	15.6	7.0	33.2	2.66	SS, LTBRN F-MG	
7	12011.0-12.0	5.23	3.07	1.25	13.5	5.2	25.8	2.65	SS, LTBRN F-MG	
8	12012.0-13.0	21.	14.	2.52	16.4	5.0	26.2	2.66	SS, LTBRN F-MG	
9	12013.0-14.0	25.	8.42	11.	15.8	4.5	21.5	2.67	SS, LTBRN F-MG SL/CALC	
10	12014.0-15.0	66.	54.	37.	16.9	4.7	17.8	2.66	SS, LTBRN F-MG	
11	12015.0-16.0	32.	11.	0.67	13.7	4.1	22.5	2.66	SS, LTBRN F-MG	
12	12016.0-17.0	29.	16.	11.	16.0	3.5	25.3	2.66	SS, LTBRN F-MG	
13	12017.0-18.0	52.	40.	13.	16.1	2.5	18.9	2.66	SS, LTBRN F-MG	
14	12018.0-19.0	34.	26.	11.	15.7	4.1	25.7	2.66	SS, LTBRN F-MG	
15	12019.0-20.0	24.	17.	22.	16.8	5.2	23.3	2.66	SS, LTBRN F-MG	
16	12020.0-21.0	39.	32.	13.	23.7	3.4	27.2	2.66	SS, LTBRN F-MG	
17	12021.0-22.0	48.	32.	11.	16.1	4.7	34.3	2.66	SS, LTBRN F-MG	
18	12022.0-23.0	49.	16.	1.63	15.1	3.9	29.1	2.67	SS, LTBRN F-MG SL/CALC	
19	12023.0-24.0	197.	87.	13.	16.5	4.3	28.0	2.66	SS, LTBRN F-MG	
20	12024.0-25.0	83.	9.29	17.	16.4	4.3	30.9	2.66	SS, LTBRN F-MG	HF
21	12025.0-26.0	223.	166.	61.	17.0	4.7	17.2	2.66	SS, LTBRN F-MG	
22	12026.0-27.0	81.	2.67	11.	15.0	4.3	26.0	2.66	SS, LTBRN F-MG	VF
23	12027.0-28.0	27.	17.	3.40	12.2	4.3	21.4	2.66	SS, LTBRN F-MG	
24	12028.0-29.0	12.	8.71	1.36	12.8	8.7	19.7	2.66	SS, LTBRN F-MG	
25	12029.0-30.0	24.	14.	0.68	12.5	6.1	22.9	2.66	SS, LTBRN F-MG	
26	12030.0-31.0	17.	10.	1.34	11.8	6.4	25.5	2.66	SS, LTBRN F-MG	
27	12031.0-32.0	10.	5.81	0.97	10.7	4.4	16.0	2.66	SS, LTBRN F-MG	
28	12032.0-33.0	0.44	*	0.34	9.0	5.0	28.2	2.64	SS, LTBRN F-MG	

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CORE LABORATORIES, INC.

Petroleum Reservoir Engineering

DALLAS, TEXAS

SCHUTZ CORPORATION
-30U ANSCHUTZ RANCH E.

DATE : 07-AUG-81
FORMATION : NUGGET

FILE NO : RP-4-6132
ANALYSTS : BERNDT

FULL DIAMETER ANALYSIS--BOYLE'S LAW POROSITY

MPLE MBER	DEPTH	PERM. TO AIR (MD) MAXIMUM	90 DEG	VERTICAL	POR. He	FLUID SATS. OIL	WTR	GRAIN DEN	DESCRIPTION
[illegible]	12033.0-34.0	5.78	3.28	0.94	10.5	5.4	21.4	2.66	SS, LTBRN F-MG VF
[illegible]	12034.0-35.0	14.	8.79	1.34	10.8	7.4	18.4	2.66	SS, LTBRN F-MG
31	12035.0-36.0	1.29	1.11	0.13	9.6	4.4	17.7	2.66	SS, LTBRN F-MG
32	12036.0-37.0	5.84	5.15	0.26	10.2	6.9	17.3	2.66	SS, LTBRN F-MG
33	12037.0-38.0	2.51	1.81	0.68	10.6	5.7	13.3	2.66	SS, LTBRN F-MG
34	12038.0-39.0	19.	13.	5.69	14.0	4.4	17.4	2.66	SS, LTBRN F-MG
35	12039.0-40.0	1.96	0.98	0.25	9.5	4.9	19.6	2.67	SS, LTBRN F-MG SL/CALC
36	12040.0-41.0	5.63	4.19	0.66	12.0	7.0	19.4	2.66	SS, LTBRN F-MG
37	12041.0-42.0	1.50	0.96	0.99	13.1	6.2	32.6	2.66	SS, LTBRN VF-FG
38	12042.0-43.0	0.46	0.32	0.10	9.9	12.7	10.9	2.66	SS, LTBRN F-MG
39	12043.0-44.0	66.	5.83	0.14	10.0	7.7	9.7	2.67	SS, LTBRN F-MG SL/CALC HF
40	12044.0-45.0	0.37	0.21	0.03	7.9	3.9	11.6	2.67	SS, LTBRN F-MG SL/CALC VF
41	12045.0-46.0	0.41	*	0.08	7.4	6.8	13.5	2.64	SS, LTBRN F-MG
42	12046.0-47.0	2.00	*	0.43	10.8	9.5	12.6	2.64	SS, LTBRN F-MG
43	12047.0-48.0	1.08	*	0.64	8.6	5.1	11.9	2.64	SS, LTBRN F-MG
44	12048.0-49.0	2.91	*	0.52	9.6	7.0	17.4	2.63	SS, LTBRN F-MG
45	12049.0-50.0	40.	*	3.08	11.2	5.4	9.0	2.64	SS, LTBRN F-MG
	12050.0-51.0	2.17	*	0.72	10.7	0.0	2.0	2.64	SS, LTBRN F-MG
47	12051.0-52.0	0.15	*	0.05	8.2	3.3	1.7	2.64	SS, LTBRN F-MG
48	12052.0-53.0	24.	*	1.78	10.6	3.5	3.5	2.63	SS, LTBRN F-MG
49	12053.0-54.0	4.41	*	1.05	11.4	3.5	3.5	2.60	SS, LTBRN F-MG
50	12054.0-55.0	2.65	*	0.05	8.8	3.5	1.7	2.64	SS, LTBRN F-MG
51	12055.0-56.0	0.13	*	0.05	9.5	5.3	2.6	2.64	SS, LTBRN F-MG
52	12056.0-57.0	0.08	*	0.12	7.9	7.1	4.7	2.64	SS, LTBRN F-MG
53	12057.0-58.0	0.06	*	0.05	6.0	4.2	4.2	2.64	SS, LTBRN F-MG
54	12058.0-59.0	2.33	*	0.05	10.7	0.0	8.5	2.64	SS, LTBRN F-MG
55	12059.0-60.0	11.	*	0.05	7.7	0.0	1.8	2.64	SS, LTBRN F-MG
56	12060.0-61.0	0.11	*	0.19	7.0	0.0	2.3	2.64	SS, LTBRN F-MG
57	12061.0-62.0	0.22	*	0.10	8.0	5.0	2.5	2.64	SS, LTBRN F-MG
58	12062.0-63.0	0.28	*	0.08	6.4	0.0	2.2	2.64	SS, LTBRN F-MG

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Petroleum Reservoir Engineering

DALLAS, TEXAS

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FULL DIAMETER ANALYSIS--BOYLE'S LAW POROSITY

MPLE MBER	DEPTH	PERM. TO AIR (MD) MAXIMUM	90 DEG	VERTICAL	POR. He	FLUID SATS. OIL	WTR	GRAIN DEN	DESCRIPTION	
[illegible]	12063.0-64.0	0.24	0.18	0.04	10.9	5.9	25.1	2.66	SS, LTBRM VFG	
[illegible]	12064.0-65.0	0.26	0.11	0.07	10.4	6.4	20.7	2.66	SS, LTBRN F-MG	
61	12065.0-66.0	0.50	0.06	0.20	11.5	5.6	20.5	2.67	SS, LTGY F-MG	
62	12066.0-67.0	0.30	0.14	1.10	11.9	6.9	20.6	2.65	SS, LTGY F-MG	
63	12067.0-68.0	0.79	0.07	0.32	11.9	6.9	27.8	2.67	SS, LTGY F-MG	
64	12068.0-69.0	0.04	0.02	0.19	10.5	5.9	26.5	2.67	SS, LTGY F-MG	
65	12069.0-70.0	0.06	0.02	0.13	9.5	10.1	16.8	2.67	SS, LTGY F-MG	HF
66	12070.0-71.0	0.56	0.32	0.07	8.6	8.2	5.5	2.66	SS, LTGY F-MG	
67	12071.0-72.0	<0.01	<0.01	0.17	9.3	10.3	15.5	2.67	SS, LTGY F-MG	
68	12072.0-73.0	<0.01	<0.01	0.28	10.1	8.1	16.2	2.68	SS, LTGY F-MG	
69	12073.0-74.0	<0.01	<0.01	0.24	10.6	10.8	18.0	2.70	SS, LTGY F-MG	
70	12074.0-75.0	<0.01	<0.01	0.18	11.0	10.5	17.5	2.69	SS, LTGY F-MG	
71	12075.0-76.0	<0.01	<0.01	0.13	11.3	5.6	24.4	2.69	SS, LTGY FG	
72	12076.0-77.0	0.45	0.24	0.23	10.7	7.0	20.9	2.65	SS, LTGY FG	
73	12077.0-78.0	0.05	0.03	0.29	12.4	4.9	26.3	2.68	SS, GY FG	
74	12078.0-79.0	0.07	0.07	0.32	11.5	6.2	30.8	2.65	SS, GY FG	VF
75	12079.0-80.0	3.77	2.86	1.71	12.0	9.4	31.4	2.65	SS, GY FG	
	12080.0-81.0	<0.01	<0.01	0.06	9.9	10.4	17.3	2.65	SS, GY FG	
77	12081.0-82.0	<0.01	<0.01	0.15	12.1	10.8	16.2	2.66	SS, GY FG	
78	12082.0-83.0	<0.01	<0.01	0.14	10.0	10.7	16.0	2.66	SS, GY FG	
79	12083.0-84.0	<0.01	<0.01	0.04	10.2	10.6	14.1	2.65	SS, GY FG	
80	12084.0-85.0	471.	0.29	0.08	10.6	5.4	18.0	2.66	SS, GY FG	V&HF
81	12085.0-86.0	0.02	0.02	0.25	10.6	8.1	29.7	2.66	SS, BF F-MG	VF
82	12086.0-87.0	0.60	0.34	0.62	9.8	7.0	14.0	2.65	SS, GY F-MG	
83	12087.0-88.0	7.10	4.21	0.65	10.7	4.3	23.1	2.65	SS, GY F-MG	
84	12088.0-89.0	3.72	2.19	0.79	12.2	3.2	19.4	2.65	SS, BF F-MG	
85	12089.0-90.0	5.29	4.41	0.65	12.3	8.5	31.2	2.65	SS, BF F-MG	
86	12090.0-91.0	3.05	2.03	0.84	12.2	4.4	29.7	2.65	SS, BF F-MG	
87	12091.0-92.0	1.62	1.18	0.53	12.5	4.3	23.1	2.65	SS, BF F-MG	
88	12092.0-93.0	2.27	2.27	0.21	11.4	6.8	23.7	2.65	SS, BF F-MG	

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CORE LABORATORIES, INC.

Petroleum Reservoir Engineering

DALLAS, TEXAS

NSCHUTZ CORPORATION
6-30U ANSCHUTZ RANCH E.

DATE : 07-AUG-81
FORMATION : NUGGET

FILE NO : RP-4-6132
ANALYSTS : BERNDT

FULL DIAMETER ANALYSIS--BOYLE'S LAW POROSITY

AMPLE UMBER	DEPTH	PERM. TO AIR (MD) MAXIMUM	90 DEG	VERTICAL	POR. He	FLUID SATS. OIL	WTR	GRAIN DEN	DESCRIPTION	
[illegible]	12093.0-94.0	2.03	1.29	0.11	5.9	7.1	10.7	2.67	SS, GY F-MG	HF
[illegible]0	12094.0-95.0	8.80	0.01	0.09	6.5	10.5	21.1	2.67	SS, GY F-MG	HF
91	12095.0-96.0	14.	0.11	0.01	6.0	8.7	11.6	2.68	SS, GY F-MG	HF
92	12096.0-97.0	0.15	0.05	0.03	4.4	2.2	8.6	2.66	SS, GY F-MG	
93	12097.0-98.0	6.07	2.56	0.65	11.7	10.0	10.0	2.67	SS, LTGY F-MG	
94	12098.0-99.0	2.04	1.63	0.45	12.6	3.1	14.1	2.67	SS, LTGY F-MG	
95	12099.0-00.0	20.	7.35	1.63	12.4	4.6	15.4	2.65	SS, LTGY F-MG	
96	12100.0-01.0	13.	4.13	1.49	11.9	3.7	9.1	2.66	SS, LTGY F-MG	
97	12101.0-02.0	4.08	0.82	0.35	9.1	3.7	12.9	2.67	SS, LTGY F-MG	
98	12102.0-03.0	3.60	2.80	0.64	10.0	3.7	16.8	2.67	SS, LTGY F-MG	
99	12103.0-04.0	2.45	0.61	0.33	8.5	9.1	18.2	2.67	SS, LTGY F-MG	
100	12104.0-05.0	0.42	0.15	0.24	8.6	4.4	21.8	2.67	SS, LTGY F-MG	
101	12105.0-06.0	2.37	1.06	0.69	10.4	7.9	15.9	2.67	SS, GY VF-FG	
102	12106.0-07.0	1.65	0.87	0.45	8.8	3.9	13.6	2.66	SS, GY VF-FG	
103	12107.0-08.0	0.49	0.17	0.17	8.5	6.8	13.5	2.67	SS, GY VF-FG	
104	12108.0-09.0	2.69	2.57	2.93	13.8	4.8	28.9	2.66	SS, GY VF-FG	
[illegible]5	12109.0-10.0	2.18	1.77	2.40	13.6	4.9	26.2	2.66	SS, GY VF-FG	
[illegible]6	12110.0-11.0	3.89	3.66	2.21	13.0	6.8	30.6	2.65	SS, GY VF-FG CALC	
107	12111.0-12.0	1.55	0.72	0.87	12.1	4.7	31.4	2.68	SS, GY VF-FG CALC	VF
108	12112.0-13.0	3.20	0.84	1.96	13.2	5.9	41.4	2.64	SS, GY VF-FG	
109	12113.0-14.0	21.	6.68	0.20	11.9	5.2	24.2	2.66	SS, GY VF-FG	HF
110	12114.0-15.0	0.02	0.02	<0.01	8.6	1.5	5.8	2.67	SS, GY VF-FG	
111	12115.0-16.0	0.02	<0.01	<0.01	8.3	9.1	20.4	2.68	SS, GY VF-FG SL/CALC	
112	12116.0-17.0	<0.01	<0.01	<0.01	7.0	9.4	23.5	2.67	SS, GY VF-FG	
113	12117.0-18.0	<0.01	<0.01	0.02	7.3	7.3	24.4	2.66	SS, GY VF-FG	
114	12118.0-19.0	<0.01	<0.01	<0.01	8.4	7.0	18.7	2.66	SS, GY VF-FG	
115	12119.0-20.0	<0.01	<0.01	<0.01	8.0	9.2	20.7	2.66	SS, GY VF-FG	
116	12120.0-21.0	<0.01	<0.01	<0.01	7.8	9.3	23.3	2.66	SS, GY VF-FG	
117	12121.0-22.0	<0.01	<0.01	<0.01	7.9	7.8	20.9	2.67	SS, GY VF-FG CALC	
	12122.0-23.0								LOST CORE	

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MPLE MBER	DEPTH	PERM. TO AIR (MD) MAXIMUM	90 DEG	VERTICAL	POR. He	FLUID OIL	SATS. WTR	GRAIN DEN	DESCRIPTION	
1[illegible]	12123.0-24.0	<0.01	<0.01	<0.01	7.4	11.5	17.3	2.67	SS, GY VF-FG CALC	
11[illegible]	12124.0-25.0	<0.01	<0.01	<0.01	7.4	10.3	18.0	2.67	SS, GY VF-FG CALC	
120	12125.0-26.0	0.02	0.01	0.31	10.4	8.0	10.7	2.67	SS, GY VF-FG CALC	
121	12126.0-27.0	0.58	0.29	0.43	10.9	11.5	14.8	2.66	SS, GY VF-FG	VF
122	12127.0-28.0	0.68	0.21	0.85	11.8	8.7	21.8	2.66	SS, GY VF-FG	
123	12128.0-29.0	1.18	0.59	0.61	11.7	6.7	25.0	2.66	SS, GY VF-FG	
124	12129.0-30.0	1.92	1.49	1.63	12.9	6.2	25.8	2.66	SS, GY VF-FG	
125	12130.0-31.0	1.78	*	1.73	11.9	5.8	23.2	2.64	SS, GY VF-FG	
126	12131.0-32.0	6.79	4.07	2.86	13.7	8.6	25.9	2.66	SS, GY VF-FG	
127	12132.0-33.0	11.	5.68	1.01	12.2	8.6	17.3	2.66	SS, GY VF-FG	HF
128	12133.0-34.0	1.56	1.05	0.74	12.4	8.0	13.3	2.66	SS, GY VF-FG	
129	12134.0-35.0	2.09	1.56	0.97	12.8	7.4	27.0	2.66	SS, GY VF-FG	
130	12135.0-36.0	0.99	0.99	0.42	11.7	6.1	26.0	2.67	SS, GY VF-FG	
131	12136.0-37.0	27.	2.64	0.46	12.2	5.5	24.9	2.68	SS, GY VF-FG	
132	12137.0-38.0	13.	12.	0.24	12.3	6.5	12.9	2.68	SS, GY VF-FG	V&HF
133	12138.0-39.0	1149.	1149.	1.73	12.0	5.9	20.5	2.66	SS, GY VF-FG	HF
13[illegible]	12139.0-40.0	1161.	1161.	0.57	12.1	8.3	22.2	2.66	SS, GY VF-FG	V&HF
1[illegible]	12140.0-41.0	0.83	0.17	0.78	13.1	5.4	20.4	2.68	SS, GY VF-FG	
136	12141.0-42.0	1.58	0.45	0.48	12.1	8.2	30.2	2.66	SS, GY VF-FG	
137	12142.0-43.0	3.87	1.93	2.02	13.5	9.2	22.9	2.66	SS, GY VF-FG	
138	12143.0-44.0	2.42	*	1.12	13.3	5.0	25.1	2.64	SS, GY VF-FG	HF
139	12144.0-45.0	926.	231.	1.04	13.7	5.9	25.2	2.66	SS, GY VF-FG	HF
140	12145.0-46.0	1.20	0.80	1.36	13.7	5.7	28.3	2.67	SS, GY VF-FG	
141	12146.0-47.0	4.77	2.71	3.13	15.6	4.3	25.0	2.67	SS, GY F-MG CALC	
142	12147.0-48.0	1.81	0.84	1.08	13.9	6.9	28.7	2.66	SS, GY F-MG	
143	12148.0-49.0	1.23	0.25	1.35	13.6	7.1	30.1	2.66	SS, GY F-MG	
144	12149.0-50.0	3.20	1.69	1.88	14.1	6.7	33.4	2.66	SS, GY F-MG	
145	12150.0-51.0	3.94	3.00	1.40	14.1	7.3	25.6	2.66	SS, GY F-MG	
146	12151.0-52.0	6.63	4.89	2.24	14.1	9.5	15.8	2.65	SS, GY F-MG	
147	12152.0-53.0	1.04	0.63	0.31	12.7	7.6	24.6	2.67	SS, GY F-MG CALC	

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FULL DIAMETER ANALYSIS--BOYLE'S LAW POROSITY

AMPLE UMBER	DEPTH	PERM. TO AIR (MD) MAXIMUM	90 DEG	VERTICAL	POR. He	FLUID SATS. OIL	WTR	GRAIN DEN	DESCRIPTION	
1[illegible]	12153.0-54.0	0.65	0.58	0.30	12.3	7.0	17.5	2.67	SS, GY F-MG CALC	
1[illegible]	12154.0-55.0	0.61	0.33	0.02	8.2	7.5	18.8	2.67	SS, GY F-MG CALC	
150	12155.0-56.0	0.06	*	0.02	8.2	30.0	34.2	2.68	SS, GY F-MG CALC	
151	12156.0-57.0	1.28	0.01	0.02	8.7	6.6	9.9	2.67	SS, GY F-MG CALC	
152	12157.0-58.0	65.	0.24	0.04	9.5	2.7	5.4	2.67	SS, GY F-MG CALC	HF
153	12158.0-59.0	36.	0.13	<0.01	9.1	20.8	17.3	2.66	SS, GY F-MG	
154	12159.0-60.0	9.19	0.11	<0.01	9.4	12.3	10.6	2.67	SS, GY F-MG CALC	
155	12160.0-61.0	13.	0.17	<0.01	9.0	12.9	12.9	2.67	SS, GY F-MG CALC	
156	12161.0-62.0	5.40	0.05	<0.01	8.6	9.2	10.8	2.67	SS, GY F-MG CALC	
157	12162.0-63.0	1.20	0.01	<0.01	8.9	10.3	13.7	2.67	SS, GY F-MG CALC	
158	12163.0-64.0	5.22	0.07	0.06	10.0	6.3	14.6	2.69	SS, GY F-MG CALC	
159	12164.0-65.0	7.61	0.10	0.05	9.4	9.8	11.5	2.67	SS, GY VF-FG CALC	
160	12165.0-66.0	5.11	0.05	0.01	9.3	10.3	8.8	2.66	SS, GY VF-FG	
161	12166.0-67.0	20.	0.15	0.06	10.1	6.0	7.5	2.67	SS, GY VF-FG	
162	12167.0-68.0	11.	0.08	0.04	10.0	10.3	8.9	2.65	SS, GY VF-FG	
163	12168.0-69.0	19.	0.33	0.06	9.6	10.2	7.3	2.65	SS, GY VF-FG	
164	12169.0-70.0	3.41	0.04	<0.01	7.8	12.1	10.1	2.66	SS, GY VF-FG	
[illegible]	12170.0-71.0	3.44	0.04	<0.01	7.2	10.9	12.8	2.66	SS, GY VF-FG	
166	12171.0-72.0	4.59	0.06	<0.01	9.3	5.4	3.6	2.65	SS, GY VF-FG	
167	12172.0-73.0	8.74	0.15	<0.01	9.7	4.7	3.1	2.66	SS, GY VF-FG	
168	12173.0-74.0	0.05	*	0.06	8.1	7.9	5.9	2.64	SS, GY VF-FG	
169	12174.0-75.0	4.02	0.03	<0.01	7.9	5.9	13.7	2.67	SS, GY VF-FG CALC	
170	12175.0-76.0	9.67	0.17	<0.01	7.9	12.5	12.5	2.66	SS, GY VF-FG CALC	
171	12176.0-77.0	6.54	0.06	<0.01	7.7	7.1	7.1	2.66	SS, GY VF-FG	
172	12177.0-78.0	0.04	*	0.05	7.1	11.0	12.8	2.64	SS, GY VF-FG	
173	12178.0-79.0	9.63	0.14	0.04	8.5	8.1	10.1	2.66	SS, GY VF-FG	
174	12179.0-80.0	0.11	*	0.05	7.6	6.6	15.3	2.64	SS, GY VF-FG	
175	12180.0-81.0	22.	0.34	0.15	9.9	12.1	18.1	2.67	SS, GY VF-FG	
176	12181.0-82.0	17.	0.30	0.12	9.4	9.8	14.6	2.66	SS, GY VF-FG	
177	12182.0-83.0	41.	0.30	0.25	10.8	9.8	9.8	2.64	SS, GY VF-FG	

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FULL DIAMETER ANALYSIS--BOYLE'S LAW POROSITY

MPLE MBER	DEPTH	PERM. TO AIR (MD) MAXIMUM	90 DEG	VERTICAL	POR. He	FLUID SATS. OIL	WTR	GRAIN DEN	DESCRIPTION	
	12183.0-86.0								LOST CORE	
178	12186.0-87.0	131.	1.51	0.25	10.3	6.7	32.0	2.64	SS, BF F-MG	
179	12187.0-88.0	44.	0.33	0.37	9.4	24.1	16.1	2.65	SS, GY F-MG	
180	12188.0-89.0	5.44	0.03	<0.01	4.6	28.7	35.9	2.66	SS, LTGY F-MG	
181	12189.0-90.0	8.18	0.03	<0.01	6.9	15.5	31.1	2.66	SS, GY F-MG	
182	12190.0-91.0	8.01	0.03	<0.01	8.1	10.0	22.6	2.66	SS, BF F-MG	
183	12191.0-92.0	0.38	*	0.10	9.4	16.4	19.2	2.64	SS, BF F-MG	
184	12192.0-93.0	7.66	0.06	<0.01	8.6	16.8	16.8	2.66	SS, BF F-MG	
185	12193.0-94.0	13.	0.11	<0.01	8.7	10.3	18.1	2.66	SS, BF F-MG	
186	12194.0-95.0	9.86	0.17	0.08	9.1	7.1	16.7	2.66	SS, BRN F-MG	
187	12195.0-96.0	13.	0.15	0.02	9.8	9.5	4.8	2.66	SS, BRN F-MG	
188	12196.0-97.0	5.28	0.05	0.06	9.4	13.8	13.8	2.65	SS, BRN F-MG	
189	12197.0-98.0	3.23	0.04	0.08	9.0	9.7	16.9	2.65	SS, BRN F-MG	VF
190	12198.0-99.0	2.18	0.02	0.07	9.5	9.5	16.7	2.65	SS, BRN F-MG	
191	12199.0-00.0	0.22	0.06	0.01	8.5	0.0	23.7	2.66	SS, BRN F-MG	
192	12200.0-01.0	0.45	0.05	0.12	9.7	6.2	39.0	2.65	SS, BRN F-MG	
193	12201.0-02.0	0.49	0.14	0.19	9.2	7.7	25.7	2.66	SS, BRN F-MG	VF
194	12202.0-03.0	0.38	*	0.19	10.2	6.8	16.0	2.63	SS, BRN F-MG	
195	12203.0-04.0	0.48	*	0.05	10.6	5.8	37.0	2.64	SS, BRN F-MG	
196	12204.0-05.0	0.94	0.69	0.45	10.8	4.3	30.0	2.66	SS, BRN F-MG	VF
197	12205.0-06.0	1.61	0.84	0.94	11.7	1.9	27.8	2.65	SS, BRN F-MG	
198	12206.0-07.0	0.86	0.07	0.28	10.7	3.4	27.3	2.65	SS, BRN F-MG	
199	12207.0-08.0	1.15	0.96	1.03	11.9	5.1	42.9	2.66	SS, BRN F-MG	
200	12208.0-09.0	1.01	0.98	0.37	12.0	4.0	29.2	2.66	SS, BRN F-MG	
201	12209.0-10.0	0.27	0.24	0.35	10.5	4.2	14.8	2.66	SS, BRN F-MG	
202	12210.0-11.0	1.39	1.35	0.58	10.4	4.6	16.1	2.66	SS, BRN F-MG	
203	12211.0-12.0	0.81	0.42	0.17	8.9	2.5	19.8	2.66	SS, BRN F-MG	
204	12212.0-13.0	0.22	0.15	0.12	8.4	6.1	16.4	2.66	SS, BRN F-MG	
205	12213.0-14.0	0.47	0.42	0.04	11.6	4.3	15.2	2.66	SS, BRN F-MG	
206	12214.0-15.0	0.64	0.55	0.53	12.1	3.6	28.4	2.65	SS, BRN F-MG	

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AMPLE UMBER	DEPTH	PERM. TO AIR (MD) MAXIMUM	90 DEG	VERTICAL	POR. He	FLUID SATS. OIL	WTR	GRAIN DEN	DESCRIPTION	
207	12215.0-16.0	2.81	0.52	0.04	10.0	26.4	60.2	2.66	SS, BRN F-MG	HF
8	12216.0-17.0	0.46	0.43	0.30	10.9	1.0	24.1	2.66	SS, BRN F-MG	
209	12217.0-18.0	0.25	0.17	0.17	9.9	5.4	23.3	2.65	SS, LTBRN VF-FG	
210	12218.0-19.0	1.30	1.20	0.58	10.9	9.8	9.8	2.66	SS, LTBRN F-MG	
211	12219.0-20.0	0.72	0.61	0.38	10.9	7.5	9.3	2.67	SS, LTBRN F-MG	
212	12220.0-21.0	0.38	0.29	0.33	9.8	7.2	7.2	2.66	SS, LTBRN F-MG	
213	12221.0-22.0	1.53	1.06	0.34	10.3	7.5	9.4	2.67	SS, LTBRN F-MG	
214	12222.0-23.0	0.73	0.45	0.60	10.9	6.7	8.4	2.66	SS, LTBRN F-MG	
215	12223.0-24.0	0.84	0.34	0.62	11.0	7.2	12.5	2.66	SS, LTBRN-GY F-MG	
216	12224.0-25.0	0.82	0.60	0.28	8.8	7.2	10.7	2.66	SS, LTBRN-GY VF-FG	
217	12225.0-26.0	0.67	0.54	0.33	8.6	8.6	6.5	2.65	SS, LTBRN-GY F-MG	
218	12226.0-27.0	0.52	0.33	0.20	9.8	8.1	8.1	2.66	SS, LTBRN-GY VF-FG	
219	12227.0-28.0	1.09	0.74	0.89	11.3	12.4	6.2	2.66	SS, LTBRN-GY VF-FG	
220	12228.0-29.0	0.08	0.01	<0.01	8.1	13.8	13.8	2.66	SS, LTBRN-GY VF-FG	
221	12229.0-30.0	0.10	0.06	<0.01	7.5	7.3	7.3	2.66	SS, LTBRN FG	
222	12230.0-31.0	0.34	0.11	0.02	5.2	8.9	6.6	2.67	SS, LTBRN MG	HF
223	12231.0-32.0	0.12	0.06	<0.01	4.1	8.7	14.4	2.67	SS, LTBRN F-MG	
4	12232.0-33.0	0.40	0.08	0.05	4.4	5.7	22.7	2.67	SS, LTBRN-GY VF-FG	HF
225	12233.0-34.0	0.04	*	0.01	3.2	0.0	24.9	2.63	SS, LTBRN-GY VF-FG	
226	12234.0-35.0	0.18	0.04	<0.01	5.6	1.9	19.4	2.67	SS, LTBRN-GY VF-FG	
227	12235.0-36.0	1.39	1.02	0.09	5.7	2.1	12.8	2.66	SS, LTBRN-GY FG	VF
228	12236.0-37.0	0.02	*	0.02	4.6	13.5	10.1	2.65	SS, LTBRN-GY F-MG	
229	12237.0-38.0	8.79	2.70	0.02	6.4	11.7	5.9	2.67	SS, LTBRN-GY F-MG	HF
230	12238.0-39.0	0.04	0.01	0.02	5.3	0.0	3.5	2.66	SS, LTBRN-GY F-MG	VF
231	12239.0-40.0	0.05	*	0.04	6.2	0.0	10.5	2.64	SS, LTBRN-GY F-MG	
232	12240.0-41.0	0.37	0.31	0.02	7.4	0.0	2.9	2.66	SS, LTBRN-GY F-MG	
233	12241.0-42.0	0.30	0.30	0.12	8.3	16.6	11.1	2.66	SS, LTBRN-GY F-MG	
234	12242.0-43.0	1.06	0.65	0.07	9.1	11.2	11.2	2.66	SS, LTBRN-GY F-MG	
235	12243.0-44.0	0.89	0.65	0.02	8.9	8.5	23.3	2.66	SS, BRN-GY F-MG	
236	12244.0-45.0	0.89	0.71	0.07	8.7	6.4	21.4	2.66	SS, LTBRN-GY F-MG	

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CORE LABORATORIES, INC.
Petroleum Reservoir Engineering
DALLAS, TEXAS

NSCHUTZ CORPORATION
6-30U ANSCHUTZ RANCH E.

DATE : 07-AUG-81
FORMATION : NUGGET

FILE NO : RP-4-6132
ANALYSTS : BERNDT

FULL DIAMETER ANALYSIS--BOYLE'S LAW POROSITY

SAMPLE NUMBER	DEPTH	PERM. TO AIR (MD) MAXIMUM	90 DEG	VERTICAL	POR. He	FLUID SATS. OIL	WTR	GRAIN DEN	DESCRIPTION	
237	12245.0-46.0	0.37	0.21	0.09	9.5	8.7	8.7	2.66	SS, LTBRN VF-FG	
238	12246.0-47.0	0.02	*	0.02	6.5	15.1	10.1	2.62	SS, LTBRN-GY VF-FG	
239	12247.0-48.0	0.25	0.14	<0.01	8.4	10.6	13.3	2.66	SS, LTBRN-GY VF-FG	
240	12248.0-49.0	0.40	0.36	0.08	7.8	11.3	11.3	2.66	SS, LTBRN-GY F-MG	
241	12249.0-50.0	0.28	0.19	<0.01	7.8	8.4	11.2	2.66	SS, LTBRN-GY F-MG	
242	12250.0-51.0	0.34	0.29	0.03	8.4	5.8	8.7	2.66	SS, LTBRN-GY F-MG	VF
243	12251.0-52.0	0.29	0.26	<0.01	8.6	13.9	9.9	2.67	SS, BF-GY F-MG	
244	12252.0-53.0	0.27	0.16	<0.01	6.7	9.4	9.4	2.67	SS, BF-GY F-MG	
245	12253.0-54.0	0.39	0.27	<0.01	6.7	9.4	2.3	2.66	SS, LTBRN F-MG	
246	12254.0-55.0	0.30	0.17	<0.01	6.4	10.2	10.2	2.67	SS, LTBRN F-MG	
247	12255.0-56.0	0.50	0.39	0.02	5.7	10.3	10.3	2.66	SS, BF-GY F-MG	VF
248	12256.0-57.0	0.24	0.11	0.04	5.8	4.1	8.2	2.67	SS, LTBRN-GY F-MG	
249	12257.0-58.0	0.23	0.17	<0.01	6.0	8.0	8.0	2.66	SS, LTBRN-GY F-MG	
250	12258.0-59.0	0.14	0.12	<0.01	7.8	7.5	10.1	2.66	SS, LTBRN-GY F-MG	
251	12259.0-60.0	0.39	0.23	<0.01	8.0	8.2	10.2	2.65	SS, LTBRN-GY F-MG	
252	12260.0-61.0	0.21	0.09	<0.01	8.6	8.3	10.3	2.66	SS, LTBRN-GY F-MG	
253	12261.0-62.0	1.33	0.66	0.02	8.6	8.3	10.3	2.66	SS, LTBRN-GY F-MG	
254	12262.0-63.0	1.30	1.22	0.34	11.0	5.7	11.4	2.67	SS, LTBRN-GY F-MG	
255	12263.0-64.0	3.29	1.97	0.63	12.0	7.2	21.6	2.66	SS, LTBRN-GY F-MG	
256	12264.0-65.0	2.89	2.23	0.33	11.5	3.8	11.4	2.67	SS, LTBRN-GY F-MG	
257	12265.0-66.0	2.65	2.13	0.69	9.4	1.2	7.1	2.67	SS, BRN-GY F-MG	
258	12266.0-67.0	0.88	0.69	0.04	7.6	4.6	4.6	2.67	SS, BRN-GY F-MG	
259	12267.0-68.0	2.12	1.63	0.22	10.1	9.3	11.6	2.66	SS, LTBRN-GY F-MG	
260	12268.0-69.0	8.63	*	3.64	15.8	1.9	12.4	2.64	SS, LTBRN-GY F-MG	
261	12269.0-70.0	9.98	*	5.57	15.7	3.0	9.9	2.64	SS, LTBRN F-MG	
262	12270.0-71.0	5.38	4.40	4.95	15.9	3.2	9.6	2.66	SS, BF F-MG	
263	12271.0-72.0	36.	13.	11.	17.7	2.8	7.4	2.67	SS, LTBRN F-MG	
264	12272.0-73.0	31.	21.	4.37	17.1	2.1	21.9	2.67	SS, LTBRN-GY F-MG	
265	12273.0-74.0	15.	12.	11.	17.8	2.1	11.5	2.66	SS, BF-GY F-MG	
266	12274.0-75.0	20.	18.	11.	17.9	2.8	17.6	2.66	SS, LTBRN-GY F-MG	

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ANSCHUTZ CORPORATION
16-30U ANSCHUTZ RANCH E.

DATE : 07-AUG-81
FORMATION : NUGGET

FILE NO : RP-4-6132
ANALYSTS : BERNDT

FULL DIAMETER ANALYSIS--BOYLE'S LAW POROSITY

SAMPLE NUMBER	DEPTH	PERM. TO AIR (MD) MAXIMUM	90 DEG	VERTICAL	POR. He	FLUID SATS. OIL	WTR	GRAIN DEN	DESCRIPTION	
267	12275.0-76.0	36.	*	1.56	17.2	3.1	8.3	2.62	SS, LTBRN F-MG	
268	12276.0-77.0	6.97	*	20.	15.7	2.7	2.7	2.63	SS, LTBRN F-MG	
269	12277.0-78.0	13.	8.64	3.71	16.6	0.0	32.1	2.66	SS, BRN F-MG	
270	12278.0-79.0	14.	7.55	5.67	17.1	4.2	21.1	2.66	SS, BRN F-MG	
271	12279.0-80.0	18.	13.	10.	17.5	3.7	21.2	2.66	SS, BF F-MG	
272	12280.0-81.0	49.	40.	41.	17.9	3.8	39.2	2.66	SS, BF F-MG	
273	12281.0-82.0	30.	13.	16.	18.4	3.5	32.8	2.68	SS, BF F-MG	
274	12282.0-83.0	16.	6.53	12.	17.3	6.2	31.2	2.66	SS, BF F-MG	
275	12283.0-84.0	12.	3.92	4.78	15.4	4.4	31.8	2.65	SS, BF F-MG	
276	12284.0-85.0	8.89	3.43	3.81	15.0	4.0	18.5	2.65	SS, BF F-MG	
277	12285.0-86.0	25.	7.94	20.	16.5	5.9	36.7	2.66	SS, BF F-MG	VF
278	12286.0-87.0	20.	18.	7.75	15.2	4.9	24.6	2.66	SS, BF F-MG	
279	12287.0-88.0	34.	25.	17.	16.2	4.9	36.4	2.65	SS, BF F-MG	
280	12288.0-89.0	57.	*	6.26	16.7	3.4	39.2	2.64	SS, BF F-MG	
281	12289.0-90.0	18.	6.15	19.	13.1	5.1	30.6	2.65	SS, BF F-MG	VF
282	12290.0-91.0	5.37	3.45	8.76	14.0	10.8	27.7	2.65	SS, GY F-MG	
283	12291.0-92.0	23.	6.81	3.70	16.3	6.7	30.3	2.65	SS, GY F-MG	VF
284	12292.0-93.0	21.	2.95	8.91	16.4	6.7	37.9	2.66	SS, BF-GY F-MG	VF
285	12293.0-94.0	8.27	3.31	6.18	14.6	4.5	15.0	2.66	SS, BF-GY F-MG	
286	12294.0-95.0	7.20	*	8.82	16.2	7.0	17.4	2.66	SS, BF-GY F-MG	
287	12295.0-96.0	26.	12.	18.	16.5	6.5	34.6	2.66	SS, BF-GY F-MG	VF
288	12296.0-97.0	6.44	6.08	5.09	14.0	6.8	21.4	2.66	SS, BF-GY F-MG	
289	12297.0-98.0	4.61	3.90	6.15	14.5	8.2	20.5	2.66	SS, BF-GY F-MG	
290	12298.0-99.0	25.	11.	11.	15.8	6.4	26.8	2.65	SS, GY F-MG	VF
291	12299.0-00.0	4.14	2.34	1.09	12.0	0.0	1.4	2.67	SS, BF F-MG SL/DOL	
292	12300.0-01.0	18.	12.	8.09	15.0	4.1	21.9	2.67	SS, BF F-MG SL/DOL	
293	12301.0-02.0	8.19	6.75	5.65	15.6	0.0	20.7	2.66	SS, BF F-MG SL/DOL	
294	12302.0-03.0	11.	7.55	2.05	14.2	4.4	11.1	2.67	SS, BF F-MG SL/DOL	
295	12303.0-04.0	14.	9.54	1.37	14.4	3.4	15.2	2.67	SS, BF F-MG	
296	12304.0-05.0	4.66	3.97	0.26	12.6	1.9	10.7	2.67	SS, BF F-MG SL/DOL	

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CORE LABORATORIES, INC.

Petroleum Reservoir Engineering

DALLAS, TEXAS

ANSCHUTZ CORPORATION
16-30U ANSCHUTZ RANCH E.

DATE : 07-AUG-81
FORMATION : NUGGET

FILE NO : RP-4-6132
ANALYSTS : BERNDT

FULL DIAMETER ANALYSIS--BOYLE'S LAW POROSITY

SAMPLE NUMBER	DEPTH	PERM. TO AIR (MD) MAXIMUM	90 DEG	VERTICAL	POR. He	FLUID SATS. OIL	WTR	GRAIN DEN	DESCRIPTION	
297	12305.0-06.0	4.16	1.51	0.07	9.5	0.0	1.6	2.67	SS, BF-GY F-MG SL/DOL	
298	12306.0-07.0	0.65	0.57	0.04	7.5	4.7	3.1	2.67	SS, BF-GY F-MG SL/DOL	
299	12307.0-08.0	0.89	0.30	0.05	7.9	6.0	9.1	2.67	SS, BF-GY F-MG SL/DOL	
300	12308.0-09.0	0.28	0.22	0.03	7.2	6.3	9.4	2.67	SS, BF-GY F-MG SL/DOL	
301	12309.0-10.0	0.74	0.37	<0.01	7.5	6.2	6.2	2.67	SS, BRN-GY F-MG	
302	12310.0-11.0	2.70	2.64	0.08	13.5	5.4	13.5	2.66	SS, BF-GY F-MG	
303	12311.0-12.0	3.13	2.22	1.14	14.6	6.2	18.7	2.68	SS, BF F-MG	
304	12312.0-13.0	5.65	4.41	2.70	15.6	4.0	15.9	2.66	SS, BF F-MG	
305	12313.0-14.0	5.55	4.76	1.71	15.5	2.4	4.8	2.66	SS, BF F-MG	
306	12314.0-15.0	8.21	7.27	3.09	16.8	4.0	6.0	2.67	SS, BF F-MG	HF
307	12315.0-16.0	6.66	6.20	4.02	16.6	4.2	3.2	2.67	SS, BF F-MG	
308	12316.0-17.0	14.	12.	1.57	15.3	2.5	7.4	2.67	SS, BF F-MG	
309	12317.0-18.0	1.58	1.11	0.41	13.7	10.0	15.0	2.66	SS, BF F-MG	
310	12318.0-19.0	0.79	0.63	0.05	13.0	0.7	7.1	2.66	SS, BF-GY F-MG	
311	12319.0-20.0	1.10	1.03	0.17	14.7	0.6	1.2	2.67	SS, DKGY F-MG	
312	12320.0-21.0	4.20	2.90	2.86	15.8	2.4	9.5	2.66	SS, BF F-MG	
313	12321.0-22.0	5.21	3.78	3.21	16.1	2.0	5.1	2.67	SS, BF F-MG	
314	12322.0-23.0	7.07	5.48	2.87	16.2	4.3	9.6	2.66	SS, BF F-MG	
315	12323.0-24.0	6.48	6.17	3.40	16.6	2.3	18.4	2.66	SS, BF F-MG	
316	12324.0-25.0	4.48	3.64	2.07	15.8	2.2	10.0	2.66	SS, BF F-MG	
317	12325.0-26.0	101.	*	30.	17.4	1.2	11.0	2.64	SS, BF F-MG	
318	12326.0-27.0	7.45	5.01	1.53	16.6	0.6	4.7	2.67	SS, BF F-MG	
319	12327.0-28.0	20.	10.	5.49	16.9	1.1	6.9	2.67	SS, BF F-MG	
320	12328.0-29.0	48.	32.	15.	17.2	0.5	5.1	2.66	SS, BF F-MG	
321	12329.0-30.0	16.	14.	3.78	16.9	0.5	6.5	2.66	SS, BF F-MG	
322	12330.0-31.0	17.	7.47	5.30	16.5	3.2	12.8	2.68	SS, BF F-MG	
323	12331.0-32.0	20.	17.	4.73	11.4	2.2	9.9	2.64	SS, BF F-MG	HF
324	12332.0-33.0	12.	7.74	3.76	15.6	1.6	9.4	2.66	SS, BF F-MG	
325	12333.0-34.0	4.43	3.13	2.53	14.2	0.0	6.3	2.66	SS, BF F-MG	
326	12334.0-35.0	6.87	4.36	1.87	14.7	2.6	6.5	2.66	SS, BF F-MG	

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ANSCHUTZ CORPORATION
16-30U ANSCHUTZ RANCH E.

DATE : 07-AUG-81
FORMATION : NUGGET

FILE NO : RP-4-6132
ANALYSTS : BERNDT

FULL DIAMETER ANALYSIS--BOYLE'S LAW POROSITY

SAMPLE NUMBER	DEPTH	PERM. TO AIR (MD) MAXIMUM	90 DEG	VERTICAL	POR. He	FLUID SATS. OIL	WTR	GRAIN DEN	DESCRIPTION	
327	12335.0-36.0	15.	5.54	1.71	13.7	0.0	1.9	2.67	SS, BF F-MG	
328	12336.0-37.0	8.25	2.51	0.69	11.4	6.6	6.6	2.67	SS, BF F-MG	
329	12337.0-38.0	9.15	5.72	1.96	14.9	2.9	14.3	2.67	SS, GY F-MG	
330	12338.0-39.0	12.	5.17	1.74	13.4	1.5	30.1	2.69	SS, GY F-MG	
331	12339.0-40.0	5.77	0.49	0.69	12.9	4.7	21.1	2.68	SS, BF F-MG	
332	12340.0-41.0	18.	9.34	1.71	12.2	4.7	11.8	2.67	SS, BF F-MG	
333	12341.0-42.0	0.70	0.35	<0.01	7.1	7.7	19.3	2.67	SS, BF F-MG	
334	12342.0-43.0	0.24	0.21	<0.01	5.5	8.3	12.5	2.67	SS, BF F-MG	
335	12343.0-44.0	0.27	0.17	<0.01	5.1	7.1	17.8	2.67	SS, BF F-MG	
336	12344.0-45.0	25.	3.83	2.42	14.5	8.2	24.6	2.67	SS, BF F-MG	VF
337	12345.0-46.0	134.	56.	10.	16.5	3.8	22.7	2.66	SS, BF F-MG	
338	12346.0-47.0	124.	85.	42.	17.2	3.9	19.4	2.67	SS, BF F-MG	
339	12347.0-48.0	70.	36.	17.	16.8	2.3	23.9	2.67	SS, BF F-MG SL/GLAU	
340	12348.0-49.0	81.	22.	2.84	16.2	2.0	18.2	2.67	SS, BF F-MG	
341	12349.0-50.0	0.94	0.66	8.26	16.1	4.7	22.1	2.67	SS, BF F-MG	
342	12350.0-51.0	120.	95.	5.23	11.0	3.1	16.5	2.67	SS, BF F-MG	
343	12351.0-52.0	6.95	3.23	0.36	10.4	3.7	12.2	2.67	SS, BF F-MG	
344	12352.0-53.0	2.90	2.56	0.30	10.8	5.7	13.2	2.67	SS, BF F-MG	
345	12353.0-54.0	3.19	2.25	0.14	9.9	8.3	13.9	2.67	SS, BF F-MG	
346	12354.0-55.0	1.15	0.87	<0.01	8.2	4.3	5.8	2.67	SS, BF-GY F-MG	
347	12355.0-56.0	0.71	0.50	<0.01	6.6	9.3	9.3	2.66	SS, BF-GY F-MG	
348	12356.0-57.0	0.66	0.60	<0.01	8.7	9.9	12.3	2.67	SS, BF-GY F-MG	
349	12357.0-58.0	0.82	0.70	<0.01	9.4	8.4	10.5	2.67	SS, BF-GY F-MG	
350	12358.0-59.0	1.36	1.22	<0.01	9.9	7.4	11.0	2.67	SS, BF-GY F-MG	
351	12359.0-60.0	1.57	0.80	<0.01	10.6	2.1	6.2	2.66	SS, BF-GY F-MG	
352	12360.0-61.0	1.66	1.21	0.04	10.3	9.2	19.9	2.67	SS, BF-GY F-MG	
353	12361.0-62.0	0.94	0.83	<0.01	8.8	7.6	7.6	2.67	SS, BF-GY F-MG	
354	12362.0-63.0	0.54	0.52	<0.01	7.2	9.3	12.4	2.67	SS, BF-GY F-MG	
355	12363.0-64.0	0.40	0.35	<0.01	8.3	5.2	8.7	2.67	SS, BF-GY F-MG	
356	12364.0-65.0	0.25	0.17	<0.01	6.4	3.6	5.4	2.67	SS, BF-GY F-MG	

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ANSCHUTZ CORPORATION
16-30U ANSCHUTZ RANCH E.

DATE : 07-AUG-81
FORMATION : NUGGET

FILE NO : RP-4-6132
ANALYSTS : BERNDT

FULL DIAMETER ANALYSIS--BOYLE'S LAW POROSITY

SAMPLE NUMBER	DEPTH	PERM. TO AIR (MD) MAXIMUM	90 DEG	VERTICAL	POR. He	FLUID SATS. OIL	WTR	GRAIN DEN	DESCRIPTION	
357	12365.0-66.0	0.06	*	0.03	5.2	13.9	18.6	2.65	SS, BF-GY F-MG	
358	12366.0-67.0	0.34	0.06	<0.01	6.4	8.0	4.0	2.67	SS, BF-GY F-MG	
359	12367.0-68.0	0.23	0.08	<0.01	6.8	10.1	13.4	2.67	SS, BF-GY F-MG	
360	12368.0-69.0	0.31	0.25	<0.01	9.4	8.3	19.5	2.66	SS, BF-GY F-MG	
361	12369.0-70.0	0.48	0.29	<0.01	10.4	13.1	7.5	2.67	SS, BF F-MG	
362	12370.0-71.0	1.01	0.32	<0.01	11.3	8.6	19.4	2.66	SS, BF F-MG	
363	12371.0-72.0	1.13	0.82	<0.01	11.1	11.7	35.0	2.67	SS, BF F-MG	
364	12372.0-73.0	1.04	0.84	<0.01	12.6	10.9	10.9	2.67	SS, BF F-MG	
365	12373.0-74.0	0.19	0.14	<0.01	11.2	10.0	11.7	2.67	SS, BF F-MG	
366	12374.0-75.0	0.22	0.16	<0.01	11.1	9.5	12.7	2.67	SS, BF F-MG	
367	12375.0-76.0	0.21	0.15	<0.01	11.2	10.5	10.5	2.66	SS, BF F-MG	
368	12376.0-77.0	0.43	0.31	<0.01	12.2	7.0	15.7	2.66	SS, BF F-MG	
369	12377.0-78.0	0.57	0.54	<0.01	11.6	10.1	10.1	2.66	SS, BF F-MG	
370	12378.0-79.0	0.59	0.52	<0.01	12.7	9.7	11.3	2.66	SS, BF F-MG	
371	12379.0-80.0	0.43	0.43	<0.01	12.1	9.2	13.8	2.65	SS, BF F-MG	
372	12380.0-81.0	0.49	0.36	<0.01	12.1	8.6	17.3	2.66	SS, BF F-MG	
373	12381.0-82.0	0.53	0.45	<0.01	12.7	7.3	18.4	2.74	SS, BF F-MG	
374	12382.0-83.0	0.64	0.59	<0.01	12.7	7.7	14.2	2.66	SS, BF F-MG	
375	12383.0-84.0	0.54	0.52	<0.01	12.8	9.3	14.0	2.66	SS, BF F-MG	
376	12384.0-85.0	0.70	0.57	<0.01	13.1	4.2	19.8	2.66	SS, BF F-MG	
377	12385.0-86.0	1.47	1.20	0.25	14.0	4.9	19.6	2.66	SS, BF F-MG	
378	12386.0-87.0	2.66	1.72	0.74	14.3	5.2	19.4	2.66	SS, BF F-MG	
379	12387.0-88.0	1.81	1.68	0.85	14.0	5.6	25.0	2.66	SS, BF F-MG	
380	12388.0-89.0	2.77	2.24	0.88	14.2	7.8	24.8	2.66	SS, BF F-MG	
381	12389.0-90.0	1.97	1.71	0.41	15.2	6.8	21.6	2.68	SS, BF F-MG	
382	12390.0-91.0	2.36	1.44	1.28	13.7	3.9	20.6	2.66	SS, BF F-MG	HF
383	12391.0-92.0	2.79	1.86	2.23	14.2	5.4	21.6	2.66	SS, BF F-MG	HF
384	12392.0-93.0	2.93	2.26	0.87	14.2	4.0	22.8	2.66	SS, BF F-MG	
385	12393.0-94.0	4.47	4.04	0.61	13.6	4.8	23.8	2.66	SS, BF F-MG	
386	12394.0-95.0	4.03	3.83	0.41	13.6	4.2	15.5	2.66	SS, BF F-MG	

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ANSCHUTZ CORPORATION
16-30U ANSCHUTZ RANCH E.

DATE : 07-AUG-81
FORMATION : NUGGET

FILE NO : RP-4-6132
ANALYSTS : BERNDT

FULL DIAMETER ANALYSIS--BOYLE'S LAW POROSITY

SAMPLE NUMBER	DEPTH	PERM. TO AIR (MD) MAXIMUM	90 DEG	VERTICAL	POR. He	FLUID SATS. OIL	WTR	GRAIN DEN	DESCRIPTION
387	12395.0-96.0	4.00	3.41	1.96	13.7	4.9	18.0	2.67	SS, BF F-MG
388	12396.0-97.0	5.93	*	2.62	13.3	5.0	15.0	2.64	SS, BF F-MG
389	12397.0-98.0	6.25	6.09	2.92	15.6	0.0	29.8	2.68	SS, BF F-MG
390	12398.0-99.0	5.69	3.71	1.85	14.1	3.7	9.8	2.66	SS, BF F-MG
391	12399.0-00.0	3.75	3.34	1.06	13.3	5.2	12.9	2.66	SS, BF F-MG
392	12400.0-01.0	4.31	3.91	0.91	13.7	3.0	11.8	2.67	SS, BF F-MG
393	12401.0-02.0	1.46	0.93	<0.01	13.3	7.1	9.9	2.68	SS, BF F-MG
394	12402.0-03.0	1.19	*	0.34	13.1	8.9	10.1	2.64	SS, BF F-MG
395	12403.0-04.0	0.63	0.47	1.04	12.7	9.8	7.9	2.66	SS, BF F-MG
396	12404.0-05.0	0.91	0.73	0.23	12.7	7.1	7.1	2.67	SS, BF F-MG
397	12405.0-06.0	1.45	0.91	0.45	13.4	10.2	11.7	2.67	SS, BF F-MG
398	12406.0-07.0	1.19	1.06	<0.01	13.4	5.9	13.3	2.66	SS, BF F-MG
399	12407.0-08.0	1.49	1.49	0.74	13.3	5.6	15.3	2.66	SS, BF F-MG
400	12408.0-09.0	1.69	1.43	0.45	13.2	4.7	11.8	2.66	SS, BF F-MG
401	12409.0-10.0	3.30	2.44	1.15	14.5	4.2	18.0	2.66	SS, BF F-MG
402	12410.0-11.0	3.31	2.78	1.26	14.2	4.2	15.9	2.66	SS, BF F-MG
403	12411.0-12.0	6.10	5.70	2.18	14.7	5.6	13.4	2.66	SS, BF F-MG
404	12412.0-13.0	2.35	1.70	0.95	13.9	4.8	13.2	2.66	SS, BF F-MG
405	12413.0-14.0	4.35	3.35	1.48	13.8	4.9	12.3	2.65	SS, BF F-MG
406	12414.0-15.0	0.92	0.39	0.20	12.7	6.5	15.7	2.66	SS, BF F-MG
407	12415.0-16.0	2.17	2.17	1.21	14.5	5.3	5.3	2.67	SS, BF F-MG
408	12416.0-17.0	9.14	1.45	0.57	13.5	5.6	15.4	2.66	SS, BF F-MG
409	12417.0-18.0	1.11	0.70	0.88	13.5	4.6	16.0	2.65	SS, BF F-MG
410	12418.0-19.0	3.38	2.73	0.89	14.2	5.0	12.5	2.65	SS, BF F-MG
411	12419.0-20.0	2.43	2.16	0.61	13.8	4.3	11.5	2.66	SS, BF F-MG
412	12420.0-21.0	1.38	*	2.48	11.6	4.0	14.7	2.63	SS, BF F-MG
413	12421.0-22.0	3.84	3.69	1.07	14.0	5.3	12.0	2.65	SS, BF F-MG
414	12422.0-23.0	0.58	0.58	0.43	13.3	4.3	21.4	2.67	SS, BF F-MG
415	12423.0-24.0	1.99	1.73	0.82	13.7	5.8	16.1	2.66	SS, BF F-MG
416	12424.0-25.0	1.44	1.18	0.49	11.6	4.2	8.4	2.66	SS, BF F-MG

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ANSCHUTZ CORPORATION
16-30U ANSCHUTZ RANCH E.

DATE : 07-AUG-81
FORMATION : NUGGET

FILE NO : RP-4-6132
ANALYSTS : BERNDT

FULL DIAMETER ANALYSIS--BOYLE'S LAW POROSITY

SAMPLE NUMBER	DEPTH	PERM. TO AIR (MD) MAXIMUM	90 DEG	VERTICAL	POR. He	FLUID SATS. OIL	WTR	GRAIN DEN	DESCRIPTION	
417	12425.0-26.0	139.	117.	1.18	12.6	4.3	8.5	2.65	SS, BF F-MG	HF
418	12426.0-27.0	3.04	2.85	2.07	13.0	4.8	6.5	2.65	SS, BF F-MG	VF
419	12427.0-28.0	0.66	0.40	0.49	12.8	6.4	11.2	2.65	SS, BF F-MG	
420	12428.0-29.0	1.09	0.47	0.16	11.5	4.8	6.4	2.67	SS, LTGY F-MG	
421	12429.0-30.0	0.87	0.87	0.53	12.3	6.4	19.1	2.65	SS, BF F-MG	
422	12430.0-31.0	1.70	1.70	2.51	14.4	7.3	25.6	2.65	SS, GY F-MG	VF
423	12431.0-32.0	0.92	0.88	0.64	12.7	5.9	17.6	2.67	SS, GY F-MG	VF
424	12432.0-33.0	0.61	0.36	0.15	11.6	13.2	13.2	2.66	SS, GY F-MG	
425	12433.0-34.0	0.55	0.45	0.25	11.8	10.5	10.5	2.65	SS, GY F-MG	
426	12434.0-35.0	0.62	0.57	0.27	12.0	10.2	8.5	2.66	SS, GY F-MG	
427	12435.0-36.0	0.54	0.45	0.12	11.4	10.6	7.9	2.64	SS, BF F-MG	
428	12436.0-37.0	0.31	0.26	0.43	11.1	9.0	12.0	2.66	SS, BF F-MG	
429	12437.0-38.0	1.48	1.22	1.59	11.4	9.1	9.1	2.66	SS, BF F-MG	VF
430	12438.0-39.0	2.31	1.75	1.00	14.7	5.3	10.6	2.66	SS, BF F-MG	
431	12439.0-40.0	1.96	1.18	0.20	14.5	5.2	18.1	2.67	SS, BF F-MG	
432	12440.0-41.0	0.93	0.08	0.24	12.3	5.6	17.7	2.66	SS, BF F-MG	
433	12441.0-42.0	2.77	1.19	1.07	14.5	4.0	14.0	2.67	SS, BF F-MG	
434	12442.0-43.0	4.17	2.92	1.19	15.5	2.9	13.3	2.68	SS, BF F-MG	
435	12443.0-44.0	16.	12.	6.37	14.9	2.4	7.3	2.67	SS, BF F-MG	HF
436	12444.0-45.0	3.54	1.71	0.94	13.1	3.4	3.4	2.69	SS, BF F-MG	
437	12445.0-46.0	2.23	1.05	0.63	9.8	4.2	4.2	2.68	SS, BF F-MG	
438	12446.0-47.0	1.97	1.55	0.46	9.0	6.0	12.0	2.69	SS, BF F-MG	VF
439	12447.0-48.0	7.33	4.00	1.86	15.9	3.3	15.4	2.67	SS, BF F-MG	VF
440	12448.0-49.0	5.11	3.65	1.13	14.0	4.3	10.0	2.67	SS, BF F-MG	
441	12449.0-50.0	6.11	2.75	0.81	14.9	3.3	8.9	2.68	SS, GY F-MG	
442	12450.0-51.0	3.84	3.64	0.61	14.6	3.6	8.4	2.67	SS, GY F-MG	
443	12451.0-52.0	11.	4.93	1.17	15.6	2.5	8.6	2.67	SS, GY F-MG	
444	12452.0-53.0	42.	11.	4.98	15.9	3.5	9.4	2.66	SS, GY F-MG	
445	12453.0-54.0	9.30	5.58	1.24	15.7	2.6	11.8	2.66	SS, GY F-MG	
446	12454.0-55.0	54.	40.	1.26	14.9	2.3	8.0	2.67	SS, GY F-MG	

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ANSCHUTZ CORPORATION
16-30U ANSCHUTZ RANCH E.

DATE : 07-AUG-81
FORMATION : NUGGET

FILE NO : RP-4-6132
ANALYSTS : BERNDT

FULL DIAMETER ANALYSIS--BOYLE'S LAW POROSITY

SAMPLE NUMBER	DEPTH	PERM. TO AIR (MD) MAXIMUM	90 DEG	VERTICAL	POR. He	FLUID SATS. OIL	WTR	GRAIN DEN	DESCRIPTION
447	12455.0-56.0	8.72	4.65	0.89	14.6	2.9	11.5	2.67	SS, GY F-MG
448	12456.0-57.0	9.20	4.40	2.17	14.2	3.5	5.8	2.67	SS, GY F-MG
449	12457.0-58.0	7.52	3.38	0.88	13.2	2.1	2.1	2.67	SS, GY F-MG
450	12458.0-59.0	9.48	5.62	2.57	12.3	2.7	10.9	2.68	SS, GY F-MG
451	12459.0-60.0	7.18	1.12	0.77	9.9	0.0	1.3	2.67	SS, BRN-GY F-MG
452	12460.0-61.0	4.09	2.48	0.85	9.5	4.4	4.4	2.68	SS, BRN-GY F-MG
453	12461.0-62.0	2.72	2.08	0.77	10.6	5.3	5.3	2.66	SS, BRN-GY F-MG
454	12462.0-63.0	2.46	2.11	0.15	8.9	4.9	6.5	2.67	SS, BRN-GY F-MG
455	12463.0-64.0	2.70	1.80	0.14	10.7	5.7	2.8	2.67	SS, BRN-GY F-MG
456	12464.0-65.0	2.29	1.99	0.08	10.5	7.0	3.5	2.67	SS, BRN-GY F-MG
457	12465.0-66.0	0.51	0.46	<0.01	9.3	7.6	5.1	2.67	SS, BRN-GY F-MG
458	12466.0-67.0	1.07	1.05	0.03	10.1	5.5	4.1	2.66	SS, BRN-GY F-MG
459	12467.0-68.0	0.64	0.62	0.01	9.1	5.0	6.7	2.67	SS, BRN-GY F-MG
460	12468.0-69.0	0.46	0.39	<0.01	9.6	3.2	6.3	2.67	SS, BRN-GY F-MG
461	12469.0-70.0	0.42	0.34	0.17	9.0	3.6	5.9	2.67	SS, BRN-GY F-MG
462	12470.0-71.0	0.49	0.47	<0.01	9.9	5.3	6.6	2.66	SS, BRN-GY F-MG
463	12471.0-72.0	0.76	0.72	0.04	10.0	8.2	6.2	2.66	SS, BRN-GY F-MG
464	12472.0-73.0	0.14	*	0.09	10.1	7.4	7.4	2.64	SS, BRN-GY F-MG
465	12473.0-74.0	0.35	0.35	<0.01	8.7	6.9	6.9	2.66	SS, BRN-GY F-MG
466	12474.0-75.0	0.29	0.25	<0.01	8.2	6.8	11.4	2.66	SS, BRN-GY F-MG
467	12475.0-76.0	0.39	0.31	0.03	8.7	10.1	12.7	2.68	SS, BRN-GY F-MG
468	12476.0-77.0	0.26	0.24	0.06	8.4	7.5	7.5	2.67	SS, BRN-GY F-MG
469	12477.0-78.0	0.25	0.20	<0.01	7.7	7.3	7.3	2.66	SS, BRN-GY F-MG
470	12478.0-79.0	0.29	0.21	<0.01	7.7	8.1	10.8	2.67	SS, BRN-GY F-MG
471	12479.0-80.0	0.22	0.17	<0.01	8.1	10.4	13.0	2.67	SS, BRN-GY F-MG
472	12480.0-81.0	0.31	0.25	<0.01	8.3	10.0	13.3	2.66	SS, BRN-GY F-MG
473	12481.0-82.0	0.25	0.13	<0.01	7.4	7.3	12.2	2.67	SS, BRN-GY F-MG
474	12482.0-83.0	0.16	0.14	<0.01	7.5	8.0	16.1	2.68	SS, BRN-GY F-MG
475	12483.0-84.0	0.27	0.25	<0.01	8.2	8.9	14.8	2.67	SS, BRN-GY F-MG
476	12484.0-85.0	0.14	0.09	<0.01	8.0	9.0	14.9	2.69	SS, BRN-GY F-MG

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ANSCHUTZ CORPORATION
16-30U ANSCHUTZ RANCH E.

DATE : 07-AUG-81
FORMATION : NUGGET

FILE NO : RP-4-6132
ANALYSTS : BERNDT

FULL DIAMETER ANALYSIS--BOYLE'S LAW POROSITY

SAMPLE NUMBER	DEPTH	PERM. TO AIR (MD) MAXIMUM	90 DEG	VERTICAL	POR. He	FLUID SATS. OIL	WTR	GRAIN DEN	DESCRIPTION	
477	12485.0-86.0	0.14	0.09	<0.01	11.8	4.1	10.3	2.68	SS, BRN-GY F-MG	
478	12486.0-87.0	2.05	1.76	1.82	13.2	2.7	5.4	2.67	SS, BRN-GY F-MG	
479	12487.0-88.0	1.83	1.70	1.29	12.3	3.5	4.6	2.66	SS, BRN-GY F-MG	
480	12488.0-89.0	2.35	0.36	<0.01	8.2	3.5	6.1	2.67	SS, BRN-GY F-MG	
481	12489.0-90.0	22.	3.18	3.09	12.5	3.3	8.9	2.67	SS, GY VF-FG	VF
482	12490.0-91.0	3.01	2.29	1.43	13.1	3.8	9.5	2.66	SS, GY VF-FG	
483	12491.0-92.0	3.89	2.08	2.34	13.9	2.9	7.4	2.66	SS, GY VF-FG	
484	12492.0-93.0	1.87	1.70	0.10	11.8	5.0	5.0	2.64	SS, GY VF-FG	
485	12493.0-94.0	2.63	1.88	0.89	12.4	3.6	6.3	2.66	SS, GY VF-FG	
486	12494.0-95.0	3.19	1.78	0.86	13.0	4.0	4.0	2.67	SS, GY VF-FG	
487	12495.0-96.0	3.53	2.48	2.07	13.6	4.1	3.0	2.67	SS, GY VF-FG	
488	12496.0-97.0	4.85	3.59	2.98	14.3	2.4	1.2	2.67	SS, GY VF-FG	
489	12497.0-98.0	2.23	1.57	0.94	12.9	4.9	7.4	2.66	SS, GY VF-FG	
490	12498.0-99.0	1.53	1.34	0.78	12.3	3.7	4.7	2.67	SS, GY VF-FG	
491	12499.0-00.0	5.21	*	1.40	13.7	3.7	2.8	2.64	SS, BRN-GY VF-FG	
492	12500.0-01.0	3.85	2.77	2.15	13.8	4.0	6.0	2.66	SS, BRN-GY VF-FG	
493	12501.0-02.0	4.24	3.44	0.93	14.0	3.7	11.0	2.66	SS, BRN-GY VF-FG	
494	12502.0-03.0	5.94	4.50	3.08	15.4	3.6	9.8	2.66	SS, BRN-GY VF-FG	
495	12503.0-04.0	5.53	5.08	4.70	15.4	4.8	8.1	2.66	SS, BRN-GY VF-FG	
496	12504.0-05.0	5.99	4.77	3.01	15.0	3.1	11.0	2.66	SS, BRN-GY VF-FG	
497	12505.0-06.0	6.29	4.52	2.72	15.3	3.0	10.0	2.67	SS, BRN-GY VF-FG	
498	12506.0-07.0	6.30	4.72	1.47	14.7	2.5	14.0	2.66	SS, BRN-GY VF-FG	
499	12507.0-08.0	5.31	4.38	3.41	13.3	3.1	11.6	2.66	SS, BRN-GY VF-FG	
500	12508.0-09.0	4.61	2.95	2.91	14.9	2.3	7.7	2.66	SS, BRN-GY VF-FG	
501	12509.0-10.0	5.49	3.92	3.05	15.3	3.6	8.1	2.66	SS, GY FG	
502	12510.0-11.0	5.45	4.47	4.52	15.6	2.4	10.4	2.66	SS, GY FG	
503	12511.0-12.0	7.36	5.78	2.90	15.2	3.6	12.7	2.66	SS, GY FG	
504	12512.0-13.0	45.	8.54	4.80	15.9	2.3	11.3	2.66	SS, GY F-MG	HF
505	12513.0-14.0	6.40	3.84	1.95	14.7	1.0	10.2	2.66	SS, GY F-MG	
506	12514.0-15.0	3.97	3.78	3.07	14.5	3.6	12.5	2.66	SS, GY F-MG	

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ANSCHUTZ CORPORATION
16-30U ANSCHUTZ RANCH E.

DATE : 07-AUG-81
FORMATION : NUGGET

FILE NO : RP-4-6132
ANALYSTS : BERNDT

FULL DIAMETER ANALYSIS--BOYLE'S LAW POROSITY

SAMPLE NUMBER	DEPTH	PERM. TO AIR (MD) MAXIMUM	90 DEG	VERTICAL	POR. He	FLUID SATS. OIL	WTR	GRAIN DEN	DESCRIPTION	
507	12515.0-16.0	3.17	1.58	0.01	11.9	3.0	10.0	2.66	SS, GY F-MG	
08	12516.0-17.0	2.40	0.40	0.03	10.2	2.9	8.6	2.66	SS, GY F-MG	
509	12517.0-18.0	0.29	0.27	0.23	6.8	4.5	5.9	2.67	SS, GY F-MG	
510	12518.0-19.0	0.07	*	0.03	6.3	1.6	1.6	2.65	SS, GY F-MG	
511	12519.0-20.0	0.80	*	0.08	12.4	5.5	5.5	2.64	SS, GY F-MG	
	12520.0-21.0								LOST CORE	
512	12521.0-22.0	1.38	*	1.08	14.2	4.7	19.9	2.64	SS, GY F-MG	
513	12522.0-23.0	1.65	1.32	0.31	15.4	6.5	20.5	2.66	SS, GY VF-FG	
514	12523.0-24.0	1.39	1.27	0.74	15.3	6.6	18.8	2.63	SS, GY VF-FG	
515	12524.0-25.0	1.21	*	1.02	14.6	8.2	15.1	2.64	SS, GY VF-FG	
516	12525.0-26.0	22.	2.06	0.25	13.3	8.0	14.9	2.68	SS, GY VF-FG	HF
517	12526.0-27.0	0.83	0.63	1.32	16.3	6.9	17.2	2.67	SS, GY VF-FG	
518	12527.0-28.0	2.46	2.11	0.70	16.4	6.7	14.5	2.67	SS, GY VF-FG	
519	12528.0-29.0	1.82	1.58	0.67	16.5	7.1	15.4	2.67	SS, GY VF-FG	
520	12529.0-30.0	2.12	1.66	0.96	16.6	6.8	19.2	2.66	SS, GY VF-FG	
521	12530.0-31.0	1.20	0.90	0.82	16.3	6.2	21.7	2.66	SS, GY VF-FG	
522	12531.0-32.0	1.58	1.05	0.54	16.1	8.0	24.0	2.67	SS, GY VF-FG	
23	12532.0-33.0	3.56	2.50	2.77	22.5	6.6	22.1	2.67	SS, GY VF-FG	
524	12533.0-34.0	5.03	3.36	3.31	17.1	4.7	17.7	2.66	SS, GY VF-FG	
525	12534.0-35.0	2.65	2.52	1.09	16.5	3.5	19.3	2.67	SS, GY VF-FG	
526	12535.0-36.0	27.	4.01	1.92	16.3	7.7	24.1	2.66	SS, GY VF-FG	HF
527	12536.0-37.0	1.10	0.73	0.70	15.3	5.6	27.9	2.66	SS, GY VF-FG	
528	12537.0-38.0	1.90	1.32	0.88	15.5	6.8	9.1	2.66	SS, GY VF-FG	
529	12538.0-39.0	1.74	1.28	1.49	16.1	7.6	17.4	2.67	SS, GY VF-FG	
530	12539.0-40.0	1.32	1.32	1.32	15.9	4.8	13.1	2.66	SS, GY VF-FG	
531	12540.0-41.0	1.57	1.37	1.11	14.9	7.8	17.0	2.65	SS, GY VF-FG	
532	12541.0-42.0	1.21	1.21	2.08	15.9	6.2	16.5	2.65	SS, GY VF-FG	
533	12542.0-43.0	2.61	1.80	0.99	15.6	6.6	14.3	2.66	SS, GY VF-FG	
534	12543.0-44.0	3.04	2.16	1.63	20.0	5.8	17.3	2.68	SS, GY VF-FG	
535	12544.0-45.0	2.43	1.79	1.61	19.6	6.8	11.3	2.68	SS, GY VF-FG	

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CORE LABORATORIES, INC.
Petroleum Reservoir Engineering
DALLAS, TEXAS

ANSCHUTZ CORPORATION
16-30U ANSCHUTZ RANCH E.

DATE : 07-AUG-81
FORMATION : NUGGET

FILE NO : RP-4-6132
ANALYSTS : BERNDT

FULL DIAMETER ANALYSIS--BOYLE'S LAW POROSITY

SAMPLE NUMBER	DEPTH	PERM. TO AIR (MD) MAXIMUM	90 DEG	VERTICAL	POR. He	FLUID SATS. OIL	WTR	GRAIN DEN	DESCRIPTION	
536	12545.0-46.0	1.33	1.14	1.51	15.6	5.8	14.5	2.66	SS, GY VF-FG	
537	12546.0-47.0	0.92	0.77	1.07	15.8	4.8	14.4	2.66	SS, GY VF-FG	
538	12547.0-48.0	1.96	0.91	1.63	16.1	8.7	21.2	2.67	SS, GY VF-FG	
539	12548.0-49.0	2.08	1.64	0.81	14.5	4.8	13.2	2.67	SS, GY F-MG	
540	12549.0-50.0	1.13	1.13	0.87	13.6	2.5	1.3	2.67	SS, GY F-MG	
541	12550.0-51.0	0.88	0.53	0.51	12.9	8.0	12.0	2.68	SS, GY F-MG	
542	12551.0-52.0	1.37	0.92	0.67	14.1	10.5	11.8	2.67	SS, GY F-MG	
543	12552.0-53.0	1.65	0.53	0.92	13.2	7.6	5.4	2.67	SS, GY F-MG	
544	12553.0-54.0	0.96	0.86	0.29	12.9	10.6	6.1	2.67	SS, GY F-MG	
545	12554.0-55.0	0.66	*	0.35	11.2	11.0	7.4	2.65	SS, GY F-MG	
546	12555.0-56.0	0.31	*	0.17	8.1	10.9	9.1	2.64	SS, GY F-MG	
547	12556.0-57.0	0.50	0.30	0.28	8.9	7.4	22.3	2.68	SS, GY F-MG	HF
548	12557.0-58.0	0.12	0.09	0.03	8.5	9.0	6.7	2.68	SS, GY F-MG	
549	12558.0-59.0	0.16	0.11	0.04	7.0	9.1	4.5	2.69	SS, GY F-MG	HF
550	12559.0-60.0	0.24	0.17	0.08	10.5	12.0	4.0	2.66	SS, GY VF-FG	
551	12560.0-61.0	0.44	0.35	0.14	10.9	8.0	2.0	2.66	SS, GY VF-FG	
552	12561.0-62.0	0.24	0.21	0.34	10.9	9.2	4.6	2.67	SS, GY VF-FG	
553	12562.0-63.0	0.40	0.26	0.24	10.4	11.2	7.5	2.66	SS, GY VF-MG	
554	12563.0-64.0	0.18	0.15	0.14	11.1	10.8	1.8	2.67	SS, GY VF-FG	
555	12564.0-65.0	0.13	0.11	0.09	9.6	11.7	5.9	2.66	SS, GY VF-FG	
556	12565.0-66.0	0.14	0.10	0.13	10.4	12.8	6.4	2.67	SS, GY VF-MG	
557	12566.0-67.0	0.20	0.15	0.32	11.7	5.8	5.8	2.67	SS, GY VF-MG	
558	12567.0-68.0	0.17	0.12	0.21	10.4	10.5	5.3	2.66	SS, GY VF-MG	
559	12568.0-69.0	0.19	0.12	0.29	10.7	7.4	7.4	2.66	SS, GY VF-MG	
560	12569.0-70.0	0.28	0.19	0.21	12.0	11.6	5.8	2.66	SS, GY VF-MG	
561	12570.0-71.0	0.19	0.17	0.21	11.5	10.0	10.0	2.67	SS, GY VF-MG	
562	12571.0-72.0	0.36	0.18	0.47	10.5	11.1	5.5	2.67	SS, GY VF-MG	
563	12572.0-73.0	0.19	*	0.10	9.6	13.1	2.2	2.64	SS, GY VF-MG	
564	12573.0-74.0	0.13	0.08	0.46	11.7	3.4	1.7	2.66	SS, GY VF-MG	VF
565	12574.0-75.0	0.07	0.05	0.09	10.9	10.8	5.4	2.66	SS, GY VF-MG	

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ANSCHUTZ CORPORATION
16-30U ANSCHUTZ RANCH E.

DATE : 07-AUG-81
FORMATION : NUGGET

FILE NO : RP-4-6132
ANALYSTS : BERNDT

FULL DIAMETER ANALYSIS--BOYLE'S LAW POROSITY

SAMPLE NUMBER	DEPTH	PERM. TO AIR (MD) MAXIMUM	90 DEG	VERTICAL	POR. He	FLUID SATS. OIL	WTR	GRAIN DEN	DESCRIPTION	
566	12575.0-76.0	0.77	0.47	1.76	12.9	10.5	7.0	2.68	SS, GY VF-MG	
567	12576.0-77.0	0.27	0.19	0.25	11.7	10.9	7.2	2.68	SS, GY VF-MG	
568	12577.0-78.0	0.28	0.22	0.55	11.4	11.1	8.3	2.66	SS, GY VF-MG	
569	12578.0-79.0	0.21	*	0.11	10.7	9.3	3.1	2.64	SS, GY VF-MG	
570	12579.0-80.0	0.15	0.10	0.48	11.1	10.3	1.7	2.67	SS, GY VF-MG	
571	12580.0-81.0	0.79	0.65	0.38	13.1	10.4	1.5	2.68	SS, GY F-MG	
572	12581.0-82.0	0.25	0.22	0.16	9.6	3.6	21.3	2.66	SS, GY F-MG	
573	12582.0-83.0	0.18	0.18	0.14	8.4	11.5	15.4	2.65	SS, GY F-MG	
574	12583.0-84.0	0.55	0.48	0.18	9.9	6.2	6.2	2.66	SS, GY F-MG	
575	12584.0-85.0	0.65	0.45	0.32	10.6	6.8	10.2	2.66	SS, GY F-MG	
576	12585.0-86.0	0.27	*	0.02	8.4	11.5	15.4	2.65	SS, GY F-MG	
577	12586.0-87.0	0.70	0.64	0.32	10.6	11.4	7.6	2.66	SS, GY F-MG	
578	12587.0-88.0	0.17	0.12	0.17	7.8	6.7	11.1	2.66	SS, GY F-MG	
579	12588.0-89.0	0.10	0.08	0.29	7.6	9.7	17.0	2.66	SS, GY F-MG	
580	12589.0-90.0	0.10	0.10	0.04	7.4	8.1	10.7	2.67	SS, GY F-MG	
581	12590.0-91.0	0.07	0.07	0.04	7.4	7.6	17.8	2.66	SS, GY F-MG	
582	12591.0-92.0	0.04	0.02	0.05	6.8	5.9	17.8	2.65	SS, GY F-MG	
583	12592.0-93.0	0.09	0.08	0.27	6.2	18.6	65.0	2.66	SS, GY F-MG	
584	12593.0-94.0	0.03	0.02	0.03	5.5	3.6	25.2	2.67	SS, GY F-MG	
585	12594.0-95.0	0.04	0.04	0.04	5.0	2.1	38.2	2.68	SS, RD-GY F-MG	
586	12595.0-96.0	0.04	0.03	0.03	4.9	2.7	44.4	2.68	SS, GY F-MG	
587	12596.0-97.0	0.16	0.14	0.04	5.6	0.8	23.1	2.68	SS, GY F-MG	
588	12597.0-98.0	0.03	0.01	0.03	5.1	5.2	15.5	2.68	SS, GY F-MG	
589	12598.0-99.0	0.24	0.17	0.20	5.4	7.4	19.8	2.67	SS, GY F-MG	
590	12599.0-00.0	0.10	0.03	0.02	5.2	7.5	20.1	2.66	SS, GY F-MG	
591	12600.0-01.0	0.02	0.02	<0.01	5.5	3.4	10.1	2.67	SS, RD-GY F-MG	
592	12601.0-02.0	0.11	0.08	0.04	8.3	3.2	14.3	2.64	SS, GY F-MG	
593	12602.0-03.0	0.08	0.05	0.04	6.5	4.9	11.4	2.66	SS, GY F-MG	
594	12603.0-04.0	0.15	0.14	0.18	6.5	7.7	9.6	2.66	SS, GY F-MG	
595	12604.0-05.0	2.60	1.04	0.26	9.0	9.4	18.8	2.64	SS, GY F-MG	HF

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CORE LABORATORIES, INC.
Petroleum Reservoir Engineering
DALLAS, TEXAS

ANSCHUTZ CORPORATION
16-30U ANSCHUTZ RANCH E.

DATE : 07-AUG-81
FORMATION : NUGGET

FILE NO : RP-4-6132
ANALYSTS : BERNDT

FULL DIAMETER ANALYSIS--BOYLE'S LAW POROSITY

SAMPLE NUMBER	DEPTH	PERM. TO AIR (MD) MAXIMUM	90 DEG	VERTICAL	POR. He	FLUID SATS. OIL	WTR	GRAIN DEN	DESCRIPTION
596	12605.0-06.0	1.29	1.27	0.73	13.8	7.7	11.0	2.68	SS, GY VF-FG
597	12606.0-07.0	0.33	0.21	0.28	12.6	8.1	9.2	2.69	SS, GY VF-FG
598	12607.0-08.0	0.49	0.36	0.41	11.9	7.2	6.2	2.66	SS, GY VF-FG
599	12608.0-09.0	0.35	0.29	0.17	11.8	4.6	2.3	2.67	SS, GY VF-FG
600	12609.0-10.0	0.66	0.49	0.55	11.2	8.9	7.6	2.68	SS, GY VF-MG
601	12610.0-11.0	0.58	0.55	0.52	11.4	7.6	6.4	2.66	SS, GY VF-MG SL/CALC
602	12611.0-12.0	0.28	0.17	0.19	10.6	14.5	16.6	2.65	SS, GY VF-MG
603	12612.0-13.0	0.33	0.24	0.26	10.1	8.6	9.8	2.65	SS, GY VF-MG SL/CALC
604	12613.0-14.0	0.59	0.27	0.62	12.7	6.8	6.8	2.67	SS, GY VF-MG SL/CALC
605	12614.0-15.0	1.13	0.95	0.57	13.4	6.0	4.5	2.67	SS, GY VF-MG SL/CALC
606	12615.0-16.0	1.56	1.03	0.75	11.6	6.5	5.4	2.67	SS, GY VF-MG SL/CALC
607	12616.0-17.0	0.52	0.36	0.62	10.0	4.1	4.1	2.65	SS, GY VF-MG SL/CALC
608	12617.0-18.0	0.20	0.14	0.90	8.2	8.0	8.0	2.65	SS, GY VF-MG SL/CALC
609	12618.0-19.0	0.32	0.20	0.69	8.5	6.9	10.4	2.65	SS, GY VF-MG SL/CALC
610	12619.0-20.0	0.87	0.36	0.58	7.8	6.0	7.5	2.65	SS, GY VF-MG SL/CALC
611	12620.0-21.0	0.23	0.18	0.86	7.8	6.0	9.0	2.66	SS, LTBRN VF-MG
612	12621.0-22.0	1.08	0.24	0.54	7.3	7.0	14.0	2.65	SS, LTBRN VF-MG
13	12622.0-23.0	0.82	0.59	0.71	13.7	4.1	14.2	2.67	SS, LTBRN VF-MG
614	12623.0-24.0	0.76	0.67	0.33	14.5	6.7	11.5	2.67	SS, LTBRN VF-FG
615	12624.0-25.0	0.25	0.20	0.08	14.8	1.1	4.2	2.66	SS, LTBRN VF-MG
616	12625.0-26.0	0.30	0.16	0.09	14.3	4.0	15.9	2.66	SS, LTBRN VF-MG
617	12626.0-27.0	2.19	1.49	1.38	14.8	6.1	12.2	2.67	SS, LTBRN VF-MG SL/CALC
618	12627.0-28.0	17.	1.82	1.49	14.8	4.9	8.9	2.67	SS, LTBRN VF-MG HF
619	12628.0-29.0	1.08	0.77	1.07	14.6	4.1	11.4	2.67	SS, LTBRN VF-MG SL/CALC
620	12629.0-30.0	1.19	1.00	1.03	14.6	6.6	10.0	2.67	SS, LTBRN VF-MG SL/CALC
621	12630.0-31.0	4.48	2.98	0.99	15.6	3.1	5.4	2.68	SS, LTBRN VF-MG SL/CALC
622	12631.0-32.0	0.78	0.63	0.57	13.9	4.1	11.2	2.66	SS, LTBRN VF-MG SL/CALC
623	12632.0-33.0	33.	3.06	0.79	14.0	3.9	7.9	2.67	SS, GY VF-MG SL/CALC HF
624	12633.0-34.0	5.14	*	1.10	14.4	5.3	2.6	2.64	SS, GY VF-MG SL/CALC
625	12634.0-35.0	0.05	*	0.02	5.9	10.0	15.0	2.66	SS, GY VF-MG SL/CALC

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ANSCHUTZ CORPORATION
16-30U ANSCHUTZ RANCH E.

DATE : 07-AUG-81
FORMATION : NUGGET

FILE NO : RP-4-6132
ANALYSTS : BERNDT

FULL DIAMETER ANALYSIS--BOYLE'S LAW POROSITY

SAMPLE NUMBER	DEPTH	PERM. TO AIR (MD) MAXIMUM	90 DEG	VERTICAL	POR. He	FLUID SATS. OIL	WTR	GRAIN DEN	DESCRIPTION	
626	12635.0-36.0	0.06	*	0.02	6.1	10.7	16.1	2.66	SS, GY VF-MG SL/CALC	
627	12636.0-37.0	0.16	*	0.08	7.9	9.5	7.9	2.64	SS, GY VF-MG SL/CALC	
628	12637.0-38.0	0.09	*	0.03	7.1	7.0	14.0	2.65	SS, GY VF-MG SL/CALC	
629	12638.0-39.0	181.	*	0.17	7.9	10.1	13.5	2.64	SS, GY VF-MG SL/CALC	HF
630	12639.0-40.0	0.65	*	0.17	10.3	14.0	34.9	2.64	SS, GY VF-MG SL/CALC	
631	12640.0-41.0	0.34	0.31	0.91	10.0	11.7	32.1	2.67	SS, GY VF-MG SL/CALC	
	12641.0-55.0								DEPTH CORRECTION	
632	12655.0-56.0	1.64	0.91	0.61	10.1	5.0	6.3	2.67	SS, GY VF-MG SL/CALC	
633	12656.0-57.0	0.52	0.44	0.90	10.2	6.4	11.1	2.66	SS, GY VF-MG SL/CALC	
634	12657.0-58.0	0.90	0.38	0.22	9.8	4.6	3.4	2.67	SS, GY VF-MG SL/CALC	
635	12658.0-59.0	0.69	0.42	0.19	9.8	9.4	4.7	2.67	SS, GY VF-MG SL/CALC	
636	12659.0-60.0	0.06	0.06	0.05	8.3	8.3	5.5	2.66	SS, GY VF-MG	
637	12660.0-61.0	0.16	0.14	0.74	6.1	7.4	7.4	2.65	SS, GY VF-MG SL/CALC	
638	12661.0-62.0	0.08	0.06	0.68	5.8	8.4	8.4	2.66	SS, GY VF-MG	
639	12662.0-63.0	0.05	0.02	0.01	5.0	7.0	11.7	2.66	SS, RD-BRN VF-FG	
640	12663.0-64.0	0.03	0.02	0.02	4.7	7.8	15.6	2.64	SS, RD-BRN VF-FG	
641	12664.0-65.0	0.04	0.04	0.66	6.4	5.5	12.9	2.67	SS, GY VF-FG	
642	12665.0-66.0	0.03	0.02	0.83	7.4	7.9	9.8	2.69	SS, GY VF-FG	
643	12666.0-67.0	0.04	0.02	0.64	7.4	7.8	11.7	2.64	SS, GY VF-FG	
644	12667.0-68.0	0.03	0.03	0.40	6.6	7.2	8.9	2.66	SS, GY VF-FG	
645	12668.0-69.0	0.04	0.03	0.14	6.7	5.1	6.9	2.66	SS, GY VF-FG	
646	12669.0-70.0	0.04	0.03	0.79	7.7	5.4	3.6	2.65	SS, GY VF-FG	
647	12670.0-71.0	0.04	0.03	0.90	8.5	6.9	10.3	2.65	SS, GY VF-FG	
648	12671.0-72.0	0.03	0.02	0.55	7.7	6.1	1.5	2.66	SS, GY VF-FG	
649	12672.0-73.0	0.12	0.12	0.64	7.8	4.1	8.2	2.65	SS, GY VF-FG	
650	12673.0-74.0	0.41	0.27	0.58	9.0	11.3	7.5	2.67	SS, GY VF-FG	
651	12674.0-75.0	0.13	0.10	0.12	7.5	7.3	7.3	2.66	SS, GY VF-MG	
652	12675.0-76.0	0.12	0.06	0.06	7.9	5.9	9.8	2.66	SS, GY VF-MG	
653	12676.0-77.0	0.15	0.12	0.04	7.4	6.4	8.0	2.66	SS, GY VF-MG	
654	12677.0-78.0	0.06	*	0.03	5.8	5.3	7.1	2.65	SS, GY VF-MG	

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ANSCHUTZ CORPORATION
16-30U ANSCHUTZ RANCH E.

DATE : 07-AUG-81
FORMATION : NUGGET

FILE NO : RP-4-6132
ANALYSTS : BERNDT

FULL DIAMETER ANALYSIS--BOYLE'S LAW POROSITY

SAMPLE NUMBER	DEPTH	PERM. TO AIR (MD) MAXIMUM	90 DEG	VERTICAL	POR. He	FLUID SATS. OIL	WTR	GRAIN DEN	DESCRIPTION	
655	12678.0-79.0	0.12	0.08	0.30	6.1	9.6	12.0	2.67	SS, RD-BRN VF-MG	
656	12679.0-80.0	0.08	0.08	0.14	6.7	11.3	11.3	2.66	SS, RD-BRN VF-MG	
657	12680.0-81.0	0.08	0.04	0.25	7.1	11.7	17.6	2.66	SS, RD-BRN VF-MG	
658	12681.0-82.0	0.13	0.08	0.19	6.4	13.9	24.3	2.66	SS, RD-BRN VF-MG	
659	12682.0-83.0	0.17	0.08	0.04	6.7	10.1	20.3	2.67	SS, RD-BRN VF-MG	
660	12683.0-84.0	0.06	*	0.02	5.4	10.3	13.7	2.65	SS, RD-BRN VF-MG	
661	12684.0-85.0	0.20	0.15	0.12	6.3	9.6	22.3	2.67	SS, BRN-RD VF-MG	
662	12685.0-86.0	0.14	0.10	0.12	6.4	7.6	26.6	2.66	SS, BRN-RD VF-MG	
663	12686.0-87.0	4.24	1.14	1.74	6.4	10.7	8.1	2.67	SS, BRN-RD VF-MG	HF
664	12687.0-88.0	0.10	0.10	0.05	6.5	12.6	6.3	2.66	SS, BRN-RD VF-MG	
665	12688.0-89.0	0.38	0.10	0.03	6.5	4.8	4.8	2.66	SS, BRN-RD VF-MG	
666	12689.0-90.0	0.24	0.24	0.26	7.6	8.3	10.4	2.68	SS, BRN-RD VF-MG	VF
667	12690.0-91.0	0.03	0.02	0.17	5.7	5.9	2.0	2.67	SS, BRN-RD VF-MG	
668	12691.0-92.0	0.43	0.07	0.17	5.1	7.1	28.6	2.66	SS, BRN-RD VF-MG	
669	12692.0-93.0	0.10	0.10	0.05	5.5	7.5	26.4	2.66	SS, BRN-RD VF-MG	
670	12693.0-94.0	0.07	0.05	0.83	5.0	10.3	27.4	2.68	SS, BRN-RD VF-MG	
671	12694.0-95.0	0.19	0.06	0.18	8.1	8.8	5.8	2.65	SS, GY VF-FG	
672	12695.0-96.0	0.10	0.10	0.19	8.6	9.1	9.1	2.65	SS, GY VF-FG	
673	12696.0-97.0	0.16	0.13	0.15	9.4	12.7	6.4	2.66	SS, GY VF-FG	VF
674	12697.0-98.0	0.32	0.19	4.86	9.7	8.5	8.5	2.66	SS, GY VF-FG	
675	12698.0-99.0	0.20	0.17	0.24	10.1	11.5	5.7	2.66	SS, GY VF-FG	
676	12699.0-00.0	0.18	0.16	0.22	9.6	8.0	6.0	2.66	SS, GY VF-FG	
677	12700.0-01.0	2.06	0.54	0.39	10.3	7.4	5.6	2.66	SS, GY VF-FG	HF
678	12701.0-02.0	0.17	0.14	0.29	10.0	8.3	2.1	2.66	SS, GY VF-FG	
679	12702.0-03.0	0.23	0.20	0.28	10.5	7.9	3.9	2.66	SS, GY VF-FG	
680	12703.0-04.0	0.88	*	0.29	11.2	7.9	2.0	2.66	SS, GY VF-MG	
681	12704.0-05.0	0.22	0.18	0.31	10.5	7.8	5.9	2.66	SS, GY VF-FG	
682	12705.0-06.0	0.18	0.16	0.23	9.8	6.1	4.1	2.66	SS, GY VF-FG	
683	12706.0-07.0	0.14	0.12	0.34	10.5	6.4	1.6	2.66	SS, GY VF-FG	
684	12707.0-08.0	1.36	0.83	1.21	11.7	1.8	3.6	2.67	SS, GY VF-MG	HF

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ANSCHUTZ CORPORATION
16-30U ANSCHUTZ RANCH E.

DATE : 07-AUG-81
FORMATION : NUGGET

FILE NO : RP-4-6132
ANALYSTS : BERNDT

FULL DIAMETER ANALYSIS--BOYLE'S LAW POROSITY

SAMPLE NUMBER	DEPTH	PERM. TO AIR (MD) MAXIMUM	90 DEG	VERTICAL	POR. He	FLUID SATS. OIL	WTR	GRAIN DEN	DESCRIPTION	
685	12708.0-09.0	0.82	*	0.35	10.0	5.6	3.8	2.64	SS, GY VF-FG	
686	12709.0-10.0	0.59	*	0.11	9.6	5.6	1.9	2.64	SS, GY VF-FG	
687	12710.0-11.0	0.36	*	0.18	9.6	5.5	9.2	2.65	SS, GY VF-FG	
688	12711.0-12.0	0.37	*	0.06	8.4	6.0	8.0	2.64	SS, GY VF-FG	
689	12712.0-13.0	1.08	*	0.03	8.3	6.9	4.6	2.64	SS, GY VF-FG	
690	12713.0-14.0	24.	*	0.13	6.3	9.8	6.6	2.66	SS, GY VF-MG	HF
691	12714.0-15.0	0.05	*	0.05	2.7	3.7	11.0	2.67	SS, GY VF-FG	
692	12715.0-16.0	0.12	0.07	0.28	9.2	14.0	16.4	2.68	SS, GY VF-FG	
693	12716.0-17.0	0.13	0.09	0.27	9.0	13.3	15.5	2.66	SS, GY VF-FG	
694	12717.0-18.0	0.17	0.12	0.25	8.7	8.2	14.3	2.65	SS, GY VF-FG	
695	12718.0-19.0	0.18	0.13	0.32	8.7	0.0	2.6	2.66	SS, GY VF-FG	
696	12719.0-20.0	0.12	0.09	0.13	8.3	11.6	20.2	2.66	SS, GY VF-FG	
697	12720.0-21.0	0.16	0.14	0.22	7.1	8.4	8.4	2.67	SS, GY VF-FG	
698	12721.0-22.0	0.11	0.09	0.14	7.8	0.0	17.5	2.67	SS, GY VF-FG	
699	12722.0-23.0	0.09	0.07	0.13	7.7	10.5	21.0	2.67	SS, GY VF-FG	
700	12723.0-24.0	0.09	0.06	0.03	7.6	11.1	13.9	2.67	SS, GY VF-FG	
701	12724.0-25.0	0.14	0.11	0.21	7.9	15.0	15.0	2.68	SS, GY VF-FG	
702	12725.0-26.0	0.18	0.15	0.07	7.1	14.5	17.0	2.67	SS, BRN-RD VF-MG	
703	12726.0-27.0	0.11	0.09	0.37	6.8	12.2	9.1	2.67	SS, BRN-RD VF-MG	VF
704	12727.0-28.0	0.14	0.12	0.22	7.3	13.0	25.9	2.67	SS, BRN-RD VF-MG	
705	12728.0-29.0	0.23	0.14	0.24	7.0	16.1	13.4	2.67	SS, BRN-RD VF-MG	
706	12729.0-30.0	0.18	0.10	0.23	7.8	15.2	15.2	2.67	SS, GY VF-MG	
707	12730.0-31.0	0.17	0.14	0.29	7.9	11.7	5.8	2.69	SS, GY VF-MG	
708	12731.0-32.0	0.13	0.11	0.33	8.7	14.1	18.8	2.68	SS, GY VF-MG	
709	12732.0-33.0	0.18	0.09	0.23	8.6	10.8	18.9	2.67	SS, GY VF-MG	
710	12733.0-34.0	0.08	0.08	0.18	7.2	15.2	17.8	2.67	SS, GY VF-MG	
711	12734.0-35.0	0.18	0.15	0.32	8.2	11.1	16.7	2.65	SS, GY VF-FG	
712	12735.0-36.0	0.14	0.11	0.30	8.1	14.4	21.5	2.66	SS, GY VF-FG	
713	12736.0-37.0	0.14	0.09	0.26	8.4	15.7	20.9	2.66	SS, GY VF-FG	
714	12737.0-38.0	0.23	0.18	0.26	8.5	13.1	15.3	2.66	SS, GY VF-FG	

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ANSCHUTZ CORPORATION
16-30U ANSCHUTZ RANCH E.

DATE : 07-AUG-81
FORMATION : NUGGET

FILE NO : RP-4-6132
ANALYSTS : BERNDT

FULL DIAMETER ANALYSIS--BOYLE'S LAW POROSITY

SAMPLE NUMBER	DEPTH	PERM. TO AIR (MD) MAXIMUM	90 DEG	VERTICAL	POR. He	FLUID SATS. OIL	WTR	GRAIN DEN	DESCRIPTION	
715	12738.0-39.0	0.17	0.14	0.18	8.8	12.5	12.5	2.66	SS, GY VF-FG	
716	12739.0-40.0	1.20	1.12	0.34	8.3	13.5	15.7	2.66	SS, GY VF-MG	HF
717	12740.0-41.0	0.13	0.10	0.23	7.9	15.1	15.1	2.66	SS, GY VF-MG	
718	12741.0-42.0	0.06	0.04	0.37	7.6	9.9	17.4	2.67	SS, GY VF-MG	
719	12742.0-43.0	0.09	0.08	0.16	7.5	8.8	14.6	2.66	SS, GY VF-MG	
720	12743.0-44.0	0.06	0.03	0.02	5.9	9.2	18.3	2.67	SS, GY VF-MG	
721	12744.0-45.0	8.35	0.08	0.25	6.5	9.4	21.8	2.68	SS, GY VF-MG CALC	HF
722	12745.0-46.0	0.12	0.07	0.24	6.1	10.2	23.9	2.70	SS, BRN-RD VF-MG CALC	
723	12746.0-47.0	0.08	0.07	0.26	5.5	16.6	25.0	2.67	SS, BRN-RD VF-MG CALC	
724	12747.0-48.0	0.08	0.05	0.17	6.7	0.0	40.1	2.68	SS, BRN-RD VF-MG CALC	
725	12748.0-49.0	0.07	0.04	0.27	5.5	0.0	60.7	2.66	SS, BRN-RD VF-MG CALC	
726	12749.0-50.0	0.01	<0.01	0.10	4.4	0.0	63.0	2.68	SS, BRN-RD VF-MG CALC	
727	12750.0-51.0	0.13	0.08	0.32	6.6	0.0	34.5	2.69	SS, BRN-RD VF-MG CALC	
728	12751.0-52.0	0.09	0.05	0.41	7.1	9.5	19.0	2.67	SS, BRN-RD VF-MG SL/CALC	
729	12752.0-53.0	0.15	0.11	0.23	6.5	9.1	18.3	2.66	SS, BRN-RD VF-MG SL/CALC	
730	12753.0-54.0	0.13	0.13	0.30	6.6	9.9	16.5	2.66	SS, GY VF-MG SL/CALC	
731	12754.0-55.0	0.08	0.06	0.11	6.9	10.2	16.9	2.66	SS, BRN-RD VF-MG	
732	12755.0-56.0	0.10	0.08	0.12	5.8	9.9	16.6	2.66	SS, BRN-RD VF-MG	
733	12756.0-57.0	0.13	0.11	0.15	6.4	0.0	7.5	2.67	SS, BRN-RD VF-MG	
734	12757.0-58.0	0.09	0.04	0.22	6.7	7.7	11.6	2.68	SS, BRN-RD VF-MG	
735	12758.0-59.0	0.08	0.05	0.08	6.4	0.0	6.8	2.68	SS, BRN-RD VF-MG	
736	12759.0-60.0	0.10	0.08	0.12	5.6	0.0	30.4	2.68	SS, BRN-RD VF-MG	
737	12760.0-61.0	0.07	0.07	0.04	4.9	0.0	48.9	2.68	SS, BRN-RD VF-MG	
738	12761.0-62.0	0.12	0.05	0.08	5.5	0.0	48.4	2.68	SS, BRN-RD VF-MG	
739	12762.0-63.0	0.02	*	0.03	3.1	2.8	55.6	2.65	SS, BRN-RD VF-MG	
740	12763.0-64.0	0.04	*	0.03	6.1	0.0	34.6	2.66	SS, BRN-RD VF-MG	
741	12764.0-65.0	0.03	*	0.49	6.0	10.3	24.1	2.65	SS, BRN-RD VF-MG	
742	12765.0-66.0	0.05	*	0.04	6.9	8.0	2.7	2.65	SS, BRN-GY VF-MG	
743	12766.0-67.0	0.03	*	0.02	6.5	7.8	5.2	2.64	SS, GY VF-MG	
744	12767.0-68.0	0.02	*	0.03	6.5	9.1	3.0	2.65	SS, GY VF-MG	

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ANSCHUTZ CORPORATION
16-30U ANSCHUTZ RANCH E.

DATE : 07-AUG-81
FORMATION : NUGGET

FILE NO : RP-4-6132
ANALYSTS : BERNDT

FULL DIAMETER ANALYSIS--BOYLE'S LAW POROSITY

SAMPLE NUMBER	DEPTH	PERM. TO AIR (MD) MAXIMUM	90 DEG	VERTICAL	POR. He	FLUID SATS. OIL	WTR	GRAIN DEN	DESCRIPTION	
745	12768.0-69.0	0.02	*	0.02	7.1	7.7	20.7	2.65	SS, GY VF-MG	
746	12769.0-70.0	0.05	*	0.02	7.9	0.0	10.2	2.65	SS, GY VF-MG	
747	12770.0-71.0	0.05	*	0.03	8.1	0.0	2.9	2.64	SS, GY VF-MG	
748	12771.0-72.0	0.07	*	0.02	8.5	5.7	9.5	2.66	SS, GY VF-MG	
749	12772.0-73.0	0.02	*	0.02	8.3	6.3	8.4	2.65	SS, GY VF-MG	
750	12773.0-74.0	0.22	0.17	0.37	9.8	0.0	4.3	2.66	SS, GY VF-MG	
751	12774.0-75.0	0.02	*	0.02	9.7	10.1	12.6	2.64	SS, GY VF-MG	
752	12775.0-76.0	0.14	0.09	<0.01	9.4	7.4	11.1	2.66	SS, GY VF-MG	
753	12776.0-77.0	0.18	0.18	<0.01	9.4	7.5	11.2	2.66	SS, GY VF-MG	
754	12777.0-78.0	0.11	0.10	<0.01	9.2	7.5	13.1	2.67	SS, GY VF-MG	
755	12778.0-79.0	8.55	2.25	<0.01	9.7	8.4	25.1	2.68	SS, GY VF-MG	HF
756	12779.0-80.0	0.40	0.34	<0.01	8.4	9.8	16.9	2.66	SS, GY VF-MG	HF
757	12780.0-81.0	0.10	0.10	<0.01	7.6	5.6	14.0	2.66	SS, GY VF-MG	
758	12781.0-82.0	0.16	0.14	<0.01	7.3	5.4	14.4	2.66	SS, GY VF-MG	
759	12782.0-83.0	0.10	0.06	<0.01	7.9	12.5	18.8	2.65	SS, GY VF-MG	
760	12783.0-84.0	0.16	0.13	0.04	8.9	2.3	23.4	2.67	SS, GY VF-FG	
761	12784.0-85.0	0.09	0.06	0.03	8.9	2.7	8.2	2.67	SS, GY VF-FG	
762	12785.0-86.0	0.06	0.05	<0.01	7.5	11.3	22.5	2.65	SS, GY VF-FG	
763	12786.0-87.0	0.08	0.05	0.04	8.9	12.8	19.1	2.66	SS, GY VF-FG	
764	12787.0-88.0	0.12	0.12	0.09	8.2	0.0	36.8	2.67	SS, GY VF-MG	
765	12788.0-89.0	0.17	0.14	0.13	10.0	8.3	18.7	2.65	SS, GY VF-FG	
766	12789.0-90.0	0.08	0.06	0.25	9.2	11.7	13.7	2.66	SS, GY VF-FG	
767	12790.0-91.0	0.05	0.04	0.07	6.8	6.6	11.0	2.67	SS, BRN-RD VF-MG	
768	12791.0-92.0	0.41	0.15	0.07	7.2	2.0	36.7	2.67	SS, BRN-RD VF-MG	HF
769	12792.0-93.0	0.05	0.02	0.02	6.3	0.0	62.8	2.67	SS, BRN-RD VF-MG	
770	12793.0-94.0	0.07	0.03	0.01	6.6	13.0	30.4	2.66	SS, BRN-RD VF-MG	
771	12794.0-95.0	0.08	0.07	0.05	5.8	3.3	19.9	2.67	SS, BRN-RD VF-MG	
772	12795.0-96.0	0.10	0.07	0.08	7.1	8.7	14.5	2.67	SS, BRN-RD VF-MG	
773	12796.0-97.0	0.14	*	0.03	5.5	5.7	14.3	2.65	SS, BRN-RD VF-MG	
774	12797.0-98.0	0.05	0.04	0.08	6.3	0.0	23.7	2.66	SS, BRN-RD VF-MG	

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ANSCHUTZ CORPORATION
16-30U ANSCHUTZ RANCH E.

DATE : 07-AUG-81
FORMATION : NUGGET

FILE NO : RP-4-6132
ANALYSTS : BERNDT

FULL DIAMETER ANALYSIS--BOYLE'S LAW POROSITY

SAMPLE NUMBER	DEPTH	PERM. TO AIR (MD) MAXIMUM	90 DEG	VERTICAL	POR. He	FLUID OIL	SATS. WTR	GRAIN DEN	DESCRIPTION
775	12798.0-99.0	0.05	0.04	0.10	6.1	0.0	21.6	2.66	SS, BRN-RD VF-MG
776	12799.0-00.0	0.10	0.08	0.09	6.0	0.0	4.5	2.67	SS, BRN-RD VF-MG
777	12800.0-01.0	0.07	0.06	0.07	6.1	9.9	16.5	2.67	SS, BRN-RD VF-MG
778	12801.0-02.0	0.10	0.08	0.06	6.6	6.3	12.7	2.67	SS, BRN-RD VF-MG
779	12802.0-03.0	0.12	0.09	0.09	6.3	0.0	3.9	2.67	SS, BRN-RD VF-MG
780	12803.0-04.0	0.04	0.03	0.02	6.0	0.0	20.3	2.68	SS, BRN-RD VF-MG
781	12804.0-05.0	0.03	*	0.03	5.3	1.9	19.2	2.65	SS, GY VF-MG
782	12805.0-06.0	0.06	*	0.06	7.0	1.6	12.9	2.65	SS, GY VF-MG
783	12806.0-07.0	0.10	0.08	0.10	8.7	3.0	27.2	2.66	SS, GY VF-MG
784	12807.0-08.0	0.04	0.04	0.02	8.0	6.6	19.9	2.66	SS, GY VF-MG
	12808.0-18.0								TOO BROKEN FOR ANALYSIS
	12818.0-20.0								LOST CORE
785	12820.0-21.0	38.	15.	0.17	9.5	6.2	17.2	2.66	SS, GY VF-MG SL/CALC HF
786	12821.0-22.0	0.06	0.03	0.03	7.6	9.8	11.2	2.67	SS, GY VF-MG SL/CALC
787	12822.0-23.0	0.19	0.12	0.21	9.3	8.2	12.2	2.66	SS, GY VF-MG SL/CALC
788	12823.0-24.0	0.12	*	0.11	9.1	7.2	7.2	2.63	SS, GY VF-MG
789	12824.0-25.0	0.17	*	0.26	9.9	8.9	11.5	2.65	SS, GY VF-MG
790	12825.0-26.0	0.08	*	0.05	9.8	7.0	7.0	2.64	SS, GY VF-MG
791	12826.0-27.0	0.06	*	0.02	8.4	9.2	9.2	2.65	SS, GY VF-MG
792	12827.0-28.0	0.08	*	0.08	7.2	6.6	8.7	2.66	SS, GY VF-MG
793	12828.0-29.0	0.20	*	0.12	10.2	8.2	9.5	2.64	SS, GY VF-MG
794	12829.0-30.0	0.11	*	0.07	9.9	9.3	4.6	2.65	SS, GY VF-MG
795	12830.0-31.0	1.64	0.41	0.17	9.4	7.5	12.6	2.65	SS, GY VF-MG SL/CALC HF
796	12831.0-32.0	2.55	0.35	0.25	9.3	8.5	14.1	2.67	SS, GY VF-MG SL/CALC HF
797	12832.0-33.0	0.10	*	0.10	9.2	8.2	9.6	2.66	SS, GY VF-MG
798	12833.0-34.0	0.22	*	0.20	10.4	8.0	10.7	2.65	SS, GY VF-MG
799	12834.0-35.0	0.20	*	29.	10.2	8.3	13.0	2.65	SS, GY VF-MG
800	12835.0-36.0	0.33	*	0.17	10.3	6.8	9.0	2.64	SS, GY VF-MG
801	12836.0-37.0	0.88	0.51	0.20	9.8	8.8	6.3	2.66	SS, GY F-MG HF
802	12837.0-38.0	0.83	*	0.14	10.4	9.4	10.8	2.65	SS, GY F-MG

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ANSCHUTZ CORPORATION
16-30U ANSCHUTZ RANCH E.

DATE : 07-AUG-81
FORMATION : NUGGET

FILE NO : RP-4-6132
ANALYSTS : BERNDT

FULL DIAMETER ANALYSIS--BOYLE'S LAW POROSITY

SAMPLE NUMBER	DEPTH	PERM. TO AIR (MD) MAXIMUM	90 DEG	VERTICAL	POR. He	FLUID SATS. OIL	WTR	GRAIN DEN	DESCRIPTION	
803	12838.0-39.0	0.15	0.12	0.07	10.4	8.0	12.0	2.66	SS, GY F-MG SL/CALC	
804	12839.0-40.0	0.98	*	0.04	10.1	13.4	15.3	2.65	SS, GY F-MG	
805	12840.0-41.0	1.12	0.29	0.07	8.3	10.9	16.3	2.66	SS, GY F-MG SL/CALC	HF
806	12841.0-42.0	0.16	0.13	0.04	14.3	8.6	19.3	2.66	SS, GY F-MG SL/CALC	
807	12842.0-43.0	0.17	*	0.11	9.7	11.7	19.5	2.64	SS, GY F-MG SL/CALC	
808	12843.0-44.0	0.14	0.10	0.18	9.4	11.2	13.1	2.65	SS, GY F-MG SL/CALC	
809	12844.0-45.0	7.40	0.82	0.26	11.9	7.2	12.5	2.65	SS, GY F-MG SL/CALC	HF
810	12845.0-46.0	0.81	*	0.10	9.0	12.1	20.2	2.66	SS, GY F-MG	
811	12846.0-47.0	0.16	0.07	0.18	9.1	12.6	10.8	2.66	SS, GY VF-FG	
812	12847.0-48.0	0.30	0.18	0.15	10.8	0.0	2.9	2.66	SS, GY VF-FG	
813	12848.0-49.0	0.21	0.18	0.07	11.0	10.9	12.7	2.66	SS, GY VF-FG	
814	12849.0-50.0	0.24	0.24	0.13	10.5	12.1	15.5	2.67	SS, GY VF-FG	HF
815	12850.0-51.0	0.15	0.13	0.14	10.2	14.4	19.1	2.66	SS, GY VF-FG	
816	12851.0-52.0	0.14	0.12	0.15	10.5	11.9	17.9	2.67	SS, GY VF-FG	
817	12852.0-53.0	0.14	0.14	0.20	10.2	11.5	13.5	2.66	SS, GY VF-FG	
818	12853.0-54.0	0.18	0.15	0.10	10.4	11.1	12.9	2.66	SS, GY VF-FG	
819	12854.0-55.0	0.14	0.11	0.07	10.0	13.2	13.2	2.66	SS, GY VF-FG	
820	12855.0-56.0	0.14	0.08	0.29	8.5	11.0	22.0	2.67	SS, GY VF-FG	VF
821	12856.0-57.0	0.15	0.12	0.20	10.6	9.9	8.3	2.68	SS, GY VF-FG	
822	12857.0-58.0	0.15	0.12	0.06	9.3	11.7	35.2	2.67	SS, GY VF-FG	
823	12858.0-59.0	0.40	0.26	0.10	9.4	13.0	10.8	2.67	SS, GY VF-FG	
824	12859.0-60.0	0.13	0.09	0.18	8.2	10.0	25.0	2.67	SS, GY VF-FG	
825	12860.0-61.0	0.19	*	0.07	8.5	15.5	10.3	2.65	SS, GY VF-FG	
826	12861.0-62.0	0.12	0.11	0.11	7.8	15.9	21.2	2.68	SS, GY VF-FG	
827	12862.0-63.0	0.12	0.09	0.17	8.7	15.8	23.7	2.66	SS, GY VF-FG	
828	12863.0-64.0	0.16	0.11	0.15	8.0	14.0	21.0	2.67	SS, GY VF-FG	
829	12864.0-65.0	0.05	0.04	0.05	6.6	7.1	38.9	2.67	SS, GY VF-FG	
830	12865.0-66.0	0.16	0.13	0.05	6.6	9.9	23.1	2.68	SS, GY VF-FG	
831	12866.0-67.0	0.11	0.07	0.12	7.1	10.7	24.1	2.67	SS, GY VF-MG SL/CALC	
832	12867.0-68.0	0.06	0.04	0.07	6.5	0.0	48.6	2.67	SS, GY VF-MG	

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ANSCHUTZ CORPORATION
16-30U ANSCHUTZ RANCH E.

DATE : 07-AUG-81
FORMATION : NUGGET

FILE NO : RP-4-6132
ANALYSTS : BERNDT

FULL DIAMETER ANALYSIS--BOYLE'S LAW POROSITY

SAMPLE NUMBER	DEPTH	PERM. TO AIR (MD) MAXIMUM	90 DEG	VERTICAL	POR. He	FLUID OIL	SATS. WTR	GRAIN DEN	DESCRIPTION	
833	12868.0-69.0	0.05	0.04	0.19	5.1	0.0	48.8	2.65	SS, RD VFG	
834	12869.0-70.0	0.07	0.04	0.10	6.0	9.8	39.1	2.67	SS, RD VFG	
835	12870.0-71.0	0.06	0.05	0.15	5.6	0.0	58.0	2.68	SS, RD VFG	
836	12871.0-72.0	0.03	0.02	0.04	4.6	0.0	74.2	2.66	SS, RD VFG	
837	12872.0-73.0	0.06	0.04	0.23	5.3	0.0	77.6	2.67	SS, RD VFG	
838	12873.0-74.0	0.05	0.04	0.15	5.0	0.0	79.6	2.68	SS, RD VFG	
839	12874.0-75.0	0.10	0.05	0.08	4.9	0.0	79.1	2.68	SS, RD VFG	
840	12875.0-76.0	0.03	*	0.02	4.7	8.9	39.9	2.65	SS, RD VFG	
841	12876.0-77.0	0.08	0.05	0.15	5.8	0.0	21.0	2.67	SS, RD VFG	
842	12877.0-78.0	0.03	*	0.02	3.6	0.0	64.2	2.67	SS, RD VFG	
843	12878.0-79.0	0.04	0.02	0.03	3.6	0.0	72.2	2.68	SS, RD VFG	
844	12879.0-80.0	0.04	*	0.02	4.4	0.0	13.9	2.65	SS, RD VFG	
	12880.0-82.0								LOST CORE	
845	12882.0-83.0	0.12	0.07	0.15	5.9	0.0	37.5	2.67	SS, RD VFG	
846	12883.0-84.0	0.05	0.04	0.16	5.3	9.2	23.1	2.67	SS, RD VFG	
847	12884.0-85.0	0.24	0.04	0.07	5.2	12.2	12.2	2.67	SS, RD VFG	
848	12885.0-86.0	0.09	0.06	0.13	5.2	0.0	6.3	2.67	SS, RD VFG	
849	12886.0-87.0	0.09	0.07	0.15	5.4	0.0	5.7	2.67	SS, LTRD VFG	
850	12887.0-88.0	0.08	0.06	0.05	6.2	0.0	15.3	2.67	SS, LTRD VFG	
851	12888.0-89.0	33.	2.84	<0.01	5.3	0.0	46.6	2.67	SS, GY VF-FG	HF
852	12889.0-90.0	0.09	0.05	<0.01	6.4	11.9	32.8	2.67	SS, GY VF-FG	
853	12890.0-91.0	0.02	0.02	<0.01	6.1	7.6	7.6	2.65	SS, RD-GY VF-FG	
854	12891.0-92.0	0.04	0.01	<0.01	8.0	12.5	18.8	2.67	SS, GY VF-FG	
855	12892.0-93.0	0.02	0.01	<0.01	7.4	11.7	23.3	2.66	SS, GY VF-FG	
856	12893.0-94.0	0.05	0.02	<0.01	7.7	7.9	35.5	2.67	SS, GY VF-FG	
857	12894.0-95.0	0.03	0.03	<0.01	6.6	0.0	41.9	2.67	SS, GY VF-FG	
858	12895.0-96.0	0.03	0.02	<0.01	7.1	11.9	31.8	2.68	SS, RD-GY VF-FG	
859	12896.0-97.0	0.02	0.02	<0.01	6.5	8.3	24.9	2.66	SS, RD-GY VF-FG	
860	12897.0-98.0	0.02	0.02	<0.01	7.5	6.5	22.9	2.67	SS, GY VF-FG	
861	12898.0-99.0	<0.01	<0.01	<0.01	5.7	10.7	28.4	2.68	SS, GY VF-FG	

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ANSCHUTZ CORPORATION
16-30U ANSCHUTZ RANCH E.

DATE : 07-AUG-81
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FULL DIAMETER ANALYSIS--BOYLE'S LAW POROSITY

SAMPLE NUMBER	DEPTH	PERM. TO AIR (MD) MAXIMUM	90 DEG	VERTICAL	POR. He	FLUID OIL	SATS. WTR	GRAIN DEN	DESCRIPTION	
862	12899.0-00.0	0.02	0.01	0.03	7.8	7.5	22.5	2.67	SS, GY VF-FG	
863	12900.0-01.0	0.06	*	0.02	6.6	10.3	23.1	2.64	SS, GY VF-FG	
864	12901.0-02.0	0.02	0.02	<0.01	7.9	0.0	36.9	2.67	SS, GY VF-FG	
865	12902.0-03.0	0.12	0.05	<0.01	6.3	6.7	33.6	2.69	SS, RD-GY VF-FG	
866	12903.0-04.0	0.03	0.02	<0.01	8.4	7.5	17.6	2.68	SS, RD-GY VF-FG	
867	12904.0-05.0	0.03	0.02	<0.01	8.0	0.0	27.1	2.68	SS, RD-GY VF-FG	
868	12905.0-06.0	0.02	0.02	<0.01	4.1	0.0	49.7	2.70	SS, RD-GY VF-FG	
869	12906.0-07.0	0.02	0.01	<0.01	7.2	0.0	11.3	2.68	SS, RD-GY VF-FG	
870	12907.0-08.0	0.06	0.03	0.03	5.8	0.0	36.1	2.68	SS, RD-GY VF-FG	
871	12908.0-09.0	0.13	0.02	0.63	6.4	0.0	46.7	2.67	SS, RD-GY VF-FG	VF
872	12909.0-10.0	0.02	0.02	0.02	12.0	0.0	27.2	2.64	SS, RD-GY VF-FG	
873	12910.0-11.0	0.02	0.02	0.03	5.8	11.6	17.4	2.68	SS, RD-GY VF-FG	
874	12911.0-12.0	0.40	0.01	0.03	7.0	10.5	21.0	2.67	SS, GY VF-FG	
875	12912.0-13.0	0.02	0.01	0.03	7.0	0.0	11.3	2.68	SS, RD-GY VF-FG	
876	12913.0-14.0	0.02	0.02	0.03	7.6	10.6	17.7	2.68	SS, GY VF-FG	
877	12914.0-15.0	0.01	0.01	0.02	7.7	7.6	11.5	2.68	SS, GY VF-FG	
878	12915.0-16.0	0.01	<0.01	0.02	6.1	6.1	18.2	2.69	SS, RD-GY VF-FG	
879	12916.0-17.0	0.01	0.01	0.03	7.4	0.0	33.0	2.68	SS, RD-GY VF-FG	
880	12917.0-18.0	0.02	<0.01	0.02	7.4	12.0	27.0	2.69	SS, RD-GY VF-FG	
881	12918.0-19.0	<0.01	<0.01	0.22	7.8	0.0	17.7	2.68	SS, LTGY VF-FG	VF
882	12919.0-20.0	<0.01	<0.01	0.03	7.5	11.7	29.2	2.68	SS, LTGY VF-FG	
883	12920.0-21.0	0.22	0.03	0.02	7.7	2.2	86.8	2.68	SS, LTGY VF-FG	
884	12921.0-22.0	0.02	0.02	0.02	8.1	0.0	17.1	2.67	SS, GY VF-FG	
885	12922.0-23.0	0.02	0.01	0.03	7.5	0.0	40.9	2.67	SS, GY VF-FG	
886	12923.0-24.0	0.02	0.02	0.02	7.5	0.0	14.8	2.68	SS, GY VF-FG	
887	12924.0-25.0	0.01	0.01	0.02	7.3	0.0	40.1	2.68	SS, GY VF-FG	
888	12925.0-26.0	0.02	0.01	0.02	7.1	0.0	34.6	2.68	SS, RD-GY VF-FG	
889	12926.0-27.0	0.02	0.02	0.03	7.4	0.0	40.7	2.68	SS, RD-GY VF-FG	
890	12927.0-28.0	0.03	0.03	0.02	6.7	14.3	33.3	2.69	SS, RD-GY VF-FG	
891	12928.0-29.0	0.53	0.03	0.02	6.1	7.6	61.2	2.68	SS, RD-GY VF-FG	VF

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16-30U ANSCHUTZ RANCH E.

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FULL DIAMETER ANALYSIS--BOYLE'S LAW POROSITY

SAMPLE NUMBER	DEPTH	PERM. TO AIR (MD) MAXIMUM	90 DEG	VERTICAL	POR. He	FLUID SATS. OIL	WTR	GRAIN DEN	DESCRIPTION	
892	12929.0-30.0	0.22	0.13	0.05	6.7	9.3	14.0	2.67	SS, GY VF-FG	VF
893	12930.0-31.0	0.12	0.10	0.04	10.2	13.5	23.6	2.67	SS, GY VF-FG	
894	12931.0-32.0	0.20	0.18	0.03	10.4	9.7	9.7	2.66	SS, GY VF-FG	
895	12932.0-33.0	9.23	5.13	0.08	11.5	9.1	9.1	2.67	SS, GY VF-FG	HF
896	12933.0-34.0	0.04	0.01	0.02	10.1	9.6	16.0	2.68	SS, GY VF-FG	
897	12934.0-35.0	0.08	*	0.03	9.8	10.1	10.1	2.65	SS, GY VF-FG	
898	12935.0-36.0	0.09	*	0.06	6.3	9.7	6.9	2.66	SS, GY VF-FG	
899	12936.0-37.0	0.04	0.02	0.03	8.9	6.5	15.2	2.68	SS, GY VF-FG	
900	12937.0-38.0	0.12	*	0.07	7.4	10.3	10.3	2.65	SS, GY VF-FG	
901	12938.0-39.0	0.11	*	0.05	7.5	8.3	10.4	2.65	SS, LTGY VF-FG	
902	12939.0-40.0	0.11	*	0.12	7.5	0.0	4.9	2.65	SS, LTGY VF-FG	
903	12940.0-41.0	<0.01	<0.01	<0.01	7.8	7.1	7.1	2.67	SS, LTGY VF-FG	
904	12941.0-42.0	0.02	<0.01	<0.01	6.1	0.0	3.3	2.64	SS, LTGY VF-FG	
905	12942.0-43.0	0.01	<0.01	<0.01	6.8	6.4	6.4	2.68	SS, LTGY VF-FG	
906	12943.0-44.0	<0.01	<0.01	<0.01	7.8	0.0	19.8	2.67	SS, LTGY VF-FG	
907	12944.0-45.0	0.01	<0.01	<0.01	8.0	4.9	14.8	2.67	SS, LTGY VF-FG	
908	12945.0-46.0	<0.01	<0.01	<0.01	7.0	7.4	14.8	2.68	SS, LTGY VF-FG	
909	12946.0-47.0	<0.01	<0.01	<0.01	8.7	0.0	6.2	2.69	SS, LTGY VF-FG	
910	12947.0-48.0	0.02	<0.01	<0.01	8.1	0.0	8.7	2.67	SS, LTGY VF-FG	
911	12948.0-49.0	0.03	0.02	0.03	7.6	8.6	10.8	2.68	SS, LTGY VF-FG	
912	12949.0-50.0	0.02	0.01	0.02	7.8	4.8	14.5	2.68	SS, LTGY VF-FG	
913	12950.0-51.0	0.06	0.04	0.03	8.7	0.0	14.0	2.67	SS, LTGY VF-FG	
914	12951.0-52.0	0.04	0.02	0.03	8.7	7.2	9.6	2.68	SS, LTGY VF-FG	
915	12952.0-53.0	0.03	0.03	0.02	8.6	0.0	22.2	2.68	SS, LTGY VF-FG	
916	12953.0-54.0	0.05	0.04	0.02	8.7	0.0	18.6	2.67	SS, LTGY VF-FG	
917	12954.0-55.0	0.05	0.03	0.02	8.2	0.0	2.7	2.67	SS, LTGY VF-FG	
918	12955.0-56.0	0.03	0.03	0.03	7.8	0.0	13.8	2.67	SS, LTGY VF-FG	
919	12956.0-57.0	0.04	0.03	0.02	8.0	0.0	18.1	2.66	SS, LTGY VF-FG	
920	12957.0-58.0	0.02	<0.01	0.03	7.9	0.0	12.6	2.68	SS, LTGY VF-FG	
921	12958.0-59.0	0.05	0.03	<0.01	8.0	0.0	8.1	2.68	SS, LTGY VF-FG	

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ANSCHUTZ CORPORATION
16-30U ANSCHUTZ RANCH E.

DATE : 07-AUG-81
FORMATION : NUGGET

FILE NO : RP-4-6132
ANALYSTS : BERNDT

FULL DIAMETER ANALYSIS--BOYLE'S LAW POROSITY

SAMPLE NUMBER	DEPTH	PERM. TO AIR (MD) MAXIMUM	90 DEG	VERTICAL	POR. He	FLUID SATS. OIL	WTR	GRAIN DEN	DESCRIPTION	
922	12959.0-60.0	0.07	0.06	<0.01	9.4	0.0	3.0	2.67	SS, LTGY VF-FG	
923	12960.0-61.0	0.07	*	0.03	8.5	4.4	4.4	2.64	SS, LTGY VF-FG	
	12961.0-63.0								DRILLED INTERVAL	
924	12963.0-64.0	0.04	0.02	<0.01	8.5	0.0	16.3	2.67	SS, LTGY VF-FG	
925	12964.0-65.0	0.05	0.04	<0.01	8.7	0.0	18.6	2.67	SS, LTGY VF-FG	
926	12965.0-66.0	0.03	0.02	<0.01	7.5	0.0	2.2	2.67	SS, LTGY VF-FG	
927	12966.0-67.0	0.04	0.02	<0.01	5.4	0.0	15.2	2.68	SS, LTGY VF-FG	VF
928	12967.0-68.0	0.01	<0.01	<0.01	7.4	0.0	8.1	2.67	SS, LTGY VF-FG	
929	12968.0-69.0	0.05	0.05	<0.01	6.9	0.0	8.1	2.67	SS, LTGY VF-FG	VF
930	12969.0-70.0	1.78	<0.01	<0.01	7.4	0.0	4.1	2.67	SS, LTGY VF-FG	HF
931	12970.0-71.0	0.02	<0.01	<0.01	5.9	0.0	33.3	2.68	SS, LTGY VF-FG	
932	12971.0-72.0	0.02	0.01	<0.01	7.1	0.0	33.1	2.67	SS, LTGY VF-FG	
933	12972.0-73.0	0.03	0.02	<0.01	6.8	8.5	22.6	2.67	SS, LTGY VF-FG	
934	12973.0-74.0	0.10	0.08	<0.01	7.2	11.9	20.9	2.68	SS, LTGY VF-FG	
935	12974.0-75.0	0.03	*	0.03	5.2	20.7	51.7	2.65	SS, LTGY VF-FG	
936	12975.0-76.0	0.01	0.01	<0.01	7.0	10.0	22.4	2.67	SS, LTGY VF-FG	
937	12976.0-77.0	0.02	<0.01	<0.01	7.9	0.0	31.0	2.67	SS, LTGY VF-FG	
938	12977.0-78.0	0.39	0.05	<0.01	7.4	0.0	28.2	2.67	SS, LTGY VF-FG	HF
939	12978.0-79.0	0.02	<0.01	<0.01	7.8	13.6	23.8	2.68	SS, LTGY VF-FG	
940	12979.0-80.0	0.02	<0.01	0.01	8.3	0.0	31.6	2.68	SS, LTGY VF-FG	
941	12980.0-81.0	0.15	0.02	<0.01	6.4	11.2	22.3	2.69	SS, LTGY VF-FG	HF
942	12981.0-82.0	0.02	<0.01	<0.01	7.9	0.0	13.1	2.67	SS, LTGY VF-FG	
943	12982.0-83.0	0.03	<0.01	<0.01	8.6	0.0	9.8	2.67	SS, LTGY VF-FG	
944	12983.0-84.0	0.01	0.01	<0.01	8.6	6.4	19.1	2.68	SS, LTGY VF-FG	
945	12984.0-85.0	80.	0.02	<0.01	7.8	14.7	24.6	2.68	SS, LTGY VF-FG	
946	12985.0-86.0	<0.01	<0.01	<0.01	6.4	4.2	12.6	2.69	SS, LTGY VF-FG	
947	12986.0-87.0	0.02	0.02	<0.01	5.1	14.9	24.8	2.67	SS, LTGY VF-FG	
948	12987.0-88.0	0.13	0.09	<0.01	6.0	0.0	33.5	2.67	SS, LTGY VF-FG	VF
949	12988.0-89.0	0.09	0.06	0.11	5.9	0.0	51.8	2.66	SS, LTGY VF-FG	
950	12989.0-90.0	0.06	0.05	<0.01	6.3	0.0	47.4	2.67	SS, LTGY VF-FG	HF

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CORE LABORATORIES, INC.
Petroleum Reservoir Engineering
DALLAS, TEXAS

ANSCHUTZ CORPORATION
16-30U ANSCHUTZ RANCH E.

DATE : 07-AUG-81
FORMATION : NUGGET

FILE NO : RP-4-6132
ANALYSTS : BERNDT

FULL DIAMETER ANALYSIS--BOYLE'S LAW POROSITY

SAMPLE NUMBER	DEPTH	PERM. TO AIR (MD) MAXIMUM	90 DEG	VERTICAL	POR. He	FLUID SATS. OIL	WTR	GRAIN DEN	DESCRIPTION	
951	12990.0-91.0	0.05	0.03	<0.01	6.4	0.0	33.9	2.66	SS, GY VF-FG	
952	12991.0-92.0	0.12	0.06	<0.01	6.5	0.0	14.3	2.67	SS, GY VF-FG	
953	12992.0-93.0	0.02	<0.01	<0.01	5.9	0.0	21.6	2.68	SS, GY VF-FG	
954	12993.0-94.0	0.03	0.01	<0.01	8.0	3.0	14.9	2.67	SS, GY VF-FG	
955	12994.0-95.0	0.04	0.02	<0.01	8.9	13.1	19.6	2.66	SS, GY VF-FG	
956	12995.0-96.0	0.07	0.02	<0.01	8.3	7.1	9.4	2.67	SS, GY VF-FG	
957	12996.0-97.0	0.03	*	0.03	7.8	6.4	14.9	2.65	SS, GY VF-FG	
958	12997.0-98.0	0.08	0.04	<0.01	7.6	9.4	21.2	2.68	SS, GY VF-FG	
959	12998.0-99.0	0.03	*	0.02	8.2	10.5	18.4	2.65	SS, GY VF-FG	
960	12999.0-00.0	0.10	0.06	<0.01	9.4	6.8	15.9	2.66	SS, GY VF-FG	
961	13000.0-01.0	0.01	0.01	<0.01	9.0	0.0	13.4	2.67	SS, GY VF-FG	
962	13001.0-02.0	<0.01	<0.01	<0.01	8.5	11.7	17.5	2.67	SS, GY VF-FG	
963	13002.0-03.0	<0.01	<0.01	<0.01	9.2	10.2	23.7	2.67	SS, GY VF-FG	
964	13003.0-04.0	<0.01	<0.01	<0.01	7.0	0.0	30.7	2.69	SS, GY VF-FG	
965	13004.0-05.0	0.02	<0.01	<0.01	9.0	0.0	38.6	2.68	SS, GY VF-FG	
966	13005.0-06.0	0.18	0.04	<0.01	9.1	2.6	23.0	2.67	SS, GY VF-FG	
967	13006.0-07.0	<0.01	<0.01	<0.01	8.7	6.6	19.9	2.67	SS, GY VF-FG	
968	13007.0-08.0	47.	*	0.07	10.3	4.6	20.9	2.65	SS, GY VF-FG	HF
969	13008.0-09.0	1.21	*	0.06	8.2	2.3	13.7	2.65	SS, GY VF-FG	
970	13009.0-10.0	<0.01	<0.01	<0.01	7.1	0.0	33.8	2.69	SS, GY VF-FG	
971	13010.0-11.0	0.01	<0.01	<0.01	6.8	0.0	36.0	2.67	SS, LTGY VF-FG	
972	13011.0-12.0	0.05	0.04	<0.01	6.7	5.8	23.4	2.67	SS, LTGY VF-FG	
973	13012.0-13.0	0.04	0.03	<0.01	8.2	2.3	28.0	2.67	SS, LTGY VF-FG	
974	13013.0-14.0	0.05	0.02	<0.01	7.6	0.0	22.8	2.66	SS, LTGY VF-FG	
975	13014.0-15.0	0.04	<0.01	<0.01	8.7	6.6	17.5	2.66	SS, LTGY VF-FG	
976	13015.0-16.0	0.01	<0.01	<0.01	8.7	4.8	14.4	2.66	SS, LTGY VF-FG	
977	13016.0-17.0	<0.01	<0.01	<0.01	7.0	3.4	24.0	2.66	SS, LTGY VF-FG	
978	13017.0-18.0	0.01	<0.01	<0.01	6.6	0.0	45.1	2.66	SS, LTGY VF-FG	
979	13018.0-19.0	0.01	<0.01	<0.01	7.7	0.0	25.5	2.68	SS, LTGY VF-FG	
980	13019.0-20.0	0.03	*	0.02	7.6	0.0	67.0	2.65	SS, GY VFG	

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ANSCHUTZ CORPORATION
16-30U ANSCHUTZ RANCH E.

DATE : 07-AUG-81
FORMATION : NUGGET

FILE NO : RP-4-6132
ANALYSTS : BERNDT

FULL DIAMETER ANALYSIS--BOYLE'S LAW POROSITY

SAMPLE NUMBER	DEPTH	PERM. TO AIR (MD) MAXIMUM	90 DEG	VERTICAL	POR. He	FLUID SATS. OIL	WTR	GRAIN DEN	DESCRIPTION	
981	13020.0-21.0	0.03	0.01	<0.01	9.0	7.5	42.6	2.67	SS, GY VF-FG	
982	13021.0-22.0	0.03	0.02	<0.01	9.1	0.0	18.7	2.67	SS, GY VF-FG	
983	13022.0-23.0	0.02	<0.01	<0.01	6.7	0.0	23.4	2.69	SS, GY VF-FG	
984	13023.0-24.0	0.32	0.09	<0.01	7.5	8.6	31.6	2.67	SS, GY VF-FG	VF
985	13024.0-25.0	0.03	0.02	<0.01	8.3	10.8	32.5	2.67	SS, GY VF-FG	
986	13025.0-26.0	0.03	0.02	<0.01	7.8	9.0	26.9	2.67	SS, GY VF-FG	
987	13026.0-27.0	0.16	0.02	<0.01	7.9	0.0	45.3	2.67	SS, GY VF-FG	
988	13027.0-28.0	0.05	0.04	<0.01	9.4	10.0	27.6	2.67	SS, GY VF-FG	
989	13028.0-29.0	0.19	0.10	<0.01	8.7	0.0	56.8	2.66	SS, GY VF-FG	
990	13029.0-30.0	0.11	0.05	<0.01	9.8	0.0	62.5	2.67	SS, GY VF-FG	
991	13030.0-31.0	0.15	0.09	<0.01	9.2	7.8	36.4	2.65	SS, GY VF-FG	
992	13031.0-32.0	0.10	0.08	<0.01	8.3	0.0	33.2	2.66	SS, GY VF-FG	
993	13032.0-33.0	0.07	0.05	<0.01	7.5	9.0	15.7	2.66	SS, GY VF-FG	
994	13033.0-34.0	0.02	0.01	<0.01	7.3	12.9	25.7	2.65	SS, GY VF-FG	
995	13034.0-35.0	0.05	0.04	<0.01	6.8	9.1	33.5	2.66	SS, GY VF-FG	
996	13035.0-36.0	0.03	0.02	<0.01	8.6	9.4	23.4	2.66	SS, GY VF-FG	VF
997	13036.0-37.0	0.04	0.03	<0.01	8.0	16.0	32.1	2.65	SS, GY VF-FG	
998	13037.0-38.0	0.05	0.02	<0.01	8.6	6.6	31.0	2.65	SS, GY VF-FG	
999	13038.0-39.0	0.02	0.01	<0.01	8.3	8.3	33.2	2.66	SS, GY VF-FG	
1000	13039.0-40.0	0.04	0.02	<0.01	8.5	8.4	33.7	2.66	SS, GY VF-FG	
1001	13040.0-41.0	0.02	0.01	0.03	6.3	8.1	26.9	2.68	SS, LTGY VF-FG	
1002	13041.0-42.0	0.02	0.02	<0.01	6.7	0.0	69.5	2.67	SS, LTGY VF-FG	
1003	13042.0-43.0	0.02	0.01	<0.01	6.6	0.0	77.1	2.65	SS, LTGY VF-FG	
1004	13043.0-44.0	0.01	0.01	<0.01	5.7	0.0	71.9	2.68	SS, LTGY VF-FG	
1005	13044.0-45.0	0.18	0.14	<0.01	4.9	0.0	62.8	2.66	SS, LTGY VF-FG	HF
1006	13045.0-46.0	0.08	0.02	0.01	4.5	0.0	76.6	2.67	SS, LTGY VF-FG	
1007	13046.0-47.0	0.04	0.04	<0.01	4.5	0.0	67.3	2.68	SS, LTGY VF-FG	HF
1008	13047.0-48.0	0.03	<0.01	<0.01	5.8	0.0	45.4	2.67	SS, LTGY VF-FG	
1009	13048.0-49.0	0.02	*	0.02	3.5	0.0	58.4	2.67	SS, LTGY VF-FG	
1010	13049.0-50.0	73.	5.48	<0.01	6.2	0.0	66.2	2.67	SS, LTGY VF-FG	HF

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ANSCHUTZ CORPORATION
16-30U ANSCHUTZ RANCH E.

DATE : 07-AUG-81
FORMATION : NUGGET

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ANALYSTS : BERNDT

FULL DIAMETER ANALYSIS--BOYLE'S LAW POROSITY

SAMPLE NUMBER	DEPTH	PERM. TO AIR (MD) MAXIMUM	90 DEG	VERTICAL	POR. He	FLUID SATS. OIL	WTR	GRAIN DEN	DESCRIPTION	
1011	13050.0-51.0	0.15	0.13	<0.01	6.4	0.0	66.5	2.68	SS, LTGY VF-FG	HF
1012	13051.0-52.0	18.	13.	3.44	15.9	3.0	34.3	2.67	SS, LTGY VF-FG	
1013	13052.0-53.0	14.	8.65	2.18	15.4	3.2	41.8	2.67	SS, LTGY VF-FG	
1014	13053.0-54.0	3.39	3.39	0.32	13.5	5.0	21.4	2.67	SS, LTGY VF-FG	
1015	13054.0-55.0	2.37	2.20	0.02	12.4	6.9	34.3	2.67	SS, LTGY VF-FG	
1016	13055.0-56.0	0.04	*	0.03	5.3	2.7	24.3	2.68	SS, LTGY VF-FG	
1017	13056.0-57.0	0.34	0.27	<0.01	8.9	0.0	2.9	2.67	SS, LTGY VF-FG	
1018	13057.0-58.0	0.05	0.05	<0.01	8.7	8.1	21.5	2.66	SS, LTGY VF-FG	
1019	13058.0-59.0	0.06	0.04	<0.01	6.5	6.1	27.5	2.67	SS, LTGY VF-FG	
1020	13059.0-60.0	0.73	0.48	<0.01	7.0	4.5	36.2	2.68	SS, LTGY VF-FG	HF
1021	13060.0-61.0	0.41	0.30	0.02	8.4	8.7	31.8	2.68	SS, GY VF-FG	
1022	13061.0-62.0	0.04	0.03	0.01	7.8	9.0	35.8	2.68	SS, GY VF-FG	
1023	13062.0-63.0	0.62	0.14	0.15	7.1	0.0	62.2	2.68	SS, GY VF-FG	
1024	13063.0-64.0	0.11	0.07	0.15	7.5	15.7	17.9	2.66	SS, GY VF-FG	
1025	13064.0-65.0	0.08	0.04	0.01	8.0	6.4	40.5	2.67	SS, GY VF-FG	
1026	13065.0-66.0	0.05	0.02	<0.01	8.0	8.6	28.5	2.67	SS, GY VF-FG	
1027	13066.0-67.0	0.02	0.02	1.21	9.2	7.8	36.2	2.67	SS, GY VF-FG	VF
1028	13067.0-68.0	0.02	0.02	0.32	7.8	0.0	46.1	2.68	SS, GY VF-FG	VF
1029	13068.0-69.0	0.11	0.04	<0.01	3.6	0.0	15.8	2.69	SS, GY VF-FG	V&HF
1030	13069.0-70.0	27.	25.	0.29	3.8	0.0	69.5	2.71	SLTST, RD	HF
1031	13070.0-71.0	0.02	*	0.01	0.7	0.0	23.2	2.74	SS, RD VFG SLTY SL/DOL	FERR
1032	13071.0-72.0	0.02	*	0.03	1.5	0.0	13.6	2.70	SS, RD VFG SLTY SL/DOL	FERR
1033	13072.0-73.0	0.04	*	0.02	1.1	0.0	87.9	2.75	SS, RD VFG SLTY SL/DOL	FERR
1034	13073.0-74.0	0.04	0.03	<0.01	2.6	0.0	75.7	2.74	SLTST, RD	
1035	13074.0-75.0	5.33	0.02	4.47	1.9	0.0	40.8	2.78	SLTST, RD	V&HF
1036	13075.0-76.0	0.03	*	0.20	0.7	0.0	69.2	2.76	SLTST, RD SL/DOL FERR	
1037	13076.0-77.0	0.05	*	0.06	0.7	0.0	67.9	2.78	SLTST, RD SL/DOL FERR	
1038	13077.0-78.0	4.84	*	0.30	2.9	0.0	6.1	2.75	SLTST, RD	V&HF
1039	13078.0-79.0	11.	0.19	1.66	2.6	0.0	32.8	2.74	SLTST, RD	V&HF
	13079.0-46.0								DRILLED INTERVAL	

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ANSCHUTZ CORPORATION
16-30U ANSCHUTZ RANCH E.

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ANALYSTS : BERNDT

FULL DIAMETER ANALYSIS--BOYLE'S LAW POROSITY

SAMPLE NUMBER	DEPTH	PERM. TO AIR (MD) MAXIMUM	90 DEG	VERTICAL	POR. He	FLUID SATS. OIL	WTR	GRAIN DEN	DESCRIPTION	
1040	13546.0-47.0	0.06	0.03	0.28	5.1	0.0	77.0	2.71	SS, RD-GY VF-FG	VF
1041	13547.0-48.0	0.03	*	0.02	4.3	0.0	73.8	2.67	SS, GY VF-FG	
1042	13548.0-49.0	775.	0.01	1718.	4.5	0.0	63.7	2.69	SS, GY VF-FG	V&HF
1043	13549.0-50.0	0.28	*	0.02	4.1	0.0	67.8	2.68	SS, RD VF-FG	
1044	13550.0-51.0	0.01	0.01	<0.01	3.9	0.0	73.9	2.72	SS, RD VF-FG	
1045	13551.0-52.0	0.65	0.03	<0.01	3.3	0.0	62.6	2.73	SS, GY VF-FG FERR	
1046	13552.0-53.0	0.04	*	0.02	3.7	0.0	66.5	2.72	SS, RD VF-FG FERR	
	13553.0-54.0								TOO BROKEN FOR ANALYSIS	

* SAMPLE NOT SUITABLE FOR FULL DIAMETER ANALYSIS

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CORE LABORATORIES, INC.

Petroleum Reservoir Engineering

DALLAS, TEXAS

ANSCHUTZ CORPORATION
16-30U ANSCHUTZ RANCH E.

DATE : 07-AUG-81
FORMATION : NUGGET

FILE NO. : RP-4-6132
ANALYSTS : BERNDT

*** CORE SUMMARY AVERAGES FOR 1 ZONE ***

DEPTH INTERVAL: 12005.0 TO 13553.0

FEET OF CORE ANALYZED : 1046.0 FEET OF CORE INCLUDED IN AVERAGES: 1046.0

-- SAMPLES FALLING WITHIN THE FOLLOWING RANGES WERE AVERAGED --

PERMEABILITY MAXIMUM RANGE (MD.)	:	0.00 TO	1200.	(UNCORRECTED FOR SLIPPAGE)
HELIUM POROSITY RANGE (%)	:	0.0 TO	100.0	
OIL SATURATION RANGE (%)	:	0.0 TO	100.0	
WATER SATURATION RANGE (%)	:	0.0 TO	100.0	

SHALE SAMPLES EXCLUDED FROM AVERAGES.

AVERAGES FOR DEPTH INTERVAL: 12005.0 TO 13553.0

AVERAGE PERMEABILITY (MILLIDARCIES)

ARITHMETIC PERMEABILITY	:	9.6
GEOMETRIC PERMEABILITY	:	0.50
HARMONIC PERMEABILITY	:	0.07
GEOMETRIC MAXIMUM & 90 DEG PERM.	:	0.26

AVERAGE POROSITY (PERCENT) : 10.0

AVERAGE RESIDUAL OIL SATURATION (PERCENT OF PORE SPACE) : 6.2

PRODUCTIVE CAPACITY (MILLIDARCY-FEET)

ARITHMETIC CAPACITY	:	10012.
GEOMETRIC CAPACITY	:	526.
HARMONIC CAPACITY	:	71.
GEOMETRIC MAXIMUM & 90 DEG CAPACITY	:	274.

AVERAGE TOTAL WATER SATURATION (PERCENT OF PORE SPACE) : 17.0

AVERAGE CONNATE WATER SATURATION (PERCENT OF PORE SPACE) : -

INTERPRETATION OF DATA

12005' - 13079' - Gas productive accompanied by condensate.

13546' - 13553' - Gas productive.

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CORE LABORATORIES, INC.

Petroleum Reservoir Engineering

DALLAS, TEXAS

PERMEABILITY VS POROSITY

COMPANY: ANSCHUTZ CORPORATION
FIELD : ANSCHUTZ RANCH E. FIELD

WELL : 16-30U ANSCHUTZ RANCH E.
COUNTY, STATE: SUMMIT COUNTY, UTAH

AIR PERMEABILITY : MD - HORIZONTAL (UNCORRECTED FOR SLIPPAGE)
POROSITY : PERCENT (HELIUM)

DEPTH INTERVAL	RANGE & SYMBOL	PERMEABILITY MINIMUM	PERMEABILITY MAXIMUM	POROSITY MIN.	POROSITY MAX.	POROSITY AVERAGE	PERMEABILITY AVERAGES ARITHMETIC	HARMONIC	GEOMETRIC
12005.0 - 13553.0	1 (+)	0.001	1200.0	0.0	24.0	10.0	9.5	0.07	0.50

EQUATION OF REDUCED LINE RELATING PERMEABILITY(K) TO POROSITY :

LOG(K) = (SLOPE)(POROSITY) + LOG OF INTERCEPT

K = ANTILOG((SLOPE)(POROSITY) + LOG OF INTERCEPT)

RANGE	EQUATION OF THE LINE
1	PERM = ANTILOG((0.2972)(POROSITY) + -3.2591)

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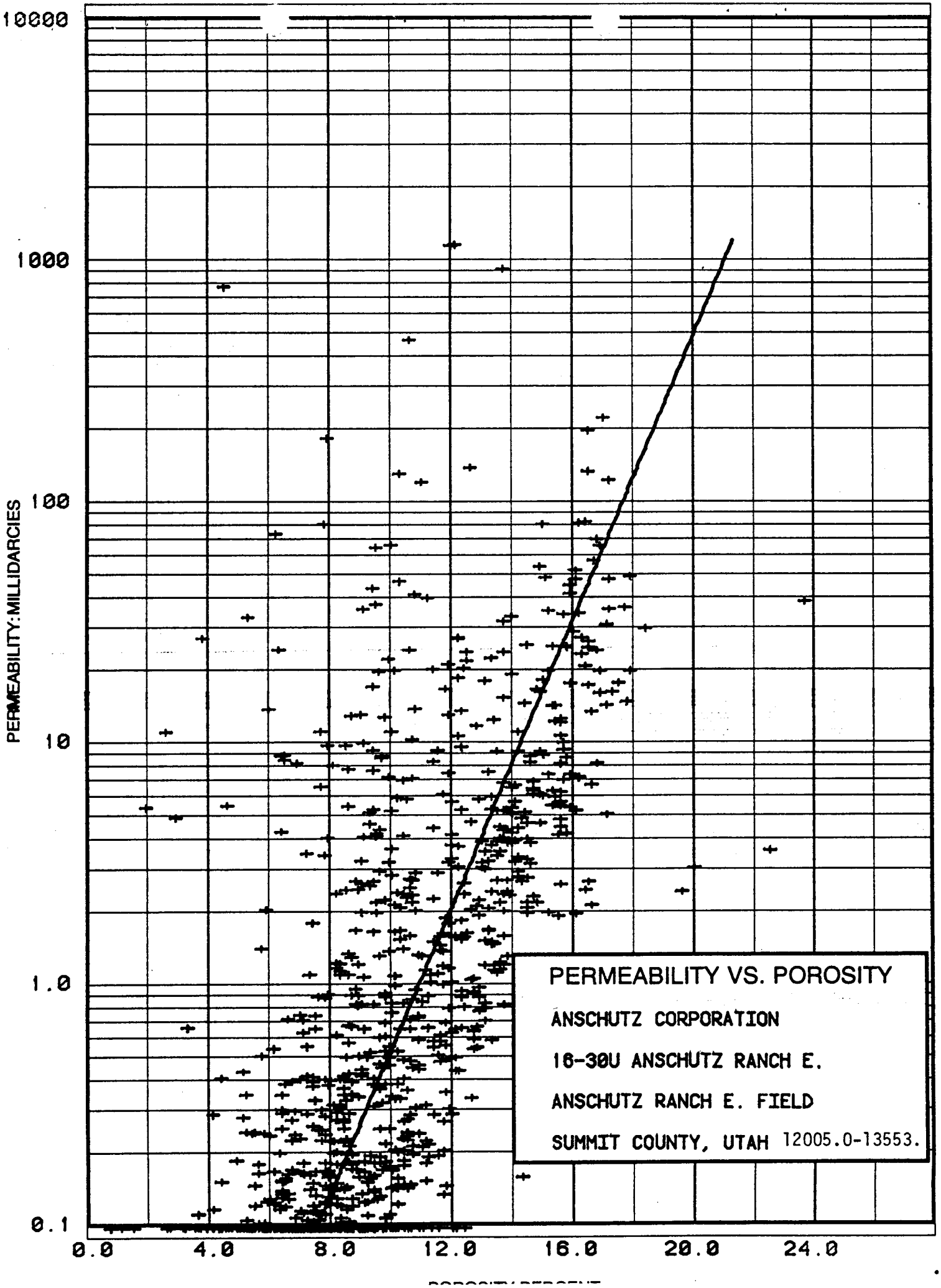
PERMEABILITY VS. POROSITY
ANSCHUTZ CORPORATION
16-30U ANSCHUTZ RANCH E.
ANSCHUTZ RANCH E. FIELD
SUMMIT COUNTY, UTAH 12005.0-13553.
PERMEABILITY:MILLIDARCIES
10000
1000
100
10
1.0
0.1
0.0
4.0
8.0
12.0
16.0
20.0
24.0

CORE LABORATORIES, INC.
Petroleum Reservoir Engineering
DALLAS, TEXAS

STATISTICAL DATA FOR POROSITY AND PERMEABILITY HISTOGRAM

COMPANY: ANSCHUTZ CORPORATION
FIELD : ANSCHUTZ RANCH E. FIELD

WELL : 16-30U ANSCHUTZ RANCH E.
COUNTY, STATE: SUMMIT COUNTY, UTAH

AIR PERMEABILITY : MD. (HORIZONTAL) RANGE USED 0.001 TO 1200.
POROSITY : PERCENT (HELIUM) RANGE USED 0.0 TO 46.0

(PERMEABILITY UNCORRECTED FOR SLIPPAGE)

DEPTH LIMITS : 12005.0 - 13553.0 INTERVAL LENGTH : 1548.0
FEET ANALYZED IN ZONE : 1046.0 LITHOLOGY EXCLUDED : NONE

DATA SUMMARY

POROSITY AVERAGE	PERMEABILITY AVERAGES ARITHMETIC	HARMONIC	GEOMETRIC
10.0	9.5	0.07	0.50

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CORE LABORATORIES, INC.
Petroleum Reservoir Engineering
DALLAS, TEXAS

STATISTICAL DATA FOR POROSITY AND PERMEABILITY HISTOGRAM

COMPANY: ANSCHUTZ CORPORATION
FIELD : ANSCHUTZ RANCH E. FIELD

WELL : 16-30U ANSCHUTZ RANCH E.
COUNTY, STATE: SUMMIT COUNTY, UTAH

GROUPING BY POROSITY RANGES

POROSITY RANGE	FEET IN RANGE	AVERAGE POROSITY	AVERAGE PERM. (GEOM.)	AVERAGE PERM. (ARITH)	FREQUENCY (PERCENT)	CUMULATIVE FREQUENCY (%)
0.0 - 2.0	6.0	1.1	0.073	0.915	0.6	0.6
2.0 - 4.0	14.0	3.3	0.145	3.1	1.3	1.9
4.0 - 6.0	79.0	5.2	0.090	10.	7.6	9.5
6.0 - 8.0	244.0	7.1	0.098	2.0	23.3	32.8
8.0 - 10.0	242.0	8.9	0.267	2.0	23.1	55.9
10.0 - 12.0	164.0	10.8	0.743	7.6	15.7	71.6
12.0 - 14.0	127.0	12.9	2.5	31.	12.1	83.7
14.0 - 16.0	113.0	14.9	5.0	9.2	10.8	94.6
16.0 - 18.0	52.0	16.6	15.	34.	5.0	99.5
18.0 - 20.0	2.0	19.0	8.5	16.	0.2	99.7
20.0 - 22.0	1.0	20.0	3.0	3.0	0.1	99.8
22.0 - 24.0	2.0	23.1	12.	21.	0.2	100.0

TOTAL NUMBER OF FEET = 1046.0

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CORE LABORATORIES, INC.
Petroleum Reservoir Engineering
DALLAS, TEXAS

STATISTICAL DATA FOR POROSITY AND PERMEABILITY HISTOGRAM

COMPANY: ANSCHUTZ CORPORATION
FIELD : ANSCHUTZ RANCH E. FIELD

WELL : 16-30U ANSCHUTZ RANCH E.
COUNTY, STATE: SUMMIT COUNTY, UTAH

GROUPING BY PERMEABILITY RANGES

PERMEABILITY RANGE	FEET IN RANGE	AVERAGE PERM. (GEOM.)	AVERAGE PERM. (ARITH)	AVERAGE POROSITY	FREQUENCY (PERCENT)	CUMULATIVE FREQUENCY (%)
0.005 - 0.010	30.0	0.006	0.006	8.5	2.9	2.9
0.010 - 0.020	41.0	0.015	0.015	7.2	3.9	6.8
0.020 - 0.039	85.0	0.028	0.029	6.7	8.1	14.9
0.039 - 0.078	94.0	0.055	0.056	7.0	9.0	23.9
0.078 - 0.156	128.0	0.113	0.116	7.7	12.2	36.1
0.156 - 0.312	115.0	0.216	0.221	8.7	11.0	47.1
0.312 - 0.625	85.0	0.442	0.451	9.5	8.1	55.3
0.625 - 1.250	98.0	0.890	0.909	11.2	9.4	64.6
1.250 - 2.500	91.0	1.8	1.8	12.3	8.7	73.3
2.500 - 5.000	81.0	3.5	3.6	12.6	7.7	81.1
5.- 10.	81.0	6.8	7.0	12.7	7.7	88.8
10.- 20.	44.0	15.	15.	13.3	4.2	93.0
20.- 40.	39.0	27.	28.	13.8	3.7	96.7
40.- 80.	17.0	53.	54.	13.9	1.6	98.4
80.- 160.	9.0	105.	108.	13.7	0.9	99.2
160.- 320.	3.0	200.	200.	13.8	0.3	99.5
320.- 640.	1.0	471.	471.	10.6	0.1	99.6
640.- 1280.	4.0	989.	1003.	10.6	0.4	100.0

TOTAL NUMBER OF FEET = 1046.0

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CORE LABORATORIES, INC.

Petroleum Reservoir Engineering

DALLAS, TEXAS

STATISTICAL DATA FOR POROSITY AND PERMEABILITY HISTOGRAM

COMPANY: ANSCHUTZ CORPORATION
FIELD : ANSCHUTZ RANCH E. FIELD

WELL : 16-30U ANSCHUTZ RANCH E.
COUNTY, STATE: SUMMIT COUNTY, UTAH

POROSITY-FEET OF STORAGE CAPACITY LOST FOR SELECTED POROSITY CUT OFF

POROSITY CUT OFF	FEET LOST	CAPACITY LOST (%)	FEET REMAINING	CAPACITY REMAINING (%)	ARITH MEAN	MEDIAN
0.0	0.0	0.0	1046.0	100.0	10.0	9.5
2.0	6.0	0.1	1040.0	99.9	10.0	9.5
4.0	20.0	0.5	1026.0	99.5	10.1	9.6
6.0	99.0	4.5	947.0	95.5	10.5	9.9
8.0	343.0	21.0	703.0	79.0	11.7	11.3
10.0	585.0	41.7	461.0	58.3	13.2	13.0
12.0	749.0	58.7	297.0	41.3	14.5	14.4
14.0	876.0	74.5	170.0	25.5	15.6	
16.0	989.0	90.7	57.0	9.3	17.0	
18.0	1041.0	99.0	5.0	1.0	20.8	21.0
20.0	1043.0	99.4	3.0	0.6	22.1	22.5
22.0	1044.0	99.6	2.0	0.4	23.1	
24.0	1046.0	100.0	0.0	0.0		

TOTAL STORAGE CAPACITY IN POROSITY-FEET = 10413.0

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CORE LABORATORIES, INC.
Petroleum Reservoir Engineering
DALLAS, TEXAS

STATISTICAL DATA FOR POROSITY AND PERMEABILITY HISTOGRAM

COMPANY: ANSCHUTZ CORPORATION
FIELD : ANSCHUTZ RANCH E. FIELD

WELL : 16-30U ANSCHUTZ RANCH E.
COUNTY, STATE: SUMMIT COUNTY, UTAH

MILLIDARCY-FEET OF FLOW CAPACITY LOST FOR SELECTED PERMEABILITY CUT OFF

PERMEABILITY CUT OFF	FEET LOST	CAPACITY LOST (%)	FEET REMAINING	CAPACITY REMAINING (%)	GEOM MEAN	MEDIAN
0.005	0.0	0.0	1046.0	100.0	0.50	0.40
0.010	30.0	0.0	1016.0	100.0	0.57	0.45
0.020	71.0	0.0	975.0	100.0	0.67	0.53
0.039	156.0	0.0	890.0	100.0	0.90	0.74
0.078	250.0	0.1	796.0	99.9	1.25	1.03
0.156	378.0	0.2	668.0	99.8	1.99	1.64
0.312	493.0	0.5	553.0	99.5	3.15	2.55
0.625	578.0	0.9	468.0	99.1	4.50	3.67
1.250	676.0	1.8	370.0	98.2	6.92	5.59
2.500	767.0	3.5	279.0	96.5	10.75	8.25
5.	848.0	6.4	198.0	93.6	17.02	13.28
10.	929.0	12.1	117.0	87.9	32.08	25.88
20.	973.0	18.6	73.0	81.4	51.74	
40.	1012.0	29.6	34.0	70.4	107.60	80.00
80.	1029.0	38.9	17.0	61.1	218.18	
160.	1038.0	48.7	8.0	51.3	494.90	640.00
320.	1041.0	54.8	5.0	45.2	852.96	829.98
640.	1042.0	59.5	4.0	40.5	989.29	
1280.	1046.0	100.0	0.0	0.0		

TOTAL FLOW CAPACITY IN MILLIDARCY-FEET(ARITHMETIC) = 9910.23

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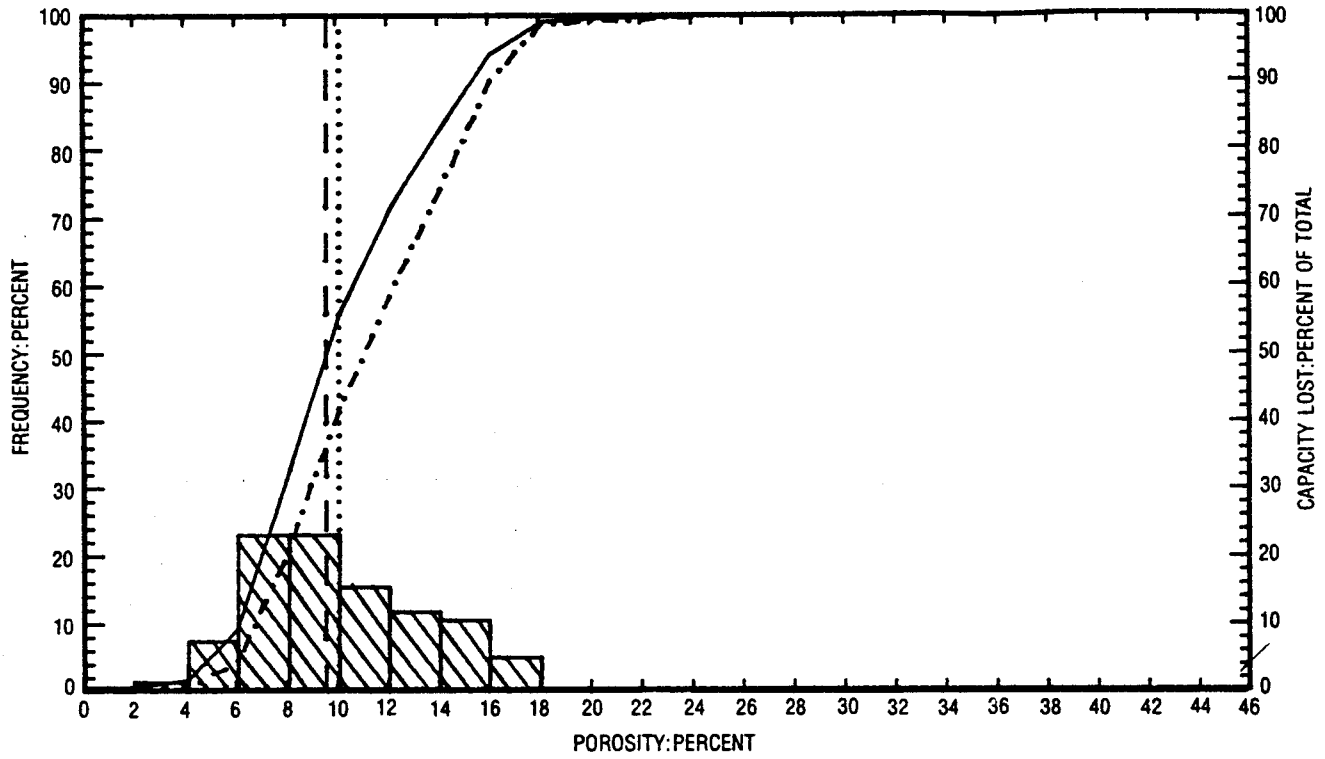

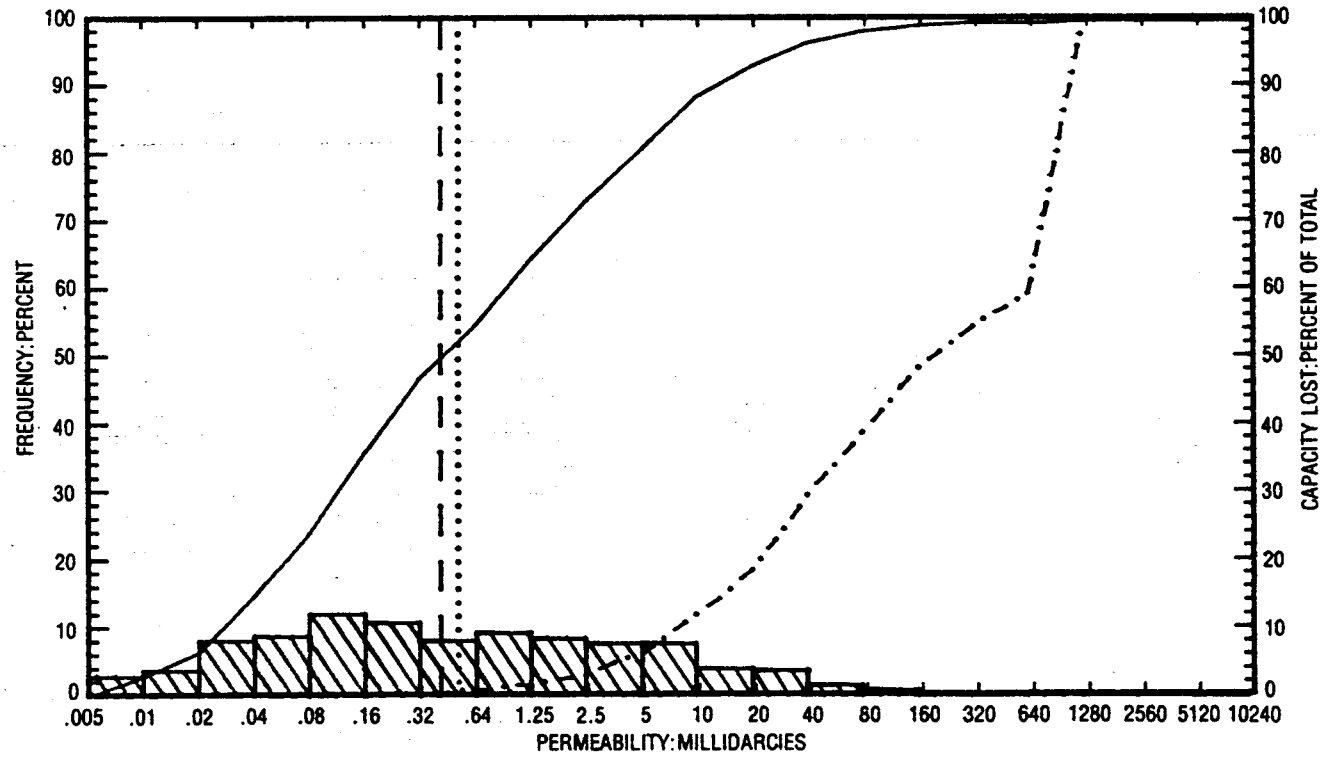

PERMEABILITY AND POROSITY HISTOGRAMS

ANSCHUTZ CORPORATION
16-30U ANSCHUTZ RANCH E.
ANSCHUTZ RANCH E. FIELD
SUMMIT COUNTY, UTAH 12005.0-13553.0

LEGEND

- ARITHMETIC MEAN POROSITY
- GEOMETRIC MEAN PERMEABILITY
- MEDIAN VALUE
- CUMULATIVE FREQUENCY
- CUMULATIVE CAPACITY LOST

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CORE ORIENTING LOG

Date 10/1/81

Page 1 of

CORE #1

PERFORMANCE

Interval Cored: Finish 12014
Start 12005

Footage Cored:

Remarks:

MULTISHOT INSTRUMENT

Make:

Serial No.

Clock Interval: Min.

Station Record By:

Film Read By:

CORRECTIONS

Declination 15 Degrees [X] East [ ] West

Azimuth Correction for Declination
East Declination [X] Add to Azimuth
West Declination [ ] Subtract from Azimuth

Reference Groove Correction:
From Above, Groove is 70 Degrees [ ] Right [X] Left of Orientation Lug.
[ ] Right Add to Lug Azimuth
[X] Left Subtract from Lug Azimuth

WELL INFORMATION

Company: THE ANSCHUTZ CORPORATION
Contractor: BS-83
Well Name: ARE 16-30U
County: SUMMIT State: UTAH
Hole Size: 81/2 Core Barrel:
Formation Name: NUGGET
Formation Description:

STATION				DRIFT			ORIENTATION							DIP, STRIKE			REMARKS
No.	Time	Picture No.	Depth	Angle	Direction Magnetic	Direction True	Orienting Lug, Magnetic Direction	Orienting Lug, Magnetic Azimuth	Declin. Corr.	Or. Lug Az. True	Reference Groove Corr.	Reference Groove Az. True	Reference Groove Direction True	Dip Dir.	Dip Angle	Strike	
1	7:15	260	12005	8°	S26E	S11E	S40W	220	+15	235	70L	165	S15E	N34W	26°	N56E-S56N	BEDDING PLANE
6	7:42	274	12010	8°	S24E	S9E	S33E	147	+15	162	70L	92	S88E	N35E	19°	N55W-S55E	BEDDING PLANE
10	8:22	293	12014	8°	S25E	S10E	S75E	105	+15	120	70L	50	N50E	N56E	33°	N34W-S34E	BEDDING PLANE
						NOTE: 12011 to Bottom Reference groove drifting											
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18

WHITE—CUSTOMER COPY PINK—DISTRICT COPY CANARY—SALT LAKE CITY COPY

CORE ORIENTING LOG

Date 8/4/81

Page 1 of

CORE #2

PERFORMANCE

Interval Cored: Finish 12063

Start 12014

Footage Cored:

Remarks:

MULTISHOT INSTRUMENT

Make:

Serial No.

Clock Interval: Min.

Station Record By:

Film Read By:

CORRECTIONS

Declination 15 Degrees [X] East [ ] West

Azimuth Correction for Declination

East Declination [X] Add to Azimuth

West Declination [ ] Subtract from Azimuth

Reference Groove Correction:

From Above, Groove is 70 Degrees [ ] Right X [ ] Left of Orientation Lug.

[X] Right Add to Lug Azimuth

[ ] Left Subtract from Lug Azimuth

WELL INFORMATION

Company: THE ANSCHUTZ CORPORATION

Contractor: BS-83

Well Name: ARE 16-20E

County: SUMMIT State: UTAH

Hole Size: 81/2 Core Barrel:

Formation Name: NUGGET

Formation Description:

STATION				DRIFT			ORIENTATION							DIP, STRIKE			REMARKS
No.	Time	Picture No.	Depth	Angle	Direction Magnetic	Direction True	Orienting Lug, Magnetic Direction	Orienting Lug, Magnetic Azimuth	Declin. Corr.	Or. Lug Az. True	Reference Groove Corr.	Reference Groove Az. True	Reference Groove Direction True	Dip Dir.	Dip Angle	Strike	
	10:34	211	12014	8°	S26E	S11E	N89E	89	15	104	70L	34	N34E	----ORIENTATION GROOVES			DRIFTING AROUND
	12:38	272	12020	8°	S26E	S11E	S62E	118	15	133	70L	63	N63E	----ORIENTATION GROOVES			DRIFTING AROUND
	3:15	351	12025	8°	S24E	S09E	S60E	120	15	135	70L	65	N65E	----ORIENTATION GROOVES			DRIFTING AROUND
26	5:04	407	12030	8°	S24E	S09E	N66E	66	15	81	70L	11	N11E	S77E	26°	N13E-S13W	BEDDING PLANE
31	6:52	460	12035	8°	S28E	S13E	S78W	258	15	173	70L	203	S23W	S35E	14°	N55E-S55W	BEDDING PLANE
31B	6:52	460	12035	8°	S28E	S13E	S78W	258	15	173	70L	203	S23W	S23E	6°	N23E-S23W	BEDDING PLANE
36	8:30	508	12040	8°	S29E	S14E	N89W	271	15	286	70L	216	S36W	N99W	34°	N1E-S1W	BEDDING PLANE
40	10:10	557	12045	8°	S29E	S14E	N67W	293	15	308	70L	238	S58W	----------RUBBLE----------			
	12:41	634	12050	8°	S25E	S10E	S60E	120	15	135	70L	65	N65E	----------RUBBLE----------			
	2:47	697	12055	8°	S28E	S13E	N15W	345	15	360	70L	290	N70W	----------RUBBLE----------			
	4:52	759	12060	8°	S27E	S12E	S30E	150	15	165	70L	95	S85E	----------RUBBLE----------			
	7:30	840	12063	8°	S27E	S12E	N01W	359	15	14	70L	304	N56W	----------RUBBLE----------			
						NOTE:	NORTH LINE MARKED ON INTERVAL 12033' - 12049'										
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18

WHITE—CUSTOMER COPY PINK—DISTRICT COPY CANARY—SALT LAKE CITY COPY

CORE ORIENTING LOG

Date 9/29/81

Page 1 of 1

CORE #3

WELL INFORMATION

Company: THE ANSCHUTZ CORPORATION
Contractor: BS-83
Well Name: ARE 16-30U
County: SUMMIT State: UTAH
Hole Size: 81/2 Core Barrel:
Formation Name: NUGGET
Formation Description: SS

PERFORMANCE

Interval Cored: Finish 12122
Start 12063

Footage Cored:

Remarks:

MULTISHOT INSTRUMENT

Make:

Serial No.

Clock Interval: Min.

Station Record By:

Film Read By:

CORRECTIONS

Declination 15 Degrees [X] East [ ] West

Azimuth Correction for Declination
East Declination [X] Add to Azimuth
West Declination [ ] Subtract from Azimuth

Reference Groove Correction:
From Above, Groove is 127 Degrees [X] Right [ ] Left
of Orientation Lug.
[X] Right Add to Lug Azimuth
[ ] Left Subtract from Lug Azimuth

STATION				DRIFT			ORIENTATION							DIP, STRIKE			REMARKS
No.	Time	Picture No.	Depth	Angle	Direction Magnetic	Direction True	Orienting Lug, Magnetic Direction	Orienting Lug, Magnetic Azimuth	Declin. Corr.	Or. Lug Az. True	Reference Groove Corr.	Reference Groove Az. True	Reference Groove Direction True	Dip Dir.	Dip Angle	Strike	
1	8:30	165	12063	73/4	S27E	S12E	S60E	186	15	201	127	328	N32W	N23E	30°	N67W-S67E	BEDDING PLANE
2	10:18	224	12069	8	S28E	S13E	S34W	214	15	229	127	356	N04W	N13E	15°	N8W-S87E	BEDDING PLANE
3	12:32	286	12074	8	S28E	S13E	S60W	240	15	255	127	22	N22E	N18E	9°	N82W-S82E	BEDDING PLANE
4	2:02	335	12077	8	S26E	S11E	S40W	220	15	235	127	2	N02E	N47W	30°	N43E-S43W	BEDDING PLANE
5	3:08	365	12079	8	S26E	S11E	N43W	317	15	332	127	99	S81E	N48E	37°	N43E-S43W	BEDDING PLANE
6	5:06	428	12084	8	S27E	S12E	N40W	320	15	335	127	102	S78E	N44E	23°	N46W-S46E	BEDDING PLANE
7	7:28	495	12089	8	S26E	S11E	N37W	323	15	338	127	105	S75E	S84E	23°	N06E-S06W	BEDDING PLANE
8	9:05	542	12094	8	S26E	S11E	N31W	329	15	344	127	111	S69E	S70E	21°	N20E-S20W	BEDDING PLANE
9	11:55	627	12099	8	S25E	S10E	N33W	327	15	342	127	109	S71E	N75E	20°	N15W-S15E	BEDDING PLANE
10	2:00	689	12104	8	S25E	S10E	N15W	345	15	360	127	127	S53E	N89E	32°	N1W-S1E	BEDDING PLANE
11	4:00	765	12110	8	S23E	S08E	S65E	115	15	130	127	257	S77W	N04E	19°	N86W-S86E	BEDDING PLANE
12	6:32	826	12115	8	S24E	S09E	S64E	116	15	131	127	258	S78W	N21E	7°	N69W-S69E	BEDDING PLANE
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18

WHITE—CUSTOMER COPY PINK—DISTRICT COPY CANARY—SALT LAKE CITY COPY

CORE ORIENTING LOG

Date 10/1/81

Page 1 of

CORE #4

WELL INFORMATION

Company: THE ANSCHUTZ CORPORATION
Contractor: BS-83
Well Name: ARE 16-30U
County: SUMMIT State: UTAH
Hole Size: 81/2 Core Barrel:
Formation Name: NUGGET
Formation Description: SS

PERFORMANCE

Interval Cored: Finish 12183
Start 12123

Footage Cored:

Remarks:

MULTISHOT INSTRUMENT

Make:

Serial No.

Clock Interval: Min.

Station Record By:

Film Read By:

CORRECTIONS

Declination 15 Degrees [X] East [ ] West

Azimuth Correction for Declination
East Declination [X] Add to Azimuth
West Declination [ ] Subtract from Azimuth

Reference Groove Correction:
From Above, Groove is 138 Degrees [X] Right [ ] Left of Orientation Lug.
[X] Right Add to Lug Azimuth
[ ] Left Subtract from Lug Azimuth

STATION				DRIFT			ORIENTATION							DIP, STRIKE			REMARKS
No.	Time	Picture No.	Depth	Angle	Direction Magnetic	Direction True	Orienting Lug, Magnetic Direction	Orienting Lug, Magnetic Azimuth	Declin. Corr.	Or. Lug Az. True	Reference Groove Corr.	Reference Groove Az. True	Reference Groove Direction True	Dip Dir.	Dip Angle	Strike	
1	3:36	229	12129	8	S25E	S10E	N22W	338	15	353	138	131	S49E	S76W	26°	N14W-S14E	BEDDING PLANE
2	6:18	311	12144	8	S26E	S11E	S52E	128	15	142	138	280	N80W	N54E	29°	N36W-S36E	BEDDING PLANE
3	8:56	394	12159	8	S25E	S10E	S73W	253	15	268	138	46	N46E	N41E	28°	N49W-S49E	BEDDING PLANE
4	12:17	490	12173	8	S27E	S12E	S63W	243	15	258	138	36	N36E	N90E	27°	NON-SOS	BEDDING PLANE
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18

CORE ORIENTING LOG

Date 10/1/81

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CORE #5

PERFORMANCE

Interval Cored: Finish 12217
Start 12186

Footage Cored:

Remarks:

MULTISHOT INSTRUMENT

Make:

Serial No.

Clock Interval: Min.

Station Record By:

Film Read By:

CORRECTIONS

Declination 15 Degrees [X] East [ ] West

Azimuth Correction for Declination
East Declination [X] Add to Azimuth
West Declination [ ] Subtract from Azimuth

Reference Groove Correction:
From Above, Groove is 147 Degrees [X] Right [ ] Left of Orientation Lug.
[X] Right Add to Lug Azimuth
[ ] Left Subtract from Lug Azimuth

WELL INFORMATION

Company: THE ANSCHUTZ CORPORATION
Contractor: BS-83
Well Name: ARE 16-30U
County: SUMMIT State: UTAH
Hole Size: 81/2 Core Barrel:
Formation Name: NUGGET
Formation Description: SS

STATION				DRIFT			ORIENTATION							DIP, STRIKE			REMARKS
No.	Time	Picture No.	Depth	Angle	Direction Magnetic	Direction True	Orienting Lug, Magnetic Direction	Orienting Lug, Magnetic Azimuth	Declin. Corr.	Or. Lug Az. True	Reference Groove Corr.	Reference Groove Az. True	Reference Groove Direction True	Dip Dir.	Dip Angle	Strike	
1	6:10	190	12189	8	S24E	S9E	S49E	131	15	146	147	293	N67W	N74W	28°	N16E-S16W	BEDDING PLANE
2	12:46	387	12204	8	S24E	S9E	S37E	143	15	158	147	305	N55W	N83W	32°	N7E-S7W	BEDDING PLANE
3	3:40	477	12210	8	S25E	S10E	S79E	101	15	116	147	263	N83W	S15W	31°	N75W-S75E	BEDDING PLANE
4	8:28	625	12217	8	S25E	S10E	S10E	170	15	185	147	332	N28W	------	RUBBLE	----------	----------
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18

CORE ORIENTING LOG

Date 10/1/81

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WELL INFORMATION

Company: THE ANSCHUTZ CORPORATION
Contractor: BS-83
Well Name: ARE 16-30U
County: SUMMIT State: UTAH
Hole Size: 81/2 Core Barrel:
Formation Name: NUGGET
Formation Description: SS

CORE #6
PERFORMANCE

Interval Cored: Finish 12277
Start
Footage Cored:
Remarks:

MULTISHOT INSTRUMENT

Make:
Serial No.
Clock Interval: Min.
Station Record By:
Film Read By:

CORRECTIONS

Declination 15 Degrees [X] East [ ] West

Azimuth Correction for Declination
East Declination [X] Add to Azimuth
West Declination [ ] Subtract from Azimuth

Reference Groove Correction:
From Above, Groove is 59 Degrees [X] Right [ ] Left
of Orientation Lug.
[X] Right Add to Lug Azimuth
[ ] Left Subtract from Lug Azimuth

STATION				DRIFT			ORIENTATION							DIP, STRIKE			REMARKS
No.	Time	Picture No.	Depth	Angle	Direction Magnetic	Direction True	Orienting Lug, Magnetic Direction	Orienting Lug, Magnetic Azimuth	Declin. Corr.	Or. Lug Az. True	Reference Groove Corr.	Reference Groove Az. True	Reference Groove Direction True	Dip Dir.	Dip Angle	Strike	
1	4:47	125	12219	8	S26E	S11E	N15E	15	15	30	59	89	N89E	N23W	28°	N67E-S67W	BEDDING PLANE
2	6:34	182	12233	8	S27E	S12E	N05W	355	15	10	59	69	N69E	S20W	14°	N80W-S80E	BEDDING PLANE
3	1:55	251	12263	8	S30E	S15E	N49E	49	15	64	59	123	S57E	N7W	24°	N93E-S93W	BEDDING PLANE
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18

CORE # 7

CORE ORIENTING LOG

Date September 17, 1981

Page ..... of .....

WELL INFORMATION

Company: Anschutz Corp.
Contractor: BS 83
Well Name: 16-30U
County: Summit State: Utah
Hole Size: Core Barrel:
Formation Name: Nugget
Formation Description:

PERFORMANCE

Interval Cored: Finish 12337'
Start 12277'

Footage Cored: 60

Remarks:

MULTISHOT INSTRUMENT

Make:

Serial No.

Clock Interval: Min.

Station Record By:

Film Read By:

CORRECTIONS

Declination 15 Degrees [X] East [ ] West

Azimuth Correction for Declination
East Declination [X] Add to Azimuth
West Declination [ ] Subtract from Azimuth

Reference Groove Correction:
From Above, Groove is 59 Degrees [X] Right [ ] Left of Orientation Lug.
[X] Right Add to Lug Azimuth
[ ] Left Subtract from Lug Azimuth

STATION				DRIFT			ORIENTATION							DIP, STRIKE			REMARKS
No.	Time	Picture No.	Depth	Angle	Direction Magnetic	Direction True	Orienting Lug, Magnetic Direction	Orienting Lug, Magnetic Azimuth	Declin. Corr.	Or. Lug Az. True	Reference Groove Corr.	Reference Groove Az. True	Reference Groove Direction True	Dip Dir.	Dip Angle	Strike	
1A	21:00	250	12292	8	S27E	S12E	N77W	283	15	298	59	357	N03W	N15E	37°	N75W-S75E	BEDDING PLANE
B	21:00	250	12292	8	S27E	S12E	N77W	283	15	298	59	357	N03W	VERTICAL		N80W-S80E	FRACTURE
2	24:35	357	12307	8	S26E	S11E	N57E	57	15	72	59	131	S49E	N3E	31°	N87W-S87E	BEDDING PLANE
3	03:00	430	12322	8	S27E	S12E	N52E	52	15	67	59	126	S54E	N23E	41°	N67W-S67E	BEDDING PLANE
4	06:45	543	12337	8	S28E	S13E	S13W	193	15	208	59	267	S87W	N25E	36	N75W-S75E	BEDDING PLANE
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18

CORE # 8

CORE ORIENTING LOG

Date September 17, 1981

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WELL INFORMATION

Company: THE ANSCHUTZ CORP.
Contractor: BS 83
Well Name: 16-30U
County: Summit State: Utah
Hole Size: Core Barrel:
Formation Name: Nugget
Formation Description:

PERFORMANCE

Interval Cored: Finish 12397'
Start 12337'

Footage Cored: 60

Remarks:

MULTISHOT INSTRUMENT

Make:

Serial No.

Clock Interval: Min.

Station Record By:

Film Read By:

CORRECTIONS

Declination 15 Degrees [X] East [ ] West

Azimuth Correction for Declination
East Declination [X] Add to Azimuth
West Declination [ ] Subtract from Azimuth

Reference Groove Correction:
From Above, Groove is 59 Degrees [X] Right [ ] Left
of Orientation Lug.
[X] Right Add to Lug Azimuth
[ ] Left Subtract from Lug Azimuth

STATION				DRIFT			ORIENTATION							DIP, STRIKE			REMARKS
No.	Time	Picture No.	Depth	Angle	Direction Magnetic	Direction True	Orienting Lug, Magnetic Direction	Orienting Lug, Magnetic Azimuth	Declin. Corr.	Or. Lug Az. True	Reference Groove Corr.	Reference Groove Az. True	Reference Groove Direction True	Dip Dir.	Dip Angle	Strike	
1	23:10	307	12353	8½	S26E	S11E	S47W	227	15	242	59	301	N59W	N47W	33	N43W-S43E	BEDDING PLANE
2	2:17	470	12368	8½	S26E	S11E	S63E	117	15	132	59	191	S11W	N63E	08	N27W-S27E	BEDDING PLANE
B	2:17	470	12368	8½	S26E	S11E	S63E	117	15	132	59	191	S11W	N5E	39	N85W-S85E	BEDDING PLANE
C	2:17	470	12368	3½	S26E	S11E	S63E	117	15	132	59	191	S11W	S44W	57	N46W-S46E	FRACTURE
D	2:17	470	12368	8½	S26E	S11E	S63E	117	15	132	59	191	S11W	S42W	75	N48W-S48E	FRACTURE
3	5:00	482	12383	83/4	S25E	S10E	S58E	122	15	137	59	196	S16W	N35E	41	N55W-S55E	BEDDING PLANE
4	8:32	591	12398	83/4	S25E	S10E	S32E	32	15	47	59	106	S74E	N31E	40	N59W-S59E	BEDDING PLANE
2		3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18

CORE # 9

CORE ORIENTING LOG

Date September 17, 1981

Page ..... of .....

WELL INFORMATION

Company: THE ANSCHUTZ CORP.
Contractor: BS 83
Well Name: ARE 16-30U
County: SUMMIT State: UTAH
Hole Size: ..... Core Barrel: .....
Formation Name: NUGGET
Formation Description: .....

PERFORMANCE

Interval Cored: Finish 12458'
Start 12398'

Footage Cored: .....

Remarks: .....

MULTISHOT INSTRUMENT

Make: .....

Serial No. .....

Clock Interval: ..... Min.

Station Record By: .....

Film Read By: .....

CORRECTIONS

Declination 15 Degrees [X] East [ ] West

Azimuth Correction for Declination
East Declination [X] Add to Azimuth
West Declination [ ] Subtract from Azimuth

Reference Groove Correction:
From Above, Groove is 59 Degrees [X] Right [ ] Left
of Orientation Lug.
[X] Right Add to Lug Azimuth
[ ] Left Subtract from Lug Azimuth

STATION				DRIFT			ORIENTATION							DIP, STRIKE			REMARKS
No.	Time	Picture No.	Depth	Angle	Direction Magnetic	Direction True	Orienting Lug, Magnetic Direction	Orienting Lug, Magnetic Azimuth	Declin. Corr.	Or. Lug Az. True	Reference Groove Corr.	Reference Groove Az. True	Reference Groove Direction True	Dip Dir.	Dip Angle	Strike	
1	24:25	284	12413	9	S23E	S8E	S60E	120	15	135	59	194	S14W	N79E	35°	N11W-S11E	BEDDING PLANE
2A	3:02	363	12428	9	S22E	S7E	S76E	104	15	119	59	178	S02E	N78E	34°	N12W-S12E	BEDDING PLANE
B	3:02	363	12428	9	S22E	S7E	S76E	104	15	119	59	178	S02E	S74W	47°	N16W-S16E	FRACTURE
3A	6:04	457	12443	9	S22E	S7E	S32W	212	15	227	59	286	N74W	N68E	40°	N22W-S22E	BEDDING PLANE
B	6:04	457	12443	9	S22E	S7E	S32W	212	15	227	59	286	N74W	S69W	56°	N21W-S21E	FRACTURE
4	9:20	557	12458	9	S23E	S8E	S32W	212	15	227	59	286	N74W	N12E	42°	N78W-S78E	BEDDING PLANE
2		3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18

CORE # 12

CORE ORIENTING LOG

Date September 18, 1981

Page ..... of .....

WELL INFORMATION

Company: THE ANSCHUTZ CORP.
Contractor: BS 83
Well Name: ARE 16-30U
County: SUMMIT State: UTAH
Hole Size: Core Barrel:
Formation Name:
Formation Description:

PERFORMANCE

Interval Cored: Finish 12641
Start 12581

Footage Cored: 60

Remarks:

MULTISHOT INSTRUMENT

Make:
Serial No.
Clock Interval: Min.
Station Record By:
Film Read By:

CORRECTIONS

Declination 15 Degrees [X] East [ ] West

Azimuth Correction for Declination
East Declination [X] Add to Azimuth
West Declination [ ] Subtract from Azimuth

Reference Groove Correction:
From Above, Groove is 59 Degrees [X] Right [ ] Left
of Orientation Lug.
[X] Right Add to Lug Azimuth
[ ] Left Subtract from Lug Azimuth

STATION				DRIFT			ORIENTATION							DIP, STRIKE			REMARKS
No.	Time	Picture No.	Depth	Angle	Direction Magnetic	Direction True	Orienting Lug, Magnetic Direction	Orienting Lug, Magnetic Azimuth	Declin. Corr.	Or. Lug Az. True	Reference Groove Corr.	Reference Groove Az. True	Reference Groove Direction True	Dip Dir.	Dip Angle	Strike	
1	14:42	246	12596	9	S20E	S05E	NOT GIVEN	193	15	208	58	266	S86W	N74E	22°	N16W-S16E	BEDDING PLANE
2A	16:08	289	12611	9	S20E	S05E	NOT GIVEN	156	15	171	58	229	S49W	N58E	23°	N32W-S32E	BEDDING PLANE
B	16:08	289	12611	9	S20E	S05E	NOT GIVEN	156	15	171	58	229	S49W	S78W	35°	N12W-S12E	FRACTURE
C	16:08	289	12611	9	S20E	S05E	NOT GIVEN	156	15	171	58	229	S49W	S77W	65°	N13W-S13E	FRACTURE
3	16:58	314	12616	9	S23E	S08E	NOT GIVEN	130	15	145	58	203	S23W	N46E	25°	N44W-S44E	BEDDING PLANE
4	18:04	347	12627	9	S20E	S05E	NOT GIVEN	269	15	284	58	342	N18W	N77E	35°	N13W-S13E	BEDDING PLANE
5A	19:34	392	12641	9	S19E	S04E	NOT GIVEN	234	15	249	58	307	N53W	S86E	29°	N4E-S4W	BEDDING PLANE
B	19:34	392	12641	9	S19E	S04E	NOT GIVEN	234	15	249	58	307	N53W	S84E	22°	N6E-S6W	BEDDING PLANE
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18

WHITE - CUSTOMER COPY PINK - DISTRICT COPY GOLDEN - CHRISTENSEN

CORE # 13

CORE ORIENTING LOG

Date September 18, 1981

Page ..... of .....

WELL INFORMATION

Company: THE ANSCHUTZ CORP.
Contractor: BS 83
Well Name: ARE 16-30U
County: SUMMIT State: UTAH
Hole Size: ..... Core Barrel: .....
Formation Name: NUGGET
Formation Description: .....

PERFORMANCE

Interval Cored: Finish 12715
Start 12655

Footage Cored: .....

Remarks: .....

MULTISHOT INSTRUMENT

Make: .....

Serial No. .....

Clock Interval: ..... Min.

Station Record By: .....

Film Read By: .....

CORRECTIONS

Declination 15 Degrees [X] East [ ] West

Azimuth Correction for Declination
East Declination [X] Add to Azimuth
West Declination [ ] Subtract from Azimuth

Reference Groove Correction:
From Above, Groove is 58 Degrees [X] Right [ ] Left
of Orientation Lug.
[X] Right Add to Lug Azimuth
[ ] Left Subtract from Lug Azimuth

STATION				DRIFT			ORIENTATION							DIP, STRIKE			REMARKS
No.	Time	Picture No.	Depth	Angle	Direction Magnetic	Direction True	Orienting Lug, Magnetic Direction	Orienting Lug, Magnetic Azimuth	Declin. Corr.	Or. Lug Az. True	Reference Groove Corr.	Reference Groove Az. True	Reference Groove Direction True	Dip Dir.	Dip Angle	Strike	
632	8:24	144	12655	93/4	S22E	S7E	NOT GIVEN	320	15	335	58	33	N33E	N46E	45°	N44E-S44W	BEDDING PLANE
646	10:28	215	12670	93/4	S19E	S4E	NOT GIVEN	327	15	327	58	40	N40E	S16W	15°	N74W-S74E	BEDDING PLANE
B	10:28	215	12670	93/4	S19E	S4E	NOT GIVEN	327	15	327	58	40	N40E	S68E	68°	N22E-S22W	FRACTURE
671	12:12	267	12685	93/4	S19E	S4E	NOT GIVEN	305	15	320	58	18	N18E	N52E	19°	N38W-S38E	BEDDING PLANE
686	14:28	334	12700	93/4	S19E	S4E	NOT GIVEN	252	15	267	58	325	N35W	N52E	28°	N38W-S38E	BEDDING PLANE
691	16:28	392	12715	93/4	S19E	S4E	NOT GIVEN	218	15	233	58	291	N69W	----	----	----------	RUBBLE
	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18

CORE # 15

CORE ORIENTING LOG

Date September 18, 1981

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WELL INFORMATION

Company: THE ANSCHUTZ CORP.
Contractor: BS 83
Well Name: ARE 16-30U
County: SUMMIT State: UTAH
Hole Size: Core Barrel:
Formation Name: NUGGET
Formation Description:

PERFORMANCE

Interval Cored: Finish 12820
Start 12775

Footage Cored: 45 Feet

Remarks: 43 feet recovered:
12808' - 12820' --- RUBBLE

MULTISHOT INSTRUMENT

Make:
Serial No.
Clock Interval: Min.
Station Record By:
Film Read By:

CORRECTIONS

Declination 15 Degrees [X] East [ ] West

Azimuth Correction for Declination
East Declination [ ] Add to Azimuth
West Declination [ ] Subtract from Azimuth

Reference Groove Correction:
From Above, Groove is 37 Degrees [ ] Right [X] Left of Orientation Lug.
[ ] Right Add to Lug Azimuth
[X] Left Subtract from Lug Azimuth

STATION				DRIFT			ORIENTATION							DIP, STRIKE			REMARKS
No.	Time	Picture No.	Depth	Angle	Direction Magnetic	Direction True	Orienting Lug, Magnetic Direction	Orienting Lug, Magnetic Azimuth	Declin. Corr.	Or. Lug Az. True	Reference Groove Corr.	Reference Groove Az. True	Reference Groove Direction True	Dip Dir.	Dip Angle	Strike	
A	6:33	255	12775	10½	S19E	S4E	NONE GIVEN	161	15	176	37	139	S41E	S78W	44°	N12W-S12E	BEDDING PLANE
A	7:20	280	12779	10½	S19E	S4E	NONE GIVEN	289	15	304	37	267	S87W	N59E	33°	N31W-S31E	BEDDING PLANE
A	8:15	302	12790	10½	S19E	S4E	NONE GIVEN	302	15	317	37	280	S80W	S47W	08°	N43W-S43E	BEDDING (CROSS)
B	8:15	302	12790	10½	S19E	S4E	NONE GIVEN	302	15	317	37	280	S80W	S01E	07°	N89E-S89W	BEDDING (CROSS)
C	8:15	302	12790	10½	S19E	S4E	NONE GIVEN	302	15	317	37	280	S80W	N84E	09°	N6W-S6E	BEDDING (CROSS)
2		3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18

CORE # 16

CORE ORIENTING LOG

Date September 18. 1981

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WELL INFORMATION

Company: THE ANSCHUTZ CORP.
Contractor: BS 83
Well Name: ARE 16-30U
County: SUMMET State: UTAH
Hole Size: Core Barrel:
Formation Name: NUGGET
Formation Description: SANDSTONE

PERFORMANCE

Interval Cored: Finish 12882
Start 12825

Footage Cored:

Remarks:

MULTISHOT INSTRUMENT

Make:

Serial No.

Clock Interval: Min.

Station Record By:

Film Read By:

CORRECTIONS

Declination 15 Degrees [X] East [ ] West

Azimuth Correction for Declination
East Declination [X] Add to Azimuth
West Declination [ ] Subtract from Azimuth

Reference Groove Correction:
From Above, Groove is 37 Degrees [ ] Right [X] Left of Orientation Lug.
[ ] Right Add to Lug Azimuth
[X] Left Subtract from Lug Azimuth

STATION				DRIFT			ORIENTATION							DIP, STRIKE			REMARKS
No.	Time	Picture No.	Depth	Angle	Direction Magnetic	Direction True	Orienting Lug, Magnetic Direction	Orienting Lug, Magnetic Azimuth	Declin. Corr.	Or. Lug Az. True	Reference Groove Corr.	Reference Groove Az. True	Reference Groove Direction True	Dip Dir.	Dip Angle	Strike	
A	8:50	462	12825	10½	S20E	S5E	NONE GIVEN	255	15	270	37	233	S53W	S77E	34	N13E-S13W	BEDDING PLANE
A	10:08	501	12840	103/4	S20E	S5E	NONE GIVEN	25	15	40	37	3	N3E	S50W	32	N40W-S40E	BEDDING PLANE
A	11:59	557	12855	103/4	S21E	S6E	NONE GIVEN	21	15	36	37	359	N1W	S53W	25	N37W-S37E	BEDDING PLANE
B	11:59	557	12855	103/4	S21E	S6E	NONE GIVEN	21	15	36	37	359	N1W	S84E	76	N6E-S6W	FRACTURE
A	13:27	601	12870	11	S20E	S5E	NONE GIVEN	46	15	61	37	24	N24E	S67W	26	N23W-S23E	BEDDING PLANE
A	15:37	666	12882	11	S21E	S6E	NONE GIVEN	337	15	352	37	315	N45W	----	----	---------	RUBBLE
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18

CORE # 17

CORE ORIENTING LOG

Date September 18, 1981

Page ..... of .....

WELL INFORMATION

Company: THE ANSCHUTZ CORP.
Contractor: BS 83
Well Name: ARE 16-30U
County: SUMMIT State: UTAH
Hole Size: ..... Core Barrel: .....
Formation Name: NUGGET
Formation Description: .....

PERFORMANCE

Interval Cored: Finish 12900
Start 12882

Footage Cored: .....

Remarks: .....

MULTISHOT INSTRUMENT

Make: .....

Serial No. .....

Clock Interval: ..... Min.

Station Record By: .....

Film Read By: .....

CORRECTIONS

Declination 15 Degrees [X] East [ ] West

Azimuth Correction for Declination
East Declination [XX] Add to Azimuth
West Declination [ ] Subtract from Azimuth

Reference Groove Correction:
From Above, Groove is 37 Degrees [ ] Right [X] Left
of Orientation Lug.
[ ] Right Add to Lug Azimuth
[X] Left Subtract from Lug Azimuth

STATION				DRIFT			ORIENTATION							DIP, STRIKE			REMARKS
No.	Time	Picture No.	Depth	Angle	Direction Magnetic	Direction True	Orienting Lug, Magnetic Direction	Orienting Lug, Magnetic Azimuth	Declin. Corr.	Or. Lug Az. True	Reference Groove Corr.	Reference Groove Az. True	Reference Groove Direction True	Dip Dir.	Dip Angle	Strike	
A	4:58	183	12885	10½	S20E	S5E	NONE GIVEN	22	15	37	37	0	N0E	S7W	4°	N93W-S93E	Bedding Plane
2		3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18

CORE # 17

CORE ORIENTING LOG

Date September 18, 1981

Page ..... of .....

WELL INFORMATION

Company: THE ANSCHUTZ CORP.
Contractor: BS 83
Well Name: ARE 16-30U
County: SUMMIT State: UTAH
Hole Size: ..... Core Barrel: .....
Formation Name: NUGGET
Formation Description: .....

PERFORMANCE

Interval Cored: Finish 12900
Start 12882

Footage Cored: .....

Remarks: .....

MULTISHOT INSTRUMENT

Make: .....

Serial No. .....

Clock Interval: ..... Min.

Station Record By: .....

Film Read By: .....

CORRECTIONS

Declination 15 Degrees [X] East [ ] West

Azimuth Correction for Declination
East Declination [XX] Add to Azimuth
West Declination [ ] Subtract from Azimuth

Reference Groove Correction:
From Above, Groove is 37 Degrees [ ] Right [X] Left
of Orientation Lug.
[ ] Right Add to Lug Azimuth
[X] Left Subtract from Lug Azimuth

STATION				DRIFT			ORIENTATION							DIP, STRIKE			REMARKS
No.	Time	Picture No.	Depth	Angle	Direction Magnetic	Direction True	Orienting Lug, Magnetic Direction	Orienting Lug, Magnetic Azimuth	Declin. Corr.	Or. Lug Az. True	Reference Groove Corr.	Reference Groove Az. True	Reference Groove Direction True	Dip Dir.	Dip Angle	Strike	
A	4:58	183	12885	10½	S20E	S5E	NONE GIVEN	22	15	37	37	0	N0E	S7W	4°	N93W-S93E	Bedding Plane
2		3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18

CORE # 18

CORE ORIENTING LOG

Date September 21, 1981

Page ..... of .....

WELL INFORMATION

Company: THE ANSCHUTZ CORP.
Contractor: BS 83
Well Name: ARE 16-30U
County: SUMMIT State: UTAH
Hole Size: ..... Core Barrel: .....
Formation Name: NUGGET
Formation Description: .....

PERFORMANCE

Interval Cored: Finish 12961
Start 12901

Footage Cored: 60 Feet

Remarks: .....

MULTISHOT INSTRUMENT

Make: .....
Serial No. .....
Clock Interval: ..... Min.
Station Record By: .....
Film Read By: .....

CORRECTIONS

Declination 15 Degrees [X] East [ ] West

Azimuth Correction for Declination
East Declination [X] Add to Azimuth
West Declination [ ] Subtract from Azimuth

Reference Groove Correction:
From Above, Groove is 37 Degrees [ ] Right [X] Left of Orientation Lug.
[ ] Right Add to Lug Azimuth
[X] Left Subtract from Lug Azimuth

STATION				DRIFT			ORIENTATION							DIP, STRIKE			REMARKS
No.	Time	Picture No.	Depth	Angle	Direction Magnetic	Direction True	Orienting Lug, Magnetic Direction	Orienting Lug, Magnetic Azimuth	Declin. Corr.	Or. Lug Az. True	Reference Groove Corr.	Reference Groove Az. True	Reference Groove Direction True	Dip Dir.	Dip Angle	Strike	
A	6:51	507	12903	103/4	S21E	S6E	NONE GIVEN	86	15	101	37	64	N64E	S46E	12°	N44E-S44W	BEDDING PLANE
A	8:20	547	12918	11	S20E	S5E	NONE GIVEN	346	15	1	37	324	N36W	N45E	44°	N45E-S45W	BEDDING PLANE
A	9:32	582	12933	11	S21E	S6E	NONE GIVEN	14	15	29	37	352	N8W	N8E	37°	N92W-S92E	FRACTURE
A	12:28	670	12948	11	S22E	S7E	NONE GIVEN	83	15	98	37	61	N61E	N2E	25°	N97W-S97E	BEDDING PLANE
2		3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18

CORE ORIENTING LOG

Date September 21. 1981

Page ..... of .....

CORE # 20

WELL INFORMATION

Company: THE ANSCHUTZ CORP.
Contractor: BS 83
Well Name: ARE 16-30U
County: SUMMIT State: UTAH
Hole Size: ..... Core Barrel: .....
Formation Name: NUGGET
Formation Description: .....

PERFORMANCE

Interval Cored: Finish 13080
Start 13019

Footage Cored: .....

Remarks: .....

MULTISHOT INSTRUMENT

Make: .....

Serial No. .....

Clock Interval: ..... Min.

Station Record By: .....

Film Read By: .....

CORRECTIONS

Declination 15 Degrees [X] East [ ] West

Azimuth Correction for Declination
East Declination [X] Add to Azimuth
West Declination [ ] Subtract from Azimuth

Reference Groove Correction:
From Above, Groove is 37 Degrees [ ] Right [X] Left
of Orientation Lug.
[ ] Right Add to Lug Azimuth
[X] Left Subtract from Lug Azimuth

STATION				DRIFT			ORIENTATION							DIP, STRIKE			REMARKS
No.	Time	Picture No.	Depth	Angle	Direction Magnetic	Direction True	Orienting Lug, Magnetic Direction	Orienting Lug, Magnetic Azimuth	Declin. Corr.	Or. Lug Az. True	Reference Groove Corr.	Reference Groove Az. True	Reference Groove Direction True	Dip Dir.	Dip Angle	Strike	
994A	6:15	295	13034	11½	S23E	S08E	N12E	12	15	27	37	350	N10W	N35E	22°	N55W-S55E	CROSS BEDDING
B	6:15	295	13034	11½	S23E	S08E	N12E	12	15	27	37	350	N10W	N30E	19°	N60W-S60E	CROSS BEDDING
C	6:15	295	13034	11½	S23E	S08E	N12E	12	15	27	37	350	N10W	N27E	31°	N63W-S63E	CROSS BEDDING
D	6:15	295	13034	11½	S23E	S08E	N12E	12	15	27	37	350	N10W	N3E	23°	N87W-S87E	CROSS BEDDING
1016	8:11	353	13055	11½	S23E	S08E	N71E	71	15	86	37	49	N49E	----	----	----------	RUBBLE
1030	10:10	413	13070	11½	S23E	S08E	N66W	294	15	309	37	272	N88W	S87E	16°	N3E-S3E	BEDDING PLANE
---	12:00	468	13080	12	S23E	S08E	N07W	353	15	008	37	331	N29W	LOST	RECOVERY	NO CORE	----------
2		3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18

December 16, 1981

Anschutz Corporation
555 17th Street, Suite 2400
Denver, Colorado 80202

Re: See attached

Gentlemen:

In reference to the above mentioned wells, considerable time has gone by since approval was obtained from this office.

This office has not received any notifiaation of spudding. If you do not in not intend to drill these wells, please notify this Division. If spudding or any other activity has taken place, please send necessary forms. If you plan to drill this location at a later date, please notify as such.

Your prompt attention to the above will be greatly appreciated.

Very truly yours,

DIVISION OF OIL, GAS AND MINING

Cari Furse

CARI FURSE
CLERK TYPIST

Well No. Antelope Island # 9-17
Sec. 17, T. 3N, R. 3W
DAVIS COUNTY, UTAH

Well No. Anschutz Ranch East 6-20U
Sec. 20, T. 4N, R. 8E
Summit County, Utah

Well No. Anschutz Ranch East 8-30U
Sec. 30, T. 4N, R. 8E
Summit County, Utah

Well No. Anschutz Ranch East 16-30U
Sec. 30, T. 4N, R. 8E
Summit County, Utah

7700 E. Iliff Avenue • Suite D
Denver, Colorado 80231-5399
(303) 751-0180

Continental Laboratories

RECEIVED
JAN 20 1982
DIVISION OF
OIL, GAS & MINING

14 January 1981

The Anschutz Corporation
555 17th. Street, Suite 2400
Denver, Co. 80202

Attn: Judy West

HYDROCARBON WELL LOGGING REPORT

Dear Ms. West:

A Continental Laboratories two-man hydrocarbon well logging laboratory was employed on the subject well from 3665 feet to the total depth of 14,193 feet. Following our normal procedures and utilizing standard instruments, our analysts monitored the geological significance of drill cuttings and identified and reported on various concentrations of hydrocarbons encountered in the mud and cuttings. Intermittently, the cuttings were tested for gas. Following on pages 3 and 4 is a summary of our Interpretive Review of the significant hydrocarbon liberating intervals. *In all cases the depths indicated in this report and on our log agree with driller's depth.*

All of the data generated during the well have been summarized and graphically presented on the Comprehensive Hydrocarbon Well Log. Submitted in conjunction with this report is a copy of the Hydrocarbon Well Log, annotated with our interpretive remarks derived from a detailed study of the instrument charts. The annotated log is provided to assist you in receiving full benefit from the data contained on the Hydrocarbon Well Log. This written report should be read in conjunction with an examination of the annotated log.

It has been a pleasure to be of service to you and your associates. If we may be of further assistance in the evaluation of this well or in the interpretation of this report, please contact us.

Sincerely,

CONTINENTAL LABORATORIES, INC.

Peter M. Besio
Technical Sales Representative

PB:cgn

cc: Natural Gas Pipeline, Houston, Tx. Attn: Don Darsey
Amoco Production Company, Denver, Co. Attn: Jeff Lelek
Oil & Gas Conservation, Casper, Wy. Attn: Don Basko
Mesa Petroleum, Denver, Co. Attn: John Barwin
Champlin Petroleum, Englewood, Co. Attn: Bob German
Division of Oil Gas & Mining, Salt Lake City, Ut.

Continental Laboratories

SHOW REPORT

Operator [illegible] Date [illegible]

Well ARE 16-30 Field ARE CLI Project # [illegible]

Location [illegible] Sec 30 [illegible] County Summit State Utah

DESCRIPTION OF PROBABLE RESERVOIR ROCK:

Show interval - from 11,995 to 12,005 ; Visual Ø Fair-Good

Lithology: [illegible],wh,pk,[illegible],occ [illegible],tr slt,fri-frm,calc

Percentage Reservoir Rock in Sample 100 %, Percentage Reservoir Rock w/Flu ____ %

Fluorescence: Color ____ Intensity ____, Distribution ____

Solvent Cut: Normal Color ____ Flu. Color ____

Intensity ____ Development ____

GAS INFORMATION:

Drilling Fluid Gas: Gas is- X liberated ____ produced ____ both

	Total	C_1	C_2	C_3	C_4	C_5	Oil Indic.
Maximum	1122	1.66	.713	.354	.08	.045	.31
Background	1	.0031	0	0	0	0	0
Net	1121	1.66	.713	.354	.08	.045	N/A

Drill Cuttings Gas:

	Total	C_1	C_2	C_3	C_4	C_5	Oil Indic.
Maximum	19	.0009	.0015	.014	.014	.020	23.3
Background	0	0	0	0	0	0	0
Net	19	.0009	.0015	.014	.014	.020	N/A

DRILLING INFORMATION:

Average Drilling rate - During break 3.25 Before break 10 Controlled drlg ____

Bit - Type F-2, diameter 8.5"; Condition- ____ new, X worn, ____ dull

Wt. on Bit - Increased to 27K, decreased to 22K no change at ____

Mud - Wt. 8.9, Vis. 58, F ____, Ck ____, % Oil ____, % Sand ____

Chlorides during show ____ Before show 3500

Other - ____

FIELD EVALUATION:

Remarks: ____

POOR
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CL 15 8/76

Continental Laboratories

SHOW REPORT # 2

Operator AMSCHUTZ CORP. Date 8/8/81

Well 16-30 Field ARM CLI Project # RM738

Location NE SW Sec30 T4N R8E County Summit State Utah

DESCRIPTION OF PROBABLE RESERVOIR ROCK:

Show interval - from 12,122 to 12,128 ; Visual Ø Good

Lithology: Ss,buff,tan,vf-mgr,sbang-rd,m-wsrt,frm,calc incl,lt-dk o stn

Percentage Reservoir Rock in Sample 100 %, Percentage Reservoir Rock w/Flu ____ %

Fluorescence: Color yellow Intensity dull , Distribution spotty

Solvent Cut: Normal Color clear Flu. Color yellow

Intensity bright Development immediate

GAS INFORMATION:

Drilling Fluid Gas: Gas is- X liberated ____ produced ____ both

	Total	C_1	C_2	C_3	C_4	NC$_4$ C_5	Oil Indic.
Maximum	420	1.32	.383	.2	.04	.053	.22
Background	50	.25	.043	.015	0	0	.06
Net	370	1.32	.383	.2	.04	.053	N/A

Drill Cuttings Gas: None: no cuttings while coring.

	Total	C_1	C_2	C_3	C_4	C_5	Oil Indic.
Maximum							
Background							
Net							N/A

DRILLING INFORMATION:

Average Drilling rate - During break 7.5 Before break 23 Controlled drlg core

Bit - Type CH 16-P , diameter 8.5" ; Condition- X new, ____ worn, ____ dull

Wt. on Bit - Increased to 35K , decreased to 15-20K no change at ____

Mud - Wt. 8.9 , Vis. 50 ,F ____ , Ck ____ ,% Oil ____ ,% Sand ____

Chlorides during show ____ Before show ____

Other - ____

FIELD EVALUATION:

Remarks: ____

POOR
FAIR
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EXCELLENT

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SHOW REPORT # 3

Operator ANSCHUTZ CORP. Date 8/10/81

Well 16-30U Field ARE CLI Project # RM738

Location SE SE Sec30 T4N R8E County Summit State Utah

DESCRIPTION OF PROBABLE RESERVOIR ROCK:

Show interval - from 12,218 to 12,228 ; Visual Ø excellent

Lithology: Ss,lt-dk tan,vf-mgr,stang-rd,frm-kd,p-wsrt,calc incl,calc frac fl, f por, o stn on bdg surf

Percentage Reservoir Rock in Sample 100 %, Percentage Reservoir Rock w/Flu ____ %

Fluorescence: Color ____ Intensity ____, Distribution ____

Solvent Cut: Normal Color ____ Flu. Color ____

Intensity ____ Development ____

GAS INFORMATION:

Drilling Fluid Gas: Gas is- x liberated ____ produced ____ both

	Total	C_1	C_2	C_3	C_4	C_5	Oil Indic.
Maximum	200	.454	.092	.042	.055	.0124	.13
Background	50	.16	.023	.008	tr	tr	.052
Net	150	.294	.069	.034	.0055	.0124	N/A

Drill Cuttings Gas: None:no cuttings while coring.

	Total	C_1	C_2	C_3	C_4	C_5	Oil Indic.
Maximum							
Background							
Net							N/A

DRILLING INFORMATION:

Average Drilling rate - During break 5.5 Before break 27 Controlled drlg core

Bit - Type CVH-16E, diameter 8.5"; Condition- x new, ____ worn, ____ dull

Wt. on Bit - Increased to 21K, decreased to 17K no change at ____

Mud - Wt. 9.0, Vis. 58, F ____, Ck ____, % Oil ____, % Sand ____

Chlorides during show ____ Before show ____

Other - ____

FIELD EVALUATION:

Remarks: Break occured after trip in with new bit, coring with 90' of core barrel.

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Continental Laboratories

SHOW REPORT # 4

Operator ANSCHUTZ CORP. Date* 8/13/81

Well 16-30U Field ARE CLI Project # RM738

Location SE SE Sec 30 T4N R8E County SUMMIT State UTAH

DESCRIPTION OF PROBABLE RESERVOIR ROCK:

Show interval - from 12,373 to 12,376 ; Visual Ø poor

Lithology: Ss,tan,vf-mgr,sbang-rd,psrt,hd-firm,sl calc,calc frac fl,tr lt o stn.

Percentage Reservoir Rock in Sample 100 %, Percentage Reservoir Rock w/Flu 100 %

Fluorescence: Color yellow Intensity dull , Distribution uniform

Solvent Cut: Normal Color clear Flu. Color yellow

Intensity very bright Development immediate streaming

GAS INFORMATION:

Drilling Fluid Gas: Gas is- X liberated _____ produced _____ both

	Total	C_1	C_2	C_3	C_4	C_5	Oil Indic.
Maximum	200	.926	.199	.084	.022	.05	.17
Background	20	.13	.031	.017	-	-	.13
Net	180	.913	.168	.067	.022	.05	N/A

Drill Cuttings Gas:

	Total	C_1	C_2	C_3	C_4	C_5	Oil Indic.
Maximum							
Background							
Net							N/A

DRILLING INFORMATION:

Average Drilling rate - During break 11 Before break 11 Controlled drlg coring

Bit - Type cvh-16-m , diameter 8.5" ; Condition- _____ new, X worn, _____ dull

Wt. on Bit - Increased to _____ , decreased to _____ no change at 18-20K

Mud - Wt. 9.0 , Vis. 51 ,F 6.6 , Ck 2 ,% Oil o ,% Sand 0

Chlorides during show _____ Before show _____

Other - _____

FIELD EVALUATION:

Remarks: Gas increased from a background of 20 units to an average of between 70 and 100 units in the interval from 12,352-12,373.

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SHOW REPORT # 5

Operator: Anschutz Corp Date: 8/21/81

Well: A.R.E. 16-30 U Field: East Ranch CLI Project #: Rm 738

Location: S.E. S.E. Sec 30 T4N R8E County: Summit State: Utah

DESCRIPTION OF PROBABLE RESERVOIR ROCK:

Show interval - from 12,398 to 12,405 ; Visual Ø Good

Lithology: Ss,lt-dk tan,vf-fgr,sbrd-rd,vwsrt,fri,calc incl,calc frac fl,lt and dk brn o stn

Percentage Reservoir Rock in Sample 100 %, Percentage Reservoir Rock w/Flu 100 %

Fluorescence: Color Yellow Intensity Pale-Dull , Distribution Spotty-Uniform

Solvent Cut: Normal Color Clear Flu. Color Yellow

Intensity Bright Milky Development Immediate Halo Then Fast Streaming

GAS INFORMATION:

Drilling Fluid Gas: Gas is- X liberated _____ produced _____ both

	Total	C_1	C_2	C_3	C_4	C_5	Oil Indic.
Maximum	150	.8	.16	.073	0	0	.091
Background	50	.37	.071	.029	0	0	.078
Net	100	.43	.09	.042	0	0	N/A

Drill Cuttings Gas:

	Total	C_1	C_2	C_3	C_4	C_5	Oil Indic.
Maximum							
Background							
Net							N/A

DRILLING INFORMATION:

Average Drilling rate - During break 9 Before break 12.5 Controlled drlg Coring

Bit - Type CVH-16-M , diameter 8.5" ; Condition- _____ new, X worn, _____ dull

Wt. on Bit - Increased to _____, decreased to _____ no change at 25K

Mud - Wt. 9.0 , Vis. 51 ,F 6.6 , Ck 2/32 ,% Oil 0 ,% Sand Tr

Chlorides during show _____ Before show _____

Other - _____

FIELD EVALUATION:

Remarks: Gas decreased to a background of about 80 units

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Continental Laboratories

SHOW REPORT # 6

Operator: Anschutz Corp. Date: 8/15/81

Well: A.R.E. 16-30U Field: East Ranch CLI Project #: Rm 738

Location: S.E. S.E. Sec 30 T4N R8E County: Summit State: Utah

DESCRIPTION OF PROBABLE RESERVOIR ROCK:

Show interval - from 12,458 to 12,490 ; Visual Ø Good (up to 20%)

Lithology: Ss,tan,f-mgr,strg cgr,sbang-rd,fri,sil cmt,abnt dk dd o stn on bdg surf, sil fl micfrac from 58 to 60.

Percentage Reservoir Rock in Sample 100 %, Percentage Reservoir Rock w/Flu 50 %

Fluorescence: Color Yellow Intensity Pale , Distribution Patchy-Banded

Solvent Cut: Normal Color Clear Flu. Color Yellow-Green

Intensity Bright Milky Development Immediate Halo Then Fast Streaming.

GAS INFORMATION:

Drilling Fluid Gas: Gas is- X liberated ____ produced ____ both

	Total	C_1	C_2	C_3	C_4	C_5	Oil Indic.
Maximum	770	1.49	.62	.32	.08	.1	.3
Background	50	.32	.057	.029	tr	tr	.091
Net	720	1.17	.56	.29	.08	.1	N/A

Drill Cuttings Gas:

	Total	C_1	C_2	C_3	C_4	C_5	Oil Indic.
Maximum							
Background							
Net							N/A

DRILLING INFORMATION:

Average Drilling rate - During break 2 Before break 13 Controlled drlg core

Bit - Type CH20M , diameter 8½ ; Condition- x new, ____ worn, ____ dull

Wt. on Bit - Increased to ____, decreased to ____ no change at 25

Mud - Wt. 9.0 , Vis. 54 ,F 6.6 , Ck 2 ,% Oil Ø ,% Sand tr

Chlorides during show ____ Before show ____

Other - ____

FIELD EVALUATION:

Remarks: WOB was decreased to slow penetration rate at 12470, probably accounting for the decrease in liberated gas from 12470 to 12480

POOR
FAIR
GOOD
EXCELLENT

CL 15 8/76

Continental Laboratories

SHOW REPORT # 7

Operator ANSCHUTZ CORP. Date 8/15/81

Well 16-30U Field ARE CLI Project # RM 738

Location SE SE Sec. 30 T4N R8E County SUMMIT State UTAH

DESCRIPTION OF PROBABLE RESERVOIR ROCK:

Show interval - fro 12,520 to 12,570 ; Visual Ø good (up to 20%)

Lithology: Ss- tan fgr sbang-sbrd wsrt sil cmt fri-frm abnt lt brn o stn / g por

Percentage Reservoir Rock in Sample 100 %, Percentage Reservoir Rock w/Flu 100 %

Fluorescence: Color yellow Intensity pale-dull , Distribution uniform

Solvent Cut: Normal Color clear Flu. Color milky yellow

Intensity bright Development imm halo then fast stmg

GAS INFORMATION:

Drilling Fluid Gas: Gas is- X liberated _____ produced _____ both

	Total	C_1	C_2	C_3	C_4	C_5	Oil Indic.
Maximum	520	1.45	.52	.24	.04	.05	.23
Background	120	.67	.14	.06	-	-	.09
Net	400	.78	.38	.18	.04	.05	N/A

Drill Cuttings Gas:

	Total	C_1	C_2	C_3	C_4	C_5	Oil Indic.
Maximum							
Background							
Net							N/A

DRILLING INFORMATION:

Average Drilling rate - During break 4 Before break 5-8 Controlled drlg core

Bit - Type CH 20 M , diameter 8½ ; Condition- _____ new, x worn, _____ dull

Wt. on Bit - Increased to 27-30k , decreased to _____ no change at _____

Mud - Wt. 9.0 , Vis. 54 ,F 6.6 , Ck 2 ,% Oil 0 ,% Sand tr

Chlorides during show _____ Before show _____

Other - _____

FIELD EVALUATION:

Remarks: Difficult to determine how much of interval from 12,564-70 is show and how much is trip gas

POOR
FAIR
GOOD
EXCELLENT

CL-15 8/76

Continental Laboratories

SHOW REPORT # 8

Operator ANSCHUTZ CORP. Date 8/16/81

Well 16-30U Field ARE CLI Project # RM 738

Location SE SE Sec.30 T4N R8E County SUMMIT State UTAH

DESCRIPTION OF PROBABLE RESERVOIR ROCK:

Show interval - from 12582 to 12592 ; Visual Ø g por (up to 20%)

Lithology: Ss- tan f-mgr sbang-sbrd wsrt sil & calc cmt frm-fri abnt calc incl abnt lt brn o stn

Percentage Reservoir Rock in Sample 100 %, Percentage Reservoir Rock w/Flu 100 %

Fluorescence: Color yellow Intensity bright , Distribution uniform

Solvent Cut: Normal Color clear Flu. Color yellow

Intensity pale milky Development imm halo then fast stmg

GAS INFORMATION:

Drilling Fluid Gas: Gas is- X liberated _____ produced _____ both

	Total	C_1	C_2	C_3	C_4	C_5	Oil Indic.
Maximum	1220	1.90	.89	.47	.08	.1	.35
Background	120	.67	.12	.03	-	-	.05
Net	1100	1.23	.77	.44	.08	.1	N/A

Drill Cuttings Gas:

	Total	C_1	C_2	C_3	C_4	C_5	Oil Indic.
Maximum							
Background							
Net							N/A

DRILLING INFORMATION:

Average Drilling rate - During break 3-4 Before break 4 Controlled drlg core

Bit - Type CH 20 M , diameter 8½ ; Condition- _____ new, _____ worn, x dull

Wt. on Bit - Increased to _____, decreased to 20-24 no change at _____

Mud - Wt. 9.0 , Vis. 62 ,F 6.7 , Ck 2 ,% Oil 0 ,% Sand tr

Chlorides during show _____ Before show _____

Other - _____

FIELD EVALUATION:

Remarks: Difficult to determine how much of initial part of show was trip gas and how much was liberated gas. A high background of 200-300 units in good porosity continued the rest of the interval following the show.

POOR
FAIR
GOOD
EXCELLENT

CL 15 8/76

Continental Laboratories

SHOW REPORT # 9

Operator ANSCHUTZ CORP Date 8/17-18/81

Well 16-30U Field ARE CLI Project # RM 738

Location SE SE Sec.30 T4N R8E County SUMMIT State UTAH

DESCRIPTION OF PROBABLE RESERVOIR ROCK: best of show interval from 12730 to 12743

Show interval - from 12,655 to 12,747 ; Visual Ø pred. fair to good (up to 20%)

Lithology: Ss- bf-tan f-mgr sbang-sbrd wsrt sil cmt hd thn lam mgr rd-sbang wsrt fr por / tr lt brn o stn

Percentage Reservoir Rock in Sample 100 %, Percentage Reservoir Rock w/Flu 100 %

Fluorescence: Color yellow Intensity dull , Distribution uniform

Solvent Cut: Normal Color clear Flu. Color yellow

Intensity pale Development imm halo then fast stmg

GAS INFORMATION:

Drilling Fluid Gas: Gas is- X liberated _____ produced _____ both

	Total	C_1	C_2	C_3	C_4	C_5	Oil Indic.
Maximum	680	1.6	.58	.3	.13	.17	.37
Background	100	.4	.09	.03	-	-	.08
Net	580	1.2	.49	.27	.13	.17	N/A

Drill Cuttings Gas:

	Total	C_1	C_2	C_3	C_4	C_5	Oil Indic.
Maximum							
Background							
Net							N/A

DRILLING INFORMATION:

Average Drilling rate - During break 4 Before break 6-8 Controlled drlg core

Bit - Type CH 20 M , diameter 8½ ; Condition- _____ new, x worn, _____ dull

Wt. on Bit - Increased to _____, decreased to 19-21 no change at _____

Mud - Wt. 9.0 , Vis. 46 ,F 7.0 , Ck 2 ,% Oil 0 ,% Sand tr

Chlorides during show _____ Before show _____

Other - _____

FIELD EVALUATION:

Remarks: The interval from 12725 to 12721 was drilled with a maximum of 880 units of liberated gas, but the core showed only traces of visual porosity. 12655-21 was characterized by moderate liberation (200-300) in fair to good porosity / good visual show and a penetration rate of 6-8 min/ft / a worn bit

POOR
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GOOD
EXCELLENT

CL-15 8/76

Continental Laboratories

SHOW REPORT # 10

Operator ANSCHUTZ CORP. Date 8/19/81

Well 16-30U Field ARE CLI Project # RM 738

Location SE SE Sec.30 T4N R8E County SUMMIT State UTAH

DESCRIPTION OF PROBABLE RESERVOIR ROCK:

Show interval - from 12762 to 12786 ; Visual Ø good (up to 20%)

Lithology: Ss- gy/occ pnk bnds f-mgr sbang-rd wsrt sil & calc cmt fri g por / abnt lt o stn

Percentage Reservoir Rock in Sample 100 %, Percentage Reservoir Rock w/Flu 100 %

Fluorescence: Color yel-gn Intensity pale , Distribution uniform

Solvent Cut: Normal Color clear Flu. Color yel

Intensity pale Development imm halo / slow stmg

GAS INFORMATION:

Drilling Fluid Gas: Gas is- X liberated _____ produced _____ both

	Total	C_1	C_2	C_3	C_4	C_5	Oil Indic.
Maximum	820	1.7	.67	.32	.04	.06	.25
Background	120	.61	.12	.06	.02	.03	.18
Net	700	1.1	.55	.26	.02	.03	N/A

Drill Cuttings Gas:

	Total	C_1	C_2	C_3	C_4	C_5	Oil Indic.
Maximum							
Background							
Net							N/A

DRILLING INFORMATION:

Average Drilling rate - During break 3-4 Before break 5-6 Controlled drlg core

Bit - Type CH 20 M , diameter 8½ ; Condition- x new, _____ worn, _____ dull

Wt. on Bit - Increased to 25k , decreased to _____ no change at _____

Mud - Wt. 8.9 , Vis. 50 ,F 5.6 , Ck 2 ,% Oil 0 ,% Sand tr

Chlorides during show _____ Before show _____

Other - _____

FIELD EVALUATION:

Remarks: Generally good porosity with a high background of 200-300 units following the show

POOR
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GOOD
EXCELLENT

CL 15 8/76

Continental Laboratories

SHOW REPORT # 11

Operator ANSCHUTZ CORP.. Date 8/19/81

Well ARE 16-30U Field ARE CLI Project # RM 738

Location SE SE Sec.30 T4N R8E County SUMMIT State UTAH

DESCRIPTION OF PROBABLE RESERVOIR ROCK:

Show interval - from 12,806 to 12,840 ; Visual Ø good

Lithology: Ss- bf vf-fgr sbang-sbrd m-wsrt sil & calc cmt fr por bnds of abnt m brn o stn / g por

Percentage Reservoir Rock in Sample 100 %, Percentage Reservoir Rock w/Flu 100 %

Fluorescence: Color yel Intensity pale , Distribution unif

Solvent Cut: Normal Color clear Flu. Color yel

Intensity bri milky Development fast stmg

GAS INFORMATION:

Drilling Fluid Gas: Gas is- X liberated _____ produced _____ both

	Total	C_1	C_2	C_3	C_4	C_5	Oil Indic.
Maximum	870	1.78	.67	.32	.09	.11	.31
Background	120	.61	.12	.06	.02	.03	.18
Net	750	1.17	.55	.26	.07	.08	N/A

Drill Cuttings Gas:

	Total	C_1	C_2	C_3	C_4	C_5	Oil Indic.
Maximum							
Background							
Net							N/A

DRILLING INFORMATION:

Average Drilling rate - During break 4-5 Before break 6-8 Controlled drlg core

Bit - Type CH 20 M , diameter 8½ ; Condition- _____ new, x worn, _____ dull

Wt. on Bit - Increased to 25k , decreased to _____ no change at _____

Mud - Wt. 8.9 , Vis. 50 ,F 5.6 , Ck 2 ,% Oil 0 ,% Sand tr

Chlorides during show _____ Before show _____

Other - _____

FIELD EVALUATION:

Remarks: _____

POOR
FAIR
GOOD
EXCELLENT

CL-15 8/76

Continental Laboratories

SHOW REPORT # 12

Operator ANSCHUTZ CORP. Date 8/23/81

Well A.R.E. 16-30U Field A.R.E. CLI Project # RM 738

Location S.E. S.E. SEC. 30 T4N R8E County SUMMIT State UTAH

DESCRIPTION OF PROBABLE RESERVOIR ROCK:

Show interval - from 12,929 to 12,956 ; Visual Ø FAIR

Lithology: Ss-tan-gy vfgr ang-sbrd,wsrt sil cmt sl calc hd sil fl micfrac & sks /o stn on frac surf, abnt dk bdg lam/abnt brn o stn & f por

Percentage Reservoir Rock in Sample 100 %, Percentage Reservoir Rock w/Flu 100 %

Fluorescence: Color yellow Intensity pale , Distribution uniform

Solvent Cut: Normal Color clear Flu. Color yellow

Intensity pale milky Development slow streaming

GAS INFORMATION:

Drilling Fluid Gas: Gas is- X liberated _____ produced _____ both

	Total	C_1	C_2	C_3	C_4	C_5	Oil Indic.
Maximum	620	1.40	.47	.25	.04	.05	.24
Background	120	.50	.07	.03	0	0	.06
Net	500	.90	.40	.22	.04	.05	N/A

Drill Cuttings Gas:

	Total	C_1	C_2	C_3	C_4	C_5	Oil Indic.
Maximum							
Background							
Net							N/A

DRILLING INFORMATION:

Average Drilling rate - During break 3-4 Before break 5-6 Controlled drlg core

Bit - Type CH 20 M , diameter 8½ ; Condition- X new, _____ worn, _____ dull

Wt. on Bit - Increased to _____, decreased to 15K no change at _____

Mud - Wt. 8.9 , Vis. 62 ,F 7.0 , Ck 1+ ,% Oil 0 ,% Sand tr

Chlorides during show _____ Before show _____

Other - _____

FIELD EVALUATION:

Remarks: Best gas response occured in the interval from 12929 to 12934. From the peak of 620 units the gas dropped to a background of ca. 200 units in fair porosity

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CL 15 8/76

Continental Laboratories

SHOW REPORT #____

Operator THE ANSCHUTZ CORP. Date SEPT. 30, 1981

Well ARE 16-30U Field ANSCHUTZ RANCH EAST CLI Project # 81-54

Location SE SE Sec. T4N R8E County Summit State Utah

DESCRIPTION OF PROBABLE RESERVOIR ROCK:

Show interval - from 13,015' to 13,025'; Visual Ø Fair to Good

Lithology: Ss wh, lt pk, vf-fgr, sb ang-sb rd, fri, f srt, bk o stn

Percentage Reservoir Rock in Sample 100 %, Percentage Reservoir Rock w/Flu 30 %

Fluorescence: Color yellow Intensity dull, Distribution spty

Solvent Cut: Normal Color clr Flu. Color yel

Intensity dull Development slow

GAS INFORMATION:

Drilling Fluid Gas: Gas is- X liberated ____ produced ____ both

	Total	C_1	C_2	C_3	C_4	C_5	Oil Indic.
Maximum	400	2.2%	.42	.14	.02	.025	.09
Background	60	.29	.08	.014	—	—	.06
Net	340	1.9	.34	.13	.02	.025	N/A

Drill Cuttings Gas:

	Total	C_1	C_2	C_3	C_4	C_5	Oil Indic.
Maximum	20	.018	.001	.0017	.0036	.0055	6
Background	—						
Net	—						N/A

DRILLING INFORMATION:

Average Drilling rate - During break 3 Before break 9 Controlled drlg ____

Bit - Type FH, diameter 8.5; Condition- ____ new, X worn, ____ dull

Wt. on Bit - Increased to ____, decreased to ____ no change at 40K

Mud - Wt. 9.0, Vis. 48, F 6.0, Ck 2, % Oil -, % Sand -

Chlorides during show - Before show ____

Other - ____

FIELD EVALUATION:

Remarks: NUGGET formation. At end of drilling break, ANKAREH red shale was encountered. Cuttings gas dropped from 37 units to 20, indicating increased permeability.

POOR
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EXCELLENT

CL-15 8/76

STATE OF UTAH
NATURAL RESOURCES & ENERGY
Oil, Gas & Mining

Scott M. Matheson, Governor
Temple A. Reynolds, Executive Director
Cleon B. Feight, Division Director

4241 State Office Building • Salt Lake City, UT 84114 • 801-533-5771

January 22, 1982

Anschutz Corporation
555 17th Street, Suite 2400
Denver, Colorado 80202

Re: Well No. Anschutz Ranch East 16-30U
Sec. 30, T. 4N, R. 8E
Summit County, Utah

Gentlemen:

In reference to the above mentioned well, considerable time has gone by since approval was obtained from this office.

This office has not received any notification of spudding. If you do not intend to drill this well, please notify this Division. If spudding or any other activity has taken place, please send necessary forms. If you plan to drill this location at a later date, please notify as such.

Your prompt attention to the above will be greatly appreciated.

Very truly yours,

DIVISION OF OIL, GAS AND MINING

Cari Furse

Cari Furse
Clerk Typist

** Please send in all information on this well from spud date on. Monthly's. Thank you.

Board/Charles R. Henderson, Chairman • John L. Bell • E. Steele McIntyre • Edward T. Beck
Robert R. Norman • Margaret R. Bird • Herm Olsen

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Form OGC-1b

SUBMIT IN TRIPLICATE*
(Other instructions on reverse side)

STATE OF UTAH
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS, AND MINING

SUNDRY NOTICES AND REPORTS ON WELLS

(Do not use this form for proposals to drill or to deepen or plug back to a different reservoir. Use "APPLICATION FOR PERMIT—" for such proposals.)

1. OIL WELL [X] GAS WELL [ ] OTHER

2. NAME OF OPERATOR: The Anschutz Corporation

3. ADDRESS OF OPERATOR: 555 Seventeenth Street #2400, Denver, CO 80202

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.* See also space 17 below.) At surface: 968 FEL and 1345 FSL SE¼

5. LEASE DESIGNATION AND SERIAL NO.: fee

6. IF INDIAN, ALLOTTEE OR TRIBE NAME:

7. UNIT AGREEMENT NAME:

8. FARM OR LEASE NAME: Anschutz Ranch East

9. WELL NO.: 16-30U

10. FIELD AND POOL, OR WILDCAT: Wildcat

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA: Sec 30 T4N R8E

14. PERMIT NO.: 43-043-30156

15. ELEVATIONS (Show whether DF, RT, GR, etc.): 7822 GR ungraded

12. COUNTY OR PARISH: Summit

13. STATE: Utah

16. **Check Appropriate Box To Indicate Nature of Notice, Report, or Other Data**

NOTICE OF INTENTION TO:				SUBSEQUENT REPORT OF:			
TEST WATER SHUT-OFF	[ ]	PULL OR ALTER CASING	[ ]	WATER SHUT-OFF	[ ]	REPAIRING WELL	[ ]
FRACTURE TREAT	[ ]	MULTIPLE COMPLETE	[ ]	FRACTURE TREATMENT	[ ]	ALTERING CASING	[ ]
SHOOT OR ACIDIZE	[ ]	ABANDON*	[ ]	SHOOTING OR ACIDIZING	[ ]	ABANDONMENT*	[ ]
REPAIR WELL	[ ]	CHANGE PLANS	[ ]	(Other) notification of spudding			[ ]
(Other)			[ ]	(NOTE: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)			

17. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)*

Spud Date: 10:00 a.m. 4/7/81 Contractor: Brinkerhoff Signal #83 and Rig

TD: 14,193' Fm: Ankareh

Tops: Pruess 8955'
Salt 10179'
Twin Creek 10522'
Nugget 11995'
Ankareh 13033'

Ran 13 3/8" csg @ 5077'
Ran Schlumberger logs @ 10190'
Ran 9 5/8" csg @ 10650'
Ran Schlumberger @ 12005'
Cut cores from 12005-13558'
Log w/Schlumberger @ 13660'
Log w/Schlumberger @ 14120'
Plugged back to 12,598'
Ran 7" csg @ 13373'
Rig released 12/24/81

RECEIVED FEB 05 1982 DIVISION OF OIL, GAS & MINING

18. I hereby certify that the foregoing is true and correct

SIGNED Robert C. Orman TITLE Operations Coordinator DATE Feb 1 1982

(This space for Federal or State office use)

APPROVED BY _____ TITLE _____ DATE _____
CONDITIONS OF APPROVAL, IF ANY:

*See Instructions on Reverse Side

Form OGCC-1 b

STATE OF UTAH

OIL & GAS CONSERVATION COMMISSION

SUBMIT IN TRIPLICATE* (Other instructions on reverse side)

SUNDRY NOTICES AND REPORTS ON WELLS

(Do not use this form for proposals to drill or to deepen or plug back to a different reservoir. Use "APPLICATION FOR PERMIT—" for such proposals.)

1. OIL WELL [X] GAS WELL [ ] OTHER

2. NAME OF OPERATOR: The Anschutz Corporation

3. ADDRESS OF OPERATOR: 2400 Anaconda Tower, 555-17th St., Denver, CO 80202

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.* See also space 17 below.) At surface: 968' FEL and 1345' FSL SE/4

5. LEASE DESIGNATION AND SERIAL NO.: Fee

6. IF INDIAN, ALLOTTEE OR TRIBE NAME:

7. UNIT AGREEMENT NAME:

8. FARM OR LEASE NAME: Anschutz Ranch East

9. WELL NO.: 16-30U

10. FIELD AND POOL, OR WILDCAT: Anschutz Ranch East

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA: Section 30, T4N-R8E

14. PERMIT NO.: 43-043-30156

15. ELEVATIONS (Show whether DF, RT, GR, etc.): 7838 KB

12. COUNTY OR PARISH: Summit

13. STATE: Utah

16. **Check Appropriate Box To Indicate Nature of Notice, Report, or Other Data**

NOTICE OF INTENTION TO:				SUBSEQUENT REPORT OF:			
TEST WATER SHUT-OFF	[ ]	PULL OR ALTER CASING	[ ]	WATER SHUT-OFF	[ ]	REPAIRING WELL	[ ]
FRACTURE TREAT	[ ]	MULTIPLE COMPLETE	[ ]	FRACTURE TREATMENT	[ ]	ALTERING CASING	[ ]
SHOOT OR ACIDIZE	[ ]	ABANDON*	[ ]	SHOOTING OR ACIDIZING	[ ]	ABANDONMENT*	[ ]
REPAIR WELL	[ ]	CHANGE PLANS	[ ]	(Other) Well Report			[X]
(Other)			[ ]	(NOTE: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)			

17. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)*

Spud - 1000 hrs. 4/7/81.
Logged with Schlumberger @ 5053'.
Ran 13-3/8" csg. to 5077'.
Logged with Schlumberger @ 10,190'.
Ran 9-5/8" csg. to 10,650'.
Cut cores from 12,005' to 13,558'.
Log with Schlumberger @ 13,660'.
Log with Sperry-Sun @ 14,120'.
Plug back from 14,120' to 12,598'.
Ran 7" csg. to 13,373'.
Plug back from 13,471' to 13,383'.
Logged with Schlumberger @ 13,922'.
Plug back from 14,215' to 13,752' for side track.
Squeezed 200 sx. below 13,321'.
Rig released 0630 hrs. 12/23/81.

18. I hereby certify that the foregoing is true and correct

SIGNED [signature] TITLE _____ DATE 2/8/82

(This space for Federal or State office use)

APPROVED BY _____ TITLE _____ DATE _____

CONDITIONS OF APPROVAL, IF ANY:

*See Instructions on Reverse Side

THE ANSCHUTZ CORPORATION

2400 ANACONDA TOWER
555 SEVENTEENTH STREET
DENVER, COLORADO 80202
TELEPHONE 303-825-6100
TWX 910-931-2620

March 8, 1982

RECEIVED
MAR 17 1982
DIVISION OF
OIL, GAS & MINING

Ms Cari Furse
State of Utah
Natural Resources and Energy
4241 State Office Building
Salt Lake City, UT 84114

Dear Ms Furse:

I have recently taken the job of providing the Sundry Notices for the wells we are drilling or have drilled in Utah. I would like to know if the Anschutz Corporation is up to date on all reports on wells (drilling).

If we are behind on any of these reports, I would appreciate it if you would let me know. I will send these notices as soon as possible.

Thank you.

Sincerely,

Mark Buckland

Mark Buckland
Asst. Drlg. Engineer

MB;cg

STATE OF UTAH
NATURAL RESOURCES & ENERGY
Oil, Gas & Mining

Scott M. Matheson, Governor
Temple A. Reynolds, Executive Director
Cleon B. Feight, Division Director

4241 State Office Building • Salt Lake City, UT 84114 • 801-533-5771

September 13, 1982

Anschutz Corporation
Att: Mark Buckland
2400 Anaconda Tower
555 Seventeenth Street
Denver, Colorado 80202

Re: Well No. Anschutz Ranch East #6-20U
Well No. Anschutz Ranch East #16-20U
Sec. 20, T. 4N, R. 8E.
Summit County, Utah
(March - August 1982)

Well No. Anschutz Ranch East #8-30UA
Sec. 30, T. 4N, R. 8E.
Summit County, Utah
(May- August 1982)

Well No. Anschutz Ranch East #16-30U
Sec. 30, T. 4N, R. 8E.
Summit County, Utah
(March- August 1982)

Gentlemen:

Our records indicate that you have not filed the monthly drilling reports for the months indicated above on the subject wells.

Rule C-22, General Rules and Regulations and Rules of Practice and Prcoedure, requires that said reports be filed on or before the sixteenth (16) day of the succeeding month. This report may be filed on Form OGC-1B, (U.S. Geological Survey Form 9-331) "Sundry Notices and Reports on Wells", or on company forms containing substantially the same information. We are enclosing forms for your convenience.

Your prompt attention to the above will be greatly appreciated.

Very truly yours,

DIVISION OF OIL, GAS AND MINING

Cari Furse

Cari Furse
Clerk Typist

Board / Charles R. Henderson, Chairman • John L. Bell • E. Steele McIntyre • Edward T. Beck
Robert R. Norman • Margaret R. Bird • Herm Olsen

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THE ANSCHUTZ CORPORATION

2400 ANACONDA TOWER
555 SEVENTEENTH STREET
DENVER, COLORADO 80202
TELEPHONE 303-825-6100
TWX 910-931-2620

September 29, 1982

State of Utah
Natural Resources and Energy
4241 State Office Building
Salt Lake City, Utah 84114

Attention: Cari Furse

Dear Ms. Furse

In regards to your notice dated September 13, 1982, the following wells have finished drilling on the dates shown:

ARE 6-20U	-	12/30/81	These are all located in sections 20 and 30; T4N R8E, Summit County, Utah.
ARE 16-20U	-	8/29/81	
ARE 8-30UA	-	5/26/82	
ARE 16-30A	-	12/23/81	

Our records show that all sundries were submitted up to rig release date and all rigs released were shown on the final sundry notices for each well. As we intend to complete these wells, all sundries to show intent have been filed 9-17-82.

If you have any questions, please contact me at (303) 825-6100.

Sincerely yours,

Mark Buckland

Mark Buckland
Jr. Drilling Engineer

MB/ahs

RECEIVED
OCT 04 1982
DIVISION OF
OIL, GAS & MINING

Form 9-331
(May 1963)

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

SUBMIT IN TRIPLICATE*
(Other instructions on reverse side)

Form approved.
Budget Bureau No. 42-R1424.

SUNDRY NOTICES AND REPORTS ON WELLS

(Do not use this form for proposals to drill or to deepen or plug back to a different reservoir. Use "APPLICATION FOR PERMIT—" for such proposals.)

1. OIL WELL [ ] GAS WELL [X] OTHER

2. NAME OF OPERATOR: The Anschutz Corporation

3. ADDRESS OF OPERATOR: 555 Seventeenth Street, Suite 2400; Denver, Colorado 80202

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.* See also space 17 below.) At surface: 968' FEL & 1345' FSL

5. LEASE DESIGNATION AND SERIAL NO.: Anschutz Ranch East

6. IF INDIAN, ALLOTTEE OR TRIBE NAME:

7. UNIT AGREEMENT NAME:

8. FARM OR LEASE NAME: Anschutz Ranch East

9. WELL NO.: 16-30U

10. FIELD AND POOL, OR WILDCAT: Anschutz Ranch East

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA: Sec. 30-T4N-R8E

12. COUNTY OR PARISH: Summit

13. STATE: Utah

14. PERMIT NO.:

15. ELEVATIONS (Show whether DF, RT, GR, etc.): 7815' GGL

16. **Check Appropriate Box To Indicate Nature of Notice, Report, or Other Data**

NOTICE OF INTENTION TO:				SUBSEQUENT REPORT OF:			
TEST WATER SHUT-OFF		PULL OR ALTER CASING		WATER SHUT-OFF		REPAIRING WELL	
FRACTURE TREAT		MULTIPLE COMPLETE		FRACTURE TREATMENT		ALTERING CASING	
SHOOT OR ACIDIZE	X	ABANDON*		SHOOTING OR ACIDIZING		ABANDONMENT*	
REPAIR WELL		CHANGE PLANS		(Other)			
(Other)							

(NOTE: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)

17. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.) *

As outlined below, we propose to start operations during the first week in November. Zones to be tested are in the Jurassic Nugget formation:

1. Run CBL & CET logs from PBTD at 11,800'. Squeeze intervals as needed to effect good cement bonding.

2. Perforate & test the following Nugget intervals. Acidize if necessary:

   a. 12,988'-13,008', 12,940-952', 12,910-930'.
   b. 12,806'-846', 12,750-780', 12,718-724', 12,682-710'.
   c. 12,604-636' 12,492-580'.
   d. 12,380-458'
   e. 12,272-354'

3. Run 3-1/2" production tubing. Commingle Nugget producing zones. Flow test for 48 hours for drawdown-buildup test.

18. I hereby certify that the foregoing is true and correct

SIGNED Paul Hobb TITLE Drilling Engineer DATE 11-1-82

(This space for Federal or State office use)

APPROVED BY _____ TITLE _____ DATE _____

CONDITIONS OF APPROVAL, IF ANY:

*See Instructions on Reverse Side

Form OGC-1b

STATE OF H
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS, AND MINING

SUBMIT IN TRIPLICATE*
(Other instructions on reverse side)

5. LEASE DESIGNATION AND SERIAL NO.
FEE

SUNDRY NOTICES AND REPORTS ON WELLS

(Do not use this form for proposals to drill or to deepen or plug back to a different reservoir. Use "APPLICATION FOR PERMIT—" for such proposals.)

6. IF INDIAN, ALLOTTEE OR TRIBE NAME

1. OIL WELL [X] GAS WELL [ ] OTHER

7. UNIT AGREEMENT NAME

2. NAME OF OPERATOR
The Anschutz Corp.

8. FARM OR LEASE NAME
Anschutz Ranch East

3. ADDRESS OF OPERATOR
555 17th St., Suite 2400, Denver, CO 80202

9. WELL NO.
16-30U

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.* See also space 17 below.)
At surface
968 FEL and 1345' FSL

10. FIELD AND POOL, OR WILDCAT
Anschutz Ranch East

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA
Sec 30 T4N R8E

14. PERMIT NO.

15. ELEVATIONS (Show whether DF, RT, GR, etc.)
7815' GL

12. COUNTY OR PARISH
Summit

13. STATE
Utah

16. **Check Appropriate Box To Indicate Nature of Notice, Report, or Other Data**

NOTICE OF INTENTION TO:				SUBSEQUENT REPORT OF:			
TEST WATER SHUT-OFF	[ ]	PULL OR ALTER CASING	[ ]	WATER SHUT-OFF	[ ]	REPAIRING WELL	[ ]
FRACTURE TREAT	[ ]	MULTIPLE COMPLETE	[ ]	FRACTURE TREATMENT	[ ]	ALTERING CASING	[ ]
SHOOT OR ACIDIZE	[ ]	ABANDON*	[ ]	SHOOTING OR ACIDIZING	[X]	ABANDONMENT*	[ ]
REPAIR WELL	[ ]	CHANGE PLANS	[ ]	(Other)			
(Other)				(NOTE: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)			

17. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.) *

This well has been completed as per the sundry notice dated 11/1/82, except for the following perforated intervals: 13041-049', 13015-022', 12970-980'. The initial production rate from the gross interval 12272-13049' was calculated to be 6185 MCFD X 919 BCPD X 110 BWPD on a 24/64" choke with a flowing tubing press of 1600 psi.

RECEIVED
JAN 21 1983
DIVISION OF
OIL GAS & MINING

18. I hereby certify that the foregoing is true and correct

SIGNED David Hobbs TITLE Drilling Engineer DATE 1-17-83.

(This space for Federal or State office use)

APPROVED BY _____ TITLE _____ DATE _____
CONDITIONS OF APPROVAL, IF ANY:

*See Instructions on Reverse Side

HALLIBURTON SERVICES
JOB SUMMARY
FORM 2025

HALLIBURTON DIVISION: Denver, Colorado
HALLIBURTON LOCATION: Evanston, Wyoming
BILLED ON TICKET NO. 364233

WELL DATA

FIELD: Anschutz SEC. 30 TWP. 4N RNG. 8E COUNTY: Summit STATE: Utah

FORMATION NAME: ____ TYPE: ____
FORMATION THICKNESS: ____ FROM: ____ TO: ____
INITIAL PROD: OIL ____ BPD. WATER ____ BPD. GAS ____ MCFD
PRESENT PROD: OIL ____ BPD. WATER ____ BPD. GAS ____ MCFD
COMPLETION DATE: ____ MUD TYPE: ____ MUD WT.: ____
PACKER TYPE: ____ SET AT: 12,160
BOTTOM HOLE TEMP.: ____ PRESSURE: ____
MISC. DATA: ____ TOTAL DEPTH: ____

	NEW USED	WEIGHT	SIZE	FROM	TO	MAXIMUM PSI ALLOWABLE
CASING		26	7	12,160	12,354	
LINER						
TUBING		9.3	3 1/2	0	12,160	
OPEN HOLE						SHOTS/FT.
PERFORATIONS				12,272	12,354	
PERFORATIONS						
PERFORATIONS						

JOB DATA

CALLED OUT	ON LOCATION	JOB STARTED	JOB COMPLETED
DATE 11/23/82	DATE 11/23/82	DATE 11/23/82	DATE 11/23/82
TIME 1500	TIME 1630	TIME 2309	TIME 0201

TOOLS AND ACCESSORIES

TYPE AND SIZE	QTY.	MAKE
FLOAT COLLAR		
FLOAT SHOE		
GUIDE SHOE		
CENTRALIZERS		
BOTTOM PLUG		
TOP PLUG		
HEAD		
PACKER		
OTHER		

PERSONNEL AND SERVICE UNITS

NAME		UNIT NO. & TYPE	LOCATION
T. Valdez	Pu	29786	
S. Cheney	Van	3919	Evnaston
L. McNeel	Pumper	2543-7009	
K. Marley	Trans	3078-6499	Evanston
D. Heinse	Trans	0314-7001	Evanston

MATERIALS

TREAT. FLUID: ____ DENSITY: ____ LB/GAL. °API
DISPL. FLUID: 2% KCL DENSITY: ____ LB/GAL. °API
PROP. TYPE: ____ SIZE: ____ LB.: ____
PROP. TYPE: ____ SIZE: ____ LB.: ____
ACID TYPE: HCL GAL. 10,000 % 15
ACID TYPE: ____ GAL. ____ %
ACID TYPE: ____ GAL. ____ %
SURFACTANT TYPE: ____ GAL. ____ IN ____
NE AGENT TYPE: 3N GAL. 10 IN 1/1000
FLUID LOSS ADD. TYPE: ____ GAL.-LB. ____ IN ____
GELLING AGENT TYPE: ____ GAL.-LB. ____ IN ____
FRIC. RED. AGENT TYPE: ____ GAL.-LB. ____ IN ____
BREAKER TYPE: ____ GAL.-LB. ____ IN ____
BLOCKING AGENT TYPE: TLC-80 GAL.-LB. 200
PERFPAC BALLS TYPE: ____ QTY.: ____
OTHER: Corrosion Inhib. HAI-75 50 gal 5/1000
OTHER: Clay Control CIA-STA II 10 gal 1/1000

DEPARTMENT: Stimulation
DESCRIPTION OF JOB: 15% HCL & N2

JOB DONE THRU: TUBING [X] CASING [ ] ANNULUS [ ] TBG./ANN. [ ]

CUSTOMER REPRESENTATIVE: X Brian H. Logan
HALLIBURTON OPERATOR: T.B. Valdez COPIES REQUESTED: ____

CEMENT DATA

STAGE	NUMBER OF SACKS	TYPE	API CLASS	BRAND	BULK SACKED	ADDITIVES	YIELD CU.FT./SK.	MIXED LBS./GAL.

SUMMARY

PRESSURES IN PSI
CIRCULATING: ____ DISPLACEMENT: ____
BREAKDOWN: ____ MAXIMUM: ____
AVERAGE: ____ FRACTURE GRADIENT: ____
SHUT-IN: INSTANT 2550 5-MIN. 1960 15-MIN. 1630

HYDRAULIC HORSEPOWER
ORDERED 2 AVAILABLE 2 USED 2

AVERAGE RATES IN BPM
TREATING: ____ DISPL.: ____ OVERALL: ____

CEMENT LEFT IN PIPE
FEET: ____ REASON: ____

VOLUMES
PRESLUSH: BBL.-GAL.: ____ TYPE: ____
LOAD & BKDN: BBL.-GAL.: ____ PAD: BBL.-GAL.: ____
TREATMENT: BBL.-GAL.: 10,000 DISPL.: BBL.-GAL.: 3630
CEMENT SLURRY: BBL.-GAL.: ____
TOTAL VOLUME: BBL.-GAL.: 13,630

REMARKS

CUSTOMER: Anschutz Corp
LEASE: Anschutz
WELL NO.: 16-30
JOB TYPE: 15% HCL &N2
DATE: 11/23/82

HALLIBURTON SERVICES

JOB LOG

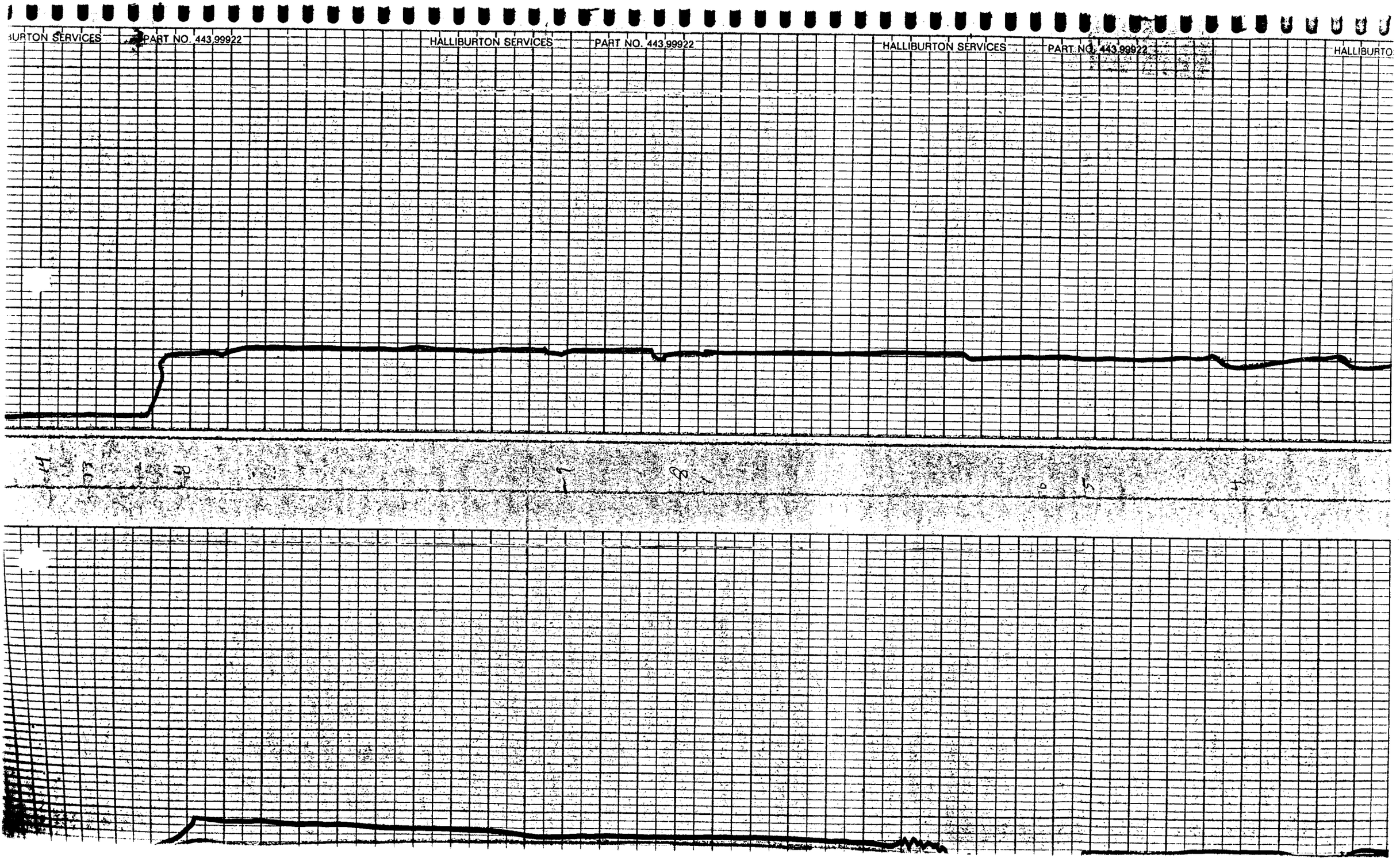
FORM 2013 R-2

WELL NO. 16-30 LEASE Anschutz TICKET NO. 364233

CUSTOMER Anschutz Corp. PAGE NO.

JOB TYPE 15% HCL & N2 DATE 11/23/82

CHART NO.	TIME	RATE (BPM)	VOLUME (BBL) (GAL)	PUMPS T	PUMPS C	PRESSURE (PSI) TUBING	PRESSURE (PSI) CASING	DESCRIPTION OF OPERATION AND MATERIALS
	1630							On Loc/Safety Meeting
A	1937							Prime up & test leak
B	1955							Test Again @ 6200 PSI
1	2308	1	0			2440	1900	Start Acid and N2
2	2312		130			2390	1900	Shut down N2 problems
3	2332	2	130			2550	1900	Start Acid again
4	0010	2.2	3530			1890	1800	1st Acid on Perfs
5	0020	2.2	5000			1890	1950	Start Div.
6	0030	1.2	5250			1810	1950	Start 2nd Acid
7	0106	2.4	8530			2280	1950	Div on Perfs
8	0109	2.4	8780			2290	1910	2nd Acid on Perfs
9	0122	2.3	10,000			2390	2000	Start Flush
10	0201	2.2	13,630			2830	1890	End Job
11	0201					2550	1890	ISIP
12	0206					1960	1080	5 Min
12	0211					1720	320	10 Min
14	0216					1630	310	15 Min
								Thank you
								T.B. Valdez and Crew


BURTON SERVICES
PART NO. 443.99922
HALLIBURTON SERVICES
PART NO. 443.99922
HALLIBURTON SERVICES
PART NO. 443.99922
HALLIBURTO

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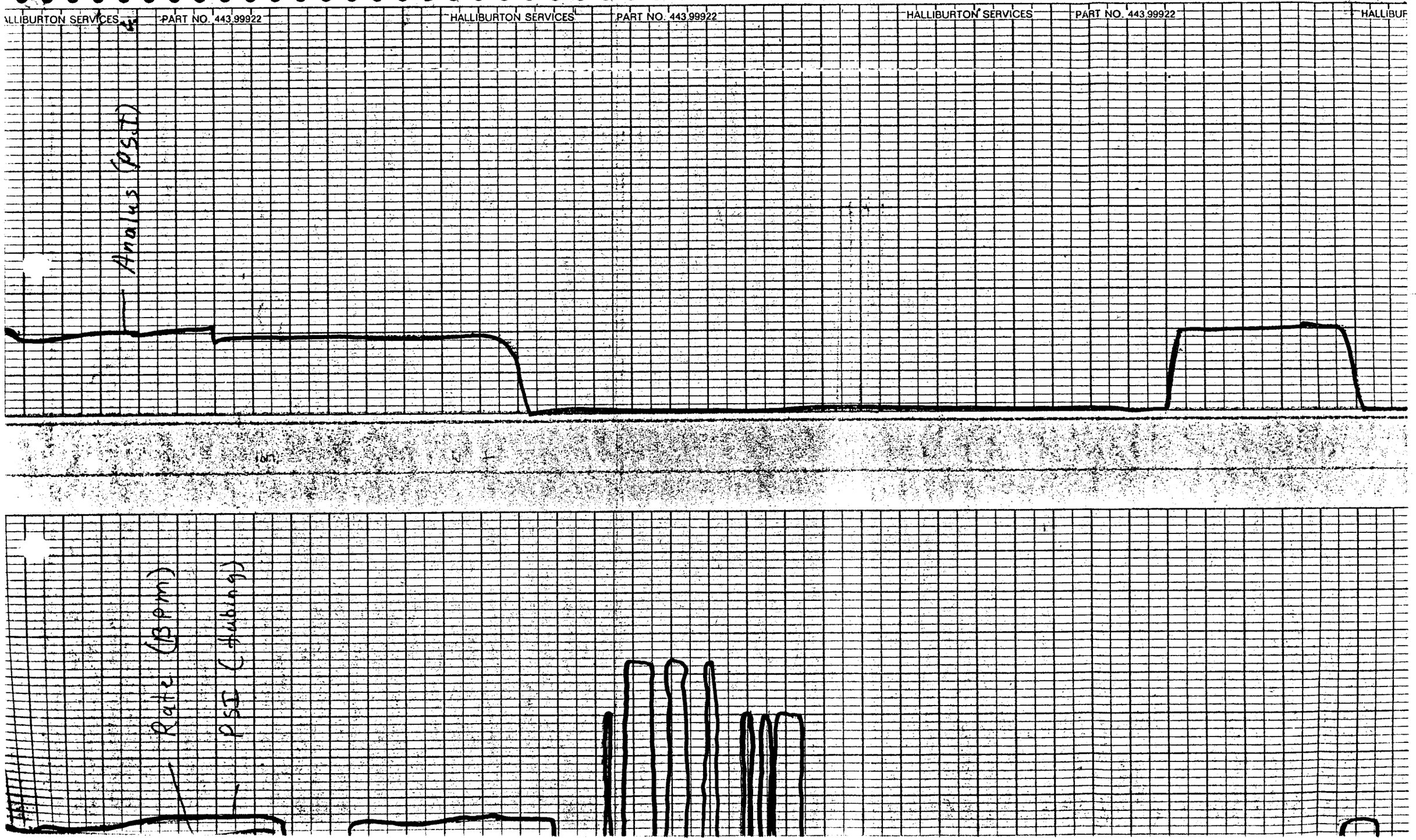
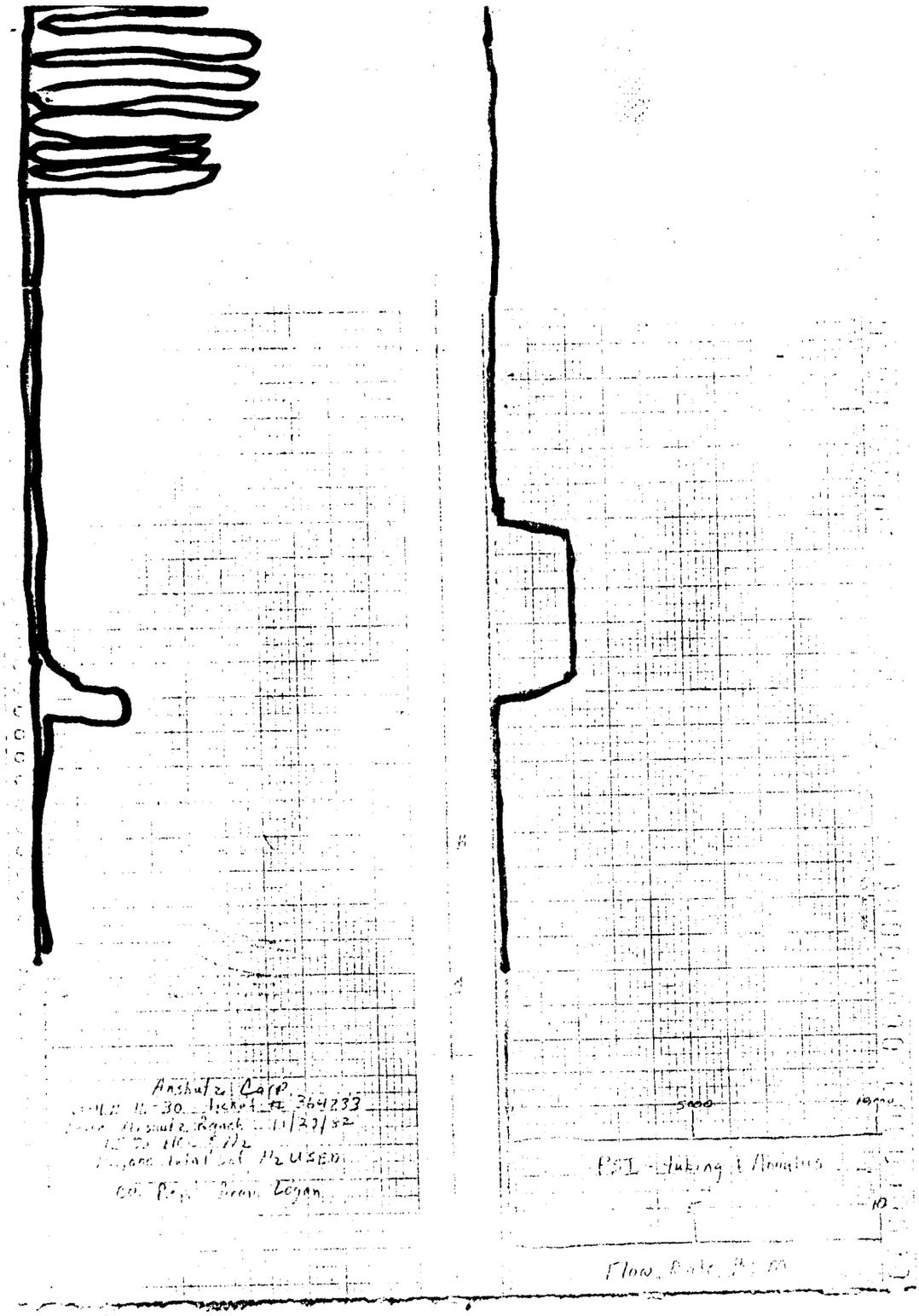


HALLIBURTON SERVICES
Annulus (PSI)
Rate (BPM)
PSI (Annulus)


Anschutz Corp.
Ticket # 364233
11/27/52
Logan
5000
10000
PSI - Tubing & Annulus
10
Flow Rate

HYDROCARBON LIBERATING INTERVALS
(LISTED CHRONOLOGICALLY)

11,993'-13,068' NUGGET SANDSTONE	This cored interval shows visual porosity ranging from fair to good with abundant fracture porosity. This is accompanied by a good visual show and hydrocarbon stain and odor. Although the coring process inhibits hydrocarbon liberation, higher gas reading match with higher penetration rates. There is no evidence to suggest a hydrocarbon/water interface and the entire interval appears to be saturated with dry gas and condensate. Lack of cuttings gas analysis makes permeability estimations impossible. *This is rated as an excellent show.*
13,085'-13,095' 13,096'-13,099' 13,140'-13,144'	These intervals are characterized by fair drilling breaks and visual porosity accompanied by strong liberation of dry gas and condensate. Cuttings gas indicates good permeability and visual show indicates high hydrocarbon saturation. *These are excellent shows.*
13,482'-13,484'	Liberation of predominately dry gas from a sandstone stringer. Cuttings shows good permeability. Visual porosity no shown although penetration rate indicates some may be present. *This is a minor show.*
WHIPSTOCK #1	
12,863'-12,864' 12,868'-12,869' 12,874'-12,881' 12,882'-12,889' 12,895'-12,897' 12,898'-12,900' 12,906'-12,911' 12,916'-12,924' 12,928'-12,929' 12,930'-12,944' 12,954'-12,968' 12,978'-12,986' 12,988'-12,992' 12,996'-12,998'	This interval was directionally drilled until 12,998', which slowed penetration rate and makes porosity indications hard to define. Slower penetration rate also inhibits the liberation of hydrocarbons through the dilution effect. Note higher gas readings after penetration rate increases with resumption of rotary drilling. Extremely low Cl reading in the cuttings gas indicates good permeability. Total gas and oil indicator shows high saturation of wet gas. Lithology is a well rounded to subangular sandstone ranging from unconsolidated to friable. Lack of cement along with grain shape as well as the high degree of sorting indicates that the permeability should

HYDROCARBON WELL LOGGING REPORT
Anschutz Corporation
Ranch East 16-30U
SE SE Sec. 30, T4N R8E
Summit County, Utah

HYDROCARBON LIBERATING INTERVALS
(LISTED CHRONOLOGICALLY)

13,000'-13,010' 13,014'-13,022' 13,052'-13,059' 13,060'-13,064' 13,108'-13,111' NUGGET SANDSTONE	be good. Liberation continues throughout the interval with no indication of a hydrocarbon water interface. *These are excellent shows.*

END OF THIS REPORT

[illegible]	
12005'-0[illegible]'	flor, yel,dull,unif
1200[illegible]'-0[illegible]'	flor, yel,bri,unif
12008'-0[illegible]'	no flor
1200[illegible]'-10'	flor, yel,dull,unif
12010'-11'	no flor
1201[illegible]'-15'	flor, yel,dull,sp
12005'-15'	out, lt yel,bri,[illegible], instant

WELL: ARE 16-30

CORE NO. 1 12,005'-12,015' CUT 9' REC 9'

12005'-0[illegible]'	[illegible]s,[illegible]h-tan,fgr,sbrd,fri,wsrt
1200[illegible]'-07'	Ss,tan,f-mgr,sbrd-rd,fri,wsrt,calc incl
12007'-0[illegible]'	Ss,tan,mgr,sbrd,fri,mod srt,calc incl
1200[illegible]'-0[illegible]'	[illegible]s,lttan,mgr,sbang-sbrd,mod srt,firm,calc incl
1200[illegible]'-10'	Ss,tan,m-cgr,sbang-sbrd,mod srt,fri,calc incl
12010'-11'	Ss,lttan,mgr,sbrd,wsrt,fri,calc incl
1201[illegible]'-12'	Ss,lttan,f-mgr,sbrd,wsrt,fri,calc incl
12012'-13	Ss,lttan,f-mgr,sbang-sbrd,mod srt,fri,calc incl
12013'-14'	Ss,lttan,f-mgr,sbrd,wsrt,fri calc incl
12014'-15'	Ss,lttan,f-mgr,sbrd-rd,mod srt,fri,calc incl

CORE NO. 2 CUT 48' REC 48'

12015'-24'	Ss, tan,m-fgr,sbrd-rd,w-vwsrt,fri,[illegible] por,sl calc,calc incl
12024'-[illegible]'	Ss, tan- [illegible] brn,f-cgr,sbrd-rd,mod srt,vfri,g por,abnt calc incl, calc frac fl
12033'-3[illegible]'	Ss, tan,f-mgr,rd,wsrt,fri, [illegible] por,noncalc
12035'-3[illegible]'	Ss, tan,f-mgr,sbrd-rd,vfri-fri,g por,calc incl,vg o stn on bdg surf
12036'-39'	Ss, tan,m-cgr,rd-sbrd,mod srt,fri,[illegible] por,mod o stn
12039'-41'	Ss, tan,f-mgr,sbrd-rd,mod srt,fri,fr por,vsl calc,calc incl
12041'-42'	Ss, tan,f-mgr,sbang-sbrd,mod srt,vfri,p por,calc incl dec,n o stn
12042'-44'	Ss, tan,f-mgr,sbrd-rd,mod srt,vfri,f-g por,calc incl inc,calc frac fl,dk-vdk o stn on bdg surf
12044'-47'	Ss, tan,fgr,sbrd-rd,wsrt,fri,fr por,calc incl,m-dk o stn on bdg surf
12047'-4[illegible]'	Ss, tan,f-vfgr,sbrd-sbang,mod srt,fri,p por,sl o stn
12048'-53'	Ss, tan,vf-fgr,sbang-sbrd,mod srt,fri,fr por,abnt calc incl & frac fl,lt-mod o stn on bdg surf
12053'-55'	Ss, tan,f-vfgr,sbrd-sbang,mod srt,fri,mod por,abnt calc incl,m-dk o stn on bdg surf
12055'-56'	Ss, tan, vfgr,wsrt,fri,p por,calc incl dec,n o stn
1205[illegible]'-6[illegible]'	Ss, tan,fgr,sbang-sbrd,wsrt,fri,mod por,calc incl inc,lt-m o stn
1206[illegible]'-6[illegible]'	Ss, tan,f-vfgr,sbang-sbrd,mod srt,fri,p-mod portr calc incl,sl o stn on bdg surf
1206[illegible]'-63'	Ss, tan,m-fgr,sbrd-sbang,mod srt,fri,p-mod por,m-dk o stn

12217'-23'	flor,dull,bl yel,unif
17'-23'	cut,bri,mky,lt yel,fast
23'-25'	flor,dull,yel,sp
23'-25'	cut,pale,mky,yel,fast
25'-34'	flor,pale,yel sp
34'-35'	flor,dull,yel,sp
34'-57'	flor, dull,yel,sp
57'-69'	flor, pale,yel,sp
69'-70'	flor, pale,yel,unif
7 -75'	flor,pale,yel,sp
25'-75'	cut, bri,mky,lt yel,fast

CORE NO. 6 12217'-12277' T 60' C 60'

12217'-20'	Ss, gy tan,f-mgr,sbang-abrd,wsrt,fri,g por,calc incl,sl dk o stn
20'-28'	Ss, tan fgr,sbang-abrd,wsrt,fri-firm,g por,sil cmt calc incl,vg blk-brn o stn
28'-29'	Ss, tan mgr,sbrd-rd,vwsrt,fri-firm,g por,abnt calc incl & frac fl,sil cmt,vg blk-brn o stn
29'-32'	Ss, tan,f-mgr,sbang-sbrd,wsrt,fri,fr por,calc incl,sil cmt sl calc,bld o stn
32'-34'	Ss, red-tan,vf-cgr,sbrd-rd,psrt,fri,fr por,sm bnd Fe
34'-37'	Ss, tan,f-mgr,sbang-rd,wsrt,firm,fr por,sl calc cmt,lam o stn
37'-39'	Ss, tan-wh,mgr,sbrd-rd,vwsrt,firm,vg por,calc cmt,o stn
39'-43'	Ss, tan,f-mgr,sbang-sbrd,wsrt,fri-firm,g por,sil cmt
43'-45'	Ss, tan,fgr,sbang-sbrd,vwsrt,fri,vg por,vg o stn
45'-53'	Ss, tan vf-fgr,sbang-sbrd,wsrt,firm-fri,g por,sil cmt,occ calc incl, occ o stn
53'-58'	Ss, tan fgr,sbang-sbrd,vwsrt,fri,vg por,vg o stn
58'-60'	Ss, tan,vf-fgr,sbang-sbrd,wsrt,fri,fr por,sil cmt sl calc,fr odor
60'-67'	Ss, tan,fgr,sbang-sbrd,vwsrt,fri,vg por,vg o stn
67'-68'	Ss, tan,m-cgr,sbrd-rd,wsrt,fri,g por,sl calc
68'-77'	Ss, tan-brn fgr bec mgr,sbang-sbrd,wsrt,fri,fr por sil cmt

12277'-80'	flor, bri,yel,sp
80'-82'	flor, dull,yel,sp
77'-83'	cut, bri,mky yel,fast
82'-89'	flor, bri,yel,sp
83'-84'	cut, dull,cldy,yel,halo
84'-87'	cut, pale,mky,yel,fast
[illegible]'-89'	cut, pale,cldy,yel,v slow
89'-94'	flor, bri,yel,sp
89'-92'	cut, dull,mky,yel,fast
[illegible]-93'	cut, pale,cldy,yel,slow
94'-95'	flor, MS
95'-96'	flor, bri,yel,sp
96'-97'	flor, MS
97'-98'	flor, dull,yel,sp
93'-98'	cut, dull,mky,yel,fast
98'-12300'	flor, MS
00'-05'	flor, dull,yel,unif
05'-18'	flor, bri yel,sp
18'-26'	flor, dull,yel,sp
26'-27'	flor, bri yel,sp
[illegible]-35'	flor, pale,yel,sp
35'-38'	flor, bri yel,sp
98'-38'	cut, bri,mky,yel,fast

CORE NO. 7 12,277'-12,338' CUT 61' REC 61'

12277'-78'	Ss, bf,vf-fgr,sbang-abrd,wsrt,fri,fr-p por,lt bnd o stn
78'-79'	Ss, bf-tan,vf-fgr,sbang-sbrd,mod srt,fri,fr por,non calc,mod o stn
79'-80'	Ss,bf,vfgr,sbang,wsrt,fri,p por non calc,n o stn
80'-81'	Ss, bf,mgr,sbrd-rd,wsrt,vfri,g por,dk o stn
81'-84'	Ss, bf-tan,f-mgr,sbang-sbrd,mod srt,sl fri,fr por,abnt calc frac fl, sl calc,mod o stn
84'-87'	Ss, bf,vf-mgr,sbang-sbrd,p srt,fri.p por,tr calc incl,sl calc,n-lt o stn
87'-88'	Ss, bf,fgr,sbrd-rd,wsrt,fri,fr por,sl calc,mod o stn
88'-89'	Ss, bf,fgr,sbrd-rd,wsrt,hd,p por,sl calc,calc incl & frac fl,n o stn
89'-93'	Ss, bf,fgr,sbang,wsrt,fri,fr-g por,sl calc,calc frac fl,dk-mod o stn
93'-12301'	Ss, bf,vf-fgr,sbang,wsrt,hd,p por,qtz frac fl,n o stn
01'-05'	Ss, bf,m-fgr,sbrd-rd,mod srt,hd,p por,tr calc incl,dk o stn
05'-06'	Ss, bf,m-cgr,rd,mod srt,sl fri,g por,sl calc,calc incl,dk o stn
06'-10'	Ss, bf,m-cgr,grdg to fgr,mod srt,hd,p por,sl calc,tr calc incl,lt-mod bnd o stn
10'-18'	Ss, bf, fgr,sbang-sbrd,wsrt,hd,p por,sl calc
18'-19'	Ss, bf,f-vfgr,sbang-sbrd,mod srt,sl fri,p por,sl calc,lt bnd o stn
19-31'	Ss, bf,f-vfgr,sbrd-rd,slfri,p por,tr calc incl & calc frac fl,n o stn
31'-32'	Ss, bf,m-vfgr,sbrd,psrt,fri,fr por,sl calc,tr calc incl,n o stn
32'-36'	Ss, bf,f-mgr,grdg to mgr,sbrd-rd,mod srt,sl fri,p-fr por,sl calc,n o stn
36'-37'	Ss, bf-wh,f-cgr,rd-sbrd,p srt,fri,fr por,sl calc,mod bnd o stn
37'-12338'	Ss, bf,m-fgr,sbang-sbrd,mod srt,fri,fr por,sl calc,calc incl,n o stn

12338'-45	flor,tr,dull,dkyel,sp
45'-52'	flor, abnt,bri,yel,unif
52'-55'	flor, com,dull,yel,sp
55'-62'	flor, abnt,dull,yel,bnd
62'-74'	flor, abnt,dull,yel,sp-unif
74'-81'	flor, abnt,dull,yel,unif
81'-83'	flor, com,pale,dkyel,sp
83'-98'	flor, abnt,dull,yel,unif
38'-45'	cut, vbri,mky,ltyel,imm

CORE NO.8 12,338'-12,398' CUT 60' REC 60'

12338'-40	Ss, lt-dk tan,f-mgr,sbrd-rd,vwsrt,firm,g por,sl calc lt-m o stn
40'-41'	Ss, bf-tan,mgr,sbang-sbrd,mod-wsrt,fri-firm,fr por,calc frac fl,o stn
41'-44'	Ss, bf-tan,f-mgr,sbang-sbrd,mod srt,fri-firm,f-g por,sl calc,lt-dk brn o stn
44'-45'	Ss, lt-dk tan,f-mgr,sbang-sbrd,mod srt,firm,fr-g por,sl calc,g o stn on bdg surf
45'-56'	Ss, lt-dktan,f-mgr,sbrd-rd,vwsrt,fri,vg por,calc cmt
56'-60'	Ss, lttan,f-mgr,sbang-sbrd,mod srt,fri-firm,g por,calc incl,o stn on bdg surf
60'-64'	Ss, lttan,vf-fgrsbrd-rd,wsrt,firm,fr por,abnt calc incl,fr o stn on bdg surf
64-67'	Ss, lttan,fgr,rd,vwsrt,hd,fr-g por,abnt calc incl,m-dk bnd o stn
67'-71'	Ss, lttan,fgr,sbang bec sbrd,hd,p por,sl calc bec non calc,n calc incl, lt o stn,bnd bec unif
71'-78'	Ss, lttan,vf-mgr,sbang-rd,p srt,hd-slfri,p por,sl calc,calc frac fl, tr lt o stn
78'-81'	Ss, lttan,fgr,sbang-sbrd,mod srt,hd,fr-p por,non calc,lt bnd o stn
81'-12398'	Ss, bf bec lttan,vf-fgr,sbang-sbrd,mod-wsrt,slfri-hd,p por,calc frac fl bec abnt,n o stn

12398'-400'	no flor
00'-03'	flor,tr,dull,yel,sp
03'-04'	cut,vbri,mky,lt yel,imm
03'-10'	flor,abnt,pale,yel,unif
05'-06'	cut,bri,mky,yel,slow
10'-20'	flor,abnt,pale,yel,unif
20'-22'	flor,abnt,pale,yel,unif
22'-26'	flor,abnt,dull,yel,sp
[illegible]'-30'	flor,abnt,pale,yel,unif
30'-31'	flor,tr,dull,yel,sp
31'-37'	flor,abnt,dull,yel,unif
37'-40'	flor,abnt,pale,yel,unif
40'-41'	flor,abnt,pale,yel,unif
41'-46'	flor,com,pale,yel,sp
46'-47'	flor,abnt,bri,yel,sp
47'50'	flor,com,pale,yel,sp
50'-58'	flor,abnt,dull,yel,unif
06'-58'	cut,vbri,mky,lt,yel,imm

CORE NO. 9 12398'-12458' CUT 60' REC 60'

12398'-01'	Ss, lt-dk tan,f-mgr,sbang-sbrd,wsrt,fri-firm,fr-g por,calc blebs, lt o stn
01'-07'	Ss, lt-dk tan,vf-fgr,sbrd-rd,vwsrt,fri,g por,calc incl,lt-dk o stn,calc frac fl
07'-13'	Ss, dk tan,f-mgr,sbang-sbrd,wsrt,fri,f-g por,calc incl,lt o stn
13'-20'	Ss, dk tan-brn,fgr,sbang-sbrd,vwsrt,fri,fr por,calc blebs,lt o stn
20'-21'	Ss, lt-dk tan,fgr,sbang-sbrd,vwsrt,fri,fr por,calc blebs,lt o stn
21'-25'	Ss, lt-dk tan,fgr,sbrd-rd,wsrt,fri-firm,fr por,calc blebs,calc frac fl,lt-dk o stn
25'-27'	Ss, lt-dk tan,f-mgr,sbrd-rd,wsrt,fri-firm,fr-g por,lt o stn
27'-40'	Ss, lt-dk tan,fgr,sbrd-rd,vwsrt,fri-firm,fr por,calc frac fl,lt -dk o stn
40'-41'	Ss, lt tan,fgr,sbrd-rd,vwsrt,fri-firm,f-g por,tr o stn,calc frac fl
41'-51'	Ss, lt-dk tan,f-mgr,sbang-sbrd,mod-wsrt,fri,fr por,calc blebs, calc frac fl,lt o stn
51'-58'	Ss, bf-lt tan,f-mgr grdg to cgr,sbang-sbrd,p-modsrt,fri,fr por, non calc,tr o stn

12458'-59'	flor, tr pale yel bnd
58'-59'	cut, bri mky yel-gn imm halo fst stmg
59'-60'	flor,abnt,dull,yel-gn,ptchy
59'-60'	cut, bri,mky,yel-gn,imm hal fst stmg
60'-75'	cut, pale,mky-clr,yel-yelgn imm hal,fst stmg
60'-75'	flor, com,pale,wh-yel,bnd-sp
75' 76'	flor, tr vpale,yel-wh,sp
75'-76'	cut,pale,clr,yel-gn,imm hal fst stmg
76'-77'	flor, com,dull,yel,sp-bnd
76'-77'	cut, dull,mky,yel-gm,imm hal fst stmg
77'-78'	flor,tr vpale,yel-wh,sp-bnd
77'-78'	cut, pale,clr,yel-gn imm hal fst stmg
78'-80'	flor, com,dull,yel-wh,sp-bnd
78'-80'	cut, pale,clr yel,imm hal,fst stmg
80'-85'	flor,com,dull,yel-wh,sp-bnd
80 35'	cut, dull,clr,yel-gn,imm hal fst strmg
85'-86'	flor, tr pale yel,sp
85'-86'	cut, pale,clr yel,slo,stmg
86'-91'	flor, com,dull,yell-wh,sp
86'-91'	cut, dull,clr-mky,yel-gn,imm hal,mod stmg
91-95'	flor, tr pale,yel-wh,sp
91'-95'	cut, dull,clr-mky,yel-gn,imm hal
95'-12500'	flor,com,pale,yel-wh,sp
95'-00'	cut, dull,clr-mky,yel gn,imm hal,fst stmg

CORE NO. 10 12,458'-12,520' CUT 62' REC 62'

12458'-80'	Ss, tan,f-mgr bec cgr in pt,wsrt,thn bnd vf-mgr psrt,sbang-rd,fri-firm, sil cmt ,abnt dk o stn on bdg surf,g por,p por in bnd,sil fl micfrac from 58'-60'
80'-85'	Ss, tan,vf-mgr/occ cgr,psrt,sbang-rd,fri-firm,fr-p por,sil fl micfrac from80'-83'
85'-90'	Ss, tan,vf-mgr,sbang-sbrd,p-msrt,firm,p-fr por,sil cmt
90'-95'	Ss, tan,f-mgr,bec cgr,sbang-sbrd, wsrt,firm,fr por,sil cmt,tr lt o stn
95'-12505'	Ss, tan,m-cgr,sbang-sbrd,vwsrt,firm,fr-g por,sil cmt,tr lt o stn
05'-11'	Ss, tan,m-cgr,sbang-sbrd,vwsrt,fri-firm,g por,sil cmt,tr calc incl, tr lt o stn
11'-14'	Ss, tan,f-mgr,bec cgr,sbang-sbrd,msrt,firm,fr-g por,sil cmt,com lt o stn
14'-16'	Ss, tan,f-mgr,sbang-rd,vwsrt,firm,g por,calc & sil cmt,abnt lt o stn
16'-17'	Ss, tan,mgr,rd-sbrd,wsrt,fri,ex por,calc cmt,abnt calc incl
17'-12520	Ss, bf,vf-mgr,sbang-rd,psrt,firm,calc & sil cmt

500'-01'	flor, tr pale,yel-wh,sp
00'-01'	cut, dull,mky,yel-wh,imm hal,mod stmg
01'-02'	flor, com,dull,gn-yelgn bnd-sp
01'-02'	cut, vpale,clr,yel-wh,imm hal,slo stmg
02'-05'	flor,tr pale,yel-gr sp
02'-05'	cut, dull-pale,mky,yel,imm hal,mod stmg
05'-06'	flor, com,yel-gn,ptchy-sp
05'-06'	cut, dull,mky,yel,imm hal fst stmg
06'-10'	flor, tr-com,dull,yel,sp
06'-10'	cut, dull,mky,yel-gn,imm hal,fst stmg
10'-11'	flor, comm,dull,yel-gn,sp
10'-11'	cut, pale,clr-mky,yelgn imm hal,slo stmg
11'-13'	flor, tr,pale,yel-wh,sp
11'-13'	cut, pale,clr-mky,yelgn,imm hal,slo stmg
13'-15'	flor, com,dull,yelgn,sp
13'-15'	cut, dull-bri,mky,yelgn, imm hal,
1[illegible]-17'	flor, tr,dull,yelgn,sp
15'-17'	cut, dull-bri,mky,yelgn imm hal,fst stmg
17'-18'	flor, com,dull,gn-yelgn ptchy
17'-18'	cut, pale,clr-mky,yel,imm hal,mod stmg
18'-12520'	flor, com dull-bri,yel-yelgn,ptchy in frac
18'-20'	cut, pale,clr-mky,yel,imm hal,mod stmg

12520-23	flor, tr dull yel unif
23-39	flor, abnt pale yel unif
39-40	flor, com dull yel & violet unif
40-48	flor, abnt pale yel unif
48-49	flor, com pale yel sp
49-50	flor, abnt bri yel unif
50-51	flor, abnt pale yel sp
51-57	flor, abnt bri yel unif
57-58	flor, not present
20-58	cut, imm bri mky halo and fast bri mky yel stmg
58-60	flor, abnt pale yel unif
58-61	cut, imm pale yel halo
60-63	flor, abnt pale yel unif
61-62	cut, imm bri yel mky halo and fast bri mky stmg
63-71	flor, abnt pale yel unif
62-67	cut, imm pale mky yel halo fast bri mky yel stmg
71-78	flor, abnt pale yel sp-unif
72-76	cut, imm bri mky yel halo
78-79	flor, not present
76-80	cut, imm pale mky yel halo
79-81	flor, abnt bri yel unif
80-81	cut, imm bri mky yel halo

CORE NO. 11 CUT 61' REC 61'

12520-27'	Ss, tan fgr sbang-sbrd wsrt sil cmt fri abnt lt brn o stn g por
27-47	Ss, tan f-mgr sbang-sbrd wsrt sil cmt fri-frm abnt lt brn o stn fr-g por
47-48	Ss, tan f-mgr sbang-rd wsrt sil cmt sl calc fri-frm abnt lt brn o stn g por tr calc incl
48-51	Ss, bf-tan mgr sbang-rd wsrt sil cmt sl calc fri-frm abnt lt brn o stn g por tr calc incl
51-54	Ss, tan f-mgr sbang-sbrd wsrt sil&calc cmt frm-fri abnt o stn on bdg planes f-g por p por when no o stn
54-59	Ss, bf vf-mgr sbang-rd msrt sil cmt frm abnt lt o stn on bdg planes p por abnt sil fl mic frac
59-63	Ss, bf vf-fgr sbang-sbrd wsrt sil cmt hd abnt mic frac sil sks on frac surf tt
63-65	Ss, tan vf-fgr sbang-sbrd msrt sil&calc cmt hd abnt calc incl tr por dk o stn
65-71	Ss, bf-tan vf-fgr sbang-sbrd m-wsrt sil cmt tt hd tr mic frac sil sks on frac surf from 66-68
71-73	Ss, bf-tan fgr sbang-sbrd wsrt sil cmt calc stg hd abnt dk o stn on bdg planes/g por, tr por elsewhere
73-74	Ss, tan fgr sbang-sbrd vwsrt sil cmt fri abnt dk o stn g por abnt calc incl
74-79	Ss, bf vf-fgr sbang-sbrd m-wsrt sil cmt sl calc frm-hd tr lt o stn p por
79-81	Ss, tan fgr sbang-rd vwsrt fri abnt calc incl abnt dk brn o stn g por

12581-82	flor, abnt unif violet and tr sp yel
82-87	flor, abnt unif bri yel in bdg planes
87-96	flor, tr bri sp yel
81-95	cut, imm pale yel halo / fast stmg mky yel
95-96	cut, not present
96-12600	flor, abnt bri yel-orng unif
96-97	cut, imm pale yel halo/ fast stmg mky yel
97-98	cut, not present
98-12600	cut, pale clr yel/ slow pale yel stmg
00-05	flor, com dull sp yel
05-12	flor, abnt pale yel-gn unif in bdg planes
00-11	cut, imm pale yel halo/ fast stmg mky yel
12-13	flor, abnt bri yel-gn unif
13-22	flor, abnt bri yel-gn unif-sp in bdg planes
11-15	cut, imm bri mky yel halo/ abnt fast stmg mky yel
15-21	cut, imm vpale yel halo / slow stmg yel
21-22	cut, imm bri mky yel halo / fast stmg mky yel
22-33	flor, abnt pale yel-gn unif
22-24	cut, imm pale yel halo / slow stmg mky yel
24-26	cut, imm bri mky yel halo / fast stmg mky yel
26-30	cut, imm pale yel halo
33-41	flor, abnt bri yel in bdg planes
30-41	cut, imm pale yel halo / fast stmg mky yel

CORE NO. 12 12581-12641' CUT 60' REC 60'

12581-84	Ss tan vf-mgr sbang-sbrd wsrt sil & calc cmt frm-fri abnt lt o stn g por abnt calc incl
84-86	Ss tan f-mgr sbang-sbrd vwsrt sil cmt sl calc frm-hd occ fri abnt o stn g por abnt calc incl
86-90	Ss tan vf-mgr sbang-sbrd wsrt sil cmt sl calc frm-fri abnt o stn in bdg planes g por
90-95	Ss tan vf-mgr sbang-sbrd wsrt sil cmt sl calc frm-fri tr lt o stn fr-g por
95-96	Ss pnk vf-fgr sbang wsrt calc & sil cmt frm-fri p por
96-97	Ss lt gy-brn /pnk incl vf-mgr sbang-sbrd calc cmt frm-fri tr lt o stn abnt calc incl m por
97-98	Ss pnk vf-fgr sbang wsrt calc & sil cmt frm-fri p por
98-99	Ss lt gy-tan occ pnk vf-mgr occ cgr sbang-sbrd m-wsrt sil cmt sl calc frm-fri tr lt o stn g pot
99-12600	Ss pnk vf-mgr sbang wsrt sil cmt sl calc frm-fri m por
00-03	Ss tan vf-mgr sbang-sbrd m-wsrt sil cmt sl calc sft-frm fri abnt dk o stn com calc incl g por
03-11	Ss tan vf-mgr sbang-sbrd wsrt sil cmt sl calc frm-hd abnt lt o stn abnt calc incl g por
11-22	Ss tan vf-mgr sbang-rd wsrt sil cmtsl calc frm-fri abnt dk o stn tr calc incl g por
22-25	Ss tan vf-mgr sbang m-wsrt sil cmt sl calc frm-hd tr lt o stn fr por
25-26	Ss tan vf-mgr sbrd wsrt sil cmt sl calc frm-fri tr calc fl frac abnt dk o stn g por
26-31	Ss tan vf-fgr occ mgr sb ang wsrt sil cmt sl calc frm-hd tr lt o stn fr-m por
31- 35	Ss tan vf-mgr sbang-sbrd wsrt sil cmt sl calc frm-fri abnt lt o stn m-g por
35-41	Ss tan vf-mgr sbang-sbrd wsrt sil cmt sl calc frm-fri abnt dk o stn com calc incl g por

CORE NO. 13 12655-12715 CUT 60' REC 60'

12655-56	flor, abnt violet and gold unif
56-60	flor, abnt violet and bri yel unif
60-65	flor, abnt vpale yel-gn unif in bnd
55-63	cut, imm pale mky yel halo fast stmg bri mky yel
63-64	cut, imm vpale clr wh halo
65-704	flor, abnt pale yel-gn unif
85	cut, imm pale mky yel halo fast stmg bri mky yel
85-86	cut, imm pale mky yel halo
04-07	flor, abnt bri yel-gn unif
07-09	flor, abnt pale yel-gn unif
09-13	flor, abnt pale gn unif
13-15	flor, not present
86-15	cut, imm pale mky yel halo fast stmg bri mky yel

12655-58	Ss bf-tan f-mgr sbang-rd wsrt sil & calc cmt frm-fri abnt lt brn o stn p por thn bnd/ calc incl
58-61	Ss bf-tan mgr sbang-rd vwsrt sil & calc cmt frm abnt dk o stn in bdg planes /tr elsewhere pred p por g por in dk o stn
61-64	Ss thn intbdd bf & pred pnk vf-mgr sbang-rd p srt sil & calc cmt tt frm-hd
64-85	Ss bf-tan pred mgr/ f-vfgr sbang-rd msrt sil & calc cmt hd tr por tr lt brn o stn thn bds of mgr/ fr por & abnt o stn sil micfrac from 73-75 abnt calc incl
85-94	Ss intbdd tan & pnk vf-mgr occ cgr sbang-rd psrt sil & calc cmt hd p por tr lt brn o stn thn bds m-cgr sbang-rd wsrt/ fr por
94-705	Ss wh-bf vf-fgr grdg to mgr sbang-sbrd m-wsrt sil cmt hd trlt o stn/tr por sl calc abnt sil fl micfrac at 96-97 thn bds mgr sbang-sbrd wsrt g por sks frac at 705 sl slty ip
05-12	Ss bf mgr sbang-rd vwsrt frm sil cmt g por/ tr lt o stn abnt calc incl
12-15	Ss intbdd bf & pnk vf-mgr sbang-rd psrt sil cmt hd sl calc tr por

12715-27	flor, abnt bri violet unif
27-47	flor, abnt vpale dull yel unif
15-43	cut, imm pale mky yel halo fast stmg yel
43-44	cut, imm pale clr yel halo
44-47	cut, imm pale mky yel halo fast stmg mky yel
47-51	flor, none present
4 51	cut, none present
51-56	flor, abnt pale yel unif
51-56	cut, imm pale mky yel halo fast stmg mky yel
56-62	flor, none present
56-62	cut, none present
62-65	flor, abnt vpale yel unif in bnds alt / bnds of no flor
62-64	cut, imm pale mky yel halo fast stmg mky yel
65-67	flor, abnt vpale dull yel unif
(65	cut, imm pale clr yel halo
67-75	flor, abnt dull yel unif
65-75	cut, imm bri mky pale yel halo

CORE NO. 14 12715-12775 CUT 60' REC 60'

12715-20	Ss bf vf-fgr sbang-sbrd wsrt sil cmt hd sl calc tr por tr lt brn o stn
20-21	Ss intbdd tan f-mgr and wh vf-fgr sbang-sbrd msrt sil cmt hd sl calc tr por / lt brn o stn in f-mgr
21-26	Ss bf-tan f-mgr sbang-rd wsrt sil cmt sl calc hd tr por / tr lt brn o stn
26-27	Ss pnk bnd lt & dk intbdd vf-fgr in dk pnk to f-mgr in lt pnk sbang-sbrd wsrt sil cmt calc tr por / o stn
27-40	Ss bf-tan f-mgr sbang-sbrd wsrt sil cmt hd sl calc p por/ lt brn o stn thn lam mgr rd-sbang vwsrt hd sil cmt sl calc tr lt brn o stn & p-fr por occ calc incl
40-43	Ss bf-tan f-mgr sbang-sbrd wsrt sil cmt hd abnt calc incl tr lt brn o stn / p por
43-47	Ss mot bf & pnk f-mgr sbang-sbrd p-msrt sil & calc cmt hd tr por / lt o stn
47-51	Ss pnk vf-mgr sbang-rd psrt sil cmt hd sl calc tt
51-56	Ss bf / thn bnd pnk f-mgr in bf vf-fgr in pnk sbang-rd wsrt sil cmt hd sl calc p por / tr lt brn o stn bcmg v calc/ calc cmt at 55
56-62	Ss pnk bnd lt & dk vf-mgr sbang-sbrd psrt in dk & mgr wrd vwsrt in dk sil & calc cmt fr por
62-65	Ss pnk vf-fgr sbang-sbrd wsrt sil & calc cmt hd fr por
65-75	Ss bf-gy / occ pnk bnd vf-fgr occ mgr sbang-sbrd msrt sil cmt p por / tr lt brn o stn

12775-78 flor, tr pale gnyel bnd

cut, bri mlky yel fst stmg

78-79 flor, abnt bri yel sptty &bnd

cut, dull clr yelbl slo halo

79-81 flor, tr-com pale gnyelsptty in bnd

cutpale mlky yelgn slo halo

81-85 flor tr pale yelgn bnd

cut, pale mlky yel slo stmg

85-87 flor, com dull yelgn bnd
cut, pale mlky yel fst stmg

87-92 flor,tr pale yel sl bnd
cut, pale mlky yel fst stmg

92-94 flor, non, no cut

94-97 tr vpale yel unif
cut,pale mlky yel slo stmg

97-800 tr pale gnyel fbnd
cut, pale mlky yel slo-fst st

12800-05 flor, tr pale yelgn bnd

cut, bri mlky yel fst stmg

05-08 flor, tr vpale yel unif

cut, bri mlky yel slo- fst stmg

08-11 flor, tr pale yelgn bnd

cut, bri mlky yel slo stmg

11-14 flor, tr- com pale gnyel unif - bnd

cut, bri mlky yel fst stmg

14-20 flor, tr pale yel- yelgn sptty in bnd

cut, bri mlky yel slo stmg

CORE NO. 15 12775 - 12820 CUT 45' REC. 45'

12775-79 Ss bf - gy intbd vf - fgr / occ f- mgr sbang- sbrd wsrt frm slcalc sil cmt fpor / tr lt brn o stn

79-80 pnk & gy bnd vf - mgr sbang - sbrd psrt sil cmt fpor / lt brn o stn

80-92 gy-occ pnk bnd pred intbd vf- fgr/ tr mgr sbang- sbrd wsrt frm / sil cmtfri ip gd por / lt o stn abnt calc incl 80-85, 91-92 pred mgr

92-94 Ss pnk vf-f-mgr sbang- rd p- msrt frm slcalc/ sil cmt ppor

94-96 Ss bf- tn mgr sbang- rd wsrt calcip sil cmt frm- fri gdpor/ tr lt brn ostn

96-98 Ss bf f- mgr sbang- rd wsrt frm- fri calc sil cmt fpor/ lt brn ostn

98-99 Ss pnk vf- mgr sbang- rd p- msrt frm- slhd calc sil cmt fpor/ o stn

99-12803 bf/ bnd pnk mgr sbang- rd wsrt sil & calc cmt frm gpor/ o stn , grdg tofgr @ 802

03-06 Ss pnk bnd, lt & dk intbd vf-fgr occ mgr sbang-rd wsrt frm- hd sil& calc cmt fpor/ lt brn o stn

06-20 Ss bf vf- fgr sbang- sbrd msrt frm- slri sil & calc cmt fpor/ bnd of mbrn o stn/ gdpor

12820-25	flor, abnt vpale yel unif
20-26	cut, pale mky yel imm halo / fast stmg
25-31	flor, abnt dull yel-gn ptchy-unif
26-28	cut, dull mky yel imm halo / fast stmg
28-32	cut, pale mky yel imm halo / slo stmg
31-37	flor, com dull-pale yel ptchy
32-35	cut, dull mky yel-gn imm halo / slo stmg
37-39	flor, com bri yel bnd
35-40	cut, pale mky yel imm halo / slo stmg
39-54	flor, abnt vpale yel unif
40-43	cut, pale mky yel imm halo
43-54	cut, pale mky yel imm halo / slo stmg
54-60	flor, abnt dull yel sp-ptchy
54-63	cut, bri clr yel-gn imm halo / fast stmg
60-65	flor, com pale yel bnd-unif
63-68	cut, vpale mky yel imm halo / vslo stmg
65-70	flor, com vpale yel unif-bnd
68-70	cut, vpale clr yel slo stmg
70-75	no flor, no cut
75-80	no flor
75-82	cut, vpale clr yel imm halo / vslo stmg
80-81	flor, com vpale yel bnd
81-82	flor, com pale yel sp

CORE NO. 16 12,820-12,882 CUT 62' REC 62'

12820-25	Ss bf-tan f-mgr sbang-sbrd wsrt sil cmt calc frm dk bdg lam / abnt lt brn o stn fr por abnt calc incl
25-45	Ss wh-tan vf-fgr sbang-sbrd wsrt sil cmt calc frm dk bdg lam / abnt lt & dk brn o stn fr por & abnt calc incl tr vis por in wh bdg lam / tr lt brn o stn (10% HCl readily percolates horiz thru wh lam despite low vis por)
45-51	Ss wh-tan vfgr grdg to fgr sbang-sbrd sil cmt wsrt calc frm thn dk bdg lam / lt brn o stn p por and calc incl
51-59	Ss wh-tan fgr occ vfgr sbang-sbrd wsrt sil cmt calc frm thn dk bdg lam / dk brn o stn p-fr por abnt calc incl
59-66	Ss wh-tan fgr sbang-sbrd vwsrt sil cmt calc frm thn dk bdg lam / dk brn to blk o stn p-fr por abnt calc incl
66-67	Ss wh-tan vf-fgr sbang-sbrd wsrt sil cmt calc frm thn bdg lam / lt-m brn o stn p por abnt calc incl
67-68	Ss wh-tan / thn pnk bdg lam vf-fgr sbang-sbrd wsrt sl calc sil cmt p por tr lt brn o stn
68-75	Ss pnk lt & dk thn lam pred fgr in lt pnk & vfgr in dk pnk lam sbang-sbrd occ rd wsrt sl calc sil cmt tt-p por (10% HCl readily percolates horiz thru lt pnk lam despite low vis por)
75-78	Ss a/a but f-mgr in lt pnk and vf-fgr in dk pnk
78-79	Ss gy vf-pred fgr sbang-sbrd msrt sil cmt vhd tt abnt unhealed mic frac / dk brn o stn
79-80	Ss pnk mass fgr sbang-sbrd m srt sil cmt vhd tt sks surf
80-82	Ss tan & pnk lam vf-fgr sbang-sbrd wsrt sil cmt sl calc tt-tr por

12,882-87 flor, com dull yel-orng ptchy-unif

82-90 cut, pale clr-mky yel slo stmg

87-95 flor, com dull yel-orng ptchy-bnd

90-91 cut, pale clr yel no stmg

91-94 cut, dull mky yel-grn slo stmg

94-95 cut, pale clr yel no stmg

95-97 flor, com pale yel-orng ptchy-unif

97-900 flor, com dull yel-wh sp-unif

95-900 cut, pale clr-mky yel-grn slo stmg

900-01 flor, com dull yel sp-ptchy

cut, pale mky yel slo stmg

CORE NO. 17 12,882-12,900'-9" CUT 18'-9" REC 18'-9"

12,882-85 Ss pk vf-fgr occ mgr sbang-sbrd wsrt sil cmt calc hd p por

85-86 Ss tan / pk calc spec vf-fgr grdg mgr sbang-rd wsrt firm v calc p por / tr lt brn o stn

86-88 Ss bf-tan f-mgr ang-sbrd wsrt firm calc p por

88-94 Ss bf-tan f-mgr ang-sbrd wsrt sil cmt sl calc firm dk bdg lam / abnt dk o stn and p-f por

94-95 Ss bnd pk and tan vfgr sbang-sbrd wsrt sil cmt hd sl calc tr-p por

95-900'-9" Ss tan bnd vf-fgr sbang-sbrd wsrt hd sil cmt sl calc thn dk bdg lam / abnt dk brn o stn and p-f por tt to tr por elsewhere

12901-03	no flor, no cut
03-06	flor, com vpale orng bnd-unif
03-05	cut, pale mky yel-wh vslo stmg
06-08	flor, abnt bri yel-orng bnd
08-10	flor, tr dull yel-orng bnd
05-10	cut, dull mky yel-orng mod stmg
10-16	flor, abnt dull yel-orng unif
10-16	cut, dull mky yel mod stmg
16-18	no flor, no cut
18-20	flor, abnt dull yel-orng unif-bnd
18-20	cut, dull mky yel-orng mod stmg
20-23	no flor, no cut
23-25	flor, abnt pale yel unif
23-25	cut, dull mky yel mod stmg
25-27	no flor, no cut
27-28	flor, com dull yel unif
27-28	cut, vpale clr yel-gn vslo stmg
28-29	no flor, no cut
29-35	flor, com pale yel unif
29-35	cut, pale mky yel slo stmg
35-45	flor, abnt pale yel-orng bnd-unif
35-43	cut, dull-bri mky yel-gn fast stmg
45-56	flor, abnt pale yel unif-bnd
43-45	cut, pale mky yel mod stmg
45-50	cut, vpale mky yel-gn vslo stmg
50-56	cut, pale mky yel mod stmg
56-58	no flor, no cut
58-61	flor, com vpale yel unif-bnd
58-61	cut, pale mky yel slo stmg

CORE NO. 18 12,901-12,963' CUT 62' REC 61'

12901-03	Ss bnd pnk & gy vfgr ang-sbrd wsrt sil cmt sl calc hd tt
03-16	Ss bnd pnk & gy vf-fgr sbang-sbrd wsrt sil cmt sl calc hd tr por sks sil fl mic frac 03-11
16-20	Ss bnd pnk & gy vfgr ang-sbrd wsrt sil cmt sl calc hd tt at 16 to tr por at 20
20-22	Ss gy-pnkgy vf-fgr sbang-sbrd wsrt sil cmt hd tt
22-28	Ss pnk vfgr sbang-sbrd wsrt sil cmt sl calc hd tr por
28-29	Ss pnk-tan gy gn vf-fgr ang-sbrd wsrt sil cmt hd tt
29-35	Ss tan-gy vfgr ang-sbrd wsrt sil cmt sl calc hd sil fl micfrac and sks / o stn on surf dk bdg lam / abnt brn o stn and p-fr por tt elsewhere
35-56	Ss tan-gy pred vf-fgr sbang-sbrd wsrt sil cmt sl calc hd abnt dk thn bdg lam / abnt lt & dk brn o stn p-fr por from 35-41, occ widely spaced clusters thn dk bdg lam from 51-56 tt- p por elsewhere
56-58	Ss tan-gy vfgr ang-sbrd wsrt sil cmt sl calc hd tt
58-61	Ss tan-gy vf-fgr ang-sbrd wsrt sil cmt sl calc hd thn dk bdg lam / dk brn o stn and p-fr por tt-tr por elsewhere
61-62	not recovered

12963-64	flor, com pale yel bnd-unif
63-64	cut, pale mky yel mod stmg
64-65	no flor, no cut
65-68	flor, abnt pale yel unif
68-69	flor, abnt pale yel unif / bri yel sp in o stn area
69-75	flor, abnt pale yel unif
65-75	cut, pale clr yel vslo stmg
75-76	no flor, no cut
76-78	flor, com dull yel bnd
78-79	flor, tr pale yel unif
79-84	flor, abnt dull yel unif
76-84	cut, dull mky yel-gn mod stmg
84-86	no flor, no cut
86-92	flor, com pale yel unif
86-92	cut, vpale mky yel slo stmg
92-93	no flor, no cut
93-95	flor, abnt pale yel unif ooc bnd
93-95	cut, pale mky yel-gn slo stmg
95-96	no flor, no cut
96-03	flor, abnt pale yel unif ooc bnd
96-02	cut, pale mky yel mod slo stmg
03-04	flor, tr pale yel unif
02-04	cut, pale clr yel slo stmg
04-05	no flor, no cut
05-09	flor, abnt dull yel-orng sp-bnd
05-09	cut bri mky yel-gn faststmg
09-11	no flor, no cut
11-16	flor, abnt pale yel sp-unif
11-16	cut, pale mky yel-gn mod stmg
16-17	flor, com dull-bri yel bnd
16-17	cut, pale-dull mky yel mod stmg

CORE NO. 19 12963-13019' CUT 56' REC 56'

12963-82'	Ss bf-lt tan occ gy-gn vfgr grdg to fgr ang-sbrd vwart sl calc hd p por widely spaced thn dk bdg lam / lt & dk brn o stn & p-fr por bnd gy-pnk-grn vfgr ang-sbrd wart sl calc tr por at 65-66 sil fl microfrac at 73-74 and 80-81
82-84	Ss bf-lt tan vfgr ang-sbrd vwart sl calc hd abnt close thn dk bdg lam / lt & dk brn o stn & p-fr por
84-93	Ss bf-tan gy to gy-gn at 95-96 vfgr ang-sbrd vwart sl calc hd tt-tr por widely spaced thn dk bdg lam / m brn o stn & tr-p por
93-19	Ss bf-tan vf-fgr sbang-sbrd vwart sl calc hd tr-p por abnt thn dk bdg lam / lt & dk brn & blk o stn & p-fr por, gy vfgr tt at 19

17-19	no flor, no cut

13019-20	flor,com pale yel bnd
	cut,pale sky yel slo stag
20-23	no flor no cut
23-25	flor,com v pale yel unif
	cut,v pale clr yel-wh slo stag
25-26	no flor no cut
26-34	flor,com dull-pale yel bnd-unif
26-30	cut,dull-bri sky yel-gn mod stag
30-34	cut,dull sky yel-wh slo stag
34-40	flor,abnt dull yel-gn bnd-sp
	cut,dull-bri sky yel-gn mod stag
40-41	flor,abnt dull yel unif-sp
	cut,v pale clr yel v slo stag
41-51	no flor,no cut
51-57	flor,com dull yel p-p sp
51-55	cut,dull-bri sky yel-gn imm halo/fast stag
55-58	cut,dull sky yel-gn mod stag
57-58	flor,abnt pale yel unif
8-59	no flor,no cut
59-60	flor, abnt v pale yel unif
	cut,v pale clr yel-wh v slo stag
60-62	flor,com dull yel-gn unif-sp
	cut,pale clr yel-gn slo stag
62-64	no flor,no cut
64-68	flor,v pale yel unif
63-65	cut,dull-bri sky yel-gn mod stag
65-68	cut,pale sky yel-gn slo stag
68-81	no flor,no cut

CORE NO. 20 13019-13081 CUT 62' REC 62'

13019-41	Sstan-gy pred vfgr / some vf-fgr sbang wsrt sl calc firm-hd abnt closely spaced thn dk bdg lam/p-f por & dk brn o stn
41-44	Ss tan-gy grn vfgr ang-sbang wsrt sl calc hd pred tt strg/tr por
44-47	Ss tan & pk bnd vf-fgr ang-sbrd wsrt sl calc hd tr-p por
47-49	Ss tan vfgr ang-sbang wsrt sl calc hd tt-tr por
49-51	Ss gy vf-fgr ang-sbrd wsrt sl calc hd tr-p por
51-54	Ss tan vf-fgr sbang-rd vwsrt firm-fri abnt lt brn o stn in g por
54-59	Ss tan-gy vf-fgr ang-sbang wsrt firm-hd sl calc tr lt brn o stn throughout/p por thn dk lam/p por & dk brn o stn
59-62	Ss tan-lt grn gy at 59-60 ang-sbang vwsrt firm-hd sl calc thn bdg lam/p por & dk brn o stn
62-64	Ss gy at top to tan at bottom vfgr ang wsrt hd sli calc tr por
64-68	Ss tan-gy vfgr ang-sbrd wsrt hd sli calc tr lt brn o stn throughout /p por some thn dk lam/dk brn-blk o stn & p por
68-69	Ss gy-grn vf-fgr ang hd tr por
69-70	Ss salmon pk vfgr ang-sbang hd sl calc tr por
70-72	Ss lt grn-gy maroon strks hd tt
72-73	Sltst dk maroon arg plty hd
73-74	Ss pk fgr ang-sbrd hd calc tt
74-80	Sh maroon plty/sks slty conch frac occ bnds lt grn-gy ss
80-81	Ss red vfgr slty hd tt sl calc

13546-49'	no flor, cut,fnt yel halo
49-52	no flor, no cut
52-55	no flor, no cut

CORE NO. 21 13546- 13559' MICRO DESCRIPTION CUT 12' REC 8.5'

13546-49'	Ss mgy vf-fgr sbang- sbrd msrt frm- fri frpor
49-52	Ss slty- shly dk rd-brn vfg sbang wsrt frm-fri mica ncalc
52-55	Ss dk gy carb vfg sbang wsrt ncalc pr-fpor

CORE NO. 6 MACRO DESCRIPTION AUG 16-30

Drilled 12217-277 Recovered 60 ft

12217-19	40°/pred lt/occ dk bnd,ptg on bnd
19	2" dk bnd/calc incl
19-25	lt bds/occ thn dk bnd,ptg on bnds
17-23	g odor
26-27	two X-sets,35°/sl chg dir to 15°/150°chg dir to 15°,abnt thn lt + dl lam thru
27-28	mas/pred lt occ dk bnd,65°healed frac
28-32	30°/thn lt + dk lam,g odor
33-34	X-set 30°/sl chg in dir to 15°/90°chg dir to 25°,thn lt + dk lam thru
34-37	30°/thn lt + dk lam,g odor
37-38	X-set 30°/50°chg dir to 45°/frac X-cut X-set @ 55°,calc lam in X-set
38-43	30°mas,lt/occdk bnd,open frac/sks @ 240'
43-46	35°/abnt thn var lt + dk lam
47	65°frac/sks
48	mas lt s.s./60°fracs X-cut @ 45°
50-61	30°,mas,lt/occ dk bnd; open frac/o stn
61-63	bd inc 30°to 45°/no chg dir
63-68	45°mas,lt/occ thn dk bnd
60	X-set 30°to 10°to 30°/sl chg in dir
68-69	X-set 45°to 30°/X-cut open frac @ 70°/½"displacement on sks
69-73	lt mas/occ thn dk bnd,occ micfrac/tr open
74-75	X-set,35°to 45°/30°chg
75-12277	rubble,decr 45°to 10°/inc lam

CORE NO. 7 MACRO DESCRIPTION A.R.E. 16-30U

Drilled 12277 -238 Recovered 61'

12277-78	25°/lt & dk bnd gd odor
78-82	30°/ thk mas bd vgd stink
82-85	30°/mas bd inc dk bnd, 80°- vert micfrac, healed
85-87	30°/ mas var lt & dk bnd , gd odor
87-94	a/a / 75° healed frac / sl displ
94-95	vert open frac / sks, sl displ
95-96	30°/dec bnd , inc mas
96-12300	30° /mas / abnt 75° healed parallel frac & micfrac
300-07	35°/ mas bd, fr odor
07-08	30° decr to 10° /20° chg in dir
08-10	10° /mas bd , fr odor
10-11	X-set, 10° /25° chg in dir to 35°
11-12	bd inc 35° to 45°
12-25	45° / alt lt & dk bnd
25-27	vert open frac / sks
27-31	45° dec to 35° / healed vert frac
31-12338	35° / alt lt & dk bnds

CORE NO. 8 MACRO DESCRIPTION A.R.E. 16-30 U

Drilled 12338 -398' Recovered 60'

12338-40	45°/ bnd, alt lt & dk, gd odor
40-43	a/a / 85° - vert healed frac , ½" displ
43-45	45° / chg of 25° dir to 30°, gd odor
45-51	45° / frac, healed / sl displ ; mas / thk bnd
51-63	45o grdg to 35° / tr chg in dir; thk grdg to alt lt & dk bnd
63-64	vert healed frac , gd odor
64-65	X-set 35° / 45° chg in dir to 20°;
65-68	X-set 20° / tr chg in dir to horiz
68-69	X-set horiz / 150° chg in dir to 35°
69-74	40° / lt & dk bd, 75° healed frac, gd odor
74-77	35° /thk lt & dk bnd , sl odor
77-78	a/a / 75° healed frac , sks / sl displ
78-84	dec to 25° /tr chg in dir, mas / occ bnd
84-92	inc to 35° / 45° chg in dir, minor 85° healed fracs
92-96	45° X-set to 25°/ tr chg in dir / sm healed vert fracs
96-98	spalded rubble / mas & no bnd

CORE NO. 9 MACRO DESCRIPTION A.R.E. 16-30 U

Drilled 12398- 458 Recovered 60'

12398-415	45°/ pred mas / occ var lam , lt & dk. gd odor
415-24	45° / 60° chg in dir to 45°, alt thn & thk lt & dk bnd / occ thn lam
24-25	75° frac /healed sl displ sks, occ calc blebs,
25-30	pos X set / 40° / 150° chg in dir to 45°, com lt & dk lam / calc bleb
30-31	60° healed frac
31-35	40° inc to 45°/ tr chg in dir, var lt & dk lam
35-44	45° to50° / mas / thn dk bnd
44-45	45° X bed to 30° / 30° chg in dir
45-47	X set /30° & 40° chg in dir to 35°, gd odor
47-50	40°, lt & dk var thn & thk lam
50-51	70°healed frac gd odor
51-56	40°/ mas lt & dk bnd
56-57	20° frac / sks
57-58	40°, mas / lt & dk bnd

CORE NO. 10 MACRO DESCRIPTION A.R.E. 16-30 U

Drilled 12458-12520 Recovered 62'

12458-60	45°/mas alt lt and dk bnd,minor healed vert frac, gd odor
60-66	a/a/thn lt and dk bnd
66-78	bec 30°/20° chg in dir,bnd bd/gd odor
78-84	bd bec 20°/vert 75° healed frac, gd odor
84-86	10° bnd lt and dk
86-89	x bed to 45°/30°chg in dir,gd odor
89-91	45°/open vert frac,sli odor
91-95	45°,mas
95-500	45°/bnd,alt lt and dk
500-502	45°/x bed and 90°chg in dir,sli odor
502-18	45°/thn lt and dk bnd,sli odor
18-20	a/a /75° sks open frac,sli odor.

CORE NO. 11 MACRO DESCRIPTION A.R.E. 16-30 U

Drilled 12520-12581 Recovered 61'

12520-21	45°/thn lt and dk bnd,75° open sks frac,vg odor
21-32	45°/20° chg in dir,mas,varied bnd (breaks across bdg plane),vg odor
32-40	a/a/lg calc blebs at 35, vg odor
40-51	45°,bec thn bnd,gd break along bdg plane,1" bnd calc at 47.5',½" bnd calc incl at 49.5' and 50.5' vg odor
51-53	45°/thn lam
53-54	a/a /75° healed frac/ 1" displ, strong odor
54-56	45° mas,g odor
56-57	45° /x bed and 30° dir chg
57-58	10°/thn lam
58-59	x bed 10° to 45°/30° dir chg,healed vert frac,g odor
59-61	45° mas/bnd,tr calc incl, small healed vert frac
61-62	45°/x bed and 20° chg in dir, healed vert frac, g odor
62-67	45° mas, g odor
67-69	a/a / 85°vert healed frac, g odor
69-74	45° mas/g odor
74-79	45° bec alt thn and thk lt and dk bnd
79-80	a/a /small intbdd calc zn,x bed then 30° dir chg
80-81	x bed,35° bec 10°/60° rotation

CORE NO. 12 MACRO DESCRIPTION A.R.E. 16-30 U

Drilled 12581-12641 Recovered 60'

12581-82	x bed,truncated 10° to truncated 45°/90° dir chg,sli odor
82-83	45° bec 30°/vert fl frac, thn bnd,vg odor
83-84	30°/x bed & 30° dir chg,small healed vertfrac
84-85	30°/ thn lt & dk bnd
85-86	30° bec 45° / 30° dir chg,g odor
86-87	45°
87-88	x bed,45° bec 30°/30° dir chg
88-89	x bed,30° bec 25°, thn lt & dk lam,g odor
89-93	25° bnd lt & dk
93-95	30°, pk & tan bnd, g odor
95-600	30° salmon pk lam, g odor
600-03	x bed bec 45°/60° dir chg,small healed vert frac/small calc veinlets no odor
03-05	45° bec 15° no odor
05-08	35° mas/healed vert frac, g odor
08-21	45°/small calc blebs,tr healed vert frac, g odor
21-22	25°/thk bnd, g odor
22-23	bec 45°/30° dir chg g odor
23-33	45°/lt & dk bnd,small fl vert frac,vg odor
33-41	rubble frag,small conical spalling,evidence of thn bnd /sl odor

CORE NO. 13 MACRO DESCRIPTION A.R.E. 16-30 U

Drilled 12655-12715 (+14' depth correction) Recovered 60'

12655-58	45°/lt & dk tan bnd, g odor
58-61	a/a /2" calc zn & thn calc layers g odor
61-65	45° bec banded salmon pk & tan,thn calc bnd,sli odor
65-66	x bed 45° to 45° bed placing/30° dir chg,
66-68	45° pk & tan bnd,sli odor
68-70	45° bec 10° then 45°/30° dir chg/pk bnd, vert healed frac,sli odor
70-75	45° mas,thk bnd, healed vert frac
75-76	x bed/45° dir chg
76-95	45°/thn pk & tan bnd,g odor
95-96	a/a /x bed 45° /30° dir chg
96-704	45° bec tan bnd, g odor
04-05	a/a /sks open frac
05-08	45° mas thk
08-15	rubble,thn pk & tan bnd,45°,conical spalling

CORE NO. 14 MACRO DESCRIPTION A.R.E. 16-30 U

Drilled 12715-12775 Recovered 60'

12715-20	60° mas, tr odor
20-23	45°/thn bnd
23-30	45°/pk & gy bnd, thn dk lam, bec inc pk at 27, g odor
30-31	x bed 45° bdg plane, bnd, 30° dir chg, g odor
31-32	x bed 45° bec 60°/30° dir chg, g odor
32-34	45° lam, thn pk & gy bnd, tr calc bleb, g odor
34-35	x bed 45° bdg plane/10° dir chg g odor
35-36	45° bec 60° mas, bnd
36-37	60° bec 40°/20° dir chg, mas
37-38	x bed 40° bec 45°/60° dir chg f odor
38-42	45° mas f odor
42-50	45°, pk & tan bnd, small calc incl, g odor
50-51	x bed, 45° bdg plane /30° dir chg then 10° incr to 55°
51-52	x bed 55° bec 45°/30° dir chg, f odor
52-53	bec 60°
53-54	x bed 60° bec 45°/20° dir chg, g odor
54-63	45° pk & tan thk & thn bnd, g odor
63-75	rubble, conical frag, pk bnd zn bec gy

CORE NO. 15 MACRO DESCRIPTION A.R.E. 16-30 U

Drilled 12775-12820 Recovered 45'

12775-77	45°/thk bnd,sli odor
77-78	x bed,45° bdg plane/10° dir chg,thn pk & tan bnd,small calc bleb sli odor
78-80	60°/thk & thn alt pk bnd
80-86	45°/pk & tan alt bnd,small calc blebs,sli odor
86-90	45° mas/thn pk strks,sli odor
90-91	x bed 45° bec 30°/30° dir chg
91-92	x bed 30°/30° dir chg,sli odor
92-93	30°/pk & tan lam
93-94	x bed 30° bec 45°/45° dir chg,sli odor
94-96	30°/pk & tan bnd
96-97	x bed 30° bec 10°/30° dir chg,sli odor
97-800	30°/thk pk & gy bnd,sli odor
800-01	x bed 30° bec 10° then 30°dir chg/bdg plane bec 45°,sli odor
01-03	45°/lt & dk gy lam
03-05	15°/lt & dk salmon pk bnd,sli odor
05-09	45° mas/thk bnd
09-20	rubble,conical frag/lt & dk gy bnd,sli odor

CORE NO. 16 MACRO DESCRIPTION A.R.E. 16-30 U

Drilled 12820-12882 Recovered 62'

12820-25	30°/thn close lam,gy-tan,sli odor
25-27	a/a /calc healed almost vert frac
27-55	30°/thn close lam,gy-tan,sli odor
55-57	a/a /calc healed almost vert frac,g odor
57-68	30°/thn close lam,gy-tan,g odor
68-72	30°/thn close lam,pk
72-82	30° bec 20°,thn close lam

CORE NO. 17 MACRO DESCRIPTION A.R.E. 16-30 U

Drilled 12882-12900'-9" Recovered 18'-9"

12882-901	10°/thn alt pk & tan bnd,strks of tan/g odor

CORE NO. 18 MACRO DESCRIPTION A.R.E. 16-30 U

Drilled 12901-12963 Recovered 61'

12901-28	25° mas, tan gy/occ pk gy, thn widely spaced bnd
28-35	20° to 45°, mas, gy/thn close dk bnd, healed calc fl frac from 32-33
35-37	10° mas, gy/thn close dk bnd
37-41	45° a/a
41-59	35° mas, gy/occ groups widely spaced thn dk bnd
59-61	45°, gy/thn close dk bnd

CORE NO. 19 MACRO DESCRIPTION A.R.E. 16-30 U

Drilled 12963-13019 Recovered 56'

12963-82	20° mas gy-tan/occ thn dk bnd
82-83	20° mas tan-gy/thn close dk bnd
83-93	20° mas tan-gy/occ thn dk bnd
93-97	45° mas tan-gy/thn close dk bnd
97-13019	30° mas tan-gy/thn close dk bnd

CORE NO. 20 MACRO DESCRIPTION A.R.E. 16-30 U

Drilled 13019-13081 Recovered 62'

13019-29	20°-40° mas/closely spaced thn dk bdg lam, sli odor
29-45	20°-30° mas/scat closely spaced thn dk bdg lam, f odor
45-51	20°-30° mas/scat closely spaced thn dk bdg lam,sli odor
51-55	20°-30°mas gy,g odor
55-59	20°-30° mas/scatclosely spaced bdg lam,sli odor
59-69	20°-30° tan-gy-grn-pk bnd
69-70	20°-30° maroon ss/grn-gy slty ss incl
70-81	20°-30° maroon sh,slty/grn-gy strks & incl of sh & some slty ss

CORE NO. 21 13546-13559' MACRO DESCRIPTION CUT 12' REC 8.5'

13546-49'	Ss mgy slty carb mas/ frac 80° to horiz, sks lat stri in horiz dir carb matter imbedded in sks, rubble at base of sect
49-52	60° mas/slty mar, frac 45° to horiz
52-54	a/a /gy carb, mic frac no sks

1200[illegible]'-0[illegible]'	flor, yel,dull,[illegible]if
1200[illegible]'-0[illegible]'	flor, yel,lri,[illegible]if
1200[illegible]'-0[illegible]'	no flor
1200[illegible]'-10'	flor, yel,dull,[illegible]if
12010'-11'	no flor
1201[illegible]'-15'	flor, yel,dull,sp
12005'-15'	cut, lt yel,lri,[illegible], [illegible]start

WELL: ART 16-30[illegible]

[illegible] NO. 1	12,005'-12,015' CUT 9' REC 9'
1200[illegible]'-0[illegible]'	[illegible]-tan,f-gr,sbrd,fri,wsrt
1200[illegible]'-0[illegible]'	Ss,tan,f-mgr,sbrd-rd,fri,wsrt,calc incl
1200[illegible]'-0[illegible]'	[illegible],tan,m gr,sbrd,fri,mod srt,calc incl
1200[illegible]'-0[illegible]'	[illegible],lttan,mgr,sbang-sbrd,mod srt,firm,calc incl
1200[illegible]'-10'	[illegible],tan,m-cgr,sbang-sbrd,mod srt,fri,calc incl
12010'-11'	Ss,lttan,mgr,sbrd,wsrt,fri,calc incl
1201[illegible]'-12'	Ss,lttan,f-mgr,sbrd,wsrt,fri,calc incl
12012'-13	Ss,lttan,f-mgr,sbang-sbrd,mod srt,fri,calc incl
12013'-14'	Ss,lttan,f-mgr,sbrd,wsrt,fri calc incl
12014'-15'	Ss,lttan,f-mgr,sbrd-rd,mod srt,fri,calc incl

[illegible] NO. 2	CUT 40' REC 40'
12015'-24'	Ss, tan,m-f gr,sbrd-rd,w-vwsrt,fri,[illegible] por,sl calc,calc incl
12024'-[illegible]'	Ss, tan-[illegible] lrn,f-c r,sbrd-rd,mod srt,vfri,g por,abnt calc incl calc frac fl
12033'-[illegible]'	Ss, tan,[illegible],fl,wsrt,fri, [illegible] por,noncalc
12035'-[illegible]'	Ss, tan,f-m r,sbrd-rd,vfri-fri,g por,calc incl,vg o stn on bdg surf
12038'-39'	Ss, tan,m-cgr,rd-sbrd,mod srt,fri,[illegible] por,mod o stn
12039'-41'	Ss, tan,f-mgr,sbrd-rd,mod srt,fri,fr por,vsl calc,calc incl
12041'-42'	Ss, tan,f-mgr,sbang-sbrd,mod srt,vfri,p por,calc incl dec,n o stn
12042'-44'	[illegible], tan,f-mgr,sbrd-rd,mod srt,vfri,f-g por,calc incl inc,calc frac fl,lk-vdk o stn on bdg surf
12044'-47'	Ss, tan,f r,sbrd-rd,wsrt,fri,fr por,calc incl,m-dk o stn on bdg surf
12047'-4[illegible]'	Ss, tan,f-vf r,sbrd-sbang,mod srt,fri,p por,sl o stn
12048'-53'	Ss, tan,vf-fgr,sbang-sbrd,mod srt,fri,fr por,abnt calc incl [illegible] frac fl,lt-mod o stn on bdg surf
12053'-55'	Ss, tan,f-vfgr,sbrd-sbang,mod srt,fri,mod por,abnt calc incl,m-dk o stn on bdg surf
12055'-5[illegible]'	Ss, tan, vf gr,wsrt,fri,p por,calc incl dec,n o stn
1205[illegible]'-[illegible]'	Ss, tan,f r,sbang-sbrd,wsrt,fri,mod por,calc incl inc,lt-m o stn
1206[illegible]'-[illegible]'	Ss, tan,f-vf r,sbang-sbrd,mod srt,fri,p-mod por,tr calc incl,sl o stn on bdg surf
1206[illegible]'-[illegible]'	Ss, tan,m-f r,sbrd-sbang,mod srt,fri,p-mod por,m-dk o stn

12217'-23'	flor,dull,bl yel,unif
1[illegible]'-23'	cut,bri,mky,lt yel,fast
[illegible]'-2[illegible]'	flor,dull,yel,sp
[illegible]'-25'	cut,pale,mky,yel,fast
[illegible]'-34'	flor,pale,yel sp
[illegible]'-35'	flor,dull,yel,sp
[illegible]'-5[illegible]'	flor, dull,yel,sp
[illegible]'-[illegible]'	flor, pale,yel,sp
[illegible]'-70'	flor, pale,yel,unif
[illegible] [illegible]'	flor,pale,yel,sp
2[illegible]'-7[illegible]'	cut, bri,mky,lt yel,fast

CORE NO. 6 12217'-12277' [illegible]T 60' [illegible]C 60'

12217'-20'	Ss, [illegible]y tan,f-mgr,sbang-abrd,wsrt,fri,g por,calc incl,sl dk o stn
20'-28'	Ss, tan fgr,sbang-abrd,wsrt,fri-firm,[illegible] por,sil cmt calc incl,vg blk-brn o stn
28'-29'	Ss, tan mgr,sbrd-rd,vwsrt,fri-firm,[illegible] por,abnt calc incl [illegible] frac fl,sil cmt,vg blk-brn o stn
29'-32'	Ss, tan,f-mgr,sbang-sbrd,wsrt,fri,fr por,calc incl,sil cmt sl calc,bld o stn
32'-34'	Ss, red-tan,vf-cgr,sbrd-rd,psrt,fri,fr por,sm bnd Fe
34'-37'	Ss, tan,f-mgr,sbang-rd,wsrt,firm,fr por,sl calc cmt,lam o stn
37'-39'	Ss, tan-wh,mgr,sbrd-rd,vwsrt,firm,vg por,calc cmt,o stn
39'-43'	Ss, tan,f-mgr,sbang-sbrd,wsrt,fri-firm,[illegible] por,sil cmt
43'-45'	Ss, tan,fgr,sbang-sbrd,vwsrt,fri,vg por,vg o stn
45'-53'	Ss, tan vf-fgr,sbang-sbrd,wsrt,firm-fri,[illegible] por,sil cmt,occ calc incl, occ o stn
53'-58'	Ss, tan fgr,sbang-sbrd,vwsrt,fri,vg por,vg o stn
58'-60'	Ss, tan,vf-fgr,sbang-sbrd,wsrt,fri,fr por,sil cmt sl calc,fr odor
60'-67'	Ss, tan,fgr,sbang-sbrd,vwsrt,fri,vg por,vg o stn
67'-68'	Ss, tan,m-cgr,sbrd-rd,wsrt,fri,g por,sl calc
68'-77'	Ss, tan-brn fgr lec mgr,sbang-sbrd,wsrt,fri,fr por sil cmt

12277'-80'	flor, bri,yel,sp
80'-82'	flor, dull,yel,sp
77'-83'	cut, bri,mky yel,fast
82'-89'	flor, bri,yel,sp
83'-84'	cut, dull,cldy,yel,halo
84'-87'	cut, pale,mky,yel,fast
87'-89'	cut, pale,cldy,yel,v slow
89'-94'	flor, bri,yel,sp
89'-92'	cut, dull,mky,yel,fast
92'-93'	cut, pale,cldy,yel,slow
94'-95'	flor, DS
95'-96'	flor, bri,yel,sp
96'-97'	flor, DS
97'-98'	flor, dull,yel,sp
93'-98'	cut, dull,mky,yel,fast
98'-12300'	flor, DS
00'-05'	flor, dull,yel,unif
05'-18'	flor, bri yel,sp
18'-26'	flor, dull,yel,sp
26'-27'	flor, bri yel,sp
27'-35'	flor, pale,yel,sp
35'-38'	flor, bri yel,sp
98'-38'	cut, bri,mky,yel,fast

CORE NO. 7 12,277'-12,338' CUT 61' REC 61'

12277'-78'	Ss, bf,vf-fgr,sbang-abrd,wsrt,fri,fr-p por,lt bnd o stn
78'-79'	Ss, bf-tan,vf-fgr,sbang-sbrd,mod srt,fri,fr por,non calc,mod o stn
79'-80'	Ss,bf,vfgr,sbang,wsrt,fri,p por non calc,n o stn
80'-81'	Ss, bf,mgr,sbrd-rd,wsrt,vfri,g por,dk o stn
81'-84'	Ss, bf-tan,f-mgr,sbang-sbrd,mod srt,sl fri,fr por,abnt calc frac fl, sl calc,mod o stn
84'-87'	Ss, bf,vf-mgr,sbang-sbrd,p srt,fri,p por,tr calc incl,sl calc,n-lt o stn
87'-88'	Ss, bf,fgr,sbrd-rd,wsrt,fri,fr por,sl calc,mod o stn
88'-89'	Ss, bf,fgr,sbrd-rd,wsrt,hd,p por,sl calc,calc incl & frac fl,n o stn
89'-93'	Ss, bf,fgr,sbang,wsrt,fri,fr-g por,sl calc,calc frac fl,dk-mod o stn
93'-12301'	Ss, bf,vf-fgr,sbang,wsrt,hd,p por,qtz frac fl,n o stn
01'-05'	Ss, bf,m-fgr,sbrd-rd,mod srt,hd,p por,tr calc incl,dk o stn
05'-06'	Ss, bf,m-cgr,rd,mod srt,sl fri,g por,sl calc,calc incl,dk o stn
06'-10'	Ss, bf,m-cgr,grdg to fgr,mod srt,hd,p por,sl calc,tr calc incl,lt-mod bnd o stn
10'-18'	Ss, bf, fgr,sbang-sbrd,wsrt,hd,p por,sl calc
18'-19'	Ss, bf,f-vfgr,sbang-sbrd,mod srt,sl fri,p por,sl calc,lt bnd o stn
19-31'	Ss, bf,f-vfgr,sbrd-rd,slfri,p por,tr calc incl & calc frac fl,n o stn
31'-32'	Ss, bf,m-vfgr,sbrd,psrt,fri,fr por,sl calc,tr calc incl,n o stn
32'-36'	Ss, bf,f-mgr,grdg to mgr,sbrd-rd,mod srt,sl fri,p-fr por,sl calc,n o stn
36'-37'	Ss, bf-wh,f-cgr,rd-sbrd,p srt,fri,fr por,sl calc,mod bnd o stn
37'-12338'	Ss, bf,m-fgr,sbang-sbrd,mod srt,fri,fr por,sl calc,calc incl,n o stn

12338'-45	flor,tr,dull,dkyel,sp
45'-52'	flor, abnt,bri,yel,unif
52'-55'	flor, com,dull,yel,sp
55'-62'	flor, abnt,dull,yel,bnd
62'-74'	flor, abnt,dull,yel,sp-unif
74'-81'	flor, abnt,dull,yel,unif
81'-83'	flor, com,pale,dkyel,sp
83'-90'	flor, abnt,dull,yel,unif
38'-45'	cut, vbri,mky,ltyel,imm

CORE NO.8 12,338'-12,398' CUT 60' REC 60'

12338'-40	Ss, lt-dk tan,f-mgr,sbrd-rd,vwsrt,firm,g por,sl calc lt-m o stn
40'-41'	Ss, bf-tan,mgr,sbang-sbrd,mod-wsrt,fri-firm,fr por,calc frac fl,o stn
41'-44'	Ss, bf-tan,f-mgr,sbang-sbrd,mod srt,fri-firm,f-g por,sl calc,lt-dk brn o stn
44'-45'	Ss, lt-dk tan,f-mgr,sbang-sbrd,mod srt,firm,fr-g por,sl calc,g o stn on bdg surf
45'-56'	Ss, lt-dktan,f-mgr,sbrd-rd,vwsrt,fri,vg por,calc cmt
56'-60'	Ss, lttan,f-mgr,sbang-sbrd,mod srt,fri-firm,g por,calc incl,o stn on bdg surf
60'-64'	Ss, lttan,vf-fgrsbrd-rd,wsrt,firm,fr por,abnt calc incl,fr o stn on bdg surf
64-67'	Ss, lttan,fgr,rd,vwsrt,hd,fr-g por,abnt calc incl,m-dk bnd o stn
67'-71'	Ss, lttan,fgr,sbang bec sbrd,hd,p por,sl calc bec non calc,n calc incl, lt o stn,bnd bec unif
71'-78'	Ss, lttan,vf-mgr,sbang-rd,p srt,hd-slfri,p por,sl calc,calc frac fl, tr lt o stn
78'-81'	Ss, lttan,fgr,sbang-sbrd,mod srt,hd,fr-p por,non calc,lt bnd o stn
81'-12398'	Ss, bf bec lttan,vf-fgr,sbang-sbrd,mod-wsrt,slfri-hd,p por,calc frac fl bec abnt,n o stn

12398'-400'	no flor
00'-03'	flor,tr,dull,yel,sp
03'-04'	cut,vbri,mky,lt yel,imm
03'-10'	flor,abnt,pale,yel,unif
05'-06'	cut,bri,mky,yel,slow
10'-20'	flor,abnt,pale,yel,unif
20'-22'	flor,abnt,pale,yel,unif
22'-26'	flor,abnt,dull,yel,sp
26'-30'	flor,abnt,pale,yel,unif
30'-31'	flor,tr,dull,yel,sp
31'-37'	flbr,abnt,dull,yel,unif
37'-40'	flor,abnt,pale,yel,unif
40'-41'	flor,abnt,pale,yel,unif
41'-46'	flor,com,pale,yel,sp
46'-47'	flor,abnt,bri,yel,sp
47'-50'	flor,com,pale,yel,sp
50'-58'	flor,abnt,dull,yel,unif
04'-58'	cut,vbri,mky,lt,yel,imm

CORE NO. 9 12398'-12458' CUT 60' REC 60'

12398'-01'	Ss, lt-dk tan,f-mgr,sbang-sbrd,wsrt,fri-firm,fr-g por,calc blebs, lt o stn
01'-07'	Ss, lt-dk tan,vf-fgr,sbrd-rd,vwsrt,fri,g por,calc incl,lt-dk o stn,calc frac fl
07'-13'	Ss, dk tan,f-mgr,sbang-sbrd,wsrt,fri,f-g por,calc incl,lt o stn
13'-20'	Ss, dk tan-brn,fgr,sbang-sbrd,vwsrt,fri,fr por,calc blebs,lt o stn
20'-21'	Ss, lt-dk tan,fgr,sbang-sbrd,vwsrt,fri,fr por,calc blebs,lt o stn
21'-25'	Ss, lt-dk tan,fgr,sbrd-rd,wsrt,fri-firm,fr por,calc blebs,calc frac fl,lt-dk o stn
25'-27'	Ss, lt-dk tan,f-mgr,sbrd-rd,wsrt,fri-firm,fr-g por,lt o stn
27'-40'	Ss, lt-dk tan,fgr,sbrd-rd,vwsrt,fri-firm,fr por,calc frac fl,lt-dk o stn
40'-41'	Ss, lt tan,fgr,sbrd-rd,vwsrt,fri-firm,f-g por,tr o stn,calc frac fl
41'-51'	Ss, lt-dk tan,f-mgr,sbang-sbrd,mod-wsrt,fri,fr por,calc blebs, calc frac fl,lt o stn
51'-58'	Ss, bf-lt tan,f-mgr grdg to cgr,sbang-sbrd,p-modsrt,fri,fr por, non calc,tr o stn

12458'-59'	flor, tr pale yel bnd
58'-59'	cut, bri mky yel-gn imm halo fst stmg
59'-60'	flor,abnt,dull,yel-gn,ptchy
59'-60'	cut, bri,mky,yel-gn,imm hal fst stmg
60'-75'	cut, pale,mky-clr,yel-yelgn imm hal,fst stmg
60'-75'	flor, com,pale,wh-yel,bnd-sp
75'-76'	flor, tr vpale,yel-wh,sp
7 -76'	cut,pale,clr,yel-gn,imm hal fst stmg
76'-77'	flor, com,dull,yel,sp-bnd
76'-77'	cut, dull,mky,yel-gn,imm hal fst stmg
77'-78'	flor,tr vpale,yel-wh,sp-bnd
77'-78'	cut, vpale,clr,yel-gn imm hal fst stmg
78'-80'	flor, com,dull,yel-wh,sp-bnd
78'-80'	cut, pale,clr yel,imm hal,fst stmg
80'-85'	flor,com,dull,yel-wh,sp-bnd
8 -85'	cut, dull,clr,yel-gn,imm hal fst strmg
85'-86'	flor, tr pale yel,sp
85'-86'	cut, pale,clr yel,slo,stmg
86'-91'	flor, com,dull,yell-wh,sp
86'-91'	cut, dull,clr-mky,yel-gn,imm hal,mod stmg
91-95'	flor, tr pale,yel-wh,sp
91'-95'	cut, dull,clr-mky,yel-gn,imm hal
95'-12500'	flor,com,pale,yel-wh,sp
95'-00'	cut, dull,clr-mky,yel-gn,imm hal,fst stmg

CORE NO. 10 12,458'-12,520' CUT 62' REC 62'

12458'-80'	Ss, tan,f-mgr bec cgr in pt,wsrt,thn bnd vf-mgr psrt,sbang-rd,fri-firm, sil cmt ,abnt dk o stn on bdg surf,g por,p por in bnd,sil fl micfrac from 58'-60'
80'-85'	Ss, tan,vf-mgr/occ cgr,psrt,sbang-rd,fri-firm,fr-p por,sil fl micfrac from80'-83'
85'-90'	Ss, tan,vf-mgr,sbang-sbrd,p-msrt,firm,p-fr por,sil cmt
90'-95'	Ss, tan,f-mgr,bec cgr,sbang-sbrd, wsrt,firm,fr por,sil cmt,tr lt o stn
95'-12505'	Ss, tan,m-cgr,sbang-sbrd,vwsrt,firm,fr-g por,sil cmt,tr lt o stn
05'-11'	Ss, tan,m-cgr,sbang-sbrd,vwsrt,fri-firm,g por,sil cmt,tr calc incl, tr lt o stn
11'-14'	Ss, tan,f-mgr,bec cgr,sbang-sbrd,msrt,firm,fr-g por,sil cmt,com lt o stn
14'-16'	Ss, tan,f-mgr,sbang-rd,vwsrt,firm,g por,calc & sil cmt,abnt lt o stn
16'-17'	Ss, tan,mgr,rd-sbrd,wsrt,fri,ex por,calc cmt,abnt calc incl
17'-12520	Ss, bf,vf-mgr,sbang-rd,psrt,firm,calc & sil cmt

500'-01'	flor, tr pale,yel-wh,sp
00'-01'	cut, dull,mky,yel-wh,imm hal,mod stmg
01'-02'	flor, com,dull,gn-yelgn bnd-sp
01'-02'	cut, pale,clr,yel-wh,imm hal,slo stmg
02'-05'	flor,tr pale,yel-gr sp
02'-05'	cut, dull-pale,mky,yel,imm hal,mod stmg
05'-06'	flor, com,yel-gn,ptchy-sp
05'-06'	cut, dull,mky,yel,imm hal fst stmg
06'-10'	flor, tr-com,dull,yel,sp
06'-10'	cut, dull,mky,yel-gn,imm hal,fst stmg
10'-11'	flor, comm,dull,yel-gn,sp
10'-11'	cut, pale,clr-mky,yelgn imm hal,slo stmg
11'-13'	flor, tr,pale,yel-wh,sp
11'-13'	cut, pale,clr-mky,yelgn,imm hal,slo stmg
13'-15'	flor, com,dull,yelgn,sp
13'-15'	cut, dull-bri,mky,yelgn, imm hal,
15'-17'	flor, tr,dull,yelgn,sp
15'-17'	cut, dull-bri,mky,yelgn imm hal,fst stmg
17'-18'	flor, com,dull, gn-yelgn ptchy
17'-18'	cut, pale,clr-mky,yel,imm hal,mod stmg
18'-12520'	flor, com dull-bri,yel-yelgn,ptchy in frac
18'-20'	cut, pale,clr-mky,yel,imm hal,mod stmg

12520-23	flor, tr dull yel unif
23-39	flor, abnt pale yel unif
39-40	flor, com dull yel & violet unif
40-48	flor, abnt pale yel unif
48-49	flor, com pale yel sp
49-50	flor, abnt bri yel unif
50-51	flor, abnt pale yel sp
51-57	flor, abnt bri yel unif
57 3	flor, not present
20-58	cut, imm bri mky halo and fast bri mky yel stmg
58-60	flor, abnt pale yel unif
58-61	cut, imm pale yel halo
60-63	flor, abnt pale yel unif
61-62	cut, imm bri yel mky halo and fast bri mky stmg
63-71	flor, abnt pale yel unif
62-67	cut, imm pale mky yel halo fast bri mky yel stmg
71-78	flor, abnt pale yel sp-unif
7 5	cut, imm bri mky yel halo
78-79	flor, not present
76-80	cut, imm pale mky yel halo
79-81	flor, abnt bri yel unif
80-81	cut, imm bri mky yel halo

CORE NO. 11 CUT 61' REC 61'

12520-27'	Ss, tan fgr sbang-sbrd wsrt sil cmt fri abnt lt brn o stn g por
27-47	Ss, tan f-mgr sbang-sbrd wsrt sil cmt fri-frm abnt lt brn o stn fr-g por
47-48	Ss, tan f-mgr sbang-rd wsrt sil cmt sl calc fri-frm abnt lt brn o stn g por tr calc incl
48-51	Ss, bf-tan mgr sbang-rd wsrt sil cmt sl calc fri-frm abnt lt brn o stn g por tr calc incl
51-54	Ss, tan f-mgr sbang-sbrd wsrt sil&calc cmt frm-fri abnt o stn on bdg planes f-g por p por when no o stn
54-59	Ss, bf vf-mgr sbang-rd msrt sil cmt frm abnt lt o stn on bdg planes p por abnt sil fl mic frac
59-63	Ss, bf vf-fgr sbang-sbrd wsrt sil cmt hd abnt mic frac sil sks on frac surf tt
63-65	Ss, tan vf-fgr sbang-sbrd msrt sil&calc cmt hd abnt calc incl tr por dk o stn
65-71	Ss, bf-tan vf-fgr sbang-sbrd m-wsrt sil cmt tt hd tr mic frac sil sks on frac surf from 66-68
71-73	Ss, bf-tan fgr sbang-sbrd wsrt sil cmt calc stg hd abnt dk o stn on bdg planes/g por, tr por elsewhere
73-74	Ss, tan fgr sbang-sbrd vwsrt sil cmt fri abnt dk o stn g por abnt calc incl
74-79	Ss, bf vf-fgr sbang-sbrd m-wsrt sil cmt sl calc frm-hd tr lt o stn p por
79-81	Ss, tan fgr sbang-rd vwsrt fri abnt calc incl abnt dk brn o stn g por

12581-82	flor, abnt unif violet and tr sp yel
82-87	flor, abnt unif bri yel in bdg planes
87-96	flor, tr bri sp yel
81-95	cut, imm pale yel halo / fast stmg mky yel
95-96	cut, not present
96-12600	flor, abnt bri yel-orng unif
96-97	cut, imm pale yel halo/ fast stmg mky yel
97-98	cut, not present
98-12600	cut, pale clr yel/ slow pale yel stmg
00-05	flor, com dull sp yel
05-12	flor, abnt pale yel-gn unif in bdg planes
00-11	cut, imm pale yel halo/ fast stmg mky yel
12-13	flor, abnt bri yel-gn unif
13-22	flor, abnt bri yel-gn unif-sp in bdg planes
11-15	cut, imm bri mky yel halo/ abnt fast stmg mky yel
15-21	cut, imm vpale yel halo / slow stmg yel
21-22	cut, imm bri mky yel halo / fast stmg mky yel
22-33	flor, abnt pale yel-gn unif
22-24	cut, imm pale yel halo / slow stmg mky yel
24-26	cut, imm bri mky yel halo / fast stmg mky yel
26-30	cut, imm pale yel halo
33-41	flor, abnt bri yel in bdg planes
30-41	cut, imm pale yel halo / fast stmg mky yel

CORE NO. 12 12581-12641' CUT 60' REC 60'

12581-84	Ss tan vf-mgr sbang-sbrd wsrt sil & calc cmt frm-fri abnt lt o stn g por abnt calc incl
84-86	Ss tan f-mgr sbang-sbrd vwsrt sil cmt sl calc frm-hd occ fri abnt o stn g por abnt calc incl
86-90	Ss tan vf-mgr sbang-sbrd wsrt sil cmt sl calc frm-fri abnt o stn in bdg planes g por
90-95	Ss tan vf-mgr sbang-sbrd wsrt sil cmt sl calc frm-fri tr lt o stn fr-g por
95-96	Ss pnk vf-fgr sbang wsrt calc & sil cmt frm-fri p por
96-97	Ss lt gy-brn /pnk incl vf-mgr sbang-sbrd calc cmt frm-fri tr lt o stn abnt calc incl m por
97-98	Ss pnk vf-fgr sbang wsrt calc & sil cmt frm-fri p por
98-99	Ss lt gy-tan occ pnk vf-mgr occ cgr sbang-sbrd m-wsrt sil cmt sl calc frm-fri tr lt o stn g pot
99-12600	Ss pnk vf-mgr sbang wsrt sil cmt sl calc frm-fri m por
00-03	Ss tan vf-mgr sbang-sbrd m-wsrt sil cmt sl calc sft-frm fri abnt dk o stn com calc incl g por
03-11	Ss tan vf-mgr sbang-sbrd wsrt sil cmt sl calc frm-hd abnt lt o stn abnt calc incl g por
11-22	Ss tan vf-mgr sbang-rd wsrt sil cmtsl calc frm-fri abnt dk o stn tr calc incl g por
22-25	Ss tan vf-mgr sbang m-wsrt sil cmt sl calc frm-hd tr lt o stn fr por
25-26	Ss tan vf-mgr sbrd wsrt sil cmt sl calc frm-fri tr calc fl frac abnt dk o stn g por
26-31	Ss tan vf-fgr occ mgr sb ang wsrt sil cmt sl calc frm-hd tr lt o stn fr-m por
31- 35	Ss tan vf-mgr sbang-sbrd wsrt sil cmt sl calc frm-fri abnt lt o stn m-g por
35-41	Ss tan vf-mgr sbang-sbrd wsrt sil cmt sl calc frm-fri abnt dk o stn com calc incl g por

12655-56	flor, abnt violet and gold unif
56-60	flor, abnt violet and bri yel unif
60-65	flor, abnt vpale yel-gn unif in bnd
55-63	cut, imm pale mky yel halo fast stmg bri mky yel
63-64	cut, imm vpale clr wh halo
65-704	flor, abnt pale yel-gn unif
(35	cut, imm pale mky yel halo fast stmg bri mky yel
85-86	cut, imm pale mky yel halo
04-07	flor, abnt bri yel-gn unif
07-09	flor, abnt pale yel-gn unif
09-13	flor, abnt pale gn unif
13-15	flor, not present
86-15	cut, imm pale mky yel halo fast stmg bri mky yel

CORE NO. 13 12655-12715 CUT 60' REC 60'

12655-58	Ss bf-tan f-mgr sbang-rd wsrt sil & calc cmt frm-fri abnt lt brn o stn p por thn bnd/ calc incl
58-61	Ss bf-tan mgr sbang-rd vwsrt sil & calc cmt frm abnt dk o stn in bdg planes /tr elsewhere pred p por g por in dk o stn
61-64	Ss thn intbdd bf & pred pnk vf-mgr sbang-rd p srt sil & calc cmt tt frm-hd
64-85	Ss bf-tan pred mgr/ f-vfgr sbang-rd msrt sil & calc cmt hd tr por tr lt brn o stn thn bds of mgr/ fr por & abnt o stn sil micfrac from 73-75 abnt calc incl
85-94	Ss intbdd tan & pnk vf-mgr occ cgr sbang-rd psrt sil & calc cmt hd p por tr lt brn o stn thn bds m-cgr sbang-rd wsrt/ fr por
94-705	Ss wh-bf vf-fgr grdg to mgr sbang-sbrd m-wsrt sil cmt hd trlt o stn/tr por sl calc abnt sil fl micfrac at 96-97 thn bds mgr sbang-sbrd wsrt g por sks frac at 705 sl slty ip
05-12	Ss bf mgr sbang-rd vwsrt frm sil cmt g por/ tr lt o stn abnt calc incl
12-15	Ss intbdd bf & pnk vf-mgr sbang-rd psrt sil cmt hd sl calc tr por

12715-27	flor, abnt bri violet unif
27-47	flor, abnt vpale dull yel unif
15-43	cut, imm pale mky yel halo fast stmg yel
43-44	cut, imm pale clr yel halo
44-47	cut, imm pale mky yel halo fast stmg mky yel
47-51	flor, none present
-51	cut, none present
51-56	flor, abnt pale yel unif
51-56	cut, imm pale mky yel halo fast stmg mky yel
56-62	flor, none present
56-62	cut, none present
62-65	flor, abnt vpale yel unif in bnds alt / bnds of no flor
62-64	cut, imm pale mky yel halo fast stmg mky yel
65-67	flor, abnt vpale dull yel unif
64-65	cut, imm pale clr yel halo
67-75	flor, abnt dull yel unif
65-75	cut, imm bri mky pale yel halo

CORE NO. 14 12715-12775 CUT 60' REC 60'

12715-20	Ss bf vf-fgr sbang-sbrd wsrt sil cmt hd sl calc tr por tr lt brn o stn
20-21	Ss intbdd tan f-mgr and wh vf-fgr sbang-sbrd msrt sil cmt hd sl calc tr por / lt brn o stn in f-mgr
21-26	Ss bf-tan f-mgr sbang-rd wsrt sil cmt sl calc hd tr por / tr lt brn o stn
26-27	Ss pnk bnd lt & dk intbdd vf-fgr in dk pnk to f-mgr in lt pnk sbang-sbrd wsrt sil cmt calc tr por / o stn
27-40	Ss bf-tan f-mgr sbang-sbrd wsrt sil cmt hd sl calc p por/ lt brn o stn thn lam mgr rd-sbang vwsrt hd sil cmt sl calc tr lt brn o stn & p-fr por occ calc incl
40-43	Ss bf-tan f-mgr sbang-sbrd wsrt sil cmt hd abnt calc incl tr lt brn o stn / p por
43-47	Ss mot bf & pnk f-mgr sbang-sbrd p-msrt sil & calc cmt hd tr por / lt o stn
47-51	Ss pnk vf-mgr sbang-rd psrt sil cmt hd sl calc tt
51-56	Ss bf / thn bnd pnk f-mgr in bf vf-fgr in pnk sbang-rd wsrt sil cmt hd sl calc p por / tr lt brn o stn bcmg v calc/ calc cmt at 55
56-62	Ss pnk bnd lt & dk vf-mgr sbang-sbrd psrt in dk & mgr wrd vwsrt in dk sil & calc cmt fr por
62-65	Ss pnk vf-fgr sbang-sbrd wsrt sil & calc cmt hd fr por
65-75	Ss bf-gy / occ pnk bnd vf-fgr occ mgr sbang-sbrd msrt sil cmt p por / tr lt brn o stn

12775-78 flor, tr pale gnyel bnd

cut, bri mlky yel fst stmg

78-79 flor, abnt bri yel sptty &bnd

cut, dull clr yelbl slo halo

79-81 flor, tr-com pale gnyelsptty in bnd

cutpale mlky yelgn slo halo

81-85 flor tr pale yelgn bnd

cut, pale mlky yel slo stmg

85-87 flor, com dull yelgn bnd
cut, pale mlky yel fst stmg

87-92 flor,tr pale yel sl bnd
cut, pale mlky yel fst stmg

92-94 flor, non, no cut

94-97 tr vpale yel unif
cut,pale mlky yel slo stmg

97-800 tr pale gnyel fbnd
cut, pale mlky yel slo-fst st

12800-05 flor, tr pale yelgn bnd

cut, bri mlky yel fst stmg

05-08 flor, tr vpale yel unif

cut, bri mlky yel slo- fst stmg

08-11 flor, tr pale yelgn bnd

cut, bri mlky yel slo stmg

11-14 flor, tr- com pale gnyel unif - bnd

cut, bri mlky yel fst stmg

14-20 flor, tr pale yel- yelgn sptty in bnd

cut, bri mlky yel slo stmg

CORE NO. 15 12775 - 12820 CUT 45' REC. 45'

12775-79 Ss bf - gy intbd vf - fgr / occ f- mgr sbang- sbrd wsrt frm slcalc sil cmt fpor / tr lt brn o stn

79-80 pnk & gy bnd vf - mgr sbang - sbrd psrt sil cmt fpor / lt brn o stn

80-92 gy-occ pnk bnd pred intbd vf- fgr/ tr mgr sbang- sbrd wsrt frm / sil cmtfri ip gd por / lt o stn abnt calc incl 80-85, 91-92 pred mgr

92-94 Ss pnk vf-f-mgr sbang- rd p- msrt frm slcalc/ sil cmt ppor

94-96 Ss bf- tn mgr sbang- rd wsrt calcip sil cmt frm- fri gdpor/ tr lt brn ostn

96-98 Ss bf f- mgr sbang- rd wsrt frm- fri calc sil cmt fpor/ lt brn ostn

98-99 Ss pnk vf- mgr sbang- rd p- msrt frm- slhd calc sil cmt fpor/ o stn

99-12803 bf/ bnd pnk mgr sbang- rd wsrt sil & calc cmt frm gpor/ o stn , grdg tofgr @ 802

03-06 Ss pnk bnd, lt & dk intbd vf-fgr occ mgr sbang-rd wsrt frm- hd sil& calc cmt fpor/ lt brn o stn

06-20 Ss bf vf- fgr sbang- sbrd msrt frm- slri sil & calc cmt fpor/ bnd of mbrn o stn/ gdpor

12820-25	flor, abnt vpale yel unif
20-26	cut, pale mky yel imm halo / fast stmg
25-31	flor, abnt dull yel-gn ptchy-unif
26-28	cut, dull mky yel imm halo / fast stmg
28-32	cut, pale mky yel imm halo / slo stmg
31-37	flor, com dull-pale yel ptchy
[illegible]-35	cut, dull mky yel-gn imm halo / slo stmg
37-39	flor, com bri yel bnd
35-40	cut, pale mky yel imm halo / slo stmg
39-54	flor, abnt vpale yel unif
40-43	cut, pale mky yel imm halo
43-54	cut, pale mky yel imm halo / slo stmg
54-60	flor, abnt dull yel sp-ptchy
54-63	cut, bri clr yel-gn imm halo / fast stmg
65	flor, com pale yel bnd-unif
63-68	cut, vpale mky yel imm halo / vslo stmg
65-70	flor, com vpale yel unif-bnd
68-70	cut, vpale clr yel slo stmg
70-75	no flor, no cut
75-80	no flor
75-82	cut, vpale clr yel imm halo / vslo stmg
80-81	flor, com vpale yel bnd
81-82	flor, com pale yel sp

CORE NO. 16 12,820-12,882 CUT 62' REC 62'

12820-25	Ss bf-tan f-mgr sbang-sbrd wsrt sil cmt calc frm dk bdg lam / abnt lt brn o stn fr por abnt calc incl
25-45	Ss wh-tan vf-fgr sbang-sbrd wsrt sil cmt calc frm dk bdg lam / abnt lt & dk brn o stn fr por & abnt calc incl tr vis por in wh bdg lam / tr lt brn o stn (10% HCl readily percolates horiz thru wh lam despite low vis por)
45-51	Ss wh-tan vfgr grdg to fgr sbang-sbrd sil cmt wsrt calc frm thn dk bdg lam / lt brn o stn p por and calc incl
51-59	Ss wh-tan fgr occ vfgr sbang-sbrd wsrt sil cmt calc frm thn dk bdg lam / dk brn o stn p-fr por abnt calc incl
59-66	Ss wh-tan fgr sbang-sbrd vwsrt sil cmt calc frm thn dk bdg lam / dk brn to blk o stn p-fr por abnt calc incl
66-67	Ss wh-tan vf-fgr sbang-sbrd wsrt sil cmt calc frm thn bdg lam / lt-m brn o stn p por abnt calc incl
67-68	Ss wh-tan / thn pnk bdg lam vf-fgr sbang-sbrd wsrt sl calc sil cmt p por tr lt brn o stn
68-75	Ss pnk lt & dk thn lam pred fgr in lt pnk & vfgr in dk pnk lam sbang-sbrd occ rd wsrt sl calc sil cmt tt-p por (10% HCl readily percolates horiz thru lt pnk lam despite low vis por)
75-78	Ss a/a but f-mgr in lt pnk and vf-fgr in dk pnk
78-79	Ss gy vf-pred fgr sbang-sbrd msrt sil cmt vhd tt abnt unhealed mic frac / dk brn o stn
79-80	Ss pnk mass fgr sbang-sbrd m srt sil cmt vhd tt sks surf
80-82	Ss tan & pnk lam vf-fgr sbang-sbrd wsrt sil cmt sl calc tt-tr por

12,882-87 flor, com dull yel-orng ptchy-unif

82-90 cut, pale clr-mky yel slo stmg

87-95 flor, com dull yel-orng ptchy-bnd

90-91 cut, pale clr yel no stmg

91-94 cut, dull mky yel-grn slo stmg

94-95 cut, pale clr yel no stmg

95-97 flor, com pale yel-orng ptchy-unif

97-900 flor, com dull yel-wh sp-unif

95-900 cut, pale clr-mky yel-grn slo stmg

900-01 flor, com dull yel sp-ptchy

cut, pale mky yel slo stmg

CORE NO. 17 12,882-12,900'-9" CUT 18'-9" REC 18'-9"

12,882-85 Ss pk vf-fgr occ mgr sbang-sbrd wsrt sil cmt calc hd p por

85-86 Ss tan / pk calc spec vf-fgr grdg mgr sbang-rd wsrt firm v calc p por / tr lt brn o stn

86-88 Ss bf-tan f-mgr ang-sbrd wsrt firm calc p por

88-94 Ss bf-tan f-mgr ang-sbrd wsrt sil cmt sl calc firm dk bdg lam / abnt dk o stn and p-f por

94-95 Ss bnd pk and tan vfgr sbang-sbrd wsrt sil cmt hd sl calc tr-p por

95-900'-9" Ss tan bnd vf-fgr sbang-sbrd wsrt hd sil cmt sl calc thn dk bdg lam / abnt dk brn o stn and p-f por tt to tr por elsewhere

12901-03	no flor, no cut
03-06	flor, com vpale orng bnd-unif
03-05	cut, pale mky yel-wh vslo stmg
06-08	flor, abnt bri yel-orng bnd
08-10	flor, tr dull yel-orng bnd
05-10	cut, dull mky yel-orng mod stmg
10-16	flor, abnt dull yel-orng unif
10-16	cut, dull mky yel mod stmg
1(3	no flor, no cut
18-20	flor, abnt dull yel-orng unif-bnd
18-20	cut, dull mky yel-orng mod stmg
20-23	no flor, no cut
23-25	flor, abnt pale yel unif
23-25	cut, dull mky yel mod stmg
25-27	no flor, no cut
27-28	flor, com dull yel unif
27-28	cut, vpale clr yel-gn vslo stmg
28-29	no flor, no cut
2(35	flor, com pale yel unif
29-35	cut, pale mky yel slo stmg
35-45	flor, abnt pale yel-orng bnd-unif
35-43	cut, dull-bri mky yel-gn fast stmg
45-56	flor, abnt pale yel unif-bnd
43-45	cut, pale mky yel mod stmg
45-50	cut, vpale mky yel-gn vslo stmg
50-56	cut, pale mky yel mod stmg
56-58	no flor, no cut
58-61	flor, com vpale yel unif-bnd
58-61	cut, pale mky yel slo stmg

CORE NO. 18 12,901-12,963' CUT 62' REC 61'

12901-03	Ss bnd pnk & gy vfgr ang-sbrd wsrt sil cmt sl calc hd tt
03-16	Ss bnd pnk & gy vf-fgr sbang-sbrd wsrt sil cmt sl calc hd tr por sks sil fl mic frac 03-11
16-20	Ss bnd pnk & gy vfgr ang-sbrd wsrt sil cmt sl calc hd tt at 16 to tr por at 20
20-22	Ss gy-pnkgy vf-fgr sbang-sbrd wsrt sil cmt hd tt
22-28	Ss pnk vfgr sbang-sbrd wsrt sil cmt sl calc hd tr por
28-29	Ss pnk-tan gy gn vf-fgr ang-sbrd wsrt sil cmt hd tt
29-35	Ss tan-gy vfgr ang-sbrd wsrt sil cmt sl calc hd sil fl micfrac and sks / o stn on surf dk bdg lam / abnt brn o stn and p-fr por tt elsewhere
35-56	Ss tan-gy pred vf-fgr sbang-sbrd wsrt sil cmt sl calc hd abnt dk thn bdg lam / abnt lt & dk brn o stn p-fr por from 35-41, occ widely spaced clusters thn dk bdg lam from 51-56 tt- p por elsewhere
56-58	Ss tan-gy vfgr ang-sbrd wsrt sil cmt sl calc hd tt
58-61	Ss tan-gy vf-fgr ang-sbrd wsrt sil cmt sl calc hd thn dk bdg lam / dk brn o stn and p-fr por tt-tr por elsewhere
61-62	not recovered

12963-64	flor, com pale yel bnd-unif
63-64	out, pale mky yel mod stmg
64-65	no flor, no out
65-68	flor, abnt pale yel unif
68-69	flor, abnt pale yel unif / bri yel sp in o stn area
69-75	flor, abnt pale yel unif
65-75	out, pale clr yel vslo stmg
75-76	no flor, no out
76-78	flor, com dull yel bnd
78-79	flor, tr pale yel unif
79-84	flor, abnt dull yel unif
76-84	out, dull mky yel-gn mod stmg
84-86	no flor, no out
86-92	flor, com pale yel unif
86-92	out, vpale mky yel slo stmg
92-93	no flor, no out
93-95	flor, abnt pale yel unif occ bnd
93-95	out, pale mky yel-gn slo stmg
95-96	no flor, no out
96-03	flor, abnt pale yel unif occ bnd
96-02	out, pale mky yel mod slo stmg
03-04	flor, tr pale yel unif
02-04	out, pale clr yel slo stmg
04-05	no flor, no out
05-09	flor, abnt dull yel-orng sp-bnd
05-09	out bri mky yel-gn faststmg
09-11	no flor, no out
11-16	flor, abnt pale yel sp-unif
11-16	out, pale mky yel-gn mod stmg
16-17	flor, com dull-bri yel bnd
16-17	out, pale-dull mky yel mod stmg

CORE NO. 19 12963-13019' CUT 56' REC 56'

12963-82'	Ss bf-lt tan occ gy-gn vfgr grdg to fgr ang-sbrd vwart sl calc hd p por widely spaced thn dk bdg lam / lt & dk brn o stn & p-fr por bnd gy-pnk-grn vfgr ang-sbrd wart sl calc tr por at 65-66 sil fl microfrac at 73-74 and 80-81
82-84	Ss bf-lt tan vfgr ang-sbrd vwart sl calc hd abnt close thn dk bdg lam / lt & dk brn o stn & p-fr por
84-93	Ss bf-tan gy to gy-gn at 95-96 vfgr ang-sbrd vwart sl calc hd tt-tr por widely spaced thn dk bdg lam / m brn o stn & tr-p por
93-19	Ss bf-tan vf-fgr sbang-sbrd vwart sl calc hd tr-p por abnt thn dk bdg lam / lt & dk brn & blk o stn & p-fr por, gy vfgr tt at 19

17-19	no flor, no out

13019-20	flor,com pale yel bnd
	cut,pale mky yel slo stmg
20-23	no flor no cut
23-25	flor,com v pale yel unif
	cut,v pale clr yel-wh slo stmg
25-26	no flor no cut
26-34	flor,com dull-pale yel bnd-unif
26-30	cut,dull-bri mky yel-gn mod stmg
30-34	cut,dull mky yel-wh slo stmg
34-40	flor,abnt dull yel-gn bnd-sp
	cut,dull-bri mky yel-gn mod stmg
40-41	flor,abnt dull yel unif-sp
	cut,v pale clr yel v slo stmg
41-51	no flor,no cut
51-57	flor,com dull yel p-p sp
51-55	cut,dull-bri mky yel-gn imm halo/fast stmg
55-58	cut,dull mky yel-gn mod stmg
57-58	flor,abnt pale yel unif
58-59	no flor,no cut
59-60	flor, abnt v pale yel unif
	cut,v pale clr yel-wh v slo stmg
60-62	flor,com dull yel-gn unif-sp
	cut,pale clr yel-gn slo stmg
62-64	no flor,no cut
64-68	flor,v pale yel unif
63-65	cut,dull-bri mky yel-gn mod stmg
65-68	cut,pale mky yel-gn slo stmg
68-81	no flor,no cut

CORE NO. 20 13019-13081 CUT 62' REC 62'

13019-41	Sstan-gy pred vfgr / some vf-fgr sbang wsrt sl calc firm-hd abnt closely spaced thn dk bdg lam/p-f por & dk brn o stn
41-44	Ss tan-gy grn vfgr ang-sbang wsrt sl calc hd pred tt strg/tr por
44-47	Ss tan & pk bnd vf-fgr ang-sbrd wsrt sl calc hd tr-p por
47-49	Ss tan vfgr ang-sbang wsrt sl calc hd tt-tr por
49-51	Ss gy vf-fgr ang-sbrd wsrt sl calc hd tr-p por
51-54	Ss tan vf-fgr sbang-rd vwsrt firm-fri abnt lt brn o stn in g por
54-59	Ss tan-gy vf-fgr ang-sbang wsrt firm-hd sl calc tr lt brn o stn throughout/p por thn dk lam/p por & dk brn o stn
59-62	Ss tan-lt grn gy at 59-60 ang-sbang vwsrt firm-hd sl calc thn bdg lam/p por & dk brn o stn
62-64	Ss gy at top to tan at bottom vfgr ang wsrt hd sli calc tr por
64-68	Ss tan-gy vfgr ang-sbrd wsrt hd sli calc tr lt brn o stn throughout /p por some thn dk lam/dk brn-blk o stn & p por
68-69	Ss gy-grn vf-fgr ang hd tr por
69-70	Ss salmon pk vfgr ang-sbang hd sl calc tr por
70-72	Ss lt grn-gy maroon strks hd tt
72-73	Sltst dk maroon arg plty hd
73-74	Ss pk fgr ang-sbrd hd calc tt
74-80	Sh maroon plty/sks slty conch frac oco bnds lt grn-gy ss
80-81	Ss red vfgr slty hd tt sl calc

CORE NO. 21 13546- 13559' MICRO DESCRIPTION CUT 12' REC 8.5'

13546-49'	no flor, cut,fnt yel halo	13546-49'	Ss mgy vf-fgr sbang- sbrd msrt frm- fri frpor
49-52	no flor, no cut	49-52	Ss slty- shly dk rd-brn vfg sbang wsrt frm-fri mica ncalc
52-55	no flor, no cut	52-55	Ss dk gy carb vfg sbang wsrt ncalc pr-fpor

[illegible] Drilled 12217-277 Recovered 60 ft

12217-13	40°/pred lt/occ dk bnd,ptg on bnd
13	2" dk bnd/calc lnel
13-25	lt bds/occ thn dk bnd,ptg on bnds
17-23	odor
24-27	two K-sets,35°/sl chg dir to 15°/150°chg dir to 15°,abnt thn lt + dk lam thru
27-28	mas/pred lt occ dk bnd,35°healed frac
28-30	30°/thn lt + dk lam, odor
33-34	K-set 30°/sl chg in dir to 15°/90°chg dir to 45°,thn lt + dk lam thru
34-37	30°/thn lt + dk lam, odor
37-38	K-set 30°/50°chg dir to 45°/frac K-cut K-set 35°,calc lam in K-set
38-43	30°mas,lt/occdk bnd,open frac/sks 240'
43-46	35°/abnt thn var lt + dk lam
47	45°frac/sks
48	mas lt s.s./60°fracs K-cut @ 45°
50-51	30°,mas,lt/occ dk bnd; open frac/o stn
51-53	bd inc 30°to 45°/no chg dir
53-60	45°mas,lt/occ thn dk bnd
60	K-set 30°to 10°to 30°/sl chg in dir
62-63	K-set 45°to 30°/K-cut open frac 70°/tr displacement on sho
63-73	lt mas/occ thn dk bnd,occ micfrac/tr open
74-75	K-set,35°to 45°/30°chg
75-12272	ru le,decr 45°to 10°/inc lam

CORE NO. 7 MACRO DESCRIPTION A.R.E. 16-30U

Drilled 12277 -238 Recovered 61'

12277-78	25°/lt & dk bnd gd odor
78-82	30°/ thk mas bd vgd stink
82-85	30°/mas bd inc dk bnd, 80°- vert micfrac, healed
85-87	30°/ mas var lt & dk bnd , gd odor
87-94	a/a / 75° healed frac / sl displ
94-95	vert open frac / sks, sl displ
95-96	30°/dec bnd , inc mas
96-12300	30° /mas / abnt 75° healed parallel frac & micfrac
300-07	35°/ mas bd, fr odor
07-08	30° decr to 10° /20° chg in dir
08-10	10° /mas bd , fr odor
10-11	X-set, 10° /25° chg in dir to 35°
11-12	bd inc 35° to 45°
12-25	45° / alt lt & dk bnd
25-27	vert open frac / sks
27-31	45° dec to 35° / healed vert frac
31-12338	35° / alt lt & dk bnds

CORE NO. 8 MACRO DESCRIPTION A.R.E. 16-30 U

Drilled 12338 -398' Recovered 60'

12338-40	45°/ bnd, alt lt & dk, gd odor
40-43	a/a / 85° - vert healed frac , ½" displ
43-45	45° / chg of 25° dir to 30°, gd odor
45-51	45° / frac, healed / sl displ ; mas / thk bnd
51-63	45o grdg to 35° / tr chg in dir; thk grdg to alt lt & dk bnd
63-64	vert healed frac , gd odor
64-65	X-set 35° / 45° chg in dir to 20°;
65-68	X-set 20° / tr chg in dir to horiz
68-69	X-set horiz / 150° chg in dir to 35°
69-74	40° / lt & dk bd, 75° healed frac, gd odor
74-77	35° /thk lt & dk bnd , sl odor
77-78	a/a / 75° healed frac , sks / sl displ
78-84	dec to 25° /tr chg in dir, mas / occ bnd
84-92	inc to 35° / 45° chg in dir, minor 85° healed fracs
92-96	45° x-set to 25°/ tr chg in dir / sm healed vert fracs
96-98	spalded rubble / mas & no bnd

CORE NO. 9 MACRO DESCRIPTION A.R.E. 16-30 U

Drilled 12398- 458 Recovered 60'

12398-415	45°/ pred mas / occ var lam , lt & dk. gd odor
415-24	45° / 60° chg in dir to 45°, alt thn & thk lt & dk bnd / occ thn lam
24-25	75° frac /healed sl displ sks, occ calc blebs,
25-30	pos X set / 40° / 150° chg in dir to 45°, com lt & dk lam / calc bleb
30-31	60° healed frac
31-35	40° inc to 45°/ tr chg in dir, var lt & dk lam
35-44	45° to50° / mas / thn dk bnd
44-45	45° X bed to 30° / 30° chg in dir
45-47	X set /30° & 40° chg in dir to 35°, gd odor
47-50	40°, lt & dk var thn & thk lam
50-51	70°healed frac gd odor
51-56	40°/ mas lt & dk bnd
56-57	20° frac / sks
57-58	40°, mas / lt & dk bnd

CORE NO. 10 MACRO DESCRIPTION A.R.E. 16-30 U

Drilled 12458-12520 Recovered 62'

12458-60	45°/mas alt lt and dk bnd,minor healed vert frac, gd odor
60-66	a/a/thn lt and dk bnd
66-78	bec 30°/20° chg in dir,bnd bd/gd odor
78-84	bd bec 20°/vert 75° healed frac, gd odor
84-86	10° bnd lt and dk
86-89	x bed to 45°/30°chg in dir,gd odor
89-91	45°/open vert frac,sli odor
91-95	45°,mas
95-500	45°/bnd,alt lt and dk
500-502	45°/x bed and 90°chg in dir,sli odor
502-18	45°/thn lt and dk bnd,sli odor
18-20	a/a /75° sks open frac,sli odor.

CORE NO. 11 MACRO DESCRIPTION A.R.E. 16-30 U

Drilled 12520-12581 Recovered 61'

12520-21	45°/thn lt and dk bnd,75° open sks frac,vg odor
21-32	45°/20° chg in dir,mas,varied bnd (breaks across bdg plane),vg odor
32-40	a/a/lg calc blebs at 35, vg odor
40-51	45°,bec thn bnd,gd break along bdg plane,1" bnd calc at 47.5',½" bnd calc incl at 49.5' and 50.5' vg odor
51-53	45°/thn lam
53-54	a/a /75° healed frac/ 1" displ, strong odor
54-56	45° mas,g odor
56-57	45° /x bed and 30° dir chg
57-58	10°/thn lam
58-59	x bed 10° to 45°/30° dir chg,healed vert frac,g odor
59-61	45° mas/bnd,tr calc incl, small healed vert frac
61-62	45°/x bed and 20° chg in dir, healed vert frac, g odor
62-67	45° mas, g odor
67-69	a/a / 85°vert healed frac, g odor
69-74	45° mas/g odor
74-79	45° bec alt thn and thk lt and dk bnd
79-80	a/a /small intbdd calc zn,x bed then 30° dir chg
80-81	x bed,35° bec 10°/60° rotation

CORE NO. 12 MACRO DESCRIPTION A.R.E. 16-30 U

Drilled 12581-12641 Recovered 60'

12581-82	x bed,truncated 10° to truncated 45°/90° dir chg,sli odor
82-83	45° bec 30°/vert fl frac, thn bnd,vg odor
83-84	30°/x bed & 30° dir chg,small healed vertfrac
84-85	30°/ thn lt & dk bnd
85-86	30° bec 45° / 30° dir chg,g odor
86-87	45°
87-88	x bed,45° bec 30°/30° dir chg
88-89	x bed,30° bec 25°, thn lt & dk lam,g odor
89-93	25° bnd lt & dk
93-95	30°, pk & tan bnd, g odor
95-600	30° salmon pk lam, g odor
600-03	x bed bec 45°/60° dir chg,small healed vert frac/small calc veinlets no odor
03-05	45° bec 15° no odor
05-08	35° mas/healed vert frac, g odor
08-21	45°/small calc blebs,tr healed vert frac, g odor
21-22	25°/thk bnd, g odor
22-23	bec 45°/30° dir chg g odor
23-33	45°/lt & dk bnd,small fl vert frac,vg odor
33-41	rubble frag,small conical spalling,evidence of thn bnd /sl odor

CORE NO. 13 MACRO DESCRIPTION A.R.E. 16-30 U

Drilled 12655-12715 (+14' depth correction) Recovered 60'

12655-58	45°/lt & dk tan bnd, g odor
58-61	a/a /2" calc zn & thn calc layers g odor
61-65	45° bec banded salmon pk & tan,thn calc bnd,sli odor
65-66	x bed 45° to 45° bed placing/30° dir chg,
66-68	45° pk & tan bnd,sli odor
68-70	45° bec 10° then 45°/30° dir chg/pk bnd, vert healed frac,sli odor
70-75	45° mas,thk bnd, healed vert frac
75-76	x bed/45° dir chg
76-95	45°/thn pk & tan bnd,g odor
95-96	a/a /x bed 45° /30° dir chg
96-704	45° bec tan bnd, g odor
04-05	a/a /sks open frac
05-08	45° mas thk
08-15	rubble,thn pk & tan bnd,45°,conical spalling

CORE NO. 14 MACRO DESCRIPTION A.R.E. 16-30 U

Drilled 12715-12775 Recovered 60'

12715-20	60° mas, tr odor
20-23	45°/thn bnd
23-30	45°/pk & gy bnd, thn dk lam, bec inc pk at 27, g odor
30-31	x bed 45° bdg plane, bnd, 30° dir chg, g odor
31-32	x bed 45° bec 60°/30° dir chg, g odor
32-34	45° lam, thn pk & gy bnd, tr calc bleb, g odor
34-35	x bed 45° bdg plane/10° dir chg g odor
35-36	45° bec 60° mas, bnd
36-37	60° bec 40°/20° dir chg, mas
37-38	x bed 40° bec 45°/60° dir chg f odor
38-42	45° mas f odor
42-50	45°, pk & tan bnd, small calc incl, g odor
50-51	x bed, 45° bdg plane /30° dir chg then 10° incr to 55°
51-52	x bed 55° bec 45°/30° dir chg, f odor
52-53	bec 60°
53-54	x bed 60° bec 45°/20° dir chg, g odor
54-63	45° pk & tan thk & thn bnd, g odor
63-75	rubble, conical frag, pk bnd zn bec gy

CORE NO. 15 MACRO DESCRIPTION A.R.E. 16-30 U

Drilled 12775-12820 Recovered 45'

12775-77	45°/thk bnd,sli odor
77-78	x bed,45° bdg plane/10° dir chg,thn pk & tan bnd,small calc bleb sli odor
78-80	60°/thk & thn alt pk bnd
80-86	45°/pk & tan alt bnd,small calc blebs,sli odor
86-90	45° mas/thn pk strks,sli odor
90-91	x bed 45° bec 30°/30° dir chg
91-92	x bed 30°/30° dir chg,sli odor
92-93	30°/pk & tan lam
93-94	x bed 30° bec 45°/45° dir chg,sli odor
94-96	30°/pk & tan bnd
96-97	x bed 30° bec 10°/30° dir chg,sli odor
97-800	30°/thk pk & gy bnd,sli odor
800-01	x bed 30° bec 10° then 30°dir chg/bdg plane bec 45°,sli odor
01-03	45°/lt & dk gy lam
03-05	15°/lt & dk salmon pk bnd,sli odor
05-09	45° mas/thk bnd
09-20	rubble,conical frag/lt & dk gy bnd,sli odor

CORE NO. 16 MACRO DESCRIPTION A.R.E. 16-30 U

Drilled 12820-12882 Recovered 62'

12820-25	30°/thn close lam,gy-tan,sli odor
25-27	a/a /calc healed almost vert frac
27-55	30°/thn close lam,gy-tan,sli odor
55-57	a/a /calc healed almost vert frac,g odor
57-68	30°/thn close lam,gy-tan,g odor
68-72	30°/thn close lam,pk
72-82	30° bec 20°,thn close lam

CORE NO. 17 MACRO DESCRIPTION A.R.E. 16-30 U

Drilled 12882-12900'-9" Recovered 18'-9"

12882-901	10°/thn alt pk & tan bnd,strks of tan/g odor

CORE NO. 18 MACRO DESCRIPTION A.R.E. 16-30 U

Drilled 12901-12963 Recovered 61'

12901-28	25° mas, tan gy/occ pk gy, thn widely spaced bnd
28-35	20° to 45°, mas, gy/thn close dk bnd, healed calc fl frac from 32-33
35-37	10° mas, gy/thn close dk bnd
37-41	45° a/a
41-59	35° mas, gy/occ groups widely spaced thn dk bnd
59-61	45°, gy/thn close dk bnd

CORE NO. 19 MACRO DESCRIPTION A.R.E. 16-30 U

Drilled 12963-13019 Recovered 56'

12963-82	20° mas gy-tan/occ thn dk bnd
82-83	20° mas tan-gy/thn close dk bnd
83-93	20° mas tan-gy/occ thn dk bnd
93-97	45° mas tan-gy/thn close dk bnd
97-13019	30° mas tan-gy/thn close dk bnd

CORE NO. 20 MACRO DESCRIPTION A.R.E. 16-30 U

Drilled 13019-13081 Recovered 62'

13019-29	20°-40° mas/closely spaced thn dk bdg lam, sli odor
29-45	20°-30° mas/scat closely spaced thn dk bdg lam, f odor
45-51	20°-30° mas/scat closely spaced thn dk bdg lam,sli odor
51-55	20°-30°mas gy,g odor
55-59	20°-30° mas/scatclosely spaced bdg lam,sli odor
59-69	20°-30° tan-gy-grn-pk bnd
69-70	20°-30° maroon ss/grn-gy slty ss incl
70-81	20°-30° maroon sh,slty/grn-gy strks & incl of sh & some slty ss

12655-56	flor, abnt violet and gold unif
56-60	flor, abnt violet and bri yel unif
60-65	flor, abnt vpale yel-gn unif in bnd
55-63	cut, imm pale mky yel halo fast stmg bri mky yel
63-64	cut, imm vpale clr wh halo
65-704	flor, abnt pale yel-gn unif
(35	cut, imm pale mky yel halo fast stmg bri mky yel
85-86	cut, imm pale mky yel halo
04-07	flor, abnt bri yel-gn unif
07-09	flor, abnt pale yel-gn unif
09-13	flor, abnt pale gn unif
13-15	flor, not present
86-15	cut, imm pale mky yel halo fast stmg bri mky yel

CORE NO. 13 12655-12715 CUT 60' REC 60'

12655-58	Ss bf-tan f-mgr sbang-rd wsrt sil & calc cmt frm-fri abnt lt brn o stn p por thn bnd/ calc incl
58-61	Ss bf-tan mgr sbang-rd vwsrt sil & calc cmt frm abnt dk o stn in bdg planes /tr elsewhere pred p por g por in dk o stn
61-64	Ss thn intbdd bf & pred pnk vf-mgr sbang-rd p srt sil & calc cmt tt frm-hd
64-85	Ss bf-tan pred mgr/ f-vfgr sbang-rd msrt sil & calc cmt hd tr por tr lt brn o stn thn bds of mgr/ fr por & abnt o stn sil micfrac from 73-75 abnt calc incl
85-94	Ss intbdd tan & pnk vf-mgr occ cgr sbang-rd psrt sil & calc cmt hd p por tr lt brn o stn thn bds m-cgr sbang-rd wsrt/ fr por
94-705	Ss wh-bf vf-fgr grdg to mgr sbang-sbrd m-wsrt sil cmt hd trlt o stn/tr por sl calc abnt sil fl micfrac at 96-97 thn bds mgr sbang-sbrd wsrt g por sks frac at 705 sl slty ip
05-12	Ss bf mgr sbang-rd vwsrt frm sil cmt g por/ tr lt o stn abnt calc incl
12-15	Ss intbdd bf & pnk vf-mgr sbang-rd psrt sil cmt hd sl calc tr por

Amoco Production Company
Post Office Box 17675
Salt Lake City, Utah 84117
801-272-9253

T. G. Doss
District Superintendent

February 9, 1983

DIVISION OF
GAS & MINING

State of Utah
Division of Oil, Gas, and Mining
4241 State Office Building
Salt Lake City, Utah 84114

File: DSD-251-031.190

Anschutz Ranch East Unit Operations - Summit County, Utah

Amoco Production Company herewith advises that the following wells within the subject unit have been renamed as noted:

Old Well Name:	New Well Name/Location:
√ Anschutz U2-30	Anschutz Ranch East Unit W30-02 Sec. 30, T4N, R8E
Anschutz U6-20	Anschutz Ranch East Unit W20-06 Sec. 20, T4N, R8E
Anschutz U30-06	Anschutz Ranch East Unit W30-06 Sec. 30, T4N, R8E
Anschutz U8-20	Anschutz Ranch East Unit W20-08 Sec. 20, T4N, R8E
Anschutz U8-30	Anschutz Ranch East Unit W30-08 Sec. 30, T4N, R8E
Anschutz U10-20	Anschutz Ranch East Unit W20-10 Sec. 20, T4N, R8E
Anschutz U10-30	Anschutz Ranch East Unit W30-10 Sec. 30, T4N, R8E
Anschutz U12-20	Anschutz Ranch East Unit W20-12 Sec. 20, T4N, R8E

Old Well Name:	New Well Name/Location:
Anschutz U14-20	Anschutz Ranch East Unit W20-14 Sec. 20, T4N, R8E
Anschutz U14-30	Anschutz Ranch East Unit W30-14 Sec. 30, T4N, R8E
Anschutz U16-20	Anschutz Ranch East Unit W20-16 Sec. 20, T4N, R8E
Anschutz U16-30	Anschutz Ranch East Unit W30-16 Sec. 30, T4N, R8E
Bountiful Livestock #1	Anschutz Ranch East Unit W16-14 Sec. 16, T4N, R8E
Bountiful Livestock "A" #1	Anschutz Ranch East Unit W16-06 Sec. 16, T4N, R8E
Champlin 458 Amoco "D" #1	Anschutz Ranch East Unit W29-04 Sec. 29, T4N, R8E
Champlin 458 Amoco "D" #2	Anschutz Ranch East Unit W29-02 Sec. 29, T4N, R8E
Champlin 458 Amoco "D" #3	Anschutz Ranch East Unit W29-12 Sec. 29, T4N, R8E
Champlin 458 Amoco "D" #5	Anschutz Ranch East Unit W29-14 Sec. 29, T4N, R8E
Champlin 458 Amoco "D" #6	Anschutz Ranch East Unit W29-06 Sec. 29, T4N, R8E
Champlin 458 Amoco "E" #1	Anschutz Ranch East Unit W31-08 Sec. 31, T4N, R8E
Champlin 458 Amoco "E" #2	Anschutz Ranch East Unit W31-04 Sec. 31, T4N, R8E
Champlin 458 Amoco "E" #5	Anschutz Ranch East Unit W31-02 Sec. 31, T4N, R8E
Champlin 458 Amoco "E" #6	Anschutz Ranch East Unit W31-06 Sec. 31, T4N, R8E
Champlin 458 Amoco "F" #1	Anschutz Ranch East Unit W21-04 Sec. 21, T4N, R8E
Champlin 458 Amoco "F" #2	Anschutz Ranch East Unit E21-14 Sec. 21, T4N, R8E
Island Ranching "E" #2	Anschutz Ranch East Unit W36-08 Sec. 36, T3N, R7E
Thousand Peaks Ranches #1	Anschutz Ranch East Unit W32-04 Sec. 32, T4N, R8E

For your information the letter preceding the well number (W-E) refers to the West/East Nugget structure within the Anschutz Ranch East Unit. Should you have questions concerning the well name changes, please contact Scheree Wilcox at this office, 801-264-2200.

T.G. Doss

T.G. Doss
District Superintendent

SW/

cc: State of Wyoming
Oil and Gas Conservation Commission
P.O. Box 2640
Casper, Wyoming 82601

STATE OF UTAH
NATURAL RESOURCES & ENERGY
Oil, Gas & Mining

Scott M. Matheson, Governor
Temple A. Reynolds, Executive Director
Cleon B. Feight, Division Director

4241 State Office Building • Salt Lake City, UT 84114 • 801-533-5771

March 21, 1983

Anschutz Corporation
Att: Mark Buckland
2400 Anaconda Tower
555 17th Street
Denver, Colorado 80202

Re: Anschutz Ranch East Unit # W20-06
Sec. 20, T. 4N, R. 8E.
Summit County, Utah

Well No. AREU # W 20-16
Sec. 20, T. 4N,. R. 8E.
Summit County, Utah

Well No. AREU # W 30-16
Sec. 30, T. 4N, R. 8E.
Summit County, Utah

Gentlemen:

This letter is to advise you that the Well Completion or Recompletion Report and Log for the above mentioned wells are due and have not been filed with this office as required by our rules and regulations.

Please complete the enclosed Form OGC-3, in duplicate, and forward them to this office as soon as possible.

We will be happy to acknowledge receipt of response to this notice if you will include an extra copy of the transmittal letter with a place for our signature, and a self addressed envelope for the return. Such acknowledgement should avoid unnecessary mailing of a firm second notice from our agency.

Your prompt attention to the above will be greatly appreciated.

Respectfully,

DIVISION OF OIL, GAS AND MINING

Cari Furse

Cari Furse
Well Records Specialist

CF/cf
Enclosure

Board/Charles R. Henderson, Chairman • John L. Bell • E. Steele McIntyre • Edward T. Beck
Robert R. Norman • Margaret R. Bird • Herm Olsen

an equal opportunity employer • please recycle paper

Form OGCC-3

9

STATE OF UTAH

OIL & GAS CONSERVATION COMMISSION

SUBMIT IN DUPLICATE*
(See other instructions on reverse side)

WELL COMPLETION OR RECOMPLETION REPORT AND LOG*

1a. TYPE OF WELL: OIL WELL [X] GAS WELL [ ] DRY [ ] Other

b. TYPE OF COMPLETION: NEW WELL [ ] WORK OVER [X] DEEP-EN [ ] PLUG BACK [ ] DIFF. RESVR. [ ] Other

2. NAME OF OPERATOR: The Anschutz Corporation

3. ADDRESS OF OPERATOR: 555 17th St. Suite 2400, Denver, CO 80202

4. LOCATION OF WELL (*Report location clearly and in accordance with any State requirements*)*
At surface 968' FEL 1345' FSL
At top prod. interval reported below 1140' FEL 928' FSL
At total depth 1140' FEL 890' FSL

5. LEASE DESIGNATION AND SERIAL NO.: FEE

6. IF INDIAN, ALLOTTEE OR TRIBE NAME:

7. UNIT AGREEMENT NAME:

8. FARM OR LEASE NAME: Anschutz Ranch East

9. WELL NO.: 16-30U

10. FIELD AND POOL, OR WILDCAT: Anschutz Ranch East

11. SEC., T., R., M., OR BLOCK AND SURVEY OR AREA: Sec 30 T4N R8E

14. PERMIT NO.: 43-043-30156 DATE ISSUED: 12/18/80

12. COUNTY OR PARISH: Summit 13. STATE: Utah

15. DATE SPUDDED	16. DATE T.D. REACHED	17. DATE COMPL. (*Ready to prod.*)	18. ELEVATIONS (DF, RKB, RT, GR, ETC.)*	19. ELEV. CASINGHEAD
4/7/81	12/24/81	1/26/82	KB 7837' GL 7815'	7815'

20. TOTAL DEPTH, MD & TVD	21. PLUG, BACK T.D., MD & TVD	22. IF MULTIPLE COMPL., HOW MANY*	23. INTERVALS DRILLED BY	ROTARY TOOLS	CABLE TOOLS
14193 MD	13100 MD		→	0-TD	

24. PRODUCING INTERVAL(S), OF THIS COMPLETION—TOP, BOTTOM, NAME (MD AND TVD)*: See 31 (Nugget)

25. WAS DIRECTIONAL SURVEY MADE: Yes

26. TYPE ELECTRIC AND OTHER LOGS RUN: DIL, GR, CNL, FDC, BHC, FIL, TDT, Dipmeter

27. WAS WELL CORED: Yes

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

CASING SIZE	WEIGHT, LB./FT.	DEPTH SET (MD)	HOLE SIZE	CEMENTING RECORD	AMOUNT PULLED
13 3/8	61-68	5077	17 1/2	3050 Sx	
9 5/8	43.5-47	10650	12 1/4	900 Sx	
7	26-32	13373	8 5/8	1900 Sx	

29. LINER RECORD

SIZE	TOP (MD)	BOTTOM (MD)	SACKS CEMENT*	SCREEN (MD)

30. TUBING RECORD

SIZE	DEPTH SET (MD)	PACKER SET (MD)
3 1/2	12050	12050

31. PERFORATION RECORD (*Interval, size and number*)
12272-354, 12380-458, 12492-580, 12604-636, 12682-710, 12718-724, 12750-780, 12806-846, 12910-930, 12940-952, 12970-980, 12988-13008, 13015-022, 13041 049, W/2SPF

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

DEPTH INTERVAL (MD)	AMOUNT AND KIND OF MATERIAL USED
12910-13008	7500 Gal 15% HCL
12682-846	10,000 Gal 15% HCL
12492-636	20,000 Gal 15% HCL
12380-12458	10,000 Gal 15% HCL

33.* PRODUCTION

DATE FIRST PRODUCTION: 1/26/82 PRODUCTION METHOD (*Flowing, gas lift, pumping—size and type of pump*): Flowing WELL STATUS (*Producing or shut-in*): Producing

DATE OF TEST	HOURS TESTED	CHOKE SIZE	PROD'N. FOR TEST PERIOD	OIL—BBL.	GAS—MCF.	WATER—BBL.	GAS-OIL RATIO
11/30/82	48	24/64	→	1838	12370	220	6730

FLOW. TUBING PRESS.	CASING PRESSURE	CALCULATED 24-HOUR RATE	OIL—BBL.	GAS—MCF.	WATER—BBL.	OIL GRAVITY-API (CORR.)
1600		→	919	6185	110	

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

TEST WITNESSED BY: T. Hiedrich

35. LIST OF ATTACHMENTS

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

SIGNED Mark L. Buckland TITLE Jr. Drilling Engineer DATE 3/30/83

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

INSTRUCTIONS

General: This form is designed for submitting a complete and correct well completion report and log on all types of lands and leases to either a Federal agency or a State agency, or both, pursuant to applicable Federal and/or State laws and regulations. Any necessary special instructions concerning the use of this form and the number of copies to be submitted, particularly with regard to local, area, or regional procedures and practices, either are shown below or will be issued by, or may be obtained from, the local Federal and/or State office. See instructions on items 22 and 24, and 33, below regarding separate reports for separate completions.
If not filed prior to the time this summary record is submitted, copies of all currently available logs (drillers, geologists, sample and core analysis, all types electric, etc.), formation and pressure tests, and directional surveys, should be attached hereto, to the extent required by applicable Federal and/or State laws and regulations. All attachments should be listed on this form, see item 35.
Item 4: If there are no applicable State requirements, locations on Federal or Indian land should be described in accordance with Federal requirements. Consult local State or Federal office for specific instructions.
Item 18: Indicate which elevation is used as reference (where not otherwise shown) for depth measurements given in other spaces on this form and in any attachments.
Items 22 and 24: If this well is completed for separate production from more than one interval zone (multiple completion), so state in item 22, and in item 24 show the producing interval, or intervals, top(s), bottom(s) and name(s) (if any) for only the interval reported in item 33. Submit a separate report (page) on this form, adequately identified, for each additional interval to be separately produced, showing the additional data pertinent to such interval.
Item 29: *"Sacks Cement":* Attached supplemental records for this well should show the details of any multiple stage cementing and the location of the cementing tool.
Item 33: Submit a separate completion report on this form for each interval to be separately produced. (See instruction for items 22 and 24 above.)

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, TIME TOOL OPEN, FLOWING AND SHUT-IN PRESSURES, AND RECOVERIES

FORMATION	TOP	BOTTOM	DESCRIPTION, CONTENTS, ETC.
Nugget	11995	13069	oil and gas

38. GEOLOGIC MARKERS

NAME	TOP MEAS. DEPTH	TOP TRUE VERT. DEPTH
Aspen	3897	same
Gannet	5769	same
Pruess	8890	8889
Salt	10179	10174
Twin Creek	10552	10547
Nugget	11995	11977
Ankareh	13069	13037

Amoco Production Company
Post Office Box 829
Evanston, Wyoming 82930
307-789-1700

T. G. Doss
District Superintendent

RECEIVED
OCT 18 1983
DIVISION OF
OIL GAS & MINING

October 14, 1983

Division of Oil, Gas and Mining
4241 State Office Building
Salt Lake City, UT 84114

Attn: Mary Alice Peterson

File: JEK-630-416

This letter is in response to a phone conversation on October 11, 1983, with Mary Alice Peterson, an employee of the Division of Oil, Gas, and Mining for the State of Utah. The wells listed below were formerly operated by the Anschutz Corporation and are now operated by Amoco Production Company as a part of the Anschutz Ranch East Unit. The wells are shown with their before unitization and after unitization names.

Before Unitization	After Unitization
Anschutz U2-30	Anschutz W30-02
Anschutz U6-20	Anschutz W20-06
Anschutz U6-30	Anschutz W30-06
Anschutz U8-20	Anschutz W20-08
Anschutz U8-30	Anschutz W30-08
Anschutz U10-20	Anschutz W20-10
Anschutz U10-30	Anschutz W30-10
Anschutz U12-20	Anschutz W20-12
Anschutz U14-20	Anschutz W20-14
Anschutz U14-30	Anschutz W30-14
Anschutz U16-20	Anschutz W20-16
Anschutz U16-30	Anschutz W30-16 4N 3E sec 30

If there are any questions please contact John Sprague at 307-789-1700, extension 2118.

T. G. Doss

T. G. Doss

JCS/sh

Claudia:
Wells that we (Amoco) took over from Anschutz Corp.
George

RECEIVED
FEB 0 1984
DIVISION OF
OIL, GAS & MINING

WCF FILE C

02/06/83

ANSCHUTZ RANCH EAST UNIT NEW NUMBERING SYSTEM

UTAH/WEST NUGGET

Our

OLD WELL NAME	NEW WELL NAME
ANSCHUTZ U06-20	ANSCHUTZ W20-06
ANSCHUTZ U06-30	ANSCHUTZ W30-06
ANSCHUTZ U08-20	ANSCHUTZ W20-08
ANSCHUTZ U08-30	ANSCHUTZ W30-08
ANSCHUTZ U14-20	ANSCHUTZ W20-14
ANSCHUTZ U14-30	ANSCHUTZ W30-14
ANSCHUTZ U16-20	ANSCHUTZ W20-16
ANSCHUTZ U16-30	ANSCHUTZ W30-16

WYOMING/EAST NUGGET

MORE... TIMESHAR

OLD WELL NAME	NEW WELL NAME
ANSCHUTZ U11-26	ANSCHUTZ E26-11
ANSCHUTZ U12-26	ANSCHUTZ E26-12

R; T=0.01/0.01 16:51:39

RUNNING TIMESHAR

Form OGC-1b

SUBMIT IN TRIPLICATE*
(Other instructions on reverse side)

2

STATE OF UTAH
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS, AND MINING

SUNDRY NOTICES AND REPORTS ON WELLS

(Do not use this form for proposals to drill or to deepen or plug back to a different reservoir. Use "APPLICATION FOR PERMIT—" for such proposals.)

5. LEASE DESIGNATION AND SERIAL NO.: Fee

6. IF INDIAN, ALLOTTEE OR TRIBE NAME:

1. OIL WELL [ ] GAS WELL [X] OTHER

7. UNIT AGREEMENT NAME: Anschutz Ranch East

2. NAME OF OPERATOR: AMOCO PRODUCTION COMPANY

8. FARM OR LEASE NAME: W30-16

3. ADDRESS OF OPERATOR: P. O. BOX 829, EVANSTON, WYOMING 82930

9. WELL NO.: W30-16

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.* See also space 17 below.) At surface: 968' FEL & 1345' FSL

10. FIELD AND POOL, OR WILDCAT: Anschutz Ranch

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA: Sec. 30, T4N, R8E

14. PERMIT NO.: 43-043-30297

15. ELEVATIONS (Show whether DF, RT, GR, etc.): 7837' KB 7815' GL

12. COUNTY OR PARISH: Summit

13. STATE: UT

16. **Check Appropriate Box To Indicate Nature of Notice, Report, or Other Data**

NOTICE OF INTENTION TO:				SUBSEQUENT REPORT OF:			
TEST WATER SHUT-OFF		PULL OR ALTER CASING		WATER SHUT-OFF		REPAIRING WELL	
FRACTURE TREAT		MULTIPLE COMPLETE		FRACTURE TREATMENT		ALTERING CASING	
SHOOT OR ACIDIZE	X	ABANDON*		SHOOTING OR ACIDIZING		ABANDONMENT*	
REPAIR WELL	X	CHANGE PLANS		(Other)			
(Other)							

(NOTE: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)

17. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)*

To Improve Sweep

Perforate and Test
12,001' - 12,032'
12,057' - 12,096'
12,130' - 12,158'
12,200' - 12,224'

Start Date 05/06/85

APPROVED BY THE STATE OF UTAH DIVISION OF OIL, GAS, AND MINING
DATE: 5/8/85
BY: John R. Baza

18. I hereby certify that the foregoing is true and correct

SIGNED: Vann E. Crater TITLE: District Engineer DATE: 4/26/85

(This space for Federal or State office use)

APPROVED BY _____ TITLE _____ DATE _____
CONDITIONS OF APPROVAL, IF ANY:

*See Instructions on Reverse Side

Utah

DOUBLE "D" ENTERPRISES

RECEIVED

MAY 13 1985

DIVISION OF OIL
GAS & MINING

B.O.P. Test Report

B.O.P. TEST PERFORMED ON (DATE) 5-06-85

OIL CO.: Amoco

WELL NAME & NUMBER 30-16

SECTION

TOWNSHIP

RANGE

COUNTY Summit

DRILLING CONTRACTOR Ranger #4

INVOICES BILLED FROM: **DOUBLE "D" ENTERPRISES, INC.**
213 Pine Street - Box 560
Shoshoni, Wyoming 82649
Phone: (307) 876-2308 or (307) 876-2234

TESTED BY: **DOUBLE "D" ENTERPRISES, INC.**
Box 2097
Evanston, Wyoming 82930
Phone: (307) 789-9213 or (307) 789-9214

OIL CO. SITE REPRESENTATIVE George Cooper

RIG TOOL PUSHER

TESTED OUT OF Evanston, Wyoming

NOTIFIED PRIOR TO TEST:

COPIES OF THIS TEST REPORT SENT COPIES TO: Site Representative
Utah Oil & Gas
B.L.M.

ORIGINAL CHART & TEST REPORT ON FILE AT: Evanston OFFICE

5-6-85

DOUBLE "D" ENTERPRISES, INC.

P.O. Box 560
Shoshoni, Wyoming 82649
307-876-2308

DELIVERY TICKET

№ 3068

Operator Amoco Contractor Ranger Rig No. 4

Ordered By George Cooper Lease _____ Well No. 30-16

_____ Section _____ Township _____ Range _____

Items Tested:

	Low Test	Time Held	High Test	Time Held	Comments
Top Pipe Rams	300	5 min	5000	15 min	ok
Bottom Pipe Rams					
Blind Rams	300	5 min	5000	15 min	ok
Annualar B.O.P.	300	5 min	5000	15 min	ok
Choke Manifold					
Choke Line					
Kill Line					
Super Choke					
Upper Kelly					
Lower Kelly					
Floor Valve	300	5 min	5000	15 min	ok
Dart Valve					
Floor Valve	300	5 min	5000	15 min	ok

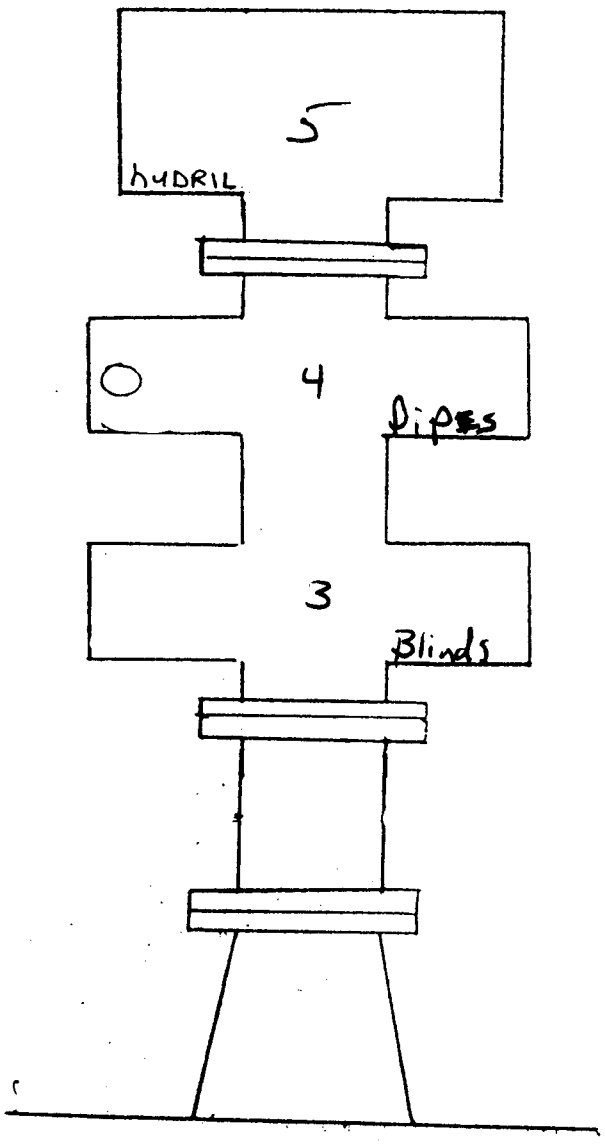
Closing Unit Psi _____ Closing Time of Rams _____ Closing Time of Hydril _____

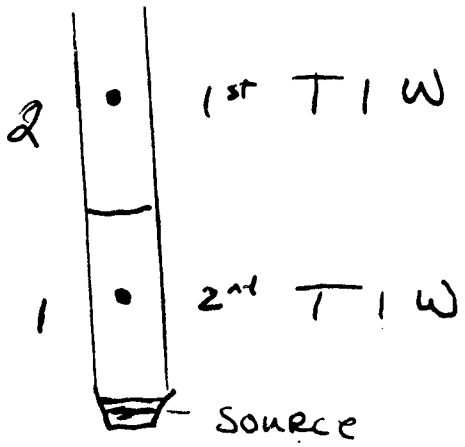
Closed Casing Head Valve _____ Set Wear Sleeve _____

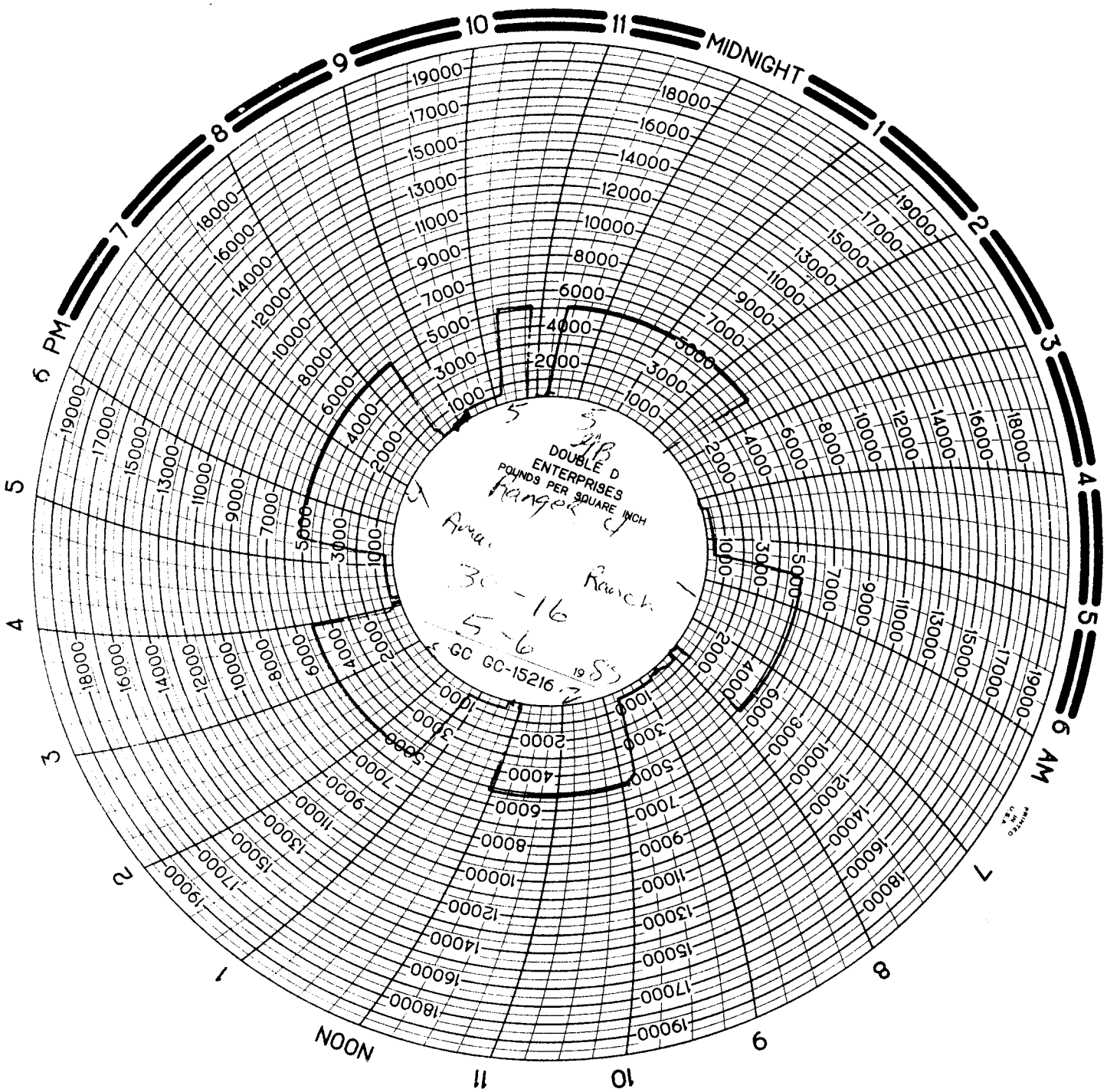
Comments _____

Company	Lease and Well Name #	Date of Test	Rig #
Amoco	A.R.E 30-16	5-6-85	Ranger 4

Test #	Time	
①	#	1st Tiw
	12 45 - 1250 pm	300 psi ok
	1250 - 105	5000 psi ok
		2nd tiw
	110 - 115	300 ok
	115 - 130	5000 ok
		switch source to stack
		gray set plug
		Blinds
	152 - 157	300 ok
	157 - 213	5000 ok
		Pipe Rams
	222 - 227	300 ok
	227 242	5000 ok
		Hydril
	246 - 251	300 ok
	251 - 306	5000 no test Bad Leak
		Hammered it up
	313 - 328	5000 psi ok
		spooled up make out ticket


5
HYDRIL
4
Pipes
3
Blinds


2
1st TIW
1
2nd TIW
Source


DOUBLE D
ENTERPRISES
POUNDS PER SQUARE INCH
Ranger
Ranch
GC GC-15216
MIDNIGHT
NOON
AM
PM

Amoco Production Company

May 16, 1986

RECEIVED
MAY 21 1986
DIVISION OF
OIL, GAS & MINING

Utah Division of Oil, Gas & Mining
355 West North Temple
3 Triad Center, Suite 350
Salt Lake City, Utah 84180

Re: **Name change on wells being brought into the Anschutz Ranch East Unit**

Attn: Claudia Jones

Dear Claudia:

The following is a list of all wells, East & West Lobe (production and Injection) at Anschtuz Ranch East referenced by well name, API No. and legal description, that should be rolled over from Amoco Production Company to Amoco Rockmount Company upon completion and being brought into the Unit.

Production wells

Well Name	API No.	Legal Description
W01-04	43-043-30270	NWNW, Sec 1, T3N, R7E
W01-06	43-043-30188	SENW, Sec 1, T3N, R7E
W01-12	43-043-30271	NWSW, Sec 1, T3N, R7E
W20-04	43-043-30238	NWNW, Sec 20, T4N, R8E
W16-~~60~~ 06	43-043-30138	NENE, Sec 16, T4N, R8E
W16-12	43-043-30231	SWNW, Sec 16, T4N, R8E
W17-~~12~~ 16?	43-043-30176	NWSE, Sec 17, T4N, R8E
W19-16	43-043-95008 ? 30204	SWSE, Sec 19, T4N, R8E
W20-02	43-043-30228	NWNE, Sec 20, T4N, R8E
W20-06	43-043-30159	NWNW, Sec 20, T4N, R8E
W20-10	43-043-30229	SENW, Sec 20, T4N, R8E
W20-12	43-043-30220	NWSW, Sec 20, T4N, R8E
W20-16	43-043-30148	SWSE, Sec 20, T4N, R8E
W21-04	43-043-30135	NWNW, Sec 21, T4N, R8E
W29-04	43-043-30129	NWNW, Sec 29, T4N, R8E
W29-06A	43-043-30250	SENW, Sec 29, T4N, R8E
W29-14A	43-043-30251	NWSW, Sec 29, T4N, R8E
W30-06	43-043-30273	NESW, Sec 30, T4N, R8E
W30-08	43-043-30183	SENE, Sec 30, T4N, R8E
W30-10	43-043-30215	NWSE, Sec 30, T4N, R8E
W30-14	43-043-30185	SESW, Sec 30, T4N, R8E
W30-16	43-043-30156	NESE, SEc 30, T4N, R8E

Production wells (cont.)

Well Name	API NO.	Legal Description
W31-04	43-043-30165	NWNW, Sec 31, T4N, R8E
W31-06	43-043-30217	SENW, Sec 31, T4N, R8E
W31-08	43-043-30164	NWNE, Sec 31, T4N, R8E
W31-12	43-043-30190	SWNW, Sec 31, T4N, R8E
W32-04	43-043-30162	NWNW, Sec 32, T4N, R8E
W36-10	43-043-30227	NESW, Sec 36, T4N, R7E
W36-16	43-043-30157	SESE, Sec 36, T4N, R7E

Injection wells

W01-02	43-043-30209	? NWNE, Sec 1, T3N, R7E
W02-10	43-043-30265	NWSE, Sec 2, T3N, R7E
W16-14	43-043-30096	NWSW, Sec 16, T4N, R8E
W19-08	43-043-30272	SENE, Sec 19, T4N, R8E
W20-08	43-043-30212 ? 30123	SWNW, Sec 20, T4N, R8E
W20-14	43-043-30145	NWSW, Sec 20, T4N, R8E
W29-02	43-043-30220 ? 30136	NWNE, Sec 29, T4N, R8E
W29-12	43-043-30154	NWSW, Sec 29, T4N, R8E
W30-02	43-043-95014 ? 30218	NWNE, Sec 30, T4N, R8E
W30-12A	43-043-30248 ? 30230	NWSW, Sec 30, T4N, R8E
W30-15	43-043-95012 ? 30216	? NWNE, Sec 30, T4N, R8E
W36-08	43-043-30167	SENE, Sec 36, T4N, R7E
W36-14	43-043-30255	SESW. Sec 36, T4N, R7E

This should help to clarify your files and if any changes are necessary we will notify you of such.

If further information is needed please contact Louis F. Lozzie of this office at 307-789-1700 ext. 2226.

Thank you,

R. M. Ramsey

R. M. Ramsey
District Admn. Supervisor

/kg

cc: Pam Collier - Amoco Denver

FORM 10

STATE OF UTAH
DIVISION OF OIL, GAS AND MINING
1594 West North Temple, Suite 1210, PO Box 145801, Salt Lake City, UT 84114-5801

MONTHLY OIL AND GAS PRODUCTION REPORT

OPERATOR NAME AND ADDRESS:

DEMETRIA MARTINEZ
AMOCO ROCMOUNT COMPANY
PO BOX 800
DENVER CO 80201

UTAH ACCOUNT NUMBER: N1390

REPORT PERIOD (MONTH/YEAR): 12 / 97

AMENDED REPORT ☐ **(Highlight Changes)**

Well Name API Number Entity Location	Producing Zone	Well Status	Days Oper	Production Volumes OIL(BBL)	GAS(MCF)	WATER(BBL)
ANSCHUTZ RANCH EAST W20-08 4304330123 04540 04N 08E 20	NGSD			Fee	Anschutz Ranch	East Unit
ANSCHUTZ RANCH EAST 29-04ST1 4304330129 04540 04N 08E 29	NGSD			"		
ANSCHUTZ RANCH EAST E21-14 4304330130 04540 04N 08E 21	TWNCR			"		
ANSCHUTZ RANCH EAST W21-04 4304330135 04540 04N 08E 21	NGSD			"		
ANSCHUTZ RANCH EAST W29-02 4304330136 04540 04N 08E 29	NGSD			"		
ANSCHUTZ RANCH EAST W16-06 4304330138 04540 04N 08E 16	NGSD			"		
ANSCHUTZ RANCH EAST W20-16 4304330148 04540 04N 08E 20	NGSD			"		
ANSCHUTZ RANCH EAST W30-16 4304330156 04540 04N 08E 30	NGSD			"		
ANSCHUTZ RANCH EAST W36-16 4304330157 04540 04N 07E 36	NGSD			"		
ANSCHUTZ RANCH EAST W20-06 4304330159 04540 04N 08E 20	NGSD			"		
ANSCHUTZ RANCH EAST W32-04 4304330162 04540 04N 08E 32	NGSD			"		
ANSCHUTZ RANCH EAST W31-08 4304330164 04540 04N 08E 31	NGSD			"		
ANSCHUTZ RANCH EAST W31-04 4304330165 04540 04N 08E 31	NGSD			"		
			TOTALS			

COMMENTS:

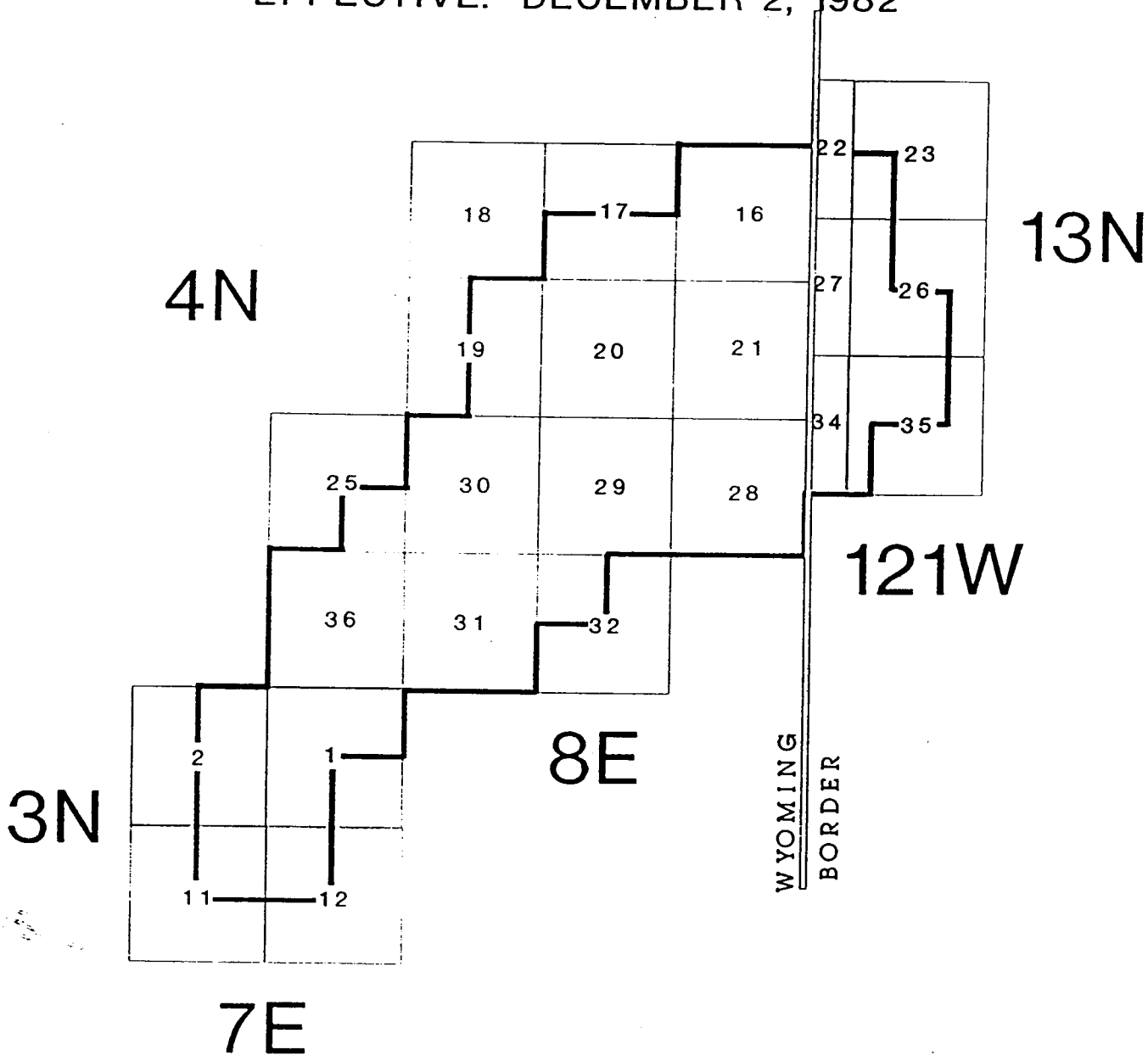
hereby certify that this report is true and complete to the best of my knowledge. Date:

ame and Signature: Telephone Number:

ANSCHUTZ RANCH EAST UNIT

Summit County, Utah

EFFECTIVE: DECEMBER 2, 1982



UNIT OUTLINE (UTU67938X)

AS CONTRACTED DECEMBER 1, 1992

22,158.00 ACRES

FORM 9

STATE OF UTAH

DIVISION OF OIL, GAS AND MINING

SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill new wells, deepen existing wells, or to reenter plugged and abandoned wells. Use APPLICATION FOR PERMIT TO DRILL OR DEEPEN form for such proposals.

5. Lease Designation and Serial Number:

6. If Indian, Allottee or Tribe Name: Anschutz Ranch East

7. Unit Agreement Name: W30-16

8. Well Name and Number:

9. API Well Number: 43-043-30156

10. Field and Pool, or Wildcat: Anschut Ranch

1. Type of Well: OIL ☐ GAS ☒ OTHER:

2. Name of Operator: Amoco Production Company

3. Address and Telephone Number: P.O. Box 800, Rm 812B, Denver, CO 80201 (303) 830-4781

4. Location of Well

Footages:

QQ, Sec., T., R., M.: Sec 30, T4N, R8E

County: Summit

State: Utah

11. CHECK APPROPRIATE BOXES TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

NOTICE OF INTENT (Submit in Duplicate)

- ☐ Abandonment
- ☐ Casing Repair
- ☐ Change of Plans
- ☐ Conversion to Injection
- ☒ Fracture Treat
- ☐ Multiple Completion
- ☐ Other
- ☐ New Construction
- ☐ Pull or Alter Casing
- ☐ Recompletion
- ☐ Shoot or Acidize
- ☐ Vent or Flare
- ☐ Water Shut-Off

Approximate date work will start

SUBSEQUENT REPORT (Submit Original Form Only)

- ☐ Abandonment *
- ☐ Casing Repair
- ☐ Change of Plans
- ☐ Conversion to Injection
- ☐ Fracture Treat
- ☐ Other
- ☐ New Construction
- ☐ Pull or Alter Casing
- ☐ Shoot or Acidize
- ☐ Vent or Flare
- ☐ Water Shut-Off

Date of work completion

Report results of Multiple Completions and Recompletions to different reservoirs on WELL COMPLETION OR RECOMPLETION AND LOG form.

* Must be accompanied by a cement verification report.

12. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)

Amoco Production Company is now the operator of the above mentioned well. We will be operating under Utah Bond # 831094. This is effective 1/31/95.

If you require additional information, please contact Gigi Martinez @ (303) 830-4781.

13.

Name & Signature: G G Martinez

Title: Permit Agent

Date: 2/5/98

(This space for State use only)

State of Delaware

Office of the Secretary of State

I, EDWARD J. FREEL, SECRETARY OF STATE OF THE STATE OF DELAWARE, DO HEREBY CERTIFY THE ATTACHED IS A TRUE AND CORRECT COPY OF THE CERTIFICATE OF DISSOLUTION OF "AMOCO ROCMOUNT COMPANY", FILED IN THIS OFFICE ON THE THIRTY-FIRST DAY OF JANUARY, A.D. 1995, AT 10 O'CLOCK A.M.

A CERTIFIED COPY OF THIS CERTIFICATE HAS BEEN FORWARDED TO THE NEW CASTLE COUNTY RECORDER OF DEEDS FOR RECORDING.

Change of operator. Amoco Rocmount to Amoco Production Co Effective 1/31/95

Edward J. Freel

Edward J. Freel, Secretary of State

0934277 8100

950022938

AUTHENTICATION: 7391913

DATE: 01-31-95

ATTN: Lisha Cordova 4 pages
801-359-3904

Ed Hadlock
Amoco Prod. Co
303-830-4993

CERTIFICATE OF DISSOLUTION

OF

AMOCO ROCMOUNT COMPANY

AMOCO ROCMOUNT COMPANY, a corporation organized and existing under and by virtue of the General Corporation Law of the State of Delaware,

DOES HEREBY CERTIFY:

FIRST: That dissolution was authorized on January 19, 1995.

SECOND: That dissolution has been authorized by the unanimous written consent of all of the stockholders of the corporation entitled to vote on a dissolution in accordance with the provisions of subsection (c) of section 275 of the General Corporation Law of the State of Delaware.

THIRD: That the names and addresses of the directors and officers of AMOCO ROCMOUNT COMPANY are as follows:

DIRECTORS

NAMES	ADDRESSES
J. M. Brown	501 WestLake Park Boulevard Houston, TX 77079
J. M. Gross	501 WestLake Park Boulevard Houston, TX 77079
D. H. Welch	200 East Randolph Drive Chicago, IL 60601

OFFICERS

NAMES	OFFICES	ADDRESS
J. M. Brown	President	501 WestLake Park Blvd. Houston, TX 77079
M. R. Gile	Vice President	1670 Broadway Denver, CO 80202
J. N. Jaggers	Vice President	1670 Broadway Denver, CO 80202

NAMES	OFFICES	ADDRESS
D. H. Welch	Vice President	200 East Randolph Drive Chicago, IL 60601
J. M. Gross	Secretary	501 WestLake Park Blvd. Houston, TX 77079
R. B. Wilson	Assistant Secretary	1670 Broadway Denver, CO 80202
Rebecca Gormezano	Assistant Secretary	200 East Randolph Drive Chicago, IL 60601
C. F. Helm	Assistant Secretary	519 S. Boston Tulsa, OK 74103
A. L. Haws	Assistant Secretary	501 WestLake Park Blvd. Houston, TX 77079
Daniel B. Pinkert	Assistant Secretary	200 East Randolph Drive Chicago, IL 60601
G. L. Paulson	Assistant Secretary	1670 Broadway Denver, CO 80202
J. E. Rutter	Assistant Secretary	501 WestLake Park Blvd. Houston, TX 77079
J. L. Siddall	Assistant Secretary	200 East Randolph Drive Chicago, IL 60601
M. J. Stonecipher	Assistant Secretary	519 S. Boston Tulsa, OK 74103
Rebecca S. McGee	Assistant Secretary	1670 Broadway Denver, CO 80202
Gerald M. Wilson	Assistant Secretary	200 East Randolph Drive Chicago, IL 60601
Marsha Williams	Treasurer	200 East Randolph Drive Chicago, IL 60601

IN WITNESS WHEREOF, said AMOCO ROCMOUNT COMPANY has caused this certificate to be signed by M. R. Gile, its Vice President, and attested by Rebecca S. McGee, its Assistant Secretary, this 26th day of January, 1995.

AMOCO ROCMOUNT COMPANY

By _____
M. R. Gile, Vice President

ATTEST:

By Rebecca S. McGee
Assistant Secretary

STATE OF COLORADO)
) ss.
CITY OF DENVER)

I, Sheryl A. White, a Notary Public, do hereby certify that M. R. GILE and Robert S. McGee of the above named AMOCO ROCMOUNT COMPANY, personally known to me to be the same persons whose names are subscribed to the foregoing instrument as Vice President and Assistant Secretary, respectively, appeared before me this day in person, and acknowledged that they signed, sealed and delivered the said instrument as the free and voluntary act of said AMOCO ROCMOUNT COMPANY, and as their own free and voluntary act as Vice President and Assistant Secretary, respectively, for the uses and purposes therein set forth.

GIVEN under my hand and official seal this 26th day of January, 1995.

Sheryl A. White
Notary Public

State of Utah
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS AND MINING

Michael O. Leavitt
Governor
Ted Stewart
Executive Director
Lowell P. Braxton
Division Director

1594 West North Temple, Suite 1210
PO Box 145801
Salt Lake City, Utah 84114-5801
801-538-5340
801-359-3940 (Fax)
801-538-7223 (TDD)

February 26, 1998

G. G. Martinez
Amoco Production Company
P. O. Box 800, Room 812B
Denver, Colorado 80201

Re: Notification of Sale or Transfer of Fee Lease Interest

The Division has received notification of a change of operator from Amoco Rocmount Company to Amoco Production Company for the following wells which are located on fee leases:

Well Name	Sec.-T.-R.	API Number
(Anschutz Ranch East "ARE")		
ARE W20-08	20-04N-08E	43-043-30123
ARE 29-04ST1	29-04N-08E	43-043-30129
ARE E21-14	21-04N-08E	43-043-30130
ARE W21-04	21-04N-08E	43-043-30135
ARE W29-02	29-04N-08E	43-043-30136
ARE W16-06	16-04N-08E	43-043-30138
ARE W20-16	20-04N-08E	43-043-30148
ARE W30-16	30-04N-08E	43-043-30156
ARE W36-16	36-04N-07E	43-043-30157
ARE W20-06	20-04N-08E	43-043-30159
ARE W32-04	32-04N-08E	43-043-30162
ARE W31-08	31-04N-08E	43-043-30164
ARE W31-04	31-04N-08E	43-043-30165
ARE W17-16	17-04N-08E	43-043-30176
ARE W30-08	30-04N-08E	43-043-30183
ARE W30-14	30-04N-08E	43-043-30185
ARE W01-06	01-03N-07E	43-043-30188
ARE W31-12	31-04N-08E	43-043-30190
ARE W19-16	19-04N-08E	43-043-30204
ARE W30-10	30-04N-08E	43-043-30215
ARE W31-06	31-04N-08E	43-043-30217

ARE W20-12	20-04N-08E	43-043-30220
ARE E28-06	28-04N-08E	43-043-30226
ARE W36-10	36-04N-07E	43-043-30227
ARE W20-02	20-04N-08E	43-043-30228
ARE W20-10	20-04N-08E	43-043-30229
ARE W16-12	16-04N-08E	43-043-30231
ARE W20-04	20-04N-08E	43-043-30238
ARE W29-06A	29-04N-08E	43-043-30250
ARE W29-14A	29-04N-08E	43-043-30251
ARE E28-12	28-04N-08E	43-043-30257
ARE W01-04	01-03N-07E	43-043-30270
ARE W01-12	01-03N-07E	43-043-30271
ARE W30-06	30-04N-08E	43-043-30273
ARE W11-1	11-03N-07E	43-043-30277
ARE W30-13	25-04N-07E	43-043-30279
ARE W12-04	02-03N-07E	43-043-30283
ARE W20-09	20-04N-08E	43-043-30286
ARE W20-03	20-04N-08E	43-043-30291

Utah Administrative Rule R649-2-10 states; the owner of a lease shall provide notification to any person with an interest in such lease, when all or part of that interest in the lease is sold or transferred.

This letter is written to advise Amoco Production Company of its responsibility to notify all individuals with an interest in these leases (royalty interest and working interest) of the change of operator. Please provide written documentation of this notification to:

Utah Royalty Owners Association
Box 1292
Roosevelt, Utah 84066

Your assistance in this matter is appreciated.

Sincerely,

Lisha Cordova

Lisha Cordova
Admin. Analyst, Oil & Gas

cc: Amoco Rocmount Company, Ed Hadlock
Utah Royalty Owners Association, Stephen Evans
John R. Baza, Associate Director
Operator File(s)

Division of Oil, Gas and Mining

OPERATOR CHANGE WORKSHEET

Routing:	
1-LEC ✓	6-LEC ✓
2-GLH ✓	7-KAS ✓
3-DTS ✓	8-SJ ✓
4-VLD ✓	9-FILE ✓
5-JRB ✓	

Attach all documentation received by the division regarding this change.
Initial each listed item when completed. Write N/A if item is not applicable.

XX Change of Operator (~~well sold~~) ☐ Designation of Agent
☐ Designation of Operator ☐ Operator Name Change Only

The operator of the well(s) listed below has changed, **effective:** 1-31-95

TO: (new operator) AMOCO PRODUCTION COMPANY
(address) PO BOX 800
DENVER CO 80201
Phone: (303)830-5340
Account no. N0050

FROM: (old operator) AMOCO ROCMOUNT COMPANY
(address) PO BOX 800
DENVER CO 80201
ED HADLOCK
Phone: (303)830-5340
Account no. N1390

WELL(S) attach additional page if needed: *ANSCHUTZ RANCH EAST UNIT

Name:	API:	Entity:	S	T	R	Lease:
SEE ATTACHED	43-043-30156					

OPERATOR CHANGE DOCUMENTATION

Lec 1. (r649-8-10) Sundry or other legal documentation has been received from the **FORMER** operator (attach to this form). (Reg. 2-19-98) (Rec'd 2-26-98)

Lec 2. (r649-8-10) Sundry or other legal documentation has been received from the **NEW** operator (Attach to this form). (Rec'd 2-11-98)

N/A 3. The **Department of Commerce** has been contacted if the new operator above is not currently operating any wells in Utah. Is the company **registered with the state?** (yes/no) _____ If yes, show company file number: _____.

N/A 4. **FOR INDIAN AND FEDERAL WELLS ONLY.** The BLM has been contacted regarding this change. Make note of BLM status in comments section of this form. BLM approval of **Federal** and **Indian** well operator changes should ordinarily take place prior to the division's approval, and before the completion of **steps 5 through 9** below.

Lec 5. Changes have been entered in the **Oil and Gas Information System** (3270) for each well listed above. (2-26-98) ✗ QuattroPro/UIC "No Chg.", DBASE/UIC "No Chg." (See comments)

Lec 6. **Cardex** file has been updated for each well listed above. (2-26-98)

Lec 7. Well **file labels** have been updated for each well listed above. (2-26-98)

Lec 8. Changes have been included on the monthly "Operator, Address, and Account Changes" **memo** for distribution to Trust Lands, Sovereign Lands, UGS, Tax Commission, etc. (2-26-98)

Lec 9. A folder has been set up for the **Operator Change file**, and a copy of this page has been placed there for reference during routing and processing of the original documents.

OPERATOR CHANGE WORKSHEET (continued) - Initial each item when completed. Write N/A if item is not applicable.

ENTITY REVIEW

Lec 1. (r649-8-7) **Entity assignments have been reviewed** for all wells listed above. Were entity changes made? (yes/no) ____ If entity assignments were changed, attach copies of Form 6, Entity Action Form.
4540 "Unit Entity"

N/A 2. Trust Lands, Sovereign Lands, Tax Commission, etc., have been **notified** through normal procedures of entity changes.

BOND VERIFICATION - (FEE WELLS ONLY)

Surety No. 831094 (80,000) Issued by Seaboard Surety Co. in behalf of Amoco Prod. Co. and Amoco Rocmount Co.

Lec 1. (r649-3-1) The **NEW** operator of any fee lease well listed above has furnished a proper bond.

Lec 2. A **copy of this form** has been placed in the new and former operator's bond files.

Lec 3. The **FORMER** operator has requested a release of liability from their bond (yes/no) ____, as of today's date 2-19-98. If yes, division response was made to this request by letter dated _____.

LEASE INTEREST OWNER NOTIFICATION OF RESPONSIBILITY

N/A/Lec 1. Copies of documents have been sent on _____ to _____ at Trust Lands for changes involving State leases, in order to remind that agency of their responsibility to review for proper bonding.

Lec 2. (r649-2-10) The former operator of any fee lease wells listed above has been contacted and informed by letter dated Feb. 26, 1998, of their responsibility to notify all interest owners of this change.

FILMING

VB 1. All attachments to this form have been **microfilmed**. Today's date: 3.20.98.

FILING

CHD 1. **Copies** of all attachments to this form have been filed in each **well file**.

__ 2. The **original of this form**, and the **original attachments** are now being filed in the Operator Change file.

COMMENTS

980219 Recognized oper. for Anschutz Ranch East Unit (State Unit) already Amoco Production Co.

* UIC Wells (Disposal & Gas Injection) were never changed to Amoco Rocmount Company, no change necessary! They were changed in 3270 and have now been changed back to Amoco Prod. Co.

Form 9

STATE OF UTAH
DIVISION OF OIL, GAS AND MINING

5. Lease Designation and Serial Number: **FEE**

6. If Indian, Allottee or Tribe Name:

7. Unit Agreement Name:

SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill new wells, deepen existing wells, or to reenter plugged and abandoned wells.
Use APPLICATION FOR PERMIT TO DRILL OR DEEPEN form for such proposals

1. Type of Well: OIL ☐ GAS ☒ OTHER ☐

8. Well Name and Number: **ARE #30-16**

2. Name of Operator: **Amoco Production Company**

9. API Well Number **43-043-30156**

3. Address and Telephone Number: **P. O. Box 800, Denver CO 80201, Suite 812B** **303-830-4781**

10. Field and Pool, or Wildcat: **Wildcat**

4. Location of Well
Footages: **968' FEL x 1345' FSL SE/4**
QQ, Sec., T.,R.,M.: **Sec.30-T4N-R8E**
County: **Summit**
State: **Utah**

11. CHECK APPROPRIATE BOXES TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

NOTICE OF INTENT (Submit in Duplicate)		SUBSEQUENT REPORT (Submit Original Form Only)	
☐ Abandonment	☐ New Construction	☐ Abandonment*	☐ New Construction
☐ Casing Repair	☐ Pull or Alter Casing	☐ Casing Repair	☐ Pull or Alter Casing
☐ Change of Plans	☐ Recompletion	☐ Change of Plans	☐ Shoot or Acidize
☐ Conversion to Injection	☐ Shoot or Acidize	☐ Conversion to Injection	☐ Vent or Flare
☒ Fracture Treat	☐ Vent or Flare	☐ Fracture Treat	☐ Water Shut-Off
☐ Multiple Completion	☐ Water Shut-Off	☐ Other	
☐ Other		Date of work completion	
Approximate date work will start **07/09/98**		Report results of Multiple Completions and Recompletions to different reservoirs on WELL COMPLETION OR RECOMPLETION AND LOG form.	
		* Must be accompanied by a cement verification report.	

12. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)

Amoco Production proposes the attached frac procedure.

If you require additional information, please contact Gigi Martinez at (303) 830-4781.

COPY SENT TO OPERATOR
Date: 7-2-98
Initials: KDR

13. Signature: G. G. Martinez Title: **Regulatory Agent** Date: 6/23/98

(This space for State use only)

APPROVED BY THE STATE OF UTAH DIVISION OF OIL, GAS, AND MINING
DATE: 7-1-98
BY: Robert J. Krueger
Petroleum Engineer

RECEIVED
JUN 25 1998
DIV. OF OIL, GAS & MINING

(See Instructions On Reverse Side)

ARE 30-16 Frac Procedure

1) Prep well to be fraced.

2) RU Dowell frac crew.

3) Pressure test Dowell Frac lines to max treating pressure.

4) Pump 45,000 lbs. of 20/40 mesh Econoprop as per Fraccade pump schedule . All fluids to be mixed on the fly. Volumes are downhole volumes and do not include tank bottoms. Estimated rate=32 BPM Estimated pressure=4000 psi.

Fluid compositions and volumes as follows (additives are per 1000 gals):

53,000 gals YF130M
6.8 gals J877 Gelling Agent
2 gals F802 Surfactant
Crosslinker, buffer, and Activator as needed

4000 gals YF125M
5.7 gals J877 Gelling Agent
2 gals F802 Surfactant
Crosslinker, buffer, and Activator as needed

45,000 lbs 20/40 Econoprop

Need equipment on location to pump job at 50 BPM below 7000 psi and continuous mix setup for the frac fluid.

Also:
Filtered 2% KCl fluid will need to be provided for Dowell. Although current tubulars are 4-1/2", the top joint of tubing is 3-1/2" because of the 3" well head. Please verify that Stinger has equipment to handle the ecommended 50 BPM that Dowell suggests. I would like to see a minimum rating of 40 BPM and 8000 psi myself.

We will not be sanding back perforations on this well. The setup will be loading the hole only. The proppant should go into the highest perm perforations and the design is based on this. A pump in test with shut down will also be perform, to verify design parameters, prior to pumping the proppant.

RECEIVED
JUN 25 1998
DIV. OF OIL, GAS & MINING

STATE OF UTAH
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS AND MINING

FORM 9

SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill new wells, significantly deepen existing wells below current bottom-hole depth, reenter plugged wells, or to drill horizontal laterals. Use APPLICATION FOR PERMIT TO DRILL form for such proposals.

5. LEASE DESIGNATION AND SERIAL NUMBER:

6. IF INDIAN, ALLOTTEE OR TRIBE NAME:

7. UNIT or CA AGREEMENT NAME: See Attached

1. TYPE OF WELL: OIL WELL ☐ GAS WELL ☐ OTHER See Attached

8. WELL NAME and NUMBER: See Attached

2. NAME OF OPERATOR: Amoco Production Company

9. API NUMBER: Attached

3. ADDRESS OF OPERATOR: 501 Westlake Park Blvd CITY Houston STATE TX ZIP 77079

PHONE NUMBER: (281) 366-5328

10. FIELD AND POOL, OR WILDCAT: See Attached

4. LOCATION OF WELL

FOOTAGES AT SURFACE: See Attached

COUNTY: See Attached

QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN:

STATE: UTAH

11. CHECK APPROPRIATE BOXES TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION		
☑ NOTICE OF INTENT (Submit in Duplicate)	☐ ACIDIZE	☐ DEEPEN	☐ REPERFORATE CURRENT FORMATION
Approximate date work will start:	☐ ALTER CASING	☐ FRACTURE TREAT	☐ SIDETRACK TO REPAIR WELL
	☐ CASING REPAIR	☐ NEW CONSTRUCTION	☐ TEMPORARILY ABANDON
	☐ CHANGE TO PREVIOUS PLANS	☐ OPERATOR CHANGE	☐ TUBING REPAIR
	☐ CHANGE TUBING	☐ PLUG AND ABANDON	☐ VENT OR FLARE
☐ SUBSEQUENT REPORT (Submit Original Form Only)	☐ CHANGE WELL NAME	☐ PLUG BACK	☐ WATER DISPOSAL
Date of work completion:	☐ CHANGE WELL STATUS	☐ PRODUCTION (START/RESUME)	☐ WATER SHUT-OFF
	☐ COMMINGLE PRODUCING FORMATIONS	☐ RECLAMATION OF WELL SITE	☑ OTHER: Operator Name Change
	☐ CONVERT WELL TYPE	☐ RECOMPLETE - DIFFERENT FORMATION	

12. DESCRIBE PROPOSED OR COMPLETED OPERATIONS. Clearly show all pertinent details including dates, depths, volumes, etc.

Amoco Production Company proposes to change its name to BP America Production Company, effective December 31, 2001. Mailing addresses and designated agents shall remain the same.

Attached to this sundry is a listing of wells currently operated by Amoco Production Company. This list includes all wells with the exception of those wells which have a plugged or D&A status.

Also attached for the Board's file is a copy of the Board Resolution approving the name change.

NAME (PLEASE PRINT) Alan Wood

TITLE Regulatory Engineer

SIGNATURE

DATE 12/11/2001

(This space for State use only)

RECEIVED

DEC 13 2001

DIVISION OF OIL, GAS AND MINING

(5/2000)

(See Instructions on Reverse Side)

UNITED STATES OF AMERICA §
STATE OF TEXAS §
COUNTY OF HARRIS §
CITY OF HOUSTON §

CERTIFICATE

M. S. Haskins, of lawful age, first being duly sworn on oath, deposes and says:

1. That she is the duly elected, qualified and acting Assistant Secretary of Amoco Production Company, a corporation organized and existing under the laws of the State of Delaware, U.S.A.;

2. That on November 12, 2001, by consent action of the Board of Directors of Amoco Production Company (hereinafter referred to as "Company"), the following resolutions were adopted:

> WHEREAS, in connection with BP America Inc.'s ("BP") integration of Atlantic Richfield Company ("ARCO") and Vastar Resources, Inc. ("Vastar"), BP has elected to reorganize, consolidate and merge its upstream onshore Lower 48 assets into a single legal entity to align BP's legal structure with its business organization and to improve operating efficiencies; and
>
> WHEREAS, BP desires Amoco Production Company ("Company") to be such single legal entity for the purposes of such reorganization, consolidation and merger; and
>
> WHEREAS such reorganization, consolidation and merger shall be accomplished by December 31, 2001 pursuant to a Reorganization Agreement ("Agreement") by and between ARCO and BP Company North America Inc. ("BP Company NA"), the parent of Company, resulting in ARCO's upstream onshore Lower 48 assets being transferred to Company and Vastar being merged into Company; and
>
> WHEREAS, pursuant to such Agreement, asset, stock and liability transfers will occur in consideration for Class B common stock of BP Company NA and Company's agreement to assume all obligations and indemnify ARCO for all past and future liabilities relating to such transfers; and
>
> WHEREAS, in connection with such reorganization, Company desires to change its name to BP America Production Company, effective December 31, 2001 with corporate seal as follows; and

WHEREAS all officers and directors of Company will remain unchanged.

NOW, THEREFORE, BE IT,

RESOLVED, Company will accept asset, stock and liability transfers effective December 31, 2001 pursuant to the Agreement and will assume all obligations and indemnify ARCO for all past or future liabilities relating to such transfers.

FURTHER RESOLVED, Company will change its name and corporate seal to BP America Production Company, effective December 31, 2001 and all officers and directors will remain unchanged.

3. That the aforesaid resolutions have not been amended, rescinded, or annulled, but remain in full force and effect on the date hereof.

EXECUTED in the City of Houston, State of Texas, on this the 13 day of November, 2001.

[Corporate Seal]

M. S. Haskins

SUBSCRIBED and sworn to before me this 13 day of November, 2001.

(Notary Seal)

DENISE ROBERTSON
Notary Public, State of Texas
My Commission Expires
October 12, 2004

NOTARY PUBLIC, STATE OF TEXAS

API Well Number	Operator	Well Name	Well Type	Well Status	Field Name	Sec	Twp-Rng
43-043-30096-00-00	AMOCO PRODUCTION CO	ANSCHUTZ RANCH EAST W16-14	Gas Well	Shut_In	ANSCHUTZ RANCH EAST	16	4N-8E
43-043-30106-00-00	AMOCO PRODUCTION CO	ANSCHUTZ RANCH EAST 34-2	SWD	Active Well	ANSCHUTZ RANCH EAST	34	4N-7E
43-043-30123-00-00	AMOCO PRODUCTION CO	ARE W20-08	Gas Well	Producing Well	ANSCHUTZ RANCH EAST	20	4N-8E
43-043-30129-00-00	AMOCO PRODUCTION CO	ARE 29-04ST1	Gas Well	Producing Well	ANSCHUTZ RANCH EAST	29	4N-8E
43-043-30130-00-00	AMOCO PRODUCTION CO	ANSCHUTZ RANCH EAST E21-14	Gas Well	Shut_In	ANSCHUTZ RANCH EAST	21	4N-8E
43-043-30135-00-00	AMOCO PRODUCTION CO	ANSCHUTZ RANCH EAST W21-04	Gas Well	Shut_In	ANSCHUTZ RANCH EAST	21	4N-8E
43-043-30136-00-00	AMOCO PRODUCTION CO	ARE W29-02	Gas Well	Producing Well	ANSCHUTZ RANCH EAST	29	4N-8E
43-043-30138-00-00	AMOCO PRODUCTION CO	ANSCHUTZ RANCH EAST W16-06	Gas Well	Shut_In	ANSCHUTZ RANCH EAST	16	4N-8E
43-043-30139-00-00	AMOCO PRODUCTION CO	ISLAND RANCHING C-1	SWD	Active Well	ANSCHUTZ RANCH EAST	26	4N-7E
43-043-30143-00-00	AMOCO PRODUCTION CO	CHAMPLIN 372 AMOCO C 1	Gas Well	Producing Well	ANSCHUTZ RANCH EAST	23	4N-7E
43-043-30145-00-00	AMOCO PRODUCTION CO	ARE W20-14	Gas Well	Producing Well	ANSCHUTZ RANCH EAST	20	4N-8E
43-043-30148-00-00	AMOCO PRODUCTION CO	ARE W20-16	Gas Well	Producing Well	ANSCHUTZ RANCH EAST	20	4N-8E
43-043-30154-00-00	AMOCO PRODUCTION CO	ARE W29-12	Gas Well	Producing Well	ANSCHUTZ RANCH EAST	29	4N-8E
43-043-30156-00-00	AMOCO PRODUCTION CO	ARE W30-16	Gas Well	Producing Well	ANSCHUTZ RANCH EAST	30	4N-8E
43-043-30157-00-00	AMOCO PRODUCTION CO	ARE W36-16	Gas Well	Producing Well	ANSCHUTZ RANCH EAST	36	4N-7E
43-043-30159-00-00	AMOCO PRODUCTION CO	ANSCHUTZ RANCH EAST W20-06	Gas Well	Shut_In	ANSCHUTZ RANCH EAST	20	4N-8E
43-043-30161-00-00	AMOCO PRODUCTION CO	ISLAND RANCHING D-1	Gas Well	Shut_In	**WEBER FORMATION**	14	4N-7E
43-043-30162-00-00	AMOCO PRODUCTION CO	ARE W32-04	Gas Well	Producing Well	ANSCHUTZ RANCH EAST	32	4N-8E
43-043-30164-00-00	AMOCO PRODUCTION CO	ARE W31-08	Gas Well	Producing Well	ANSCHUTZ RANCH EAST	31	4N-8E
43-043-30165-00-00	AMOCO PRODUCTION CO	ANSCHUTZ RANCH EAST W31-04 E	Gas Well	Shut_In	ANSCHUTZ RANCH EAST	31	4N-8E
43-043-30167-00-00	AMOCO PRODUCTION CO	ARE W36-08	Gas Well	Producing Well	ANSCHUTZ RANCH EAST	36	4N-7E
43-043-30168-00-00	AMOCO PRODUCTION CO	CHAMPLIN 387 B1A	Gas Well	Shut_In	ANSCHUTZ RANCH EAST	9	3N-7E
43-043-30170-00-00	AMOCO PRODUCTION CO	CHAMPLIN 372 D-1	Gas Well	Producing Well	ANSCHUTZ RANCH EAST	23	4N-7E
43-043-30176-00-00	AMOCO PRODUCTION CO	ANSCHUTZ RANCH EAST W17-16	Gas Well	Shut_In	ANSCHUTZ RANCH EAST	17	4N-8E
43-043-30183-00-00	AMOCO PRODUCTION CO	ARE W30-08	Gas Well	Producing Well	ANSCHUTZ RANCH EAST	30	4N-8E
43-043-30185-00-00	AMOCO PRODUCTION CO	ANSCHUTZ RANCH EAST W30-14	Gas Well	Producing Well	ANSCHUTZ RANCH EAST	30	4N-8E
43-043-30188-00-00	AMOCO PRODUCTION CO	ARE W01-06	Gas Well	Producing Well	ANSCHUTZ RANCH EAST	1	3N-7E
43-043-30190-00-00	AMOCO PRODUCTION CO	ANSCHUTZ RANCH EAST W31-12	Gas Well	Shut_In	ANSCHUTZ RANCH EAST	31	4N-8E
43-043-30204-00-00	AMOCO PRODUCTION CO	ANSCHUTZ RANCH EAST W19-16	Gas Well	Shut_In	ANSCHUTZ RANCH EAST	19	4N-8E
43-043-30209-00-00	AMOCO PRODUCTION CO	ARE W1-02	Gas Well	Producing Well	ANSCHUTZ RANCH EAST	1	3N-7E
43-043-30215-00-00	AMOCO PRODUCTION CO	ARE W30-10	Gas Well	Producing Well	ANSCHUTZ RANCH EAST	30	4N-8E
43-043-30216-00-00	AMOCO PRODUCTION CO	ARE W30-15	Gas Well	Producing Well	ANSCHUTZ RANCH EAST	30	4N-8E
43-043-30217-00-00	AMOCO PRODUCTION CO	ARE W31-06	Gas Well	Producing Well	ANSCHUTZ RANCH EAST	31	4N-8E
43-043-30218-00-00	AMOCO PRODUCTION CO	ARE W30-02	Gas Well	Producing Well	ANSCHUTZ RANCH EAST	30	4N-8E

API Well Number	Operator	Well Name	Well Type	Well Status	Field Name	Sec	Twp-Rng
43-043-30220-00-00	AMOCO PRODUCTION CO	ANSCHUTZ RANCH EAST W20-12	Gas Well	Shut_In	ANSCHUTZ RANCH EAST	20	4N-8E
43-043-30226-00-00	AMOCO PRODUCTION CO	ARE E28-06	Gas Well	Producing Well	ANSCHUTZ RANCH EAST	28	4N-8E
43-043-30227-00-00	AMOCO PRODUCTION CO	ANSCHUTZ RANCH EAST W36-10	Gas Well	Producing Well	ANSCHUTZ RANCH EAST	36	4N-7E
43-043-30228-00-00	AMOCO PRODUCTION CO	ANSCHUTZ RANCH EAST W20-02	Gas Well	Shut_In	ANSCHUTZ RANCH EAST	20	4N-8E
43-043-30229-00-00	AMOCO PRODUCTION CO	ANSCHUTZ RANCH EAST W20-10	Gas Well	Producing Well	ANSCHUTZ RANCH EAST	20	4N-8E
43-043-30231-00-00	AMOCO PRODUCTION CO	ANSCHUTZ RANCH EAST W16-12	Gas Well	Shut_In	ANSCHUTZ RANCH EAST	16	4N-8E
43-043-30238-00-00	AMOCO PRODUCTION CO	ANSCHUTZ RANCH EAST W20-04	Gas Well	Shut_In	ANSCHUTZ RANCH EAST	20	4N-8E
43-043-30248-00-00	AMOCO PRODUCTION CO	ANSCHUTZ RANCH EAST W30-12A	GIW	Active Well	ANSCHUTZ RANCH EAST	30	4N-8E
43-043-30250-00-00	AMOCO PRODUCTION CO	ANSCHUTZ RANCH EAST W29-06A	Gas Well	Producing Well	ANSCHUTZ RANCH EAST	29	4N-8E
43-043-30251-00-00	AMOCO PRODUCTION CO	ANSCHUTZ RANCH EAST W29-14A	Gas Well	Producing Well	ANSCHUTZ RANCH EAST	29	4N-8E
43-043-30255-00-00	AMOCO PRODUCTION CO	ANSCHUTZ RANCH EAST W36-14	Gas Well	Shut_In	ANSCHUTZ RANCH EAST	36	4N-7E
43-043-30257-00-00	AMOCO PRODUCTION CO	ANSCHUTZ RANCH EAST E28-12	Gas Well	Producing Well	ANSCHUTZ RANCH EAST	28	4N-8E
43-043-30265-00-00	AMOCO PRODUCTION CO	ANSCHUTZ RANCH EAST W2-10	GIW	Active Well	ANSCHUTZ RANCH EAST	2	3N-7E
43-043-30270-00-00	AMOCO PRODUCTION CO	ANSCHUTZ RANCH EAST W01-04	Gas Well	Shut_In	ANSCHUTZ RANCH EAST	1	3N-7E
43-043-30271-00-00	AMOCO PRODUCTION CO	ANSCHUTZ RANCH EAST W01-12	Gas Well	Shut_In	ANSCHUTZ RANCH EAST	1	3N-7E
43-043-30272-00-00	AMOCO PRODUCTION CO	ANSCHUTZ RANCH EAST W19-08	GIW	Active Well	ANSCHUTZ RANCH EAST	19	4N-8E
43-043-30273-00-00	AMOCO PRODUCTION CO	ANSCHUTZ RANCH EAST W30-06	Gas Well	Shut_In	ANSCHUTZ RANCH EAST	30	4N-8E
43-043-30277-00-00	AMOCO PRODUCTION CO	ANSCHUTZ RANCH EAST W11-1	Gas Well	Shut_In	ANSCHUTZ RANCH EAST	11	3N-7E
43-043-30279-00-00	AMOCO PRODUCTION CO	ANSCHUTZ RANCH EAST W30-13	Gas Well	Shut_In	ANSCHUTZ RANCH EAST	25	4N-7E
43-043-30280-00-00	AMOCO PRODUCTION CO	ANSCHUTZ RANCH EAST W31-05	Gas Well	Producing Well	ANSCHUTZ RANCH EAST	31	4N-8E
43-043-30283-00-00	AMOCO PRODUCTION CO	ANSCHUTZ RANCH EAST W12-04	Gas Well	Producing Well	ANSCHUTZ RANCH EAST	2	3N-7E
43-043-30286-00-00	AMOCO PRODUCTION CO	ANSCHUTZ RANCH EAST W20-09	Gas Well	Producing Well	ANSCHUTZ RANCH EAST	20	4N-8E
43-043-30291-00-00	AMOCO PRODUCTION CO	ANSCHUTZ RANCH EAST W20-03	Gas Well	Shut_In	ANSCHUTZ RANCH EAST	20	4N-8E

Division of Oil, Gas and Mining

OPERATOR CHANGE WORKSHEET

ROUTING		
1. GLH		4-KAS
2. CDW ✓		5-LP
3. JLT		6-FILE

Enter date after each listed item is completed

Change of Operator (Well Sold) — Designation of Agent

X Operator Name Change — Merger

The operator of the well(s) listed below has changed, effective: **12-31-2001**

FROM: (Old Operator):	**TO:** (New Operator):
AMOCO PRODUCTION COMPANY	BP AMERICA PRODUCTION COMPANY
Address: 501 WESTLAKE PARK BLVD	Address: 501 WESTLAKE PARK BLVD
HOUSTON, TX 77079	HOUSTON,TX 77079
Phone: 1-(281)-366-5328	Phone: 1-(281)-366-5328
Account N0050	Account N1990

CA No. **Unit:** **ANSCHUTZ RANCH EAST**

WELL(S)

NAME	API NO.	ENTITY NO.	SEC. TWN RNG	LEASE TYPE	WELL TYPE	WELL STATUS
ANSCHUTZ RANCH EAST W20-02	43-043-30228	4540	20-4N-8E	FEE	GW	S
ANSCHUTZ RANCH EAST W20-03	43-043-30291	4540	20-4N-8E	FEE	GW	S
ANSCHUTZ RANCH EAST W20-04	43-043-30238	4540	20-4N-8E	FEE	GW	S
ANSCHUTZ RANCH EAST W20-06	43-043-30159	4540	20-4N-8E	FEE	GW	S
ANSCHUTZ RANCH EAST W20-09	43-043-30286	4540	20-4N-8E	FEE	GW	P
ANSCHUTZ RANCH EAST W20-10	43-043-30229	4540	20-4N-8E	FEE	GW	P
ANSCHUTZ RANCH EAST W20-12	43-043-30220	4540	20-4N-8E	FEE	GW	S
ANSCHUTZ RANCH EAST E21-14	43-043-30130	4540	21-4N-8E	FEE	GW	S
ANSCHUTZ RANCH EAST W21-04	43-043-30135	4540	21-4N-8E	FEE	GW	S
ANSCHUTZ RANCH EAST E28-06	43-043-30226	4540	28-4N-8E	FEE	GW	P
ANSCHUTZ RANCH EAST E28-12	43-043-30257	4540	28-4N-8E	FEE	GW	P
ARE 29-04ST1	43-043-30129	4540	29-4N-8E	FEE	GW	P
ANSCHUTZ RANCH EAST W29-02	43-043-30136	4540	29-4N-8E	FEE	GW	P
ANSCHUTZ RANCH EAST W29-12	43-043-30154	4540	29-4N-8E	FEE	GW	P
ANSCHUTZ RANCH EAST W29-06A	43-043-30250	4540	29-4N-8E	FEE	GW	P
ANSCHUTZ RANCH EAST W29-14A	43-043-30251	4540	29-4N-8E	FEE	GW	P
ANSCHUTZ RANCH EAST W30-08	43-043-30183	4540	30-4N-8E	FEE	GW	P
ANSCHUTZ RANCH EAST W30-10	43-043-30215	4540	30-4N-8E	FEE	GW	P
ANSCHUTZ RANCH EAST W30-14	43-043-30185	4540	30-4N-8E	FEE	GW	S
ANSCHUTZ RANCH EAST W30-16	43-043-30156	4540	30-4N-8E	FEE	GW	P

OPERATOR CHANGES DOCUMENTATION

1. (R649-8-10) Sundry or legal documentation was received from the **FORMER** operator on: 12/13/2001

2. (R649-8-10) Sundry or legal documentation was received from the **NEW** operator on: 12/13/2001

3. The new company has been checked through the **Department of Commerce, Division of Corporations Database on:** 12/14/2001

4. Is the new operator registered in the State of Utah: YES Business Number: PENDING

5. If **NO**, the operator was contacted contacted on: N/A

6. **Federal and Indian Lease Wells:** The BLM and or the BIA has approved the (merger, name change, or operator change) for all wells listed on Federal or Indian leases on: N/A

7. **Federal and Indian Units:** The BLM or BIA has approved the successor of unit operator for wells listed on: N/A

8. **Federal and Indian Communization Agreements ("CA"):** The BLM or the BIA has approved the operator change for all wells listed involved in a CA on: N/A

9. **Underground Injection Control ("UIC")** The Division has approved UIC Form 5, **Transfer of Authority to Inject,** for the enhanced/secondary recovery unit/project for the water disposal well(s) listed on: N/A

DATA ENTRY:

1. Changes entered in the **Oil and Gas Database on:** 12/17/2001

2. Changes have been entered on the **Monthly Operator Change Spread Sheet on:** 12/17/2001

3. Bond information entered in RBDMS on: 12/11/2001

4. Fee wells attached to bond in RBDMS on: 12/17/2001

STATE BOND VERIFICATION:

1. State well(s) covered by Bond No.: N/A

INDIAN BOND VERIFICATION:

1. Indian well(s) covered by Bond No.: N/A

FEDERAL BOND VERIFICATION:

1. Federal well(s) covered by Bond No.: N/A

FEE WELLS - BOND VERIFICATION/LEASE INTEREST OWNER NOTIFICATION:

1. (R649-3-1) The **NEW** operator of any fee well(s) listed has furnished a bond: 103172911249

2. The **FORMER** operator has requested a release of liability from their bond on: N/A
   The Division sent response by letter on: N/A

3. (R649-2-10) The **FORMER** operator of the Fee wells has been contacted and informed by a letter from the Division of their responsibility to notify all interest owners of this change on: 12/19/2001

COMMENTS:

STATE OF UTAH
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS AND MINING

FORM 9

SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill new wells, significantly deepen existing wells below current bottom-hole depth, reenter plugged wells, or to drill horizontal laterals. Use APPLICATION FOR PERMIT TO DRILL form for such proposals.

5. LEASE DESIGNATION AND SERIAL NUMBER:

6. IF INDIAN, ALLOTTEE OR TRIBE NAME:

7. UNIT or CA AGREEMENT NAME: See Attached

1. TYPE OF WELL: OIL WELL ☐ GAS WELL ☐ OTHER See Attached

8. WELL NAME and NUMBER: See Attached

2. NAME OF OPERATOR: BP America Production Company

9. API NUMBER: Attached

3. ADDRESS OF OPERATOR: 501 WestLake Park Blv CITY Houston STATE TX ZIP 77079 PHONE NUMBER: (281) 366-2000

10. FIELD AND POOL, OR WILDCAT: See Attached

4. LOCATION OF WELL

FOOTAGES AT SURFACE: See Attached

COUNTY: See Attached

QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN:

STATE: UTAH

11. CHECK APPROPRIATE BOXES TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION		
☑ NOTICE OF INTENT (Submit in Duplicate)	☐ ACIDIZE	☐ DEEPEN	☐ REPERFORATE CURRENT FORMATION
Approximate date work will start:	☐ ALTER CASING	☐ FRACTURE TREAT	☐ SIDETRACK TO REPAIR WELL
	☐ CASING REPAIR	☐ NEW CONSTRUCTION	☐ TEMPORARILY ABANDON
	☐ CHANGE TO PREVIOUS PLANS	☑ OPERATOR CHANGE	☐ TUBING REPAIR
	☐ CHANGE TUBING	☐ PLUG AND ABANDON	☐ VENT OR FLARE
☐ SUBSEQUENT REPORT (Submit Original Form Only)	☐ CHANGE WELL NAME	☐ PLUG BACK	☐ WATER DISPOSAL
Date of work completion:	☐ CHANGE WELL STATUS	☐ PRODUCTION (START/RESUME)	☐ WATER SHUT-OFF
	☐ COMMINGLE PRODUCING FORMATIONS	☐ RECLAMATION OF WELL SITE	☐ OTHER:
	☐ CONVERT WELL TYPE	☐ RECOMPLETE - DIFFERENT FORMATION	

12. DESCRIBE PROPOSED OR COMPLETED OPERATIONS. Clearly show all pertinent details including dates, depths, volumes, etc.

BP America Production Company, effective May 1, 2003, has transferred its interest in the attached list of properties to :

Merit Energy Company
13727 Noel Road, Suite 500
Dallas, TX 75240

Transfer of operations is effective July 1, 2003.

By Merit Energy Company

Name Fred N. Dizm Title V.P.

Signature [signature] Date 7/1/03

BP America Production Company

NAME (PLEASE PRINT) David G. Peterson TITLE Attorney-In-Fact

SIGNATURE [signature] DATE 6/26/03

(This space for State use only)

RECEIVED
JUL 03 2003
DIV. OF OIL, GAS & MINING

(5/2000)

(See Instructions on Reverse Side)

BP OPERATED PROPERTIES TRANSFERRED TO MERIT ENERGY COMPANY

API Well Number	Operator	Well Name	Well Type	Well Status	Field Name	County Name	Location (Twp-Rng)	Section	Qtr/Qtr	Ft. NS	NS	Ft. EW	EW
43-043-30096-00-00	BP AMERICA PRODUCTION CO	ARE W16-14	Gas Well	Shut_In	ANSCHUTZ RANCH EAST	SUMMIT	4N-8E	16	NWSW	2137	S	686	W
43-043-30106-00-00	BP AMERICA PRODUCTION CO	ARE 34-2	Water Disposal	Active Well	ANSCHUTZ RANCH	SUMMIT	4N-7E	34	NWNW	1036	N	1100	W
43-043-30123-00-00	BP AMERICA PRODUCTION CO	ARE W20-08	Gas Well	Shut_In	ANSCHUTZ RANCH EAST	SUMMIT	4N-8E	20	SENE	2202	N	1592	E
43-043-30129-00-00	BP AMERICA PRODUCTION CO	ARE 29-04ST1	Gas Well	Producing Well	ANSCHUTZ RANCH EAST	SUMMIT	4N-8E	29	NWNW	627	N	435	W
43-043-30130-00-00	BP AMERICA PRODUCTION CO	ARE E21-14	Gas Well	Shut_In	ANSCHUTZ RANCH EAST	SUMMIT	4N-8E	21	NWSW	2365	S	200	W
43-043-30135-00-00	BP AMERICA PRODUCTION CO	ARE W21-04	Gas Well	Shut_In	ANSCHUTZ RANCH EAST	SUMMIT	4N-8E	21	NWNW	1063	N	401	W
43-043-30136-00-00	BP AMERICA PRODUCTION CO	ARE W29-02	Gas Well	Producing Well	ANSCHUTZ RANCH EAST	SUMMIT	4N-8E	29	NWNE	662	N	2460	E
43-043-30138-00-00	BP AMERICA PRODUCTION CO	ARE W16-06	Gas Well	Shut_In	ANSCHUTZ RANCH EAST	SUMMIT	4N-8E	16	SENE	1314	N	618	E
43-043-30139-00-00	BP AMERICA PRODUCTION CO	ISLAND RANCHING C-1	Water Disposal	Active Well	ANSCHUTZ RANCH	SUMMIT	4N-7E	26	SWSE	1324	S	1722	E
43-043-30143-00-00	BP AMERICA PRODUCTION CO	CHAMPLIN 372 AMOCO C 1	Gas Well	Shut_In	ANSCHUTZ RANCH	SUMMIT	4N-7E	23	NWNW	860	N	536	W
43-043-30145-00-00	BP AMERICA PRODUCTION CO	ARE W20-14	Gas Well	Producing Well	ANSCHUTZ RANCH EAST	SUMMIT	4N-8E	20	NWSW	1518	S	1283	W
43-043-30148-00-00	BP AMERICA PRODUCTION CO	ARE W20-16	Gas Well	Producing Well	ANSCHUTZ RANCH EAST	SUMMIT	4N-8E	20	SWSE	257	S	1640	E
43-043-30154-00-00	BP AMERICA PRODUCTION CO	ARE W29-12	Gas Well	Producing Well	ANSCHUTZ RANCH EAST	SUMMIT	4N-8E	29	NWSW	2204	S	22	W
43-043-30156-00-00	BP AMERICA PRODUCTION CO	ARE W30-16	Gas Well	Producing Well	ANSCHUTZ RANCH EAST	SUMMIT	4N-8E	30	NESE	1345	S	968	E
43-043-30157-00-00	BP AMERICA PRODUCTION CO	ARE W36-16	Gas Well	Producing Well	ANSCHUTZ RANCH EAST	SUMMIT	4N-7E	36	SESE	890	S	447	E
43-043-30159-00-00	BP AMERICA PRODUCTION CO	ARE W20-06	Gas Well	Shut_In	ANSCHUTZ RANCH EAST	SUMMIT	4N-8E	20	NWNW	1291	N	936	W
43-043-30162-00-00	BP AMERICA PRODUCTION CO	ARE W32-04	Gas Well	Producing Well	ANSCHUTZ RANCH EAST	SUMMIT	4N-8E	32	NWNW	642	N	791	W
43-043-30164-00-00	BP AMERICA PRODUCTION CO	ARE W31-08	Gas Well	Producing Well	ANSCHUTZ RANCH EAST	SUMMIT	4N-8E	31	NWNE	468	N	2201	E
43-043-30165-00-00	BP AMERICA PRODUCTION CO	ARE W31-04E	Gas Well	Shut_In	ANSCHUTZ RANCH EAST	SUMMIT	4N-8E	31	NWNW	111	N	737	W
43-043-30167-00-00	BP AMERICA PRODUCTION CO	ARE W36-08	Gas Well	Shut_In	ANSCHUTZ RANCH EAST	SUMMIT	4N-7E	36	SENE	1641	N	1183	E
43-043-30168-00-00	BP AMERICA PRODUCTION CO	CHAMPLIN 387 B1A	Gas Well	Shut_In	ANSCHUTZ RANCH	SUMMIT	3N-7E	9	SWNW	1837	N	1286	W
43-043-30170-00-00	BP AMERICA PRODUCTION CO	CHAMPLIN 372 D-1	Gas Well	Producing Well	ANSCHUTZ RANCH	SUMMIT	4N-7E	23	NESE	2170	S	680	E
43-043-30176-00-00	BP AMERICA PRODUCTION CO	ARE W17-16	Gas Well	Shut_In	ANSCHUTZ RANCH EAST	SUMMIT	4N-8E	17	NWSE	1765	S	1444	E
43-043-30183-00-00	BP AMERICA PRODUCTION CO	ARE W30-08	Gas Well	Producing Well	ANSCHUTZ RANCH EAST	SUMMIT	4N-8E	30	SENE	2109	N	665	E
43-043-30185-00-00	BP AMERICA PRODUCTION CO	ARE W30-14	Gas Well	Shut_In	ANSCHUTZ RANCH EAST	SUMMIT	4N-8E	30	SESW	1195	S	1405	W
43-043-30188-00-00	BP AMERICA PRODUCTION CO	ARE W01-06	Gas Well	Producing Well	ANSCHUTZ RANCH EAST	SUMMIT	3N-7E	1	SENW	1777	N	1666	W
43-043-30190-00-00	BP AMERICA PRODUCTION CO	ARE W31-12	Gas Well	Shut_In	ANSCHUTZ RANCH EAST	SUMMIT	4N-8E	31	SWNW	1778	N	640	W
43-043-30204-00-00	BP AMERICA PRODUCTION CO	ARE W19-16	Gas Well	Shut_In	ANSCHUTZ RANCH EAST	SUMMIT	4N-8E	19	SWSE	1229	S	1350	E
43-043-30209-00-00	BP AMERICA PRODUCTION CO	ARE W01-02	Gas Well	Producing Well	ANSCHUTZ RANCH EAST	SUMMIT	3N-7E	1	NENW	386	N	2013	W
43-043-30215-00-00	BP AMERICA PRODUCTION CO	ARE W30-10	Gas Well	Producing Well	ANSCHUTZ RANCH EAST	SUMMIT	4N-8E	30	NWSE	2230	S	2432	E
43-043-30216-00-00	BP AMERICA PRODUCTION CO	ARE W30-15	Gas Well	Producing Well	ANSCHUTZ RANCH EAST	SUMMIT	4N-8E	30	SESW	626	S	2848	E
43-043-30217-00-00	BP AMERICA PRODUCTION CO	ARE W31-06	Gas Well	Producing Well	ANSCHUTZ RANCH EAST	SUMMIT	4N-8E	31	SENW	1397	N	2181	W
43-043-30218-00-00	BP AMERICA PRODUCTION CO	ARE W30-02	Gas Well	Shut_In	ANSCHUTZ RANCH EAST	SUMMIT	4N-8E	30	NWNE	715	N	2182	E
43-043-30220-00-00	BP AMERICA PRODUCTION CO	ARE W20-12	Gas Well	Shut_In	ANSCHUTZ RANCH EAST	SUMMIT	4N-8E	20	NWSW	2531	S	7	W
43-043-30226-00-00	BP AMERICA PRODUCTION CO	ARE E28-06	Gas Well	Producing Well	ANSCHUTZ RANCH EAST	SUMMIT	4N-8E	28	SENW	1900	N	1652	W
43-043-30227-00-00	BP AMERICA PRODUCTION CO	ARE W36-10	Gas Well	Shut_In	ANSCHUTZ RANCH EAST	SUMMIT	4N-7E	36	NESW	2315	S	3185	E
43-043-30228-00-00	BP AMERICA PRODUCTION CO	ARE W20-02	Gas Well	Shut_In	ANSCHUTZ RANCH EAST	SUMMIT	4N-8E	20	NWNE	319	N	2000	E
43-043-30229-00-00	BP AMERICA PRODUCTION CO	ARE W20-10	Gas Well	Producing Well	ANSCHUTZ RANCH EAST	SUMMIT	4N-8E	20	SENW	2560	N	2567	W
43-043-30231-00-00	BP AMERICA PRODUCTION CO	ARE W16-12	Gas Well	Shut_In	ANSCHUTZ RANCH EAST	SUMMIT	4N-8E	16	SWNW	2756	S	454	W
43-043-30238-00-00	BP AMERICA PRODUCTION CO	ARE W20-04	Gas Well	Shut_In	ANSCHUTZ RANCH EAST	SUMMIT	4N-8E	20	NWNW	702	N	414	W
43-043-30248-00-00	BP AMERICA PRODUCTION CO	ARE W30-12A	Gas Injection	Inactive Well	ANSCHUTZ RANCH EAST	SUMMIT	4N-8E	30	NWSW	1886	S	47	W
43-043-30250-00-00	BP AMERICA PRODUCTION CO	ARE W29-06A	Gas Well	Producing Well	ANSCHUTZ RANCH EAST	SUMMIT	4N-8E	29	SENW	1513	N	1548	W
43-043-30251-00-00	BP AMERICA PRODUCTION CO	ARE W29-14A	Gas Well	Producing Well	ANSCHUTZ RANCH EAST	SUMMIT	4N-8E	29	NWSW	1786	S	795	W
43-043-30255-00-00	BP AMERICA PRODUCTION CO	ARE W36-14	Gas Well	Shut_In	ANSCHUTZ RANCH EAST	SUMMIT	4N-7E	36	SESW	901	S	1780	W
43-043-30257-00-00	BP AMERICA PRODUCTION CO	ARE E28-12	Gas Well	Producing Well	ANSCHUTZ RANCH EAST	SUMMIT	4N-8E	28	NWSW	1994	S	806	W
43-043-30265-00-00	BP AMERICA PRODUCTION CO	ARE W2-10	Gas Injection	Inactive Well	ANSCHUTZ RANCH EAST	SUMMIT	3N-7E	2	NWSE	1959	S	1463	E
43-043-30270-00-00	BP AMERICA PRODUCTION CO	ARE W01-04	Gas Well	Shut_In	ANSCHUTZ RANCH EAST	SUMMIT	3N-7E	1	SWNW	697	N	465	W
43-043-30271-00-00	BP AMERICA PRODUCTION CO	ARE W01-12	Gas Well	Shut_In	ANSCHUTZ RANCH EAST	SUMMIT	3N-7E	1	NWSW	2072	S	1669	W
43-043-30272-00-00	BP AMERICA PRODUCTION CO	ARE W19-08	Gas Injection	Inactive Well	ANSCHUTZ RANCH EAST	SUMMIT	4N-8E	19	SENE	2227	N	301	E

BP OPERATED PROPERTIES TRANSFERRED TO MERIT ENERGY COMPANY

43-043-30273-00-00	BP AMERICA PRODUCTION CO	ARE W30-06	Gas Well	Shut_In	ANSCHUTZ RANCH EAST	SUMMIT	4N-8E	30 SENW	2393 S	1645 W
43-043-30277-00-00	BP AMERICA PRODUCTION CO	ARE W11-1	Gas Well	Shut_In	ANSCHUTZ RANCH EAST	SUMMIT	3N-7E	11 NENE	533 N	1486 E
43-043-30279-00-00	BP AMERICA PRODUCTION CO	ARE W30-13	Gas Well	Shut_In	ANSCHUTZ RANCH EAST	SUMMIT	4N-7E	25 SESE	597 S	382 E
43-043-30280-00-00	BP AMERICA PRODUCTION CO	ARE W31-05	Gas Well	Producing Well	ANSCHUTZ RANCH EAST	SUMMIT	4N-8E	31 SWNW	2361 N	282 E
43-043-30283-00-00	BP AMERICA PRODUCTION CO	ARE W12-04	Gas Well	Producing Well	ANSCHUTZ RANCH EAST	SUMMIT	3N-7E	2 SESE	373 S	865 E
43-043-30286-00-00	BP AMERICA PRODUCTION CO	ARE W20-09	Gas Well	Producing Well	ANSCHUTZ RANCH EAST	SUMMIT	4N-8E	20 SENE	2360 N	430 E
43-043-30291-00-00	BP AMERICA PRODUCTION CO	ARE W20-03	Gas Well	Shut_In	ANSCHUTZ RANCH EAST	SUMMIT	4N-8E	20 SESW	641 S	1810 W

State of Utah
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS AND MINING

Michael O. Leavitt
Governor
Robert L. Morgan
Executive Director
Lowell P. Braxton
Division Director

1594 West North Temple, Suite 1210
PO Box 145801
Salt Lake City, Utah 84114-5801
(801) 538-5340 telephone
(801) 359-3940 fax
(801) 538-7223 TTY
www.nr.utah.gov

August 26, 2003

Bruce Williams
BP America Production Company
501 WestLake Park Blvd
Houston, TX 77079

Subject: Notification of Sale or Transfer of Fee Lease Interest

Dear Mr. Williams:

The Division has processed your request for an operator change from BP America Production Company to Merit Energy Company effective July 1, 2003 for the attached list of fee wells.

Utah Administrative Code Rule R649-2-10 states: "The owner of a lease shall provide notification to any person with an interest in such lease, when all or part of that interest in the lease is sold or transferred".

This letter is written to advise you of your responsibility to notify all individuals with an interest in these leases (royalty interest and working interest) of the changer. Please provide written documentation of this notification to:

Utah Royalty Owners Association
PO Box 1292
Roosevelt, Utah 84066

Your assistance in this matter is appreciated.

Sincerely,

Earlene Russell

Earlene Russell
Engineering Technician

Attachment

cc: Merit Energy Company
Utah Royalty Owners Association

Division of Oil, Gas and Mining

OPERATOR CHANGE WORKSHEET

ROUTING
1. GLH
2. CDW
3. FILE

X **Change of Operator (Well Sold)** — **Designation of Agent/Operator**

Operator Name Change — Merger

The operator of the well(s) listed below has changed, effective: **7/1/2003**

FROM: (Old Operator):	**TO:** (New Operator):
N1990-BP America Production Company 501 WestLake Park Blvd Houston, TX 77079 Phone: (281) 366-2000	N4900-Merit Energy Company 13727 Noel Road, Suite 500 Dallas, TX 75240 Phone: (972) 628-1558

CA No. **Unit:** ANSCHUTZ RANCH EAST

WELL(S)

NAME	SEC	TWN	RNG	API NO	ENTITY NO	LEASE TYPE	WELL TYPE	WELL STATUS
ARE W01-06	01	030N	070E	4304330188	4540	FEE	GW	P
ARE W36-16	36	040N	070E	4304330157	4540	FEE	GW	P
ARE W36-08	36	040N	070E	4304330167	4540	FEE	GW	S
ARE W16-14	16	040N	080E	4304330096	4540	FEE	GW	S
ARE W16-06	16	040N	080E	4304330138	4540	FEE	GW	S
ARE W17-16	17	040N	080E	4304330176	4540	FEE	GW	S
ARE W20-08	20	040N	080E	4304330123	4540	FEE	GW	S
ARE W20-14	20	040N	080E	4304330145	4540	FEE	GW	P
ARE W20-16	20	040N	080E	4304330148	4540	FEE	GW	P
ARE W20-06	20	040N	080E	4304330159	4540	FEE	GW	S
ARE E21-14	21	040N	080E	4304330130	4540	FEE	GW	S
ARE W21-04	21	040N	080E	4304330135	4540	FEE	GW	S
ARE 29-04ST1	29	040N	080E	4304330129	4540	FEE	GW	P
ARE W29-02	29	040N	080E	4304330136	4540	FEE	GW	P
ARE W29-12	29	040N	080E	4304330154	4540	FEE	GW	P
ARE W30-16	**30**	**040N**	**080E**	**4304330156**	4540	FEE	GW	P
ARE W30-08	30	040N	080E	4304330183	4540	FEE	GW	P
ARE W30-14	30	040N	080E	4304330185	4540	FEE	GW	S
ARE W31-08	31	040N	080E	4304330164	4540	FEE	GW	P
ARE W31-04E	31	040N	080E	4304330165	4540	FEE	GW	S
ARE W32-04	32	040N	080E	4304330162	4540	FEE	GW	P

OPERATOR CHANGES DOCUMENTATION

Enter date after each listed item is completed

1. (R649-8-10) Sundry or legal documentation was received from the **FORMER** operator on: 7/3/2003
2. (R649-8-10) Sundry or legal documentation was received from the **NEW** operator on: 7/3/2003
3. The new company was checked on the **Department of Commerce, Division of Corporations Database on:** 8/7/2003
4. Is the new operator registered in the State of Utah: YES Business Number: 1348145-0143
5. If **NO**, the operator was contacted contacted on: _____

6. (R649-9-2)Waste Management Plan has been received on: IN PLACE

7. **Federal and Indian Lease Wells:** The BLM and or the BIA has approved the merger, name change, or operator change for all wells listed on Federal or Indian leases on: n/a

8. **Federal and Indian Units:**
The BLM or BIA has approved the successor of unit operator for wells listed on: n/a

9. **Federal and Indian Communization Agreements ("CA"):**
The BLM or BIA has approved the operator for all wells listed within a CA on: n/a

10. **Underground Injection Control ("UIC")** The Division has approved UIC Form 5, **Transfer of Authority to Inject,** for the enhanced/secondary recovery unit/project for the water disposal well(s) listed on: n/a

DATA ENTRY:

1. Changes entered in the **Oil and Gas Database on:** 8/26/2003
2. Changes have been entered on the **Monthly Operator Change Spread Sheet on:** 8/26/2003
3. Bond information entered in RBDMS on: 8/26/2003
4. Fee wells attached to bond in RBDMS on: 8/26/2003

STATE WELL(S) BOND VERIFICATION:

1. State well(s) covered by Bond Number: n/a

FEDERAL WELL(S) BOND VERIFICATION:

1. Federal well(s) covered by Bond Number: n/a

INDIAN WELL(S) BOND VERIFICATION:

1. Indian well(s) covered by Bond Number: n/a

FEE WELL(S) BOND VERIFICATION:

1. (R649-3-1) The **NEW** operator of any fee well(s) listed covered by Bond Number 103912218
2. The **FORMER** operator has requested a release of liability from their bond on: n/a
The Division sent response by letter on: n/a

LEASE INTEREST OWNER NOTIFICATION:

3. (R649-2-10) The **FORMER** operator of the fee wells has been contacted and informed by a letter from the Division of their responsibility to notify all interest owners of this change on: 8/26/2003

COMMENTS: