EPOCH

WELL LOGGING, INC.

COMPANY AMOCO OIL and GAS CO.
WELL Sterling # 12-24-60 U. T
FIELD Mist
LOCATION 5279'N and 5479'E from the west 1 corner of section 24, T04S-R4W.
COUNTY, STATE Clatsop County
API WELL INDEX NO.
ELEVATION 1187'+/- 1229'+/-
DATES FROM 7-15-96 TO 9-14-96
DEPTHS FROM 1549'+/- TO 10477'+/-
SPUD DATE 7-14-96
DRILLING CONTRACTOR Mel Drake, Inc.
MUD COMPANY Baroid
LOGGING GEOLOGISTS Jeff Jay, Jr. Conlan

ABBREVIATIONS

BIT		MW	MUD WEIGHT
RPBD	REPLN BIT	VIS	FUNNEL VISCOSITY
RTB	RE-TYP BIT	PV	PLASTIC VISCOSITY
CB	CORE BIT	YP	YIELD POINT
T.O.	TRIP GAS	FL	FLUID LOSS (@100 PSI)
B.G.	BKGRD GAS	CL	PPM CHLORIDE ION
C.G.	CONNECTION GAS	CA	PPM CALCIUM ION
WOB	WEIGHT ON BIT	RMF	FILTRATE RESISTIVITY
RPM	ROTARY REV/MIN	LAT	LOGGED AFTER TRIP
PP	PUMP PRESSURE	NR	NO RETURNS
SPM	STROKES/MIN	PR	POOR RETURNS
		MUD TYPE	Salt Mud

CASING RECORD

13 3/8"	AT	1274'+/-
9 5/8"	AT	10271'+/-
	AT	
	AT	

HOLE SIZE

8 3/4"	AT	10279'+/-
6 1/8"	AT	10477'+/-
	AT	
	AT	

SAND/SANDSTONE	CLAY	LIMESTONE	TUFF	LIGNITE
SHALE	MUDSTONE	VOLCANIC	FOSSIL	GLAUCONITE
SILTSTONE	CONGLOMERATE	BASALT	MICA	PYRITE

OIL: BASED ON LIVE OIL IN UNWASHED CUTTINGS AND PERCENT STAINING AND FLUORESCENCE OF WASHED SAMPLES.

PENETRATION

DRILL RATE (FT/HR)
drilling data

ANALYSIS OF RETURNS

DEPTH

OIL — GAS — UNITS

TRACE GAS | TOTAL GAS | CHROMATOGRAPH

DITCH — TOTAL GAS

CUTTINGS GAS

CALIBRATION 100 units = 2% methane by volume

CHROMATOGRAPH — PPM

METHANE, C-1
ETHANE, C-2
PROPANE, C-3
BUTANES, C-4
PENTANES, C-5

REMARKS

LITHOLOGIC DESCRIPTION
MUD PROPERTIES
SURVEYS, OTHER TEST DATA

Accessory Minerals: Trace
Color:
Samples Dry
Oil
Wet
Abundance:

Survey All sections 100ft unless otherwise noted.
Notes: All TVDs taken referenced to the GR from Calet Check.
Notes: Modifiers in Accessory Mineral Column are referenced to the number of cuttings present in a standard sample tray:
Trace.....1-3 cuttings
Sprinkle.....4-10 cuttings
Common.....10+ cuttings
Abundant.....covered this entire sample.

Pitch off cmt plug @ 5150+, Tr=Cmt
Bit No. 7, 8.5"
Hycalog DS513
Jet 3-13
Survey @ 5151', 1°/0°, N38W
TVD 5150.79', 5.47'N, 5.47'W
Survey @ 5201', 1°/0°, N38W
TVD 5200.77', 6.47'N, 6.47'W
Survey @ 5297', 1°, N38W
TVD 5296.75', 8.07'N, 8.07'W
Survey @ 5393', 1°/0°, N38W
TVD 5392.73', 9.67'N, 9.67'W
Survey @ 5488', 1°/0°, N38W
TVD 5487.71', 11.27'N, 11.27'W
Survey @ 5583', 1°/0°, N38W
TVD 5582.69', 12.87'N, 12.87'W
Survey @ 5678', 1°/0°, N38W
TVD 5677.67', 14.47'N, 14.47'W
Survey @ 5773', 1°/0°, N38W
TVD 5772.65', 16.07'N, 16.07'W
Survey @ 5868', 1°/0°, N38W
TVD 5867.63', 17.67'N, 17.67'W
Survey @ 5963', 1°/0°, N38W
TVD 5962.61', 19.27'N, 19.27'W
Survey @ 6058', 1°/0°, N38W
TVD 6057.59', 20.87'N, 20.87'W
Survey @ 6153', 1°/0°, N38W
TVD 6152.57', 22.47'N, 22.47'W
Survey @ 6248', 1°/0°, N38W
TVD 6247.55', 24.07'N, 24.07'W
Survey @ 6343', 1°/0°, N38W
TVD 6342.53', 25.67'N, 25.67'W
Survey @ 6438', 1°/0°, N38W
TVD 6437.51', 27.27'N, 27.27'W
Survey @ 6533', 1°/0°, N38W
TVD 6532.49', 28.87'N, 28.87'W
Survey @ 6628', 1°/0°, N38W
TVD 6627.47', 30.47'N, 30.47'W
Survey @ 6723', 1°/0°, N38W
TVD 6722.45', 32.07'N, 32.07'W
Survey @ 6818', 1°/0°, N38W
TVD 6817.43', 33.67'N, 33.67'W
Survey @ 6913', 1°/0°, N38W
TVD 6912.41', 35.27'N, 35.27'W
Survey @ 7008', 1°/0°, N38W
TVD 7007.39', 36.87'N, 36.87'W
Survey @ 7103', 1°/0°, N38W
TVD 7102.37', 38.47'N, 38.47'W
Survey @ 7198', 1°/0°, N38W
TVD 7197.35', 40.07'N, 40.07'W
Survey @ 7293', 1°/0°, N38W
TVD 7292.33', 41.67'N, 41.67'W
Survey @ 7388', 1°/0°, N38W
TVD 7387.31', 43.27'N, 43.27'W
Survey @ 7483', 1°/0°, N38W
TVD 7482.29', 44.87'N, 44.87'W
Survey @ 7578', 1°/0°, N38W
TVD 7577.27', 46.47'N, 46.47'W
Survey @ 7673', 1°/0°, N38W
TVD 7672.25', 48.07'N, 48.07'W
Survey @ 7768', 1°/0°, N38W
TVD 7767.23', 49.67'N, 49.67'W
Survey @ 7863', 1°/0°, N38W
TVD 7862.21', 51.27'N, 51.27'W
Survey @ 7958', 1°/0°, N38W
TVD 7957.19', 52.87'N, 52.87'W
Survey @ 8053', 1°/0°, N38W
TVD 8052.17', 54.47'N, 54.47'W
Survey @ 8148', 1°/0°, N38W
TVD 8147.15', 56.07'N, 56.07'W
Survey @ 8243', 1°/0°, N38W
TVD 8242.13', 57.67'N, 57.67'W
Survey @ 8338', 1°/0°, N38W
TVD 8337.11', 59.27'N, 59.27'W
Survey @ 8433', 1°/0°, N38W
TVD 8432.09', 60.87'N, 60.87'W
Survey @ 8528', 1°/0°, N38W
TVD 8527.07', 62.47'N, 62.47'W
Survey @ 8623', 1°/0°, N38W
TVD 8622.05', 64.07'N, 64.07'W
Survey @ 8718', 1°/0°, N38W
TVD 8717.03', 65.67'N, 65.67'W
Survey @ 8813', 1°/0°, N38W
TVD 8812.01', 67.27'N, 67.27'W
Survey @ 8908', 1°/0°, N38W
TVD 8906.99', 68.87'N, 68.87'W
Survey @ 9003', 1°/0°, N38W
TVD 9002.97', 70.47'N, 70.47'W
Survey @ 9098', 1°/0°, N38W
TVD 9097.95', 72.07'N, 72.07'W
Survey @ 9193', 1°/0°, N38W
TVD 9192.93', 73.67'N, 73.67'W
Survey @ 9288', 1°/0°, N38W
TVD 9287.91', 75.27'N, 75.27'W
Survey @ 9383', 1°/0°, N38W
TVD 9382.89', 76.87'N, 76.87'W
Survey @ 9478', 1°/0°, N38W
TVD 9477.87', 78.47'N, 78.47'W
Survey @ 9573', 1°/0°, N38W
TVD 9572.85', 80.07'N, 80.07'W
Survey @ 9668', 1°/0°, N38W
TVD 9667.83', 81.67'N, 81.67'W
Survey @ 9763', 1°/0°, N38W
TVD 9762.81', 83.27'N, 83.27'W
Survey @ 9858', 1°/0°, N38W
TVD 9857.79', 84.87'N, 84.87'W
Survey @ 9953', 1°/0°, N38W
TVD 9952.77', 86.47'N, 86.47'W
Survey @ 10048', 1°/0°, N38W
TVD 10047.75', 88.07'N, 88.07'W
Survey @ 10143', 1°/0°, N38W
TVD 10142.73', 89.67'N, 89.67'W
Survey @ 10238', 1°/0°, N38W
TVD 10237.71', 91.27'N, 91.27'W
Survey @ 10333', 1°/0°, N38W
TVD 10332.69', 92.87'N, 92.87'W
Survey @ 10428', 1°/0°, N38W
TVD 10427.67', 94.47'N, 94.47'W
Survey @ 10477', 1°/0°, N38W
TVD 10476.66', 95.28'N, 95.28'W
CASTLEBERRY SERVICES

Kick off cmt plug @ 5150+, Tr=Cmt
Bit No. 7, 8.5"
Hycalog DS513
Jet 3-13
3 per MW
MW 9.0 VIS 40
MW 9.0+ VIS 40
Ditch and Cuttings Gas 10
Full Samp Tr-3u1
Tr Clay
MW 9.0 VIS 40
MW 9.0+ VIS 40
Ditch and Cuttings Gas 11
MW 9.0+ VIS 40
MW 9.0 VIS 40
Ditch and Cuttings Gas 12
MW 9.0 VIS 40
MW 9.0+ VIS 40
Ditch and Cuttings Gas 13
MW 9.0+ VIS 40
Bit No. 9, 8.5"
Hycalog DS513
Jet 3-13
MW 9.0+ VIS 40
Ditch and Cuttings Gas 14
MW 9.0+ VIS 40
Ditch and Cuttings Gas 15
MW 9.0+ VIS 40
Ditch and Cuttings Gas 16
Trace Gas 17u
Ditch and Cuttings Gas 17
MW 9.0+ VIS 40
Ditch and Cuttings Gas 18
Clay cuttings
Clay cuttings
Clay cuttings
Trace Gas
Ditch and Cuttings Gas 19
MW 9.0+ VIS 40
Ditch and Cuttings Gas 20
MW 9.0+ VIS 40
Ditch and Cuttings Gas 21
MW 9.0+ VIS 40
Ditch and Cuttings Gas 22
MW 9.0+ VIS 40
Ditch and Cuttings Gas 23
MW 9.0+ VIS 40
Ditch and Cuttings Gas 24
MW 9.0+ VIS 40
Ditch and Cuttings Gas 25
MW 9.0+ VIS 40
Ditch and Cuttings Gas 26
MW 9.0+ VIS 40
Ditch and Cuttings Gas 27
MW 9.0+ VIS 40
Ditch and Cuttings Gas 28
MW 9.0+ VIS 40
Ditch and Cuttings Gas 29
MW 9.0+ VIS 40
Ditch and Cuttings Gas 30
MW 9.0+ VIS 40
Ditch and Cuttings Gas 31
MW 9.0+ VIS 40
Ditch and Cuttings Gas 32
MW 9.0+ VIS 40
Ditch and Cuttings Gas 33
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Ditch and Cuttings Gas 43
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Ditch and Cuttings Gas 45
MW 9.0+ VIS 40
Ditch and Cuttings Gas 46
MW 9.0+ VIS 40
Ditch and Cuttings Gas 47
MW 9.0+ VIS 40
Ditch and Cuttings Gas 48
MW 9.0+ VIS 40
Ditch and Cuttings Gas 49
MW 9.0+ VIS 40
Ditch and Cuttings Gas 50
MW 9.0+ VIS 40