CONFIDENTIAL

ORIGINAL

SCIENTIFIC DRILLING

OKLAHOMA CITY OK

Well Name	: McCLURE 4-A
Location	: STEVENS CO. KANSAS
SHL	:
BHL	:
ACTUAL BHL	:
	: DECEMBER 10 1997
	: 34H1297424
Survey Performed By	: MIKE McSPERITT AND JOE NORRIS

This survey is correct to the best of my knowledge
and is supported by actual field data.

Mah R. ..... COMPANY REPRESENTATIVE

CONFIDENTIAL

ORIGINAL

RELEASED

MAY 18 1999

FROM CONFIDENTIAL

SCIENTIFIC DRILLING

Well Name	: McCLURE 4-A	Date DECEMBER 10 1997
Location	: STEVENS CO. KANSAS	Filename : MCCLURE
SHL	:	
BHL	:	
ACTUAL BHL	:	No Interpolation

Height Of WELLSITE Datum Above Field Datum 0.00 ft

Plane of Vertical Section	:	270.0°
Latitude & Departure relate to	:	SLOT CENTRE
Vertical Section Originates at	:	SLOT CENTRE
Slot Coordinates	: Lat	0.000ft
	: Dep	0.000ft
Directions Referenced To	:	GRID NORTH
Depth at Drill Floor	:	0.00 ft
Calculation Method	:	MINIMUM CURVATURE

Points of Interest
NO DATA

Magnetic Declination	:	+0.00°
WELLSITE North	:	+0° 0' 0'' (T)
Grid convergence	:	+0.0000°

RECEIVED

MAY 2 2

CONFIDENTIAL

ORIGINAL

SCIENTIFIC DRILLING

Well Name : McCLURE 4-A
Location : STEVENS CO. KANSAS
SHL :
BHL :
ACTUAL BHL :

Date DECEMBER 10 1997
Filename : MCCLURE

No Interpolation

Height Of WELLSITE Datum Above Field Datum 0.00 ft

MD ft	INC deg	DIR deg	TVD ft	LAT ft	DEP ft	VS ft	D'LEG °/100	BUILD °/100	TURN °/100	TOOL	C\L ft
2271	0.9	177.9	2270	-4	49	-49	0.0	0.0	0.0		0
2304	2.8	264.0	2303	-4	48	-48	8.9	6.1	99.0		33
2335	8.2	275.3	2334	-4	45	-45	17.5	17.3	36.5		31
2365	14.0	277.8	2363	-4	39	-39	19.4	19.3	8.3		30
2397	20.4	277.4	2394	-2	30	-30	20.0	20.0	-1.3		32
2429	25.0	276.0	2423	-1	18	-18	14.5	14.4	-4.4		32
2460	29.8	277.0	2451	1	3	-3	15.6	15.5	3.2		31
2489	30.2	277.0	2476	2	-11	11	1.4	1.4	0.0		29
2521	33.6	276.0	2503	4	-28	28	10.8	10.6	-3.1		32
2552	39.3	275.0	2528	6	-46	46	18.5	18.4	-3.2		31
2583	44.9	273.0	2551	7	-67	67	18.6	18.1	-6.5		31
2613	46.5	273.0	2572	9	-88	88	5.3	5.3	0.0		30
2645	46.6	273.0	2594	10	-111	111	0.3	0.3	0.0		32
2676	51.1	272.0	2614	11	-135	135	14.7	14.5	-3.2		31
2707	57.0	270.0	2633	11	-160	160	19.7	19.0	-6.5		31
2738	63.8	270.0	2648	11	-187	187	21.9	21.9	0.0		31
2770	69.8	270.0	2660	11	-216	216	18.8	18.8	0.0		32
2801	72.0	270.0	2671	11	-246	246	7.1	7.1	0.0		31
2833	72.2	270.0	2680	11	-276	276	0.6	0.6	0.0		32
2865	75.2	270.0	2689	11	-307	307	9.4	9.4	0.0		32
2896	81.6	270.0	2696	11	-337	337	20.6	20.6	0.0		31
2942	90.4	270.0	2699	11	-383	383	19.1	19.1	0.0		46
2974	91.2	270.0	2698	11	-415	415	2.5	2.5	0.0		32
3005	91.3	270.0	2698	11	-446	446	0.3	0.3	0.0		31
3037	91.5	270.0	2697	11	-478	478	0.6	0.6	0.0		32
3069	91.5	270.0	2696	11	-510	510	0.0	0.0	0.0		32
3100	91.5	270.0	2695	11	-541	541	0.0	0.0	0.0		31
3132	91.2	270.0	2695	11	-573	573	0.9	-0.9	0.0		32
3164	90.8	270.0	2694	11	-605	605	1.3	-1.2	0.0		32
3195	90.5	270.0	2694	11	-636	636	1.0	-1.0	0.0		31
3227	90.8	270.0	2693	11	-668	668	0.9	0.9	0.0		32
3258	91.0	270.0	2693	11	-699	699	0.6	0.6	0.0		31
3290	91.0	270.0	2692	11	-731	731	0.0	0.0	0.0		32
3322	89.9	270.0	2692	11	-763	763	3.4	-3.4	0.0		32
3354	90.2	270.0	2692	11	-795	795	0.9	0.9	0.0		32
3385	91.0	270.0	2692	11	-826	826	2.6	2.6	0.0		31

3449	89.7	270.0	2691	11	-890	890	3.1	-3.1	0.0	32
3481	89.6	270.0	2691	11	-922	922	0.3	-0.3	0.0	32
3513	89.8	270.0	2691	11	-954	954	0.6	0.6	0.0	32
3544	89.2	270.0	2692	11	-985	985	1.9	-1.9	0.0	31
3576	88.5	270.0	2692	11	-1017	1017	2.2	-2.2	0.0	32
3608	88.1	270.0	2693	11	-1049	1049	1.3	-1.2	0.0	32
3640	88.0	270.0	2694	11	-1081	1081	0.3	-0.3	0.0	32
3672	87.9	270.0	2695	11	-1113	1113	0.3	-0.3	0.0	32
3704	87.7	270.0	2697	11	-1145	1145	0.6	-0.6	0.0	32
3736	87.1	270.0	2698	11	-1177	1177	1.9	-1.9	0.0	32
3768	87.6	270.0	2700	11	-1209	1209	1.6	1.6	0.0	32
3800	87.5	270.0	2701	11	-1241	1241	0.3	-0.3	0.0	32
3831	88.1	270.0	2702	11	-1272	1272	1.9	1.9	0.0	31
3863	88.5	270.0	2703	11	-1304	1304	1.3	1.2	0.0	32
3895	88.5	270.0	2704	11	-1336	1336	0.0	0.0	0.0	32
3927	89.6	270.0	2704	11	-1368	1368	3.4	3.4	0.0	32
3959	90.4	270.0	2704	11	-1400	1400	2.5	2.5	0.0	32
3991	91.4	270.0	2704	11	-1432	1432	3.1	3.1	0.0	32
4023	90.9	270.0	2703	11	-1464	1464	1.6	-1.6	0.0	32
4054	90.8	270.0	2703	11	-1495	1495	0.3	-0.3	0.0	31
4086	91.2	270.0	2702	11	-1527	1527	1.3	1.2	0.0	32
4117	91.6	270.0	2702	11	-1558	1558	1.3	1.3	0.0	31
4147	91.1	270.0	2701	11	-1588	1588	1.7	-1.7	0.0	30
4179	90.5	270.0	2700	11	-1620	1620	1.9	-1.9	0.0	32
4211	89.9	270.0	2700	11	-1652	1652	1.9	-1.9	0.0	32
4238	89.3	270.0	2700	11	-1679	1679	2.2	-2.2	0.0	27
4269	89.3	270.0	2701	11	-1710	1710	0.0	0.0	0.0	31
4301	90.1	270.0	2701	11	-1742	1742	2.5	2.5	0.0	32
4333	90.1	270.0	2701	11	-1774	1774	0.0	0.0	0.0	32
4364	90.6	270.0	2701	11	-1805	1805	1.6	1.6	0.0	31
4396	90.4	270.0	2701	11	-1837	1837	0.6	-0.6	0.0	32
4438	90.4	270.0	2700	11	-1879	1879	0.0	0.0	0.0	42

Origin of Bottom Hole Closure SLOT
Bottom Hole Closure 1879 ft 270.3°

THANK YOU FOR THE WORK ,MIKE

RELEASED

MAY 18 1999

Goolsby Brothers & Assoc., Survey Report

ORIGINAL

MIN. CURVATURE CALCULATIONS (SPE-3362)

FROM CONFIDENTIAL

15-189-22262-0100

OPERATOR: ANADARKO PETROLEUM CORP. START: 12-Dec-97 (kick-off)

WELL: McClure A-4 FINISH: 20-Dec-97

LOCATION: STEVENS COUNTY, KANSAS Tool Length 42 ft

ELEVATIC 3203 (KB) CONFIDENTIAL PROP. DIRECTION 270

KCC

APR 3

CONFIDENTIAL

SURVEY NUMBER	MD	INC	TRUE AZM	TVD	N-S	E-W	SECT	DLS/ 100	SUB-SEA AT TVD
TIE IN	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3203.0
2	99.9	0.2	166.9	99.9	-0.1	0.0	0.0	0.2	3103.1
3	199.8	0.1	206.2	199.8	-0.3	0.0	0.0	0.1	3003.2
4	299.6	0.6	74.3	299.6	-0.2	0.5	-0.5	0.6	2903.4
5	399.9	1.7	80.6	399.9	0.2	2.4	-2.4	1.1	2803.1
6	499.7	2.2	77.9	499.6	0.8	5.8	-5.8	0.6	2703.4
7	599.9	2.4	77.1	599.7	1.7	9.7	-9.7	0.1	2603.3
8	699.1	2.6	87.4	698.8	2.2	13.9	-13.9	0.5	2504.2
9	799.9	2.1	107.2	799.6	1.8	18.0	-18.0	0.9	2403.4
10	899.7	1.8	88.4	899.3	1.3	21.3	-21.3	0.7	2303.7
11	999.8	2.5	88.2	999.3	1.4	25.0	-25.0	0.6	2203.7
12	1098.8	3.3	94.5	1098.2	1.3	30.0	-30.0	0.9	2104.8
13	1199.4	3.1	102.0	1198.7	0.5	35.4	-35.4	0.5	2004.3
14	1299.2	3.3	90.7	1298.3	-0.1	40.9	-40.9	0.7	1904.7
15	1399.4	1.9	100.0	1398.4	-0.4	45.4	-45.4	1.4	1804.6
16	1499.7	1.6	131.6	1498.7	-1.7	48.1	-48.1	1.0	1704.3
17	1599.1	0.4	130.8	1598.0	-2.8	49.4	-49.4	1.2	1605.0
18	1699.8	0.2	241.4	1698.7	-3.2	49.6	-49.6	0.5	1504.3
19	1799.7	0.4	227.6	1798.6	-3.5	49.2	-49.2	0.2	1404.4
20	1899.9	0.4	15.6	1898.8	-3.4	49.0	-49.0	0.7	1304.2
21	1999.4	0.2	223.4	1998.3	-3.2	49.0	-49.0	0.6	1204.7
22	2099.9	0.0	207.6	2098.8	-3.4	48.8	-48.8	0.2	1104.2
23	2199.9	0.2	208.9	2198.8	-3.5	48.7	-48.7	0.1	1004.2
24	2271.3	0.9	177.9	2270.2	-4.2	48.7	-48.7	1.0	932.8
25	2304.0	2.9	264.0	2302.9	-4.5	47.9	-47.9	8.9	900.1
26	2335.0	8.2	275.3	2333.8	-4.4	44.9	-44.9	17.5	869.2
27	2365.0	14.0	277.8	2363.2	-3.7	39.2	-39.2	19.4	839.8
28	2397.0	20.4	277.4	2393.7	-2.4	29.8	-29.8	20.0	809.3
29	2429.0	25.0	276.0	2423.3	-1.0	17.6	-17.6	14.5	779.7
30	2460.0	29.8	277.0	2450.8	0.6	3.4	-3.4	15.6	752.2
31	2489.0	30.2	277.0	2475.9	2.4	-11.0	11.0	1.4	727.1
32	2521.0	33.6	276.0	2503.0	4.3	-27.8	27.8	10.8	700.0
33	2552.0	39.3	275.0	2528.0	6.0	-46.1	46.1	18.5	675.0
34	2583.0	44.9	273.0	2551.0	7.5	-66.8	66.8	18.6	652.0
35	2613.0	46.5	273.0	2571.9	8.6	-88.3	88.3	5.3	631.1
36	2645.0	46.6	273.0	2593.9	9.8	-111.5	111.5	0.3	609.1
37	2676.0	51.1	272.0	2614.3	10.8	-134.8	134.8	14.7	588.7
38	2707.0	57.0	270.0	2632.5	11.2	-159.9	159.9	19.7	570.5
39	2738.0	63.8	270.0	2647.8	11.2	-186.8	186.8	21.9	555.2
40	2770.0	69.8	270.0	2660.4	11.2	-216.2	216.2	18.8	542.6
41	2801.0	72.0	270.0	2670.6	11.2	-245.5	245.5	7.1	532.4
42	2833.0	72.2	270.0	2680.4	11.2	-276.0	276.0	0.6	522.6

					N -S	E -W			
43	2865.0	75.2	270.0	2689.4	11.2	-306.7	306.7	9.4	513.6
44	2896.0	81.6	270.0	2695.6	11.2	-337.0	337.0	20.6	507.4
45	2942.0	90.4	270.0	2698.8	11.2	-382.9	382.9	19.1	504.2
46	2974.0	91.2	270.0	2698.4	11.2	-414.9	414.9	2.5	504.6
47	3005.0	91.3	270.0	2697.7	11.2	-445.9	445.9	0.3	505.3
48	3037.0	91.5	270.0	2696.9	11.2	-477.8	477.8	0.6	506.1
49	3069.0	91.5	270.0	2696.1	11.2	-509.8	509.8	0.0	506.9
50	3100.0	91.5	270.0	2695.3	11.2	-540.8	540.8	0.0	507.7
51	3132.0	91.2	270.0	2694.5	11.2	-572.8	572.8	0.9	508.5
52	3164.0	90.8	270.0	2693.9	11.2	-604.8	604.8	1.3	509.1
53	3195.0	90.5	270.0	2693.6	11.2	-635.8	635.8	1.0	509.4
54	3227.0	90.8	270.0	2693.2	11.2	-667.8	667.8	0.9	509.8
55	3258.0	91.0	270.0	2692.7	11.2	-698.8	698.8	0.6	510.3
56	3290.0	91.0	270.0	2692.2	11.2	-730.8	730.8	0.0	510.8
57	3322.0	89.9	270.0	2691.9	11.2	-762.8	762.8	3.4	511.1
58	3354.0	90.2	270.0	2691.9	11.2	-794.8	794.8	0.9	511.1
59	3385.0	91.0	270.0	2691.6	11.2	-825.8	825.8	2.6	511.4
60	3417.0	90.7	270.0	2691.1	11.2	-857.8	857.8	0.9	511.9
61	3449.0	89.7	270.0	2691.0	11.2	-889.8	889.8	3.1	512.0
62	3481.0	89.6	270.0	2691.2	11.2	-921.8	921.8	0.3	511.8
63	3513.0	89.8	270.0	2691.4	11.2	-953.8	953.8	0.6	511.6
64	3544.0	89.2	270.0	2691.6	11.2	-984.8	984.8	1.9	511.4
65	3576.0	88.5	270.0	2692.3	11.2	-1016.8	1016.8	2.2	510.7
66	3608.0	88.1	270.0	2693.2	11.2	-1048.8	1048.8	1.3	509.8
67	3640.0	88.0	270.0	2694.3	11.2	-1080.7	1080.7	0.3	508.7
68	3672.0	87.9	270.0	2695.5	11.2	-1112.7	1112.7	0.3	507.5
69	3704.0	87.7	270.0	2696.7	11.2	-1144.7	1144.7	0.6	506.3
70	3736.0	87.1	270.0	2698.1	11.2	-1176.7	1176.7	1.9	504.9
71	3768.0	87.6	270.0	2699.6	11.2	-1208.6	1208.6	1.6	503.4
72	3800.0	87.5	270.0	2701.0	11.2	-1240.6	1240.6	0.3	502.0
73	3831.0	88.1	270.0	2702.2	11.2	-1271.6	1271.6	1.9	500.8
74	3863.0	88.5	270.0	2703.1	11.2	-1303.6	1303.6	1.3	499.9
75	3895.0	88.5	270.0	2704.0	11.2	-1335.6	1335.6	0.0	499.0
76	3927.0	89.6	270.0	2704.5	11.2	-1367.5	1367.5	3.4	498.5
77	3959.0	90.4	270.0	2704.5	11.2	-1399.5	1399.5	2.5	498.5
78	3991.0	91.4	270.0	2704.0	11.2	-1431.5	1431.5	3.1	499.0
79	4023.0	90.9	270.0	2703.3	11.2	-1463.5	1463.5	1.6	499.7
80	4054.0	90.8	270.0	2702.9	11.2	-1494.5	1494.5	0.3	500.1
81	4086.0	91.2	270.0	2702.3	11.2	-1526.5	1526.5	1.3	500.7
82	4117.0	91.6	270.0	2701.6	11.2	-1557.5	1557.5	1.3	501.4
83	4147.0	91.1	270.0	2700.9	11.2	-1587.5	1587.5	1.7	502.1
84	4179.0	90.5	270.0	2700.4	11.2	-1619.5	1619.5	1.9	502.6
85	4211.0	89.8	270.0	2700.3	11.2	-1651.5	1651.5	2.2	502.7
86	4238.0	89.3	270.0	2700.5	11.2	-1678.5	1678.5	1.9	502.5
87	4269.0	89.3	270.0	2700.9	11.2	-1709.5	1709.5	0.0	502.1
88	4301.0	90.1	270.0	2701.1	11.2	-1741.5	1741.5	2.5	501.9
89	4333.0	90.1	270.0	2701.0	11.2	-1773.5	1773.5	0.0	502.0
90	4364.0	90.6	270.0	2700.8	11.2	-1804.5	1804.5	1.6	502.2
91	4396.0	90.4	270.0	2700.6	11.2	-1836.5	1836.5	0.6	502.4
PRJ@TD	4438.0	90.4	270.0	2700.3	11.2	-1878.5	1878.5	0.0	502.7

SURFACE LOC
1600 FNL
1250 FEL

N (+)
W (-)
E (+)
S (-)

11.2 (+) NORTH

1878.5 (-) WEST

1600
- 11.7
1588.8 FNL
OK

1250 FEL
+ 1878.5
2128.5 FEL
OK