

30.015.36007

SCIENTIFIC DRILLING CONTROLS

KEEPER GYRO SURVEY
Directional Survey Report
for

FDG

Well Number	:	CHAMA 3 FED #1
Well Location	:	EDDY COUNTY, NEW MEXICO
Job Number	:	32K0208082
Location Latitude	:	32.775
Survey Date	:	1-FEB-2008
S.D.C. Personnel	:	JOHNNY FENA
Length Units	:	Feet
North Reference	:	GRID North
Grid Correction	:	0.18 Degrees
Survey Depth Zero	:	RKB
Proposal Direction	:	268.95
Calculation Method	:	Minimum Curvature

Remarks : The OUTRUN Survey will be called definitive

MC

S C I E N T I F I C D R I L L I N G C O N T R O L S

Outrun Survey
for
E06

Page 1

Well No.: CHAMA 3 FFD B1

Date : 1-FEB-2003

Job No. : 32K02080R2

GPI0

Proposal : 208.95

Depth (Feet)	T.V.D. (Feet)	V.S. (Feet)	Inc Deg.	azimuth Deg.	Latitude (Feet)	Departure (Feet)	D-leg /100
-------------------	--------------------	------------------	-------------	-----------------	----------------------	-----------------------	---------------

0.00	0.00	0.00	0.00	0.18	0.00	0.00	0.00
100.00	100.00	-0.32	0.54	41.36	0.55	0.31	0.54
200.00	199.99	-0.91	0.41	48.82	0.94	0.89	0.14
300.00	299.99	-1.01	1.02	347.52	2.05	0.97	0.90
400.00	399.97	-0.70	1.25	352.18	4.00	0.63	0.25
500.00	499.94	-0.05	1.42	333.97	6.19	-0.06	0.45
600.00	599.92	0.85	1.03	335.02	8.14	-1.00	0.56
700.00	699.90	1.87	0.99	310.90	9.55	-2.04	0.43
800.00	799.88	3.15	1.07	315.72	10.78	-3.35	0.12
900.00	899.87	4.11	0.64	323.57	11.90	-4.33	0.44
1000.00	999.86	5.01	0.97	316.14	12.96	-5.25	0.35
1100.00	1099.85	6.28	0.92	299.79	13.97	-6.53	0.27
1200.00	1199.83	7.49	0.98	321.33	15.03	-7.76	0.36
1300.00	1299.82	8.67	0.92	303.73	16.15	-8.96	0.30
1400.00	1399.81	9.64	0.81	332.35	17.22	-9.96	0.44
1500.00	1499.80	10.64	1.00	307.92	18.38	-10.98	0.43
1600.00	1599.78	12.01	0.82	283.37	19.08	-12.36	0.42
1700.00	1699.78	13.28	0.71	291.12	19.47	-13.63	0.15
1800.00	1799.76	14.72	1.04	251.79	19.41	-15.08	0.67
1900.00	1899.75	16.47	1.12	344.13	18.70	-16.82	0.16
2000.00	1999.73	17.91	0.82	229.94	17.82	-18.24	0.38
2100.00	2099.72	19.39	1.13	248.23	16.99	-19.71	0.44
2200.00	2199.70	20.99	0.97	231.73	16.10	-21.29	0.34
2300.00	2299.67	22.21	0.75	236.09	15.21	-22.50	0.23
2400.00	2399.68	23.52	0.96	244.46	14.48	-23.79	0.24
2500.00	2499.67	24.78	0.70	233.29	13.76	-25.04	0.31
2600.00	2599.66	25.68	0.56	233.26	13.10	-25.92	0.14
2700.00	2699.66	26.34	0.43	225.02	12.54	-26.58	0.15
2800.00	2799.65	26.97	0.36	282.69	12.35	-27.15	0.39
2900.00	2899.65	27.83	0.74	348.39	12.18	-28.06	0.49
3000.00	2999.64	28.90	0.57	247.78	11.75	-29.12	0.17
3100.00	3099.64	29.70	0.44	242.33	11.38	-29.92	0.14
3200.00	3199.63	30.63	0.68	278.98	11.30	-30.84	0.42
3300.00	3299.63	31.67	0.56	246.02	11.19	-31.88	0.37
3400.00	3399.62	32.15	0.09	206.60	10.92	-32.36	0.49
3500.00	3499.62	31.93	0.58	30.45	11.29	-32.14	0.67
3600.00	3599.62	31.50	0.37	29.40	12.01	-31.77	0.21
3700.00	3699.61	30.88	0.85	36.24	12.89	-31.13	0.48
3800.00	3799.61	30.21	0.44	33.83	13.80	-30.47	0.41
3900.00	3899.60	29.20	0.91	83.64	14.21	-29.47	0.71

S C I E N T I F I C D R I L L I N G C O N T R O L S

Outrun Survey
for
EOG

Page 2

Well No.: CHAMA 3 FED #1

Date : 1-FEB-2008

Job No. : 32K0208082

GRID

Proposal : 268.95

Depth	I.V.D.	V.S.	Inc	Azimuth	Latitude	Departure	D-leg
(Feet)	(Feet)	(Feet)	Deg.	Deg.	(Feet)	(Feet)	/100

4000.00	3999.57	26.90	1.84	69.94	14.85	-27.17	0.98
4100.00	4099.51	23.67	2.10	67.81	16.09	-23.97	0.27
4200.00	4199.44	20.25	2.17	63.40	17.63	-20.58	0.18
4300.00	4299.36	16.52	2.46	69.68	19.23	-16.87	0.38
4400.00	4399.28	12.97	1.96	61.83	20.78	-13.35	0.58
4500.00	4499.23	9.99	1.86	62.80	22.33	-10.40	0.11
4600.00	4599.18	7.14	1.72	67.38	23.65	-7.57	0.20
4700.00	4699.14	4.40	1.72	62.27	24.92	-4.86	0.15
4800.00	4799.09	1.85	1.56	61.90	26.26	-2.33	0.16

The Horizontal Displacement (in Feet) at
Measured Depth 4800.00 is 26.36 in a Direction of 354.93 Degrees