

**ESTIMATED
DRILLING
COSTS
FOR
FLORA AKF STATE #1**

Dr. Bill Mitchell
October 8, 1992



Proposed Drilling Locations

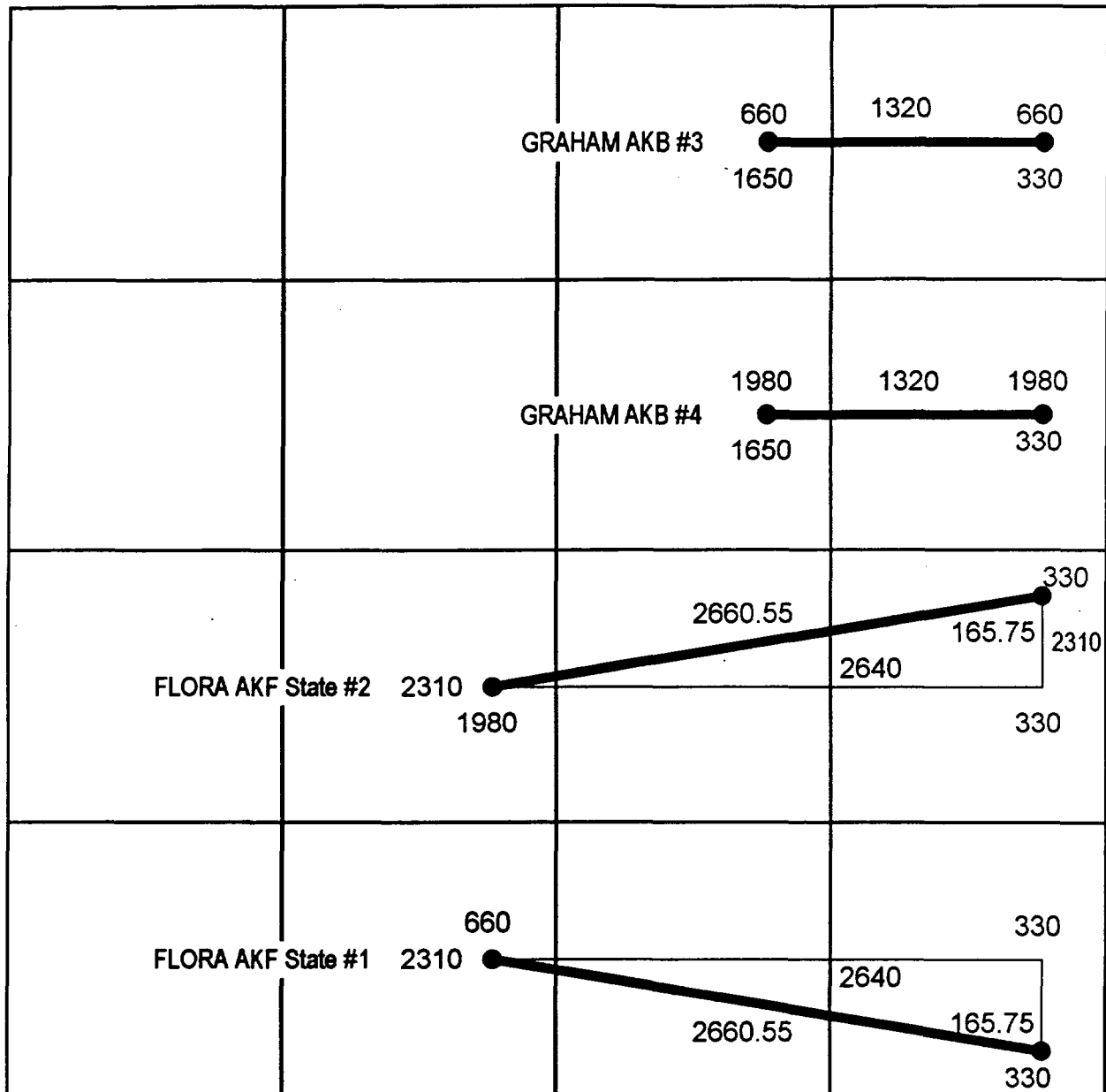
FLORA AKF State #1

FLORA AKF State #2

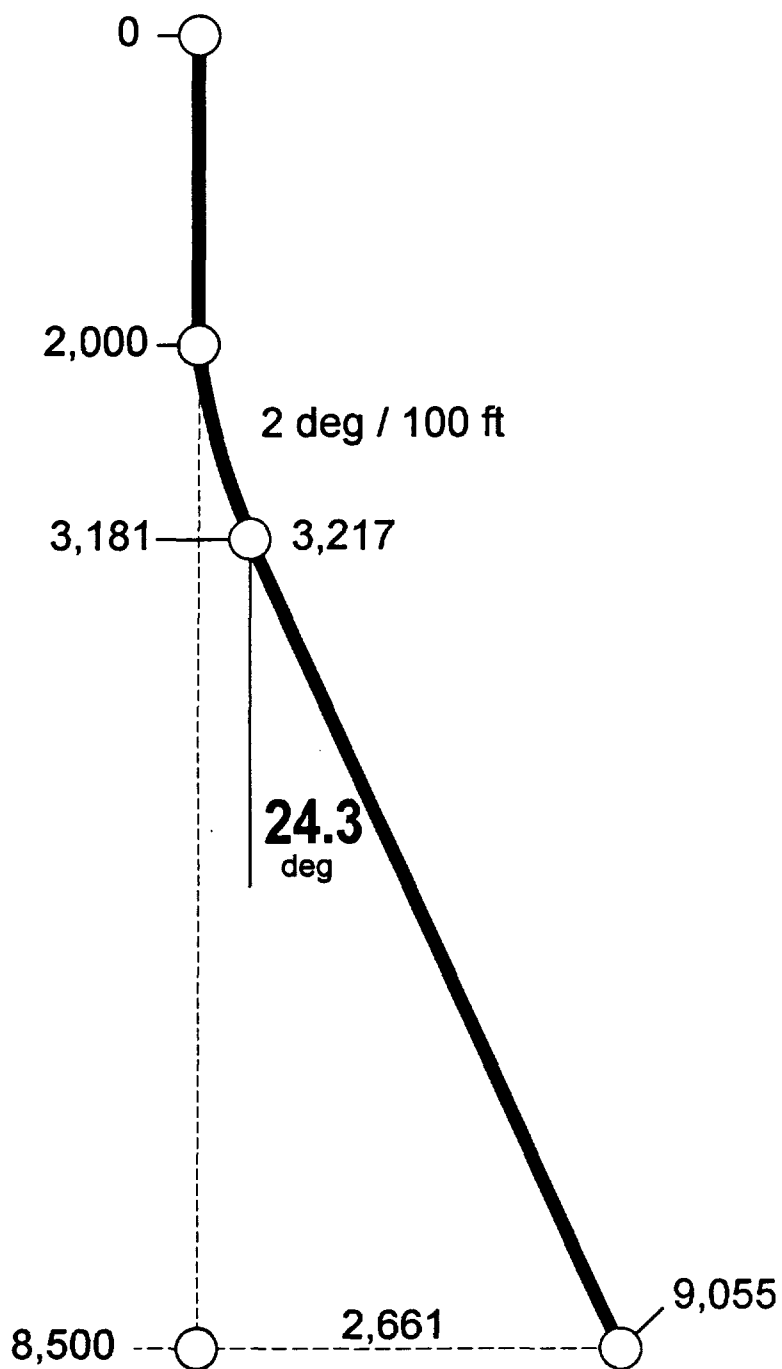
GRAHAM AKB #3

GRAHAM AKB #4

SEC. 2, T22S - R31R



Directional Plan for FLORA AKF State #1



DIRECTIONAL PLANNING

FLORA AKF STATE #1

KICK OFF POINT

TARGET DEPTH

TARGET DEPARTURE

UPPER BUILD GRADIENT

LOWER DROP OR BUILD GRADIENT

HANG ANGLE

HANG LENGTH

TVD(FT)

TVD(FT)

HOR(FT)

DEG/100FT

DEG/100FT

DEG =

MD(FT)

TYPES OF HOLES

BUILD

BUILD-DROP

BUILD-BUILD

0.00 RADIANS

TABLE OF DIRECTIONAL VARIABLES

	MD	DEP	TVD
TOP OF HOLE	0	0	0
KICK OFF POINT	2000	0	2000
TOP OF SLANT	3217	255	3181
TOP OF DROP			
TOP OF HANG			
BOTTOM OF HOLE	9055	2661	8500

COMPUTED VARIABLES

RADIUS OF BUILD

RADIUS OF DROP

SLANT ANGLE

SLANT ANGLE (ITERATION)

2864.79

0.00

0.4247661 RAD

0.4247661 RAD

24.33730241 DEG

24.33730241 DEG

ILLEGIBLE

DIRECTIONAL PLANNING

GRAHAM AKB STATE #2

KICK OFF POINT

TARGET DEPTH

TARGET DEPARTURE

UPPER BUILD GRADIENT

LOWER DROP OR BUILD GRADIENT

HANG ANGLE

HANG LENGTH

TVD(FT)

TVD(FT)

HOR(FT)

DEG/100FT

DEG/100FT

DEG =

MD(FT)

TYPES OF HOLES

BUILD

BUILD-DROP

BUILD-BUILD

0.00 RADIANS

TABLE OF DIRECTIONAL VARIABLES

	MD	DEP	TVD
TOP OF HOLE	0	0	0
KICK OFF POINT	2000	0	2000
TOP OF SLANT	2601	63	2597
TOP OF DROP			
TOP OF HANG			
BOTTOM OF HOLE	8647	1428	8500

COMPUTED VARIABLES

RADIUS OF BUILD

RADIUS OF DROP

SLANT ANGLE

SLANT ANGLE (ITERATION)

2864.79

0.00

0.2098257

RAD

12.02212919 DEG

0.2098257

RAD

12.02212919 DEG

ILLEGIBLE

Graham AKB State Well #2

	Date	Mesured Depth	
0	03-26-1992 12:00	0	spud
20.75	03-27-1992 08:45	815	run 13 3/8"
9	03-27-1992 17:45	815	BIT #2
10	03-28-1992 03:45	1990	air pocket
14	03-28-1992 17:45	1990	
66.25	03-30-1992 12:00	2668	BIT #3
123.5	04-02-1992 07:15	2951	check point
139.25	04-08-1992 02:30	4206	BIT #4
7.5	04-08-1992 10:00	4206	run 8 5/8"
13	04-08-1992 23:00	5695	BIT #5
16	04-09-1992 15:00	6688	check point
39	04-11-1992 06:00	8400	TD
9	04-11-1992 15:00	8400	run 5 1/2"

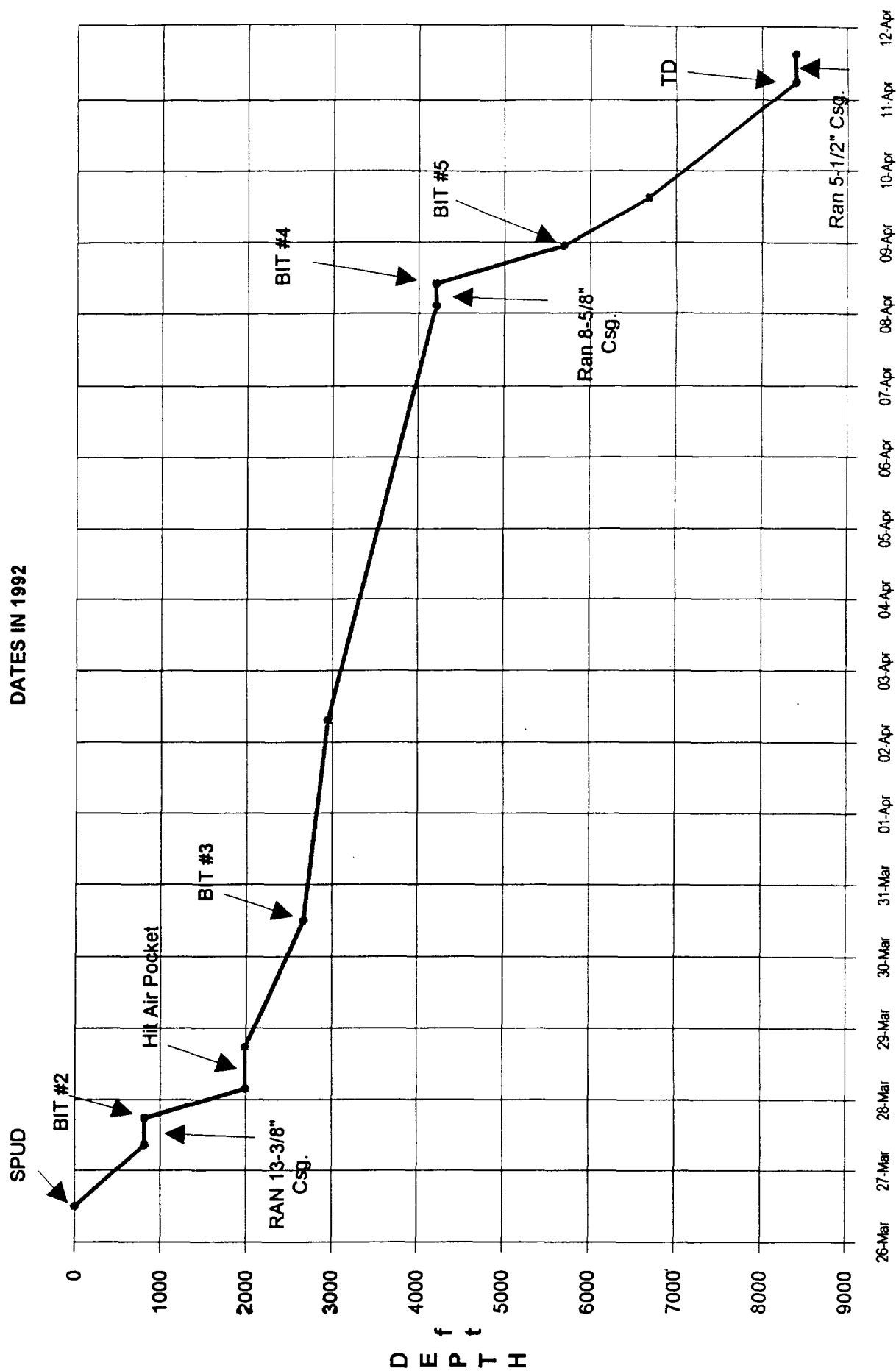
467.25

State 2 Well #1

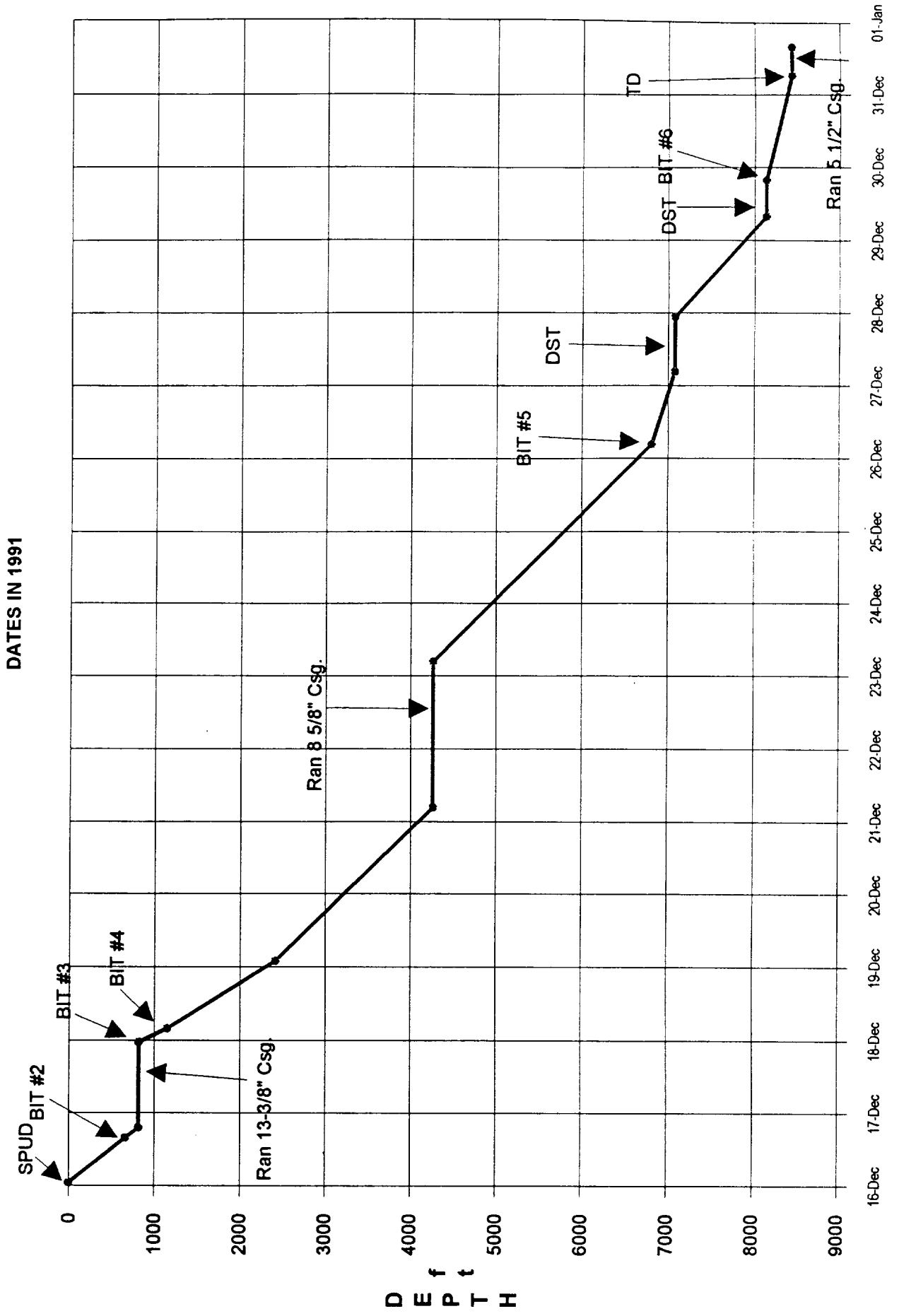
	Date	Mesured Depth	
0	12-16-1991 01:00	0	SPUD
14.75	12-16-1991 15:45	663	BIT #2
3.5	12-16-1991 19:15	819	BIT #3
28.25	12-17-1991 23:30	819	run 13 3/8"
4.5	12-18-1991 04:00	1150	BIT #4
22	12-19-1991 02:00	2418	check point
50.75	12-21-1991 04:45	4265	check point
48	12-23-1991 04:45	4265	run 8 5/8"
72	12-26-1991 04:45	6810	BIT #5
24	12-27-1991 04:45	7079	trip w/ DST
18	12-27-1991 22:45	7079	
33.25	12-29-1991 08:00	8141	trip w/ DST
12	12-29-1991 20:00	8141	BIT #6
34.75	12-31-1991 06:45	8440	TD
9.25	12-31-1991 16:00	8440	run 5 1/2"

375

Graham AKB State
Well No. 2
(Yates Petro. Corp.)



State 2 Well No. 1 (Pogo Producing)



FLORA AKF STATE #1
TIME AND FOOTAGE DIFFERENCES

REGULAR DRILLING TIME

est. DRILLING DAYS; days (bit record)	16
est. DAYWORK DAYS; days	6
DRILLING FOOTAGE; ft	8500
est. DRILLING RATE; days/1000' = 16 / 8.500	1.88

TOTAL REGULAR TIME; days 22

DIRECTIONAL DRILLING TIME

DRILLING FOOTAGE; ft	9055
FOOTAGE IN BUILD SECTION; ft	1217
est. ADD'L DAYS FOR BUILD SECTION;days 2.5 FACTOR	3.80
FOOTAGE IN SLANT SECTION; ft = 9055-3217	5838
est. ADD'L DAYS FOR SLANT SECTION; days 1.3 FACTOR	3.30
ADDITIONAL FOOTAGE; ft = 9055 - 8500	555
est. ADD'L DAYS FOR ADD'L FOOTAGE; days 1.3*1.88*555	1.36
TOTAL ADDITIONAL DRILLING DAYS;days = 3.8 + 5.2 + 2.0	8.5

TOTAL DIRECTIONAL TIME; days 30.5

DRILLING TIME FACTOR = directional time/regular time 1.384

DRILLING FOOTAGE FACTOR = regular feet/directional feet 1.065

ESTIMATED COSTS FOR A DIRECTIONAL FLORA AKF STATE #1

INTANGIBLE COSTS	REG'L DRY HOLE	DIRECT'L DRY HOLE	ADD'L DIRECT' DRY	REG'L OIL WELL	DIRECT'L OIL WELL	ADD'L DIRECT'L OIL
DRILLING						
9210 STAKNG PERMIT & LEGAL FEES	1,000	1,000	0	1,000	1,000	0
9211 LOCATION, RIGHT OF WAY	15,000	15,000	0	15,000	15,000	0
9212 DRILLING, FOOTAGE 8500' @ \$14.50/FT	123,300	170,647	47,347	123,300	170,647	47,347
9213 DRILLING, DAYWORK 6 DAYS @ \$4500/DAY	27,000	28,755	1,755	27,000	28,755	1,755
9214 DRILLING WATER	12,000	16,608	4,608	12,000	16,608	4,608
9215 DRILLING MUD & ADDITIVES	12,000	16,608	4,608	12,000	16,608	4,608
9216 MUD LOGGING UNIT	4,500	6,228	1,728	4,500	6,228	1,728
9217 SURFACE & INT. CEMENT, CSG., TOOLS * SERV.	25,000	26,625	1,625	25,000	26,625	1,625
9218 DRILL STEM TESTING	10,000	10,650	650	10,000	10,650	650
9219 ELECTRIC LOGS - OPEN HOLE	9,000	9,585	585	9,000	9,585	585
9220 TOOL & EQUIP. RENTAL, TRUCKING, WELDING	4,000	4,260	260	4,000	4,260	260
9221 SUPERVISION & OVERHEAD	8,500	11,764	3,264	8,500	11,764	3,264
9223 CORING, TOOLS & SERVICES						
9224 BITS, TOOLS, & SUPPLIES	500	533	33	500	533	33
9235 PRODUCTION CEMENT, CASING, TOOLS & SERV.				7,500	7,988	488
CSG CENT'LIZERS 2000' to 4100' ON 8-5/8"		3,286	3,286		3,286	3,286
9222 CONTINGENCY						
DIRECT'L EQUIP. & SUPERVISION		55,000	55,000		55,000	55,000
COMPLETION						
9241 COMPLETION UNIT				7,000	7,455	455
9242 WATER				1,500	1,598	98
9243 MUD ADDITIVES				500	533	33
9244 CMT, TOOL, SERV. & TEMP. SURV.				3,000	3,195	195
9245 ELEC. LOGS, PERFORATION TEST				9,000	9,585	585
9246 TOOLS, TRUCK, WELD, & EQUIP'T RENTAL				10,000	10,650	650
9247 STIMULATION				30,000	31,950	1,950
9248 SUPERVIDION & OVERHEAD				3,000	3,195	195
9249 ADDIT'L LOCATION, ROAD & SURF. DAMAGE				1,500	1,598	98
9251 BITS, TOOLS, ETC. - PURCHASE						
9250 CONTINGENCY						
TOTAL INTANGIBLES	251,800	376,549	124,749	324,800	454,294	129,494
EQUIPMENT COSTS						
9301 CHRISTMAS TREE AND WELL HEAD	1,600	1,600	0	9,500	9,500	0
9302 CASING 13-3/8" @ 650'	15,000	15,000	0	15,000	15,000	0
8-5/8" @ 4100' AND 4226' IN DIR.HOLE	49,200	50,712	1,512	49,200	50,712	1,512
5-1/2" @ 8500' and 9,055'				50,000	53,250	3,250
9303 TUBING 2-7/8" @ 8000' and 8506'				23,200	24,667	1,467
9304 PACKER & SPECIAL EQUIPMENT						
9350 CONTINGENCY						
WELL EQUIPMENT	65,800	67,312	1,512	146,900	153,129	6,229
LEASE & BATTERY EQUIPMENT COSTS						
9401 PUMPING EQUIPMENT			0	75,000	75,000	0
9402 STORAGE 2- 210 BBL TANKS			0	15,000	15,000	0
9403 SEPARAT'N EQUIP., FLOWLINES, VALVE			0	10,000	10,000	0
9404 TRUCKING & CONSTRUCTION COSTS			0	10,000	10,000	0
TOTAL LEASE & BATTERY EQUIPMENT	0	0	0	110,000	110,000	0
GRAND TOTALS	317,600	443,861	126,261	581,700	717,423	135,723
%COST — DIRECTIONAL OF REGULAR WELLS		140%			123%	
DRILLING TIME FACTOR FOR DIRECTIONAL	1.384					
FOOTAGE FACTOR FOR DIRECTIONAL	1.065					