

Williams

DATE IN 6/12/06	SUSPENSE 7/3/06	ENGINEER Mike Stogner	LOGGED IN 6/13/06	TYPE NSL	APP NO. PTDS0616455229
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ABOVE THIS LINE FOR DIVISION USE ONLY

NEW MEXICO OIL CONSERVATION DIVISION

- Engineering Bureau -

1220 South St. Francis Drive, Santa Fe, NM 87505



30-039-29366

*Rosa Ruiz Well
No. 350*

ADMINISTRATIVE APPLICATION CHECKLIST

THIS CHECKLIST IS MANDATORY FOR ALL ADMINISTRATIVE APPLICATIONS FOR EXCEPTIONS TO DIVISION RULES AND REGULATIONS WHICH REQUIRE PROCESSING AT THE DIVISION LEVEL IN SANTA FE

Application Acronyms:

**[NSL-Non-Standard Location] [NSP-Non-Standard Proration Unit] [SD-Simultaneous Dedication]
[DHC-Downhole Commingling] [CTB-Lease Commingling] [PLC-Pool/Lease Commingling]
[PC-Pool Commingling] [OLS - Off-Lease Storage] [OLM-Off-Lease Measurement]
[WFX-Waterflood Expansion] [PMX-Pressure Maintenance Expansion]
[SWD-Salt Water Disposal] [IPI-Injection Pressure Increase]
[EOR-Qualified Enhanced Oil Recovery Certification] [PPR-Positive Production Response]**

[1] TYPE OF APPLICATION - Check Those Which Apply for [A]

[A] Location - Spacing Unit - Simultaneous Dedication
☒ NSL ☐ NSP ☐ SD

Check One Only for [B] or [C]

[B] Commingling - Storage - Measurement
☐ DHC ☐ CTB ☐ PLC ☐ PC ☐ OLS ☐ OLM

[C] Injection - Disposal - Pressure Increase - Enhanced Oil Recovery
☐ WFX ☐ PMX ☐ SWD ☐ IPI ☐ EOR ☐ PPR

[D] Other: Specify HORIZONTAL DRILLING

[2] NOTIFICATION REQUIRED TO: - Check Those Which Apply, or ☒ Does Not Apply

- [A] ☐ Working, Royalty or Overriding Royalty Interest Owners
- [B] ☐ Offset Operators, Leaseholders or Surface Owner
- [C] ☐ Application is One Which Requires Published Legal Notice
- [D] ☐ Notification and/or Concurrent Approval by BLM or SLO
U.S. Bureau of Land Management - Commissioner of Public Lands, State Land Office
- [E] ☐ For all of the above, Proof of Notification or Publication is Attached, and/or,
- [F] ☐ Waivers are Attached

[3] SUBMIT ACCURATE AND COMPLETE INFORMATION REQUIRED TO PROCESS THE TYPE OF APPLICATION INDICATED ABOVE.

[4] CERTIFICATION: I hereby certify that the information submitted with this application for administrative approval is **accurate** and **complete** to the best of my knowledge. I also understand that **no action** will be taken on this application until the required information and notifications are submitted to the Division.

Note: Statement must be completed by an individual with managerial and/or supervisory capacity.

WILLIAM F. CARR
Print or Type Name

William F. Carr
Signature

ANALYST
Title

6-12-06
Date

wcarr@nolandhart.com
e-mail Address



June 12, 2006

HAND DELIVERED

Mark Fesmire, P.E.
Director
Oil Conservation Division
New Mexico Department of Energy,
Minerals and Natural Resources
1220 Saint Francis Drive
Santa Fe, New Mexico 87505

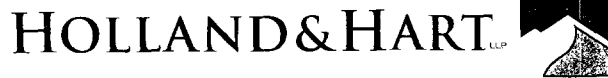
Re: Application of Williams Production Company, L.L.C. for Administrative Approval of Horizontal Drilling and an Unorthodox Surface and Bottomhole Location in the Basin-Fruitland Coal Gas Pool, Rio Arriba County, New Mexico.

Dear Mr. Fesmire:

Pursuant to the provisions of Division Rule 111.C(2) and Rules 8 and 9 of the Special Rules and Regulations for the Basin-Fruitland Coal Gas Pool, as promulgated by Division Order No. R-8768 dated October 17, 1988, Williams Production Company, L.L.C. hereby files its application for an administrative exception to the requirements of Rule 7 as amended by Division Order No. R-8768-B, effective February 10, 2000, for the drilling of its Rosa Unit Well No. 350 as an intentionally deviated horizontal wellbore on a standard coalbed methane gas spacing unit comprised of the N/2 of Section 10, Township 31 North, Range 5 West, NMPM, Rio Arriba County, New Mexico. This spacing unit will be the Project Area for this horizontal well.

Rule 7 of the Special Rules and Regulations for the Basin-Fruitland Coal Gas Pool provides that wells shall be located in the NE/4 or SW/4 of a single governmental section and shall be located no closer than 660 feet to any outer boundary of the spacing unit nor closer than 10 feet to any interior quarter or quarter-quarter section line.

The Rosa Unit Well No. 350 has been drilled by Williams Production Company as operator of the Rosa Unit. The surface location for the well will be in offsetting Section 11. This unorthodox surface location is necessary to enable Williams to enter the Fruitland Coal at the proposed Entry Point and thereby have as much of the horizontal portion of the wellbore as possible in the Project Area for the well. The horizontal portion of the wellbore of the Rosa Unit Well No. 350 will be entirely



confined within the N/2 of Section 10. However, the point of entry for the horizontal portion of the wellbore will be only 315 feet from the east line of Section 10 and therefore 345 feet closer to the outer boundary of the Project Area for the well (N/2 of Section 10) than permitted by the rules of the Division. The surface location for the proposed Rosa Unit Well No. 350 well is 1290 feet from the North line and 170 feet from the West line of said Section 11, Township 31 North, Range 5 West, and is therefore does not comply with Rule 7 of the Special Rules and Regulations for the Basin Fruitland Coal Gas Pool. The point of entry into the Fruitland Coal is 1165 feet from the North line and 315 feet from the East line of Section 10. The wellbore is therefore unorthodox under to Division Rule 111.C (2) and Rule 7 of the Special Pool Rules and Regulations for the Basin-Fruitland Coal Gas Pool.

Williams proposes to drill a vertical well to a kick-off point at a depth of 3123.6 feet and build a curve at a rate of 12.00 degrees per 100 feet and drill until a 90 degree curve is achieved at a true vertical depth of 3856.93 feet. Williams proposes to then drill a lateral in a westerly direction along an azimuth of 104 degrees for a bottomhole displacement of approximately 2063.7 feet to a terminus in the NE/4 of Section 10 at a point 660 feet from the North line and 2310 feet from the East line of said Section 10.

The spacing unit for the proposed horizontal well comprised of the N/2 of said Section 10 is located within the Rosa Unit, a voluntary exploratory unit operated by Williams Production Company, LLC. This spacing unit/project area is offset on all sides by the Rosa Unit except for Section 2 which offsets this spacing unit project/area to the northeast that is located in the Carracas Canyon Unit which is operated by Energen Resources Corporation. Pursuant to Rules 8 and 9(A) of the Special Pool Rules for the Basin Fruitland Coal Gas Pool, Energen Resources Corporation has been notified of this application by certified mail and have been advised that if they have objections to this application the objection must be filed in writing with the Santa Fe Office of the Division located at 1220 South Saint Francis Drive, Santa Fe, New Mexico 87505, within 20 days of the date of this application or the application may be approved.

Attached to this application are the following documents:

- Exhibit A.** Plats showing the proposed spacing unit, the unorthodox surface location, projected horizontal wellbore and the proposed lateral end of the wellbore and the boundary of the offsetting Carracas Unit;
- Exhibit B.** A copy of Division Form C-102 identifying the proposed 320-acre standard gas spacing or proration unit/project area to be dedicated to the well; and
- Exhibit C.** The Halliburton Sperry-Sun Proposal Report for the Rosa Unit Well No. 350 which contains schematic drawings of the proposed



well that fully describe the casing, tubing, perforated or openhole interval, kick-off point, and proposed trajectory of the directional drainhole.

Enclosed in hard copy is a proposed order granting this application.

Your attention to this matter is appreciated.

Very truly yours,

A handwritten signature in black ink, appearing to read "William F. Carr".

William F. Carr
Attorney for Williams Production Company

Enclosures

cc: Oil Conservation Division-Aztec

June __, 2006

Williams Production Company, L.L.C.
c/o Holland & Hart LLP
Post Office Box 2208
Santa Fe, New Mexico 87504-2208
Attention: William F. Carr

Telefax No. (505) 983-6043

Administrative Order NSL- _____
(Non-Standard Subsurface Location/Producing Area)

Dear Mr. Carr:

Reference is made to the following: (i) your application on behalf of the operator, Williams Production Company, L.L.C. ("Williams") dated June 12, 2006 (*application reference No. _____*); (ii) the records of the New Mexico Oil Conservation Division ("Division") in Aztec and Santa Fe: all concerning William's request for exception to Division Rules 111.A (13) and 111.C (2) and Rule 7 of the "*Special Rules and Regulations for the Basin-Fruitland Coal (Gas) Pool*," as promulgated by Division Order No. R-8768, as amended.

The Division Director Finds That:

- (1) The subject application has been duly filed under the provisions of Division Rule 111.C (2) and the applicable provisions of the special rules governing the Basin-Fruitland Coal (Gas) Pool (71629);
- (2) The special rules governing the Basin-Fruitland Coal (Gas) Pool provides for 320-acre gas spacing units and wells to be located within either the NE/4 or SW/4 of the section and not closer than 660 feet from any outer boundary of the spacing unit nor closer than 10 feet from any quarter-quarter section line or subdivision inner boundary;
- (4) The "project area" proposed by Williams is to consist of a single standard 320-acre slay-down gas spacing unit comprising the N/2 of Section 10, Township 31 North, Range 5 West, NMPM, Rio Arriba County, New Mexico;
- (5) It is our understanding that Williams has drilled its Rosa Unit Well No. 350 (API No. 30-039-29366) from a surface location 1290 feet from the North line and 170 feet from the West line (Unit D) of Section 11, Township 31 North, Range 5 West, and directionally drill a vertical wellbore to an approximate depth of 3123.6 feet, kick-off in a westerly

direction, build angle at a rate of 12 degrees per 100 feet until 90 degrees of vertical is achieved at a depth of 3856.93 feet (TVD). The point of entry into the Fruitland Coal will be at a point 1165 feet from the North line and 315 feet from the East line of Section 10, Township 31 North, Range 5 West and Williams will then directionally drill a horizontal drainhole a lateral distance of 2063.7 feet to an unorthodox location at a point 660 feet from the North line and 2310 feet from the East line of said Section 10;

- (6) It appears that the applicant has satisfied all of the appropriate requirements prescribed in Division Rule 111.C (2) and Rule 9 (B) of the Special Rules and Regulations for the Basin-Fruitland Coal (Gas) Pool; therefore the subject application should be approved; and
- (7) The provisions contained within this order and all other applicable provisions of Division Rule 111 and Division Order No. R-8768, as amended, should govern the subject well and 320-acre gas spacing unit.

It Is Therefore Ordered That:

(1) By the authority granted me under the provisions of Rule 9 (B) of the *"Special Rules and Regulations for the Basin-Fruitland Coal (Gas) Pool,"* as promulgated by Division Order No. R-8768, as amended, the application of Williams Production Company, L.L.C. ("Williams") for exception to Division Rules 111.A (13) and 111.C (2) and Rule 7 of the Special Rules and Regulations for the Basin-Fruitland Coal (Gas) Pool (71629), is hereby approved. Williams is further authorized to drill its Rosa Unit Well No. 350 (API No. 30-039-29366) at a surface location 1290 feet from the North line and 170 feet from the West line (Unit D) of Section 11, Township 31 North, Range 5 West, NMPM, Rio Arriba County, New Mexico, drill vertical to an approximate depth of 3123.6 feet, kick-off in a westerly direction, build angle at a rate of 12 degrees per 100 feet until 90 degrees off of vertical is achieved at a depth of 3856.93 feet (TVD). The point of entry into the Fruitland Coal will be at a point 1165 feet from the North line and 315 feet from the East line of Section 10, Township 31 North, Range 5 West and Williams will then directionally drill a horizontal drainhole a lateral distance of 2,063.7 feet to an unorthodox location at a point 660 feet from the North line and 2310 feet from the East line of said Section 10.

(2) The "project area" for this well shall consist of a single standard 320-acre lay-down gas spacing unit comprising the N/2 of Section 10.

(3) An exception to the provisions of Rule 7 of the Special Rules for the Basin-Fruitland Coal (Gas) Pool is hereby granted to permit the horizontal portion of the wellbore to be within a drilling window or producing area for the within the Basin-Fruitland Coal (Gas) Pool for this wellbore 315 feet from the outer boundary of the project area.

(4) The operator shall comply with all applicable requirements and conditions set forth in Division Rule 111 and Division Order No. R-8768, as amended.

(6) Jurisdiction of this cause is retained for the entry of such further orders as the Division may deem necessary.

DONE at Santa Fe, New Mexico, on the day and year hereinabove designated.

STATE OF NEW MEXICO
OIL CONSERVATION DIVISION

MARK E. FESMIRE, P.E.
Director

cc: New Mexico Oil Conservation Division – Aztec
U. S. Bureau of Land Management - Farmington

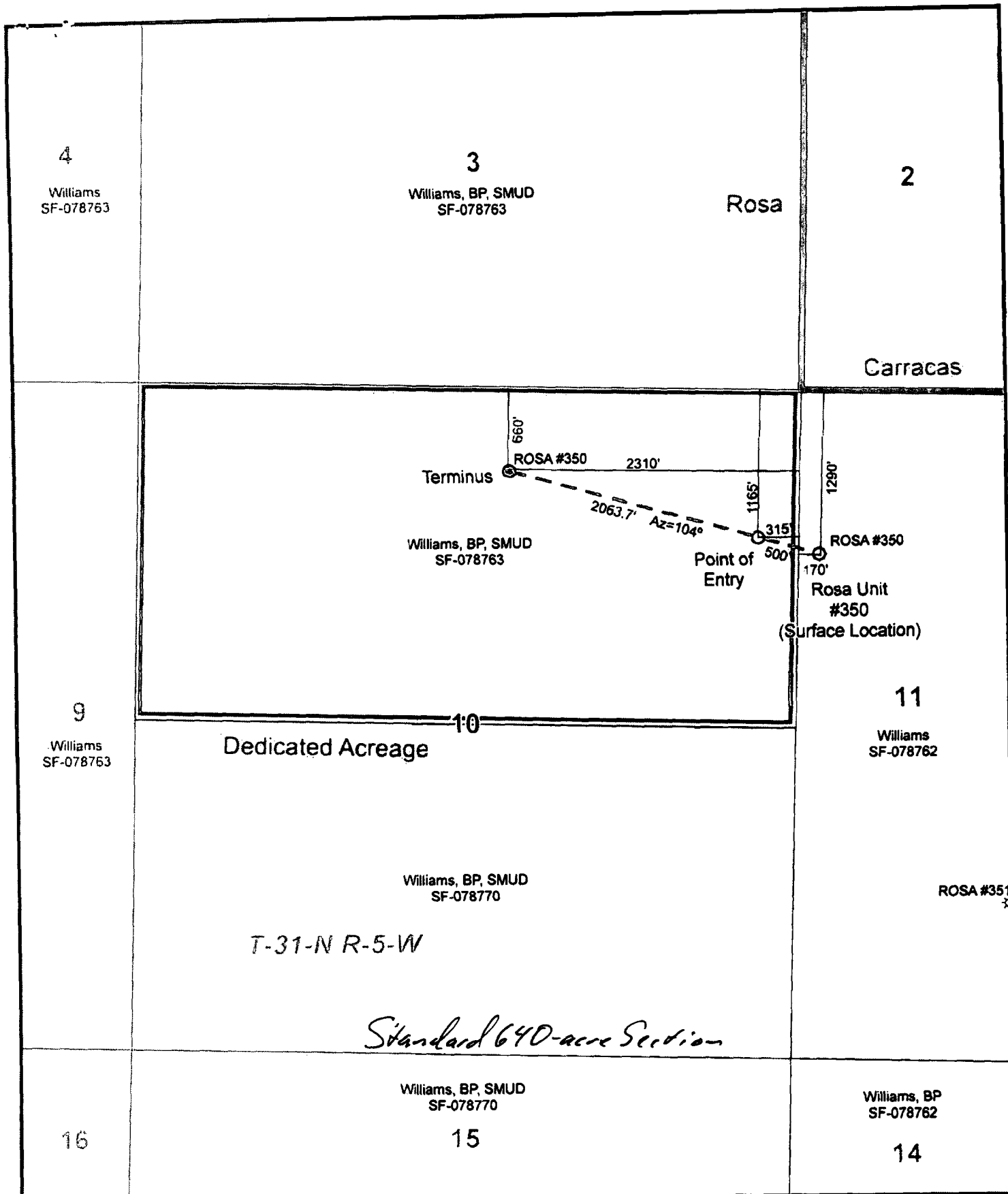


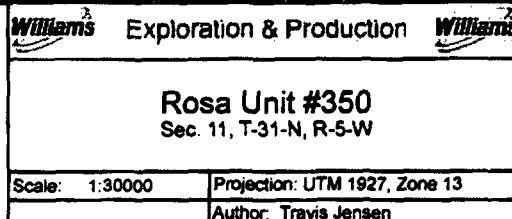
EXHIBIT A

1,000 500 0 1,000 Feet



Map Document: (G:\Project\Employee\Wern_Hansen\Rosa_Unit_350\Large_Plat.mxd)
5/25/2005 -- 1:25:39 PM

Williams Exploration & Production Williams	
Rosa Unit #350 Sec. 11, T-31-N, R-5-W	
Scale: 1:12000	Projection: UTM 1927, Zone 13
Author: Travis Jensen	



District I
PO Box 1980, Hobbs, NM 88241-1980

District II
PO Drawer 00, Artesia, NM 88211-0719

District III
1000 Rio Brazos Rd., Aztec, NM 87410

District IV
PO Box 2088, Santa Fe, NM 87504-2088

State of New Mexico
Energy, Minerals & Natural Resources Department

OIL CONSERVATION DIVISION
PO Box 2088
Santa Fe, NM 87504-2088

Form C-102
Revised February 21, 1994
Instructions on back
Submit to Appropriate District Office
State Lease - 4 Copies
Fee Lease - 3 Copies

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

*API Number		*Pool Code 71629	*Pool Name BASIN FRUITLAND COAL
*Property Code 17033	*Property Name ROSA UNIT		*Well Number 350
*OGRIID No. 120782	*Operator Name WILLIAMS PRODUCTION COMPANY		*Elevation 6826'

¹⁰ Surface Location

LL or lot no.	Section	Township	Range	Lot	Feet from the	North/South line	Feet from the	East/West line	County
0	11	31N	5W		1290	NORTH	170	WEST	RIO ARriba

¹¹ Bottom Hole Location If Different From Surface

LL or lot no.	Section	Township	Range	Lot	Feet from the	North/South line	Feet from the	East/West line	County
B	10	31N	5W		660	NORTH	2310	EAST	RIO ARriba

¹² Dedicated Acres 320.0 Acres - (N/2)	¹³ Joint or Infill	¹⁴ Consolidation Code	¹⁵ Order No.
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NO ALLOWABLE WILL BE ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATED OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION

FINAL
7-15-04
LL

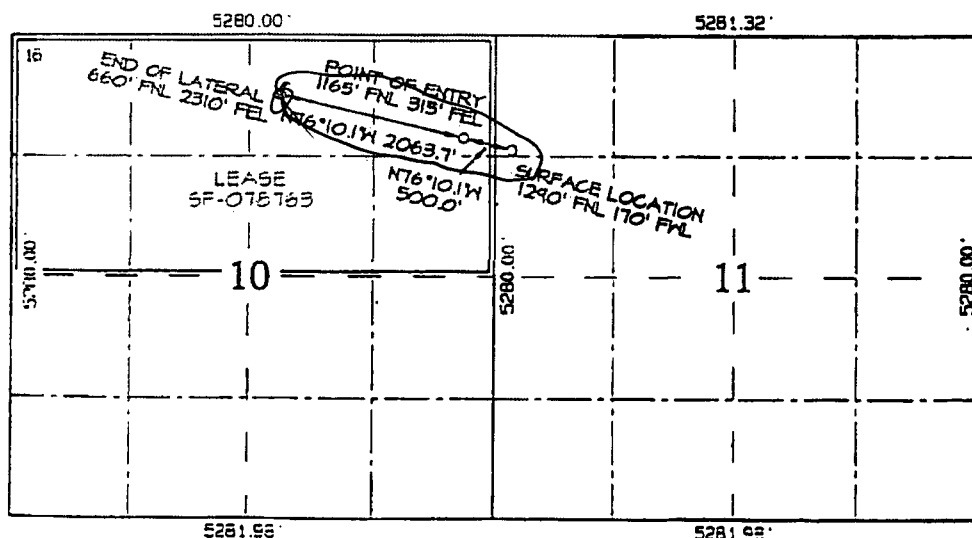


EXHIBIT B

¹⁷ OPERATOR CERTIFICATION

I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief.

Signature

Printed Name

Title

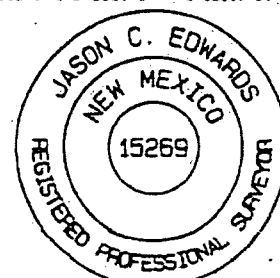
Date

¹⁸ SURVEYOR CERTIFICATION

I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief.

Date of Survey: JUNE 8, 2004

Signature and Seal of Professional Surveyor



JASON C. EDWARDS
Certificate Number 15259



**Williams Production Co.
New Mexico
Rio Arriba County, NM
Sec. 11 - T31N - R5W
Rosa Unit #350
Version 1**

Revised: 14 October, 2004

Sperry-Sun

Proposal Report

14 October, 2004

Surface Coordinates: 2153709.82 N, 644378.72 E (36° 55' 04.0000" N, 107° 20' 22.0000" W)
Grid Coordinate System: NAD27 New Mexico State Planes, Western Zone

Kelly Bushing Elevation: 6841.00ft above Mean Sea Level

Proposal Ref: pro10704

HALLIBURTON

EXHIBIT C

HALLIBURTON

Williams Production Co.
New Mexico
Rio Arriba County, NM

Proposal Report for Sec. 11 - T31N - R5W - Rosa Unit #350 - Version 1

Measured Depth (ft)	Incl. Angle (Deg)	Drift Direction (Deg)	True Vertical Depth	Vertical Section (ft)	Local Coordinates N-S (ft)	E-W (ft)	Dogleg Severity (°/100ft)	Lease Calls FNL-FSL (ft)	FEL-FWL (ft)	Global Coordinates Grid Y (ft)	Grid X (ft)
0.00	0.000	0.000	0.00	0.00	0.00 N	0.00 E		1290.00 FNL	170.00 FWL	2153709.82 N	644378.72 E
9 5/8" Casing											
300.00	0.000	0.000	300.00	0.00	0.00 N	0.00 E	0.00	1290.00 FNL	170.00 FWL	2153709.82 N	644378.72 E
500.00	0.000	0.000	500.00	0.00	0.00 N	0.00 E	0.00	1290.00 FNL	170.00 FWL	2153709.82 N	644378.72 E
1000.00	0.000	0.000	1000.00	0.00	0.00 N	0.00 E	0.00	1290.00 FNL	170.00 FWL	2153709.82 N	644378.72 E
1500.00	0.000	0.000	1500.00	0.00	0.00 N	0.00 E	0.00	1290.00 FNL	170.00 FWL	2153709.82 N	644378.72 E
Nacimiento											
1601.00	0.000	0.000	1601.00	0.00	0.00 N	0.00 E	0.00	1290.00 FNL	170.00 FWL	2153709.82 N	644378.72 E
2000.00	0.000	0.000	2000.00	0.00	0.00 N	0.00 E	0.00	1290.00 FNL	170.00 FWL	2153709.82 N	644378.72 E
2500.00	0.000	0.000	2500.00	0.00	0.00 N	0.00 E	0.00	1290.00 FNL	170.00 FWL	2153709.82 N	644378.72 E
Ojo Alamo											
2941.00	0.000	0.000	2941.00	0.00	0.00 N	0.00 E	0.00	1290.00 FNL	170.00 FWL	2153709.82 N	644378.72 E
3000.00	0.000	0.000	3000.00	0.00	0.00 N	0.00 E	0.00	1290.00 FNL	170.00 FWL	2153709.82 N	644378.72 E
Kirtland Shale											
3056.00	0.000	0.000	3056.00	0.00	0.00 N	0.00 E	0.00	1290.00 FNL	170.00 FWL	2153709.82 N	644378.72 E
Kick-Off at 3123.60ft											
3123.60	0.000	0.000	3123.60	0.00	0.00 N	0.00 E	0.00	1290.00 FNL	170.00 FWL	2153709.82 N	644378.72 E
3140.00	1.968	284.253	3140.00	0.28	0.07 N	0.27 W	12.00	1289.93 FNL	169.73 FNL	2153709.89 N	644378.45 E
3160.00	4.368	284.253	3160.00	1.39	0.34 N	1.34 W	12.00	1289.66 FNL	168.66 FNL	2153710.16 N	644377.38 E
3180.00	6.768	284.253	3180.00	3.33	0.82 N	3.22 W	12.00	1288.18 FNL	166.78 FNL	2153710.64 N	644375.50 E
3200.00	9.168	284.253	3199.57	6.10	1.50 N	5.91 W	12.00	1288.50 FNL	164.09 FNL	2153711.32 N	644372.81 E
3220.00	11.568	284.253	3219.35	9.70	2.39 N	9.40 W	12.00	1287.61 FNL	160.60 FNL	2153712.21 N	644369.32 E
3240.00	13.968	284.253	3238.85	14.12	3.48 N	13.68 W	12.00	1286.52 FNL	156.32 FNL	2153713.30 N	644365.04 E
3260.00	16.368	284.253	3258.15	19.35	4.76 N	18.76 W	12.00	1285.24 FNL	151.24 FNL	2153714.58 N	644359.96 E
3280.00	18.768	284.253	3277.22	25.39	6.25 N	24.61 W	12.00	1283.75 FNL	145.39 FNL	2153716.07 N	644354.11 E
3300.00	21.168	284.253	3296.01	32.22	7.93 N	31.22 W	12.00	1282.07 FNL	138.76 FNL	2153717.75 N	644347.50 E

Measured Depth (ft)	Incl. Angle (Deg)	Drift Direction (Deg)	True Vertical Depth	Vertical Section (ft)	Local Coordinates N-S (ft)	E-W (ft)	Dogleg Severity (°/100ft)	FNL-FSL (ft)	Lease Calls FEL-FWL (ft)	Global Coordinates Grd Y (ft)	Grd X (ft)
3320.00	23.568	284.253	3314.51	39.83	9.81 N	38.60 W	12.00	1280.19 FNL	131.40 FWL	2153719.63 N	644340.12 E
3340.00	25.968	284.253	3332.67	48.21	11.87 N	46.72 W	12.00	1278.13 FNL	123.28 FWL	2153721.69 N	644332.00 E
Fruitland Fm.											
3349.31	27.086	284.253	3341.00	52.36	12.89 N	50.75 W	12.00	1277.11 FNL	119.25 FWL	2153722.71 N	644327.97 E
3360.00	28.368	284.253	3350.46	57.34	14.12 N	55.57 W	12.00	1275.88 FNL	114.43 FWL	2153723.94 N	644323.15 E
3380.00	30.768	284.253	3367.85	67.21	16.55 N	65.14 W	12.00	1273.45 FNL	104.86 FWL	2153726.37 N	644313.58 E
3400.00	33.168	284.253	3384.82	77.79	19.15 N	75.40 W	12.00	1270.85 FNL	94.60 FWL	2153728.97 N	644303.32 E
3420.00	35.568	284.253	3401.33	89.08	21.93 N	86.34 W	12.00	1268.07 FNL	83.66 FWL	2153731.75 N	644292.38 E
3440.00	37.968	284.253	3417.35	101.05	24.88 N	97.94 W	12.00	1265.12 FNL	72.06 FWL	2153734.70 N	644280.78 E
3460.00	40.368	284.253	3432.85	113.68	27.99 N	110.18 W	12.00	1262.01 FNL	59.82 FWL	2153737.81 N	644268.54 E
3480.00	42.768	284.253	3447.81	126.95	31.26 N	123.05 W	12.00	1258.74 FNL	46.95 FWL	2153741.08 N	644255.67 E
3500.00	45.168	284.253	3462.21	140.84	34.67 N	136.50 W	12.00	1255.33 FNL	33.50 FWL	2153744.49 N	644242.22 E
3520.00	47.568	284.253	3476.01	155.31	38.24 N	150.53 W	12.00	1251.76 FNL	19.47 FWL	2153748.06 N	644228.19 E
3540.00	49.968	284.253	3489.19	170.35	41.94 N	165.11 W	12.00	1248.06 FNL	4.89 FWL	2153751.76 N	644213.61 E
Top Coal											
3542.83	50.307	284.253	3491.00	172.52	42.48 N	167.21 W	12.00	1247.52 FNL	2.79 FWL	2153752.30 N	644211.51 E
3560.00	52.368	284.253	3501.73	185.93	45.78 N	180.21 W	12.00	1244.22 FNL	10.21 FEL	2153755.60 N	644188.51 E
3580.00	54.768	284.253	3513.60	202.02	49.74 N	195.80 W	12.00	1240.26 FNL	25.80 FEL	2153759.56 N	644182.92 E
3600.00	57.168	284.253	3524.80	218.59	53.82 N	211.87 W	12.00	1236.18 FNL	41.87 FEL	2153763.64 N	644166.85 E
3620.00	59.568	284.253	3535.28	235.62	58.01 N	228.37 W	12.00	1231.99 FNL	58.37 FEL	2153767.83 N	644150.35 E
3640.00	61.968	284.253	3545.05	253.07	62.31 N	245.28 W	12.00	1227.69 FNL	75.28 FEL	2153772.13 N	644133.44 E
3660.00	64.368	284.253	3554.08	270.92	66.70 N	262.58 W	12.00	1223.30 FNL	92.58 FEL	2153776.52 N	644116.14 E
3680.00	66.768	284.253	3562.35	289.13	71.18 N	280.23 W	12.00	1218.82 FNL	110.23 FEL	2153781.00 N	644098.49 E
3700.00	69.168	284.253	3569.85	307.66	75.75 N	298.19 W	12.00	1214.25 FNL	128.19 FEL	2153785.57 N	644080.53 E
3720.00	71.568	284.253	3576.57	326.50	80.39 N	316.45 W	12.00	1209.61 FNL	146.45 FEL	2153790.21 N	644062.27 E
3740.00	73.968	284.253	3582.50	345.60	85.09 N	334.96 W	12.00	1204.91 FNL	164.96 FEL	2153794.91 N	644043.76 E
3760.00	76.368	284.253	3587.61	364.93	89.85 N	353.70 W	12.00	1200.15 FNL	183.70 FEL	2153799.67 N	644025.02 E
3780.00	78.768	284.253	3591.92	384.46	94.66 N	372.63 W	12.00	1195.34 FNL	202.63 FEL	2153804.48 N	644006.09 E
3800.00	81.168	284.253	3595.40	404.16	99.50 N	391.72 W	12.00	1190.50 FNL	221.72 FEL	2153809.32 N	643987.00 E
3820.00	83.568	284.253	3598.06	423.98	104.38 N	410.93 W	12.00	1185.62 FNL	240.93 FEL	2153814.20 N	643967.79 E
3840.00	85.968	284.253	3599.88	443.89	109.29 N	430.23 W	12.00	1180.71 FNL	260.23 FEL	2153819.11 N	643948.49 E
End of Build at 3856.93ft											
3856.93	88.000	284.253	3600.77	460.80	113.45 N	446.62 W	12.00	1176.55 FNL	276.62 FEL	2153823.27 N	643932.10 E
7" Casing, Top Target Coal											
3863.41	88.000	284.253	3601.00	467.27	115.04 N	452.89 W	0.00	1174.96 FNL	282.89 FEL	2153824.86 N	643925.83 E

Measured Depth (ft)	Incl. Angle (Deg)	Drift Direction (Deg)	True Vertical Depth	Vertical Section (ft)	Local Coordinates N-S (ft)	E-W (ft)	Dogleg Severity (°/100ft)	Lease Calls FNL-FSL (ft)	FEL-FWL (ft)	Global Coordinates Grid Y (ft)	Grid X (ft)
Start Build/Turn at 3916.03ft											
3916.03	88.000	284.253	3602.84	519.87	127.99 N	503.86 W	0.00	1162.01 FNL	333.86 FEL	2153837.81 N	643874.86 E
End of Build/Turn at 3982.70ft											
3982.70	90.000	284.254	3604.00	586.52	144.40 N	568.47 W	3.00	1145.60 FNL	398.47 FEL	2153854.22 N	643810.25 E
4000.00	90.000	284.254	3604.00	603.82	148.66 N	585.23 W	0.00	1141.34 FNL	415.23 FEL	2153858.48 N	643793.49 E
4500.00	90.000	284.254	3604.00	1103.82	271.77 N	1069.84 W	0.00	1018.23 FNL	899.84 FEL	2153981.59 N	643308.88 E
5000.00	90.000	284.254	3604.00	1603.82	394.88 N	1554.45 W	0.00	895.12 FNL	1384.45 FEL	2154104.70 N	642824.27 E
5500.00	90.000	284.254	3604.00	2103.82	517.98 N	2039.05 W	0.00	772.02 FNL	1869.05 FEL	2154227.80 N	642339.67 E
Total Depth at 5954.95ft, 6 1/4" Open Hole, Target - PBHL, Current Target											
5954.95	90.000	284.254	3604.00	2558.77	630.00 N	2480.00 W	0.00	660.00 FNL	2310.00 FEL	2154339.82 N	641898.72 E

All data is in Feet (US) unless otherwise stated. Directions and coordinates are relative to Grid North.
Vertical depths are relative to RKB (6826' + 15' est). Northings and Eastings are relative to Wellhead.

Based upon Minimum Curvature type calculations, at a Measured Depth of 5954.95ft.,
The Bottom Hole Displacement is 2558.77ft., in the Direction of 284.253° (Grid).

HALLIBURTON

Proposal Report for Sec. 11 - T31N - R5W - Rosa Unit #350 - Version 1

Comments

Measured Depth (ft)	Station Coordinates			Comment
	TVD (ft)	Northings (ft)	Eastings (ft)	
3123.60	3123.60	0.00 N	0.00 E	Kick-Off at 3123.60ft
3856.93	3600.77	113.45 N	446.62 W	End of Build at 3856.93ft
3916.03	3602.84	127.99 N	503.86 W	Start Build/Turn at 3916.03ft
3982.70	3604.00	144.40 N	568.47 W	End of Build/Turn at 3982.70ft
5954.95	3604.00	630.00 N	2480.00 W	Total Depth at 5954.95ft

Formation Tops

Measured Depth (ft)	Vertical Depth (ft)	Sub-Sea Depth (ft)	Northings (ft)	Eastings (ft)	Dip Angle	Dn-Dip Dir.	Formation Name
1601.00	1601.00	-5240.00	0.00 N	0.00 E	0.000	0.000	Nacimiento
2941.00	2941.00	-3900.00	0.00 N	0.00 E	0.000	0.000	Ojo Alamo
3056.00	3056.00	-3785.00	0.00 N	0.00 E	0.000	0.000	Kirtland Shale
3349.31	3341.00	-3500.00	12.89 N	50.75 W	0.000	0.000	Fruitland Fm.
3542.83	3491.00	-3350.00	42.48 N	167.21 W	0.000	0.000	Top Coal
3863.41	3601.00	-3240.00	115.04 N	452.89 W	0.000	0.000	Top Target Coal

HALLIBURTON

Williams Production Co.
New Mexico
Rio Arriba County, NM

Proposal Report for Sec. 11 - T31N - R5W - Rosa Unit #350 - Version 1

Casing details

From		To		Casing Detail
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	
<Surface>	<Surface>	300.00	300.00	9 5/8" Casing
<Surface>	<Surface>	3863.41	3601.00	7" Casing
<Surface>	<Surface>	<Run-TD>	<Run-TD>	6 1/4" Open Hole

Targets associated with this wellpath

Target Name	Target Entry Coordinates			Target Shape	Target Type
	TVD (ft)	Northings (ft)	Eastings (ft)		
PBHL	3604.00	630.00 N	2480.00 W	Point	Current Target
	-3237.00	2154339.82 N	641898.72 E		
		36° 55' 10.3555" N	107° 20' 52.5003" W		
	Mean Sea Level/Global Coordinates: Geographical Coordinates:				

North Reference Sheet for Sec. 11 - T31N - R5W - Rosa Unit #350

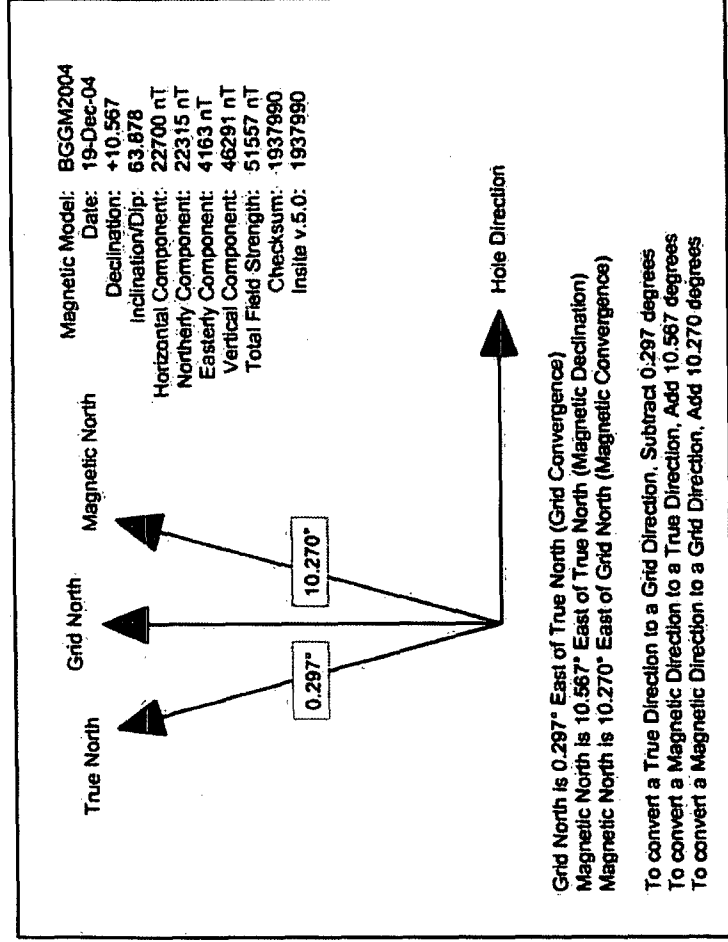
Coordinate System is NAD27 New Mexico State Planes, Western Zone, US Foot
Source: Snyder, J.P., 1987, Map Projections - A Working Manual

Datum is North American Datum of 1927 (US48, AK, HI, and Canada)

Spheroid is Clarke - 1866
Equatorial Radius: 6378206.400m.
Polar Radius: 6356583.800m.
Inverse Flattening: 294.978698213901

Projection method is Transverse Mercator or Gauss Kruger Projection
Central Meridian is -107.833°
Longitude Origin: 0.000°
Latitude Origin: 31.000°
False Easting: 152400.00m
False Northing: 0.00m
Scale Reduction: 0.99991667

Grid Coordinates of Well: 2153709.82 N, 644378.72 E
Geographical Coordinates of Well: 36° 55' 04.0000" N, 107° 20' 22.0000" W
Surface Elevation of Well: 6841.00ft
Grid Convergence at Surface is +0.297°
Magnetic Convergence at Surface is -10.270° (19 December, 2004)



Halliburton Sperry-Sun

Survey Report for Rosa Unit #350 - Version 1

DrillQuest 3.03.06.007

Source:

Report Date: 14-Oct-04

Client: Williams Production Co.

Field: New Mexico

Structure / Slot:

Well: Sec. 11 - T31N - R5W / Rosa Unit

Vertical Section Azimu 284.253

Vertical Section Origin N 0.000 ft, E 0.000 ft

Location Grid Lat / Lor 36 55 04.0000 N, 107 20 22.0000

Location Grid N/E Y/X: N 2153709.820 ft, E 644378.720 f North Reference:

Grid Convergence Ang 0.296668

TVD Reference Datur RKB (6826' + 15'est)

TVD Reference Elevat 6841.000 ft relative to Mean Sea Level

Minimum Curvature

NAD27 New Mexico State Planes, Western Zone

0.999917

10.567

51558 nT

63.878

19-Dec-04

BGM2004

Grid North

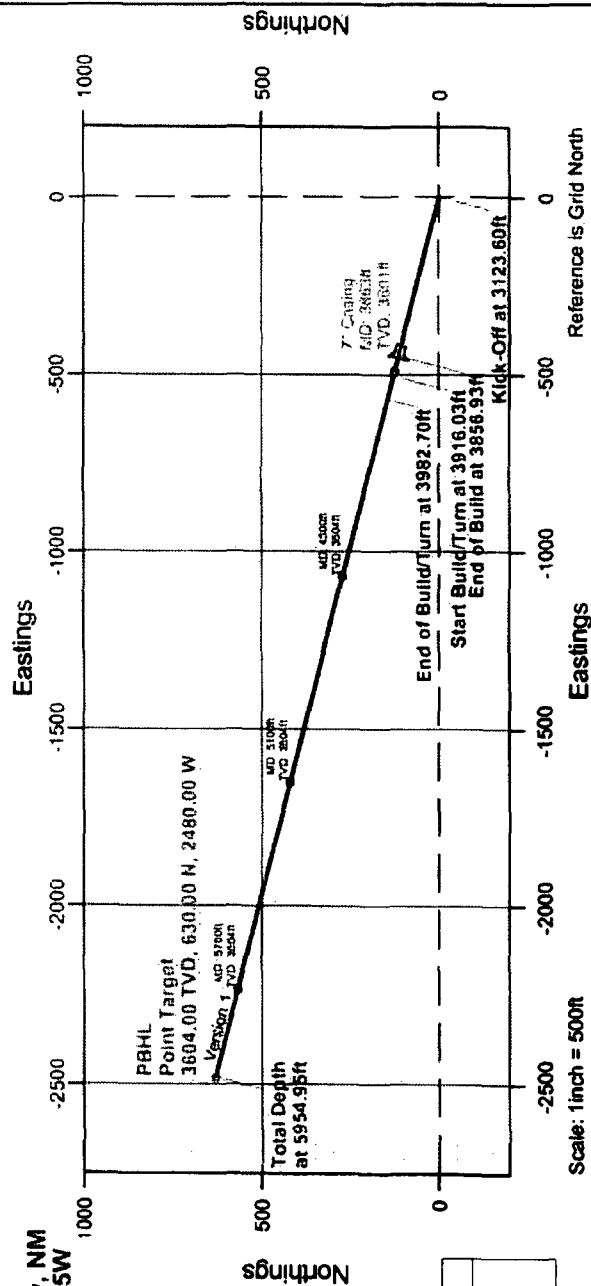
-10.27

Mag North to Grid North:

Local Coordinates Referenced To Wellhead

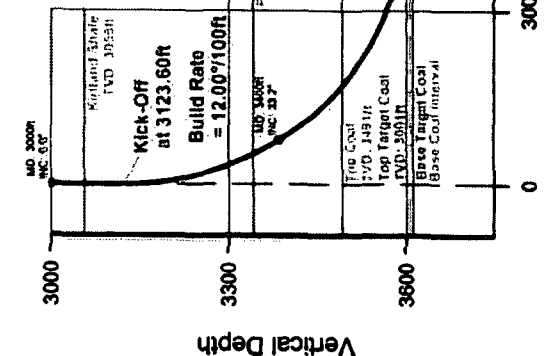
MD	Incl.	Azim.	TVD	Dogleg	V.Sect.	N/-S	E/-W
0	0	0	0	0	0	0	0
500	0	0	500	0	0	0	0
1000	0	0	1000	0	0	0	0
1500	0	0	1500	0	0	0	0
2000	0	0	2000	0	0	0	0
2500	0	0	2500	0	0	0	0
3000	0	0	3000	0	0	0	0
3123.6	0	0	3123.6	0	0	0	0
3140	1.97	284.25	3140	12	0.28	0.07	-0.27
3160	4.37	284.25	3159.96	12	1.39	0.34	-1.34
3180	6.77	284.25	3179.87	12	3.33	0.82	-3.22
3200	9.17	284.25	3199.67	12	6.1	1.5	-5.91
3220	11.57	284.25	3219.35	12	9.7	2.39	-9.4
3240	13.97	284.25	3238.85	12	14.12	3.48	-13.68
3260	16.37	284.25	3258.15	12	19.35	4.76	-18.76
3280	18.77	284.25	3277.22	12	25.39	6.25	-24.61
3300	21.17	284.25	3296.01	12	32.22	7.93	-31.22
3320	23.57	284.25	3314.51	12	39.83	9.81	-38.6
3340	25.97	284.25	3332.67	12	48.21	11.87	-46.72

3360	28.37	284.25	3350.46	12	57.34	14.12	-55.57
3380	30.77	284.25	3367.85	12	67.21	16.55	-65.14
3400	33.17	284.25	3384.82	12	77.79	19.15	-75.4
3420	35.57	284.25	3401.33	12	89.08	21.93	-86.34
3440	37.97	284.25	3417.35	12	101.05	24.88	-97.94
3460	40.37	284.25	3432.85	12	113.68	27.99	-110.18
3480	42.77	284.25	3447.81	12	126.95	31.26	-123.05
3500	45.17	284.25	3462.21	12	140.84	34.67	-136.5
3520	47.57	284.25	3476.01	12	155.31	38.24	-150.53
3540	49.97	284.25	3489.19	12	170.35	41.94	-165.11
3560	52.37	284.25	3501.73	12	185.93	45.78	-180.21
3580	54.77	284.25	3513.6	12	202.02	49.74	-195.8
3600	57.17	284.25	3524.8	12	218.59	53.82	-211.87
3620	59.57	284.25	3535.28	12	235.62	58.01	-228.37
3640	61.97	284.25	3545.05	12	253.07	62.31	-245.28
3660	64.37	284.25	3554.08	12	270.92	66.7	-262.58
3680	66.77	284.25	3562.35	12	289.13	71.18	-280.23
3700	69.17	284.25	3569.85	12	307.66	75.75	-298.19
3720	71.57	284.25	3576.57	12	326.5	80.39	-316.45
3740	73.97	284.25	3582.5	12	345.6	85.09	-334.96
3760	76.37	284.25	3587.61	12	364.93	89.85	-353.7
3780	78.77	284.25	3591.92	12	384.46	94.66	-372.63
3800	81.17	284.25	3595.4	12	404.16	99.5	-391.72
3820	83.57	284.25	3598.06	12	423.98	104.38	-410.93
3840	85.97	284.25	3599.88	12	443.89	109.29	-430.23
3856.93	88	284.25	3600.77	12	460.8	113.45	-446.62
3863.41	88	284.25	3601	0	467.27	115.04	-452.89
3916.03	88	284.25	3602.84	0	519.87	127.99	-503.86
3982.7	90	284.25	3604	3	586.52	144.4	-568.47
4000	90	284.25	3604	0	603.82	148.66	-585.23
4500	90	284.25	3604	0	1103.82	271.77	-1069.84
5000	90	284.25	3604	0	1603.82	394.88	-1554.45
5500	90	284.25	3604	0	2103.82	517.98	-2039.05
5954.95	90	284.25	3604	0	2558.77	630	-2480



Version 1 Proposal Data							
Coordinate System :		NAD27 New Mexico State Plane, Western Zone					
	Measured Depth	Incl.	Adm.	Vertical Depth	Northings	Eastings	Vertical Section Ratio
Kick-Off Point	113.69	0.000	0.000	0.00	0.00 N	0.00 E	0.00
Build Angle	1856.01	85.000	0.000	3123.60	0.00 N	0.00 E	0.00
" " " "			294.253	3600.77	113.45 N	446.62 W	12.00
" " " "	3865.41	93.075	294.253	3602.84	115.04 N	457.89 W	467.27
Start Build Turn	1916.01	88.000	294.253	3602.84	127.90 N	503.86 W	519.87
Build Angle	3982.70	90.075	294.254	3604.00	144.40 N	568.47 W	556.52
End Depth	1914.01	90.000	294.254	3604.90	160.99 N	2150.09 W	2538.77

Version 1 Bottom Hole Location	
Ref: MWK (8520' x 15' east):	3504 00N -3237' 00M
Ref: Near Sea Level:	6330 00 N, 24490 00 W
Ref: Westpass:	9912 00 S, 14780 00 W
Ref: NW Corner Sec. 10	9912 00 S, 14780 00 W
Ref: NW Corner Sec. 11	9912 00 S, 14780 00 W
Ref: Geophysical Coordinates	39° 55' 10.3655' N, 107° 20' 52.5003' W
Ref: Geophysical Coordinates	39° 55' 10.3655' N, 107° 20' 52.5003' W

[illegible]