

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

RCVD MAR 13 '12
OIL CONS. DIV.
DIST. 3

APPLICATION FOR PERMIT TO DRILL, DEEPEN, OR PLUG BACK

1a. Type of Work DRILL	5. Lease Number SF-078578-A Unit Reporting Number	
1b. Type of Well GAS	6. If Indian, All. or Tribe	
2. Operator BURLINGTON RESOURCES Oil & Gas Company, LP	7. Unit Agreement Name	
3. Address & Phone No. of Operator PO Box 4289, Farmington, NM 87499 (505) 326-9700	8. Farm or Lease Name Howell K 9. Well Number 101	
4. Location of Well Surface: Unit L(NWSW), 1810' FSL & 550' FWL BHL : Unit M(SWSW), 820' FSL & 740' FWL Surface: Latitude: 36.794072° N (NAD83) Longitude: 107.703701° W BHL : Latitude: 36.791395° N (NAD83) Longitude: 107.702994°	10. Field, Pool, Wildcat La Jara PC/Basin FC 11. Sec., Twn, Rge, Mer. (NMPM) Sec. 20, T30N, R8W API# 30-045-35350	
14. Distance in Miles from Nearest Town 0.9 from Navajo Dam	12. County San Juan NM	13. State
15. Distance from Proposed Location to Nearest Property or Lease Line 550'	17. Acres Assigned to Well PC 128.66 Acres SW/4 FC 286.69 Acres W/2	
16. Acres in Lease 1207.470		
18. Distance from Proposed Location to Nearest Well, Drlg, Compl, or Applied for on this Lease 440' from Howell 1/MV		
19. Proposed Depth 2668'	20. Rotary or Cable Tools Rotary	
21. Elevations (DF, FT, GR, Etc.) 5750' GL	22. Approx. Date Work will Start DRILLING OPERATIONS AUTHORIZED ARE SUBJECT TO COMPLIANCE WITH ATTACHED "GENERAL REQUIREMENTS".	
23. Proposed Casing and Cementing Program See Operations Plan attached		
24. Authorized by: <u>Arleen Kellywood</u> Arleen Kellywood (Staff Regulatory Tech)	1/27/12 Date	

Hold C104
for Directional Survey
and "As Drilled" plat

BLM'S APPROVAL OR ACCEPTANCE OF THIS
ACTION DOES NOT RELIEVE THE LESSEE AND
OPERATOR FROM OBTAINING ANY OTHER
AUTHORIZATION REQUIRED FOR OPERATIONS
ON FEDERAL AND INDIAN LANDS

PERMIT NO. _____ APPROVAL DATE _____
APPROVED BY [Signature] TITLE AFM DATE 3/12/12

Archaeological Report attached A gas recovery unit may or may not be used on this location
Threatened and Endangered Species Report attached
NOTE: This format is issued in lieu of U.S. BLM Form 3160-3
Title 18 U.S.C. Section 1001, makes it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or presentations as to any matter within its jurisdiction

Example Master Plan Type 2 Bond Numbers NMB-000015 and NMB-000089

MAR 19 2012

NMOCD A

pc

NOTIFY AZTEC OCD 24 HRS.
PRIOR TO CASING & CEMENT

DISTRICT I
1625 N. French Dr., Hobbs, N.M. 88240

DISTRICT II
1301 West Grand Avenue, Artesia, N.M. 88210

DISTRICT III
1000 Rio Brazos Rd., Aztec, N.M. 87410

DISTRICT IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy, Minerals & Natural Resources Department

OIL CONSERVATION DIVISION
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-102 Revised
July 16, 2010
Submit one copy to appropriate
District Office

JAN 30 2012

Farmington Field Office

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION

¹ API Number 30-045-35350	² Pool Code 96199/71629	³ Pool Name LA JARA PICTURED CLIFFS/BASIN FRUITLAND COAL
⁴ Property Code 7130	⁵ Property Name HOWELL K	⁶ Well Number 101
⁷ GRID No. 14538	⁸ Operator Name BURLINGTON RESOURCES OIL & GAS COMPANY LP	⁹ Elevation 5750'

¹⁰ Surface Location

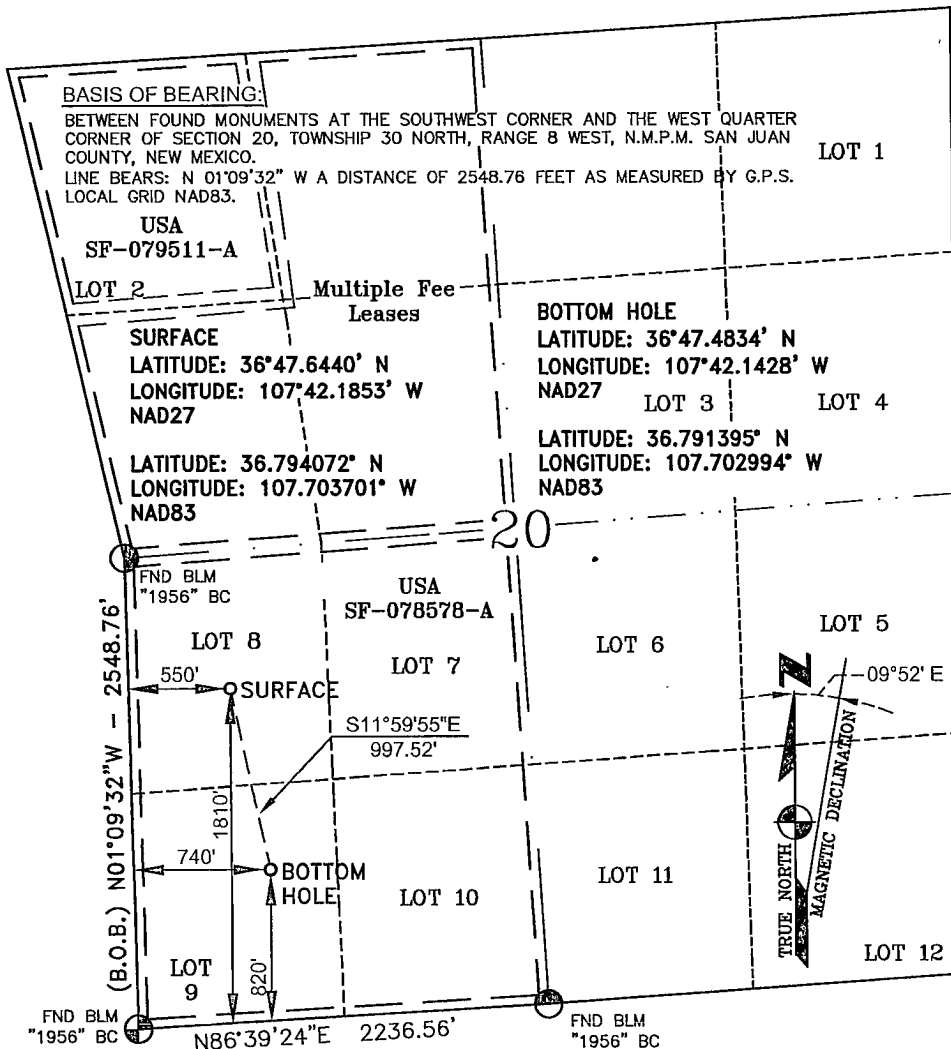
UL or lot no.	Section	Township	Range	Lot Idn.	Feet from the	North/South line	Feet from the	East/West line	County
L	20	30-N	8-W	8	1810	SOUTH	550	WEST	SAN JUAN

¹¹ Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn.	Feet from the	North/South line	Feet from the	East/West line	County
M	20	30-N	8-W	9	820	SOUTH	740	WEST	SAN JUAN
¹² Dedicated Acres PC 128.66 ACRES SW/4 FC 286.69 ACRES W/2			¹³ Joint or Infill		¹⁴ Consolidation Code		¹⁵ Order No.		

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

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17 OPERATOR CERTIFICATION

I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom hole location or has a right to drill this well at this location pursuant to a contract with an owner of such a mineral or a working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.

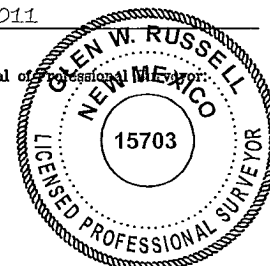
Arleen Kellywood 7/25/11
Signature Date

Arleen Kellywood
Printed Name
arleen.r.kellywood@conocophillips.com
E-mail Address

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.

JULY 20, 2011
Date of Survey
Signature and Seal of Professional Surveyor



GLEN W. RUSSELL 15703
Certificate Number

PROJECT PROPOSAL - New Drill / Sidetrack

San Juan Business Unit

HOWELL K 101

DEVELOPMENT

Lease:		AFE #: WAN.CDR.0031		AFE \$:	
Field Name: SAN JUAN		Rig: Aztec Rig 673		State: NM	County: SAN JUAN
Geologist:		Phone:		Geophysicist:	
Geoscientist:		Phone:		Prod. Engineer:	
Res. Engineer:		Phone:		Proj. Field Lead:	
				Phone:	

Primary Objective (Zones):

Zone	Zone Name
JCV	BASIN FRUITLAND COAL (GAS)
R20003	PICTURED CLIFFS(R20003)

Location: Surface		Datum/Code: NAD 27		Directional	
Latitude: 36.794067	Longitude: -107.703087	X:	Y:	Section: 20	Range: 008W
Footage X: 550 FWL	Footage Y: 1810 FSL	Elevation: 5750	(FT)	Township: 030N	
Tolerance:					

Location: Bottom Hole		Datum/Code: NAD 27		Directional	
Latitude: 36.791390	Longitude: -107.702380	X:	Y:	Section: 20	Range: 008W
Footage X: 740 FWL	Footage Y: 820 FSL	Elevation:	(FT)	Township: 030N	
Tolerance:					

Location Type: Year Round		Start Date (Est.): 1/1/2014		Completion Date:		Date In Operation:	
Formation Data: Assume KB = 5765		Units = FT					
Formation Call & Casing Points	Depth (TVD in Ft)	SS (Ft)	MD (Ft)	Depletion (Yes/No)	BHP (PSIG)	BHT	Remarks
Surface Casing	200	5565		☐			8-3/4 hole. 7" 20 ppf, J-55 STC csg. Cement with 77 cuft. Circulate cement to surface.
OJO ALAMO	1275	4490		☐			
KIRTLAND	1453	4312		☐			
FRUITLAND	2154	3611		☐	168		Gas
FRUITLAND COAL	2245	3520		☐			
PICTURED CLIFFS	2468	3297		☐	688		Gas; TD - 200' below T/PCCF
LEWIS	2580	3185		☐			
Total Depth	2668	3097		☐			6-1/4" hole. 4-1/2" 11.6 ppf, J-55, LTC casing. Cement with 394 cuft. Circulate cement to surface.

Reference Wells:		
Reference Type	Well Name	Comments

Logging Program:	
Intermediate Logs:	☐ Log only if show ☐ GR/ILD ☐ Triple Combo

TD Logs:	☐ Triple Combo ☐ Dipmeter ☐ RFT ☐ Sonic ☐ VSP ☐ TDT
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Additional Information:					
Log Type	Stage	From (Ft)	To (Ft)	Tool Type/Name	Remarks

ConocoPhillips or its affiliates

Planning Report

Database:	EDM Central Planning	Local Co-ordinate Reference:	Well Howell K 101
Company:	ConocoPhillips SJBU	TVd Reference:	WELL @ 5765.0ft (Original Well Elev)
Project:	San Juan Basin - New Mexico West Wells	MD Reference:	WELL @ 5765.0ft (Original Well Elev)
Site:	Other Named Wells	North Reference:	True
Well:	Howell K 101	Survey Calculation Method:	Minimum Curvature
Wellbore:	Howell K 101		
Design:	Plan #1		

Project	San Juan Basin - New Mexico West Wells, New Mexico, Directional "S"		
Map System:	US State Plane 1927 (Exact solution)	System Datum:	Mean Sea Level
Geo Datum:	NAD 1927 (NADCON CONUS)		
Map Zone:	New Mexico West 3003		Using geodetic scale factor

Site	Other Named Wells		
Site Position:		Northing:	2,108,178.26 ft
From:	Lat/Long	Easting:	643,887.63 ft
Position Uncertainty:	15 0 ft	Slot Radius:	6-1/8"
		Latitude:	36° 47' 33.793 N
		Longitude:	107° 20' 30.932 W
		Grid Convergence:	0 29 °

Well	Howell K 101		
Well Position	+N/-S	0.0 ft	Northing: 2,108,324.80 ft
	+E/-W	0.0 ft	Easting: 538,135.85 ft
Position Uncertainty	0 0 ft	Wellhead Elevation:	ft
		Latitude:	36° 47' 38.640 N
		Longitude:	107° 42' 11.118 W
		Ground Level:	5,750.0 ft

Wellbore	Howell K 101		
Magnetics	Model Name	Sample Date	Declination
	BGGM2011	11/14/2011	9.83
			Dip Angle
			63.51
			Field Strength
			50,711

Design	Plan #1		
Audit Notes:			
Version:	Phase:	PROTOTYPE	Tie On Depth: 0.0
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W
	(ft)	(ft)	(ft)
	0.0	0.0	0.0
			Direction
			(°)
			167.98

Plan Sections										
Measured Depth	Inclination	Azimuth	Vertical Depth	+N/-S	+E/-W	Dogleg Rate	Build Rate	Turn Rate	TFO	Target
(ft)	(°)	(°)	(ft)	(ft)	(ft)	(°/100ft)	(°/100ft)	(°/100ft)	(°)	
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
320.0	0.00	0.00	320.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,067.1	37.36	167.98	1,015.3	-229.9	48.9	5.00	5.00	0.00	167.98	
1,934.4	37.36	167.98	1,704.7	-744.6	158.5	0.00	0.00	0.00	0.00	
2,681.5	0.00	0.00	2,400.0	-974.5	207.4	5.00	-5.00	0.00	180.00	Depth to vertical
2,949.5	0.00	0.00	2,668.0	-974.5	207.4	0.00	0.00	0.00	0.00	TD

ConocoPhillips or its affiliates

Planning Report

Database:	EDM Central Planning	Local Co-ordinate Reference:	Well Howell K 101
Company:	ConocoPhillips SJB	TVD Reference:	WELL @ 5765 0ft (Original Well Elev)
Project:	San Juan Basin - New Mexico West Wells	MD Reference:	WELL @ 5765 0ft (Original Well Elev)
Site:	Other Named Wells	North Reference:	True
Well:	Howell K 101	Survey Calculation Method:	Minimum Curvature
Wellbore:	Howell K 101		
Design:	Plan #1		

Planned Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00	
100.0	0.00	0.00	100.0	0.0	0.0	0.0	0.00	0.00	0.00	
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	0.00	
surface										
300.0	0.00	0.00	300.0	0.0	0.0	0.0	0.00	0.00	0.00	
320.0	0.00	0.00	320.0	0.0	0.0	0.0	0.00	0.00	0.00	
400.0	4.00	167.98	399.9	-2.7	0.6	2.8	5.00	5.00	0.00	
500.0	9.00	167.98	499.3	-13.8	2.9	14.1	5.00	5.00	0.00	
600.0	14.00	167.98	597.2	-33.3	7.1	34.0	5.00	5.00	0.00	
700.0	19.00	167.98	693.1	-61.1	13.0	62.4	5.00	5.00	0.00	
800.0	24.00	167.98	786.1	-96.9	20.6	99.1	5.00	5.00	0.00	
900.0	29.00	167.98	875.6	-140.5	29.9	143.7	5.00	5.00	0.00	
1,000.0	34.00	167.98	960.8	-191.6	40.8	195.9	5.00	5.00	0.00	
1,067.1	37.36	167.98	1,015.3	-229.9	48.9	235.1	5.00	5.00	0.00	
1,100.0	37.36	167.98	1,041.4	-249.4	53.1	255.0	0.00	0.00	0.00	
1,200.0	37.36	167.98	1,120.9	-308.8	65.7	315.7	0.00	0.00	0.00	
1,300.0	37.36	167.98	1,200.4	-368.1	78.4	376.4	0.00	0.00	0.00	
1,393.8	37.36	167.98	1,275.0	-423.8	90.2	433.3	0.00	0.00	0.00	
Ojo Alamo										
1,400.0	37.36	167.98	1,279.9	-427.5	91.0	437.0	0.00	0.00	0.00	
1,500.0	37.36	167.98	1,359.4	-486.8	103.6	497.7	0.00	0.00	0.00	
1,600.0	37.36	167.98	1,438.9	-546.1	116.2	558.4	0.00	0.00	0.00	
1,617.8	37.36	167.98	1,453.0	-556.7	118.5	569.2	0.00	0.00	0.00	
Kirtland										
1,700.0	37.36	167.98	1,518.4	-605.5	128.9	619.1	0.00	0.00	0.00	
1,800.0	37.36	167.98	1,597.9	-664.8	141.5	679.7	0.00	0.00	0.00	
1,900.0	37.36	167.98	1,677.3	-724.2	154.1	740.4	0.00	0.00	0.00	
1,934.4	37.36	167.98	1,704.7	-744.6	158.5	761.3	0.00	0.00	0.00	
2,000.0	34.08	167.98	1,757.9	-782.1	166.5	799.6	5.00	-5.00	0.00	
2,100.0	29.08	167.98	1,843.1	-833.3	177.4	851.9	5.00	-5.00	0.00	
2,200.0	24.08	167.98	1,932.5	-877.0	186.7	896.6	5.00	-5.00	0.00	
2,300.0	19.08	167.98	2,025.5	-913.0	194.3	933.4	5.00	-5.00	0.00	
2,400.0	14.08	167.98	2,121.3	-940.9	200.3	961.9	5.00	-5.00	0.00	
2,433.6	12.40	167.98	2,154.0	-948.4	201.9	969.6	5.00	-5.00	0.00	
Fruitland										
2,500.0	9.08	167.98	2,219.2	-960.5	204.4	982.0	5.00	-5.00	0.00	
2,526.1	7.77	167.98	2,245.0	-964.2	205.2	985.8	5.00	-5.00	0.00	
Fruitland Coal										
2,600.0	4.08	167.98	2,318.5	-971.7	206.8	993.4	5.00	-5.00	0.00	
2,681.5	0.00	0.00	2,400.0	-974.5	207.4	996.3	5.00	-5.00	-206.03	
Depth to vertical										
2,700.0	0.00	0.00	2,418.5	-974.5	207.4	996.3	0.00	0.00	0.00	
2,749.5	0.00	0.00	2,468.0	-974.5	207.4	996.3	0.00	0.00	0.00	
Pictured Cliffs										
2,800.0	0.00	0.00	2,518.5	-974.5	207.4	996.3	0.00	0.00	0.00	
2,861.5	0.00	0.00	2,580.0	-974.5	207.4	996.3	0.00	0.00	0.00	
Lewis										
2,900.0	0.00	0.00	2,618.5	-974.5	207.4	996.3	0.00	0.00	0.00	
2,949.5	0.00	0.00	2,668.0	-974.5	207.4	996.3	0.00	0.00	0.00	
production - TD										

ConocoPhillips or its affiliates

Planning Report

Database:	EDM Central Planning	Local Co-ordinate Reference:	Well Howell K 101
Company:	ConocoPhillips SJB	TVD Reference:	WELL @ 5765.0ft (Original Well Elev)
Project:	San Juan Basin - New Mexico West Wells	MD Reference:	WELL @ 5765.0ft (Original Well Elev)
Site:	Other Named Wells	North Reference:	True
Well:	Howell K 101	Survey Calculation Method:	Minimum Curvature
Wellbore:	Howell K 101		
Design:	Plan #1		

Targets									
Target Name	hit/miss target	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude
	Shape	(°)	(°)	(ft)	(ft)	(ft)	(ft)	(ft)	Longitude
TD	- plan hits target center - Point	0.00	0.00	2,668.0	-974.5	207.4	2,107,350.67	538,344.56	36° 47' 29.004 N
Depth to vertical	- plan hits target center - Point	0.00	0.00	2,400.0	-974.5	207.4	2,107,350.65	538,344.59	36° 47' 29.004 N
									107° 42' 8.568 W

Casing Points				
Measured Depth	Vertical Depth	Name	Casing Diameter	Hole Diameter
(ft)	(ft)		(")	(")
200.0	200.0	surface	7	8-3/4
2,949.5	2,668.0	production	4-1/2	6-1/4

Formations					
Measured Depth	Vertical Depth	Name	Lithology	Dip	Dip Direction
(ft)	(ft)			(°)	(°)
2,861.5	2,580.0	Lewis		0.00	
1,617.8	1,453.0	Kirtland		0.00	
2,526.1	2,245.0	Fruitland Coal		0.00	
2,433.6	2,154.0	Fruitland		0.00	
1,393.8	1,275.0	Ojo Alamo		0.00	
2,749.5	2,468.0	Pictured Cliffs		0.00	

REFERENCE INFORMATION

WELL @ 5765.0ft (Original Well Elev)
Ground Elevation 5750.0
Reference Lat: 36° 47' 38.640 N
Reference Long: 107° 42' 11.118 W

Project: San Juan Basin - New Mexico West W
Site: Other Named Wells
Well: Howell K 101
Wellbore: Howell K 101
Design: Plan #1

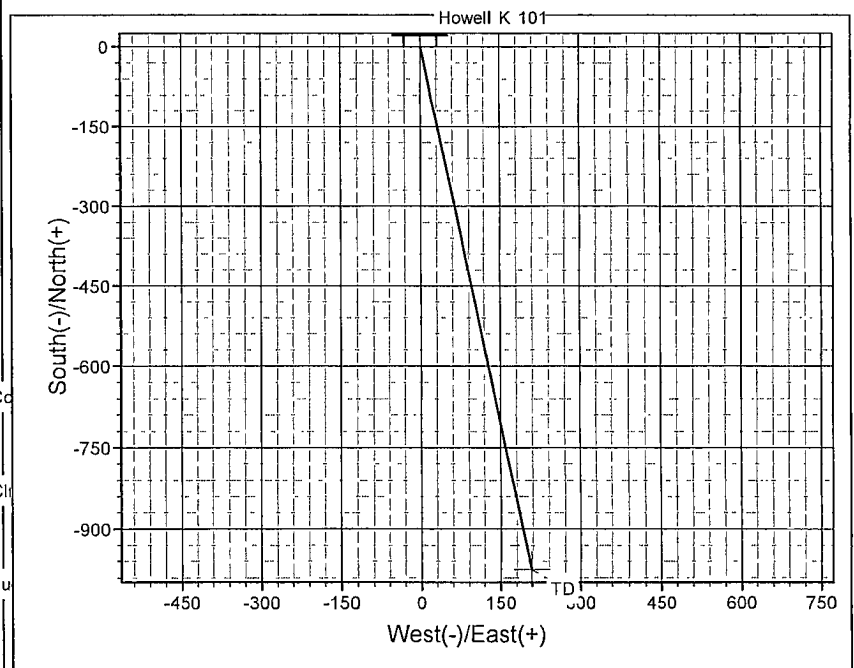
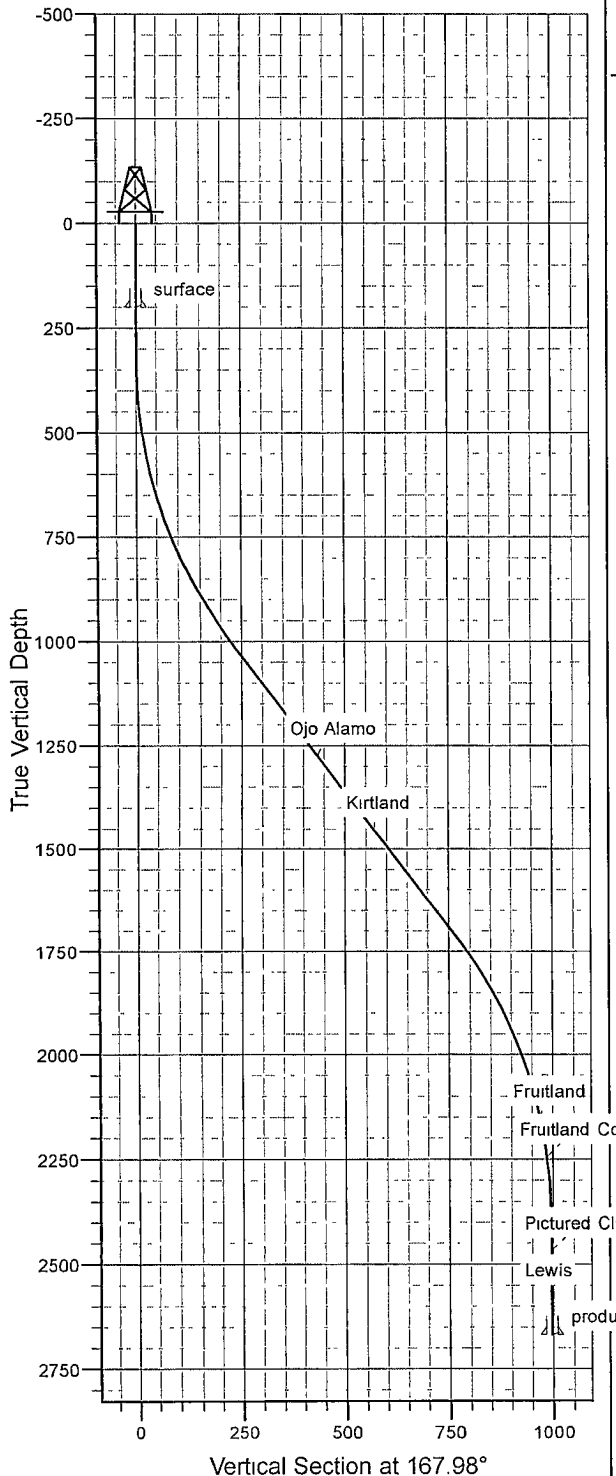
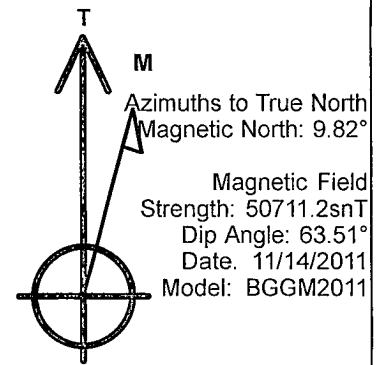


SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSec	Target
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	320.0	0.00	0.00	320.0	0.0	0.0	0.00	0.00	0.0	
3	1067.1	37.36	167.98	1015.3	-229.9	48.9	5.00	167.98	235.1	
4	1934.4	37.36	167.98	1704.7	-744.6	158.5	0.00	0.00	761.3	
5	2681.5	0.00	0.00	2400.0	-974.5	207.4	5.00	180.00	996.3	Depth to vertical
6	2949.5	0.00	0.00	2668.0	-974.5	207.4	0.00	0.00	996.3	TD

FORMATION TOP DETAILS

TVDPath	MDPath	Formation
1275.0	1393.8	Ojo Alamo
1453.0	1617.8	Kirtland
2154.0	2433.6	Fruitland
2245.0	2526.1	Fruitland Coal
2468.0	2749.5	Pictured Cliffs
2580.0	2861.5	Lewis



Directions from the Intersection of Hwy 173 & 511
in the community of Navajo Dam, NM
to
BURLINGTON RESOURCES OIL & GAS COMPANY LP
HOWELL K #101
1810' FSL & 550' FWL,
Section 20, T30N, R8W, N.M.P.M. San Juan County,
New Mexico
Lat: 36° 47' 38.659" N
Long: 107° 42' 13.326" W
Nad 1983

Take Highway 511 Southwest for 0.6 miles,
Turn left on CR 4227 for 200' to CR 4228,
Stay left for 0.1 miles to beginning of 2-Track,
Follow 2-Track (southwest) 0.3 miles, to beginning of
New access on right side of 2-Track,
Turn right (west) 194.83' to newly staked location.