

District I
1625 N. French Dr., Hobbs, NM 88240

District II
1301 W. Grand Avenue, Artesia, NM 88210

District III
1000 Rio Brazos Rd., Aztec, NM 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 October 12, 2005

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 30-045-34934		*Pool Code 71629		*Pool Name BASIN FRUITLAND COAL	
*Property Code 37651		*Property Name BARBARA K			*Well Number 1
*OGRID No. 13931		*Operator Name MANANA GAS COMPANY			*Elevation 5771'

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
I	5	30N	11W		2081	SOUTH	128	EAST	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
L	4	30N	11W		1961	SOUTH	819	WEST	SAN JUAN

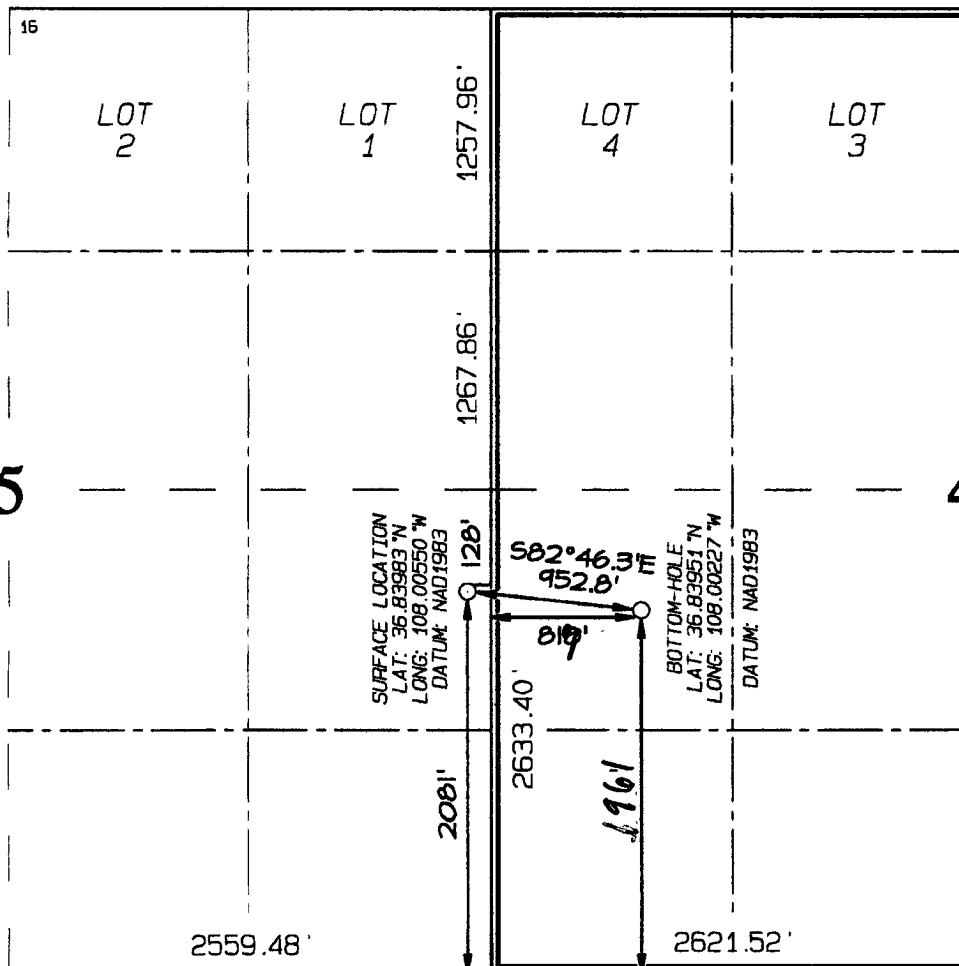
¹² Dedicated Acres 319.65 Acres - W/2					¹³ Joint or Infill Y	¹⁴ Consolidation Code	¹⁵ Order No. RCVD SEP 1 '09 OIL CONS. DIV.		
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NO ALLOWABLE WILL BE ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATED
OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION

2585.88'

2610.30'

DIST. 3



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 working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the Division. Signature: <u>John C. Thompson</u> Date: <u>8/31/09</u> Printed Name: _____	
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. INFORMATION OF RECORD Date Drawn: AUGUST 31, 2009 Signature and Seal of Professional Surveyor JASON C. EDWARDS Certificate Number 15269	



Scientific
Drilling

Directional Survey Certification

7327 West Barton Road
Casper, WY 82604
(307)-472-6621 Fax (307) 472-5439

RECEIVED JUN 22 2009

Operator Walsh Engineering
Well Name & No. Barbara K #1
County & State San Juan County, NM
SDI Job No. 42DEF0906248
Rig Aztec 507

RCVD AUG 17 '09

OIL CONS. DIV.

30-045-34934
DIST. 3

9/1/09

I, Julie Cruse, having personal knowledge of all the facts, hereby
certify that the attached directional survey run from a measured depth of 0 feet to a
measured depth of 2800 feet is true and correct as determined from all available records.

Julie Cruse

Signature

17-Jun-09

Date

Julie Cruse

Rockies Region Engineer
Scientific Drilling - Rocky Mountain District

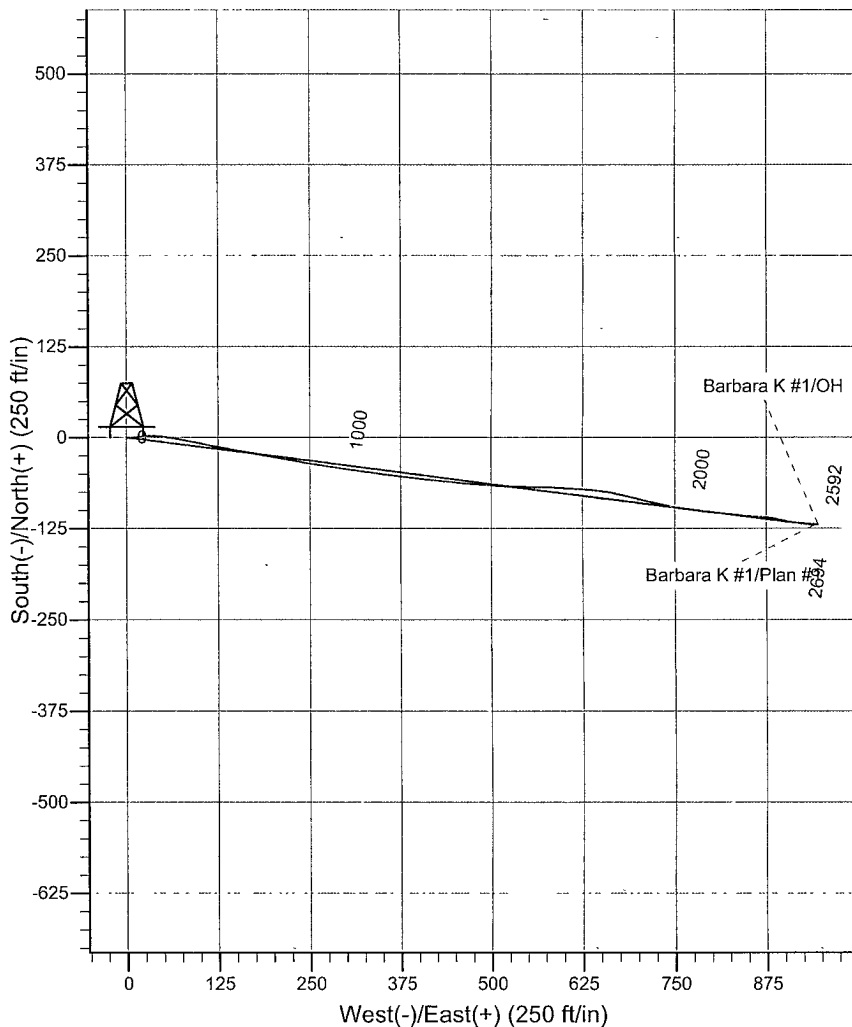
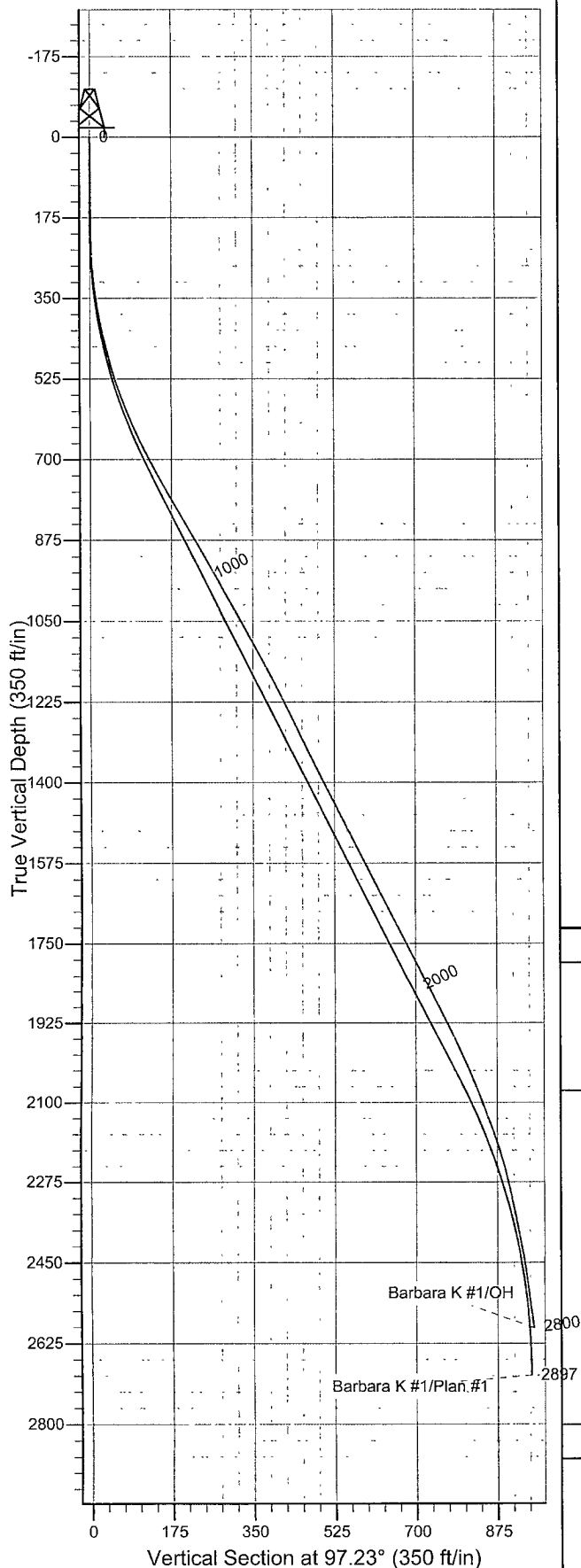
id 61/5 817/W



Scientific Drilling
Rocky Mountain Operations

Project: San Juan County, NM
Site: Barbara K #1
Well: Barbara K #1
Wellbore: OH
Design: OH

Wash Engineering



WELL DETAILS. Barbara K #1

Ground Level GL 5771' @ 5771.00ft (Ground Level)
Northing 2125451.60 Easting 2672961.74 Latitude 36° 50' 27.204 N Longitude 108° 0' 16.740 W

RCVD AUG 17 '09

OIL CONS. DIV.
DIST. 3

REFERENCE INFORMATION

Co-ordinate (N/E) Reference: Well Barbara K #1, True North
Vertical (TVD) Reference: GL 5771' @ 5771.00ft (Ground Level)
Section (VS) Reference: Slot - (0.00N, 0.00E)
Measured Depth Reference: GL 5771' @ 5771.00ft (Ground Level)
Calculation Method: Minimum Curvature
Local North: True
Location: Sec 5 T30N R11W

PROJECT DETAILS San Juan County, NM

Geodetic System: US State Plane 1983
Datum: North American Datum 1983
Ellipsoid: GRS 1980
Zone: New Mexico Western Zone

Design: OH (Barbara K #1/OH)

Created By: Julie Cruse Date: 2009-06-17



Scientific Drilling
Rocky Mountain Operations

Walsh Engineering

San Juan County, NM

Barbara K #1

Barbara K #1

OH

Design: OH

Standard Survey Report

17 June, 2009

RCVD AUG 17 '09

OIL CONS. DIV.

DIST. 3



Scientific Drilling

Survey Report

Company:	Walsh Engineering	Local Co-ordinate Reference:	Well Barbara K #1
Project:	San Juan County, NM	TVD Reference:	GL 5771' @ 5771.00ft (Ground Level)
Site:	Barbara K #1	MD Reference:	GL 5771' @ 5771.00ft (Ground Level)
Well:	Barbara K #1	North Reference:	True
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	EDM 2003.16 Multi User Db

Project:	San Juan County, NM		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Western Zone		

Site:		Barbara K #1, Sec 5 T30N R11W			
Site Position:		Northing:	2,125,451.60 ft	Latitude:	36° 50' 27.204 N
From:	Lat/Long	Easting:	2,672,961.74 ft	Longitude:	108° 0' 16.740 W
Position Uncertainty:	0.00 ft	Slot Radius:	in	Grid Convergence:	-0.10 °

Well:	Barbara K #1, 2081' FSL & 128' FEL					
Well Position	+N/-S	0.00 ft	Northing:	2,125,451.60 ft	Latitude:	36° 50' 27.204 N
	+E/-W	0.00 ft	Easting:	2,672,961.74 ft	Longitude:	108° 0' 16.740 W
Position Uncertainty		0.00 ft	Wellhead Elevation:	ft	Ground Level:	5,771.00 ft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF200510	2009-06-04	10.24	63.56	50,994

Design:	OH			
Audit Notes:				
Version:	1.0	Phase:	ACTUAL	Tie On Depth: 0.00
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W/ (ft)	Direction (°)
	0.00	0.00	0.00	97.23

Survey Program		Date 2009-06-17		
From	To	Survey (Wellbore)	Tool Name	Description
(ft)	(ft)			
206.00	2,800.00	Survey #1 (OH)	MWD SDI	MWD - Standard ver 1.0.1

Survey:									
Measured	Inclination	Azimuth	Vertical	+N/-S	+E/-W	Vertical	Dogleg	Build	Turn
Depth	(°)	(°)	Depth	(ft)	(ft)	Section	Rate	Rate	Rate
(ft)			(ft)			(ft)	(°/100ft)	(°/100ft)	(°/100ft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
206.00	0.72	126.87	205.99	-0.78	1.04	1.12	0.35	0.35	0.00
298.00	5.53	81.70	297.84	-0.48	5.89	5.90	5.49	5.23	-49.10
393.00	11.25	82.78	391.78	1.34	19.62	19.30	6.02	6.02	1.14
487.00	15.13	93.56	483.30	1.73	40.97	40.43	4.87	4.13	11.47
583.00	20.53	100.95	574.66	-2.24	70.03	69.76	6.09	5.62	7.70
678.00	25.98	101.63	661.91	-9.61	106.79	107.15	5.74	5.74	0.72
774.00	29.75	100.49	746.77	-18.19	150.82	151.91	3.97	3.93	-1.19
870.00	30.03	100.80	830.00	-27.03	197.84	199.67	0.33	0.29	0.32
964.00	29.50	99.49	911.60	-35.25	243.77	246.27	0.89	-0.56	-1.39
1,058.00	29.57	98.08	993.38	-42.32	289.57	292.59	0.74	0.07	-1.50
1,153.00	28.25	97.25	1,076.54	-48.46	335.08	338.51	1.45	-1.39	-0.87
1,248.00	28.35	97.44	1,160.19	-54.21	379.75	383.55	0.14	0.11	0.20

Scientific Drilling

Survey Report

Company:	Walsh Engineering	Local Co-ordinate Reference:	Well Barbara K #1
Project:	San Juan County, NM	TVD Reference:	GL 5771' @ 5771.00ft (Ground Level)
Site:	Barbara K #1	MD Reference:	GL 5771' @ 5771.00ft (Ground Level)
Well:	Barbara K #1	North Reference:	True
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	EDM 2003.16 Multi User Db

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)	
1,344.00	25.55	95.83	1,245.76	-59.27	422.95	427.05	3.01	-2.92	-1.68	
1,439.00	25.73	95.21	1,331.40	-63.22	463.87	468.14	0.34	0.19	-0.65	
1,535.00	26.87	93.43	1,417.46	-66.41	506.28	510.61	1.44	1.19	-1.85	
1,631.00	27.26	90.42	1,502.95	-67.87	549.92	554.09	1.48	0.41	-3.14	
1,726.00	27.01	93.19	1,587.50	-69.23	593.22	597.21	1.36	-0.26	2.92	
1,821.00	26.76	95.04	1,672.23	-72.31	636.06	640.11	0.92	-0.26	1.95	
1,916.00	27.14	103.41	1,756.95	-79.22	678.46	683.03	4.01	0.40	8.81	
2,010.00	27.24	103.89	1,840.56	-89.36	720.20	725.72	0.26	0.11	0.51	
2,106.00	25.45	99.88	1,926.59	-98.17	761.85	768.15	2.63	-1.86	-4.18	
2,138.00	24.79	97.22	1,955.57	-100.19	775.28	781.73	4.09	-2.06	-8.31	
2,202.00	23.50	95.27	2,013.97	-103.05	801.30	807.90	2.37	-2.02	-3.05	
2,297.00	20.52	96.79	2,102.04	-106.76	836.70	843.49	3.19	-3.14	1.60	
2,393.00	18.67	92.81	2,192.48	-109.50	868.76	875.64	2.38	-1.93	-4.15	
2,489.00	11.42	107.42	2,285.16	-113.11	893.22	900.35	8.47	-7.55	15.22	
2,584.00	12.16	95.88	2,378.16	-116.95	912.15	919.61	2.60	0.78	-12.15	
2,679.00	8.29	93.11	2,471.64	-118.35	928.95	936.46	4.11	-4.07	-2.92	
2,742.00	7.61	96.22	2,534.03	-119.05	937.63	945.16	1.28	-1.08	4.94	
2,800.00	7.61	96.22	2,591.52	-119.88	945.26	952.84	0.00	0.00	0.00	
Projection to TD										

Targets										
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude	
- hit/miss target										
- Shape										
Barbara K 1 FCoal Top	0.00	0.00	2,050.00	-101.00	788.00	2,125,349.19	2,673,749.56	36° 50' 26.205 N	108° 0' 7.045 W	
- actual wellpath misses target center by 26.49ft at 2230.37ft MD (2040.07 TVD, -104.11 N, 812.36 E)										
- Point										
Barbara K 1 Hardline	0.00	0.00	2,050.00	0.00	788.00	2,125,450.18	2,673,749.74	36° 50' 27.204 N	108° 0' 7.045 W	
- actual wellpath misses target center by 107.30ft at 2226.43ft MD (2036.43 TVD, -103.96 N, 810.85 E)										
- Rectangle (sides W800.00 H0.01 D650.00)										

Checked By: _____ Approved By: _____ Date: _____

ANANA GAS COMPANY

BARBARA K #1

2081" FSL & 128' FEL

LOCATED IN THE NW/4 SE/4 OF SECTION 5, T30N, R11W, N.M.P.M.,

BOTTOM HOLE: 1980' FSL & 660' FWL

LOCATED IN THE NW/4 SW/4 SEC 4, T30N, R11W, NMPM

SAN JUAN COUNTY, NEW MEXICO

LATITUDE: 36.83983 N
LONGITUDE: 108.00551 W
DATUM: NAD 83

