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OIL CONS. DIV.

DIST. 3

Form 3160-3
(August 2007)

JUL 31 2012

FORM APPROVED
OMB NO. 1004-0137
Expires: July 31, 2010

UNITED STATES Farmington Field Office
DEPARTMENT OF THE INTERIOR Bureau of Land Management
BUREAU OF LAND MANAGEMENT
APPLICATION FOR PERMIT TO DRILL OR REENTER

1a. Type of Work: ☒ DRILL ☐ REENTER
1b. Type of Well: ☐ Oil Well ☒ Gas Well ☐ Other ☒ Single Zone ☐ Multiple Zone

2. Name of Operator

Black Hills Gas Resources

3a. Address
P.O. Box 249/3200 N 1st St
Bloomfield, NM 87401

3b. Phone No. (include area code)
(505) 634-5104

4. Location of well (Report location clearly and in accordance with any State requirements. *)
At surface 2,385' FNL & 415' FEL SW/SE (UL: H)

SE/SE

At proposed prod. zone 1,914' FNL & 1,705' FEL SW/NE (UL: G)

14. Distance in miles and direction from the nearest town or post office*

20 miles southwest of Dulce, New Mexico

15. Distance from proposed*
location to nearest

property or lease line, ft.

Approx. 2918'

(Also to nearest drlg. unit line, if any)

1949.99'

16. No. of acres in lease
Approx.

2,273ac Contract 459

2,020ac Contract 460

18. Distance from proposed location*

to nearest well, drilling, completed,
applied for, on this lease, ft.

50' (Twin Location)

19. Proposed Depth
7,652' TVD
16,879' MD

21. Elevations (Show whether DF, RT, GR, etc.)

7,209' GR

22. Approximate date work will start*

June 1, 2013

17. Spacing Unit dedicated to this well

Approx. 320 ac N/2 of Sec. 20

Approx. 331.04ac N/2 of Sec. 21

20. BLM/ BIA Bond No. on file

BLM- NMB000230 / BIA 190-010-577

23. Estimated duration

45-60 Days drlg & compl.

24. Attachments

The following, completed in accordance with the requirements of Onshore Oil and Gas Order No. 1 shall be attached to this form:

1. Well plat certified by a registered surveyor.
2. A Drilling Plan.
3. A Surface Use Plan (if the location is on National Forest System Lands, the SUPO shall be filed with the appropriate Forest Service Office).

4. Bond to cover the operations unless covered by existing bond on file (see item 20 above).
5. Operator certification.
6. Such other site specific information and/or plans as may be required by the authorized officer.

25. Signature

Daniel Manus

Name (Printed/ Typed)

Daniel Manus

Date

July 31, 2012

Title

Regulatory Technician

Approved By (Signature)

D. Mancinella

Name (Printed/ Typed)

KFO

Date

2/28/13

Title

Office

Application approval does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject conduct operations thereon.

Conditions of approval, if any, are attached.

A COMPLETE C-144 MUST BE SUBMITTED TO AND APPROVED BY THE NMOCD FOR: A PIT, CLOSED LOOP SYSTEM, BELOW GRADE TANK, OR PROPOSED ALTERNATIVE METHOD, PURSUANT TO NMOCD PART 19.15.17, PRIOR TO THE USE OR CONSTRUCTION OF THE ABOVE APPLICATIONS.

Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, make 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 representations as to any matter within its jurisdiction.

* (Instructions on page 2)

H₂S POTENTIAL EXIST

NMOCD

DRILLING OPERATIONS AUTHORIZED ARE
SUBJECT TO COMPLIANCE WITH ATTACHED
"GENERAL REQUIREMENTS".

MAY 17 2013

This action is subject to technical and
procedural review pursuant to 43 CFR 3165.3
and appeal pursuant to 43 CFR 3165.4

Hold C104
for Directional Survey
and "As Drilled" plat

Hold C104
for Directional Survey
and "As Drilled" plat

NOTIFY AZTEC OCD 24 HRS.
PRIOR TO CASING & CEMENT

DISTRICT I
1625 N. French Dr., Hobbs, N.M. 88240
Phone: (575) 393-6161 Fax: (575) 393-0720

DISTRICT II
811 S. First St., Artesia, N.M. 88210
Phone: (575) 748-1283 Fax: (575) 748-9720

DISTRICT III
1000 Rio Brazos Rd., Aztec, N.M. 87410
Phone: (505) 334-6178 Fax: (505) 334-6170

DISTRICT IV
1220 S. St. Francis Dr., Santa Fe, N.M. 87505
Phone: (505) 476-3460 Fax: (505) 476-3462

State of New Mexico
Energy, Minerals & Natural Resources Department

OIL CONSERVATION DIVISION

1220 South St. Francis Dr.
Santa Fe, N.M. 87505

RECEIVED

JUL 31 2012

Form C-102

Revised August 1, 2011

Submit one copy to appropriate

District Office

Farmington Field Office
Bureau of Land Management

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

¹ API Number 30-039-31135	² Pool Code 97232	³ Pool Name BASIN MANCOS
⁴ Property Code 22210	⁵ Property Name JICARILLA 459-19	⁶ Well Number 724C
⁷ OGRD No. 013925	⁸ Operator Name BLACK HILLS GAS RESOURCES	⁹ Elevation 7209

¹⁰ Surface Location

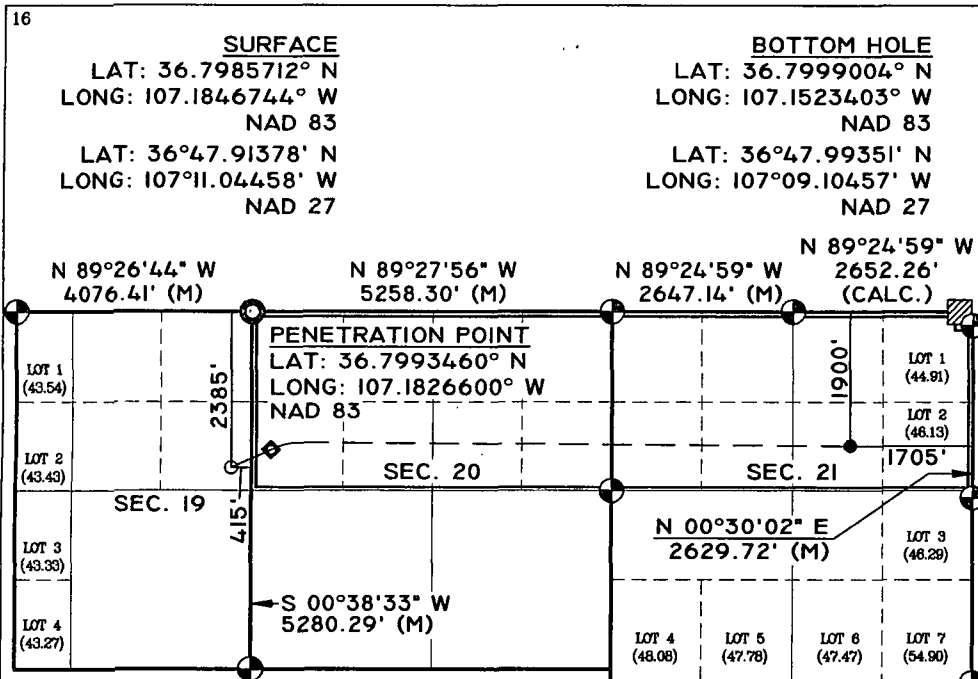
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
H	19	30 N	3 W		2385	NORTH	415	EAST	RIO ARRIBA

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
G	21	30 N	3 W		1900	NORTH	1705	EAST	RIO ARRIBA

¹² Dedicated Acres 320 Ac. N/2 SEC. 20 331.04 Ac. N/2 SEC. 21	¹³ Joint or Infill	¹⁴ Consolidation Code	¹⁵ Order No. R-13449
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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



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.

Daniel Manus 7-31-2012
Signature Date
Daniel Manus
Printed Name
daniel.manus@blackhillscorp.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 knowledge.

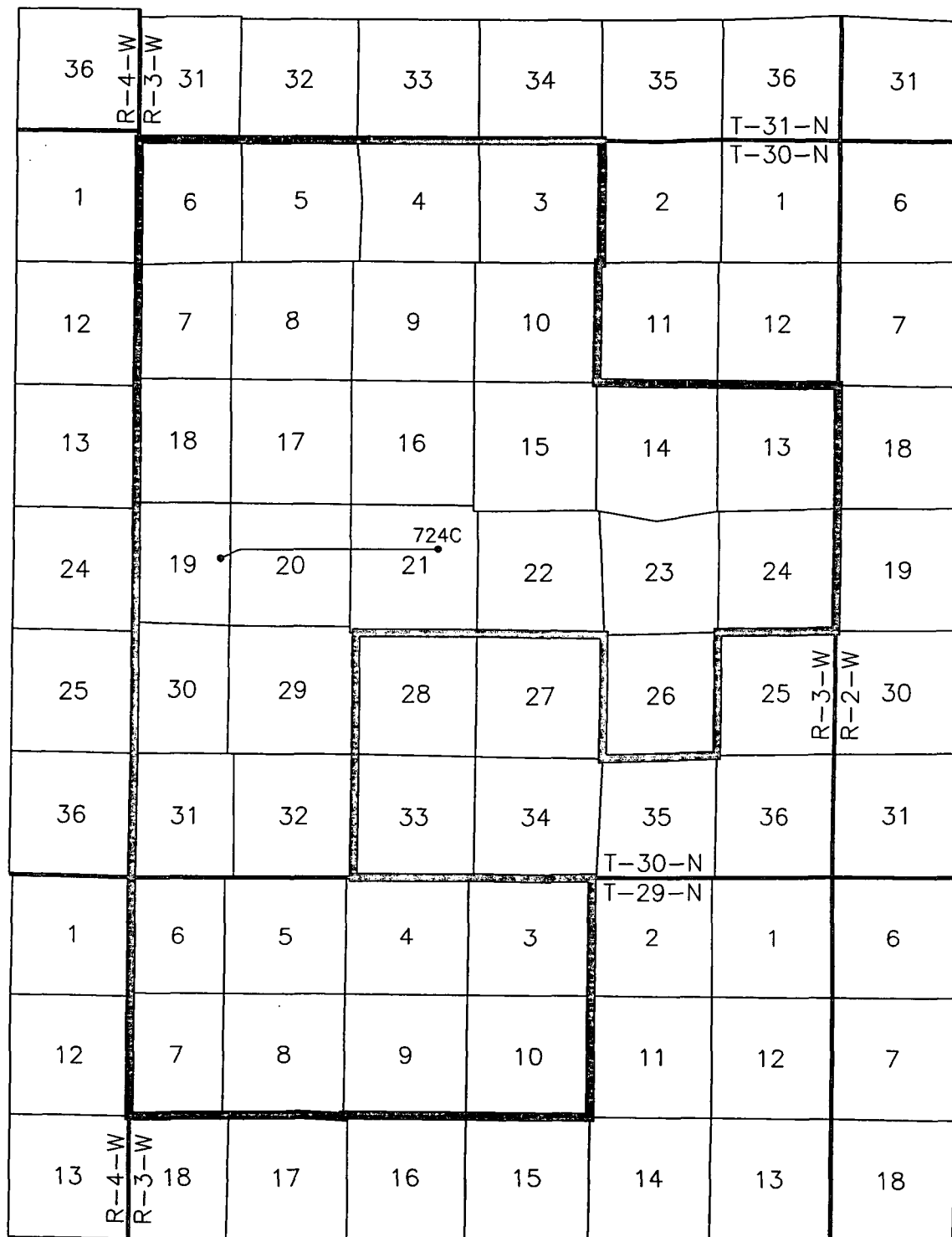
11/30/11
Date of Survey
Signature and Seal
JOHN A. VUKONICH
NEW MEXICO
REGISTERED PROFESSIONAL SURVEYOR
14831

14831
Certificate Number
7-31-2012

LEGEND:



- = SURFACE LOCATION
- = BOTTOM HOLE LOCATION
- ◆ = PENETRATION POINT
- ⊕ = FOUND 1917 U.S.G.L.O. BRASS CAP
- ⊙ = FOUND 1915 U.S.G.L.O. BRASS CAP
- ▣ = CALCULATED POSITION

BLACK HILL GAS RESOURCES
JICARILLA (MANCOS FORMATION) PROJECT AREA
JICARILLA 459-19 No. 724C
T-30-N, R-3-W, N.M.P.M.
RIO ARriba COUNTY, NEW MEXICO



PROJECT AREA

= ORDER # R-13449

 Black Hills Gas Resources 3200 N. 1st. BLOOMFIELD, NEW MEXICO (505)-634-1111	 UNITED FIELD SERVICES INC. P.O. BOX 3851 FARMINGTON, NEW MEXICO, 87499 (505) 334-0408	
SURVEY DATE: 03/21/12	DRAWN BY: HS	DRAWING NO: 10262MAPC
DATE: 07/25/12	CHECKED BY: AD	REV: 1



Black Hills Gas Resources

Jicarilla 459-19 #724C

Surface Location: 2,358' FNL 415' FEL (SE/NE)

Sec.19 T30N R3W

Bottom Hole Location: 1,914' FNL 1,705' FEL (SW/NE)

Sec. 21 T30N R3W

Rio Arriba County, New Mexico

Lease: Contract 459

DRILLING PROGRAM

(Per Rule 320)

This Application for Permit to Drill (APD) was initiated under the NOS process as stated in Onshore Order No. 1 and supporting Bureau of Land Management (BLM) documents. This NOS process includes an onsite meeting which was held on December 8, 2011 as determined by Bureau of Indian Affairs (BIA) and Jicarilla Oil & Gas Administration (JOGA) and at which time the specific concerns of Black Hills Gas Resources (BHGR), BIA, and JOGA were discussed.

SURFACE FORMATION – San Jose

GROUND ELEVATION – 7,209'

ESTIMATED FORMATION TOPS - (Water, oil, gas and/or other mineral-bearing formations)

San Jose	Surface	Sandstone, shales & siltstones
Nacimiento	2,021'	Sandstone, shales & siltstones
Ojo Alamo	3,257'	Sandstone, shales & siltstones
Fruitland Coal	3,736'	Sandstone, shales, siltstones & coal
Pictured Cliffs	3,788'	Sandstone, shales & siltstones
Lewis	3,869'	Sandstone, shales & siltstones
Mesaverde	5,749'	Sandstone, shales & siltstones
Mancos	6,623'	Sandstone, shales & siltstones
Lower Niobrara	7,613'	Sandstone, shales & siltstones

**TOTAL DEPTH 7,652' TVD
 16,879' MD**

Estimated depths of anticipated fresh water, oil, or gas:

Nacimiento	2,021'	Gas, water, sand
Ojo Alamo	3,257'	Gas, water, sand
Fruitland Coal	3,736'	Gas, water, sand
Pictured Cliffs	3,788'	Gas, water, sand
Lewis	3,869'	Gas, water, sand
Mesaverde	5,749'	Gas, water, sand
Mancos	6,623'	Gas, water, sand

HORIZONTAL DRILLING PROGRAMKick-Off Point is estimated to be $\pm 6,916'$ TVD**CASING PROGRAM**

Depth	Hole Diameter	Casing Diameter	Casing Weight and Grade	Cement
0' - 600'MD	17 1/2"	13 3/8"	54.5# J-55	Surface 20bbl H ₂ O flush followed by ± 618 skts Premium cmt (126bbbls) w/ 0.125 lbm/sks Poly-E-Fake & 1% CaCl. Displace w/ ± 70 bbbls H ₂ O Yield 1.16 ft ³ /sks : wt 15.80 lbm/gal
0' - 6,916'MD	12 1/4"	9 3/8"	40# L-80 HC	Intermediate Lead: 20bbl H ₂ O flush, 20bbl SUPER FLUSH 101, 20bbl H ₂ O Spacer, followed w/ 1404skts of Light Premium w/ 5 lbm/sks Gilsonite, 0.125 lbm/sks Poly-E- Fake. Yield 1.82ft ³ /sks : wt. 12.50 lbm/gal. Tail: 180skts Premium w/ 0.125 lbm/sks Poly-E-Flake, 0.2% Halad@-9. Slurry yield 1.15ft ³ /sks : wt 15.80 lbm/gal, Displace w/ 375 bbls H ₂ O.
3399' - 7,979'MD	8 3/4"	7"	23# L-80 HC	Liner 40bbl Tuned SPACER (12 lbm/gal) w/ 0.1gal/bbl Musol, 0.1gal/bbl SEM-7, 175.4 lbm/bbl Barite 690skts HALCEM Premium w/ 0.4% Halad@-334, 2.5 lbm/sks Kol-seal, 0.3% D-Air 3000, 0.05% HR-5, Yield 1.31ft ³ /sks : wt 13.5 lbm/gal. Displace cmt w/ OBM (9 lbm/gal) 217bbl
0' - 16,879' MD	6 1/4"	4 1/2"	11.6# P-110	Long String Cement 40bbl Turned Spacer III, .05gal/bbl Musol A, 0.5 gal/bbl SEM-7, 291 lbm/bbl Barite, 375bbl WBM (13.5 lbm/gal) (displace out OBM), 10bbl Tuned Spacer III (14lbm/gal), 0.5gal/bbl SEM-7, 0.5gal/bbl Musol A, 291 lbm/bbl Darite Unfoamed Lead: 75skts Type V cmt, 0.2% Halad@-766, 0.3% Halad@-344. Slurry yield 1.18ft ³ /sks : wt 15.6 lbm/gal Foamed Lead: 655skts Type V cmt, 0.2% Halad@-766, 0.3% Halad@-344, 2% Chem-foamer 760. Yield 1.18ft ³ /sks : wt 15.6 lbm/gal Foamed Tail: 447skts 50/50 Poz cmt, 0.2% Versaset, 0.15% Halad@-766, 25 Chem-foamed 760. Yield 1.43ft ³ /sks : wt 13 lbm/gal Unfoamed Tail: 58skts 50/50 Poz cmt, 0.2 % Versaset, 0.15% Halad@-766. Yield 1.43ft ³ : wt 13 lbm/gal, Displace cmt w/ 293bbl H ₂ O

* Actual cement volume to be determined by caliper log.

All fresh water and prospectively valuable minerals encountered during drilling will be recorded by depth and protected.

PRESSURE CONTROL

BOPs and choke manifold will be installed and pressure tested before drilling out under surface casing (subsequent pressure test will be performed whenever pressure seals are broken), and then will be checked daily as to mechanical operating condition. BOP's will be pressure tested at least once every 30 days. Ram type preventers and associated equipment to be isolated from casing by test plug and tested to 5,000 psi for 10 minutes. Annular type preventer will be pressure tested to 50% of the rated working pressure. All casing strings will be pressure tested to 0.22 psi/ft. or 1,500 psi, whichever is greater, not to exceed 70% of internal yield.

BOP to be both double gate rams and an annular preventer as per Onshore Order No. 2.

Statement on Accumulator System and Location of Hydraulic Controls

The drilling rig has not yet been selected for this well. Selection will take place after approval of this application. Manual and/or hydraulic controls will be in compliance with Onshore Order No. 2 for 5M systems.

A remote accumulator will be used. Pressures, capacities, location of remote hydraulic and manual controls will be identified at the time of the BLM supervised BOP test.

MUD PROGRAM

	Interval to	Type	M.W.	Vis	W.L.	Sld's
Surface	0' -600'	Fresh Water / Spud Mud	±8.4 - 9.0 ppg	28 - 32 sec	n/c	1 - 5%
Intermidate	600' MD - 6916' MD	Low solids non-dispersed	±9.0 - 10.2 ppg	40 - 50 sec	≥ 6 - 8 cc	≥ 6%
Liner	3370' MD - 7979' MD	Low solids non-dispersed	±10.5 - 11.9 ppg	40 - 50 sec	≥ 4 - 6 cc	≥ 6%
KOP to Csg Pt		Raise as deviation rises				
BIC to	7979' MD - 16879' MD	Invert OBM	±12.3 - 13.6 ppg	28 - 32 sec	n/c	1 - 2%
TD of Lateral		Recommend 12.5 ppg				

Sufficient mud materials to maintain mud properties, control lost circulation and to contain "kick" will be available at well site.

AUXILIARY EQUIPMENT

- A) A Kelly cock will be kept in the drill string at all times
- B) Inside BOP or stab-in valve (available on rig floor)
- C) Mud monitoring will be visually observed

LOGGING, CORING, TESTING PROGRAM

- A) Logging: Mud log 2-Man Unit 4500' to 16879'
Lateral MWD/GR 7979' to 16879'
Measurement while drilling-GR
- B) Coring: None
- C) Testing: DST - None anticipated. Drill stem tests may be run on shows of interest
Manned mudlogging unit from 4000' to 16000'
Samples 100 ft samples from 600' to 4200'
30 ft samples from 4200' to 7100'
10 ft samples from 6916' to 7979'
10 ft samples from 7979' to 16879'

ABNORMAL CONDITIONS

- A) Pressures: No abnormal conditions are anticipated
Bottom hole pressure gradient - 0.62 psi/ft
- B) Temperatures: No abnormal conditions are anticipated
- C) H₂S: See attached 'Hydrogen Sulfide Operation Drilling Plan' in event H₂S is encountered.
- D) Estimated bottomhole pressure: 4,744 psi

ANTICIPATED START DATE

May 1, 2013

COMPLETION

The location pad will be of sufficient size to accommodate all completion activities and equipment. BHGR plans to complete the well as follows: Perforate and perform multi-stage slickwater frac in lateral section using plug & perf method for each stage. Perforation intervals and frac volumes will be determined once well logs are run. A sundry notice will be submitted with a revised completion program if warranted.



Job Number: 11xxx
Company: Black Hills Gas Resources
Lease/Well: Jicarilla 459-19 #724C
Location: Rio Arriba County, NM
Rig Name:
State/County: NM/ Rio Arriba
Country: USA
API Number:

Elevation (To MSL): 7204.00 ft
RKB: 20.00 ft
Projection System: US State Plane 1983
Projection Group: New Mexico Central Zone
Projection Datum: GRS80
Magnetic Declination: 9.64
Grid Convergence: -0.55984 W
Date: Wednesday, August 03, 2011

NOVA Directional, Inc.
Directional Survey Report

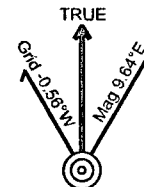
Calculated by HawkEye Software
Minimum Curvature Method
Vertical Section Plane 87.62°

Northing: 2111315.90 Easting: 1366797.69

Latitude: 36°47'54.9960" N Longitude: -107°11'4.4520" W

Well Location: 2373 FNL, 386 FEL, Section 19, T30N, R3W, Meridian 23, Rio Arriba County, NM

Direction Reference: True North



Measured Depth (Ft)	INC Deg	AZM Deg	TVD (Ft)	NS (Ft)	EW (Ft)	VS (Ft)	Closure (Ft)	Closure Dir Deg	DLS °/100Ft
Surface									
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00
1000.00	0.00	0.00	1000.00	0.00	0.00	0.00	0.00	0.00	0.00
1500.00	0.00	0.00	1500.00	0.00	0.00	0.00	0.00	0.04	0.00
2000.00	0.00	0.00	2000.00	0.00	0.00	0.00	0.00	0.03	0.00
2500.00	0.00	0.00	2500.00	0.00	0.00	0.00	0.00	0.03	0.00
3000.00	0.00	0.00	3000.00	0.00	0.00	0.00	0.00	0.02	0.00
3500.00	0.00	0.00	3500.00	0.00	0.00	0.00	0.00	0.02	0.00
4000.00	0.00	0.00	4000.00	0.00	0.00	0.00	0.00	0.02	0.00
4500.00	0.00	0.00	4500.00	0.00	0.00	0.00	0.00	0.01	0.00
5000.00	0.00	0.00	5000.00	0.00	0.00	0.00	0.00	0.01	0.00
5500.00	0.00	0.00	5500.00	0.00	0.00	0.00	0.00	0.01	0.00
6000.00	0.00	0.00	6000.00	0.01	0.00	0.00	0.01	0.01	0.00
6500.00	0.00	0.00	6500.00	0.01	0.00	0.00	0.01	0.01	0.00
KOP-Begin Build @ 8.00°/ 100 Ft									
6916.50	0.00	65.00	6916.50	0.00	0.01	0.01	0.01	65.00	0.00
6946.50	2.40	65.00	6946.49	0.27	0.58	0.59	0.64	65.10	8.00
6976.50	4.80	65.00	6976.43	1.06	2.28	2.32	2.52	65.00	8.00
7006.50	7.20	65.00	7006.26	2.39	5.12	5.22	5.65	64.99	8.00
7036.50	9.60	65.00	7035.94	4.24	9.10	9.26	10.04	65.00	8.00
7066.50	12.00	65.00	7065.41	6.62	14.19	14.45	15.66	64.99	8.00
7096.50	14.40	65.00	7094.61	9.51	20.40	20.78	22.51	65.00	8.00
7126.50	16.80	65.00	7123.50	12.92	27.71	28.22	30.57	65.00	8.00
7156.50	19.20	65.00	7152.03	16.84	36.11	36.78	39.84	65.00	8.00
7186.50	21.60	65.00	7180.15	21.26	45.59	46.43	50.30	65.00	8.00
7216.50	24.00	65.00	7207.80	26.17	56.12	57.16	61.93	65.00	8.00
7246.50	26.40	65.00	7234.95	31.57	67.70	68.95	74.70	65.00	8.00
7276.50	28.80	65.00	7261.53	37.44	80.30	81.78	88.60	65.00	8.00
7306.50	31.20	65.00	7287.51	43.78	93.89	95.63	103.60	65.00	8.00
7336.50	33.60	65.00	7312.84	50.58	108.46	110.46	119.67	65.00	8.00
7366.50	36.00	65.00	7337.47	57.81	123.98	126.27	136.79	65.00	8.00
7396.50	38.40	65.00	7361.36	65.48	140.41	143.01	154.93	65.00	8.00
7426.50	40.80	65.00	7384.48	73.56	157.74	160.66	174.05	65.00	8.00
7456.50	43.20	65.00	7406.77	82.04	175.93	179.18	194.12	65.00	8.00
7486.50	45.60	65.00	7428.21	90.91	194.95	198.55	215.11	65.00	8.00
7516.50	48.00	65.00	7448.74	100.15	214.77	218.74	236.98	65.00	8.00
7546.50	50.40	65.00	7468.34	109.75	235.35	239.70	259.68	65.00	8.00
7576.50	52.80	65.00	7486.97	119.68	256.66	261.40	283.20	65.00	8.00
7606.50	55.20	65.00	7504.60	129.94	278.66	283.80	307.46	65.00	8.00

Measured Depth (Ft)	INC Deg	AZM Deg	TVD (Ft)	NS (Ft)	EW (Ft)	VS (Ft)	Closure (Ft)	Closure Dir Deg	DLS %/100Ft
7636.50	57.60	65.00	7521.20	140.50	301.30	306.87	332.45	65.00	8.00
7666.50	60.00	65.00	7536.74	151.35	324.56	330.55	358.11	65.00	8.00
7696.50	62.40	65.00	7551.19	162.45	348.38	354.82	384.40	65.00	8.00
7726.50	64.80	65.00	7564.53	173.81	372.73	379.62	411.27	65.00	8.00
7756.50	67.20	65.00	7576.73	185.39	397.57	404.92	438.67	65.00	8.00
7786.50	69.60	65.00	7587.77	197.18	422.85	430.66	466.57	65.00	8.00
7816.50	72.00	65.00	7597.64	209.15	448.52	456.81	494.89	65.00	8.00
7846.50	74.40	65.00	7606.31	221.29	474.55	483.32	523.61	65.00	8.00
7876.50	76.80	65.00	7613.77	233.57	500.89	510.14	552.67	65.00	8.00
7906.50	79.20	65.00	7620.00	245.97	527.48	537.22	582.01	65.00	8.00
7936.50	81.60	65.00	7625.00	258.47	554.29	564.52	611.59	65.00	8.00
7966.50	84.00	65.00	7628.76	271.05	581.26	591.99	641.35	65.00	8.00
CSG - Hold @ 85.00°, 65.00° Azm									
7978.98	85.00	65.00	7629.96	276.30	592.52	603.46	653.77	65.00	8.00
Begin Build and Turn @ 7.35°/100 Ft									
8078.98	85.00	65.00	7638.67	318.40	682.80	695.42	753.39	65.00	0.00
8108.98	85.47	67.16	7641.16	330.52	710.13	723.22	783.28	65.04	7.35
8138.98	85.94	69.32	7643.42	341.61	737.91	751.44	813.15	65.16	7.35
8168.98	86.41	71.48	7645.42	351.65	766.11	780.03	842.96	65.34	7.35
8198.98	86.90	73.63	7647.17	360.63	794.68	808.95	872.68	65.59	7.35
8228.98	87.38	75.78	7648.67	368.52	823.58	838.15	902.27	65.89	7.35
8258.98	87.87	77.93	7649.91	375.34	852.77	867.59	931.71	66.24	7.35
8288.98	88.37	80.08	7650.89	381.06	882.20	897.23	960.98	66.64	7.35
8318.98	88.86	82.23	7651.62	385.67	911.83	927.04	990.04	67.07	7.35
8348.98	89.36	84.38	7652.09	389.16	941.62	956.95	1018.87	67.55	7.35
8378.98	89.86	86.52	7652.29	391.55	971.52	986.92	1047.46	68.05	7.35
8408.98	90.36	88.67	7652.23	392.80	1001.50	1016.92	1075.77	68.58	7.35
Target - Hold @ 90.66°, 90.00° Azm									
8427.55	90.66	90.00	7652.07	393.02	1020.06	1035.48	1093.15	68.93	7.35
8927.55	90.66	90.00	7646.27	393.02	1520.03	1535.01	1570.01	75.50	0.00
9427.55	90.66	90.00	7640.47	393.02	2019.99	2034.55	2057.87	78.99	0.00
9927.55	90.66	90.00	7634.66	393.01	2519.96	2534.09	2550.42	81.14	0.00
10427.55	90.66	90.00	7628.86	393.01	3019.93	3033.62	3045.39	82.59	0.00
10927.55	90.66	90.00	7623.06	393.01	3519.89	3533.16	3541.76	83.63	0.00
11427.55	90.66	90.00	7617.26	393.01	4019.86	4032.70	4039.02	84.42	0.00
11927.55	90.66	90.00	7611.46	393.01	4519.82	4532.23	4536.88	85.03	0.00
12427.55	90.66	90.00	7605.66	393.01	5019.79	5031.77	5035.15	85.52	0.00
12927.55	90.66	90.00	7599.85	393.00	5519.76	5531.30	5533.73	85.93	0.00
13427.55	90.66	90.00	7594.05	393.00	6019.72	6030.84	6032.54	86.26	0.00
13927.55	90.66	90.00	7588.25	393.00	6519.69	6530.38	6531.52	86.55	0.00
14427.55	90.66	90.00	7582.45	393.00	7019.66	7029.91	7030.65	86.80	0.00
14927.55	90.66	90.00	7576.65	393.00	7519.62	7529.45	7529.88	87.01	0.00
15427.55	90.66	90.00	7570.85	392.99	8019.59	8028.99	8029.21	87.19	0.00
15927.55	90.66	90.00	7565.04	392.99	8519.56	8528.52	8528.61	87.36	0.00
16427.55	90.66	90.00	7559.24	392.99	9019.52	9028.06	9028.08	87.51	0.00
Proposed End of Lateral									
16879.46	90.66	90.00	7553.99	392.99	9471.40	9479.55	9479.55	87.62	0.00
GEODETIC INFORMATION									
Latitude: 36°47'54.9960" N Dec. Latitude: 36.79860999 Longitude: -107°11'4.4520" W Dec. Longitude: -107.18457000 Geodetic Group: US State Plane 1983					Geodetic Zone: New Mexico Central Zone Geodetic Datum: NAD83 Easting: 1366797.69 Northing: 2111315.90 Convergence: -0.56				

MAGNETICS INFORMATION

Magnetic Model: C:\HawkEye\IGRF2010.MIF
Date for Magnetics: 08/03/2011
Latitude: 36°47'54.9960" N
Longitude: -107°11'4.4520" W
Magnetic Declination: 9.64
Total Correction(Mag to Grid): 10.20

Field Strength (nt): 50890
B-X Component (nt): 22299
B-Y Component (nt): 3786
B-Z Component (nt): 45587
B-Horz Component (nt): 22619
Dip Angle: 63.61

TARGET DATA

Name	Shape	Easting (Ft)	Northing (Ft)	Subsea TVD (Ft)	NS (Ft)	EW (Ft)	Side A (Ft)	Side B (Ft)	Diameter (Ft)
jic724C BHL	CYLINDER	1376272.48	2111616.34	330.00	393.00	9471.40	100.00	100.00	100.00



Black Hills Gas Resources

Jicarilla 459-19 #724C
2,385' FNL 415' FEL (SE/NE) Unit H
Sec.19 T30N R3W
Rio Arriba County, New Mexico
Lease: Contract 459

SURFACE USE PLAN

INTRODUCTION:

The new proposed natural gas well, Jicarilla 459-19 #724C, will be co-located near the existing Jicarilla 459-19 #18 well and the Jicarilla 459-19 #724A and will utilize the existing well pad.

1) EXISTING ROADS:

- A) The existing access roads are shown on the attached maps/plat. The established roads will be utilized during drilling and production operations.
- B) Existing roads will be maintained in conditions equal to or better than those existing prior to the commencement of operations. Maintenance of the roads used to access the drill site location will continue until abandonment and reclamation of the well.
- C) *Directions to location: From Bloomfield, New Mexico, travel approximately 50.4 miles east on Highway 64 to J-10 Road. Turn left (North) on J-10 Road and travel for approximately 3 miles. Turn left to the existing well-pad. (See 'Access to Jicarilla 459-19 #724C' Map)*

2) PROPOSED ACCESS ROADS

- A) There will be no new or proposed access road. The existing access road to the Jicarilla 459-19 #18 well pad will be utilized. Maintenance for the existing access road is explained above.
- B) In an effort to minimize disturbance, equipment and vehicles will be confined to travel these corridors.
- C) Dust will be controlled on the roads and locations during construction and drilling by approved periodic dust mitigation measures.

3) LOCATION OF EXISTING WELLS

Within a 1-mile radius (See attached 'Jicarilla 459-19 #724C One Mile Map')

Abandoned	See Table 1
Disposal injection	See Table 1
Shut-In	See Table 1
Producing	See Table 1

4) LOCATION OF EXISTING AND/OR PROPOSED PRODUCTION FACILITIES

- A) Existing production facilities for the Jicarilla 459-19 #18 well include meter, above ground 95bbl pit tank, and separator; all will be removed before the drilling commences.
- B) Proposed are three pipelines to be installed in the same trench, approximately 200', alongside the existing access road and will tie into Black Hills high pressure gathering line. The pipelines will consist of; one 12" steel pipe for gas, two 8" poly-urethane pipe; one for disposal of produce water and the other for transporting water to location for drilling and completing the well.
- C) Proposed production facilities shall be located and arranged to facilitate safety and maximize interim reclamation opportunities, e.g. located at the access road end of the pad. As practical, access to production facilities will be provided by a teardrop-shaped road through the production area, so that the driving area may be clearly defined and limited and so that the teardrop center may be revegetated.
- D) Surface equipment will be painted a flat, non-reflective color as determined by the BLM.
- E) Should drilling result in established commercial production the following will be shown:
 - 1. Proposed location and attendant lines, by flagging, if off well pad.
 - 2. Dimensions of facilities.

5000 psi System

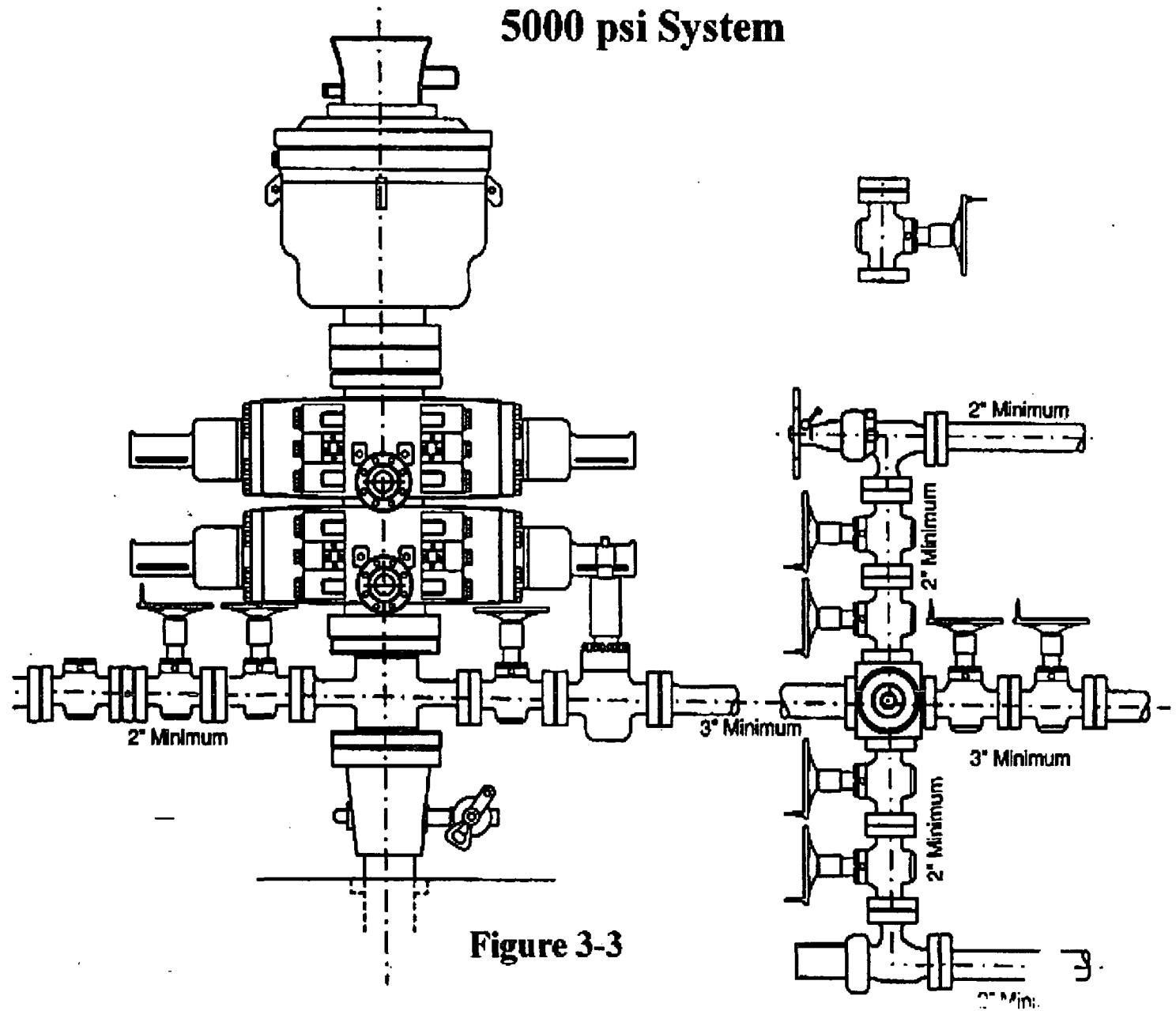


Figure 3-3