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JUL 31 2012

Farmington Field Office
Bureau of Land Management

RCVD MAR 21 '13
OIL CONS. DIV.
DIST. 3

Form 3160-3
(August 2007)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

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

APPLICATION FOR PERMIT TO DRILL OR REENTER

5. Lease Serial No. **Contract 459 & 460**

6. If Indian, Allottee or Tribe Name **Jicarilla Apache**

7. If Unit or CA Agreement, Name and No.

1a. Type of Work: [✓] DRILL [ ] REENTER

1b. Type of Well: [ ] Oil Well [✓] Gas Well [ ] Other [✓] Single Zone [ ] Multiple Zone

8. Lease Name and Well No. **Jicarilla 459-19 #724B**

2. Name of Operator **Black Hills Gas Resources**

9. API Well No. 30-039-31136

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

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

10. Field and Pool, or Exploratory **Basin Mancos**

4. Location of well *(Report location clearly and In accordance with any State requirements.*)*
At surface **2,362' FNL & 404' FEL SW/SE (UL H)**
At proposed prod. zone **613' FNL & 1,150' FEL SW/SE (UL A)**

11. Sec., T., R., M., or Blk. And Survey or Area
SHL: Sec. 19, T30N R3W
BHL: Sec. 21 T30N R3W

14. Distance in miles and direction from the nearest town or post office* **20 miles southwest of Dulce, New Mexico**

12. County or Parish **Rio Arriba**

13. State **New Mexico**

15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drlg. unit line, if any) **Approx. 2918'**

16. No. of acres in lease **Approx. 2,273ac Contract 459 2,020ac Contract 460**

17. Spacing Unit dedicated to this well **Approx. 320ac N/2 of Sec. 20 Approx. 331.04ac N/2 of Sec. 21**

Hold C104 for Directional Survey and "As Drilled" plat

18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft. **50' (Twin Location)**

19. Proposed Depth **7,673' TVD 17,958' MD**

20. BLM/ BIA Bond No. on file **BLM- NMB000230 / BIA 190-010-577**

21. Elevations (Show whether DF. RT, GR, etc.) **7,209' GR**

22. Aproximate date work will start* **June 1, 2013**

23. Estimated duration **45-60 Days drlg & compl.**

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

24. Attachments

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

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 a authorized officer.

25. Signature *Daniel Manus* | Name *(Printed/ Typed)* **Daniel Manus** | Date *July 31, 2012*

Title **Regulatory Technician**

Approved By *(Signature)* *[signature]* | Name *(Printed/ Typed)* | Date *3/19/13*

Title *AFM* | Office *FFO*

Application approval does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.
Conditions of approval, if any, are attached.

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)*

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.

NOTIFY AZTEC OCD 24 HRS. PRIOR TO CASING & CEMENT

Hold C104 for Directional Survey and "As Drilled" plat

H_2S POTENTIAL EXIST

NMOCD

MAY 17 2013 *ca*

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

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

RECEIVED
JUL 31 2012
Farmington Field Office
Bureau of Land Management

Form C-102
Revised August 1, 2011
Submit one copy to appropriate District Office

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

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

[1] API Number	[2] Pool Code	[3] Pool Name
30-039-31136	97232	BASIN MANCOS

[4] Property Code	[5] Property Name	[6] Well Number
22210	JICARILLA 459-19	724B

[7] OGRID No.	[8] Operator Name	[9] Elevation
013925	BLACK HILLS GAS RESOURCES	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		2362	NORTH	404	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
A	21	30 N	3 W	LOT 1	592	NORTH	1150	EAST	RIO ARRIBA

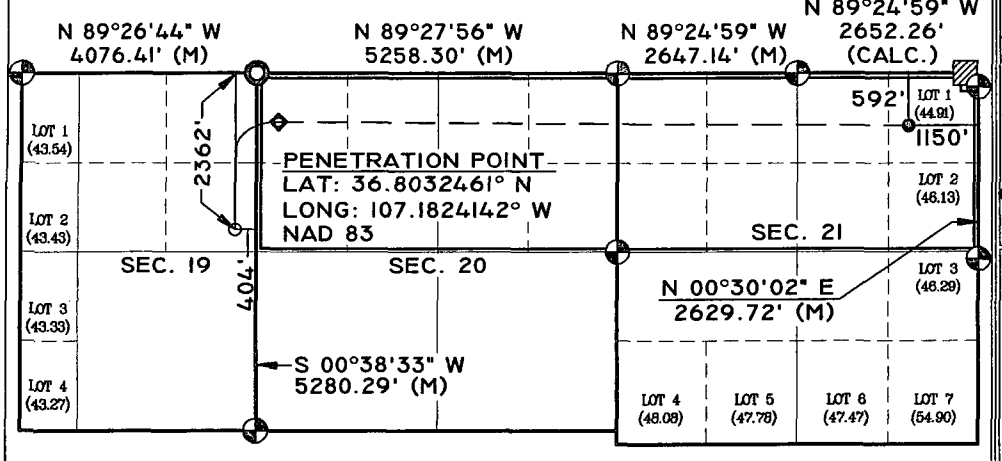
[12] Dedicated Acres	[13] Joint or Infill	[14] Consolidation Code	[15] Order No.
320 Ac. N/2 SEC. 20 331.04 Ac. N/2 SEC. 21			R-13449

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

16

SURFACE
LAT: 36.7986332° N
LONG: 107.1846375° W
NAD 83
LAT: 36°47.91750' N
LONG: 107°11.04237' W
NAD 27

BOTTOM HOLE
LAT: 36.8034924° N
LONG: 107.1504491° W
NAD 83
LAT: 36°48.20903' N
LONG: 107°08.99110' W
NAD 27



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

[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 belief.

11/30/11
Date of Survey

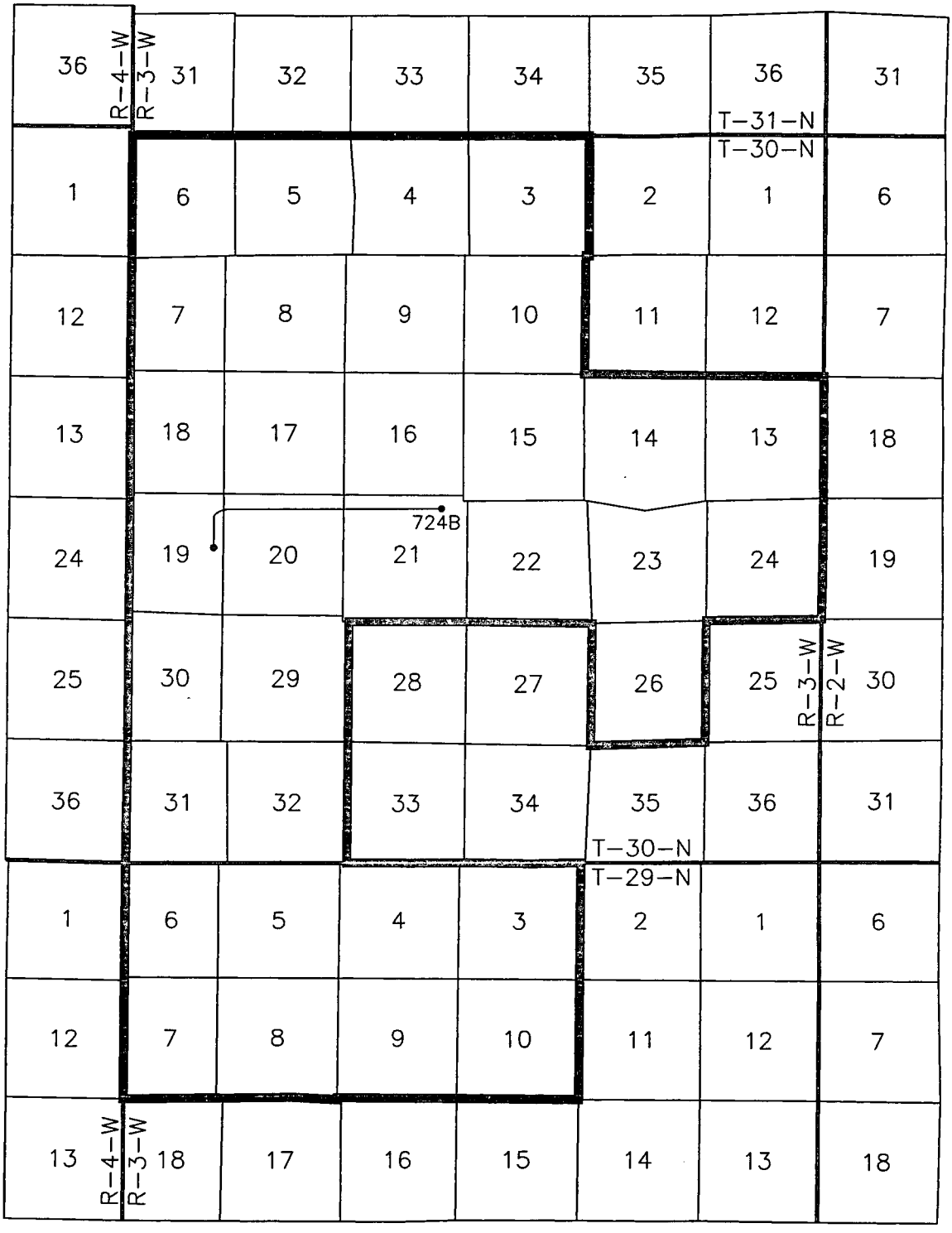
Signature and Seal of Professional Surveyor:

JOHN AL YURONICH
NEW MEXICO
14831
REGISTERED PROFESSIONAL SURVEYOR

14831
Certificate Number

7-31-2012

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



N

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 3651
FARMINGTON, NEW MEXICO, 87499
(505) 334-0408

SURVEY DATE: 03/21/12	DRAWN BY: HS	DRAWING NO: 10262MAPB
DATE: 07/25/12	CHECKED BY: AD	REV: 1

Black Hills Gas Resources

Jicarilla 459-19 #724B
Surface Location: 2,362' FNL 404' FEL (SE/NE)
Sec.19 T30N R3W
Bottom Hole Location: 613' FNL 1,150' FEL (NE/NE)
Sec. 21 T30N R3W
Rio Arriba County, New Mexico
Lease: Contract 459 & 460

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 October 26, 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)

	MD	**VD**	
San Jose	Surface	Surface	Sandstone, shales & siltstones
Nacimiento	2,021'	2,021'	Sandstone, shales & siltstones
Ojo Alamo	3,257'	3,257'	Sandstone, shales & siltstones
Fruitland Coal	3,736'	3,736'	Sandstone, shales, siltstones & coal
Pictured Cliffs	3,788'	3,788'	Sandstone, shales & siltstones
Lewis	3,869'	3,869'	Sandstone, shales & siltstones
Mesaverde	5,749'	5,749'	Sandstone, shales & siltstones
Mancos	6,623'	6,623'	Sandstone, shales & siltstones
Lower Niobrara	8,260'	8,260'	Sandstone, shales & silstones

TOTAL DEPTH **7,673'** TVD
17,958' MD

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

Nacimiento	1,974'	Gas, water, sand
Ojo Alamo	3,142'	Gas, water, sand
Fruitland Coal	3,669'	Gas, water, sand
Pictured Cliffs	3,712'	Gas, water, sand
Lewis	3,795'	Gas, water, sand
Mesaverde	5,689'	Gas, water, sand
Mancos	6,625'	Gas, water, sand

HORIZONTAL DRILLING PROGRAM
Kick-Off Point is estimated to be ± 5,349' TVD
CASING PROGRAM

Depth	Hole Diameter	Casing Diameter	Casing Weight and Grade	Cement
0' - 600'MD	17 ½"	13 ⅜"	54.5# J-55	**Surface** 20bbl H_2O flush followed by ±618sks Premium cmt (126bbls) w/ 0.125 lbm/sks Poly-E-Fake & 1% CaCl. Displace w/ ±70bbls H_2O Yield 1.16 ft³/sks : wt 15.80 lbm/gal
0' - 5,349'MD	12 ¼"	9 ⅝"	40# L-80 HC	**Intermediate** **Lead:** 20bbl H_2O flush, 20bbl SUPER FLUSH 101, 20bbl H_2O Spacer, followed w/ 1404sks of Light Premium w/ 5 lbm/sks Gilsonite, 0.125 lbm/sks Poly-E- Fake. Yield 1.82ft³/sks : wt. 12.50 lbm/gal. **Tail:** 180sks Premium w/ 0.125 lbm/sks Poly-E-Flake, 0.2% Halad®-9. Slurry yield 1.15ft³/sks : wt 15.80 lbm/gal, Displace w/ 375 bbls H_2O.
3370' - 8,598'MD	8 ¾"	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 690sks HALCEM Premium w/ 0.4% Halad®-334, 2.5 lbm/sks Kol-seal, 0.3% D-Air 3000, 0.05% HR-5, Yield 1.31ft³/sks : wt 13.5 lbm/gal. Displace cmt w/ OBM (9 lbm/gal) 217bbl
0' - 17,958' MD	6 1/4"	4 ½"	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**: 75sks Type V cmt, 0.2% Halad®-766, 0.3% Halad®-344. Slurry yield 1.18ft³/sks : wt 15.6 lbm/gal **Foamed Lead:** 655sks Type V cmt, 0.2% Halad®-766, 0.3% Halad®-344, 2% Chem-foamer 760. Yield 1.18ft³/sks : wt 15.6 lbm/gal **Foamed Tail:** 447sks 50/50 Poz cmt, 0.2% Versaset, 0.15% Halad®-766, 25 Chem-foamed 760. Yield 1.43ft³/sks : wt 13 lbm/gal **Unfoamed Tail:** 58sks 50/50 Poz cmt, 0.2 % Versaset, 0.15% Halad®-766. Yield 1.43ft³ : wt 13 lbm/gal, Displace cmt w/ 293bbl H_2O

* 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. 30 min test Period

BOP to be both double gate rams and an annular preventer as per Onshore Order No. 2 for a 5M system.

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 – 5,349' MD	Low solids non-dispersed	±9.0 - 10.2 ppg	40 - 50 sec	≥ 6 - 8 cc	≥ 6%
Liner	3,370' MD – 8,598' MD	Low solids non-dispersed **Raise as deviation rises**	±10.5 – 11.9 ppg	40 - 50 sec	≥ 4 - 6 cc	≥ 6%
BIC to TD of Lateral	8,598' MD – 17,958' MD	Invert OBM **Recommend 12.5 ppg**	±12.3 - 13.6 ppg	28 - 32 sec	n/c	1 - 2%

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 17958'
		Lateral	MWD/GR	8598' to 17958'
			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 18060'		
		Samples	100 ft samples from 700' to 4200'	
			30 ft samples from 4200' to 7100'	
			10 ft samples from 7100' to 8598'	
			10 ft samples from 8598' to 17958'	

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) H_2S: See attached H_2S plan in event H_2S is encountered.
D) Estimated bottomhole pressure: 4,757 psi

ANTICIPATED START DATE

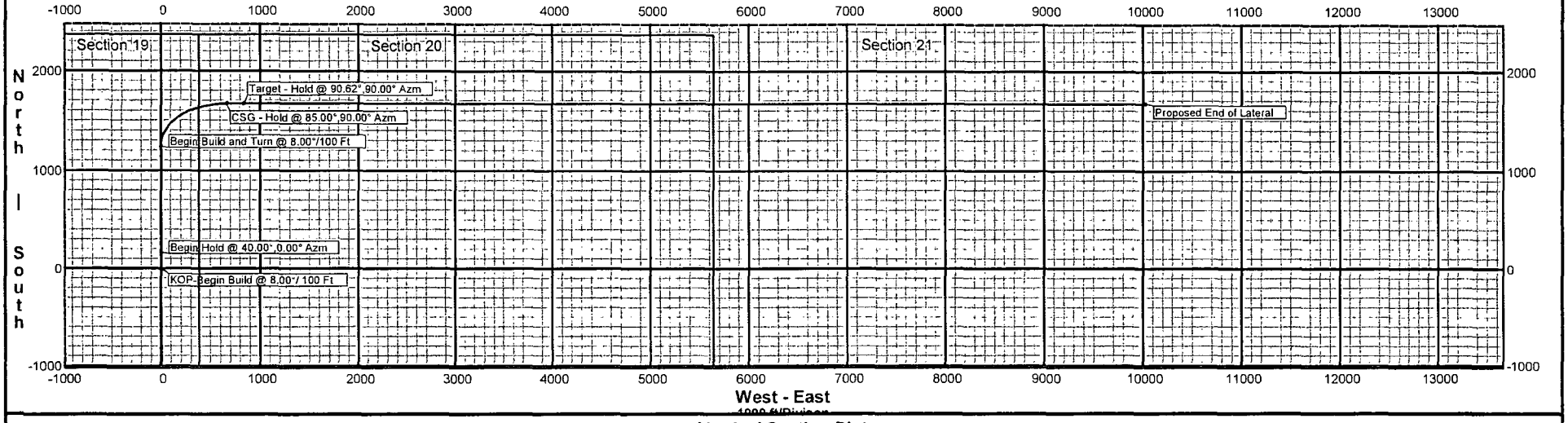
April 1, 2013

COMPLETION

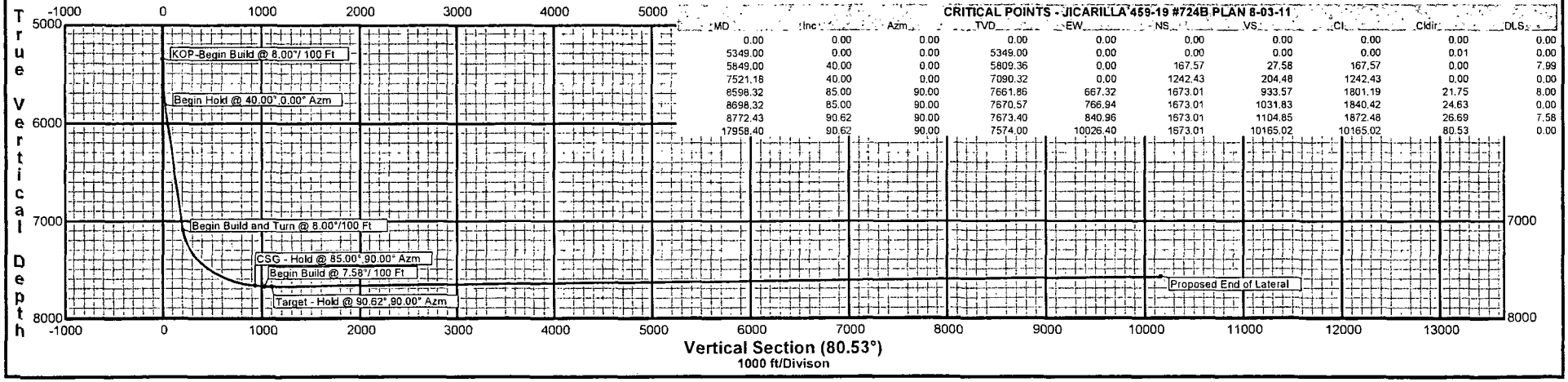
The location pad will be of sufficient size to accommodate all completion activities and equipment. BHGR plans to complete the well as follows: Perforate and perform multi-stage slickwater frac in lateral section using plug & perf method for each stage. Perforation intervals and frac volumes will be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

Job ID : 11xxx	Elevation (To MSL) : 7204 ft
Company : Black Hills Gas Resources	RKB : 20 ft
Lease/Well : Jicarilla 459-19 #724B	North Reference : True North
Location : Rio Arriba County, NM	Latitude : 36°47'54.9960" N
Rig Name :	Longitude : -107°11'4.4520" W

Horizontal Plot



Vertical Section Plot



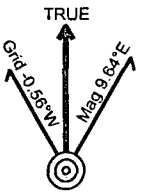
CRITICAL POINTS - JICARILLA 459-19 #724B PLAN 8-03-11

MD	Inc	Azm	TVD	EW	NS	VS	CI	Cldir	DLS
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5349.00	0.00	0.00	5349.00	0.00	0.00	0.00	0.00	0.01	0.00
5849.00	40.00	0.00	5809.36	0.00	167.57	27.58	167.57	0.00	7.99
7521.18	40.00	0.00	7090.32	0.00	1242.43	204.48	1242.43	0.00	0.00
8598.32	85.00	90.00	7661.86	667.32	1673.01	933.57	1801.19	21.75	8.00
8698.32	85.00	90.00	7670.57	766.94	1673.01	1031.83	1840.42	24.63	0.00
8772.43	90.62	90.00	7673.40	840.96	1673.01	1104.85	1872.48	26.69	7.58
17958.40	90.62	90.00	7574.00	10026.40	1673.01	10165.02	10165.02	80.53	0.00

Job Number: 11xxx	**Elevation (To MSL):** 7204.00 ft
Company: Black Hills Gas Resources	**RKB:** 20.00 ft
Lease/Well: Jicarilla 459-19 #724B	**Projection System:** US State Plane 1983
Location: Rio Arriba County, NM	**Projection Group:** New Mexico Central Zone
Rig Name:	**Projection Datum:** GRS80
State/County: NM/ Rio Arriba	**Magnetic Declination:** 9.64
Country: USA	**Grid Convergence:** -0.55984 W
API Number:	**Date:** Wednesday, August 03, 2011

NOVA Directional, Inc.
Directional Survey Report

Calculated by HawkEye Software
Minimum Curvature Method
Vertical Section Plane 80.53°
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
KOP-Begin Build @ 8.00°/ 100 Ft									
5349.00	0.00	0.00	5349.00	0.00	0.00	0.00	0.00	0.01	0.00
5379.00	2.40	0.00	5378.99	0.63	0.00	0.10	0.63	0.00	8.00
5409.00	4.80	0.00	5408.93	2.52	0.00	0.41	2.52	0.00	8.00
5439.00	7.20	0.00	5438.76	5.65	0.00	0.93	5.65	0.00	8.00
5469.00	9.60	0.00	5468.44	10.04	0.00	1.65	10.04	0.00	8.00
5499.00	12.00	0.00	5497.91	15.66	0.00	2.58	15.66	0.00	8.00
5529.00	14.40	0.00	5527.11	22.51	0.00	3.70	22.51	0.00	8.00
5559.00	16.80	0.00	5556.00	30.57	0.00	5.03	30.57	0.00	8.00
5589.00	19.20	0.00	5584.53	39.84	0.00	6.56	39.84	0.00	8.00
5619.00	21.60	0.00	5612.65	50.30	0.00	8.28	50.30	0.00	8.00
5649.00	24.00	0.00	5640.30	61.93	0.00	10.19	61.93	0.00	8.00
5679.00	26.40	0.00	5667.45	74.70	0.00	12.30	74.70	0.00	8.00
5709.00	28.80	0.00	5694.03	88.60	0.00	14.58	88.60	0.00	8.00
5739.00	31.20	0.00	5720.01	103.60	0.00	17.05	103.60	0.00	8.00
5769.00	33.60	0.00	5745.34	119.67	0.00	19.70	119.67	0.00	8.00
5799.00	36.00	0.00	5769.97	136.79	0.00	22.51	136.79	0.00	8.00
5829.00	38.40	0.00	5793.86	154.93	0.00	25.50	154.93	0.00	8.00
Begin Hold @ 40.00°,0.00° Azm									
5849.00	40.00	0.00	5809.36	167.57	0.00	27.58	167.57	0.00	7.99
6349.00	40.00	0.00	6192.38	488.96	0.00	80.48	488.96	0.00	0.00
6849.00	40.00	0.00	6575.40	810.36	0.00	133.37	810.36	0.00	0.00
7349.00	40.00	0.00	6958.43	1131.75	0.00	186.27	1131.75	0.00	0.00
Begin Build and Turn @ 8.00°/100 Ft									
7521.18	40.00	0.00	7090.32	1242.43	0.00	204.48	1242.43	0.00	0.00
7551.18	39.93	3.74	7113.32	1261.68	0.63	208.27	1261.68	0.03	8.00
7581.18	39.97	7.47	7136.32	1280.84	2.51	213.28	1280.84	0.11	8.00
7611.18	40.14	11.19	7159.29	1299.88	5.64	219.51	1299.89	0.25	8.00

Measured Depth (Ft)	INC Deg	AZM Deg	TVD (Ft)	NS (Ft)	EW (Ft)	VS (Ft)	Closure (Ft)	Closure Dir Deg	DLS °/100Ft
7641.18	40.42	14.88	7182.18	1318.77	10.01	226.93	1318.81	0.44	8.00
7671.18	40.82	18.52	7204.96	1337.47	15.63	235.54	1337.56	0.67	8.00
7701.18	41.33	22.09	7227.58	1355.95	22.47	245.33	1356.13	0.95	8.00
7731.18	41.95	25.58	7250.00	1374.17	30.52	256.27	1374.51	1.27	8.00
7761.18	42.67	28.98	7272.19	1392.11	39.78	268.35	1392.68	1.64	8.00
7791.18	43.49	32.28	7294.10	1409.74	50.21	281.55	1410.63	2.04	8.00
7821.18	44.40	35.48	7315.71	1427.01	61.82	295.84	1428.35	2.48	8.00
7851.18	45.40	38.57	7336.96	1443.91	74.58	311.20	1445.83	2.96	8.00
7881.18	46.47	41.56	7357.83	1460.40	88.45	327.60	1463.07	3.47	8.00
7911.18	47.63	44.43	7378.27	1476.45	103.42	345.01	1480.07	4.01	8.00
7941.18	48.85	47.20	7398.25	1492.04	119.47	363.41	1496.82	4.58	8.00
7971.18	50.14	49.87	7417.74	1507.14	136.56	382.75	1513.31	5.18	8.00
8001.18	51.48	52.43	7436.70	1521.72	154.67	403.02	1529.56	5.80	8.00
8031.18	52.88	54.90	7455.10	1535.75	173.77	424.16	1545.55	6.46	8.00
8061.18	54.33	57.28	7472.90	1549.22	193.81	446.14	1561.29	7.13	8.00
8091.18	55.82	59.57	7490.07	1562.09	214.76	468.93	1576.79	7.83	8.00
8121.18	57.36	61.78	7506.59	1574.35	236.60	492.48	1592.03	8.55	8.00
8151.18	58.93	63.92	7522.43	1585.97	259.27	516.76	1607.02	9.28	8.00
8181.18	60.53	65.98	7537.55	1596.94	282.74	541.71	1621.77	10.04	8.00
8211.18	62.17	67.98	7551.93	1607.22	306.97	567.31	1636.28	10.81	8.00
8241.18	63.84	69.92	7565.55	1616.82	331.92	593.49	1650.54	11.60	8.00
8271.18	65.53	71.81	7578.38	1625.71	357.53	620.22	1664.56	12.40	8.00
8301.18	67.24	73.64	7590.40	1633.87	383.78	647.46	1678.33	13.22	8.00
8331.18	68.97	75.43	7601.59	1641.28	410.60	675.13	1691.86	14.05	8.00
8361.18	70.72	77.18	7611.92	1647.95	437.97	703.22	1705.15	14.88	8.00
8391.18	72.49	78.89	7621.39	1653.85	465.81	731.66	1718.20	15.73	8.00
8421.18	74.27	80.57	7629.97	1658.97	494.10	760.40	1730.99	16.59	8.00
8451.18	76.07	82.22	7637.65	1663.31	522.78	789.40	1743.53	17.45	8.00
8481.18	77.87	83.84	7644.41	1666.85	551.78	818.60	1755.81	18.32	8.00
8511.18	79.69	85.44	7650.25	1669.60	581.08	847.95	1767.83	19.19	8.00
8541.18	81.51	87.02	7655.15	1671.54	610.61	877.39	1779.58	20.07	8.00
8571.18	83.34	88.59	7659.10	1672.68	640.32	906.89	1791.05	20.95	8.00
CSG - Hold @ 85.00°,90.00° Azm									
8598.32	85.00	90.00	7661.86	1673.01	667.32	933.57	1801.19	21.75	8.00
Begin Build @ 7.58°/ 100 Ft									
8698.32	85.00	90.00	7670.57	1673.01	766.94	1031.83	1840.42	24.63	0.00
8728.32	87.28	90.00	7672.59	1673.01	796.87	1061.35	1853.10	25.47	7.58
8758.32	89.55	90.00	7673.42	1673.01	826.86	1090.93	1866.19	26.30	7.58
Target - Hold @ 90.62°,90.00° Azm									
8772.43	90.62	90.00	7673.40	1673.01	840.96	1104.85	1872.48	26.69	7.58
9272.43	90.62	90.00	7667.99	1673.01	1340.93	1598.00	2144.08	38.71	0.00
9772.43	90.62	90.00	7662.58	1673.01	1840.90	2091.15	2487.55	47.74	0.00
10272.43	90.62	90.00	7657.17	1673.01	2340.87	2584.30	2877.26	54.45	0.00
10772.43	90.62	90.00	7651.76	1673.01	2840.84	3077.45	3296.87	59.51	0.00
11272.43	90.62	90.00	7646.35	1673.01	3340.81	3570.61	3736.31	63.40	0.00
11772.43	90.62	90.00	7640.94	1673.01	3840.78	4063.76	4189.34	66.46	0.00
12272.43	90.62	90.00	7635.53	1673.01	4340.76	4556.91	4652.00	68.92	0.00
12772.43	90.62	90.00	7630.12	1673.01	4840.73	5050.06	5121.68	70.93	0.00
13272.43	90.62	90.00	7624.71	1673.01	5340.70	5543.22	5596.61	72.61	0.00
13772.43	90.62	90.00	7619.30	1673.01	5840.67	6036.37	6075.55	74.02	0.00
14272.43	90.62	90.00	7613.88	1673.01	6340.64	6529.52	6557.64	75.22	0.00
14772.43	90.62	90.00	7608.47	1673.01	6840.61	7022.67	7042.22	76.26	0.00
15272.43	90.62	90.00	7603.06	1673.01	7340.58	7515.83	7528.82	77.16	0.00
15772.43	90.62	90.00	7597.65	1673.01	7840.55	8008.98	8017.06	77.95	0.00
16272.43	90.62	90.00	7592.24	1673.01	8340.52	8502.13	8506.66	78.66	0.00
16772.43	90.62	90.00	7586.83	1673.01	8840.49	8995.29	8997.40	79.28	0.00
17272.43	90.62	90.00	7581.42	1673.01	9340.46	9488.44	9489.11	79.85	0.00

Measured Depth (Ft)	INC Deg	AZM Deg	TVD (Ft)	NS (Ft)	EW (Ft)	VS (Ft)	Closure (Ft)	Closure Dir Deg	DLS °/100Ft
17772.43	90.62	90.00	7576.01	1673.01	9840.43	9981.59	9981.64	80.35	0.00
Proposed End of Lateral									
17958.40	90.62	90.00	7574.00	1673.01	10026.40	10165.02	10165.02	80.53	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	Latitude	Longitude	Subsea TVD (Ft)	NS (Ft)	EW (Ft)	Side A (Ft)	Side B (Ft)	Diameter (Ft)
jic724B BHL	CYLINDER	36°48'11.5208" N	-107°09'1.1675" W	350.00	1673.00	10026.40	100.00	100.00	100.00

Black Hills Gas Resources

Hydrogen Sulfide Drilling Operations Plan

I. Hydrogen Sulfide Training

All personnel, whether regularly assigned, contracted, or employed on an unscheduled basis, will receive training from a qualified instructor in the following areas prior to commencing drilling operations on this well:

1. The hazards and characteristics of hydrogen sulfide (H_2S).
2. The proper use and maintenance of personal protective equipment and life support systems.
3. The proper use of H_2S detectors, alarms, warning systems, briefing areas, evacuation procedures, and prevailing winds.
4. The proper techniques for first aid and rescue procedures.

In addition, supervisory personnel will be trained in the following areas:

1. The effects of H_2S on metal components. If high tensile tubular are to be used, personnel will be trained in their special maintenance requirements.
2. Corrective action and shut-in procedures when drilling or reworking a well and blowout prevention and will control procedures.
3. The contents and requirements of the H_2S Drilling Operations Plan and the Public Protection Plan.

A training session will be held prior to encountering a known or probable H_2S zone (within 3 days or 500 feet) and weekly H_2S well control drills for all personnel in each crew. The initial training sessions shall include a review of the site specific H_2S Drilling Operations Plan and the Public Protection Plan. This plan shall be available at the well site. All personnel will be required to carry documentation that they have received the proper training.

II. H2S safety equipment and Systems

Note: All H_2S safety equipment and systems (if necessary) will be installed, tested, and operational when drilling reaches a depth of 500 feet above or three days prior to penetrating the first zone containing or reasonably expected to contain H_2S.

A. Well control equipment:
   1. Choke manifold with a minimum of one remote choke.
   2. Blind rams and pipe rams to accommodate all pipe sizes with properly sized closing unit.

B. Protective equipment for essential personnel
   1. Self-Contained Breathing Apparatus (SCBA) (30 min) will be located in the doghouse, on mud tanks, in the cellar and at briefing areas, as indicated on well site diagram.

C. H_2S detection and monitoring equipment:

1. Two portable H_2S monitors positioned on location for best coverage and response. These units have warning lights and audible sirens when H_2S levels reach 10ppm.

D. Visual warning systems:
   1. Wind direction indicators as shown on well site diagram.
   2. Caution/Danger signs shall be posted on roads providing direct access to location. Signs will be painted a high visibility yellow with black lettering of sufficient size to be readable at a reasonable distance from the immediate location. Bilingual signs will be used when appropriate. See example attached.

E. Mud program:
   1. The mud program has been designed to minimize the volume of H_2S circulated to the surface. Proper mud weight, safe drilling practices and the use of H_2S scavengers will minimize hazards when penetrating H_2S bearing zones.

F. Metallurgy:
   1. All drill strings, casings, tubing, wellhead, blowout preventers, drilling spool, kill lines, choke manifold and lines, and valves shall be suitable for H_2S service.
   2. All elastomers used for packing and seals shall be H_2S trim.

G. Communication:
   Satellite phones shall be available at well site.
   Black Hills company vehicles are outfitted with two way radios and cellular phones.
   1. A list of nearest tribal, county, and state emergency department numbers shall be available at well site. (See attachment)
   2. Black Hills 24hrs general emergency contact
      a 1-877-554-6349
   3. Black Hills emergency contact personnel
      a Allen Parrent, Drilling Superintendent
         - Office: 1-720-210-1310 (Day Time)
         - Mobile: 1-505-486-0323
         - Email: Allen.Parrent@blackhillscorp.com
      b Lance Nelson, Drilling Engineer
         - Office: 1-303-566-3502 (Day Time)
         - Mobile: 1-303-550-8849
         - Email: Lance.Nelson@blackhillscorp.com
      c Art Childers, Engineer Manager
         - Office: 1-303-566-3413 (Day Time)
         - Mobile: 1-303-453-9083
         - Email: Art.Childers@blackhillscorp.com
      d Doran Newlin, Production Manager
         - Office: 1-303-568-5983 (Day Time)
         - Mobile: 1-303-317-4805
         - Email: Doran.Newlin@blackhillscorp.com

H. Well testing:
   1. Drill stem testing will be performed with a minimum number of personnel in the immediate vicinity which are necessary to safely and adequately conduct the test. The drill stem testing will be conducted during daylight hours and formation fluids will not be flowed to the surface. All drill stem testing operations conducted in an H_2S environment will use the closed chamber method of testing.

EMERGENCY
CONTACT NUMBERS

HOSPITAL	**911 / 505-334-6622**
DULCE	575-759-3291
SAN JUAN	505-334-6622
AMBULANCE	**911 / 505-334-6622**
DULCE	575-759-3778
SAN JUAN	505-334-6622
EMERGENCY HELICOPTER	**911 / 505-334-6622**
FIRE/RESCUE	**911 / 505-334-6622**
JICARILLA FIRE/SFTY	505-759-3254
FOREST SERVICE FIRE/SFTY	505-632-1963
NON-EMERGENCY	505-334-6622
POLICE	**911 / 505-334-6622**
JICARILLA PD	575-759-3222
RIO ARRIBA SHERIFF	
OFFICE	575-588-7522
DISPATCH	505-753-3320
NEW MEXICO STATE POLICE	505-325-7547
SAN JUAN SHERIFF	505-334-6622
NON-EMERGENCY	505-334-6622
POISON CONTROL	**1-800-222-1222**

Black Hills Gas Resources

Jicarilla 459-19 #724B
2,362' FNL 404' 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 #724B, will be co-located near the existing Jicarilla 459-19 #18 well and will utilize and expand 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 for the Jicarilla 459-19 #18.***

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:

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

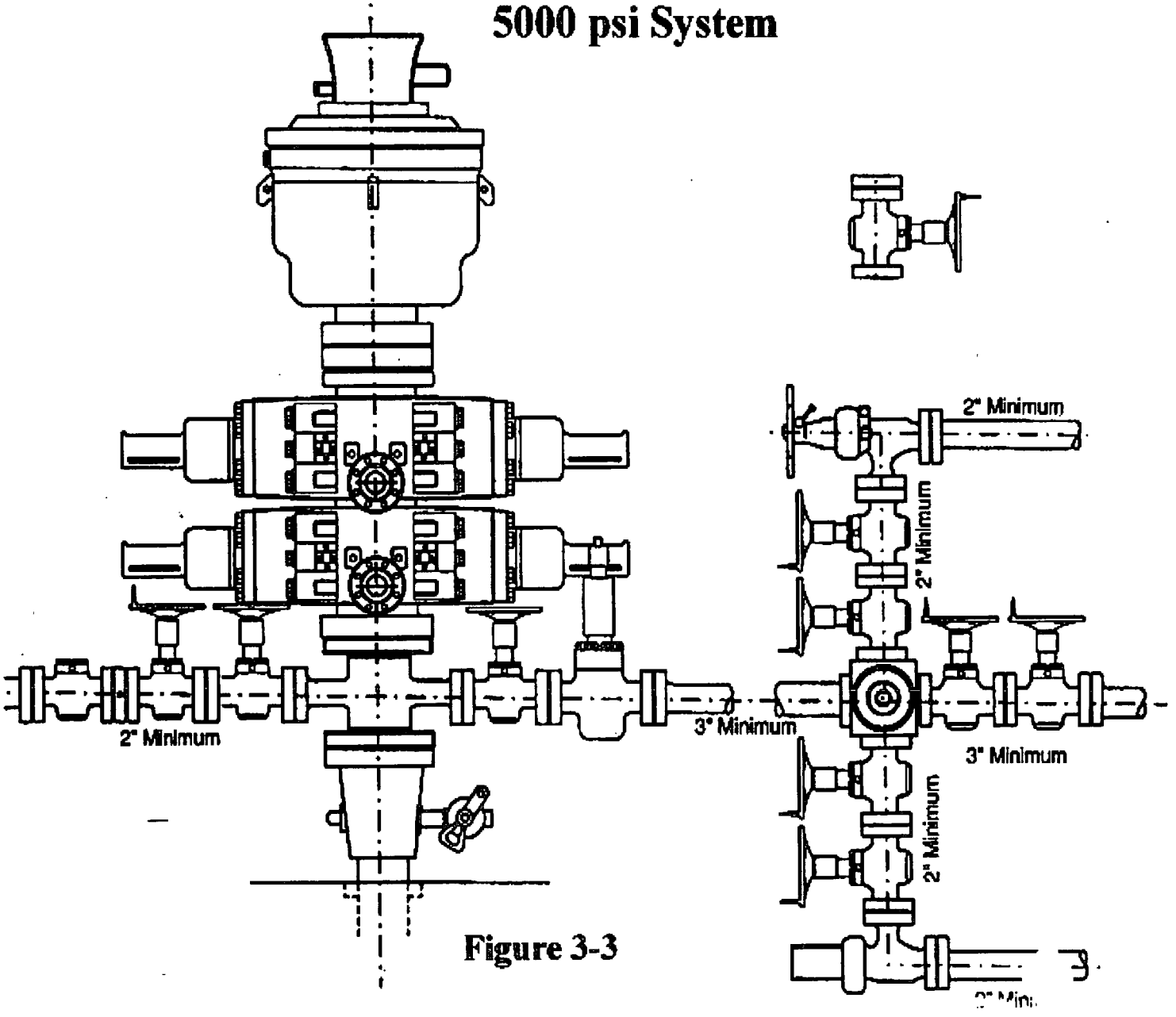


Figure 3-3