

RCVD AUG 4 '11

OIL CONS. DIV.

DIST. 3

RECEIVED

Form 3160-3
(August 2007)

JUL 07 2011

FORM APPROVED
OMB NO 1004-0137
Expires July 31, 2010UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENTFarmington
Bureau of Land Management

APPLICATION FOR PERMIT TO DRILL OR REENTER

Lease Serial No.
Contract 458

6 If Indian, Allottee or Tribe Name

Jicarilla Apache Tribe

7. If Unit or CA Agreement, Name and No

8. Lease Name and Well No.

Jicarilla 458-6 #733A

9 API Well No

30-039-31077

10 Field and Pool, or Exploratory

Basin Mancos

11 Sec., T., R., M., or Blk. And Survey or Area

Section 6, T30N & R3W N.M.P.M.

1a. Type of Work: ☒ DRILL ☐ REENTER1b 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 874013b Phone No (include area code)
(505) 634-1111 ext. 28

4 Location of well (Report location clearly and in accordance with any State requirements. *)

At surface 1,342' FSL & 1,803' FEL (NW/SE) Lot 8

At proposed prod. zone 1,642' FSL & 2' FEL (NE/SE) Sec 5 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.

Approx. 2,630'

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

16. No. of acres in lease

Approx. 2,235 Acres

17. Spacing Unit dedicated to this well

320 acres
473.20S/2 sec 5,
SE/4 sec 618 Distance from proposed location*
to nearest well, drilling, completed,
applied for, on this lease, ft.

100' (Twin Location)

19 Proposed Depth

7,645' bgs

20 BLM/ BIA Bond No on file

BLM- NMB000230 / BIA 190-010-577

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

7,055' GR

22. Approximate date work will start*

July 11, 2011

23 Estimated duration

45-60 Days drlg & compl.

This section is subject to technical and
interpretation by the BLM. The following completed forms are required:
and approved pursuant to 43 CFR 3165.3

24. Attachments

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

- 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

Name (Printed/ Typed)

Daniel Manus

Date

July 7, 2011

Title

Regulatory Technician

Approved By (Signature)

Name (Printed/ Typed)

Office

FED

Date

8/1/11

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

NOTIFY AZFEC OCD 24 HRS.
PRIOR TO CASING & CEMENT

H2S POTENTIAL EXIST

Hold C104
for Directional Survey
and "As Drilled" platNMOCD
NOV 07 2011BLM'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 LANDSA 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.

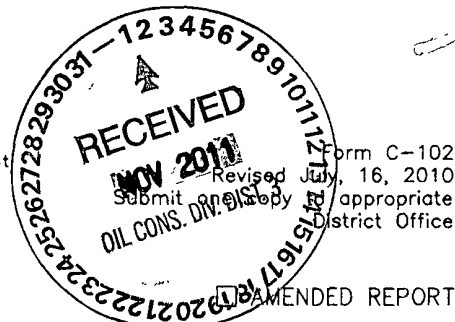
DISTRICT I
1625 N. French Dr., Hobbs, N.M. 88240

DISTRICT II
1301 W. Grand Ave., Artesia, N.M. 88210

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

DISTRICT IV
1220 South 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 on appropriate
District Office

AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

¹ API Number 30-039-31077		² Pool Code 71599 97032		³ Pool Name BASIN MANCOS	
⁴ Property Code 22859		⁵ Property Name JICARILLA 458-6			⁶ Well Number 733A
⁷ OGRID No. 013925		⁸ Operator Name BLACK HILLS GAS RESOURCES			⁹ Elevation 7055'

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
3	6	30-N	3-W	8	1342	SOUTH	1803	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
I	5	30-N	3-W	9	1642	SOUTH	2	EAST	RIO ARriba

¹² Dedicated Acres	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

<p>16</p> <p>PRELIMINARY BHL BHL FOOTAGES ARE APPROXIMATE AND PROVIDED BY BHGR CLIENT</p>						<p>17</p> <p>OPERATOR CERTIFICATION</p> <p>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.</p> <p><i>Daniel Manus</i> 11/11 Signature Date Daniel Manus Printed Name Daniel.Manus@blackhillscorp.com E-mail Address</p>	
<p>LOT 2 LOT 1 LOT 4 LOT 3 LOT 2 LOT 1 LOT 5 LOT 6 LOT 5 LOT 6 LOT 7 LOT 8 FD 2 1/2" BC 1917 USGLO LOT 8 LOT 7 LOT 12 LOT 11 LOT 10 LOT 9 SHL / PP 1803' BHL 2' LOT 11 LOT 12 LOT 13 LOT 14 LOT 15 LOT 16 S 88°03'30" W 4517.23' (M) N 89°43'50" E 2577.62' (M) S 89°43'45" W 2582.91' (M) FD. 2 1/2" BC. 1917 USGLO FD. 2 1/2" BC. 1917 USGLO FD. 2 1/2" BC. 1917 USGLO FD. 2 1/2" BC. 1917 USGLO N 00°11'59" W 2631.88' (M) N 00°00'25" W 2636.76' (M) 1342' 1803' 1642'</p> <p>SURFACE / PENETRATION POINT: LAT: 36.83721° N. (NAD 83) LONG: 107.18798° W. (NAD 83) LAT: 36°50'13.92" N. (NAD 27) LONG: 107°11'14.57" W. (NAD 27)</p> <p>BOTTOM HOLE: LAT 36.83827° N. (NAD 83) LONG: 107.16422° W. (NAD 83) LAT: 36°50'17.75" N. (NAD 27) LONG: 107°09'49.04" W. (NAD 27)</p>						<p>18</p> <p>SURVEYOR CERTIFICATION</p> <p>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.</p> <p>APR 10, 2012 Date of Survey Signature and Seal of Professional Surveyor 8894 REGISTERED PROFESSIONAL LAND SURVEYOR Certificate Number</p>	

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State of New Mexico
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1220 South St. Francis Dr.
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JUL 07 2011

Form C-102
Revised July, 16, 2010
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 30-039-31077	² Pool Code 71599 97232	³ Pool Name BASIN MANCOS
⁴ Property Code 22859	⁵ Property Name JICARILLA 458-6	⁶ Well Number 733A
⁷ GRID No. 013925	⁸ Operator Name BLACK HILLS GAS RESOURCES	⁹ Elevation 7055'

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
5	6	30-N	3-W	8	1342	SOUTH	1803	EAST	RIO ARRIBA

¹¹ Bottom Hole Location If Different From Surface

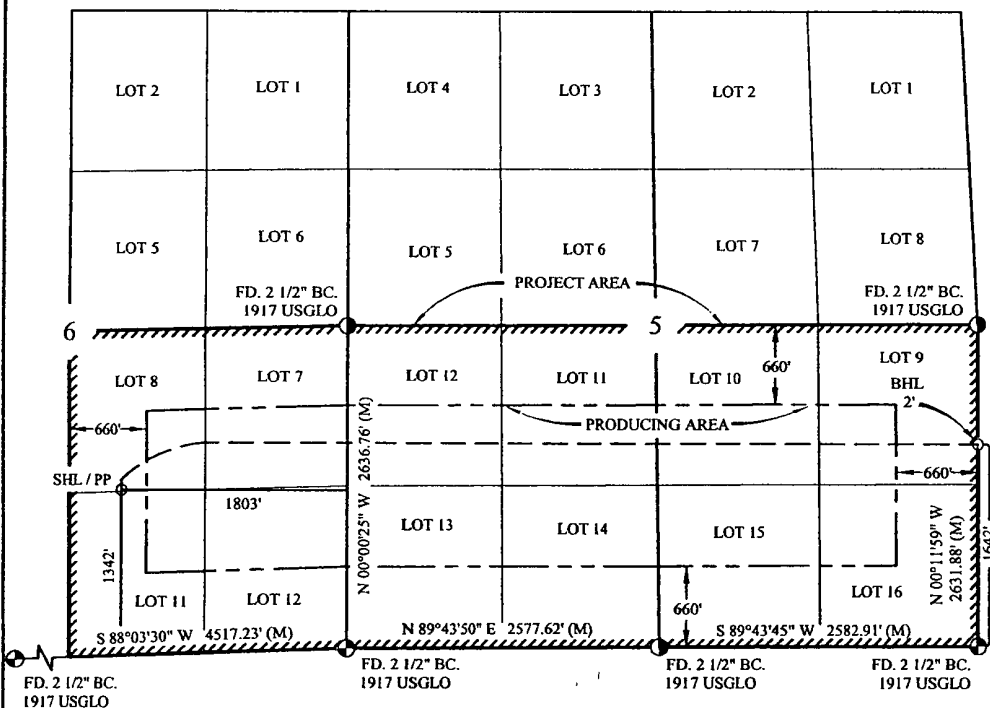
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
5	5	30-N	3-W	9	1642	SOUTH	2	EAST	RIO ARRIBA

¹² Dedicated Acres S/2 SEC. 5 & SE/4 SEC. 6 (473.26 ACRES)	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
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16

PRELIMINARY BHL
BHL FOOTAGES ARE APPROXIMATE
AND PROVIDED BY BHGR
CLIENT



SURFACE/PENETRATION POINT:
LAT: 36.83721° N. (NAD 83)
LONG: 107.18798° W. (NAD 83)
LAT: 36°50'13.92" N. (NAD 27)
LONG: 107°11'14.57" W. (NAD 27)

BOTTOM HOLE:
LAT: 36.83827° N. (NAD 83)
LONG: 107.16422° W. (NAD 83)
LAT: 36°50'17.75" N. (NAD 27)
LONG: 107°09'49.04" W. (NAD 27)

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 7/7/11
Signature Date

Daniel Manus
Printed Name

daniel.manus@blackhillcorp.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.

APR 21 2011
Date of Survey
Signature and Seal of Professional Surveyor

NEW MEXICO
REGISTERED PROFESSIONAL LAND SURVEYOR
01-11

Certificate Number



Black Hills Gas Resources

Jicarilla 458-06 #733A

Surface Location: 1,342' FSL 1,803' FEL (NW/SE)

Sec.6 T30N R3W

Bottom Hole Location: 1,642' FSL & 2' FEL (NE/SE)

Sec.05 T30N R3W

Rio Arriba County, New Mexico

Lease: Contract 458

RECEIVED

JUL 21 2011

Farmington Field Office
Bureau of Land Management

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 November 18, 2010 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 – 7,055'

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

San Jose	Surface	Sandstone, shales & siltstones
Nacimiento	1974'	Sandstone, shales & siltstones
Ojo Alamo	3142'	Sandstone, shales & siltstones
Fruitland Coal	3669'	Sandstone, shales, siltstones & coal
Pictured Cliffs	3712'	Sandstone, shales & siltstones
Lewis	3795'	Sandstone, shales & siltstones
Mesaverde	5683'	Sandstone, shales & siltstones
Mancos	6625'	Sandstone, shales & siltstones

TOTAL DEPTH

7,644' TVD

14,366' MD

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

Nacimiento	1974'	Gas, water, sand
Ojo Alamo	3142'	Gas, water, sand
Fruitland Coal	3669'	Gas, water, sand
Pictured Cliffs	3712'	Gas, water, sand
Lewis	3795'	Gas, water, sand
Mesaverde	5683'	Gas, water, sand
Mancos	6625'	Gas, water, sand

HORIZONTAL DRILLING PROGRAMKick-Off Point is estimated to be $\pm 6,655'$ TVD**CASING PROGRAM**

Depth	Hole Diameter	Casing Diameter	Casing Weight and Grade	Cement
0' - 40'	22"	16"	63# & 30-Std	45 sks Class G cement (yield 1.15 ft ³ /sk ; wt. 15.8 lbm/gal)
0' MD – 3,200' MD	12 ¼"	9 ⅝"	40# & J-55	Lead: ± 700 sxs Lite Premium cement w/ 0.5 lbm/sxs Gilsonite & 0.125 lbm/sxs Poly-E-Flake (yield 1.82 ft ³ /sxs : wt 12.50 lbm/gal)* Tail: ± 100 sxs Premium cement w/ 0.125 lbm/sxs Poly-E-Flake & 2% Halad®-9 (yield 1.15 ft ³ /sxs : wt 15.80 lbm/gal)*
3,000' MD – 6,655' MD	8 ¾"	7"	23# & N-80	Lead: ± 515 sxs 50/50 Poz Premium cement w/ 0.4% Halad®-413, 0.5% Halad®-344, 0.1% CFR-3, 0.2% Versaset & 0.2% HR-5 (yield 1.44 ft ³ /sxs : wt 13 lbm/gal)* Tail: ± 125 sxs 50/50 Poz Premium cement w/ 0.4% Halad®-413, 0.5% Halad®, 0.015% CRF-3, 0.2% Versaset & 0.4% HR-5 (yield 1.1ft ³ /sxs : Wt. 15.80/gal)*
0' MD – 14,366' MD	6 ⅛"	4 ½"	11.6# & HCP-110	510 sxs Poz Premium w/ 0.4% Halad®-413, 0.5% Halad®-344, 0.01% Versaset, 0.4% HR-5 & 0.3% Supe CBL (yield 1.44ft ³ /sxs : Wt 13.0/gal)*

* 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 preventors and related pressure control equipment will be pressure tested to 1,500 psi. Annular type preventor will be pressure tested to 50% of the rated working pressure, not to exceed 2,500 psi. 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 either double gate rams or an annular preventor 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' – 3,200'	Fresh Water / Spud Mud	$\pm 8.4 - 9.0$ ppg	28 - 32 sec	$\geq 6 - 8$ cc	$\geq 6\%$
Intermediate to KOP	3,000' MD – 6,655' MD	Low solids non-dispersed	$\pm 9.2 - 9.4$ ppg	40 - 50 sec	$\geq 4 - 6$ cc	$\geq 6\%$
BIC to TD of Lateral	6,921' MD – 14,365' MD	Invert OBM	$\pm 10.0 - 10.3$ 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 | 3,500' to 14,520' |
| | | OpenHole | Tripel Combo w/Spectral GR | |
| | | | DIL/FDC/CNL-SONIC | 1,000' to 7,491' |
| | | Lateral | MWD/GR | 8,233' to 14,365' |
| | | | 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 3,500' to 13,313' | | |
| | | Samples | 100 ft samples from 400' to 4,200' | |
| | | | 30 ft samples from 4,200' to 6,000' | |
| | | | 10 ft samples from 6,300' to 6,530' | |
| | | | 10 ft samples from 9,526' to 9,719' | |

ABNORMAL CONDITIONS

- A) Pressures: No abnormal conditions are anticipated
Bottom hole pressure gradient – 0.49 psi/ft
- B) Temperatures: No abnormal conditions are anticipated
- C) H₂S: See attached H₂S plan in event H₂S is encountered.
- D) Estimated bottomhole pressure: 3,746 psi

ANTICIPATED START DATE

August 1, 2011

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.

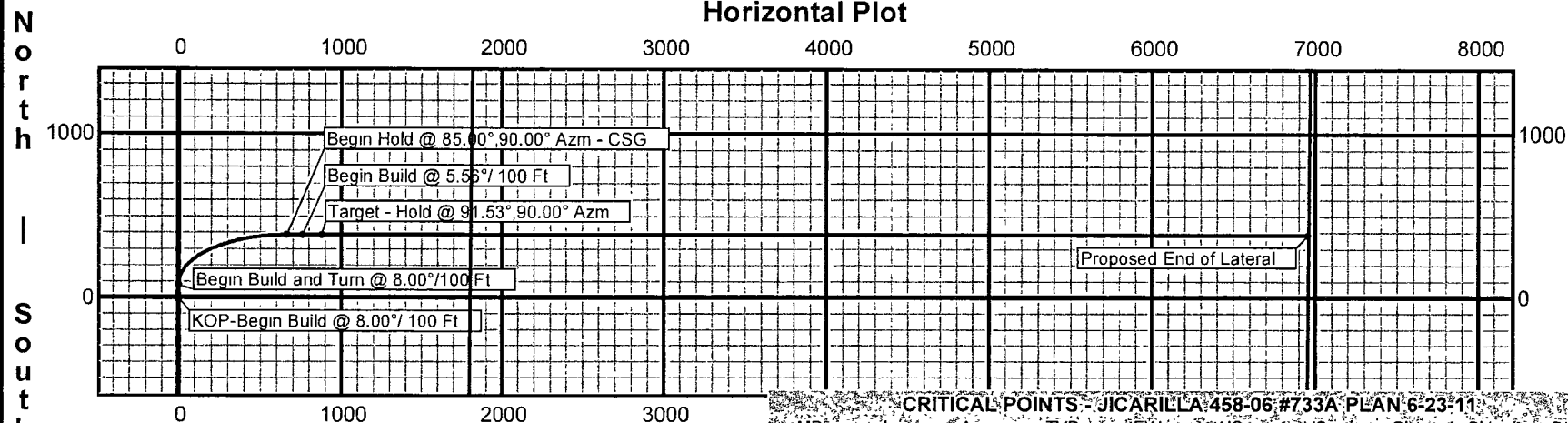


Job ID : 11xxx
Company : Black Hills Gas Resources
Lease/Well : Jicarilla 458-06 #733A
Location : Rio Arriba County, NM
Rig Name :

Elevation (To MSL) : 7055 ft
RKB : 13 ft
North Reference : True North
Latitude : 36°50'13.8285" N
Longitude : -107°11'16.9968" W



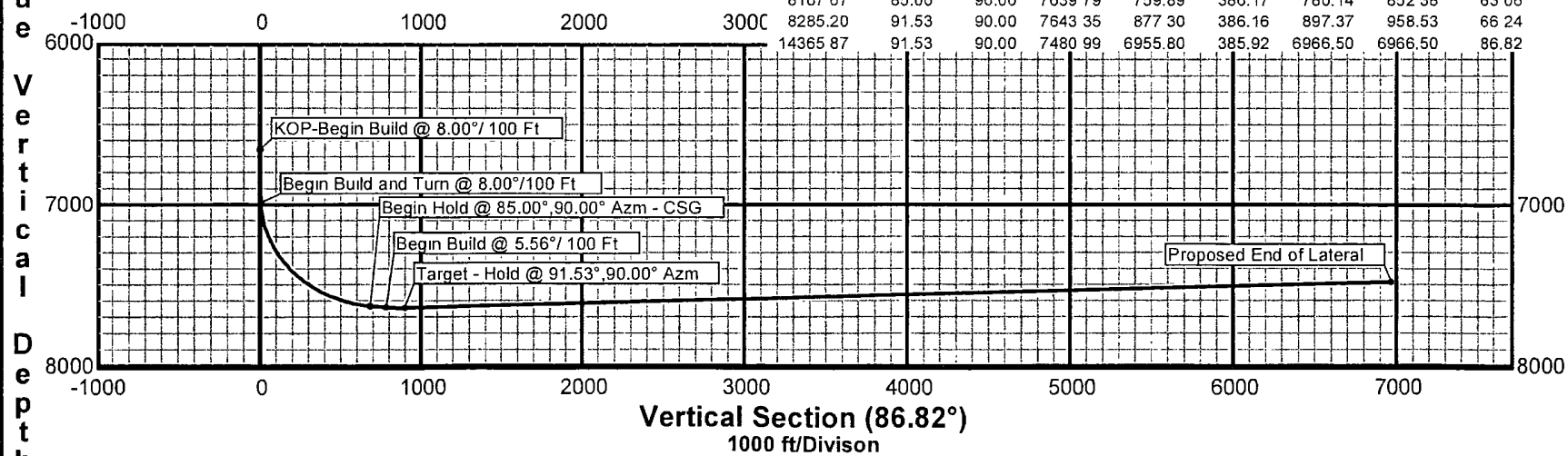
Horizontal Plot



CRITICAL POINTS - JICARILLA 458-06 #733A PLAN 6-23-11

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
6655.00	0.00	0.00	6655.00	0.00	0.01	0.00	0.01	0.01	0.00
6998.12	27.45	0.00	6985.14	0.00	80.64	4.47	80.64	0.00	8.01
8067.67	85.00	90.00	7631.08	660.27	386.17	680.67	764.90	59.68	8.00
8167.67	85.00	90.00	7639.79	759.89	386.17	780.14	852.38	63.06	0.00
8285.20	91.53	90.00	7643.35	877.30	386.16	897.37	958.53	66.24	5.56
14365.87	91.53	90.00	7480.99	6955.80	385.92	6966.50	6966.50	86.82	0.00

Vertical





Job Number: 11xxx
Company: Black Hills Gas Resources
Lease/Well: Jicarilla 458-06 #733A
Location: Rio Arriba County, NM
Rig Name:
State/County: NM/ Rio Arriba
Country: USA
API Number:

Elevation (To MSL): 7055.00 ft
RKB: 13.00 ft
Projection System: US State Plane 1983
Projection Group: New Mexico Central Zone
Projection Datum: GRS80
Magnetic Declination: 9.66
Grid Convergence: -0.56244 W
Date: Thursday, June 23, 2011

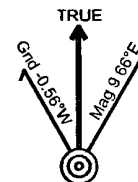
NOVA Directional, Inc.
Directional Survey Report

Calculated by HawkEye Software
 Minimum Curvature Method
 Vertical Section Plane 86.82°

Northing: 2125365.92 **Easting:** 1365915.21

Latitude: 36°50'13.8285" N **Longitude:** -107°11'16.9968" W

Well Location: 1342.00 FSL, 1803.00 FEL, Section 6, T30N, R3W, Meridian 23, Rio Arriba County, NM
Direction Reference: True North



Measured Depth (Ft)	INC Deg	AZM Deg	TVD (Ft)	EW (Ft)	NS (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	0.00	0.01	0.00	0.01	0.01	0.00
6500.00	0.00	0.00	6500.00	0.00	0.01	0.00	0.01	0.01	0.00
KOP-Begin Build @ 8.00°/ 100 Ft									
6655.00	0.00	0.00	6655.00	0.00	0.01	0.00	0.01	0.01	0.00
6685.00	2.40	0.00	6684.99	0.00	0.64	0.04	0.64	0.00	8.00
6715.00	4.80	0.00	6714.93	0.00	2.52	0.14	2.52	0.00	8.00
6745.00	7.20	0.00	6744.76	0.00	5.65	0.31	5.65	0.00	8.00
6775.00	9.60	0.00	6774.44	0.00	10.04	0.56	10.04	0.00	8.00
6805.00	12.00	0.00	6803.91	0.00	15.66	0.87	15.66	0.00	8.00
6835.00	14.40	0.00	6833.11	0.00	22.51	1.25	22.51	0.00	8.00
6865.00	16.80	0.00	6862.00	0.00	30.57	1.70	30.57	0.00	8.00
6895.00	19.20	0.00	6890.53	0.00	39.84	2.21	39.84	0.00	8.00
6925.00	21.60	0.00	6918.65	0.00	50.30	2.79	50.30	0.00	8.00
6955.00	24.00	0.00	6946.30	0.00	61.93	3.44	61.93	0.00	8.00
6985.00	26.40	0.00	6973.45	0.00	74.69	4.14	74.69	0.00	8.00
Begin Build and Turn @ 8.00°/100 Ft									
6998.12	27.45	0.00	6985.14	0.00	80.64	4.47	80.64	0.00	8.01
7028.12	27.45	5.21	7011.78	0.63	94.44	5.87	94.45	0.38	8.00
7058.12	27.64	10.38	7038.37	2.51	108.18	8.51	108.20	1.33	8.00
7088.12	28.02	15.46	7064.90	5.64	121.81	12.39	121.95	2.65	8.00
7118.12	28.59	20.38	7091.32	10.02	135.34	17.51	135.71	4.23	8.00
7148.12	29.32	25.10	7117.58	15.64	148.72	23.87	149.54	6.00	8.00
7178.12	30.21	29.59	7143.62	22.48	161.94	31.43	163.49	7.90	8.00
7208.12	31.25	33.83	7169.41	30.54	174.97	40.20	177.62	9.90	8.00
7238.12	32.42	37.80	7194.90	39.81	187.79	50.16	191.96	11.97	8.00
7268.12	33.70	41.52	7220.04	50.25	200.38	61.29	206.58	14.08	8.00
7298.12	35.09	44.99	7244.80	61.87	212.71	73.57	221.52	16.22	8.00

Measured Depth (Ft)	INC Deg	AZM Deg	TVD (Ft)	EW (Ft)	NS (Ft)	VS (Ft)	Closure (Ft)	Closure Dir Deg	DLS /100Ft
7328.12	36.57	48.22	7269.13	74.63	224.77	86.98	236.83	18.37	8.00
7358.12	38.13	51.22	7292.97	88.52	236.52	101.50	252.54	20.52	8.00
7388.12	39.76	54.02	7316.31	103.51	247.96	117.10	268.69	22.66	8.00
7418.12	41.46	56.63	7339.08	119.56	259.06	133.75	285.32	24.77	8.00
7448.12	43.21	59.07	7361.26	136.67	269.80	151.42	302.44	26.86	8.00
7478.12	45.01	61.35	7382.80	154.79	280.17	170.10	320.09	28.92	8.00
7508.12	46.85	63.50	7403.67	173.90	290.14	189.72	338.26	30.94	8.00
7538.12	48.73	65.51	7423.82	193.95	299.70	210.28	356.98	32.91	8.00
7568.12	50.64	67.41	7443.23	214.93	308.82	231.73	376.25	34.84	8.00
7598.12	52.58	69.21	7461.86	236.78	317.51	254.02	396.08	36.71	8.00
7628.12	54.55	70.92	7479.68	259.46	325.74	277.13	416.45	38.54	8.00
7658.12	56.54	72.55	7496.65	282.96	333.49	301.02	437.35	40.31	8.00
7688.12	58.55	74.10	7512.75	307.20	340.74	325.63	458.78	42.04	8.00
7718.12	60.58	75.59	7527.94	332.17	347.50	350.94	480.72	43.71	8.00
7748.12	62.63	77.02	7542.21	357.81	353.75	376.88	503.16	45.33	8.00
7778.12	64.68	78.39	7555.52	384.07	359.47	403.42	526.05	46.90	8.00
7808.12	66.76	79.72	7567.86	410.92	364.66	430.52	549.39	48.41	8.00
7838.12	68.84	81.01	7579.19	438.30	369.30	458.12	573.15	49.88	8.00
7868.12	70.93	82.27	7589.51	466.17	373.39	486.17	597.27	51.31	8.00
7898.12	73.03	83.49	7598.79	494.48	376.93	514.63	621.76	52.68	8.00
7928.12	75.14	84.69	7607.02	523.17	379.90	543.44	646.56	54.02	8.00
7958.12	77.25	85.86	7614.18	552.20	382.30	572.56	671.63	55.30	8.00
7988.12	79.37	87.01	7620.26	581.52	384.12	601.93	696.94	56.55	8.00
8018.12	81.49	88.15	7625.25	611.08	385.38	631.51	722.45	57.76	8.00
8048.12	83.61	89.27	7629.13	640.81	386.05	661.24	748.11	58.93	8.00
Begin Hold @ 85.00°,90.00° Azm - CSG									
8067.67	85.00	90.00	7631.08	660.27	386.17	680.67	764.90	59.68	8.00
Begin Build @ 5.56°/ 100 Ft									
8167.67	85.00	90.00	7639.79	759.89	386.17	780.14	852.38	63.06	0.00
8197.67	86.67	90.00	7641.97	789.81	386.17	810.01	879.16	63.94	5.56
8227.67	88.33	90.00	7643.28	819.78	386.17	839.94	906.18	64.78	5.56
8257.67	90.00	90.00	7643.72	849.77	386.17	869.89	933.40	65.56	5.56
Target - Hold @ 91.53°,90.00° Azm									
8285.20	91.53	90.00	7643.35	877.30	386.16	897.37	958.53	66.24	5.56
8785.20	91.53	90.00	7630.00	1377.12	386.14	1396.42	1430.23	74.34	0.00
9285.20	91.53	90.00	7616.65	1876.94	386.12	1895.47	1916.25	78.38	0.00
9785.20	91.53	90.00	7603.30	2376.77	386.10	2394.52	2407.92	80.77	0.00
10285.20	91.53	90.00	7589.95	2876.59	386.08	2893.57	2902.38	82.36	0.00
10785.20	91.53	90.00	7576.60	3376.41	386.06	3392.63	3398.41	83.48	0.00
11285.20	91.53	90.00	7563.25	3876.23	386.04	3891.68	3895.41	84.31	0.00
11785.20	91.53	90.00	7549.90	4376.05	386.02	4390.73	4393.04	84.96	0.00
12285.20	91.53	90.00	7536.55	4875.87	386.00	4889.78	4891.13	85.47	0.00
12785.20	91.53	90.00	7523.20	5375.70	385.98	5388.83	5389.53	85.89	0.00
13285.20	91.53	90.00	7509.85	5875.52	385.96	5887.88	5888.18	86.24	0.00
13785.20	91.53	90.00	7496.50	6375.34	385.94	6386.93	6387.01	86.54	0.00
14285.20	91.53	90.00	7483.15	6875.16	385.92	6885.98	6885.98	86.79	0.00
Proposed End of Lateral									
14365.87	91.53	90.00	7480.99	6955.80	385.92	6966.50	6966.50	86.82	0.00



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 well control procedures.
3. The contents and requirements of the H_2S Drilling Operations Plan and the Public Protection Plan.

There will be an initial training session just prior to encountering a known or probable H_2S zone (within 3 days or 500 feet) and weekly H_2S and 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. H_2S 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 the three days prior to penetrating the first zone containing or reasonably expected to contain H_2S .

A. Well control equipment:

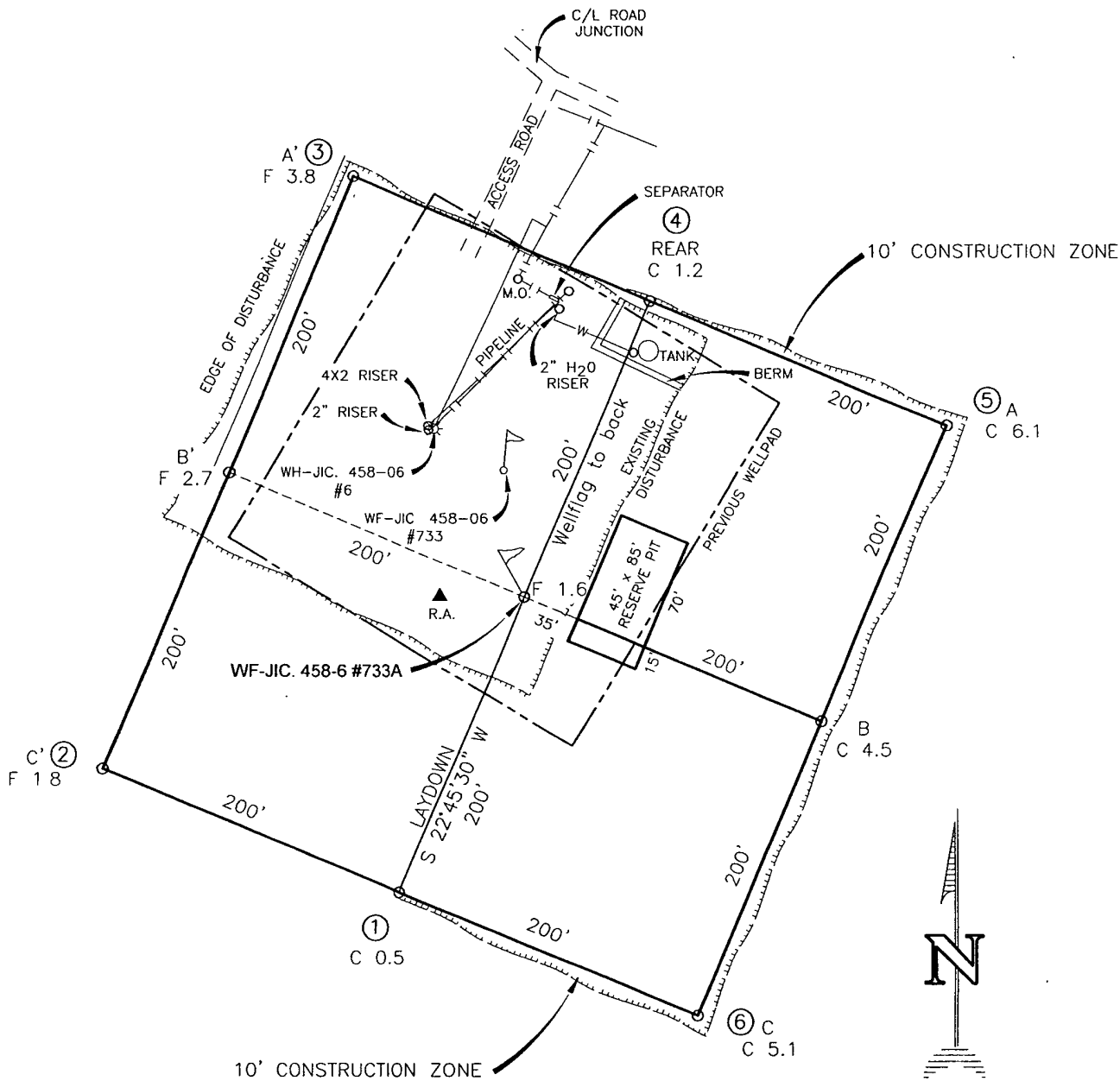
1. Choke manifold with a minimum of one remote choke.
2. Blind rams and pipe rams to accommodate all pipe sizes with properly sized closing unit.

B. Protective equipment for essential personnel

1. Mark II Surniveair 30-minute units located in the doghouse and at briefing areas, as indicated on well site diagram.
- C. H₂S detection and monitoring equipment:
1. Two portable H₂S monitors positioned on location for best coverage and response. These units have warning lights and aquidilbesirens when H₂S levels of 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 programs has been designed to minimize the volume of H₂S circulated to the surface. Proper mud weight, safe drilling practices and the use of H₂S scavengers will minimize hazards when penetrating H₂S 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 H₂S service.
 2. All elastomers used for packing and seals shall be H₂S trim.
- G. Communication:
1. Cellular telephone communications in company vehicles.
- 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 lesting will be conducted during daylight hours and formation fluids will not be flowed to the surface. All drill stem testing operations conducted in an H₂S environment will use the closed chamber method of testing.

WELL PAD DIAGRAM


COMPANY: BLACK HILLS GAS RESOURCES
 LEASE: JICARILLA 458-6 No. 733A
 FOOTAGE: 1342 FSL, 1803 FEL
 SEC.: 6, TWN: 30-N, RNG: 3-W, NMPM
 ELEVATION: 7055'



SCALE IN FEET
 0 50 100

NOTE:

DAGGETT ENTERPRISES, INC. IS NOT LIABLE FOR UNDERGROUND UTILITIES OR PIPELINES. NEW MEXICO ONE CALL TO BE NOTIFIED 48 HOURS PRIOR TO EXCAVATION OR CONSTRUCTION.

REVISION	DATE	REVISED BY
 Daggett Enterprises, Inc. Surveying and Oil Field Services P. O. Box 510 • Farmington, NM 87499 Phone (505) 326-1772 • Fax (505) 326-6019 NEW MEXICO L.S. 8894		
DRAWN BY: G.V.	CADFILE: MN594_PL8	
ROW# MN594	DATE: 11/08/10	

5000 psi System

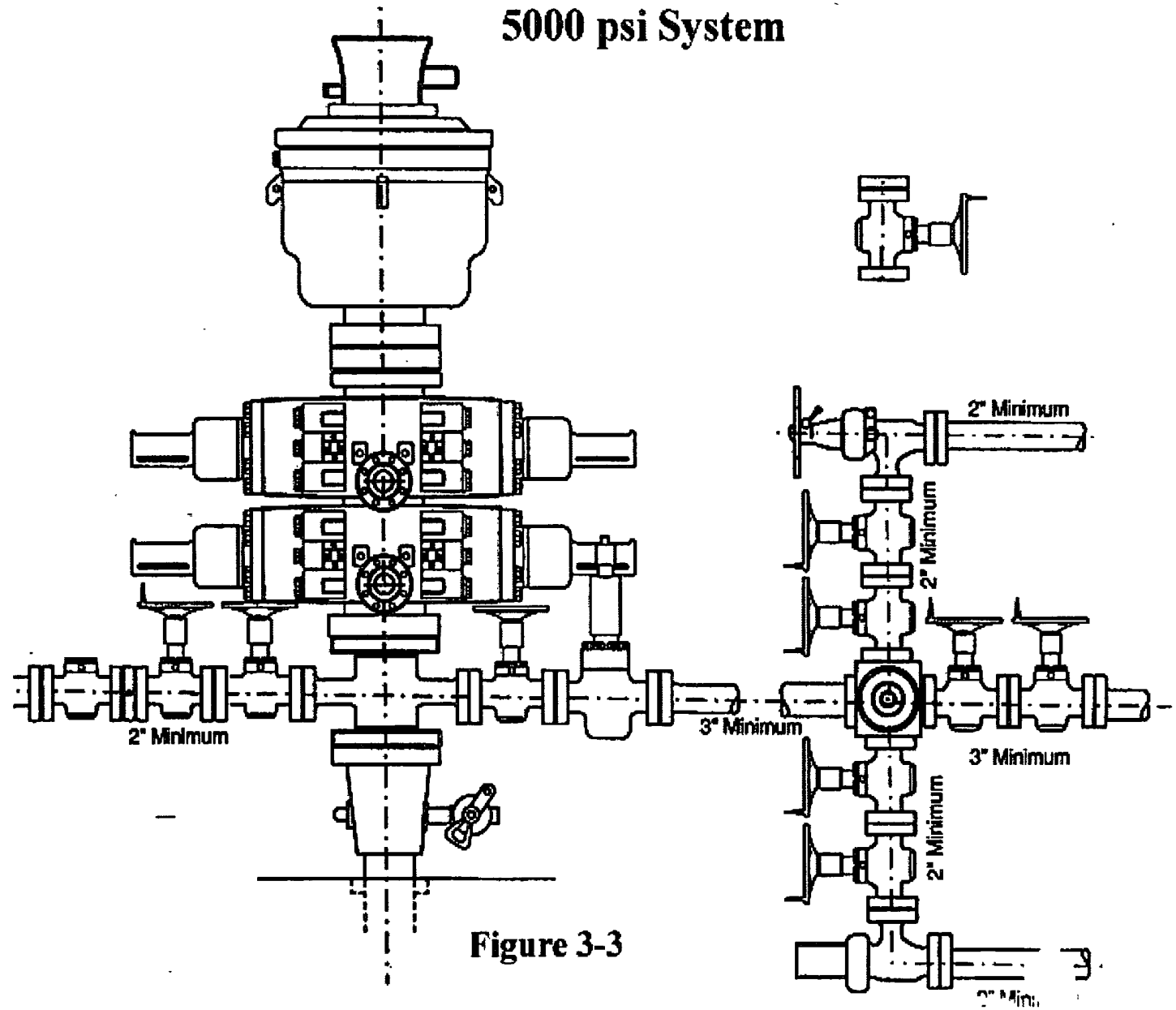


Figure 3-3