

Form 3160-3
(August 2007)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR REENTER

Bold* fields are required.

Section 1 - Completed by Operator	
1. BLM Office* Craig, CO	2. Confidentiality <input type="checkbox"/> Confidential
3. Work Type* <input checked="" type="radio"/> DRILL <input type="radio"/> REENTER	4. Well Type* GAS
Operating Company Information	
5. Company Name* WEXPRO COMPANY	
6. Address* PO BOX 458 ROCK SPRINGS WY 82902	7. Phone Number* 307-352-7500
Administrative Contact Information	
8. Contact Name* DEE _ FINDLAY	9. Title* PERMIT AGENT
10. Address* PO BOX 458 ROCK SPRINGS WY 82902	11. Phone Number* 307-352-7554 ____ 12. Mobile Number 307-354-6346
13. E-mail* dee.findlay@questar.com	14. Fax Number 307-352-7575
Technical Contact Information	
<input type="checkbox"/> Check here if Technical Contact is the same as Administrative Contact.	
15. Contact Name* G T NIMMO	16. Title* OPERATIONS MANAGER
17. Address* PO BOX 458 ROCK SPRINGS WY 82902	18. Phone Number* 307-352-7577 ____ 19. Mobile Number _____
20. E-mail* terry.nimmo@questar.com	21. Fax Number 307-352-7575
Lease and Agreement	
22. Lease Serial Number*	

COC081267	
24. If Unit or CA/Agreement, Name and/or Number POWDER WASH	25. Field and Pool, or Exploratory Area* POWDER WASH
26. Number of Acres in Lease* 760	27. Spacing Unit dedicated to this well

Well		
28. Well Name* CARL ALLEN	29. Well Number* 45	30. API Number _____
31. Proposed M.D. 9297	32. Proposed T.V.D. _____	33. Elevation 6590 Ground Level
34. BLM/BIA Bond Number 965010694	35. Work Start Date 10/17/2011	36. Work Duration 35 DAYS
37. Number of Completions _	38. Cable Tool <input type="radio"/> Cable <input checked="" type="radio"/> Rotary	

Surface Location				
39. Specify location using one of the following methods: a) State, County, Section, Township, Range, Meridian, N/S Footage, E/W Footage, with Qtr/Qtr, Lot, or Tract b) State, County, Latitude, Longitude, Metes & Bounds description				
County or Parish, State* MOFFAT CO				
Section 28	Township 12N	Range 97W	Meridian 6TH PRINCIPAL	
Qtr/Qtr SESW	Lot # _	Tract # _____	N/S Footage 565 FSL	E/W Footage 1931 FWL
Latitude 40.965589	Longitude 108.299233	Metes and Bounds		
40. Distance in miles and direction from nearest town or post office APPROXIMATELY 40 MILES SOUTHWEST OF BAGGS, WY				
41. Distance from proposed location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any) 1931				
42. Distance from proposed location to nearest well, drilling, completed, applied for, on this lease, ft. 780				

Bottom Hole Location				
43. Specify location or <input checked="" type="checkbox"/> Check here if the bottom hole location is the same as the surface location.				
County or Parish, State* _____				
Section _	Township _	Range _	Meridian	
Qtr/Qtr	Lot #	Tract #	N/S Footage	E/W Footage

			FSL	
Latitude	Longitude	Metes and Bounds		

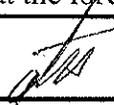
44. Additional Information

Please provide any additional pertinent information.

This location is covered by the Master Surface Use Plan for Powder Wash Wells, Date 01/01/2011.

Attached are the detailed well plat, drilling plan, cement design, and BOP design.

I hereby certify that the foregoing is true and correct.

<p>45. Name* G T NIMMO</p> 	<p>46. Title OPERATIONS MANAGER</p> 
<p>47. Date* (MM/DD/YYYY) Today</p>	<p>48. Signature* <i>You have the ability to sign this form only if a SmartCard or digital certificate has been issued to you.</i></p>

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.

**DRILLING PLAN
WEXPRO COMPANY
CARL ALLEN NO. 45
MOFFAT COUNTY, COLORADO**

1. SURFACE FORMATION, ESTIMATED TOPS AND WATER, OIL, GAS OR MINERAL BEARING FORMATIONS:

Wasatch	Surface
A-4-G SD	4,347', gas - Secondary Objective
A-4-H SD	4,923', gas - Secondary Objective
Fort Union	5,119'
Allen 8 - A	5,900'
Allen 8 - B	5,950', gas, - Major Objective
Allen 8 - E	6,085'
Allen 8 - F	6,204', gas, - Major Objective
Allen 8 - G	6,261'
Allen 8 - H	6,328'
Allen 9 - A	6,525', gas, - Secondary Objective
Allen 9 - B	6,561', gas, - Secondary Objective
Allen 9 - C	6,665'
Allen 11	6,783'
L. F. U. 4600	7,469'
Allen 10 - B	7,782'
Allen 10 - C	7,834'
Allen 6 - A	7,963'
Allen 6 - G	8,436', gas, - Major Objective
Allen 6 - H	8,521', gas, - Major Objective
Allen 6 - K	8,669', gas, - Major Objective
Lance	8,862'
Fox Hills	8,947'
Total Depth	9,297'

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

2. PRESSURE CONTROL EQUIPMENT: (see attached diagram) Operator's minimum specifications for pressure control equipment require an 11-inch 3000 psi double gate hydraulically operated blowout preventer and an 11-inch 3000 psi annular preventer. BOP equipment will be tested to its rated working pressure or 70-percent of the internal yield of the surface casing. The annular preventer will be tested at 50-percent of its rated working pressure. NOTE: The surface casing will be pressure tested to a minimum of 1500 psi. BOP's will be checked daily as to mechanical operating condition and will be

tested by rig equipment after each string of casing is run. All ram type preventers will have hand wheels which will be operative and accessible at the time the preventers are installed. Accumulator will include both electric and air power source (see attached diagram).

At this time Wexpro Company requests approval, if needed, to use "Flex Hose" between the BOP and Choke Manifold. The Flex Hose will have a minimum rating of 5,000 psi. Please see the attached specifications sheet for more details.

AUXILIARY EQUIPMENT:

- a) Manually operated kelly cock
- b) No floats at bit
- c) Monitoring of mud system will be visual
- d) Full opening floor valves in the full open position, capable of fitting all drill stem connections manually operated

3. CASING PROGRAM:

Size		Top	Bottom	Weight	Grade	Thread	Condition
Hole	Casing						
20"	16"	sfc	80'	Steel Pipe Conductor			New
12-1/4"	9-5/8"	sfc	1500'	36#	J55	LT&C	New
7-7/8"	4-1/2"	sfc	9,297'	13.5#	P-110	LT&C	New

Casing Strengths:				Collapse	Burst	Tensile (minimum)
9-5/8"	36 lb.	J55	LTC	2,020 psi	3,520 psi	453,000 lb.
4-1/2"	13.5 lb.	P110	LTC	10,670 psi	12,410 psi	338,000 lb.

Area Fracture Gradient: 0.750 psi/foot

The variance to Onshore #2 is requested because surface casing depth for this well is 1500' and high pressure is not expected.

A properly lubricated and maintained rotating head: A diverter bowl will be utilized in place of a rotating head. The diverter bowl will force the air and cutting returns to the reserve pit as it is used to drill the surface casing.

Blooiie line discharge will be 100 feet from the well bore and securely anchored: The blooiie line discharge for this operation will be located 50 to 70 feet from the wellhead.

Automatic ignitor or continuous pilot light on the blooiie line: A diffuser will be used rather than an automatic pilot/ignitor. Water is injected into the compressed air and eliminates the need for the pilot light and the need for dust suppression equipment.

Compressor located in the direction from the blooiie line is a minimum of 100' from the well bore: Truck mounted air compressors will be located within 50 feet on the opposite side of the wellhead from the blooiie line and equipped with a (1) emergency kill switch on the driller's console, (2) pressure relief valve on the compressor and (3) spark arrestors on the motors.

CEMENTING PROGRAMS: (See Attached Details)

9-5/8" Surface Casing: **Lead Slurry:** 585 cubic feet Light 50/50 Poz-G with 2% CaCl₂ and 1/4 % cello flake (only if lost circulation is encountered).
Tail Slurry: 395 cubic feet Class "G" with 2% CaCl₂ and 1/4 % cello flake (only if lost circulation is encountered)

4-1/2" Production Casing: **Lead Slurry:** 1265 cubic feet Light 50/50 Poz-G with retarder, reducer and fluid loss additive. Volume to be calculated from caliper logs to bring lead cement from 4,200' to surface, with 15% excess.
Tail Slurry: 1339 cubic feet 35/65 Poz-G with retarder, reducer and fluid loss additive. Volume to be calculated from caliper logs to bring tail cement from TD to 4,200', with 15% excess.

4. MUD PROGRAM:

- 1) Surface hole mud drilled and cased with the drilling rig using fresh water and polymer sweeps.
- 2) Surface casing will be drilled out 10 feet and formation tested to 10.0 ppg mud equivalent.
- 3) Fresh water with gel and polymer sweeps as necessary. Mud weight of 9.5 - 10.0 ppg to be accomplished by 1,500 feet to total depth, if needed.
 - A. Mud weight 9.0 - 10.0 ppg
 - B. Viscosity 35 - 45 cp
 - C. PH 108

- | | | |
|----|------------|-------------------------------|
| D. | Water Loss | < 7 |
| E. | Type | Fresh water and dispersed mud |
| F. | Asphalt | 6 lb/sack |

Sufficient mud materials to maintain mud properties, control lost circulation and to contain blowout will be available at the wellsite.

No chrome constituent additives will be used in the mud system on Federal, State and Indian lands without prior BLM/State approval to ensure adequate protection of fresh water aquifers.

5. LOGGING:

- | | |
|------------------------------|--------------------------------|
| DIL-SFL-GR: | Total depth to surface casing. |
| BHC-Sonic-GR: | Total depth to surface casing. |
| FDC-CNL-GR-PE-Cal: | Total depth to surface casing. |
| Cement/Bore Hole Profile Log | |

TESTING: None.

CORING: None.

6. ABNORMAL PRESSURE AND TEMPERATURE: A BHT of 189° F and a BHP of 3500 psi are possible.

7. ANTICIPATED STARTING DATE: March 13, 2012

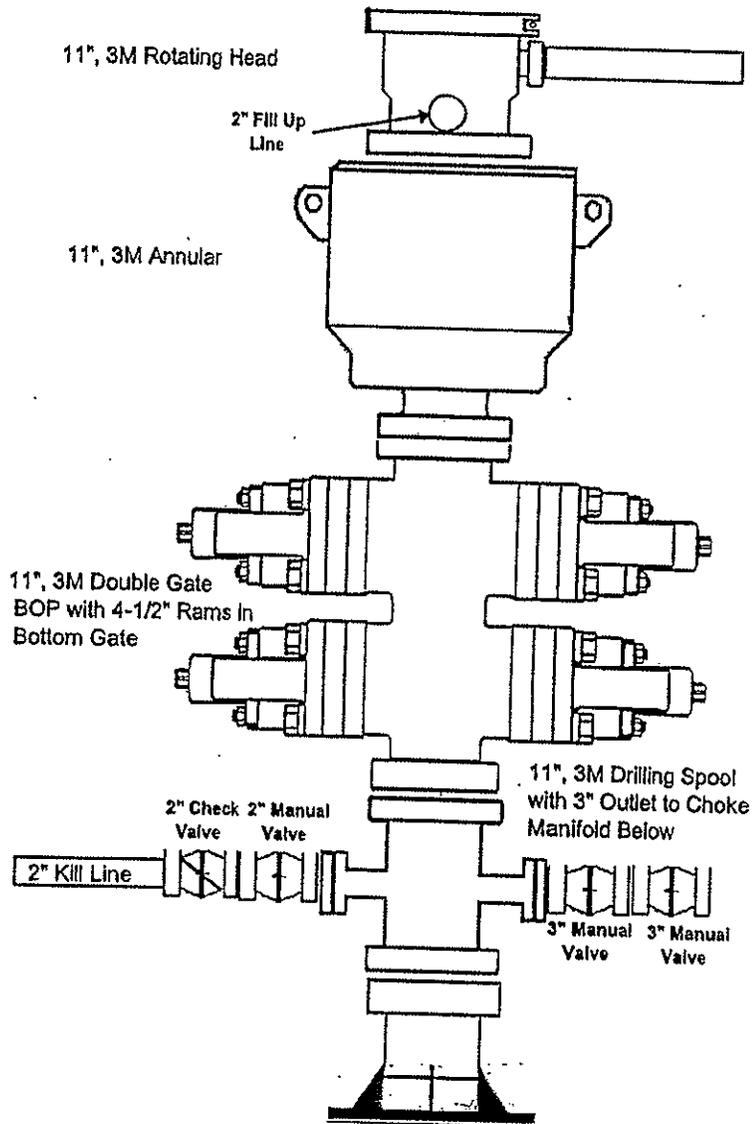
DURATION OF OPERATION: 25 days

CARL ALLEN 45 : CEMENT CALCULATIONS

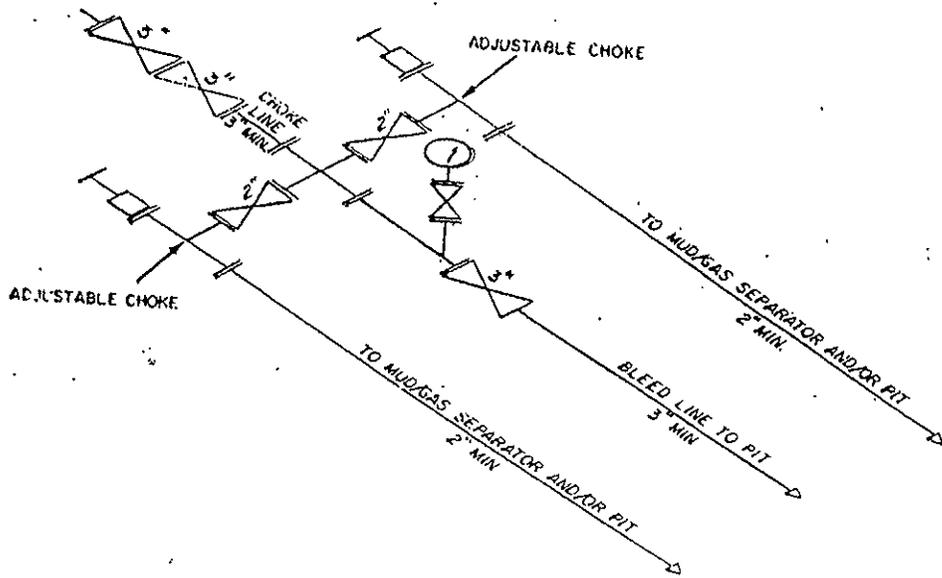
SURFACE CASING:					
CASING:	9.625 " 36#, K-55		0.4340 cu.ft./lin.ft		ID= 8.921
ANNULUS:	12.250 " x 9.625" Gauge Hole		0.3131 cu.ft./lin.ft		
CONDUCTOR	16.000 " STEEL PIPE		0.8908		
EXCESS:			100%		
CEMENT YIELD:	LEAD		2.65 cu.ft./sack	11.5 PPG	
	TAIL		1.26 cu.ft./sack	15.2 PPG	
CONDUCTOR DEPTH			80		
TOTAL DEPTH			1,500 Feet		
TOP OF TAIL			900 Feet		
TOP OF LEAD			0 Feet	(Surface)	
LEAD SLURRY					
CU.FT					
COND/CSG ANN	80	TO	0	0.8908	71.27
ANN (OH)	900	TO	80	0.3131	256.77
ANN EXCESS				100%	256.77
					584.80
					221 SACKS 584.8 CU.FT.
TAIL SLURRY					
CU.FT					
CSG SHOE (45')	1,500	TO	1,455	0.4340	19.53
COND/CSG ANN	-	TO	-	0.8908	0.00
ANN (OH)	1,500	TO	900	0.3131	187.88
ANN EXCESS				100%	187.88
					395.28
					314 SACKS 395 CU.FT.
					DISPLACEMENT 112.5 BBLs

PRODUCTION CASING:					
CASING:	4.500 " , 13.5#, P-110		0.0838 cu.ft./lin.ft		ID= 3.92
ANNULUS:	7.875 "(For Gauge Hole)		0.2278 cu.ft./lin.ft		
	8.921 " ID x 4-1/2" CASING ANNULUS		0.3236 cu.ft./lin.ft		
EXCESS:			15%		
CEMENT YIELD:	LEAD		2.63 cu.ft./sack	11.5 PPG	
	TAIL		1.49 cu.ft./sack	14.2 PPG	
TOTAL DEPTH			9,297 Feet		
TOP OF TAIL			4,200 Feet		
TOP OF LEAD			1,500 Feet		
			OPEN HOLE TOP		
			CASED HOLE TOP		
			SURFACE Feet		
LEAD SLURRY					
CU.FT					
ANN	4,200	TO	1,500	0.2278	614.93
	1,500	TO	0	0.3236	485.34
ANN EXCESS				15%	165.04
					1265.31
					481 SACKS 1265 CU.FT.
TAIL SLURRY					
CU.FT					
CSG	9,297	TO	9,252	0.0838	3.77
ANN	9,297	TO	4,200	0.2278	1160.86
ANN EXCESS				15%	174.13
					1338.76
					898 SACKS 1339 CU.FT.
					DISPLACEMENT 138.1 BBLs

QUESTAR WEAVER 3,000 psi BOP Minimum Requirements



3M CHOKE MANIFOLD EQUIPMENT — CONFIGURATION MAY VARY
 46812 Federal Register / Vol. 53, No. 223 / Friday, November 18, 1988 / Rules and Regulations





Construction

Tube: Black, oil and abrasion resistant HNBR for H₂S service.

Reinforcement: Multiple plies of bias laid textile cord for extra strength and flexibility. Spirally wound, high tensile, multiple strand cables to provide unsurpassed ruggedness and reliability to withstand sudden high pressure.

Cover: Special flame resistant red Neoprene (CR) with optional stainless steel armor.

Fittings: Integral connection flanged or hubbed.

Temperature: -40°F to 212°F.

Branding: NRP Choke & Kill Hose. MADE IN USA.

Specifications

NRP Part Number	Hose ID (in)	Hose OD (in)	Rated WP (psi)	Test Pressure (psi)	Minimum Bend Radius	Weight per Foot (lbs)
5035-32	2.00	4.45	5,000	10,000	44	12.9
5035-40	2.50	4.60	5,000	10,000	48	13.9
5035-48	3.00	5.10	5,000	10,000	52	16.1
5040-32	2.00	4.68	10,000	15,000	48	22.4
5040-40	2.50	5.34	10,000	15,000	52	27.4
5040-48	3.00	5.84	10,000	15,000	56	28.8

Specifications

NRP Rotary Number	NRP Vibrator Number	Hose ID (in)	Hose OD (in)	Grade	Rated WP (psi)	Test Pressure (psi)	Minimum Bend Radius	Weight per Foot (lbs)	Weight of 2 Cplgs (lbs)	Cplg Thread API (in)
5501-40	5502-40	2.50	4.45	C	4,000	8,000	36	12.9	54	3
5501-48	5502-48	3.00	4.95	C	4,000	8,000	48	14.9	74	4
5501-56	5502-56	3.50	5.45	C	4,000	8,000	54	16.6	94	4
5603-40	5604-40	2.50	4.60	D	5,000	10,000	36	13.6	54	3
5603-48	5604-48	3.00	5.10	D	5,000	10,000	48	15.5	74	4
5603-56	5604-56	3.50	5.75	D	5,000	10,000	54	18.6	94	4

