RE

PECEIVED JUN 1 0 2010

NMOCD ARTESIA

R-111-POTASH

CCLARIEN

orn 3160 3NMOCD ARTESIA	- WEDP -		FORM APPRO OMB No 1004-	VED 0137 , 2007 EA-579		
UNITED STATE	S		5 Lease Serial No	, 2001 E H -3 79		
DEPARTMENT OF THE	NMO2883A					
BUREAU OF LAND MA	6 If Indian, Allotee or Tri					
APPLICATION FOR PERMIT TO	DRILL OR REENTER		i maran, more or m			
Type of work DRILL REENT	IER		7 If Unit or CA Agreement	Name and No		
Type of Well Oil Well Gas Well Other	Single Zone Multi	ple Zone	8 Lease Name and Well No James Ranch Unit #			
Name of Operator BOPCO, L. P	(260737)		9 API Well No 30-015-	38114		
Address P. O Box 2760	3b Phone No (include area code)		10 Field and Pool, or Explora	itory		
Midland, TX 79702	432-683-2277		Quahada Ridge SE	(Delaware)		
Location of Well (Report tocation clearly and in accordance with a	any State requirements *)		11 Sec, TRM or Blk and	Survey or Area		
At surface SENW, UL F, 2310' FSL, 530' FE	L, Lat N32 333128, Long W103.8	27336	Sec 1, T23S, R30E, N	Mer NMP		
At proposed prod zone 660' FSL, 990'FWL, Sec 5, T23S,	R31E, Lt N32.328069, Lg W103.8	305217	500 1, 1255, 1650E, 1	111.55		
Distance in miles and direction from nearest town or post office* 20 miles northeast of Malaga, NM	4884		12 County or Parish Eddy County	13 State		
Distance from proposed*	16 No of acres in lease	17 Spacis	ng Unit dedicated to this well			
location to nearest property or lease line, ft (Also to nearest drig unit line, if any)	5002.5					
Distance from proposed location*	so to treatest ung unit line, it any)					
to nearest well drilling, completed, applied for, on this lease, ft	14,850 MD, 7669' TVD		000050			
Elevations (Show whether DF, KDB, RT, GL, etc.) 3294' GL	22 Approximate date work will sta 10/01/2010	nrt*	23 Estimated duration 30 days			
	24 Attachments					
following, completed in accordance with the requirements of Onsh	ore Oil and Gas Order No 1, shall be	ittached to :1	ns form			
Well plat certified by a registered surveyor A Drilling Plan A Surface Use Plan (if the location is on National Forest System SUPO shall be filed with the appropriate Forest Service Office)	Item 20 above) n Lands, the 5 Operator certifi	cation specific int	ons unless covered by an existing			
Signature Sulders	Name (Printed Typed) Annette Childers		Date 3	26.201		
e Regulatory Clerk						
proved by (Signature) SI TON'X J. HERREU	Name (Printed Typed)	V 15.	HPRRFU Date	5-25-10		
FOR STATE DIRECTOR	Office NM S	TATE	OFFICE			
plication approval does not wirrant or certify that the applicant ho duet operations thereon additions of approval, it any, are attached	lds legal or equitable title to those rigi	its in the sal	bject lease which would entitle t APPROVAL FOR	• •		
e 18 USC Section 1001 and Title 43 USC Section 1212, make it a tes any false, fictitious or fraudulent statements or representations at	crime for any person knowingly and s to any matter within its jurisdiction	wiltfally to r				
nstructions on page 2)						
were program.						

SEE ATTACHED FOR CONDITIONS OF APPROVAL

OCD CONDITION OF APPROVAL for Drilling Intent to drill ONLY --- CANNOT produce until the Non-Standard L∞ation has been approved by OCD Santa Fe office

KZ 8 /30/10

Carlsbad Controlled Water Basin

GENERAL REQUIREMENTS AND SPECIAL STIPULATIONS ATTACHED DISTRICT I 1825 N French Dr., Hobbs, NM 88240

DISTRICT II 1301 W Grand Avenue, Artesia, NM 88210 State of New Mexico Energy, Minerals and Natural Resources Department

OIL CONSERVATION DIVISION

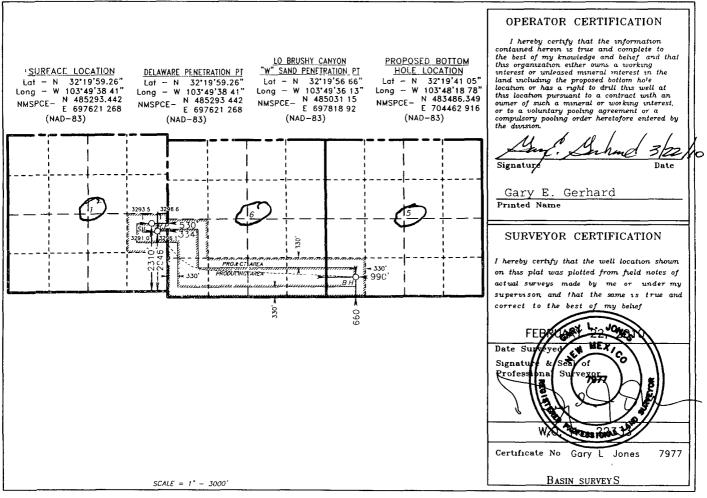
Form C-102 Revised October 15, 2009

Submit one copy to appropriate District Office

DISTRICT III

1220 South St. Francis Dr.

1000 Rio Brazos Rd, Aztec, NM 87410 Santa Fe; New Mexico 87505 DISTRICT IV 1220 S St Francis Dr., Santa Fe., NM 87505 ☐ AMENDED REPORT WELL LOCATION AND ACREAGE DEDICATION PLAT Pool Code 56443 API Number Pool Name 30-015-381 Quahada Ridge SE (Delaware) Property Name Well Number Property Code JAMES RANCH UNIT 109H 306407 OGRID Nº 26073 Operator Name Elevation 3294 BOPCO, L.P. Surface Location UL or lot No Section Township Range Lot Idn Feet from the North/South line Feet from the East/West line County 23 S 30 E 2310 SOUTH 530 **EAST EDDY** 1 Bottom Hole Location If Different From Surface Lot Idn Feet from the North/South line UL or lot No. Section Township Range Feet from the East/West line County 23 S 5 31 E 660 SOUTH 990 **WEST EDDY** Dedicated Acres Joint or Infill Consolidation Code Order No 280 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





Mosaic Potash Carisbad Inc PO Box 71 1361 Potash Mines Road Carisbad, NM 88220 www.mosaicco.com Tel 505-887-2871 Fax 505-887-0589

March 11, 2010

Mr. Brad Glasscock BOPCO, L.P. 201 Main Street Fort Worth, TX 76102-3131 (817) 339-7185



Re: JRU#121H, S17-23S-31E, 2450' FNL, 1500' FWL JRU#120H, S8-23S-31E, 290' FSL, 1990' FEL JRU#119H, S8-23S-31E, 1640' FSL, 1830' FEL JRU#115H, S5-23S-31E, 330' FNL, 120' FWL JRU#114H, S6-23S-31E, 270' FNL, 710' FEL JRU#111H, S8-23S-31E, 2000' FSL, 1750' FEL JRU#110H, S1-23S-30E, 2235' FSL, 530' FEL JRU#109H, S1-23S-30E, 2310' FSL, 530' FEL

Dear Mr Glasscock:

Per our discussions this week concerning 8 wells referenced above, all of these locations are either "behind" previous drilling or adjacent to WIPP and will not affect expected mining plans. Contingent upon all of these wells being Delaware only wells (nothing deeper), Mosaic has no objection to these locations.

As more information becomes available, our estimates of the extent of potash resources in any given area may change. Therefore, please consider a "no objection" or "objection" to these locations to be valid for one year only. Do not consider a "no objection offered" or an "objection offered" decision to be permanent.

Mosaic Potash submits this letter in lieu of the forms requested.

Sincerely,

Dan Morehouse

Mine Engineering Superintendent

Mis

Surface casing to be set into the Rustler below all fresh water sands

7" casing will be set at approximately 10,130' thru curve and turn and cemented in two stages with DV tool set at approximately 5000'. Cement will be circulated to surface

Production casing will be 4-1/2" run with Baker hydraulic packers. Top of 4-1/2" liner will be approximately 200' inside 7" casing (+/- 9880')

Drilling procedure, BOP diagram, and anticipated tops attached

This well is located within the R111 Potash area Potash waiver attached

The surface and bottom hole locations are both orthodox

BOPCO, LP, at PO. Box 2760, Midland, TX, 79702 is a subsidiary of BOPCO, LP, 201 Mail Street, Ft Worth, TX, 76102 Bond No. COB000050 (Nationwide)

EIGHT POINT DRILLING PROGRAM BOPCO, L.P.

NAME OF WELL: James Ranch Unit #109H

LEGAL DESCRIPTION - SURFACE: 2310' FSL, 530' FEL, Section 1, T23S, R30E, Eddy County, NM BHL 660' FSL, 990' FWL, Section 5, T23S, R31E, Eddy County, New Mexico

POINT 1: ESTIMATED FORMATION TOPS

(See No. 2 Below)

POINT 2: WATER, OIL, GAS AND/OR MINERAL BEARING FORMATIONS

Anticipated Formation Tops KB 3313' (estimated) GL 3294'

	ESTIMA	ATED		
,	TOP FR	OM KB	ESTIMATED	
FORMATION	TVD	MD	SUB-SEA TOP	BEARING
T/Rustler	208'	208'	+ 3,105'	Barren
T/Salt	661'	661'	+ 2,652'	Barren
B/Salt	3,661'	3,661'	- 348'	Barren
T/Lamar	3,897'	3,897'	- 584'	Barren
T/Ramsey	3,945'	3,945'	- 632'	Oil/Gas
T/Lwr Cherry Canyon	6,069'	6,069'	- 2,756'	Oil/Gas
KOP	7,041'	7,041'	- 3,728'	Oil/Gas
T/Brushy Canyon "U" Sand	7,209'	7,373'	- 3,896'	Oil/Gas
T/Lwr Brushy Canyon "8A"	7,413'	7,467'	- 4,098'	Oil/Gas
T/Lwr Brushy Canyon "W" Sand	7,495'	7,640'	- 4,182'	Oil/Gas
EOC	7,521'	7,951'	- 4,208'	Oil/Gas
TD Horizontal Hole	7,669'	14,850'	- 4,356'	Oil/Gas

POINT 3: CASING PROGRAM

TYPE	INTERVALS (MD)	Hole Size	PURPOSE	CONDITION
20"	0'- 60'	24"	Conductor	Contractor Discretion
13-3/8", 48#, H-40, 8rd, ST&C	0' - 651'	17-1/2"	Surface	New
9-5/8", 36#, J-55, 8rd. LT&C	0' - 3,917'	12-1/4"	Intermediate	New
7", 26#, N-80, 8rd, LT&C	0' - 10,130'	8/3/4"	Production	New ·
4-1/2", 11 6#, HCP-110, 8rd, LT&C	9,930' - 14,850'	6-1/8"	Production	New

CASING DESIGN SAFETY FACTORS:

TYPE	TENSION	COLLAPSE	BURST	
13-3/8", 48#, H-40, 8rd, ST&C	10 73	2 08	2 38	
9-5/8", 36#, J-55, 8rd, LT&C	2 41	1 24	1 08	
7", 26#, N-80, 8rd, LT&C	2 83	1 50	1 45	
4-1/2", 11 6#, HCP-110, 8rd, LT&C	3 13	2 11	2 13	

DESIGN CRITERIA AND CASING LOADING ASSUMPTIONS:

SURFACE CASING - (13-3/8")

Tension A 1 6 design factor utilizing the effects of buoyancy (9 2 ppg)

Collapse A 1 0 design factor with full internal evacuation and a collapse force equal to the mud gradient in which the

casing will be run (0.48 psi/ft) The effects of axial load on collapse will be considered

Burst A 1 3 design factor with a surface pressure equal to the fracture gradient at setting depth less a gas gradient to the surface Internal burst force at the shoe will be fracture pressure a that depth. Backup

pressure will be formation pore pressure. In all cases a conservative fracture pressure will be used such that it represents the upper limit of potential fracture resistance up to a 1.0 psi/ft gradient. The effects of

tension on burst will not be utilized

PROTECTIVE CASING - (9-5/8")

Tension A 1 6 design factor utilizing the effects of buoyancy (10 ppg)

Collapse A 1 0 design factor with full internal evacuation and a collapse force equal to the mud gradient in which the

casing will be run (0.52 psi/ft). The effects of axial load on collapse will be considered

In the case of development drilling, collapse design should be analyzed using internal evacuation equal to 1/3 the proposed total depth of the well. This criterion will be used when there is absolutely no potential of

the protective string being used as a production casing string

Burst A 1.0 surface design factor and a 1.3 downhole design factor with a surface pressure equivalent to the

fracture gradient at setting depth less a gas gradient to the surface. Internal burst force at the shoe will be fracture pressure at that depth. Back pressure will be formation pore pressure. In all cases a conservative fracture pressure will be used such that it represents the upper limit of potential fracture resistance up to a

1 0 psi/ft gradient

2ND INTERMEDIATE CASING - (7")

Tension A 1 6 design factor utilizing the effects of buoyancy (9 0 ppg)

Collapse A 1 0 design factor with full internal evacuation and a collapse force equal to the mud gradient in which the

casing will be run (0 48 psi/ft) The effects of axial load on collapse will be considered

Burst A 1 25 design factor with anticipated maximum tubing pressure (5000 psig) on top of the maximum

anticipated packer fluid gradient (0 433 psi/ft) Backup on production strings will be formation pore

pressure (0 433 psi/ft) The effects of tension on burst will not be utilized

PRODUCTION CASING - (4-1/2")

Tension A 1 6 design factor utilizing the effects of buoyancy (9 0 ppg)

Collapse A 1 0 design factor with full internal evacuation and a collapse force equal to the mud gradient in which the

casing will be run (0.48 psi/ft). The effects of axial load on collapse will be considered.

Burst A 1 25 design factor with anticipated maximum tubing pressure (5000 psig) on top of the maximum

anticipated packer fluid gradient. (0 433 psi/ft) Backup on production strings will be formation pore

pressure (0 433 psi/ft) The effects of tension on burst will not be utilized

POINT 4: PRESSURE CONTROL EQUIPMENT (SEE ATTACHED DIAGRAM)

The blowout preventer equipment will be as shown in Diagram #2 and will consist of a double ram type preventer (5000 psi WP) and a bag type (Hydril) annular preventer (5000 psi WP). The same BOPE will be installed on the surface casinghead and on all subsequent casing strings. The BOP stack, chokes, kill lines, upper and lower kelly cocks, inside BOP, choke manifold when installed on the surface casinghead will be hydro-tested to 200 psig & 2000 psig by a independent tester. The BOP stack, chokes, kill lines, upper and lower kelly cocks, inside BOP, choke manifold, when rigged up on the intermediate casing spool will be tested to 3000 psig by independent tester. (hydril to 2500 psig) in addition to the high pressure test, a low pressure (250 psig) test will be required.

These tests will be performed.

- a) Upon installation
- b) After any component changes
- c) Fifteen days after a previous test
- d) As required by well conditions

A function test to insure that the preventers are operating correctly will be performed on each trip

POINT 5: MUD PROGRAM

DEPTH	MUD TYPE	WEIGHT	_FV	PV	YP	FL	<u>Ph</u>
0' - 651'	FW Spud Mud	85-92	38-70	NC	NC	NC	10 0
651' - 3,917'	Brine Water	98-102	28-30	NC	NC	NC	95-105
3,917' - 10,130'	FW/Gel	87-90	28-36	NC	NC	NC	9 5 – 10 0
10,130' - 14,850'	FW/Gel/Starch	87-90	28-36	NC	NC	<20	95-100

NOTE: May increase vis for logging purposes only.

POINT 6: TECHNICAL STAGES OF OPERATION

A) TESTING

None anticipated

B) LOGGING

Run #1. GR with MWD during drilling of build and horizontal portions of 8-3/4" hole

Run #2 Drill pipe conveyed GR-NL-Density-Caliper TD thru curve

Run #3 GR/CNL from 9-5/8" casing shoe to surface will be run as part of initial completion procedure

C) CONVENTIONAL CORING

None anticipated

D) CEMENT

INTERVAL SURFACE:	AMOUNT SXS	FT OF FILL	TYPE	GALS/SX	<u>PPG</u>	FT ³ /SX
Lead 0 - 351' (100% excess Circ to surface)	280	351	Class "C" + 4% Extender + 2% CaCl ₂	9 15	13 50	1 74
Tail 351' - 651' (100% excess)	335	300	Class "C"	6 35	14 80	1 34
INTERMEDIATE: Lead 0' - 3417' (100% excess Circ to surface)	1050	3417	35/65 Poz + 5% NaCl + 0 20% Anti Foam + 6% Extender + 0 125 pps Lost circulation material	11 44	12 60	2 08
Tail 3417' - 3917' (100% excess)	300	500	Class "C"	6 36	14 80	1 33
2 nd INTERMEDIATE Stage 1	≣:					
Lead 5000' - 10,13 (50% excess)	30' 550	5130	LiteCrete + 3 pps Extende + 0 20% Anti Foam + 0 30 Retarder + 0 30% Dispers	%	10 20	2 18
DV Tool @ 5,000'						
Stage 2 ⁻ Lead 0' - 4900' (50% excess Circ to surface)	575	4900	35/65 Poz + 5% NaCl + 0 60% Extender + 0.20% Antı Foam	10 92	12 60	1.98
Tail 4900' - 5000' (50% excess)	50	100	Class "C" + 0 20% Retarde	er 635	14 80	1 33

E) DIRECTIONAL DRILLING

BOPCO, L P plans to drill out the 9-5/8" intermediate casing with an 8-3/4" bit to a TVD of approximately 7282' At this depth an 8-3/4" directional hole will be initiated at an azimuth of 320°, building angle at 12 00°/100' to a max of 90° at a TVD of 8553' (MD 7760') At measured depth of 8553' the azimuth will be turned at rate of 4°/100' to 269 5° and this azimuth continued to TD of 10,065' At this depth 7" casing will be installed with DV Tool at 5000' and cemented with cement circulated to the surface A 6-1/8" open hole will be drilled thru the lateral to a MD of 16,586' (TVD 7653'). 4-1/2" casing will be installed in the lateral using Baker Hydraulic packers to isolated pay intervals in the "W" Sand

POINT 7: ANTICIPATED RESERVOIR CONDITIONS

Normal pressures are anticipated throughout Delaware section. A BHP of 3581 psi (max) or MWE of 8.4 ppg is expected. Lost circulation may exist in the Delaware Section from 4047'-7760' TVD. No H_2S is anticipated

POINT 8: OTHER PERTINENT INFORMATION

A) Auxiliary Equipment

Upper and lower kelly cocks Full opening stab in valve on the rig floor

B) Anticipated Starting Date

Est. Spud Date 10/1/10

30 days drilling operations

14 days completion operations

Gary Gerhard

GEG/mac March 19, 2010 BOPCO, L.P.

Location Eddy County, NM Field JRU Project Facility JRU No 109H Slot No 109H SHL Well No 109H Wellbore No 109H PWB

Plot reterence wellpath is Presm_2	
True vertical depths are referenced to Rig on No. 109H (RT)	Gnd System: NA083 / TM New Mexico State Planes: Eastern Zone (3001): US feet
Measured depths are referenced to Rig on No. 109H (RT)	North Reference Grid north
Rig on No. 109H (RT) to Mean Sea Level 3313 feet	Scale True distance
Mean Sea Level to Mud line (Facility: JRU No. 109H). 3294 (ee)	Depths are in feet
Coordinates are in feet referenced to Surface Location	Created by: Victor Hernandez on 3/12/2010

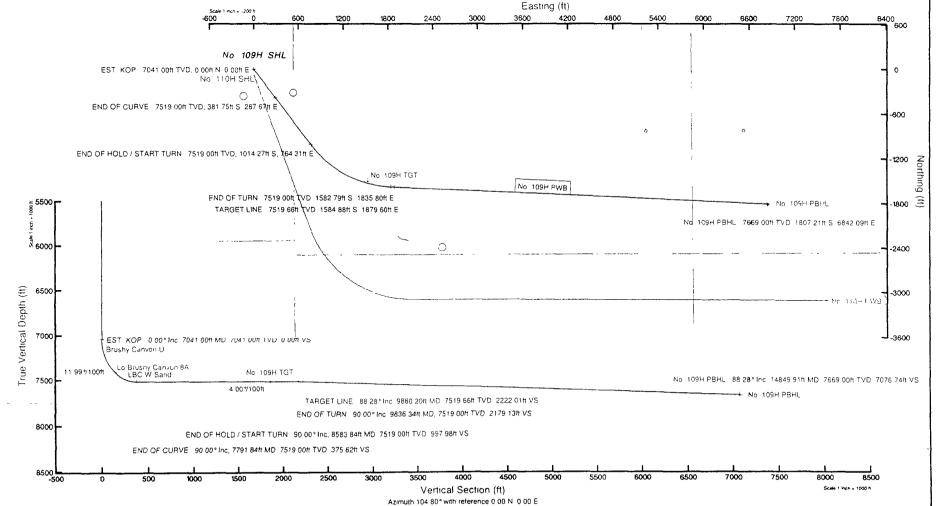




Well Profile Data								
Design Comment	MD (ft)	Inc (7	Az (9	TVD (#)	Local N (n)	Local E (ft)	DLS (7100ff)	VS (ff)
Tie On	0 00	0.000	143 000	0.00	0.00	0.00	0.00	0.00
EST KOP	7041 00	0.000	143 noo	/04100	0.00	0.00	0.00	0.00
END OF CURVE	7791 84	90 000	143 000	7519 00	381 75	287 67	11 99	375 62
END OF HOLD / START TURN	8583 84	90 000	143 000	7519 00	1014 27	764 31	0 00	997 98
END OF TURN	9836 34	90 000	92 900	7519 00	1582 79	1835 80	4 00	2179 1
TARGET LINE	9880 20	88 278	92 565	7519 66	1584 88	1879 60	4 00	2222 0
No 109H PBHL	14849 91	88 278	92 565	7669 00	1807 21	6842 09	0.00	7076 7



BGGM (1945 to 2011 0) [Dip 60.29 Februaries 4 in 7
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Planned Wellpath Report Prelim_2 Page 5 of 5

BAKER HUGHES INTEQ

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Operator	BOPCO, L.P.	Section of the sectio			Slot	No.	109H SHL	THE PART OF THE PA		
Area	Eddy County, NM	COLUMN TO THE RESIDENCE AND A COLUMN AND A SECURE AND A S	Total Name on All Woman and Manager Street, on		Well	No.	109H		AND AND AND ASSESSMENT OF THE PARTY OF THE P	
Field	JRU Project				Wellbo	re No	109H PWB			
Facility	JRU No. 109H	Annual Control of the						to a desired fit of administration and definitions in a services along about an extreme	W W THE LOCAL SECTION	
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TARGET	rs				w * -		-		-	
тe		MD [ft]	TVD [ft]	North [ft]	East [ft]	Grid East [srv ft]	Grid North [srv ft]	Latitude	Longitude	Shape
No. 109H	TGT		7519 00	-1506 14	1526 43	699147.60	483787 40	32°19'44 289"N	103°49'20 709"W	point
1) No. 109	H PBHL	14849 91	7669 00	-1807 21	6842 09	704462.92	483486.35	32°19'41.055"N;	103°48'18 778"W	point
		E. E. Service and the second contraction of the second contraction of the second contract of the second contract of	aniamananan mananan mananan mananan manan ma	and the second s		more a municipal de comunicación, que que a comunicación de comunicación de comunicación de comunicación de co	editykenter Transporter Sym. iz "Selber ur neurostron en enes cyclother Transporter programmer programmer.	enciamen standiguele de la gran (es s'autre es par de la glanca (super la primer de la participa de la partici	· · · · · · · · · · · · · · · · · · ·	e-tropics independent on their
SURVEY	PROGRAM Ref Wellbor	e: No. 109H PWB	Ref We	llpath: Preli	m_2					
Start	MD End MD	·	Positional Unc	ertainty Model			Log Name/Com	ument	Wellbore	

	SURVEY PROGR		o. 109H PWB Ref Wellpath: Prelim_2			
Ì	Start MD	End MD	Positional Uncertainty Model		Log Name/Comment	Wellbore
-	[ft]	[ft]				
	19 00	14849 91 Na	vıTrak (Standard)	1	TO THE PART OF THE	No 109H PWB



Planned Wellpath Report Prelim_2 Page 4 of 5



Nagana	NCE WELLPATH IDENTIFICATION	<u>Lia il Martingo di Arte di A</u>	
Operator	BOPCO, L.P.	Slot	No. 109H SHL
Area	Eddy County, NM	Well	No. 109H
Field	JRU Project	Wellbore	No. 109H PWB
Facility	JRU No. 109H		

MD	Inclination	Azımuth	TVD	Vert Sect	North	East	Grid East	Grid North	Latitude	Longitude	DLS Comments
[ft]	[°]	[°]	[ft]	[ft]	[ft]	[ft]	[srv ft]	[srv ft]			[°/100ft]
12241 00†	88 278	92 565	7590 60	4528 19 ,	-1690 50	4236 97	701857 96	483603 06	32°19'42 336"N (103°48'49 131"W	0 00
12341 007	88 278	92 565	7593 61	4625 88	-1694 97	4336 82	701957 81	483598 58	32°19'42 287"N	103°48'47 968"W	0.00
12441 00†	88 278	92 565	7596 61	4723 56	-1699 44	4436 68	702057_66	483594 11	32°19'42 238"N	103°48'46 804"W	0 00 ,
12541 00+	88 278	92 565	7599 62	4821 25	-1703 92	4536 53	702157 51 '	483589 64	32°19'42 189 N	103°48'45 641"W	0 00
12641.001	88.278	192.565	7602.62	4918.93	a1708.39	<u>,</u>	7022 <u>5</u> 7.35		32°,19'42.140"N	10334844. 4 77°W	140, 26, 0,00 miles 1 10.4 10
12741 00†	88 278	92 565	7605 63	5016 62	-1712 86	4736 24	702357 20	483580 69	32°19'42 090"N	103°48'43 314"W	0 00 ;
12841 00†	88 278	92 565	7608 63 :	5114 31	-1717 34	4836 10	702457 05	483576 22	32°19'42 041"N	103°48'42 151"W	0 00
12941 00†	88 278	92 565	7611 64	5211 99	-1721 81	4935 95	702556 90	483571 74	32°19'41 992"N	103°48 40 987"W	0 00
13041 00±	88 278	92 565	7614 64	5309 68	-1726 29 '	5035.81.	702656 75	483567 27	32°19'41 943"N	103°48'39 824"\V :	0 00
13141,001	88.278	92:565	7617.65	\$407.37		5135.66 r.	702756.60	483562,80	32°19'41.894"N ;	;;;;,,103°,48',38 ; 660',\W,	0,00 gt were
13241 00†	88 278	92 565	7620 65	5505 05	-1735 23	5235 52	702856 44	483558 32	32°19'41 845"N	103°48'37 4 97"W	0.00
13341 00†	88 278	92 565	7623 66	5602 74	-1739 71	5335 37	702956 29	483553 85	32°19'41 796' N	103°48 36 333"W	0.00
13441 00†	88 278	92 565	7626 66	5700 42	-1744 18	5435 23	703056 14	483549 38	32°19 41 747"N	103°48'35 170"W	0.00
13541 00†	88 278	92 565	7629 67	5798 11	-1748 65	5535 08	703155 99	483544 90	32°19'41 698 'N	103°48 34 006"W	0 00
13641.00t	588 278	92.565	7632,67	5895.80	1753.13		703255.84	483540.43 :	32°19'41.6497N	103948152.843"W	S. 10, 4, 0,00 B. S. L. 10 B.
13741 00†	88 278	92 565	7635 68	5993 48	-1757 60	5734 79	703355 68	483535 96	32°19'41 600"N	103°48'31 680"W	0 00 1
13841 00†	88 278	92 565	7638 68	6091 17	-1762 07	5834 64 1	703455 53	483531 48	32°19'41 550"N	103°48′30 516″W	0 00
13941 00†	88 278	92 565	7641 69	6188 85	-1766 55	5934 50 [703555 38	483527 01	32°19'41 501"N	103°48'29 353"W	0 00
14041 001	88 278	92 565 ¹	7644 69	6286 54	-1771 02	6034 35	703655 23	483522 53	32°19'41 452"N	103°48'28 189"W	0.00
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Planned Wellpath Report Prelim_2 Page 3 of 5

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Operator	BOPCO, L.P.	Slot	No. 109H SHL
Area	Eddy County, NM	Well	No. 109H
Field	JRU Project	Wellbore	No. 109H PWB
Facility	JRU No. 109H		,

WELLPATI	H DAŤA (88	stations)	† = inte	rpolated/ex	trapolated	station	* -			-	*
MD	Inclination	Azimuth	TVD ;	Vert Sect	North	East	Grid East	Grid North	Latitude	Longitude	DLS Comments
[ft] 9441 00†	90 000	108 714	7519 00 ¹	[ft] 1786 00	[ft] -1508 90	[ft] 1448 70	[srv ft] ; 699069 87	[srv ft] 483784 64	32°19'44 265"N	103°49'21 615"W	[°/100ft]
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9641 00†	90 000	100 714	7519 00 .	1985 83	-1559 66	1641 98	699263 15	483733 89	32°19'43 754"N	103°49'19 365"W	400
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10441 00†	88 278	92 565	7536 51 :	2769 84	-1609 97	2439 58 1	700060 69	483683 58	32°19'43 218"N	103°49'10 073 W	0.00
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10841 00†	88 278	92 565	7548 53	3160 58	-1627 86	2839 00	700460 09	483665 68	32°19'43 022"N	103°49'05 419"W	0 00
10941 007!	88 278	92 565	7551 54	3258 27 .	-1632 34	2938 86 i	700559 94	483661 21	32°19'42 973"N	103°49'04 256''W	0.00
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11941 00+	88 278	92 565	7581 59	4235 13	-1677 07	3937 41	701558 42	483616 48	32°19'42 483"N	103°48'52 621"W	0.00
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BAKER HUGHES INTEQ

(१ववववर्गक	NEE WELLPATH IDENTIFICATION		
Operator	BOPCO, L.P.	Slot	No. 109H SHL
Area	Eddy County, NM	Well	No. 109H
Field	JRU Project	Wellbore	No. 109H PWB
Facility	JRU No. 109H	- CONTROL - TOTAL - TOTAL - AND ALL AN	

WELLPA	TH DATA	(88 stati	ons) †=	= interpol	ated/extra	polated st	ation	*** ** *	the state with assessment that the training		
MD	Inclination	Azimuth	TVD	Vert Sect	North	East	Grid East	Grid North	Latitude	Longitude	DLS Comments
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7741 00T	i	143 000	7516 30	335 74	-341 22	257 13	697878 38	484952 24	32°19'55 875"N '	103°49'35 437 W	والمستراب المستراب ال
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Planned Wellpath Report Prelim_2 Page 1 of 5



CHECKEY!	NGE MEDITATE DENTITIES OF THE SECOND	<u> Parkis di Tangang Kabupat</u>	
Operator	BOPCO, L.P.	Slot	No. 109H SHL
Area	Eddy County, NM	Well	No. 109H
Field	JRU Project	Wellbore	No. 109H PWB
Facility	JRU No. 109H		

REPORTSETURINGO	RMATION		
njection System	NAD83 / TM New Mexico State Planes, Eastern Zone (3001), US feet	Software System	WellArchitect® 2.0
. Jrth Reference	Grid	User	Victor Hernandez
Scale	0.999937	Report Generated	;3/12/2010 at 11:00:56 AM
Convergence at slot	0.27° East	Database/Source file	WA_Midland/No109H_PWB.xml

WEST-PARTIEOCAVION Local coordinates			Grid coordinates Geographic coordinates			
	North[ft]	East[ft]	Easting[USft]	Northing[USft]	Latitude	Longitude
Slot Location	0.00	0.00	697621 27	485293 44	32°19'59 264"N	103°49'38 415"W
Facility Reference Pt			697621.27	485293.44	32°19'59 264"N	103°49'38'415"W
Field Reference Pt			697621.65	485218.03	32°19'58 517"N	103°49'38 415"W

WANTED WATER			
Calculation method	Minimum curvature	Rig on No 109H (RT) to GL	19.00ft
Horizontal Reference Pt	Surface Location	Rig on No 109H (RT) to Mean Sea Level	3313.00ft
/ertical Reference Pt	Rig on No. 109H (RT)	GL to Mud Line (Facility)	0.00ft
MD Reference Pt	Rig on No. 109H (RT)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	[104.80°

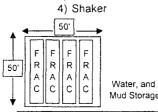


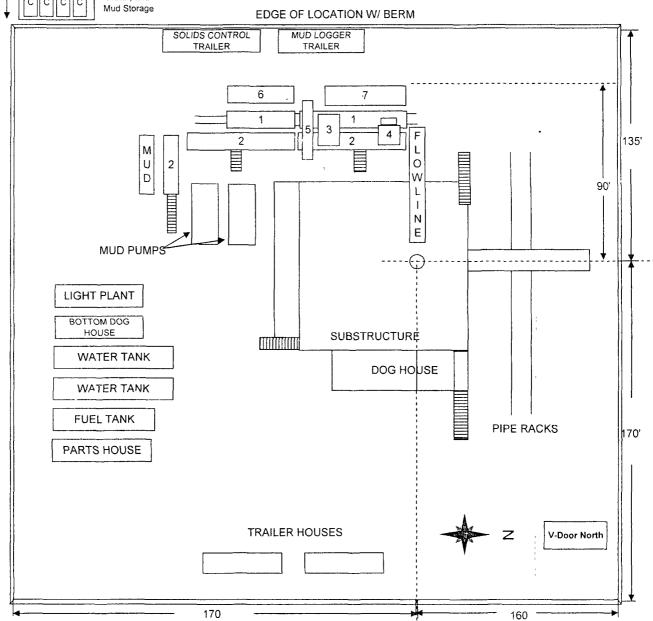
BOPCO, L.P James Ranch Unit #109H Sec 1, T23S-R30E Eddy County, NM

RIG LAYOUT SCHEMATIC INCLUSIVE OF CLOSED-LOOP DESIGN PLAN

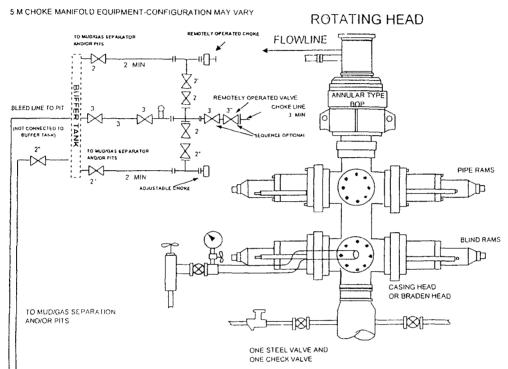
Solids Control Equipment Legend 1) Roll Off Bin 5) Centrifuge

- 2) Steel Tank
- 6) Dewatering Unit
- 3) Mud Cleaner
- 7) Catch Tank





BOPCO, L. P. 5-M WP BOPE WITH 5-M WP ANNULAR



THE FOLLOWING CONSTITUTE MINIMUM BLOWOUT PREVENTER REQUIREMENTS

- A One double gate Blowout preventer with lower pipe rams and upper blind rams, all hydraulically controlled
- B. Opening on preventers between rams to be flanged, studded or clamped and at least two inches in diameter.
- C. All connections from operating manifold to preventers to be all steel hose or tube a mininum of one inch in diameter.
- D The available closing pressure shall be at least 15% in excess of that required with suffficient volume to operate (close, open, and re-close) the preventers
- E All connections to and from preventers to have a pressure rating equivalent to that of the BOPs
- F Manual controls to be installed before drilling cement plug
- G Valve to control flow through drill pipe to be located on rig floor
- H Chokes must be adjustable. Choke spool may be used between rams

DIAGRAM 2

TO STEEL MUD TANKS

BLEED LINE TO FLARE PIT (NOT CONNECTED TO BUFFER TANK

MULTI-POINT SURFACE USE PLAN

NAME OF WELL: James Ranch Unit #109H

LEGAL DESCRIPTION - SURFACE: 2310' FSL, 530' FEL, Section 1, T23S, R30E, Eddy County, NM BHL 660' FSL, 990' FWL, Section 5, T23S, R31E, Eddy County, New Mexico.

POINT 1: EXISTING ROADS

A) Proposed Well Site Location

See Exhibit "A"

B) Existing Roads

From the junction of State Hwy 128 and Twin Wells, go east 0.1 miles to lease road. On lease road go northeast 0.5 miles to lease road, on lease road go west 0.1 miles to proposed location.

C) Existing Road Maintenance or Improvement Plan.

See Exhibit "B"

POINT 2: NEW PLANNED ACCESS ROUTE

A) Route Location

Will use existing lease road and pad (See Exhibit "B") serving James Ranch Unit #110H

B) Width

12' wide

C) Maximum Grade

Grade to match existing topography or as per BLM requirements

D) Turnout Ditches

As required by BLM stipulations

E) Culverts, Cattle Guards, and Surfacing Equipment

If required, culverts and cattle guards will be set per BLM Specs

POINT 3: LOCATION OF EXISTING WELLS

Exhibits "C" indicates existing wells within the surrounding area.

A) Existing facilities within one mile owned or controlled by lessee/operator

The BOPCO operated JRU #36 Battery is located in the SW quarter of NE quarter of Sec 1, T23S, R30E

B) New Facilities in the Event of Production.

New production facilities will not be installed at the new location. Additional separators and heater/treaters will be added as needed at the James Ranch Unit #36 Battery. 2-7/8" steel flow line will be laid on top of ground and will follow existing roads to JRU #36 Battery. (See Exhibit "E") Power lines will be extended from the James Ranch Unit #110H pad (75' south) to the James Ranch Unit #109H. New right-of-way will not be needed.

C) Rehabilitation of Disturbed Areas Unnecessary for Production

Following the construction, those access areas required for continued production will be graded to provide drainage and minimize erosion. The areas unnecessary for use will be graded to blend in with the surrounding topography (see Point 10).

POINT 5: LOCATION AND TYPE OF WATER SUPPLY

A) Location and Type of Water Supply

Fresh water will be hauled from Johnson Station 50 miles east of Carlsbad, New Mexico or other commercial facilities. Brine water will be hauled from commercial facilities.

B) Water Transportation System

Water hauling to the location will be over the existing and proposed roads

POINT 6: SOURCE OF CONSTRUCTION MATERIALS

A) Materials

On-site caliche will be used. If this is not sufficient, caliche will be hauled from a BLM approved pit.

B) Land Ownership

Federally Owned

C) Materials Foreign to the Site

No construction materials foreign to this area are anticipated for this drill site.

D) Access Roads

See Exhibits "B"

Page 3

A) Cuttings – Closed Loop System

Cuttings will be contained in the steel pits and will be hauled to an approved disposal facility

B) Drilling Fluids – Closed Loop System

Drilling fluids will be contained in the steel pits, frac tanks, and will be disposed of at licensed disposal facilities

C) Produced Fluids

Water production will be contained in the steel pits

Hydrocarbon fluid or other fluids that may be produced during testing will be retained in test tanks

D) Sewage

Current laws and regulations pertaining to the disposal of human waste will be complied with

E) Garbage

Portable containers will be utilized for garbage disposal during the drilling of this well

F) Cleanup of Well Site

Upon release of the drilling rig, the surface of the drilling pad will be graded to accommodate a completion rig if electric log analysis indicate potential productive zones. Reasonable cleanup will be performed prior to the final restoration of the site

POINT 8: ANCILLARY FACILITIES

None required.

POINT 9: WELL SITE LAYOUT

A) Rig Orientation and Layout

Exhibit "D" shows the dimensions of the well pad and closed loop system, and the location of major rig components. Only minor leveling of the well site will be required. No significant cuts or fills will be necessary.

B) Locations of closed loop system and access road

See Exhibits "D"

C) Lining of the Pits

No reserve pit. Closed loop system

A) Reserve Pit Cleanup - Not applicable (see Point 9C above)

The pits will be fenced immediately after construction and shall be maintained until they are backfilled. Previous to backfill operations, any hydrocarbon material on the pits' surfaces shall be removed. The fluids and solids contained in the pits shall be backfilled with soil excavated from the site and soil adjacent to the reserve pits. The restored surface of the pits shall be contoured to prevent impoundment of surface water flow. Water-bars will be constructed as needed to prevent excessive erosion. Topsoil, as available, shall be placed over the restored surface in a uniform layer. The area will be seeded according to the Bureau of Land Management stipulations during the appropriate season following restoration.

B) Restoration Plans - Production Developed

In addition, those areas not required for production will be graded to blend with the surrounding topography. Topsoil, as available, will be placed upon those areas and seeded. The portion of the site required for production will be graded to minimize erosion and provide access during inclement conditions. Following depletion and abandonment of the site, restoration procedures will be those that follow under Item C.

C) Restoration Plans - No Production Developed

With no production developed, the entire surface disturbed by construction of the well site will be restored. The site will be contoured to blend with the surrounding topography and provide drainage of surface water. The topsoil, as available, shall be replaced in a uniform layer and seeded according to the Bureau of Land Management's stipulations.

D) Rehabilitation's Timetable

Upon completion of drilling operations, the initial cleanup of the site will be performed as soon as weather and site conditions allow economic execution of the work.

POINT 11: OTHER INFORMATION

A) Terrain

Relatively flat.

B) Soil

Caliche and sand

C) Vegetation

Sparse, primarily grasses and mesquite with very little grass

D) Surface Use

Primarily grazing

E) Surface Water

There are no ponds, lakes, streams or rivers within several miles of the wellsite

F) Water Wells

The closest known fresh water wells are located in Sec 5 and Sec 6, T23S, R31E.

G) Residences and Buildings

The Mills ranch house is located approximately 3/8 of a mile east of this location.

H) Historical Sites

None observed

I) Archeological Resources

This location, road, flowline, and power lines are covered under the MOA. Checks for location, flowline, power line, and road fees are attached (\$1339 for location & road, \$1854 for power line and flowlines). Any location or construction conflicts will be resolved before construction begins.

J) Surface Ownership

The surface is owned by Federal government

- K) Well signs will be posted at the drilling site.
- L) Open Pits None used Closed loop system.

POINT 12: OPERATOR'S FIELD REPRESENTATIVE

(Field personnel responsible for compliance with development plan for surface use)

DRILLING William R Dannels Box 2760 Midland, Texas 79702

(432) 683-2277

PRODUCTION
Dean Clemmer
3104 East Green Street
Carlsbad, New Mexico 88220

(505) 887-7329

Carlos Cruz Box 2760

Midland, Texas 79702 (432) 683-2277

OPERATOR CERTIFICATION

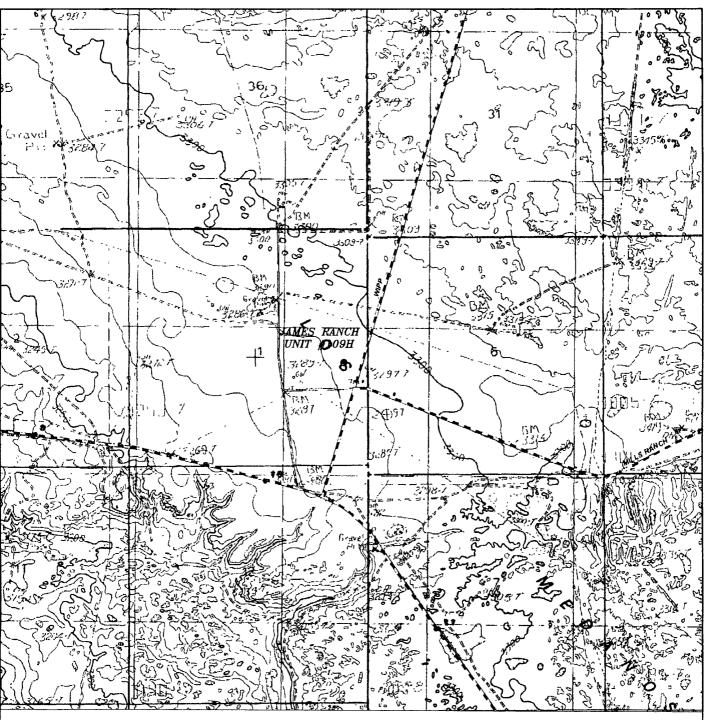
3/22/10

I hereby certify that I, or persons under my direct supervision have inspected the proposed drill site and access route, that I am familiar with the conditions which currently exist; that the statements made in the plan are, to the best of my knowledge, true and correct, and that the work associated with operations proposed herein will be performed by BOPCO, LP and it's contractors and subcontractors in conformity with this plan and the terms and conditions under which it is approved. This statement is subject to the provisions of 18 U.S.C. 1001 for the filing of a false statement.

Date

Sary Gerhard

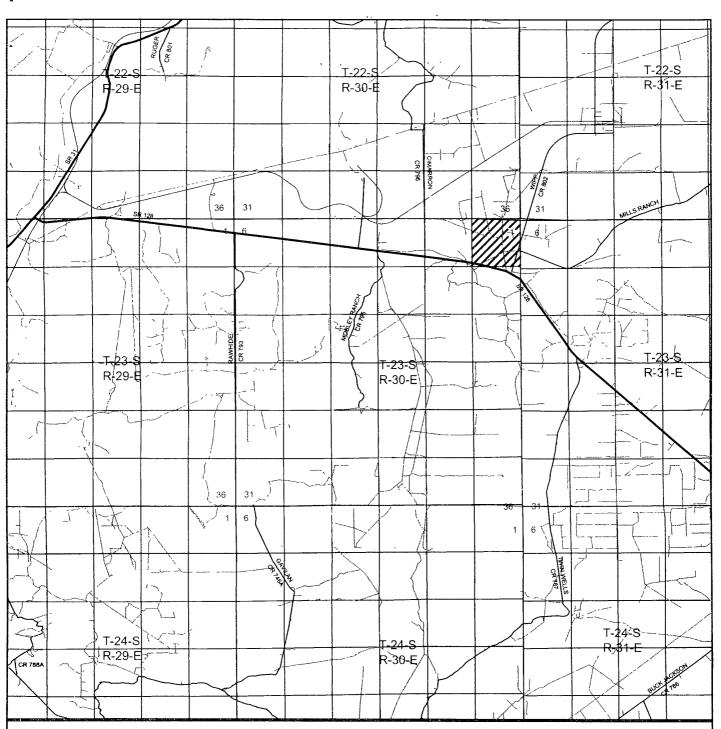
SECTION 1, TOWNSHIP 23 SOUTH, RANGE 30 EAST, N.M.P.M., NEW MEXICO. EDDY COUNTY, 600' 150° NORTH OFF SET 3294 5 O BOPCO, L.P JAMES RANCH UNIT #109H ELEV. - 3294' |/ 150' EAST 150' WEST OFF SET [] New Pour lines 3292 9 Lot - N 32'19'59 26" Long - W 103'49'38 41" NMSPCE- N 485293 442 E 697621 268 (NAD-83) PROPOSED O 150' SOUTH OFF SET 3293 4 3291.0 3296 1 ∯-JRU 38 11 11 11 Π 200 200 400 FEET HHHHH SCALE: 1" = 200' Directions to Location BOPCO, L.P. FROM THE JUNCTION OF STATE HWY 128 AND WIPP. GO NORTHEASTERLY ON WIPP 0.5 MILES TO LEASE ROAD, ONE LEASE ROAD GO WEST 0.1 MILES TO WELL PAD AND PROPOSED LOCATION REF JAMES RANCH UNIT #109H / WELL PAD TOPO THE JAMES RANCH UNIT #109H LOCATED 2310' FROM THE SOUTH LINE AND 530' FROM THE EAST LINE OF SECTION 1, TOWNSHIP 23 SOUTH, RANGE 30 EAST, BASIN SURVEYS PO BOX 1786-HOBBS, NEW MEXICO W O Number 22333 N.M.P.M., EDDY COUNTY, NEW MEXICO. Drawn By J. SMALL 02-22-2010 Disk JMS 22333 Survey Date 02-22-2010 Sheet Sheets





P.O Box 1786 1120 N. West County Rd. Hobbs, New Mexico 88241 (575) 393-7316 - Office (575) 392-2206 - Fax basinsurveys.com

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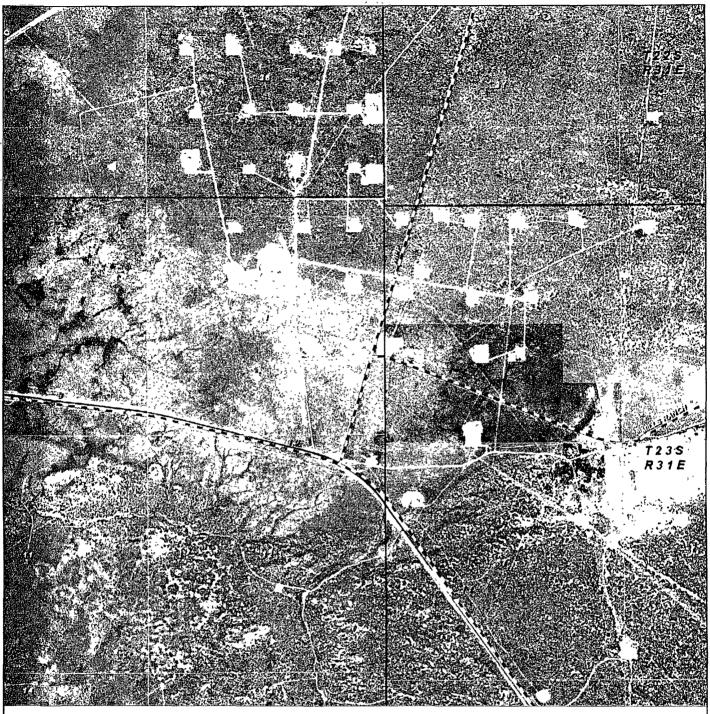




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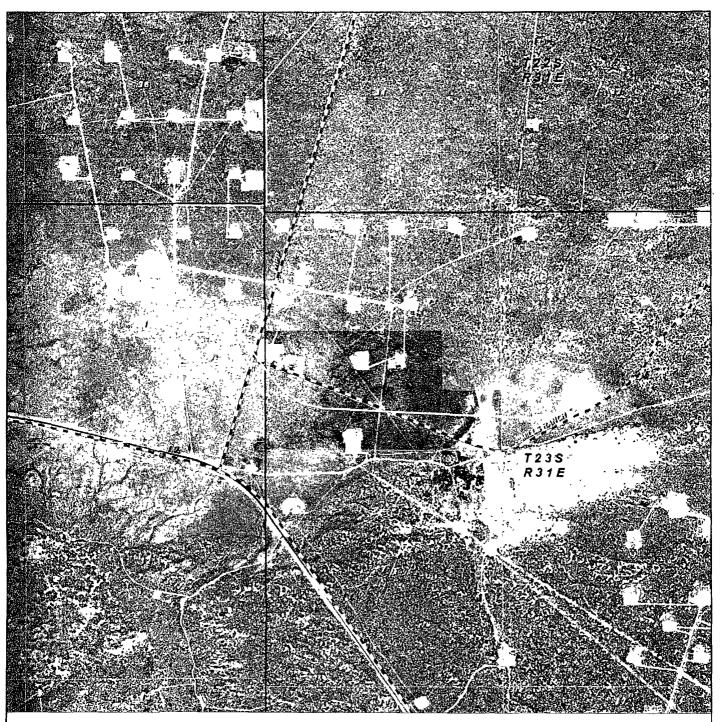




P O Box 1786 1120 N West County Rd Hobbs, New Mexico 88241 (575) 393—7316 — Office (575) 392—2206 — Fax basinsurveys com W O Number JMS 22333

Scale 1" = 2000'

YELLOW TINT — USA LAND BLUE TINT — STATE LAND NATURAL COLOR — FEE LAND





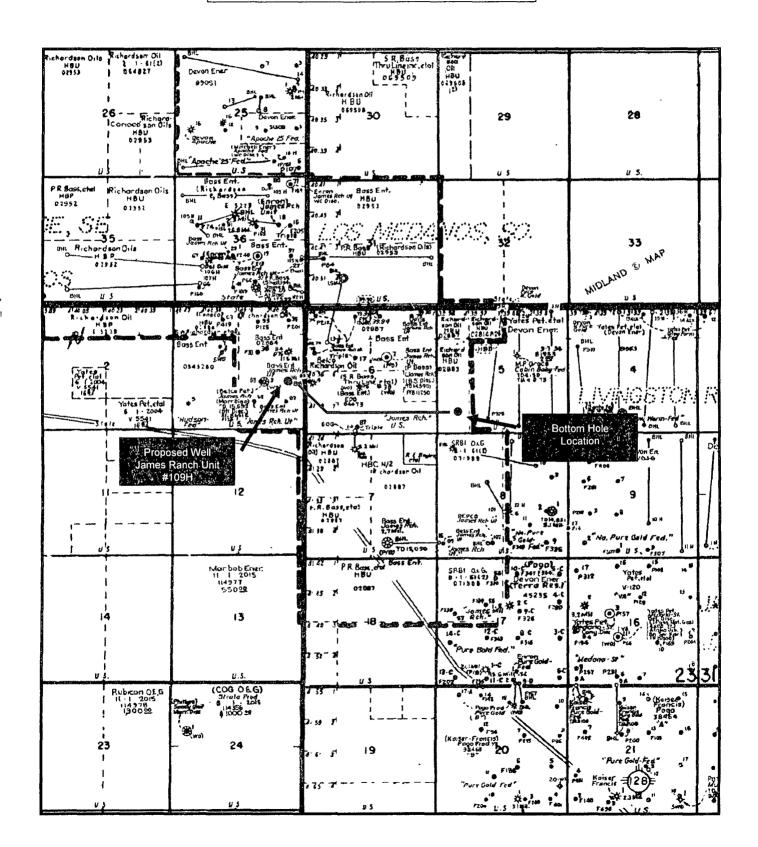
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Scale 1' = 2000

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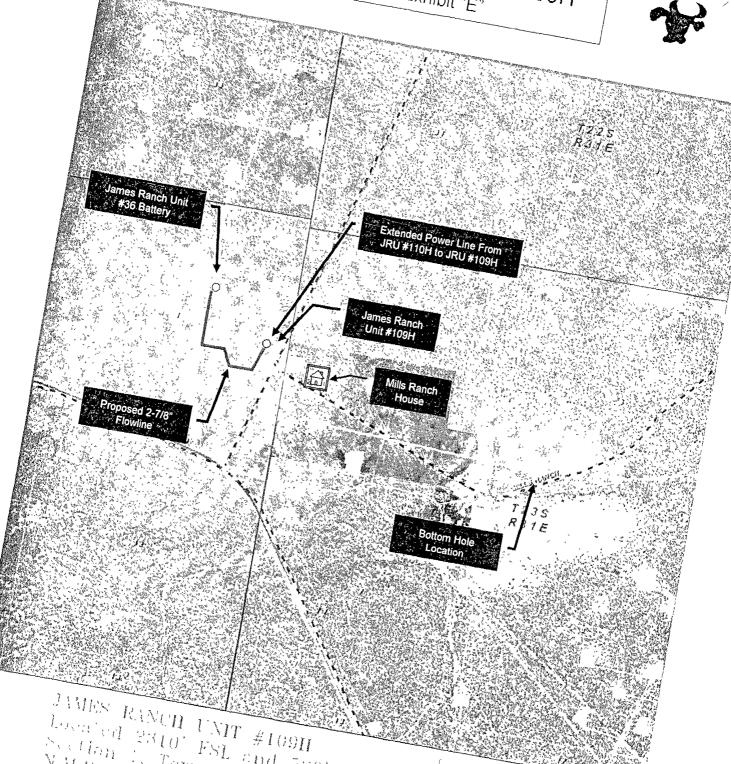
James Ranch Unit #109H Exhibit "A"





James Ranch Unit #109H Exhibit "E"





Local ed 2310' FSL and 530' FEL NIP.M. Eddy County, New Mexico. 30 East,

PECOS DISTRICT CONDITIONS OF APPROVAL

OPERATOR'S NAME:
LEASE NO.:
NM02883A
WELL NAME & NO.:
SURFACE HOLE FOOTAGE:
BOTTOM HOLE FOOTAGE
LOCATION:
COUNTY:
BOPCO LP
NM02883A
109H-JAMES RANCH UNIT
2310' FSL & 530' FEL
0660' FSL & 0990' FWL
Section 5, T. 23 S., R 31 E., NMPM
Eddy County, New Mexico

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Standard Conditions of Approval (COA) apply to this APD. If any deviations to these standards exist or special COAs are required, the section with the deviation or requirement will be checked below.

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I. GENERAL PROVISIONS

The approval of the Application For Permit To Drill (APD) is in compliance with all applicable laws and regulations: 43 Code of Federal Regulations 3160, the lease terms, Onshore Oil and Gas Orders, Notices To Lessees, New Mexico Oil Conservation Division (NMOCD) Rules, National Historical Preservation Act As Amended, and instructions and orders of the Authorized Officer. Any request for a variance shall be submitted to the Authorized Officer on Form 3160-5, Sundry Notices and Report on Wells.

II. PERMIT EXPIRATION

If the permit terminates prior to drilling and drilling cannot be commenced within 60 days after expiration, an operator is required to submit Form 3160-5, Sundry Notices and Reports on Wells, requesting surface reclamation requirements for any surface disturbance. However, if the operator will be able to initiate drilling within 60 days after the expiration of the permit, the operator must have set the conductor pipe in order to allow for an extension of 60 days beyond the expiration date of the APD. (Filing of a Sundry Notice is required for this 60 day extension.)

III. ARCHAEOLOGICAL, PALEONTOLOGY & HISTORICAL SITES

Any cultural and/or paleontological resource discovered by the operator or by any person working on the operator's behalf shall immediately report such findings to the Authorized Officer. The operator is fully accountable for the actions of their contractors and subcontractors. The operator shall suspend all operations in the immediate area of such discovery until written authorization to proceed is issued by the Authorized Officer. An evaluation of the discovery shall be made by the Authorized Officer to determine the appropriate actions that shall be required to prevent the loss of significant cultural or scientific values of the discovery. The operator shall be held responsible for the cost of the proper mitigation measures that the Authorized Officer assesses after consultation with the operator on the evaluation and decisions of the discovery. Any unauthorized collection or disturbance of cultural or paleontological resources may result in a shutdown order by the Authorized Officer.

IV. NOXIOUS WEEDS

The operator shall be held responsible if noxious weeds become established within the areas of operations. Weed control shall be required on the disturbed land where noxious weeds exist, which includes the roads, pads, associated pipeline corridor, and adjacent land affected by the establishment of weeds due to this action. The operator shall consult

with the Authorized Officer for acceptable weed control methods, which include following EPA and BLM requirements and policies.

V. SPECIAL REQUIREMENT(S)

Porto-johns and trash containers will be on-location during fracturing operations or any other crew-intensive operations.

Operator shall separate top-soil from any other materials placed on location as a result of "flipping" surface materials to expose and/or extract caliche from underneath the well-pad location.

Use of sub-surface, on-site caliche requires a salable minerals contract prior to the start of construction.

Cave and Karst

** Depending on location, additional Drilling, Casing, and Cementing procedures may be required by engineering to protect critical karst groundwater recharge areas.

Cave/Karst Surface Mitigation

The following stipulations will be applied to minimize impacts during construction, drilling and production.

Construction:

In the advent that any underground voids are opened up during construction activities, construction activities will be halted and the BLM will be notified immediately.

No Blasting:

No blasting will be utilized for pad construction. The pad will be constructed and leveled by adding the necessary fill and caliche.

Pad Berming:

The pad will be bermed to prevent oil, salt, and other chemical contaminants from leaving the pad. All sides will be bermed.

Tank Battery Liners and Berms:

Tank battery locations will be lined and bermed. A 20 mil permanent liner will be installed with a 4 oz. felt backing to prevent tears or punctures. Tank battery berms must be large enough to contain 1 ½ times the content of the largest tank.

Leak Detection System:

A method of detecting leaks is required. The method could incorporate gauges to measure loss, situating values and lines so they can be visually inspected, or installing electronic sensors to alarm when a leak is present. Leak detection plan will be submitted to BLM for approval.

Automatic Shut-off Systems:

Automatic shut off, check values, or similar systems will be installed for pipelines and tanks to minimize the effects of catastrophic line failures used in production or drilling.

Cave/Karst Subsurface Mitigation

The following stipulations will be applied to protect cave/karst and ground water concerns:

Rotary Drilling with Fresh Water:

Fresh water will be used as a circulating medium in zones where caves or karst features are expected. SEE ALSO: Drilling COAs for this well.

Directional Drilling:

Kick off for directional drilling will occur at least 100 feet below the bottom of the cave occurrence zone. SEE ALSO: Drilling COAs for this well.

Lost Circulation:

ALL lost circulation zones from the surface to the base of the cave occurrence zone will be logged and reported in the drilling report.

Regardless of the type of drilling machinery used, if a void of four feet or more and circulation losses greater than 70 percent occur simultaneously while drilling in any cavebearing zone, the BLM will be notified immediately by the operator. The BLM will assess the situation and work with the operator on corrective actions to resolve the problem.

Abandonment Cementing:

Upon well abandonment in high cave karst areas additional plugging conditions of approval may be required. The BLM will assess the situation and work with the operator to ensure proper plugging of the wellbore.

Pressure Testing:

Annual pressure monitoring will be performed by the operator on all casing annuli and reported in a sundry notice. If the test results indicated a casing failure has occurred, remedial action will be undertaken to correct the problem to the BLM's approval.

Commercial Well Determination

Well is outside of NMNM – 070965F participating area. A commercial well determination will need to be submitted after production has been established for at least six months.

Plan of Development

Sub-operator is to submit a Unit Plan of Development (UPOD) annually to the Unit operator for submission to the BLM. Guidelines for UPOD are available upon request at the BLM Carlsbad Field Office.

VI. CONSTRUCTION

A. NOTIFICATION

The BLM shall administer compliance and monitor construction of the access road and well pad. Notify the Carlsbad Field Office at (575) 234-5972 at least 3 working days prior to commencing construction of the access road and/or well pad.

When construction operations are being conducted on this well, the operator shall have the approved APD and Conditions of Approval (COA) on the well site and they shall be made available upon request by the Authorized Officer.

B. V-DOOR DIRECTION: not stipulated

C. TOPSOIL

The operator shall stockpile the topsoil in a low profile manner in order to prevent wind/water erosion of the topsoil. The topsoil to be stripped is approximately 8 inches in depth. The topsoil will be used for interim and final reclamation.

Operator shall separate top-soil from any other materials placed on location as a result of "flipping" surface materials to expose and/or extract caliche from underneath the well-pad location.

D. CLOSED LOOP SYSTEM

Tanks are required for drilling operations: No Pits.

The operator shall properly dispose of drilling contents at an authorized disposal site.

E. FEDERAL MINERAL MATERIALS PIT

Payment shall be made to the BLM prior to removal of any federal mineral materials. Call the Carlsbad Field Office at (575) 234-5972.

F. WELL PAD SURFACING

Surfacing of the well pad is not required.

If the operator elects to surface the well pad, the surfacing material may be required to be removed at the time of reclamation.

The well pad shall be constructed in a manner which creates the smallest possible surface disturbance, consistent with safety and operational needs.

G. ON LEASE ACCESS ROADS

Road Width

The access road shall have a driving surface that creates the smallest possible surface disturbance and does not exceed fourteen (14) feet in width. The maximum width of surface disturbance, when constructing the access road, shall not exceed thirty (30) feet.

Surfacing

Surfacing material is not required on the new access road driving surface. If the operator elects to surface the new access road or pad, the surfacing material may be required to be removed at the time of reclamation.

Where possible, no improvements should be made on the unsurfaced access road other than to remove vegetation as necessary, road irregularities, safety issues, or to fill low areas that may sustain standing water.

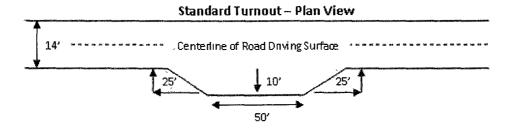
The Authorized Officer reserves the right to require surfacing of any portion of the access road at any time deemed necessary. Surfacing may be required in the event the road deteriorates, erodes, road traffic increases, or it is determined to be beneficial for future field development. The surfacing depth and type of material will be determined at the time of notification.

Crowning

Crowning shall be done on the access road driving surface. The road crown shall have a grade of approximately 2% (i.e., a 1" crown on a 14' wide road). The road shall conform to Figure 1; cross section and plans for typical road construction.

Turnouts

Vehicle turnouts shall be constructed on the road. Turnouts shall be intervisible with interval spacing distance less than 1000 feet. Turnouts shall be constructed on all blind curves. Turnouts shall conform to the following diagram:

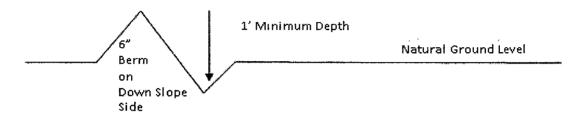


Drainage

Drainage control systems shall be constructed on the entire length of road (e.g. ditches, sidehill outsloping and insloping, lead-off ditches, culvert installation, and low water crossings).

A typical lead-off ditch has a minimum depth of 1 foot below and a berm of 6 inches above natural ground level. The berm shall be on the down-slope side of the lead-off ditch.

Cross Section of a Typical Lead-off Ditch



All lead-off ditches shall be graded to drain water with a 1 percent minimum to 3 percent maximum ditch slope. The spacing interval are variable for lead-off ditches and shall be determined according to the formula for spacing intervals of lead-off ditches, but may be amended depending upon existing soil types and centerline road slope (in %);

Formula for Spacing Interval of Lead-off Ditches

Example - On a 4% road slope that is 400 feet long, the water flow shall drain water into a lead-off ditch. Spacing interval shall be determined by the following formula:

400 foot road with 4% road slope:
$$\frac{400'}{4\%}$$
 + 100' = 200' lead-off ditch interval

Culvert Installations

Appropriately sized culvert(s) shall be installed at the deep waterway channel flow crossing.

Cattleguards

An appropriately sized cattleguard(s) sufficient to carry out the project shall be installed and maintained at fence crossing(s).

Any existing cattleguard(s) on the access road shall be repaired or replaced if they are damaged or have deteriorated beyond practical use. The operator shall be responsible for the condition of the existing cattleguard(s) that are in place and are utilized during lease operations.

A gate shall be constructed and fastened securely to H-braces.

Fence Requirement

Where entry is required across a fence line, the fence shall be braced and tied off on both sides of the passageway prior to cutting.

The operator shall notify the private surface landowner or the grazing allotment holder prior to crossing any fence(s).

Public Access

Public access on this road shall not be restricted by the operator without specific written approval granted by the Authorized Officer.

center line of roadway shoulderternaet 10° 100 Intervisible "troots shall be constructed on all single lane roods on all blind curves with additional tuncuts as needed to keep spacing below 1000 feet full turnout width **Typical Turnout Plan** height of fid at shoulder slope 0'-4' 3.1 2.1 **Embankment Section** toad type croyen eath suface 03 - 05 h/h 02 - .04 nyh aggregate surfa Dep'h measured from the benom of the datch **Side Hill Section** (stope 2 - 4%) [slope 2 - 4%] **Typical Inslope Section**

Figure 1 – Cross Sections and Plans For Typical Road Sections

Typical Outsloped Section

VII. DRILLING

A. DRILLING OPERATIONS REQUIREMENTS

The BLM is to be notified a minimum of 4 hours in advance for a representative to witness:

- a. Spudding well
- b. Setting and/or Cementing of all casing strings
- c. BOPE tests

Eddy County

Call the Carlsbad Field Office, 620 East Greene St., Carlsbad, NM 88220, (575) 361-2822

- 1. Due to recent H2S encounters in the salt formation, it is recommended that monitoring equipment be onsite for potential Hydrogen Sulfide prior to drilling out the surface shoe. If Hydrogen Sulfide is encountered, please report measurements and formations to the BLM.
- 2. Unless the production casing has been run and cemented or the well has been properly plugged, the drilling rig shall not be removed from over the hole without prior approval.
- 3. Floor controls are required for 3M or Greater systems. These controls will be on the rig floor, unobstructed, readily accessible to the driller and will be operational at all times during drilling and/or completion activities. Rig floor is defined as the area immediately around the rotary table; the area immediately above the substructure on which the draw works are located, this does not include the dog house or stairway area.
- 4. The record of the drilling rate along with the CAL/GR/N well log run from TD to surface will be submitted to the BLM office as well as all other logs run on the borehole 30 days from completion. If available, a digital copy of the logs is to be submitted in addition to the paper copies. The Rustler top and top and bottom of Salt are to be recorded on the Completion Report.

B. CASING

Changes to the approved APD casing and cement program require submitting a sundry and receiving approval prior to work. Failure to obtain approval prior to work will result in an Incident of Non-Compliance being issued.

Centralizers required on surface casing per Onshore Order 2.III.B.1.f.

Wait on cement (WOC) time for a primary cement job will be a minimum 18 hours for a water basin, 24 hours in the potash area, or 500 pounds compressive strength, whichever is greater for all casing strings. Provide compressive strengths including hours to reach required 500 pounds compressive strength prior to cementing each casing string. See individual casing strings for details regarding lead cement slurry requirements.

No pea gravel permitted for remedial or fall back remedial without prior authorization from the BLM engineer.

High Cave/Karst
R-111-P Potash
Possible water and brine flows in the Salado and Casitle groups.
Possible lost circulation and water flows in the Delaware and Bone Spring.

- 1. The 13-3/8 inch surface casing shall be set at approximately 651 feet (a minimum of 25 feet into the Rustler Anhydrite and above the salt) and cemented to the surface. If salt is penetrated, set casing 10' above the top of salt.
 - a. If cement does not circulate to the surface, the appropriate BLM office shall be notified and a temperature survey utilizing an electronic type temperature survey with surface log readout will be used or a cement bond log shall be run to verify the top of the cement. Temperature survey will be run a minimum of six hours after pumping cement and ideally between 8-10 hours after completing the cement job.
 - b. Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry.
 - c. Wait on cement (WOC) time for a remedial job will be a minimum of 4 hours after bringing cement to surface or 500 pounds compressive strength, whichever is greater.
 - d. If cement falls back, remedial cementing will be done prior to drilling out that string.
- 2. The minimum required fill of cement behind the 9-5/8 inch intermediate casing is:
 - Cement to surface. If cement does not circulate see B.1.a, c-d above. Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to cave/karst and potash. Set in Lamar Limestone.

- 3. The minimum required fill of cement behind the 7 inch production casing is:a. First stage to DV tool, cement shall:
 - Cement to circulate. If cement does not circulate, contact the appropriate BLM office before proceeding with second stage cement job.
 - b. Second stage above DV tool, cement shall:
 - □ Cement to circulate. If cement does not circulate, contact the appropriate BLM office before proceeding with second stage cement job. Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to cave/karst and potash.
- 4. The minimum required fill of cement behind the 4-1/2 inch production liner is:
 - Packer system to be used No Cement required.
- 5. If hardband drill pipe is rotated inside casing, returns will be monitored for metal. If metal is found in samples, drill pipe will be pulled and rubber protectors which have a larger diameter than the tool joints of the drill pipe will be installed prior to continuing drilling operations.
- 6. Whenever a casing string is cemented in the R-111-P potash area, the NMOCD requirements shall be followed.

C. PRESSURE CONTROL

- 1. All blowout preventer (BOP) and related equipment (BOPE) shall comply with well control requirements as described in Onshore Oil and Gas Order No. 2 and API RP 53 Sec. 17.
- 2. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be 2000 (2M) psi. 5M system tested as a 2M.
 - a. For surface casing only: If the BOP/BOPE is to be tested against casing, the wait on cement (WOC) time for that casing is to be met (see WOC statement at start of casing section). Independent service company required.
- 3. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the 9-5/8 intermediate casing shoe shall be 3000 (3M) psi. 5M system tested as a 3M

- 4. The appropriate BLM office shall be notified a minimum of 4 hours in advance for a representative to witness the tests.
 - a. Casing cut-off and BOP installation will not be initiated until the cement has had a minimum of 8 hours setup time for a water basin. The casing shall remain stationary and under pressure for at least eight hours after the operator places the cement. In the potash area, the minimum time is 12 hours and the casing shall remain stationary and under pressure during this time period. Casing shall be under pressure if the operator uses some acceptable means of holding pressure or if the operator employs one or more float valves to hold the cement in place. Testing the BOP/BOPE against a plug can commence after meeting the above conditions plus the BOP installation time.
 - b. The tests shall be done by an independent service company utilizing a test plug.
 - c. The results of the test shall be reported to the appropriate BLM office.
 - d. All tests are required to be recorded on a calibrated test chart. A copy of the BOP/BOPE test chart and a copy of independent service company test will be submitted to the appropriate BLM office.
 - e. The BOP/BOPE test shall include a low pressure test from 250 to 300 psi. The test will be held for a minimum of 10 minutes if test is done with a test plug and 30 minutes without a test plug.

D. DRILL STEM TEST

If drill stem tests are performed, Onshore Order 2.III.D shall be followed.

E. WIPP Requirements

The proposed well is located within 330' of the WIPP Land Withdrawal Area boundary. As a result, BOPCO, LP is required to submit daily logs and deviation survey information to the Department of Energy per requirements of the Joint Powers Agreement. Information from this well will be included in the Quarterly Drilling Report. Information will also be provided to the New Mexico Oil Conservation Division after drilling activities have been completed. Any future entry into the well for purposes of completing additional drilling will require supplemental information.

BOPCO, LP can email the required information to Mr. Mel Balderrama at melvin.balderama@wipp.ws or fax to his attention at 575-234-6062.

DHW 042610

VIII. PRODUCTION (POST DRILLING)

A. WELL STRUCTURES & FACILITIES

Placement of Production Facilities

Production facilities should be placed on the well pad to allow for maximum interim recontouring and revegetation of the well location.

Containment Structures

The containment structure shall be constructed to hold the capacity of the entire contents of the largest tank, plus 24 hour production, unless more stringent protective requirements are deemed necessary by the Authorized Officer.

Painting Requirement

All above-ground structures including meter housing that are not subject to safety requirements shall be painted a flat non-reflective paint color Shale Green, Munsell Soil Color Chart # 5Y 4/2

B. PIPELINES – 2 7/8" Surface Steel Flowline

STANDARD STIPULATIONS FOR SURFACE INSTALLED PIPELINES

A copy of the grant and attachments, including stipulations, survey plat and/or map, will be on location during construction. BLM personnel may request to you a copy of your permit during construction to ensure compliance with all stipulations.

Holder agrees to comply with the following stipulations to the satisfaction of the Authorized Officer:

- 1. The holder shall indemnify the United States against any liability for damage to life or property arising from the occupancy or use of public lands under this grant.
- 2. The holder shall comply with all applicable Federal laws and regulations existing or hereafter enacted or promulgated. In any event, the holder shall comply with the Toxic Substances Control Act of 1976 as amended, 15 USC 2601 et seq. (1982) with regards to any toxic substances that are used, generated by or stored on the right-of-way or on facilities authorized under this right-of-way grant. (See 40 CFR, Part 702-799 and especially, provisions on polychlorinated biphenyls, 40 CFR 761.1-761.193.) Additionally, any release of toxic substances (leaks, spills, etc.) in excess of the reportable quantity established by 40 CFR, Part 117 shall be reported as required by the Comprehensive Environmental Response, Compensation, and Liability Act, section 102b. A copy of any report required or requested by any Federal agency or State government as a result of a reportable release or spill of any toxic substances shall be furnished to the authorized officer concurrent with the filing of the reports to the involved Federal agency or State government.

- 3. The holder agrees to indemnify the United States against any liability arising from the release of any hazardous substance or hazardous waste (as these terms are defined in the Comprehensive Environmental Response, Compensation and Liability Act of 1980, 42 U.S.C. 9601, et seq. or the Resource Conservation and Recovery Act, 42 U.S.C. 6901, et seq.) on the Right-of-Way (unless the release or threatened release is wholly unrelated to activity of the Right-of-Way holder's activity on the Right-of-Way), or resulting from the activity of the Right-of-Way holder on the Right-of-Way. This agreement applies without regard to whether a release is caused by the holder, its agent, or unrelated third parties.
- 4. The holder shall be liable for damage or injury to the United States to the extent provided by 43 CFR Sec. 2883.1-4. The holder shall be held to a standard of strict liability for damage or injury to the United States resulting from pipe rupture, fire, or spills caused or substantially aggravated by any of the following within the right-of-way or permit area:
 - a. Activities of the holder including, but not limited to construction, operation, maintenance, and termination of the facility.
 - b. Activities of other parties including, but not limited to:
 - (1) Land clearing.
 - (2) Earth-disturbing and earth-moving work.
 - (3) Blasting.
 - (4) Vandalism and sabotage.
 - c. Acts of God.

The maximum limitation for such strict liability damages shall not exceed one million dollars (\$1,000,000) for any one event, and any liability in excess of such amount shall be determined by the ordinary rules of negligence of the jurisdiction in which the damage or injury occurred.

This section shall not impose strict liability for damage or injury resulting primarily from an act of war or from the negligent acts or omissions of the United States.

5. If, during any phase of the construction, operation, maintenance, or termination of the pipeline, any oil, salt water, or other pollutant should be discharged from the pipeline system, impacting Federal lands, the control and total removal, disposal, and cleaning up of such oil, salt water, or other pollutant, wherever found, shall be the responsibility of the holder, regardless of fault. Upon failure of the holder to control, dispose of, or clean up such discharge on or affecting Federal lands, or to repair all damages resulting therefrom, on the Federal lands, the Authorized Officer may take such measures as he deems necessary to control and clean up the discharge and restore the area, including, where appropriate, the aquatic environment and fish and wildlife habitats, at the full

6. All construction and maintenance activity will be confined to the authorized right-ofway width of feet. 7. No blading or clearing of any vegetation will be allowed unless approved in writing by the Authorized Officer. 8. The holder shall install the pipeline on the surface in such a manner that will minimize suspension of the pipeline across low areas in the terrain. In hummocky of duney areas, the pipeline will be "snaked" around hummocks and dunes rather then suspended across these features. 9. The pipeline shall be buried with a minimum of 24 inches under all roads, "two-tracks," and trails. Burial of the pipe will continue for 20 feet on each side of each crossing. The condition of the road, upon completion of construction, shall be returned to at least its former state with no bumps or dips remaining in the road surface. 10. The holder shall minimize disturbance to existing fences and other improvements on public lands. The holder is required to promptly repair improvements to at least their former state. Functional use of these improvements will be maintained at all times. The holder will contact the owner of any improvements prior to disturbing them. When necessary to pass through a fence line, the fence shall be braced on both sides of the passageway prior to cutting of the fence. No permanent gates will be allowed unless approved by the Authorized Officer. 11. In those areas where erosion control structures are required to stabilize soil conditions, the holder will install such structures as are suitable for the specific soil conditions being encountered and which are in accordance with sound resource management practices. 12. Excluding the pipe, all above-ground structures not subject to safety requirement shall be painted by the holder to blend with the natural color of the landscape. The paint used shall be a color which simulates "Standard Environmental Colors" - Shale Green, Munsell Soil Color No. 5Y 4/2; designated by the Rocky Mountain Five State Interagency Committee. 13. The pipeline will be identified by signs at the point of origin and completion of the right-of-way and at all road crossings. At a minimum, signs will state the holder's name, BLM serial number, and the product being transported. Signs will be maintained in a legible condition for the life of the pipeline.

expense of the holder. Such action by the Authorized Officer shall not relieve the holder

of any responsibility as provided herein.

14. The holder shall not use the pipeline route as a road for purposes other than routine maintenance as determined necessary by the Authorized Officer in consultation with the holder. The holder will take whatever steps are necessary to ensure that the pipeline

route is not used as a roadway.

15. Any cultural and/or paleontological resource (historic or prehistoric site or object) discovered by the holder, or any person working on his behalf, on public or Federal land shall be immediately reported to the authorized officer. Holder shall suspend all operations in the immediate area of such discovery until written authorization to proceed is issued by the authorized officer. An evaluation of the discovery will be made by the authorized officer to determine appropriate cultural or scientific values. The holder will be responsible for the cost of evaluation and any decision as to proper mitigation measures will be made by the authorized officer after consulting with the holder.

C. ELECTRIC LINES -

STANDARD STIPULATIONS - OVERHEAD ELECTRIC DISTRIBUTION LINES

A copy of the grant and attachments, including stipulations, survey plat and/or map, will be on location during construction. BLM personnel may request to you a copy of your permit during construction to ensure compliance with all stipulations.

Holder agrees to comply with the following stipulations to the satisfaction of the Authorized Officer:

- 1. The holder shall indemnify the United States against any liability for damage to life or property arising from the occupancy or use of public lands under this grant.
- 2. The holder shall comply with all applicable Federal laws and regulations existing or hereafter enacted or promulgated. In any event, the holder shall comply with the Toxic Substances Control Act of 1976 as amended, 15 USC 2601 et seq. (1982) with regards to any toxic substances that are used, generated by or stored on the right-of-way or on facilities authorized under this right-of-way grant. (See 40 CFR, Part 702-799 and especially, provisions on polychlorinated biphenyls, 40 CFR 761.1-761.193.) Additionally, any release of toxic substances (leaks, spills, etc.) in excess of the reportable quantity established by 40 CFR, Part 117 shall be reported as required by the Comprehensive Environmental Response, Compensation, and Liability Act, section 102b. A copy of any report required or requested by any Federal agency or State government as a result of a reportable release or spill of any toxic substances shall be furnished to the authorized officer concurrent with the filing of the reports to the involved Federal agency or State government.
- 3. The holder agrees to indemnify the United States against any liability arising from the release of any hazardous substance or hazardous waste (as these terms are defined in the Comprehensive Environmental Response, Compensation and Liability Act of 1980, 42 U.S.C. 9601, et seq. or the Resource Conservation and Recovery Act, 42 U.S.C. 6901, et seq.) on the Right-of-Way (unless the release or threatened release is wholly unrelated to the Right-of-Way holder's activity on the Right-of-Way), or resulting from the activity of the Right-of-Way holder on the Right-of-Way. This agreement applies without regard to whether a release is caused by the holder, its agent, or unrelated third parties.

- 4. There will be no clearing or blading of the right-of-way unless otherwise agreed to in writing by the Authorized Officer.
- 5. Powerlines shall be constructed in accordance to standards outlined in "Suggested Practices for Raptor Protection on Powerlines," Raptor Research Foundation, Inc., 1981. The holder shall assume the burden and expense of proving that pole designs not shown in the above publication are "raptor safe." Such proof shall be provided by a raptor expert approved by the Authorized Officer. The BLM reserves the right to require modification or additions to all powerline structures placed on this right-of-way, should they be necessary to ensure the safety of large perching birds. Such modifications and/or additions shall be made by the holder without liability or expense to the United States.
- 6. The holder shall minimize disturbance to existing fences and other improvements on public lands. The holder is required to promptly repair improvements to at least their former state. Functional use of these improvements will be maintained at all times. The holder will contact the owner of any improvements prior to disturbing them. When necessary to pass through a fence line, the fence shall be braced on both sides of the passageway prior to cutting the fence. No permanent gates will be allowed unless approved by the Authorized Officer.
- 7. The BLM serial number assigned to this authorization shall be posted in a permanent, conspicuous manner where the power line crosses roads and at all serviced facilities. Numbers will be at least two inches high and will be affixed to the pole nearest the road crossing and at the facilities served.
- 8. Upon cancellation, relinquishment, or expiration of this grant, the holder shall comply with those abandonment procedures as prescribed by the Authorized Officer.
- 9. All surface structures (poles, lines, transformers, etc.) shall be removed within 180 days of abandonment, relinquishment, or termination of use of the serviced facility or facilities or within 180 days of abandonment, relinquishment, cancellation, or expiration of this grant, whichever comes first. This will not apply where the power line extends service to an active, adjoining facility or facilities.
- 10. Any cultural and/or paleontological resource (historic or prehistoric site or object) discovered by the holder, or any person working on his behalf, on public or Federal land shall be immediately reported to the Authorized Officer. Holder shall suspend all operations in the immediate area of such discovery until written authorization to proceed is issued by the Authorized Officer. An evaluation of the discovery will be made by the Authorized Officer to determine appropriate actions to prevent the loss of significant cultural or scientific values. The holder will be responsible for the cost of evaluation and any decision as to proper mitigation measures will be made by the Authorized Officer after consulting with the holder.
- 11. Special Stipulations:

- Limit all disturbance to authorized width of approved access road.
- For reclamation remove poles, lines, transformer, etc. and dispose of properly.
- Fill in any holes from the poles removed.

IX. INTERIM RECLAMATION

During the life of the development, all disturbed areas not needed for active support of production operations should undergo interim reclamation in order to minimize the environmental impacts of development on other resources and uses.

Within six (6) months of well completion, operators should work with BLM surface management specialists (Jim Amos: 575-234-5909) to devise the best strategies to reduce the size of the location. Interim reclamation should allow for remedial well operations, as well as safe and efficient removal of oil and gas.

During reclamation, the removal of caliche is important to increasing the success of revegetating the site. Removed caliche that is free of contaminants may be used for road repairs, fire walls or for building other roads and locations. In order to operate the well or complete workover operations, it may be necessary to drive, park and operate on restored interim vegetation within the previously disturbed area. Disturbing revegetated areas for production or workover operations will be allowed. If there is significant disturbance and loss of vegetation, the area will need to be revegetated. Communicate with the appropriate BLM office for any exceptions/exemptions if needed.

All disturbed areas after they have been satisfactorily prepared need to be reseeded with the seed mixture provided below.

Upon completion of interim reclamation, the operator shall submit a Sundry Notices and Reports on Wells, Subsequent Report of Reclamation (Form 3160-5).

X. FINAL ABANDONMENT & RECLAMATION

At final abandonment, well locations, production facilities, and access roads must undergo "final" reclamation so that the character and productivity of the land are restored.

Earthwork for final reclamation must be completed within six (6) months of well plugging. All pads, pits, facility locations and roads must be reclaimed to a satisfactory revegetated, safe, and stable condition, unless an agreement is made with the landowner or BLM to keep the road and/or pad intact.

After all disturbed areas have been satisfactorily prepared; these areas need to be revegetated with the seed mixture provided below. Seeding should be accomplished by drilling on the contour whenever practical or by other approved methods. Seeding may need to be repeated until revegetation is successful, as determined by the BLM.

Operators shall contact a BLM surface protection specialist prior to surface abandonment operations for site specific objectives (Jim Amos: 575-234-5909).

Seed Mixture 2, for Sandy Sites

The holder shall seed all disturbed areas with the seed mixture listed below. The seed mixture shall be planted in the amounts specified in pounds of pure live seed (PLS)* per acre. There shall be <u>no</u> primary or secondary noxious weeds in the seed mixture. Seed will be tested and the viability testing of seed will be done in accordance with State law (s) and within nine (9) months prior to purchase. Commercial seed will be either certified or registered seed. The seed container will be tagged in accordance with State law(s) and available for inspection by the authorized officer.

Seed will be planted using a drill equipped with a depth regulator to ensure proper depth of planting where drilling is possible. The seed mixture will be evenly and uniformly planted over the disturbed area (smaller/heavier seeds have a tendency to drop the bottom of the drill and are planted first). The holder shall take appropriate measures to ensure this does not occur. Where drilling is not possible, seed will be broadcast and the area shall be raked or chained to cover the seed. When broadcasting the seed, the pounds per acre are to be doubled. The seeding will be repeated until a satisfactory stand is established as determined by the authorized officer. Evaluation of growth will not be made before completion of at least one full growing season after seeding.

Species to be planted in pounds of pure live seed* per acre:

Species	l <u>b/acre</u>
Sand dropseed (Sporobolus cryptandrus)	1.0
Sand love grass (Eragrostis trichodes)	1.0
Plains bristlegrass (Setaria macrostachya)	2.0

^{*}Pounds of pure live seed:

Pounds of seed x percent purity x percent germination = pounds pure live seed