

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENTFORM APPROVED
OMB NO. 1004-0135
Expires: July 31, 2010**SUNDRY NOTICES AND REPORTS ON WELLS**
*Do not use this form for proposals to drill or to re-enter an abandoned well. Use form 3160-3 (APD) for such proposals.*5. Lease Serial No.
NMNM04105A

6. If Indian, Allottee or Tribe Name

SUBMIT IN TRIPLICATE - Other instructions on reverse side.7. If Unit or CA/Agreement, Name and/or No.
891000326X

1. Type of Well

☒ Oil Well ☐ Gas Well ☐ Other8. Well Name and No.
BIG EDDY UNIT D19 34H2. Name of Operator
BOPCO LPContact: WHITNEY MCKEE
E-Mail: wbmckee@basspet.com9. API Well No.
30-015-42008-00-X13a. Address
P O BOX 2760
MIDLAND, TX 797023b. Phone No. (include area code)
Ph: 432-683-227710. Field and Pool, or Exploratory
WILDCAT

4. Location of Well (Footage, Sec., T., R., M., or Survey Description)

Sec 21 T21S R30E SESE 0090FSL 0879FEL
32.272752 N Lat, 103.524536 W Lon11. County or Parish, and State
EDDY COUNTY, NM

12. CHECK APPROPRIATE BOX(ES) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION			
☒ Notice of Intent	☐ Acidize	☐ Deepen	☐ Production (Start/Resume)	☐ Water Shut-Off
☐ Subsequent Report	☐ Alter Casing	☐ Fracture Treat	☐ Reclamation	☐ Well Integrity
☐ Final Abandonment Notice	☐ Casing Repair	☐ New Construction	☐ Recomplete	☒ Other
	☐ Change Plans	☐ Plug and Abandon	☐ Temporarily Abandon	Change to Original A
	☐ Convert to Injection	☐ Plug Back	☐ Water Disposal	PD

13. Describe Proposed or Completed Operation (clearly state all pertinent details, including estimated starting date of any proposed work and approximate duration thereof. If the proposal is to deepen directionally or recompleat horizontally, give subsurface locations and measured and true vertical depths of all pertinent markers and zones. Attach the Bond under which the work will be performed or provide the Bond No. on file with BLM/BIA. Required subsequent reports shall be filed within 30 days following completion of the involved operations. If the operation results in a multiple completion or recompleat in a new interval, a Form 3160-4 shall be filed once testing has been completed. Final Abandonment Notices shall be filed only after all requirements, including reclamation, have been completed, and the operator has determined that the site is ready for final inspection.)

Accepted for record

NMOC D 7/15/14

SEE ATTACHED FOR
CONDITIONS OF APPROVAL
ARTESIA DISTRICT

JUL 16 2014

RECEIVED

The following changes need to be made on the approved APD for the subject well:

1. Surface location changed from 90? FSL & 879? FEL, Sec 21, T21S-R30E to 48? FNL & 823? FEL of Sec 28, T21S-R30E.
2. Casing weight, grade and thread changes. See table below which highlights changes.
3. This well will not have a pilot hole as the APD shows. Rev-D.0 directional plan is attached.
4. Cement program changes. These changes are contained and highlighted in the table below.
5. The original APD stated ?Cement not required on the 4-1/2? casing. Packer system being used.? The 4-1/2? liner will be cemented and the cement program is contained in the table attached.

14. I hereby certify that the foregoing is true and correct.

Electronic Submission #252032 verified by the BLM Well Information System

For BOPCO LP, sent to the Carlsbad

Committed to AFMSS for processing by CHRISTOPHER WALLS on 07/15/2014 (14CRW0304SE)

Name (Printed/Typed) DON WOOD

Title DRILLING ENGINEER

Signature

(Electronic Submission)

Date 07/08/2014

THIS SPACE FOR FEDERAL OR STATE OFFICE USE

Approved By



Title

Date

7/15/14

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

Office

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.

** BLM REVISED ** BLM REVISED ** BLM REVISED ** BLM REVISED ** BLM REVISED **

DISTRICT I

1825 N. French Dr., Hobbs, NM 88240
Phone (575) 593-8161 Fax: (575) 593-0720

DISTRICT II

811 S. First St., Artesia, NM 88210
Phone (575) 748-1283 Fax: (575) 748-9720

DISTRICT III

1000 Rio Brazos Rd., Aztec, NM 87410
Phone (505) 334-8178 Fax: (505) 334-8170

DISTRICT IV

1220 S. St. Francis Dr., Santa Fe, NM 87505
Phone (505) 476-3460 Fax: (505) 476-3462State of New Mexico
Energy, Minerals and Natural Resources Department

OIL CONSERVATION DIVISION

1220 South St. Francis Dr.
Santa Fe, New Mexico 87505

Form C-102

Revised August 1, 2011

Submit one copy to appropriate
District Office

WELL LOCATION AND ACREAGE DEDICATION PLAT

☐ AMENDED REPORT

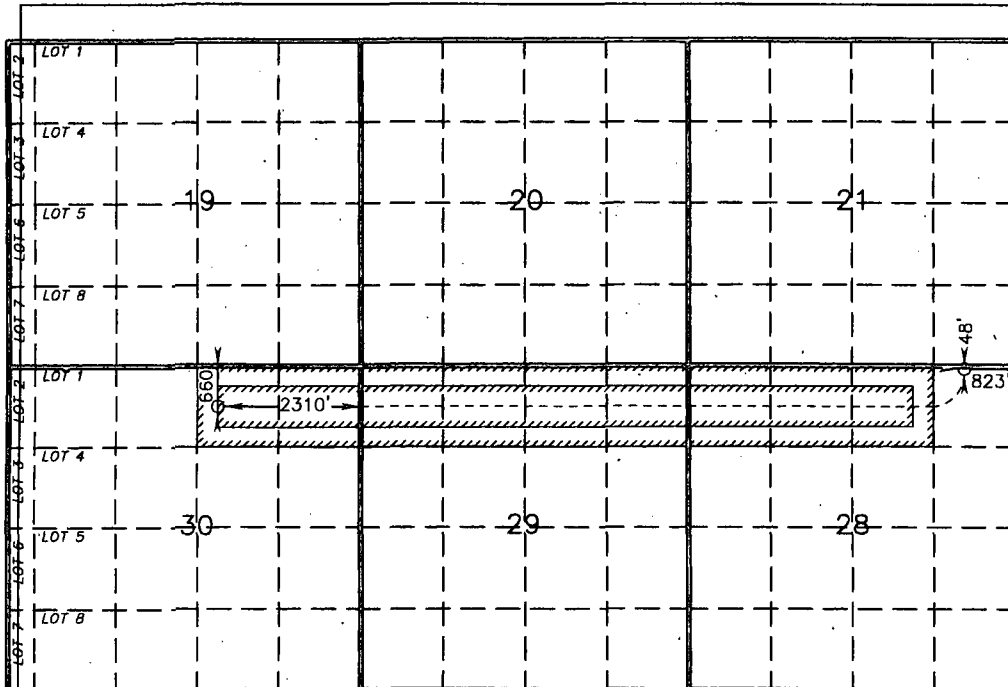
API Number		Pool Code	Pool Name
			WILDCAT; BONE SPRING
Property Code	Property Name		Well Number
805860	BIG EDDY UNIT D19		34H
OGRID No.	Operator Name		Elevation
260737	BOPCO, L.P.		3148'

Surface Location

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
A	28	21 S	30 E		48	NORTH	823	EAST	EDDY

Bottom Hole Location If Different From Surface

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
B	30	21 S	30 E		660	NORTH	2310	EAST	EDDY
Dedicated Acres	Joint or Infill	Consolidation Code	Order No.						
360									

NO ALLOWABLE WILL BE ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATED
OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISIONPROPOSED BOTTOM
HOLE LOCATION

Lot - N 32°27'20.33"
Long - W 103°55'05.30"
NMSPC- N 529727.5
E 628068.3
(NAD-27)

SURFACE LOCATION

Lot - N 32°27'26.16"
Long - W 103°52'44.71"
NMSPC- N 530364.8
E 640111.6
(NAD-27)

OPERATOR CERTIFICATION

I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom hole location or has a right to drill this well at this location pursuant to a contract with an owner of such a mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.

Signature _____ Date _____

Whitney McKee

Printed Name

wbmckee@basspet.com

Email Address

SURVEYOR CERTIFICATION

I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision and that the same is true and correct to the best of my belief.

Date Surveyed

Signature of Professional Surveyor

Certificate No. 7977

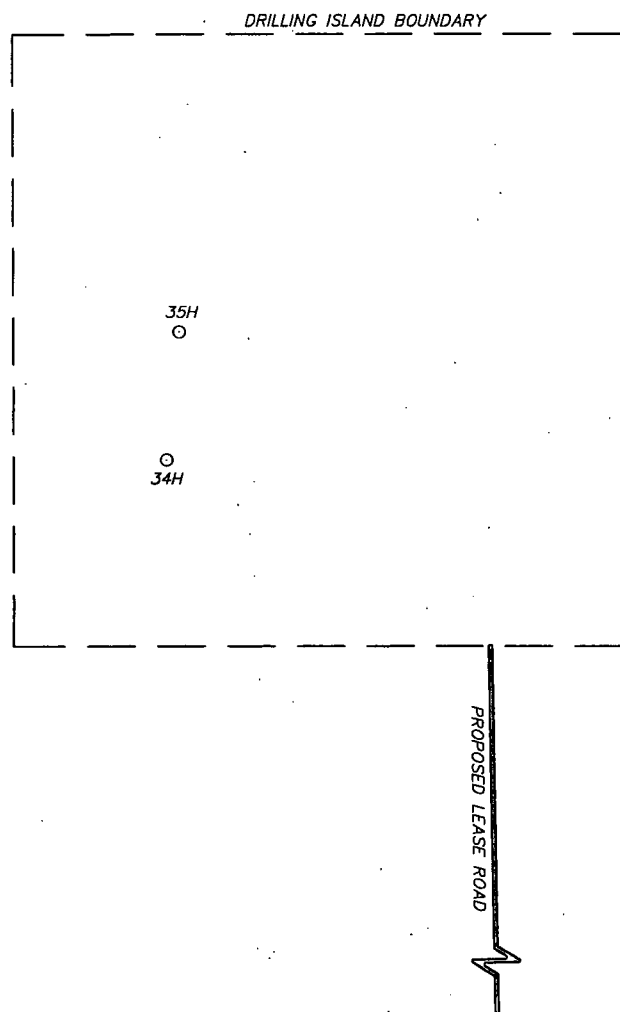
BASS PETROLEUM

0' 1500' 3000' 4500' 6000'

SCALE: 1" = 3000'

WO Num.: 30614

SECTION 28, TOWNSHIP 21 SOUTH, RANGE 30 EAST, N.M.P.M.,
EDDY COUNTY, NEW MEXICO.

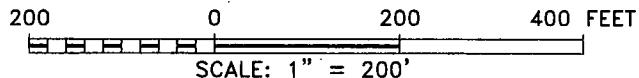


BOPCO, L.P.
BIG EDDY UNIT DI9 #34H
ELEV. - 3148'

Lat - N 32°27'26.16"
Long - W 103°52'44.71"
NMSPCE- N 530364.8
E 640111.6
(NAD-27)



EUNICE, NM IS ±23 MILES TO THE SOUTHEAST OF LOCATION.



Directions to Location:

FROM THE THE JUNCTION OF HWY 31 AD CIMARRON,
GO EAST ON CIMARRON FOR 5.0 MILES TO LEASE
ROAD, CONTINUE EAST 1.5 MILES TO PROPOSED
LEASE ROAD NORTH.



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

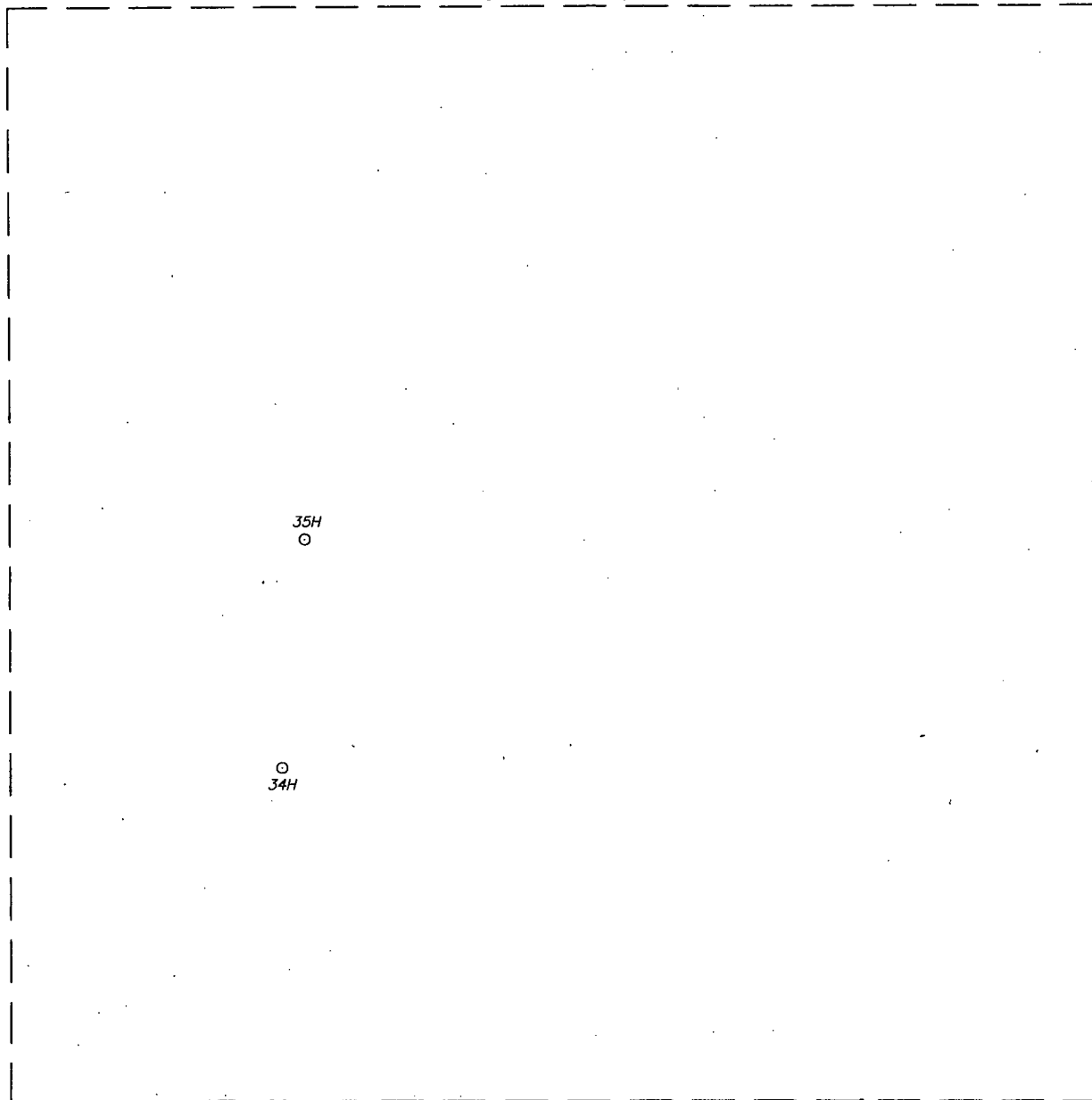
BOPCO, L.P.

REF: BIG EDDY UNIT DI9 34H / WELL PAD TOPO

THE BIG EDDY UNIT DI9 34H LOCATED 48' FROM
THE NORTH LINE AND 823' FROM THE EAST LINE OF
SECTION 28, TOWNSHIP 21 SOUTH, RANGE 30 EAST,
N.M.P.M., EDDY COUNTY, NEW MEXICO.

SECTION 28, TOWNSHIP 21 SOUTH, RANGE 30 EAST, N.M.P.M.,
EDDY COUNTY, NEW MEXICO.

DRILLING ISLAND BOUNDARY



100 0 100 200 FEET
SCALE: 1" = 100'

BOPCO, L.P.

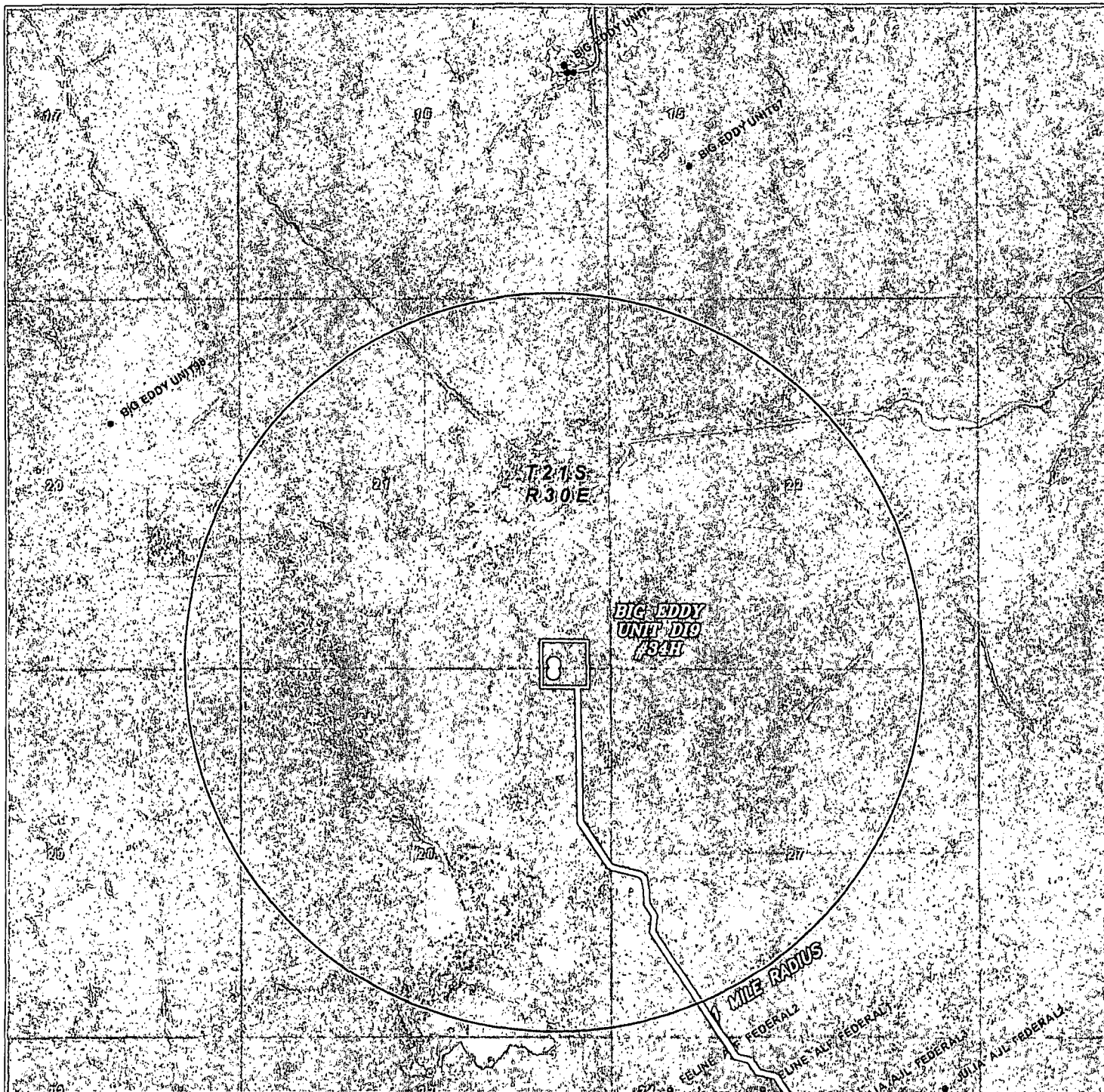
REF: BIG EDDY UNIT D19 34H / WELL PAD TOPO

THE BIG EDDY UNIT D19 34H LOCATED 48' FROM
THE NORTH LINE AND 823' FROM THE EAST LINE OF
SECTION 28, TOWNSHIP 21 SOUTH, RANGE 30 EAST,
N.M.P.M., EDDY COUNTY, NEW MEXICO.

basin
surveys
focused on excellence
in the oilfield

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

W.O. Number: 30614 Drawn By: J. SMALL Date: 06-24-2014 Survey Date: 06-24-2014 Sheet 1 of 1 Sheets



BIG EDDY UNIT DI9 34H

Located 48' FNL and 823' FEL
Section 28, Township 21 South, Range 30 East,
N.M.P.M., Eddy County, New Mexico.

basin
surveys

focused on excellence
in the oilfield

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

0' 1000' 2000' 3000' 4000'

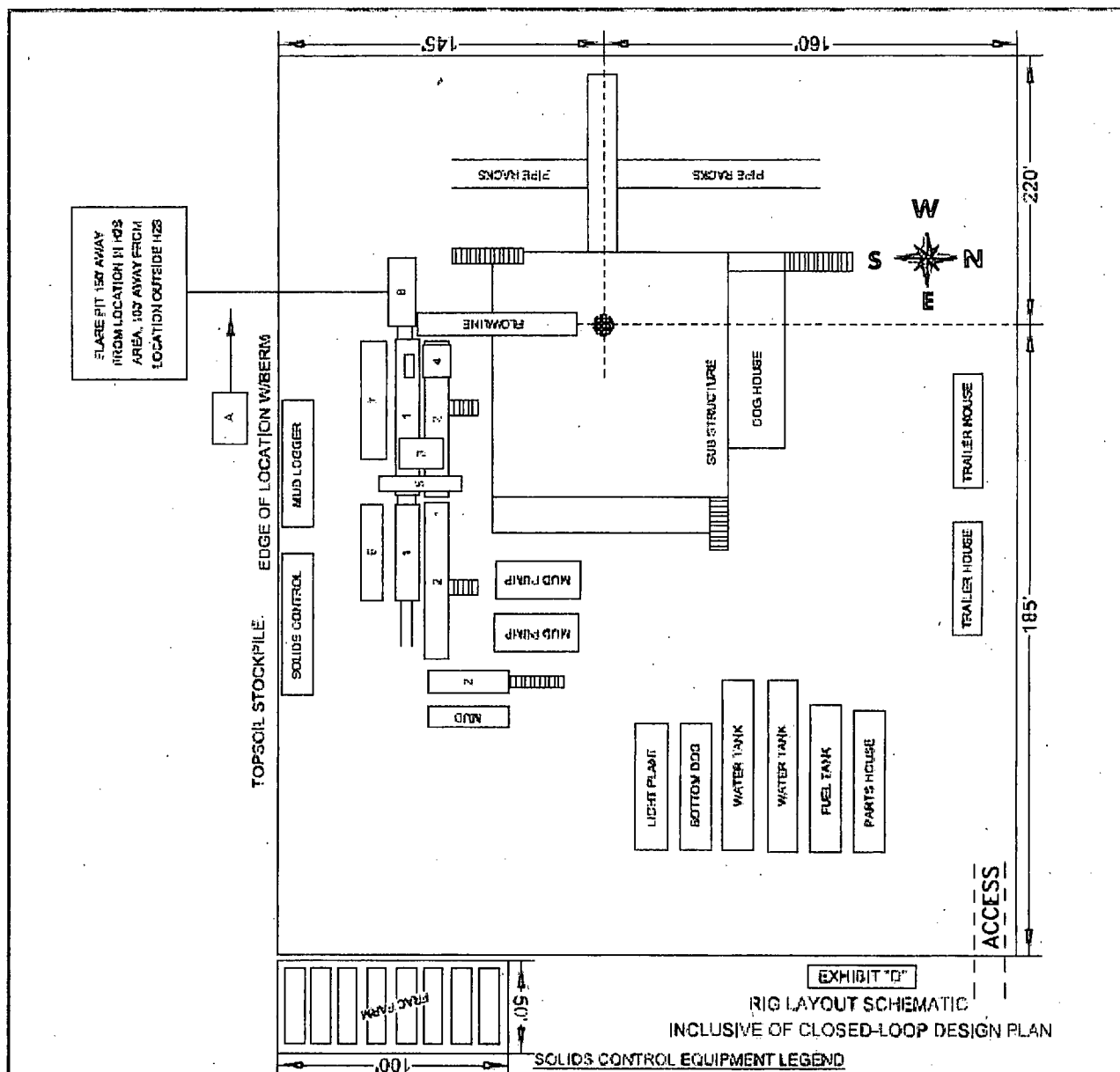
SCALE: 1" = 2000'

W.O. Number: JMS 30614

Survey Date: 06-24-2014

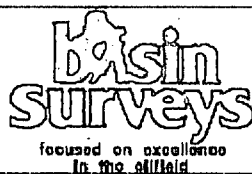
YELLOW TINT - USA LAND
BLUE TINT - STATE LAND
NATURAL COLOR - FEE LAND

BOPCO, L.P.



BIG EDDY UNIT DI9 34H

Located 48' FNL and 823' FEL
Section 28, Township 21 South, Range 30 East,
N.M.P.M., Eddy County, New Mexico.



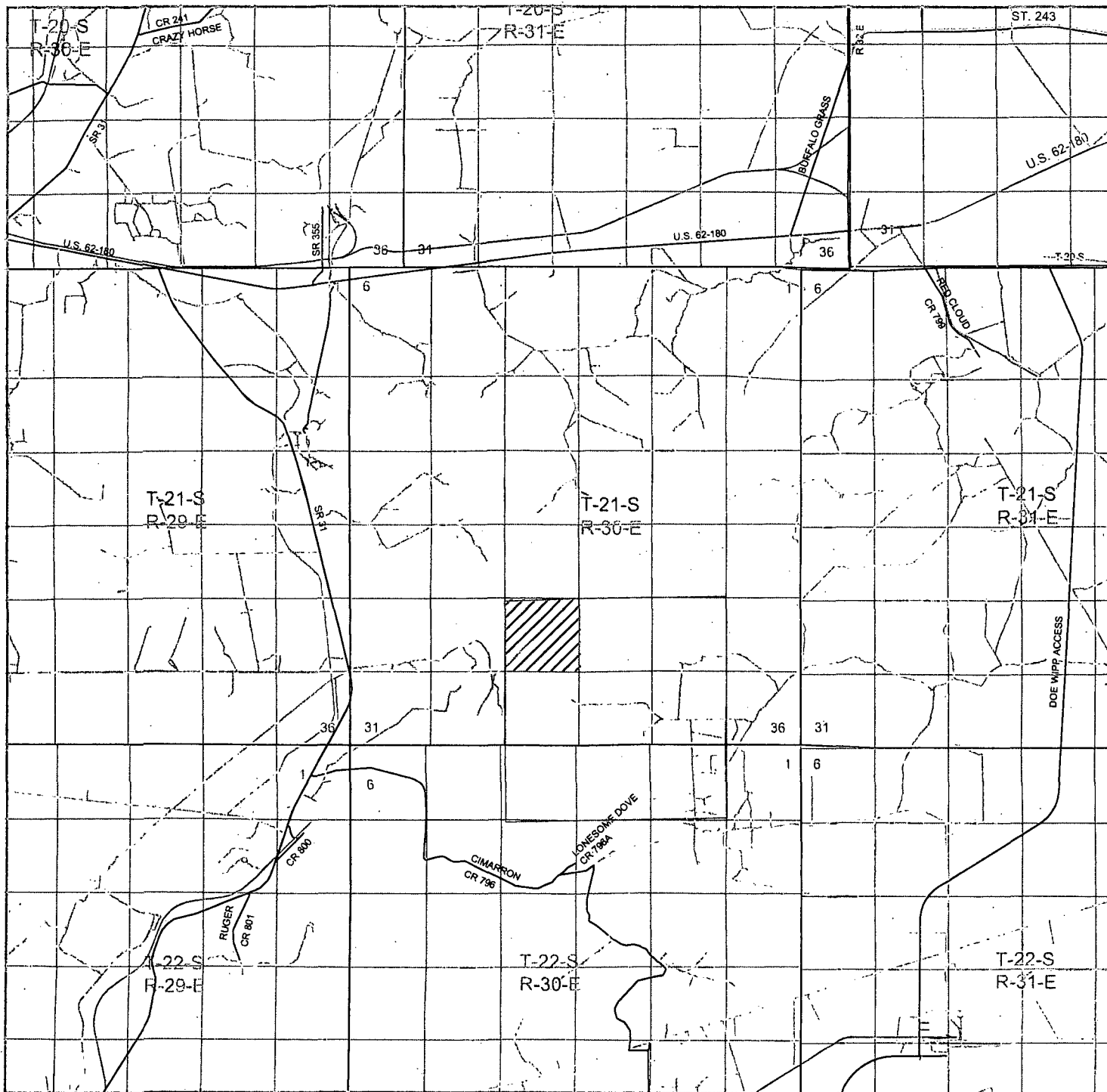
P.O. Box 1786
1120 N. West County Rd.
Hobbs, New Mexico 88241
(575) 393-7318 - Office
(575) 392-2208 - Fax
basinsurveys.com

SCALE: NONE

W.O. Number: JMS 30814

Survey Date: 06-24-2014

BOPCO, L.P.



BIG EDDY UNIT DI9 34H

Located 48' FNL and 823' FEL
 Section 28, Township 21 South, Range 30 East,
 N.M.P.M., Eddy County, New Mexico.

basin
surveys
 focused on excellence
 in the oilfield

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

0 1 MI 2 MI 3 MI 4 MI

SCALE: 1" = 2 MILES

W.O. Number: JMS 30614

Survey Date: 06-24-2014

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

BOPCO, L.P.

TO: Whitney McKee
FROM: Don Wood
REMARK: BEU DI9 #34H Drilling Sundry Notice
DATE: July 8, 2014

The following changes need to be made on the approved APD for the subject well:

1. Surface location changed from 90' FSL & 879' FEL, Sec 21, T21S-R30E to 48' FNL & 823' FEL of Sec 28, T21S-R30E.
2. Casing weight, grade and thread changes. See table below which highlights changes.
3. This well will not have a pilot hole as the APD shows. Rev-D.0 directional plan is attached.
4. Cement program changes. These changes are contained and highlighted in the table below.
5. The original APD stated "Cement not required on the 4-1/2" casing. Packer system being used." The 4-1/2" liner will be cemented and the cement program is contained in the table below.

APD POINT 3: CASING PROGRAM (Original APD)

TYPE	INTERVAL (MD)	HOLE SIZE	PURPOSE	INSTALLATION TYPE
20"	0-120	30"	Conductor	Contractor Discretion
13-3/8", 48#, H-40 STC	0-410	17-1/2"	Surface	New
9-5/8", 40#, J-55 LTC	0-3,400'	12-1/4"	Intermediate	New
7", 26.0#, HCP-110 BTC	0-10,930'	8-3/4"	Production	New
4-1/2", 11.6#, HCP-110 BTC	10,880-20,430'	6-1/8"	Completion System	New

APD POINT 3: CASING PROGRAM CHANGES

See
CON

TYPE	INTERVAL (MD)	HOLE SIZE	PURPOSE	INSTALLATION TYPE
20"	0-120	30"	Conductor	Contractor Discretion
13-3/8", 54.5#, J-55 STC	0-425' 410'	17-1/2"	Surface	New
9-5/8", 40#, J-55 LTC	0-3,236' 3400'	12-1/4"	Intermediate	New
7", 26.0#, HCP-110 BTC	0-9,581'	8-3/4"	Production	New
4-1/2", 11.6#, HCP-110 Hydril 563	9,481-20,368'	6-1/8"	Completion System	New

POINT 6: TECHNICAL STAGES OF OPERATIONS

D) CEMENT (Original APD)

INTERVAL	AMOUNT SXS	FT of FILL	TYPE	GAL/SX	PPG	FT3/SX
SURFACE						
Lead: 0-110'	90	110	Class C + 2% CaCl + 4% Bentonite + 0.25 lb/sx CelloFlake + 3 lb/sx LCM-1	8.69	13.50	1.75
Tail: 110-410'	340	300	Class C + 2% CaCl + 0.25 lb/sx CelloFlake + 3 lb/sx LCM-1	6.35	14.8	1.35
INTERMEDIATE						
Lead: 0-2,991'	660	2991	EconoCEM HLC + 5% CaCl + 5#/sx Gilsonite	9.32	12.90	1.85
Tail: 2,991-3,491'	190	500	HalCem C	6.34	14.80	1.33
PRODUCTION						
Stage 1						
Lead: 5,000-8,236'	280	3,236	Tuned Light + 0.125 pps Poly-E-Flake	14.87	11.0	2.64
Tail: 8,236-10,930'	300	2,694	Class "H" + 0.5% Halad-344 + 0.25% CFR-3 + 0.5% Econolite	11.41	12.00	2.03
DV TOOL AT 5,000'						
Stage 2						
Lead: 0-5,000'	410	5,000	Tuned Light + 0.125 pps Poly-E-Flake	11.70	11.0	2.35

POINT 6: TECHNICAL STAGES OF OPERATIONS

D) CEMENT CHANGES

INTERVAL	AMOUNT SXS	FT of FILL	TYPE	GAL/SX	PPG	FT3/SX
SURFACE						
Lead: 0-410'	495	425	HalCem System	6.34	14.80	1.33
INTERMEDIATE						
Lead: 0-2,736'	870	2,736	EconoCEM HLC + 5% Salt + 0.125 lbm Poly- E-Flake	9.83	12.90	1.85
Tail: 2,736-3,236'	250	500	HalCem C	6.34	14.80	1.33
PRODUCTION						
Stage 1						
Lead: 5,000-8,297'	310	3,297	Tuned Light IV + 0.50 lbm CFR-3 + 0.125 pps Poly-E-Flake	14.84	11.0	2.71
Tail: 8,297-9,581'	165	1,284	VersaCem + 0.5%	8.84	13.00	1.67

See COA

			Halad-344 + 0.40% CFR-3 + 1 lbm Salt			
DV TOOL AT 5,000'						
Stage 2						
Lead: 0-5,000'	390	5,000'	Tuned Light III+ 0.125 pps Poly-E-Flake	12.63	11.0	2.53
Completion System						
Lead: 9,481- 20,368'	495 1,100 Per Chris Giese 1/15/14	10,887'	VersaCem™ System + 0.30% CFR-3 + 0.10% FWCA + 0.50 lbm D- AIR 5000 + 0.15% HR- 601 + 0.30% Super CBL	5.37	14.5	1.213

See COA

All changes have been highlighted.

cc: Todd Carpenter
Charles Warne
Chris Giese



Premium Connections Performance Data

Choose pipe size, weight and grade to view connection options and performance data.

PRODUCT

Wedge
563™
Tubing

Unit

USC unit ☐

Size

4.500



Wall

0.250 (11.60)



(Weight:lbs/ft)

Grade

P110



Connection Wedge 563™ Tubing



Options

- > Printer friendly version
- > E-mail results
- > View list of grade codes
- > TenarisHydril Homepage

PIPE BODY DATA

GEOMETRY

Nominal OD	4.500 in.	Nominal Weight	11.60 lbs/ft	Standard Drift Diameter	3.875 in.
Nominal ID	4.000 in.	Wall Thickness	0.250 in.	Special Drift Diameter	N/A
Plain End Weight	11.36 lbs/ft				

PERFORMANCE

Body Yield Strength	367 x 1000 lbs	Internal Yield	10690 psi	SMYS	110000 psi
Collapse	7580 psi				

WEDGE 563™ TUBING CONNECTION DATA

GEOMETRY

Connection OD	5.200 in.	Matched Strength OD	4.891 in.	Connection ID	3.950 in.
Coupling Length	8.250 in.	Threads per in.	3.45	Make-Up Loss	3.640 in.

PERFORMANCE

Tension Efficiency	100 %	Joint Yield Strength	367 x 1000 lbs	Internal Pressure Capacity	10690 psi
Compression Efficiency	100 %	Compression Strength	367 x 1000 lbs	Bending	112 °/100 ft
External Pressure Capacity	7580 psi				

MAKE-UP TORQUES

Minimum	3000 ft-lbs	Target	3600 ft-lbs	Maximum	5300 ft-lbs
---------	--------------------	--------	--------------------	---------	--------------------

OPERATIONAL LIMIT TORQUES

Operating Torque	10900 ft-lbs	Yield Torque	16300 ft-lbs	
------------------	---------------------	--------------	---------------------	--

BUCK-ON TORQUES

Minimum	5100 ft-lbs	Maximum	5800 ft-lbs	
---------	--------------------	---------	--------------------	--

BLANKING DIMENSIONS

Blanking Dimensions

Tenaris Steel Grade Designations

CS - Critical Service

HC - High Collapse Service

LT - Low Temperature Service

DW - Deep Well Service

HS - High Collapse(+ Sour Service

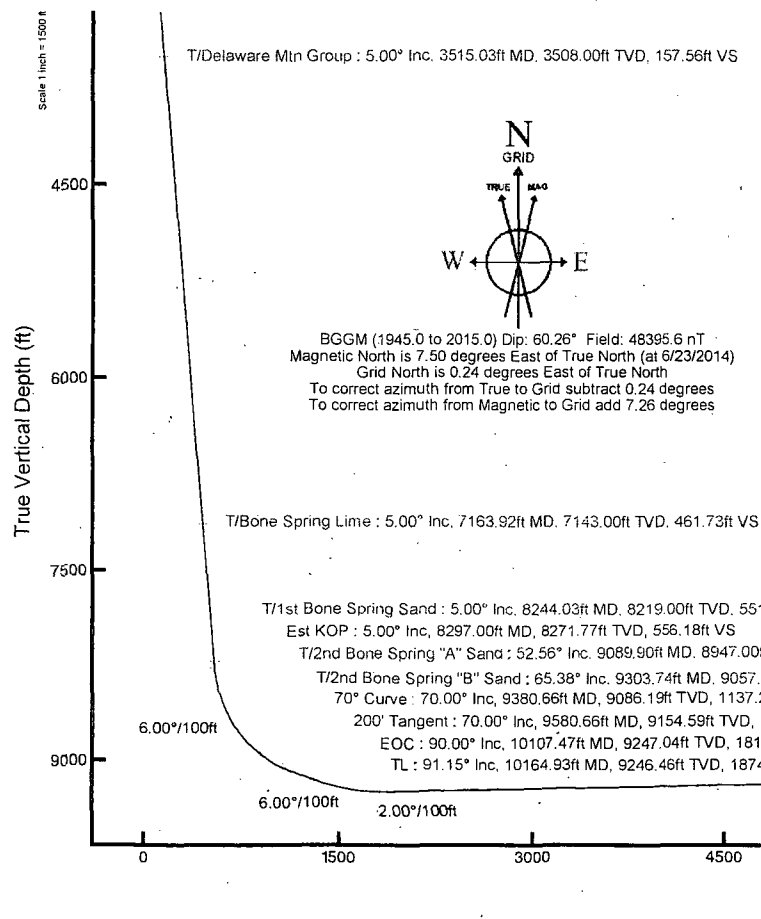
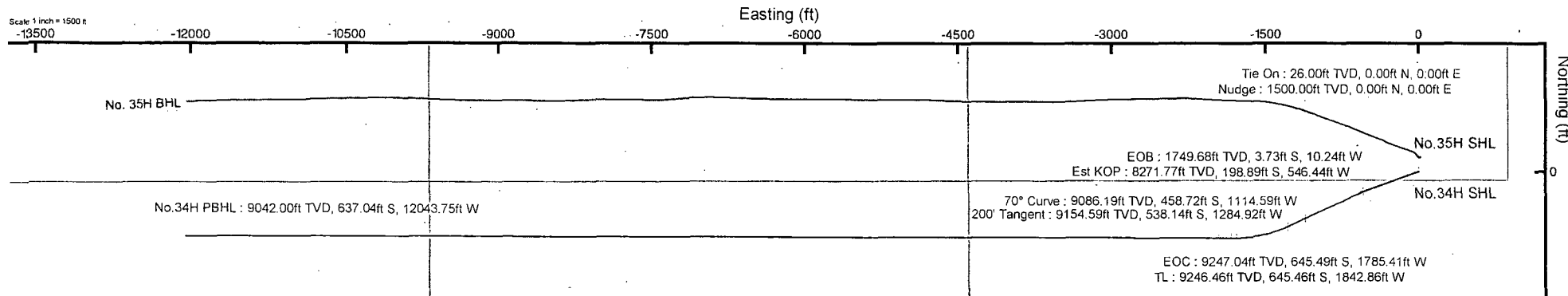
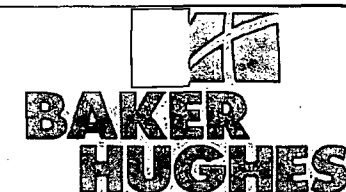
SS - Sour Service



BOPCO, LP

Location: Eddy County, NM
Field: Big Eddy
Facility: Big Eddy Unit DI-9

Slot: No.34H SHL
Well: No.34H
Wellbore: No.34H PWB



Plot reference wellpath is Rev-D.0	
True vertical depths are referenced to Rig on No.34H (KB)	Grid System: NAD27 / TM New Mexico SP, Eastern Zone (3001), US feet
Measured depths are referenced to Rig on No.34H (KB)	North Reference: Grid north
Rig on No.34H (KB) to Mean Sea Level: 3174 feet	Scale: True distance
Mean Sea Level to Mud line (At Slot: No.34H SHL): 0 feet	Depths are in feet
Coordinates are in feet referenced to Slot	Created by: burnranj on 6/23/2014

Well Profile Data

Design Comment	MD (ft)	Inc (°)	Az (°)	TVD (ft)	Local N (ft)	Local E (ft)	DLS (°/100ft)	VS (ft)
Tie On	26.00	0.000	250.000	26.00	0.00	0.00	0.00	0.00
Nudge	1500.00	0.000	250.000	1500.00	0.00	0.00	0.00	0.00
EOB	1750.00	5.000	250.000	1749.68	-3.73	-10.24	2.00	10.43
Est KOP	8297.00	5.000	250.000	8271.77	-198.89	-546.44	0.00	556.18
70° Curve	9380.66	70.000	245.000	9086.19	-458.72	-1114.59	6.00	1137.26
200' Tangent	9580.66	70.000	245.000	9154.59	-538.14	-1284.92	0.00	1311.55
EOC	10107.47	90.000	270.000	9247.04	-645.49	-1785.41	6.00	1817.01
TL	10164.93	91.148	270.047	9246.46	-645.46	-1842.86	2.00	1874.38
No.34H PBHL	20367.87	91.148	270.047	9042.00	-637.04	-12043.75	0.00	12060.59



Planned Wellpath Report

Rev-D.0

Page n of nn



REFERENCE WELLPATH IDENTIFICATION

Operator	BOPCO, LP	Slot	No.34H SHL
Area	Eddy County, NM	Well	No.34H
Field	Big Eddy	Wellbore	No.34H PWB
Facility	Big Eddy Unit D1-9		

REPORT SETUP INFORMATION

Projection System	NAD27 / TM New Mexico SP, Eastern Zone (3001), US feet	Software System	WellArchitect® 4.0.0
North Reference	Grid	User	Burnranj
Scale	0.999932	Report Generated	6/23/2014 at 1:52:24 PM
Divergence at slot	0.24° East	Database/Source file	WA_MIDLAND/C:\Users\burnranj\AppData\Roaming\Well Explorer\temp\BOPCO, LP No.34H SHL (Rev-D.0).xml

WELLPATH LOCATION

	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Easting[US ft]	Northing[US ft]	Latitude	Longitude
Start Location	-628.34	59.20	640111.20	530364.50	32°27'26.154"N	103°52'44.714"W
Facility Reference Pt			640052.00	530992.80	32°27'32.374"N	103°52'45.374"W
Field Reference Pt			610823.03	524402.80	32°26'28.262"N	103°58'26.774"W

WELLPATH DATUM

Calculation method	Minimum curvature	Rig on No.34H (KB) to Facility Vertical Datum	3174.00ft
Horizontal Reference Pt	Slot	Rig on No.34H (KB) to Mean Sea Level	3174.00ft
Vertical Reference Pt	Rig on No.34H (KB)	Rig on No.34H (KB) to Mud Line at Slot (No.34H SHL)	3174.00ft
Section Reference Pt	Rig on No.34H (KB)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	266.97°



Planned Wellpath Report

Rev-D.0

Page n of nn



REFERENCE WELLPATH IDENTIFICATION

Operator	BOPCO, LP	Slot	No.34H SHL
Area	Eddy County, NM	Well	No.34H
Field	Big Eddy	Wellbore	No.34H PWB
Locality	Big Eddy Unit DI-9		

WELLPATH DATA (206 stations) * = interpolated/extrapolated station

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	DLS [%/100ft]	Comments
0.00†	0.000	250.000	0.00	0.00	0.00	0.00	0.00	
26.00	0.000	250.000	26.00	0.00	0.00	0.00	0.00	Tie On
417.00†	0.000	250.000	417.00	0.00	0.00	0.00	0.00	T/Salt
1500.00	0.000	250.000	1500.00	0.00	0.00	0.00	0.00	Nudge
1600.00†	2.000	250.000	1599.98	1.67	-0.60	-1.64	2.00	
1700.00†	4.000	250.000	1699.84	6.67	-2.39	-6.56	2.00	
1750.00	5.000	250.000	1749.68	10.43	-3.73	-10.24	2.00	EOB
1800.00†	5.000	250.000	1799.49	14.59	-5.22	-14.34	0.00	
1900.00†	5.000	250.000	1899.11	22.93	-8.20	-22.53	0.00	
2000.00†	5.000	250.000	1998.73	31.27	-11.18	-30.72	0.00	
2100.00†	5.000	250.000	2098.35	39.60	-14.16	-38.91	0.00	
2200.00†	5.000	250.000	2197.97	47.94	-17.14	-47.10	0.00	
2300.00†	5.000	250.000	2297.59	56.27	-20.12	-55.29	0.00	
2400.00†	5.000	250.000	2397.21	64.61	-23.10	-63.48	0.00	
2500.00†	5.000	250.000	2496.83	72.95	-26.09	-71.67	0.00	
2600.00†	5.000	250.000	2596.45	81.28	-29.07	-79.86	0.00	
2700.00†	5.000	250.000	2696.07	89.62	-32.05	-88.05	0.00	
2800.00†	5.000	250.000	2795.69	97.95	-35.03	-96.24	0.00	
2900.00†	5.000	250.000	2895.31	106.29	-38.01	-104.43	0.00	
3000.00†	5.000	250.000	2994.93	114.63	-40.99	-112.62	0.00	
3060.30†	5.000	250.000	3055.00	119.65	-42.79	-117.56	0.00	B/Salt
3100.00†	5.000	250.000	3094.55	122.96	-43.97	-120.81	0.00	
3200.00†	5.000	250.000	3194.17	131.30	-46.95	-129.00	0.00	
3300.00†	5.000	250.000	3293.78	139.63	-49.93	-137.19	0.00	
3400.00†	5.000	250.000	3393.40	147.97	-52.91	-145.38	0.00	
3500.00†	5.000	250.000	3493.02	156.31	-55.89	-153.57	0.00	
3515.03†	5.000	250.000	3508.00	157.56	-56.34	-154.80	0.00	T/Delaware Mtn Group
3600.00†	5.000	250.000	3592.64	164.64	-58.88	-161.76	0.00	
3700.00†	5.000	250.000	3692.26	172.98	-61.86	-169.95	0.00	
3800.00†	5.000	250.000	3791.88	181.31	-64.84	-178.14	0.00	
3900.00†	5.000	250.000	3891.50	189.65	-67.82	-186.33	0.00	
4000.00†	5.000	250.000	3991.12	197.99	-70.80	-194.52	0.00	
4100.00†	5.000	250.000	4090.74	206.32	-73.78	-202.71	0.00	
4200.00†	5.000	250.000	4190.36	214.66	-76.76	-210.90	0.00	
4300.00†	5.000	250.000	4289.98	222.99	-79.74	-219.09	0.00	
4400.00†	5.000	250.000	4389.60	231.33	-82.72	-227.28	0.00	
4500.00†	5.000	250.000	4489.22	239.67	-85.70	-235.47	0.00	
4600.00†	5.000	250.000	4588.84	248.00	-88.68	-243.66	0.00	
4700.00†	5.000	250.000	4688.46	256.34	-91.67	-251.85	0.00	
4800.00†	5.000	250.000	4788.08	264.67	-94.65	-260.04	0.00	
4900.00†	5.000	250.000	4887.70	273.01	-97.63	-268.23	0.00	
5000.00†	5.000	250.000	4987.32	281.35	-100.61	-276.42	0.00	
5100.00†	5.000	250.000	5086.94	289.68	-103.59	-284.61	0.00	
5200.00†	5.000	250.000	5186.55	298.02	-106.57	-292.80	0.00	
5300.00†	5.000	250.000	5286.17	306.35	-109.55	-300.99	0.00	



Planned Wellpath Report

Rev-D.0
Page n of nn



REFERENCE WELLPATH IDENTIFICATION

Operator	BOPCO, LP	Slot	No.34H SHL
Area	Eddy County, NM	Well	No.34H
Field	Big Eddy	Wellbore	No.34H PWB
Facility	Big Eddy Unit DI-9		

WELLPATH DATA (206 stations) * = interpolated/extrapolated station

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	DLS [°/100ft]	Comments
5400.00†	5.000	250.000	5385.79	314.69	-112.53	-309.18	0.00	
5500.00†	5.000	250.000	5485.41	323.03	-115.51	-317.37	0.00	
5600.00†	5.000	250.000	5585.03	331.36	-118.49	-325.56	0.00	
5700.00†	5.000	250.000	5684.65	339.70	-121.47	-333.75	0.00	
5800.00†	5.000	250.000	5784.27	348.03	-124.46	-341.94	0.00	
5900.00†	5.000	250.000	5883.89	356.37	-127.44	-350.13	0.00	
6000.00†	5.000	250.000	5983.51	364.71	-130.42	-358.32	0.00	
6100.00†	5.000	250.000	6083.13	373.04	-133.40	-366.51	0.00	
6200.00†	5.000	250.000	6182.75	381.38	-136.38	-374.70	0.00	
6300.00†	5.000	250.000	6282.37	389.71	-139.36	-382.89	0.00	
6400.00†	5.000	250.000	6381.99	398.05	-142.34	-391.08	0.00	
6500.00†	5.000	250.000	6481.61	406.39	-145.32	-399.27	0.00	
6600.00†	5.000	250.000	6581.23	414.72	-148.30	-407.46	0.00	
6700.00†	5.000	250.000	6680.85	423.06	-151.28	-415.65	0.00	
6800.00†	5.000	250.000	6780.47	431.39	-154.26	-423.84	0.00	
6900.00†	5.000	250.000	6880.09	439.73	-157.24	-432.03	0.00	
7000.00†	5.000	250.000	6979.70	448.07	-160.23	-440.22	0.00	
7100.00†	5.000	250.000	7079.32	456.40	-163.21	-448.41	0.00	
7163.92†	5.000	250.000	7143.00	461.73	-165.11	-453.64	0.00	T/Bone Spring Lime
7200.00†	5.000	250.000	7178.94	464.74	-166.19	-456.60	0.00	
7300.00†	5.000	250.000	7278.56	473.07	-169.17	-464.79	0.00	
7400.00†	5.000	250.000	7378.18	481.41	-172.15	-472.98	0.00	
7500.00†	5.000	250.000	7477.80	489.75	-175.13	-481.17	0.00	
7600.00†	5.000	250.000	7577.42	498.08	-178.11	-489.36	0.00	
7700.00†	5.000	250.000	7677.04	506.42	-181.09	-497.55	0.00	
7800.00†	5.000	250.000	7776.66	514.75	-184.07	-505.74	0.00	
7900.00†	5.000	250.000	7876.28	523.09	-187.05	-513.93	0.00	
8000.00†	5.000	250.000	7975.90	531.43	-190.03	-522.12	0.00	
8100.00†	5.000	250.000	8075.52	539.76	-193.02	-530.31	0.00	
8200.00†	5.000	250.000	8175.14	548.10	-196.00	-538.50	0.00	
8244.03†	5.000	250.000	8219.00	551.77	-197.31	-542.10	0.00	T/1st Bone Spring Sand
8297.00	5.000	250.000	8271.77	556.18	-198.89	-546.44	0.00	Est KOP
8300.00†	5.179	249.820	8274.76	556.44	-198.98	-546.69	6.00	
8400.00†	11.169	247.122	8373.70	569.87	-204.31	-559.86	6.00	
8500.00†	17.165	246.297	8470.61	592.81	-214.01	-582.32	6.00	
8600.00†	23.164	245.890	8564.44	625.00	-227.99	-613.81	6.00	
8700.00†	29.163	245.644	8654.15	666.08	-246.09	-654.00	6.00	
8800.00†	35.162	245.476	8738.77	715.61	-268.11	-702.43	6.00	
8900.00†	41.162	245.352	8817.36	773.05	-293.81	-758.59	6.00	
9000.00†	47.161	245.254	8889.06	837.77	-322.91	-821.86	6.00	
9089.90†	52.555	245.181	8947.00	901.57	-351.71	-884.23	6.00	T/2nd Bone Spring "A" Sand
9100.00†	53.161	245.174	8953.10	909.05	-355.09	-891.54	6.00	
9200.00†	59.161	245.105	9008.76	986.11	-389.99	-966.87	6.00	
9300.00†	65.161	245.045	9055.44	1068.12	-427.24	-1047.02	6.00	
9303.74†	65.385	245.042	9057.00	1071.27	-428.67	-1050.10	6.00	T/2nd Bone Spring "B" Sand



Planned Wellpath Report

Rev-D.0

Page n of nn



REFERENCE WELLPATH IDENTIFICATION

Operator	BOPCO, LP	Slot	No.34H SHL
Location	Eddy County, NM	Well	No.34H
Well ID	Big Eddy	Wellbore	No.34H PWB
Well ID	Big Eddy Unit DI-9		

WELLPATH DATA (206 stations) † = interpolated/extrapolated station

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	DLS [°/100ft]	Comments
9380.66	70.000	245.000	9086.19	1137.26	-458.72	-1114.59	6.00	70° Curve
9400.00†	70.000	245.000	9092.80	1154.11	-466.40	-1131.06	0.00	
9500.00†	70.000	245.000	9127.01	1241.26	-506.11	-1216.22	0.00	
9580.66	70.000	245.000	9154.59	1311.55	-538.14	-1284.92	0.00	200' Tangent
9600.00†	70.689	245.991	9161.10	1328.50	-545.70	-1301.49	6.00	
9700.00†	74.331	250.992	9191.17	1418.92	-580.61	-1390.19	6.00	
9800.00†	78.083	255.815	9215.02	1513.29	-608.30	-1483.22	6.00	
9900.00†	81.914	260.505	9232.39	1610.56	-628.48	-1579.57	6.00	
10000.00†	85.797	265.105	9243.10	1709.68	-640.91	-1678.17	6.00	
10100.00†	89.708	269.661	9247.02	1809.55	-645.46	-1777.94	6.00	
10107.47	90.000	270.000	9247.04	1817.01	-645.49	-1785.41	6.00	EOC
10164.93	91.148	270.047	9246.46	1874.38	-645.46	-1842.86	2.00	TL
10200.00†	91.148	270.047	9245.76	1909.40	-645.43	-1877.93	0.00	
10300.00†	91.148	270.047	9243.76	2009.24	-645.35	-1977.91	0.00	
10400.00†	91.148	270.047	9241.75	2109.07	-645.27	-2077.89	0.00	
10500.00†	91.148	270.047	9239.75	2208.91	-645.19	-2177.87	0.00	
10600.00†	91.148	270.047	9237.75	2308.74	-645.10	-2277.85	0.00	
10700.00†	91.148	270.047	9235.74	2408.58	-645.02	-2377.83	0.00	
10800.00†	91.148	270.047	9233.74	2508.42	-644.94	-2477.81	0.00	
10900.00†	91.148	270.047	9231.73	2608.25	-644.86	-2577.79	0.00	
11000.00†	91.148	270.047	9229.73	2708.09	-644.77	-2677.77	0.00	
11100.00†	91.148	270.047	9227.73	2807.92	-644.69	-2777.75	0.00	
11200.00†	91.148	270.047	9225.72	2907.76	-644.61	-2877.73	0.00	
11300.00†	91.148	270.047	9223.72	3007.59	-644.53	-2977.71	0.00	
11400.00†	91.148	270.047	9221.71	3107.43	-644.44	-3077.69	0.00	
11500.00†	91.148	270.047	9219.71	3207.27	-644.36	-3177.67	0.00	
11600.00†	91.148	270.047	9217.71	3307.10	-644.28	-3277.65	0.00	
11700.00†	91.148	270.047	9215.70	3406.94	-644.20	-3377.63	0.00	
11800.00†	91.148	270.047	9213.70	3506.77	-644.11	-3477.61	0.00	
11900.00†	91.148	270.047	9211.69	3606.61	-644.03	-3577.59	0.00	
12000.00†	91.148	270.047	9209.69	3706.45	-643.95	-3677.57	0.00	
12100.00†	91.148	270.047	9207.69	3806.28	-643.87	-3777.55	0.00	
12200.00†	91.148	270.047	9205.68	3906.12	-643.78	-3877.53	0.00	
12300.00†	91.148	270.047	9203.68	4005.95	-643.70	-3977.51	0.00	
12400.00†	91.148	270.047	9201.67	4105.79	-643.62	-4077.49	0.00	
12500.00†	91.148	270.047	9199.67	4205.63	-643.54	-4177.47	0.00	
12600.00†	91.148	270.047	9197.67	4305.46	-643.45	-4277.45	0.00	
12700.00†	91.148	270.047	9195.66	4405.30	-643.37	-4377.43	0.00	
12800.00†	91.148	270.047	9193.66	4505.13	-643.29	-4477.41	0.00	
12900.00†	91.148	270.047	9191.65	4604.97	-643.20	-4577.39	0.00	
13000.00†	91.148	270.047	9189.65	4704.81	-643.12	-4677.37	0.00	
13100.00†	91.148	270.047	9187.65	4804.64	-643.04	-4777.35	0.00	
13200.00†	91.148	270.047	9185.64	4904.48	-642.96	-4877.33	0.00	
13300.00†	91.148	270.047	9183.64	5004.31	-642.87	-4977.31	0.00	
13400.00†	91.148	270.047	9181.63	5104.15	-642.79	-5077.29	0.00	



Planned Wellpath Report

Rev-D.0
Page n of nn



REFERENCE WELLPATH IDENTIFICATION

Operator	BOPCO, LP	Slot	No.34H SHL
Area	Eddy County, NM	Well	No.34H
Field	Big Eddy	Wellbore	No.34H PWB
Facility	Big Eddy Unit DI-9		

WELLPATH DATA (206 stations) † = interpolated/extrapolated station

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	DLS [%/100ft]	Comments
13500.00†	91.148	270.047	9179.63	5203.99	-642.71	-5177.27	0.00	
13600.00†	91.148	270.047	9177.63	5303.82	-642.63	-5277.25	0.00	
13700.00†	91.148	270.047	9175.62	5403.66	-642.54	-5377.23	0.00	
13800.00†	91.148	270.047	9173.62	5503.49	-642.46	-5477.20	0.00	
13900.00†	91.148	270.047	9171.61	5603.33	-642.38	-5577.18	0.00	
14000.00†	91.148	270.047	9169.61	5703.17	-642.30	-5677.16	0.00	
14100.00†	91.148	270.047	9167.61	5803.00	-642.21	-5777.14	0.00	
14200.00†	91.148	270.047	9165.60	5902.84	-642.13	-5877.12	0.00	
14300.00†	91.148	270.047	9163.60	6002.67	-642.05	-5977.10	0.00	
14400.00†	91.148	270.047	9161.59	6102.51	-641.97	-6077.08	0.00	
14500.00†	91.148	270.047	9159.59	6202.35	-641.88	-6177.06	0.00	
14600.00†	91.148	270.047	9157.59	6302.18	-641.80	-6277.04	0.00	
14700.00†	91.148	270.047	9155.58	6402.02	-641.72	-6377.02	0.00	
14800.00†	91.148	270.047	9153.58	6501.85	-641.64	-6477.00	0.00	
14900.00†	91.148	270.047	9151.57	6601.69	-641.55	-6576.98	0.00	
15000.00†	91.148	270.047	9149.57	6701.53	-641.47	-6676.96	0.00	
15100.00†	91.148	270.047	9147.57	6801.36	-641.39	-6776.94	0.00	
15200.00†	91.148	270.047	9145.56	6901.20	-641.31	-6876.92	0.00	
15300.00†	91.148	270.047	9143.56	7001.03	-641.22	-6976.90	0.00	
15400.00†	91.148	270.047	9141.55	7100.87	-641.14	-7076.88	0.00	
15500.00†	91.148	270.047	9139.55	7200.71	-641.06	-7176.86	0.00	
15600.00†	91.148	270.047	9137.55	7300.54	-640.98	-7276.84	0.00	
15700.00†	91.148	270.047	9135.54	7400.38	-640.89	-7376.82	0.00	
15800.00†	91.148	270.047	9133.54	7500.21	-640.81	-7476.80	0.00	
15900.00†	91.148	270.047	9131.53	7600.05	-640.73	-7576.78	0.00	
16000.00†	91.148	270.047	9129.53	7699.88	-640.65	-7676.76	0.00	
16100.00†	91.148	270.047	9127.53	7799.72	-640.56	-7776.74	0.00	
16200.00†	91.148	270.047	9125.52	7899.56	-640.48	-7876.72	0.00	
16300.00†	91.148	270.047	9123.52	7999.39	-640.40	-7976.70	0.00	
16400.00†	91.148	270.047	9121.51	8099.23	-640.32	-8076.68	0.00	
16500.00†	91.148	270.047	9119.51	8199.06	-640.23	-8176.66	0.00	
16600.00†	91.148	270.047	9117.51	8298.90	-640.15	-8276.64	0.00	
16700.00†	91.148	270.047	9115.50	8398.74	-640.07	-8376.62	0.00	
16800.00†	91.148	270.047	9113.50	8498.57	-639.99	-8476.60	0.00	
16900.00†	91.148	270.047	9111.50	8598.41	-639.90	-8576.58	0.00	
17000.00†	91.148	270.047	9109.49	8698.24	-639.82	-8676.56	0.00	
17100.00†	91.148	270.047	9107.49	8798.08	-639.74	-8776.54	0.00	
17200.00†	91.148	270.047	9105.48	8897.92	-639.66	-8876.52	0.00	
17300.00†	91.148	270.047	9103.48	8997.75	-639.57	-8976.50	0.00	
17400.00†	91.148	270.047	9101.48	9097.59	-639.49	-9076.48	0.00	
17500.00†	91.148	270.047	9099.47	9197.42	-639.41	-9176.46	0.00	
17600.00†	91.148	270.047	9097.47	9297.26	-639.32	-9276.44	0.00	
17700.00†	91.148	270.047	9095.46	9397.10	-639.24	-9376.42	0.00	
17800.00†	91.148	270.047	9093.46	9496.93	-639.16	-9476.40	0.00	
17900.00†	91.148	270.047	9091.46	9596.77	-639.08	-9576.38	0.00	



Planned Wellpath Report

Rev-D.0
Page n of nn



REFERENCE WELLPATH IDENTIFICATION

Operator	BOPCO, LP	Slot	No.34H SHL
Area	Eddy County, NM	Well	No.34H
Field	Big Eddy	Wellbore	No.34H PWB
Locality	Big Eddy Unit D1-9		

WELLPATH DATA (206 stations) * = interpolated/extrapolated station

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	DLS [°/100ft]	Comments
18000.00†	91.148	270.047	9089.45	9696.60	-638.99	-9676.36	0.00	
18100.00†	91.148	270.047	9087.45	9796.44	-638.91	-9776.34	0.00	
18200.00†	91.148	270.047	9085.44	9896.28	-638.83	-9876.32	0.00	
18300.00†	91.148	270.047	9083.44	9996.11	-638.75	-9976.30	0.00	
18400.00†	91.148	270.047	9081.44	10095.95	-638.66	-10076.28	0.00	
18500.00†	91.148	270.047	9079.43	10195.78	-638.58	-10176.26	0.00	
18600.00†	91.148	270.047	9077.43	10295.62	-638.50	-10276.24	0.00	
18700.00†	91.148	270.047	9075.42	10395.46	-638.42	-10376.22	0.00	
18800.00†	91.148	270.047	9073.42	10495.29	-638.33	-10476.20	0.00	
18900.00†	91.148	270.047	9071.42	10595.13	-638.25	-10576.18	0.00	
19000.00†	91.148	270.047	9069.41	10694.96	-638.17	-10676.16	0.00	
19100.00†	91.148	270.047	9067.41	10794.80	-638.09	-10776.14	0.00	
19200.00†	91.148	270.047	9065.40	10894.64	-638.00	-10876.12	0.00	
19300.00†	91.148	270.047	9063.40	10994.47	-637.92	-10976.10	0.00	
19400.00†	91.148	270.047	9061.40	11094.31	-637.84	-11076.08	0.00	
19500.00†	91.148	270.047	9059.39	11194.14	-637.76	-11176.06	0.00	
19600.00†	91.148	270.047	9057.39	11293.98	-637.67	-11276.04	0.00	
19619.35†	91.148	270.047	9057.00	11313.30	-637.66	-11295.39	0.00	T/2nd Bone Spring "B" Sand
19700.00†	91.148	270.047	9055.38	11393.82	-637.59	-11376.02	0.00	
19800.00†	91.148	270.047	9053.38	11493.65	-637.51	-11476.00	0.00	
19900.00†	91.148	270.047	9051.38	11593.49	-637.43	-11575.98	0.00	
20000.00†	91.148	270.047	9049.37	11693.32	-637.34	-11675.96	0.00	
20100.00†	91.148	270.047	9047.37	11793.16	-637.26	-11775.94	0.00	
20200.00†	91.148	270.047	9045.36	11893.00	-637.18	-11875.92	0.00	
20300.00†	91.148	270.047	9043.36	11992.83	-637.10	-11975.90	0.00	
20367.87	91.148	270.047	9042.00†	12060.59	-637.04	-12043.75	0.00	No.34H PBHL



Planned Wellpath Report

Rev-D.0
Page n of nn



REFERENCE WELLPATH IDENTIFICATION

Operator	BOPCO, LP	Slot	No.34H SHL
Area	Eddy County, NM	Well	No.34H
Field	Big Eddy	Wellbore	No.34H PWB
Facility	Big Eddy Unit DI-9		

TARGETS

Name	MD [ft]	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
BEU DI9 No.34H PBHL		9125.00	-637.04	-12043.75	628068.30	529727.50	32°27'20.335"N	103°55'05.297"W	point

SURVEY PROGRAM - Ref Wellbore: No.34H PWB / Ref Wellpath: Rev-D.0

Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore
26.00	20500.00	NaviTrak (Standard)		No.34H PWB

**PECOS DISTRICT
CONDITIONS OF APPROVAL**

OPERATOR'S NAME:	BOPCO LP
LEASE NO.:	NMNM-04105A
WELL NAME & NO.:	34H-BIG EDDY UNIT DI9
SURFACE HOLE FOOTAGE:	0048' FNL & 0823' FEL
BOTTOM HOLE FOOTAGE	0660' FNL & 2310' FEL (Sec. 30)
LOCATION:	Section 28, T. 21 S., R 30 E., NMPM
COUNTY:	Eddy County, New Mexico

The original COAs still stand with the following drilling modifications:

I. DRILLING

A. DRILLING OPERATIONS REQUIREMENTS

The BLM is to be notified in advance for a representative to witness:

- a. Spudding well (minimum of 24 hours)
- b. Setting and/or Cementing of all casing strings (minimum of 4 hours)
- c. BOPE tests (minimum of 4 hours)

☒ **Eddy County**

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

1. **Hydrogen Sulfide (H₂S) monitors shall be installed prior to drilling out the surface shoe. If H₂S is encountered in quantities greater than 10 PPM the well shall be shut in and H₂S equipment shall be installed and flare line must be extended pursuant to Onshore Oil and Gas Order #6. After detection, the Hydrogen Sulfide area must meet Onshore Order 6 requirements, which includes equipment and personnel/public protection items.**
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. **If the drilling rig is removed without approval – an Incident of Non-Compliance will be written and will be a “Major” violation.**
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 is located, this does not include the dog house or stairway area.

4. The record of the drilling rate along with the GR/N well log run from TD to surface (horizontal well – vertical portion of hole) shall 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 program need prior approval if the items substituted are of lesser grade or different casing size or are Non-API. The Operator can exchange the components of the proposal with that of superior strength (i.e. changing from J-55 to N-80, or from 36# to 40#). Changes to the approved cement program need prior approval if the altered cement plan has less volume or strength or if the changes are substantial (i.e. Multistage tool, ECP, etc.).

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

Wait on cement (WOC) time prior to drilling out 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. DURING THIS WOC TIME, NO DRILL PIPE, ETC. SHALL BE RUN IN THE HOLE. Provide compressive strengths including hours to reach required 500 pounds compressive strength prior to cementing each casing string. IF OPERATOR DOES NOT HAVE THE WELL SPECIFIC CEMENT DETAILS ONSITE PRIOR TO PUMPING THE CEMENT FOR EACH CASING STRING, THE WOC WILL BE 30 HOURS. 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.

R-111-P Potash

Possibility of water flows in the Salado and Delaware.

Possibility of lost circulation in the Rustler and Delaware.

A MINIMUM OF TWO CASING STRINGS CEMENTED TO SURFACE IS REQUIRED IN HIGH CAVE/KARST AREAS. THE CEMENT MUST BE IN A SOLID SHEATH. THEREFORE, ONE INCH OPERATIONS ARE NOT SUFFICIENT TO PROTECT CAVE KARST RESOURCES. A CASING DESIGN THAT HAS A ONE INCH JOB PERFORMED DOES NOT COUNT AS A SOLID SHEATH.

1. The **13-3/8** inch surface casing shall be set at approximately **410** feet (a minimum of 25 feet into the Rustler Anhydrite and above the salt) and cemented to the surface. **If salt is encountered, surface casing is to be set 10 feet above the 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.

Formation below the 13-3/8" shoe to be tested according to Onshore Order

2.III.B.1.i. Test to be done as a mud equivalency test using the mud weight necessary for the pore pressure of the formation below the shoe and the mud weight for the bottom of the hole. Report results to BLM office.

2. The minimum required fill of cement behind the **9-5/8** inch intermediate casing, which shall be set at **3400** feet (set casing in the base of the limestone member), 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.**

Formation below the 9-5/8" shoe to be tested according to Onshore Order 2.III.B.1.i.

Test to be done as a mud equivalency test using the mud weight necessary for the pore pressure of the formation below the shoe (not the mud weight required to prevent dissolving the salt formation) and the mud weight for the bottom of the hole. Report results to BLM office.

Centralizers required through the curve and a minimum of one every other joint.

3. The minimum required fill of cement behind the 7 inch production casing is:

Operator has proposed DV tool at depth of 5000', but will adjust cement proportionately if moved. DV tool shall be set a minimum of 50' below previous shoe and a minimum of 200' above current shoe. Operator shall submit sundry if DV tool depth cannot be set in this range.

- a. First stage to DV tool:

☒ Cement to circulate. If cement does not circulate, contact the appropriate BLM office before proceeding with second stage cement job. Operator should have plans as to how they will achieve approved top of cement on the next stage.

- b. Second stage above DV tool:

☒ Cement to surface. If cement does not circulate, contact the appropriate BLM office. **Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to potash.**

4. The minimum required fill of cement behind the 4-1/2 inch production Liner is:

☒ Cement as proposed by operator. Operator shall provide method of verification.

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. Variance approved to use flex line from BOP to choke manifold. Check condition of flexible line from BOP to choke manifold, replace if exterior is damaged or if line fails test. Line to be as straight as possible with no hard bends and is to be anchored according to Manufacturer's requirements. The flexible hose can be exchanged with a hose of equal size and equal or greater pressure rating. **Anchor requirements, specification sheet and hydrostatic pressure test certification matching the hose in service, to be onsite for review. These documents shall be posted in the company man's trailer and on the rig floor.** If the BLM inspector questions the straightness of the hose, a BLM engineer will be contacted and will review in the field or via picture supplied by inspector to determine if changes are required (operator shall expect delays if this occurs).
3. **Operator has proposed a multi-bowl wellhead assembly. This assembly will only be tested when installed on the surface casing. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be 5000 (5M) psi.**
 - a. **Wellhead shall be installed by manufacturer's representatives, submit documentation with subsequent sundry.**
 - b. **If the welding is performed by a third party, the manufacturer's representative shall monitor the temperature to verify that it does not exceed the maximum temperature of the seal.**
 - c. **Manufacturer representative shall install the test plug for the initial BOP test.**
 - d. **Operator shall perform the 9-5/8" and 7" casing integrity tests to 70% of the casing burst. This will test the multi-bowl seals.**
 - e. **If the cement does not circulate and one inch operations would have been possible with a standard wellhead, the well head shall be cut off, cementing operations performed and another wellhead installed.**

5M system requires an HCR valve, remote kill line and annular to match. The remote kill line is to be installed prior to testing the system and tested to stack pressure.

4. The appropriate BLM office shall be notified a minimum of 4 hours in advance for a representative to witness the tests.
 - a. In potash areas, for all casing strings utilizing slips, these are to be set as soon as the crew and rig are ready and any fallback cement remediation has been done. For all casing strings, casing cut-off and BOP installation can be initiated at twelve hours after bumping the plug. However, **no tests** shall commence until the cement has had a minimum of 24 hours setup time.
 - b. The tests shall be done by an independent service company utilizing a test plug **not a cup or J-packer.**

- c. The test shall be run on a 5000 psi chart for a 2-3M BOP/BOP, on a 10000 psi chart for a 5M BOP/BOPE and on a 15000 psi chart for a 10M BOP/BOPE. If a linear chart is used, it shall be a one hour chart. A circular chart shall have a maximum 2 hour clock. If a twelve hour or twenty-four hour chart is used, tester shall make a notation that it is run with a two hour clock.
- d. The results of the test shall be reported to the appropriate BLM office.
- e. 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.**
- f. 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. This test shall be performed prior to the test at full stack pressure.

D. DRILLING MUD

Mud system monitoring equipment, with derrick floor indicators and visual and audio alarms, shall be operating before drilling out of the surface shoe and shall be used until production casing is run and cemented.

Operator shall report any mud spill to the BLM within 12 hours of the spill.

E. DRILL STEM TEST

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

F. WASTE MATERIAL AND FLUIDS

All waste (i.e. drilling fluids, trash, salts, chemicals, sewage, gray water, etc.) created as a result of drilling operations and completion operations shall be safely contained and disposed of properly at a waste disposal facility. No waste material or fluid shall be disposed of on the well location or surrounding area.

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

JAM 071514