Form 3160-5
(June 2015)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

NMOCD Artesia

FORM APPROVED
OMB NO. 1004-0137
Expires: January 31, 2018

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.

SUBMIT IN TRIPLICATE - Other instructions on page 2

5. Lease Serial No.
NMNM25953

6. If Indian, Allottee or Tribe Name

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

1. Type of Well
☒ Oil Well ☐ Gas Well ☐ Other

8. Well Name and No.
KYLE 34 FEDERAL COM 5H 316764

2. Name of Operator
BC OPERATING INC
Contact: SARAH PRESLEY
E-Mail: SPRESLEY@BCOPERATING.COM

9. API Well No.
30-015-43295-00-X1

3a. Address
MIDLAND, TX 79710

3b. Phone No. (include area code)
Ph: 432-684-9696

10. Field and Pool or Exploratory Area
~~WILLOW LAKE-BONE SPRING, SE~~
Purple SAGE WFMP 98220

4. Location of Well *(Footage, Sec., T., R., M., or Survey Description)*
Sec 34 T24S R28E SESE 225FSL 990FEL
32.167025 N Lat, 104.069194 W Lon

11. County or Parish, State
EDDY COUNTY, NM

12. CHECK THE 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	☐ Hydraulic Fracturing	☐ Reclamation	☐ Well Integrity
☐ Final Abandonment Notice	☐ Casing Repair	☐ New Construction	☐ Recomplete	☒ Other Change to Original A PD
	☐ Change Plans	☐ Plug and Abandon	☐ Temporarily Abandon	
	☐ Convert to Injection	☐ Plug Back	☐ Water Disposal	

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 recomplete 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 must be filed within 30 days following completion of the involved operations. If the operation results in a multiple completion or recompletion in a new interval, a Form 3160-4 must be filed once testing has been completed. Final Abandonment Notices must be filed only after all requirements, including reclamation, have been completed and the operator has determined that the site is ready for final inspection.

BC OPERATING, INC. RESPECTFULLY REQUESTS TO AMEND THE APD FOR THE SUBJECT WELL.WE WILL BE LENGTHENING LATERAL INTO SEC.27-T24S-R28E. WE HAVE ATTACHED THE AMENDED C-102, DRILLING PLAN AND THE DIRECTIONAL PLAN.

NM OIL CONSERVATION
ARTESIA DISTRICT
FEB 22 2017
RECEIVED

SEE ATTACHED FOR
CONDITIONS OF APPROVAL

14. I hereby certify that the foregoing is true and correct.
Electronic Submission #360249 verified by the BLM Well Information System
For BC OPERATING INC, sent to the Carlsbad
Committed to AFMSS for processing by JENNIFER SANCHEZ on 12/13/2016 (17JAS0111SE)

Name *(Printed/Typed)* SARAH PRESLEY — Title REGULATORY ANALYST

Signature (Electronic Submission) — Date 12/07/2016

APPROVED
FEB 14 2017
BUREAU OF LAND MANAGEMENT
CARLSBAD FIELD OFFICE

THIS SPACE FOR FEDERAL OR STATE OFFICE USE

Approved By _____ Title _____ Date _____

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.

(Instructions on page 2)

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

Accepted for record - NMOCD RWP 2-24-2017

District I
1625 N. French Dr., Hobbs, NM 88240
Phone: (575) 393-6161 Fax: (575) 393-0720
District II
811 S. First St., Artesia, NM 88210
Phone: (575) 748-1283 Fax: (575) 748-9720
District III
1000 Rio Brazos Road, Aztec, NM 87410
Phone: (505) 334-6178 Fax: (505) 334-6170
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505
Phone: (505) 476-3460 Fax: (505) 476-3462

State of New Mexico
Energy, Minerals & Natural Resources Department
OIL CONSERVATION DIVISION
1220 South St. Francis Dr.
Santa Fe, NM 87505

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

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

[1] API Number	[2] Pool Code	[3] Pool Name
30-015-43295	~~97721~~ 98220 Purple Sage	~~WC; SALT DRAW~~; WOLFCAMP (G)

[4] Property Code	[5] Property Name	[6] Well Number
~~26599~~ 316704	KYLE 34 FEDERAL COM	5H

[7] OGRID No.	[8] Operator Name	[9] Elevation
160825	B.C. OPERATING, INC.	2994

[10] Surface Location

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
P	34	T24S	R28E		225	SOUTH	990	EAST	EDDY

[11] Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
I	27	T24S	R28E		2400	SOUTH	990	EAST	EDDY

[12] Dedicated Acres	[13] Joint or Infill	[14] Consolidation Code	[15] Order No.
~~480.00~~	640		

No allowable will be assigned to this completion until all interests have been consolidated or a non-standard unit has been approved by the division.

[16]

SECTION 21 | SECTION 22 | SECTION 23
SECTION 28 | SECTION 27 | SECTION 26

BOTTOM HOLE LOCATION
2400' FSL 990' FEL, SECTION 27
NAD 83, SPCS NM EAST
Y=432188.66 / X=622839.72
LAT=32.18789977N / LON=104.06987457W
NAD 27, SPCS NM EAST
Y=432130.25 / X=581655.98
LAT=32.18776769N / LON=104.06938354W

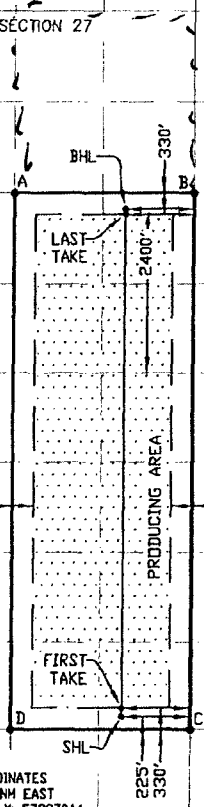
LAST TAKE POINT
2350' FSL 990' FEL, SECTION 27
NAD 83, SPCS NM EAST
Y=432138.54 / X=622840.22
LAT=32.18775198N / LON=104.06987333W
NAD 27, SPCS NM EAST
Y=432080.13 / X=581656.48
LAT=32.18762990N / LON=104.06938230W

SECTION 28 | SECTION 27 | SECTION 26
SECTION 33 | SECTION 34 | SECTION 35

FIRST TAKE POINT
330' FSL 990' FEL, SECTION 34
NAD 83, SPCS NM EAST
Y=424748.06 / X=622915.83
LAT=32.16743579N / LON=104.06968747W
NAD 27, SPCS NM EAST
Y=424689.80 / X=581731.93
LAT=32.16731345N / LON=104.06919708W

SURFACE HOLE LOCATION
225' FSL 990' FEL, SECTION 34
NAD 83, SPCS NM EAST
Y=424643.00' / X=622917.10'
LAT=32.16714699N / LON=104.06968420W
NAD 27, SPCS NM EAST
Y=424584.74' / X=581733.20'
LAT=32.16702465N / LON=104.06919382W

T-24-S SECTION 33 | SECTION 34 | SECTION 35
T-25-S SECTION 4 | SECTION 3 | SECTION 2



CORNER COORDINATES
NAD 83, SPCS NM EAST
A - Y= 432462.50 / X= 621153.84
B - Y= 432472.07 / X= 623826.91
C - Y= 424422.82 / X= 623909.23
D - Y= 424409.95 / X= 621226.81

CORNER COORDINATES
NAD 27, SPCS NM EAST
A - Y= 432404.11 / X= 579970.14
B - Y= 432413.65 / X= 582643.16
C - Y= 424364.55 / X= 582725.30
D - Y= 424351.72 / X= 580042.94

[17] OPERATOR CERTIFICATION

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

Signature Date

SARAH PRESLEY
Printed Name

SPRESLEY@BCOPERATING.COM
E-mail Address

[18] SURVEYOR CERTIFICATION

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

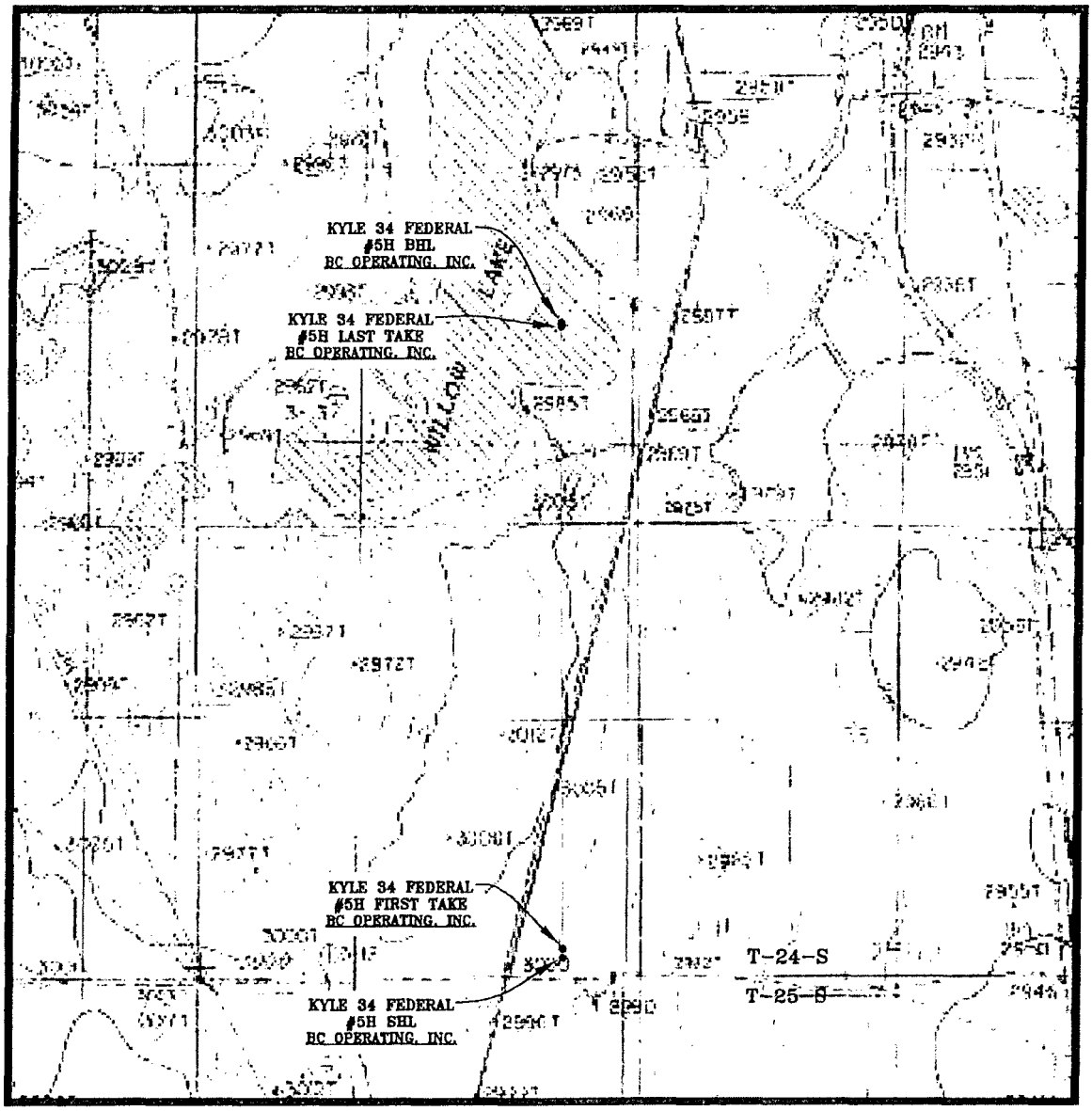
DECEMBER 01, 2016
Date of Survey

Signature and Seal of Professional Surveyor

Certificate Number LLOYD P. SHORT, 21653

GAS - 1 STO 320 AC
More Sect → 320 AC.
640 ACRES.

LOCATION VERIFICATION MAP

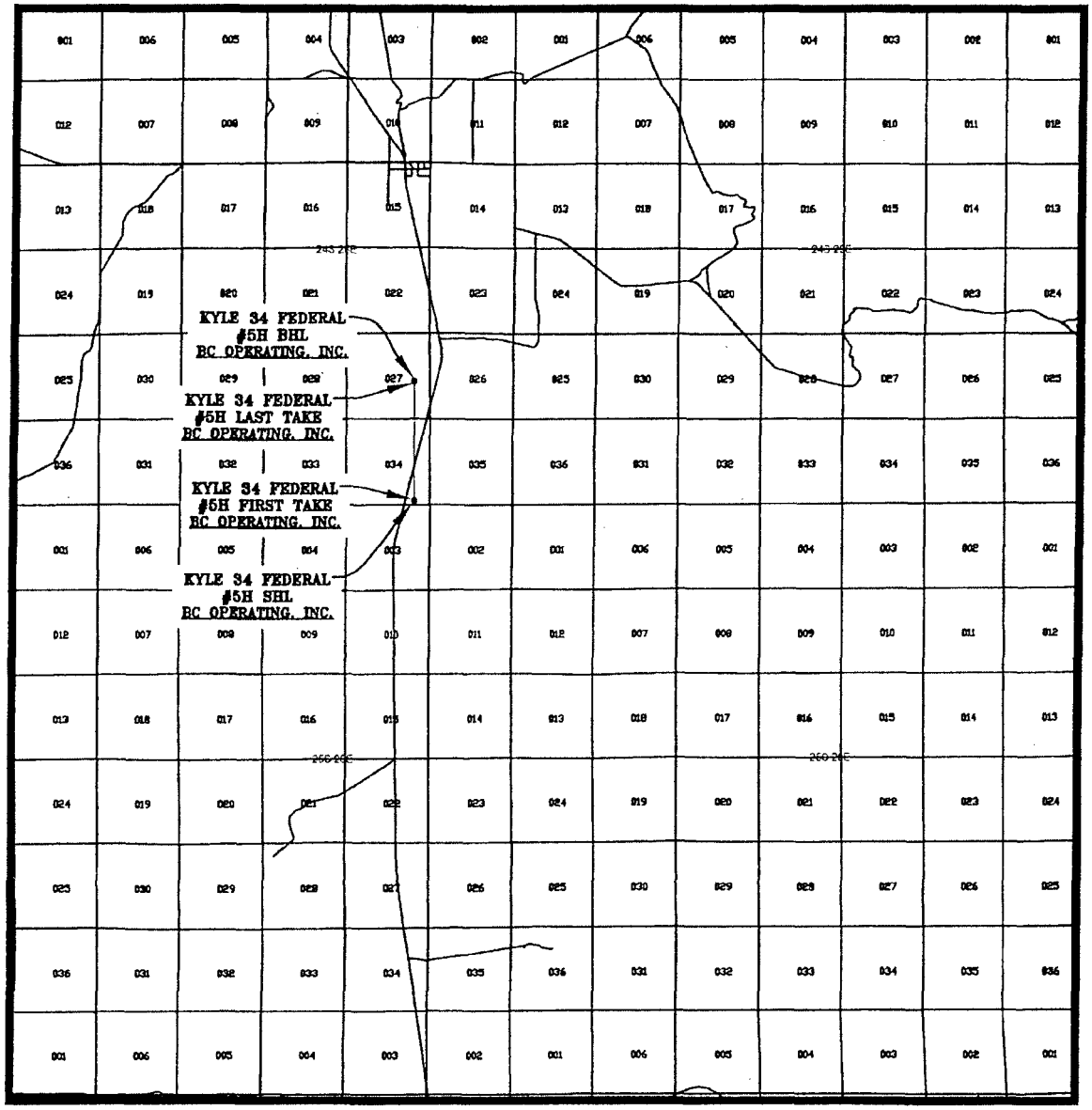


SEC. 34 TWP. 24-S RGE. 28-E
SURVEY: N.M.P.M.
COUNTY: EDDY
DESCRIPTION: 225' FSL & 990' FEL
ELEVATION: 2994'
OPERATOR: B.C. OPERATING, INC.
LEASE: KYLE 34 FEDERAL
U.S.G.S. TOPOGRAPHIC MAP: MALAGA, N.M.

SCALE: 1" = 2000'
CONTOUR INTERVAL = 20'

PREPARED BY:
R-SQUARED GLOBAL, LLC
1309 LOUISVILLE AVENUE, MONROE, LA 71201
318-323-6900 OFFICE
JOB No. R3681-01

VICINITY MAP



SEC. 34 TWP. 24-S RGE. 28-E
SURVEY: N.M.P.M.
COUNTY: EDDY
DESCRIPTION: 225' FSL & 990' FEL
ELEVATION: 2994'
OPERATOR: B.C. OPERATING, INC.
LEASE: KYLE 34 FEDERAL
U.S.G.S. TOPOGRAPHIC MAP: MALAGA, N.M.

SCALE: 1" = 2 MILES

PREPARED BY:
R-SQUARED GLOBAL, LLC
1309 LOUISVILLE AVENUE, MONROE, LA 71201
318-323-6900 OFFICE
JOB No. R3681-01

DRILLING AND OPERATIONS PLAN
BC OPERATING, L.L.C.
KYLE 34 FEDERAL COM #5H

Surface: 225' FSL & 990' FEL, UL P, Sec. 34-T24S- R28E
BHL: 2400' FSL & 990' FEL, UL I, Sec. 27-T24S-R28E
Eddy County, New Mexico

1. Geological Surface Formation: **Permian and Quaternary Alluvium.**
2. Horizontal Oil well. No pilot hole, total depth 17,050', depth to Fresh Water 200'. **Elevation 2994'**

3. **TOPS OF IMPORTANT GEOLOGICAL MARKERS:** TVD

Rustler	surface
Top Salt	1774'
BX (base salt)	2311'
Delaware M. Bell Canyon	2633'
Cherry Canyon	3470'
Brushy Canyon	5036'
Bone Springs Ls	6270'
Avalon Shale	6597'
1st Bone Springs Sand	7226'
2nd Bone Springs Sand	8000'
3rd Bone Spring Sand	9170'
Wolfcamp	9450'
Wolfcamp Horizontal Target	**9,750'** ✓

4. **Estimated Depth of Anticipated/Possible Water, Oil or Gas:**

Rustler/Castile	0-200'	Fresh Water from WAIDS database
Bell Canyon	2633	Oil, gas and water
Brushy Canyon	5036	Oil, gas and water
Bone Springs	6270	Oil, gas and water
Wolfcamp	9450	Oil, gas and water

No other formations are expected to yield oil, gas or fresh water in measurable volumes. The surface fresh water will be protected by setting 13 3/8" casing at 400' and circulating cement back to surface, all other intervals will be isolated by the 9 5/8 intermediate and 7" production casing.

5. Proposed Casing Program

HOLE SIZE	CASING SIZE	WT./GRADE	THREAD/COLLAR	SETTING DEPTH	TOP CEMENT
Conductor	20"	94# H-40	8rd STC	40'	Surface**
17.5"	13 3/8" (new)	48# H-40	8rd STC	400'	Surface**
12.25"	9 5/8" (new)	36# J-55	8rd LTC	2,600'	Surface**
8.75"	7" (new)	26# P-110	8rd BTC	9,800'	Surface**
*6.125"	4 1/2" (new)	13.5# P-110	8rd LTC	9,500'-17,050'	liner top**

*start 6.125" hole at end of curve 9,800' md, 4.5" casing set with liner hanger.

** When running casing keep liquid filled and void of air

MINIMUM SAFETY FACTORS: **BURST 1.125** **COLLAPSE 1.125** **TENSION 1.8**

ALL CASING WILL BE NEW API APPROVED

CEMENT PROGRAM-ALL CEMENT BLENDS WILL BE TESTED TO BLM MINIMUM REQUIREMENTS.

A. **13 3/8"** **SURFACE** CEMENT TO SURFACE **100% EXCESS OVER CALCULATED**

450 SACKS CLASS "C"+2%CACL+.25# CELLO-FLAKE+.25% DEFOAMER, 14.8 PPG, 1.35 YIELD, 6.34 GAL/SK

B. **9 5/8"** **INTERMEDIATE** CEMENT TO SURFACE **75% EXCESS LEAD, 50% TAIL**

LEAD 600 SACKS CLASS "C" 35/65 +6% BENTONITE+5% SALT+.25% DEFOAMER 12.8 PPG, 1.9 YIELD, 11.2 GAL/SK

TAIL 200 SACKS CLASS "C" + .25% DEFOAMER, 14.8 PPG, 1.33 YIELD, 6.34 GAL/SK

C. **7"** **PRODUCTION** CEMENT TO SURFACE **50% EXCESS OVER CALCULATED.**

LEAD 800 SACKS CLASS C 50/50 +10% BENTONITE +.15% C-20 RETARDER +3# STAR SEAL +.3% C-12 FLUID LOSS+3% SALT+.25% DEFOAMER, 11.8 PPG, 2.37 YIELD, 13.52 GL/SK

TAIL 250 SACKS CLASS "H" +.5% FL-10+.2%C-20, 15.6 PPG, 1.2 YIELD, 5.5 GAL/SK

D. **4.5" PRODUCTION LINER** CEMENT TO LINER TOP **50% EXCESS OVER CALCULATED**

TAIL SLURRY: 600 SACKS PVL ACIDSOLID +30% CALCIUM CARBONATE, +5%PF174, +.7% PF606 + .2% PF153 +.4% PF813 + .4 PPS PF46, 13.0 PPG 1.87 YIELD 9.517 GALLONS/SACK MIX WATER

SPECIFICATIONS FOR PRESSURE CONTROL EQUIPMENT: (EXHIBIT #5)

A 2000# WP Annular will be installed after running the 13-3/8" casing. A 5,000# WP Double Ram BOP and 5,000 annular will be installed after running the 9-5/8" and 7" casing. Pressure test will be conducted prior to drilling out under all casing strings. BOP controls will be installed prior to drilling under surface casing and will remain in use until completion of drilling operations. BOP's will be inspected and operated as recommended in Onshore Order #2. A Kelly cock and a sub equipped with a full opening valve sized to fit the drill pipe and collars will be available on the rig floor in the open position when the Kelly is not in use. 7" and 9-5/8" BOP will be tested to 5000# and the annular to 2500# with a third party testing company before drilling below each shoe. If operations last more than 30 days from 1st test, will test again as per BLM Onshore Oil and Gas order #2.

MUD PROGRAM:

Spud and drill 17 ½" surface hole with **fresh water (8.4 to 8.7 ppg)** to a depth of approx 400'. Control lost circulation with paper and LCM pills. Viscosity 28-55, no fluid loss control. Fresh water gel sweeps.

Drill 12 ¼" hole from 400' to 2,600' with **Brine (10.0 ppg).** Control lost circulation with paper and LCM pills. Viscosity 28-36, no fluid loss control. Salt water gel sweeps.

Drill 8 ¾" production hole from 2,600' to 9,800' **cut brine (8.8 to 10.0 ppg).** Control lost circulation with paper and LCM pills. Clean hole with salt water sweeps as necessary. System properties: viscosity 28-32, fluid loss <30 ml/30min.

Drill 6 1/8" horizontal production hole from 9,800'-17,050' with **Brine water (10.5-12.8 ppg)**, control filtrate and increase viscosity with Xanthan gum and Poly Anionic Cellulose. System Properties funnel viscosity 35-50 seconds, fluid loss <10 ml/30min, chlorides 150k.

All necessary mud products for weight addition and fluid loss control will be on location at all times. Mud program subject to change due to hole conditions.

Mud monitoring system: Mud will be maintained and checked daily for mud weight, viscosity, API water loss, pH, etc. Additional electronic monitoring will include a pit volume totalizer to monitor mud volume in active system, pump rate, and mud return flow percentage. H2S monitors and alarms will be located on rig floor, shale shakers, and mud tanks (see rig plat). Gas chromatograph with monitor hydrocarbon gas content of mud from 2,600' to TD. Third party corrosion company will utilize H2S/oxygen scavengers to monitor for corrosion and limit damage to tubulars.

Auxiliary Equipment

A. A Kelly cock will be in the drill string at all times.

B. A full opening drill pipe stabbing valve having the appropriate connections will be on the rig floor at all times

C. Hydrogen Sulfide detection equipment will be in operation after drilling out the 13 3/8" casing shoe until the 4 ½" liner is run and set and rigging down operations have begun.

TESTING, LOGGING & CORING PROGRAM:

a. Testing: No DST's will be conducted.
b. Mud logging will take place from 2,600ft to TD 10ft samples
c. Gyro survey will be run at KOP of surface casing depth at 400ft
d. MWD (directional surveys) and LWD (gamma) surveys will be taken from KOP (9,177') to TD 17,050ft
e. Cased hole CBL/Gamma

POTENTIAL HAZARDS:

No significant hazards are expected, Pressure gradient of .65 psi/ft. Normal temperature gradient is expected. Anticipated pressure 6337 psi at 9,750 ft. Expected temperature at 9,750 TVD is 160 deg F. Lost circulation may occur, no H_2S is expected, but the operator will utilize a 3rd party H_2S monitoring package from 400' to TD. No losses or H2s occurred in the Kyle Federal #1 or #2H. If H2S is encountered the operator will comply with the provisions of onshore oil and gas order no 6. All personnel will be familiar with all aspects of safe operation of equipment being used to drill this well.

ANTICIPATED STARTING DATE & DURATION:

Bc Operating, Inc. anticipates drilling operations to begin around February 1, 2016 and completed in approximately 45 days. An additional 15 days will be needed for completion activities. Road and location construction will begin after the BLM has approved the APD.

Jason Goss, Drilling Engineer Date
BC Operating, Inc.

BC OPERATING, INC.

Project: Eddy County, New Mexico (NAD27)
Site: Kyle 34 Federal
Well: #5H
Wellbore: OH / Job #60399
Design: Plan 1 11-23-16
Rig: Patterson 244

PHOENIX TECHNOLOGY SERVICES

Azimuths to Grid North
True North: -0.14°
Magnetic North: 7.18°

Magnetic Field
Strength: 48160.6snT
Dip Angle: 60.00°
Date: 11/23/2016
Model: HDGM

WELL DETAILS

Ground Level: 2993.00

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
0.00	0.00	424584.74	581733.20	32° 10' 1.28872 N	104° 4' 9.09770 W

SECTION DETAILS

MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Target	Annotation
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
2600.00	0.00	0.00	2600.00	0.00	0.00	0.00	0.00	0.00		KOP1, Begin 1.00°/100' Build
2666.00	0.66	90.00	2666.00	0.00	0.38	1.00	90.00	0.00		Hold 0.66° Inc at 90.00° Azm
9177.45	0.66	90.00	9177.01	0.00	75.38	0.00	0.00	0.06		KOP2, Begin 10.00°/100' Build
10077.51	90.00	359.42	9750.00	573.00	76.23	10.00	-90.58	573.06		LP, Hold 90.00° Inc at 359.42° Azm
17050.55	90.00	359.42	9750.00	7545.68	6.15	0.00	0.00	7545.68	BHL - Kyle 34 Federal #5H	TD at 17050.55

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
BHL - Kyle 34 Federal #5H	9750.00	7545.68	6.15	432130.42	581739.35	32° 11' 15.96327 N	104° 4' 8.81057 W

Map System: US State Plane 1927 (Exact solution)
Datum: NAD 1927 (NADCON CONUS)
Ellipsoid: Clarke 1866
Zone Name: New Mexico East 3001

Local Origin: Well #5H, Grid North

Latitude: 32° 10' 1.28872 N
Longitude: 104° 4' 9.09770 W

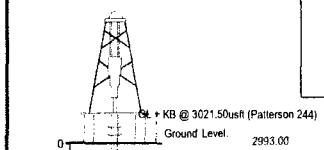
Grid East: 581733.20
Grid North: 424584.74
Scale Factor: 1.000

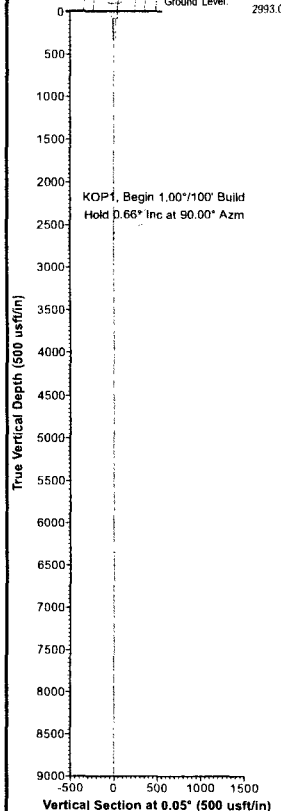
Geomagnetic Model: HDGM
Sample Date: 23-Nov-16
Magnetic Declination: 7.32°
Dip Angle from Horizontal: 60.00°
Magnetic Field Strength: 48161

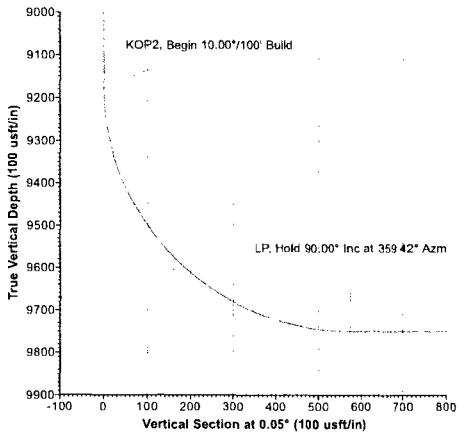
To convert a Magnetic Direction to a Grid Direction, Add 7.32°
To convert a Magnetic Direction to a True Direction, Add 7.32° East
To convert a True Direction to a Grid Direction, Subtract 0.14°

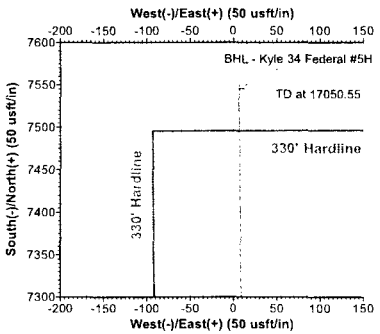
LEGEND

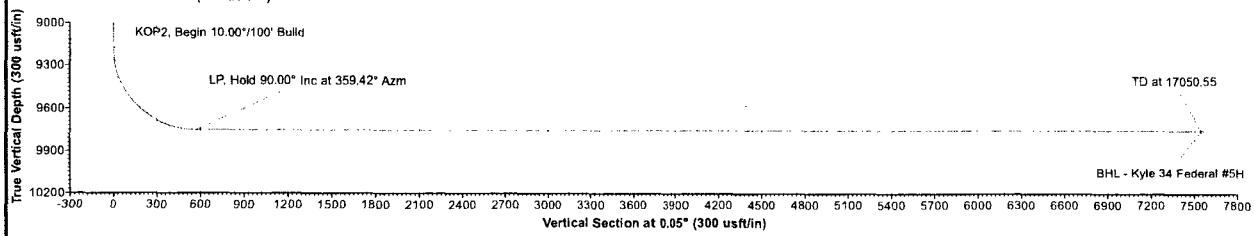
2H, ST01, Surveys V0
2H, OH, Surveys V0
Plan 1 11-23-16

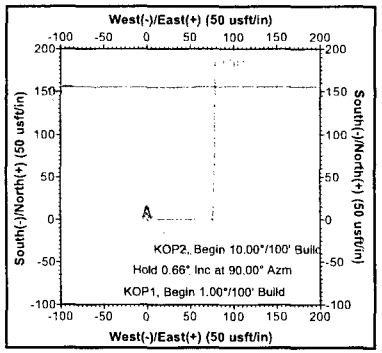


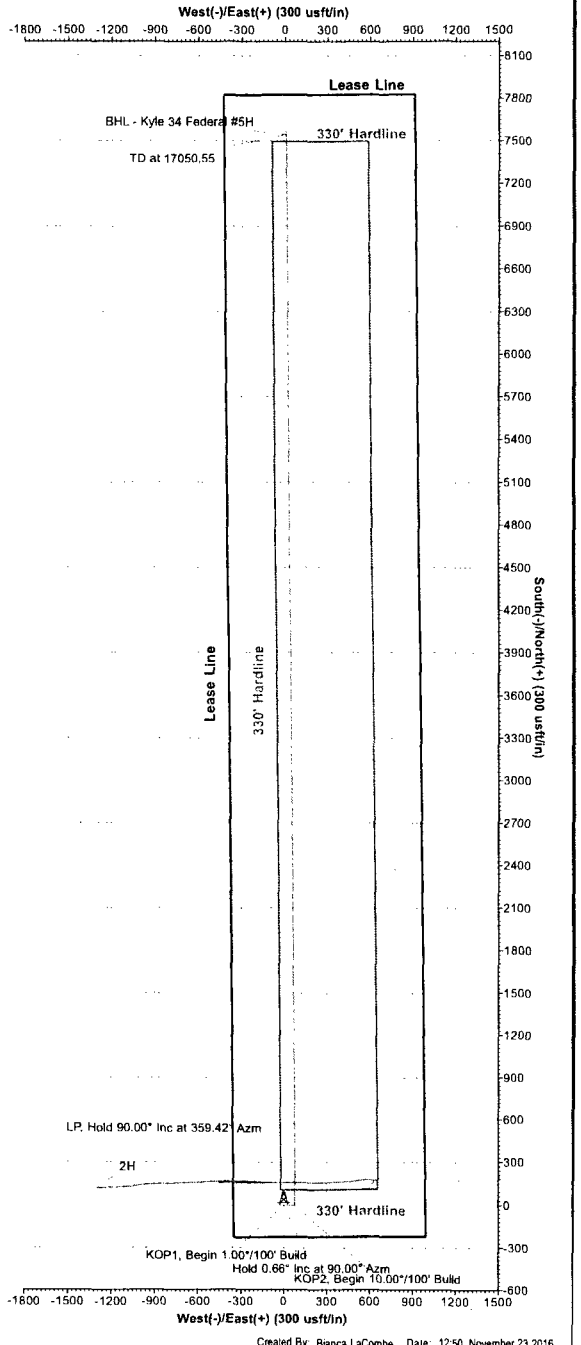












Created By: Bianca LaCombe Date: 12:50, November 23 2016

BC OPERATING, INC.

BC Operating, Inc.

Eddy County, New Mexico (NAD27)
Kyle 34 Federal
#5H

OH / Job #60399

Plan: Plan 1 11-23-16

Standard Planning Report

23 November, 2016

PHOENIX
TECHNOLOGY SERVICES

Database:	Compass 5000 GCR	**Local Co-ordinate Reference:**	Well #5H
Company:	BC Operating, Inc.	**TVD Reference:**	GL + KB @ 3021.50usft (Patterson 244)
Project:	Eddy County, New Mexico (NAD27)	**MD Reference:**	GL + KB @ 3021.50usft (Patterson 244)
Site:	Kyle 34 Federal	**North Reference:**	Grid
Well:	#5H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OH / Job #60399		
Design:	Plan 1 11-23-16		

Project	Eddy County, New Mexico (NAD27)		
Map System:	US State Plane 1927 (Exact solution)	**System Datum:**	Mean Sea Level
Geo Datum:	NAD 1927 (NADCON CONUS)		
Map Zone:	New Mexico East 3001		

Site Kyle 34 Federal

Site Position:		**Northing:**	424,584.74 usft	**Latitude:**	32° 10' 1.28872 N
From:	Map	**Easting:**	581,733.20 usft	**Longitude:**	104° 4' 9.09770 W
Position Uncertainty:	0.00 usft	**Slot Radius:**	13-3/16 "	**Grid Convergence:**	0.14 °

Well #5H

Well Position	**+N/-S**	0.00 usft	**Northing:**	424,584.74 usft	**Latitude:**	32° 10' 1.28872 N
	+E/-W	0.00 usft	**Easting:**	581,733.20 usft	**Longitude:**	104° 4' 9.09770 W
Position Uncertainty		0.00 usft	**Wellhead Elevation:**	0.00 usft	**Ground Level:**	2,993.00 usft

Wellbore OH / Job #60399

Magnetics	**Model Name**	**Sample Date**	**Declination (°)**	**Dip Angle (°)**	**Field Strength (nT)**
	HDGM	11/23/2016	7.32	60.00	48,161

Design Plan 1 11-23-16

Audit Notes:

Version:		**Phase:**	PROTOTYPE	**Tie On Depth:**	0.00
Vertical Section:	**Depth From (TVD) (usft)**	**+N/-S (usft)**	**+E/-W (usft)**	**Direction (°)**	
	0.00	0.00	0.00	0.05	

Plan Sections

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2,600.00	0.00	0.00	2,600.00	0.00	0.00	0.00	0.00	0.00	0.00	
2,666.00	0.66	90.00	2,666.00	0.00	0.38	1.00	1.00	0.00	90.00	
9,177.45	0.66	90.00	9,177.01	0.00	75.38	0.00	0.00	0.00	0.00	
10,077.51	90.00	359.42	9,750.00	573.00	76.23	10.00	9.93	-10.06	-90.58	
17,050.55	90.00	359.42	9,750.00	7,545.68	6.15	0.00	0.00	0.00	0.00	BHL - Kyle 34 Federa

Database:	Compass 5000 GCR	**Local Co-ordinate Reference:**	Well #5H
Company:	BC Operating, Inc.	**TVD Reference:**	GL + KB @ 3021.50usft (Patterson 244)
Project:	Eddy County, New Mexico (NAD27)	**MD Reference:**	GL + KB @ 3021.50usft (Patterson 244)
Site:	Kyle 34 Federal	**North Reference:**	Grid
Well:	#5H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OH / Job #60399		
Design:	Plan 1 11-23-16		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2,600.00	0.00	0.00	2,600.00	0.00	0.00	0.00	0.00	0.00	0.00
KOP1, Begin 1.00°/100' Build									
2,666.00	0.66	90.00	2,666.00	0.00	0.38	0.00	1.00	1.00	0.00
Hold 0.66° Inc at 90.00° Azm									
2,700.00	0.66	90.00	2,700.00	0.00	0.77	0.00	0.00	0.00	0.00
2,800.00	0.66	90.00	2,799.99	0.00	1.92	0.00	0.00	0.00	0.00
2,900.00	0.66	90.00	2,899.98	0.00	3.08	0.00	0.00	0.00	0.00
3,000.00	0.66	90.00	2,999.98	0.00	4.23	0.00	0.00	0.00	0.00
3,100.00	0.66	90.00	3,099.97	0.00	5.38	0.00	0.00	0.00	0.00
3,200.00	0.66	90.00	3,199.96	0.00	6.53	0.01	0.00	0.00	0.00
3,300.00	0.66	90.00	3,299.96	0.00	7.68	0.01	0.00	0.00	0.00
3,400.00	0.66	90.00	3,399.95	0.00	8.84	0.01	0.00	0.00	0.00
3,500.00	0.66	90.00	3,499.94	0.00	9.99	0.01	0.00	0.00	0.00
3,600.00	0.66	90.00	3,599.94	0.00	11.14	0.01	0.00	0.00	0.00
3,700.00	0.66	90.00	3,699.93	0.00	12.29	0.01	0.00	0.00	0.00
3,800.00	0.66	90.00	3,799.92	0.00	13.44	0.01	0.00	0.00	0.00
3,900.00	0.66	90.00	3,899.92	0.00	14.59	0.01	0.00	0.00	0.00
4,000.00	0.66	90.00	3,999.91	0.00	15.75	0.01	0.00	0.00	0.00
4,100.00	0.66	90.00	4,099.90	0.00	16.90	0.01	0.00	0.00	0.00
4,200.00	0.66	90.00	4,199.90	0.00	18.05	0.01	0.00	0.00	0.00
4,300.00	0.66	90.00	4,299.89	0.00	19.20	0.02	0.00	0.00	0.00
4,400.00	0.66	90.00	4,399.88	0.00	20.35	0.02	0.00	0.00	0.00
4,500.00	0.66	90.00	4,499.88	0.00	21.51	0.02	0.00	0.00	0.00
4,600.00	0.66	90.00	4,599.87	0.00	22.66	0.02	0.00	0.00	0.00
4,700.00	0.66	90.00	4,699.86	0.00	23.81	0.02	0.00	0.00	0.00
4,800.00	0.66	90.00	4,799.86	0.00	24.96	0.02	0.00	0.00	0.00
4,900.00	0.66	90.00	4,899.85	0.00	26.11	0.02	0.00	0.00	0.00
5,000.00	0.66	90.00	4,999.84	0.00	27.27	0.02	0.00	0.00	0.00
5,100.00	0.66	90.00	5,099.84	0.00	28.42	0.02	0.00	0.00	0.00
5,200.00	0.66	90.00	5,199.83	0.00	29.57	0.02	0.00	0.00	0.00
5,300.00	0.66	90.00	5,299.82	0.00	30.72	0.03	0.00	0.00	0.00
5,400.00	0.66	90.00	5,399.82	0.00	31.87	0.03	0.00	0.00	0.00
5,500.00	0.66	90.00	5,499.81	0.00	33.02	0.03	0.00	0.00	0.00
5,600.00	0.66	90.00	5,599.80	0.00	34.18	0.03	0.00	0.00	0.00
5,700.00	0.66	90.00	5,699.80	0.00	35.33	0.03	0.00	0.00	0.00
5,800.00	0.66	90.00	5,799.79	0.00	36.48	0.03	0.00	0.00	0.00
5,900.00	0.66	90.00	5,899.78	0.00	37.63	0.03	0.00	0.00	0.00
6,000.00	0.66	90.00	5,999.78	0.00	38.78	0.03	0.00	0.00	0.00
6,100.00	0.66	90.00	6,099.77	0.00	39.94	0.03	0.00	0.00	0.00
6,200.00	0.66	90.00	6,199.76	0.00	41.09	0.03	0.00	0.00	0.00
6,300.00	0.66	90.00	6,299.76	0.00	42.24	0.03	0.00	0.00	0.00
6,400.00	0.66	90.00	6,399.75	0.00	43.39	0.04	0.00	0.00	0.00
6,500.00	0.66	90.00	6,499.74	0.00	44.54	0.04	0.00	0.00	0.00
6,600.00	0.66	90.00	6,599.74	0.00	45.70	0.04	0.00	0.00	0.00
6,700.00	0.66	90.00	6,699.73	0.00	46.85	0.04	0.00	0.00	0.00
6,800.00	0.66	90.00	6,799.72	0.00	48.00	0.04	0.00	0.00	0.00
6,900.00	0.66	90.00	6,899.72	0.00	49.15	0.04	0.00	0.00	0.00
7,000.00	0.66	90.00	6,999.71	0.00	50.30	0.04	0.00	0.00	0.00
7,100.00	0.66	90.00	7,099.70	0.00	51.46	0.04	0.00	0.00	0.00
7,200.00	0.66	90.00	7,199.70	0.00	52.61	0.04	0.00	0.00	0.00
7,300.00	0.66	90.00	7,299.69	0.00	53.76	0.04	0.00	0.00	0.00
7,400.00	0.66	90.00	7,399.68	0.00	54.91	0.04	0.00	0.00	0.00
7,500.00	0.66	90.00	7,499.68	0.00	56.06	0.05	0.00	0.00	0.00

Database:	Compass 5000 GCR	**Local Co-ordinate Reference:**	Well #5H
Company:	BC Operating, Inc.	**TVD Reference:**	GL + KB @ 3021.50usft (Patterson 244)
Project:	Eddy County, New Mexico (NAD27)	**MD Reference:**	GL + KB @ 3021.50usft (Patterson 244)
Site:	Kyle 34 Federal	**North Reference:**	Grid
Well:	#5H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OH / Job #60399		
Design:	Plan 1 11-23-16		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
7,600.00	0.66	90.00	7,599.67	0.00	57.21	0.05	0.00	0.00	0.00
7,700.00	0.66	90.00	7,699.66	0.00	58.37	0.05	0.00	0.00	0.00
7,800.00	0.66	90.00	7,799.66	0.00	59.52	0.05	0.00	0.00	0.00
7,900.00	0.66	90.00	7,899.65	0.00	60.67	0.05	0.00	0.00	0.00
8,000.00	0.66	90.00	7,999.64	0.00	61.82	0.05	0.00	0.00	0.00
8,100.00	0.66	90.00	8,099.64	0.00	62.97	0.05	0.00	0.00	0.00
8,200.00	0.66	90.00	8,199.63	0.00	64.13	0.05	0.00	0.00	0.00
8,300.00	0.66	90.00	8,299.62	0.00	65.28	0.05	0.00	0.00	0.00
8,400.00	0.66	90.00	8,399.62	0.00	66.43	0.05	0.00	0.00	0.00
8,500.00	0.66	90.00	8,499.61	0.00	67.58	0.06	0.00	0.00	0.00
8,600.00	0.66	90.00	8,599.61	0.00	68.73	0.06	0.00	0.00	0.00
8,700.00	0.66	90.00	8,699.60	0.00	69.89	0.06	0.00	0.00	0.00
8,800.00	0.66	90.00	8,799.59	0.00	71.04	0.06	0.00	0.00	0.00
8,900.00	0.66	90.00	8,899.59	0.00	72.19	0.06	0.00	0.00	0.00
9,000.00	0.66	90.00	8,999.58	0.00	73.34	0.06	0.00	0.00	0.00
9,100.00	0.66	90.00	9,099.57	0.00	74.49	0.06	0.00	0.00	0.00
9,177.45	0.66	90.00	9,177.01	0.00	75.38	0.06	0.00	0.00	0.00
KOP2, Begin 10.00°/100' Build									
9,200.00	2.34	15.77	9,199.56	0.44	75.64	0.51	10.00	7.46	-329.13
9,300.00	12.27	2.46	9,298.63	13.06	76.65	13.12	10.00	9.92	-13.31
9,400.00	22.26	1.04	9,394.00	42.68	77.46	42.74	10.00	9.99	-1.42
9,500.00	32.25	0.47	9,482.79	88.42	78.02	88.48	10.00	10.00	-0.57
9,600.00	42.25	0.15	9,562.28	148.87	78.33	148.94	10.00	10.00	-0.32
9,700.00	52.25	359.94	9,630.07	222.21	78.37	222.28	10.00	10.00	-0.22
9,800.00	62.25	359.77	9,684.10	306.21	78.15	306.28	10.00	10.00	-0.16
9,900.00	72.25	359.64	9,722.72	398.31	77.67	398.38	10.00	10.00	-0.14
10,000.00	82.25	359.51	9,744.77	495.72	76.94	495.78	10.00	10.00	-0.12
10,077.51	90.00	359.42	9,750.00	573.00	76.23	573.06	10.00	10.00	-0.12
LP, Hold 90.00° Inc at 359.42° Azm									
10,100.00	90.00	359.42	9,750.00	595.48	76.00	595.54	0.00	0.00	0.00
10,200.00	90.00	359.42	9,750.00	695.48	75.00	695.54	0.00	0.00	0.00
10,300.00	90.00	359.42	9,750.00	795.47	73.99	795.53	0.00	0.00	0.00
10,400.00	90.00	359.42	9,750.00	895.47	72.99	895.52	0.00	0.00	0.00
10,500.00	90.00	359.42	9,750.00	995.46	71.98	995.52	0.00	0.00	0.00
10,600.00	90.00	359.42	9,750.00	1,095.46	70.98	1,095.51	0.00	0.00	0.00
10,700.00	90.00	359.42	9,750.00	1,195.45	69.97	1,195.51	0.00	0.00	0.00
10,800.00	90.00	359.42	9,750.00	1,295.45	68.97	1,295.50	0.00	0.00	0.00
10,900.00	90.00	359.42	9,750.00	1,395.44	67.96	1,395.49	0.00	0.00	0.00
11,000.00	90.00	359.42	9,750.00	1,495.43	66.96	1,495.49	0.00	0.00	0.00
11,100.00	90.00	359.42	9,750.00	1,595.43	65.95	1,595.48	0.00	0.00	0.00
11,200.00	90.00	359.42	9,750.00	1,695.42	64.95	1,695.48	0.00	0.00	0.00
11,300.00	90.00	359.42	9,750.00	1,795.42	63.94	1,795.47	0.00	0.00	0.00
11,400.00	90.00	359.42	9,750.00	1,895.41	62.94	1,895.47	0.00	0.00	0.00
11,500.00	90.00	359.42	9,750.00	1,995.41	61.93	1,995.46	0.00	0.00	0.00
11,600.00	90.00	359.42	9,750.00	2,095.40	60.93	2,095.45	0.00	0.00	0.00
11,700.00	90.00	359.42	9,750.00	2,195.40	59.92	2,195.45	0.00	0.00	0.00
11,800.00	90.00	359.42	9,750.00	2,295.39	58.92	2,295.44	0.00	0.00	0.00
11,900.00	90.00	359.42	9,750.00	2,395.39	57.91	2,395.44	0.00	0.00	0.00
12,000.00	90.00	359.42	9,750.00	2,495.38	56.91	2,495.43	0.00	0.00	0.00
12,100.00	90.00	359.42	9,750.00	2,595.38	55.90	2,595.42	0.00	0.00	0.00
12,200.00	90.00	359.42	9,750.00	2,695.37	54.90	2,695.42	0.00	0.00	0.00
12,300.00	90.00	359.42	9,750.00	2,795.37	53.89	2,795.41	0.00	0.00	0.00
12,400.00	90.00	359.42	9,750.00	2,895.36	52.89	2,895.41	0.00	0.00	0.00
12,500.00	90.00	359.42	9,750.00	2,995.36	51.88	2,995.40	0.00	0.00	0.00

Database:	Compass 5000 GCR	**Local Co-ordinate Reference:**	Well #5H
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Project:	Eddy County, New Mexico (NAD27)	**MD Reference:**	GL + KB @ 3021.50usft (Patterson 244)
Site:	Kyle 34 Federal	**North Reference:**	Grid
Well:	#5H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OH / Job #60399		
Design:	Plan 1 11-23-16		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
12,600.00	90.00	359.42	9,750.00	3,095.35	50.88	3,095.39	0.00	0.00	0.00
12,700.00	90.00	359.42	9,750.00	3,195.35	49.87	3,195.39	0.00	0.00	0.00
12,800.00	90.00	359.42	9,750.00	3,295.34	48.87	3,295.38	0.00	0.00	0.00
12,900.00	90.00	359.42	9,750.00	3,395.34	47.86	3,395.38	0.00	0.00	0.00
13,000.00	90.00	359.42	9,750.00	3,495.33	46.86	3,495.37	0.00	0.00	0.00
13,100.00	90.00	359.42	9,750.00	3,595.33	45.85	3,595.37	0.00	0.00	0.00
13,200.00	90.00	359.42	9,750.00	3,695.32	44.85	3,695.36	0.00	0.00	0.00
13,300.00	90.00	359.42	9,750.00	3,795.32	43.84	3,795.35	0.00	0.00	0.00
13,400.00	90.00	359.42	9,750.00	3,895.31	42.84	3,895.35	0.00	0.00	0.00
13,500.00	90.00	359.42	9,750.00	3,995.31	41.83	3,995.34	0.00	0.00	0.00
13,600.00	90.00	359.42	9,750.00	4,095.30	40.83	4,095.34	0.00	0.00	0.00
13,700.00	90.00	359.42	9,750.00	4,195.30	39.82	4,195.33	0.00	0.00	0.00
13,800.00	90.00	359.42	9,750.00	4,295.29	38.82	4,295.32	0.00	0.00	0.00
13,900.00	90.00	359.42	9,750.00	4,395.29	37.81	4,395.32	0.00	0.00	0.00
14,000.00	90.00	359.42	9,750.00	4,495.28	36.81	4,495.31	0.00	0.00	0.00
14,100.00	90.00	359.42	9,750.00	4,595.28	35.80	4,595.31	0.00	0.00	0.00
14,200.00	90.00	359.42	9,750.00	4,695.27	34.80	4,695.30	0.00	0.00	0.00
14,300.00	90.00	359.42	9,750.00	4,795.27	33.79	4,795.29	0.00	0.00	0.00
14,400.00	90.00	359.42	9,750.00	4,895.26	32.79	4,895.29	0.00	0.00	0.00
14,500.00	90.00	359.42	9,750.00	4,995.26	31.78	4,995.28	0.00	0.00	0.00
14,600.00	90.00	359.42	9,750.00	5,095.25	30.78	5,095.28	0.00	0.00	0.00
14,700.00	90.00	359.42	9,750.00	5,195.25	29.77	5,195.27	0.00	0.00	0.00
14,800.00	90.00	359.42	9,750.00	5,295.24	28.77	5,295.26	0.00	0.00	0.00
14,900.00	90.00	359.42	9,750.00	5,395.24	27.76	5,395.26	0.00	0.00	0.00
15,000.00	90.00	359.42	9,750.00	5,495.23	26.76	5,495.25	0.00	0.00	0.00
15,100.00	90.00	359.42	9,750.00	5,595.23	25.75	5,595.25	0.00	0.00	0.00
15,200.00	90.00	359.42	9,750.00	5,695.22	24.75	5,695.24	0.00	0.00	0.00
15,300.00	90.00	359.42	9,750.00	5,795.22	23.74	5,795.24	0.00	0.00	0.00
15,400.00	90.00	359.42	9,750.00	5,895.21	22.74	5,895.23	0.00	0.00	0.00
15,500.00	90.00	359.42	9,750.00	5,995.21	21.73	5,995.22	0.00	0.00	0.00
15,600.00	90.00	359.42	9,750.00	6,095.20	20.73	6,095.22	0.00	0.00	0.00
15,700.00	90.00	359.42	9,750.00	6,195.20	19.72	6,195.21	0.00	0.00	0.00
15,800.00	90.00	359.42	9,750.00	6,295.19	18.72	6,295.21	0.00	0.00	0.00
15,900.00	90.00	359.42	9,750.00	6,395.19	17.71	6,395.20	0.00	0.00	0.00
16,000.00	90.00	359.42	9,750.00	6,495.18	16.71	6,495.19	0.00	0.00	0.00
16,100.00	90.00	359.42	9,750.00	6,595.18	15.70	6,595.19	0.00	0.00	0.00
16,200.00	90.00	359.42	9,750.00	6,695.17	14.70	6,695.18	0.00	0.00	0.00
16,300.00	90.00	359.42	9,750.00	6,795.17	13.69	6,795.18	0.00	0.00	0.00
16,400.00	90.00	359.42	9,750.00	6,895.16	12.69	6,895.17	0.00	0.00	0.00
16,500.00	90.00	359.42	9,750.00	6,995.16	11.68	6,995.16	0.00	0.00	0.00
16,600.00	90.00	359.42	9,750.00	7,095.15	10.68	7,095.16	0.00	0.00	0.00
16,700.00	90.00	359.42	9,750.00	7,195.15	9.67	7,195.15	0.00	0.00	0.00
16,800.00	90.00	359.42	9,750.00	7,295.14	8.67	7,295.15	0.00	0.00	0.00
16,900.00	90.00	359.42	9,750.00	7,395.14	7.66	7,395.14	0.00	0.00	0.00
17,000.00	90.00	359.42	9,750.00	7,495.13	6.66	7,495.14	0.00	0.00	0.00
17,050.55	90.00	359.42	9,750.00	7,545.68	6.15	7,545.68	0.00	0.00	0.00

TD at 17050.55

Database:	Compass 5000 GCR	**Local Co-ordinate Reference:**	Well #5H
Company:	BC Operating, Inc.	**TVD Reference:**	GL + KB @ 3021.50usft (Patterson 244)
Project:	Eddy County, New Mexico (NAD27)	**MD Reference:**	GL + KB @ 3021.50usft (Patterson 244)
Site:	Kyle 34 Federal	**North Reference:**	Grid
Well:	#5H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OH / Job #60399		
Design:	Plan 1 11-23-16		

Design Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
BHL - Kyle 34 Federal #: - plan hits target center - Point	0.00	0.00	9,750.00	7,545.68	6.15	432,130.42	581,739.35	32° 11' 15.96327 N	104° 4' 8.81057 W

Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates +N/-S (usft)	Local Coordinates +E/-W (usft)	Comment
2,600.00	2,600.00	0.00	0.00	KOP1, Begin 1.00°/100' Build
2,666.00	2,666.00	0.00	0.38	Hold 0.66° Inc at 90.00° Azm
9,177.45	9,177.01	0.00	75.38	KOP2, Begin 10.00°/100' Build
10,077.51	9,750.00	573.00	76.23	LP, Hold 90.00° Inc at 359.42° Azm
17,050.55	9,750.00	7,545.68	6.15	TD at 17050.55

BC OPERATING, INC.

BC Operating, Inc.

Eddy County, New Mexico (NAD27)
Kyle 34 Federal
#5H

OH / Job #60399
Plan 1 11-23-16

Anticollision Report

23 November, 2016

PHOENIX
TECHNOLOGY SERVICES

Company:	BC Operating, Inc.	**Local Co-ordinate Reference:**	Well #5H
Project:	Eddy County, New Mexico (NAD27)	**TVD Reference:**	GL + KB @ 3021.50usft (Patterson 244)
Reference Site:	Kyle 34 Federal	**MD Reference:**	GL + KB @ 3021.50usft (Patterson 244)
Site Error:	0.00 usft	**North Reference:**	Grid
Reference Well:	#5H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH / Job #60399	**Database:**	Compass 5000 GCR
Reference Design:	*Plan 1 11-23-16*	***Offset TVD Reference:***	*Reference Datum*

Reference	Plan 1 11-23-16		
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	MD Interval 100.00usft	**Error Model:**	ISCWSA
Depth Range:	Unlimited	**Scan Method:**	Closest Approach 3D
Results Limited by:	Maximum center-center distance of 10,000.00 usft	**Error Surface:**	Elliptical Conic
Warning Levels Evaluated at:	2.00 **Sigma**	**Casing Method:**	Not applied

Survey Tool Program **Date** 11/23/2016

From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
0.00	17,050.55	Plan 1 11-23-16 (OH / Job #60399)	MWD+HDGM	OWSG Rev.2 MWD + HDGM

Summary

Site Name Offset Well - Wellbore - Design	Reference Measured Depth (usft)	Offset Measured Depth (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Separation Factor	Warning
Mosaic 34 Federal						
2H - OH - Surveys	4,931.85	5,326.10	154.78	120.21	4.478	CC, ES, SF
2H - ST01 - Surveys	4,931.85	5,326.10	154.78	120.21	4.478	CC, ES, SF

Offset Design Mosaic 34 Federal - 2H - OH - Surveys — **Offset Site Error:** 0.00 usft

Survey Program: 200-NS-GYRO-MS, 4425-MWD — **Offset Well Error:** 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
0.00	0.00	0.00	12.50	0.00	0.00	76.56	148.96	623.40	641.07				
100.00	100.00	88.06	100.56	0.13	0.10	76.55	149.02	623.35	640.91	640.68	0.23	2,760.116	
200.00	200.00	188.70	201.20	0.49	0.22	76.53	149.26	623.15	640.77	640.07	0.71	903.020	
300.00	300.00	290.73	303.23	0.85	0.45	76.50	149.49	622.74	640.44	639.14	1.30	493.535	
400.00	400.00	392.93	405.43	1.20	0.70	76.49	149.45	622.04	639.77	637.87	1.90	336.765	
467.66	467.66	455.17	467.66	1.45	0.80	76.48	149.48	621.72	639.44	637.19	2.25	284.308	
500.00	500.00	484.53	497.03	1.56	0.85	76.47	149.63	621.76	639.52	637.10	2.41	265.037	
600.00	600.00	575.33	587.81	1.92	1.00	76.40	150.61	622.63	640.70	637.78	2.92	219.456	
700.00	700.00	675.18	687.64	2.28	1.15	76.31	152.15	624.42	642.80	639.38	3.43	187.675	
800.00	800.00	778.46	790.90	2.64	1.29	76.26	153.08	625.96	644.47	640.54	3.93	163.972	
900.00	900.00	879.57	892.00	3.00	1.48	76.24	153.57	627.19	645.76	641.28	4.48	144.169	
1,000.00	1,000.00	980.11	992.53	3.35	1.69	76.20	154.30	628.25	646.96	641.92	5.04	128.377	
1,100.00	1,100.00	1,084.31	1,096.73	3.71	1.91	76.14	155.19	628.97	647.84	642.22	5.63	115.169	
1,200.00	1,200.00	1,189.42	1,201.83	4.07	2.15	76.07	155.98	628.90	647.96	641.74	6.22	104.223	
1,279.07	1,279.07	1,266.66	1,279.07	4.35	2.33	76.01	156.62	628.58	647.80	641.12	6.68	96.959	
1,300.00	1,300.00	1,286.88	1,299.29	4.43	2.37	75.99	156.84	628.54	647.81	641.01	6.80	95.213	
1,400.00	1,400.00	1,383.47	1,395.87	4.79	2.60	75.88	158.18	628.57	648.18	640.79	7.39	87.710	
1,500.00	1,500.00	1,481.07	1,493.45	5.15	2.85	75.73	159.97	628.96	649.02	641.03	7.99	81.194	
1,600.00	1,600.00	1,578.87	1,591.22	5.51	3.10	75.56	162.14	629.60	650.20	641.60	8.60	75.601	
1,700.00	1,700.00	1,677.35	1,689.67	5.86	3.34	75.38	164.44	630.51	651.68	642.47	9.20	70.801	
1,800.00	1,800.00	1,776.03	1,788.33	6.22	3.59	75.25	166.35	631.73	653.36	643.56	9.81	66.618	
1,900.00	1,900.00	1,867.56	1,879.83	6.58	3.80	75.15	167.96	633.46	655.66	645.28	10.38	63.144	
2,000.00	2,000.00	1,956.71	1,968.90	6.94	4.01	75.05	169.94	636.53	659.56	648.61	10.95	60.230	
2,100.00	2,100.00	2,055.84	2,067.89	7.30	4.25	74.94	172.55	641.11	664.70	653.16	11.54	57.579	
2,200.00	2,200.00	2,164.62	2,176.56	7.66	4.51	74.79	175.32	645.06	668.87	656.71	12.16	54.992	

CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation

Company:	BC Operating, Inc.	**Local Co-ordinate Reference:**	Well #5H
Project:	Eddy County, New Mexico (NAD27)	**TVD Reference:**	GL + KB @ 3021.50usft (Patterson 244)
Reference Site:	Kyle 34 Federal	**MD Reference:**	GL + KB @ 3021.50usft (Patterson 244)
Site Error:	0.00 usft	**North Reference:**	Grid
Reference Well:	#5H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH / Job #60399	**Database:**	Compass 5000 GCR
Reference Design:	Plan 1 11-23-16	**Offset TVD Reference:**	Reference Datum

Offset Design Mosaic 34 Federal - 2H - OH - Surveys — **Offset Site Error:** 0.00 usft

Survey Program: 200-NS-GYRO-MS, 4425-MWD — **Offset Well Error:** 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
2,300.00	2,300.00	2,271.44	2,283.32	8.01	4.74	74.67	177.51	647.72	671.81	659.07	12.75	52.693	
2,400.00	2,400.00	2,377.33	2,389.19	8.37	4.95	74.67	178.08	649.81	673.86	660.54	13.32	50.588	
2,500.00	2,500.00	2,481.55	2,493.40	8.73	5.13	74.75	177.55	651.32	675.12	661.27	13.86	48.726	
2,600.00	2,600.00	2,585.32	2,597.16	9.09	5.29	74.80	177.22	652.16	675.82	661.44	14.38	46.996	
2,700.00	2,700.00	2,687.57	2,699.42	9.44	5.41	-15.20	176.99	652.48	675.31	660.47	14.84	45.509	
2,800.00	2,799.99	2,789.57	2,801.41	9.78	5.52	-15.19	176.65	652.51	674.14	658.85	15.29	44.091	
2,900.00	2,899.98	2,888.48	2,900.32	10.12	5.61	-15.17	176.08	652.50	672.87	657.15	15.72	42.804	
3,000.00	2,999.98	2,987.04	2,998.88	10.47	5.69	-15.11	175.14	652.81	671.82	655.67	16.15	41.603	
3,100.00	3,099.97	3,088.67	3,100.50	10.81	5.80	-15.05	174.16	653.15	670.78	654.18	16.60	40.404	
3,200.00	3,199.96	3,190.76	3,202.59	11.16	5.91	-15.05	173.80	653.00	669.43	652.37	17.06	39.240	
3,300.00	3,299.96	3,290.25	3,302.08	11.50	6.05	-15.09	173.86	652.60	667.95	650.40	17.54	38.078	
3,400.00	3,399.95	3,389.49	3,401.32	11.85	6.18	-15.14	174.09	652.27	666.57	648.55	18.03	36.979	
3,500.00	3,499.94	3,490.31	3,502.14	12.20	6.32	-15.18	174.19	651.98	665.20	646.69	18.51	35.935	
3,600.00	3,599.94	3,591.32	3,603.15	12.55	6.46	-15.17	173.70	651.68	663.69	644.69	19.00	34.935	
3,700.00	3,699.93	3,689.73	3,701.55	12.90	6.58	-15.14	172.89	651.51	662.19	642.73	19.47	34.018	
3,800.00	3,799.92	3,787.90	3,799.72	13.25	6.70	-15.09	172.08	651.62	660.97	641.04	19.93	33.159	
3,900.00	3,899.92	3,887.71	3,899.53	13.60	6.86	-15.06	171.50	651.84	659.92	639.47	20.45	32.272	
4,000.00	3,999.91	3,987.75	3,999.57	13.95	7.03	-15.09	171.55	651.89	658.86	637.89	20.97	31.417	
4,100.00	4,099.90	4,088.85	4,100.66	14.30	7.20	-15.14	171.72	651.82	657.73	636.24	21.49	30.608	
4,200.00	4,199.90	4,190.09	4,201.91	14.65	7.37	-15.12	171.24	651.72	656.41	634.40	22.01	29.829	
4,300.00	4,299.89	5,290.55	4,929.05	15.00	16.48	-77.54	155.46	60.81	649.41	618.30	31.12	20.871	
4,400.00	4,399.88	5,295.87	4,929.43	15.35	16.61	-79.41	155.36	55.49	552.98	521.30	31.68	17.454	
4,500.00	4,499.88	5,301.48	4,929.83	15.71	16.74	-81.41	155.24	49.90	458.01	425.76	32.25	14.201	
4,600.00	4,599.87	5,307.38	4,930.27	16.06	16.89	-83.54	155.11	44.02	365.63	332.81	32.82	11.141	
4,700.00	4,699.86	5,313.00	4,930.70	16.41	17.02	-85.59	154.98	38.42	278.42	245.06	33.36	8.346	
4,800.00	4,799.86	5,318.88	4,931.15	16.76	17.16	-87.75	154.86	32.56	203.17	169.27	33.90	5.994	
4,900.00	4,899.85	5,324.34	4,931.58	17.12	17.29	-89.77	154.79	27.11	158.01	123.60	34.40	4.593	
4,931.85	4,931.70	5,326.10	4,931.71	17.23	17.34	-90.42	154.77	25.35	154.78	120.21	34.56	4.478	CC, ES, SF
5,000.00	4,999.84	5,329.91	4,932.01	17.47	17.43	-91.82	154.75	21.56	169.06	134.16	34.90	4.844	
5,100.00	5,099.84	5,335.58	4,932.46	17.83	17.57	-93.91	154.76	15.91	228.30	192.93	35.38	6.453	
5,200.00	5,199.83	5,341.35	4,932.92	18.18	17.71	-96.02	154.81	10.16	309.17	273.33	35.84	8.626	
5,300.00	5,299.82	5,347.55	4,933.42	18.53	17.86	-98.27	154.91	3.97	398.71	362.42	36.29	10.986	
5,400.00	5,399.82	5,354.14	4,933.94	18.89	18.02	-100.63	155.01	-2.59	492.20	455.48	36.72	13.403	
5,500.00	5,499.81	5,360.46	4,934.42	19.24	18.17	-102.86	155.09	-8.89	587.77	550.64	37.13	15.829	
5,600.00	5,599.80	5,366.52	4,934.89	19.60	18.32	-104.96	155.14	-14.93	684.54	647.03	37.52	18.247	
5,700.00	5,699.80	5,372.34	4,935.32	19.95	18.46	-106.94	155.18	-20.74	782.08	744.20	37.88	20.646	
5,800.00	5,799.79	5,377.00	4,935.67	20.31	18.58	-108.49	155.20	-25.39	880.13	841.90	38.23	23.021	
5,900.00	5,899.78	5,377.00	4,935.67	20.66	18.58	-108.49	155.20	-25.39	978.56	939.98	38.59	25.361	
6,000.00	5,999.78	5,377.00	4,935.67	21.02	18.58	-108.49	155.20	-25.39	1,077.28	1,038.34	38.94	27.665	
6,100.00	6,099.77	5,385.86	4,936.27	21.37	18.80	-111.37	155.23	-34.23	1,176.15	1,136.88	39.26	29.956	
6,200.00	6,199.76	5,388.14	4,936.42	21.73	18.86	-112.10	155.24	-36.50	1,275.21	1,235.61	39.60	32.199	
6,300.00	6,299.76	5,390.22	4,936.54	22.08	18.91	-112.75	155.25	-38.57	1,374.40	1,334.46	39.94	34.408	
6,400.00	6,399.75	5,392.13	4,936.66	22.44	18.95	-113.35	155.26	-40.48	1,473.70	1,433.41	40.29	36.582	
6,500.00	6,499.74	5,393.88	4,936.76	22.80	19.00	-113.89	155.26	-42.23	1,573.08	1,532.45	40.63	38.721	
6,600.00	6,599.74	5,395.51	4,936.84	23.15	19.04	-114.39	155.27	-43.85	1,672.53	1,631.56	40.97	40.827	
6,700.00	6,699.73	5,397.01	4,936.92	23.51	19.08	-114.84	155.27	-45.36	1,772.03	1,730.72	41.31	42.898	
6,800.00	6,799.72	5,398.41	4,937.00	23.86	19.11	-115.27	155.28	-46.76	1,871.59	1,829.94	41.65	44.937	
6,900.00	6,899.72	5,409.00	4,937.48	24.22	19.37	-118.37	155.31	-57.33	1,971.25	1,929.38	41.88	47.073	
7,000.00	6,999.71	5,409.00	4,937.48	24.58	19.37	-118.37	155.31	-57.33	2,070.87	2,028.64	42.23	49.035	
7,100.00	7,099.70	5,409.00	4,937.48	24.93	19.37	-118.37	155.31	-57.33	2,170.52	2,127.93	42.59	50.965	
7,200.00	7,199.70	5,409.00	4,937.48	25.29	19.37	-118.37	155.31	-57.33	2,270.21	2,227.26	42.94	52.863	
7,300.00	7,299.69	5,409.00	4,937.48	25.65	19.37	-118.37	155.31	-57.33	2,369.92	2,326.62	43.30	54.731	

CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation

Company:	BC Operating, Inc.	**Local Co-ordinate Reference:**	Well #5H
Project:	Eddy County, New Mexico (NAD27)	**TVD Reference:**	GL + KB @ 3021.50usft (Patterson 244)
Reference Site:	Kyle 34 Federal	**MD Reference:**	GL + KB @ 3021.50usft (Patterson 244)
Site Error:	0.00 usft	**North Reference:**	Grid
Reference Well:	#5H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	*0.00 usft*	***Output errors are at***	*2.00 sigma*
Reference Wellbore	OH / Job #60399	**Database:**	Compass 5000 GCR
Reference Design:	Plan 1 11-23-16	**Offset TVD Reference:**	Reference Datum

Offset Design Mosaic 34 Federal - 2H - OH - Surveys — **Offset Site Error:** 0.00 usft

Survey Program: 200-NS-GYRO-MS, 4425-MWD — **Offset Well Error:** 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
7,400.00	7,399.68	5,409.00	4,937.48	26.00	19.37	-118.37	155.31	-57.33	2,469.65	2,425.99	43.66	56.569	
7,500.00	7,499.68	5,409.00	4,937.48	26.36	19.37	-118.37	155.31	-57.33	2,569.40	2,525.39	44.01	58.377	
7,600.00	7,599.67	5,409.00	4,937.48	26.72	19.37	-118.37	155.31	-57.33	2,669.18	2,624.81	44.37	60.157	
7,700.00	7,699.66	5,409.00	4,937.48	27.07	19.37	-118.37	155.31	-57.33	2,768.97	2,724.24	44.73	61.909	
7,800.00	7,799.66	5,409.00	4,937.48	27.43	19.37	-118.37	155.31	-57.33	2,868.77	2,823.69	45.08	63.633	
7,900.00	7,899.65	5,409.00	4,937.48	27.79	19.37	-118.37	155.31	-57.33	2,968.59	2,923.15	45.44	65.330	
8,000.00	7,999.64	5,409.00	4,937.48	28.14	19.37	-118.37	155.31	-57.33	3,068.42	3,022.62	45.80	67.002	
8,100.00	8,099.64	5,409.00	4,937.48	28.50	19.37	-118.37	155.31	-57.33	3,168.26	3,122.10	46.15	68.647	
8,200.00	8,199.63	5,409.00	4,937.48	28.86	19.37	-118.37	155.31	-57.33	3,268.10	3,221.59	46.51	70.267	
8,300.00	8,299.62	5,409.00	4,937.48	29.21	19.37	-118.37	155.31	-57.33	3,367.96	3,321.10	46.87	71.863	
8,400.00	8,399.62	5,409.00	4,937.48	29.57	19.37	-118.37	155.31	-57.33	3,467.83	3,420.61	47.22	73.435	
8,500.00	8,499.61	5,409.00	4,937.48	29.93	19.37	-118.37	155.31	-57.33	3,567.70	3,520.12	47.58	74.983	
8,600.00	8,599.61	5,409.00	4,937.48	30.29	19.37	-118.37	155.31	-57.33	3,667.58	3,619.65	47.94	76.509	
8,700.00	8,699.60	5,409.00	4,937.48	30.64	19.37	-118.37	155.31	-57.33	3,767.47	3,719.18	48.29	78.012	
8,800.00	8,799.59	5,409.00	4,937.48	31.00	19.37	-118.37	155.31	-57.33	3,867.36	3,818.71	48.65	79.492	
8,900.00	8,899.59	5,409.00	4,937.48	31.36	19.37	-118.37	155.31	-57.33	3,967.26	3,918.26	49.01	80.952	
9,000.00	8,999.58	5,409.00	4,937.48	31.71	19.37	-118.37	155.31	-57.33	4,067.17	4,017.80	49.36	82.390	
9,100.00	9,099.57	5,409.00	4,937.48	32.07	19.37	-118.37	155.31	-57.33	4,167.07	4,117.35	49.72	83.808	
9,200.00	9,199.56	5,409.00	4,937.48	32.43	19.37	-30.64	155.31	-57.33	4,266.96	4,215.64	51.33	83.132	
9,300.00	9,298.63	5,409.00	4,937.48	32.78	19.37	-7.52	155.31	-57.33	4,365.52	4,314.45	51.07	85.482	
9,400.00	9,394.00	5,409.00	4,937.48	33.10	19.37	-4.37	155.31	-57.33	4,459.98	4,410.96	49.02	90.978	
9,500.00	9,482.79	5,409.00	4,937.48	33.42	19.37	-3.13	155.31	-57.33	4,547.81	4,502.17	45.64	99.635	
9,600.00	9,562.28	5,409.00	4,937.48	33.73	19.37	-2.49	155.31	-57.33	4,626.80	4,585.69	41.11	112.554	
9,700.00	9,630.07	5,409.00	4,937.48	34.04	19.37	-2.12	155.31	-57.33	4,695.03	4,659.38	35.66	131.678	
9,800.00	9,684.10	5,409.00	4,937.48	34.35	19.37	-1.89	155.31	-57.33	4,750.95	4,721.28	29.67	160.139	
9,900.00	9,722.72	5,409.00	4,937.48	34.66	19.37	-1.74	155.31	-57.33	4,793.31	4,769.53	23.78	201.579	
10,000.00	9,744.77	5,409.00	4,937.48	34.98	19.37	-1.67	155.31	-57.33	4,821.19	4,802.02	19.17	251.467	
10,100.00	9,750.00	5,409.00	4,937.48	35.30	19.37	-1.64	155.31	-57.33	4,834.45	4,816.66	17.79	271.772	
10,200.00	9,750.00	5,409.00	4,937.48	35.66	19.37	-1.64	155.31	-57.33	4,844.55	4,826.51	18.03	268.641	
10,300.00	9,750.00	5,409.00	4,937.48	36.08	19.37	-1.64	155.31	-57.33	4,856.69	4,838.37	18.32	265.108	
10,400.00	9,750.00	5,409.00	4,937.48	36.55	19.37	-1.64	155.31	-57.33	4,870.85	4,852.20	18.64	261.250	
10,500.00	9,750.00	5,409.00	4,937.48	37.07	19.37	-1.64	155.31	-57.33	4,887.02	4,868.01	19.01	257.141	
10,600.00	9,750.00	5,409.00	4,937.48	37.64	19.37	-1.64	155.31	-57.33	4,905.17	4,885.77	19.40	252.853	
10,700.00	9,750.00	5,409.00	4,937.48	38.25	19.37	-1.64	155.31	-57.33	4,925.29	4,905.46	19.82	248.450	
10,800.00	9,750.00	5,409.00	4,937.48	38.91	19.37	-1.64	155.31	-57.33	4,947.34	4,927.07	20.28	243.987	
10,900.00	9,750.00	5,409.00	4,937.48	39.61	19.37	-1.64	155.31	-57.33	4,971.31	4,950.56	20.76	239.514	
11,000.00	9,750.00	5,409.00	4,937.48	40.35	19.37	-1.64	155.31	-57.33	4,997.17	4,975.91	21.26	235.070	
11,100.00	9,750.00	5,409.00	4,937.48	41.12	19.37	-1.64	155.31	-57.33	5,024.89	5,003.10	21.78	230.690	
11,200.00	9,750.00	5,409.00	4,937.48	41.93	19.37	-1.64	155.31	-57.33	5,054.43	5,032.10	22.33	226.399	
11,300.00	9,750.00	5,409.00	4,937.48	42.78	19.37	-1.64	155.31	-57.33	5,085.76	5,062.88	22.89	222.218	
11,400.00	9,750.00	5,409.00	4,937.48	43.65	19.37	-1.64	155.31	-57.33	5,118.86	5,095.40	23.46	218.161	
11,500.00	9,750.00	5,409.00	4,937.48	44.56	19.37	-1.64	155.31	-57.33	5,153.69	5,129.63	24.06	214.240	
11,600.00	9,750.00	5,409.00	4,937.48	45.49	19.37	-1.64	155.31	-57.33	5,190.21	5,165.55	24.66	210.461	
11,700.00	9,750.00	5,409.00	4,937.48	46.45	19.37	-1.64	155.31	-57.33	5,228.39	5,203.11	25.28	206.829	
11,800.00	9,750.00	5,409.00	4,937.48	47.43	19.37	-1.64	155.31	-57.33	5,268.19	5,242.28	25.91	203.346	
11,900.00	9,750.00	5,409.00	4,937.48	48.44	19.37	-1.64	155.31	-57.33	5,309.57	5,283.03	26.55	200.010	
12,000.00	9,750.00	5,409.00	4,937.48	49.47	19.37	-1.64	155.31	-57.33	5,352.51	5,325.31	27.19	196.821	
12,100.00	9,750.00	5,409.00	4,937.48	50.51	19.37	-1.64	155.31	-57.33	5,396.95	5,369.10	27.85	193.775	
12,200.00	9,750.00	5,409.00	4,937.48	51.58	19.37	-1.64	155.31	-57.33	5,442.87	5,414.36	28.52	190.869	
12,300.00	9,750.00	5,409.00	4,937.48	52.67	19.37	-1.64	155.31	-57.33	5,490.23	5,461.04	29.19	188.099	
12,400.00	9,750.00	5,409.00	4,937.48	53.77	19.37	-1.64	155.31	-57.33	5,538.99	5,509.12	29.87	185.459	
12,500.00	9,750.00	5,409.00	4,937.48	54.88	19.37	-1.64	155.31	-57.33	5,589.11	5,558.56	30.55	182.944	

CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation

Company:	BC Operating, Inc.	**Local Co-ordinate Reference:**	Well #5H
Project:	Eddy County, New Mexico (NAD27)	**TVD Reference:**	GL + KB @ 3021.50usft (Patterson 244)
Reference Site:	Kyle 34 Federal	**MD Reference:**	GL + KB @ 3021.50usft (Patterson 244)
Site Error:	0.00 usft	**North Reference:**	Grid
Reference Well:	#5H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH / Job #60399	**Database:**	Compass 5000 GCR
Reference Design:	Plan 1 11-23-16	**Offset TVD Reference:**	Reference Datum

Offset Design Mosaic 34 Federal - 2H - OH - Surveys — **Offset Site Error:** 0.00 usft

Survey Program: 200-NS-GYRO-MS, 4425-MWD — **Offset Well Error:** 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
12,600.00	9,750.00	5,409.00	4,937.48	56.02	19.37	-1.64	155.31	-57.33	5,640.56	5,609.32	31.24	180.550	
12,700.00	9,750.00	5,409.00	4,937.48	57.16	19.37	-1.64	155.31	-57.33	5,693.30	5,661.36	31.94	178.270	
12,800.00	9,750.00	5,409.00	4,937.48	58.32	19.37	-1.64	155.31	-57.33	5,747.30	5,714.66	32.64	176.101	
12,900.00	9,750.00	5,409.00	4,937.48	59.49	19.37	-1.64	155.31	-57.33	5,802.51	5,769.17	33.34	174.036	
13,000.00	9,750.00	5,409.00	4,937.48	60.68	19.37	-1.64	155.31	-57.33	5,858.92	5,824.87	34.05	172.070	
13,100.00	9,750.00	5,409.00	4,937.48	61.87	19.37	-1.64	155.31	-57.33	5,916.48	5,881.71	34.76	170.199	
13,200.00	9,750.00	5,409.00	4,937.48	63.08	19.37	-1.64	155.31	-57.33	5,975.15	5,939.68	35.48	168.418	
13,300.00	9,750.00	5,409.00	4,937.48	64.29	19.37	-1.64	155.31	-57.33	6,034.92	5,998.72	36.20	166.722	
13,400.00	9,750.00	5,409.00	4,937.48	65.52	19.37	-1.64	155.31	-57.33	6,095.73	6,058.81	36.92	165.107	
13,500.00	9,750.00	5,409.00	4,937.48	66.75	19.37	-1.64	155.31	-57.33	6,157.58	6,119.93	37.65	163.568	
13,600.00	9,750.00	5,409.00	4,937.48	67.99	19.37	-1.64	155.31	-57.33	6,220.41	6,182.04	38.37	162.102	
13,700.00	9,750.00	5,409.00	4,937.48	69.24	19.37	-1.64	155.31	-57.33	6,284.21	6,245.10	39.10	160.705	
13,800.00	9,750.00	5,409.00	4,937.48	70.49	19.37	-1.64	155.31	-57.33	6,348.94	6,309.10	39.84	159.373	
13,900.00	9,750.00	5,409.00	4,937.48	71.76	19.37	-1.64	155.31	-57.33	6,414.58	6,374.00	40.57	158.103	
14,000.00	9,750.00	5,423.12	4,937.90	73.03	19.73	-1.81	155.36	-71.45	6,480.97	6,439.55	41.42	156.475	
14,100.00	9,750.00	5,423.29	4,937.90	74.30	19.73	-1.81	155.36	-71.62	6,548.33	6,506.17	42.16	155.324	
14,200.00	9,750.00	5,423.46	4,937.91	75.58	19.74	-1.81	155.36	-71.78	6,616.52	6,573.62	42.90	154.225	
14,300.00	9,750.00	5,423.62	4,937.91	76.87	19.74	-1.81	155.37	-71.95	6,685.51	6,641.87	43.65	153.176	
14,400.00	9,750.00	5,423.79	4,937.91	78.16	19.74	-1.82	155.37	-72.12	6,755.28	6,710.89	44.39	152.173	
14,500.00	9,750.00	5,423.96	4,937.92	79.46	19.75	-1.82	155.37	-72.28	6,825.80	6,780.66	45.14	151.215	
14,600.00	9,750.00	5,424.13	4,937.92	80.76	19.75	-1.82	155.37	-72.45	6,897.05	6,851.16	45.89	150.300	
14,700.00	9,750.00	5,424.29	4,937.92	82.07	19.76	-1.82	155.37	-72.62	6,969.00	6,922.36	46.64	149.425	
14,800.00	9,750.00	5,424.46	4,937.92	83.38	19.76	-1.82	155.37	-72.79	7,041.64	6,994.25	47.39	148.587	
14,900.00	9,750.00	5,424.63	4,937.93	84.70	19.77	-1.83	155.37	-72.95	7,114.94	7,066.80	48.14	147.786	
15,000.00	9,750.00	5,424.80	4,937.93	86.02	19.77	-1.83	155.37	-73.12	7,188.89	7,139.99	48.90	147.019	
15,100.00	9,750.00	5,424.96	4,937.93	87.34	19.77	-1.83	155.37	-73.29	7,263.46	7,213.81	49.65	146.284	
15,200.00	9,750.00	5,425.13	4,937.94	88.67	19.78	-1.83	155.37	-73.46	7,338.64	7,288.23	50.41	145.581	
15,300.00	9,750.00	5,425.30	4,937.94	90.00	19.78	-1.83	155.37	-73.62	7,414.40	7,363.23	51.17	144.906	
15,400.00	9,750.00	5,425.47	4,937.94	91.34	19.79	-1.84	155.37	-73.79	7,490.73	7,438.80	51.93	144.260	
15,500.00	9,750.00	5,425.63	4,937.94	92.68	19.79	-1.84	155.37	-73.96	7,567.61	7,514.93	52.68	143.640	
15,600.00	9,750.00	5,425.80	4,937.95	94.02	19.79	-1.84	155.37	-74.13	7,645.03	7,591.58	53.44	143.046	
15,700.00	9,750.00	5,425.97	4,937.95	95.36	19.80	-1.84	155.37	-74.29	7,722.96	7,668.76	54.21	142.475	
15,800.00	9,750.00	5,426.14	4,937.95	96.71	19.80	-1.84	155.37	-74.46	7,801.40	7,746.43	54.97	141.927	
15,900.00	9,750.00	5,426.30	4,937.95	98.06	19.81	-1.85	155.37	-74.63	7,880.33	7,824.60	55.73	141.402	
16,000.00	9,750.00	5,426.47	4,937.96	99.41	19.81	-1.85	155.38	-74.80	7,959.73	7,903.24	56.49	140.896	
16,100.00	9,750.00	5,426.64	4,937.96	100.76	19.82	-1.85	155.38	-74.96	8,039.59	7,982.33	57.26	140.411	
16,200.00	9,750.00	5,426.81	4,937.96	102.12	19.82	-1.85	155.38	-75.13	8,119.90	8,061.87	58.02	139.945	
16,300.00	9,750.00	5,426.97	4,937.96	103.48	19.82	-1.85	155.38	-75.30	8,200.64	8,141.85	58.79	139.496	
16,400.00	9,750.00	5,441.00	4,938.01	104.84	20.18	-2.02	155.43	-89.32	8,281.89	8,222.22	59.67	138.805	
16,500.00	9,750.00	5,441.00	4,938.01	106.20	20.18	-2.02	155.43	-89.32	8,363.45	8,303.02	60.43	138.396	
16,600.00	9,750.00	5,441.00	4,938.01	107.57	20.18	-2.02	155.43	-89.32	8,445.42	8,384.22	61.20	138.003	
16,700.00	9,750.00	5,441.00	4,938.01	108.94	20.18	-2.02	155.43	-89.32	8,527.76	8,465.80	61.96	137.625	
16,800.00	9,750.00	5,441.00	4,938.01	110.31	20.18	-2.02	155.43	-89.32	8,610.48	8,547.75	62.73	137.261	
16,900.00	9,750.00	5,441.00	4,938.01	111.68	20.18	-2.02	155.43	-89.32	8,693.56	8,630.07	63.50	136.910	
17,000.00	9,750.00	5,441.00	4,938.01	113.05	20.18	-2.02	155.43	-89.32	8,777.00	8,712.73	64.27	136.573	
17,050.55	9,750.00	5,441.00	4,938.01	113.75	20.18	-2.02	155.43	-89.32	8,819.31	8,754.65	64.65	136.407	

Company:	BC Operating, Inc.	**Local Co-ordinate Reference:**	Well #5H
Project:	Eddy County, New Mexico (NAD27)	**TVD Reference:**	GL + KB @ 3021.50usft (Patterson 244)
Reference Site:	Kyle 34 Federal	**MD Reference:**	GL + KB @ 3021.50usft (Patterson 244)
Site Error:	0.00 usft	**North Reference:**	Grid
Reference Well:	#5H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH / Job #60399	**Database:**	Compass 5000 GCR
Reference Design:	Plan 1 11-23-16	**Offset TVD Reference:**	Reference Datum

Offset Design Mosaic 34 Federal - 2H - ST01 - Surveys

Survey Program: 200-NS-GYRO-MS, 4425-MWD, 5437-MWD

Offset Site Error: 0.00 usft
Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
0.00	0.00	0.00	12.50	0.00	0.00	76.56	148.96	623.40	641.07				
100.00	100.00	88.06	100.56	0.13	0.10	76.55	149.02	623.35	640.91	640.68	0.23	2,760.116	
200.00	200.00	188.70	201.20	0.49	0.22	76.53	149.26	623.15	640.77	640.07	0.71	903.020	
300.00	300.00	290.73	303.23	0.85	0.45	76.50	149.49	622.74	640.44	639.14	1.30	493.535	
400.00	400.00	392.93	405.43	1.20	0.70	76.49	149.45	622.04	639.77	637.87	1.90	336.765	
467.66	467.66	455.17	467.66	1.45	0.80	76.48	149.48	621.72	639.44	637.19	2.25	284.308	
500.00	500.00	484.53	497.03	1.56	0.85	76.47	149.63	621.76	639.52	637.10	2.41	265.037	
600.00	600.00	575.33	587.81	1.92	1.00	76.40	150.61	622.63	640.70	637.78	2.92	219.456	
700.00	700.00	675.18	687.64	2.28	1.15	76.31	152.15	624.42	642.80	639.38	3.43	187.675	
800.00	800.00	778.46	790.90	2.64	1.29	76.26	153.08	625.96	644.47	640.54	3.93	163.972	
900.00	900.00	879.57	892.00	3.00	1.48	76.24	153.57	627.19	645.76	641.28	4.48	144.169	
1,000.00	1,000.00	980.11	992.53	3.35	1.69	76.20	154.30	628.25	646.96	641.92	5.04	128.377	
1,100.00	1,100.00	1,084.31	1,096.73	3.71	1.91	76.14	155.19	628.97	647.84	642.22	5.63	115.169	
1,200.00	1,200.00	1,189.42	1,201.83	4.07	2.15	76.07	155.98	628.90	647.96	641.74	6.22	104.223	
1,279.07	1,279.07	1,266.66	1,279.07	4.35	2.33	76.01	156.62	628.58	647.80	641.12	6.68	96.959	
1,300.00	1,300.00	1,286.88	1,299.29	4.43	2.37	75.99	156.84	628.54	647.81	641.01	6.80	95.213	
1,400.00	1,400.00	1,383.47	1,395.87	4.79	2.60	75.88	158.18	628.57	648.18	640.79	7.39	87.710	
1,500.00	1,500.00	1,481.07	1,493.45	5.15	2.85	75.73	159.97	628.96	649.02	641.03	7.99	81.194	
1,600.00	1,600.00	1,578.87	1,591.22	5.51	3.10	75.56	162.14	629.60	650.20	641.60	8.60	75.601	
1,700.00	1,700.00	1,677.35	1,689.67	5.86	3.34	75.38	164.44	630.51	651.68	642.47	9.20	70.801	
1,800.00	1,800.00	1,776.03	1,788.33	6.22	3.59	75.25	166.35	631.73	653.36	643.56	9.81	66.618	
1,900.00	1,900.00	1,867.56	1,879.83	6.58	3.80	75.15	167.96	633.46	655.66	645.28	10.38	63.144	
2,000.00	2,000.00	1,956.71	1,968.90	6.94	4.01	75.05	169.94	636.53	659.56	648.61	10.95	60.230	
2,100.00	2,100.00	2,055.84	2,067.89	7.30	4.25	74.94	172.55	641.11	664.70	653.16	11.54	57.579	
2,200.00	2,200.00	2,164.62	2,176.56	7.66	4.51	74.79	175.32	645.06	668.87	656.71	12.16	54.992	
2,300.00	2,300.00	2,271.44	2,283.32	8.01	4.74	74.67	177.51	647.72	671.81	659.07	12.75	52.693	
2,400.00	2,400.00	2,377.33	2,389.19	8.37	4.95	74.67	178.08	649.81	673.86	660.54	13.32	50.588	
2,500.00	2,500.00	2,481.55	2,493.40	8.73	5.13	74.75	177.55	651.32	675.12	661.27	13.86	48.726	
2,600.00	2,600.00	2,585.32	2,597.16	9.09	5.29	74.80	177.22	652.16	675.82	661.44	14.38	46.996	
2,700.00	2,700.00	2,687.57	2,699.42	9.44	5.41	-15.20	176.99	652.48	675.31	660.47	14.84	45.509	
2,800.00	2,799.99	2,789.57	2,801.41	9.78	5.52	-15.19	176.65	652.51	674.14	658.85	15.29	44.091	
2,900.00	2,899.98	2,888.48	2,900.32	10.12	5.61	-15.17	176.08	652.50	672.87	657.15	15.72	42.804	
3,000.00	2,999.98	2,987.04	2,998.88	10.47	5.69	-15.11	175.14	652.81	671.82	655.67	16.15	41.603	
3,100.00	3,099.97	3,088.67	3,100.50	10.81	5.80	-15.05	174.16	653.15	670.78	654.18	16.60	40.404	
3,200.00	3,199.96	3,190.76	3,202.59	11.16	5.91	-15.05	173.80	653.00	669.43	652.37	17.06	39.240	
3,300.00	3,299.96	3,290.25	3,302.08	11.50	6.05	-15.09	173.86	652.60	667.95	650.40	17.54	38.078	
3,400.00	3,399.95	3,389.49	3,401.32	11.85	6.18	-15.14	174.09	652.27	666.57	648.55	18.03	36.979	
3,500.00	3,499.94	3,490.31	3,502.14	12.20	6.32	-15.18	174.19	651.98	665.20	646.69	18.51	35.935	
3,600.00	3,599.94	3,591.32	3,603.15	12.55	6.46	-15.17	173.70	651.68	663.69	644.69	19.00	34.935	
3,700.00	3,699.93	3,689.73	3,701.55	12.90	6.58	-15.14	172.89	651.51	662.19	642.73	19.47	34.018	
3,800.00	3,799.92	3,787.90	3,799.72	13.25	6.70	-15.09	172.08	651.62	660.97	641.04	19.93	33.159	
3,900.00	3,899.92	3,887.71	3,899.53	13.60	6.86	-15.06	171.50	651.84	659.92	639.47	20.45	32.272	
4,000.00	3,999.91	3,987.75	3,999.57	13.95	7.03	-15.09	171.55	651.89	658.86	637.89	20.97	31.417	
4,100.00	4,099.90	4,088.85	4,100.66	14.30	7.20	-15.14	171.72	651.82	657.73	636.24	21.49	30.608	
4,200.00	4,199.90	4,190.09	4,201.91	14.65	7.37	-15.12	171.24	651.72	656.41	634.40	22.01	29.829	
4,300.00	4,299.89	5,290.55	4,929.05	15.00	16.48	-77.54	155.46	60.81	649.41	618.30	31.12	20.871	
4,400.00	4,399.88	5,295.87	4,929.43	15.35	16.61	-79.41	155.36	55.49	552.98	521.30	31.68	17.454	
4,500.00	4,499.88	5,301.48	4,929.83	15.71	16.74	-81.41	155.24	49.90	458.01	425.76	32.25	14.201	
4,600.00	4,599.87	5,307.38	4,930.27	16.06	16.89	-83.54	155.11	44.02	365.63	332.81	32.82	11.141	
4,700.00	4,699.86	5,313.00	4,930.70	16.41	17.02	-85.59	154.98	38.42	278.42	245.06	33.36	8.346	
4,800.00	4,799.86	5,318.88	4,931.15	16.76	17.16	-87.75	154.86	32.56	203.17	169.27	33.90	5.994	
4,900.00	4,899.85	5,324.34	4,931.58	17.12	17.29	-89.77	154.79	27.11	158.01	123.60	34.40	4.593	

CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation

Company:	BC Operating, Inc.	**Local Co-ordinate Reference:**	Well #5H
Project:	Eddy County, New Mexico (NAD27)	**TVD Reference:**	GL + KB @ 3021.50usft (Patterson 244)
Reference Site:	Kyle 34 Federal	**MD Reference:**	GL + KB @ 3021.50usft (Patterson 244)
Site Error:	0.00 usft	**North Reference:**	Grid
Reference Well:	#5H	***Survey Calculation Method:***	*Minimum Curvature*
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH / Job #60399	**Database:**	Compass 5000 GCR
Reference Design:	Plan 1 11-23-16	**Offset TVD Reference:**	Reference Datum

Offset Design Mosaic 34 Federal - 2H - ST01 - Surveys — **Offset Site Error:** 0.00 usft

Survey Program: 200-NS-GYRO-MS, 4425-MWD, 5437-MWD — ***Offset Well Error:*** 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
4,931.85	4,931.70	5,326.10	4,931.71	17.23	17.34	-90.42	154.77	25.35	154.78	120.21	34.56	4.478	CC, ES, SF
5,000.00	4,999.84	5,329.91	4,932.01	17.47	17.43	-91.82	154.75	21.56	169.06	134.16	34.90	4.844	
5,100.00	5,099.84	5,335.58	4,932.46	17.83	17.57	-93.91	154.76	15.91	228.30	192.93	35.38	6.453	
5,200.00	5,199.83	5,341.35	4,932.92	18.18	17.71	-96.02	154.81	10.16	309.17	273.33	35.84	8.626	
5,300.00	5,299.82	5,347.55	4,933.42	18.53	17.86	-98.27	154.91	3.97	398.71	362.42	36.29	10.986	
5,400.00	5,399.82	5,354.14	4,933.94	18.89	18.02	-100.63	155.01	-2.59	492.20	455.48	36.72	13.403	
5,500.00	5,499.81	5,360.46	4,934.42	19.24	18.17	-102.86	155.09	-8.89	587.77	550.64	37.13	15.829	
5,600.00	5,599.80	5,366.52	4,934.89	19.60	18.32	-104.96	155.14	-14.93	684.54	647.03	37.52	18.247	
5,700.00	5,699.80	5,372.34	4,935.32	19.95	18.46	-106.94	155.18	-20.74	782.08	744.20	37.88	20.646	
5,800.00	5,799.79	5,377.00	4,935.67	20.31	18.58	-108.49	155.20	-25.39	880.13	841.90	38.23	23.021	
5,900.00	5,899.78	5,377.00	4,935.67	20.66	18.58	-108.49	155.20	-25.39	978.56	939.98	38.59	25.361	
6,000.00	5,999.78	5,377.00	4,935.67	21.02	18.58	-108.49	155.20	-25.39	1,077.28	1,038.34	38.94	27.665	
6,100.00	6,099.77	5,385.86	4,936.27	21.37	18.80	-111.37	155.23	-34.23	1,176.15	1,136.88	39.26	29.956	
6,200.00	6,199.76	5,388.14	4,936.42	21.73	18.86	-112.10	155.24	-36.50	1,275.21	1,235.61	39.60	32.199	
6,300.00	6,299.76	5,390.22	4,936.54	22.08	18.91	-112.75	155.25	-38.57	1,374.40	1,334.46	39.94	34.408	
6,400.00	6,399.75	5,392.13	4,936.66	22.44	18.95	-113.35	155.26	-40.48	1,473.70	1,433.41	40.29	36.582	
6,500.00	6,499.74	5,393.88	4,936.76	22.80	19.00	-113.89	155.26	-42.23	1,573.08	1,532.45	40.63	38.721	
6,600.00	6,599.74	5,395.51	4,936.84	23.15	19.04	-114.39	155.27	-43.85	1,672.53	1,631.56	40.97	40.827	
6,700.00	6,699.73	5,397.01	4,936.92	23.51	19.08	-114.84	155.27	-45.36	1,772.03	1,730.72	41.31	42.898	
6,800.00	6,799.72	5,398.41	4,937.00	23.86	19.11	-115.27	155.28	-46.76	1,871.59	1,829.94	41.65	44.937	
6,900.00	6,899.72	5,409.00	4,937.48	24.22	19.37	-118.37	155.31	-57.33	1,971.25	1,929.38	41.88	47.073	
7,000.00	6,999.71	5,409.00	4,937.48	24.58	19.37	-118.37	155.31	-57.33	2,070.87	2,028.64	42.23	49.035	
7,100.00	7,099.70	5,409.00	4,937.48	24.93	19.37	-118.37	155.31	-57.33	2,170.52	2,127.93	42.59	50.965	
7,200.00	7,199.70	5,409.00	4,937.48	25.29	19.37	-118.37	155.31	-57.33	2,270.21	2,227.26	42.94	52.863	
7,300.00	7,299.69	5,409.00	4,937.48	25.65	19.37	-118.37	155.31	-57.33	2,369.92	2,326.62	43.30	54.731	
7,400.00	7,399.68	5,409.00	4,937.48	26.00	19.37	-118.37	155.31	-57.33	2,469.65	2,425.99	43.66	56.569	
7,500.00	7,499.68	5,409.00	4,937.48	26.36	19.37	-118.37	155.31	-57.33	2,569.40	2,525.39	44.01	58.377	
7,600.00	7,599.67	5,409.00	4,937.48	26.72	19.37	-118.37	155.31	-57.33	2,669.18	2,624.81	44.37	60.157	
7,700.00	7,699.66	5,409.00	4,937.48	27.07	19.37	-118.37	155.31	-57.33	2,768.97	2,724.24	44.73	61.909	
7,800.00	7,799.66	5,409.00	4,937.48	27.43	19.37	-118.37	155.31	-57.33	2,868.77	2,823.69	45.08	63.633	
7,900.00	7,899.65	5,409.00	4,937.48	27.79	19.37	-118.37	155.31	-57.33	2,968.59	2,923.15	45.44	65.330	
8,000.00	7,999.64	5,409.00	4,937.48	28.14	19.37	-118.37	155.31	-57.33	3,068.42	3,022.62	45.80	67.002	
8,100.00	8,099.64	5,413.94	4,937.68	28.50	19.45	-119.76	155.35	-62.27	3,168.25	3,122.20	46.05	68.793	
8,200.00	8,199.63	5,416.23	4,937.77	28.86	19.49	-120.38	155.38	-64.56	3,268.09	3,221.73	46.37	70.486	
8,300.00	8,299.62	5,418.53	4,937.86	29.21	19.53	-121.00	155.42	-66.86	3,367.95	3,321.27	46.67	72.158	
8,400.00	8,399.62	5,420.83	4,937.95	29.57	19.57	-121.61	155.47	-69.15	3,467.80	3,420.82	46.98	73.808	
8,500.00	8,499.61	5,423.13	4,938.05	29.93	19.61	-122.21	155.53	-71.45	3,567.67	3,520.37	47.29	75.437	
8,600.00	8,599.61	5,425.43	4,938.14	30.29	19.64	-122.81	155.59	-73.74	3,667.54	3,619.94	47.60	77.045	
8,700.00	8,699.60	5,427.73	4,938.23	30.64	19.68	-123.39	155.66	-76.04	3,767.41	3,719.50	47.91	78.633	
8,800.00	8,799.59	5,430.02	4,938.32	31.00	19.72	-123.96	155.75	-78.33	3,867.29	3,819.07	48.22	80.200	
8,900.00	8,899.59	5,432.32	4,938.42	31.36	19.76	-124.52	155.84	-80.63	3,967.18	3,918.65	48.53	81.747	
9,000.00	8,999.58	5,437.00	4,938.60	31.71	19.84	-125.63	156.05	-85.30	4,067.07	4,018.28	48.79	83.359	
9,100.00	9,099.57	5,437.00	4,938.60	32.07	19.84	-125.63	156.05	-85.30	4,166.96	4,117.81	49.15	84.786	
9,200.00	9,199.56	5,437.00	4,938.60	32.43	19.84	-35.14	156.05	-85.30	4,266.83	4,215.39	51.45	82.939	
9,300.00	9,298.63	5,437.00	4,938.60	32.78	19.84	-9.01	156.05	-85.30	4,365.37	4,313.87	51.50	84.764	
9,400.00	9,394.00	5,437.00	4,938.60	33.10	19.84	-5.26	156.05	-85.30	4,459.81	4,410.36	49.46	90.179	
9,500.00	9,482.79	5,437.00	4,938.60	33.42	19.84	-3.78	156.05	-85.30	4,547.62	4,501.57	46.05	98.756	
9,600.00	9,562.28	5,437.00	4,938.60	33.73	19.84	-3.01	156.05	-85.30	4,626.58	4,585.11	41.47	111.569	
9,700.00	9,630.07	5,437.00	4,938.60	34.04	19.84	-2.56	156.05	-85.30	4,694.79	4,658.83	35.96	130.544	
9,800.00	9,684.10	5,437.00	4,938.60	34.35	19.84	-2.27	156.05	-85.30	4,750.68	4,720.77	29.92	158.801	
9,900.00	9,722.72	5,437.00	4,938.60	34.66	19.84	-2.10	156.05	-85.30	4,793.02	4,769.05	23.97	199.998	
10,000.00	9,744.77	5,437.00	4,938.60	34.98	19.84	-2.00	156.05	-85.30	4,820.88	4,801.57	19.31	249.712	

CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation

Company:	BC Operating, Inc.	**Local Co-ordinate Reference:**	Well #5H
Project:	Eddy County, New Mexico (NAD27)	**TVD Reference:**	GL + KB @ 3021.50usft (Patterson 244)
Reference Site:	Kyle 34 Federal	**MD Reference:**	GL + KB @ 3021.50usft (Patterson 244)
Site Error:	0.00 usft	**North Reference:**	Grid
Reference Well:	#5H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH / Job #60399	**Database:**	Compass 5000 GCR
Reference Design:	Plan 1 11-23-16	**Offset TVD Reference:**	Reference Datum

Offset Design Mosaic 34 Federal - 2H - ST01 - Surveys — *Offset Site Error:* 0.00 usft

Survey Program: 200-NS-GYRO-MS, 4425-MWD, 5437-MWD — **Offset Well Error:** 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
10,100.00	9,750.00	5,437.00	4,938.60	35.30	19.84	-1.97	156.05	-85.30	4,834.11	4,816.21	17.90	270.024	
10,200.00	9,750.00	5,437.00	4,938.60	35.68	19.84	-1.97	156.05	-85.30	4,844.19	4,826.05	18.15	266.937	
10,300.00	9,750.00	5,437.00	4,938.60	36.08	19.84	-1.97	156.05	-85.30	4,856.31	4,837.88	18.43	263.453	
10,400.00	9,750.00	5,437.00	4,938.60	36.55	19.84	-1.97	156.05	-85.30	4,870.45	4,851.70	18.76	259.647	
10,500.00	9,750.00	5,437.00	4,938.60	37.07	19.84	-1.97	156.05	-85.30	4,886.60	4,867.48	19.12	255.593	
10,600.00	9,750.00	5,451.08	4,939.06	37.64	19.96	-2.14	156.80	-99.35	4,904.62	4,885.09	19.53	251.126	
10,700.00	9,750.00	5,452.25	4,939.08	38.25	19.97	-2.15	156.87	-100.52	4,924.70	4,904.74	19.96	246.769	
10,800.00	9,750.00	5,453.45	4,939.11	38.91	19.98	-2.17	156.94	-101.71	4,946.72	4,926.30	20.41	242.353	
10,900.00	9,750.00	5,454.67	4,939.13	39.61	19.99	-2.18	157.01	-102.93	4,970.65	4,949.76	20.89	237.926	
11,000.00	9,750.00	5,469.00	4,939.30	40.35	20.12	-2.35	157.94	-117.23	4,996.56	4,975.15	21.41	233.342	
11,100.00	9,750.00	5,469.00	4,939.30	41.12	20.12	-2.35	157.94	-117.23	5,024.22	5,002.28	21.94	229.030	
11,200.00	9,750.00	5,469.00	4,939.30	41.93	20.12	-2.35	157.94	-117.23	5,053.70	5,031.22	22.48	224.806	
11,300.00	9,750.00	5,469.00	4,939.30	42.78	20.12	-2.35	157.94	-117.23	5,084.97	5,061.93	23.04	220.687	
11,400.00	9,750.00	5,469.00	4,939.30	43.65	20.12	-2.35	157.94	-117.23	5,118.02	5,094.40	23.62	216.691	
11,500.00	9,750.00	5,469.00	4,939.30	44.56	20.12	-2.35	157.94	-117.23	5,152.79	5,128.57	24.21	212.826	
11,600.00	9,750.00	5,469.00	4,939.30	45.49	20.12	-2.35	157.94	-117.23	5,189.25	5,164.43	24.82	209.102	
11,700.00	9,750.00	5,469.00	4,939.30	46.45	20.12	-2.35	157.94	-117.23	5,227.37	5,201.94	25.43	205.521	
11,800.00	9,750.00	5,469.00	4,939.30	47.43	20.12	-2.35	157.94	-117.23	5,267.12	5,241.05	26.06	202.085	
11,900.00	9,750.00	5,469.00	4,939.30	48.44	20.12	-2.35	157.94	-117.23	5,308.45	5,281.75	26.70	198.795	
12,000.00	9,750.00	5,469.00	4,939.30	49.47	20.12	-2.35	157.94	-117.23	5,351.33	5,323.98	27.35	195.648	
12,100.00	9,750.00	5,469.00	4,939.30	50.51	20.12	-2.35	157.94	-117.23	5,395.73	5,367.72	28.01	192.643	
12,200.00	9,750.00	5,469.00	4,939.30	51.58	20.12	-2.35	157.94	-117.23	5,441.60	5,412.92	28.67	189.775	
12,300.00	9,750.00	5,469.00	4,939.30	52.67	20.12	-2.35	157.94	-117.23	5,488.91	5,459.56	29.35	187.040	
12,400.00	9,750.00	5,469.00	4,939.30	53.77	20.12	-2.35	157.94	-117.23	5,537.62	5,507.59	30.03	184.433	
12,500.00	9,750.00	5,469.00	4,939.30	54.88	20.12	-2.35	157.94	-117.23	5,587.70	5,556.99	30.71	181.950	
12,600.00	9,750.00	5,469.00	4,939.30	56.02	20.12	-2.35	157.94	-117.23	5,639.10	5,607.70	31.40	179.586	
12,700.00	9,750.00	5,469.00	4,939.30	57.16	20.12	-2.35	157.94	-117.23	5,691.80	5,659.70	32.10	177.335	
12,800.00	9,750.00	5,469.00	4,939.30	58.32	20.12	-2.35	157.94	-117.23	5,745.75	5,712.96	32.80	175.192	
12,900.00	9,750.00	5,469.00	4,939.30	59.49	20.12	-2.35	157.94	-117.23	5,800.93	5,767.43	33.50	173.152	
13,000.00	9,750.00	5,469.00	4,939.30	60.68	20.12	-2.35	157.94	-117.23	5,857.30	5,823.08	34.21	171.210	
13,100.00	9,750.00	5,482.94	4,939.20	61.87	20.25	-2.52	158.97	-131.13	5,914.70	5,879.75	34.95	169.226	
13,200.00	9,750.00	5,484.25	4,939.17	63.08	20.26	-2.53	159.07	-132.44	5,973.32	5,937.65	35.67	167.456	
13,300.00	9,750.00	5,485.58	4,939.14	64.29	20.28	-2.55	159.17	-133.76	6,033.03	5,996.63	36.39	165.771	
13,400.00	9,750.00	5,486.93	4,939.11	65.52	20.29	-2.56	159.28	-135.11	6,093.79	6,056.67	37.12	164.166	
13,500.00	9,750.00	5,501.00	4,938.60	66.75	20.43	-2.73	160.45	-149.12	6,155.66	6,117.78	37.88	162.524	
13,600.00	9,750.00	5,501.00	4,938.60	67.99	20.43	-2.73	160.45	-149.12	6,218.41	6,179.81	38.60	161.081	
13,700.00	9,750.00	5,501.00	4,938.60	69.24	20.43	-2.73	160.45	-149.12	6,282.13	6,242.80	39.34	159.705	
13,800.00	9,750.00	5,501.00	4,938.60	70.49	20.43	-2.73	160.45	-149.12	6,346.79	6,306.72	40.07	158.393	
13,900.00	9,750.00	5,501.00	4,938.60	71.76	20.43	-2.73	160.45	-149.12	6,412.36	6,371.55	40.81	157.142	
14,000.00	9,750.00	5,501.00	4,938.60	73.03	20.43	-2.73	160.45	-149.12	6,478.80	6,437.26	41.54	155.949	
14,100.00	9,750.00	5,501.00	4,938.60	74.30	20.43	-2.73	160.45	-149.12	6,546.10	6,503.81	42.28	154.810	
14,200.00	9,750.00	5,501.00	4,938.60	75.58	20.43	-2.73	160.45	-149.12	6,614.22	6,571.20	43.03	153.723	
14,300.00	9,750.00	5,501.00	4,938.60	76.87	20.43	-2.73	160.45	-149.12	6,683.15	6,639.38	43.77	152.685	
14,400.00	9,750.00	5,501.00	4,938.60	78.16	20.43	-2.73	160.45	-149.12	6,752.85	6,708.34	44.52	151.693	
14,500.00	9,750.00	5,501.00	4,938.60	79.46	20.43	-2.73	160.45	-149.12	6,823.31	6,778.05	45.26	150.746	
14,600.00	9,750.00	5,501.00	4,938.60	80.76	20.43	-2.73	160.45	-149.12	6,894.50	6,848.49	46.01	149.841	
14,700.00	9,750.00	5,501.00	4,938.60	82.07	20.43	-2.73	160.45	-149.12	6,966.40	6,919.63	46.76	148.975	
14,800.00	9,750.00	5,501.00	4,938.60	83.38	20.43	-2.73	160.45	-149.12	7,038.98	6,991.47	47.51	148.147	
14,900.00	9,750.00	5,501.00	4,938.60	84.70	20.43	-2.73	160.45	-149.12	7,112.23	7,063.96	48.27	147.354	
15,000.00	9,750.00	5,514.16	4,937.91	86.02	20.57	-2.89	161.60	-162.21	7,186.06	7,137.01	49.06	146.486	
15,100.00	9,750.00	5,516.21	4,937.79	87.34	20.59	-2.91	161.78	-164.25	7,260.56	7,210.75	49.82	145.744	
15,200.00	9,750.00	5,518.26	4,937.67	88.67	20.61	-2.93	161.96	-166.29	7,335.67	7,285.09	50.58	145.033	

CC - Min centre to center distance or covergent point, SF - min separation factor ES - min ellipse separation

Company:	BC Operating, Inc.	**Local Co-ordinate Reference:**	Well #5H
Project:	Eddy County, New Mexico (NAD27)	**TVD Reference:**	GL + KB @ 3021.50usft (Patterson 244)
Reference Site:	Kyle 34 Federal	**MD Reference:**	GL + KB @ 3021.50usft (Patterson 244)
Site Error:	0.00 usft	**North Reference:**	Grid
Reference Well:	#5H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH / Job #60399	**Database:**	Compass 5000 GCR
Reference Design:	Plan 1 11-23-16	**Offset TVD Reference:**	Reference Datum

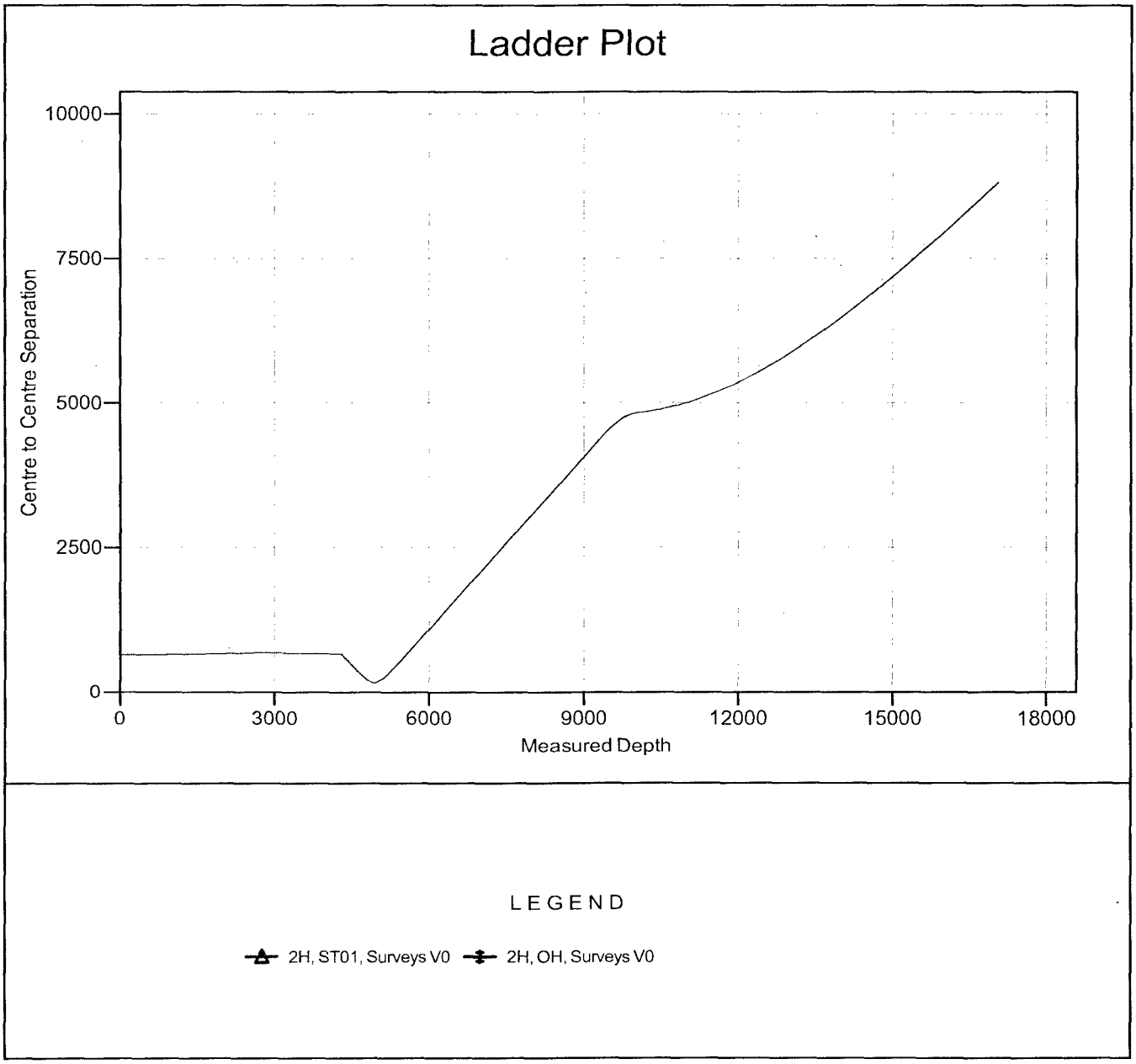
Offset Design Mosaic 34 Federal - 2H - ST01 - Surveys — **Offset Site Error:** 0.00 usft

Survey Program: 200-NS-GYRO-MS, 4425-MWD, 5437-MWD — **Offset Well Error:** 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
15,300.00	9,750.00	5,532.00	4,936.74	90.00	20.76	-3.10	163.18	-179.94	7,411.40	7,360.02	51.38	144.257	
15,400.00	9,750.00	5,532.00	4,936.74	91.34	20.76	-3.10	163.18	-179.94	7,487.64	7,435.51	52.13	143.621	
15,500.00	9,750.00	5,532.00	4,936.74	92.68	20.76	-3.10	163.18	-179.94	7,564.44	7,511.54	52.89	143.010	
15,600.00	9,750.00	5,532.00	4,936.74	94.02	20.76	-3.10	163.18	-179.94	7,641.77	7,588.12	53.65	142.425	
15,700.00	9,750.00	5,532.00	4,936.74	95.36	20.76	-3.10	163.18	-179.94	7,719.63	7,665.21	54.42	141.863	
15,800.00	9,750.00	5,532.00	4,936.74	96.71	20.76	-3.10	163.18	-179.94	7,797.98	7,742.81	55.18	141.324	
15,900.00	9,750.00	5,532.00	4,936.74	98.06	20.76	-3.10	163.18	-179.94	7,876.83	7,820.89	55.94	140.807	
16,000.00	9,750.00	5,540.19	4,936.15	99.41	20.86	-3.19	163.89	-188.08	7,956.15	7,899.42	56.73	140.243	
16,100.00	9,750.00	5,545.81	4,935.77	100.76	20.92	-3.26	164.36	-193.67	8,035.92	7,978.41	57.51	139.720	
16,200.00	9,750.00	5,551.15	4,935.42	102.12	20.99	-3.32	164.80	-198.98	8,116.14	8,057.84	58.30	139.219	
16,300.00	9,750.00	5,556.23	4,935.09	103.48	21.05	-3.38	165.20	-204.03	8,196.78	8,137.70	59.08	138.738	
16,400.00	9,750.00	5,564.00	4,934.62	104.84	21.14	-3.47	165.79	-211.77	8,277.84	8,217.97	59.87	138.252	
16,500.00	9,750.00	5,564.00	4,934.62	106.20	21.14	-3.47	165.79	-211.77	8,359.31	8,298.67	60.64	137.846	
16,600.00	9,750.00	5,564.00	4,934.62	107.57	21.14	-3.47	165.79	-211.77	8,441.17	8,379.76	61.41	137.456	
16,700.00	9,750.00	5,574.39	4,934.03	108.94	21.27	-3.59	166.54	-222.11	8,523.41	8,461.19	62.22	136.991	
16,800.00	9,750.00	5,578.37	4,933.83	110.31	21.32	-3.64	166.81	-226.08	8,606.03	8,543.02	63.00	136.596	
16,900.00	9,750.00	5,582.14	4,933.64	111.68	21.37	-3.68	167.06	-229.84	8,689.00	8,625.22	63.79	136.216	
17,000.00	9,750.00	5,585.72	4,933.47	113.05	21.41	-3.73	167.29	-233.40	8,772.33	8,707.76	64.57	135.851	
17,050.55	9,750.00	5,587.46	4,933.39	113.75	21.43	-3.75	167.40	-235.14	8,814.59	8,749.62	64.97	135.672	

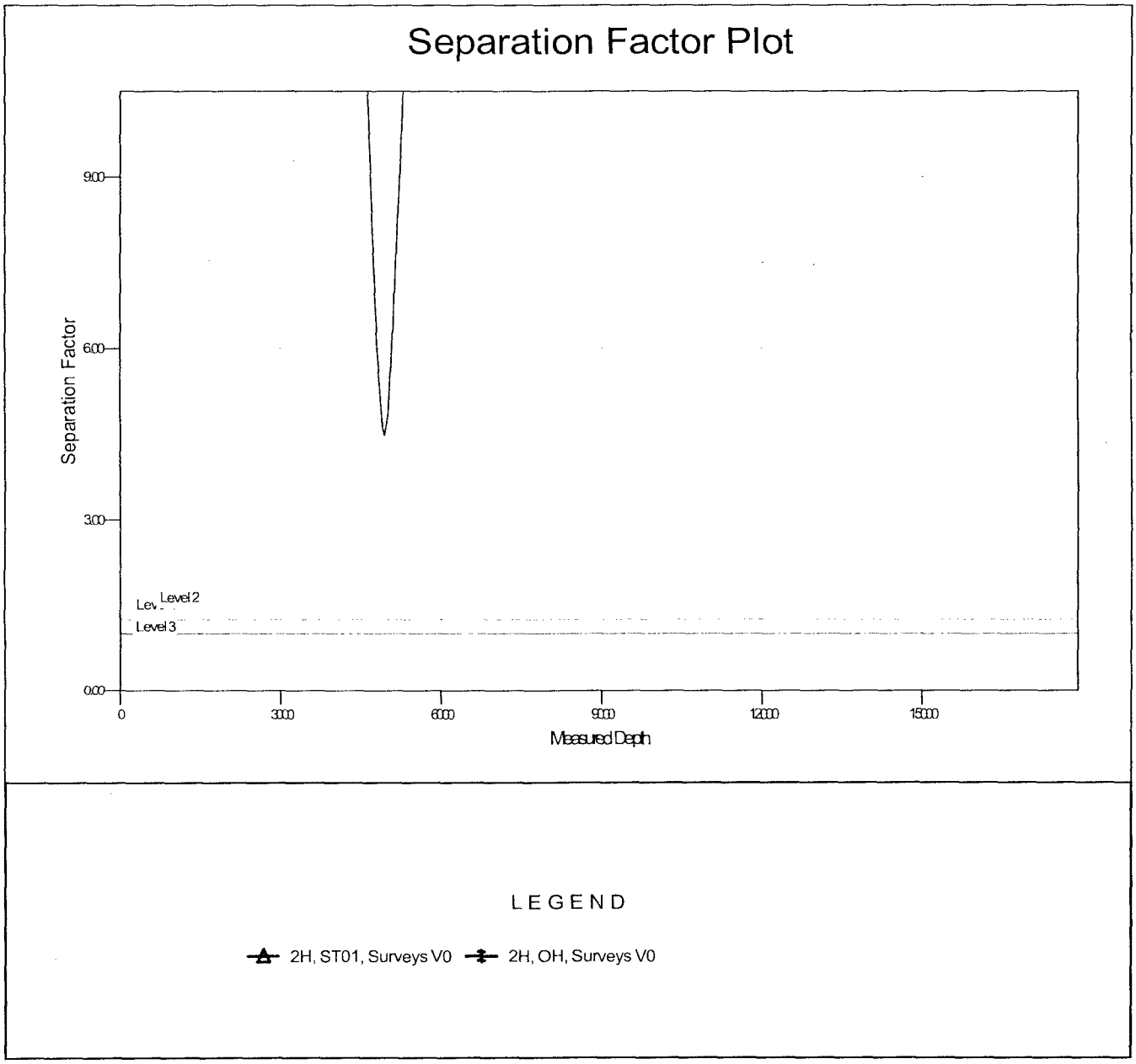
Company:	BC Operating, Inc.	**Local Co-ordinate Reference:**	Well #5H
Project:	Eddy County, New Mexico (NAD27)	**TVD Reference:**	GL + KB @ 3021.50usft (Patterson 244)
Reference Site:	Kyle 34 Federal	**MD Reference:**	GL + KB @ 3021.50usft (Patterson 244)
Site Error:	0.00 usft	**North Reference:**	Grid
Reference Well:	#5H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH / Job #60399	**Database:**	Compass 5000 GCR
Reference Design:	Plan 1 11-23-16	**Offset TVD Reference:**	Reference Datum

Reference Depths are relative to GL + KB @ 3021.50usft (Patterson 24	Coordinates are relative to: #5H
Offset Depths are relative to Offset Datum	Coordinate System is US State Plane 1927 (Exact solution), New Mexico East 30
Central Meridian is 104° 19' 60.00000 W	Grid Convergence at Surface is: 0.14°



Company:	BC Operating, Inc.	**Local Co-ordinate Reference:**	Well #5H
Project:	Eddy County, New Mexico (NAD27)	**TVD Reference:**	GL + KB @ 3021.50usft (Patterson 244)
Reference Site:	Kyle 34 Federal	**MD Reference:**	GL + KB @ 3021.50usft (Patterson 244)
Site Error:	0.00 usft	**North Reference:**	Grid
Reference Well:	#5H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH / Job #60399	**Database:**	Compass 5000 GCR
Reference Design:	Plan 1 11-23-16	**Offset TVD Reference:**	Reference Datum

Reference Depths are relative to GL + KB @ 3021.50usft (Patterson 24	Coordinates are relative to: #5H
Offset Depths are relative to Offset Datum	Coordinate System is US State Plane 1927 (Exact solution), New Mexico East 30
Central Meridian is 104° 19' 60.00000 W	Grid Convergence at Surface is: 0.14°



Anti-collision plan for Kyle 34 Federal #5H

Two existing and active wells are producing inside the producing interval of the Kyle 34 Federal #5H:

Mosaic 34 Federal #2H – Horizontal Brushy Canyon, TVD 4,900'. See map and directional survey. Chevron operated.

Kyle 34 Federal #1 – vertical gas well, TD 12,200'. See plat and inclination survey. BC operated.

Plan for collision avoidance to Mosaic 34 Federal #2: drill directionally due south starting below intermediate casing a distance of 215ft south of SHL by a TVD of 4,900ft, this will increase the separation from the Mosaic #2H to approx. 360ft.

Plan for collision avoidance to Kyle 34 Federal #1: BC Operating will gyro survey well prior to commencing drilling of the Kyle 34 Federal #5H and submit anti-collision for lateral prior to drilling well.

Thanks

Jason Goss, P.E.

BC Operating, Inc.

BC OPERATING, INC.

BC Operating, Inc.

Eddy County, New Mexico (NAD27)
Kyle 34 Federal
#5H

OH / Job #60399
Plan 1 11-23-16

Anticollision Report

10 February, 2017

PHOENIX
TECHNOLOGY SERVICES

Company:	BC Operating, Inc.	**Local Co-ordinate Reference:**	Well #5H
Project:	Eddy County, New Mexico (NAD27)	**TVD Reference:**	GL + KB @ 3021.50usft (Patterson 244)
Reference Site:	Kyle 34 Federal	**MD Reference:**	GL + KB @ 3021.50usft (Patterson 244)
Site Error:	0.00 usft	**North Reference:**	Grid
Reference Well:	#5H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH / Job #60399	**Database:**	Compass 5000 GCR
Reference Design:	Plan 1 11-23-16	**Offset TVD Reference:**	Reference Datum

Reference Plan 1 11-23-16

Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	MD Interval 100.00usft	**Error Model:**	ISCWSA
Depth Range:	Unlimited	**Scan Method:**	Closest Approach 3D
Results Limited by:	Maximum center-center distance of 10,000.00 u	**Error Surface:**	Elliptical Conic
Warning Levels Evaluated at:	2.00 **Sigma**	**Casing Method:**	Not applied

Survey Tool Program **Date** 2/10/2017

From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
0.00	17,050.55	Plan 1 11-23-16 (OH / Job #60399)	MWD+HDGM	OWSG Rev.2 MWD + HDGM

Summary

Site Name Offset Well - Wellbore - Design	Reference Measured Depth (usft)	Offset Measured Depth (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Separation Factor	Warning
Kyle 34 Federal						
#1 - OH - Surveys	13,990.16	9,740.36	12.26	-273.47	0.043	Level 1, CC, ES, SF
Mosaic 34 Federal						
2H - OH - Surveys	4,931.85	5,326.10	154.78	120.21	4.478	CC, ES, SF
2H - ST01 - Surveys	4,931.85	5,326.10	154.78	120.21	4.478	CC, ES, SF

Offset Design Kyle 34 Federal - #1 - OH - Surveys — **Offset Site Error:** 0.00 usft

Survey Program: 230-INC-ONLY-Offset Well — **Offset Well Error:** 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
0.00	0.00	0.00	10.50	0.00	0.00	0.62	4,487.76	48.95	4,488.04				
100.00	100.00	89.50	100.00	0.13	0.84	0.62	4,487.76	48.95	4,488.03	4,487.05	0.97	4,620.250	
200.00	200.00	189.50	200.00	0.49	1.79	0.62	4,487.76	48.95	4,488.03	4,485.75	2.27	1,975.357	
300.00	300.00	289.50	300.00	0.85	3.34	0.62	4,487.76	48.95	4,488.03	4,483.84	4.18	1,072.619	
400.00	400.00	389.50	400.00	1.20	5.31	0.62	4,487.76	48.95	4,488.03	4,481.51	6.51	689.129	
500.00	500.00	489.51	500.00	1.56	7.92	0.62	4,487.76	48.95	4,488.03	4,478.54	9.48	473.254	
563.16	563.16	552.67	563.16	1.79	9.65	0.62	4,487.76	48.95	4,488.03	4,476.59	11.43	392.514	
600.00	600.00	580.00	590.49	1.92	10.39	0.62	4,487.76	48.95	4,488.04	4,475.72	12.31	364.518	
672.18	672.18	661.69	672.18	2.18	13.83	0.62	4,487.76	48.95	4,488.03	4,472.02	16.01	280.341	
700.00	700.00	673.00	683.45	2.28	14.31	0.62	4,487.76	48.95	4,488.06	4,471.47	16.58	270.614	
785.07	785.07	774.62	785.07	2.58	18.77	0.62	4,487.76	48.95	4,488.03	4,466.67	21.35	210.176	
800.00	800.00	780.00	790.36	2.64	19.01	0.62	4,487.76	48.95	4,488.04	4,466.39	21.64	207.361	
900.00	900.00	889.67	900.00	3.00	23.51	0.62	4,487.76	48.95	4,488.03	4,461.52	26.51	169.327	
1,000.00	1,000.00	989.72	1,000.00	3.35	27.29	0.62	4,487.76	48.95	4,488.03	4,457.38	30.65	146.448	
1,100.00	1,100.00	1,089.75	1,100.00	3.71	30.28	0.62	4,487.76	48.95	4,488.03	4,454.03	34.00	132.017	
1,127.88	1,127.88	1,117.64	1,127.88	3.81	31.08	0.62	4,487.76	48.95	4,488.03	4,453.13	34.90	128.613	
1,200.00	1,200.00	1,136.00	1,146.22	4.07	31.61	0.62	4,487.76	48.95	4,488.35	4,452.67	35.68	125.791	
1,283.93	1,283.93	1,264.00	1,274.20	4.37	35.77	0.62	4,487.76	48.95	4,488.04	4,447.90	40.14	111.814	
1,300.00	1,300.00	1,264.00	1,274.20	4.43	35.77	0.62	4,487.76	48.95	4,488.10	4,447.90	40.20	111.655	
1,369.60	1,369.60	1,358.00	1,368.17	4.68	38.94	0.62	4,487.76	48.95	4,488.03	4,444.41	43.62	102.895	
1,400.00	1,400.00	1,358.00	1,368.17	4.79	38.94	0.62	4,487.76	48.95	4,488.14	4,444.41	43.73	102.642	
1,488.83	1,488.83	1,478.66	1,488.83	5.11	42.55	0.62	4,487.76	48.95	4,488.03	4,440.37	47.66	94.171	

Company:	BC Operating, Inc.	**Local Co-ordinate Reference:**	Well #5H
Project:	Eddy County, New Mexico (NAD27)	**TVD Reference:**	GL + KB @ 3021.50usft (Patterson 244)
Reference Site:	Kyle 34 Federal	**MD Reference:**	GL + KB @ 3021.50usft (Patterson 244)
Site Error:	0.00 usft	**North Reference:**	Grid
Reference Well:	#5H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH / Job #60399	**Database:**	Compass 5000 GCR
Reference Design:	Plan 1 11-23-16	**Offset TVD Reference:**	Reference Datum

Offset Design Kyle 34 Federal - #1 - OH - Surveys — **Offset Site Error:** 0.00 usft

Survey Program: 230-INC-ONLY-Offset Well — **Offset Well Error:** 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
1,500.00	1,500.00	1,483.00	1,493.14	5.15	42.68	0.62	4,487.76	48.95	4,488.03	4,440.20	47.83	93.836	
1,600.00	1,600.00	1,589.86	1,600.00	5.51	45.21	0.62	4,487.76	48.95	4,488.03	4,437.31	50.72	88.492	
1,634.78	1,634.78	1,624.64	1,634.78	5.63	46.04	0.62	4,487.76	48.95	4,488.03	4,436.36	51.66	86.868	
1,700.00	1,700.00	1,641.00	1,651.11	5.86	46.42	0.62	4,487.76	48.95	4,488.29	4,436.01	52.29	85.841	
1,800.00	1,800.00	1,789.89	1,800.00	6.22	49.23	0.62	4,487.76	48.95	4,488.03	4,432.58	55.45	80.937	
1,812.52	1,812.52	1,802.41	1,812.52	6.27	49.46	0.62	4,487.76	48.95	4,488.03	4,432.29	55.73	80.529	
1,900.00	1,900.00	1,828.00	1,838.10	6.58	49.95	0.62	4,487.76	48.95	4,488.45	4,431.93	56.53	79.403	
2,000.00	2,000.00	1,989.90	2,000.00	6.94	52.74	0.62	4,487.76	48.95	4,488.03	4,428.35	59.68	75.206	
2,100.00	2,100.00	2,089.90	2,100.00	7.30	54.66	0.62	4,487.76	48.95	4,488.03	4,426.07	61.96	72.438	
2,134.76	2,134.76	2,124.67	2,134.76	7.42	55.33	0.62	4,487.76	48.95	4,488.03	4,425.28	62.75	71.523	
2,200.00	2,200.00	2,141.00	2,151.10	7.66	55.64	0.62	4,487.76	48.95	4,488.29	4,425.00	63.30	70.908	
2,300.00	2,300.00	2,289.90	2,300.00	8.01	60.45	0.62	4,487.76	48.95	4,488.03	4,419.56	68.46	65.555	
2,400.00	2,400.00	2,389.92	2,400.00	8.37	64.12	0.62	4,487.76	48.95	4,488.03	4,415.54	72.49	61.914	
2,500.00	2,500.00	2,489.98	2,500.00	8.73	67.78	0.62	4,487.76	48.95	4,488.03	4,411.52	76.51	58.661	
2,525.89	2,525.89	2,515.87	2,525.89	8.82	68.65	0.62	4,487.76	48.95	4,488.03	4,410.56	77.47	57.933	
2,600.00	2,600.00	2,535.00	2,544.98	9.09	69.29	0.62	4,487.76	48.95	4,488.36	4,409.99	78.38	57.266	
2,700.00	2,700.00	2,690.01	2,700.00	9.44	73.00	-89.39	4,487.76	48.95	4,488.02	4,405.58	82.43	54.445	
2,736.40	2,736.40	2,726.41	2,736.40	9.56	73.87	-89.39	4,487.76	48.95	4,488.01	4,404.59	83.43	53.795	
2,800.00	2,799.99	2,737.00	2,746.95	9.78	74.12	-89.39	4,487.76	48.95	4,488.32	4,404.42	83.90	53.497	
2,900.00	2,899.98	2,890.03	2,899.98	10.12	76.70	-89.41	4,487.76	48.95	4,487.99	4,401.18	86.82	51.695	
3,000.00	2,999.98	2,990.03	2,999.98	10.47	78.17	-89.43	4,487.76	48.95	4,487.98	4,399.34	88.64	50.632	
3,053.60	3,053.57	3,043.63	3,053.57	10.65	78.96	-89.44	4,487.76	48.95	4,487.98	4,398.37	89.61	50.084	
3,100.00	3,099.97	3,053.00	3,062.94	10.81	79.10	-89.44	4,487.76	48.95	4,488.12	4,398.22	89.91	49.920	
3,200.00	3,199.96	3,190.02	3,199.96	11.16	81.30	-89.46	4,487.76	48.95	4,487.96	4,395.51	92.45	48.544	
3,266.15	3,266.11	3,256.17	3,266.11	11.39	82.36	-89.47	4,487.76	48.95	4,487.95	4,394.21	93.74	47.875	
3,300.00	3,299.96	3,272.00	3,281.94	11.50	82.61	-89.47	4,487.76	48.95	4,487.99	4,393.87	94.11	47.686	
3,400.00	3,399.95	3,390.01	3,399.95	11.85	84.66	-89.49	4,487.76	48.95	4,487.94	4,391.42	96.51	46.500	
3,500.00	3,499.94	3,490.00	3,499.94	12.20	86.40	-89.50	4,487.76	48.95	4,487.93	4,389.33	98.60	45.516	
3,600.00	3,599.94	3,590.00	3,599.94	12.55	88.23	-89.52	4,487.76	48.95	4,487.92	4,387.14	100.78	44.533	
3,700.00	3,699.93	3,689.99	3,699.93	12.90	90.09	-89.53	4,487.76	48.95	4,487.91	4,384.92	102.99	43.576	
3,765.93	3,765.85	3,755.92	3,765.85	13.13	91.32	-89.54	4,487.76	48.95	4,487.90	4,383.45	104.45	42.967	
3,800.00	3,799.92	3,772.00	3,781.93	13.25	91.62	-89.54	4,487.76	48.95	4,487.94	4,383.07	104.87	42.796	
3,900.00	3,899.92	3,889.99	3,899.92	13.60	93.84	-89.56	4,487.76	48.95	4,487.89	4,380.46	107.43	41.773	
4,000.00	3,999.91	3,989.98	3,999.91	13.95	95.72	-89.58	4,487.76	48.95	4,487.88	4,378.22	109.66	40.924	
4,100.00	4,099.90	4,089.98	4,099.90	14.30	97.59	-89.59	4,487.76	48.95	4,487.87	4,375.98	111.89	40.109	
4,150.61	4,150.51	4,140.58	4,150.51	14.48	98.54	-89.60	4,487.76	48.95	4,487.87	4,374.85	113.02	39.709	
4,200.00	4,199.90	4,150.00	4,159.92	14.65	98.72	-89.60	4,487.76	48.95	4,488.04	4,374.67	113.37	39.588	
4,300.00	4,299.89	4,289.97	4,299.89	15.00	101.36	-89.62	4,487.76	48.95	4,487.86	4,371.49	116.36	38.567	
4,400.00	4,399.88	4,389.97	4,399.88	15.35	103.25	-89.64	4,487.76	48.95	4,487.85	4,369.25	118.60	37.839	
4,500.00	4,499.88	4,489.97	4,499.88	15.71	105.15	-89.65	4,487.76	48.95	4,487.84	4,366.99	120.85	37.135	
4,600.00	4,599.87	4,589.96	4,599.87	16.06	107.05	-89.66	4,487.76	48.95	4,487.84	4,364.73	123.10	36.456	
4,700.00	4,699.86	4,689.95	4,699.86	16.41	108.94	-89.68	4,487.76	48.95	4,487.83	4,362.48	125.35	35.802	
4,762.11	4,761.97	4,752.06	4,761.97	16.63	110.12	-89.69	4,487.76	48.95	4,487.83	4,361.08	126.75	35.407	
4,800.00	4,799.86	4,766.00	4,775.90	16.76	110.38	-89.69	4,487.76	48.95	4,487.89	4,360.74	127.15	35.296	
4,900.00	4,899.85	4,889.95	4,899.85	17.12	112.87	-89.71	4,487.76	48.95	4,487.82	4,357.83	129.99	34.524	
5,000.00	4,999.84	4,989.94	4,999.84	17.47	114.88	-89.72	4,487.76	48.95	4,487.81	4,355.46	132.35	33.909	
5,048.39	5,048.23	5,038.33	5,048.23	17.64	115.85	-89.73	4,487.76	48.95	4,487.81	4,354.32	133.49	33.618	
5,100.00	5,099.84	5,048.00	5,057.89	17.83	116.05	-89.73	4,487.76	48.95	4,488.00	4,354.13	133.87	33.525	
5,200.00	5,199.83	5,189.94	5,199.83	18.18	119.19	-89.75	4,487.76	48.95	4,487.80	4,350.44	137.37	32.670	
5,300.00	5,299.82	5,289.93	5,299.82	18.53	121.40	-89.77	4,487.76	48.95	4,487.80	4,347.86	139.93	32.071	
5,400.00	5,399.82	5,389.93	5,399.82	18.89	123.61	-89.78	4,487.76	48.95	4,487.79	4,345.29	142.50	31.493	
5,500.00	5,499.81	5,489.94	5,499.81	19.24	126.03	-89.80	4,487.76	48.95	4,487.79	4,342.52	145.27	30.892	

CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation

Company:	BC Operating, Inc.	**Local Co-ordinate Reference:**	Well #5H
Project:	Eddy County, New Mexico (NAD27)	**TVD Reference:**	GL + KB @ 3021.50usft (Patterson 244)
Reference Site:	Kyle 34 Federal	**MD Reference:**	GL + KB @ 3021.50usft (Patterson 244)
Site Error:	0.00 usft	**North Reference:**	Grid
Reference Well:	#5H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH / Job #60399	**Database:**	Compass 5000 GCR
Reference Design:	Plan 1 11-23-16	**Offset TVD Reference:**	Reference Datum

Offset Design Kyle 34 Federal - #1 - OH - Surveys — **Offset Site Error:** 0.00 usft

Survey Program: 230-INC-ONLY-Offset Well — **Offset Well Error:** 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
5,600.00	5,599.80	5,589.93	5,599.80	19.60	128.45	-89.81	4,487.76	48.95	4,487.78	4,339.74	148.04	30.314	
5,667.52	5,667.32	5,657.44	5,667.32	19.84	130.08	-89.82	4,487.76	48.95	4,487.78	4,337.87	149.92	29.935	
5,700.00	5,699.80	5,677.00	5,686.85	19.95	130.55	-89.82	4,487.76	48.95	4,487.80	4,337.29	150.50	29.818	
5,800.00	5,799.79	5,677.00	5,686.85	20.31	130.55	-89.82	4,487.76	48.95	4,489.20	4,338.34	150.86	29.758	
5,900.00	5,899.78	5,889.93	5,899.78	20.66	135.70	-89.86	4,487.76	48.95	4,487.77	4,331.41	156.36	28.701	
5,971.92	5,971.70	5,961.85	5,971.70	20.92	137.44	-89.87	4,487.76	48.95	4,487.77	4,329.42	158.36	28.340	
6,000.00	5,999.78	5,986.00	5,995.82	21.02	138.02	-89.87	4,487.76	48.95	4,487.77	4,328.73	159.04	28.218	
6,100.00	6,099.77	6,089.95	6,099.77	21.37	140.32	-89.88	4,487.76	48.95	4,487.77	4,326.07	161.70	27.754	
6,200.00	6,199.76	6,189.95	6,199.76	21.73	142.54	-89.90	4,487.76	48.95	4,487.77	4,323.50	164.27	27.320	
6,300.00	6,299.76	6,289.94	6,299.76	22.08	144.75	-89.91	4,487.76	48.95	4,487.76	4,320.93	166.84	26.899	
6,400.00	6,399.75	6,389.96	6,399.75	22.44	146.88	-89.93	4,487.76	48.95	4,487.76	4,318.45	169.31	26.506	
6,500.00	6,499.74	6,489.95	6,499.74	22.80	148.99	-89.94	4,487.76	48.95	4,487.76	4,315.98	171.78	26.125	
6,600.00	6,599.74	6,589.95	6,599.74	23.15	151.10	-89.96	4,487.76	48.95	4,487.76	4,313.51	174.25	25.754	
6,605.20	6,604.93	6,595.14	6,604.93	23.17	151.21	-89.96	4,487.76	48.95	4,487.76	4,313.38	174.38	25.736	
6,700.00	6,699.73	6,613.00	6,622.78	23.51	151.59	-89.96	4,487.76	48.95	4,488.42	4,313.32	175.09	25.634	
6,800.00	6,799.72	6,789.95	6,799.72	23.86	155.33	-89.99	4,487.76	48.95	4,487.76	4,308.57	179.19	25.044	
6,882.12	6,881.84	6,872.07	6,881.84	24.16	157.07	-90.00	4,487.76	48.95	4,487.76	4,306.54	181.22	24.764	
6,900.00	6,899.72	6,889.94	6,899.72	24.22	157.44	-90.00	4,487.76	48.95	4,487.76	4,306.10	181.66	24.704	
6,904.41	6,904.13	6,894.35	6,904.13	24.24	157.54	-90.00	4,487.76	48.95	4,487.76	4,305.99	181.77	24.689	
7,000.00	6,999.71	6,927.00	6,936.76	24.58	158.23	-90.01	4,487.76	48.95	4,488.20	4,305.40	182.80	24.552	
7,094.43	7,094.14	7,084.38	7,094.14	24.91	161.56	-90.03	4,487.76	48.95	4,487.76	4,301.29	186.47	24.067	
7,100.00	7,099.70	7,089.94	7,099.70	24.93	161.67	-90.03	4,487.76	48.95	4,487.76	4,301.15	186.61	24.049	
7,200.00	7,199.70	7,189.94	7,199.70	25.29	163.79	-90.05	4,487.76	48.95	4,487.76	4,298.68	189.08	23.735	
7,300.00	7,299.69	7,289.95	7,299.69	25.65	165.83	-90.06	4,487.76	48.95	4,487.76	4,296.29	191.47	23.438	
7,400.00	7,399.68	7,389.94	7,399.68	26.00	167.85	-90.08	4,487.76	48.95	4,487.76	4,293.92	193.84	23.151	
7,500.00	7,499.68	7,489.93	7,499.68	26.36	169.86	-90.09	4,487.76	48.95	4,487.76	4,291.55	196.22	22.871	
7,600.00	7,599.67	7,589.93	7,599.67	26.72	171.88	-90.11	4,487.76	48.95	4,487.77	4,289.17	198.59	22.598	
7,700.00	7,699.66	7,689.92	7,699.66	27.07	173.90	-90.12	4,487.76	48.95	4,487.77	4,286.80	200.97	22.331	
7,800.00	7,799.66	7,789.91	7,799.66	27.43	175.92	-90.13	4,487.76	48.95	4,487.77	4,284.43	203.34	22.070	
7,900.00	7,899.65	7,889.94	7,899.65	27.79	177.78	-90.15	4,487.76	48.95	4,487.77	4,282.21	205.57	21.831	
8,000.00	7,999.64	7,989.93	7,999.64	28.14	179.61	-90.16	4,487.76	48.95	4,487.78	4,280.03	207.75	21.602	
8,100.00	8,099.64	8,089.92	8,099.64	28.50	181.44	-90.18	4,487.76	48.95	4,487.78	4,277.85	209.93	21.377	
8,200.00	8,199.63	8,189.92	8,199.63	28.86	183.26	-90.19	4,487.76	48.95	4,487.78	4,275.67	212.11	21.157	
8,300.00	8,299.62	8,289.92	8,299.62	29.21	185.29	-90.21	4,487.76	48.95	4,487.79	4,273.29	214.50	20.922	
8,357.15	8,356.77	8,347.07	8,356.77	29.42	186.50	-90.22	4,487.76	48.95	4,487.79	4,271.87	215.92	20.785	
8,400.00	8,399.62	8,385.00	8,394.70	29.57	187.31	-90.22	4,487.76	48.95	4,487.80	4,270.92	216.88	20.693	
8,500.00	8,499.61	8,385.00	8,394.70	29.93	187.31	-90.22	4,487.76	48.95	4,489.02	4,271.79	217.23	20.664	
8,594.40	8,594.01	8,584.31	8,594.01	30.27	191.73	-90.25	4,487.76	48.95	4,487.80	4,265.81	221.99	20.216	
8,600.00	8,599.61	8,589.90	8,599.61	30.29	191.85	-90.25	4,487.76	48.95	4,487.80	4,265.67	222.14	20.203	
8,645.47	8,645.07	8,635.37	8,645.07	30.45	192.86	-90.26	4,487.76	48.95	4,487.81	4,264.50	223.31	20.097	
8,700.00	8,699.60	8,659.00	8,668.67	30.64	193.39	-90.26	4,487.76	48.95	4,487.91	4,263.89	224.03	20.033	
8,794.16	8,793.75	8,784.08	8,793.75	30.98	195.92	-90.28	4,487.76	48.95	4,487.81	4,260.92	226.89	19.779	
8,800.00	8,799.59	8,789.92	8,799.59	31.00	196.04	-90.28	4,487.76	48.95	4,487.81	4,260.78	227.03	19.767	
8,900.00	8,899.59	8,889.92	8,899.59	31.36	198.06	-90.30	4,487.76	48.95	4,487.82	4,258.40	229.42	19.562	
8,953.64	8,953.22	8,943.55	8,953.22	31.55	199.15	-90.30	4,487.76	48.95	4,487.82	4,257.13	230.69	19.454	
9,000.00	8,999.58	8,974.00	8,983.66	31.71	199.77	-90.31	4,487.76	48.95	4,487.85	4,256.38	231.48	19.388	
9,100.00	9,099.57	9,089.91	9,099.57	32.07	201.89	-90.33	4,487.76	48.95	4,487.83	4,253.87	233.96	19.182	
9,104.29	9,103.86	9,094.20	9,103.86	32.09	201.97	-81.98	4,487.76	48.95	4,487.83	4,253.78	234.05	19.174	
9,200.00	9,199.56	9,189.90	9,199.56	32.43	203.73	-16.13	4,487.76	48.95	4,487.39	4,251.42	235.97	19.017	
9,300.00	9,298.63	9,288.97	9,298.63	32.78	205.54	-2.88	4,487.76	48.95	4,474.79	4,241.76	233.02	19.203	
9,400.00	9,394.00	9,378.00	9,387.64	33.10	207.18	-1.52	4,487.76	48.95	4,445.18	4,222.29	222.88	19.944	
9,500.00	9,482.79	9,473.15	9,482.79	33.42	208.66	-1.00	4,487.76	48.95	4,399.44	4,193.59	205.85	21.372	

Company:	BC Operating, Inc.	**Local Co-ordinate Reference:**	Well #5H
Project:	Eddy County, New Mexico (NAD27)	**TVD Reference:**	GL + KB @ 3021.50usft (Patterson 244)
Reference Site:	Kyle 34 Federal	**MD Reference:**	GL + KB @ 3021.50usft (Patterson 244)
Site Error:	0.00 usft	**North Reference:**	Grid
Reference Well:	#5H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH / Job #60399	**Database:**	Compass 5000 GCR
Reference Design:	Plan 1 11-23-16	**Offset TVD Reference:**	Reference Datum

Offset Design Kyle 34 Federal - #1 - OH - Surveys — **Offset Site Error:** 0.00 usft

Survey Program: 230-INC-ONLY-Offset Well — **Offset Well Error:** 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
9,600.00	9,562.28	9,552.64	9,562.28	33.73	209.90	-0.73	4,487.76	48.95	4,338.99	4,156.58	182.41	23.787	
9,700.00	9,630.07	9,620.43	9,630.07	34.04	210.96	-0.54	4,487.76	48.95	4,265.65	4,112.18	153.46	27.796	
9,800.00	9,684.10	9,674.46	9,684.10	34.35	211.80	-0.37	4,487.76	48.95	4,181.65	4,061.45	120.20	34.788	
9,900.00	9,722.72	9,713.08	9,722.72	34.66	212.40	-0.12	4,487.76	48.95	4,089.55	4,005.10	84.45	48.427	
10,000.00	9,744.77	9,735.12	9,744.77	34.98	212.75	0.62	4,487.76	48.95	3,992.14	3,941.95	50.18	79.553	
10,100.00	9,750.00	9,740.36	9,750.00	35.30	212.83	90.00	4,487.76	48.95	3,892.37	3,644.25	248.13	15.687	
10,200.00	9,750.00	9,740.36	9,750.00	35.66	212.83	90.00	4,487.76	48.95	3,792.37	3,543.88	248.49	15.262	
10,300.00	9,750.00	9,740.36	9,750.00	36.08	212.83	90.00	4,487.76	48.95	3,692.37	3,443.47	248.91	14.834	
10,400.00	9,750.00	9,740.36	9,750.00	36.55	212.83	90.00	4,487.76	48.95	3,592.37	3,343.00	249.38	14.405	
10,500.00	9,750.00	9,740.36	9,750.00	37.07	212.83	90.00	4,487.76	48.95	3,492.37	3,242.48	249.90	13.975	
10,600.00	9,750.00	9,740.36	9,750.00	37.64	212.83	90.00	4,487.76	48.95	3,392.38	3,141.91	250.46	13.544	
10,700.00	9,750.00	9,740.36	9,750.00	38.25	212.83	90.00	4,487.76	48.95	3,292.38	3,041.30	251.08	13.113	
10,800.00	9,750.00	9,740.36	9,750.00	38.91	212.83	90.00	4,487.76	48.95	3,192.38	2,940.64	251.73	12.682	
10,900.00	9,750.00	9,740.36	9,750.00	39.61	212.83	90.00	4,487.76	48.95	3,092.38	2,839.94	252.43	12.250	
11,000.00	9,750.00	9,740.36	9,750.00	40.35	212.83	90.00	4,487.76	48.95	2,992.38	2,739.21	253.17	11.820	
11,100.00	9,750.00	9,740.36	9,750.00	41.12	212.83	90.00	4,487.76	48.95	2,892.38	2,638.43	253.95	11.390	
11,200.00	9,750.00	9,740.36	9,750.00	41.93	212.83	90.00	4,487.76	48.95	2,792.38	2,537.62	254.76	10.961	
11,300.00	9,750.00	9,740.36	9,750.00	42.78	212.83	90.00	4,487.76	48.95	2,692.38	2,436.78	255.60	10.533	
11,400.00	9,750.00	9,740.36	9,750.00	43.65	212.83	90.00	4,487.76	48.95	2,592.38	2,335.90	256.48	10.108	
11,500.00	9,750.00	9,740.36	9,750.00	44.56	212.83	90.00	4,487.76	48.95	2,492.38	2,235.00	257.38	9.684	
11,600.00	9,750.00	9,740.36	9,750.00	45.49	212.83	90.00	4,487.76	48.95	2,392.38	2,134.07	258.32	9.261	
11,700.00	9,750.00	9,740.36	9,750.00	46.45	212.83	90.00	4,487.76	48.95	2,292.39	2,033.11	259.27	8.842	
11,800.00	9,750.00	9,740.36	9,750.00	47.43	212.83	90.00	4,487.76	48.95	2,192.39	1,932.13	260.26	8.424	
11,900.00	9,750.00	9,740.36	9,750.00	48.44	212.83	90.00	4,487.76	48.95	2,092.39	1,831.13	261.26	8.009	
12,000.00	9,750.00	9,740.36	9,750.00	49.47	212.83	90.00	4,487.76	48.95	1,992.39	1,730.10	262.29	7.596	
12,100.00	9,750.00	9,740.36	9,750.00	50.51	212.83	90.00	4,487.76	48.95	1,892.39	1,629.05	263.34	7.186	
12,200.00	9,750.00	9,740.36	9,750.00	51.58	212.83	90.00	4,487.76	48.95	1,792.39	1,527.99	264.41	6.779	
12,300.00	9,750.00	9,740.36	9,750.00	52.67	212.83	90.00	4,487.76	48.95	1,692.40	1,426.91	265.49	6.375	
12,400.00	9,750.00	9,740.36	9,750.00	53.77	212.83	90.00	4,487.76	48.95	1,592.40	1,325.81	266.59	5.973	
12,500.00	9,750.00	9,740.36	9,750.00	54.88	212.83	90.00	4,487.76	48.95	1,492.40	1,224.69	267.71	5.575	
12,600.00	9,750.00	9,740.36	9,750.00	56.02	212.83	90.00	4,487.76	48.95	1,392.41	1,123.56	268.84	5.179	
12,700.00	9,750.00	9,740.36	9,750.00	57.16	212.83	90.00	4,487.76	48.95	1,292.41	1,022.42	269.99	4.787	
12,800.00	9,750.00	9,740.36	9,750.00	58.32	212.83	90.00	4,487.76	48.95	1,192.42	921.27	271.15	4.398	
12,900.00	9,750.00	9,740.36	9,750.00	59.49	212.83	90.00	4,487.76	48.95	1,092.42	820.10	272.32	4.012	
13,000.00	9,750.00	9,740.36	9,750.00	60.68	212.83	90.00	4,487.76	48.95	992.43	718.92	273.50	3.629	
13,100.00	9,750.00	9,740.36	9,750.00	61.87	212.83	90.00	4,487.76	48.95	892.44	617.74	274.70	3.249	
13,200.00	9,750.00	9,740.36	9,750.00	63.08	212.83	90.00	4,487.76	48.95	792.45	516.54	275.90	2.872	
13,300.00	9,750.00	9,740.36	9,750.00	64.29	212.83	90.00	4,487.76	48.95	692.46	415.34	277.12	2.499	
13,400.00	9,750.00	9,740.36	9,750.00	65.52	212.83	90.00	4,487.76	48.95	592.48	314.14	278.34	2.129	
13,500.00	9,750.00	9,740.36	9,750.00	66.75	212.83	90.00	4,487.76	48.95	492.50	212.93	279.57	1.762	
13,600.00	9,750.00	9,740.36	9,750.00	67.99	212.83	90.00	4,487.76	48.95	392.54	111.73	280.81	1.398	Level 3
13,700.00	9,750.00	9,740.36	9,750.00	69.24	212.83	90.00	4,487.76	48.95	292.60	10.54	282.06	1.037	Level 2
13,800.00	9,750.00	9,740.36	9,750.00	70.49	212.83	90.00	4,487.76	48.95	192.73	-90.59	283.32	0.680	Level 1
13,900.00	9,750.00	9,740.36	9,750.00	71.76	212.83	90.00	4,487.76	48.95	93.14	-191.44	284.58	0.327	Level 1
13,990.16	9,750.00	9,740.36	9,750.00	72.90	212.83	90.00	4,487.76	48.95	12.26	-273.47	285.73	0.043	Level 1, CC, ES, SF
14,000.00	9,750.00	9,740.36	9,750.00	73.03	212.83	90.00	4,487.76	48.95	14.28	-271.57	285.85	0.050	Level 1
14,100.00	9,750.00	9,740.36	9,750.00	74.30	212.83	90.00	4,487.76	48.95	108.32	-178.81	287.13	0.377	Level 1
14,200.00	9,750.00	9,740.36	9,750.00	75.58	212.83	90.00	4,487.76	48.95	208.00	-80.41	288.41	0.721	Level 1
14,300.00	9,750.00	9,740.36	9,750.00	76.87	212.83	90.00	4,487.76	48.95	307.88	18.19	289.70	1.063	Level 2
14,400.00	9,750.00	9,740.36	9,750.00	78.16	212.83	90.00	4,487.76	48.95	407.82	116.84	290.99	1.402	Level 3
14,500.00	9,750.00	9,740.36	9,750.00	79.46	212.83	90.00	4,487.76	48.95	507.79	215.50	292.29	1.737	
14,600.00	9,750.00	9,740.36	9,750.00	80.76	212.83	90.00	4,487.76	48.95	607.77	314.18	293.59	2.070	

CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation

Company:	BC Operating, Inc.	**Local Co-ordinate Reference:**	Well #5H
Project:	Eddy County, New Mexico (NAD27)	**TVD Reference:**	GL + KB @ 3021.50usft (Patterson 244)
Reference Site:	Kyle 34 Federal	**MD Reference:**	GL + KB @ 3021.50usft (Patterson 244)
Site Error:	0.00 usft	**North Reference:**	Grid
Reference Well:	#5H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH / Job #60399	**Database:**	Compass 5000 GCR
Reference Design:	Plan 1 11-23-16	**Offset TVD Reference:**	Reference Datum

Offset Design Kyle 34 Federal - #1 - OH - Surveys — **Offset Site Error:** 0.00 usft

Survey Program: 230-INC-ONLY-Offset Well — **Offset Well Error:** 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
14,700.00	9,750.00	9,740.36	9,750.00	82.07	212.83	90.00	4,487.76	48.95	707.75	412.85	294.90	2.400	
14,800.00	9,750.00	9,740.36	9,750.00	83.38	212.83	90.00	4,487.76	48.95	807.74	511.53	296.21	2.727	
14,900.00	9,750.00	9,740.36	9,750.00	84.70	212.83	90.00	4,487.76	48.95	907.73	610.20	297.53	3.051	
15,000.00	9,750.00	9,740.36	9,750.00	86.02	212.83	90.00	4,487.76	48.95	1,007.72	708.87	298.85	3.372	
15,100.00	9,750.00	9,740.36	9,750.00	87.34	212.83	90.00	4,487.76	48.95	1,107.71	807.54	300.17	3.690	
15,200.00	9,750.00	9,740.36	9,750.00	88.67	212.83	90.00	4,487.76	48.95	1,207.71	906.21	301.50	4.006	
15,300.00	9,750.00	9,740.36	9,750.00	90.00	212.83	90.00	4,487.76	48.95	1,307.70	1,004.87	302.83	4.318	
15,400.00	9,750.00	9,740.36	9,750.00	91.34	212.83	90.00	4,487.76	48.95	1,407.70	1,103.53	304.16	4.628	
15,500.00	9,750.00	9,740.36	9,750.00	92.68	212.83	90.00	4,487.76	48.95	1,507.69	1,202.19	305.50	4.935	
15,600.00	9,750.00	9,740.36	9,750.00	94.02	212.83	90.00	4,487.76	48.95	1,607.69	1,300.85	306.84	5.239	
15,700.00	9,750.00	9,740.36	9,750.00	95.36	212.83	90.00	4,487.76	48.95	1,707.69	1,399.50	308.19	5.541	
15,800.00	9,750.00	9,740.36	9,750.00	96.71	212.83	90.00	4,487.76	48.95	1,807.69	1,498.15	309.53	5.840	
15,900.00	9,750.00	9,740.36	9,750.00	98.06	212.83	90.00	4,487.76	48.95	1,907.68	1,596.80	310.88	6.136	
16,000.00	9,750.00	9,740.36	9,750.00	99.41	212.83	90.00	4,487.76	48.95	2,007.68	1,695.45	312.23	6.430	
16,100.00	9,750.00	9,740.36	9,750.00	100.76	212.83	90.00	4,487.76	48.95	2,107.68	1,794.09	313.59	6.721	
16,200.00	9,750.00	9,740.36	9,750.00	102.12	212.83	90.00	4,487.76	48.95	2,207.68	1,892.73	314.95	7.010	
16,300.00	9,750.00	9,740.36	9,750.00	103.48	212.83	90.00	4,487.76	48.95	2,307.68	1,991.37	316.31	7.296	
16,400.00	9,750.00	9,740.36	9,750.00	104.84	212.83	90.00	4,487.76	48.95	2,407.68	2,090.01	317.67	7.579	
16,500.00	9,750.00	9,740.36	9,750.00	106.20	212.83	90.00	4,487.76	48.95	2,507.67	2,188.64	319.03	7.860	
16,600.00	9,750.00	9,740.36	9,750.00	107.57	212.83	90.00	4,487.76	48.95	2,607.67	2,287.28	320.40	8.139	
16,700.00	9,750.00	9,740.36	9,750.00	108.94	212.83	90.00	4,487.76	48.95	2,707.67	2,385.91	321.76	8.415	
16,800.00	9,750.00	9,740.36	9,750.00	110.31	212.83	90.00	4,487.76	48.95	2,807.67	2,484.54	323.13	8.689	
16,900.00	9,750.00	9,740.36	9,750.00	111.68	212.83	90.00	4,487.76	48.95	2,907.67	2,583.17	324.50	8.960	
17,000.00	9,750.00	9,740.36	9,750.00	113.05	212.83	90.00	4,487.76	48.95	3,007.67	2,681.79	325.88	9.229	
17,050.55	9,750.00	9,740.36	9,750.00	113.75	212.83	90.00	4,487.76	48.95	3,058.22	2,731.65	326.57	9.365	

Company:	BC Operating, Inc.	**Local Co-ordinate Reference:**	Well #5H
Project:	Eddy County, New Mexico (NAD27)	**TVD Reference:**	GL + KB @ 3021.50usft (Patterson 244)
Reference Site:	Kyle 34 Federal	**MD Reference:**	GL + KB @ 3021.50usft (Patterson 244)
Site Error:	0.00 usft	**North Reference:**	Grid
Reference Well:	#5H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH / Job #60399	**Database:**	Compass 5000 GCR
Reference Design:	Plan 1 11-23-16	**Offset TVD Reference:**	Reference Datum

Offset Design Mosaic 34 Federal - 2H - OH - Surveys — **Offset Site Error:** 0.00 usft

Survey Program: 200-NS-GYRO-MS, 4425-MWD — **Offset Well Error:** 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
0.00	0.00	0.00	12.50	0.00	0.00	76.56	148.96	623.40	641.07				
100.00	100.00	88.06	100.56	0.13	0.10	76.55	149.02	623.35	640.91	640.68	0.23	2,760.116	
200.00	200.00	188.70	201.20	0.49	0.22	76.53	149.26	623.15	640.77	640.07	0.71	903.020	
300.00	300.00	290.73	303.23	0.85	0.45	76.50	149.49	622.74	640.44	639.14	1.30	493.535	
400.00	400.00	392.93	405.43	1.20	0.70	76.49	149.45	622.04	639.77	637.87	1.90	336.765	
467.66	467.66	455.17	467.66	1.45	0.80	76.48	149.48	621.72	639.44	637.19	2.25	284.308	
500.00	500.00	484.53	497.03	1.56	0.85	76.47	149.63	621.76	639.52	637.10	2.41	265.037	
600.00	600.00	575.33	587.81	1.92	1.00	76.40	150.61	622.63	640.70	637.78	2.92	219.456	
700.00	700.00	675.18	687.64	2.28	1.15	76.31	152.15	624.42	642.80	639.38	3.43	187.675	
800.00	800.00	778.46	790.90	2.64	1.29	76.26	153.08	625.96	644.47	640.54	3.93	163.972	
900.00	900.00	879.57	892.00	3.00	1.48	76.24	153.57	627.19	645.76	641.28	4.48	144.169	
1,000.00	1,000.00	980.11	992.53	3.35	1.69	76.20	154.30	628.25	646.96	641.92	5.04	128.377	
1,100.00	1,100.00	1,084.31	1,096.73	3.71	1.91	76.14	155.19	628.97	647.84	642.22	5.63	115.169	
1,200.00	1,200.00	1,189.42	1,201.83	4.07	2.15	76.07	155.98	628.90	647.96	641.74	6.22	104.223	
1,279.07	1,279.07	1,266.66	1,279.07	4.35	2.33	76.01	156.62	628.58	647.80	641.12	6.68	96.959	
1,300.00	1,300.00	1,286.88	1,299.29	4.43	2.37	75.99	156.84	628.54	647.81	641.01	6.80	95.213	
1,400.00	1,400.00	1,383.47	1,395.87	4.79	2.60	75.88	158.18	628.57	648.18	640.79	7.39	87.710	
1,500.00	1,500.00	1,481.07	1,493.45	5.15	2.85	75.73	159.97	628.96	649.02	641.03	7.99	81.194	
1,600.00	1,600.00	1,578.87	1,591.22	5.51	3.10	75.56	162.14	629.60	650.20	641.60	8.60	75.601	
1,700.00	1,700.00	1,677.35	1,689.67	5.86	3.34	75.38	164.44	630.51	651.68	642.47	9.20	70.801	
1,800.00	1,800.00	1,776.03	1,788.33	6.22	3.59	75.25	166.35	631.73	653.36	643.56	9.81	66.618	
1,900.00	1,900.00	1,867.56	1,879.83	6.58	3.80	75.15	167.96	633.46	655.66	645.28	10.38	63.144	
2,000.00	2,000.00	1,956.71	1,968.90	6.94	4.01	75.05	169.94	636.53	659.56	648.61	10.95	60.230	
2,100.00	2,100.00	2,055.84	2,067.89	7.30	4.25	74.94	172.55	641.11	664.70	653.16	11.54	57.579	
2,200.00	2,200.00	2,164.62	2,176.56	7.66	4.51	74.79	175.32	645.06	668.87	656.71	12.16	54.992	
2,300.00	2,300.00	2,271.44	2,283.32	8.01	4.74	74.67	177.51	647.72	671.81	659.07	12.75	52.693	
2,400.00	2,400.00	2,377.33	2,389.19	8.37	4.95	74.67	178.08	649.81	673.86	660.54	13.32	50.588	
2,500.00	2,500.00	2,481.55	2,493.40	8.73	5.13	74.75	177.55	651.32	675.12	661.27	13.86	48.726	
2,600.00	2,600.00	2,585.32	2,597.16	9.09	5.29	74.80	177.22	652.16	675.82	661.44	14.38	46.996	
2,700.00	2,700.00	2,687.57	2,699.42	9.44	5.41	-15.20	176.99	652.48	675.31	660.47	14.84	45.509	
2,800.00	2,799.99	2,789.57	2,801.41	9.78	5.52	-15.19	176.65	652.51	674.14	658.85	15.29	44.091	
2,900.00	2,899.98	2,888.48	2,900.32	10.12	5.61	-15.17	176.08	652.50	672.87	657.15	15.72	42.804	
3,000.00	2,999.98	2,987.04	2,998.88	10.47	5.69	-15.11	175.14	652.81	671.82	655.67	16.15	41.603	
3,100.00	3,099.97	3,088.67	3,100.50	10.81	5.80	-15.05	174.16	653.15	670.78	654.18	16.60	40.404	
3,200.00	3,199.96	3,190.76	3,202.59	11.16	5.91	-15.05	173.80	653.00	669.43	652.37	17.06	39.240	
3,300.00	3,299.96	3,290.25	3,302.08	11.50	6.05	-15.09	173.86	652.60	667.95	650.40	17.54	38.078	
3,400.00	3,399.95	3,389.49	3,401.32	11.85	6.18	-15.14	174.09	652.27	666.57	648.55	18.03	36.979	
3,500.00	3,499.94	3,490.31	3,502.14	12.20	6.32	-15.18	174.19	651.98	665.20	646.69	18.51	35.935	
3,600.00	3,599.94	3,591.32	3,603.15	12.55	6.46	-15.17	173.70	651.68	663.69	644.69	19.00	34.935	
3,700.00	3,699.93	3,689.73	3,701.55	12.90	6.58	-15.14	172.89	651.51	662.19	642.73	19.47	34.018	
3,800.00	3,799.92	3,787.90	3,799.72	13.25	6.70	-15.09	172.08	651.62	660.97	641.04	19.93	33.159	
3,900.00	3,899.92	3,887.71	3,899.53	13.60	6.86	-15.06	171.50	651.84	659.92	639.47	20.45	32.272	
4,000.00	3,999.91	3,987.75	3,999.57	13.95	7.03	-15.09	171.55	651.89	658.86	637.89	20.97	31.417	
4,100.00	4,099.90	4,088.85	4,100.66	14.30	7.20	-15.14	171.72	651.82	657.73	636.24	21.49	30.608	
4,200.00	4,199.90	4,190.09	4,201.91	14.65	7.37	-15.12	171.24	651.72	656.41	634.40	22.01	29.829	
4,300.00	4,299.89	5,290.55	4,929.05	15.00	16.48	-77.54	155.46	60.81	649.41	618.30	31.12	20.871	
4,400.00	4,399.88	5,295.87	4,929.43	15.35	16.61	-79.41	155.36	55.49	552.98	521.30	31.68	17.454	
4,500.00	4,499.88	5,301.48	4,929.83	15.71	16.74	-81.41	155.24	49.90	458.01	425.76	32.25	14.201	
4,600.00	4,599.87	5,307.38	4,930.27	16.06	16.89	-83.54	155.11	44.02	365.63	332.81	32.82	11.141	
4,700.00	4,699.86	5,313.00	4,930.70	16.41	17.02	-85.59	154.98	38.42	278.42	245.06	33.36	8.346	
4,800.00	4,799.86	5,318.88	4,931.15	16.76	17.16	-87.75	154.86	32.56	203.17	169.27	33.90	5.994	
4,900.00	4,899.85	5,324.34	4,931.58	17.12	17.29	-89.77	154.79	27.11	158.01	123.60	34.40	4.593	

CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation

Company:	BC Operating, Inc.	**Local Co-ordinate Reference:**	Well #5H
Project:	Eddy County, New Mexico (NAD27)	**TVD Reference:**	GL + KB @ 3021.50usft (Patterson 244)
Reference Site:	Kyle 34 Federal	**MD Reference:**	GL + KB @ 3021.50usft (Patterson 244)
Site Error:	0.00 usft	**North Reference:**	Grid
Reference Well:	#5H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH / Job #60399	**Database:**	Compass 5000 GCR
Reference Design:	Plan 1 11-23-16	**Offset TVD Reference:**	Reference Datum

Offset Design Mosaic 34 Federal - 2H - OH - Surveys — **Offset Site Error:** 0.00 usft

Survey Program: 200-NS-GYRO-MS, 4425-MWD — **Offset Well Error:** 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
4,931.85	4,931.70	5,326.10	4,931.71	17.23	17.34	-90.42	154.77	25.35	154.78	120.21	34.56	4.478	CC, ES, SF
5,000.00	4,999.84	5,329.91	4,932.01	17.47	17.43	-91.82	154.75	21.56	169.06	134.16	34.90	4.844	
5,100.00	5,099.84	5,335.58	4,932.46	17.83	17.57	-93.91	154.76	15.91	228.30	192.93	35.38	6.453	
5,200.00	5,199.83	5,341.35	4,932.92	18.18	17.71	-96.02	154.81	10.16	309.17	273.33	35.84	8.626	
5,300.00	5,299.82	5,347.55	4,933.42	18.53	17.86	-98.27	154.91	3.97	398.71	362.42	36.29	10.986	
5,400.00	5,399.82	5,354.14	4,933.94	18.89	18.02	-100.63	155.01	-2.59	492.20	455.48	36.72	13.403	
5,500.00	5,499.81	5,360.46	4,934.42	19.24	18.17	-102.86	155.09	-8.89	587.77	550.64	37.13	15.829	
5,600.00	5,599.80	5,366.52	4,934.89	19.60	18.32	-104.96	155.14	-14.93	684.54	647.03	37.52	18.247	
5,700.00	5,699.80	5,372.34	4,935.32	19.95	18.46	-106.94	155.18	-20.74	782.08	744.20	37.88	20.646	
5,800.00	5,799.79	5,377.00	4,935.67	20.31	18.58	-108.49	155.20	-25.39	880.13	841.90	38.23	23.021	
5,900.00	5,899.78	5,377.00	4,935.67	20.66	18.58	-108.49	155.20	-25.39	978.56	939.98	38.59	25.361	
6,000.00	5,999.78	5,377.00	4,935.67	21.02	18.58	-108.49	155.20	-25.39	1,077.28	1,038.34	38.94	27.665	
6,100.00	6,099.77	5,385.86	4,936.27	21.37	18.80	-111.37	155.23	-34.23	1,176.15	1,136.88	39.26	29.956	
6,200.00	6,199.76	5,388.14	4,936.42	21.73	18.86	-112.10	155.24	-36.50	1,275.21	1,235.61	39.60	32.199	
6,300.00	6,299.76	5,390.22	4,936.54	22.08	18.91	-112.75	155.25	-38.57	1,374.40	1,334.46	39.94	34.408	
6,400.00	6,399.75	5,392.13	4,936.66	22.44	18.95	-113.35	155.26	-40.48	1,473.70	1,433.41	40.29	36.582	
6,500.00	6,499.74	5,393.88	4,936.76	22.80	19.00	-113.89	155.26	-42.23	1,573.08	1,532.45	40.63	38.721	
6,600.00	6,599.74	5,395.51	4,936.84	23.15	19.04	-114.39	155.27	-43.85	1,672.53	1,631.56	40.97	40.827	
6,700.00	6,699.73	5,397.01	4,936.92	23.51	19.08	-114.84	155.27	-45.36	1,772.03	1,730.72	41.31	42.898	
6,800.00	6,799.72	5,398.41	4,937.00	23.86	19.11	-115.27	155.28	-46.76	1,871.59	1,829.94	41.65	44.937	
6,900.00	6,899.72	5,409.00	4,937.48	24.22	19.37	-118.37	155.31	-57.33	1,971.25	1,929.38	41.88	47.073	
7,000.00	6,999.71	5,409.00	4,937.48	24.58	19.37	-118.37	155.31	-57.33	2,070.87	2,028.64	42.23	49.035	
7,100.00	7,099.70	5,409.00	4,937.48	24.93	19.37	-118.37	155.31	-57.33	2,170.52	2,127.93	42.59	50.965	
7,200.00	7,199.70	5,409.00	4,937.48	25.29	19.37	-118.37	155.31	-57.33	2,270.21	2,227.26	42.94	52.863	
7,300.00	7,299.69	5,409.00	4,937.48	25.65	19.37	-118.37	155.31	-57.33	2,369.92	2,326.62	43.30	54.731	
7,400.00	7,399.68	5,409.00	4,937.48	26.00	19.37	-118.37	155.31	-57.33	2,469.65	2,425.99	43.66	56.569	
7,500.00	7,499.68	5,409.00	4,937.48	26.36	19.37	-118.37	155.31	-57.33	2,569.40	2,525.39	44.01	58.377	
7,600.00	7,599.67	5,409.00	4,937.48	26.72	19.37	-118.37	155.31	-57.33	2,669.18	2,624.81	44.37	60.157	
7,700.00	7,699.66	5,409.00	4,937.48	27.07	19.37	-118.37	155.31	-57.33	2,768.97	2,724.24	44.73	61.909	
7,800.00	7,799.66	5,409.00	4,937.48	27.43	19.37	-118.37	155.31	-57.33	2,868.77	2,823.69	45.08	63.633	
7,900.00	7,899.65	5,409.00	4,937.48	27.79	19.37	-118.37	155.31	-57.33	2,968.59	2,923.15	45.44	65.330	
8,000.00	7,999.64	5,409.00	4,937.48	28.14	19.37	-118.37	155.31	-57.33	3,068.42	3,022.62	45.80	67.002	
8,100.00	8,099.64	5,409.00	4,937.48	28.50	19.37	-118.37	155.31	-57.33	3,168.26	3,122.10	46.15	68.647	
8,200.00	8,199.63	5,409.00	4,937.48	28.86	19.37	-118.37	155.31	-57.33	3,268.10	3,221.59	46.51	70.267	
8,300.00	8,299.62	5,409.00	4,937.48	29.21	19.37	-118.37	155.31	-57.33	3,367.96	3,321.10	46.87	71.863	
8,400.00	8,399.62	5,409.00	4,937.48	29.57	19.37	-118.37	155.31	-57.33	3,467.83	3,420.61	47.22	73.435	
8,500.00	8,499.61	5,409.00	4,937.48	29.93	19.37	-118.37	155.31	-57.33	3,567.70	3,520.12	47.58	74.983	
8,600.00	8,599.61	5,409.00	4,937.48	30.29	19.37	-118.37	155.31	-57.33	3,667.58	3,619.65	47.94	76.509	
8,700.00	8,699.60	5,409.00	4,937.48	30.64	19.37	-118.37	155.31	-57.33	3,767.47	3,719.18	48.29	78.012	
8,800.00	8,799.59	5,409.00	4,937.48	31.00	19.37	-118.37	155.31	-57.33	3,867.36	3,818.71	48.65	79.492	
8,900.00	8,899.59	5,409.00	4,937.48	31.36	19.37	-118.37	155.31	-57.33	3,967.26	3,918.26	49.01	80.952	
9,000.00	8,999.58	5,409.00	4,937.48	31.71	19.37	-118.37	155.31	-57.33	4,067.17	4,017.80	49.36	82.390	
9,100.00	9,099.57	5,409.00	4,937.48	32.07	19.37	-118.37	155.31	-57.33	4,167.07	4,117.35	49.72	83.808	
9,200.00	9,199.56	5,409.00	4,937.48	32.43	19.37	-30.64	155.31	-57.33	4,266.96	4,215.64	51.33	83.132	
9,300.00	9,298.63	5,409.00	4,937.48	32.78	19.37	-7.52	155.31	-57.33	4,365.52	4,314.45	51.07	85.482	
9,400.00	9,394.00	5,409.00	4,937.48	33.10	19.37	-4.37	155.31	-57.33	4,459.98	4,410.96	49.02	90.978	
9,500.00	9,482.79	5,409.00	4,937.48	33.42	19.37	-3.13	155.31	-57.33	4,547.81	4,502.17	45.64	99.635	
9,600.00	9,562.28	5,409.00	4,937.48	33.73	19.37	-2.49	155.31	-57.33	4,626.80	4,585.69	41.11	112.554	
9,700.00	9,630.07	5,409.00	4,937.48	34.04	19.37	-2.12	155.31	-57.33	4,695.03	4,659.38	35.66	131.678	
9,800.00	9,684.10	5,409.00	4,937.48	34.35	19.37	-1.89	155.31	-57.33	4,750.95	4,721.28	29.67	160.139	
9,900.00	9,722.72	5,409.00	4,937.48	34.66	19.37	-1.74	155.31	-57.33	4,793.31	4,769.53	23.78	201.579	
10,000.00	9,744.77	5,409.00	4,937.48	34.98	19.37	-1.67	155.31	-57.33	4,821.19	4,802.02	19.17	251.467	

CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation

Company:	BC Operating, Inc.	**Local Co-ordinate Reference:**	Well #5H
Project:	Eddy County, New Mexico (NAD27)	**TVD Reference:**	GL + KB @ 3021.50usft (Patterson 244)
Reference Site:	Kyle 34 Federal	**MD Reference:**	GL + KB @ 3021.50usft (Patterson 244)
Site Error:	0.00 usft	**North Reference:**	Grid
Reference Well:	#5H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH / Job #60399	**Database:**	Compass 5000 GCR
Reference Design:	Plan 1 11-23-16	**Offset TVD Reference:**	Reference Datum

Offset Design Mosaic 34 Federal - 2H - OH - Surveys — **Offset Site Error:** 0.00 usft

Survey Program: 200-NS-GYRO-MS, 4425-MWD — **Offset Well Error:** 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
10,100.00	9,750.00	5,409.00	4,937.48	35.30	19.37	-1.64	155.31	-57.33	4,834.45	4,816.66	17.79	271.772	
10,200.00	9,750.00	5,409.00	4,937.48	35.66	19.37	-1.64	155.31	-57.33	4,844.55	4,826.51	18.03	268.641	
10,300.00	9,750.00	5,409.00	4,937.48	36.08	19.37	-1.64	155.31	-57.33	4,856.69	4,838.37	18.32	265.108	
10,400.00	9,750.00	5,409.00	4,937.48	36.55	19.37	-1.64	155.31	-57.33	4,870.85	4,852.20	18.64	261.250	
10,500.00	9,750.00	5,409.00	4,937.48	37.07	19.37	-1.64	155.31	-57.33	4,887.02	4,868.01	19.01	257.141	
10,600.00	9,750.00	5,409.00	4,937.48	37.64	19.37	-1.64	155.31	-57.33	4,905.17	4,885.77	19.40	252.853	
10,700.00	9,750.00	5,409.00	4,937.48	38.25	19.37	-1.64	155.31	-57.33	4,925.29	4,905.46	19.82	248.450	
10,800.00	9,750.00	5,409.00	4,937.48	38.91	19.37	-1.64	155.31	-57.33	4,947.34	4,927.07	20.28	243.987	
10,900.00	9,750.00	5,409.00	4,937.48	39.61	19.37	-1.64	155.31	-57.33	4,971.31	4,950.56	20.76	239.514	
11,000.00	9,750.00	5,409.00	4,937.48	40.35	19.37	-1.64	155.31	-57.33	4,997.17	4,975.91	21.26	235.070	
11,100.00	9,750.00	5,409.00	4,937.48	41.12	19.37	-1.64	155.31	-57.33	5,024.89	5,003.10	21.78	230.690	
11,200.00	9,750.00	5,409.00	4,937.48	41.93	19.37	-1.64	155.31	-57.33	5,054.43	5,032.10	22.33	226.399	
11,300.00	9,750.00	5,409.00	4,937.48	42.78	19.37	-1.64	155.31	-57.33	5,085.76	5,062.88	22.89	222.218	
11,400.00	9,750.00	5,409.00	4,937.48	43.65	19.37	-1.64	155.31	-57.33	5,118.86	5,095.40	23.46	218.161	
11,500.00	9,750.00	5,409.00	4,937.48	44.56	19.37	-1.64	155.31	-57.33	5,153.69	5,129.63	24.06	214.240	
11,600.00	9,750.00	5,409.00	4,937.48	45.49	19.37	-1.64	155.31	-57.33	5,190.21	5,165.55	24.66	210.461	
11,700.00	9,750.00	5,409.00	4,937.48	46.45	19.37	-1.64	155.31	-57.33	5,228.39	5,203.11	25.28	206.829	
11,800.00	9,750.00	5,409.00	4,937.48	47.43	19.37	-1.64	155.31	-57.33	5,268.19	5,242.28	25.91	203.346	
11,900.00	9,750.00	5,409.00	4,937.48	48.44	19.37	-1.64	155.31	-57.33	5,309.57	5,283.03	26.55	200.010	
12,000.00	9,750.00	5,409.00	4,937.48	49.47	19.37	-1.64	155.31	-57.33	5,352.51	5,325.31	27.19	196.821	
12,100.00	9,750.00	5,409.00	4,937.48	50.51	19.37	-1.64	155.31	-57.33	5,396.95	5,369.10	27.85	193.775	
12,200.00	9,750.00	5,409.00	4,937.48	51.58	19.37	-1.64	155.31	-57.33	5,442.87	5,414.36	28.52	190.869	
12,300.00	9,750.00	5,409.00	4,937.48	52.67	19.37	-1.64	155.31	-57.33	5,490.23	5,461.04	29.19	188.099	
12,400.00	9,750.00	5,409.00	4,937.48	53.77	19.37	-1.64	155.31	-57.33	5,538.99	5,509.12	29.87	185.459	
12,500.00	9,750.00	5,409.00	4,937.48	54.88	19.37	-1.64	155.31	-57.33	5,589.11	5,558.56	30.55	182.944	
12,600.00	9,750.00	5,409.00	4,937.48	56.02	19.37	-1.64	155.31	-57.33	5,640.56	5,609.32	31.24	180.550	
12,700.00	9,750.00	5,409.00	4,937.48	57.16	19.37	-1.64	155.31	-57.33	5,693.30	5,661.36	31.94	178.270	
12,800.00	9,750.00	5,409.00	4,937.48	58.32	19.37	-1.64	155.31	-57.33	5,747.30	5,714.66	32.64	176.101	
12,900.00	9,750.00	5,409.00	4,937.48	59.49	19.37	-1.64	155.31	-57.33	5,802.51	5,769.17	33.34	174.036	
13,000.00	9,750.00	5,409.00	4,937.48	60.68	19.37	-1.64	155.31	-57.33	5,858.92	5,824.87	34.05	172.070	
13,100.00	9,750.00	5,409.00	4,937.48	61.87	19.37	-1.64	155.31	-57.33	5,916.48	5,881.71	34.76	170.199	
13,200.00	9,750.00	5,409.00	4,937.48	63.08	19.37	-1.64	155.31	-57.33	5,975.15	5,939.68	35.48	168.418	
13,300.00	9,750.00	5,409.00	4,937.48	64.29	19.37	-1.64	155.31	-57.33	6,034.92	5,998.72	36.20	166.722	
13,400.00	9,750.00	5,409.00	4,937.48	65.52	19.37	-1.64	155.31	-57.33	6,095.73	6,058.81	36.92	165.107	
13,500.00	9,750.00	5,409.00	4,937.48	66.75	19.37	-1.64	155.31	-57.33	6,157.58	6,119.93	37.65	163.568	
13,600.00	9,750.00	5,409.00	4,937.48	67.99	19.37	-1.64	155.31	-57.33	6,220.41	6,182.04	38.37	162.102	
13,700.00	9,750.00	5,409.00	4,937.48	69.24	19.37	-1.64	155.31	-57.33	6,284.21	6,245.10	39.10	160.705	
13,800.00	9,750.00	5,409.00	4,937.48	70.49	19.37	-1.64	155.31	-57.33	6,348.94	6,309.10	39.84	159.373	
13,900.00	9,750.00	5,409.00	4,937.48	71.76	19.37	-1.64	155.31	-57.33	6,414.58	6,374.00	40.57	158.103	
14,000.00	9,750.00	5,423.12	4,937.90	73.03	19.73	-1.81	155.36	-71.45	6,480.97	6,439.55	41.42	156.475	
14,100.00	9,750.00	5,423.29	4,937.90	74.30	19.73	-1.81	155.36	-71.62	6,548.33	6,506.17	42.16	155.324	
14,200.00	9,750.00	5,423.46	4,937.91	75.58	19.74	-1.81	155.36	-71.78	6,616.52	6,573.62	42.90	154.225	
14,300.00	9,750.00	5,423.62	4,937.91	76.87	19.74	-1.81	155.37	-71.95	6,685.51	6,641.87	43.65	153.176	
14,400.00	9,750.00	5,423.79	4,937.91	78.16	19.74	-1.82	155.37	-72.12	6,755.28	6,710.89	44.39	152.173	
14,500.00	9,750.00	5,423.96	4,937.92	79.46	19.75	-1.82	155.37	-72.28	6,825.80	6,780.66	45.14	151.215	
14,600.00	9,750.00	5,424.13	4,937.92	80.76	19.75	-1.82	155.37	-72.45	6,897.05	6,851.16	45.89	150.300	
14,700.00	9,750.00	5,424.29	4,937.92	82.07	19.76	-1.82	155.37	-72.62	6,969.00	6,922.36	46.64	149.425	
14,800.00	9,750.00	5,424.46	4,937.92	83.38	19.76	-1.82	155.37	-72.79	7,041.64	6,994.25	47.39	148.587	
14,900.00	9,750.00	5,424.63	4,937.93	84.70	19.77	-1.83	155.37	-72.95	7,114.94	7,066.80	48.14	147.786	
15,000.00	9,750.00	5,424.80	4,937.93	86.02	19.77	-1.83	155.37	-73.12	7,188.89	7,139.99	48.90	147.019	
15,100.00	9,750.00	5,424.96	4,937.93	87.34	19.77	-1.83	155.37	-73.29	7,263.46	7,213.81	49.65	146.284	
15,200.00	9,750.00	5,425.13	4,937.94	88.67	19.78	-1.83	155.37	-73.46	7,338.64	7,288.23	50.41	145.581	

CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation

Company:	BC Operating, Inc.	**Local Co-ordinate Reference:**	Well #5H
Project:	Eddy County, New Mexico (NAD27)	**TVD Reference:**	GL + KB @ 3021.50usft (Patterson 244)
Reference Site:	Kyle 34 Federal	**MD Reference:**	GL + KB @ 3021.50usft (Patterson 244)
Site Error:	0.00 usft	**North Reference:**	Grid
Reference Well:	#5H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH / Job #60399	**Database:**	Compass 5000 GCR
Reference Design:	Plan 1 11-23-16	**Offset TVD Reference:**	Reference Datum

Offset Design Mosaic 34 Federal - 2H - OH - Surveys — **Offset Site Error:** 0.00 usft

Survey Program: 200-NS-GYRO-MS, 4425-MWD — **Offset Well Error:** 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
15,300.00	9,750.00	5,425.30	4,937.94	90.00	19.78	-1.83	155.37	-73.62	7,414.40	7,363.23	51.17	144.906	
15,400.00	9,750.00	5,425.47	4,937.94	91.34	19.79	-1.84	155.37	-73.79	7,490.73	7,438.80	51.93	144.260	
15,500.00	9,750.00	5,425.63	4,937.94	92.68	19.79	-1.84	155.37	-73.96	7,567.61	7,514.93	52.68	143.640	
15,600.00	9,750.00	5,425.80	4,937.95	94.02	19.79	-1.84	155.37	-74.13	7,645.03	7,591.58	53.44	143.046	
15,700.00	9,750.00	5,425.97	4,937.95	95.36	19.80	-1.84	155.37	-74.29	7,722.96	7,668.76	54.21	142.475	
15,800.00	9,750.00	5,426.14	4,937.95	96.71	19.80	-1.84	155.37	-74.46	7,801.40	7,746.43	54.97	141.927	
15,900.00	9,750.00	5,426.30	4,937.95	98.06	19.81	-1.85	155.37	-74.63	7,880.33	7,824.60	55.73	141.402	
16,000.00	9,750.00	5,426.47	4,937.96	99.41	19.81	-1.85	155.38	-74.80	7,959.73	7,903.24	56.49	140.896	
16,100.00	9,750.00	5,426.64	4,937.96	100.76	19.82	-1.85	155.38	-74.96	8,039.59	7,982.33	57.26	140.411	
16,200.00	9,750.00	5,426.81	4,937.96	102.12	19.82	-1.85	155.38	-75.13	8,119.90	8,061.87	58.02	139.945	
16,300.00	9,750.00	5,426.97	4,937.96	103.48	19.82	-1.85	155.38	-75.30	8,200.64	8,141.85	58.79	139.496	
16,400.00	9,750.00	5,441.00	4,938.01	104.84	20.18	-2.02	155.43	-89.32	8,281.89	8,222.22	59.67	138.805	
16,500.00	9,750.00	5,441.00	4,938.01	106.20	20.18	-2.02	155.43	-89.32	8,363.45	8,303.02	60.43	138.396	
16,600.00	9,750.00	5,441.00	4,938.01	107.57	20.18	-2.02	155.43	-89.32	8,445.42	8,384.22	61.20	138.003	
16,700.00	9,750.00	5,441.00	4,938.01	108.94	20.18	-2.02	155.43	-89.32	8,527.76	8,465.80	61.96	137.625	
16,800.00	9,750.00	5,441.00	4,938.01	110.31	20.18	-2.02	155.43	-89.32	8,610.48	8,547.75	62.73	137.261	
16,900.00	9,750.00	5,441.00	4,938.01	111.68	20.18	-2.02	155.43	-89.32	8,693.56	8,630.07	63.50	136.910	
17,000.00	9,750.00	5,441.00	4,938.01	113.05	20.18	-2.02	155.43	-89.32	8,777.00	8,712.73	64.27	136.573	
17,050.55	9,750.00	5,441.00	4,938.01	113.75	20.18	-2.02	155.43	-89.32	8,819.31	8,754.65	64.65	136.407	

Company:	BC Operating, Inc.	**Local Co-ordinate Reference:**	Well #5H
Project:	Eddy County, New Mexico (NAD27)	**TVD Reference:**	GL + KB @ 3021.50usft (Patterson 244)
Reference Site:	Kyle 34 Federal	**MD Reference:**	GL + KB @ 3021.50usft (Patterson 244)
Site Error:	0.00 usft	**North Reference:**	Grid
Reference Well:	#5H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH / Job #60399	**Database:**	Compass 5000 GCR
Reference Design:	Plan 1 11-23-16	**Offset TVD Reference:**	Reference Datum

Offset Design Mosaic 34 Federal - 2H - ST01 - Surveys — **Offset Site Error:** 0.00 usft

Survey Program: 200-NS-GYRO-MS, 4425-MWD, 5437-MWD — **Offset Well Error:** 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
0.00	0.00	0.00	12.50	0.00	0.00	76.56	148.96	623.40	641.07				
100.00	100.00	88.06	100.56	0.13	0.10	76.55	149.02	623.35	640.91	640.68	0.23	2,760.116	
200.00	200.00	188.70	201.20	0.49	0.22	76.53	149.26	623.15	640.77	640.07	0.71	903.020	
300.00	300.00	290.73	303.23	0.85	0.45	76.50	149.49	622.74	640.44	639.14	1.30	493.535	
400.00	400.00	392.93	405.43	1.20	0.70	76.49	149.45	622.04	639.77	637.87	1.90	336.765	
467.66	467.66	455.17	467.66	1.45	0.80	76.48	149.48	621.72	639.44	637.19	2.25	284.308	
500.00	500.00	484.53	497.03	1.56	0.85	76.47	149.63	621.76	639.52	637.10	2.41	265.037	
600.00	600.00	575.33	587.81	1.92	1.00	76.40	150.61	622.63	640.70	637.78	2.92	219.456	
700.00	700.00	675.18	687.64	2.28	1.15	76.31	152.15	624.42	642.80	639.38	3.43	187.675	
800.00	800.00	778.46	790.90	2.64	1.29	76.26	153.08	625.96	644.47	640.54	3.93	163.972	
900.00	900.00	879.57	892.00	3.00	1.48	76.24	153.57	627.19	645.76	641.28	4.48	144.169	
1,000.00	1,000.00	980.11	992.53	3.35	1.69	76.20	154.30	628.25	646.96	641.92	5.04	128.377	
1,100.00	1,100.00	1,084.31	1,096.73	3.71	1.91	76.14	155.19	628.97	647.84	642.22	5.63	115.169	
1,200.00	1,200.00	1,189.42	1,201.83	4.07	2.15	76.07	155.98	628.90	647.96	641.74	6.22	104.223	
1,279.07	1,279.07	1,266.66	1,279.07	4.35	2.33	76.01	156.62	628.58	647.80	641.12	6.68	96.959	
1,300.00	1,300.00	1,286.88	1,299.29	4.43	2.37	75.99	156.84	628.54	647.81	641.01	6.80	95.213	
1,400.00	1,400.00	1,383.47	1,395.87	4.79	2.60	75.88	158.18	628.57	648.18	640.79	7.39	87.710	
1,500.00	1,500.00	1,481.07	1,493.45	5.15	2.85	75.73	159.97	628.96	649.02	641.03	7.99	81.194	
1,600.00	1,600.00	1,578.87	1,591.22	5.51	3.10	75.56	162.14	629.60	650.20	641.60	8.60	75.601	
1,700.00	1,700.00	1,677.35	1,689.67	5.86	3.34	75.38	164.44	630.51	651.68	642.47	9.20	70.801	
1,800.00	1,800.00	1,776.03	1,788.33	6.22	3.59	75.25	166.35	631.73	653.36	643.56	9.81	66.618	
1,900.00	1,900.00	1,867.56	1,879.83	6.58	3.80	75.15	167.96	633.46	655.66	645.28	10.38	63.144	
2,000.00	2,000.00	1,956.71	1,968.90	6.94	4.01	75.05	169.94	636.53	659.56	648.61	10.95	60.230	
2,100.00	2,100.00	2,055.84	2,067.89	7.30	4.25	74.94	172.55	641.11	664.70	653.16	11.54	57.579	
2,200.00	2,200.00	2,164.62	2,176.56	7.66	4.51	74.79	175.32	645.06	668.87	656.71	12.16	54.992	
2,300.00	2,300.00	2,271.44	2,283.32	8.01	4.74	74.67	177.51	647.72	671.81	659.07	12.75	52.693	
2,400.00	2,400.00	2,377.33	2,389.19	8.37	4.95	74.67	178.08	649.81	673.86	660.54	13.32	50.588	
2,500.00	2,500.00	2,481.55	2,493.40	8.73	5.13	74.75	177.55	651.32	675.12	661.27	13.86	48.726	
2,600.00	2,600.00	2,585.32	2,597.16	9.09	5.29	74.80	177.22	652.16	675.82	661.44	14.38	46.996	
2,700.00	2,700.00	2,687.57	2,699.42	9.44	5.41	-15.20	176.99	652.48	675.31	660.47	14.84	45.509	
2,800.00	2,799.99	2,789.57	2,801.41	9.78	5.52	-15.19	176.65	652.51	674.14	658.85	15.29	44.091	
2,900.00	2,899.98	2,888.48	2,900.32	10.12	5.61	-15.17	176.08	652.50	672.87	657.15	15.72	42.804	
3,000.00	2,999.98	2,987.04	2,998.88	10.47	5.69	-15.11	175.14	652.81	671.82	655.67	16.15	41.603	
3,100.00	3,099.97	3,088.67	3,100.50	10.81	5.80	-15.05	174.16	653.15	670.78	654.18	16.60	40.404	
3,200.00	3,199.96	3,190.76	3,202.59	11.16	5.91	-15.05	173.80	653.00	669.43	652.37	17.06	39.240	
3,300.00	3,299.96	3,290.25	3,302.08	11.50	6.05	-15.09	173.86	652.60	667.95	650.40	17.54	38.078	
3,400.00	3,399.95	3,389.49	3,401.32	11.85	6.18	-15.14	174.09	652.27	666.57	648.55	18.03	36.979	
3,500.00	3,499.94	3,490.31	3,502.14	12.20	6.32	-15.18	174.19	651.98	665.20	646.69	18.51	35.935	
3,600.00	3,599.94	3,591.32	3,603.15	12.55	6.46	-15.17	173.70	651.68	663.69	644.69	19.00	34.935	
3,700.00	3,699.93	3,689.73	3,701.55	12.90	6.58	-15.14	172.89	651.51	662.19	642.73	19.47	34.018	
3,800.00	3,799.92	3,787.90	3,799.72	13.25	6.70	-15.09	172.08	651.62	660.97	641.04	19.93	33.159	
3,900.00	3,899.92	3,887.71	3,899.53	13.60	6.86	-15.06	171.50	651.84	659.92	639.47	20.45	32.272	
4,000.00	3,999.91	3,987.75	3,999.57	13.95	7.03	-15.09	171.55	651.89	658.86	637.89	20.97	31.417	
4,100.00	4,099.90	4,088.85	4,100.66	14.30	7.20	-15.14	171.72	651.82	657.73	636.24	21.49	30.608	
4,200.00	4,199.90	4,190.09	4,201.91	14.65	7.37	-15.12	171.24	651.72	656.41	634.40	22.01	29.829	
4,300.00	4,299.89	5,290.55	4,929.05	15.00	16.48	-77.54	155.46	60.81	649.41	618.30	31.12	20.871	
4,400.00	4,399.88	5,295.87	4,929.43	15.35	16.61	-79.41	155.36	55.49	552.98	521.30	31.68	17.454	
4,500.00	4,499.88	5,301.48	4,929.83	15.71	16.74	-81.41	155.24	49.90	458.01	425.76	32.25	14.201	
4,600.00	4,599.87	5,307.38	4,930.27	16.06	16.89	-83.54	155.11	44.02	365.63	332.81	32.82	11.141	
4,700.00	4,699.86	5,313.00	4,930.70	16.41	17.02	-85.59	154.98	38.42	278.42	245.06	33.36	8.346	
4,800.00	4,799.86	5,318.88	4,931.15	16.76	17.16	-87.75	154.86	32.56	203.17	169.27	33.90	5.994	
4,900.00	4,899.85	5,324.34	4,931.58	17.12	17.29	-89.77	154.79	27.11	158.01	123.60	34.40	4.593	

Company:	BC Operating, Inc.	**Local Co-ordinate Reference:**	Well #5H
Project:	Eddy County, New Mexico (NAD27)	**TVD Reference:**	GL + KB @ 3021.50usft (Patterson 244)
Reference Site:	Kyle 34 Federal	**MD Reference:**	GL + KB @ 3021.50usft (Patterson 244)
Site Error:	0.00 usft	**North Reference:**	Grid
Reference Well:	#5H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH / Job #60399	**Database:**	Compass 5000 GCR
Reference Design:	Plan 1 11-23-16	**Offset TVD Reference:**	Reference Datum

Offset Design Mosaic 34 Federal - 2H - ST01 - Surveys — **Offset Site Error:** 0.00 usft

Survey Program: 200-NS-GYRO-MS, 4425-MWD, 5437-MWD — **Offset Well Error:** 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
4,931.85	4,931.70	5,326.10	4,931.71	17.23	17.34	-90.42	154.77	25.35	154.78	120.21	34.56	4.478	CC, ES, SF
5,000.00	4,999.84	5,329.91	4,932.01	17.47	17.43	-91.82	154.75	21.56	169.06	134.16	34.90	4.844	
5,100.00	5,099.84	5,335.58	4,932.46	17.83	17.57	-93.91	154.76	15.91	228.30	192.93	35.38	6.453	
5,200.00	5,199.83	5,341.35	4,932.92	18.18	17.71	-96.02	154.81	10.16	309.17	273.33	35.84	8.626	
5,300.00	5,299.82	5,347.55	4,933.42	18.53	17.86	-98.27	154.91	3.97	398.71	362.42	36.29	10.986	
5,400.00	5,399.82	5,354.14	4,933.94	18.89	18.02	-100.63	155.01	-2.59	492.20	455.48	36.72	13.403	
5,500.00	5,499.81	5,360.46	4,934.42	19.24	18.17	-102.86	155.09	-8.89	587.77	550.64	37.13	15.829	
5,600.00	5,599.80	5,366.52	4,934.89	19.60	18.32	-104.96	155.14	-14.93	684.54	647.03	37.52	18.247	
5,700.00	5,699.80	5,372.34	4,935.32	19.95	18.46	-106.94	155.18	-20.74	782.08	744.20	37.88	20.646	
5,800.00	5,799.79	5,377.00	4,935.67	20.31	18.58	-108.49	155.20	-25.39	880.13	841.90	38.23	23.021	
5,900.00	5,899.78	5,377.00	4,935.67	20.66	18.58	-108.49	155.20	-25.39	978.56	939.98	38.59	25.361	
6,000.00	5,999.78	5,377.00	4,935.67	21.02	18.58	-108.49	155.20	-25.39	1,077.28	1,038.34	38.94	27.665	
6,100.00	6,099.77	5,385.86	4,936.27	21.37	18.80	-111.37	155.23	-34.23	1,176.15	1,136.88	39.26	29.956	
6,200.00	6,199.76	5,388.14	4,936.42	21.73	18.86	-112.10	155.24	-36.50	1,275.21	1,235.61	39.60	32.199	
6,300.00	6,299.76	5,390.22	4,936.54	22.08	18.91	-112.75	155.25	-38.57	1,374.40	1,334.46	39.94	34.408	
6,400.00	6,399.75	5,392.13	4,936.66	22.44	18.95	-113.35	155.26	-40.48	1,473.70	1,433.41	40.29	36.582	
6,500.00	6,499.74	5,393.88	4,936.76	22.80	19.00	-113.89	155.26	-42.23	1,573.08	1,532.45	40.63	38.721	
6,600.00	6,599.74	5,395.51	4,936.84	23.15	19.04	-114.39	155.27	-43.85	1,672.53	1,631.56	40.97	40.827	
6,700.00	6,699.73	5,397.01	4,936.92	23.51	19.08	-114.84	155.27	-45.36	1,772.03	1,730.72	41.31	42.898	
6,800.00	6,799.72	5,398.41	4,937.00	23.86	19.11	-115.27	155.28	-46.76	1,871.59	1,829.94	41.65	44.937	
6,900.00	6,899.72	5,409.00	4,937.48	24.22	19.37	-118.37	155.31	-57.33	1,971.25	1,929.38	41.88	47.073	
7,000.00	6,999.71	5,409.00	4,937.48	24.58	19.37	-118.37	155.31	-57.33	2,070.87	2,028.64	42.23	49.035	
7,100.00	7,099.70	5,409.00	4,937.48	24.93	19.37	-118.37	155.31	-57.33	2,170.52	2,127.93	42.59	50.965	
7,200.00	7,199.70	5,409.00	4,937.48	25.29	19.37	-118.37	155.31	-57.33	2,270.21	2,227.26	42.94	52.863	
7,300.00	7,299.69	5,409.00	4,937.48	25.65	19.37	-118.37	155.31	-57.33	2,369.92	2,326.62	43.30	54.731	
7,400.00	7,399.68	5,409.00	4,937.48	26.00	19.37	-118.37	155.31	-57.33	2,469.65	2,425.99	43.66	56.569	
7,500.00	7,499.68	5,409.00	4,937.48	26.36	19.37	-118.37	155.31	-57.33	2,569.40	2,525.39	44.01	58.377	
7,600.00	7,599.67	5,409.00	4,937.48	26.72	19.37	-118.37	155.31	-57.33	2,669.18	2,624.81	44.37	60.157	
7,700.00	7,699.66	5,409.00	4,937.48	27.07	19.37	-118.37	155.31	-57.33	2,768.97	2,724.24	44.73	61.909	
7,800.00	7,799.66	5,409.00	4,937.48	27.43	19.37	-118.37	155.31	-57.33	2,868.77	2,823.69	45.08	63.633	
7,900.00	7,899.65	5,409.00	4,937.48	27.79	19.37	-118.37	155.31	-57.33	2,968.59	2,923.15	45.44	65.330	
8,000.00	7,999.64	5,409.00	4,937.48	28.14	19.37	-118.37	155.31	-57.33	3,068.42	3,022.62	45.80	67.002	
8,100.00	8,099.64	5,413.94	4,937.68	28.50	19.45	-119.76	155.35	-62.27	3,168.25	3,122.20	46.05	68.793	
8,200.00	8,199.63	5,416.23	4,937.77	28.86	19.49	-120.38	155.38	-64.56	3,268.09	3,221.73	46.37	70.486	
8,300.00	8,299.62	5,418.53	4,937.86	29.21	19.53	-121.00	155.42	-66.86	3,367.95	3,321.27	46.67	72.158	
8,400.00	8,399.62	5,420.83	4,937.95	29.57	19.57	-121.61	155.47	-69.15	3,467.80	3,420.82	46.98	73.808	
8,500.00	8,499.61	5,423.13	4,938.05	29.93	19.61	-122.21	155.53	-71.45	3,567.67	3,520.37	47.29	75.437	
8,600.00	8,599.61	5,425.43	4,938.14	30.29	19.64	-122.81	155.59	-73.74	3,667.54	3,619.94	47.60	77.045	
8,700.00	8,699.60	5,427.73	4,938.23	30.64	19.68	-123.39	155.66	-76.04	3,767.41	3,719.50	47.91	78.633	
8,800.00	8,799.59	5,430.02	4,938.32	31.00	19.72	-123.96	155.75	-78.33	3,867.29	3,819.07	48.22	80.200	
8,900.00	8,899.59	5,432.32	4,938.42	31.36	19.76	-124.52	155.84	-80.63	3,967.18	3,918.65	48.53	81.747	
9,000.00	8,999.58	5,437.00	4,938.60	31.71	19.84	-125.63	156.05	-85.30	4,067.07	4,018.28	48.79	83.359	
9,100.00	9,099.57	5,437.00	4,938.60	32.07	19.84	-125.63	156.05	-85.30	4,166.96	4,117.81	49.15	84.786	
9,200.00	9,199.56	5,437.00	4,938.60	32.43	19.84	-35.14	156.05	-85.30	4,266.83	4,215.39	51.45	82.939	
9,300.00	9,298.63	5,437.00	4,938.60	32.78	19.84	-9.01	156.05	-85.30	4,365.37	4,313.87	51.50	84.764	
9,400.00	9,394.00	5,437.00	4,938.60	33.10	19.84	-5.26	156.05	-85.30	4,459.81	4,410.36	49.46	90.179	
9,500.00	9,482.79	5,437.00	4,938.60	33.42	19.84	-3.78	156.05	-85.30	4,547.62	4,501.57	46.05	98.756	
9,600.00	9,562.28	5,437.00	4,938.60	33.73	19.84	-3.01	156.05	-85.30	4,626.58	4,585.11	41.47	111.569	
9,700.00	9,630.07	5,437.00	4,938.60	34.04	19.84	-2.56	156.05	-85.30	4,694.79	4,658.83	35.96	130.544	
9,800.00	9,684.10	5,437.00	4,938.60	34.35	19.84	-2.27	156.05	-85.30	4,750.68	4,720.77	29.92	158.801	
9,900.00	9,722.72	5,437.00	4,938.60	34.66	19.84	-2.10	156.05	-85.30	4,793.02	4,769.05	23.97	199.998	
10,000.00	9,744.77	5,437.00	4,938.60	34.98	19.84	-2.00	156.05	-85.30	4,820.88	4,801.57	19.31	249.712	

CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation

Company:	BC Operating, Inc.	**Local Co-ordinate Reference:**	Well #5H
Project:	Eddy County, New Mexico (NAD27)	**TVD Reference:**	GL + KB @ 3021.50usft (Patterson 244)
Reference Site:	Kyle 34 Federal	**MD Reference:**	GL + KB @ 3021.50usft (Patterson 244)
Site Error:	0.00 usft	**North Reference:**	Grid
Reference Well:	#5H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH / Job #60399	**Database:**	Compass 5000 GCR
Reference Design:	Plan 1 11-23-16	**Offset TVD Reference:**	Reference Datum

Offset Design Mosaic 34 Federal - 2H - ST01 - Surveys — **Offset Site Error:** 0.00 usft

Survey Program: 200-NS-GYRO-MS, 4425-MWD, 5437-MWD — **Offset Well Error:** 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
10,100.00	9,750.00	5,437.00	4,938.60	35.30	19.84	-1.97	156.05	-85.30	4,834.11	4,816.21	17.90	270.024	
10,200.00	9,750.00	5,437.00	4,938.60	35.66	19.84	-1.97	156.05	-85.30	4,844.19	4,826.05	18.15	266.937	
10,300.00	9,750.00	5,437.00	4,938.60	36.08	19.84	-1.97	156.05	-85.30	4,856.31	4,837.88	18.43	263.453	
10,400.00	9,750.00	5,437.00	4,938.60	36.55	19.84	-1.97	156.05	-85.30	4,870.45	4,851.70	18.76	259.647	
10,500.00	9,750.00	5,437.00	4,938.60	37.07	19.84	-1.97	156.05	-85.30	4,886.60	4,867.48	19.12	255.593	
10,600.00	9,750.00	5,451.08	4,939.06	37.64	19.96	-2.14	156.80	-99.35	4,904.62	4,885.09	19.53	251.126	
10,700.00	9,750.00	5,452.25	4,939.08	38.25	19.97	-2.15	156.87	-100.52	4,924.70	4,904.74	19.96	246.769	
10,800.00	9,750.00	5,453.45	4,939.11	38.91	19.98	-2.17	156.94	-101.71	4,946.72	4,926.30	20.41	242.353	
10,900.00	9,750.00	5,454.67	4,939.13	39.61	19.99	-2.18	157.01	-102.93	4,970.65	4,949.76	20.89	237.926	
11,000.00	9,750.00	5,469.00	4,939.30	40.35	20.12	-2.35	157.94	-117.23	4,996.56	4,975.15	21.41	233.342	
11,100.00	9,750.00	5,469.00	4,939.30	41.12	20.12	-2.35	157.94	-117.23	5,024.22	5,002.28	21.94	229.030	
11,200.00	9,750.00	5,469.00	4,939.30	41.93	20.12	-2.35	157.94	-117.23	5,053.70	5,031.22	22.48	224.806	
11,300.00	9,750.00	5,469.00	4,939.30	42.78	20.12	-2.35	157.94	-117.23	5,084.97	5,061.93	23.04	220.687	
11,400.00	9,750.00	5,469.00	4,939.30	43.65	20.12	-2.35	157.94	-117.23	5,118.02	5,094.40	23.62	216.691	
11,500.00	9,750.00	5,469.00	4,939.30	44.56	20.12	-2.35	157.94	-117.23	5,152.79	5,128.57	24.21	212.826	
11,600.00	9,750.00	5,469.00	4,939.30	45.49	20.12	-2.35	157.94	-117.23	5,189.25	5,164.43	24.82	209.102	
11,700.00	9,750.00	5,469.00	4,939.30	46.45	20.12	-2.35	157.94	-117.23	5,227.37	5,201.94	25.43	205.521	
11,800.00	9,750.00	5,469.00	4,939.30	47.43	20.12	-2.35	157.94	-117.23	5,267.12	5,241.05	26.06	202.085	
11,900.00	9,750.00	5,469.00	4,939.30	48.44	20.12	-2.35	157.94	-117.23	5,308.45	5,281.75	26.70	198.795	
12,000.00	9,750.00	5,469.00	4,939.30	49.47	20.12	-2.35	157.94	-117.23	5,351.33	5,323.98	27.35	195.648	
12,100.00	9,750.00	5,469.00	4,939.30	50.51	20.12	-2.35	157.94	-117.23	5,395.73	5,367.72	28.01	192.643	
12,200.00	9,750.00	5,469.00	4,939.30	51.58	20.12	-2.35	157.94	-117.23	5,441.60	5,412.92	28.67	189.775	
12,300.00	9,750.00	5,469.00	4,939.30	52.67	20.12	-2.35	157.94	-117.23	5,488.91	5,459.56	29.35	187.040	
12,400.00	9,750.00	5,469.00	4,939.30	53.77	20.12	-2.35	157.94	-117.23	5,537.62	5,507.59	30.03	184.433	
12,500.00	9,750.00	5,469.00	4,939.30	54.88	20.12	-2.35	157.94	-117.23	5,587.70	5,556.99	30.71	181.950	
12,600.00	9,750.00	5,469.00	4,939.30	56.02	20.12	-2.35	157.94	-117.23	5,639.10	5,607.70	31.40	179.586	
12,700.00	9,750.00	5,469.00	4,939.30	57.16	20.12	-2.35	157.94	-117.23	5,691.80	5,659.70	32.10	177.335	
12,800.00	9,750.00	5,469.00	4,939.30	58.32	20.12	-2.35	157.94	-117.23	5,745.75	5,712.96	32.80	175.192	
12,900.00	9,750.00	5,469.00	4,939.30	59.49	20.12	-2.35	157.94	-117.23	5,800.93	5,767.43	33.50	173.152	
13,000.00	9,750.00	5,469.00	4,939.30	60.68	20.12	-2.35	157.94	-117.23	5,857.30	5,823.08	34.21	171.210	
13,100.00	9,750.00	5,482.94	4,939.20	61.87	20.25	-2.52	158.97	-131.13	5,914.70	5,879.75	34.95	169.226	
13,200.00	9,750.00	5,484.25	4,939.17	63.08	20.26	-2.53	159.07	-132.44	5,973.32	5,937.65	35.67	167.456	
13,300.00	9,750.00	5,485.58	4,939.14	64.29	20.28	-2.55	159.17	-133.76	6,033.03	5,996.63	36.39	165.771	
13,400.00	9,750.00	5,486.93	4,939.11	65.52	20.29	-2.56	159.28	-135.11	6,093.79	6,056.67	37.12	164.166	
13,500.00	9,750.00	5,501.00	4,938.60	66.75	20.43	-2.73	160.45	-149.12	6,155.66	6,117.78	37.88	162.524	
13,600.00	9,750.00	5,501.00	4,938.60	67.99	20.43	-2.73	160.45	-149.12	6,218.41	6,179.81	38.60	161.081	
13,700.00	9,750.00	5,501.00	4,938.60	69.24	20.43	-2.73	160.45	-149.12	6,282.13	6,242.80	39.34	159.705	
13,800.00	9,750.00	5,501.00	4,938.60	70.49	20.43	-2.73	160.45	-149.12	6,346.79	6,306.72	40.07	158.393	
13,900.00	9,750.00	5,501.00	4,938.60	71.76	20.43	-2.73	160.45	-149.12	6,412.36	6,371.55	40.81	157.142	
14,000.00	9,750.00	5,501.00	4,938.60	73.03	20.43	-2.73	160.45	-149.12	6,478.80	6,437.26	41.54	155.949	
14,100.00	9,750.00	5,501.00	4,938.60	74.30	20.43	-2.73	160.45	-149.12	6,546.10	6,503.81	42.28	154.810	
14,200.00	9,750.00	5,501.00	4,938.60	75.58	20.43	-2.73	160.45	-149.12	6,614.22	6,571.20	43.03	153.723	
14,300.00	9,750.00	5,501.00	4,938.60	76.87	20.43	-2.73	160.45	-149.12	6,683.15	6,639.38	43.77	152.685	
14,400.00	9,750.00	5,501.00	4,938.60	78.16	20.43	-2.73	160.45	-149.12	6,752.85	6,708.34	44.52	151.693	
14,500.00	9,750.00	5,501.00	4,938.60	79.46	20.43	-2.73	160.45	-149.12	6,823.31	6,778.05	45.26	150.746	
14,600.00	9,750.00	5,501.00	4,938.60	80.76	20.43	-2.73	160.45	-149.12	6,894.50	6,848.49	46.01	149.841	
14,700.00	9,750.00	5,501.00	4,938.60	82.07	20.43	-2.73	160.45	-149.12	6,966.40	6,919.63	46.76	148.975	
14,800.00	9,750.00	5,501.00	4,938.60	83.38	20.43	-2.73	160.45	-149.12	7,038.98	6,991.47	47.51	148.147	
14,900.00	9,750.00	5,501.00	4,938.60	84.70	20.43	-2.73	160.45	-149.12	7,112.23	7,063.96	48.27	147.354	
15,000.00	9,750.00	5,514.16	4,937.91	86.02	20.57	-2.89	161.60	-162.21	7,186.06	7,137.01	49.06	146.486	
15,100.00	9,750.00	5,516.21	4,937.79	87.34	20.59	-2.91	161.78	-164.25	7,260.56	7,210.75	49.82	145.744	
15,200.00	9,750.00	5,518.26	4,937.67	88.67	20.61	-2.93	161.96	-166.29	7,335.67	7,285.09	50.58	145.033	

Company:	BC Operating, Inc.	**Local Co-ordinate Reference:**	Well #5H
Project:	Eddy County, New Mexico (NAD27)	**TVD Reference:**	GL + KB @ 3021.50usft (Patterson 244)
Reference Site:	Kyle 34 Federal	**MD Reference:**	GL + KB @ 3021.50usft (Patterson 244)
Site Error:	0.00 usft	**North Reference:**	Grid
Reference Well:	#5H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH / Job #60399	**Database:**	Compass 5000 GCR
Reference Design:	Plan 1 11-23-16	**Offset TVD Reference:**	Reference Datum

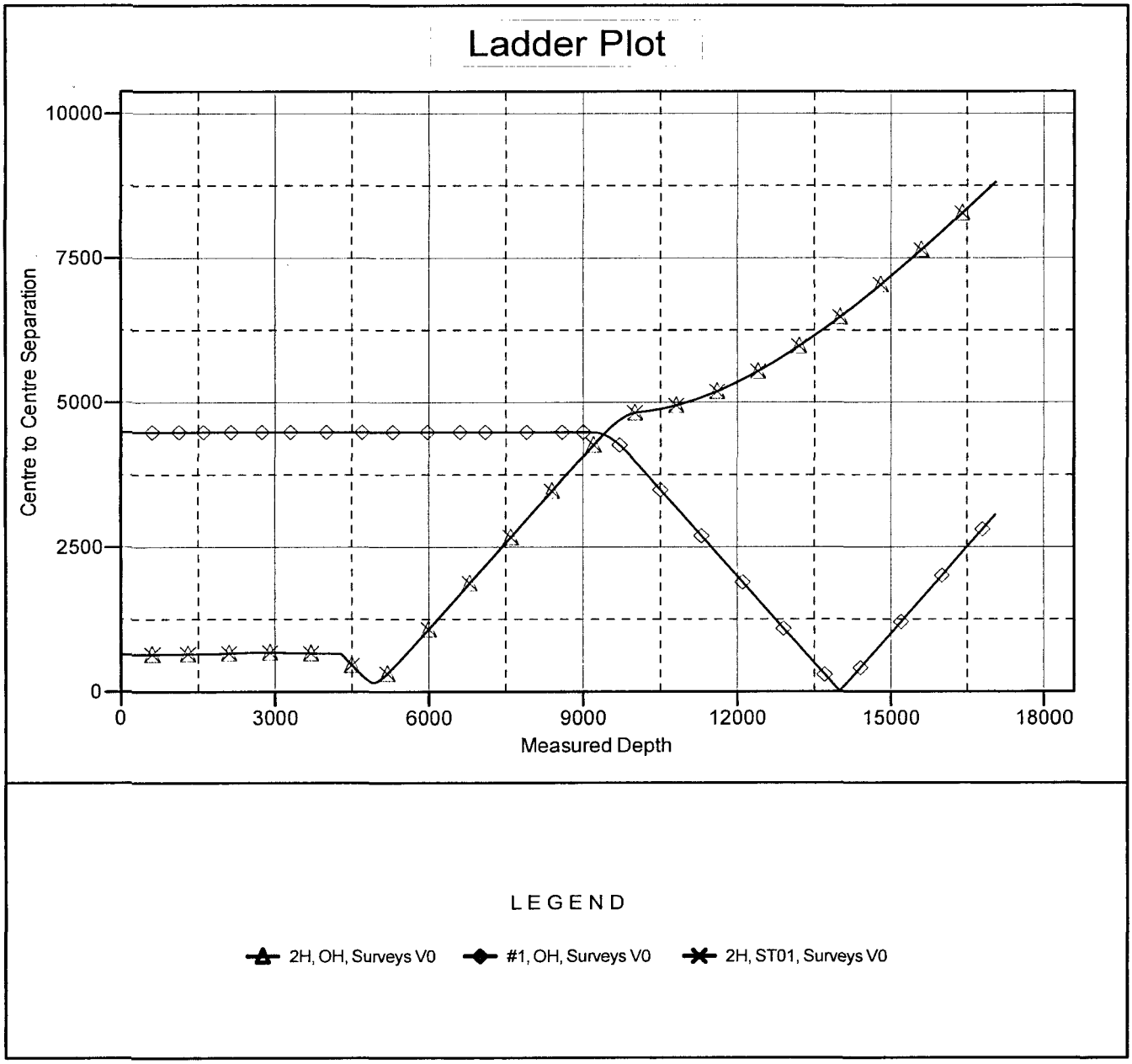
Offset Design Mosaic 34 Federal - 2H - ST01 - Surveys — **Offset Site Error:** 0.00 usft

Survey Program: 200-NS-GYRO-MS, 4425-MWD, 5437-MWD — **Offset Well Error:** 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
15,300.00	9,750.00	5,532.00	4,936.74	90.00	20.76	-3.10	163.18	-179.94	7,411.40	7,360.02	51.38	144.257	
15,400.00	9,750.00	5,532.00	4,936.74	91.34	20.76	-3.10	163.18	-179.94	7,487.64	7,435.51	52.13	143.621	
15,500.00	9,750.00	5,532.00	4,936.74	92.68	20.76	-3.10	163.18	-179.94	7,564.44	7,511.54	52.89	143.010	
15,600.00	9,750.00	5,532.00	4,936.74	94.02	20.76	-3.10	163.18	-179.94	7,641.77	7,588.12	53.65	142.425	
15,700.00	9,750.00	5,532.00	4,936.74	95.36	20.76	-3.10	163.18	-179.94	7,719.63	7,665.21	54.42	141.863	
15,800.00	9,750.00	5,532.00	4,936.74	96.71	20.76	-3.10	163.18	-179.94	7,797.98	7,742.81	55.18	141.324	
15,900.00	9,750.00	5,532.00	4,936.74	98.06	20.76	-3.10	163.18	-179.94	7,876.83	7,820.89	55.94	140.807	
16,000.00	9,750.00	5,540.19	4,936.15	99.41	20.86	-3.19	163.89	-188.08	7,956.15	7,899.42	56.73	140.243	
16,100.00	9,750.00	5,545.81	4,935.77	100.76	20.92	-3.26	164.36	-193.67	8,035.92	7,978.41	57.51	139.720	
16,200.00	9,750.00	5,551.15	4,935.42	102.12	20.99	-3.32	164.80	-198.98	8,116.14	8,057.84	58.30	139.219	
16,300.00	9,750.00	5,556.23	4,935.09	103.48	21.05	-3.38	165.20	-204.03	8,196.78	8,137.70	59.08	138.738	
16,400.00	9,750.00	5,564.00	4,934.62	104.84	21.14	-3.47	165.79	-211.77	8,277.84	8,217.97	59.87	138.252	
16,500.00	9,750.00	5,564.00	4,934.62	106.20	21.14	-3.47	165.79	-211.77	8,359.31	8,298.67	60.64	137.846	
16,600.00	9,750.00	5,564.00	4,934.62	107.57	21.14	-3.47	165.79	-211.77	8,441.17	8,379.76	61.41	137.456	
16,700.00	9,750.00	5,574.39	4,934.03	108.94	21.27	-3.59	166.54	-222.11	8,523.41	8,461.19	62.22	136.991	
16,800.00	9,750.00	5,578.37	4,933.83	110.31	21.32	-3.64	166.81	-226.08	8,606.03	8,543.02	63.00	136.596	
16,900.00	9,750.00	5,582.14	4,933.64	111.68	21.37	-3.68	167.06	-229.84	8,689.00	8,625.22	63.79	136.216	
17,000.00	9,750.00	5,585.72	4,933.47	113.05	21.41	-3.73	167.29	-233.40	8,772.33	8,707.76	64.57	135.851	
17,050.55	9,750.00	5,587.46	4,933.39	113.75	21.43	-3.75	167.40	-235.14	8,814.59	8,749.62	64.97	135.672	

Company:	BC Operating, Inc.	**Local Co-ordinate Reference:**	Well #5H
Project:	Eddy County, New Mexico (NAD27)	**TVD Reference:**	GL + KB @ 3021.50usft (Patterson 244)
Reference Site:	Kyle 34 Federal	**MD Reference:**	GL + KB @ 3021.50usft (Patterson 244)
Site Error:	0.00 usft	**North Reference:**	Grid
Reference Well:	#5H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH / Job #60399	**Database:**	Compass 5000 GCR
Reference Design:	Plan 1 11-23-16	**Offset TVD Reference:**	Reference Datum

Reference Depths are relative to GL + KB @ 3021.50usft (Patterson 24Coordinates are relative to: #5H
Offset Depths are relative to Offset Datum
Coordinate System is US State Plane 1927 (Exact solution), New Mexico East 30
Central Meridian is 104° 19' 60.00000 W
Grid Convergence at Surface is: 0.14°



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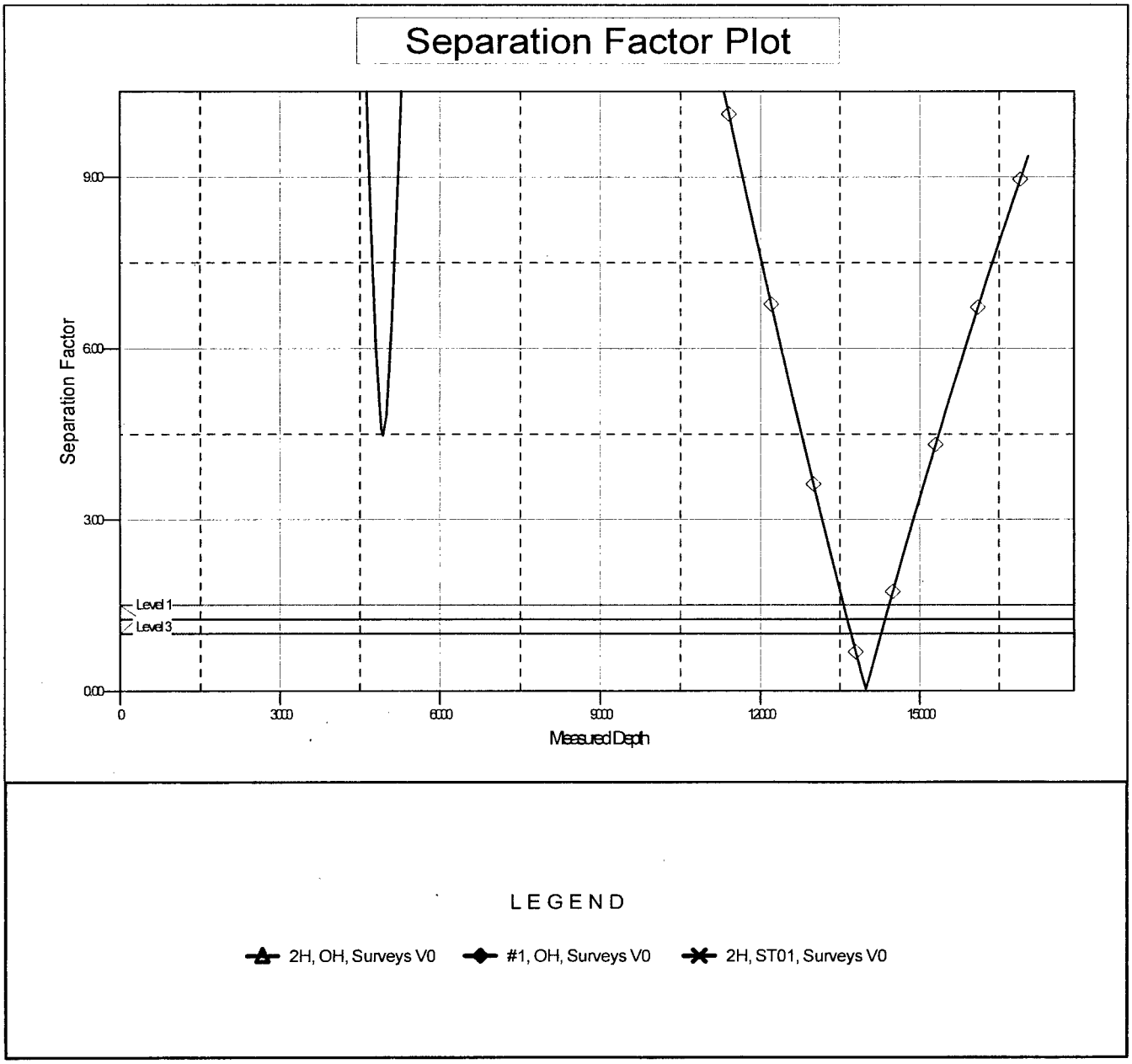

PECOS DISTRICT
CONDITIONS OF APPROVAL

OPERATOR'S NAME:	BC Operating Inc.
LEASE NO.:	NMNM-25953
WELL NAME & NO.:	5H-Kyle 34 Federal Com
SURFACE HOLE FOOTAGE:	225'/S & 990'/E
BOTTOM HOLE FOOTAGE	330'/N & 990'/E
LOCATION:	Section 34, T. 24 S., R.28 E., NMPM
COUNTY:	Eddy County, New Mexico
API:	30-015-43295

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. **Although Hydrogen Sulfide has not been reported in the area, it is always a potential hazard. If Hydrogen Sulfide is encountered, report measured amounts and formations to the BLM. Operator has stated that they will have monitoring equipment in place prior to drilling out of the surface shoe.**

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.). The initial wellhead installed on the well will remain on the well with spools used as needed.

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

Wait on cement (WOC) for Water Basin:
After cementing but before commencing any tests, the casing string shall stand cemented under pressure until both of the following conditions have been met: 1) cement reaches a minimum compressive strength of 500 psi at the shoe, 2) until cement has been in place at least 8 hours. WOC time will be recorded in the driller's log. See individual casing strings for details regarding lead cement slurry requirements.

Provide compressive strengths including hours to reach required 500 pounds compressive strength prior to cementing each casing string. Have well specific cement details onsite prior to pumping the cement for each casing string.

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

High Cave/Karst
Possibility of water flows in the top of salt and the Salado and Castile.
Possibility of lost circulation in the Rustler, Red Beds and Delaware.
Possible high pressure gas burst in the Third Bone Spring Sand and Wolfcamp

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. IF THE PRIMARY CEMENT JOB ON THE SURFACE CASING DOES NOT CIRCULATE, THEN THE NEXT TWO CASING STRINGS MUST BE CEMENTED TO SURFACE.

1. The **13-3/8** inch surface casing shall be set at approximately **400** feet (a minimum of 25 feet into the Rustler Anhydrite and above the salt) and cemented to the surface. **If salt is encountered, set casing at least 25 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.

2. The minimum required fill of cement behind the **9-5/8** inch intermediate casing, which shall be set at approximately **2600** feet, 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 high cave/karst.**

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 on horizontal leg, must be type for horizontal service and a minimum of one every other joint.

7'' production casing shall be kept fluid filled while running into hole to meet BLM minimum collapse requirements.

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

   ☒ Cement to surface. If cement does not circulate see B.1.a, c-d above. Operator shall provide method of verification.

Formation below the 7" 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.

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.

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.

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 **5000 (5M)** psi. **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 a water basin, 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. The casing cut-off and BOP installation can be initiated four hours after installing the slips, which will be approximately six hours after bumping the plug. For those casing strings not using slips, the minimum wait time before cut-off is eight hours after bumping the plug. BOP/BOPE testing can begin after cut-off or once cement reaches 500 psi compressive strength (including lead when specified), whichever is greater. However, if the float does not hold, cut-off cannot be initiated until cement reaches 500 psi compressive strength (including lead when specified).

    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.

    g. BOP/BOPE must be tested by an independent service company within 500 feet of the top of the **Third Bone Spring Sand** formation if the time between the setting of the intermediate casing and reaching this depth exceeds 20 days. This test does not exclude the test prior to drilling out the casing shoe as per Onshore Order No. 2

D. DRILL STEM TEST

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

E. DRILLING MUD

Mud system monitoring equipment, with derrick floor indicators and visual and audio alarms, shall be operating before drilling into the **Third Bone Spring Sand** formation, and shall be used until production casing is run and cemented.

Proposed mud weight may not be adequate for drilling through Third Bone Spring Sand and Wolfcamp.

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.

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