

Submit 1 Copy To Appropriate District
Office
District I - (575) 393-6161
1625 N. French Dr., Hobbs, NM 88240
District II - (575) 748-1283
811 S. First St., Artesia, NM 88210
District III - (505) 334-6178
1000 Rio Brazos Rd., Aztec, NM 87410
District IV - (505) 476-3460
1220 S. St. Francis Dr., Santa Fe, NM
87505

State of New Mexico
Energy, Minerals and Natural Resources

Form C-103
Revised July 18, 2013

HOBBS OCD

OIL CONSERVATION DIVISION

DEC 18 2013

1220 South St. Francis Dr.
Santa Fe, NM 87505

RECEIVED

SUNDRY NOTICES AND REPORTS ON WELLS (DO NOT USE THIS FORM FOR PROPOSALS TO DRILL OR TO DEEPEN OR PLUG BACK TO A DIFFERENT RESERVOIR. USE "APPLICATION FOR PERMIT" (FORM C-101) FOR SUCH PROPOSALS.)		WELL API NO. 30-025-41462
1. Type of Well: Oil Well ☒ Gas Well ☐ Other ☐		5. Indicate Type of Lease STATE ☒ FEE ☐
2. Name of Operator OXY USA Inc.		6. State Oil & Gas Lease No.
3. Address of Operator P.O. Box 50250 Midland, TX 79710		7. Lease Name or Unit Agreement Name Copperhead 18 State
4. Well Location Unit Letter B : 340 feet from the north line and 1980 feet from the east line Section 18 Township 24S Range 33E NMPM County Lea		8. Well Number 4H
11. Elevation (Show whether DR, RKB, RT, GR, etc.) 3570		9. OGRID Number 16696
		10. Pool name or Wildcat Triplex Bone Springs, W.

12. Check Appropriate Box to Indicate Nature of Notice, Report or Other Data

NOTICE OF INTENTION TO:

- PERFORM REMEDIAL WORK ☐ PLUG AND ABANDON ☐
TEMPORARILY ABANDON ☐ CHANGE PLANS ☒
PULL OR ALTER CASING ☐ MULTIPLE COMPL ☐
DOWNHOLE COMMINGLE ☐
CLOSED-LOOP SYSTEM ☐
OTHER: Amend APD ☒

SUBSEQUENT REPORT OF:

- REMEDIAL WORK ☐ ALTERING CASING ☐
COMMENCE DRILLING OPNS. ☐ P AND A ☐
CASING/CEMENT JOB ☐
OTHER: ☐

13. Describe proposed or completed operations. (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work). SEE RULE 19.15.7.14 NMAC. For Multiple Completions: Attach wellbore diagram of proposed completion or recompletion.

OXY USA Inc. respectfully requests to amend the APD for the Copperhead 18 State #4H, API No. 30-025-41462.

1. Amend the proposed TD of the horizontal lateral to 15212'M 10944'V.
2. See attached for an amended proposed directional plan.
3. The planned cementing volumes will not be affected

Spud Date:

Rig Release Date:

I hereby certify that the information above is true and complete to the best of my knowledge and belief.

SIGNATURE David Stewart TITLE Sr. Regulatory Advisor DATE 12/16/13

Type or print name David Stewart E-mail address: david_stewart@oxy.com PHONE: 432-685-5717

For State Use Only

APPROVED BY: [Signature] TITLE Petroleum Engineer DATE DEC 19 2013

Conditions of Approval (if any):

DEC 19 2013



C18S 4H
Lea County, New Mexico
Northing: 445923.30
Easting: 724053.60
Design #2



To convert a Magnetic Direction to a Grid Direction, Add 6.93°
To convert a True Direction to a Grid Direction, Subtract 0.39°

Azimuths to Grid North
True North: -0.39°
Magnetic North: 6.93°

Magnetic Field
Strength: 48379.5snT
Dip Angle: 60.12°
Date: 10/8/2013
Model: IGRF2010



KB @ 3594.00usft
Gr @ 3570.00

HOBBS OCD

DEC 18 2013

RECEIVED

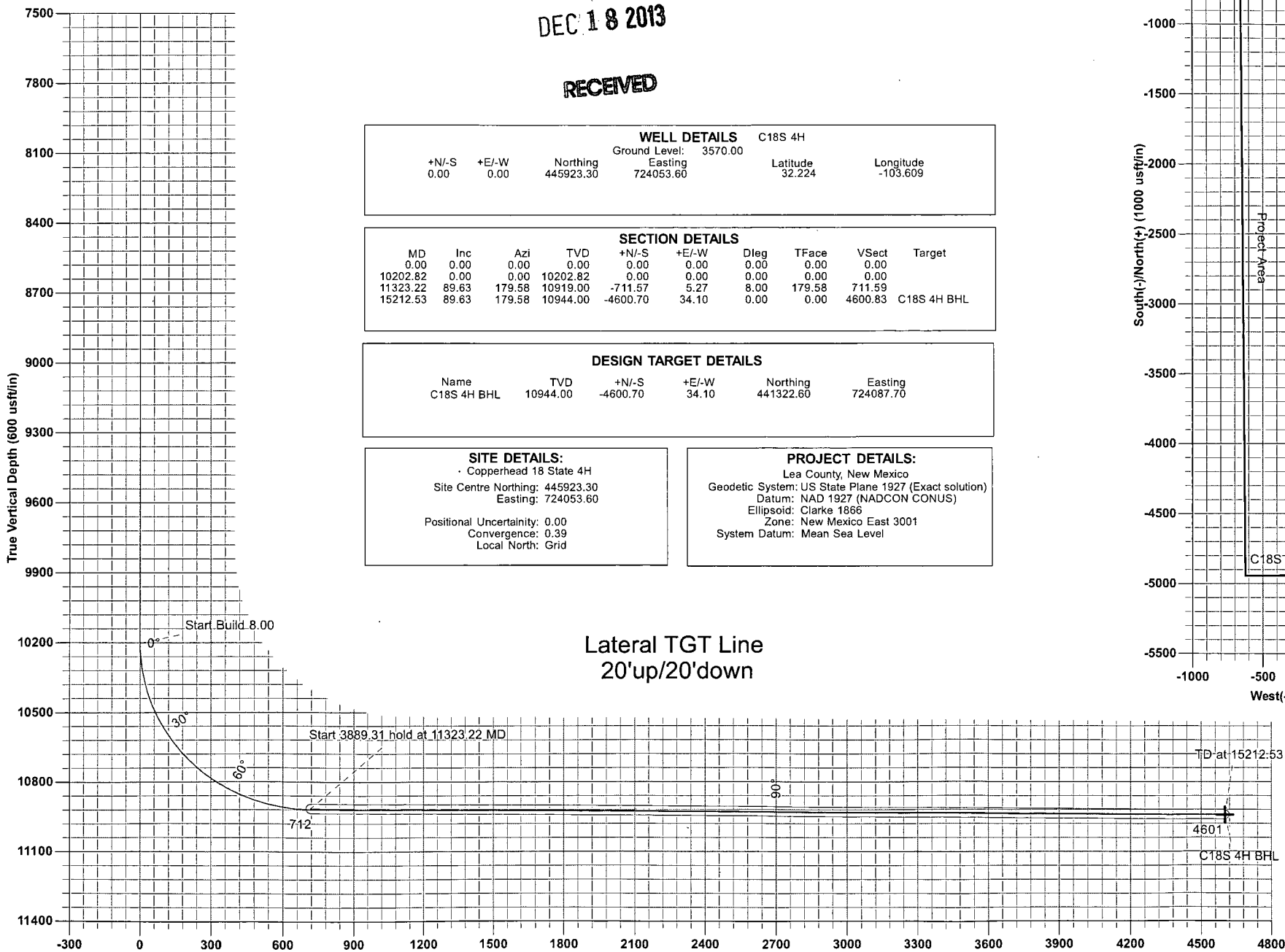
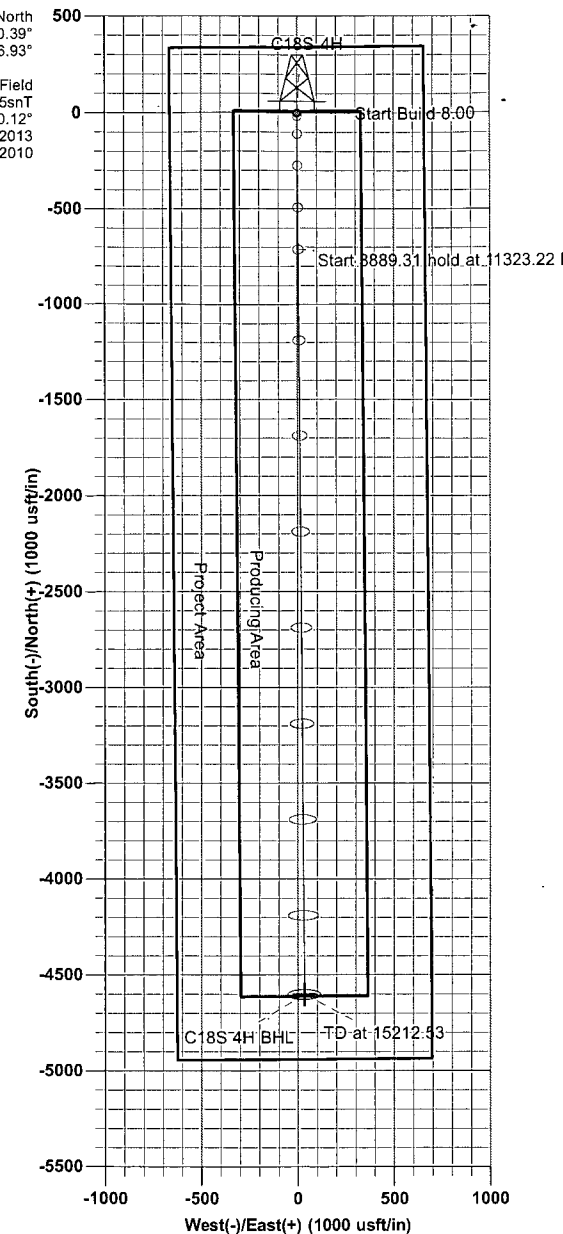
WELL DETAILS C18S 4H					
Ground Level: 3570.00					
+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
0.00	0.00	445923.30	724053.60	32.224	-103.609

SECTION DETAILS									
MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
10202.82	0.00	0.00	10202.82	0.00	0.00	0.00	0.00	0.00	
11323.22	89.63	179.58	10919.00	-711.57	5.27	8.00	179.58	711.59	
15212.53	89.63	179.58	10944.00	-4600.70	34.10	0.00	0.00	4600.83	C18S 4H BHL

DESIGN TARGET DETAILS					
Name	TVD	+N/-S	+E/-W	Northing	Easting
C18S 4H BHL	10944.00	-4600.70	34.10	441322.60	724087.70

SITE DETAILS:	
• Copperhead 18 State 4H	
Site Centre Northing: 445923.30	
Easting: 724053.60	
Positional Uncertainty: 0.00	
Convergence: 0.39	
Local North: Grid	

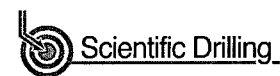
PROJECT DETAILS:	
Lea County, New Mexico	
Geodetic System: US State Plane 1927 (Exact solution)	
Datum: NAD 1927 (NADCON CONUS)	
Ellipsoid: Clarke 1866	
Zone: New Mexico East 3001	
System Datum: Mean Sea Level	



Jody Barclay
13:59, December 10 2013
Scientific Drilling
2740 N. Highway 287
P.O. Box 282821



Scientific Drilling
Planning Report



Database:	CompassC	Local Co-ordinate Reference:	Well C18S 4H
Company:	OXY	TVD Reference:	KB @ 3594.00usft
Project:	Lea County, New Mexico	MD Reference:	KB @ 3594.00usft
Site:	Copperhead 18 State 4H	North Reference:	Grid
Well:	C18S 4H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Wellbore		
Design:	Design #2		

Project	Lea County, New Mexico		
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	Copperhead 18 State 4H		
Site Position:		Northing:	445,923.30 usft
From:	Map	Easting:	724,053.60 usft
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "
		Latitude:	32.224
		Longitude:	-103.609
		Grid Convergence:	0.39 °

Well	C18S 4H		
Well Position	+N/-S	0.00 usft	Northing:
	+E/-W	0.00 usft	Easting:
Position Uncertainty	0.00 usft	Wellhead Elevation:	0.00 usft
		Latitude:	32.224
		Longitude:	-103.609
		Ground Level:	3,570.00 usft

Wellbore	Original Wellbore		
Magnetics	Model Name	Sample Date	Declination
			(°)
	IGRF2010	10/8/2013	7.32
			Dip Angle
			(°)
			60.12
			Field Strength
			(nT)
			48,379

Design	Design #2		
Audit Notes:			
Version:	Phase:	PROTOTYPE	Tie On Depth:
			0.00
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W
	(usft)	(usft)	(usft)
	0.00	0.00	0.00
			Direction
			(°)
			179.58

Plan Sections										
Measured	Inclination	Azimuth	Vertical			Dogleg	Build	Turn	TFO	Target
Depth	(°)	(°)	Depth	+N/-S	+E/-W	Rate	Rate	Rate	(°)	
(usft)			(usft)	(usft)	(usft)	(°/100usft)	(°/100usft)	(°/100usft)		
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
10,202.82	0.00	0.00	10,202.82	0.00	0.00	0.00	0.00	0.00	0.00	
11,323.22	89.63	179.58	10,919.00	-711.57	5.27	8.00	8.00	0.00	179.58	
15,212.53	89.63	179.58	10,944.00	-4,600.70	34.10	0.00	0.00	0.00	0.00	C18S 4H BHL



Scientific Drilling Planning Report

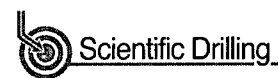


Database:	CompassC	Local Co-ordinate Reference:	Well C18S 4H
Company:	OXY	TVD Reference:	KB @ 3594.00usft
Project:	Lea County, New Mexico	MD Reference:	KB @ 3594.00usft
Site:	Copperhead 18 State 4H	North Reference:	Grid
Well:	C18S 4H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Wellbore		
Design:	Design #2		

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
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00
600.00	0.00	0.00	600.00	0.00	0.00	0.00	0.00	0.00	0.00
700.00	0.00	0.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	0.00	0.00
900.00	0.00	0.00	900.00	0.00	0.00	0.00	0.00	0.00	0.00
1,000.00	0.00	0.00	1,000.00	0.00	0.00	0.00	0.00	0.00	0.00
1,100.00	0.00	0.00	1,100.00	0.00	0.00	0.00	0.00	0.00	0.00
1,200.00	0.00	0.00	1,200.00	0.00	0.00	0.00	0.00	0.00	0.00
1,300.00	0.00	0.00	1,300.00	0.00	0.00	0.00	0.00	0.00	0.00
1,400.00	0.00	0.00	1,400.00	0.00	0.00	0.00	0.00	0.00	0.00
1,500.00	0.00	0.00	1,500.00	0.00	0.00	0.00	0.00	0.00	0.00
1,600.00	0.00	0.00	1,600.00	0.00	0.00	0.00	0.00	0.00	0.00
1,700.00	0.00	0.00	1,700.00	0.00	0.00	0.00	0.00	0.00	0.00
1,800.00	0.00	0.00	1,800.00	0.00	0.00	0.00	0.00	0.00	0.00
1,900.00	0.00	0.00	1,900.00	0.00	0.00	0.00	0.00	0.00	0.00
2,000.00	0.00	0.00	2,000.00	0.00	0.00	0.00	0.00	0.00	0.00
2,100.00	0.00	0.00	2,100.00	0.00	0.00	0.00	0.00	0.00	0.00
2,200.00	0.00	0.00	2,200.00	0.00	0.00	0.00	0.00	0.00	0.00
2,300.00	0.00	0.00	2,300.00	0.00	0.00	0.00	0.00	0.00	0.00
2,400.00	0.00	0.00	2,400.00	0.00	0.00	0.00	0.00	0.00	0.00
2,500.00	0.00	0.00	2,500.00	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
2,700.00	0.00	0.00	2,700.00	0.00	0.00	0.00	0.00	0.00	0.00
2,800.00	0.00	0.00	2,800.00	0.00	0.00	0.00	0.00	0.00	0.00
2,900.00	0.00	0.00	2,900.00	0.00	0.00	0.00	0.00	0.00	0.00
3,000.00	0.00	0.00	3,000.00	0.00	0.00	0.00	0.00	0.00	0.00
3,100.00	0.00	0.00	3,100.00	0.00	0.00	0.00	0.00	0.00	0.00
3,200.00	0.00	0.00	3,200.00	0.00	0.00	0.00	0.00	0.00	0.00
3,300.00	0.00	0.00	3,300.00	0.00	0.00	0.00	0.00	0.00	0.00
3,400.00	0.00	0.00	3,400.00	0.00	0.00	0.00	0.00	0.00	0.00
3,500.00	0.00	0.00	3,500.00	0.00	0.00	0.00	0.00	0.00	0.00
3,600.00	0.00	0.00	3,600.00	0.00	0.00	0.00	0.00	0.00	0.00
3,700.00	0.00	0.00	3,700.00	0.00	0.00	0.00	0.00	0.00	0.00
3,800.00	0.00	0.00	3,800.00	0.00	0.00	0.00	0.00	0.00	0.00
3,900.00	0.00	0.00	3,900.00	0.00	0.00	0.00	0.00	0.00	0.00
4,000.00	0.00	0.00	4,000.00	0.00	0.00	0.00	0.00	0.00	0.00
4,100.00	0.00	0.00	4,100.00	0.00	0.00	0.00	0.00	0.00	0.00
4,200.00	0.00	0.00	4,200.00	0.00	0.00	0.00	0.00	0.00	0.00
4,300.00	0.00	0.00	4,300.00	0.00	0.00	0.00	0.00	0.00	0.00
4,400.00	0.00	0.00	4,400.00	0.00	0.00	0.00	0.00	0.00	0.00
4,500.00	0.00	0.00	4,500.00	0.00	0.00	0.00	0.00	0.00	0.00
4,600.00	0.00	0.00	4,600.00	0.00	0.00	0.00	0.00	0.00	0.00
4,700.00	0.00	0.00	4,700.00	0.00	0.00	0.00	0.00	0.00	0.00
4,800.00	0.00	0.00	4,800.00	0.00	0.00	0.00	0.00	0.00	0.00
4,900.00	0.00	0.00	4,900.00	0.00	0.00	0.00	0.00	0.00	0.00
5,000.00	0.00	0.00	5,000.00	0.00	0.00	0.00	0.00	0.00	0.00
5,100.00	0.00	0.00	5,100.00	0.00	0.00	0.00	0.00	0.00	0.00
5,200.00	0.00	0.00	5,200.00	0.00	0.00	0.00	0.00	0.00	0.00
5,300.00	0.00	0.00	5,300.00	0.00	0.00	0.00	0.00	0.00	0.00



Scientific Drilling Planning Report



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Company:	OXY	TVD Reference:	KB @ 3594.00usft
Project:	Lea County, New Mexico	MD Reference:	KB @ 3594.00usft
Site:	Copperhead 18 State 4H	North Reference:	Grid
Well:	C18S 4H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Wellbore		
Design:	Design #2		

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)
5,400.00	0.00	0.00	5,400.00	0.00	0.00	0.00	0.00	0.00	0.00
5,500.00	0.00	0.00	5,500.00	0.00	0.00	0.00	0.00	0.00	0.00
5,600.00	0.00	0.00	5,600.00	0.00	0.00	0.00	0.00	0.00	0.00
5,700.00	0.00	0.00	5,700.00	0.00	0.00	0.00	0.00	0.00	0.00
5,800.00	0.00	0.00	5,800.00	0.00	0.00	0.00	0.00	0.00	0.00
5,900.00	0.00	0.00	5,900.00	0.00	0.00	0.00	0.00	0.00	0.00
6,000.00	0.00	0.00	6,000.00	0.00	0.00	0.00	0.00	0.00	0.00
6,100.00	0.00	0.00	6,100.00	0.00	0.00	0.00	0.00	0.00	0.00
6,200.00	0.00	0.00	6,200.00	0.00	0.00	0.00	0.00	0.00	0.00
6,300.00	0.00	0.00	6,300.00	0.00	0.00	0.00	0.00	0.00	0.00
6,400.00	0.00	0.00	6,400.00	0.00	0.00	0.00	0.00	0.00	0.00
6,500.00	0.00	0.00	6,500.00	0.00	0.00	0.00	0.00	0.00	0.00
6,600.00	0.00	0.00	6,600.00	0.00	0.00	0.00	0.00	0.00	0.00
6,700.00	0.00	0.00	6,700.00	0.00	0.00	0.00	0.00	0.00	0.00
6,800.00	0.00	0.00	6,800.00	0.00	0.00	0.00	0.00	0.00	0.00
6,900.00	0.00	0.00	6,900.00	0.00	0.00	0.00	0.00	0.00	0.00
7,000.00	0.00	0.00	7,000.00	0.00	0.00	0.00	0.00	0.00	0.00
7,100.00	0.00	0.00	7,100.00	0.00	0.00	0.00	0.00	0.00	0.00
7,200.00	0.00	0.00	7,200.00	0.00	0.00	0.00	0.00	0.00	0.00
7,300.00	0.00	0.00	7,300.00	0.00	0.00	0.00	0.00	0.00	0.00
7,400.00	0.00	0.00	7,400.00	0.00	0.00	0.00	0.00	0.00	0.00
7,500.00	0.00	0.00	7,500.00	0.00	0.00	0.00	0.00	0.00	0.00
7,600.00	0.00	0.00	7,600.00	0.00	0.00	0.00	0.00	0.00	0.00
7,700.00	0.00	0.00	7,700.00	0.00	0.00	0.00	0.00	0.00	0.00
7,800.00	0.00	0.00	7,800.00	0.00	0.00	0.00	0.00	0.00	0.00
7,900.00	0.00	0.00	7,900.00	0.00	0.00	0.00	0.00	0.00	0.00
8,000.00	0.00	0.00	8,000.00	0.00	0.00	0.00	0.00	0.00	0.00
8,100.00	0.00	0.00	8,100.00	0.00	0.00	0.00	0.00	0.00	0.00
8,200.00	0.00	0.00	8,200.00	0.00	0.00	0.00	0.00	0.00	0.00
8,300.00	0.00	0.00	8,300.00	0.00	0.00	0.00	0.00	0.00	0.00
8,400.00	0.00	0.00	8,400.00	0.00	0.00	0.00	0.00	0.00	0.00
8,500.00	0.00	0.00	8,500.00	0.00	0.00	0.00	0.00	0.00	0.00
8,600.00	0.00	0.00	8,600.00	0.00	0.00	0.00	0.00	0.00	0.00
8,700.00	0.00	0.00	8,700.00	0.00	0.00	0.00	0.00	0.00	0.00
8,800.00	0.00	0.00	8,800.00	0.00	0.00	0.00	0.00	0.00	0.00
8,900.00	0.00	0.00	8,900.00	0.00	0.00	0.00	0.00	0.00	0.00
9,000.00	0.00	0.00	9,000.00	0.00	0.00	0.00	0.00	0.00	0.00
9,100.00	0.00	0.00	9,100.00	0.00	0.00	0.00	0.00	0.00	0.00
9,200.00	0.00	0.00	9,200.00	0.00	0.00	0.00	0.00	0.00	0.00
9,300.00	0.00	0.00	9,300.00	0.00	0.00	0.00	0.00	0.00	0.00
9,400.00	0.00	0.00	9,400.00	0.00	0.00	0.00	0.00	0.00	0.00
9,500.00	0.00	0.00	9,500.00	0.00	0.00	0.00	0.00	0.00	0.00
9,600.00	0.00	0.00	9,600.00	0.00	0.00	0.00	0.00	0.00	0.00
9,700.00	0.00	0.00	9,700.00	0.00	0.00	0.00	0.00	0.00	0.00
9,800.00	0.00	0.00	9,800.00	0.00	0.00	0.00	0.00	0.00	0.00
9,900.00	0.00	0.00	9,900.00	0.00	0.00	0.00	0.00	0.00	0.00
10,000.00	0.00	0.00	10,000.00	0.00	0.00	0.00	0.00	0.00	0.00
10,100.00	0.00	0.00	10,100.00	0.00	0.00	0.00	0.00	0.00	0.00
10,202.82	0.00	0.00	10,202.82	0.00	0.00	0.00	0.00	0.00	0.00
10,250.00	3.77	179.58	10,249.97	-1.55	0.01	1.55	8.00	8.00	0.00
10,300.00	7.77	179.58	10,299.70	-6.58	0.05	6.58	8.00	8.00	0.00
10,350.00	11.77	179.58	10,348.97	-15.07	0.11	15.07	8.00	8.00	0.00
10,400.00	15.77	179.58	10,397.52	-26.97	0.20	26.97	8.00	8.00	0.00
10,450.00	19.77	179.58	10,445.12	-42.23	0.31	42.23	8.00	8.00	0.00



Scientific Drilling
Planning Report



Database:	CompassC	Local Co-ordinate Reference:	Well C18S 4H
Company:	OXY	TVD Reference:	KB @ 3594.00usft
Project:	Lea County, New Mexico	MD Reference:	KB @ 3594.00usft
Site:	Copperhead 18 State 4H	North Reference:	Grid
Well:	C18S 4H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Wellbore		
Design:	Design #2		

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)
10,500.00	23.77	179.58	10,491.55	-60.78	0.45	60.78	8.00	8.00	0.00
10,550.00	27.77	179.58	10,536.56	-82.51	0.61	82.51	8.00	8.00	0.00
10,600.00	31.77	179.58	10,579.95	-107.34	0.80	107.34	8.00	8.00	0.00
10,650.00	35.77	179.58	10,621.51	-135.12	1.00	135.13	8.00	8.00	0.00
10,700.00	39.77	179.58	10,661.02	-165.75	1.23	165.75	8.00	8.00	0.00
10,750.00	43.77	179.58	10,698.30	-199.05	1.48	199.05	8.00	8.00	0.00
10,800.00	47.77	179.58	10,733.17	-234.87	1.74	234.88	8.00	8.00	0.00
10,850.00	51.77	179.58	10,765.45	-273.04	2.02	273.04	8.00	8.00	0.00
10,900.00	55.77	179.58	10,794.99	-313.36	2.32	313.37	8.00	8.00	0.00
10,950.00	59.77	179.58	10,821.65	-355.65	2.64	355.66	8.00	8.00	0.00
11,000.00	63.77	179.58	10,845.29	-399.69	2.96	399.71	8.00	8.00	0.00
11,050.00	67.77	179.58	10,865.81	-445.28	3.30	445.29	8.00	8.00	0.00
11,100.00	71.77	179.58	10,883.09	-492.19	3.65	492.20	8.00	8.00	0.00
11,150.00	75.77	179.58	10,897.06	-540.18	4.00	540.20	8.00	8.00	0.00
11,200.00	79.77	179.58	10,907.64	-589.04	4.37	589.05	8.00	8.00	0.00
11,250.00	83.77	179.58	10,914.79	-638.51	4.73	638.53	8.00	8.00	0.00
11,300.00	87.77	179.58	10,918.48	-688.37	5.10	688.38	8.00	8.00	0.00
11,323.22	89.63	179.58	10,919.00	-711.57	5.27	711.59	8.00	8.00	0.00
11,400.00	89.63	179.58	10,919.50	-788.35	5.84	788.38	0.00	0.00	0.00
11,500.00	89.63	179.58	10,920.14	-888.35	6.58	888.37	0.00	0.00	0.00
11,600.00	89.63	179.58	10,920.78	-988.34	7.33	988.37	0.00	0.00	0.00
11,700.00	89.63	179.58	10,921.42	-1,088.34	8.07	1,088.37	0.00	0.00	0.00
11,800.00	89.63	179.58	10,922.07	-1,188.34	8.81	1,188.37	0.00	0.00	0.00
11,900.00	89.63	179.58	10,922.71	-1,288.33	9.55	1,288.37	0.00	0.00	0.00
12,000.00	89.63	179.58	10,923.35	-1,388.33	10.29	1,388.36	0.00	0.00	0.00
12,100.00	89.63	179.58	10,924.00	-1,488.32	11.03	1,488.36	0.00	0.00	0.00
12,200.00	89.63	179.58	10,924.64	-1,588.32	11.77	1,588.36	0.00	0.00	0.00
12,300.00	89.63	179.58	10,925.28	-1,688.31	12.51	1,688.36	0.00	0.00	0.00
12,400.00	89.63	179.58	10,925.92	-1,788.31	13.25	1,788.36	0.00	0.00	0.00
12,500.00	89.63	179.58	10,926.57	-1,888.30	14.00	1,888.35	0.00	0.00	0.00
12,600.00	89.63	179.58	10,927.21	-1,988.30	14.74	1,988.35	0.00	0.00	0.00
12,700.00	89.63	179.58	10,927.85	-2,088.29	15.48	2,088.35	0.00	0.00	0.00
12,800.00	89.63	179.58	10,928.49	-2,188.29	16.22	2,188.35	0.00	0.00	0.00
12,900.00	89.63	179.58	10,929.14	-2,288.28	16.96	2,288.35	0.00	0.00	0.00
13,000.00	89.63	179.58	10,929.78	-2,388.28	17.70	2,388.34	0.00	0.00	0.00
13,100.00	89.63	179.58	10,930.42	-2,488.27	18.44	2,488.34	0.00	0.00	0.00
13,200.00	89.63	179.58	10,931.07	-2,588.27	19.18	2,588.34	0.00	0.00	0.00
13,300.00	89.63	179.58	10,931.71	-2,688.26	19.93	2,688.34	0.00	0.00	0.00
13,400.00	89.63	179.58	10,932.35	-2,788.26	20.67	2,788.33	0.00	0.00	0.00
13,500.00	89.63	179.58	10,932.99	-2,888.25	21.41	2,888.33	0.00	0.00	0.00
13,600.00	89.63	179.58	10,933.64	-2,988.25	22.15	2,988.33	0.00	0.00	0.00
13,700.00	89.63	179.58	10,934.28	-3,088.24	22.89	3,088.33	0.00	0.00	0.00
13,800.00	89.63	179.58	10,934.92	-3,188.24	23.63	3,188.33	0.00	0.00	0.00
13,900.00	89.63	179.58	10,935.56	-3,288.23	24.37	3,288.32	0.00	0.00	0.00
14,000.00	89.63	179.58	10,936.21	-3,388.23	25.11	3,388.32	0.00	0.00	0.00
14,100.00	89.63	179.58	10,936.85	-3,488.22	25.85	3,488.32	0.00	0.00	0.00
14,200.00	89.63	179.58	10,937.49	-3,588.22	26.60	3,588.32	0.00	0.00	0.00
14,300.00	89.63	179.58	10,938.14	-3,688.21	27.34	3,688.32	0.00	0.00	0.00
14,400.00	89.63	179.58	10,938.78	-3,788.21	28.08	3,788.31	0.00	0.00	0.00
14,500.00	89.63	179.58	10,939.42	-3,888.21	28.82	3,888.31	0.00	0.00	0.00
14,600.00	89.63	179.58	10,940.06	-3,988.20	29.56	3,988.31	0.00	0.00	0.00
14,700.00	89.63	179.58	10,940.71	-4,088.20	30.30	4,088.31	0.00	0.00	0.00
14,800.00	89.63	179.58	10,941.35	-4,188.19	31.04	4,188.31	0.00	0.00	0.00
14,900.00	89.63	179.58	10,941.99	-4,288.19	31.78	4,288.30	0.00	0.00	0.00



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Project:	Lea County, New Mexico	MD Reference:	KB @ 3594.00usft
Site:	Copperhead 18 State 4H	North Reference:	Grid
Well:	C18S 4H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Wellbore		
Design:	Design #2		

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)
15,000.00	89.63	179.58	10,942.63	-4,388.18	32.52	4,388.30	0.00	0.00	0.00
15,100.00	89.63	179.58	10,943.28	-4,488.18	33.27	4,488.30	0.00	0.00	0.00
15,200.00	89.63	179.58	10,943.92	-4,588.17	34.01	4,588.30	0.00	0.00	0.00
15,212.53	89.63	179.58	10,944.00	-4,600.70	34.10	4,600.83	0.00	0.00	0.00

Design Targets

Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
- hit/miss target									
- Shape									
C18S 4H BHL	0.00	0.00	10,944.00	-4,600.70	34.10	441,322.60	724,087.70	32.211	-103.609
- plan hits target center									
- Point									