

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

OCD Hobbs

FORM APPROVED
OMB NO. 1004-0135
Expires: July 31, 2010

SUNDRY NOTICES AND REPORTS ON WELLS
Do not use this form for proposals to drill or to re-enter an abandoned well. Use form 3160-3 (APD) for such proposals.

SUBMIT IN TRIPLICATE - Other instructions on reverse side.

1. Type of Well ☒ Oil Well ☐ Gas Well ☐ Other		5. Lease Serial No. NMNM109758	
2. Name of Operator OXY USA INCORPORATED		6. If Indian, Allottee or Tribe Name	
3a. Address HOUSTON, TX 77210-4294		7. If Unit or CA/Agreement, Name and/or No. NMNM126140	
3b. Phone No. (include area code) Ph: 432.685.5717 Fx: 432.685.5742		8. Well Name and No. SPEAK EASY FEDERAL UNIT 4H	
4. Location of Well (Footage, Sec., T., R., M., or Survey Description) Sec 1 T22S R32E SWNW 1980FNL 330FWL 32.422522 N Lat, 103.635391 W Lon		9. API Well No. 30-025-42266-00-X1	
		10. Field and Pool, or Exploratory BOOTLEG RIDGE	
		11. County or Parish, and State LEA COUNTY, NM	

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

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

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

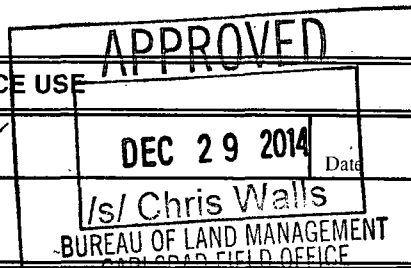
OXY USA Inc. respectfully requests approval for the following changes to the drilling plan:

1. Change the target formation from the Brushy Canyon to the 3rd Bone Spring.
2. Extend the BHL 150' past the east hardline to allow for our shoe track and perforating guns, see attached for amended C-102 plat and amended directional drilling plan.

Proposed TD - 16317'M 11869'V

3. Request casing design modification, to drill the well with smaller bit sizes:
14-3/4" surface hole w/ 11-3/4" csg, 10-5/8" intermediate hole w/ 8-5/8" csg and 7-7/8" production hole w/ 5-1/2" csg. Details are below.

14. I hereby certify that the foregoing is true and correct. Electronic Submission #278797 verified by the BLM Well Information System For OXY USA INCORPORATED, sent to the Hobbs Committed to AFMSS for processing by LINDA JIMENEZ on 11/20/2014 (15LJ0369SE)	
Name (Printed/Typed) DAVID STEWART	Title SR. REGULATORY ADVISOR
Signature (Electronic Submission)	Date 11/12/2014
THIS SPACE FOR FEDERAL OR STATE OFFICE USE	
Approved By _____	Title _____
Conditions of approval, if any, are attached. Approval of this notice does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.	
Office _____	



Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, make it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

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

JAN 07 2015

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Additional data for EC transaction #278797 that would not fit on the form

32. Additional remarks, continued

a. Surface Casing

11-3/4" 47# J-55 BT&C new csg @ 0-1100', 14-3/4' hole w/ 8.6# mud

Coll Rating (psi)-1510 Burst Rating (psi)-3070
SF Coll-3.89 SF Burst-1.36 SF Ten-5.08

b. Intermediate Casing

8-5/8" 32# J-55 BT&C new csg @ 0-4700', 10-5/8" hole w/ 10.2# mud

Coll Rating (psi)-2530 Burst Rating (psi)-3930
SF Coll-2.14 SF Burst-1.26 SF Ten-2.19

c. Production Casing

5-1/2" 17# P-110 BT&C new csg @ 0-16317'M, 7-7/8" hole w/ 9.2# mud

Coll Rating (psi)-6290 Burst Rating (psi)-7740
SF Coll-1.96 SF Burst-1.21 SF Ten-1.92

Collapse and burst loads calculated using Stress Check with anticipated loads, see attached for design assumptions

4. Cement program adjustment to the new bit/casing sizes. Cement program modifications detailed below.

a. Surface - Circulate cement to surface w/ 480sx PP cmt w/ 1% CaCl₂ + .25#/sx Poly-E-Flake + 4% Bentonite, 13.5ppg 1.73 yield 951# 24hr CS 125% Excess followed by 220sx PP cmt w/ 2% CaCl₂, 14.8ppg 1.35 yield 1346# 24hr CS 125% Excess.

b. Intermediate - Circulate cement to surface w/ 750sx HES light PP cmt w/ 5% Salt + .35% HR-800 + .125#/sx Poly-E-Flake + 5#/sx Kol-Seal, 12.9ppg 1.88 yield 734# 24hrs CS 105% Excess followed by 325sx PP cmt, 14.8ppg 1.33 yield 1849# 24hr CS 105% Excess.

c. Production - Circulate cement w/ 860sx Tuned Light (TM) system cmt w/ 3#/sx Kol-Seal + .125#/sx Poly-E-Flake + .8% HR-601, 9.76ppg (10.2ppg-downhole) 3.46 yield 788# 24hr CS 100% Excess followed by 820sx Super H cmt w/ 3#/sx salt + .3% CFR-3 + .5% Halad(R)-344 + 2#/sx Kol-Seal, 13.2ppg 1.65 yield 1462# 24hr CS 40% Excess.

DV tool @ 4750'. If cement comes to surface during first stage cement job we will drop the cancelation cone for the DV tool. Add second stage contingency cement in the event we do not circulate cement to surface during the first stage.

Contingency 2nd Stage - Cement w/ 390sx Econocement + 3#/sx salt, 12.4ppg 2.05 yield 500# 26hr CS 10% Excess followed by 100sx PP cmt, 14.8ppg 1.33 yield 1849# 24hr CS 10# excess

Description of Cement Additives: Calcium Chloride, Salt (Accelerator); CFR-3 (Dispersant); Bentonite (Light Weight Additive); Kol-Seal, Poly-E-Flake (Lost Circulation Additive); Halad-344 (Low Fluid Loss Control); HR-601, HR-800 (Retarder)
The above cement volumes could be revised pending the caliper measurement.

5. Additional Formation Estimated Formation Tops

Bone Spring - 8692'
1st Bone Spring - 9867'
2nd Bone Spring - 10117'
3rd Bone Spring - 11017'

6. Mud Program

Depth	Mud WT.	Vis Sec	Fluid Loss	Type
0-1100'	8.4-8.9	32-36	NC	Fresh Water/Spud Mud
1100-4700'	9.8-10.2	28-35	NC	Brine
4700-11180'	8.8-9.2	26-32	NC	Cut Brine
11180-12200'	8.8-9.2	26-32	<10	Cut Brine
12200-16317'	9.2-9.4	32-50	NC	Cut Brine

7. Anticipated BHP 5451psi - Pressure Gradient .46psi

District I
1621 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 Grande Road, Alamo, NM 87410
Phone: (505) 334-6178 Fax: (505) 334-6179
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

API Number 30-025-	Pool Code 51683	Pool Name Red Tank Bare Spring
Property Code 39664	Property Name Federal	Well Number 4H
OGRID No. 116696	Operator Name OXY USA INC.	Elevation 3642.2'

Surface Location

UL or lot no.	Section	Township	Range	Lot Ids	Feet from the	North/South line	Feet from the	East/West line	County
E	1	22 SOUTH	32 EAST, N.M.P.M.		1980'	NORTH	330'	WEST	LEA

Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Ids	Feet from the	North/South line	Feet from the	East/West line	County
H	1	22 SOUTH	32 EAST, N.M.P.M.		1980'	NORTH	180'	EAST	LEA

Dedicated Acres	Joint or Infill	Consolidation Code	Order No.
160	N		

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.

				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 undivided 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: <i>David Stewart</i> Date: <i>8/7/14</i> Printed Name: <i>David Stewart Sr. Reg. Adv.</i> E-mail Address: <i>David.Stewart@oxy.com</i>
SURVEYOR CERTIFICATION I hereby certify that the well location shown on this plat was plotted from a true and correct survey made by me or under my supervision, and that the same is true and correct to the best of my belief. Date of Survey: <i>SEPTEMBER 25, 2014</i> Signature and Stamp: <i>James G. Paul</i> 15079 Professional Stamp: <i>15079</i>				

OXY USA Inc.
Speak Easy Federal Unit #4

Casing Design Assumptions:

Burst Loads

CSG Test (Surface)

- Internal: Displacement fluid + 70% CSG Burst rating
- External: Pore Pressure from section TD to surface

CSG Test (Intermediate)

- Internal: Displacement fluid + 70% CSG Burst rating
- External: Pore Pressure from the Intermediate hole TD to Surface CSG shoe and MW of the drilling mud that was in the hole when the CSG was run to surface

CSG Test (Production)

- Internal: Fresh Water Displacement fluid + 80% CSG Burst rating
- External: Pore Pressure from the well TD the Intermediate CSG shoe and MW of the drilling mud that was in the hole when the CSG was run to surface

Gas Kick (Surface/Intermediate)

- Internal: Gas Kick based on Pore Pressure or Fracture Gradient @ CSG shoe with a gas 0.115psi/ft Gas gradient to surface while drilling the next hole section (e.g. Gas kick while drilling the production hole section is a burst load used to design the intermediate CSG)
- External: Pore Pressure from section TD to previous CSG shoe and MW of the drilling mud that was in the hole when the CSG was run to surface

Stimulation (Production)

- Internal: Displacement fluid + Max Frac treating pressure (not to exceed 80% CSG Burst rating)
- External: Pore Pressure from the well TD to the Intermediate CSG shoe and 8.5 ppg MWE to surface

Collapse Loads

Lost Circulation (Surface/Intermediate)

- Internal: Losses experienced while drilling the next hole section (e.g. losses while drilling the production hole section are used as a collapse load to design the intermediate CSG). After losses there will be a column of mud inside the CSG with an equivalent weight to the Pore Pressure of the lost circulation zone
- External: MW of the drilling mud that was in the hole when the CSG was run

Cementing (Surface/Intermediate/Production)

- Internal: Displacement Fluid
- External: Cement Slurries to TOC, MW to surface

Full Evacuation (Production)

- Internal: Atmospheric Pressure
- External: MW of the drilling mud that was in the hole when the CSG was run

Tension Loads

Running CSG (Surface/Intermediate/Production)

- Axial load of the buoyant weight of the string plus either 100 klb over-pull or string weight in air, whichever is less

Green Cement (Surface/Intermediate/Production)

- Axial load of the buoyant weight of the string plus the cement plug bump pressure (Final displacement + 500 psi)

Burst, Collapse and Tensile SF are calculated using Landmark's Stress Check (Casing Design) software.



Speakeasy Federal Unit 4H

SEFU 4H

Northing: 518131.20

Easting: 715362.60

Design #1

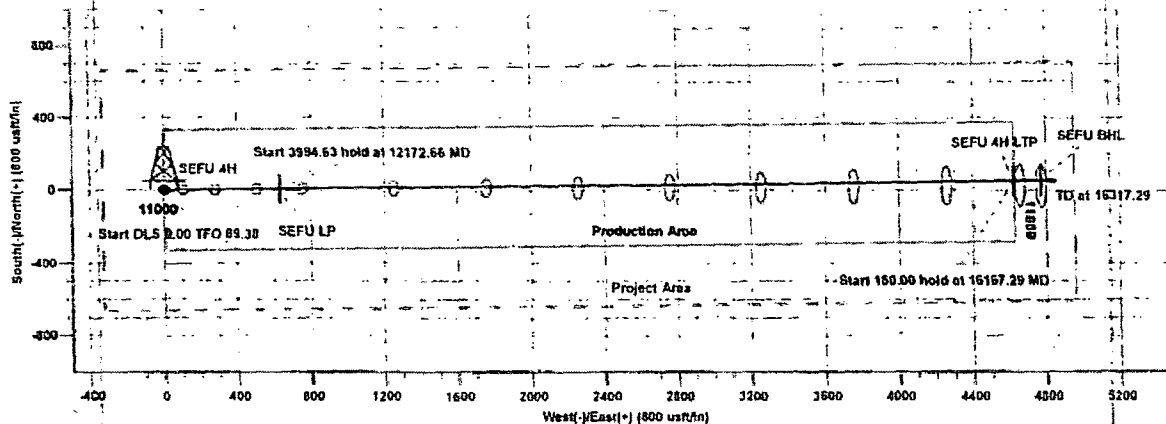
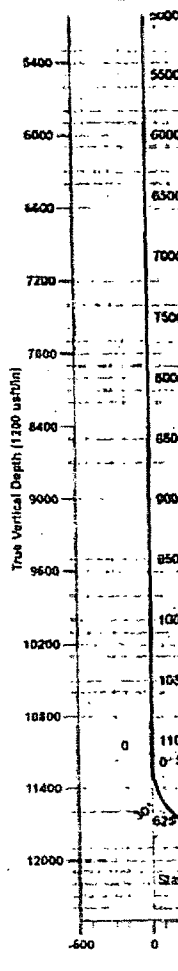


To convert Magnetic North to Grid, Add 0.37°
To convert True North to Grid, Subtract 0.37°

Adjusts to Grid North
True North -0.37°
Magnetic North 0.67°

Magnetic Field
Strength 48413.3nT
Dip Angle 60.25°
Date 8/4/2014
Model IGRF2010

RHO 3667.20ust
Gr 3642.20



SECTION DETAILS									
MD	Inc	Alt	TVD	+N/S	+E/W	Deg	IFace	VFace	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
11862.63	0.00	0.00	11869.03	0.00	0.00	0.00	0.00	0.00	
12172.66	89.28	89.38	11817.20	0.79	0.28 61	9.00	89.38	628.65	
16167.29	89.28	89.38	11869.06	49.00	4622.70	0.00	0.00	4622.97	SEFU 4H LTP
16317.29	89.28	89.38	11869.06	51.52	4772.68	0.00	0.00	4772.86	SEFU BHL

WELL DETAILS SEFU 4H			
Ground Level	3642.20	Latitude	Longitude
Northing	Easting	32° 25' 21.082 N	103° 38' 7.409 W
0.00	0.00	518131.20	715362.60

DESIGN TARGET DETAILS					
Name	TVD	+N/S	+E/W	Northing	Easting
SEFU LP	11817.20	0.79	0.28 61	518131.99	715891.21
SEFU 4H LTP	11867.20	49.00	4622.70	518161.10	716585.30
SEFU BHL	11869.06	51.52	4772.68	518162.72	720115.28

SITE DETAILS: Speakeasy Federal Unit 4H	
Site Centre Northing	518131.20
Easting	715362.60
Positional Uncertainty	0.00
Convergence	0.37
Local North	Grid

PROJECT DETAILS:	
Lea County, New Mexico	
Geoid System US State Plane 1927 (Exact solution)	
Datum NAD 1927 (NAD 83 CONUS)	
Elevation Chart 1966	
Zone New Mexico East 3001	
System Datum Mean Sea Level	

Judge Fletcher
18 11, August 04 2014
Scientific Drilling Int'l
633 Rankin Ct
Houston, Tx 77073



Scientific Drilling, Int'l Planning Report

Database:	EDM 5000 1 Single User Db	Local Co-ordinate Reference:	Well SEFU 4H
Company:	OXY	TVD Reference:	RKB @ 3667.20usft
Project:	Lea County, New Mexico	MD Reference:	RKB @ 3667.20usft
Site:	Speakeasy Federal Unit 4H	North Reference:	Grid
Well:	SEFU 4H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1		

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:	Speakeasy Federal Unit 4H				
Site Position:		Northings:	518,131.20 usft	Latitude:	32° 25' 21.082 N
From:	Map	Easting:	715,362.60 usft	Longitude:	103° 38' 7.409 W
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.37 "

Well:	SEFU 4H					
Well Position	+N-S	0.00 usft	Northings:	518,131.20 usft	Latitude:	32° 25' 21.082 N
	+E-W	0.00 usft	Easting:	715,362.60 usft	Longitude:	103° 38' 7.409 W
Position Uncertainty		0.00 usft	Wellhead Elevation:	0.00 usft	Ground Level:	3,642.20 usft

Wellbore:	Wellbore #1
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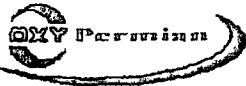
Magnetics	Model Name	Sample Date	Declination	Dip Angle	Field Strength
	IGRF2010	8/4/2014	(°)	(°)	(nT)
			7.24	60.28	48,413

Design:	Design #1
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Audit Notes:				
Version:	Phase:	PROTOTYPE	Tie On Depth:	0.00

Vertical Section:	Depth From (TVD)	+N-S	+E-W	Direction
	(usft)	(usft)	(usft)	(°)
	11,867.20	0.00	0.00	89.38

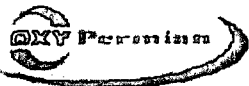
Plan Sections:										
Measured	Inclination	Azimuth	Vertical	+N-S	+E-W	Dogleg	Build	Turn	TFD	Target
Depth	(°)	(°)	Depth	(usft)	(usft)	Rate	Rate	Rate	(°)	
(usft)			(usft)			(°/100usft)	(°/100usft)	(°/100usft)		
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
11,180.63	0.00	0.00	11,180.63	0.00	0.00	0.00	0.00	0.00	0.00	
12,172.66	89.28	89.38	11,817.20	6.79	628.61	9.00	9.00	9.01	89.38	
16,167.29	89.28	89.38	11,867.20	49.90	4,622.70	0.00	0.00	0.00	0.00	SEFU 4H LTP
16,317.29	89.28	89.38	11,869.08	51.52	4,772.68	0.00	0.00	0.00	0.00	SEFU BHL



Scientific Drilling, Int'l
Planning Report

Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well SEFU 4H
Company:	OXY	TVD Reference:	RKB @ 3667.20usft
Project:	Lea County, New Mexico	MD Reference:	RKB @ 3667.20usft
Site:	Speakeasy Federal Unit 4H	North Reference:	Gnd
Well:	SEFU 4H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1		

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, Int'l Planning Report

Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well SEFU 4H
Company:	OXY	TVD Reference:	RKB @ 3667.20usft
Project:	Lea County, New Mexico	MD Reference:	RKB @ 3667.20usft
Site:	Speakeasy Federal Unit 4H	North Reference:	Grid
Well:	SEFU 4H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1		

Planned Survey

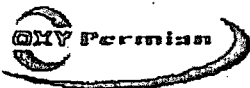
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	N/S (usft)	E/W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
5,400.00	0.00	0.00	5,400.00	0.00	0.00	0.00	0.00	0.00	0.00
5,500.00	0.00	0.00	5,500.00	0.00	0.00	0.00	0.00	0.00	0.00
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
10,200.00	0.00	0.00	10,200.00	0.00	0.00	0.00	0.00	0.00	0.00
10,300.00	0.00	0.00	10,300.00	0.00	0.00	0.00	0.00	0.00	0.00
10,400.00	0.00	0.00	10,400.00	0.00	0.00	0.00	0.00	0.00	0.00
10,500.00	0.00	0.00	10,500.00	0.00	0.00	0.00	0.00	0.00	0.00
10,600.00	0.00	0.00	10,600.00	0.00	0.00	0.00	0.00	0.00	0.00
10,700.00	0.00	0.00	10,700.00	0.00	0.00	0.00	0.00	0.00	0.00



Scientific Drilling, Int'l Planning Report

Database:	EDM 5000 1 Single User Db	Local Co-ordinate Reference:	Well SEFU 4H
Company:	OXY	TVD Reference:	RKB @ 3667 20usft
Project:	Lea County, New Mexico	MD Reference:	RKB @ 3667 20usft
Site:	Speakeasy Federal Unit 4H	North Reference:	Grid
Well:	SEFU 4H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1		

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)
10,800.00	0.00	0.00	10,800.00	0.00	0.00	0.00	0.00	0.00	0.00
10,900.00	0.00	0.00	10,900.00	0.00	0.00	0.00	0.00	0.00	0.00
11,000.00	0.00	0.00	11,000.00	0.00	0.00	0.00	0.00	0.00	0.00
11,100.00	0.00	0.00	11,100.00	0.00	0.00	0.00	0.00	0.00	0.00
11,180.63	0.00	0.00	11,180.63	0.00	0.00	0.00	0.00	0.00	0.00
11,200.00	1.74	89.38	11,200.00	0.00	0.29	0.29	9.00	9.00	0.00
11,300.00	10.74	89.38	11,299.30	0.12	11.16	11.16	9.00	9.00	0.00
11,400.00	19.74	89.38	11,395.68	0.40	37.42	37.42	9.00	9.00	0.00
11,500.00	28.74	89.38	11,486.77	0.85	78.44	78.44	9.00	9.00	0.00
11,600.00	37.74	89.38	11,570.32	1.44	133.20	133.21	9.00	9.00	0.00
11,700.00	46.74	89.38	11,644.27	2.16	200.35	200.36	9.00	9.00	0.00
11,800.00	55.74	89.38	11,706.81	3.00	278.25	278.27	9.00	9.00	0.00
11,890.44	63.88	89.38	11,752.25	3.85	356.35	356.37	9.00	9.00	0.00
SEFU LP2									
11,900.00	64.74	89.38	11,756.39	3.94	364.97	364.99	9.00	9.00	0.00
12,000.00	73.74	89.38	11,791.80	4.95	458.38	458.40	9.00	9.00	0.00
SEFU PP2									
12,100.00	82.74	89.38	11,812.15	6.00	556.17	556.21	9.00	9.00	0.00
12,172.66	89.28	89.38	11,817.20	6.79	628.61	628.65	9.00	9.00	0.00
SEFU LP									
12,200.00	89.28	89.38	11,817.54	7.08	655.95	655.99	0.00	0.00	0.00
12,300.00	89.28	89.38	11,818.79	8.16	755.94	755.98	0.00	0.00	0.00
12,400.00	89.28	89.38	11,820.05	9.24	855.92	855.97	0.00	0.00	0.00
12,500.00	89.28	89.38	11,821.30	10.32	955.91	955.96	0.00	0.00	0.00
12,600.00	89.28	89.38	11,822.55	11.40	1,055.90	1,055.96	0.00	0.00	0.00
12,700.00	89.28	89.38	11,823.80	12.48	1,155.88	1,155.95	0.00	0.00	0.00
12,800.00	89.28	89.38	11,825.05	13.56	1,255.87	1,255.94	0.00	0.00	0.00
12,900.00	89.28	89.38	11,826.30	14.64	1,355.85	1,355.93	0.00	0.00	0.00
13,000.00	89.28	89.38	11,827.56	15.72	1,455.84	1,455.93	0.00	0.00	0.00
13,100.00	89.28	89.38	11,828.81	16.79	1,555.83	1,555.92	0.00	0.00	0.00
13,200.00	89.28	89.38	11,830.06	17.87	1,655.81	1,655.91	0.00	0.00	0.00
13,300.00	89.28	89.38	11,831.31	18.95	1,755.80	1,755.90	0.00	0.00	0.00
13,400.00	89.28	89.38	11,832.56	20.03	1,855.79	1,855.89	0.00	0.00	0.00
13,500.00	89.28	89.38	11,833.81	21.11	1,955.77	1,955.89	0.00	0.00	0.00
13,600.00	89.28	89.38	11,835.07	22.19	2,055.76	2,055.88	0.00	0.00	0.00
13,700.00	89.28	89.38	11,836.32	23.27	2,155.74	2,155.87	0.00	0.00	0.00
13,800.00	89.28	89.38	11,837.57	24.35	2,255.73	2,255.86	0.00	0.00	0.00
13,900.00	89.28	89.38	11,838.82	25.43	2,355.72	2,355.85	0.00	0.00	0.00
14,000.00	89.28	89.38	11,840.07	26.51	2,455.70	2,455.85	0.00	0.00	0.00
14,100.00	89.28	89.38	11,841.32	27.59	2,555.69	2,555.84	0.00	0.00	0.00
14,200.00	89.28	89.38	11,842.58	28.67	2,655.68	2,655.83	0.00	0.00	0.00
14,300.00	89.28	89.38	11,843.83	29.75	2,755.66	2,755.82	0.00	0.00	0.00
14,400.00	89.28	89.38	11,845.08	30.83	2,855.65	2,855.82	0.00	0.00	0.00
14,500.00	89.28	89.38	11,846.33	31.90	2,955.64	2,955.81	0.00	0.00	0.00
14,600.00	89.28	89.38	11,847.58	32.98	3,055.62	3,055.80	0.00	0.00	0.00
14,700.00	89.28	89.38	11,848.83	34.06	3,155.61	3,155.79	0.00	0.00	0.00
14,800.00	89.28	89.38	11,850.09	35.14	3,255.59	3,255.78	0.00	0.00	0.00
14,900.00	89.28	89.38	11,851.34	36.22	3,355.58	3,355.78	0.00	0.00	0.00
15,000.00	89.28	89.38	11,852.59	37.30	3,455.57	3,455.77	0.00	0.00	0.00
15,100.00	89.28	89.38	11,853.84	38.38	3,555.55	3,555.76	0.00	0.00	0.00
15,200.00	89.28	89.38	11,855.09	39.46	3,655.54	3,655.75	0.00	0.00	0.00
15,300.00	89.28	89.38	11,856.34	40.54	3,755.53	3,755.75	0.00	0.00	0.00
15,400.00	89.28	89.38	11,857.60	41.62	3,855.51	3,855.74	0.00	0.00	0.00



Scientific Drilling, Int'l Planning Report

Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well SEFU 4H
Company:	OXY	TVD Reference:	RKB @ 3667.20usft
Project:	Lea County, New Mexico	MD Reference:	RKB @ 3667.20usft
Site:	Speakeasy Federal Unit 4H	North Reference:	Grid
Well:	SEFU 4H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1		

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)	
15,500.00	89.28	89.38	11,858.85	42.70	3,955.50	3,955.73	0.00	0.00	0.00	
15,600.00	89.28	89.38	11,860.10	43.78	4,055.49	4,055.72	0.00	0.00	0.00	
15,700.00	89.28	89.38	11,861.35	44.86	4,155.47	4,155.71	0.00	0.00	0.00	
15,800.00	89.28	89.38	11,862.60	45.94	4,255.46	4,255.71	0.00	0.00	0.00	
15,900.00	89.28	89.38	11,863.85	47.02	4,355.44	4,355.70	0.00	0.00	0.00	
16,000.00	89.28	89.38	11,865.11	48.09	4,455.43	4,455.69	0.00	0.00	0.00	
16,100.00	89.28	89.38	11,866.36	49.17	4,555.42	4,555.68	0.00	0.00	0.00	
16,167.29	89.28	89.38	11,867.20	49.90	4,622.70	4,622.97	0.00	0.00	0.00	
SEFU 4H LTP										
16,200.00	89.28	89.38	11,867.61	50.25	4,655.40	4,655.67	0.00	0.00	0.00	
16,300.00	89.28	89.38	11,868.86	51.33	4,755.39	4,755.67	0.00	0.00	0.00	
16,317.29	89.28	89.38	11,869.08	51.52	4,772.68	4,772.96	0.00	0.00	0.00	
SEFU BHL										

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
SEFU LP			0.00	0.00	11,817.20	6.79	628.61	518,137.99	715,991.21	32° 25' 21.109 N 103° 38' 0.075 W
- plan hits target center										
- Point										
SEFU 4H LTP			0.00	0.00	11,867.20	49.90	4,622.70	518,181.10	719,985.30	32° 25' 21.274 N 103° 37' 13.476 W
- plan hits target center										
- Point										
SEFU BHL			0.00	0.00	11,869.08	51.52	4,772.68	518,182.72	720,135.28	32° 25' 21.280 N 103° 37' 11.726 W
- plan hits target center										
- Point										