

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

NM OIL CONSERVATION

ARTESIA DISTRICT
OCD Artesia
JUN 11 2015

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.

RECEIVED

SUBMIT IN TRIPLICATE - Other instructions on reverse side.

1. Type of Well ☒ Oil Well ☐ Gas Well ☐ Other		5. Lease Serial No. NMNM114356
2. Name of Operator CIMAREX ENERGY COMPANY Contact: HOPE KNAULS E-Mail: hknauls@cimarex.com		6. If Indian, Allottee or Tribe Name
3a. Address 202 S. CHEYENNE AVE TULSA, OK 74103	3b. Phone No. (include area code) Ph: 918-585-1100	7. If Unit or CA/Agreement, Name and/or No.
4. Location of Well (Footage, Sec., T., R., M., or Survey Description) Sec 23 T23S R30E 225FSL 250FEL		8. Well Name and No. SANDY FEDERAL 21H
		9. API Well No. 30-015-41791
		10. Field and Pool, or Exploratory FORTY NINER RIDGE, BS
		11. County or Parish, and State EDDY COUNTY, NM

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

TYPE OF SUBMISSION	TYPE OF ACTION			
☒ Notice of Intent	☐ Acidize	☐ Deepen	☐ Production (Start/Resume)	☐ Water Shut-Off
☒ Subsequent Report	☐ Alter Casing	☐ Fracture Treat	☐ Reclamation	☐ Well Integrity
☐ Final Abandonment Notice	☐ Casing Repair	☐ New Construction	☐ Recomplete	☒ Other Drilling Operations
	☐ 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 recompleat horizontally, give subsurface locations and measured and true vertical depths of all pertinent markers and zones. Attach the Bond under which the work will be performed or provide the Bond No. on file with BLM/BIA. Required subsequent reports shall be filed within 30 days following completion of the involved operations. If the operation results in a multiple completion or recompleat in a new interval, a Form 3160-4 shall be filed once testing has been completed. Final Abandonment Notices shall be filed only after all requirements, including reclamation, have been completed, and the operator has determined that the site is ready for final inspection.)

Please note that the bottom hole location has changed from original APD.

Please see attached:

As drilled plat
End of Well directional survey

OCD 6/17/15
Accepted for record
NMOC

14. I hereby certify that the foregoing is true and correct. Electronic Submission #290882 verified by the BLM Well Information System For CIMAREX ENERGY COMPANY, sent to the Carlsbad Committed to AFMSS for processing by DEBORAH HAM on 05/14/2015		ACCEPTED FOR RECORD MAY 29 2015 D. Ham
Name (Printed/Typed) HOPE KNAULS	Title REGULATORY TECHNICIAN	
Signature (Electronic Submission)	Date 02/09/2015	
THIS SPACE FOR FEDERAL OR STATE OFFICE USE		
Approved By _____	Title _____	BUREAU OF LAND MANAGEMENT CARLSBAD FIELD OFFICE
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.

**** OPERATOR-SUBMITTED ** OPERATOR-SUBMITTED ** OPERATOR-SUBMITTED ****

NM OIL CONSERVATION

ARTESIA DISTRICT

JUN 11 2015

DISTRICT I

1685 N. French Dr., Hobbs, NM 88240
Phone (505) 393-6162 Fax (505) 393-0720

DISTRICT II

811 S. First St., Artesia, NM 88210
Phone (505) 740-1203 Fax (505) 740-0720

DISTRICT III

1000 Rio Brazos Rd., Aztec, NM 87410
Phone (505) 334-6170 Fax (505) 334-6170

DISTRICT IV

1220 S. St. Francis Dr., Santa Fe, NM 87505
Phone (505) 478-3400 Fax (505) 478-5482

State of New Mexico
Energy, Minerals and Natural Resources Department

RECEIVED

Form C-102

Revised August 1, 2011

Submit one copy to appropriate
District Office

OIL CONSERVATION DIVISION

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

AS DRILLED

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

API Number 30015-41791	Pool Code 24720	Pool Name Forty Niner Ridge, Bone Springs
Property Code 39937	Property Name SANDY FEDERAL	Well Number 21H
GRID No. 251099	Operator Name CIMAREX ENERGY CO.	Elevation 3294'

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	23	23 S	30 E		225	SOUTH	250	EAST	EDDY

Bottom Hole Location If Different From Surface

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
B	24	23 S	30 E		331	NORTH	2335	EAST	EDDY

Dedicated Acres	Joint or Infill	Consolidation Code	Order No.
280			

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

N: 472387.2 E: 697466.6 NAD 83 N: 472394.1 E: 690167.9 NAD 83 N: 472401.4 E: 692851.2 NAD 83 N: 472418.5 E: 695533.1 NAD 83 N: 469742.8 E: 697511.3 NAD 83 N: 469700.8 E: 692869.0 NAD 83 N: 467095.5 E: 697637.2 NAD 83 N: 467107.8 E: 690213.4 NAD 83 N: 467138.7 E: 695503.8 NAD 83 N: 467156.8 E: 698238.1 NAD 83 N: 467119.3 E: 692805.3 NAD 83 N: 464477.1 E: 692095.0 NAD 83 N: 464515.5 E: 698251.3 NAD 83 N: 461834.7 E: 692903.2 NAD 83 N: 461854.9 E: 695502.8 NAD 83 N: 461874.2 E: 698263.2 NAD 83	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: <i>Terri Stathem</i> Date: 2-9-15 Printed Name: Terri Stathem Email Address: tstathem@cimarex.com SURVEYOR CERTIFICATION I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief. Date Surveyed: 2-9-15 Signature of Professional Surveyor: <i>Gary L. Jones</i> Certificate No. Gary L. Jones 7977 BASIN SURVEYS 28775
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Cimarex



Cactus 137

Rev4c

A Schlumberger Company

WELL				Sandy Federal #21H				FIELD				NM Eddy County				STRUCTURE				Cactus 137																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																							
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Grid North
Tot Corr (M->G 7.2227°)
Mag Dec (7.484°)
Grid Conv (0.2615°)

- Legend
- 100' to 1000' TVD
 - 1000' to 1500' TVD
 - 1500' to 2000' TVD
 - 2000' to 2500' TVD
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 - 99000' to 99500' TVD
 - 99500' to 100000' TVD

Vertical Section (ft) Azim = 34.58° Scale = 1:2500 (ft) Origin = 0 N-S, 0 E-W

Vertical Section (ft) Azim = 34.58° Scale = 1:2500 (ft) Origin = 0 N-S, 0 E-W

Drawn By: R. Schuler
Title: Cactus 137
Created By: J. P. 11.2011 (64 47 02 PM)
Created Date: 11/11/2011
Reviewed By: [blank]
Reviewed Date: [blank]



Cimarex Sandy Federal #21H XEM+MWD 0ft to 15711ft MD

(Def Survey)

PATHFINDER
A Schlumberger Company

Report Date: June 03, 2014 - 04:56 PM
Client: Cimarex
Field: NM Eddy County (NAD 83)
Structure / Slot: Cactus 137 / Cimarex Sandy Federal #21H
Well: Cimarex Sandy Federal #21H
Borehole: Original Borehole
UWI / API#: Unknown / Unknown
Survey Name: Cimarex Sandy Federal #21H XEM+MWD 0ft to 15711ft MD
Survey Date: April 24, 2014
Tort / AHD / DDI / ERD Ratio: 250.209 * / 6481.937 ft / 6.410 / 0.654
Coordinate Reference System: NAD83 New Mexico State Plane, Eastern Zone, US Feet
Location Lat / Long: N 32° 17' 1.86523", W 103° 50' 37.49970"
Location Grid N/E Y/X: N 467343.200 ftUS, E 692633.900 ftUS
CRS Grid Convergence Angle: 0.2615°
Grid Scale Factor: 0.99993531

Survey / DLS Computation: Minimum Curvature / Lubinski
Vertical Section Azimuth: 34.584° (Grid North)
Vertical Section Origin: 0.000 ft, 0.000 ft
TVD Reference Datum: KB
TVD Reference Elevation: 3318.000 ft above
Seabed / Ground Elevation: 3294.000 ft above
Magnetic Declination: 7.482°
Total Gravity Field Strength: 998.5021mgn (9.80665 Based)
Total Magnetic Field Strength: 48313.019 nT
Magnetic Dip Angle: 60.109°
Declination Date: April 24, 2014
Magnetic Declination Model: BGGM 2013
North Reference: Grid North
Grid Convergence Used: 0.2615°
Total Corr Mag North->Grid North: 7.2206°

NM OIL CONSERVATION
ARTESIA DISTRICT

JUN 11 2015

RECEIVED

Local Coord Referenced To: Structure Reference Point

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	TVDSS (ft)	DLS (°/100ft)	NS (ft)	EW (ft)	Northing (ftUS)	Easting (ftUS)	Latitude (N/S ° ' ")	Longitude (E/W ° ' ")
SHL Sandy Federal #21H	0.00	0.00	90.00	0.00	0.00	-3318.00	N/A	0.00	0.00	467343.20	692633.90	N 32 17 1.87	W 103 50 37.50
	140.15	0.09	7.91	140.15	0.10	-3177.85	0.06	0.11	0.02	467343.31	692633.92	N 32 17 1.87	W 103 50 37.50
	210.44	0.31	90.57	210.44	0.25	-3107.56	0.44	0.16	0.21	467343.36	692634.11	N 32 17 1.87	W 103 50 37.50
	241.66	0.40	6.95	241.66	0.40	-3076.34	1.53	0.27	0.31	467343.47	692634.21	N 32 17 1.87	W 103 50 37.50
	266.32	0.40	82.74	266.32	0.53	-3051.68	1.99	0.37	0.41	467343.57	692634.31	N 32 17 1.87	W 103 50 37.49
	303.76	0.40	113.24	303.76	0.64	-3014.24	0.56	0.33	0.66	467343.53	692634.56	N 32 17 1.87	W 103 50 37.49
	358.00	0.40	32.34	358.00	0.87	-2960.00	0.96	0.42	0.93	467343.62	692634.83	N 32 17 1.87	W 103 50 37.49
	438.89	0.09	333.37	438.89	1.18	-2879.11	0.45	0.71	1.05	467343.91	692634.95	N 32 17 1.87	W 103 50 37.49
	532.49	0.09	258.04	532.49	1.17	-2785.51	0.12	0.76	0.95	467343.96	692634.85	N 32 17 1.87	W 103 50 37.49
	623.61	0.09	157.94	623.61	1.07	-2694.39	0.15	0.68	0.91	467343.88	692634.81	N 32 17 1.87	W 103 50 37.49
	752.92	0.22	188.26	752.92	0.80	-2565.08	0.12	0.34	0.91	467343.54	692634.81	N 32 17 1.87	W 103 50 37.49
	848.39	0.00	164.13	848.39	0.63	-2469.61	0.23	0.16	0.88	467343.36	692634.78	N 32 17 1.87	W 103 50 37.49
	941.55	0.09	81.47	941.55	0.68	-2376.45	0.10	0.17	0.95	467343.37	692634.85	N 32 17 1.87	W 103 50 37.49
	1035.00	0.22	12.56	1034.99	0.90	-2283.01	0.22	0.36	1.07	467343.56	692634.97	N 32 17 1.87	W 103 50 37.49
	1222.00	0.22	65.65	1221.99	1.54	-2096.01	0.11	0.85	1.47	467344.05	692635.37	N 32 17 1.87	W 103 50 37.48
	1316.20	0.09	263.54	1316.19	1.64	-2001.81	0.33	0.92	1.56	467344.12	692635.46	N 32 17 1.87	W 103 50 37.48
	1403.37	0.22	25.13	1403.36	1.76	-1914.64	0.32	1.06	1.57	467344.26	692635.47	N 32 17 1.88	W 103 50 37.48
	1499.29	0.09	69.34	1499.28	2.01	-1818.72	0.17	1.26	1.71	467344.46	692635.61	N 32 17 1.88	W 103 50 37.48
	1596.00	0.09	268.15	1595.99	2.03	-1722.01	0.18	1.28	1.71	467344.48	692635.61	N 32 17 1.88	W 103 50 37.48
	1688.70	0.09	312.36	1688.69	1.99	-1629.31	0.07	1.33	1.58	467344.53	692635.48	N 32 17 1.88	W 103 50 37.48
	1786.11	0.09	141.85	1786.10	1.98	-1531.90	0.18	1.32	1.57	467344.52	692635.47	N 32 17 1.88	W 103 50 37.48
	1879.03	0.09	282.87	1879.02	1.93	-1438.98	0.18	1.28	1.55	467344.48	692635.45	N 32 17 1.88	W 103 50 37.48
	1974.94	0.22	40.03	1974.93	2.09	-1343.07	0.28	1.44	1.59	467344.64	692635.49	N 32 17 1.88	W 103 50 37.48
	2066.66	0.09	28.25	2066.65	2.33	-1251.35	0.15	1.64	1.74	467344.84	692635.64	N 32 17 1.88	W 103 50 37.48
	2162.78	0.09	320.14	2162.77	2.43	-1155.23	0.10	1.76	1.73	467344.96	692635.63	N 32 17 1.88	W 103 50 37.48
	2259.20	0.09	139.96	2259.19	2.43	-1058.81	0.19	1.76	1.73	467344.96	692635.63	N 32 17 1.88	W 103 50 37.48
	2355.42	0.09	13.14	2355.41	2.48	-962.59	0.17	1.78	1.79	467344.98	692635.69	N 32 17 1.88	W 103 50 37.48
	2447.24	0.22	34.54	2447.23	2.72	-870.77	0.15	1.99	1.91	467345.19	692635.81	N 32 17 1.88	W 103 50 37.48
	2543.74	0.22	357.27	2543.73	3.06	-774.27	0.15	2.33	2.01	467345.53	692635.91	N 32 17 1.89	W 103 50 37.48

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	TVDSS (ft)	DLS (°/100ft)	NS (ft)	EW (ft)	Northing (ftUS)	Easting (ftUS)	Latitude (N/S ° ' ")	Longitude (E/W ° ' ")
	2637.81	0.22	327.34	2637.80	3.27	-680.20	0.12	2.66	1.90	467345.86	692635.80	N 32 17 1.89	W 103 50 37.48
	2733.16	0.22	14.94	2733.15	3.51	-584.85	0.19	2.99	1.85	467346.19	692635.75	N 32 17 1.89	W 103 50 37.48
	2828.35	0.22	56.07	2828.34	3.85	-489.66	0.16	3.27	2.05	467346.47	692635.95	N 32 17 1.90	W 103 50 37.48
	2923.23	0.09	342.15	2923.22	4.07	-394.78	0.22	3.44	2.17	467346.64	692636.07	N 32 17 1.90	W 103 50 37.47
	3019.99	0.22	81.56	3019.98	4.24	-298.02	0.26	3.54	2.34	467346.74	692636.24	N 32 17 1.90	W 103 50 37.47
	3117.01	0.00	7.91	3117.00	4.37	-201.00	0.23	3.57	2.52	467346.77	692636.42	N 32 17 1.90	W 103 50 37.47
	3209.45	0.09	105.64	3209.44	4.39	-108.56	0.10	3.55	2.59	467346.75	692636.49	N 32 17 1.90	W 103 50 37.47
	3337.09	0.22	17.35	3337.08	4.66	19.08	0.18	3.76	2.76	467346.96	692636.66	N 32 17 1.90	W 103 50 37.47
	3400.15	0.09	129.24	3400.14	4.77	82.14	0.42	3.84	2.83	467347.04	692636.73	N 32 17 1.90	W 103 50 37.47
	3495.26	0.09	295.44	3495.25	4.75	177.25	0.19	3.83	2.82	467347.03	692636.72	N 32 17 1.90	W 103 50 37.47
	3591.11	0.09	244.24	3591.10	4.68	273.10	0.08	3.83	2.69	467347.03	692636.59	N 32 17 1.90	W 103 50 37.47
	3687.80	0.22	62.13	3687.79	4.77	369.79	0.32	3.88	2.78	467347.08	692636.68	N 32 17 1.90	W 103 50 37.47
	3760.03	0.09	291.13	3760.02	4.88	442.02	0.40	3.97	2.85	467347.16	692636.75	N 32 17 1.90	W 103 50 37.47
	3849.55	0.79	47.85	3849.53	5.47	531.53	0.93	4.40	3.25	467347.60	692637.15	N 32 17 1.91	W 103 50 37.46
	3944.34	0.70	21.53	3944.32	6.67	626.32	0.37	5.38	3.94	467348.58	692637.84	N 32 17 1.92	W 103 50 37.45
	4041.44	2.11	84.46	4041.39	8.40	723.39	1.95	6.11	5.94	467349.31	692639.84	N 32 17 1.93	W 103 50 37.43
	4138.35	3.21	96.15	4138.19	10.84	820.19	1.26	5.99	10.41	467349.19	692644.31	N 32 17 1.92	W 103 50 37.38
	4235.00	4.09	94.35	4234.65	13.86	916.65	0.92	5.44	16.54	467348.64	692650.44	N 32 17 1.92	W 103 50 37.31
	4324.03	5.19	89.25	4323.38	17.79	1005.38	1.32	5.25	23.73	467348.45	692657.63	N 32 17 1.92	W 103 50 37.22
	4420.75	5.41	93.47	4419.69	22.68	1101.69	0.46	5.03	32.66	467348.23	692666.56	N 32 17 1.91	W 103 50 37.12
	4517.07	5.58	93.73	4515.57	27.43	1197.57	0.18	4.45	41.86	467347.65	692675.76	N 32 17 1.91	W 103 50 37.01
	4614.04	5.01	94.65	4612.12	31.96	1294.12	0.59	3.80	50.79	467347.00	692684.69	N 32 17 1.90	W 103 50 36.91
	4710.34	5.01	94.35	4708.06	36.17	1390.06	0.03	3.14	59.17	467346.34	692693.07	N 32 17 1.89	W 103 50 36.81
	4797.66	4.61	95.27	4795.07	39.81	1477.07	0.47	2.53	66.47	467345.73	692700.36	N 32 17 1.89	W 103 50 36.73
	4893.60	5.41	98.74	4890.64	43.67	1572.64	0.89	1.49	74.78	467344.69	692708.67	N 32 17 1.88	W 103 50 36.63
	4986.91	5.01	97.73	4983.57	47.43	1665.57	0.44	0.27	83.16	467343.47	692717.06	N 32 17 1.86	W 103 50 36.53
	5084.17	5.10	98.57	5080.45	51.24	1762.45	0.12	-0.94	91.65	467342.26	692725.54	N 32 17 1.85	W 103 50 36.43
	5180.53	5.01	97.25	5176.43	55.05	1858.43	0.15	-2.11	100.05	467341.09	692733.95	N 32 17 1.84	W 103 50 36.33
	5272.92	4.92	97.64	5268.48	58.70	1950.48	0.10	-3.15	107.98	467340.05	692741.88	N 32 17 1.83	W 103 50 36.24
	5370.63	4.79	96.06	5365.84	62.55	2047.84	0.19	-4.14	116.19	467339.06	692750.09	N 32 17 1.82	W 103 50 36.15
	5463.95	4.79	95.84	5458.83	66.28	2140.83	0.02	-4.94	123.94	467338.26	692757.84	N 32 17 1.81	W 103 50 36.06
	5560.50	4.79	94.43	5555.04	70.24	2237.04	0.12	-5.67	131.97	467337.53	692765.86	N 32 17 1.80	W 103 50 35.96
	5652.94	4.79	93.95	5647.16	74.15	2329.16	0.04	-6.23	139.67	467336.97	692773.56	N 32 17 1.80	W 103 50 35.87
	5745.79	5.41	91.53	5739.64	78.51	2421.64	0.71	-6.61	147.91	467336.59	692781.80	N 32 17 1.79	W 103 50 35.78
	5841.88	5.49	89.25	5835.30	83.64	2517.30	0.24	-6.68	157.04	467336.53	692790.93	N 32 17 1.79	W 103 50 35.67
	5938.07	5.49	86.96	5931.05	89.11	2613.05	0.23	-6.37	166.23	467336.83	692800.12	N 32 17 1.79	W 103 50 35.56
	6031.00	5.41	86.96	6023.56	94.50	2705.56	0.09	-5.90	175.05	467337.30	692808.94	N 32 17 1.80	W 103 50 35.46
	6128.00	5.49	90.04	6120.12	99.92	2802.12	0.31	-5.66	184.25	467337.54	692818.14	N 32 17 1.80	W 103 50 35.35
	6219.48	5.19	90.66	6211.20	104.71	2893.20	0.33	-5.71	192.77	467337.49	692826.66	N 32 17 1.80	W 103 50 35.25
	6316.74	4.70	89.56	6308.10	109.45	2990.10	0.51	-5.73	201.15	467337.47	692835.04	N 32 17 1.80	W 103 50 35.16
	6415.61	3.78	91.75	6406.70	113.55	3088.70	0.94	-5.80	208.46	467337.40	692842.35	N 32 17 1.80	W 103 50 35.07
	6512.60	4.22	89.47	6503.45	117.33	3185.45	0.48	-5.87	215.22	467337.33	692849.11	N 32 17 1.80	W 103 50 34.99
	6609.37	4.70	84.24	6599.93	121.95	3281.93	0.65	-5.44	222.73	467337.76	692856.61	N 32 17 1.80	W 103 50 34.91
	6697.36	5.80	90.96	6687.55	126.74	3369.55	1.43	-5.15	230.76	467338.05	692864.65	N 32 17 1.80	W 103 50 34.81
	6792.51	5.10	93.95	6782.27	131.56	3464.27	0.79	-5.52	239.79	467337.68	692873.67	N 32 17 1.80	W 103 50 34.71
	6889.58	5.01	94.35	6878.96	135.89	3560.96	0.10	-6.14	248.32	467337.06	692882.20	N 32 17 1.79	W 103 50 34.61
	6985.05	4.31	97.95	6974.11	139.60	3656.11	0.79	-6.95	256.03	467336.25	692889.91	N 32 17 1.78	W 103 50 34.52
	7076.44	4.79	87.05	7065.22	143.46	3747.22	1.08	-7.23	263.24	467335.97	692897.12	N 32 17 1.78	W 103 50 34.43
	7174.28	4.92	89.34	7162.71	148.37	3844.71	0.24	-6.97	271.51	467336.23	692905.40	N 32 17 1.78	W 103 50 34.34
	7267.09	4.79	89.16	7255.18	152.92	3937.18	0.14	-6.87	279.37	467336.33	692913.25	N 32 17 1.78	W 103 50 34.25
	7364.44	4.61	94.43	7352.21	157.24	4034.21	0.48	-7.11	287.33	467336.09	692921.21	N 32 17 1.78	W 103 50 34.15
	7457.76	4.48	92.24	7445.23	161.07	4127.23	0.23	-7.54	294.71	467335.66	692928.59	N 32 17 1.78	W 103 50 34.07

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	TVDSS (ft)	DLS (°/100ft)	NS (ft)	EW (ft)	Northing (ftUS)	Easting (ftUS)	Latitude (N/S ° ' ")	Longitude (E/W ° ' ")
	7554.48	5.01	93.47	7541.62	165.27	4223.62	0.56	-7.95	302.70	467335.25	692936.58	N 32 17 1.77	W 103 50 33.97
	7650.04	4.70	93.86	7636.84	169.43	4318.84	0.33	-8.46	310.78	467334.74	692944.65	N 32 17 1.77	W 103 50 33.88
	7746.78	4.00	95.45	7733.30	173.10	4415.30	0.73	-9.05	318.09	467334.15	692951.97	N 32 17 1.76	W 103 50 33.80
	7845.72	3.91	89.64	7832.00	176.71	4514.00	0.41	-9.36	324.90	467333.84	692958.78	N 32 17 1.76	W 103 50 33.72
	7932.96	3.30	88.37	7919.07	179.90	4601.07	0.71	-9.27	330.38	467333.93	692964.26	N 32 17 1.76	W 103 50 33.65
	8028.13	2.81	80.64	8014.11	183.13	4696.11	0.67	-8.81	335.42	467334.39	692969.30	N 32 17 1.76	W 103 50 33.59
	8120.23	3.60	86.57	8106.06	186.48	4788.06	0.93	-8.27	340.54	467334.93	692974.41	N 32 17 1.77	W 103 50 33.53
	8215.21	6.11	89.64	8200.69	191.21	4882.69	2.66	-8.06	348.57	467335.14	692982.44	N 32 17 1.77	W 103 50 33.44
	8313.02	5.89	95.14	8297.97	196.66	4979.97	0.63	-8.48	358.77	467334.72	692992.65	N 32 17 1.77	W 103 50 33.32
	8404.29	6.02	91.14	8388.75	201.60	5070.75	0.48	-8.99	368.22	467334.21	693002.10	N 32 17 1.76	W 103 50 33.21
	8497.66	5.49	80.94	8481.65	207.38	5163.65	1.23	-8.39	377.53	467334.82	693011.40	N 32 17 1.77	W 103 50 33.10
	8592.49	4.39	81.56	8576.12	212.99	5258.12	1.16	-7.14	385.60	467336.06	693019.47	N 32 17 1.78	W 103 50 33.01
	8690.39	5.58	83.05	8673.65	218.70	5355.65	1.22	-6.01	394.03	467337.19	693027.90	N 32 17 1.79	W 103 50 32.91
	8782.00	4.92	82.26	8764.88	224.30	5446.88	0.72	-4.94	402.34	467338.26	693036.22	N 32 17 1.80	W 103 50 32.81
	8878.00	5.89	81.73	8860.45	230.42	5542.45	1.01	-3.68	411.30	467339.52	693045.17	N 32 17 1.81	W 103 50 32.71
	8976.00	6.02	82.13	8957.92	237.31	5639.92	0.14	-2.25	421.36	467340.95	693055.23	N 32 17 1.82	W 103 50 32.59
	9069.96	5.71	84.63	9051.39	243.64	5733.39	0.43	-1.14	430.90	467342.06	693064.77	N 32 17 1.83	W 103 50 32.48
	9163.83	5.32	87.27	9144.82	249.28	5826.82	0.50	-0.50	439.89	467342.70	693073.76	N 32 17 1.84	W 103 50 32.38
	9259.46	4.70	85.34	9240.09	254.44	5922.09	0.67	0.03	448.23	467343.23	693082.10	N 32 17 1.85	W 103 50 32.28
Last XEM Survey	9353.49	4.00	91.45	9333.85	258.67	6015.85	0.89	0.26	455.35	467343.46	693089.21	N 32 17 1.85	W 103 50 32.20
	9400.00	4.40	89.78	9380.23	260.58	6062.23	0.90	0.23	458.75	467343.43	693092.62	N 32 17 1.85	W 103 50 32.16
	9462.00	10.97	88.30	9441.64	265.43	6123.64	10.60	0.41	467.03	467343.61	693100.90	N 32 17 1.85	W 103 50 32.06
	9493.00	13.55	89.10	9471.93	269.29	6153.93	8.34	0.56	473.62	467343.76	693107.48	N 32 17 1.85	W 103 50 31.98
	9525.00	15.54	88.92	9502.90	273.96	6184.90	6.22	0.70	481.85	467343.90	693115.52	N 32 17 1.85	W 103 50 31.89
	9556.00	18.37	86.25	9532.55	279.41	6214.55	9.47	1.09	490.68	467344.29	693124.55	N 32 17 1.85	W 103 50 31.78
	9587.00	22.58	84.53	9561.59	286.28	6243.59	13.72	1.98	501.48	467345.18	693135.35	N 32 17 1.86	W 103 50 31.66
	9619.00	26.89	82.49	9590.65	295.08	6272.65	13.73	3.51	514.78	467346.71	693148.64	N 32 17 1.88	W 103 50 31.50
	9650.00	31.37	80.70	9617.72	305.38	6299.72	14.72	5.73	529.70	467348.93	693163.56	N 32 17 1.90	W 103 50 31.33
	9681.00	35.29	80.60	9643.62	317.20	6325.62	12.65	8.50	546.50	467351.70	693180.37	N 32 17 1.92	W 103 50 31.13
	9713.00	38.39	80.66	9669.22	330.51	6351.22	9.69	11.62	565.43	467354.82	693199.29	N 32 17 1.95	W 103 50 30.91
	9744.00	41.52	81.14	9692.98	344.26	6374.98	10.15	14.77	585.09	467357.97	693218.95	N 32 17 1.98	W 103 50 30.68
	9775.00	44.04	81.91	9715.73	358.63	6397.73	8.30	17.87	605.91	467361.07	693239.77	N 32 17 2.01	W 103 50 30.44
	9807.00	46.29	83.53	9738.30	373.77	6420.30	7.89	20.74	628.42	467363.94	693262.28	N 32 17 2.04	W 103 50 30.18
	9838.00	48.91	85.99	9759.20	388.42	6441.20	10.28	22.82	651.21	467366.02	693285.07	N 32 17 2.06	W 103 50 29.91
	9868.00	52.09	86.70	9778.28	402.74	6460.28	10.76	24.29	674.31	467367.49	693308.16	N 32 17 2.08	W 103 50 29.64
	9900.00	55.21	87.28	9797.24	418.46	6479.24	9.86	25.64	700.04	467368.84	693333.90	N 32 17 2.09	W 103 50 29.34
	9932.00	58.18	87.73	9814.81	434.58	6496.81	9.36	26.80	726.76	467370.00	693360.61	N 32 17 2.10	W 103 50 29.03
	9963.00	60.90	88.36	9830.53	450.49	6512.53	8.95	27.71	753.46	467370.91	693387.31	N 32 17 2.11	W 103 50 28.72
	9995.00	63.96	89.02	9845.34	467.11	6527.34	9.74	28.36	781.82	467371.56	693415.66	N 32 17 2.11	W 103 50 28.39
	10027.00	68.23	88.98	9858.30	484.13	6540.30	13.34	28.87	811.06	467372.07	693444.91	N 32 17 2.11	W 103 50 28.05
	10058.00	71.84	88.05	9868.88	501.29	6550.88	11.98	29.63	840.18	467372.83	693474.03	N 32 17 2.12	W 103 50 27.71
	10090.00	75.75	87.95	9877.81	519.60	6559.81	12.22	30.70	870.89	467373.90	693504.73	N 32 17 2.13	W 103 50 27.35
	10122.00	79.21	86.26	9884.75	538.60	6566.75	11.98	32.28	902.08	467375.48	693535.92	N 32 17 2.14	W 103 50 26.99
	10154.00	81.99	84.06	9889.97	558.65	6571.97	11.02	34.95	933.53	467378.14	693567.37	N 32 17 2.17	W 103 50 26.62
	10186.00	84.28	81.56	9893.80	579.82	6575.80	10.55	38.92	965.05	467382.12	693598.88	N 32 17 2.21	W 103 50 26.26
	10217.00	86.18	77.72	9896.38	601.63	6578.38	13.78	44.48	995.43	467387.68	693629.26	N 32 17 2.26	W 103 50 25.90
	10304.00	90.28	72.86	9899.07	667.52	6581.07	7.31	66.55	1079.49	467409.75	693713.32	N 32 17 2.47	W 103 50 24.92
	10399.00	91.10	71.60	9897.92	742.74	6579.92	1.58	95.54	1169.95	467438.74	693803.77	N 32 17 2.76	W 103 50 23.87
	10494.00	91.21	69.40	9896.01	819.65	6578.01	2.32	127.25	1259.48	467470.44	693893.29	N 32 17 3.07	W 103 50 22.82
	10589.00	91.07	66.85	9894.12	898.81	6576.12	2.69	162.63	1347.61	467505.82	693981.42	N 32 17 3.41	W 103 50 21.79
	10684.00	90.90	64.28	9892.48	980.24	6574.48	2.71	201.92	1434.08	467545.11	694067.89	N 32 17 3.80	W 103 50 20.78
	10779.00	91.38	60.62	9890.59	1064.19	6572.59	3.88	245.84	1518.28	467589.03	694152.08	N 32 17 4.23	W 103 50 19.80
	10875.00	93.14	54.57	9886.80	1152.44	6568.80	6.56	297.22	1599.23	467640.40	694233.02	N 32 17 4.73	W 103 50 18.86

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	TVDSS (ft)	DLS (°/100ft)	NS (ft)	EW (ft)	Northing (ftUS)	Easting (ftUS)	Latitude (N/S ° ' '')	Longitude (E/W ° ' '')
	10970.00	91.21	49.04	9883.20	1243.08	6565.20	6.16	355.90	1673.80	467699.08	694307.59	N 32 17 5.31	W 103 50 17.98
	11065.00	89.46	43.73	9882.64	1336.03	6564.64	5.88	421.40	1742.55	467764.58	694376.34	N 32 17 5.96	W 103 50 17.18
	11160.00	89.11	39.99	9883.83	1430.24	6565.83	3.95	492.14	1805.93	467835.31	694439.71	N 32 17 6.65	W 103 50 16.44
	11254.00	88.91	37.60	9885.45	1523.97	6567.45	2.55	565.39	1864.81	467908.55	694498.59	N 32 17 7.37	W 103 50 15.75
	11349.00	88.90	36.62	9887.27	1618.85	6569.27	1.03	641.13	1922.12	467984.29	694555.89	N 32 17 8.12	W 103 50 15.08
	11444.00	89.01	35.61	9889.00	1713.80	6571.00	1.07	717.86	1978.10	468061.01	694611.87	N 32 17 8.88	W 103 50 14.42
	11538.00	88.73	34.33	9890.85	1807.78	6572.85	1.39	794.87	2031.97	468138.02	694665.73	N 32 17 9.64	W 103 50 13.79
	11633.00	88.73	33.88	9892.96	1902.75	6574.96	0.47	873.52	2085.22	468216.66	694718.98	N 32 17 10.41	W 103 50 13.16
	11728.00	89.15	32.68	9894.72	1997.71	6576.72	1.34	952.92	2137.34	468296.06	694771.10	N 32 17 11.20	W 103 50 12.55
	11823.00	89.01	30.69	9896.24	2092.57	6578.24	2.10	1033.75	2187.23	468376.88	694820.99	N 32 17 11.99	W 103 50 11.97
	11918.00	89.05	27.73	9897.85	2187.13	6579.85	3.12	1116.64	2233.58	468459.77	694867.33	N 32 17 12.81	W 103 50 11.42
	12012.00	89.70	25.37	9898.88	2280.20	6580.88	2.60	1200.72	2275.59	468543.84	694909.34	N 32 17 13.64	W 103 50 10.93
	12107.00	90.01	22.96	9899.12	2373.62	6581.12	2.56	1287.39	2314.48	468630.50	694948.22	N 32 17 14.50	W 103 50 10.47
	12201.00	90.11	20.01	9899.02	2465.17	6581.02	3.14	1374.85	2348.90	468717.96	694982.65	N 32 17 15.36	W 103 50 10.07
	12296.00	89.97	17.46	9898.95	2556.55	6580.95	2.69	1464.81	2379.41	468807.91	695013.15	N 32 17 16.25	W 103 50 9.70
	12390.00	89.97	15.35	9899.00	2645.85	6581.00	2.24	1554.97	2405.96	468898.07	695039.70	N 32 17 17.14	W 103 50 9.39
	12485.00	89.97	14.17	9899.05	2735.22	6581.05	1.24	1646.84	2430.16	468989.93	695063.90	N 32 17 18.05	W 103 50 9.10
	12578.00	89.80	14.73	9899.24	2822.54	6581.24	0.63	1736.90	2453.37	469079.98	695087.11	N 32 17 18.94	W 103 50 8.83
	12673.00	89.86	16.13	9899.52	2912.28	6581.52	1.48	1828.47	2478.64	469171.55	695112.38	N 32 17 19.84	W 103 50 8.53
	12767.00	89.69	18.15	9899.89	3001.95	6581.89	2.16	1918.29	2506.35	469261.36	695140.08	N 32 17 20.73	W 103 50 8.20
	12862.00	90.25	18.93	9899.94	3093.25	6581.94	1.01	2008.36	2536.55	469351.42	695170.28	N 32 17 21.62	W 103 50 7.84
	12957.00	89.60	17.03	9900.06	3184.28	6582.06	2.11	2098.71	2565.88	469441.77	695199.60	N 32 17 22.51	W 103 50 7.50
	13051.00	90.11	14.63	9900.30	3273.28	6582.30	2.61	2189.14	2591.51	469532.19	695225.24	N 32 17 23.41	W 103 50 7.19
	13145.00	89.94	13.49	9900.26	3361.31	6582.26	1.23	2280.32	2614.35	469623.37	695248.08	N 32 17 24.31	W 103 50 6.92
	13241.00	89.59	14.91	9900.65	3451.30	6582.65	1.52	2373.39	2637.90	469716.43	695271.62	N 32 17 25.23	W 103 50 6.64
	13336.00	89.90	15.56	9901.08	3540.93	6583.08	0.76	2465.05	2662.86	469808.08	695296.59	N 32 17 26.14	W 103 50 6.35
	13430.00	89.97	14.71	9901.18	3629.57	6583.18	0.91	2555.78	2687.41	469898.81	695321.13	N 32 17 27.03	W 103 50 6.06
	13526.00	89.59	13.04	9901.55	3719.36	6583.55	1.78	2648.98	2710.43	469992.00	695344.14	N 32 17 27.95	W 103 50 5.78
	13621.00	89.56	11.61	9902.26	3807.28	6584.26	1.51	2741.79	2730.70	470084.80	695364.42	N 32 17 28.87	W 103 50 5.54
	13716.00	90.14	11.72	9902.50	3894.78	6584.50	0.62	2834.82	2749.91	470177.83	695383.63	N 32 17 29.79	W 103 50 5.31
	13811.00	90.21	11.74	9902.21	3982.32	6584.21	0.08	2927.84	2769.22	470270.84	695402.94	N 32 17 30.71	W 103 50 5.08
	13906.00	89.49	14.59	9902.46	4070.75	6584.46	3.09	3020.33	2790.86	470363.33	695424.57	N 32 17 31.62	W 103 50 4.83
	14002.00	90.18	16.38	9902.74	4161.46	6584.74	2.00	3112.84	2816.49	470455.83	695450.20	N 32 17 32.54	W 103 50 4.52
	14096.00	89.56	16.10	9902.95	4250.68	6584.95	0.72	3203.09	2842.78	470546.08	695476.49	N 32 17 33.43	W 103 50 4.21
	14191.00	89.70	15.27	9903.57	4340.56	6585.57	0.89	3294.55	2868.46	470637.53	695502.17	N 32 17 34.33	W 103 50 3.91
	14286.00	89.70	14.12	9904.06	4429.89	6586.06	1.21	3386.44	2892.56	470729.41	695526.26	N 32 17 35.24	W 103 50 3.62
	14381.00	90.18	14.00	9904.16	4518.86	6586.16	0.52	3478.59	2915.64	470821.56	695549.34	N 32 17 36.15	W 103 50 3.35
	14475.00	90.35	12.99	9903.73	4606.56	6585.73	1.09	3570.00	2937.57	470912.96	695571.27	N 32 17 37.06	W 103 50 3.09
	14569.00	89.22	14.80	9904.08	4694.49	6586.08	2.27	3661.24	2960.14	471004.19	695593.85	N 32 17 37.96	W 103 50 2.82
	14663.00	88.73	15.80	9905.76	4783.21	6587.76	1.18	3751.89	2984.94	471094.84	695618.64	N 32 17 38.85	W 103 50 2.53
	14763.00	90.00	15.30	9906.87	4877.73	6588.87	1.36	3848.22	3011.75	471191.17	695645.45	N 32 17 39.81	W 103 50 2.21
	14857.00	91.00	14.97	9906.05	4966.36	6588.05	1.12	3938.96	3036.29	471281.89	695669.99	N 32 17 40.70	W 103 50 1.92
	14951.00	92.55	15.13	9903.14	5054.91	6585.14	1.66	4029.69	3060.69	471372.62	695694.38	N 32 17 41.60	W 103 50 1.63
	15044.00	94.37	14.96	9897.53	5142.39	6579.53	1.97	4119.33	3084.78	471462.26	695718.48	N 32 17 42.48	W 103 50 1.34
	15139.00	96.38	14.52	9888.63	5231.35	6570.63	2.17	4210.80	3108.85	471553.72	695742.54	N 32 17 43.39	W 103 50 1.06
	15234.00	97.31	14.97	9877.31	5320.07	6559.31	1.09	4302.01	3132.85	471644.92	695766.54	N 32 17 44.29	W 103 50 0.77
	15328.00	99.22	14.86	9863.79	5407.67	6545.79	2.04	4391.90	3156.79	471734.80	695790.48	N 32 17 45.18	W 103 50 0.49
	15423.00	102.06	14.43	9846.25	5495.43	6528.25	3.02	4482.22	3180.40	471825.12	695814.09	N 32 17 46.07	W 103 50 0.21
	15517.00	105.53	14.71	9823.84	5581.19	6505.84	3.70	4570.56	3203.36	471913.45	695837.04	N 32 17 46.94	W 103 49 59.94
	15611.00	109.72	14.49	9795.39	5665.36	6477.39	4.46	4657.23	3225.94	472000.12	695859.62	N 32 17 47.80	W 103 49 59.67
Final Survey	15661.00	111.02	14.28	9777.98	5709.35	6459.98	2.63	4702.64	3237.58	472045.52	695871.27	N 32 17 48.25	W 103 49 59.53
Proj to TD	15711.00	111.02	14.28	9760.05	5753.13	6442.05	0.00	4747.87	3249.09	472090.75	695882.78	N 32 17 48.70	W 103 49 59.40

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	TVDSS (ft)	DLS (°/100ft)	NS (ft)	EW (ft)	Northing (ftUS)	Easting (ftUS)	Latitude (N/S ° ' ")	Longitude (E/W ° ' ")
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Survey Type: Def Survey

Survey Error Model: ISCWSA Rev D *** 3-D 95.000% Confidence 2.7955 sigma
Survey Program:

Description	MD From (ft)	MD To (ft)	EOU Freq (ft)	Hole Size (in)	Casing Diameter (in)	Survey Tool Type	Borehole / Survey
	0.000	24.000	Act Stns	30.000	30.000	SLB_MWD-POOR-Depth Only	Original Borehole / Cimarex Sandy Federal #21H XEM+MWD
	24.000	9353.490	Act Stns	30.000	30.000	SLB_MWD-POOR	Original Borehole / Cimarex Sandy Federal #21H XEM+MWD
	9353.490	15661.000	Act Stns	30.000	30.000	SLB_MWD-STD	Original Borehole / Cimarex Sandy Federal #21H XEM+MWD
	15661.000	15711.000	Act Stns	30.000	30.000	SLB__BLIND+TREND	Original Borehole / Cimarex Sandy Federal #21H XEM+MWD