

ABOVE THIS LINE FOR DIVISION USE ONLY

NEW MEXICO OIL CONSERVATION DIVISION
 - Engineering Bureau -
 1220 South St. Francis Drive, Santa Fe, NM 87505



ADMINISTRATIVE APPLICATION CHECKLIST

THIS CHECKLIST IS MANDATORY FOR ALL ADMINISTRATIVE APPLICATIONS FOR EXCEPTIONS TO DIVISION RULES AND REGULATIONS WHICH REQUIRE PROCESSING AT THE DIVISION LEVEL IN SANTA FE

Application Acronyms:

- [NSL-Non-Standard Location] [NSP-Non-Standard Proration Unit] [SD-Simultaneous Dedication]
 [DHC-Downhole Commingling] [CTB-Lease Commingling] [PLC-Pool/Lease Commingling]
 [PC-Pool Commingling] [OLS - Off-Lease Storage] [OLM-Off-Lease Measurement]
 [WFX-Waterflood Expansion] [PMX-Pressure Maintenance Expansion]
 [SWD-Salt Water Disposal] [IPI-Injection Pressure Increase]
 [EOR-Qualified Enhanced Oil Recovery Certification] [PPR-Positive Production Response]

[1] **TYPE OF APPLICATION** - Check Those Which Apply for [A]

- [A] Location - Spacing Unit - Simultaneous Dedication
 NSL NSP SD

Check One Only for [B] or [C]

- [B] Commingling - Storage - Measurement
 DHC CTB PLC PC OLS OLM

- [C] Injection - Disposal - Pressure Increase - Enhanced Oil Recovery
 WFX PMX SWD IPI EOR PPR

- [D] Other: Specify _____

NSL
 - Apache Corp
 873
 well
 - Crow Federal
 14H
 30-015-40578
Pool
 - Frenj Glonicta
 Yeso
 26770

[2] **NOTIFICATION REQUIRED TO:** - Check Those Which Apply, or Does Not Apply

- [A] Working, Royalty or Overriding Royalty Interest Owners
 [B] Offset Operators, Leaseholders or Surface Owner
 [C] Application is One Which Requires Published Legal Notice
 [D] Notification and/or Concurrent Approval by BLM or SLO
U.S. Bureau of Land Management - Commissioner of Public Lands, State Land Office
 [E] For all of the above, Proof of Notification or Publication is Attached, and/or,
 [F] Waivers are Attached

[3] **SUBMIT ACCURATE AND COMPLETE INFORMATION REQUIRED TO PROCESS THE TYPE OF APPLICATION INDICATED ABOVE.**

[4] **CERTIFICATION:** I hereby certify that the information submitted with this application for administrative approval is **accurate** and **complete** to the best of my knowledge. I also understand that **no action** will be taken on this application until the required information and notifications are submitted to the Division.

Note: Statement must be completed by an individual with managerial and/or supervisory capacity.

David Catanach
 Print or Type Name

David Catanach
 Signature

Agent for Apache Corporation
 Title

1/30/14
 Date

drcatanach@netscape.com
 E-Mail Address

January 30, 2014

Hand Delivered

New Mexico Oil Conservation Division
1220 S. St. Francis Drive
Santa Fe, New Mexico 87505

Attention: Ms. Jami Bailey, CPG
Division Director

Re: Application for Unorthodox Well Locations
Crow Federal Well No. 14H (API No. 30-015-40578)
Crow Federal Well No. 15H (API No. 30-015-40579)
Fren Glorieta-Yeso Pool (26770)
Eddy County, New Mexico

Dear Ms. Bailey:

Pursuant to Division Rule 19.15.15.13, Apache Corporation (“Apache”) respectfully requests administrative approval of two unorthodox oil well locations for its Crow Federal Wells No. 14H and 15H. These wells have been drilled as horizontal development oil wells in the Fren Glorieta-Yeso Pool, described as follows:

Well	Surface Location	First Take Point	Last Take Point	As Drilled BHL
Crow Federal No. 14H	923' FSL & 250' FWL Unit M, 10-17S-31E	917' FSL & 183' FEL Unit P, 9-17S-31E	909' FSL & 436' FWL Unit M, 9-17S-31E	906' FSL & 332' FWL Unit M, 9-17S-31E
Crow Federal No. 15H	988' FSL & 250' FWL Unit M, 10-17S-31E	991' FSL & 272' FEL Unit P, 9-17S-31E	999' FSL & 433' FWL Unit M, 9-17S-31E	999' FSL & 332'FWL Unit M, 9-17S-31E

The Crow Federal Wells No. 14H and 15H will both be dedicated to an existing 160-acre horizontal project area comprising the S/2 S/2 of Section 9, Township 17 South, Range 31 East, NMPM.

This project area is currently dedicated to Apache’s Crow Federal Well No. 13H (API No. 30-015-40577) which has also been drilled as a Glorieta-Yeso horizontal well at a standard location within the project area.

The Fren Glorieta-Yeso Pool is currently governed by Division Rule 19.19.15.9 which requires standard 40-acre oil spacing and proration units with wells to be located no closer than 330 feet to the outer boundary of the spacing unit, or in the case of a horizontal well, no closer than 330 feet to the outer boundary of the project area.

The Crow Federal Wells No. 14H and 15H were drilled at the unorthodox locations in order to maximize the recovery of oil and gas reserves from the Fren Glorieta-Yeso Pool underlying the S/2 S/2 of Section 9.

The affected offset tracts for the Crow Federal No. 14H are the N/2 S/2 and S/2 S/2 of Section 10, Township 17 South, Range 31 East. Both of these tracts are existing 160-acre horizontal project areas in the Fren Glorieta-Yeso Pool, and both are operated by Apache (**See attached plat**).

The affected offset tracts for the Crow Federal No. 15H are the aforesaid N/2 S/2 and S/2 S/2 of Section 10, and the N/2 S/2 of Section 9, Township 17 South, Range 31 East. The N/2 S/2 of Section 9 is also an existing 160-acre project area in the Fren Glorieta-Yeso Pool that is operated by Apache (**See attached plat**).

Please be advised that the working interest ownership between the drill tract (S/2 S/2 of Section 9) and the three affected offset tracts is common. Consequently, notice of this application is not required to be provided to any party.

Attached are Form C-102's for the Crow Federal Wells No. 14H and 15H and maps that show the well locations, project area, legal producing area and affected offset tracts.

In summary, approval of the application will provide Apache Corporation the opportunity to recover additional oil and gas reserves from the Fren Glorieta-Yeso Pool underlying the S/2 S/2 of Section 9 that may otherwise not be recovered by the existing or proposed producing wells, thereby preventing waste, and will not violate correlative rights.

If you should have any questions, please call me at (505) 690-9453.

Sincerely,



David Catanach, Agent
Apache Corporation
303 Veterans Airpark Lane
Suite 3000
Midland, Texas 79705

Xc: OCD-Artesia

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

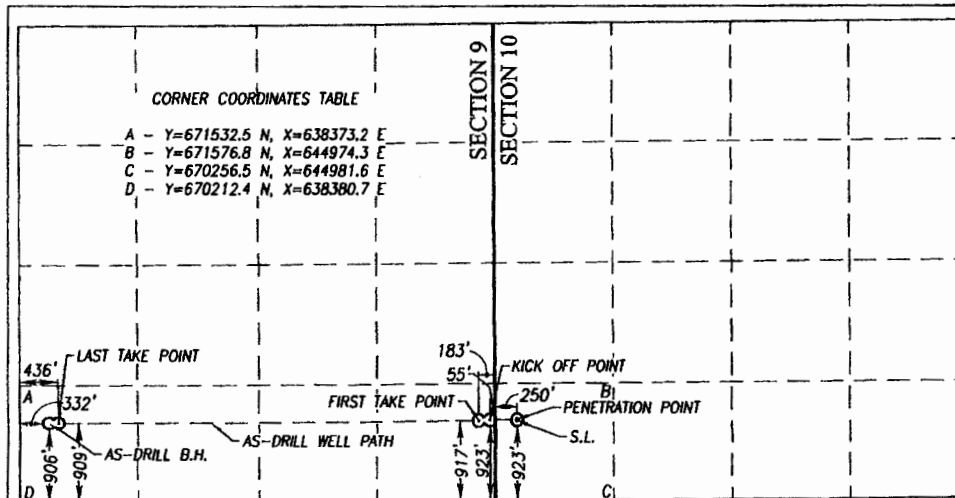
State of New Mexico
Energy, Minerals & Natural Resources Department
OIL CONSERVATION DIVISION
1220 South St. Francis Dr.
Santa Fe, New Mexico 87505

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

□ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

API Number 30-15-40578		Pool Code 26770		Pool Name FREN; GLORIETA-YESO					
Property Code 308711		Property Name CROW FEDERAL						Well Number 14H	
OGRID No. 873		Operator Name APACHE CORPORATION						Elevation 3884'	
Surface Location									
UL or lot No. M	Section 10	Township 17-S	Range 31-E	Lot Idn	Feet from the 923	North/South line SOUTH	Feet from the 250	East/West line WEST	County EDDY
As-Drill Bottom Hole Location If Different From Surface									
UL or lot No. M	Section 9	Township 17-S	Range 31-E	Lot Idn	Feet from the 906	North/South line SOUTH	Feet from the 332	East/West line WEST	County EDDY
Penetration Point Location									
UL or lot No. M	Section 10	Township 17-S	Range 31-E	Lot Idn	Feet from the 925	North/South line SOUTH	Feet from the 247	East/West line WEST	County EDDY
Dedicated Acres 160		Joint or Infill		Consolidation Code		Order No.			



CORNER COORDINATES TABLE

A	-	Y=671532.5 N	X=638373.2 E
B	-	Y=671576.8 N	X=644974.3 E
C	-	Y=670256.5 N	X=644981.6 E
D	-	Y=670212.4 N	X=638380.7 E

OPERATOR CERTIFICATION

I hereby certify that the information 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 mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.

Signature _____ Date _____

Printed Name _____

E-mail Address _____

SURVEYOR CERTIFICATION

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

MARCH 27, 2012

Date of Survey _____
Signature & Seal of Professional Surveyor: _____

Ronald J. Eidson 12/19/2013
Certificate Number 3239
Gary G. Eidson 12641
Ronald J. Eidson 3239

BKL JWSC W.O.: 13.13.1412

GEODETIC COORDINATES NAD 27 NME	GEODETIC COORDINATES NAD 27 NME	GEODETIC COORDINATES NAD 27 NME	GEODETIC COORDINATES NAD 27 NME	GEODETIC COORDINATES NAD 27 NME
BOTTOM HOLE LOCATION Y=671120.8 N X=638707.3 E	LAST TAKE POINT Y=671124.3 N X=638811.2 E	FIRST TAKE POINT Y=671161.7 N X=643474.0 E	PENETRATION POINT Y=671172.5 N X=643903.6 E	SURFACE LOCATION Y=671170.9 N X=643906.5 E
LAT.=32.844181" N LONG.=103.881698" W	LAT.=32.844190" N LONG.=103.881360" W	LAT.=32.844237" N LONG.=103.866177" W	LAT.=32.844261" N LONG.=103.864778" W	LAT.=32.844257" N LONG.=103.864769" W
LAT.=32° 50' 39" N LONG.=103° 51' 54" W	LAT.=32° 50' 39" N LONG.=103° 52' 53" W	LAT.=32° 50' 39" N LONG.=103° 51' 58" W	LAT.=32° 50' 39" N LONG.=103° 51' 53" W	LAT.=32° 50' 39" N LONG.=103° 51' 53" W
				GEODETIC COORDINATES NAD 27 NME
				KICK OFF POINT Y=671168.9 N X=643601.2 E
				LAT.=32.844255" N LONG.=103.865763" W
				LAT.=32° 50' 39" N LONG.=103° 51' 57" W

NOTE:
AS-DRILLED BOTTOM HOLE AND PENETRATION POINT PLOTTED FROM DATA FURNISHED BY
(APACHE CORPORATION; PHOENIX FINAL SURVEY REPORT, JUNE 7, 2013)

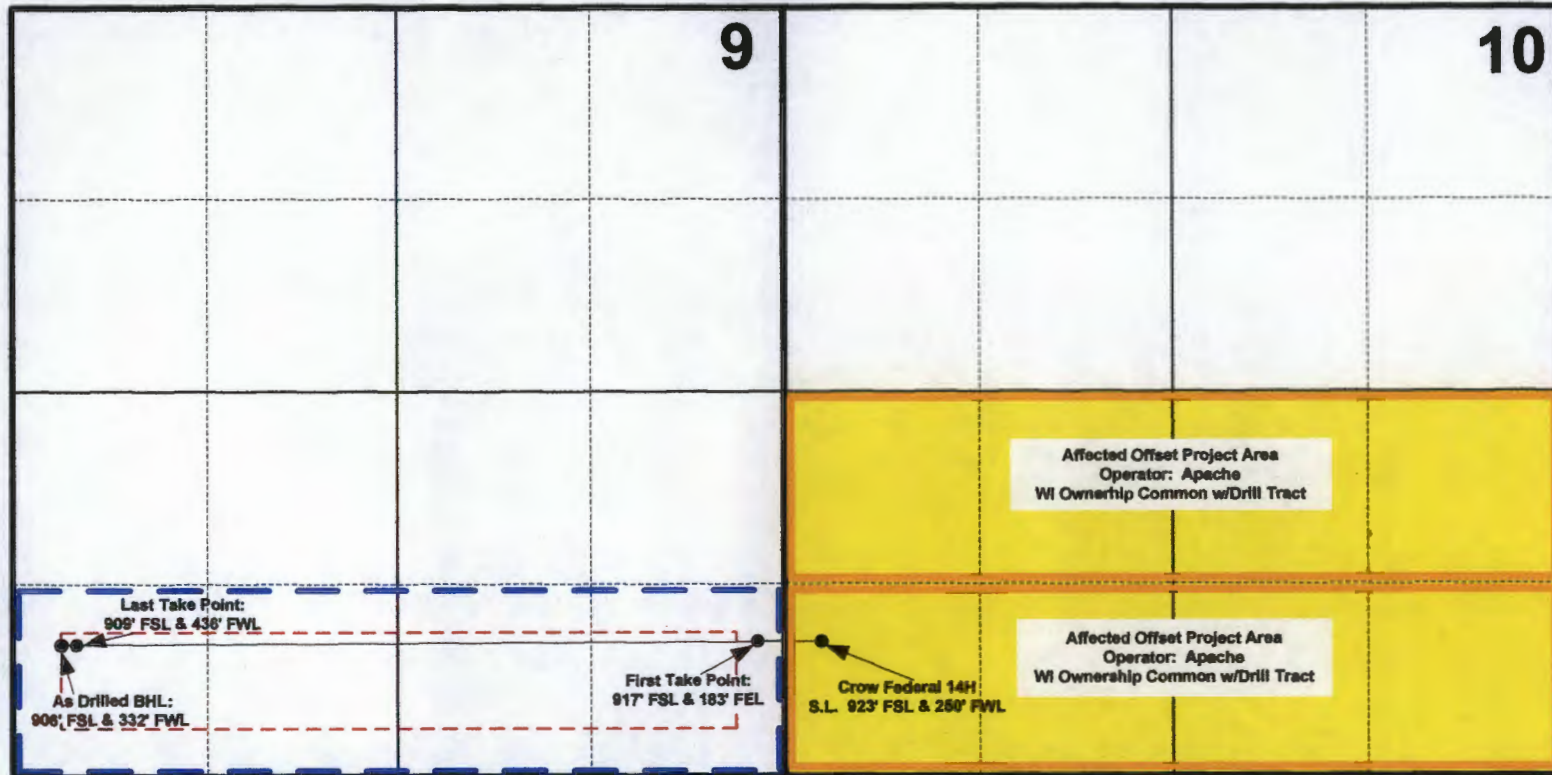
Plat for Crow Federal No. 14H

31E

9

10

17S



160-Acre Project Area



Legal Producing Window
(330' Setback)

Apache Corporation
Application for Unorthodox Well Locations
Crow Federal Wells No. 14H & 15H
Section 9, Township 17 South, Range 31 East

OCD-ARTESIA

Form 3160-3
(April 2004)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

FORM APPROVED
OMB No. 1004-0137
Expires March 31, 2007

APPLICATION FOR PERMIT TO DRILL OR REENTER

5 Lease Serial No.
NMLC - 029426B

6 If Indian, Allottee or Tribe Name

JES
8/6/12

1a. Type of work: <input checked="" type="checkbox"/> DRILL <input type="checkbox"/> REENTER		7 If Unit or CA Agreement, Name and No	
1b. Type of Well: <input checked="" type="checkbox"/> Oil Well <input type="checkbox"/> Gas Well <input type="checkbox"/> Other <input checked="" type="checkbox"/> Single Zone <input type="checkbox"/> Multiple Zone		8. Lease Name and Well No. CROW FEDERAL #14H <308711>	
2 Name of Operator APACHE CORPORATION		9. API Well No. 30-015- 405-78	
3a. Address 303 VETERANS AIRPARK LN #3000 MIDLAND, TX 79705	3b. Phone No. (include area code) 432-818-1167	10. Field and Pool, or Exploratory <96831> CEDAR LAKE;GLORIETA-YESO	
4. Location of Well (Report location clearly and in accordance with any State requirements*) At surface 923' FSL & 250' FWL SEC: 10 UL: M At proposed prod. zone 923' FSL & 330' FWL SEC: 9 UL: M		11 Sec., T. R. M. or Blk. and Survey or Area UL: M SEC: 10 T17S R31E	
14. Distance in miles and direction from nearest town or post office* APPROX 4 MILES NORTHEAST OF LOCO HILLS, NM		12 County or Parish EDDY	13. State NM
15. Distance from proposed* location to nearest property or lease line, ft (Also to nearest drig. unit line, if any) 250'	16. No. of acres in lease 1919.88 ACRES	17 Spacing Unit dedicated to this well 160 ACRES	
18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft. ~ 25'	19. Proposed Depth TVD ~ 5640' MD ~ 10775'	20 BLM/BIA Bond No. on file BLM - CO - 1463 NATIONWIDE	
21. Elevations (Show whether DF, KDB, RT, GL, etc) 3884'	22. Approximate date work will start* AS SOON AS APPROVED	23. Estimated duration ~ 25 DAYS	
24. Attachments			

The following, completed in accordance with the requirements of Onshore Oil and Gas Order No 1, shall be attached to this form:

- | | |
|---|---|
| 1. Well plat certified by a registered surveyor. | 4. Bond to cover the operations unless covered by an existing bond on file (see Item 20 above). |
| 2. A Drilling Plan | 5. Operator certification |
| 3. A Surface Use Plan (if the location is on National Forest System Lands, the SUPO shall be filed with the appropriate Forest Service Office). | 6. Such other site specific information and/or plans as may be required by the authorized officer |

25. Signature <i>Sorina L Flores</i>	Name (Printed/Typed) SORINA L. FLORES	Date 5/22/12
Title SUPV OF DRILLING SERVICES		

Approved by (Signature) /s/ Don Peterson	Name (Printed/Typed) /s/ Don Peterson	Date JUL 31 2012
Title FIELD MANAGER		Office CARLSBAD FIELD OFFICE

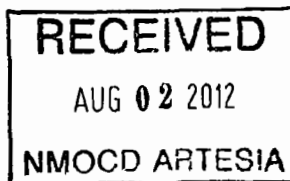
Application approval does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.

Conditions of approval, if any, are attached.

APPROVAL FOR TWO YEARS

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)



Roswell Controlled Water Basin

Approval Subject to General Requirements & Special Stipulations Attached

SEE ATTACHED FOR CONDITIONS OF APPROVAL

Apache Corporation

Eddy County, NM

Crow federal 14H

Job # 1210352

Wellbore #1

Plan: Plan 1 4-25-2012

Apache Corp. Planning Report

25 April, 2012

Apache Corp. Planning Report

Company:	Apache Corporation	Local Co-ordinate Reference:	Site Crow federal 14H
Project:	Eddy County, NM	TVD Reference:	WELL @ 3915.00usft (Original Well Elev)
Site:	Crow federal 14H	MD Reference:	WELL @ 3915.00usft (Original Well Elev)
Well:	Job # 1210352	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Plan 1 4-25-2012	Database:	Compass5000

Project	Eddy County, NM		
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	Crow federal 14H		
Site Position:	Northing:	671,170.90 usft	Latitude: 32° 50' 39.3238 N
From: Map	Easting:	643,906.50 usft	Longitude: 103° 51' 53.1683 W
Position Uncertainty: 0.00 usft	Slot Radius:	13-3/16 "	Grid Convergence: 0.25 °

Well	Job # 1210352		
Well Position	+N-S	0.00 usft	Northing: 671,170.90 usft
	+E-W	0.00 usft	Easting: 643,906.50 usft
Position Uncertainty	0.00 usft		Wellhead Elevation: usft
			Latitude: 32° 50' 39.3238 N
			Longitude: 103° 51' 53.1683 W
			Ground Level: 3,915.00 usft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination	Dip Angle	Field Strength
	IGRF2010_14	04/25/12	(°) 7.66	(°) 60.69	(nT) 48,868

Design	Plan 1 4-25-2012			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth: 0.00	
Vertical Section:	Depth From (TVD)	+N-S	+E-W	Direction
	(usft)	(usft)	(usft)	(°)
	0.00	0.00	0.00	269.63

Survey Tool Program	Date 04/25/12			
From	To	Survey (Wellbore)	Tool Name	Description
(usft) 0.00	(usft) 10,775.09	Plan 1 4-25-2012 (Wellbore #1)	MWD	MWD - Standard

Apache Corp. Planning Report

Company:	Apache Corporation	Local Co-ordinate Reference:	Site Crow federal 14H
Project:	Eddy County, NM	TVD Reference:	WELL @ 3915.00usft (Original Well Elev)
Site:	Crow federal 14H	MD Reference:	WELL @ 3915.00usft (Original Well Elev)
Well:	Job # 1210352	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Plan 1 4-25-2012	Database:	Compass5000

Planned Survey												
MD (usft)	Inc (")	Azi (azimuth) (°)	TVDSS (usft)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg ("/100usft)	Northing (usft)	Easting (usft)		
0.00	0.00	0.00	3,915.00	0.00	0.00	0.00	0.00	0.00	671,170.90	643,906.50		
200.00	0.00	0.00	3,715.00	200.00	0.00	0.00	0.00	0.00	671,170.90	643,906.50		
Begin Nudge Build 2.00*/100'												
270.00	1.40	269.63	3,645.01	269.99	-0.01	-0.85	0.85	2.00	671,170.89	643,905.65		
360.00	3.20	269.63	3,555.08	359.92	-0.03	-4.46	4.46	2.00	671,170.87	643,902.04		
400.16	4.00	269.63	3,515.00	400.00	-0.05	-6.98	6.98	2.00	671,170.85	643,899.52		
Hold 4" Inc for 500.00'												
450.00	4.00	269.63	3,465.28	449.72	-0.07	-10.46	10.46	0.00	671,170.83	643,896.04		
540.00	4.00	269.63	3,375.50	539.50	-0.11	-16.74	16.74	0.00	671,170.79	643,889.76		
630.00	4.00	269.63	3,285.72	629.28	-0.15	-23.02	23.02	0.00	671,170.75	643,883.48		
720.00	4.00	269.63	3,195.94	719.06	-0.19	-29.29	29.29	0.00	671,170.71	643,877.21		
810.00	4.00	269.63	3,106.16	808.84	-0.23	-35.57	35.57	0.00	671,170.67	643,870.93		
900.00	4.00	269.63	3,016.38	898.62	-0.27	-41.85	41.85	0.00	671,170.63	643,864.65		
900.16	4.00	269.63	3,016.22	898.78	-0.27	-41.86	41.86	0.00	671,170.63	643,864.64		
Begin Drop @ -1.50*/100'												
990.00	2.65	269.63	2,926.53	988.47	-0.30	-47.07	47.07	1.50	671,170.60	643,859.43		
1,080.00	1.30	269.63	2,836.59	1,078.41	-0.32	-50.18	50.18	1.50	671,170.58	643,856.32		
1,166.60	0.00	0.00	2,750.00	1,165.00	-0.33	-51.16	51.16	1.50	671,170.57	643,855.34		
Vertical												
5,404.80	0.00	0.00	-1,488.20	5,403.20	-0.33	-51.16	51.16	0.00	671,170.57	643,855.34		
KOP Build 15.00*/100'												
5,490.00	12.78	269.63	-1,572.70	5,487.70	-0.39	-60.62	60.62	15.00	671,170.51	643,845.88		
5,580.00	26.28	269.63	-1,657.32	5,572.32	-0.59	-90.64	90.64	15.00	671,170.31	643,815.86		
5,670.00	39.78	269.63	-1,732.60	5,647.60	-0.90	-139.58	139.58	15.00	671,170.00	643,766.92		
5,760.00	53.28	269.63	-1,794.38	5,709.38	-1.32	-204.74	204.75	15.00	671,169.58	643,701.76		
5,850.00	66.78	269.63	-1,839.24	5,754.24	-1.82	-282.53	282.53	15.00	671,169.08	643,623.97		
5,940.00	80.28	269.63	-1,864.69	5,779.69	-2.38	-368.63	368.64	15.00	671,168.52	643,537.87		

Apache Corp. Planning Report

Company:	Apache Corporation	Local Co-ordinate Reference:	Site Crow federal 14H
Project:	Eddy County, NM	TVD Reference:	WELL @ 3915.00usft (Original Well Elev)
Site:	Crow federal 14H	MD Reference:	WELL @ 3915.00usft (Original Well Elev)
Well:	Job # 1210352	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Plan 1 4-25-2012	Database:	Compass5000

Planned Survey											
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVDSS (usft)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)	Northing (usft)	Easting (usft)	
6,016.47	91.75	269.63	-1,870.00	5,785.00	-2.87	-444.79	444.80	15.00	671,168.03	643,461.71	
LP @ 5785' TVD											
6,030.00	91.75	269.63	-1,869.59	5,784.59	-2.96	-458.31	458.32	0.00	671,167.94	643,448.19	
6,055.34	91.75	269.63	-1,868.81	5,783.81	-3.12	-483.64	483.65	0.02	671,167.78	643,422.86	
6,120.00	91.75	269.63	-1,866.84	5,781.84	-3.54	-548.27	548.28	0.00	671,167.36	643,358.23	
6,210.00	91.75	269.63	-1,864.10	5,779.10	-4.12	-638.23	638.24	0.00	671,166.78	643,268.27	
6,300.00	91.75	269.63	-1,861.36	5,776.36	-4.70	-728.18	728.20	0.00	671,166.20	643,178.32	
6,390.00	91.75	269.63	-1,858.62	5,773.62	-5.28	-818.14	818.15	0.00	671,165.62	643,088.36	
6,480.00	91.75	269.63	-1,855.87	5,770.87	-5.87	-908.09	908.11	0.00	671,165.03	642,998.41	
6,570.00	91.75	269.63	-1,853.13	5,768.13	-6.45	-998.05	998.07	0.00	671,164.45	642,908.45	
6,660.00	91.75	269.63	-1,850.39	5,765.39	-7.03	-1,088.01	1,088.03	0.00	671,163.87	642,818.49	
6,750.00	91.75	269.63	-1,847.65	5,762.65	-7.61	-1,177.96	1,177.99	0.00	671,163.29	642,728.54	
6,840.00	91.75	269.63	-1,844.91	5,759.91	-8.19	-1,267.92	1,267.95	0.00	671,162.71	642,638.58	
6,930.00	91.75	269.63	-1,842.16	5,757.16	-8.77	-1,357.88	1,357.90	0.00	671,162.13	642,548.62	
7,020.00	91.75	269.63	-1,839.42	5,754.42	-9.35	-1,447.83	1,447.86	0.00	671,161.55	642,458.67	
7,110.00	91.75	269.63	-1,836.68	5,751.68	-9.93	-1,537.79	1,537.82	0.00	671,160.97	642,368.71	
7,200.00	91.75	269.63	-1,833.94	5,748.94	-10.51	-1,627.74	1,627.78	0.00	671,160.39	642,278.76	
7,290.00	91.75	269.63	-1,831.19	5,746.19	-11.10	-1,717.70	1,717.74	0.00	671,159.80	642,188.80	
7,380.00	91.75	269.63	-1,828.45	5,743.45	-11.68	-1,807.66	1,807.70	0.00	671,159.22	642,098.84	
7,470.00	91.75	269.63	-1,825.71	5,740.71	-12.26	-1,897.61	1,897.65	0.00	671,158.64	642,008.89	
7,560.00	91.75	269.63	-1,822.97	5,737.97	-12.84	-1,987.57	1,987.61	0.00	671,158.06	641,918.93	
7,650.00	91.75	269.63	-1,820.22	5,735.22	-13.42	-2,077.53	2,077.57	0.00	671,157.48	641,828.97	
7,740.00	91.75	269.63	-1,817.48	5,732.48	-14.00	-2,167.48	2,167.53	0.00	671,156.90	641,739.02	
7,830.00	91.75	269.63	-1,814.74	5,729.74	-14.58	-2,257.44	2,257.49	0.00	671,156.32	641,649.06	
7,920.00	91.75	269.63	-1,812.00	5,727.00	-15.16	-2,347.40	2,347.44	0.00	671,155.74	641,559.10	
8,010.00	91.75	269.63	-1,809.25	5,724.25	-15.75	-2,437.35	2,437.40	0.00	671,155.15	641,469.15	
8,100.00	91.75	269.63	-1,806.51	5,721.51	-16.33	-2,527.31	2,527.36	0.00	671,154.57	641,379.19	

Apache Corp. Planning Report

Company:	Apache Corporation	Local Co-ordinate Reference:	Site Crow federal 14H
Project:	Eddy County, NM	TVD Reference:	WELL @ 3915.00usft (Original Well Elev)
Site:	Crow federal 14H	MD Reference:	WELL @ 3915.00usft (Original Well Elev)
Well:	Job # 1210352	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Plan 1 4-25-2012	Database:	Compass5000

Planned Survey											
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVDS (usft)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)	Northing (usft)	Easting (usft)	
8,190.00	91.75	269.63	-1,803.77	5,718.77	-16.91	-2,617.26	2,617.32	0.00	671,153.99	641,289.24	
8,280.00	91.75	269.63	-1,801.03	5,716.03	-17.49	-2,707.22	2,707.28	0.00	671,153.41	641,199.28	
8,370.00	91.75	269.63	-1,798.28	5,713.28	-18.07	-2,797.18	2,797.24	0.00	671,152.83	641,109.32	
8,460.00	91.75	269.63	-1,795.54	5,710.54	-18.65	-2,887.13	2,887.19	0.00	671,152.25	641,019.37	
8,550.00	91.75	269.63	-1,792.80	5,707.80	-19.23	-2,977.09	2,977.15	0.00	671,151.67	640,929.41	
8,640.00	91.75	269.63	-1,790.06	5,705.06	-19.81	-3,067.05	3,067.11	0.00	671,151.09	640,839.45	
8,730.00	91.75	269.63	-1,787.32	5,702.32	-20.39	-3,157.00	3,157.07	0.00	671,150.51	640,749.50	
8,820.00	91.75	269.63	-1,784.57	5,699.57	-20.98	-3,246.96	3,247.03	0.00	671,149.92	640,659.54	
8,910.00	91.75	269.63	-1,781.83	5,696.83	-21.56	-3,336.92	3,336.98	0.00	671,149.34	640,569.58	
9,000.00	91.75	269.63	-1,779.09	5,694.09	-22.14	-3,426.87	3,426.94	0.00	671,148.76	640,479.63	
9,090.00	91.75	269.63	-1,776.35	5,691.35	-22.72	-3,516.83	3,516.90	0.00	671,148.18	640,389.67	
9,180.00	91.75	269.63	-1,773.60	5,688.60	-23.30	-3,606.78	3,606.86	0.00	671,147.60	640,299.72	
9,270.00	91.75	269.63	-1,770.86	5,685.86	-23.88	-3,696.74	3,696.82	0.00	671,147.02	640,209.76	
9,360.00	91.75	269.63	-1,768.12	5,683.12	-24.46	-3,786.70	3,786.78	0.00	671,146.44	640,119.80	
9,450.00	91.75	269.63	-1,765.38	5,680.38	-25.04	-3,876.65	3,876.73	0.00	671,145.86	640,029.85	
9,540.00	91.75	269.63	-1,762.63	5,677.63	-25.62	-3,966.61	3,966.69	0.00	671,145.28	639,939.89	
9,630.00	91.75	269.63	-1,759.89	5,674.89	-26.21	-4,056.57	4,056.65	0.00	671,144.69	639,849.93	
9,720.00	91.75	269.63	-1,757.15	5,672.15	-26.79	-4,146.52	4,146.61	0.00	671,144.11	639,759.98	
9,810.00	91.75	269.63	-1,754.41	5,669.41	-27.37	-4,236.48	4,236.57	0.00	671,143.53	639,670.02	
9,900.00	91.75	269.63	-1,751.66	5,666.66	-27.95	-4,326.43	4,326.53	0.00	671,142.95	639,580.07	
9,990.00	91.75	269.63	-1,748.92	5,663.92	-28.53	-4,416.39	4,416.48	0.00	671,142.37	639,490.11	
10,080.00	91.75	269.63	-1,746.18	5,661.18	-29.11	-4,506.35	4,506.44	0.00	671,141.79	639,400.15	
10,170.00	91.75	269.63	-1,743.44	5,658.44	-29.69	-4,596.30	4,596.40	0.00	671,141.21	639,310.20	
10,260.00	91.75	269.63	-1,740.70	5,655.70	-30.27	-4,686.26	4,686.36	0.00	671,140.63	639,220.24	
10,350.00	91.75	269.63	-1,737.95	5,652.95	-30.86	-4,776.22	4,776.32	0.00	671,140.04	639,130.28	
10,440.00	91.75	269.63	-1,735.21	5,650.21	-31.44	-4,866.17	4,866.27	0.00	671,139.46	639,040.33	
10,530.00	91.75	269.63	-1,732.47	5,647.47	-32.02	-4,956.13	4,956.23	0.00	671,138.88	638,950.37	

Apache Corp. Planning Report

Company:	Apache Corporation	Local Co-ordinate Reference:	Site Crow federal 14H
Project:	Eddy County, NM	TVD Reference:	WELL @ 3915.00usft (Original Well Elev)
Site:	Crow federal 14H	MD Reference:	WELL @ 3915 00usft (Original Well Elev)
Well:	Job # 1210352	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Plan 1 4-25-2012	Database:	Compass5000

Planned Survey											
MD (usft)	Inc (°)	Azl (azimuth) (°)	TVSS (usft)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)	Northing (usft)	Easting (usft)	
10,620.00	91.75	269.63	-1,729.73	5,644.73	-32.60	-5,046.09	5,046.19	0.00	671,138.30	638,860.41	
10,710.00	91.75	269.63	-1,726.98	5,641.98	-33.18	-5,136.04	5,136.15	0.00	671,137.72	638,770.46	
10,775.00	91.75	269.63	-1,725.00	5,640.00	-33.60	-5,201.01	5,201.12	0.00	671,137.30	638,705.49	
TD @ 10775.09° MD											
10,775.09	91.75	269.63	-1,725.00	5,640.00	-33.60	-5,201.10	5,201.21	0.00	671,137.30	638,705.40	

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
3,542.60	3,541.00	San Andres		0.00		
2,782.60	2,781.00	Queen		0.00		
5,022.60	5,021.00	Glorieta		0.00		
5,651.37	5,633.00	BlineBry		0.00		
1,873.60	1,872.00	Yates		0.00		
701.90	701.00	T/Salt		0.00		
1,706.60	1,705.00	B/Salt		0.00		
530.48	530.00	Rustler		0.00		
5,076.60	5,075.00	Yeso Paddock		0.00		