ATS-12-574

OCD-ARTESIA

Form 3160-3
(April 2004)

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

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

**APPLICATION FOR PERMIT TO DRILL OR REENTER**

5. Lease Serial No. **NMLC - 029426B**

6. If Indian, Allotee or Tribe Name

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

1a. Type of work: ☑ DRILL ☐ REENTER

1b. Type of Well: ☑ Oil Well ☐ Gas Well ☐ Other ☑ Single Zone ☐ Multiple Zone

8. Lease Name and Well No. **CROW FEDERAL #12H <308711>**

2. Name of Operator **APACHE CORPORATION** <873>

9. API Well No. **30-015-** 40576

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 **1013' FSL & 250' FWL SEC: 10 UL: M**

At proposed prod. zone **1013' FSL & 330' FEL SEC: 10 UL: P**

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 ~ 6380' MD ~ 10808'

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.
2. A Drilling Plan.
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).
4. Bond to cover the operations unless covered by an existing bond on file (see Item 20 above).
5. Operator certification
6. Such other site specific information and/or plans as may be required by the authorized officer.

25. Signature Sorina L Flores — 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)*

RECEIVED
AUG 02 2012
NMOCD ARTESIA

Roswell Controlled Water Basin

Approval Subject to General Requirements & Special Stipulations Attached

SEE ATTACHED FOR CONDITIONS OF APPROVAL

**UNITED STATES DEPARTMENT OF THE INTERIOR**
**BUREAU OF LAND MANAGEMENT**
**CARLSBAD FIELD OFFICE**
**620 E. GREENE STREET**
**CARLSBAD, NM 88220**

## OPERATOR CERTIFICATION

I HEARBY CERTIFY THAT I, OR SOMEONE UNDER MY DIRECT SUPERVISION, HAVE INSPECTED THE DRILL SITE AND ACCESS ROUTE PROPOSED HEREIN; THAT I AM FAMILIAR WITH THE CONDITIONS WHICH CURRENTLY EXIST; THAT I HAVE FULL KNOWLEDGE OF STATE AND FEDERAL laws applicable to this operation; that the statements made in the APD package are, to the best of my knowledge, true and correct; and that the work associated with the operations proposed herein will be performed in conformity with this APD package and the terms and conditions under which it is approved. I also certify that I, or the company I represent, am responsible for the operations conducted under this application. These statements are subject to the provisions of 18 U.S.C. 1001 for the filing of false statements.

Executed this 2ND day of MAY, 2012

**Well:** CROW FEDERAL #12H

**Operator Name:** APACHE CORPORATION

**Signature:** Terry West **Printed Name:** TERRY WEST

**Title:** Drilling Engineer Date:

**Email (optional):** terry.west@apachecorp.com

**Street or Box:** 303 Veterans Airpark Ln., Ste. 3000

**City, State, Zip Code:** Midland, TX 79705

**Telephone:** 432-818-1114

**Field Representative (if not above signatory):**

**Address (if different from above):**

**Telephone (if different from above):**

**Email (optional):**

Agents not directly employed by the operator must submit a letter from the operator authorizing that the agent to act or file this application on their behalf.

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 | Pool Code | Pool Name |
|---|---|---|
| 30-015- 40576 | 96831 | Cedar Lake; Glorieta-Yeso |

| Property Code | Property Name | Well Number |
|---|---|---|
| 308711 | CROW FEDERAL | 12H |

| OGRID No. | Operator Name | Elevation |
|---|---|---|
| 873 | APACHE CORPORATION | 3886' |

Surface Location

| UL or lot No. | Section | Township | Range | Lot Idn | Feet from the | North/South line | Feet from the | East/West line | County |
|---|---|---|---|---|---|---|---|---|---|
| M | 10 | 17-S | 31-E | | 1013 | SOUTH | 250 | WEST | 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 |
|---|---|---|---|---|---|---|---|---|---|
| P | 10 | 17-S | 31-E | | 1013 | SOUTH | 330 | EAST | EDDY |

| Dedicated Acres | Joint or Infill | Consolidation Code | Order No. |
|---|---|---|---|
| 160 | | | 10808 7/31 |

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

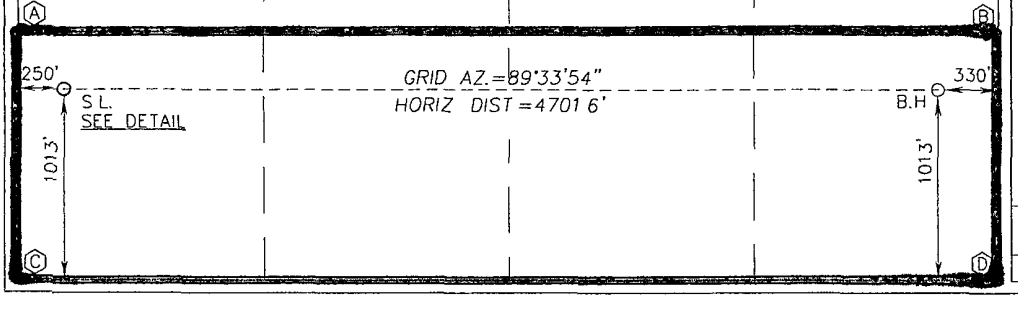
CORNER COORDINATES TABLE

(A) - Y=671567.1 N, X=643654.3 E
(B) - Y=671606.0 N, X=648934.5 E
(C) - Y=670246.2 N, X=643662.0 E
(D) - Y=670286.2 N, X=648942.1 E

GEODETIC COORDINATES
NAD 27 NME

SURFACE LOCATION
Y=671260.9 N
X=643906.0 E
LAT.=32.844504° N
LONG.=103.864769° W
LAT.=32° 50' 40" N
LONG.=103° 51' 53" W

BOTTOM HOLE LOCATION
Y=671296.5 N
X=648606.4 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*

Sorina L. Flores 5/1/12
Signature Date

Sorina L. Flores
Printed Name

sorina.flores@apachecorp.com
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.

GARY G. EIDSON NEW MEXICO 12641 REGISTERED PROFESSIONAL SURVEYOR

4/29/12

| Certificate Number | Gary G. Eidson | 12641 |
|---|---|---|
| | Ronald J. Eidson | 3239 |

DSS Rel 11 11.2710 12 11.0633

DRILLING PLAN: BLM COMPLIANCE
(Supplement to BLM 3160-3)

**APACHE CORPORATION (OGRID: 873) CROW FEDERAL #12H**

Lease #: NMLC-029426B Projected TVD: ~ 6380' MD: ~ 10808' GL: 3886'
SHL: 1013' FSL & 250' FWL UL: M BHL: 1013' FSL & 330' FEL UL: P
SEC: 10 T17S R31E EDDY COUNTY, NM

## 1. GEOLOGIC NAME OF SURFACE FORMATION: Eolian/Piedmond Alluvial Deposits

## 2. ESTIMATED TOPS OF GEOLOGICAL MARKERS & DEPTHS OF ANTICIPATED FRESH WATER, OIL OR GAS:

| | | | |
|---|---|---|---|
| Quaternary Aeolian | Surf | Queen | 2781' |
| Rustler | 530' | Grayburg | 3206' |
| Salt Top | 701' | San Andres | 3541' (Oil) |
| Salt Bottom | 1705' | Glorieta | 5021' |
| Yates | 1872' | Yeso (Paddock) | 5075' (Oil) |
| Seven Rivers | 2154' | TD | TVD: 6380' MD: 10808' |

Avg Depth to Ground Water: ~91'

Fresh water & prospectively valuable minerals, as described by BLM, encountered during drilling, will be recorded by depth & adequately protected. All oil & gas shows within zones of correlative rights will be tested to determine commercial potential. Surface fresh water sands will be protected by setting 13-3/8" csg @ ~~555'~~ 575' & circ cmt back to surface. Hydrocarbon zones will be protected by setting 9-5/8" csg @ ~ 3500', if water flow is encountered, then 7" @ ~ 5885'; and a 4-1/2" liner from the 7" csg though the KOP @ ~ 5888'; the curve & on to TD @ ~ 10808' MD.

## 3. CASING PROGRAM: All casing is new & API approved

| STRING | HOLE SIZE | DEPTH | OD CSG | WEIGHT | COLLAR | GRADE | COLLAPSE | BURST | TENSION |
|---|---|---|---|---|---|---|---|---|---|
| Surface | 17-1/2" | 0' – ~~585'~~ 575' | 13-3/8" | 48# | STC | H-40 | 1.0 | 1.21 | 1.8 |
| Intermediate* | 12-1/4" | 0' - 3500' | 9-5/8" | 36# | STC | J-55 | 1.0 | 1.21 | 1.8 |
| Production | 8-3/4" | 0'-5885' | 7" | 26# | LTC | J-55 | 1.0 | 1.21 | 1.8 |
| Production Liner | 6-1/8" | 5785' – 10808' | 4.5" | 11.6# | LTC | L-80 | 1.125 | 1.21 | 1.8 |

**Contingency: 9-5/8" string will only be ran if water flows are encountered.*

## 4. CEMENT PROGRAM:

**A. Surface (TOC – Surface) **100% excess cmt to surf** Cmt with:**

Lead: 170 sx Class H 50/50 w/10% Gel + 0.5# Star Seal + 0.25% De-foamer + 3% Salt *(11.9 wt, 2.31 yld)*
*Compressive Strengths : **12 hr** – 589 psi **24 hr** – 947 psi*

Tail: 360 sx Class C w/ 0.25% De-foamer (14.8 wt, 1.33 yld)
*Compressive Strengths: **12 hr** – 813 psi **24 hr** – 1205 psi*

**B. Intermediate (TOC – Surface) **50% excess cmt to surf**. Cmt with:**

Lead: 550 sx Class H 50/50 w/10% Gel + 2# Star Seal + 0.25% De-foamer *(11.9 wt, 2.24 yld)*
*Compressive Strengths: **12 hr** – 540 psi **24 hr** – 866 psi*

Tail: 380 sx Class C w/1% CaCL + 0.25% De-foamer (14.8 wt, 1.34 yld)
*Compressive Strengths: **12 hr** – 813 psi **24 hr** – 1205 psi*

**C. Production (TOC: ~2500' from surface) **35% excess cmt** Cmt with:**

Lead: 270 sx Class H 50/50 w/10% Gel + 2# Star Seal + 0.25% Defoamer *(11.9 wt, 2.24 yld)*
*Compressive Strengths: **12 hr** – 540 psi **24 hr** – 866 psi*

Tail: 530 sx Class C w/1% CaCL + 0.25% De-foamer *(14.8 wt, 1.34 yld)*
*Compressive Strengths: **12 hr** – 813 psi **24 psi** – 1205 psi*

*Contingency: If 9-5/8" string is not ran, the following cmt program will be used for the Production string & will bring cmt to surface using 35% excess:*

*Lead: 1286 sx Class H 50/50 w/10% Gel + 2# Star Seal + 0.25% Defoamer (11.9 wt, 2.24 yld)*
*Compressive Strengths: **12 hr** – 540 psi **24 hr** – 866 psi*

*Tail: 200 sx Class C w/1% CaCL + 0.25% De-foamer (14.8 wt, 1.34 yld)*
*Compressive Strengths: **12 hr** – 813 psi **24 psi** – 1205 psi*

D. Apache proposes to run a multiple packer system on the 4-1/2" production liner which will tie back into the 7" string (No cmt will be used).

***** The above cmt volumes could be revised pending caliper measurement from open hole logs.*** *For Surface csg: If cmt does not circ to surface, the appropriate BLM office shall be notified. The top of cement shall be determined by either a temperature survey or by tagging, as directed by the BLM for the specific set of circumstances. Cement will then be brought to surface via either 1" or ready mix operations, as specified by the BLM at that time.*

## 5. PROPOSED CONTROL EQUIPMENT

*"EXHIBIT 3"* shows a 13-5/8" 3M psi WP BOP consisting of at least annular bag type preventer. This BOP will be nippled up on the 13-3/8" surface csg head & tested to 70% of casing burst. After the 9-5/8" intermediate csg is set & cemented (or after the 7" string, if the 9-5/8" casing isn't ran), either a 13-5/8" or an 11" 3M BOP consisting of an annular bag type preventer, middle blind rams and bottom pipe rams will be installed in place of the original BOP & utilized continuously until TD is reached. The BOP will be tested at 2000 psi, maximum surface pressure is not expected to exceed 2M psi, BHP is calculated to be approximately 2807 psi. *All BOP's & associated equipment will be tested as per BLM *Drilling Operations Order #2*. The BOP will be operated & checked each 24 hr period & blind rams will be operated & checked when the drill pipe is out of the hole. Functional tests will be documented on the daily driller's log. *"EXHIBIT 3"* also shows a 3M psi choke manifold with a 3" blow down line. Full opening stabbing valve & Kelly cock will be on derrick floor in case of need. No abnormal pressures of temperatures are expected in this well. No nearby wells have encountered any problems.

## 6. PROPOSED MUD CIRCULATION SYSTEM: (Closed Loop System)

| INTERVAL | MW (ppg) | VISC (sec/qt) | FLUID LOSS (cc) | MUD TYPE |
|---|---|---|---|---|
| 0' – ~~555'~~ 575 | 8.6 – 8.8 | 28 – 30 | NC | FW |
| ~~555'~~ – 3500' * | 9.8 – 10.0 | 28 – 34 | NC | Brine |
| 3500' – 5885' | 8.6 – 9.1 | 28 – 36 | NC | FW/Brine |
| 5885' – 10807' | 8.6 – 9.1 | 28 – 40 | 15 - NC | FW/Brine |

** Contingency: If 9-5/8" string is not ran, these mud properties will be continued to the next casing seat instead of those indicated on the next line.*

***** The necessary mud products for weight addition and fluid loss control will be on location at all times. In order to run open hole logs & casing, the above mud properties may have to be altered to meet these needs.***

## 7. AUXILIARY WELL CONTROL EQUIPMENT / MONITORING EQUIPMENT:

13 5/8" or 11" x 3000 psi Double BOP/Blind & pipe ram (3M BOP/BOPE to be used as 2M system)
4-1/2" x 3000 psi Kelly valve
11" x 3000 psi mud cross – H2S detector on production hole
Gate-type safety valve 3" choke line from BOP to manifold
2" adjustable chokes – 3" blow down line
Fill up line as per Onshore Order 2

## 8. LOGGING, CORING & TESTING PROGRAM: See COA

**A.** OH logs: Dual Laterolog, MSFL, CNL, Litho-Density, Gamma Ray, Caliper & Sonic from TD back to last csg shoe.
**B.** Run CNL, Gamma Ray from 8-5/8" csg shoe back to surface.
**C.** No cores, DST's or mud logger are planned at this time.
**D.** Additional testing will be initiated subsequent to setting the 5-1/2" production casing. Specific intervals will be targeted based on log evaluation, geological sample shows & drill stem tests.

## 9. POTENTIAL HAZARDS:

No abnormal pressures or temperatures are anticipated. In the event abnormal pressures are encountered, however, the proposed mud program will be modified to increase the mud-weight. There is known presence of $H_2S$ in this area. If $H_2S$ is encountered the operator will comply with the provisions of *Onshore Oil & Gas Order No. 6.* No lost circulation is expected to occur. All personnel will be familiar with all aspects of safe operation of equipment being used to drill this well. Estimated BHP: 2807 psi and estimated BHT : 115°.

## 10. ANTICIPATED STARTING DATE AND DURATION OF OPERATIONS:

Road and location construction will begin after BLM has approved APD. Anticipated spud date will be as soon after BLM approval and as soon as rig will be available. Move in operations and drilling is expected to take ~ 25 days. If production casing is run then an additional 90 days will be needed to complete well and construct surface facilities and/or lay flow lines in order to place well on production.

## 11. OTHER FACETS OF OPERATION:

After running csg, cased hole Gamma Ray, Neutron Collar logs will be run from TD back to all possible productive zones. The Cedar Lake; Glorieta-Yeso formation will be perforated and stimulated in order to establish production. The well will be swab tested & potentialed as an oil well.

# Apache Corporation

**Eddy County, NM**
**Crow Federal 12H**
**Job # 1210350**
**Wellbore #1**

**Plan: Plan 1 4-25-2012**

# Apache Corp. Planning Report

**25 April, 2012**

| | | | |
|---|---|---|---|
| **Company:** | Apache Corporation | **Local Co-ordinate Reference:** | Site Crow Federal 12H |
| **Project:** | Eddy County, NM | **TVD Reference:** | WELL @ 3915.00usft (Original Well Elev) |
| **Site:** | Crow Federal 12H | **MD Reference:** | WELL @ 3915.00usft (Original Well Elev) |
| **Well:** | Job # 1210350 | **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 12H

| | | | | | |
|---|---|---|---|---|---|
| **Site Position:** | | **Northing:** | 671,260.90 usft | **Latitude:** | 32° 50' 40.2143 N |
| **From:** | Map | **Easting:** | 643,906.00 usft | **Longitude:** | 103° 51' 53.1695 W |
| **Position Uncertainty:** | 0.00 usft | **Slot Radius:** | 13-3/16 " | **Grid Convergence:** | 0.25 ° |

**Well** Job # 1210350

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Well Position** | **+N/-S** | 0.00 usft | **Northing:** | 671,260.90 usft | **Latitude:** | 32° 50' 40.2143 N |
| | **+E/-W** | 0.00 usft | **Easting:** | 643,906.00 usft | **Longitude:** | 103° 51' 53.1695 W |
| **Position Uncertainty** | | 0.00 usft | **Wellhead Elevation:** | usft | **Ground Level:** | 3,915.00 usft |

**Wellbore** Wellbore #1

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

**Design** Plan 1 4-25-2012

**Audit Notes:**

| | | | | | |
|---|---|---|---|---|---|
| **Version:** | | **Phase:** | PLAN | **Tie On Depth:** | 0.00 |

| **Vertical Section:** | **Depth From (TVD) (usft)** | **+N/-S (usft)** | **+E/-W (usft)** | **Direction (°)** |
|---|---|---|---|---|
| | 0.00 | 0.00 | 0.00 | 89.57 |

**Survey Tool Program** Date 04/25/12

| **From (usft)** | **To (usft)** | **Survey (Wellbore)** | **Tool Name** | **Description** |
|---|---|---|---|---|
| 0.00 | 10,808.05 | Plan 1 4-25-2012 (Wellbore #1) | MWD | MWD - Standard |

| | | | |
|---|---|---|---|
| **Company:** | Apache Corporation | **Local Co-ordinate Reference:** | Site Crow Federal 12H |
| **Project:** | Eddy County, NM | **TVD Reference:** | WELL @ 3915.00usft (Original Well Elev) |
| **Site:** | Crow Federal 12H | **MD Reference:** | WELL @ 3915.00usft (Original Well Elev) |
| **Well:** | Job # 1210350 | **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 | 671,260.90 | 643,906.00 |
| 5,888.20 | 0.00 | 0.00 | -1,973.20 | 5,888.20 | 0 00 | 0.00 | 0.00 | 0.00 | 671,260.90 | 643,906.00 |
| **KOP Build 15.00°/100'** | | | | | | | | | | |
| 5,940.00 | 7.77 | 89.57 | -2,024.84 | 5,939.84 | 0.03 | 3.51 | 3.51 | 15.00 | 671,260.93 | 643,909.51 |
| 6,030.00 | 21.27 | 89.57 | -2,111.76 | 6,026.76 | 0.20 | 26.02 | 26.02 | 15.00 | 671,261.10 | 643,932.02 |
| 6,120.00 | 34.77 | 89.57 | -2,191.03 | 6,106.03 | 0.51 | 68.21 | 68.21 | 15.00 | 671,261.41 | 643,974.21 |
| 6,210.00 | 48.28 | 89.57 | -2,258.25 | 6,173.25 | 0.96 | 127.73 | 127.74 | 15.00 | 671,261.86 | 644,033.73 |
| 6,300.00 | 61.78 | 89.57 | -2,309.72 | 6,224.72 | 1.51 | 201.31 | 201.31 | 15.00 | 671,262.41 | 644,107.31 |
| 6,390.00 | 75.28 | 89.57 | -2,342.59 | 6,257.59 | 2.14 | 284 87 | 284.88 | 15.00 | 671,263.04 | 644,190.87 |
| 6,478.39 | 88.54 | 89.57 | -2,355.00 | 6,270.00 | 2.79 | 372.18 | 372.19 | 15.00 | 671,263.69 | 644,278.18 |
| **LP @ 6270' TVD** | | | | | | | | | | |
| 6,480.00 | 88.54 | 89.57 | -2,355.04 | 6,270.04 | 2.81 | 373.79 | 373.80 | 0.00 | 671,263.71 | 644,279.79 |
| 6,497.84 | 88.54 | 89.57 | -2,355.49 | 6,270.49 | 2.94 | 391.63 | 391.64 | 0.03 | 671,263 84 | 644,297.63 |
| 6,570.00 | 88.54 | 89.57 | -2,357.33 | 6,272.33 | 3.49 | 463.76 | 463.77 | 0.00 | 671,264.39 | 644,369.76 |
| 6,660.00 | 88.54 | 89.57 | -2,359.61 | 6,274.61 | 4.17 | 553.73 | 553.74 | 0.00 | 671,265.07 | 644,459.73 |
| 6,750.00 | 88.54 | 89.57 | -2,361.90 | 6,276.90 | 4.85 | 643.69 | 643.71 | 0.00 | 671,265.75 | 644,549.69 |
| 6,840.00 | 88.54 | 89.57 | -2,364.19 | 6,279.19 | 5.53 | 733.66 | 733.68 | 0.00 | 671,266.43 | 644,639.66 |
| 6,930.00 | 88.54 | 89.57 | -2,366.47 | 6,281.47 | 6.21 | 823.63 | 823.65 | 0.00 | 671,267.11 | 644,729.63 |
| 7,020.00 | 88.54 | 89.57 | -2,368.76 | 6,283.76 | 6.90 | 913.60 | 913.63 | 0.00 | 671,267.80 | 644,819.60 |
| 7,110.00 | 88.54 | 89.57 | -2,371.05 | 6,286.05 | 7 58 | 1,003.57 | 1,003.60 | 0.00 | 671,268.48 | 644,909.57 |
| 7,200.00 | 88.54 | 89.57 | -2,373.33 | 6,288.33 | 8.26 | 1,093.54 | 1,093.57 | 0.00 | 671,269 16 | 644,999.54 |
| 7,290.00 | 88.54 | 89.57 | -2,375.62 | 6,290.62 | 8.94 | 1,183.50 | 1,183.54 | 0.00 | 671,269.84 | 645,089.50 |
| 7,380.00 | 88.54 | 89 57 | -2,377.91 | 6,292.91 | 9.62 | 1,273.47 | 1,273.51 | 0.00 | 671,270.52 | 645,179.47 |
| 7,470.00 | 88.54 | 89.57 | -2,380.19 | 6,295.19 | 10 31 | 1,363.44 | 1,363.48 | 0.00 | 671,271.21 | 645,269.44 |
| 7,560.00 | 88.54 | 89.57 | -2,382 48 | 6,297.48 | 10.99 | 1,453.41 | 1,453.45 | 0.00 | 671,271.89 | 645,359.41 |
| 7,650.00 | 88.54 | 89.57 | -2,384.77 | 6,299.77 | 11.67 | 1,543.38 | 1,543.42 | 0.00 | 671,272.57 | 645,449.38 |
| 7,740.00 | 88.54 | 89.57 | -2,387.05 | 6,302.05 | 12.35 | 1,633.35 | 1,633.39 | 0.00 | 671,273 25 | 645,539.35 |

| | | | |
|---|---|---|---|
| **Company:** | Apache Corporation | **Local Co-ordinate Reference:** | Site Crow Federal 12H |
| **Project:** | Eddy County, NM | **TVD Reference:** | WELL @ 3915.00usft (Original Well Elev) |
| **Site:** | Crow Federal 12H | **MD Reference:** | WELL @ 3915.00usft (Original Well Elev) |
| **Well:** | Job # 1210350 | **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) |
|---|---|---|---|---|---|---|---|---|---|---|
| 7,830.00 | 88.54 | 89.57 | -2,389.34 | 6,304.34 | 13.03 | 1,723.31 | 1,723.36 | 0.00 | 671,273.93 | 645,629.31 |
| 7,920.00 | 88.54 | 89.57 | -2,391.63 | 6,306.63 | 13.72 | 1,813.28 | 1,813.33 | 0.00 | 671,274.62 | 645,719.28 |
| 8,010.00 | 88.54 | 89.57 | -2,393.91 | 6,308.91 | 14.40 | 1,903.25 | 1,903.31 | 0.00 | 671,275.30 | 645,809.25 |
| 8,100.00 | 88.54 | 89.57 | -2,396.20 | 6,311.20 | 15.08 | 1,993.22 | 1,993.28 | 0.00 | 671,275.98 | 645,899.22 |
| 8,190.00 | 88.54 | 89.57 | -2,398.48 | 6,313.48 | 15.76 | 2,083.19 | 2,083.25 | 0.00 | 671,276.66 | 645,989.19 |
| 8,280.00 | 88.54 | 89.57 | -2,400.77 | 6,315.77 | 16.44 | 2,173.16 | 2,173.22 | 0.00 | 671,277.34 | 646,079.16 |
| 8,370.00 | 88.54 | 89.57 | -2,403.06 | 6,318.06 | 17.13 | 2,263.12 | 2,263.19 | 0.00 | 671,278.03 | 646,169.12 |
| 8,460.00 | 88.54 | 89.57 | -2,405.34 | 6,320.34 | 17.81 | 2,353.09 | 2,353.16 | 0.00 | 671,278.71 | 646,259.09 |
| 8,550.00 | 88.54 | 89.57 | -2,407.63 | 6,322.63 | 18.49 | 2,443.06 | 2,443.13 | 0.00 | 671,279.39 | 646,349.06 |
| 8,640.00 | 88.54 | 89.57 | -2,409.92 | 6,324.92 | 19.17 | 2,533.03 | 2,533.10 | 0.00 | 671,280.07 | 646,439.03 |
| 8,730.00 | 88.54 | 89.57 | -2,412.20 | 6,327.20 | 19.85 | 2,623.00 | 2,623.07 | 0.00 | 671,280.75 | 646,529.00 |
| 8,820.00 | 88.54 | 89.57 | -2,414.49 | 6,329.49 | 20.54 | 2,712.97 | 2,713.04 | 0.00 | 671,281 44 | 646,618.97 |
| 8,910.00 | 88.54 | 89.57 | -2,416.78 | 6,331.78 | 21.22 | 2,802.94 | 2,803.02 | 0.00 | 671,282.12 | 646,708.94 |
| 9,000.00 | 88.54 | 89.57 | -2,419.06 | 6,334.06 | 21.90 | 2,892.90 | 2,892.99 | 0.00 | 671,282.80 | 646,798.90 |
| 9,090.00 | 88 54 | 89.57 | -2,421.35 | 6,336.35 | 22.58 | 2,982.87 | 2,982.96 | 0.00 | 671,283.48 | 646,888.87 |
| 9,180.00 | 88.54 | 89.57 | -2,423.64 | 6,338.64 | 23.26 | 3,072.84 | 3,072.93 | 0.00 | 671,284.16 | 646,978.84 |
| 9,270.00 | 88.54 | 89.57 | -2,425.92 | 6,340.92 | 23.95 | 3,162.81 | 3,162.90 | 0.00 | 671,284.85 | 647,068.81 |
| 9,360.00 | 88.54 | 89.57 | -2,428.21 | 6,343.21 | 24.63 | 3,252.78 | 3,252.87 | 0.00 | 671,285.53 | 647,158.78 |
| 9,450.00 | 88.54 | 89.57 | -2,430.50 | 6,345.50 | 25.31 | 3,342.75 | 3,342.84 | 0.00 | 671,286.21 | 647,248.75 |
| 9,540.00 | 88.54 | 89.57 | -2,432 78 | 6,347.78 | 25.99 | 3,432.71 | 3,432.81 | 0.00 | 671,286.89 | 647,338.71 |
| 9,630.00 | 88.54 | 89.57 | -2,435.07 | 6,350.07 | 26.67 | 3,522.68 | 3,522.78 | 0.00 | 671,287.57 | 647,428.68 |
| 9,720.00 | 88.54 | 89.57 | -2,437.36 | 6,352.36 | 27.35 | 3,612.65 | 3,612.75 | 0.00 | 671,288.25 | 647,518.65 |
| 9,810.00 | 88.54 | 89.57 | -2,439.64 | 6,354.64 | 28.04 | 3,702.62 | 3,702.72 | 0.00 | 671,288.94 | 647,608.62 |
| 9,900.00 | 88.54 | 89.57 | -2,441.93 | 6,356.93 | 28.72 | 3,792.59 | 3,792.70 | 0.00 | 671,289.62 | 647,698.59 |
| 9,990.00 | 88.54 | 89.57 | -2,444.21 | 6,359.21 | 29.40 | 3,882.56 | 3,882.67 | 0.00 | 671,290.30 | 647,788.56 |
| 10,080.00 | 88.54 | 89.57 | -2,446.50 | 6,361.50 | 30.08 | 3,972.52 | 3,972.64 | 0.00 | 671,290.98 | 647,878.52 |
| 10,170.00 | 88.54 | 89.57 | -2,448.79 | 6,363.79 | 30.76 | 4,062.49 | 4,062.61 | 0.00 | 671,291.66 | 647,968.49 |

| | | | |
|---|---|---|---|
| **Company:** | Apache Corporation | **Local Co-ordinate Reference:** | Site Crow Federal 12H |
| **Project:** | Eddy County, NM | **TVD Reference:** | WELL @ 3915.00usft (Original Well Elev) |
| **Site:** | Crow Federal 12H | **MD Reference:** | WELL @ 3915.00usft (Original Well Elev) |
| **Well:** | Job # 1210350 | **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) |
|---|---|---|---|---|---|---|---|---|---|---|
| 10,260.00 | 88.54 | 89 57 | -2,451.07 | 6,366.07 | 31.45 | 4,152.46 | 4,152.58 | 0.00 | 671,292.35 | 648,058.46 |
| 10,350.00 | 88.54 | 89.57 | -2,453.36 | 6,368.36 | 32.13 | 4,242.43 | 4,242.55 | 0.00 | 671,293.03 | 648,148.43 |
| 10,440.00 | 88.54 | 89.57 | -2,455.65 | 6,370 65 | 32.81 | 4,332.40 | 4,332.52 | 0.00 | 671,293.71 | 648,238.40 |
| 10,530.00 | 88.54 | 89.57 | -2,457.93 | 6,372.93 | 33.49 | 4,422.37 | 4,422.49 | 0.00 | 671,294.39 | 648,328.37 |
| 10,620.00 | 88.54 | 89.57 | -2,460.22 | 6,375.22 | 34.17 | 4,512.33 | 4,512.46 | 0.00 | 671,295.07 | 648,418.33 |
| 10,710.00 | 88.54 | 89.57 | -2,462.51 | 6,377.51 | 34.86 | 4,602 30 | 4,602.43 | 0.00 | 671,295.76 | 648,508.30 |
| 10,800.00 | 88.54 | 89.57 | -2,464 79 | 6,379.79 | 35.54 | 4,692 27 | 4,692.41 | 0.00 | 671,296.44 | 648,598.27 |
| 10,808.00 | 88.54 | 89.57 | -2,465.00 | 6,380.00 | 35 60 | 4,700.27 | 4,700.40 | 0.00 | 671,296.50 | 648,606.27 |
| **TD @ 10808.13' MD** | | | | | | | | | | |
| 10,808.13 | 88.54 | 89.57 | -2,465.00 | 6,380.00 | 35.60 | 4,700.40 | 4,700.53 | 0.00 | 671,296.50 | 648,606.40 |

**Formations**

| Measured Depth (usft) | Vertical Depth (usft) | Name | Lithology | Dip (°) | Dip Direction (°) |
|---|---|---|---|---|---|
| 1,705.00 | 1,705.00 | B/Salt | | 0.00 | |
| 5,633.00 | 5,633.00 | Blinebry | | 0.00 | |
| 1,872.00 | 1,872.00 | Yates | | 0.00 | |
| 701.00 | 701.00 | T/Salt | | 0.00 | |
| 3,541.00 | 3,541.00 | San Andres | | 0.00 | |
| 5,075.00 | 5,075.00 | Yeso Paddock | | 0.00 | |
| 5,021.00 | 5,021.00 | Glorieta | | 0 00 | |
| 530.00 | 530.00 | Rustler | | 0.00 | |
| 2,781.00 | 2,781.00 | Queen | | 0.00 | |

| | | | |
|---|---|---|---|
| **Company:** | Apache Corporation | **Local Co-ordinate Reference:** | Site Crow Federal 12H |
| **Project:** | Eddy County, NM | **TVD Reference:** | WELL @ 3915.00usft (Original Well Elev) |
| **Site:** | Crow Federal 12H | **MD Reference:** | WELL @ 3915.00usft (Original Well Elev) |
| **Well:** | Job # 1210350 | **North Reference:** | Grid |
| **Wellbore:** | Wellbore #1 | **Survey Calculation Method:** | Minimum Curvature |
| **Design:** | Plan 1 4-25-2012 | **Database:** | Compass5000 |

**Plan Annotations**

| Measured Depth (usft) | Vertical Depth (usft) | Local Coordinates +N/-S (usft) | Local Coordinates +E/-W (usft) | Comment |
|---|---|---|---|---|
| 5,888.20 | 5,888.20 | 0.00 | 0.00 | KOP Build 15.00°/100' |
| 6,478.39 | 6,270.00 | 2.79 | 372.18 | LP @ 6270' TVD |
| 10,808.00 | 6,380.00 | 35.60 | 4,700.27 | TD @ 10808.13' MD |

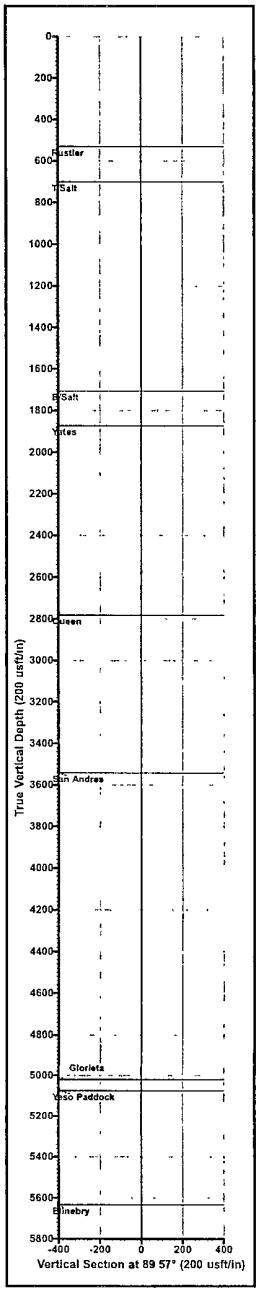
Checked By: _____ Approved By: _____ Date: _____

PHOENIX TECHNOLOGY SERVICES

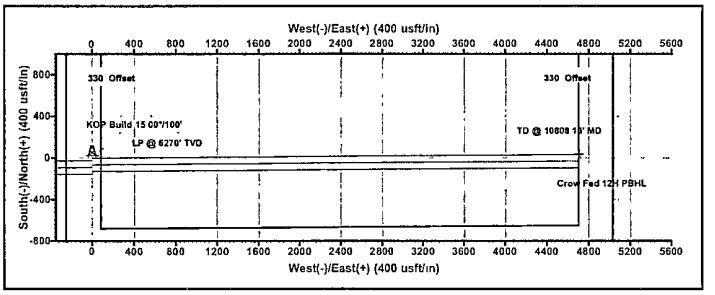
# Apache Corporation

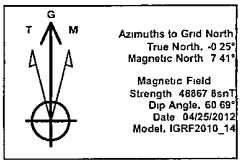
**Project: Eddy County, NM**
**Site: Crow Federal 12H**
**Well: Job # 1210350**
**Wellbore: Wellbore #1**
**Plan: Plan 1 4-25-2012**

| WELL DETAILS Job # 1210350 | | | |
|---|---|---|---|
| Northing | Easting | Ground Level: 3915.00<br>Latitude | Longitude |
| 671260 90 | 643906 00 | 32° 50' 40 2143 N | 103° 51' 53 1695 W |

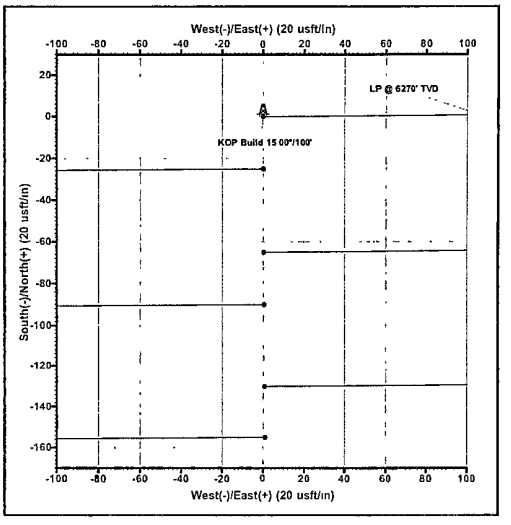



| SECTION DETAILS | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| MD | Inc | Azi | TVD | +N/-S | +E/-W | Dleg | TFace | VSect | |
| 0 00 | 0 00 | 0 00 | 0 00 | 0 00 | 0 00 | 0 00 | 0 00 | 0 00 | |
| 5888 20 | 0 00 | 0 00 | 5888 20 | 0 00 | 0 00 | 0 00 | 0 00 | 0 00 | |
| 6478 39 | 88 54 | 89 57 | 6270 00 | 2 79 | 372 18 | 15 00 | 89 57 | 372 19 | |
| 6497 84 | 88 54 | 89 57 | 6270 49 | 2 94 | 391 63 | 0 03 | -45 49 | 391 64 | |
| 10808 13 | 88.54 | 89 57 | 6380 00 | 35 60 | 4700 40 | 0 00 | 0 00 | 4700 53 | Crow Fed 12H PBHL |

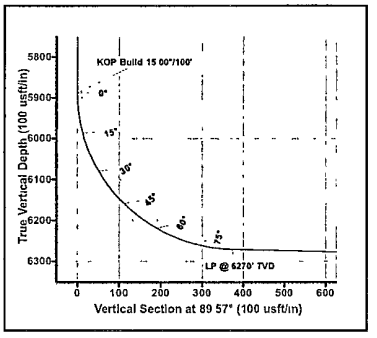


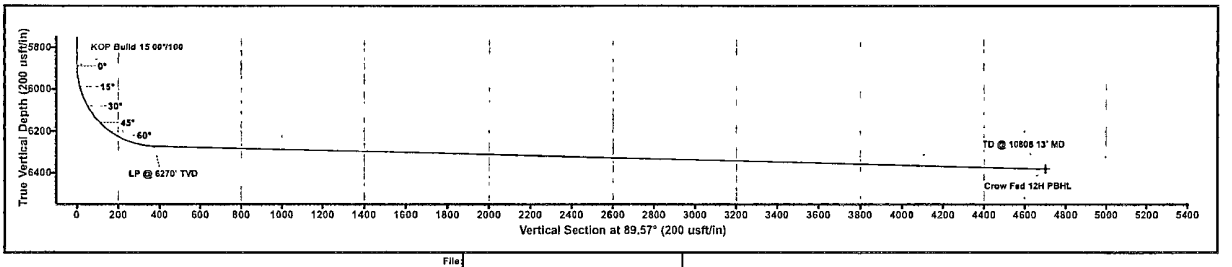




| FORMATION TOP DETAILS | | | | |
|---|---|---|---|---|
| TVDPath | MDPath | Formation | DipAngle | DipDir |
| 530 00 | 530 00 | Rustler | 0 00 | |
| 701 00 | 701 00 | T/Salt | 0 00 | |
| 1705 00 | 1705 00 | B/Salt | 0 00 | |
| 1872 00 | 1872 00 | Yates | 0 00 | |
| 2781 00 | 2781 00 | Queen | 0 00 | |
| 3541 00 | 3541 00 | San Andres | 0 00 | |
| 5021 00 | 5021 00 | Glorieta | 0 00 | |
| 5075 00 | 5075 00 | Yeso Paddock | 0 00 | |
| 5633 00 | 5633 00 | Blinebry | 0 00 | |




| ANNOTATIONS | | |
|---|---|---|
| TVD | MD | Annotation |
| 5888 20 | 5888.20 | KOP Build 15.00°/100' |
| 6270 00 | 6478 39 | LP @ 6270' TVD |
| 6380.00 | 10808.00 | TD @ 10808.13' MD |



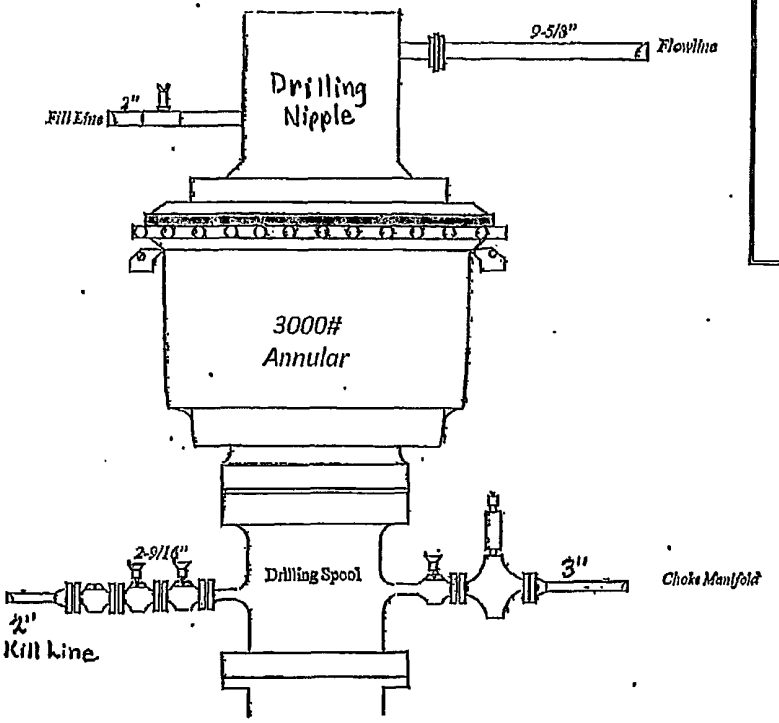

File:

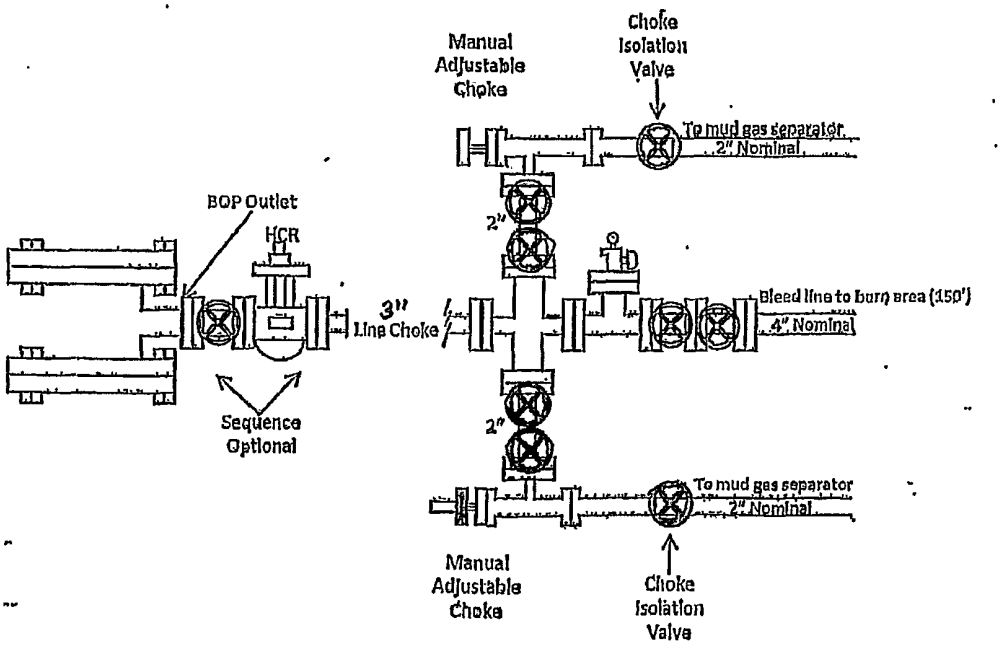
Created By Jose Hernandez

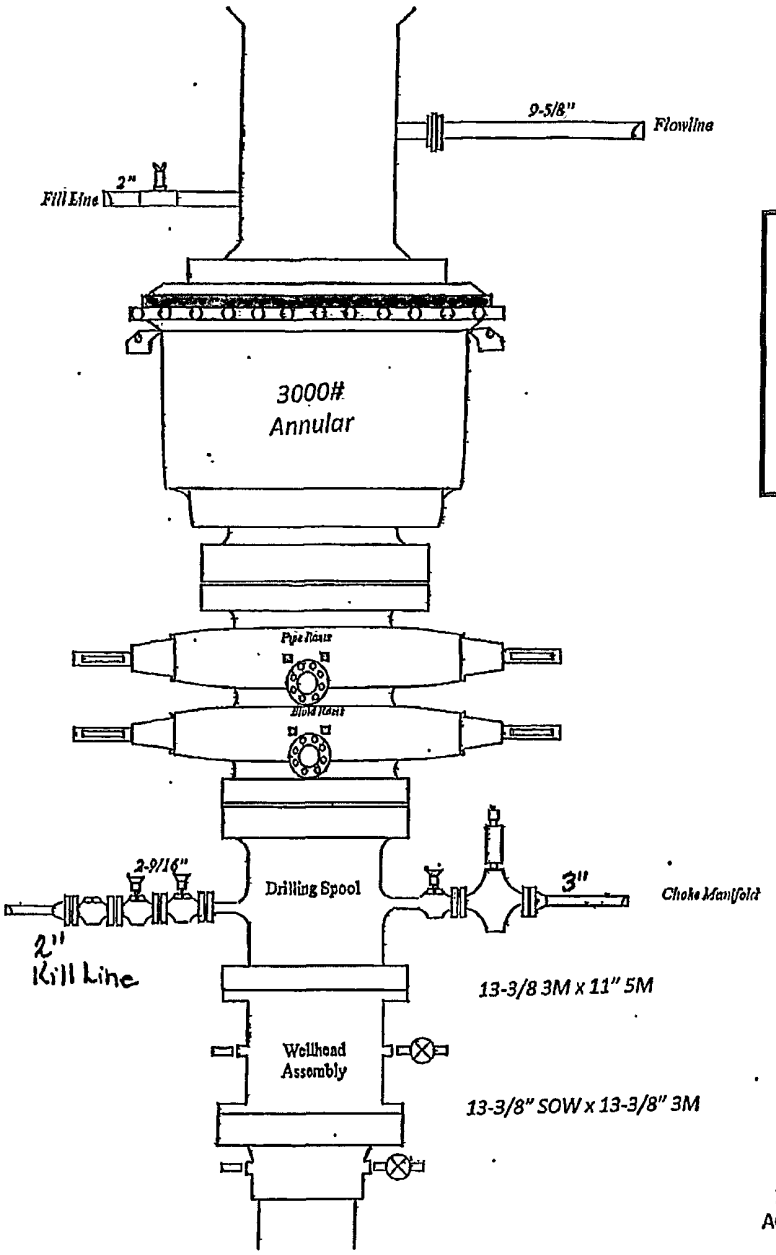
# 13-5/8" 3M psi
# BOPE & Choke Manifold

Exhibit 3

All valve & lines on choke manifold are 2" unless noted.
Exact manifold configuration may vary



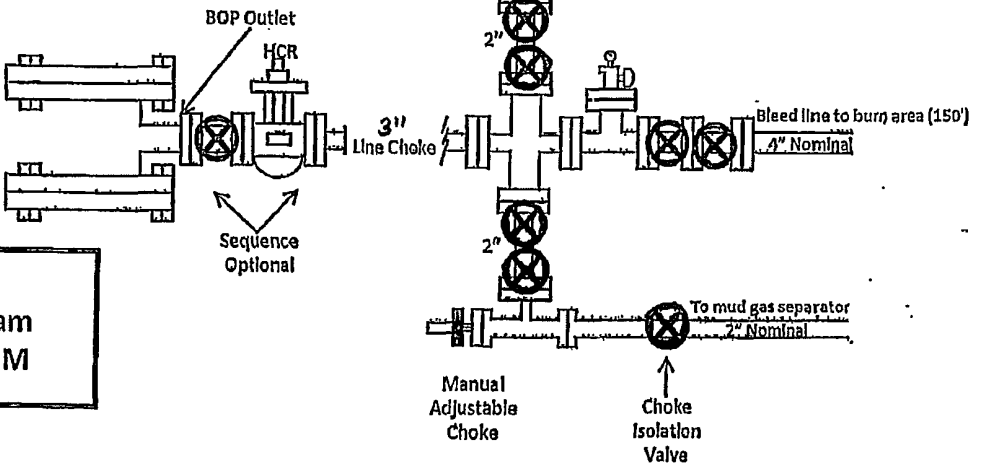



11' or 13-5/8" 5M psi

**BOPE & Choke Manifold**

**EXHIBIT 3A**

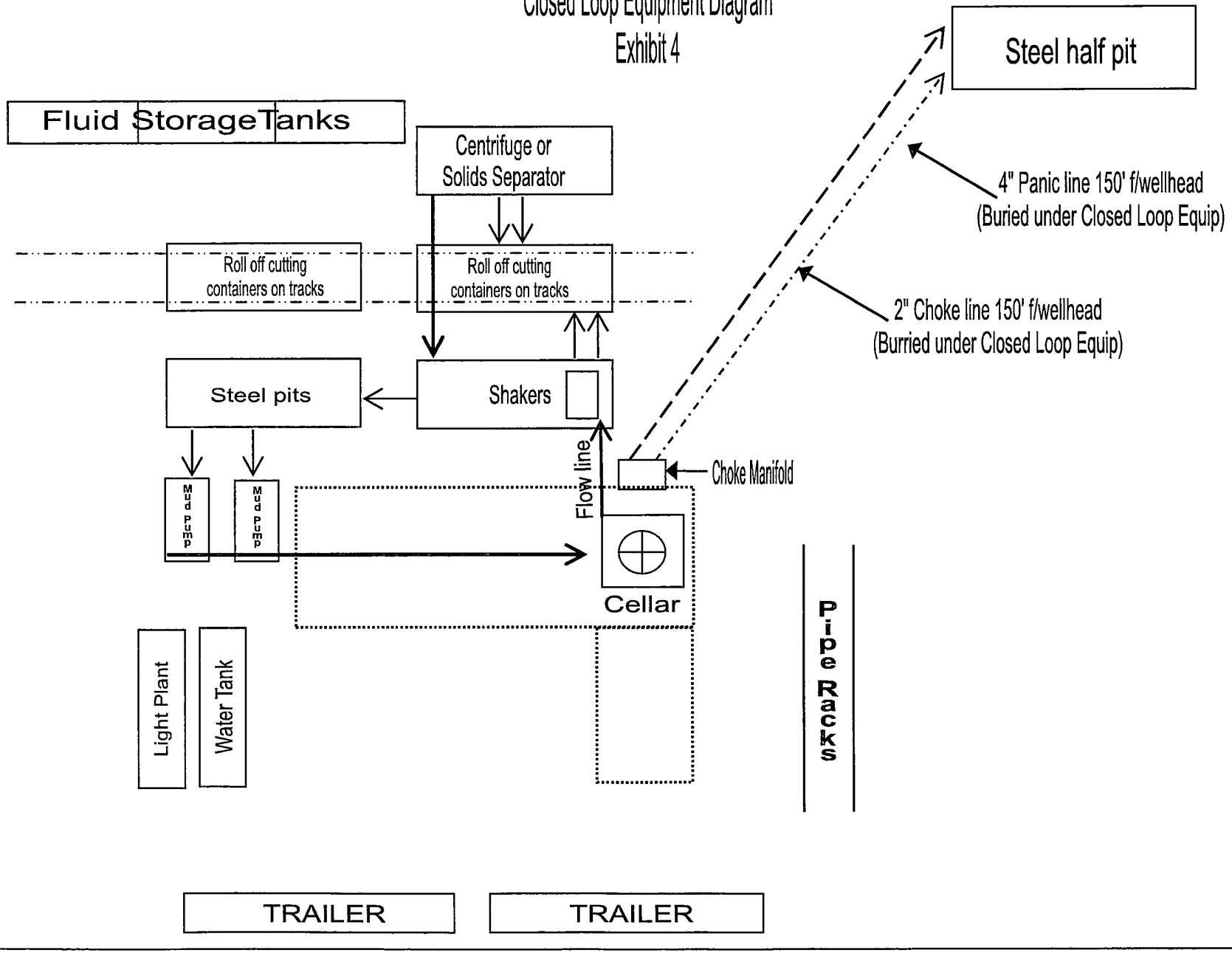
All valve & lines on choke manifold are 2" unless noted. Exact manifold configuration may vary




**Choke Manifold Diagram**
**5M Service tested to 3M**

Apache

Closed Loop Equipment Diagram
Exhibit 4



**DESIGN PLAN, OPERATING & MAINTENANCE PLAN, & CLOSURE PLAN**
**FOR OCD FOR C-144**

# CROW FEDERAL #12H

## DESIGN PLAN

Fluid & cuttings coming from drilling operations will pass over the Shale Shaker with the cuttings going to the Sundance Inc / CRI haul off bin and the cleaned fluid returning to the working steel pits.

Equipment includes:

2 – 500 bbl steel frac tanks (fresh water for drilling)
2 – 180 bbl steel working pits
3 – 75 bbl steel haul off bins
2 – Pumps (6-1/2" x 10" PZ 10 or equivalent)
1 – Shale shaker
1 – Mud cleaner – QMAX MudStripper

## OPERATING AND MAINTENANCE PLAN

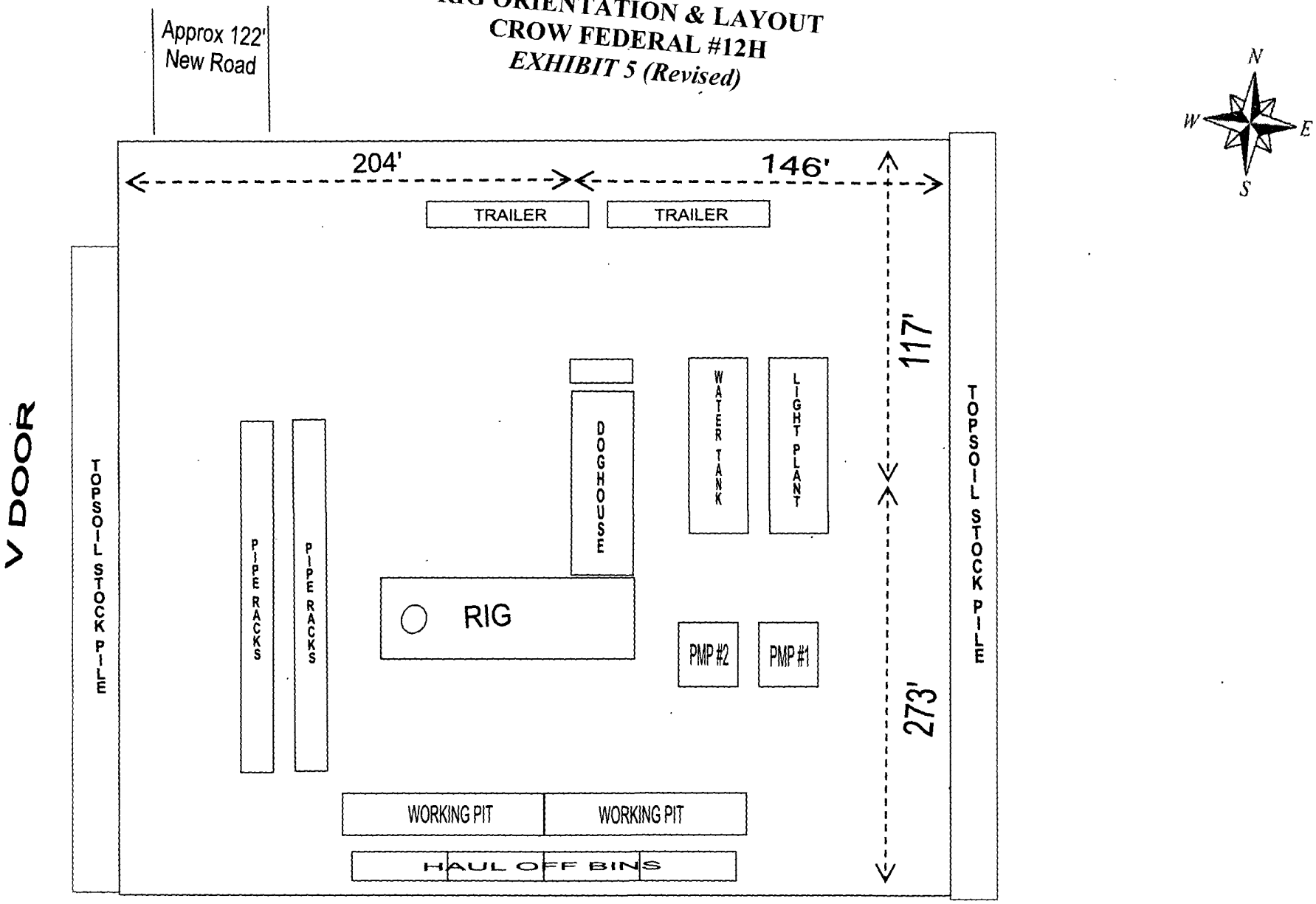
Inspection to occur every tour for proper operation of system and individual components. If any problems are found they will be repaired and/or corrected immediately.

## CLOSURE PLAN

All haul bins containing cuttings will be removed from location and hauled to Sundance Incorporated (NM-01-0003) disposal site located 3 miles East of Eunice, NM on the Texas border / Controlled Recovery, Inc's (NM-01-0006) disposal site located near mile marker 66 on Highway 62/180.

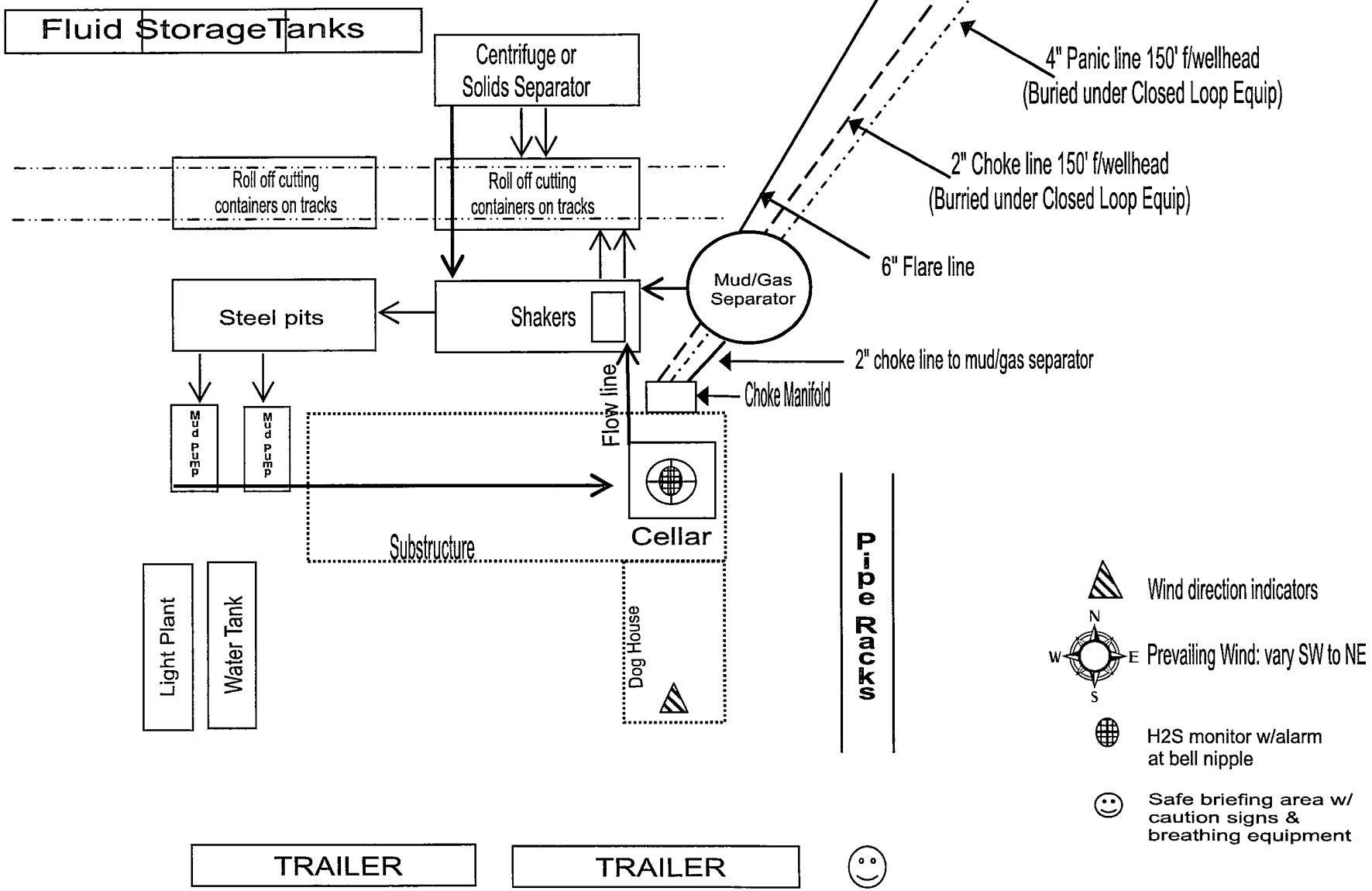
Sorina L. Flores
Supv. of Drilling Services

# RIG ORIENTATION & LAYOUT
# CROW FEDERAL #12H
*EXHIBIT 5 (Revised)*



Apache

Drilling Location
H2S Safety Equipment Diagram
Exhibit 3A



# HYDROGEN SULFIDE ($H_2S$) DRILLING OPERATIONS PLAN

## Hydrogen Sulfide Training:

All regularly assigned personnel, contracted or employed by Apache Corporation will receive training from qualified instructor(s) in the following areas prior to commencing drilling possible hydrogen sulfide bearing formations in this well:

- The hazards and characteristics of hydrogen sulfide ($H_2S$)
- The proper use and maintenance of personal protective equipment and life support systems.
- The proper use of $H_2S$ detectors, alarms, warning systems, briefing area, evacuation procedures & prevailing winds.
- The proper techniques for first aid and rescue procedures.

## Supervisory personnel will be trained in the following areas:

- The effects of $H_2S$ on metal components. If high tensile tubulars are to be utilized, personnel will be trained in their special maintenance requirements.
- Corrective action & shut-in procedures when drilling or reworking a well & blowout prevention / well control procedures.
- The contents and requirements of the $H_2S$ Drilling Operations Plan

There will be an initial training session just prior to encountering a known or probable $H_2S$ zone (within 3 days or 500') and weekly $H_2S$ and well control drills for all personnel in each crew. The initial training session shall include a review of the site specific $H_2S$ Drilling Operations Plan and the Public Protection Plan. This plan shall be available at the well site. All personnel will be required to carry documentation that they have received proper training.

# $H_2S$ SAFETY EQUIPMENT AND SYSTEMS:

## Well Control Equipment that will be available & installed if $H_2S$ is encountered:

- Flare Line with electronic igniter or continuous pilot.
- Choke manifold with a minimum of one remote choke.
- Blind rams & pipe rams to accommodate all pipe sizes with properly sized closing unit.
- Auxiliary equipment to include: annular preventer, mud-gas separator, rotating head & flare gun with flares

## Protective Equipment for Essential Personnel:

- Mark II Survive-air 30 minute units located in dog house & at briefing areas, as indicated on wellsite diagram.

## H2S Dection and Monitoring Equipment:

- Two portable $H_2S$ monitors positioned on location for best coverage & response. These units have warning lights & audible sirens when $H_2S$ levels of 20 ppm are reached.
- One portable $H_2S$ monitor positioned near flare line.

## H2S Visual Warning Systems:

- Wind direction indicators are shown on wellsite diagram.
- Caution / Danger signs shall be posted on roads providing direct access to location. Signs will be painted a high visibility yellow with black lettering of sufficient size to be readable at a reasonable distance from the immediate location. Bilingual signs will be used when appropriate.

## Mud Program:

- The Mud Program has been designed to minimize the volume of $H_2S$ circulated to the surface. Proper mud weights, safe drilling practices & the use of $H_2S$ scavengers will minimize hazards when penetrating $H_2S$ bearing zones.
- A mud-gas separator and $H_2S$ gas buster will be utilized as needed.

## Metallurgy:

- All drill strings, casing, tubing, wellhead, blowout preventers, drilling spool, kill lines, choke manifold & lines, & valves will be suitable for $H_2S$ service.
- All elastomers used for packing & seals shall be $H_2S$ trim.

## Communication:

- Cellular telephone and 2-way radio communications in company vehicles, rig floor and mud logging trailer.

# HYDROGEN SULFIDE ($H_2S$) CONTINGENCY PLAN

**Assumed 100 ppm ROE = 3000'**

100 ppm $H_2S$ concentration shall trigger activation of this plan.

## Emergency Procedures

In the event of a release of gas containing $H_2S$, the first responder(s) must

- Isolate the area and prevent entry by other persons into the 100 ppm ROE.
- Evacuate any public places encompassed by the 100 ppm ROE.
- Be equipped with $H_2S$ monitors and air packs in order to control the release.
- Use the "buddy system" to ensure no injuries occur during the response
- Take precautions to avoid personal injury during this operation.
- Contact operators and/or local officials to aid in operation. See list of phone numbers attached.
- Have received training in the :
  - Detection of $H_2S$, and
  - Measures for protection against the gas,
  - Equipment used for protection and emergency response.

## Ignition of Gas source

Should control of the well be considered lost and ignition considered, take care to protect against exposure to Sulfur Dioxide ($SO_2$). Intentional ignition must be coordinated with the NMOCD and local officials. Additionally the NM State Police may become involved. NM State Police shall be the Incident Command on scene of any major release. Take care to protect downwind whenever this is an ignition of the gas.

### Characteristics of $H_2S$ and $SO_2$

| Common Name | Chemical Formula | Specific Gravity | Threshold Limit | Hazardous Limit | Lethal Concentration |
|---|---|---|---|---|---|
| Hydrogen Sulfide | $H_2S$ | 1.189 Air = I | 10 ppm | 100 ppm/hr | 600 ppm |
| Sulfur Dioxide | $SO_2$ | 2.21 Air = I | 2 ppm | N/A | 1000 ppm |

## Contacting Authorities

Apache Corporation personnel must liaison with local and state agencies to ensure a proper response to a major release. Additionally, the OCD must be notified of the release as soon as possible but no later than 4 hours. Agencies will ask for information such as type and volume of release, wind direction, location of release, etc. Be prepared with all information available including directions to site. The following call list of essential and potential responders has been prepared for use during a release. Apache's response must be in coordination with the State of New Mexico's *"Hazardous Materials Emergency Response Plan" (HMER).*

# WELL CONTROL EMERGENCY RESPONSE PLAN

## I. GENERAL PHILOSOPHY

Our objective is to ensure that during an emergency, a predetermined procedure is followed so that prompt decisions can be made based on accurate information.

The best way to handle and emergency is with an experienced organization set up for the sole purpose of solving the problem. The *Well Control Emergency Response Team* was organized to handle dangerous & expensive well control problems. The *Team* is structured such that each individual can contribute the most from his area of expertise. Key decision-makers are determined prior to an emergency to avoid confusion about who is in charge.

If the well is flowing uncontrolled at the surface or subsurface, *The Emergency Response Team* will be mobilized. The *Team* is customized for the people currently on the Apache staff. Staff changes may require a change in the plan.

## II. EMERGENCY PROCEDURE ON DRILLING OR COMPLETION OPERATIONS

**A.** In the event of an emergency the *Drilling Foreman or Tool-Pusher* will immediately contact only one of the following starting with the first name listed:

| Name | Office | Mobile | Home |
|---|---|---|---|
| Danny Laman – Drlg Superintendent | 432-818-1022 | 432-634-0288 | 432-520-3528 |
| Terry West – Drilling Engineer | 432-818-1114 | 432-664-7254 | |
| Bobby Smith – Drilling Manager | 432-818-1020 | 432-556-7701 | |
| Jeff Burt – EH&S Coordinator | | 432-631-9081 | |

***This one phone call will free the Drilling Foreman to devote his full time to securing the safety of personnel & equipment. This call will initiate the process to mobilize the Well Control Emergency Response Team. Apache maintains an Emergency Telephone Conference Room in the Houston office. This room is available for us by the Permian Region. The room has 50 separate telephone lines.*

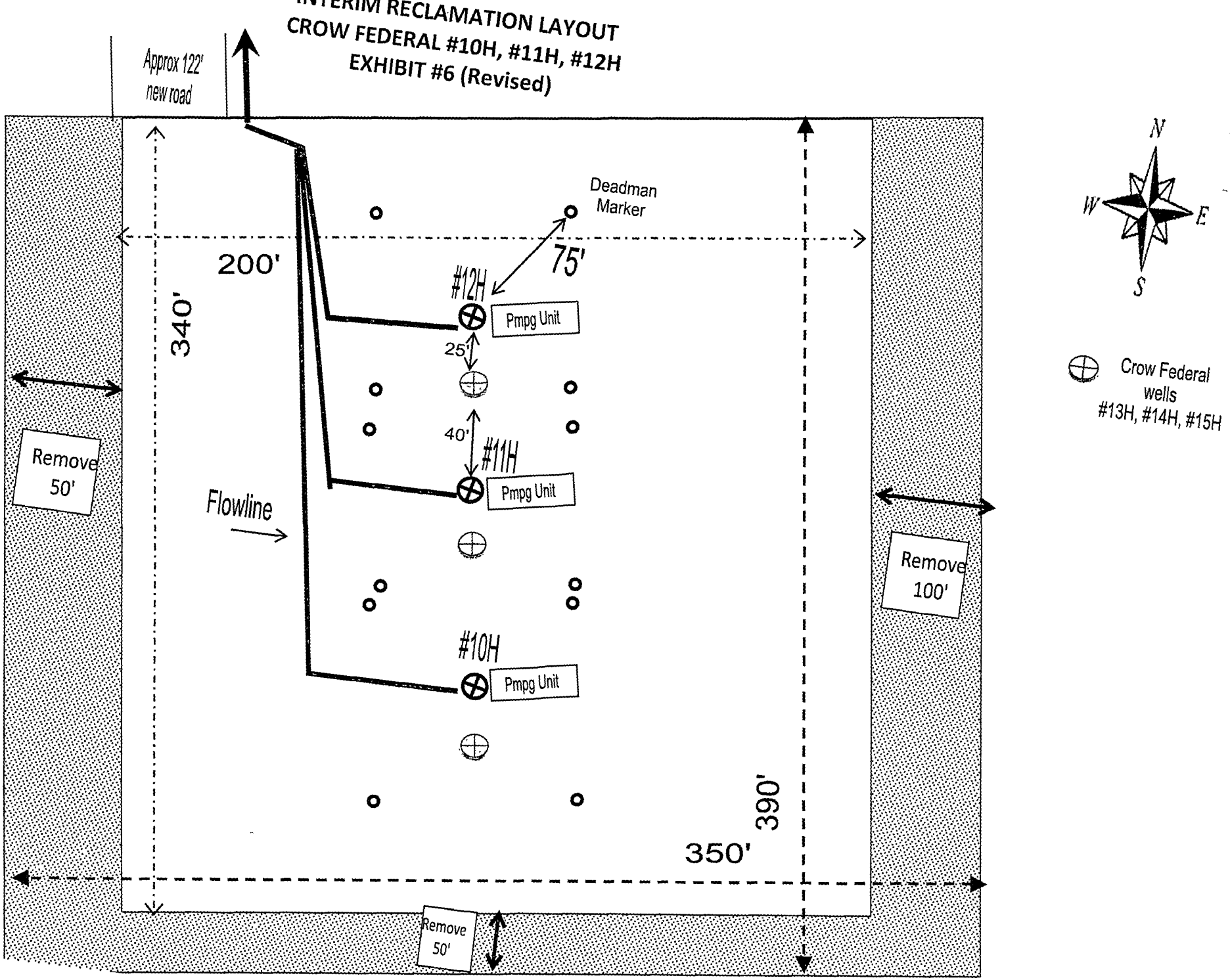
**B.** The Apache employee contacted by the Drilling Foreman will begin contacting the rest of the *Team*. If **Danny Laman** is out of contact, **Bob Lange** will be notified.

**C.** If a member of the *Emergency Response Team* is away from the job, he must be available for call back. Telephone numbers should be left with secretaries or a key decision-maker.

**D.** Apache's reporting procedure for spills or releases of oil or hazardous materials will be implemented when spills or releases have occurred or are probable.

### EMERGENCY RESPONSE NUMBERS:

| | |
|---|---|
| **SHERIFF DEPARTMENT** | |
| Eddy County | 575-887-7551 |
| Lea County | 575-396-3611 |
| **FIRE DEPARTMENT** | 911 |
| Artesia | 575-746-5050 |
| Carlsbad | 575-885-2111 |
| Eunice | 575-394-2111 |
| Hobbs | 575-397-9308 |
| Jal | 575-395-2221 |
| Lovington | 575-396-2359 |
| **HOSPITALS** | 911 |
| Artesia Medical Emergency | 575-746-5050 |
| Carlsbad Medical Emergency | 575-885-2111 |
| Eunice Medical Emergency | 575-394-2112 |
| Hobbs Medical Emergency | 575-397-9308 |
| Jal Medical Emergency | 575-395-2221 |
| Lovington Medical Emergency | 575-396-2359 |
| **AGENT NOTIFICATIONS** | |
| Bureau of Land Management | 575-393-3612 |
| New Mexico Oil Conservation Division | 575-393-6161 |


INTERIM RECLAMATION LAYOUT
CROW FEDERAL #10H, #11H, #12H
EXHIBIT #6 (Revised)
Approx 122' new road
Deadman Marker
200'
75'
340'
#12H
Pmpg Unit
25'
40'
#11H
Pmpg Unit
Flowline
Remove 50'
Remove 100'
#10H
Pmpg Unit
390'
350'
Remove 50'
N
W
E
S
Crow Federal wells #13H, #14H, #15H

# PECOS DISTRICT
# CONDITIONS OF APPROVAL

| | |
|---|---|
| OPERATOR'S NAME: | Apache Corp |
| LEASE NO.: | LC029426B |
| WELL NAME & NO.: | 12H Crow Federal |
| SURFACE HOLE FOOTAGE: | 1013' FSL & 250' FWL |
| BOTTOM HOLE FOOTAGE | '1013 FSL & 330' FEL |
| LOCATION: | Section 10, T.17 S., R.31 E., NMPM |
| COUNTY: | Eddy County, New Mexico |

## TABLE OF CONTENTS

Standard Conditions of Approval (COA) apply to this APD. If any deviations to these standards exist or special COAs are required, the section with the deviation or requirement will be checked below.