

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR DEEPEN

1a. TYPE OF WORK DRILL <input type="checkbox"/> DEEPEN <input checked="" type="checkbox"/>		5. LEASE DESIGNATION AND SERIAL NO. NM-9018, NM-48292, & LC-065684
b. TYPE OF WELL OIL WELL <input checked="" type="checkbox"/> GAS WELL <input type="checkbox"/> OTHER <input type="checkbox"/> SINGLE ZONE <input checked="" type="checkbox"/> MULTIPLE ZONE <input type="checkbox"/>		6. IF INDIAN, ALLOTEE OR TRIBE NAME
2. NAME OF OPERATOR HARVEY E. YATES COMPANY		7. UNIT AGREEMENT NAME YOUNG DEEP UNIT
3. ADDRESS AND TELEPHONE NO. P.O. BOX 1933, ROSWELL, NEW MEXICO 88202 505-823-6601		8. FARM OR LEASE NAME, WELL NO. 14H
4. LOCATION OF WELL (REPORT LOCATION CLEARLY AND IN ACCORDANCE WITH ANY STATE REQUIREMENTS) AT SURFACE 585' FNL & 2,055' FEL AT PROPOSED PROD. ZONE 1,550' FNL & 760' FWL		9. API WELL NO. 30-025-29015
		10. FIELD AND POOL, OR WILDCAT N. YOUNG BONE SPRING
		11. SEC., T., R., M., OR BLK AND SURVEY OR AREA SEC 9, T18S, R32E
		12. COUNTY OR PARISH LEA
		13. STATE NM

14. DISTANCE IN MILES AND DIRECTION FROM NEAREST TOWN OR POST OFFICE  
20 MILES SE OF LOCO HILLS, NM

15. DISTANCE FROM PROPOSED LOCATION TO NEAREST PROPERTY OR LEASE LINE, FT. (Also to nearest drig. unit line, if any)	16. NO. OF ACRES IN LEASE	17. NO. OF ACRES ASSIGNED TO THIS WELL
585	320	
18. DISTANCE FROM PROPOSED LOCATION TO NEAREST WELL DRILLING, COMPLETED, OR APPLIED FOR, ON THIS LEASE, FT.	19. PROPOSED DEPTH	20. ROTARY OR CABLE TOOLS
450'	8,900' TVD	ROTARY
21. ELEVATIONS (Show whether DF, RT, GR, etc.) 3836	APPROX. DATE WORK WILL START 08/15/05	

23. PROPOSED CASING AND CEMENTING PROGRAM

SIZE OF HOLE	GRADE, SIZE OF CASING	WT PER FT	SETTING DEPTH	QUANTITY OF CEMENT
17 1/2"	13 3/8" H-40	48#	400'	IN PLACE CEMENT CIRCULATED
12 1/4"	8 5/8" J-55	32#	3,100'	IN PLACE CEMENT CIRCULATED
7 7/8"	5 1/2" J-65	15.5# & 17#	9,208'	IN PLACE TOP OF CEMENT 760'
4 3/4"	3 1/2" P-110	9.3#	8,900' TVD + 1,950' HORIZ	135 SX

ALL CASING WILL BE NEW, OR USED MEETING BLM SPECS.

CEMENT QUANTITIES AND ADDITIVES ARE SUBJECT TO CHANGE DUE TO HOLE CONDITIONS.

3 1/2" LINER CEMENT 135 SX CLASS H, W/ SODIUM METASILICATE, DISPERSANT AND FLUID LOSS

APPROVAL SUBJECT TO  
GENERAL REQUIREMENTS AND  
SPECIAL STIPULATIONS  
ATTACHED

PROPOSED MUD PROGRAM

0-8,200'	FRESH WATER
8,200' TO 1,950' HORIZ.	MUD UP WITH BARAZAN D, MW 9.4-9.8 VIS 34-36

MUD PROGRAM SUBJECT TO CHANGE DUE TO HOLE CONDITIONS

SEE ATTACHED PROCEDURE FOR HORIZONTAL DRILLING

IN ABOVE SPACE DESCRIBE PROPOSED PROGRAM: If proposal is to deepen, give data on present productive zone and proposed new productive zone. If proposal is to drill or deepen directionally, give pertinent data on subsurface locations and measured and true vertical depths. Give blowout preventer program, if any.

24. SIGNED Bob Williams Bob Williams TITLE Drilling Superintendent DATE 6/10/05

(THIS SPACE FOR FEDERAL OR STATE OFFICE USE)

PERMIT NO. \_\_\_\_\_ APPROVAL DATE \_\_\_\_\_

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:

APPROVED BY /s/ Joe G. Lara TITLE ACTING FIELD MANAGER DATE JUL 29 2005

TITLE 18 U.S.C. SECTION 1001, MAKES IT A CRIME FOR ANY PERSONS 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

APPROVAL FOR 1 YEAR

Application  
Harvey E. Yates Company  
Young Deep Unit #14H  
SEC 9, T18S, R32E  
Eddy County, New Mexico

In conjunction with Form 3160-3, Application For Permit To Drill Or Deepen subject well, Harvey E. Yates Company submits the following ten items of pertinent information in accordance with Onshore Oil & Gas Order No 10.

1. Geologic Name of Surface Formation:

Quaternary alluvium and bolson deposits.

2. Estimated Tops of Significant Geologic Markers:

Rustler	1,165	BSPG A Zone	7,655	
Yates	2,665	BSPG 1st Sand	7,850	
Seven Rivers	3,100	B-Zone	8,080	
Bowers	3,550	Kick Off Point	8,200	T.V.D.
Queen	3,810	BSPG 2nd Sand	8,565	8,555
Penrose	4,050	Base A Bench	8,618	8,605
Grayburg	4,330	Top B Bench	8,657	8,635
San Andres	4,855	Top C Bench	8,950	8,826
Delaware	4,945	1st Horz. Point	9,297	8,900
BSPG LS	6,070	BHL Target @TD	11,245	8,900

3. Estimated Depths at which Water, Oil, or Gas Formations are expected:

Oil: 8,555

Gas: 8,555

4. Proposed Casing Program:

See Form 3160-3

5. Pressure Control Equipment:

This well will be rated 3M, but actual BOP Stack will be rated 5M

6. Drilling Fluid Program:

See Form 3160-3

7. Auxiliary Equipment:

No auxiliary equipment

8. Testing, Logging, and Coring Program:

Mud Log and Gamma Ray MWD

9. Abnormal Conditions, Pressures, Temperature, or Potential Hazards:

No abnormal conditions are anticipated in this wellbore

BHST 150° F

BHP 2,000 psi

No H2S is present in this well.

10. Anticipated Starting Date & Duration of Operation:

Start Date: Approximately Aug 15, 2005. Duration of this project will be approximately 40 days from start of construction of drilling pad until finish of completion operations.

**Surface Use Plan**  
Harvey E. Yates Company  
Young Deep Unit 14H  
Section 9, T18S, R32E  
Lea County, New Mexico

**1 Existing Roads:**

Exhibit A is a portion of a New Mexico map showing the location of the proposed location. The location is approximately 16 miles Southeast of Loco Hills, NM. Leave Artesia on US 82 & travel 31 miles east to the junction of NM 529. Turn Southeast and go 7 miles. Turn right and go .3 miles. Turn right and go .1 miles to Young Deep 13 location. Turn left and go .2 miles. Turn left into location

**2 Planned Access Roads:**

No new road will be built to access this location.

**3 Location of Existing Wells:**

See EXHIBIT B

**4 Location of Tank Batteries, Electric Lines, Etc:**

In the event a producing well is drilled, a tank battery will be built on the location.

**5 Location and Type of Water Supply:**

Water will be obtained from commercial sources.

**6 Source of Construction Material:**

We will use materials from a state approved caliche pit to build the location.

**7 Methods of Handling Waste Disposal:**

Waste will be handled in an approved manner. The wellsite will be cleaned of all waste within 30 days of final completion of the well.

**8 Ancillary Facilities:**

N/A

**9 Wellsite Layout:**

- a. EXHIBIT D shows the relative location and dimensions of the well pad, reserve pits, and major rig components.
- b. The land is rolling and sandy
- c. The pad and pit area have been staked.

**10 Plan for Restoration of the Surface:**

- a. After drilling and completion operations are completed, all equipment and other materials not needed for further operations will be removed. Pits will be back filled and the location cleaned of all trash to leave the wellsite as pleasant in appearance as possible.
- b. If the proposed operation is nonproductive, all restoration and/or vegetation requirements of the BLM will be complied with, and will be accomplished as quickly as possible. All pits will be filled and leveled within 90 days after abandonment.

**11 Other Information:**

- a. The surface and mineral owner is the Federal Government. The grazing Lessee is Williams & Son Cattle Company, and they will be contacted regarding operations.
- b. The topography consists of sandy soil with native grasses. No wildlife was observed, but the usual inhabitants of this region are Jackrabbits, Reptiles, Coyotes, etc.
- c. There are no ponds, lakes, or rivers in this area.
- d. An Archaeological Survey will be done a copy has been sent to the Carlsbad BLM office. There are no occupied dwellings or windmills in the area.
- e. Should any incidental oil be recovered during testing of this well, this oil will be considered waste oil and not sellable due to contamination by drilling and/or completion fluids.

**12 Operator's Representative:**

I certify that I, or persons under my direct supervision, have inspected the proposed drill site and access route; that I am familiar with the conditions which currently exist; that the statements made in this plan are, to the best of my knowledge, true and correct; that the work associated with operations proposed herein will be performed by Harvey E. Yates Company and its contractors and subcontractors in conformity with this plan and the terms and conditions under which it is approved. This statement is subject to the provisions of 18 U.S.C. 1001 for the filing of a false statement.

06/15/05

*Bob Williams*

Bob Williams Drilling Superintendent  
Harvey E. Yates Company  
P.O. Box 1933  
Roswell, NM  
505-623-6601

**United States Department of the Interior**

**BUREAU OF LAND MANAGEMENT  
Roswell Resource Area  
P.O. Drawer 1857  
Roswell, New Mexico 88202-1857**

**Statement Accepting Responsibilities for Operations**

**Operator Name:** Harvey E. Yates Company  
**Street or Box:** P.O. Box 1933  
**City, State:** Roswell, New Mexico  
**Zip Code:** 88202

**The undersigned accepts all applicable terms, conditions, stipulations, and restrictions concerning operations conducted on the leased land or portion thereof, as described below.**

**Lease No.:**

**Lease Name:** Young Deep Unit 14H

**Legal description of land:** Sec 9, T18S, R32E, Lea County, New Mexico

**Formation(s) (if applicable):** Bone Springs 2nd Sand

**Bond Coverage: (State if individually bonded or another's bond):** Blanket Bond

**BLM Bond File No.:**

**Authorized Signature:** Bob Wallion

**Title:** Drilling Superintendent

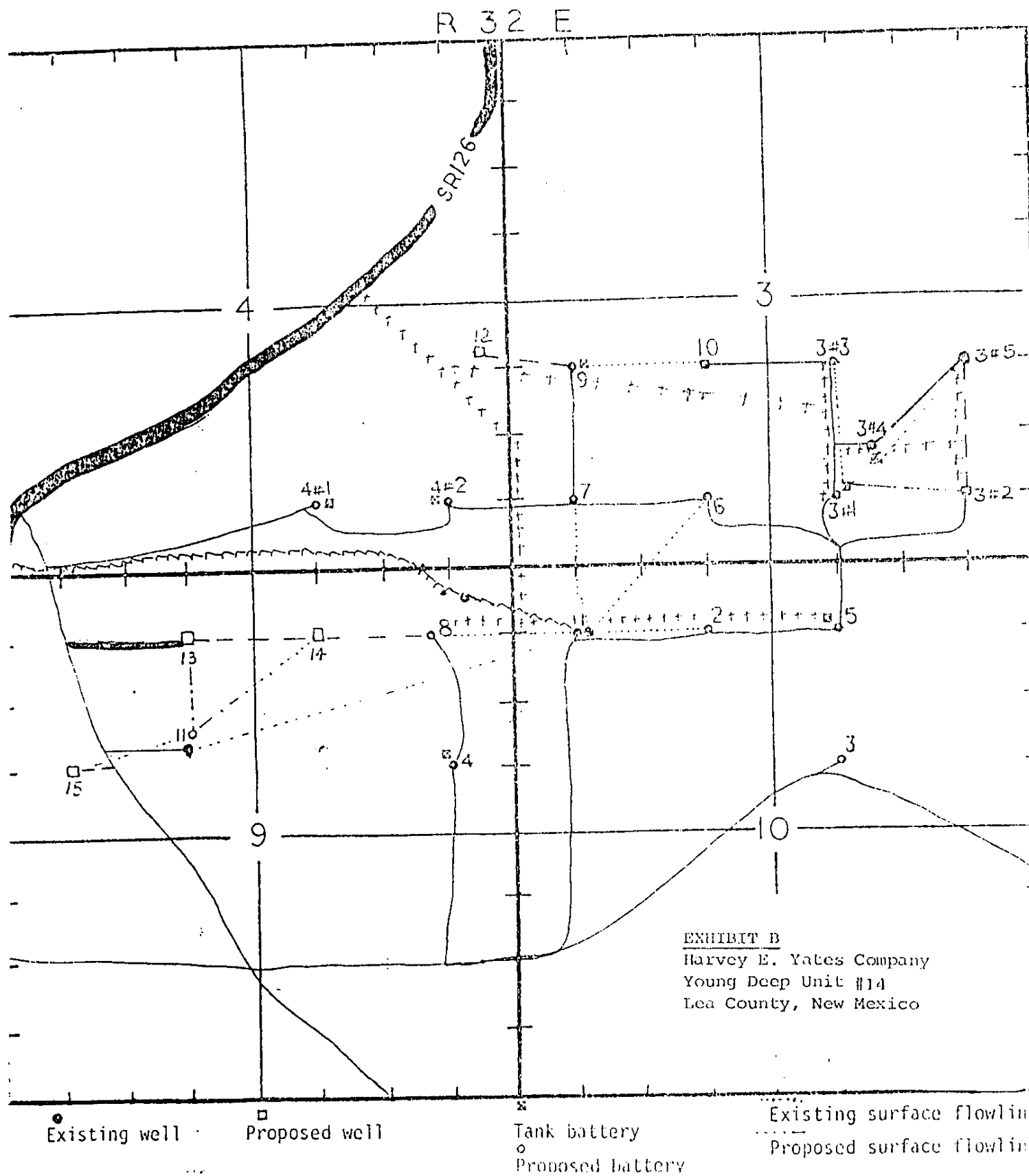
**DATE:** 6/15/05

FIELD Young Deep Unit

OPERATOR Harvey E. Yates Company  
WELL NAME & NO.

COUNTY Lea  
STATE New Mexico

SURFACE USE PLAN



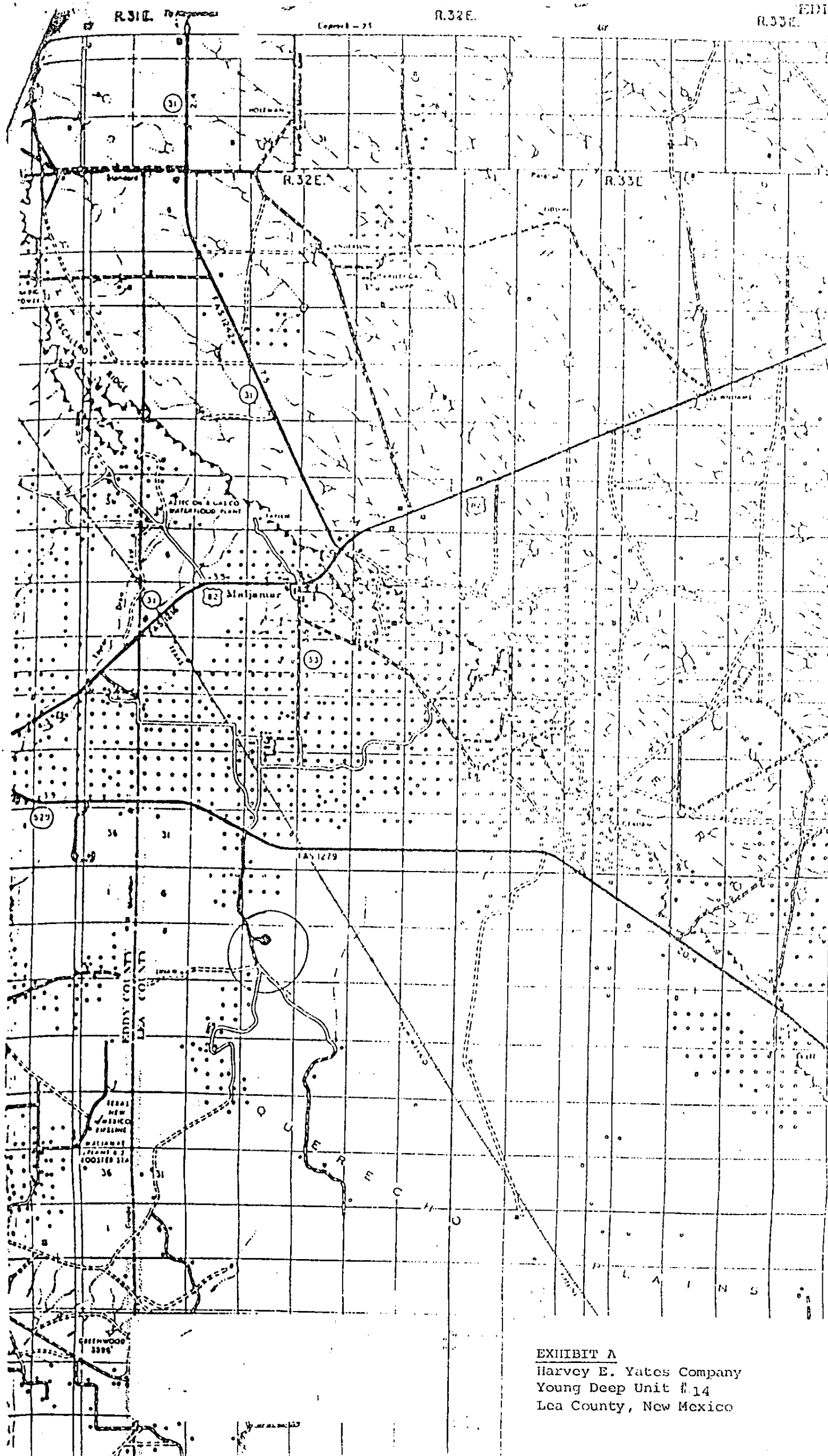


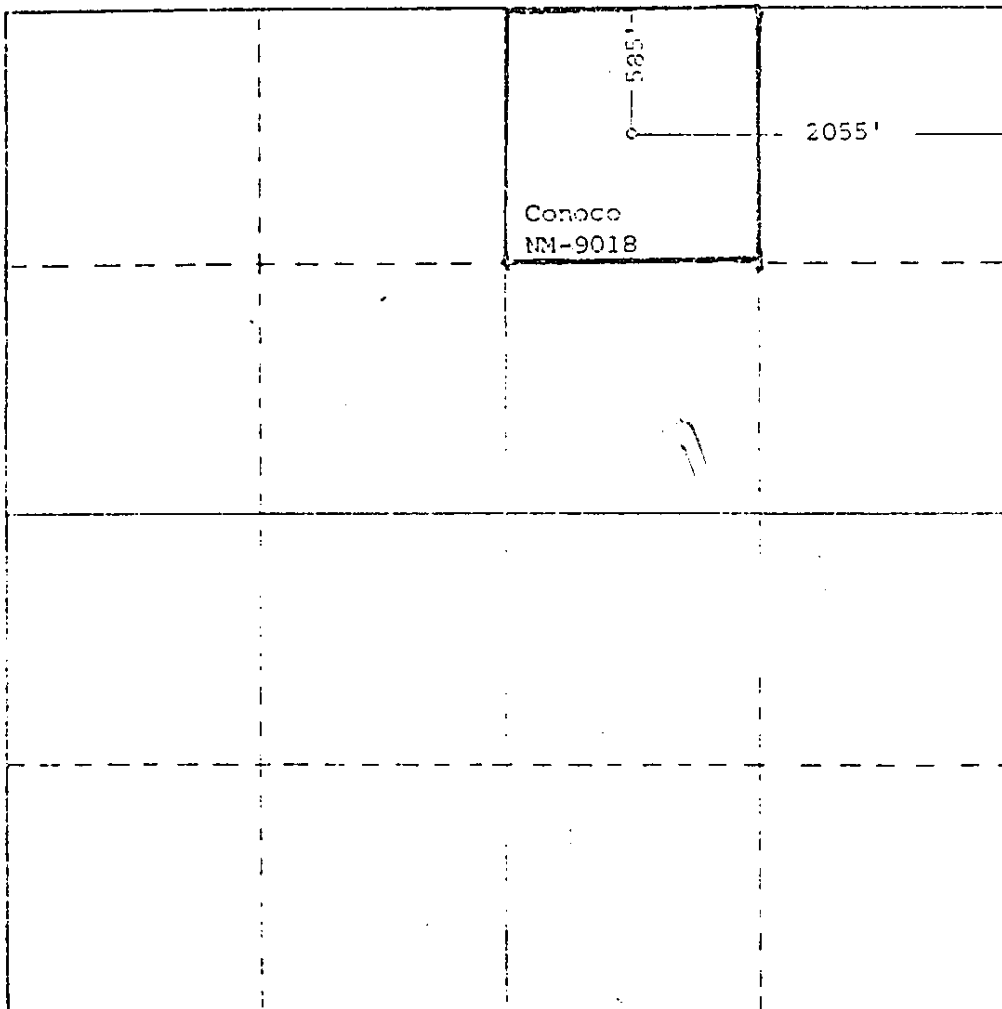
EXHIBIT A  
Harvey E. Yates Company  
Young Deep Unit #14  
Lea County, New Mexico

NEW MEXICO OIL CONSERVATION COMMISSION  
WELL LOCATION AND ACREAGE DEDICATION PLAT

Form O-101  
Superseded by O-104  
Effective 1-1-65

All distances must be from the outer boundaries of the Section.

Owner: HARVEY E. YATES CO. <span style="font-size: 1.2em;">(10179)</span>			Lease: YOUNG DEEP UNIT <span style="font-size: 1.2em;">(12993)</span>		Well No.: 14
Section: 8	Section: 9	Township: 18S	Range: 32E	County: LEA	
Actual Encroachment Location of Well:					
585 feet from the North line and		2055 feet from the East line			
Ground Level Elev.: 3836.0	Producing Formation: Bone Springs	Pool: N. Young Bone Springs	Dedicated Acreage: 40		
<p>1. Outline the acreage dedicated to the subject well by colored pencil or hatchure marks on the plat below.</p> <p>2. If more than one lease is dedicated to the well, outline each and identify the ownership thereof (both as to working interest and royalty).</p> <p>3. If more than one lease of different ownership is dedicated to the well, have the interests of all owners been consolidated by communitization, unitization, force-pooling, etc?</p> <p><input checked="" type="checkbox"/> Yes    <input type="checkbox"/> No    If answer is "yes," type of consolidation: <u>Unitization</u></p> <p>If answer is "no," list the owners and tract descriptions which have actually been consolidated. (Use reverse side of this form if necessary.) _____</p> <p>No allowable will be assigned to the well until all interests have been consolidated (by communitization, unitization, forced-pooling, or otherwise) or until a non-standard unit, eliminating such interests, has been approved by the Commission.</p>					



CERTIFICATION

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

*Ray F. Nokes*

Name: Ray F. Nokes

Position: Registered Engineer

Company: Harvey E. Yates Company

Date: October 19, 1984

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

Date Surveyed: 10/19/84

Registered Professional Engineer and or Land Surveyor

*John W. West*

Certificate No. JOHN W. WEST, 675

RONALD J. EIDSON, 2119

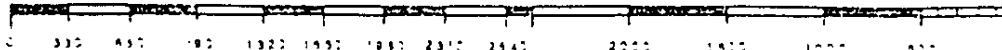
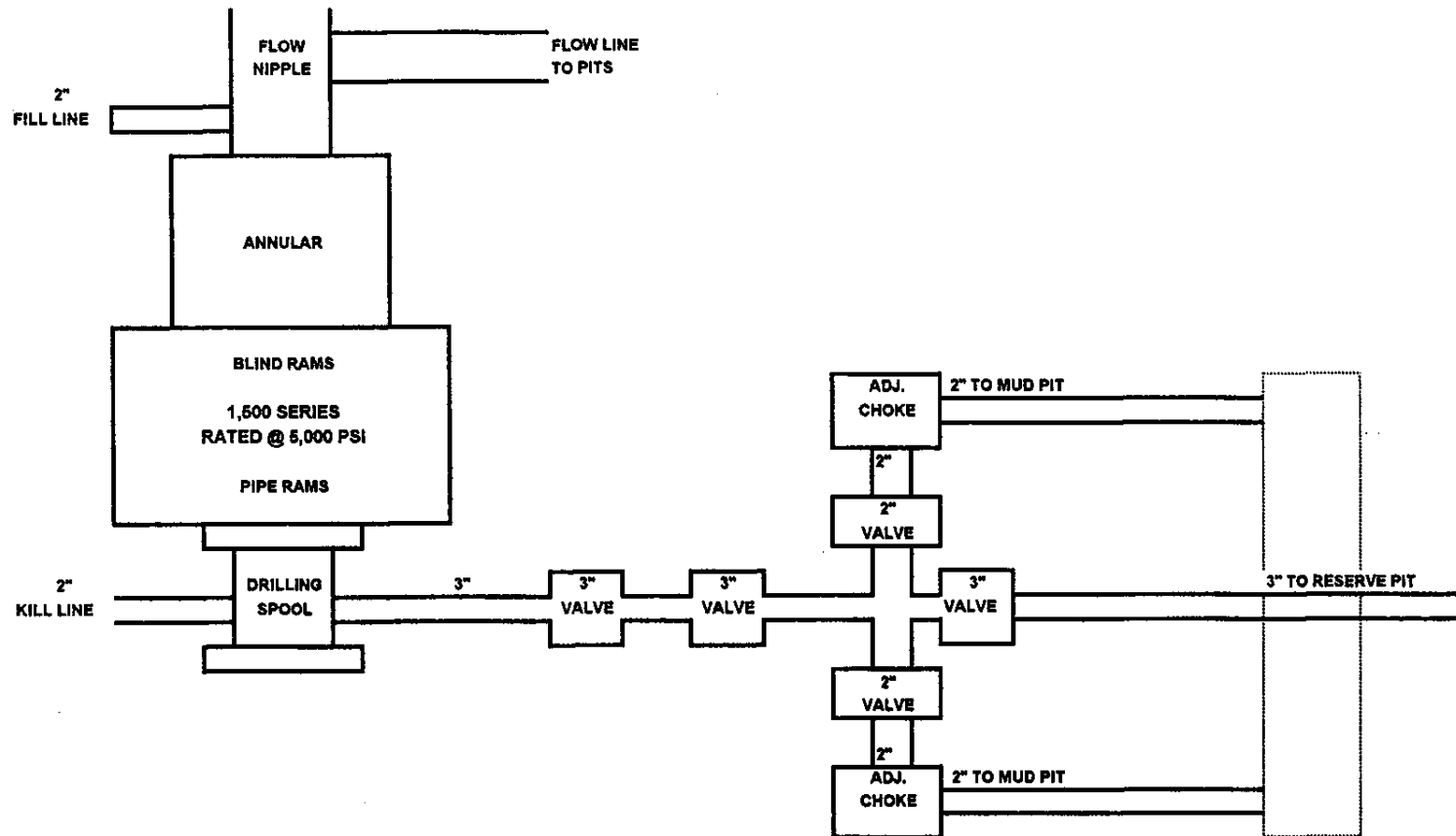




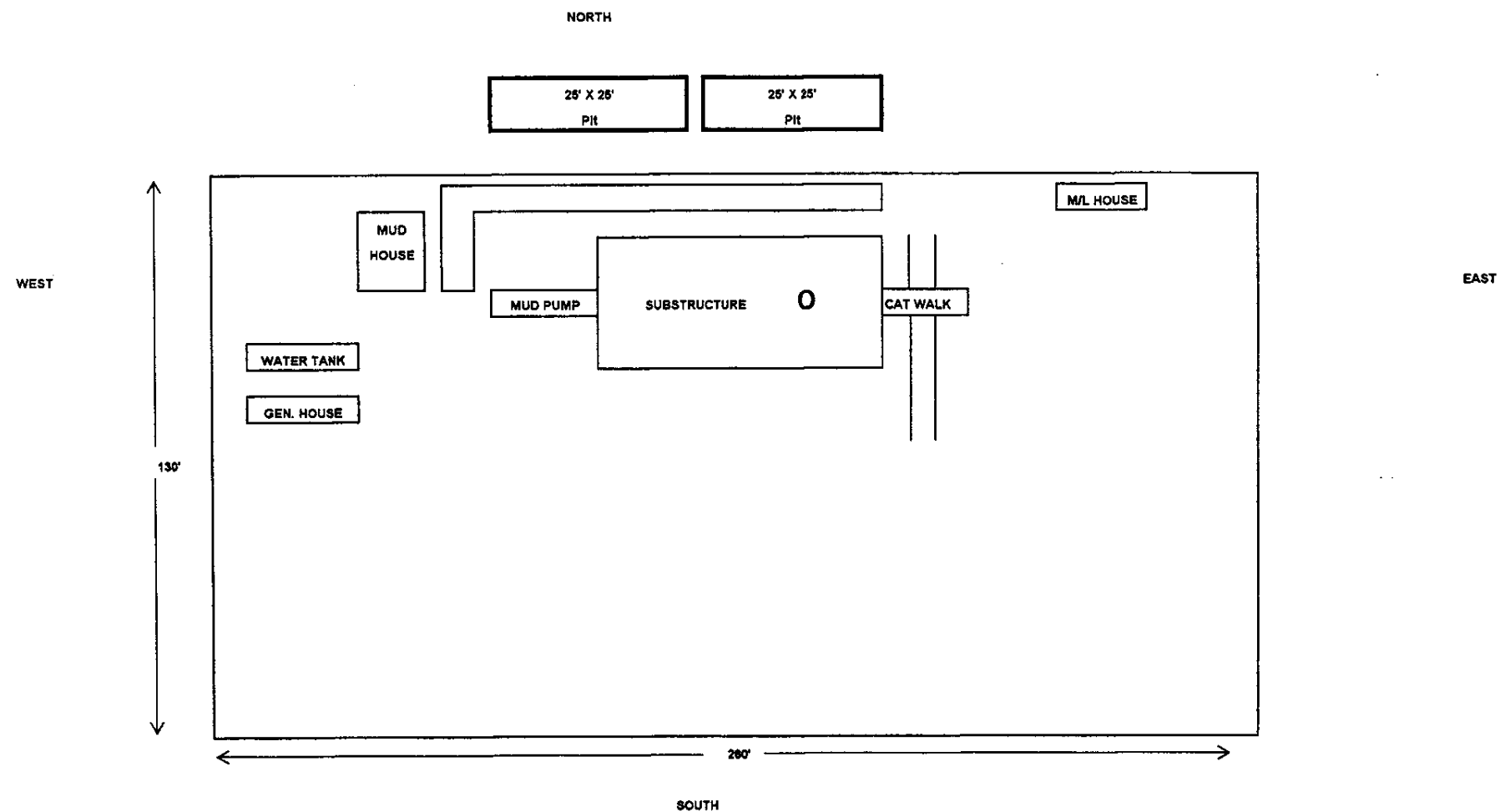
EXHIBIT "C" BOP STACK

Young Deep Unit 14H  
585' FNL & 2,055' FEL  
Sec 9, T18S, R32E  
Lea County, NM



# EXHIBIT "D" LOCATION DIAGRAM

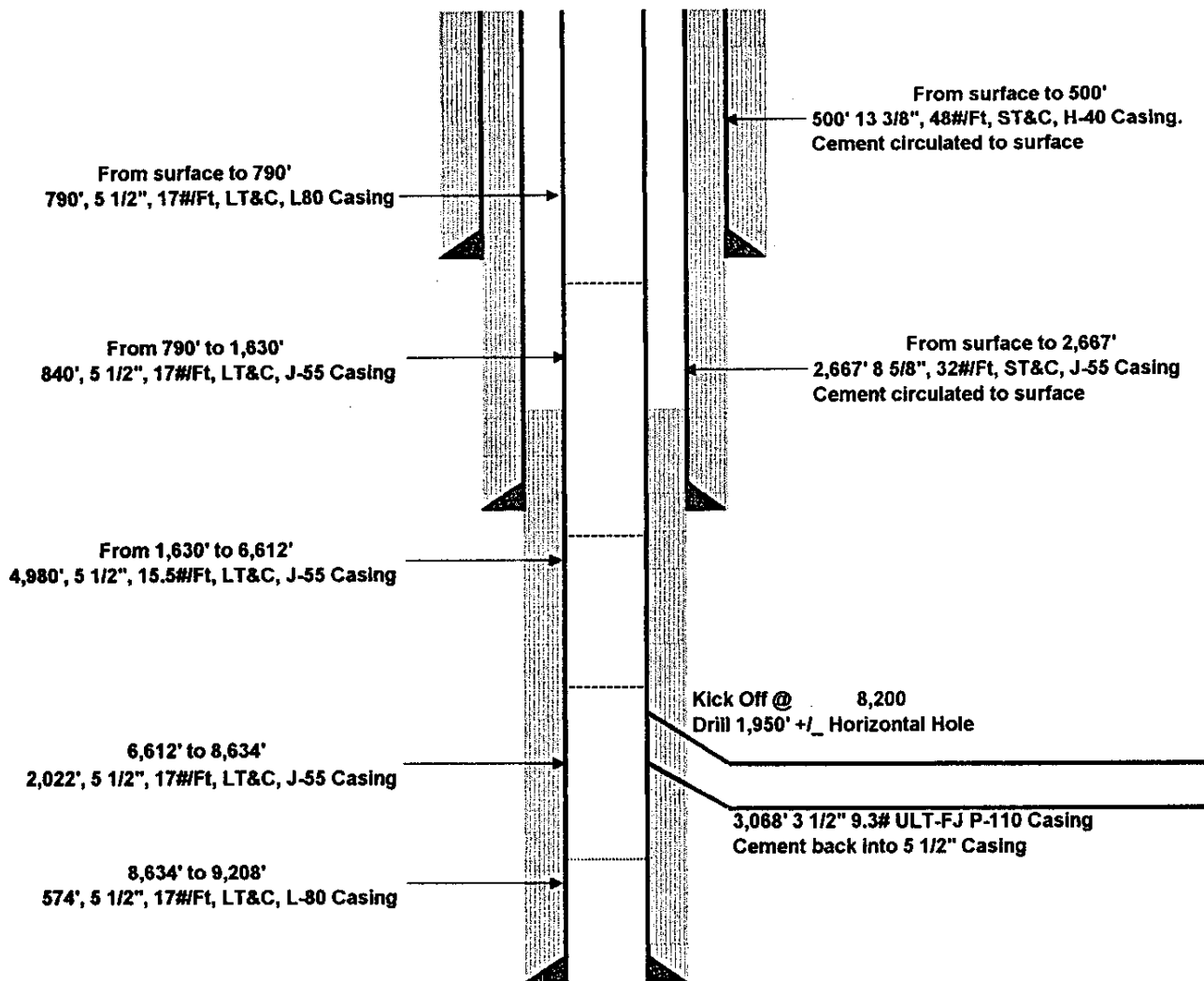
Young Deep Unit 14H  
585' FNL & 2,055' FEL  
Sec 9, T18S, R32E  
Lea County, NM

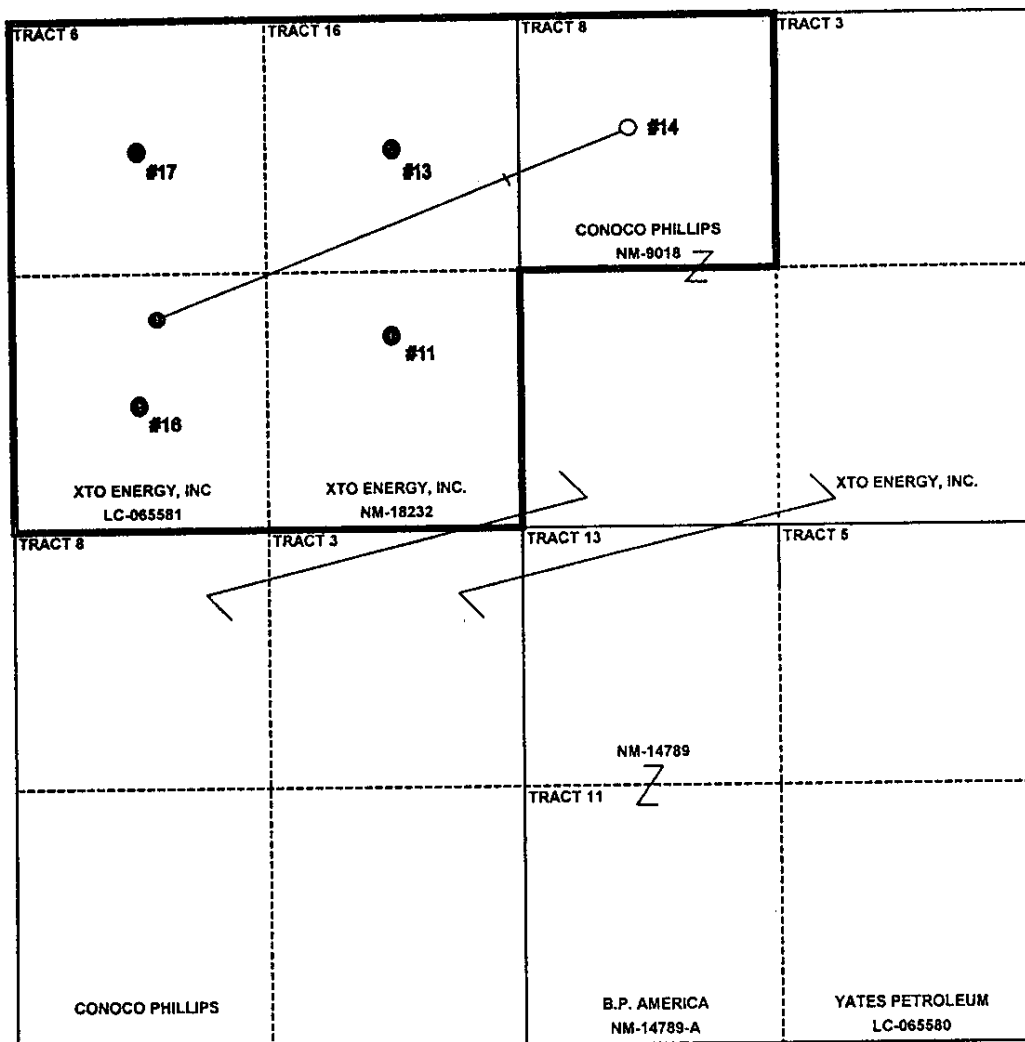


# EXHIBIT "E" CASING DESIGN

Young Deep Unit 14H  
585' FNL & 2,055' FEL  
Sec 9, T18S, R32E  
Lea County, NM

13 3/8", 8 5/8", & 5 1/2" Casings are in place and cemented.





#11 1650' FNL & 1980' FWL  
 #13 660' FNL & 1980' FWL  
 #14 585' FNL & 2055' FEL  
 #14 BHL 1550' FNL & 760' FWL  
 #16 1980' FNL & 660' FWL  
 #17 660' FNL & 660' FWL

ACREAGE IN PRORATION UNIT = 200.00

#### ACREAGE IN LEASES:

NM - 9018	=	160.00
NM - 18232	=	80.00
LC - 065581	=	<u>80.00</u>
		320.00

Heyco Energy  
Young Deep Unit #14

slot #1  
UNKNOWN  
LEA COUNTY, NEW MEXICO

P R O P O S A L L I S T I N G

by  
Baker Hughes INTEQ

Your ref : Plan 1 - 3D J  
Our ref : prop4614  
License :

Date printed : 14-Jun-2005  
Date created : 14-Jun-2005  
Last revised : 14-Jun-2005

Field is centred on n32 55 0.000,w103 15 0  
Structure is centred on 595789.981,641511.751,999.00000,N

Slot location is n32 45 47.596,w104 1 18.192  
Slot Grid coordinates are N 641511.751, E 595789.981  
Slot local coordinates are 0.00 N 0.00 E

Projection type: mercator - New Mexico East (3001), Spheroid: Clarke - 1866

Reference North is Grid North

Heyco Energy  
Young Deep Unit #14, slot #1  
UNKNOWN, LEA COUNTY, NEW MEXICO

PROPOSAL LISTING Page 1  
Your ref : Plan 1 - 3D J  
Last revised : 14-Jun-2005

Measured Depth	Inclin Degrees	Azimuth Degrees	True Vert Depth	R E C T A N G U L A R C O O R D I N A T E S	Dogleg Deg/100ft	Vert Sect	G R I D C O O R D S Easting Northing
0.00	0.00	0.00	0.00	0.00N	0.00E	0.00	595789.98 641511.75
100.00	0.00	248.62	100.00	0.00N	0.00E	0.00	595789.98 641511.75
200.00	0.00	248.62	200.00	0.00N	0.00E	0.00	595789.98 641511.75
300.00	0.00	248.62	300.00	0.00N	0.00E	0.00	595789.98 641511.75
400.00	0.00	248.62	400.00	0.00N	0.00E	0.00	595789.98 641511.75
500.00	0.00	248.62	500.00	0.00N	0.00E	0.00	595789.98 641511.75
600.00	0.00	248.62	600.00	0.00N	0.00E	0.00	595789.98 641511.75
700.00	0.00	248.62	700.00	0.00N	0.00E	0.00	595789.98 641511.75
800.00	0.00	248.62	800.00	0.00N	0.00E	0.00	595789.98 641511.75
900.00	0.00	248.62	900.00	0.00N	0.00E	0.00	595789.98 641511.75
1000.00	0.00	248.62	1000.00	0.00N	0.00E	0.00	595789.98 641511.75
1100.00	0.00	248.62	1100.00	0.00N	0.00E	0.00	595789.98 641511.75
1200.00	0.00	248.62	1200.00	0.00N	0.00E	0.00	595789.98 641511.75
1300.00	0.00	248.62	1300.00	0.00N	0.00E	0.00	595789.98 641511.75
1400.00	0.00	248.62	1400.00	0.00N	0.00E	0.00	595789.98 641511.75
1500.00	0.00	248.62	1500.00	0.00N	0.00E	0.00	595789.98 641511.75
1600.00	0.00	248.62	1600.00	0.00N	0.00E	0.00	595789.98 641511.75
1700.00	0.00	248.62	1700.00	0.00N	0.00E	0.00	595789.98 641511.75
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2200.00	0.00	248.62	2200.00	0.00N	0.00E	0.00	595789.98 641511.75
2300.00	0.00	248.62	2300.00	0.00N	0.00E	0.00	595789.98 641511.75
2400.00	0.00	248.62	2400.00	0.00N	0.00E	0.00	595789.98 641511.75
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2800.00	0.00	248.62	2800.00	0.00N	0.00E	0.00	595789.98 641511.75
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4200.00	0.00	248.62	4200.00	0.00N	0.00E	0.00	595789.98 641511.75
4300.00	0.00	248.62	4300.00	0.00N	0.00E	0.00	595789.98 641511.75
4400.00	0.00	248.62	4400.00	0.00N	0.00E	0.00	595789.98 641511.75
4500.00	0.00	248.62	4500.00	0.00N	0.00E	0.00	595789.98 641511.75
4600.00	0.00	248.62	4600.00	0.00N	0.00E	0.00	595789.98 641511.75
4700.00	0.00	248.62	4700.00	0.00N	0.00E	0.00	595789.98 641511.75
4800.00	0.00	248.62	4800.00	0.00N	0.00E	0.00	595789.98 641511.75
4900.00	0.00	248.62	4900.00	0.00N	0.00E	0.00	595789.98 641511.75

All data in feet unless otherwise stated. Calculation uses minimum curvature method.  
Coordinates from structure and TVD from rotary table.  
Bottom hole distance is 2647.16 on azimuth 248.62 degrees from wellhead.  
Vertical section is from N 0.00 E 0.00 on azimuth 248.62 degrees.  
Grid is mercator - New Mexico East (3001).  
Grid coordinates in FEET and computed using the Clarke - 1866 spheroid  
Presented by Baker Hughes INTEQ

Heyco Energy  
Young Deep Unit #14, slot #1  
UNKNOWN, LEA COUNTY, NEW MEXICO

PROPOSAL LISTING Page 2  
Your ref : Plan 1 - 3D J  
Last revised : 14-Jun-2005

Measured Depth	Inclin Degrees	Azimuth Degrees	True Vert Depth	R E C T A N G U L A R C O O R D I N A T E S		Dogleg Deg/100ft	Vert Sect	G R I D C O O R D S Easting Northing	
5000.00	0.00	248.62	5000.00	0.00N	0.00E	0.00	0.00	595789.98	641511.75
5100.00	0.00	248.62	5100.00	0.00N	0.00E	0.00	0.00	595789.98	641511.75
5200.00	0.00	248.62	5200.00	0.00N	0.00E	0.00	0.00	595789.98	641511.75
5300.00	0.00	248.62	5300.00	0.00N	0.00E	0.00	0.00	595789.98	641511.75
5400.00	0.00	248.62	5400.00	0.00N	0.00E	0.00	0.00	595789.98	641511.75
5500.00	0.00	248.62	5500.00	0.00N	0.00E	0.00	0.00	595789.98	641511.75
5600.00	0.00	248.62	5600.00	0.00N	0.00E	0.00	0.00	595789.98	641511.75
5700.00	0.00	248.62	5700.00	0.00N	0.00E	0.00	0.00	595789.98	641511.75
5800.00	0.00	248.62	5800.00	0.00N	0.00E	0.00	0.00	595789.98	641511.75
5900.00	0.00	248.62	5900.00	0.00N	0.00E	0.00	0.00	595789.98	641511.75
6000.00	0.00	248.62	6000.00	0.00N	0.00E	0.00	0.00	595789.98	641511.75
6100.00	0.00	248.62	6100.00	0.00N	0.00E	0.00	0.00	595789.98	641511.75
6200.00	0.00	248.62	6200.00	0.00N	0.00E	0.00	0.00	595789.98	641511.75
6300.00	0.00	248.62	6300.00	0.00N	0.00E	0.00	0.00	595789.98	641511.75
6400.00	0.00	248.62	6400.00	0.00N	0.00E	0.00	0.00	595789.98	641511.75
6500.00	0.00	248.62	6500.00	0.00N	0.00E	0.00	0.00	595789.98	641511.75
6600.00	0.00	248.62	6600.00	0.00N	0.00E	0.00	0.00	595789.98	641511.75
6700.00	0.00	248.62	6700.00	0.00N	0.00E	0.00	0.00	595789.98	641511.75
6800.00	0.00	248.62	6800.00	0.00N	0.00E	0.00	0.00	595789.98	641511.75
6900.00	0.00	248.62	6900.00	0.00N	0.00E	0.00	0.00	595789.98	641511.75
7000.00	0.00	248.62	7000.00	0.00N	0.00E	0.00	0.00	595789.98	641511.75
7100.00	0.00	248.62	7100.00	0.00N	0.00E	0.00	0.00	595789.98	641511.75
7200.00	0.00	248.62	7200.00	0.00N	0.00E	0.00	0.00	595789.98	641511.75
7300.00	0.00	248.62	7300.00	0.00N	0.00E	0.00	0.00	595789.98	641511.75
7400.00	0.00	248.62	7400.00	0.00N	0.00E	0.00	0.00	595789.98	641511.75
7500.00	0.00	248.62	7500.00	0.00N	0.00E	0.00	0.00	595789.98	641511.75
7600.00	0.00	248.62	7600.00	0.00N	0.00E	0.00	0.00	595789.98	641511.75
7700.00	0.00	248.62	7700.00	0.00N	0.00E	0.00	0.00	595789.98	641511.75
7800.00	0.00	248.62	7800.00	0.00N	0.00E	0.00	0.00	595789.98	641511.75
7900.00	0.00	248.62	7900.00	0.00N	0.00E	0.00	0.00	595789.98	641511.75
8000.00	0.00	248.62	8000.00	0.00N	0.00E	0.00	0.00	595789.98	641511.75
8100.00	0.00	248.62	8100.00	0.00N	0.00E	0.00	0.00	595789.98	641511.75
8200.00	0.00	248.62	8200.00	0.00N	0.00E	0.00	0.00	595789.98	641511.75
8300.00	8.20	248.62	8299.66	2.60S	6.65W	8.20	7.14	595783.33	641509.15
8400.00	16.40	248.62	8397.28	10.36S	26.47W	8.20	23.43	595763.51	641501.39
8500.00	24.60	248.62	8490.87	23.12S	59.06W	8.20	62.42	595730.93	641488.93
8600.00	32.80	248.62	8578.51	40.61S	103.73W	8.20	111.40	595686.25	641471.14
8700.00	41.00	248.62	8658.41	62.48S	159.60W	8.20	171.39	595630.38	641449.27
8800.00	49.20	248.62	8728.93	88.28S	225.50W	8.20	242.17	595564.48	641423.47
8900.00	57.40	248.62	8788.65	117.48S	300.10W	8.20	322.27	595489.88	641394.27
9000.00	65.60	248.62	8836.32	149.49S	381.86W	8.20	410.08	595408.12	641362.26
9100.00	73.80	248.62	8870.99	183.65S	469.12W	8.20	502.79	595320.86	641328.10
9200.00	82.00	248.62	8891.93	213.27S	560.89W	8.20	601.43	595229.89	641292.48
9297.11	89.96	248.62	8898.73	254.55S	650.22W	8.20	693.27	595139.76	641257.20
9300.00	89.96	248.62	8893.86	302.51S	839.16W	0.00	901.17	594950.83	641183.24
10000.00	89.96	248.62	8899.19	510.78S	1304.75W	0.00	1401.17	594435.23	641090.97
10500.00	89.96	248.62	8899.51	693.06S	1770.24W	0.00	1901.17	594019.04	640818.70
11000.00	89.96	248.62	8899.84	875.33S	2235.64W	0.00	2401.17	593554.04	640536.43
11145.99	89.96	248.62	8900.00	965.00S	2485.60W	0.00	2801.17	593201.32	640544.75

All data in feet unless otherwise stated. Calculation uses minimum curvature method.  
Coordinates from structure and TVD from rotary table.  
Bottom hole distance is 2647.16 on azimuth 248.62 degrees from wellhead.  
Vertical section is from N 0.00 E 0.00 on azimuth 248.62 degrees.  
Grid is mercator - New Mexico East (3001).  
Grid coordinates in FEET and computed using the Clarke - 1866 spheroid  
Presented by Baker Hughes INTEQ

Heyco Energy  
Young Deep Unit #14, slot #1  
UNKNOWN, LEA COUNTY, NEW MEXICO

PROPOSAL LISTING Page 1  
Your ref : Plan 1 - 3D  
Last revised : 14-Jun-2005

Targets associated with this wellpath				
Target name	Geographic Location	T.V.D.	Rectangular Coordinates	Revised
TD		8900.00	56426.48N 234196.90E	14-Jun-2005



# Heyco Energy

Created by: jshymn  
Date plotted: 14-Jun-2005  
Plot Reference is Plan 1 - 30 x  
Coordinates are in feet reference structure  
True Vertical Depths are reference structure  
--- Baker Hughes INTEC ---

Structure : Young Deep Unit #14

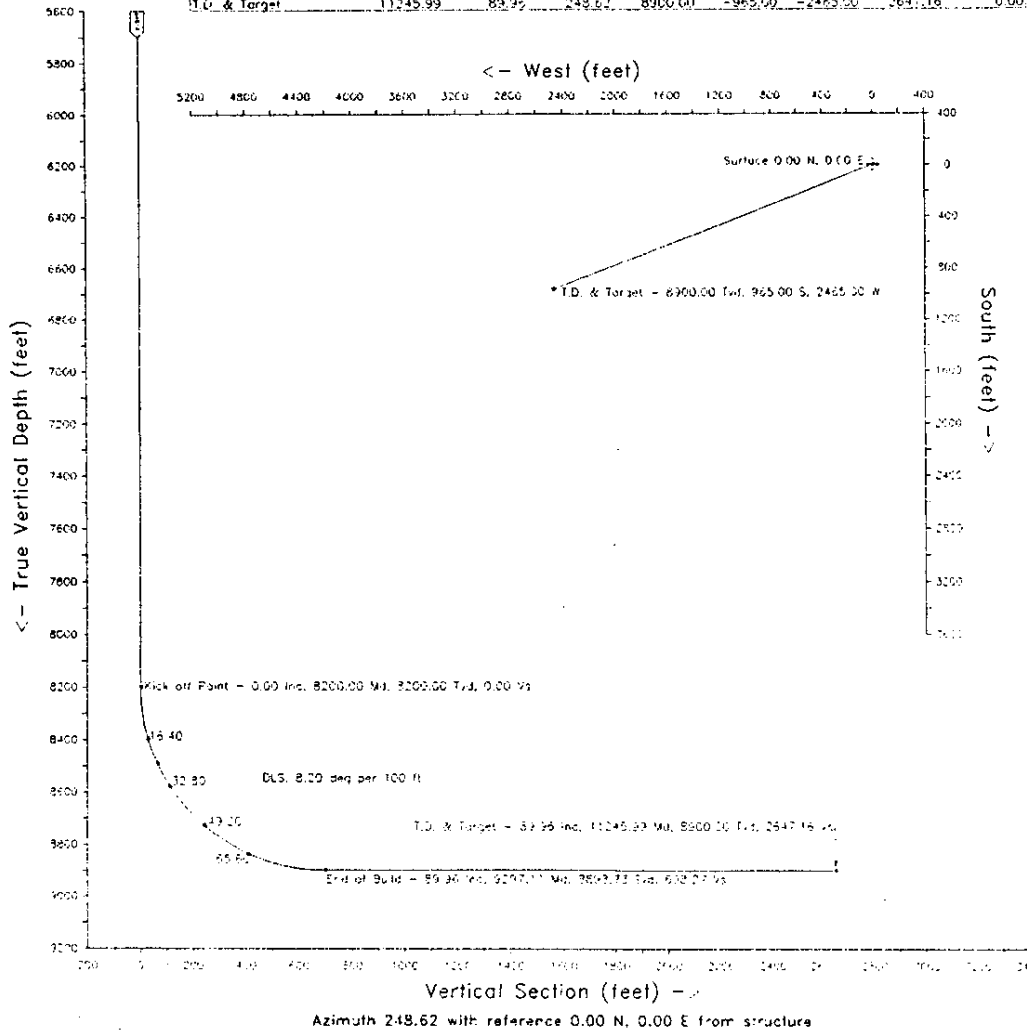
Slot : slot #1

Field : UNKNOWN

Location : LEA COUNTY, NEW MEXICO

## WELL PROFILE DATA

Point	MD	Inc	Dir	TVD	North	East	V. Sect	Dep/100'
Tie on	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
KOP	8200.00	0.00	248.62	8200.00	0.00	0.00	0.00	0.00
End of Build	9297.11	89.96	248.62	8898.73	-254.55	-650.22	698.27	8.20
T.D. & Target	11245.99	89.96	248.62	8900.00	-965.00	-2465.00	2647.16	0.00



## **YDU #14 – Horizontal Drilling Procedure**

### **Prior to Drilling**

1. Dig up wellhead, remove the dry hole marker, inspect csg stub, install 11" 3000 x 7-1/16" 5000 tbg head and test. Will install 7-1/16" tbg head flange and valve.
2. Install anchors prior to moving in pulling unit.
3. MIRU pulling unit, BOP and reverse unit. Drill out 10 sx surface plug. Pick up additional collars and drill out cmt plug at 291' +/-, continue in hole and drill out cmt plug at 2485' +/- and test csg to 2000 psi. Continue in hole and drill out cmt plug at 5124' +/-.
4. Continue in hole to 8100' +/- . Circulate hole clean. POOH and stand back collars. GIH w/ scrapper and gauge ring to PBTD. POOH and RIH with pkr and set at 7000'. Establish injection rate and pressure into the production csg hole at 7772' – 7804'.
5. POOH w/ tbg and pkr, PU cmt retainer and GIH. Set retainer at 7720' (will be set in 17# J-55). Squeeze hole at 7772' – 7804' to 3000#. Sting out of retainer and reverse circulate tbg clean.
6. RIH w/ bit, collars and tbg. Drill out cmt retainer and cmt to PBTD. Pressure test to 2000#. Drill out cmt above CIBP (set @ 8230') to 8200' PBTD. Retest csg to 2000 psi for 15 min.
7. POOH and lay down tbg, collars and bit.

### **Drilling Procedure**

1. MIRU drilling contractor and equipment. Bring out 11,500' of 10.4# S-135 2-7/8" AOH DP, handling tools, subs, kelly valve, TIW valve and install stripper head.
2. RU Suttles Mudloggers and Pason digital geolograph.
3. Install wear bushing and NU the 7-1/16", 5M BOP Equipment and choke manifold.
4. Test BOP Equipment 3000 psi (annular preventer to 1500 psi w/ independent BOP tester).
5. Rig up scientific drilling and run gyro survey to PBTD of 8200'.
6. Tally in hole w/ dummy mill and tag 8200' PBTD. POOH and lay down mill.

7. Prior to picking up whipstock assembly, ensure that the gyro will seat into the orienting lug. TIH w/ Weatherford's 4-1/2" OD whipstock. Stop 5' above 8200' PBTD and run gyro to determine the direction of the whipstock face. Rotate the pipe as needed to achieve the required direction (azimuth of 248.6 degrees). Lower the pipe to within one foot of PBTD and take another gyro reading. If necessary, rotate pipe to obtain required orientation. Confirm azimuth setting w/ 5 consistent readings.
8. Set whipstock w/ 3-5k. Keep gyro tool in orientation tool while lowering and adjust as necessary. After setting the slips, confirm settings with 5 consecutive readings. If the orientation is correct, shear the starting mills of the whipstock.
9. Pick up swivel and begin cutting window. Continue until the whole assembly has cleared the casing. Drill 5' of rathole, pumping sweeps as necessary. Circulate hole clean and TOH.
10. Inspect the mill on the surface. If mills are 1/8" or less out of gauge, run drilling assembly instead of making an extra mill run.
11. Rig up Inteq, Suttles Mudloggers and Pason Unit. TIH w/ Inteq's bottomhole assembly. RU and run gyro. Orient motor and drill w/ gyro until able to use MWD readings.
12. Build curve to estimated target depths and angles as follows:
 

True Vertical Depth .....	8900'
Measured Depth .....	11,245'
Final Angle .....	90 degrees
Target Azimuth .....	248.6 degrees
Build Rate .....	8.2 degrees/100'
13. Drill the curve sliding as necessary to stay on target (Note: After each slide, pull back bit and wash through the slide). When the curve is built, rotate through the curve section and record tight spots and fill. Make at least one short trip prior to tripping out of hole.
14. TIH w/ Inteq's lateral assembly (4-3/4" bit, 3-3/4" motor, float sub/orienter combo, 2 – flexible monel collars and 2-7/8" drill pipe).
15. Drill 1950' +/- lateral. The end point will be 11,245' MD, 8900' TVD and 2647' of vertical section per the attached well plan. Azimuth will be held at 248.6 degrees and inclination at 90 degrees.

16. Sweep hole on connections with E-Z Mud as necessary for hole cleaning and lubricity. Use Bara-Lube or EPL-50 for torque reduction if necessary in lateral. Loss circulation material is not to be used.
17. Short trip above KOP for hole cleaning at any time as recommended by directional driller. Sweep and condition hole at TD of lateral and short trip to above KOP to insure that no cuttings remain. Circ lateral from TD until hole is clean.
18. TOH w/ drill string and LD all directional drilling tools, release Inteq equipment.
19. PU reamers and TIH. Ream lateral in preparation for running 3-1/2" liner. TOH.
20. PU and run 3-1/2" liner as described in liner and cementing schedule.
21. Retrieve wear bushing.
22. Rig down and release rig.

## SPECIAL DRILLING STIPULATIONS

### THE FOLLOWING DATA IS REQUIRED ON THE WELL SIGN

Operator's Name Harvey E. Yates Co. Well Name & No. Young Deep Unit #14 H  
Location 1550 FNL & 760 FWL Sec. 9, T. 18 S, R. 32 E. BHL  
Lease No. NM-9018 County Lea State New Mexico

Location 585' FNL & 2055' FWL Sec. 9, T.18S., R.32E. SHL

The Special stipulations check marked below are applicable to the above described well and approval of this application to drill is conditioned upon compliance with such stipulations in addition to the General Requirements. The permittee should be familiar with the General Requirements, a copy of which is available from a Bureau of Land Management office.

EACH PERMITTEE HAS THE RIGHT OF ADMINISTRATIVE APPEAL TO THESE STIPULATIONS PURSUANT TO TITLE 43 CRF 3165.3 AND 3165.4.

This permit is valid for a period of one year from the date of approval or until lease expiration or termination whichever is shorter.

#### I. SPECIAL ENVIRONMENT REQUIREMENTS

- (X ) Lesser Prairie Chicken (stips attached)                      ( ) Flood plain (stips attached)  
( ) San Simon Swale (stips attached)                              ( ) Other

#### II. ON LEASE - SURFACE REQUIREMENTS PRIOR TO DRILLING

( X ) The BLM will monitor construction of this drill site. Notify the (X ) Carlsbad Field Office at (505) 234-5972 ( ) Hobbs Office (505) 393-3612, at least 3 working days prior to commencing construction.

( X ) Roads and the drill pad for this well must be surfaced with 6 inches of compacted caliche.

( ) All topsoil and vegetation encountered during the construction of the drill site area will be stockpiled and made available for resurfacing of the disturbed area after completion of the drilling operation. Topsoil on the subject location is approximately \_\_\_\_\_ inches in depth. Approximately \_\_\_\_\_ cubic yards of topsoil material will be stockpiled for reclamation.

( ) Other.

#### III. WELL COMPLETION REQUIREMENTS

( ) A Communitization Agreement covering the acreage dedicated to the well must be filed for approval with the BLM. The effective date of the agreement must be prior to any sales.

( X ) Surface Restoration: If the well is a producer, the reserve pit(s) will be backfilled when dry, and cut-and-fill slopes will be reduced to a slope of 3:1 or less. All areas of the pad not necessary for production must be re-contoured to resemble the original contours of the surrounding terrain, and topsoil must be re-distributed and re-seeded with a drill equipped with a depth indicator (set at depth of 1/2 inch) with the following seed mixture, in pounds of Pure Live Seed (PLS), per acre.

( ) A. Seed Mixture 1 (Loamy Sites)  
Side Oats Grama (*Bouteloua curtipendula*) 5.0  
Sand Dropseed (*Sporobolus cryptandrus*) 1.0

( ) B. Seed Mixture 2 (Sandy Sites)  
Sand Dropseed (*Sporobolus cryptandrus*) 1.0  
Sand Lovegrass (*Eragrostis trichodes*) 1.0  
Plains Bristlegrass (*Setaria magrostachya*) 2.0

( ) C. Seed Mixture 3 (Shallow Sites)  
Side oats Grama (*Boute curtipendula*) 1.0

( ) D. Seed Mixture 4 (Gypsum Sites)  
Alkali Sacaton (*Sporobolus airoides*) 1.0  
Four-Wing Saltbush (*Atriplex canescens*) 5.0

( X ) OTHER SEE ATTACHED SEED MIXTURE

Seeding should be done either late in the fall (September 15 - November 15, before freeze up, or early as possible the following spring to take advantage of available ground moisture.

( ) Other.

## RESERVE PIT CONSTRUCTION STANDARDS

The reserve pit shall be constructed entirely in cut material and lined with 6 mil plastic.

Mineral material extracted during construction of the reserve pit may be used for development of the pad and access road as needed. Removal of any additional material on location must be purchased from BLM.

Reclamation: Reclamation of this type of deep pit will consist of pushing the pit walls into the pit when sufficiently dry to support track equipment. The pit liner is NOT TO BE RUPTURED to facilitate drying; a ten month period after completion of the well is allowed for drying of the pit contents.

The pit area must be contoured to the natural terrain with all contaminated drilling mud buried with at least 3 feet of clean soil. The reclaimed area will then be seeded as specified in this permit.

## OPTIONAL PIT CONSTRUCTION STANDARDS

The reserve pit may be constructed in predominantly fill material if:

- (1) Lined as specified above and
- (2) A borrow/caliche/gravel pit can be constructed immediately adjacent to the reserve pit and it capable of containing all reserve pit contents. The mineral material removed in the process can be used for pad and access road construction. However, a material sales contract must be purchased from the BLM prior to removal of the material.

Reclamation of the reserve pit consists of bulldozing all reserve pit contents and contaminants into the borrow pit and covering with a minimum of 3 feet of clean soil material. The entire area must be recontoured, all trash removed, and reseeded as specified in this permit.

## CULTURAL

Whether or not an archaeological survey has been completed and notwithstanding that operations are being conducted as approved, the lessee/operator/grantee shall notify the BLM immediately if previously unidentified cultural resources are observed during surface disturbing operations. From the time of the observation, the lessee/operator/grantee shall avoid operations that will result in disturbance to these cultural resources until directed to processed by BLM.

## TRASH PIT STIPS

All trash, junk, and other waste material shall be contained in trash cages or bins to prevent scattering and will be removed and deposited in an approved sanitary landfill. Burial on site is not permitted.

## EXHIBIT B

BLM Serial No.: NM-9018

Company Reference: Harvey E. Yates

### Seed Mixture for LPC Sand/Shinnery Sites

The holder shall seed all disturbed areas with the seed mixture listed below. The seed mixture shall be planted in the amounts specified in pounds of pure live seed (PLS)\* per acre. There shall be no primary or secondary noxious weeds in the seed mixture. Seed will be tested and the viability testing of seed will be done in accordance with State law(s) and within nine (9) months prior to purchase. Commercial seed will be either certified or registered seed. The seed container will be tagged in accordance with State law(s) and available for inspection by the authorized officer.

Seed will be planted using a drill equipped with a depth regulator to ensure proper depth of planting where drilling is possible. The seed mixture will be evenly and uniformly planted over the disturbed area (smaller/heavier seeds have a tendency to drop the bottom of the drill and are planted first). The holder shall take appropriate measures to ensure this does not occur. Where drilling is not possible, seed will be broadcast and the area shall be raked or chained to cover the seed. When broadcasting the seed, the pounds per acre are to be doubled. The seeding will be repeated until a satisfactory stand is established as determined by the authorized officer. Evaluation of growth will not be made before completion of at least one full growing season after seeding.

Species to be planted in pounds of pure live seed\* per acre:

<u>Species</u>	<u>lb/acre</u>
Plains Bristlegrass	5lbs/A
Sand Bluestem	5lbs/A
Little Bluestem	3lbs/A
Big Bluestem	6lbs/A
Plains Coreopsis	2lbs/A
Sand Dropseed	1lbs/A

\*\*Four-winged Saltbush 5lbs/A

\* This can be used around well pads and other areas where caliche cannot be removed.

\*Pounds of pure live seed:

Pounds of seed x percent purity x percent germination = pounds pure live seed

PRAIRIE CHICKENS

No surface use is allowed during the following time periods; unless otherwise specified, this stipulation does not apply to operation and maintenance of production facilities.

On the lands described below: All of Section 9 T. 18 S., R. 32 E.

For the purpose of: Protecting Prairie Chickens:

Drilling for oil and gas, and 3-D geophysical exploration operations will not be allowed in Lesser Prairie Chicken Habitat during the period of March 15 through June 15, each year. During that period, other activities that produce noise or involve human activity, such as the maintenance of oil and gas facilities, geophysical exploration other than 3-D operations, and pipeline, road, and well pad construction, will be allowed except between 3:00 a.m. and 9:00 a.m. The 3:00 a.m. and 9:00 a.m. restriction will not apply to normal, around-the-clock operations, such as venting, flaring, or pumping, which do not require a human presence during the period. Additionally, no new drilling will be allowed within up to 200 meters of leks known at the time of permitting. Normal vehicle use on existing roads will not be restricted. Exhaust noise from pump jack engines must be muffled or otherwise controlled so as not to exceed 75 db measured at 30 feet from the source of the noise.

Bureau of Land Management  
Carlsbad Field Office

SENM-S-22  
December 1997



## CONDITIONS OF APPROVAL - DRILLING

Operator's Name: Harvey E. Yates Company  
Well Name & No: Young Deep Unit No. 14 <sup>H</sup>  
Location: SHL: 585' FNL & 2055' FWL, BHL: 1550' FNL & 760' FWL  
Sec. 09, T. 18 S. R. 32 E.  
Lease: NMNM 9018  
Lea County, New Mexico

.....

### I. DRILLING OPERATIONS REQUIREMENTS:

1. The Bureau of Land Management (BLM) is to be notified at the Roswell Field Office, 2909 West Second St., Roswell, NM 88201, (505) 627-0272 for wells in Chaves and Roosevelt Counties; the Carlsbad Field Office, 620 East Greene St., Carlsbad, NM 88220, (505) 361-2822 for wells in Eddy County; and the Hobbs Field Station, 414 West Taylor, Hobbs NM 88240, (505) 393-3612 for wells in Lea County, in sufficient time for a representative to witness:

A. Spudding

B. Cementing casing: Existing Casing String: 13 3/8", 8 1/2", 5 1/2" A 3 1/2 inch horizontal casing string will be run from a kick depth of 8200 feet (mol). Cement will be circulated to top of liner.

C. BOP Tests

2. A Hydrogen Sulfide (H<sub>2</sub>S) Drilling Plan is not required for this wellbore.

3. Unless the production casing has been run and cemented or the well has been properly plugged, the drilling rig shall not be removed from over the hole without prior approval.

4. Submit a Sundry Notice (Form 3160-5, one original and five copies) for each casing string, describing the casing and cementing operations. Include pertinent information such as; spud date, hole size, casing (size, weight, grade and thread type), cement (type, quantity and top), water zones and problems or hazards encountered. The Sundry shall be submitted within 15 days of completion of each casing string. The reports may be combined into the same Sundry if they fall within the same 15 day time frame.

5. The API No. assigned to the well by NMOCD shall be included on the subsequent report of setting the first casing string.

### II. CASING:

1. This wellbore is a Re-entry with an existing cased hole. A horizontal attempt will kick off at approximately 8200 feet and drill a horizontal well bore in the Bone Springs. A 3 1/2 inch string will be set in to the horizontal section and cemented with 135 sx of cement.

### III. PRESSURE CONTROL:

1. All BOP systems and related equipment shall comply with well control requirements as described in Onshore Oil and Gas Order No. 2. The BOP and related equipment shall be installed and operational before drilling beyond the existing 5 1/2 long string shoe and shall be tested as described in Onshore Order No. 2. Any equipment failing to test satisfactorily shall be repaired or replaced.

2. Minimum working pressure of the blowout preventer and related equipment (BOPE) shall be 2 M psi.

### **III. Pressure Control (continued):**

3. The appropriate BLM office shall be notified in sufficient time for a representative to witness the test.

- The test shall be done by an independent service company
- The results of the test shall be reported to the appropriate BLM office.
- Testing fluid must be water or an appropriate clear liquid suitable for sub-freezing temperatures.
- Use of drilling mud for testing is not permitted since it can mask small leaks.
- Testing must be done in safe workman-like manner. Hard line connections shall be required.
- Both low pressure and high pressure testing of BOPE is required.

BLM Serial Number: NM-9018  
Company Reference: Harvey E. Yates Co.  
Well No. & Name: Young Deep Unit #14 H

STANDARD STIPULATIONS FOR PERMANENT RESOURCE ROADS  
CARLSBAD FIELD OFFICE

A copy of the grant and attachments, including stipulations and map, will be on location during construction. BLM personnel may request to view a copy of your permit during construction to ensure compliance with all stipulations.

The holder/grantee/permittee shall hereafter be identified as the holder in these stipulations. The Authorized Officer is the person who approves the Application for Permit to Drill (APD) and/or Right-of-Way (ROW).

GENERAL REQUIREMENTS

A. The holder shall indemnify the United States against any liability for damage to life or property arising from the occupancy or use of public lands under this grant.

B. The holder shall comply with all applicable Federal laws and regulations existing or hereafter enacted or promulgated. In any event, the holder shall comply with the Toxic Substances Control Act of 1976, as amended (15 U.S.C. 2601, *et. seq.*) with regard to any toxic substances that are used, generated by or stored on the right-of-way or on facilities authorized by this grant. (See 40 CFR, Part 702-799 and especially, provisions on polychlorinated biphenyls, 40 CFR 761.1-761.193.) Additionally, any release of toxic substances (leaks, spills, etc.) in excess of the reportable quantity established by 40 CFR, Part 117 shall be reported as required by the Comprehensive Environmental Response, Compensation and Liability Act, Section 102b. A copy of any report required or requested by any Federal agency or State government as a result of a reportable release or spill of any toxic substances shall be furnished to the Authorized Officer concurrent with the filing of the reports to the involved Federal agency or State government.

C. The holder agrees to indemnify the United States against any liability arising from the release of any hazardous substance or hazardous waste (as these terms are defined in the Comprehensive Environmental Response, Compensation and Liability Act of 1980, 42 U.S.C. 9601, *et. seq.* or the Resource Conservation and Recovery Act, 42 U.S.C. 6901, *et. seq.*) on the right-of-way (unless the release or threatened release is wholly unrelated to the right-of-way holder's activity on the right-of-way). This agreement applies without regard to whether a release is caused by the holder, its agent, or unrelated third parties.

D. If, during any phase of the construction, operation, maintenance, or termination of the road, any oil or other pollutant should be discharged, impacting Federal lands, the control and total removal, disposal, and cleaning up of such oil or other pollutant, wherever found, shall be the responsibility of the holder, regardless of fault. Upon failure of the holder to control, dispose of, or clean up such discharge on or affecting Federal lands, or to repair all damages to Federal lands resulting there from, the Authorized Officer may take such measures as deemed necessary to control and cleanup the discharge and restore the area, including, where appropriate, the aquatic environment and fish and wildlife habitats, at the full expense of the holder. Such action by the Authorized Officer shall not relieve the holder of any liability or responsibility.

E. The holder shall minimize disturbance to existing fences and other improvements on public domain surface. The holder is required to promptly repair improvements to at least their former state. Functional use of these improvements will be maintained at all times.

The holder will make a documented good-faith effort to contact the owner of any improvements prior to disturbing them. When necessary to pass through a fence line, the fence shall be braced on both sides of the passageway prior to cutting of the fence.

F. The Holder shall ensure that the entire right-of-way, including the driving surface, ditching and drainage control structures, road verges and any construction sites or zones, will be kept free of the following plant species: Malta starthistle, African rue, Scotch thistle and salt cedar.

Holder agrees to comply with the following stipulations:

1. ROAD WIDTH AND GRADE

The road will have a driving surface of 14 feet (all roads shall have a minimum driving surface of 12 feet, unless local conditions dictate a different width). The maximum grade is 10 percent unless the box below is checked. Maximum width of surface disturbance from construction will be 30 feet.

☐ Those segments of road where grade is in excess of 10% for more than 300 feet shall be designed by a professional engineer.

2. CROWNING AND DITCHING

Crowning with materials on site and ditching on one side of the road on the uphill side will be required. The road cross-section will conform to the cross section diagrams in Figure 1. If conditions dictate, ditching may be required for both sides of the road; if local conditions permit, a flat-bladed road may be considered (if these conditions exist, check the appropriate box below). The crown shall have a grade of approximately 2% (i.e., 1" crown on a 12' wide road).

☒ Ditching will be required on both sides of the roadway as shown on the attached map or as staked in the field.

☐ Flat-blading is authorized on segment(s) delineated on the attached map.

### 3. DRAINAGE

Drainage control shall be ensured over the entire road through the use of borrow ditches, outsloping, insloping, natural rolling topography, lead-off (turnout) ditches, culverts, and/or drainage dips.

A. All lead-off ditches shall be graded to drain water with a 1 percent minimum to 3 percent maximum ditch slope. The spacing interval for lead-off ditches shall be determined according to the following table, but may be amended depending upon existing soil types and centerline road slope (in %):

#### SPACING INTERVAL FOR TURNOUT DITCHES

Percent slope	Spacing interval
0% - 4%	400' - 150'
4% - 6%	250' - 125'
6% - 8%	200' - 100'
8% - 10%	150' - 75'

A typical lead-off ditch has a minimum depth of 1 foot below and a berm 6 inches above natural ground level. The berm will be on the down-slope side of the lead-off ditch. The ditch end will tie into vegetation whenever possible.

For this road the spacing interval for lead-off ditches shall be at

☒ 400 foot intervals.

☐ \_\_\_\_\_ foot intervals.

☐ locations staked in the field as per spacing intervals above.

☐ locations delineated on the attached map.

B. Culvert pipes shall be used for cross drains where drainage dips or low water crossings are not feasible. The minimum culvert diameter must be 18 inches. Any culvert pipe installed shall be of sufficient diameter to pass the anticipated flow of water. Culvert location and required diameter are shown on the attached map (Further details can be obtained from the Roswell District Office or the appropriate Resource Area Office).

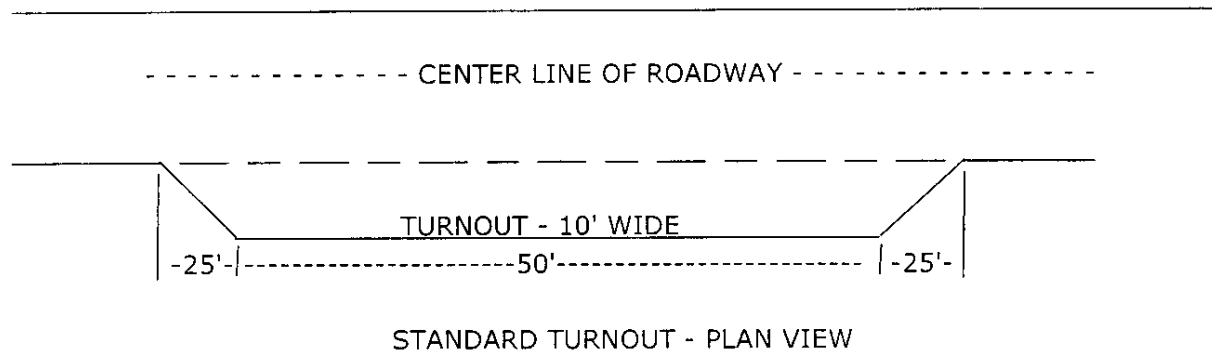
C. On road slopes exceeding 2%, drainage dips shall drain water into an adjacent lead-off ditch. Drainage dip location and spacing shall be determined by the formula:

$$\text{spacing interval} = \frac{400'}{\text{road slope in \%}} + 100'$$

Example: 4% slope: spacing interval =  $\frac{400}{4} + 100 = 200$  feet

#### 4. TURNOUTS

Unless otherwise approved by the Authorized Officer, vehicle turnouts will be required. Turnouts will be located at 2000-foot intervals, or the turnouts will be intervisible, whichever is less. Turnouts will conform to the following diagram:



#### 5. SURFACING

Surfacing of the road or those portions identified on the attached map may, at the direction of the Authorized Officer, be required, if necessary, to maintain traffic within the right-of-way with caliche, gravel, or other surfacing material which shall be approved by the Authorized Officer. When surfacing is required, surfacing materials will be compacted to a minimum thickness of six inches with caliche material. The width of surfacing shall be no less than the driving surface. Prior to using any mineral materials from an existing or proposed Federal source, authorization must be obtained from the Authorized Officer.

A sales contract for the removal of mineral materials (caliche, sand, gravel, fill dirt, etc.) from an authorized pit, site, or on location must be obtained from the BLM prior to using any such mineral material from public lands. Contact the BLM solid minerals staff for the various options to purchase mineral material.

#### 6. CATTLEGUARDS

Where used, all cattleguard grids and foundation designs and construction shall meet the American Association of State Highway and Transportation Officials (AASHTO) Load Rating H-20, although AASHTO U-80 rated grids shall be required where heavy loads (exceeding H-20 loading), are anticipated (See BLM standard drawings for cattleguards). Cattleguard grid length shall not be less than 8 feet and width of not less than 14 feet. A wire gate (16-foot minimum width) will be provided on one side of the cattleguard unless requested otherwise by the surface user.

7. MAINTENANCE

The holder shall maintain the road in a safe, usable condition. A maintenance program shall include, but not be limited to blading, ditching, culvert installation, culvert cleaning, drainage installation, cattleguard maintenance, and surfacing.

8. PUBLIC ACCESS

Public access along this road will not be restricted by the holder without specific written approval being granted by the Authorized Officer. Gates or cattleguards on public lands will not be locked or closed to public use unless closure is specifically determined to be necessary and is authorized in writing by the Authorized Officer.

9. CULTURAL RESOURCES

Any cultural and/or paleontological resource (historic or prehistoric site or object) discovered by the holder, or any person working on the holder's behalf, on public or Federal land shall be immediately reported to the authorized officer. The holder shall suspend all operations in the immediate area of such discovery until written authorization to proceed is issued by the authorized officer. An evaluation of the discovery will be made by the authorized officer to determine appropriate actions to prevent the loss of significant cultural or scientific values. The holder will be responsible for the cost of evaluation and any decision as to the proper mitigation measures will be made by the authorized officer after consulting with the holder.

10. SPECIAL STIPULATIONS:

# EXHIBIT "D" LOCATION DIAGRAM

Young Deep Unit 14H  
 585' FNL & 2,055' FEL  
 Sec 9, T18S, R32E  
 Lea County, NM

