Carlsbad Field Office
OCD Artesia

ATS-14-651

Form 3160-3
(March 2012)

FORM APPROVED
OMB No. 1004-0137
Expires October 31, 2014

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR REENTER

5. Lease Serial No.
NMLC-047800A NMNM-106718

6. If Indian, Allotee or Tribe Name

1a. Type of work: ☑ DRILL ☐ REENTER

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

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

8. Lease Name and Well No. 313968
Taylor Deep 12 Federal Com #8H

2. Name of Operator Harvey E. Yates

9. API Well No.
30-015-42832

3a. Address	3b. Phone No. *(include area code)*	10. Field and Pool, or Exploratory
P.O Box 1933 Roswell N.M 88202	575-623-6601	Tamano; Bone Spring

4. Location of Well *(Report location clearly and in accordance with any State requirements.*)*
At surface SHL; 330' FNL & 1675' FEL / Sec 13, T18S, R31E
At proposed prod. zone 330' FNL & 1675' FEL / Sec 12, T18S, R31E

11. Sec., T. R. M. or Blk. and Survey or Area
UL-B, Sec 13, T18S, R31E

14. Distance in miles and direction from nearest town or post office*	12. County or Parish	13. State
15 Miles SouthEast of Loco Hills, N.M	Eddy Co.	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. Spacing Unit dedicated to this well
330'	840.6	160

18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft.	19. Proposed Depth	20. BLM/BIA Bond No. on file
330'	MD-14,120' Pilot Hole TVD- 8,655' 9600'	NMB000317

21. Elevations (Show whether DF, KDB, RT, GL, etc.)	22. Approximate date work will start*	23. Estimated duration
3749'	01/15/2015	45 Days

24. Attachments

The following, completed in accordance with the requirements of Onshore Oil and Gas Order No.1, must 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 must 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 BLM.

25. Signature	Name *(Printed/Typed)*	Date
	Keith Cannon	03/27/2014

Title
Drilling Superintendent

Approved by *(Signature)*	Name *(Printed/Typed)*	Date
Steve Caffey		NOV 20 2014

Title	Office
FIELD MANAGER	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.

(Continued on page 2)

*(Instructions on page 2)

Capitan Controlled Water Basin

NM OIL CONSERVATION
ARTESIA DISTRICT
DEC 08 2014

Approval Subject to General Requirements & Special Stipulations Attached

RECEIVED

SEE ATTACHED FOR CONDITIONS OF APPROVAL

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
30-015-42832	58040	Tamano; Bone Spring

Property Code	Property Name	Well Number
~~305063~~ 313968	TAYLOR DEEP 12 FEDERAL COM	8H

OGRID No.	Operator Name	Elevation
10179	HARVEY E. YATES	3749'

Surface Location

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
B	13	18-S	31-E		330	NORTH	1675	EAST	EDDY

Bottom Hole Location If Different From Surface

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
B	12	18-S	31-E		330	NORTH	1675	EAST	EDDY

Dedicated Acres	Joint or Infill	Consolidation Code	Order No.
160			

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

GEODETIC COORDINATES
NAD 27 NME

SURFACE LOCATION
Y=638338.1 N
X=658011.5 E

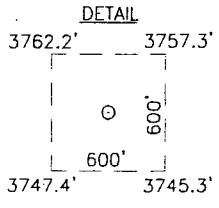
LAT.=32.753831° N
LONG.=103.819363° W

BOTTOM HOLE LOCATION
Y=643617.2 N
X=657980.5 E

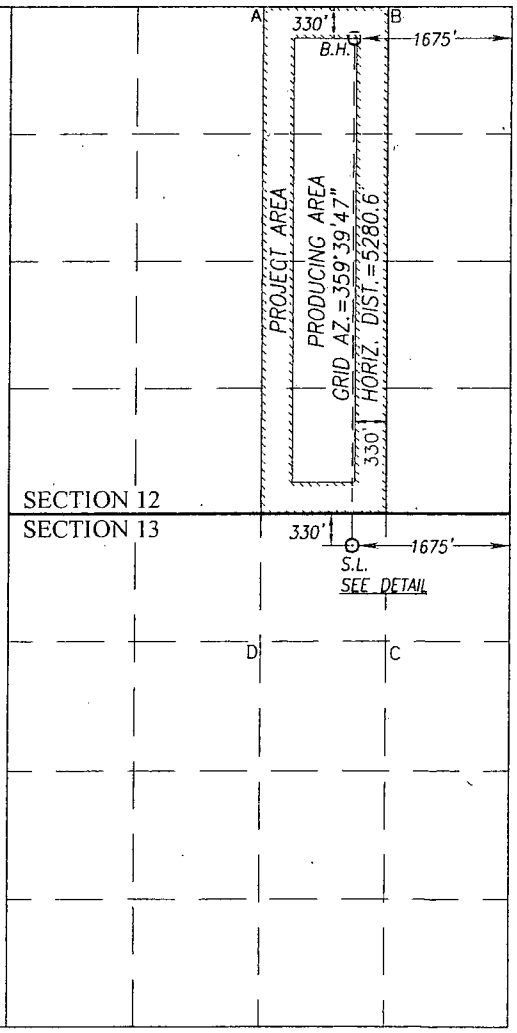
CORNER COORDINATES TABLE

A - Y=643939.6 N, X=657014.0 E
B - Y=643949.9 N, X=658333.6 E
C - Y=637351.4 N, X=658372.3 E
D - Y=637340.4 N, X=657052.8 E

DETAIL



SCALE: 1"=2000'



OPERATOR CERTIFICATION

I hereby certify that the information herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom hole location or has a right to drill this well at this location pursuant to a contract with an owner of such mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.

Signature 3/27/14 Date

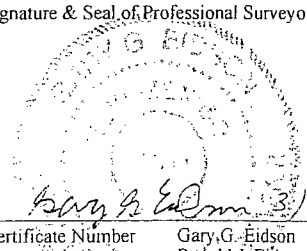
Keith Cannon
Printed Name

kcannon@heycoenergy.com
E-mail Address

SURVEYOR CERTIFICATION

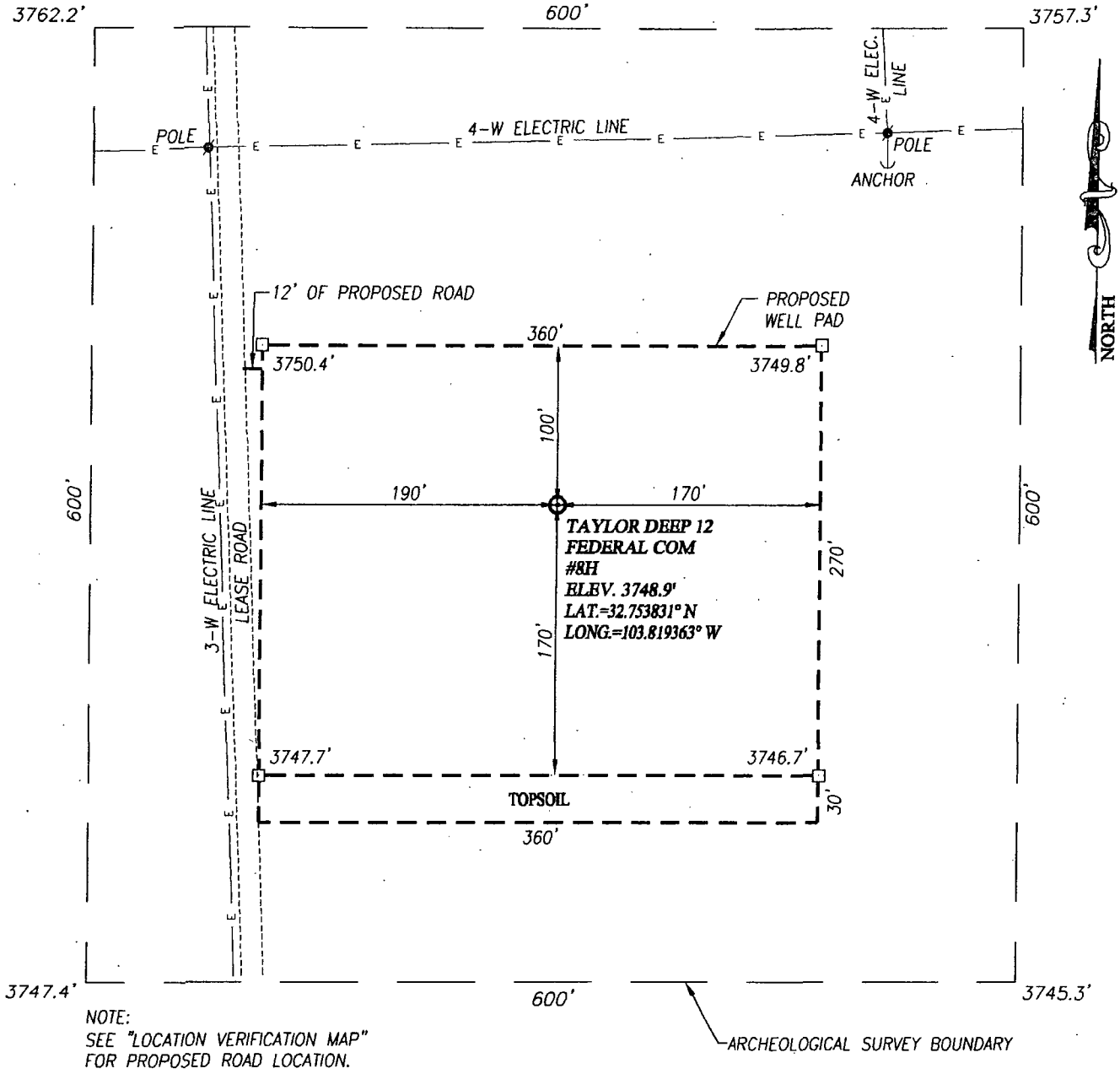
I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief.

FEBRUARY 4, 2014
Date of Survey
Signature & Seal of Professional Surveyor:



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

DSS Rev. 3/6/14 JWSC W.O.: 14.11.0112



NOTE:
SEE "LOCATION VERIFICATION MAP" FOR PROPOSED ROAD LOCATION.

DIRECTIONS TO LOCATION

FROM THE INTERSECTION OF U.S. HWY. #82, (LOVINGTON HWY) AND CO. RD. 222 (SHUGART RD.) GO SOUTH ON CO. RD. 222 APPROX. 4.0 MILES; TURN LEFT ON CO. RD. 249 (WESTALL RD.) AND GO SOUTHEAST APPROX. 1.5 MILES; TURN LEFT ON LEASE ROAD AND GO NORTHEAST, THEN EAST APPROX. 2.7 MILES; TURN RIGHT AND GO SOUTH APPROX. 0.2 MILES. THIS LOCATION STAKE IS APPROX. 200 FEET EAST OF LEASE ROAD.

100 0 100 200 Feet

Scale: 1"=100'

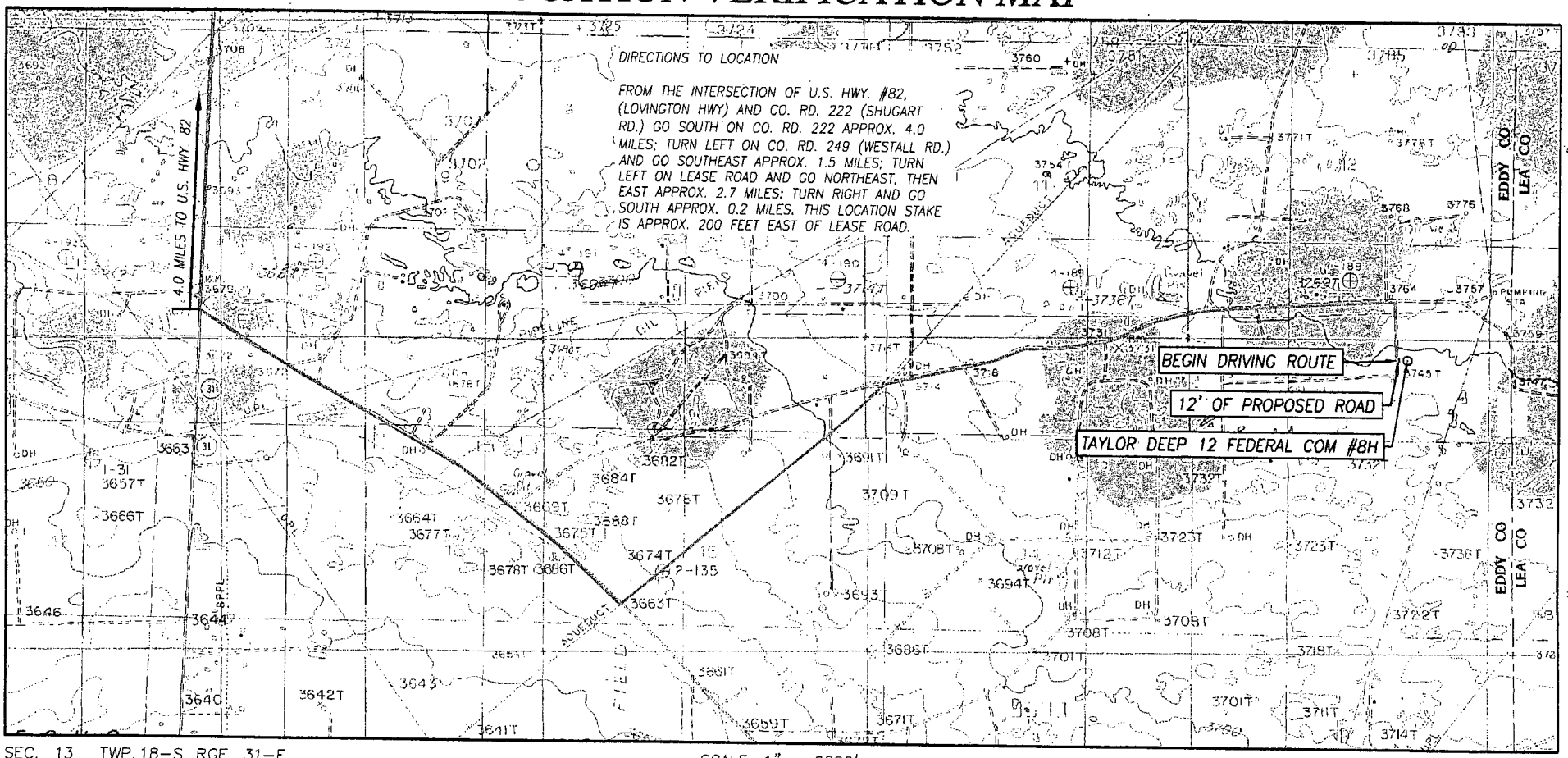
PROVIDING SURVEYING SERVICES SINCE 1946
JOHN WEST SURVEYING COMPANY
412 N. DAL PASO
HOBBS, N.M. 88240
(575) 393-3117 www.jwsc.biz

HARVEY E. YATES

TAYLOR DEEP 12 FEDERAL COM #8H WELL
LOCATED 330 FEET FROM THE NORTH LINE
AND 1675 FEET FROM THE EAST LINE OF SECTION 13,
TOWNSHIP 18 SOUTH, RANGE 31 EAST, N.M.P.M.,
EDDY COUNTY, NEW MEXICO

Survey Date: 02/04/14	CAD Date: 02/07/14	Drawn By: DSS
W.O. No.: 14110112	Rev: 3/6/14	Rel. W.O.:	Sheet 1 of 1

LOCATION VERIFICATION MAP



SEC. 13 TWP. 18-S RGE. 31-E
COUNTY EDDY STATE NEW MEXICO
DESCRIPTION 330' FNL & 1675' FEL
ELEVATION 3749'
OPERATOR HARVEY E. YATES
LEASE TAYLOR DEEP 12 FEDERAL COM
U.S.G.S. TOPOGRAPHIC MAP
MALJAMAR, N.M. SURVEY N.M.P.M.

SCALE: 1" = 2000'

CONTOUR INTERVAL:
MALJAMAR, N.M. – 10'

PROVIDING SURVEYING SERVICES
SINCE 1946
JOHN WEST SURVEYING COMPANY
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HOBBS, N.M. 88240
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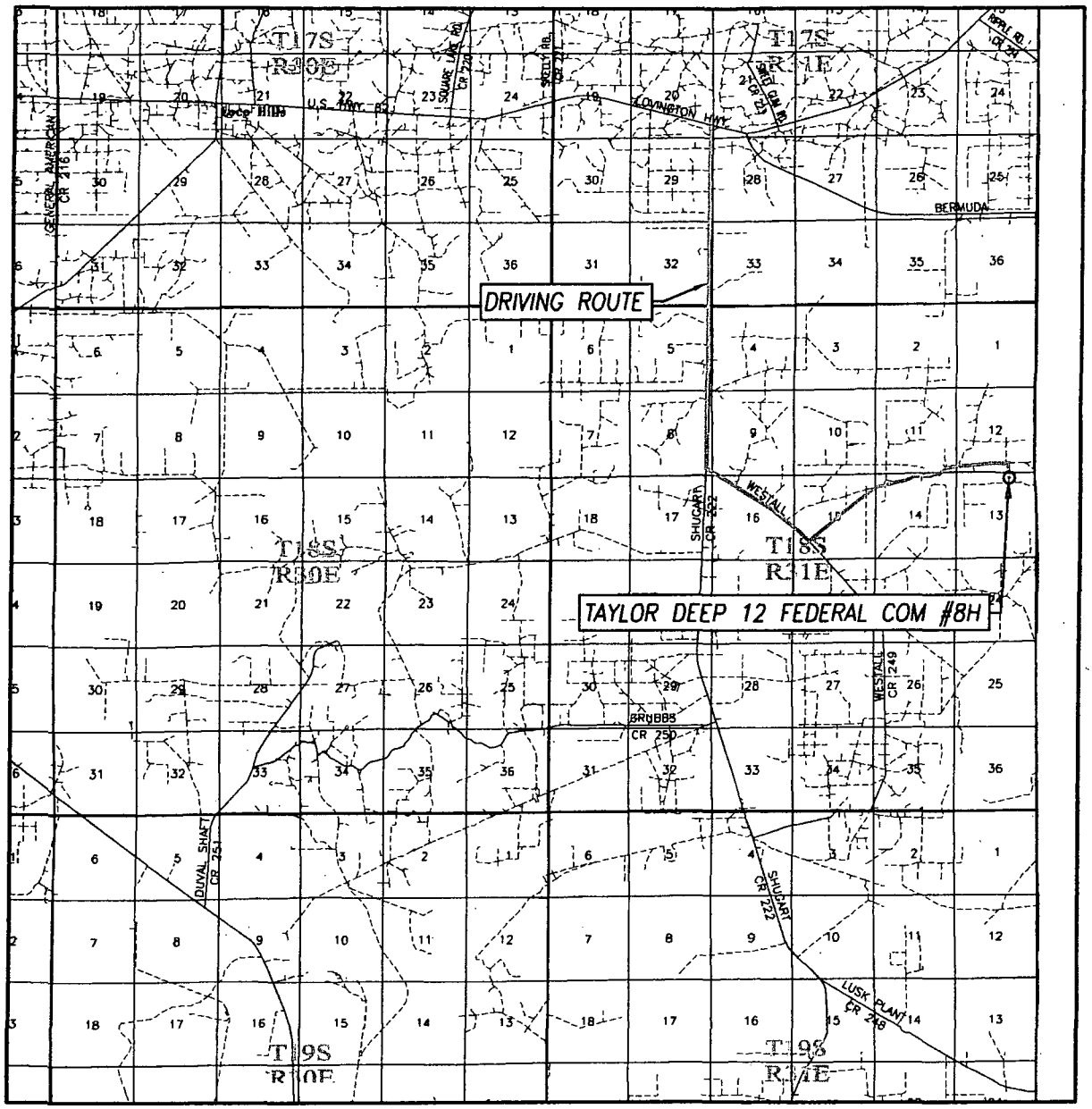
VICINITY MAP



SCALE: 1" = 2 MILES

DRIVING ROUTE: SEE LOCATION VERIFICATION MAP

SEC. 13 TWP. 18-S RGE. 31-E

SURVEY N.M.P.M.

COUNTY EDDY STATE NEW MEXICO

DESCRIPTION 330' FNL & 1675' FEL

ELEVATION 3749'

OPERATOR HARVEY E. YATES

LEASE TAYLOR DEEP 12 FEDERAL COM

PROVIDING SURVEYING SERVICES SINCE 1946

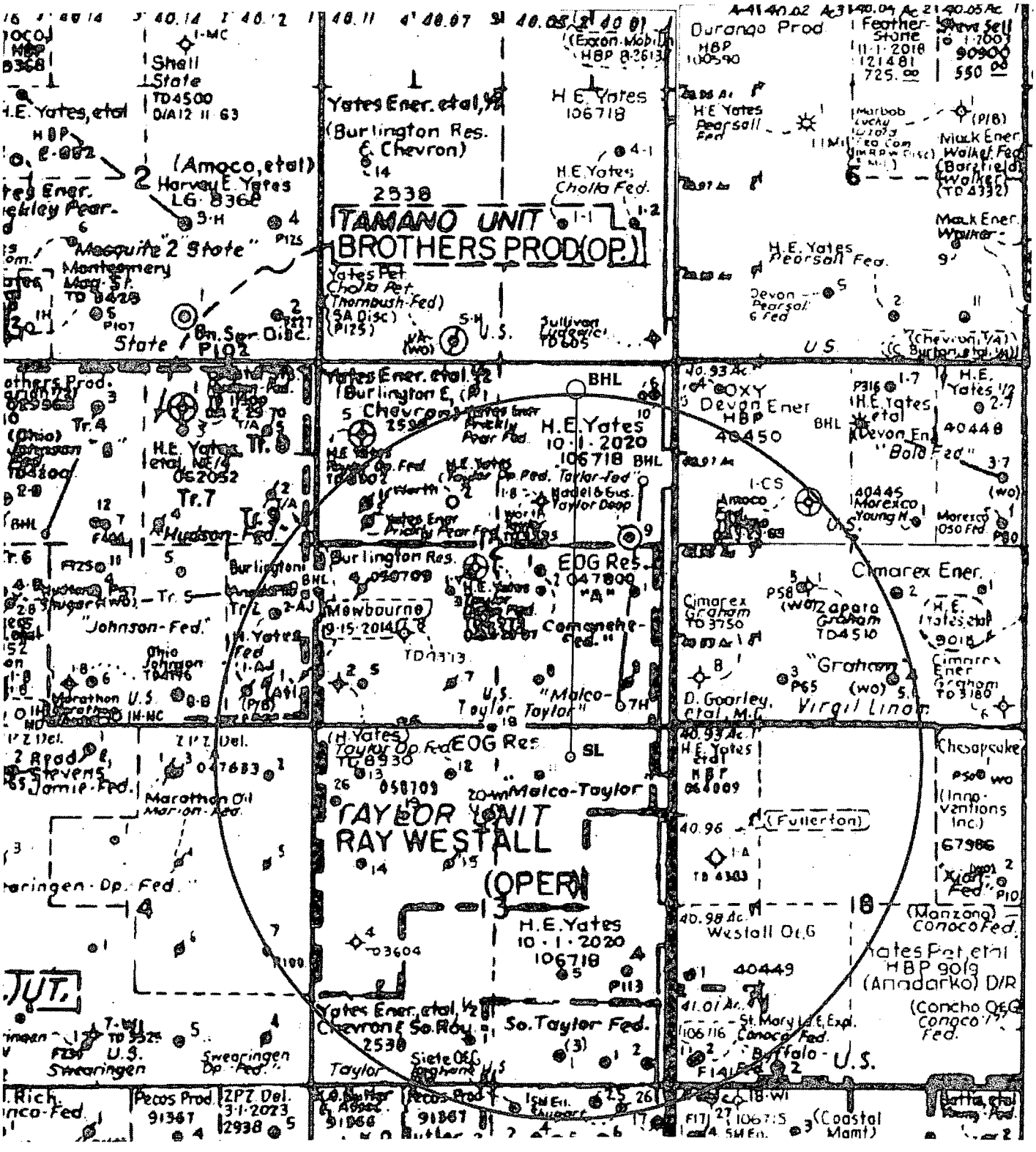
JOHN WEST SURVEYING COMPANY

412 N. DAL PASO

HOBBS, N.M. 88240

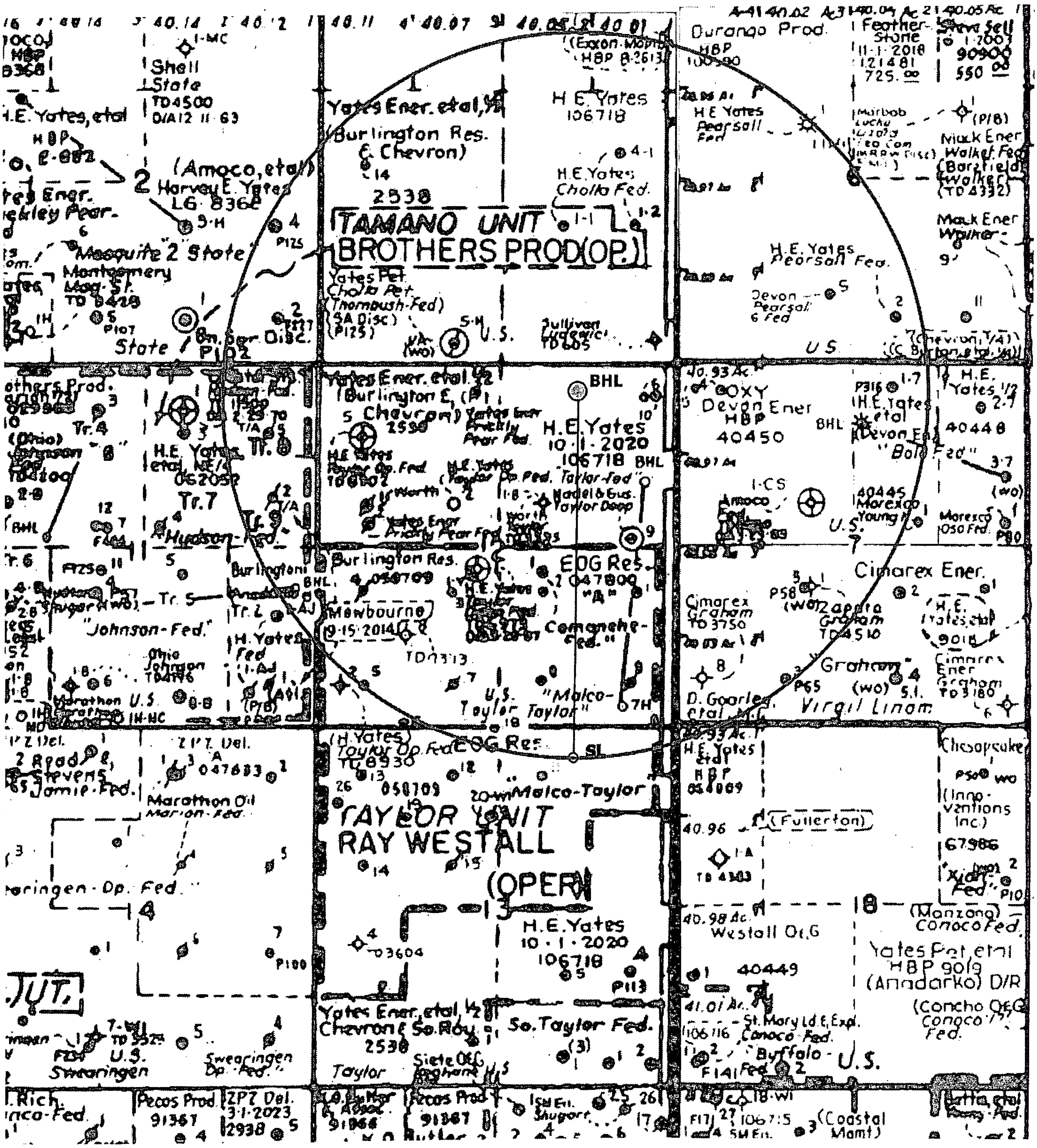
(575) 393-3117 www.jwsc.biz

TAYLOR DEEP 12 FEDERAL #8H



1 mi. radius from SL

TAYLOR DEEP 12 FEDERAL #8H



1 mi. radius from BHL

DRILLING AND OPERATIONS PLAN
HARVEY E. YATES
TAYLOR DEEP 12 FEDERAL COM 8H

Surface: 330' FNL & 1675' FEL
UL- B Sec 13, T-18-S, R-31-E
BHL: 330' FNL & 1675' FEL
UL- B Sec 12, T-18-S, R-31-E
Eddy County, New Mexico.

ELEVATION: GL 3749'

Field / Pool: Tamano, Bone Spring

GEOLOGICAL NAME OF SURFACE FORMATION: PERMIAN

Type of Well: Oil Horizontal

PROPOSED DRILLING DEPTH: 14,120' MD, 8,655' TVD, Kick off point at 8,390', drill lateral 5282' see directional plan: Exhibit #2, No pilot hole will be drilled

TOPS OF IMPORTANT GEOLOGICAL MARKERS: TVD

Estimated Depth of Anticipated Water,
Fresh Water 450' to 960' Water in (Sec 12, 18S, 31E)

			MD	TVD	
Rustler	910'	Kick Off Point	8390'	8390'	
Top Salt	1020 '	BSpg 2nd target	8868'	8790'	
Tansill (base salt)	2225	TD-End Of Lateral	14,120'	8655'	
Yates	2405'				
Seven Rivers	2860'	Hydrocardons			
Bowers	3315'	Hydrocardons			
Queen	3570'	Hydrocardons			
Penrose Sand	3825'	Hydrocardons			
Grayburg	4155'	Hydrocardons			
Loco Hills	4305'	Hydrocardons			
Metex	4425'	Hydrocardons			
Premier	4530'	Hydrocardons			
San Andres	4620'	Hydrocardons			
Cherry Canyon	4970'	Hydrocardons			
Brushy Canyon	5275'	Hydrocardons			
1st BSS	7790'	Hydrocardons			
2nd BSS	8360'	Hydrocardons			
TD Pilot Hole	**9600'**				
3rd Bone Spring	9230'	Hydrocardons			

See COA

*Finial depths may be revised slightly based on vendor Hz plan.

*No other formations are expected to yield oil, gas or fresh water in measurable volumes. The surface fresh water will be protected by setting 13 3/8" casing at 1000' and circulating cement back to surface, all other intervals will be isolated by the 9 5/8" intermediate and 5 1/2" production casing.

CASING PROGRAM:

1. **Proposed Casing Program**

HOLE SIZE	CASING SIZE	WT./GRADE	THREAD/COLLAR	SETTING DEPTH (MD)	TOP CEMENT
17.5"	13 3/8" (New API)	54.5# J-55	8rd STC	1000'	Surface
12.25"	9 5/8" (New API)	36# J-55	8rd STC	2775'	Surface
8.75"	5 1/2" (New API)	17# P110HC	8rd LTC	14,120'	2575'

While running all casing string, the pipe will be kept a minimum of 1/3 full at all times to avoid approaching the collapse pressure of casing.

MINIMUM SAFETY FACTORS: **BURST 1.125** **COLLAPSE 1.125** **TENSION 1.6**

ALL CASING WILL BE NEW API APPROVED

*See COA

CEMENT PROGRAM-ALL CEMENT BLENDS WILL BE TESTED TO BLM MINIMUM REQUIREMENTS.

A. **13 3/8"** **SURFACE** CEMENT TO SURFACE **100% EXCESS OVER CALCULATED**
LEAD: 400 SACKS CLASS "C" +4% PF020 +2% PF001 (13.5 PPG, 1.74 YIELD, WTR 9.11 GAL/SKS)
TAIL: 200 SACKS CLASS "C"+2%PF001 (14.8 PPG, 1.34 YIELD, WTR 6.30 GAL/SKS)

B. **9 5/8"** **INTERMEDIATE** CEMENT TO SURFACE **50% EXCESS OVER CALCULATED**
LEAD:450SACKSCLASS"C"+5%PF044BWOW+6%PF020+1%PF001 (12.9 PPG, 1.92 YIELD, WTR 9.95 GAL/SKS)
TAIL: 200 SACKS CLASS "C" +.2%PF013 (14.8 PPG, 1.33 YIELD WTR 6.32 GAL/SKS)

C. **5 1/2"** **PRODUCTION** CEMENT TO 2575" (WILL RUN FLUID CALIPER) **25% EXCESS OVER FLUID CALIPER, OR 50% OVER CALCULATED.**

See COA

LEAD: 410 SX 50/50 POZ H + 5%PF044BWOW+.10%PF020+.2%PF153+.2%PF013 (11.9 PPG, 2.48 YIELD, WTR 13.877 GAL/SKS)
TAIL: 1475 SX 50:50:POZ H+2%PF020+.7%PF606A+.2%PF65 (14.4 PPG, 1.26 YIELD, WTR 5.559 GAL/SKS)

PILOT HOLE PLUGS

BOTTOM HOLE PLUG: TOC @ 9400' See COA

125 SACKS CLASS H, 2%PF01, 16.5 PPG. 1.05 YIELD
ADDITIVES AS RECOMMENDED BY CEMENT COMPANY

KICK OFF PLUG BTM OF CMT PLUG @ 8590' TOC @ 8240'	150 SACKS CLASS H, 2%PF-01, 16.5 PPG. 1.05 YIELD ADDITIVES AS RECOMMENDED BY CEMENT COMPANY

EXCESS AND ADDITIVES AS RECOMMENDED BY CEMENT COMPANY DETERMINED BY WELLBORE CONDITIONS

SPECIFICATIONS FOR PRESSURE CONTROL EQUIPMENT: (EXHIBIT #5)

See COA

A 13 5/8" 2000# WP Annular will be installed after running the 13-3/8" casing. A 11" 3000# WP Double Ram BOP and 3,000 annular will be installed after running the 9-5/8" casing. Pressure test will be conducted prior to drilling out under all casing strings. BOP controls will be installed prior to drilling under surface casing and will remain in use until completion of drilling operations. BOP's will be inspected and operated as recommended in Onshore Order #2. A Kelly cock and a sub equipped with a full opening valve sized to fit the drill pipe and collars will be available on the rig floor in the open position when the Kelly is not in use. BOP will be tested to 3000psi high 250psi low and the annular to1500psi High 250psi low with a third party testing company before drilling below each shoe. A 2" kill line and 3" choke line will be included in the drilling spool location below the ram-type BOP

* Low pressure test first.

MUD PROGRAM:

Spud and drill 17 ½" surface hole with fresh water (8.4 to 8.7 ppg) to a depth of approx 1,000'. Control lost circulation with paper and LCM pills. Viscosity 28-55, no fluid loss control. Fresh water gel sweeps.

Drill 12 ¼" hole from 1000' to 2775' with Brine (9.5 to 10.0 ppg) . Control lost circulation with paper and LCM pills. Viscosity 28-30, no fluid loss control. Salt water gel sweeps.

Drill 8 3/4" pilot hole from 2775' to 9600' with cut brine (8.6 to 9.0 ppg). Control lost circulation with paper and LCM pills. Drill Laterral 8390" to TD @ 14,120 with cut brine (9.0 to 9.5 ppg), control filtrate with starch and water loss additives. Clean hole with pre-hydrated saltwater gel sweeps, as necessary. System properties: viscosity 32-24, fluid loss <20 ml/30min.

All necessary mud products for weight addition and fluid loss control will be on location at all times. Mud program subject to change due to hole conditions. A PVT will be used to monitor the mud system

Mud monitoring system:

Mud will be maintained and checked daily for mud weight, viscosity, API water loss, pH, etc. Additional electronic monitoring will include a pit volume totalizer to monitor mud volume in active system, pump rate, and mud return flow percentage. H2S monitors will be located on rig floor, shale shakers, and mud tanks. Gas chromatograph with monitor hydrocarbon gas content of mud from 1300' to TD.

Auxiliary Equipment

A. A Kelly cock will be in the drill string at all times. BOP and fittings must be in good condition with minimum of 2000 psi working pressure on 13-3/8" casing and 3000 psi working pressure on 9-5/8" and 7" casing. Accumulator will be at least 40 gallon capacity with 2 independent sources of pressure on closing unit and meet all other API specifications.

B. A full opening drill pipe stabbing valve having the appropriate connections will be on the rig floor at all times with 3000 psi working pressure.

C. Hydrogen Sulfide detection equipment will be in operation after drilling out the 13 3/8" casing shoe until the production casing liner is run and set and rigging down operations have begun.

TESTING, LOGGING & CORING PROGRAM: — See COA

a. Testing: No DST's are expected.
b. Open hole logs are planned in Pilot hole (9600') TD
   Halliburton Quad Combo
c. Mud logging will take place from 2775ft to TD 10ft samples
d. Gyro survey will be ran at KOP of 8,390'
e. MWD (directional) and LWD (gamma) surveys will be taken from KOP (8,390') to TD (MD 14,120')

POTENTIAL HAZARDS:

No significant hazards are expected to MD of 13,920ft, no abnormal pressures or temperatures are expected, **Expected pressure gradient will be that of .433 psi/ft (8.33 PPG FW) or lessgine expected temp & pressure 130 deg, 4156.8 psi..** Lost circulation may occur, XW flow 10+gpm at B/Salado fm (2150'-2300') in South Taylor 13 Federal #5 to the south. Active water flood to the NW in the (Queen Sd) Operated by Endurance Resources, Taylor Unit. Harvey E. Yates will utilize a 3rd party H_2S monitoring package from 2775' to TD. If H2S is encountered the operator will comply with the provisions of onshore oil and gas order no 6. All personnel will be familiar with all aspects of safe operation of equipment being used to drill this well.

ANTICIPATED STARTING DATE & DURATION:

Harvey E. Yates anticipates drilling operations to begin ASAP after receiving approved APD. Expected time to complete is approximately 45 days. An additional 15 days will be needed for completion activities. Road and location construction will begin after the BLM has approved the APD.

4/21/2014

Keith Cannon, Drilling Superintendent — Date
Harvey E. Yates

HEYCO ENERGY GROUP
HORIZONTAL WORKSHEET

DATE 3/6/14

WELL NAME: Taylor Deep 12 Fed Com #8H
SURFACE LOCATION: 330 FNL & 1675 FEL
EC TO RANGE 13

TARGET DEPTH: 8655 FT TVD @TD
TARGET ANGLE: 0.01 DEGREES
'LANNED HZ LENGTH: 5280 FT
PLANNED KOP: 8375 FT TVD

COUNTY: Eddy
STATE: NM
FORMATION: Bone Spring 2nd Sd
MAXIMUM ROB: 12 DEG/100 FT
FORMATION DIP: 1 DEGREES
DIRECTION: 150 AZIMUTH
DECLINATION: N9E DEGREES
STARTING PT: 0.001 DEGREES
AT 950 FEET

BEGINNING SURVEY

COMPANY: 0 SURVEY TYPE: 0

DEPTH FROM 0 FT
TO 0 FT

	MD (Ft)	INCL (deg)	AZIMUTH (deg)	TVD (Ft)	COORDINATES (N+/S-)	(E+/W-)	VERT.SEC (Ft)
TIE IN POINT	2500.00	0.20	150.00	2500.00	-0.01	0.01	-0.01

MEASURED DEPTH (ft)	INCL ANGLE (degrees)	HOLE AZIMUTH (degrees)	COURSE LENGTH (ft)	T.V.D. (ft)	TOTAL VERT.SEC (ft)	COORDINATES (N+/S-) (ft)	(E+/W-) (ft)	CLOSURE DISTANCE (ft)	DOGLEG SEVERITY (deg/100)	BUILD RATE (deg/100)
3000.0	0.3	110.0	500.0	3000.0	-1.2	-1.2	1.5	1.9	0.0	0.0
3500.0	0.3	90.0	500.0	3500.0	-1.7	-1.7	3.8	4.2	0.0	0.0
4000.0	0.4	70.0	500.0	4000.0	-1.2	-1.2	6.6	6.7	0.0	0.0
4500.0	0.4	50.0	500.0	4500.0	0.5	0.5	9.4	9.4	0.0	0.0
5000.0	0.6	30.0	500.0	5000.0	3.3	3.3	11.8	12.3	0.0	0.0
5500.0	0.6	10.0	500.0	5499.9	7.2	7.2	13.2	15.0	0.0	0.0
6000.0	0.6	350.0	500.0	5999.9	6.9	6.9	13.2	14.9	0.0	0.0
6500.0	0.6	330.0	500.0	6499.9	11.6	11.6	11.5	16.3	0.0	0.0
7000.0	0.7	340.0	500.0	6999.9	16.5	16.5	9.2	18.9	0.0	0.0
7500.0	0.7	350.0	500.0	7499.8	22.2	22.2	7.7	23.5	0.0	0.0
8000.0	0.8	355.0	500.0	7999.8	28.5	28.5	6.9	29.3	0.0	0.0
8390.0	0.8	0.0	390.0	8389.8	28.4	28.4	6.9	29.2	0.0	0.0
8490.0	12.0	0.3	100.0	8489.0	39.5	39.5	6.9	40.1	11.2	11.2
8590.0	24.0	0.3	100.0	8583.9	70.4	70.4	7.1	70.7	12.0	12.0
8690.0	36.0	0.3	100.0	8670.3	120.3	120.3	7.3	120.5	12.0	12.0
8790.0	48.0	0.3	100.0	8744.5	187.1	187.1	7.6	187.2	12.0	12.0
[illegible] 0	60.0	0.2	100.0	8803.2	267.8	267.8	8.0	267.9	12.0	12.0

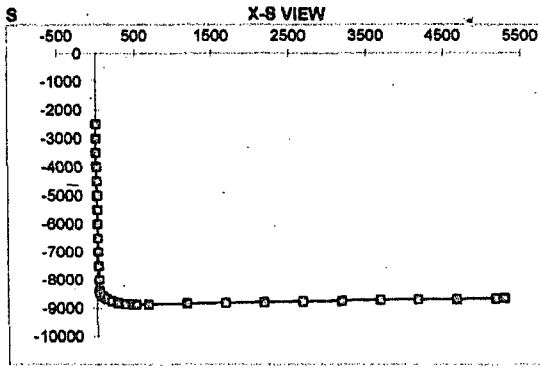
'CO ENERGY GROUP
r Deep 12 Fed Com #8H

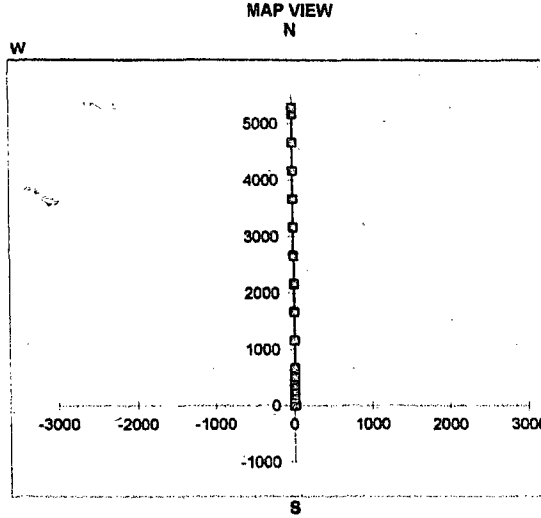
DATE 3/6/14

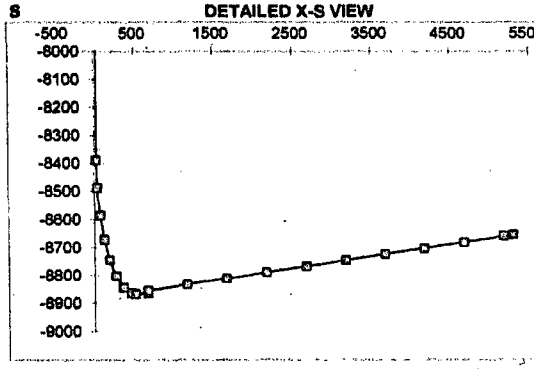
MEASURED DEPTH (ft)	INCL ANGLE (degrees)	HOLE AZIMUTH (degrees)	COURSE LENGTH (ft)	T.V.D. (ft)	TOTAL VERT.SEC (ft)	COORDINATES (N+/S-) (ft)	(E+/W-) (ft)	CLOSURE DISTANCE (ft)	DOGLEG SEVERITY (deg/100)	BUILD RATE (deg/100)
8990.0	72.0	0.2	100.0	8843.8	359.0	359.0	8.2	359.1	12.0	12.0
9090.0	84.0	0.1	100.0	8864.5	456.6	456.6	8.4	456.7	12.0	12.0
9140.0	90.0	0.1	50.0	8867.2	506.6	506.6	8.5	506.6	12.0	12.0
9300.0	92.5	0.0	160.0	8863.7	666.5	666.5	8.6	666.6	1.6	1.6
9500.0	92.5	360.0	200.0	8855.0	866.5	666.5	8.6	666.5	0.0	0.0
10000.0	92.5	359.9	500.0	8833.2	1166.0	1166.0	7.9	1166.0	0.0	0.0
10500.0	92.5	359.9	500.0	8811.3	1665.5	1665.5	6.8	1665.5	0.0	0.0
11000.0	92.5	359.9	500.0	8789.5	2165.0	2165.0	5.8	2165.1	0.0	0.0
11500.0	92.5	359.9	500.0	8767.7	2664.6	2664.6	4.7	2664.6	0.0	0.0
12000.0	92.5	359.9	500.0	8746.0	3164.1	3164.1	3.6	3164.1	0.0	0.0
12500.0	92.5	359.9	500.0	8724.1	3663.6	3663.6	2.5	3663.6	0.0	0.0
13000.0	92.5	359.9	500.0	8702.3	4163.1	4163.1	1.4	4163.1	0.0	0.0
13500.0	92.5	359.9	500.0	8680.5	4662.7	4662.7	0.3	4662.7	0.0	0.0
14000.0	92.5	359.9	500.0	8658.7	5162.2	5162.2	-0.8	5162.2	0.0	0.0
14120.0	92.5	359.9	120.0	8653.5	5282.1	5282.1	-1.0	5282.1	0.0	0.0

FOR GRAPHING

MD	VERT	TVD	ROB	+E/-W	+N/-S
2500	0	-2500	0.0	0.01	-0.01
3000	-1	-3000	0.0	1.483761	-1.24663
3500	-2	-3500	0.0	3.83514	-1.66124
4000	-1	-4000	0.0	6.614039	-1.17125
4500	0	-4500	0.0	9.433714	0.456691
5000	3	-5000	0.0	11.80559	3.283387
5500	7	-5500	0.0	13.21612	7.15877
6000	7	-6000	0.0	13.21612	6.890641
6500	12	-6500	0.0	11.50865	11.58187
7000	17	-7000	0.0	9.206595	16.51864
7500	22	-7500	0.0	7.683995	22.20106
8000	28	-8000	0.0	6.858463	28.4716
8390	28	-8390	0.0	6.861703	28.3974
8490	40	-8489	11.2	6.890839	39.5265
8590	70	-8584	12.0	7.055036	70.37131
8690	120	-8670	12.0	7.320711	120.2793
8790	187	-8745	12.0	7.641283	187.0893
8890	268	-8803	12.0	7.958402	267.8226
8990	359	-8844	12.0	8.238918	359.0099
9090	457	-8865	12.0	8.449927	456.6457
9140	507	-8867	12.0	8.515257	506.5543
9300	667	-8864	1.6	8.585048	666.5035
9500	666	-8855	0.0	8.58506	666.4758
10000	1166	-8833	0.0	7.931182	1166.001
10500	1666	-8811	0.0	6.841395	1665.522
11000	2165	-8789	0.0	5.751607	2165.043
11500	2665	-8768	0.0	4.661812	2664.568
12000	3164	-8746	0.0	3.572016	3164.093
12500	3664	-8724	0.0	2.482228	3663.614
13000	4163	-8702	0.0	1.392441	4163.135
13500	4663	-8680	0.0	0.302645	4662.66
14000	5162	-8659	0.0	-0.78715	5162.185
14120	5282	-8653	0.0	-1.0487	5282.071



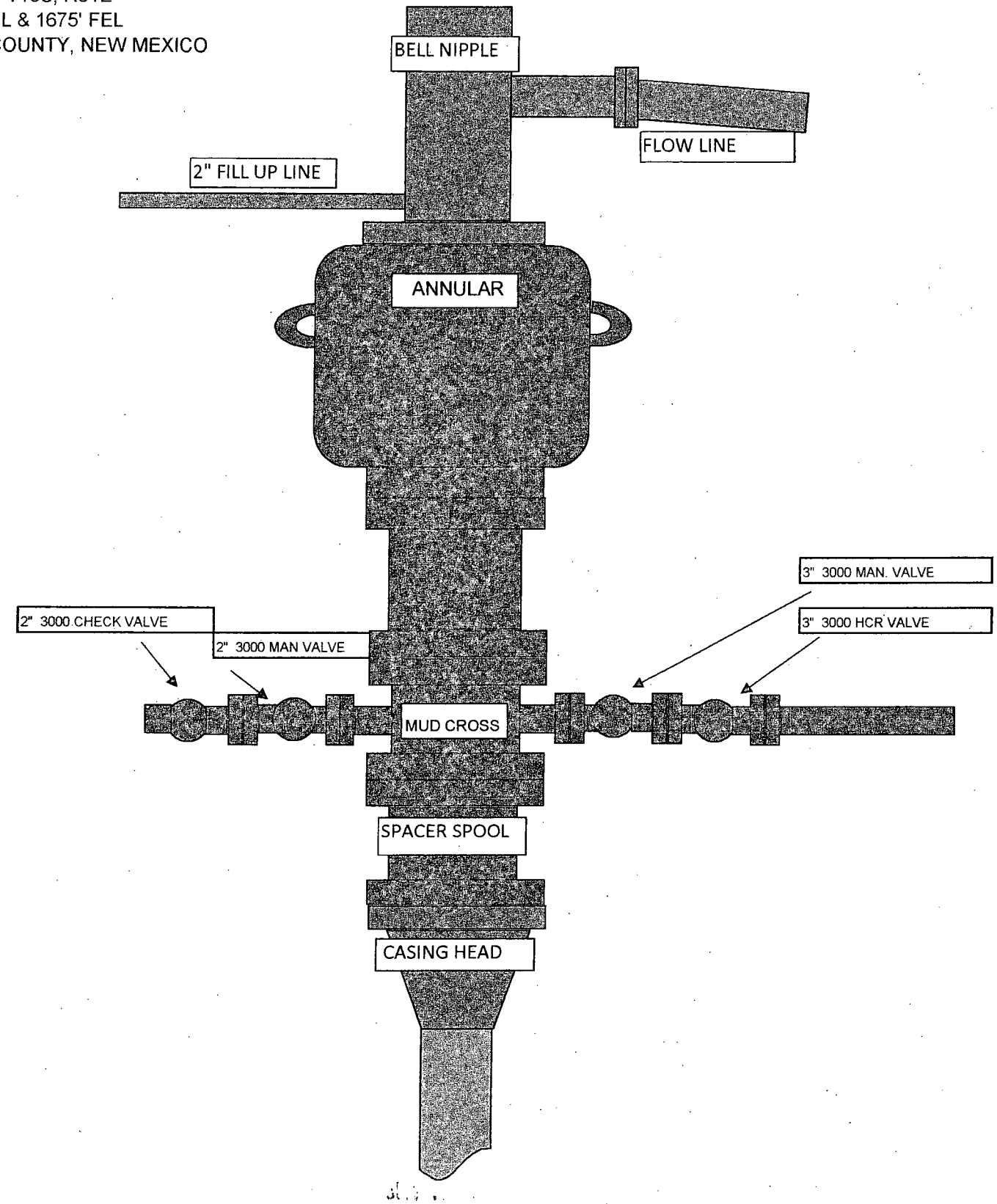




13 5/8" 2M BOP SYSTEM

HARVEY E. YATES

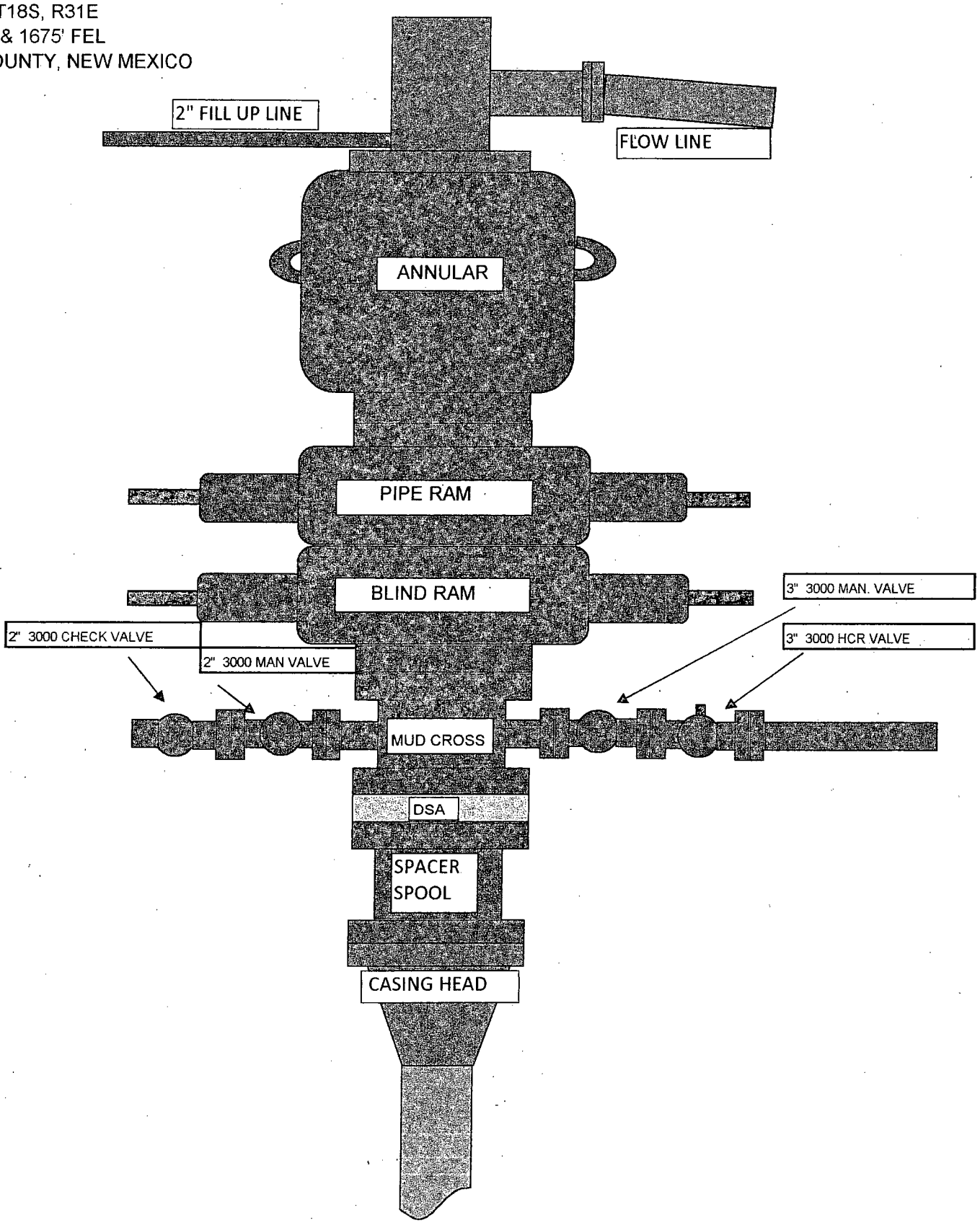
TAYLOR DEEP 12 FEDERAL COM 8H
SEC 12, T18S, R31E
330" FNL & 1675' FEL
EDDY COUNTY, NEW MEXICO



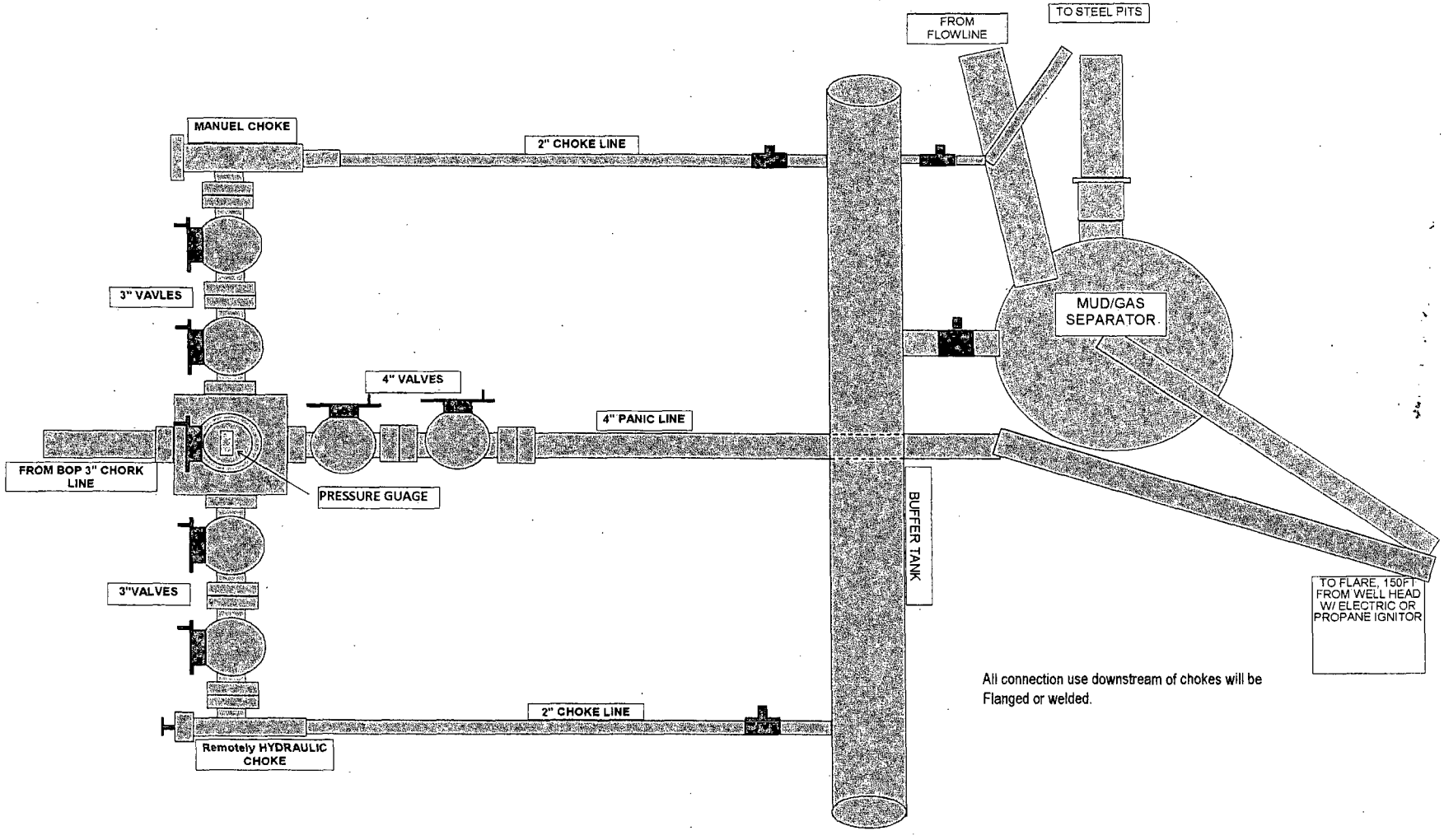
11" 3M BOP SYSTEM

HARVEY E. YATES

TAYLOR DEEP 12 FEDERAL COM 8H
SEC 13, T18S, R31E
330' FNL & 1675' FEL
EDDY COUNTY, NEW MEXICO



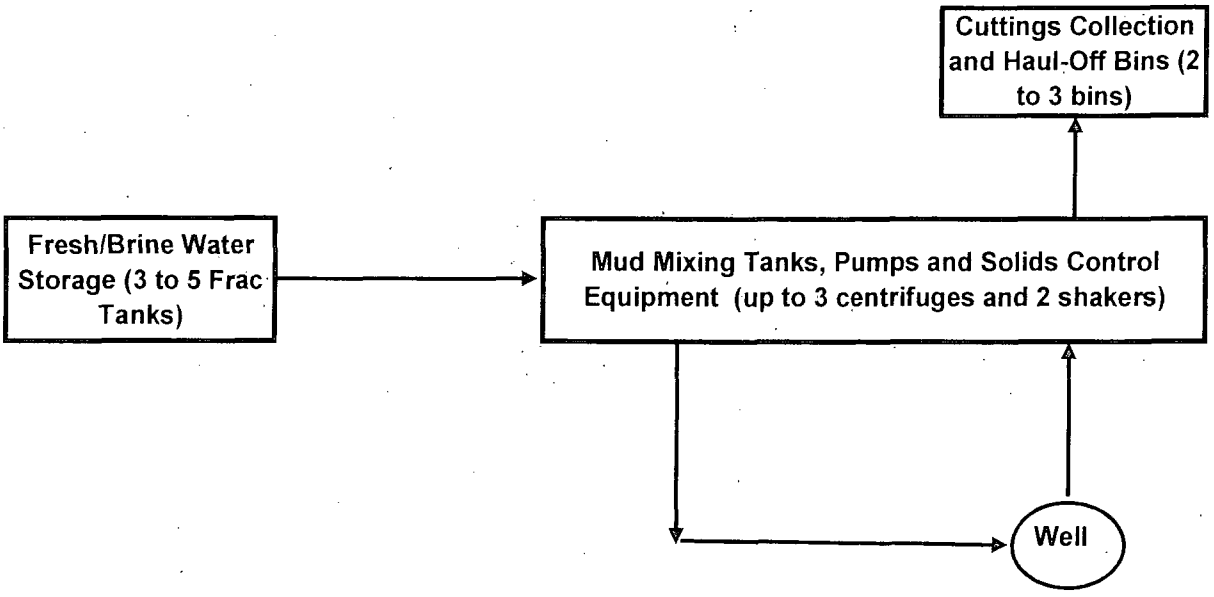
HARVEY E. YATES
Taylor Deep 12 Federal Com 8H
3000 psi BOP Manifold System



All connection use downstream of chokes will be Flanged or welded.

CLOSED-LOOP SYSTEM

Design Plan:



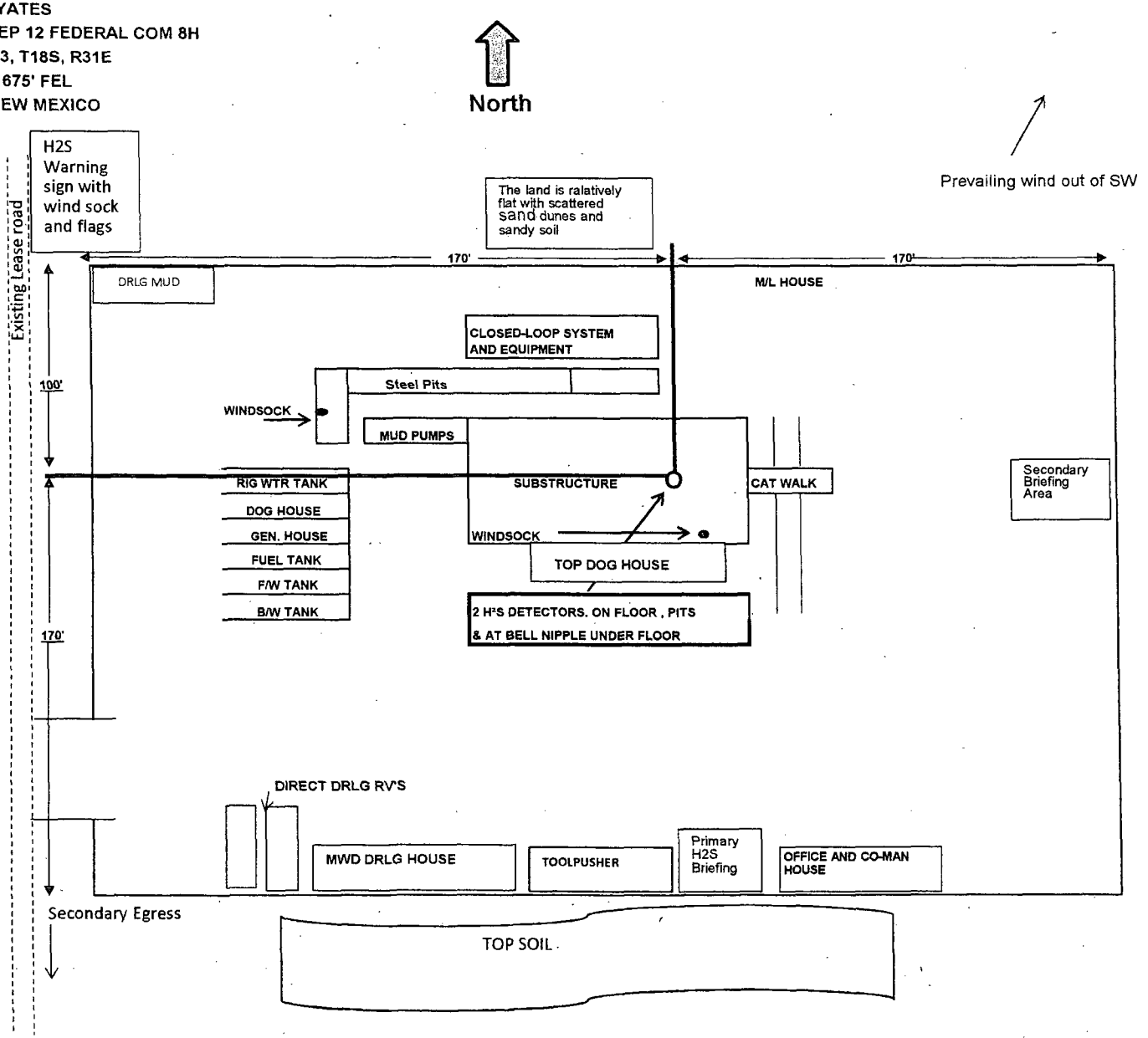
Operating and Maintenance Plan:

During drilling operations, third party service companies will utilize solids control equipment to remove cuttings from the drilling fluid and collect it in haul-off bins. Equipment will be closely monitored at all times while drilling by the derrick man and the service company employees.

Closure Plan:

During drilling operations, third party service companies will haul-off drill solids and fluids to an approved disposal facility. At the end of the well, all closed loop equipment will be removed from the location.

EXHIBIT "D" LOCATION DIAGRAM
HARVEY E. YATES
TAYLOR DEEP 12 FEDERAL COM 8H
UL-B, SEC 13, T18S, R31E
330' FNL & 1675' FEL
EDDY CO. NEW MEXICO



HARVEY E. YATES
500 N. MAIN, STE. ONE
ROSWELL, NM 88201
(575) 623-6601 (Office)
(575) -624-5321 (Fax)

03/27/14

Mr. Wesley Ingram
Carlsbad BLM Field Office
620 E. Greene St.
Carlsbad, NM 88220

Re: Taylor Deep 12 Federal Com 8H
SHL: 330' FNL & 1675 FEL UL B
Sec. 13, T18S, R31E
Eddy, NM
Rule 118 H2S Exposure

Dear Mr. Ingram,

Harvey E. Yates (Heyco), have evaluated this well and we do not expect to encounter hydrogen sulfide. However, we will employ a third party monitoring system. We will begin monitoring prior to drilling out the surface casing and will continue monitoring the remainder of the well.

Please contact me if you have any additional questions.

Sincerely,

Keith Cannon
Drilling Superintendent

Hydrogen Sulfide Drilling Operations Plan
Taylor Deep 12 Federal Com 8H
Sec 13, T18S, R31E
Eddy County N.M.

1. Company and contract personnel admitted on location should be trained by a qualified H_2S safety instructor to the recognize and handle following:
   A. Characteristics of H_2S gas
   B. Physical effects and hazards
   C. Proper use of safety equipment and life support systems
   D. Principle and operation of H_2S detectors, warning system and briefing knowledge
   E. Evacuation procedure, routes and first aid support
   F. Proper use of 30 minutes Pressure-on-Demand Air Pack

2. Supervisory personnel will be trained in the following areas:
   A. Effects of H2S on metal components.
   B. Corrective action and shut in procedures, blowout prevention, and well control procedure.
   C. Contents of Hydrogen Sulfide Drilling Operations Plan.

3. H_2S Detection and Alarm Systems will be in place before commencing any operations.
   A. H_2S detectors and audio alarm system to be located at wellhead, shale shaker and mud pits. Will be installed and maintained by third party safety company.
   B. Thirty minute self-contained work unit located in at briefing areas.

4. Visual warning systems

   A. Windsock at mud pit area (high enough to be visible)
   B. Windsock on dog house (high enough to be visible)
   C. H_2S warning signs on lease access road into location
      Flags displayed on sign at location entrance
      1. Green flag indicates "Normal Safe Conditions"
      2. Yellow Flag indicates "Potential Pressure and Danger"
      3. Red Flag indicates "Danger - H_2S Present in High Concentrations" *admit only emergency personnel*

5. Well Control Equipment

   A. - Annular preventers*
      - Double ram with blind rams and pipe rams*
      - Drilling spool, or blowout preventer with 2 side outlets (choke side shall be a 3-inch minimum diameter, kill side shall be at least 2-inch diameter)*
      - Kill line (2 inch minimum)
      - A minimum of 2 choke line valves (3 inch minimum)*
      - 3 inch diameter choke line
      - 2 kill line valves, one of which shall be a check valve (2 inch minimum)*
      - 2 chokes (refer to diagram in Attachment 1)
      - Pressure gauge on choke manifold
      - Upper Kelly cock valve with handle available
      - Safety valve and subs to fit all drill string connections in use
      - All BOPE connections subjected to well pressure shall be flanged, welded, or clamped*
      - Fill-up line above the uppermost preventer.
   B. Choke manifold with a remotely operated choke
   C. Mud / Gas separator
   D. Flare line 150' from wellhead
   E. Also see BOP and Choke exhibit.

6. Communication
   A. While working under masks chalkboards will be used for communication
   B. Hand signals will be used where chalk board is inappropriate
   C. Two -way radios or cell phones used to communicate off location or minimally in Drilling Foreman's trailer or living quarters

7. Drill Stem Testing (**not planned**)
   A. Exhausts watered
   B. Flare line equipped with electric Igniter/propane pilot light in case gas reaches surface
   C. If location near dwelling closed DST will be performed

9. Mud Program

   The mud program has been designed to minimize the volume circulated to surface. The operator will have the necessary Mud products to minimize hazards while drilling in H2S bearing zones.

10. If H_2S encountered, mud system shall be addressed to maintain control of formation. A mud gas separator will be brought into service along with H_2S scavengers, if necessary. pH will be maintained at 10, to minimize H2S in the system. Hydrogen sulfide scavengers will also be used to minimize hazards while drilling the well.

PUBLIC PROTECTION PLAN FOR EMERGENCY CONTACTS

HARVEY E. YATES COMPANY 575-623-6601

Company Personnel

Keith Cannon	Drilling Supt.	575-626-1936
		575-623-6601

ARTESIA N.M.	
Ambulance	911
State Police	575-746-5000
City Police	575-746-5000
Sheriff's Office	575-746-9888
Fire Department	575-746-5050 or 575-746-5051
N.M.O.C.D	575-748-1283

CARLSBAD N.M.	
Ambulance	911
State Police	575-885-3137
City Police	575-885-2111
Sheriff's Office	575-887-7551
Fire Department	575-885-3125 or 575-885-2111
Carlsbad BLM	575-887-6544

HOBBS N.M.	
Ambulance	911
State Police	575-392-5588
City Police	575-397-9265
Sheriff's Office	575-396-3611
Fire Department	575-397-9308
N.M.O.C.D	575-393-6161
Hobbs BLM	575-393-3612

Flight for Life (Lubbock Tx)	806-743-9911
Aerocare (Lubbock Tx)	806-747-8923
Med flight air Ambulance (Albuq NM)	505-842-4433
SB air Med Services (Albuq NM)	505-842-4949

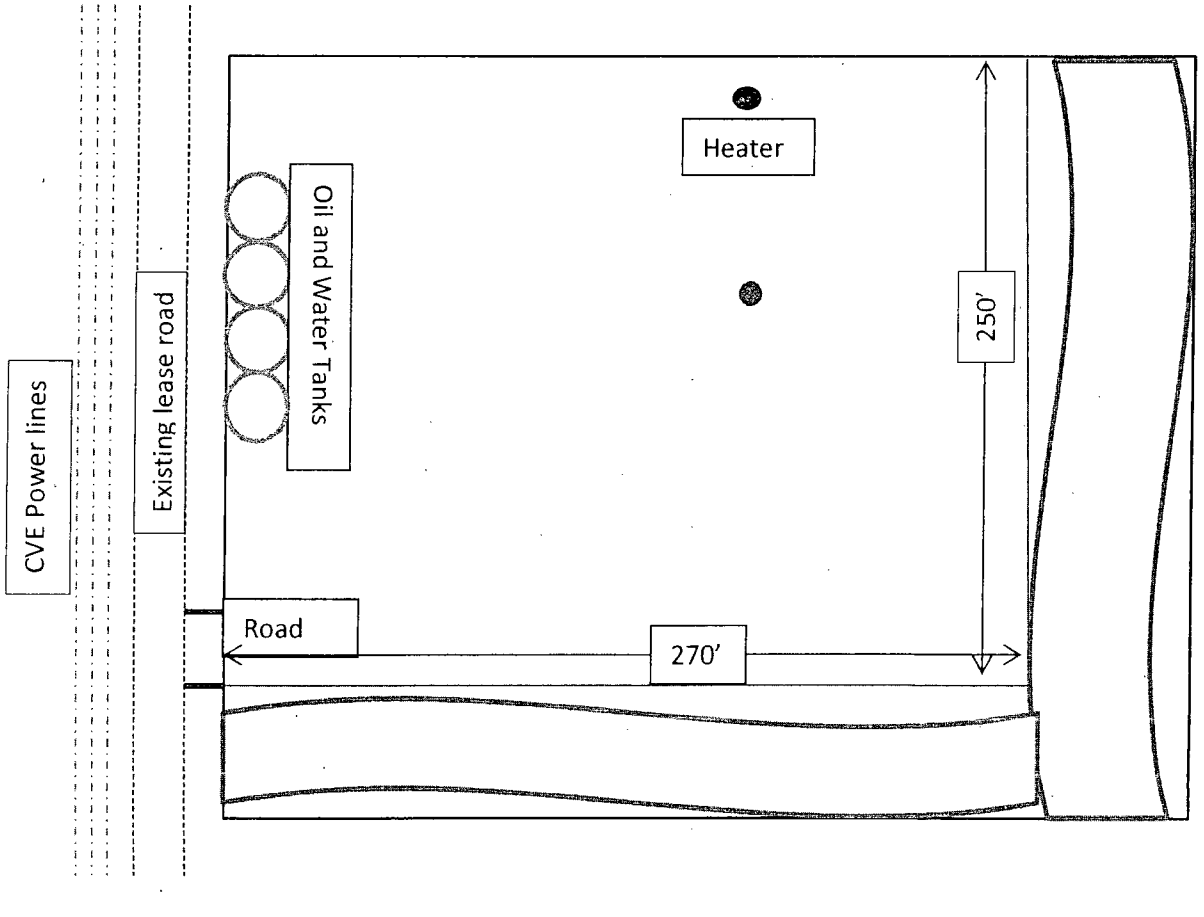
Wild Well Control		281-784-4700 (24 hour number)
Boots & Coots IWC		800-256-9688 or 281-931-8884
Cudd Pressure Control		915-699-0139 or 915-563-3356
BJ Services	(Artesia NM)	575-746-3569
	(Hobbs NM)	575-392-5556

New Mexico Emergency Response Commission (Santa Fe)	505-476-9600
24 Hour	505-827-9126
New Mexico State Emergency Operations Center	505-476-9635

Taylor Deep 12 Federal Com 8H

SHL: UL. B, Sec 13, T18S, R31E
330' FNL & 1675' FEL
BHL: UL. B, Sec 12, T18S, R31E
330' FNL & 1675' FEL
Eddy Co. N.M

1. V-Door to the East
2. Top soil pile on the South side of location.
3. Road coming into the Southwest corner of location.
4. Tank Battery, Heater to the North side and oil & water tanks on the West side of location.
5. Down size location on the south and east side to 250' x 270'



Surface Use Plan
Harvey E. Yates
Taylor Deep 12 Federal Com 8H
UL- B, Section 13, T18S, R31E
330' FNL & 1675' FEL
Eddy County, New Mexico

1. **Existing Roads:**
Exhibit 1 contains the surveys and a maps with proposed location and lease roads. Directions: from intersection of Co Rd 122 and State HWY 82 go south on Co. Rd 122 for 4.0 miles, turn left on to Co Rd 249 (westall Rd) road, travel east on Westall road for 1.5 miles, turns left (northeast) go 2.7 miles. Turn right (South) go 0.2 miles to location

2. **Planned Access Roads:**
No new road will be constructed on or off lease. Will use existing lease road to the Parke A #1 See attached diagrams and plats.

3. **Location of Existing Wells:**
See EXHIBIT #3 Existing wells within 1 mile.

4. **Location of Tank Batteries, Electric Lines, Etc:**
a. In the event the well is found productive, the tank battery would be utilized for this location and the necessary production equipment will be installed, tank battery will be lined and burmed. see tank battery exhibit.

b. Will tie onto power lines that runs just to the west of location, CVE Electric will provide electricity.

5. **Location and Type of Water Supply:**
This location will be drilled using a combination of water mud systems (outlined in the drilling program). Water will be obtained from commercial water stations in the area and hauled in by transport truck using the existing and proposed roads shown in the C-102.

6. **Source of Construction Material:**
a. Top soil will be stock piled on the South side of location (V-door side is east) and will be used after drilling and completion operations to reduce location size on south and east sides and reclaim and reseeded to BLM specifications. See location map.

b. All caliche utilized for the drilling pad and proposed access road will be obtained from an existing BLM / State approved pit or from deposits found under the location. All roads will be constructed of 6" rolled and compacted caliche.

7. **Methods of Handling Waste Disposal:**
a. All trash, junk, and other waste material will be contained in trash cages or trash bin to prevent scattering. When the job is completed, all contents will be removed and disposed of in an approved sanitary landfill. The wellsite will be cleaned of all waste within 30 days of final completion of the well.

b. A portable toilet will be provided for the rig crews. This equipment will be properly maintained during the drilling and completion operations and will be removed when all operations are complete.

c. Disposal of fluids to be transported by trucks to a nearby approved disposal.

d. Closed loop system will be used. All drill solid waste will be trasported to permited disposal facility R360, permit # NM-01-0019 or GMI, permit # NM-01-0006

8. **Ancillary Facilities:**

Harvey E. Yates,(HEYCO) will explore all options for obtaining water storage for stimulation before constructing a frac pit, Heyco will look to utilize offset Frac pits built by nearby operators, next option will be temporary Poisidon Frac tanks if a nearby source of water is available, if this is not possible a Frac Pit will be built. When operations are complete the Frac pit will be reclaimed and reseeded to BLM requirments.

9. **Wellsite Layout:**

a. EXHIBIT #4 shows the relative location and dimensions of the well pad and major rig components. V-door east.

b. The land is relatively flat with scattered vegitated sand dunes and sandy soil.

c. The pad area has been staked and onsite has been conducted with the BLM on February 4, 2014

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. 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.

c. Interim reclamation consists of minimizing the footprint of disturbance by reclaiming all portions of the well site not needed for production operations. Topsoil is respread over areas not needed for production operations and recontoured to the surrounding area and reseeded per BLM guidelines.

11. **Surface Ownership:**

a. The mineral and surface owner is the Federal Government, Land and Grazing lease owner is JR Caviness will be contacted

12. **Other Information:**

a. The topography consists of Qal/vegitated dues, sandy soil with native grasses. No wildlife was observed, but the usual inhabitants of this region are Jackrabbits, Reptiles, Coyotes, etc.

b. There are no ponds, lakes, or rivers in this area.

c. An Archaeological Survey will be conducted by Boone Arch. a copy will be sent to the Carlsbad BLM office. There are no occupied dwellings or windmills in the area.

d. 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.

13. **Operator's Representative:**

The Harvey E. Yates Company (HEYCO); representatives reponsible for ensuring compliance of the surface Use plan are listed below:

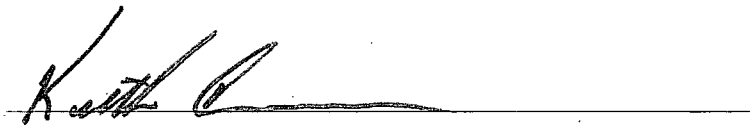
Keith Cannon, Drilling Superintendent

Harvey E. Yates Company
500 N. Main Suite One, P.O Box 1933
Roswell, NM 88202
(575)-623-6601

OPERATOR CERTIFICATION

I 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 that presently exist; that I have full knowledge of State and Federal Laws applicable to this operation; that the statements made in this 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 the 27 day of March 2014.

Name: Keith Cannon
Position: Drilling Superintendent
Address: 500 N. Main, Suite one
P.O Box 1933
Roswell N.M. 88202
Telephone: 575-623-6601
Email: kcannon@heycoenergy.com

Signed: 

PECOS DISTRICT
CONDITIONS OF APPROVAL

OPERATOR'S NAME:	Harvey E Yates
LEASE NO.:	NM106718
WELL NAME & NO.:	8H-Taylor Deep 12 Federal Com
SURFACE HOLE FOOTAGE:	330'/N & 1675'/E
BOTTOM HOLE FOOTAGE	330'/N & 1675'/E, sec. 12
LOCATION:	Sec. 13, T. 18 S., R. 31 E.
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.

I. GENERAL PROVISIONS

The approval of the Application For Permit To Drill (APD) is in compliance with all applicable laws and regulations: 43 Code of Federal Regulations 3160, the lease terms, Onshore Oil and Gas Orders, Notices To Lessees, New Mexico Oil Conservation Division (NMOCD) Rules, National Historical Preservation Act As Amended, and instructions and orders of the Authorized Officer. Any request for a variance shall be submitted to the Authorized Officer on Form 3160-5, Sundry Notices and Report on Wells.

II. PERMIT EXPIRATION

If the permit terminates prior to drilling and drilling cannot be commenced within 60 days after expiration, an operator is required to submit Form 3160-5, Sundry Notices and Reports on Wells, requesting surface reclamation requirements for any surface disturbance. However, if the operator will be able to initiate drilling within 60 days after the expiration of the permit, the operator must have set the conductor pipe in order to allow for an extension of 60 days beyond the expiration date of the APD. (Filing of a Sundry Notice is required for this 60 day extension.)

III. ARCHAEOLOGICAL, PALEONTOLOGY & HISTORICAL SITES

Any cultural and/or paleontological resource discovered by the operator or by any person working on the operator's behalf shall immediately report such findings to the Authorized Officer. The operator is fully accountable for the actions of their contractors and subcontractors. The operator 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 shall be made by the Authorized Officer to determine the appropriate actions that shall be required to prevent the loss of significant cultural or scientific values of the discovery. The operator shall be held responsible for the cost of the proper mitigation measures that the Authorized Officer assesses after consultation with the operator on the evaluation and decisions of the discovery. Any unauthorized collection or disturbance of cultural or paleontological resources may result in a shutdown order by the Authorized Officer.

IV. NOXIOUS WEEDS

The operator shall be held responsible if noxious weeds become established within the areas of operations. Weed control shall be required on the disturbed land where noxious weeds exist, which includes the roads, pads, associated pipeline corridor, and adjacent land affected by the establishment of weeds due to this action. The operator shall consult with the Authorized Officer for acceptable weed control methods, which include following EPA and BLM requirements and policies.

V. SPECIAL REQUIREMENT(S)

Timing Limitation Stipulation / Condition of Approval for lesser prairie-chicken: Oil and gas activities including 3-D geophysical exploration, and drilling will not be allowed in lesser prairie-chicken habitat during the period from March 1st through June 15th annually. During that period, other activities that produce noise or involve human activity, such as the maintenance of oil and gas facilities, pipeline, road, and well pad construction, will be allowed except between 3:00 am and 9:00 am. The 3:00 am to 9:00 am restriction will not apply to normal, around-the-clock operations, such as venting, flaring, or pumping, which do not require a human presence during this 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.

Ground-level Abandoned Well Marker to avoid raptor perching: Upon the plugging and subsequent abandonment of the well, the well marker will be installed at ground level on a plate containing the pertinent information for the plugged well. For more installation details, contact the Carlsbad Field Office at 575-234-5972.

Communitization Agreement
A Communitization Agreement covering the acreage dedicated to this well must be filed for approval with the BLM. The effective date of the agreement shall be prior to any sales. In addition, the well sign shall include the surface and bottom hole lease numbers. If the Communitization Agreement number is known, it shall also be on the sign. If not, it shall be placed on the sign when the sign is replaced.

VI. CONSTRUCTION

A. NOTIFICATION

The BLM shall administer compliance and monitor construction of the access road and well pad. Notify the Carlsbad Field Office at (575) 234-5909 at least 3 working days prior to commencing construction of the access road and/or well pad.

When construction operations are being conducted on this well, the operator shall have the approved APD and Conditions of Approval (COA) on the well site and they shall be made available upon request by the Authorized Officer.

B. TOPSOIL

The operator shall strip the top portion of the soil (root zone) from the entire well pad area and stockpile the topsoil along the edge of the well pad as depicted in the APD. The root zone is typically six (6) inches in depth. All the stockpiled topsoil will be redistributed over the interim reclamation areas. Topsoil shall not be used for berming the pad or facilities. For final reclamation, the topsoil shall be spread over the entire pad area for seeding preparation.

Other subsoil (below six inches) stockpiles must be completely segregated from the topsoil stockpile. Large rocks or subsoil clods (not evident in the surrounding terrain) must be buried within the approved area for interim and final reclamation.

C. CLOSED LOOP SYSTEM

Tanks are required for drilling operations: No Pits.

The operator shall properly dispose of drilling contents at an authorized disposal site.

D. FEDERAL MINERAL MATERIALS PIT

Payment shall be made to the BLM prior to removal of any federal mineral materials. Call the Carlsbad Field Office at (575) 234-5972.

E. WELL PAD SURFACING

Surfacing of the well pad is not required.

If the operator elects to surface the well pad, the surfacing material may be required to be removed at the time of reclamation.The well pad shall be constructed in a manner which creates the smallest possible surface disturbance, consistent with safety and operational needs.

F. EXCLOSURE FENCING (CELLARS & PITS)

Exclosure Fencing
The operator will install and maintain exclosure fencing for all open well cellars to prevent access to public, livestock, and large forms of wildlife before and after drilling operations until the pit is free of fluids and the operator initiates backfilling. (For examples of exclosure fencing design, refer to BLM's Oil and Gas Gold Book, Exclosure Fence Illustrations, Figure 1, Page 18.)

G. ON LEASE ACCESS ROADS

Road Width
The access road shall have a driving surface that creates the smallest possible surface disturbance and does not exceed fourteen (14) feet in width. The maximum width of surface disturbance, when constructing the access road, shall not exceed twenty-five (25) feet.

Surfacing
Surfacing material is not required on the new access road driving surface. If the operator elects to surface the new access road or pad, the surfacing material may be required to be removed at the time of reclamation.

Where possible, no improvements should be made on the unsurfaced access road other than to remove vegetation as necessary, road irregularities, safety issues, or to fill low areas that may sustain standing water.

The Authorized Officer reserves the right to require surfacing of any portion of the access road at any time deemed necessary. Surfacing may be required in the event the road deteriorates, erodes, road traffic increases, or it is determined to be beneficial for future field development. The surfacing depth and type of material will be determined at the time of notification.

Crowning
Crowning shall be done on the access road driving surface. The road crown shall have a grade of approximately 2% (i.e., a 1" crown on a 14' wide road). The road shall conform to Figure 1; cross section and plans for typical road construction.

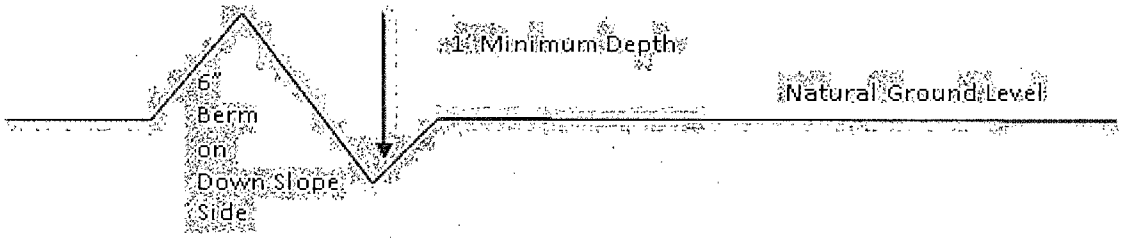
Ditching
Ditching shall be required on both sides of the road.

Turnouts
Vehicle turnouts shall be constructed on the road. Turnouts shall be intervisible with interval spacing distance less than 1000 feet. Turnouts shall conform to Figure 1; cross section and plans for typical road construction.

Drainage
Drainage control systems shall be constructed on the entire length of road (e.g. ditches, sidehill outsloping and insloping, lead-off ditches, culvert installation, and low water crossings).

A typical lead-off ditch has a minimum depth of 1 foot below and a berm of 6 inches above natural ground level. The berm shall be on the down-slope side of the lead-off ditch.

Cross Section of a Typical Lead-off Ditch



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

Formula for Spacing Interval of Lead-off Ditches

Example - On a 4% road slope that is 400 feet long, the water flow shall drain water into a lead-off ditch. Spacing interval shall be determined by the following formula:

400 foot road with 4% road slope: $\frac{400'}{4\%} + 100' = 200'$ lead-off ditch interval

Cattleguards
An appropriately sized cattleguard sufficient to carry out the project shall be installed and maintained at fence/road crossings. Any existing cattleguards on the access road route shall be repaired or replaced if they are damaged or have deteriorated beyond practical use. The operator shall be responsible for the condition of the existing cattleguards that are in place and are utilized during lease operations.

Fence Requirement
Where entry is granted across a fence line, the fence shall be braced and tied off on both sides of the passageway prior to cutting. The operator shall notify the private surface landowner or the grazing allotment holder prior to crossing any fences.

Public Access

Public access on this road shall not be restricted by the operator without specific written approval granted by the Authorized Officer.

Construction Steps

1. Salvage topsoil
2. Construct road
3. Redistribute topsoil
4. Revegetate slopes

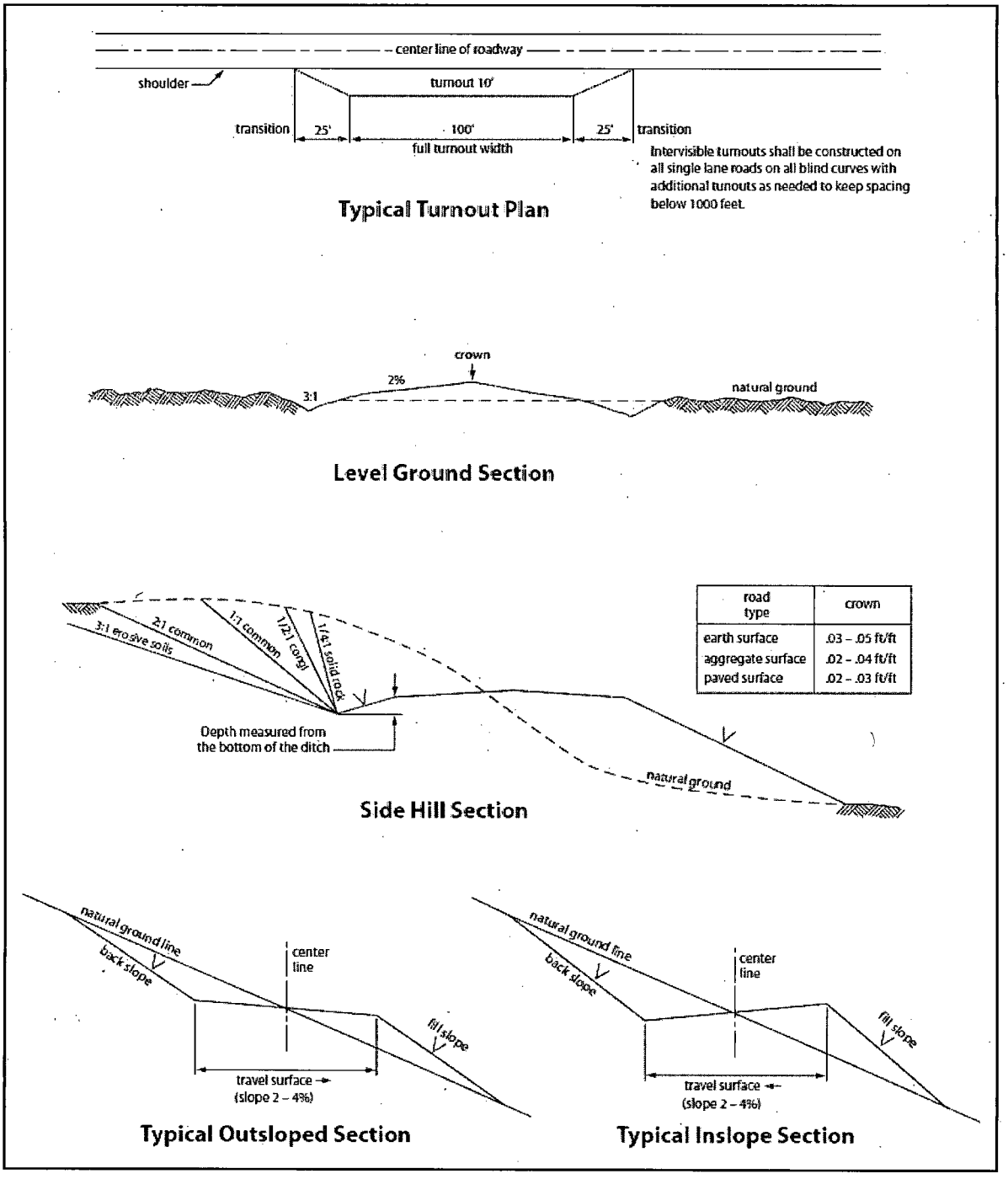


Figure 1. Cross-sections and plans for typical road sections representative of BLM resource or FS local and higher-class roads.

VII. DRILLING

A. DRILLING OPERATIONS REQUIREMENTS

The BLM is to be notified a minimum of 4 hours in advance for a representative to witness:

a. Spudding well
b. Setting and/or Cementing of all casing strings
c. BOPE tests

☒ **Eddy County**
Call the Carlsbad Field Office, 620 East Greene St., Carlsbad, NM 88220, (575) 361-2822

1. A Hydrogen Sulfide (H2S) Drilling Plan shall be activated 500 feet prior to drilling into the **Yates** formation. **As a result, the Hydrogen Sulfide area must meet Onshore Order 6 requirements, which includes equipment and personnel/public protection items. If Hydrogen Sulfide is encountered, please provide measured values and formations to the BLM.**

2. 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. **If the drilling rig is removed without approval – an Incident of Non-Compliance will be written and will be a "Major" violation.**

3. Floor controls are required for 3M or Greater systems. These controls will be on the rig floor, unobstructed, readily accessible to the driller and will be operational at all times during drilling and/or completion activities. Rig floor is defined as the area immediately around the rotary table; the area immediately above the substructure on which the draw works is located, this does not include the dog house or stairway area.

4. **The record of the drilling rate along with the GR/N well log run from TD to surface (horizontal well – vertical portion of hole) shall be submitted to the BLM office as well as all other logs run on the borehole 30 days from completion. If available, a digital copy of the logs is to be submitted in addition to the paper copies. The Rustler top and top and bottom of Salt are to be recorded on the Completion Report.**

B. CASING

Changes to the approved APD casing program need prior approval if the items substituted are of lesser grade or different casing size or are Non-API. The Operator can exchange the components of the proposal with that of superior strength (i.e. changing from J-55 to N-80, or from 36# to 40#). Changes to the

approved cement program need prior approval if the altered cement plan has less volume or strength or if the changes are substantial (i.e. Multistage tool, ECP, etc.).

The initial wellhead installed on the well will remain on the well with spools used as needed.

Centralizers required on surface casing per Onshore Order 2.III.B.1.f.

Wait on cement (WOC) time prior to drilling out for a primary cement job will be a minimum 18 hours for a water basin, 24 hours in the potash area, or 500 pounds compressive strength, whichever is greater for all casing strings. DURING THIS WOC TIME, NO DRILL PIPE, ETC. SHALL BE RUN IN THE HOLE. Provide compressive strengths including hours to reach required 500 pounds compressive strength prior to cementing each casing string. IF OPERATOR DOES NOT HAVE THE WELL SPECIFIC CEMENT DETAILS ONSITE PRIOR TO PUMPING THE CEMENT FOR EACH CASING STRING, THE WOC WILL BE 30 HOURS. See individual casing strings for details regarding lead cement slurry requirements.

No pea gravel permitted for remedial or fall back remedial without prior authorization from the BLM engineer.

Possible water flows in the Queen, Salado and Artesia Group
Possibility lost circulation in the Rustler, San Andres, Grayburg, Red Beds, Delaware and Artesia Group.

1. The **13-3/8** inch surface casing shall be set at approximately **1000** feet (in a competent bed below the Magenta Dolomite, Member of the Rustler and above the salt) and cemented to the surface. **If salt is encountered, set casing at least 25 feet above the salt.**

    a. If cement does not circulate to the surface, the appropriate BLM office shall be notified and a temperature survey utilizing an electronic type temperature survey with surface log readout will be used or a cement bond log shall be run to verify the top of the cement. Temperature survey will be run a minimum of six hours after pumping cement and ideally between 8-10 hours after completing the cement job.

    b. Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry.

    c. Wait on cement (WOC) time for a remedial job will be a minimum of 4 hours after bringing cement to surface or 500 pounds compressive strength, whichever is greater.

    d. If cement falls back, remedial cementing will be done prior to drilling out that string.

2. The minimum required fill of cement behind the **9-5/8** inch first intermediate casing, which shall be set at approximately **2775** feet (base of the Tansill), is:

   ☒ Cement to surface. If cement does not circulate see B.1.a, c-d above. **Additional cement shall be required as excess calculates to 21%.**

Pilot hole is required to have a plug at the bottom of the hole. Plug is approved as written. The BLM is to be contacted (575-361-2822) prior to tag of bottom plug.

Centralizers required on horizontal leg, must be type for horizontal service and a minimum of one every other joint.

3. The minimum required fill of cement behind the **5-1/2** inch production casing is:

   ☒ Cement should tie-back at **least 200 feet** into previous casing string. Operator shall provide method of verification. **Additional cement shall be required as excess calculates to 0%.**

5. If hardband drill pipe is rotated inside casing, returns will be monitored for metal. If metal is found in samples, drill pipe will be pulled and rubber protectors which have a larger diameter than the tool joints of the drill pipe will be installed prior to continuing drilling operations.

C. PRESSURE CONTROL

1. All blowout preventer (BOP) and related equipment (BOPE) shall comply with well control requirements as described in Onshore Oil and Gas Order No. 2 and API RP 53 Sec. 17.

2. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the **surface casing** shoe shall be **2000 (2M)** psi.

   In the case where the only BOP installed is an annular preventer, it shall be tested to a minimum of 2000 psi (which may require upgrading to 3M or 5M annular).

3. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the **13-3/8** intermediate casing shoe shall be **2000 (2M)** psi.

4. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the **9-5/8** intermediate casing shoe shall be **3000 (3M)** psi.

5. The appropriate BLM office shall be notified a minimum of 4 hours in advance for a representative to witness the tests.

    a. In a water basin, for all casing strings utilizing slips, these are to be set as soon as the crew and rig are ready and any fallback cement remediation has been done. The casing cut-off and BOP installation can be initiated four hours after installing the slips, which will be approximately six hours after bumping the plug. For those casing strings not using slips, the minimum wait time before cut-off is eight hours after bumping the plug. BOP/BOPE testing can begin after cut-off or once cement reaches 500 psi compressive strength (including lead when specified), whichever is greater. However, if the float does not hold, cut-off cannot be initiated until cement reaches 500 psi compressive strength (including lead when specified).

    b. The tests shall be done by an independent service company utilizing a test plug **not a cup or J-packer**.

    c. The test shall be run on a 5000 psi chart for a 2-3M BOP/BOP, on a 10000 psi chart for a 5M BOP/BOPE and on a 15000 psi chart for a 10M BOP/BOPE. If a linear chart is used, it shall be a one hour chart. A circular chart shall have a maximum 2 hour clock. If a twelve hour or twenty-four hour chart is used, tester shall make a notation that it is run with a two hour clock.

    d. The results of the test shall be reported to the appropriate BLM office.

    e. All tests are required to be recorded on a calibrated test chart. **A copy of the BOP/BOPE test chart and a copy of independent service company test will be submitted to the appropriate BLM office.**

    f. The BOP/BOPE test shall include a low pressure test from 250 to 300 psi. The test will be held for a minimum of 10 minutes if test is done with a test plug and 30 minutes without a test plug. This test shall be performed prior to the test at full stack pressure.

D. DRILL STEM TEST

If drill stem tests are performed, Onshore Order 2.III.D shall be followed.

E. WASTE MATERIAL AND FLUIDS

All waste (i.e. drilling fluids, trash, salts, chemicals, sewage, gray water, etc.) created as a result of drilling operations and completion operations shall be safely contained and disposed of properly at a waste disposal facility. No waste material or fluid shall be disposed of on the well location or surrounding area.

Porto-johns and trash containers will be on-location during fracturing operations or any other crew-intensive operations.

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VIII. PRODUCTION (POST DRILLING)

A. WELL STRUCTURES & FACILITIES

Placement of Production Facilities
Production facilities should be placed on the well pad to allow for maximum interim recontouring and revegetation of the well location.

Exclosure Netting (Open-top Tanks)
Immediately following active drilling or completion operations, the operator will take actions necessary to prevent wildlife and livestock access, including avian wildlife, to all open-topped tanks that contain or have the potential to contain salinity sufficient to cause harm to wildlife or livestock, hydrocarbons, or Resource Conservation and Recovery Act of 1976-exempt hazardous substances. At a minimum, the operator will net, screen, or cover open-topped tanks to exclude wildlife and livestock and prevent mortality. If the operator uses netting, the operator will cover and secure the open portion of the tank to prevent wildlife entry. The operator will net, screen, or cover the tanks until the operator removes the tanks from the location or the tanks no longer contain substances that could be harmful to wildlife or livestock. Use a maximum netting mesh size of 1 ½ inches. The netting must not be in contact with fluids and must not have holes or gaps.

Chemical and Fuel Secondary Containment and Exclosure Screening
The operator will prevent all hazardous, poisonous, flammable, and toxic substances from coming into contact with soil and water. At a minimum, the operator will install and maintain an impervious secondary containment system for any tank or barrel containing hazardous, poisonous, flammable, or toxic substances sufficient to contain the contents of the tank or barrel and any drips, leaks, and anticipated precipitation. The operator will dispose of fluids within the containment system that do not meet applicable state or U. S. Environmental Protection Agency livestock water standards in accordance with state law; the operator must not drain the fluids to the soil or ground. The operator will design, construct, and maintain all secondary containment systems to prevent wildlife and livestock exposure to harmful substances. At a minimum, the operator will install effective wildlife and livestock exclosure systems such as fencing, netting, expanded metal mesh, lids, and grate covers. Use a maximum netting mesh size of 1 ½ inches.

Open-Vent Exhaust Stack Exclosures
The operator will construct, modify, equip, and maintain all open-vent exhaust stacks on production equipment to prevent birds and bats from entering, and to discourage perching, roosting, and nesting. (*Recommended exclosure structures on open-vent exhaust stacks are in the shape of a cone.*) Production equipment includes, but may not be limited to, tanks, heater-treaters, separators, dehydrators, flare stacks, in-line units, and compressor mufflers.

Containment Structures
Proposed production facilities such as storage tanks and other vessels will have a secondary containment structure that is constructed to hold the capacity of 1.5 times the largest tank, plus freeboard to account for precipitation, unless more stringent protective requirements are deemed necessary.

Painting Requirement
All above-ground structures including meter housing that are not subject to safety requirements shall be painted a flat non-reflective paint color, **Shale Green** from the BLM Standard Environmental Color Chart (CC-001: June 2008).

IX. INTERIM RECLAMATION

During the life of the development, all disturbed areas not needed for active support of production operations should undergo interim reclamation in order to minimize the environmental impacts of development on other resources and uses.

Within six (6) months of well completion, operators should work with BLM surface management specialists (Jim Amos: 575-234-5909) to devise the best strategies to reduce the size of the location. Interim reclamation should allow for remedial well operations, as well as safe and efficient removal of oil and gas.

During reclamation, the removal of caliche is important to increasing the success of revegetating the site. Removed caliche that is free of contaminants may be used for road repairs, fire walls or for building other roads and locations. In order to operate the well or complete workover operations, it may be necessary to drive, park and operate on restored interim vegetation within the previously disturbed area. Disturbing revegetated areas for production or workover operations will be allowed. If there is significant disturbance and loss of vegetation, the area will need to be revegetated. Communicate with the appropriate BLM office for any exceptions/exemptions if needed.

All disturbed areas after they have been satisfactorily prepared need to be reseeded with the seed mixture provided below.

Upon completion of interim reclamation, the operator shall submit a Sundry Notices and Reports on Wells, Subsequent Report of Reclamation (Form 3160-5).

X. FINAL ABANDONMENT & RECLAMATION

At final abandonment, well locations, production facilities, and access roads must undergo "final" reclamation so that the character and productivity of the land are restored.

Earthwork for final reclamation must be completed within six (6) months of well plugging. All pads, pits, facility locations and roads must be reclaimed to a satisfactory revegetated, safe, and stable condition, unless an agreement is made with the landowner or BLM to keep the road and/or pad intact.

After all disturbed areas have been satisfactorily prepared, these areas need to be revegetated with the seed mixture provided below. Seeding should be accomplished by drilling on the contour whenever practical or by other approved methods. Seeding may need to be repeated until revegetation is successful, as determined by the BLM.

Operators shall contact a BLM surface protection specialist prior to surface abandonment operations for site specific objectives (Jim Amos: 575-234-5909).

Ground-level Abandoned Well Marker to avoid raptor perching: Upon the plugging and subsequent abandonment of the well, the well marker will be installed at ground level on a plate containing the pertinent information for the plugged well.

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:

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

*Pounds of pure live seed:

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