12-832

TCG 1-15-2014

Form 3160-3
(March 2012)

SECRETARY'S POTASH
OCD Artesia

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.: NM-27276

6. If Indian, Allotee or Tribe Name: N/A

7. If Unit or CA Agreement, Name and No.: N/A

1a. Type of work: [✓] DRILL [ ] REENTER

1b. Type of Well: [✓] Oil Well [ ] Gas Well [ ] Other [✓] Single Zone [ ] Multiple Zone

8. Lease Name and Well No.: Benson Deep BDX Federal #2H <39250>

2. Name of Operator: YATES PETROLEUM CORPORATION <25575>

9. API Well No.: 30-015-41966

3a. Address: 105 South Fourth Street, Artesia, NM 88210

3b. Phone No. (include area code): 575-748-4372

10. Field and Pool, or Exploratory: ~~Undesignated Bone Spring~~ Leo; B.S., So. <37920>

4. Location of Well (Report location clearly and in accordance with any State requirements.*)

At surface: 380' FSL & 560' FWL Surface Hole Location

At proposed prod. zone: 660' FSL & 330' FEL Bottom Hole Location

11. Sec., T. R. M. or Blk. and Survey or Area: Section 33, T18S-R30E

14. Distance in miles and direction from nearest town or post office*: Approximately 28 miles east of Artesia, New Mexico

12. County or Parish: Eddy County

13. State: 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
380'	560 ac.	S2S2 of Section 33, T18S-30E

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
50'	8700' Pilot Hole 8444' TVD 12572' MD	Nation Wide Bond NMB000434 Individual Bond NMB000920

21. Elevations (Show whether DF, KDB, RT, GL, etc.)	22. Approximate date work will start*	23. Estimated duration
3454' GL	12/31/2013	60 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
	Cy Cowan	05/15/2013

Title: Land Regulatory Agent

Approved by (Signature)	Name (Printed/Typed)	Date
/s/ Jesse J. Juen		JAN 13 2014

Title	Office
STATE DIRECTOR	NM STATE 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

SEE ATTACHED FOR CONDITIONS OF APPROVAL

APPROVAL SUBJECT TO GENERAL REQUIREMENTS AND SPECIAL STIPULATIONS ATTACHED

RECEIVED
JAN 15 2014
NMOCD ARTESIA

CERTIFICATION
YATES PETROLEUM CORPORATION
Benson Deep BDX Federal #2H

I hereby certify that I, or someone under my direct supervision, have inspected the drill site and access route proposed herein; that I am familiar with the conditions which currently exist; and an someone under employment of Yates Petroleum Corporation has 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 this 15th day of May

Signature Cy Cowan

Name Cy Cowan

Position Title Land Regulatory Agent

Address 105 South Fourth Street, Artesia, New Mexico 88210

Telephone (575) 748-4372

Field Representative (if not above signatory) Tim Bussell, Drilling Supervisor

Address (if different from above) Same as above.

Telephone (if different from above) (575) 748-4221

E-mail (optional) cy@yatespetroleum.com

DISTRICT I
1625 N. French Dr., Hobbs, NM 88240
DISTRICT II
1301 W. Grand Avenue, Artesia, NM 88210
DISTRICT III
1000 Rio Brazos Rd., Aztec, NM 87410
DISTRICT IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy, Minerals and Natural Resources Department

OIL CONSERVATION DIVISION

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

Form C-102
Revised July 16, 2010

Submit one copy to appropriate District Office

4/16

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

API Number	Pool Code	Pool Name
30-015-41966	37920	Leo ~~Undesignated~~ Bone Spring, So.

Property Code	Property Name	Well Number
39250	BENSON DEEP BDX FEDERAL	2H

OGRID No.	Operator Name	Elevation
025575	YATES PETROLEUM CORP.	3454

Surface Location

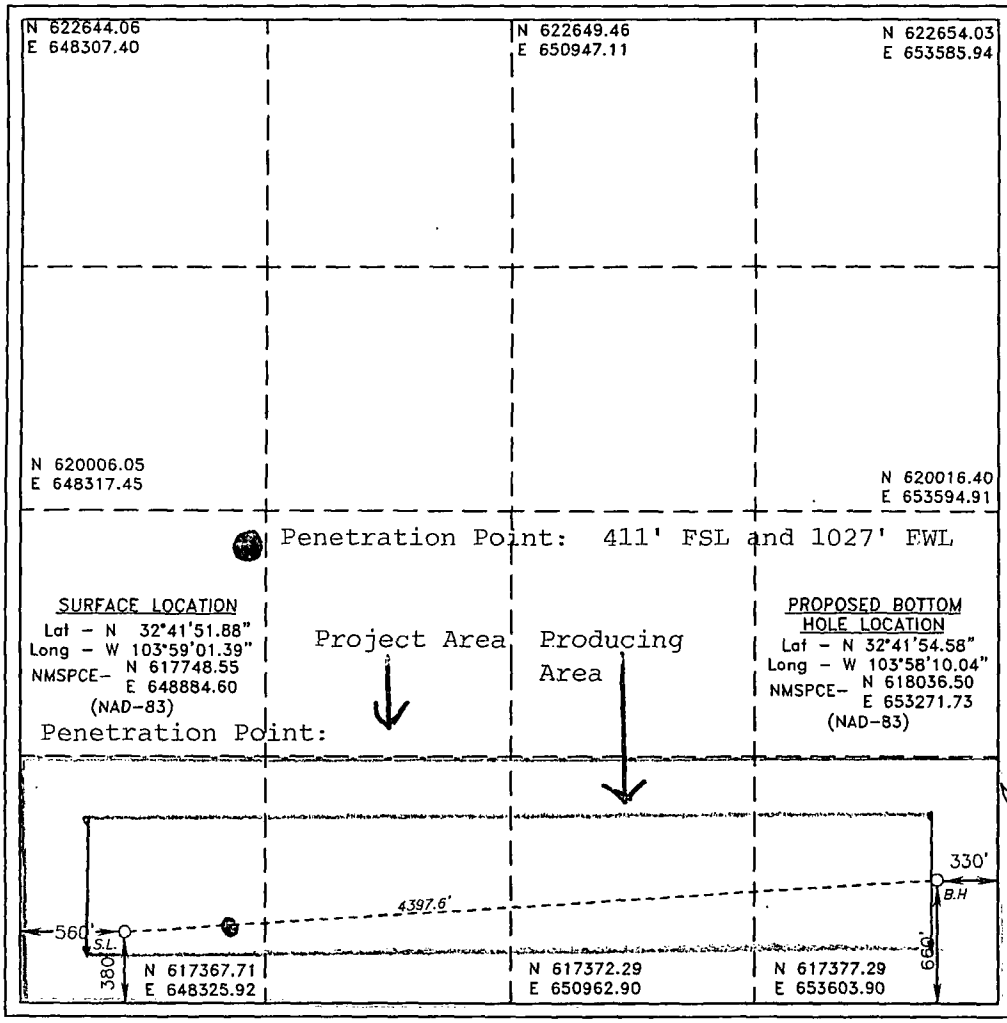
UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
M	33	18 S	30 E		380	SOUTH	560	WEST	EDDY

Bottom Hole Location If Different From Surface

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
P	33	18 S	30 E		660	SOUTH	330	EAST	EDDY

Dedicated Acres	Joint or Infill	Consolidation Code	Order No.
160			12572

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



OPERATOR CERTIFICATION

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

Signature Date 5/15/13

Cy Cowan

Printed Name

Email 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 supervison, and that the same is true and correct to the best of my belief.

JANUARY 30, 2013

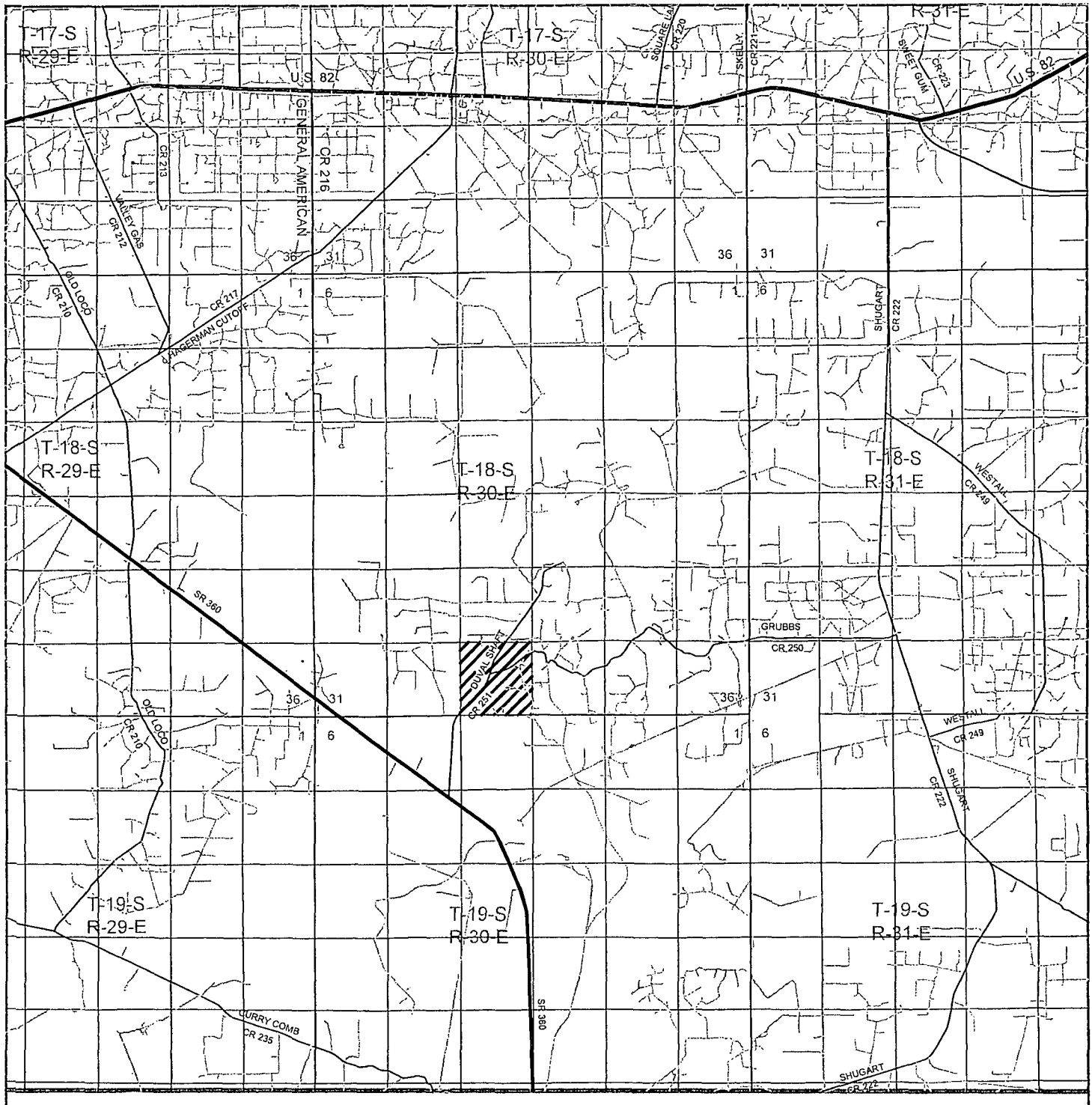
Date Surveyed

Signature & Seal of Professional Surveyor

GARY L. JONES NEW MEXICO 7977 REGISTERED PROFESSIONAL LAND SURVEYOR

Certificate No. Gary L. Jones 7977

BASIN SURVEYS 27919



BENSON DEEP BDX FEDERAL #2H
Located 380' FSL and 560' FWL
Section 33, Township 18 South, Range 30 East,
N.M.P.M., EDDY County, New Mexico.

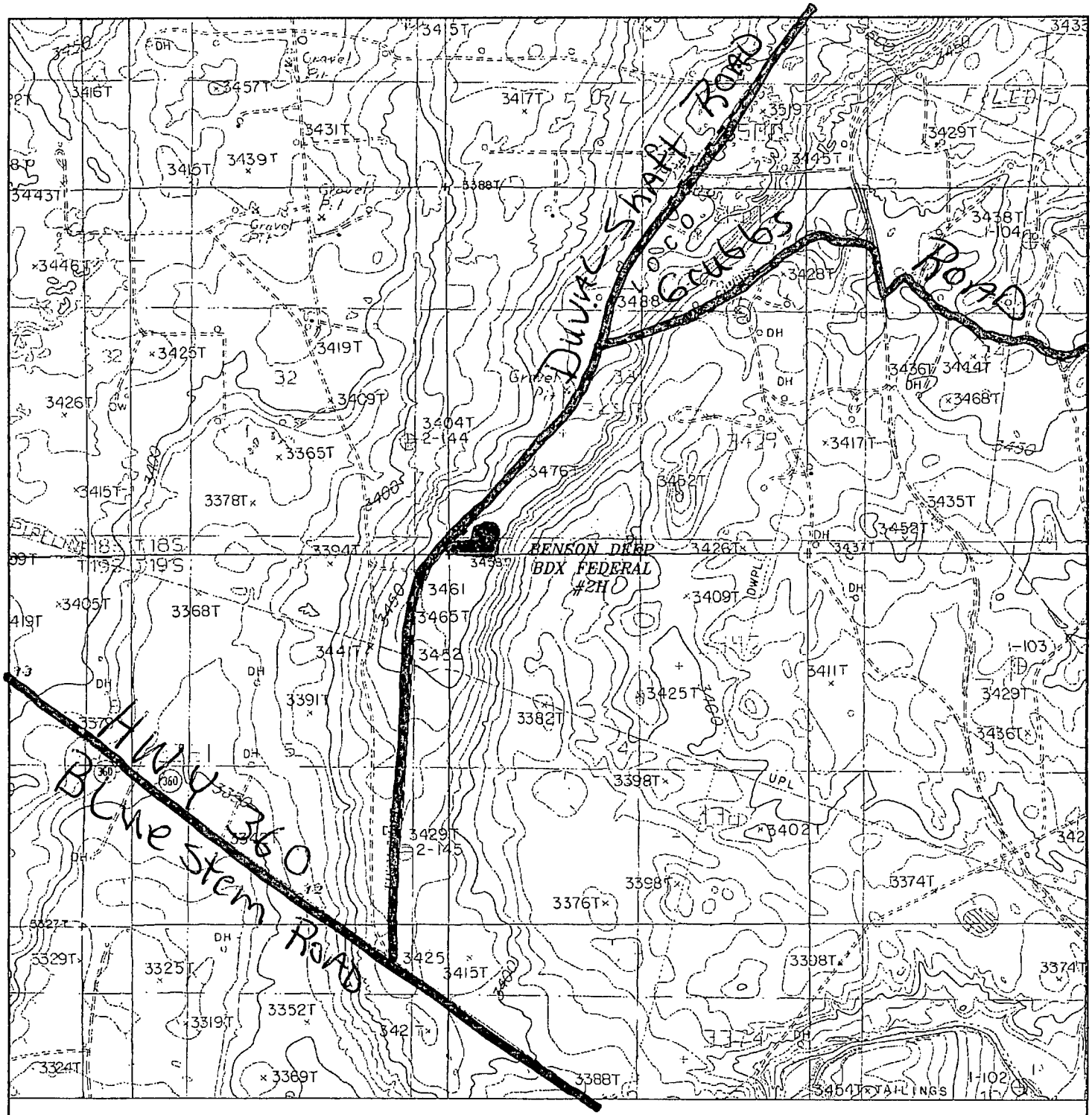
Basin Surveys
focused on excellence in the oilfield

P.O. Box 1786
1120 N. West County Rd.
Hobbs, New Mexico 88241
(575) 393-7316 - Office
(575) 392-2206 - Fax
basinsurveys.com

W.O. Number: DAJ 27919
Survey Date: 01-05-2013
Scale: 1" = 2 Miles
Date: 01-07-2013

N

YATES PETROLEUM CORP.



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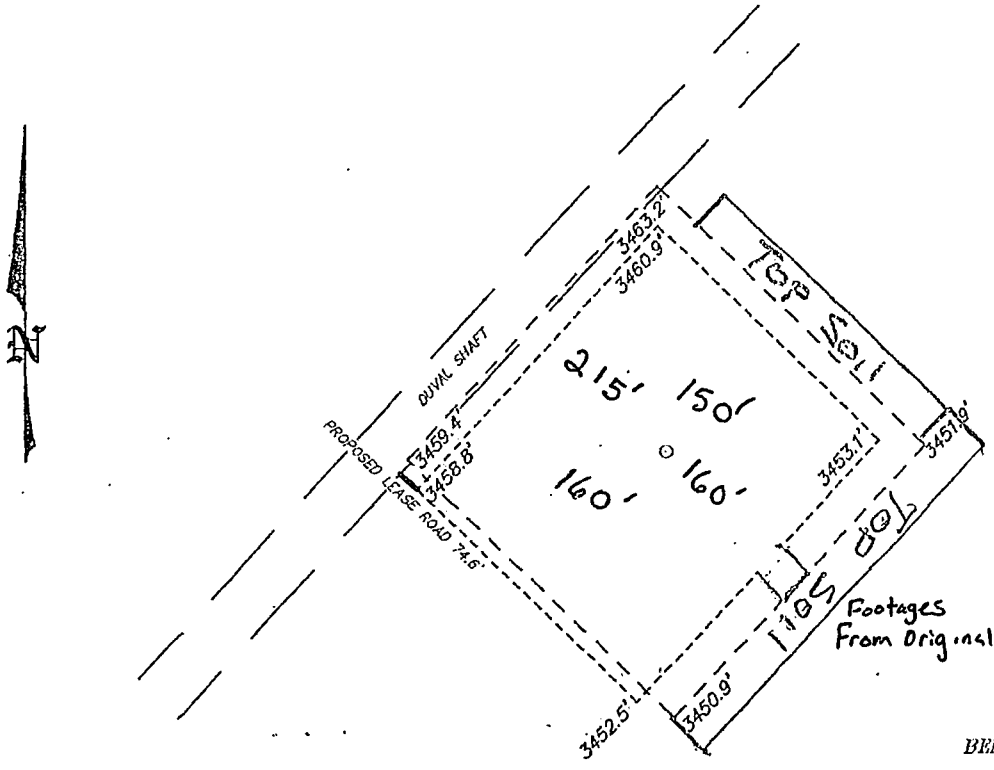
(575) 393-7316 - Office
(575) 392-2206 - Fax
basinsurveys.com

W.O. Number: DAJ 27919
Survey Date: 01-05-2013
Scale: 1" = 2000'
Date: 01-07-2013

N

YATES PETROLEUM CORP.

SECTION 33, TOWNSHIP 18 SOUTH, RANGE 30 EAST, N.M.P.M.,
EDDY COUNTY, NEW MEXICO.



Footages From Original Plat. 12/11/13 JR

YATES PETROLEUM CORP.
BENSON DEEP BDX FEDERAL #2H
ELEV. – 3454'
SURFACE LOCATION
Lat – N 32°41'51.88"
Long – W 103°59'01.39"
NMSPCE– N 617748.55
E 648884.60
(NAD–83)

200 0 200 400 FEET
SCALE: 1" = 200'

DRIVING DIRECTIONS

FROM INTERSECTION OF CRUBBS AND DUVAL SHAFT GO SOUTH ON DUVAL SHAFT 0.5 MILES TO PROPOSED LEASE ROAD.

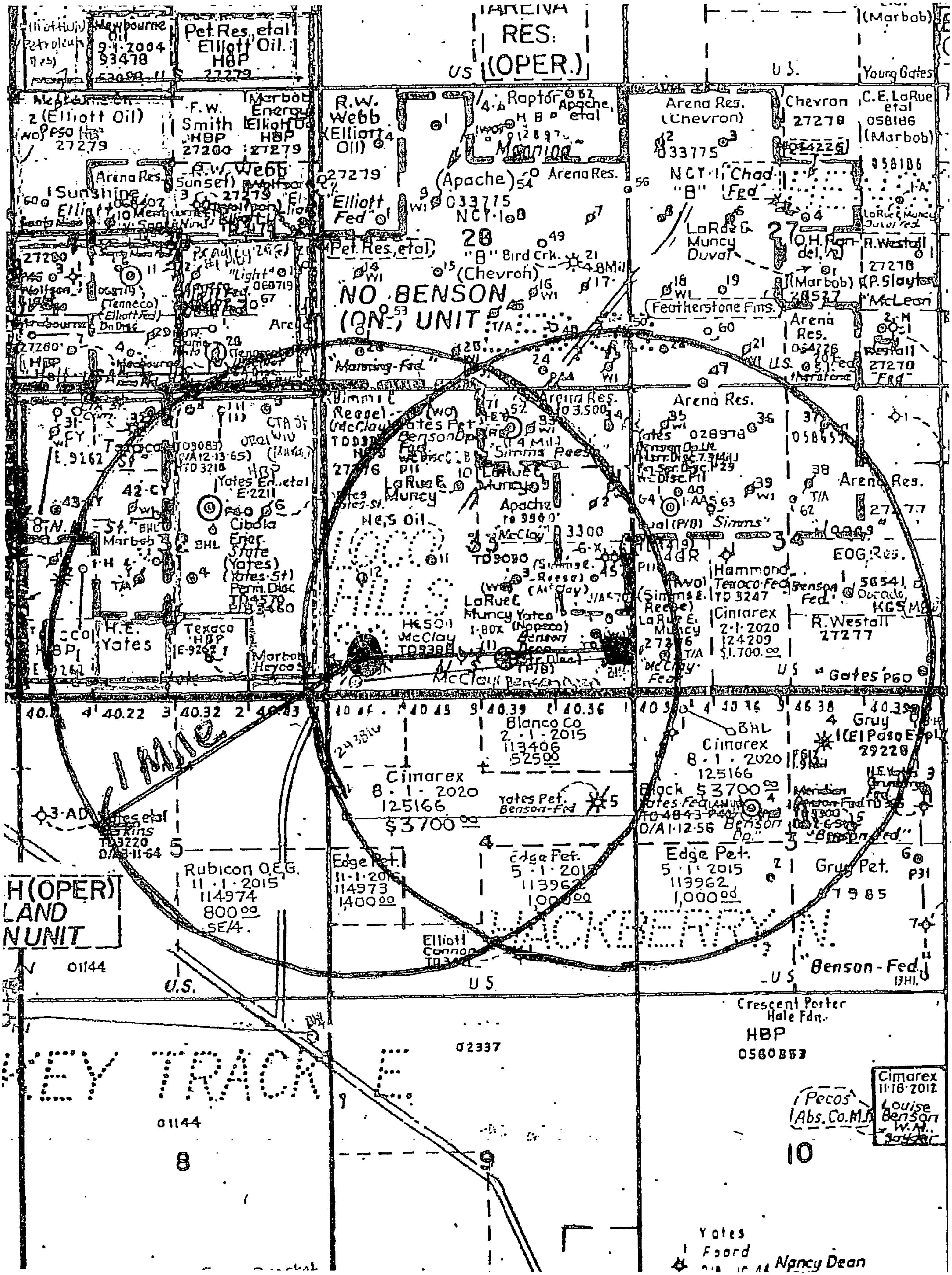
YATES PETROLEUM CORP.

REF: BENSON DEEP BDX FEDERAL #2H / WELL PAD TOPO

THE BENSON DEEP BDX FEDERAL #2H LOCATED 380' FROM THE SOUTH LINE AND 560 FROM THE WEST LINE OF SECTION 33, TOWNSHIP 18 SOUTH, RANGE 30 EAST, N.M.P.M., EDDY COUNTY, NEW MEXICO.

BASIN SURVEYS P.O. BOX 1786 – HOBBS, NEW MEXICO

W.O. Number: 27919	Drawn By: D. JONES		
Date: 01–07–2013	Disk: DAJ 27919	Survey Date: 01–05–2013	Sheet 1 of 1 Sheets



ARENA RES. (OPER.)
Pet. Res. etal
Elliott Oil
HBP
27279
Newbourne Oil
9-1-2004
93478
R.W. Webb
F.W. Smith
HBP
27200
Raptor
Apache, etal
Manning
Arena Res.
(Chevron)
033775
Chevron
27278
C.E. LaRue etal
058186
(Marbob)
Young Gates
Elliott Fed
(Apache)
NCT-1 Chad Fed
"B"
28
27
LaRue & Muncy Duval
"B" Bird Crk.
(Chevron)
NO. BENSON (QN.) UNIT
Featherstone Fins.
R. Westall
27278
(Marbob)
(P. Slayton)
McLean
Arena Res.
Manning-Fed
Arena Res.
Yates Pet.
Benson Dp. Fed
LaRue & Muncy
Apache
Simms Rees
McClay
H&S Oil
35
34
Yates Ed. etal
E-2211
Cibola Ener.
State (Yates) (Yates-St)
Marbob
Hammond Texaco Fed
TD 3247
Cimarex
2-1-2020
124209
$1,700.00
Benson Fed.
EOG Res.
58541
Durado KGS
R. Westall
27277
H.E. Yates
Texaco
HBP
E-9262
Marbob Heyco
LaRue & Muncy Yates
H&S Oil McClay
McClay Benson
Gates
Blanco Co
2-1-2015
113406
525.00
Cimarex
8-1-2020
125166
$3700.00
Cimarex
8-1-2020
125166
Black $3700.00
Yates Fed
D/A 1-12-56
Benson Dp.
Gruy
(El Paso Epl)
29228
Yates Pet. Benson-Fed
1 Mile
Yates etal
D/A 8-11-64
5
4
3
Rubicon O.&G.
11-1-2015
114974
800.00
SE/4
Edge Pet.
11-1-2015
114973
1400.00
Edge Pet.
5-1-2015
113962
1,000.00
Edge Pet.
5-1-2015
113962
1,000.00
Gruy Pet.
7985
H (OPER)
LAND
N UNIT
HACKBERRY N.
Elliott Cannon
Benson-Fed
01144
U.S.
US
Crescent Porter Hale Fdn.
HBP
0560353
02337
EY TRACK E.
01144
8
9
10
Cimarex
11-18-2012
Louise Benson
Pecos Abs. Co. M.I.
Yates
Foard
Nancy Dean

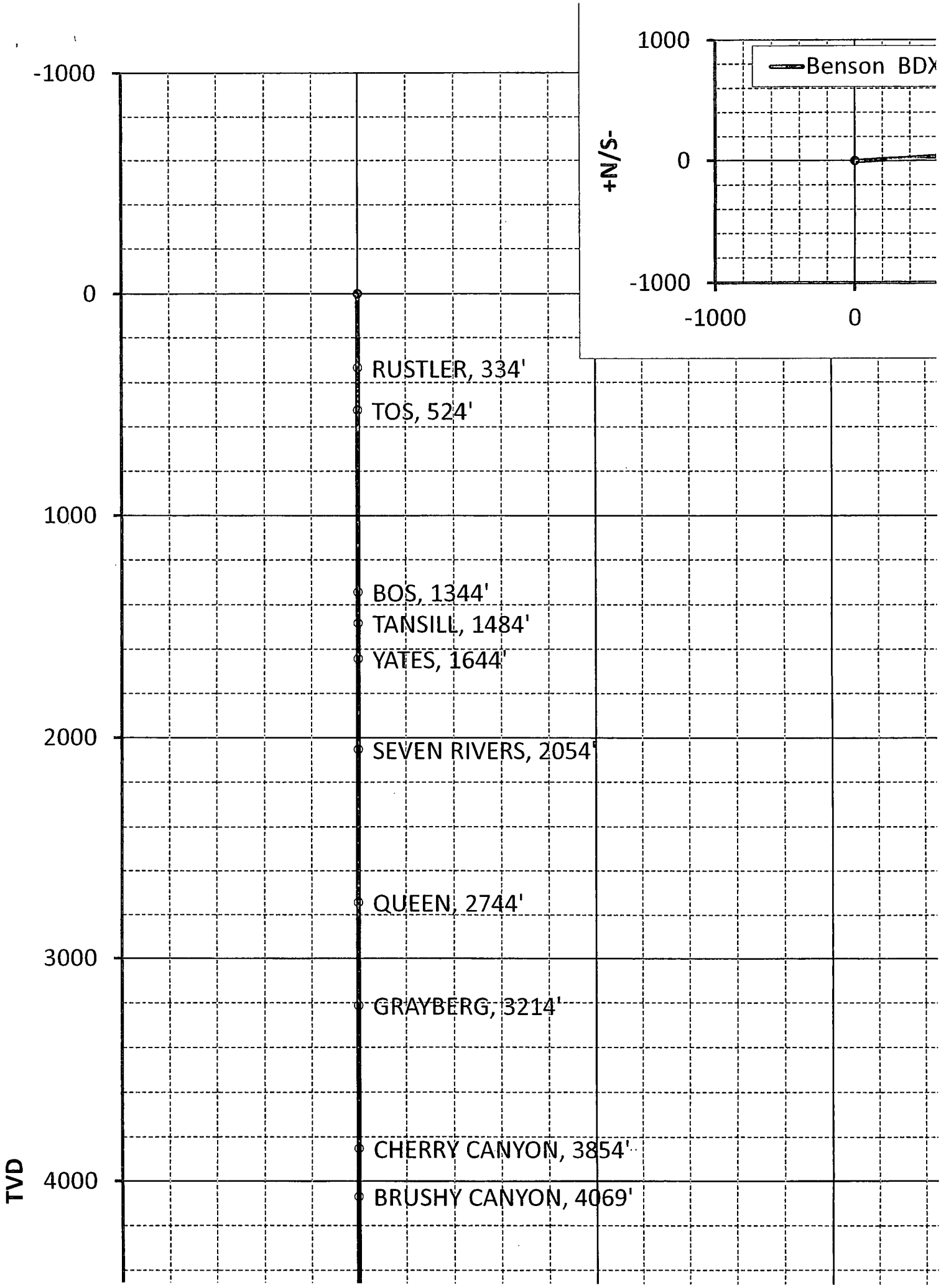
Operator Co.

Your Co.

Survey/Planning Report

Operator	Yates Petroleum Corp.	Northing		Date	29-Apr-13
Dir. Co.	Yates Petroleum Corp.	Easting		System	2 - St. Plane
Well Name	Benson BDX 2H Survey	Elevation		Datum	1983 - NAD83
Location	Sec. 33, 18S-30E	Latitude		Zone	4302 - Utah Central
Rig		Longitude		Scale Fac.	
Job		Units	Feet	Converg.	

MD	INC	AZI	TVD	+N/S	+E/W	VS@86.24°	BR	TR	DLS
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
334.00	0.00	0.00	334.00	0.00	0.00	0.00	0.00	0.00	0.00
334: RUSTLER, 334'									
524.00	0.00	0.00	524.00	0.00	0.00	0.00	0.00	0.00	0.00
524: TOS, 524'									
1344.00	0.00	0.00	1344.00	0.00	0.00	0.00	0.00	0.00	0.00
1344: BOS, 1344'									
1484.00	0.00	0.00	1484.00	0.00	0.00	0.00	0.00	0.00	0.00
1484: TANSILL, 1484'									
1644.00	0.00	0.00	1644.00	0.00	0.00	0.00	0.00	0.00	0.00
1644: YATES, 1644'									
2054.00	0.00	0.00	2054.00	0.00	0.00	0.00	0.00	0.00	0.00
2054: SEVEN RIVERS, 2054'									
2744.00	0.00	0.00	2744.00	0.00	0.00	0.00	0.00	0.00	0.00
2744: QUEEN, 2744'									
3214.00	0.00	0.00	3214.00	0.00	0.00	0.00	0.00	0.00	0.00
3214: GRAYBERG, 3214'									
3854.00	0.00	0.00	3854.00	0.00	0.00	0.00	0.00	0.00	0.00
3854: CHERRY CANYON, 3854'									
4069.00	0.00	0.00	4069.00	0.00	0.00	0.00	0.00	0.00	0.00
4069: BRUSHY CANYON, 4069'									
5644.00	0.00	0.00	5644.00	0.01	0.00	0.00	0.00	0.00	0.00
5644: BONE SPRINGS LM, 5644'									
7404.00	0.00	0.00	7404.00	0.01	0.00	0.00	0.00	0.00	0.00
7404: FBSG, 7404'									
7904.22	0.00	86.24	7904.23	0.01	0.00	0.00	0.00	1.09	0.00
7904.22: KOP, 7904'									
8000.00	11.49	86.24	7999.36	0.63	9.55	9.57	12.00	0.00	12.00
8100.00	23.49	86.24	8094.56	2.60	39.49	39.58	12.00	0.00	12.00
8200.00	35.49	86.24	8181.44	5.82	88.53	88.72	12.00	0.00	12.00
8268.26	43.68	86.24	8234.01	8.66	131.90	132.18	12.00	0.00	12.00
8268.26: SBSG, 8268' MD (8234' TVD)									
8300.00	47.49	86.24	8256.21	10.15	154.51	154.85	12.00	0.00	12.00
8400.00	59.49	86.24	8315.60	15.40	234.57	235.08	12.00	0.00	12.00
8500.00	71.49	86.24	8357.00	21.35	325.20	325.90	12.00	0.00	12.00
8600.00	83.49	86.24	8378.62	27.73	422.44	423.35	12.00	0.00	12.00
8646.64	89.09	86.24	8381.63	30.78	468.87	469.88	12.00	0.00	12.00
8646.64: TARGET SBSG, 8647' MD (8382' TVD)									
12573.82	89.09	86.24	8444.00	287.95	4387.13	4396.57	0.00	0.00	0.00
12573.82: LATERAL TD, 12574' MD (8444' TVD)									


-1000
0
1000
2000
3000
4000
TVD
RUSTLER, 334'
TOS, 524'
BOS, 1344'
TANSILL, 1484'
YATES, 1644'
SEVEN RIVERS, 2054'
QUEEN, 2744'
GRAYBERG, 3214'
CHERRY CANYON, 3854'
BRUSHY CANYON, 4069'
1000
0
-1000
+N/S-
-1000
0
Benson BDX

YATES PETROLEUM CORPORATION
Benson Deep BDX Federal #2H
380' FSL & 560' FWL, Surface Hole
660'FSL & 330' FEL, Bottom Hole
Section 33 -T18S-R30-E
Eddy County, New Mexico

1. The estimated tops of geologic markers are as follows:

FORMATION	DEPTH	FORMATION	TVD	MD
Rustler	334'	Brushy Canyon	4069'--Oil	
Top of Salt	524'	Bone Springs Lime	5644'--Oil	
Base of Salt	1344'	Bone Springs 1/SD?	7404--Oil	
Tansill	1484'--Oil	**Kick Off Point**	7904'	
Yates	1644'--Oil	Bone Springs 2/SD/	8234'--Oil	8268'
Seven Rivers	2054'--Oil	Target Zone	8374'--Oil	8647'
Queen	2744'--Oil	Lateral TD	8444'	12574'
Grayburg	3214'--Oil	Pilot TD	8700'	
Cherry Canyon	3854'--Oil			

2. The estimated depths at which anticipated water, oil or gas formations are expected to be encountered:

   Water: Approx 250'
   Oil or Gas: See above.

3. Pressure Control Equipment: BOP with a minimum 13 5/8" opening will be installed on the 13 3/8" casing and rated for 3000#. A BOP with a minimum 13 5/8" opening will be installed on the 9 5/8" casing and rated for **5000#.** BOPE systems will be consistent with API RP 53. BOP Preventers and equipment will be tested to the pressure approved in the APD. Test will be conducted by an Independent Tester, utilizing a test plug in the well head. Test will be held for 10 minutes on each segment of the system tested. Any leaks will be repaired at the time of test. Annular preventer will be tested to 50% of rated working pressure. Blowout Preventer controls will be installed prior to drilling the surface plug and will remain in use until the well is completed or abandoned. Preventers will be inspected and operated at least daily to ensure good mechanical working order, and this inspection recorded on the daily drilling report. See Exhibit B.

   Accumular system will be inspected for correct pre charge pressures, and proper functionality, prior to connection to the BOP system.

   Auxiliary Equipment:

   A. Auxiliary Equipment: Kelly cock, pit level indicators, flow sensor equipment and a sub with full opening valve to fit the drill pipe and collars will be available on the rig floor in the open position at all times for use when kelly is not in use.

4. The proposed casing and cementing program:

   A. Casing Program: (All New)

Hole Size	Casing Size	Wt./Ft.	Grade	Coupling	Interval	Length
17 1/2"	13 3/8"	48#	J-55 Hybrid	ST&C	0-450'	450'
12 1/4"	9 5/8"	40#	J-55	LT&C	0-80'	80'
12 1/4"	9 5/8"	36#	J-55	LT&C	80'-3200'	3120'
12 1/4"	9 5/8"	40#	J-55	LT&C	3200'-3950'	750'
8 3/4'	5 1/2'	17#	P-110	Buttress	0-8647'	8647'
8 1/2"	5 1/2"	17#	P-110	Buttress	8647'-12574'	3927'

Minimum Casing Design Factors: Burst 1.0, Tensile 1.8, Collapse 1.125

Well will be drilled vertically to 8700'. Well will then be plugged with a 200' plug on bottom and a 600 ' kick off plug from 8200' to 7600' and kicked off at approximately 7904' and directionally drilled at 12 degrees per 100' with an 8 3/4" hole to 8647' MD (8444' TVD). Hole size will be reduced to 8 1/2' and drilled to drilled to 12,542' MD (8444' TVD) where 5 1/2" casing will be run and cemented 500' into previous casing string with a DV tool between 6500' and 7000'. If DV tool/Stage Packer tools are moved the cement will be adjusted proportionately. Penetration point of producing zone will be encountered at 411' FSL & 1027' FWL, Section 33-18S-30E. Deepest TVD is 8700' in the pilot hole. Well will have a 200' cement plug on the bottom with 84 sacks Class H with D-080, 0.030 gal/sack, Dispersant: D-197 0.070, gal/sack, Retarder: D-206 0.020 gal/sack, Antifoam I(Wt. 14.80 Yld 1.34) and cement designed with 35% excess. A 600' kick off plug of 360 sacks class H with D080, 0.030 gal/sack, Dispersant; D-197, 0.060 gal/sack, Retarder; D-206, 0.020 gal/sack, Antifoam (Wt. 17.5 Yld. 0.94). Cement was designed with **35%** excess.

B. Cementing Program: Production casing will be cemented in two stages with a DV Tool being set at 7000'.

Surface casing: 465 sacks Class C with 2% CaCl2 (WT.14.80 YLD. 1.34). Cement designed with 100% excess. TOC-Surface.

Intermediate Casing: Lead with 1105 sacks 35:65:6PzC (WT 12.50 YLD 2.00); Tail in with 200 sacks Class C with 2% CaCl2 (Wt. 14.80 Yld. 1.34. Cement designed with 100% excess. TOC-Surface.

Production Casing: Stage 1: 12,574'-7000' Lead with 1350 sacks Pecos VILt Retarder .03 lb/sack, Anti Foam .2%, Dispersant .1%, Extender 39 lb/sack, Fluid Loss 0.4%, Calcium Carbonite 22.5 lb/sack, Extender 1.5 lb/sack, Retarder 0.01 lb/sack, Retarder 0.6 lb/sack, Antifoam Agent 0.15 lb/sack. LCM Extender 3 lb/sack, Salt 1%, Lost Circulation Material .125 lb/sack, Fluid Loss Material 2.0 %. (Wt 13.00 Yld 1.41).
Stage 2: 7000'-3450' 535 sacks 35:65:6PzC (Wt. 12.50 Yld. 2.00). Tail in with 100 sacks Pecos VLt Retarder .03 lb/sack, Anti Foam .2%, Dispersant .1%, Extender 39 lb/sack, Fluid Loss 0.4%, Calcium Carbonite 22.5 lb/sack, Extender 1.5 lb/sack, Retarder 0.01 lb/sack, Retarder 0.6 lb/sack, Antifoam Agent 0.15 lb/sack. LCM Extender 3 lb/sack, Salt 1%, Lost Circulation Material .125 lb/sack, Fluid Loss Material 2.0 %. (Wt. 13.00 Yld. 1.41). Cement designed with 35% excess.

5. Mud Program and Auxiliary Equipment:

See COA

Interval	Type	Weight	Viscosity	Fluid Loss
0-450'	Fresh Water	8.40-9.20	28-38	N/C
450'-~~2500'~~ 3450'	Brine Water	10.00-10.20	28-32	N/C
~~2500'~~-12572'	Cut Brine	8.60-9.30	29-34	<10-15

Sufficient mud material(s) to maintain mud properties, control lost circulation and contain a blow out will be available at the well site during drilling operations. Mud will be checked hourly by rig personnel.

6. Evaluation Program :

Samples: 30' samples to 5000'. 10 samples from 5000' to TD.
Logging: **Gamma Ray Neutron-TD to surface; Density-TD to intermediate casing; Laterolog (Resistivity)-TD to intermediate casing; CMR-TD to intermediate casing**
Coring: As warranted.
DST's: As warranted.
Mudlogging: On from surface casing to TD

7. Mud Program and Auxiliary Equipment:

Repeat
See COA

Interval	Type	Weight	Viscosity	Fluid Loss
0-450'	Fresh Water	8.40-9.20	28-38	N/C
450'-~~2500'~~ 3450'	Brine Water	10.00-10.20	28-32	N/C
~~2500'~~-12572'	Cut Brine	8.60-9.30	29-34	<10-15

B. Cementing Program:

Surface casing: 470 sacks Class C with 2% CaCl (WT.14.80 YLD. 1.34). Cement designed with 100% excess. TOC-Surface.

Intermediate Casing: Lead with 1200 Class C with 2% CaCl (WT 14.80 YLD 1.34); Cement designed with 100% excess. TOC-Surface.

Production Casing: Lead with 975 sacks C Lite with Gilsonite, 3lb/bbl; Poly-E-Flake, .125 lb/bbl; and 2% CaCl (Wt. 12.50 YLD 2.00). Tail In with 100 sacks Class C with 2% CaCl (Wt. 14.80 YLD 1.34). TOC-2000'. Cemented from 7925' back to 2000'. Cement designed with 35% excess.

8. Mud Program and Auxiliary Equipment:

Interval	Type	Weight	Viscosity	Fluid Loss
0-450'	Fresh Water	8.40-9.20	28-38	N/C
450'-2500'	Brine Water	10.00-10.20	28-32	N/C
2500'-12572'	Cut Brine	8.60-9.30	29-34	<10-15

Sufficient mud material(s) to maintain mud properties, control lost circulation and contain a blow out will be available at the well site during drilling operations. Mud will be checked hourly by rig personnel.

9. Evaluation Program :

Samples: 30' samples to 5000'. 10 samples from 5000' to TD.
Logging: Gamma Ray Neutron-TD to surface; Density-TD to intermediate casing; Laterolog (Resistivity)-TD **to** intermediate casing; CMR-TD to intermediate casing
Coring: As warranted.
DST's: As warranted.
Mudlogging: On from surface casing to TD

10. Abnormal Conditions, Bottom hole pressure and potential hazards:ABNORM
Anticipated BHP:

From:	0'	TO:	450'	Anticipated Max. BHP:	201	PSI
From:	450'	TO:	2500'	Anticipated Max. BHP:	1326	PSI
From:	2500'	TO:	8709'	Anticipated Max. BHP:	4070	PSI

No abnormal pressures or temperatures are anticipated.

Lost Circulation Zones Anticipated: None.

H2S Zones Anticipated: None

11. Anticipated Starting Date:

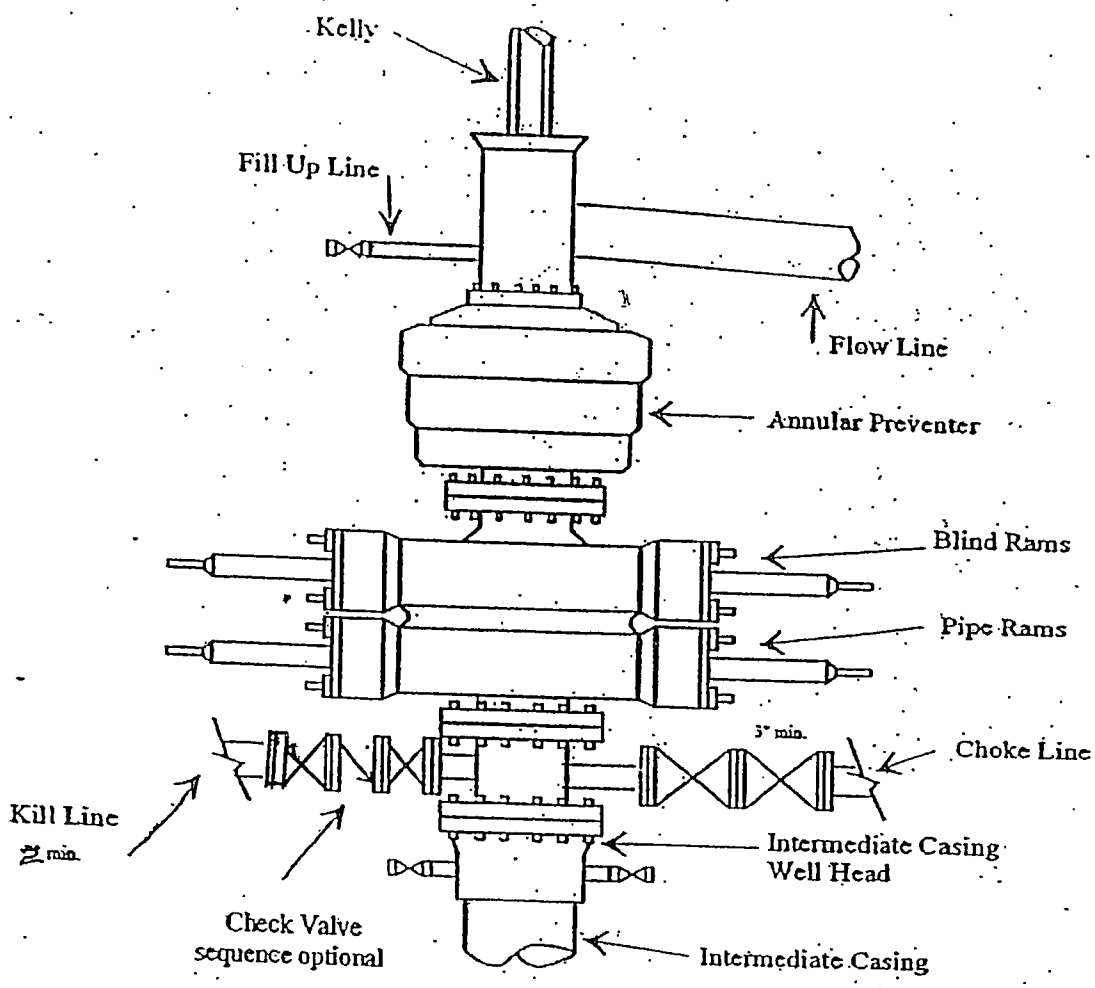
Plans are to drill this well as soon as possible after receiving approval. It should take approximately 60 days to drill the well with completion taking another 20 days.

Yates Petroleum Corporation

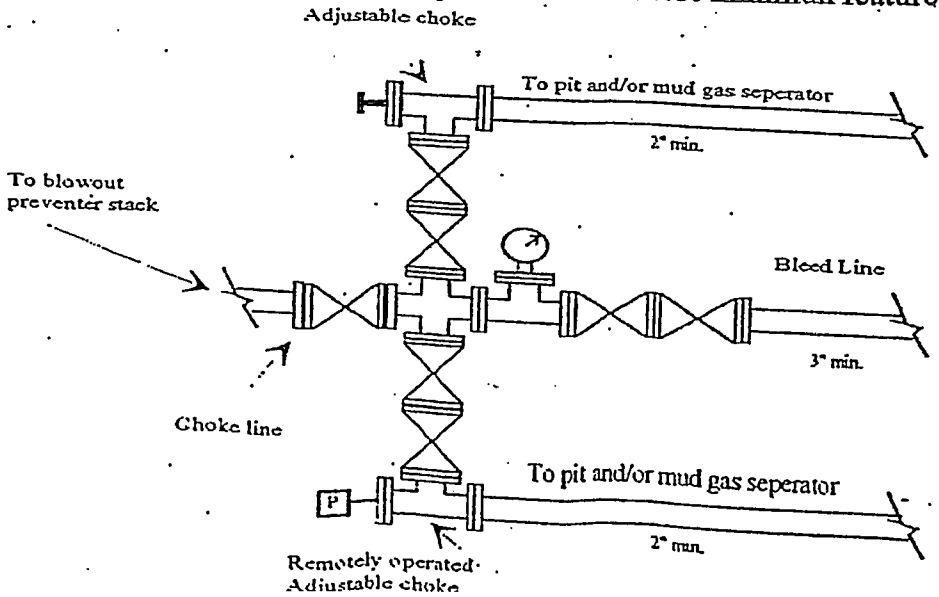
BOP-3

Exhibit

Typical 3,000 psi Pressure System Schematic
Annular with Double Ram Preventer Stack



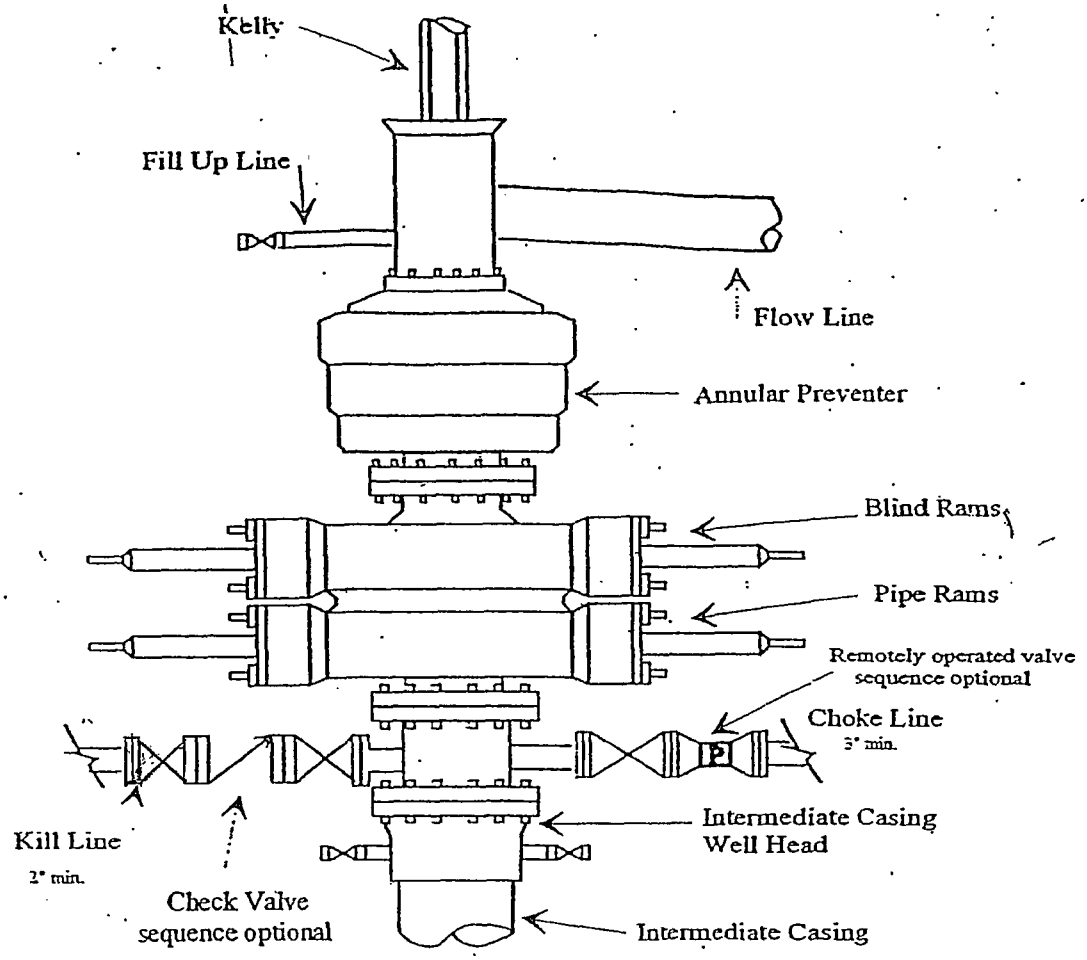
Typical 3,000 psi choke manifold assembly with at least these minimun features



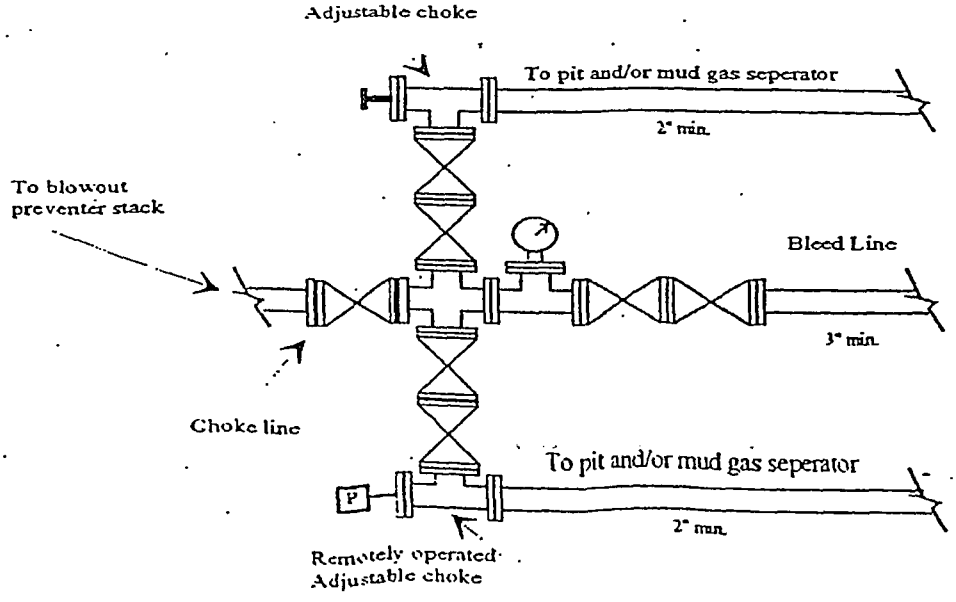
Exhibit

Yates Petroleum Corporation

Typical 5,000 psi Pressure System
Schematic
Annular with Double Ram Preventer Stack



Typical 5,000 psi choke manifold assembly with at least these minimun features



Yates Petroleum Corporation
Closed Loop System

Equipment Design Plan

Closed Loop System will consist of:
1 – double panel shale shaker
1 – (minimum) Centrifuge, certain wells and flow rates may require 2 centrifuges
On certain wells, the Centrifuge will be replaced by a Clackco Settling Tank System
1 – minimum centrifugal pump to transfer fluids
2- 500 bbl. FW Tanks
1 – 500 bbl. BW Tank
1 – half round frac tank – 250 bbl. capacity as necessary to catch cement / excess mud returns generated during a cement job.
1 Set of rail cars / catch bins
Certain wells will use an ASC Auger Tank

Operation Plan

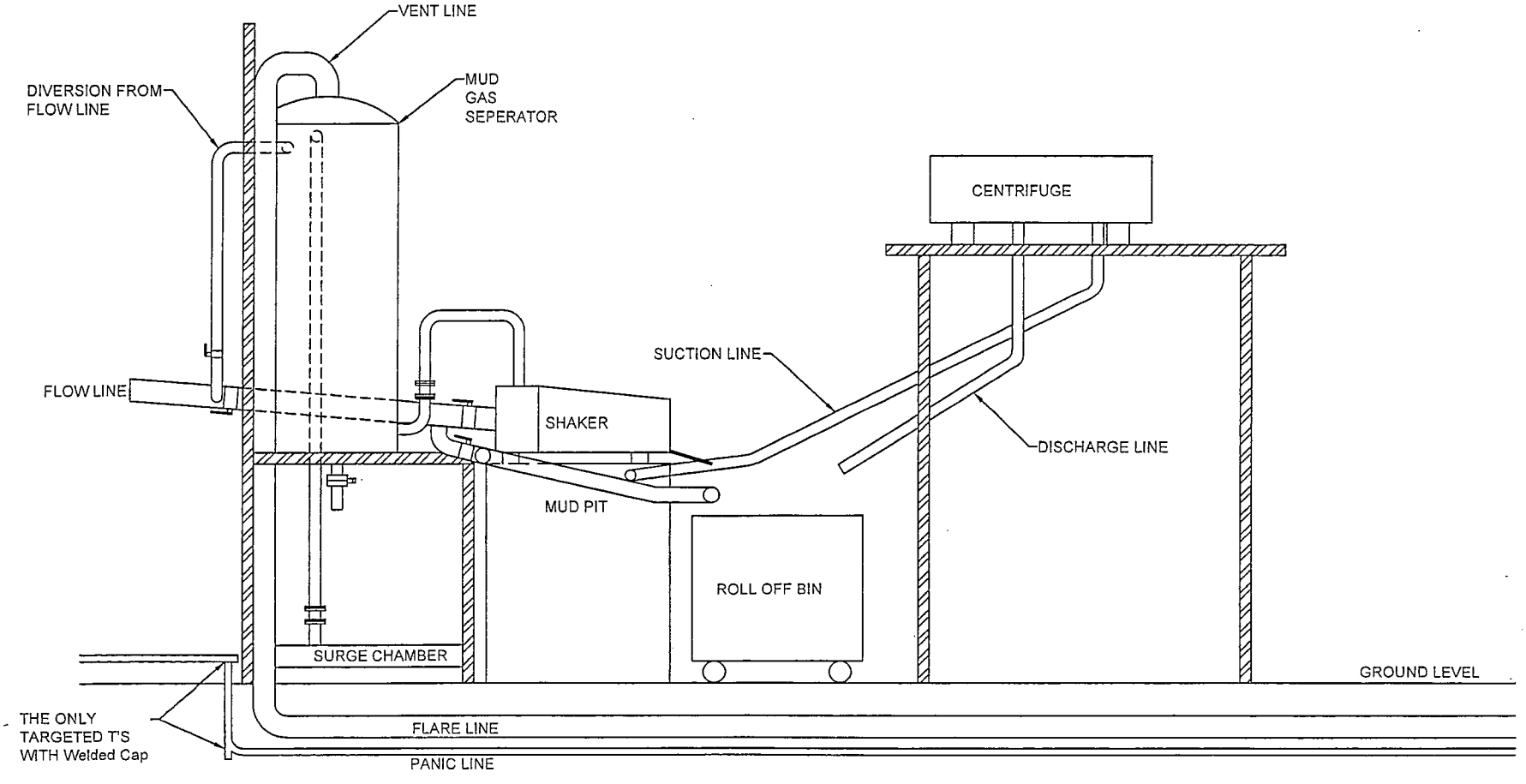
All equipment will be inspected at least hourly by rig personnel and daily by contractors' personnel.
Any spills / leaks will be reported to YPC, NMOCD, and cleaned up without delay.

Closure Plan

Drilling with Closed Loop System, haul off bins will be taken to Gandy Marley, Lea Land Farm, CRI or Sundance Services Inc.

YATES PETROLEUM CORPORATION

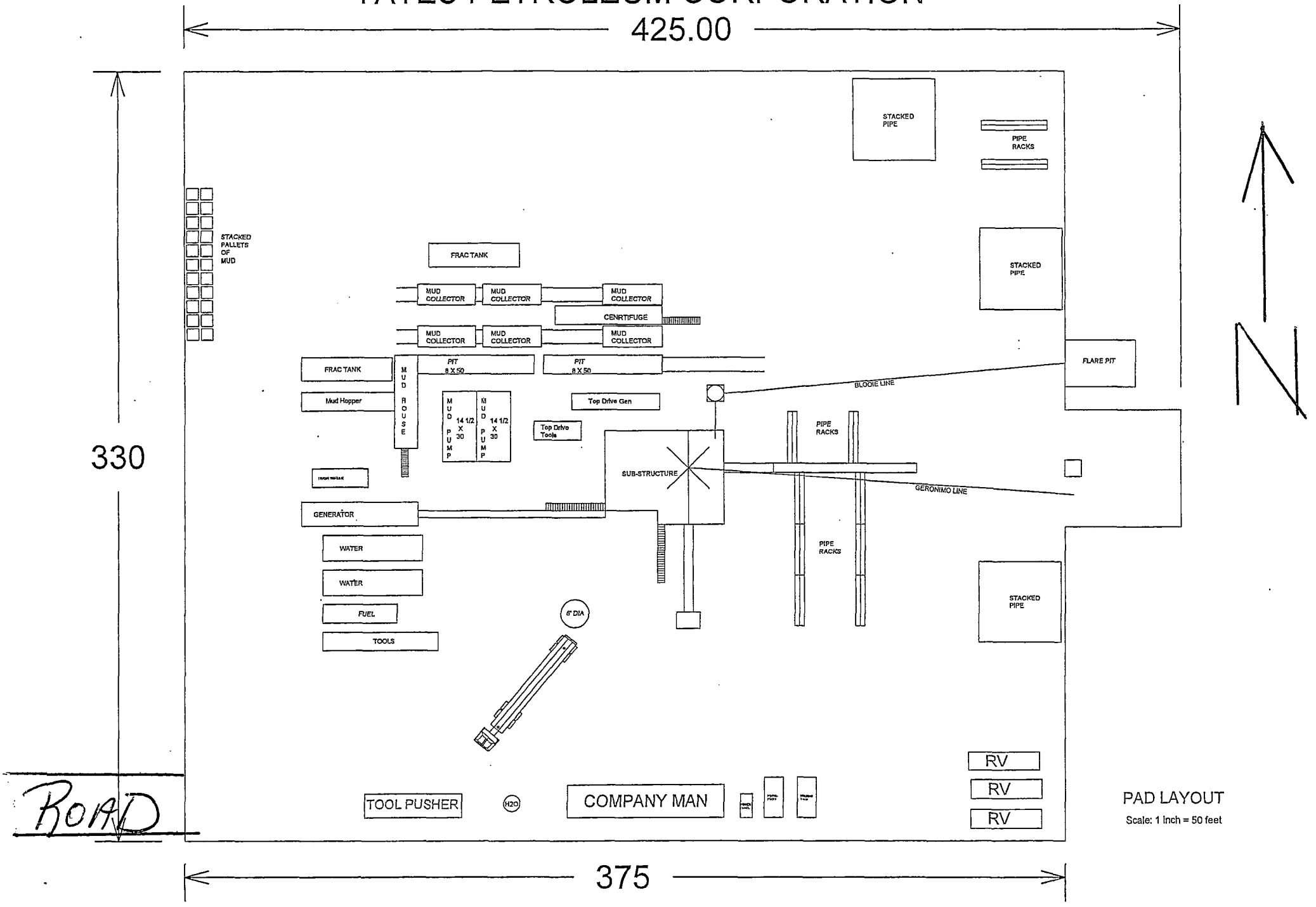
Piping from Choke Manifold
to the Closed Loop Drilling Mud System



The flare discharge must be 100' from wellhead for non H2S wells and 150' from wellhead for wells expected to encounter H2S.

Exhibit

YATES PETROLEUM CORPORATION



PAD LAYOUT

Scale: 1 Inch = 50 feet

Yates Petroleum Corporation

105 S. Fourth Street
Artesia, NM 88210

Hydrogen Sulfide (H_2S) Contingency Plan

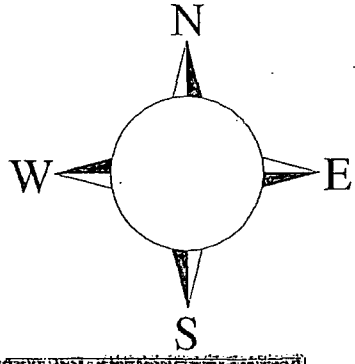
For

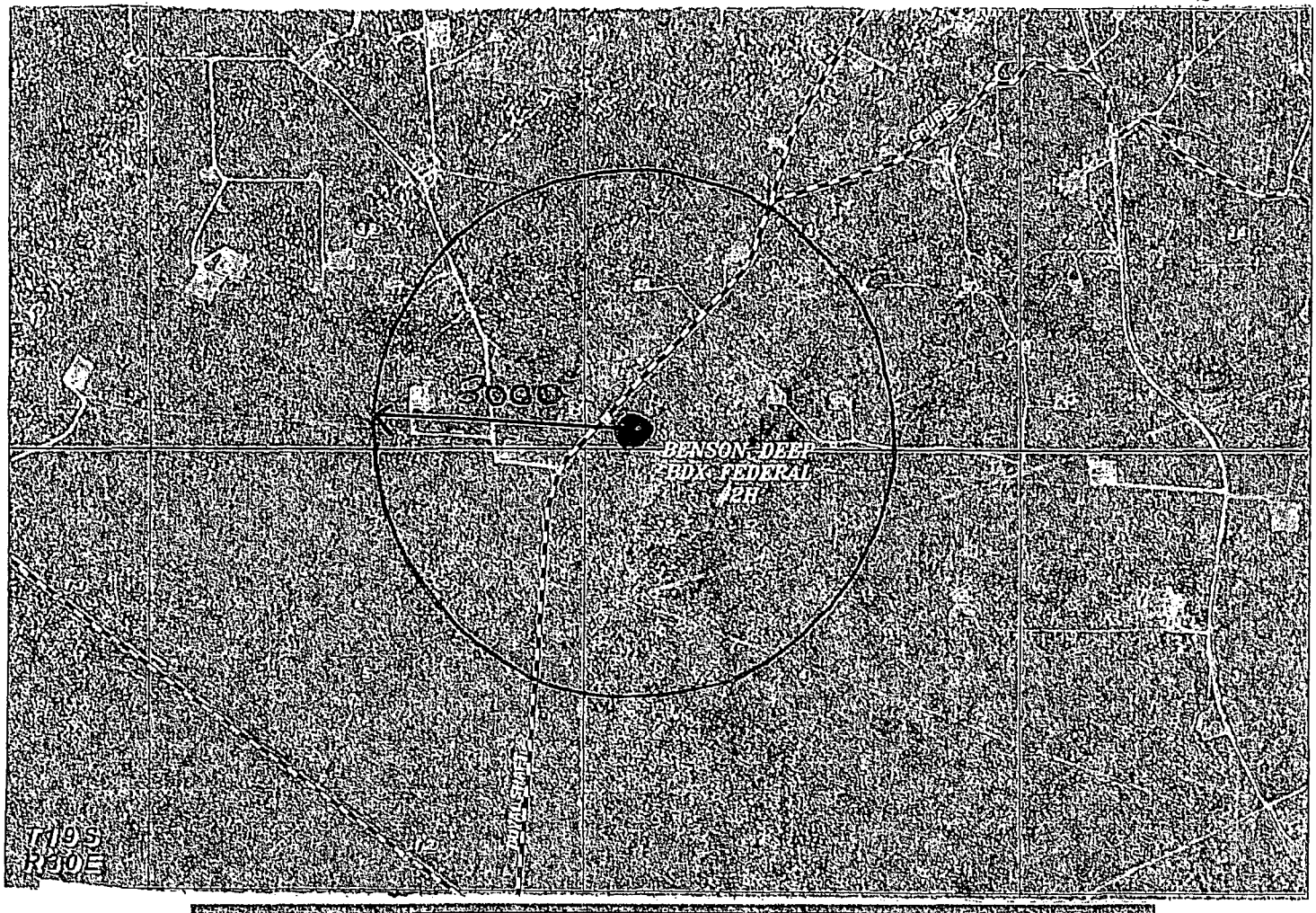
Benson Deep BDX Federal #2H

380' FSL and 560' FWL
Section 33, T-18-S, R-30-E
Eddy County, NM

Benson Deep BDX Federal #2H

This is an open drilling site. H_2S monitoring equipment and emergency response equipment will be used within 500' of zones known to contain H_2S, including warning signs, wind indicators and H_2S monitor.





Assumed 100 ppm ROE = 3000'

100 ppm H2S concentration shall trigger activation of this plan.

Emergency Procedures

In the case of a release of gas containing H_2S, the first responder(s) must isolate the area and prevent entry by other persons into the 100 ppm ROE. Additionally the first responder(s) must evacuate any public places encompassed by the 100 ppm ROE. First responder(s) must take care not to injure themselves during this operation. Company and/or local officials must be contacted to aid in this operation. Evacuation of the public should be beyond the 100 ppm ROE.

All responders must have training in the detection of H_2S, measures for protection against the gas, equipment used for protection and emergency response. Additionally, responders must be equipped with H_2S monitors and air packs in order to control the release. Use the "buddy system' to ensure no injuries during the response.

Ignition of Gas Source

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

Characteristics of H_2S and SO_2

Common Name	Chemical Formula	Specific Gravity	Threshold Limit	Hazardous Limit	Lethal Concentr-ation
Hydrogen Sulfide	H_2S	1.189 Air = 1	10 ppm	100 ppm/hr	600 ppm
Sulfur Dioxide	SO_2	2.21 Air = 1	2 ppm	N/A	1000 ppm

Contacting Authorities

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

Yates Petroleum Corporation Phone Numbers

YPC Office ..... (575) 748-1471
Pinson McWhorter/Operations Manager ..... (575) 748-4189
Wade Bennett/Prod Superintendent ..... (575) 748-4236
LeeRoy Richards/Assistant Prod Superintendent (575) 748-4228
Mike Larkin/Drilling ..... (575) 748-4222
Paul Hanes/Prod. Foreman/Roswell ..... (575) 624-2805
Tim Bussell/Drilling Superintendent ..... (575) 748-4221
Artesia Answering Service ..... (575) 748-4302
(During non-office hours)

Agency Call List

Eddy County (575)

Artesia

State Police 746-2703
City Police.....746-2703
Sheriff's Office 746-9888
Ambulance.....911
Fire Department 746-2701
LEPC (Local Emergency Planning Committee) 746-2122
NMOCD.....748-1283

Carlsbad

State Police 885-3137
City Police.....885-2111
Sheriff's Office.....887-7551
Ambulance.....911
Fire Department 885-2111
LEPC (Local Emergency Planning Committee)..... 887-3798
US Bureau of Land Management.....887-6544
New Mexico Emergency Response Commission (Santa Fe) (505)476-9600
24 HR .....(505) 827-9126
New Mexico State Emergency Operations Center.....(505) 476-9635
National Emergency Response Center (Washington, DC) ...(800) 424-8802

Other

Boots & Coots IWC .....1-800-256-9688 or (281) 931-8884
Cudd Pressure Control.....(915) 699-0139 or (915) 563-3356
Halliburton .....(575) 746-2757
B. J. Services.....(575) 746-3569

Flight For Life -4000 24th St, Lubbock, TX .....(806) 743-9911
Aerocare -Rr 3 Box 49f , Lubbock, TX .....(806) 747-8923
Med Flight Air Amb 2301 Yale Blvd SE #D3, Albuq, NM .....(505) 842-4433
S B Air Med Svc 2505 Clark Carr Loop SE, Albuq, NM .....(505) 842-4949

Yates Petroleum Corporation

Hydrogen Sulfide Drilling Operation Plan

I. HYDROGEN SULFIDE TRAINING

All personnel, whether regularly assigned, contracted, or employed on an unscheduled basis, will receive training from a qualified instructor in the following areas prior to commencing drilling operations on this well:

1. The hazards and characteristics of hydrogen sulfide (H2S).
2. The proper use and maintenance of personal protective equipment and life support systems.
3. The proper use of H2S detectors, alarms, warning systems, briefing areas, evacuation procedures, and prevailing winds.
4. The proper techniques for first aid and rescue procedures.

In addition, supervisory personnel will be trained in the following areas:

1. The effects of H2S on metal components. If high tensile tubular are to be used, personnel well be trained in their special maintenance requirements.
2. Corrective action and shut-in procedures when drilling or reworking a well and blowout prevention and well control procedures.
3. The contents and requirements of the H2S Drilling Operations Plan and H2S Contingency Plan.

There will be an initial training session just prior to encountering a known or probable H2S zone (within 3 days or 500 feet) and weekly H2S and well control drills for all personnel in each crew. The initial training session shall include a review of the site specific H2S Drilling Operation Plan and the H2S Contingency Plan. **The location of this well does not require a Public Protection Plan.**

II. H2S SAFETY EQUIPMENT AND SYSTEMS

NOTE: All H2S safety equipment and systems will be installed, tested, and operational when drilling reaches a depth of 500 feet above, or three days prior to penetrating the first zone containing or reasonably expected to contain H2S.

1. Well Control Equipment:

A. Flare line

B. Choke manifold

C. Blind rams and pipe rams to accommodate all pipe sizes with properly sized closing unit

D. Auxiliary equipment may include if applicable: annular preventer & rotating head.

2. Protective equipment for essential personnel:

A. Mark II Survive Air (or equivalent) 30-minute units located in the doghouse and at briefing areas, as indicated on well site diagram.

3. H2S detection and monitoring equipment:

A. 3 portable H2S monitors positioned at: Shale Shaker, Bell Nipple, and Rig Floor. These units have warning lights and audible sirens when H2S levels of 10 PPM are reached.

4. Visual warning systems:

A. Wind direction indicators as shown on well site diagram (attached).

B. Caution/Danger signs (attached) shall be posted on roads providing direct access to location. Signs will be painted with high visibility yellow with black lettering of a sufficient size to be readable at a reasonable distance from the immediate location. Bilingual signs will be used, when appropriate. See example attached.

5. Mud program:

A. The mud program has been designed to minimize the volume of H2S circulated to the surface. Proper mud weight, safe drilling practices and the use of H2S scavengers will minimize hazards when penetrating H2S bearing zones.

6. Metallurgy:

A. All drill strings, casings, tubing, wellhead, blowout preventer, drilling spool, kill lines, choke manifold and lines, and valves shall be suitable for H2S service.

B. All elastomers used for packing and seals shall be H2S trim.

7. **Communication:**

A. Cellular communications in company vehicles.

B. Land line (telephone) communication at the Office.

8. **Well testing:**

A. There will be no drill stem testing.

EXHIBIT

DANGER

POISONS GAS

HYDROGEN SULFIDE

NORMAL OPERATIONS

(GREEN)

CAUTION POTENTIAL DANGER

(YELLOW)

DANGER POISONS GAS ENCOUNTERED

(RED) **AUTHORIZED PERSONAL ONLY.**

LOCATION SECURED.

1-575-746-1096

1-877-879-8899

EDDY COUNTY EMERGENCY NUMBERS

NUMBERS

ARTESIA FIRE DEPT. 575-746-5050

ARTESIA POLICE DEPT. 575-746-5000

EDDY CO. SHERIFF DEPT. 575-746-9888

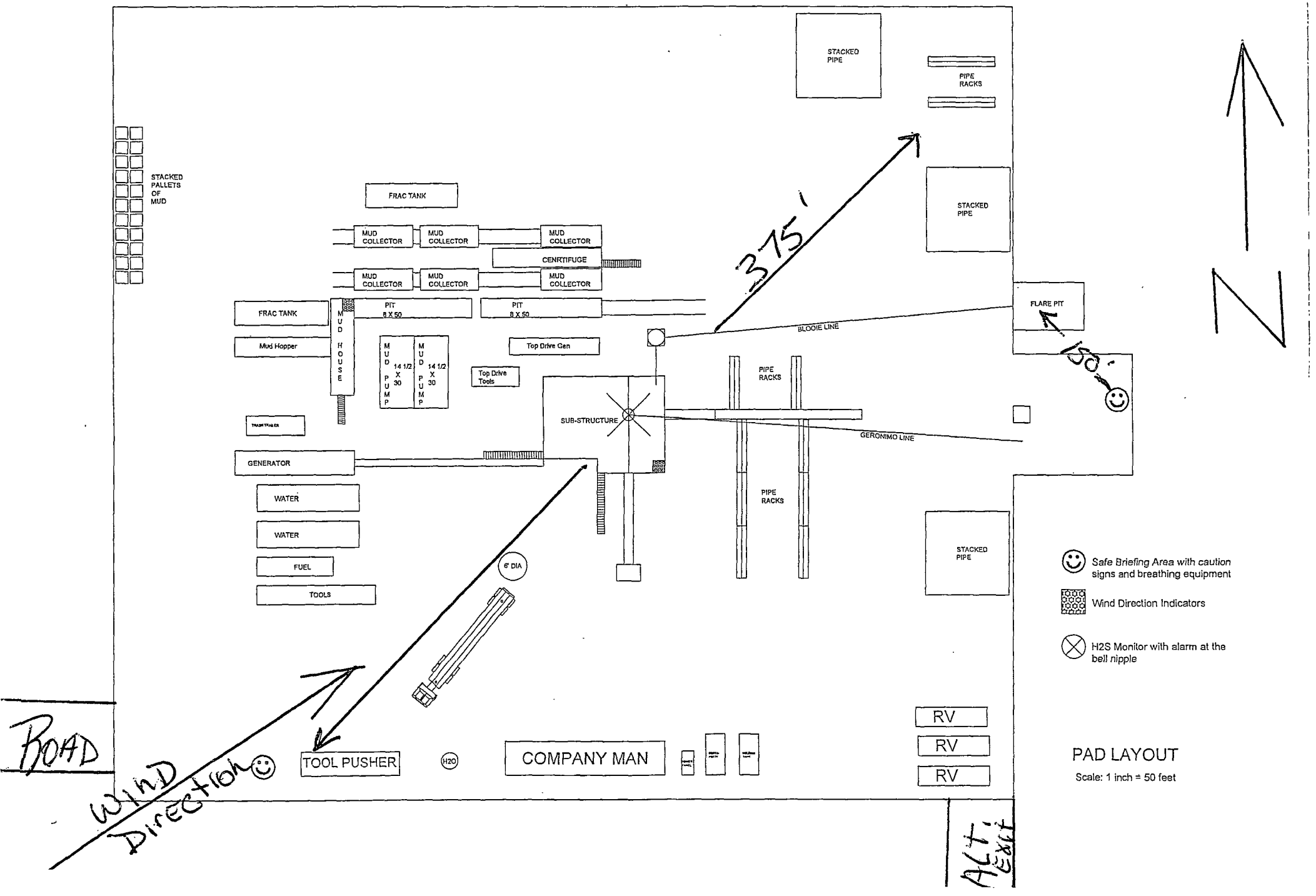
LEA COUNTY EMERGENCY

HOBBS FIRE DEPT. 575-397-9308

HOBBS POLICE DEPT. 575-397-9285

LEA CO. SHERIFF DEPT. 575-396-1196

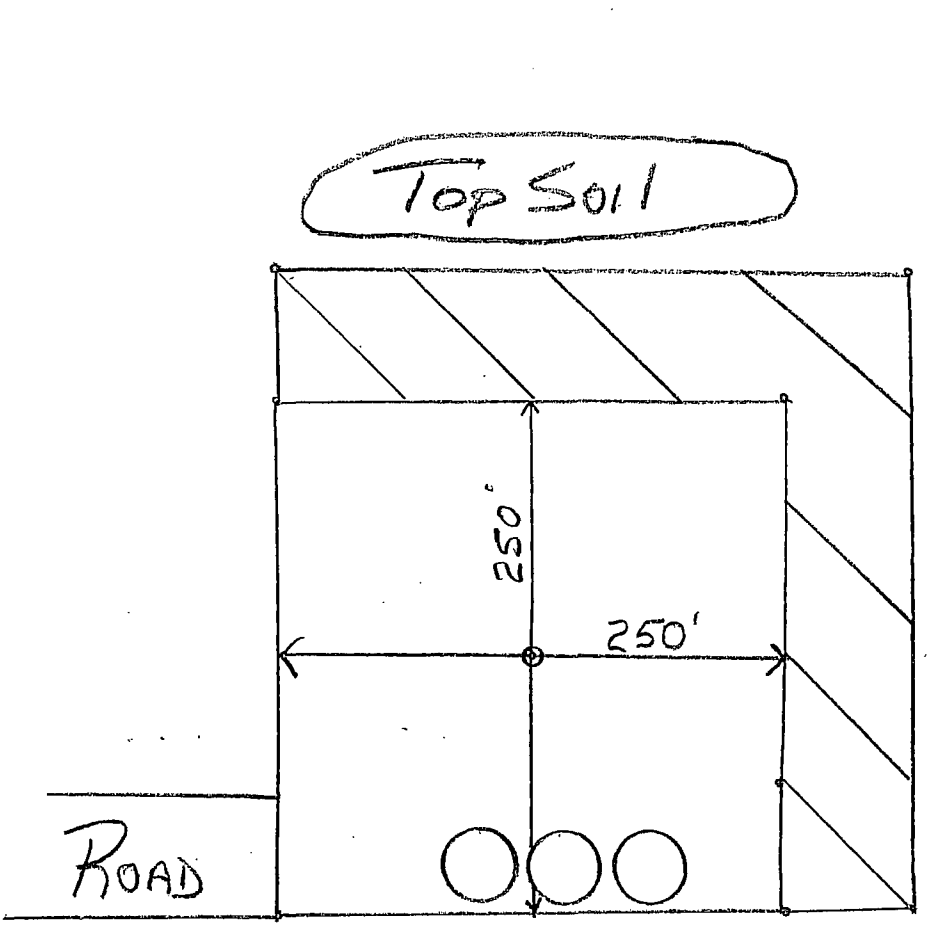
YATES PETROLEUM CORPORATION



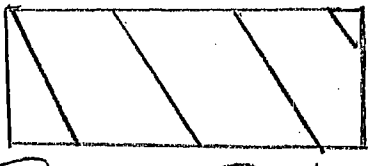
PAD LAYOUT

Scale: 1 inch = 50 feet

Reclamation Plat



Not To Scale



Possible Reclaimed Area

MULTI-POINT SURFACE USE AND OPERATIONS PLAN
Yates Petroleum Corporation
Benson Deep BDX Federal Com. #2H
380' FSL & 560' FWL Surface Hole Location
660' FSL and 330' FEL Bottom Hole Location
Section. 33, T-18S-R30-E
Eddy County, New Mexico

This plan is submitted with Form 3160-3, Application for Permit to Drill, covering the above described well. The purpose of this plan is to describe the location of the proposed well, the proposed construction activities and operations plan, the magnitude of the surface disturbance involved and the procedures to be followed in rehabilitating the surface after completion of the operations, so that a complete appraisal can be made of the environmental effect associated with the operations.

1. EXISTING ROADS:

Exhibit A is a portion of the BLM map showing the well and roads in the vicinity of the proposed location. The proposed well site is located approximately 28 miles southeast of Artesia, New Mexico and the access route to the location is indicated in red and green on Exhibit A.

DIRECTIONS:

Go east of Artesia on Highway 82 for approximately 26.1 miles to the intersection of Highway 82 and County Road 360 (Blue Stem Road). Turn right on Bluestem Road and go approximately 12.7 miles to Duval Shaft Road. Turn left on Duval Shaft Road and go approximately 1.1 miles. The new access road will start here going to the right for approximately 100 feet to the southwest corner of the proposed well location.

2. PLANNED ACCESS ROAD.

A. The proposed new access will go east for approximately 100 feet to the southwest corner of the proposed well location. The road will lie in a west to east direction.
B. The new road will be 14 feet in width (driving surface) and will be adequately drained to control runoff and soil erosion.
C. The new road will be bladed with drainage on one side. Traffic turnouts may be needed.
D. The route of the road is visible.
E. Existing roads will be maintained in the same or better condition.

3. LOCATION OF EXISTING WELL

A. There is drilling activity within a one-mile radius of the well site.
B. Exhibit D shows existing wells within a one-mile radius of the proposed well site.

4. LOCATION OF EXISTING AND/OR PROPOSED FACILITIES
A. There are production facilities on this lease at the present time
B. In the event that the well is productive, the necessary production facilities will be constructed on this well location. If the well is productive oil, a gas or diesel self-contained unit will be used to provide the necessary power. No power will be required if the well is productive of gas.

5. LOCATION AND TYPE OF WATER SUPPLY:

A. It is planned to drill the proposed well with a fresh water system. The water will be obtained from commercial sources and will be hauled to the location by truck over the existing and proposed roads shown in Exhibit A.

6. SOURCE OF CONSTRUCTION MATERIALS:

Dirt contractor will locate closest pit and obtain any permits and materials needed for construction of the well location.

7. METHODS OF HANDLING WASTE DISPOSAL:

A. This well will be drilled with a closed loop system
B. The closed loop system will be constructed, maintained, and closed in compliance with the State of New Mexico, Energy and Natural Resources Department, Oil Conservation Division – the "Pit Rule" 19.15.17 NMAC.
C. Drilling fluids will be removed after drilling and completions are completed.
D. Water produced during operations will be collected in tanks until hauled to an approved disposal system, or separate disposal application will be submitted.
E. Oil produced during operations will be stored in tanks until sold.
F. Current laws and regulations pertaining to the disposal of human waste will be complied with.
G. All trash, junk, and other waste materials will 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 approved.

8. ANCILLARY FACILITIES: None.

9. WELLSITE LAYOUT:

A. Exhibit C shows the relative location and dimensions of the well pad, location of the drilling equipment, pulling unit orientation and access road approach. The closed loop system will be constructed, maintained, and closed in compliance with the State of New Mexico, Energy and Natural Resources Department, Oil Conservation Division – the "Pit Rule" 19.15.17 NMAC.
B. A 600' x 600' area has been staked and flagged.

10. PLANS FOR RESTORATION

A. After finishing drilling and/or completion operations, all equipment and other material not needed for further operations will be removed. The location will be cleaned of all trash and junk to leave the wellsite in as aesthetically pleasing a condition as possible.
B. Unguarded pits, if any, containing fluids will be fenced until they have dried and been leveled.
C. If the proposed well is non-productive, all rehabilitation and/or vegetation requirements of the Bureau of Land Management will be complied with and will be accomplished as expeditiously as possible. All pits will be filled level after they have evaporated and dried.

11. SURFACE OWNERSHIP:

Surface Estate Bureau of Land Management
620 East Greene Street, Carlsbad, NM 88220.

Mineral Estate: Federal Lease NM-27276
Bureau of Land Management
620 East Greene Street, Carlsbad, NM 88220

12. OTHER INFORMATION:

A. Topography: Refer to the existing archaeological report for a description of the topography, flora, fauna, soil characteristics, dwellings, historical and cultural sites.
B. The primary surface use is for grazing.

PECOS DISTRICT
CONDITIONS OF APPROVAL

OPERATOR'S NAME:	**Yates Petroleum Corporation**
LEASE NO.:	**NMNM-27276**
WELL NAME & NO.:	**Benson Deep BDX Federal 2H**
SURFACE HOLE FOOTAGE:	**0230' FSL & 0560' FWL**
BOTTOM HOLE FOOTAGE	**0660' FSL & 0330' FEL**
LOCATION:	**Section 33, T. 18 S., R 30 E., NMPM**
COUNTY:	**Eddy County, New Mexico**

TABLE OF CONTENTS

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

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.

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) 234-6235 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 stockpile the topsoil in a low profile manner in order to prevent wind/water erosion of the topsoil. The topsoil to be stripped is approximately 6" inches in depth. The topsoil will be used 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. 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 (20) 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.

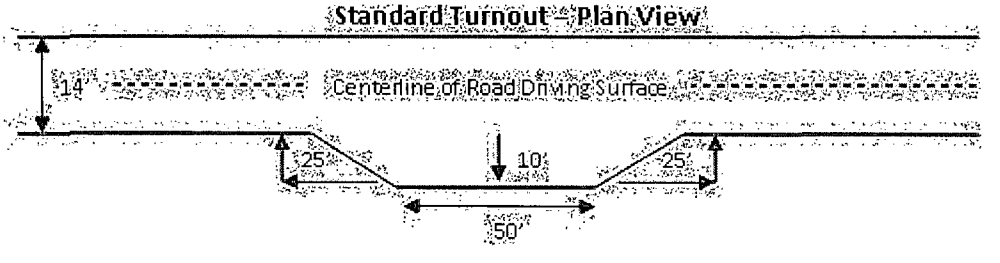
Where possible, no improvements should be made on the unsurfaced access road other than to remove vegetation as necessary, road irregularities, safety issues, or to fill low areas that may sustain standing water.

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.

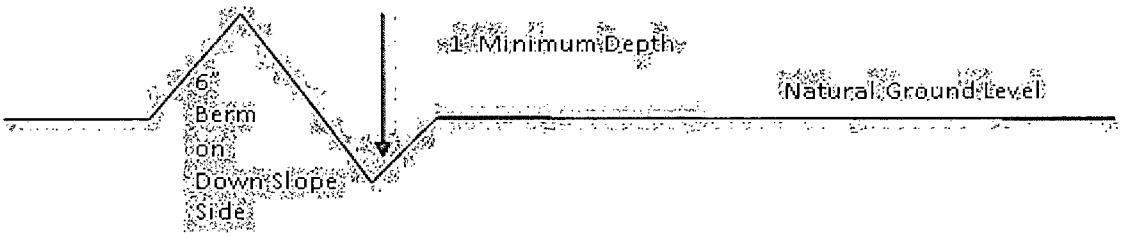
Turnouts
Vehicle turnouts shall be constructed on the road. Turnouts shall be intervisible with interval spacing distance less than 1000 feet. Turnouts shall be constructed on all blind curves. Turnouts shall conform to the following diagram:



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:

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

Culvert Installations
Appropriately sized culvert(s) shall be installed at the deep waterway channel flow crossing.

Cattleguards
An appropriately sized cattleguard(s) sufficient to carry out the project shall be installed and maintained at fence crossing(s).

Any existing cattleguard(s) on the access road 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 cattleguard(s) that are in place and are utilized during lease operations.

A gate shall be constructed and fastened securely to H-braces.

Fence Requirement

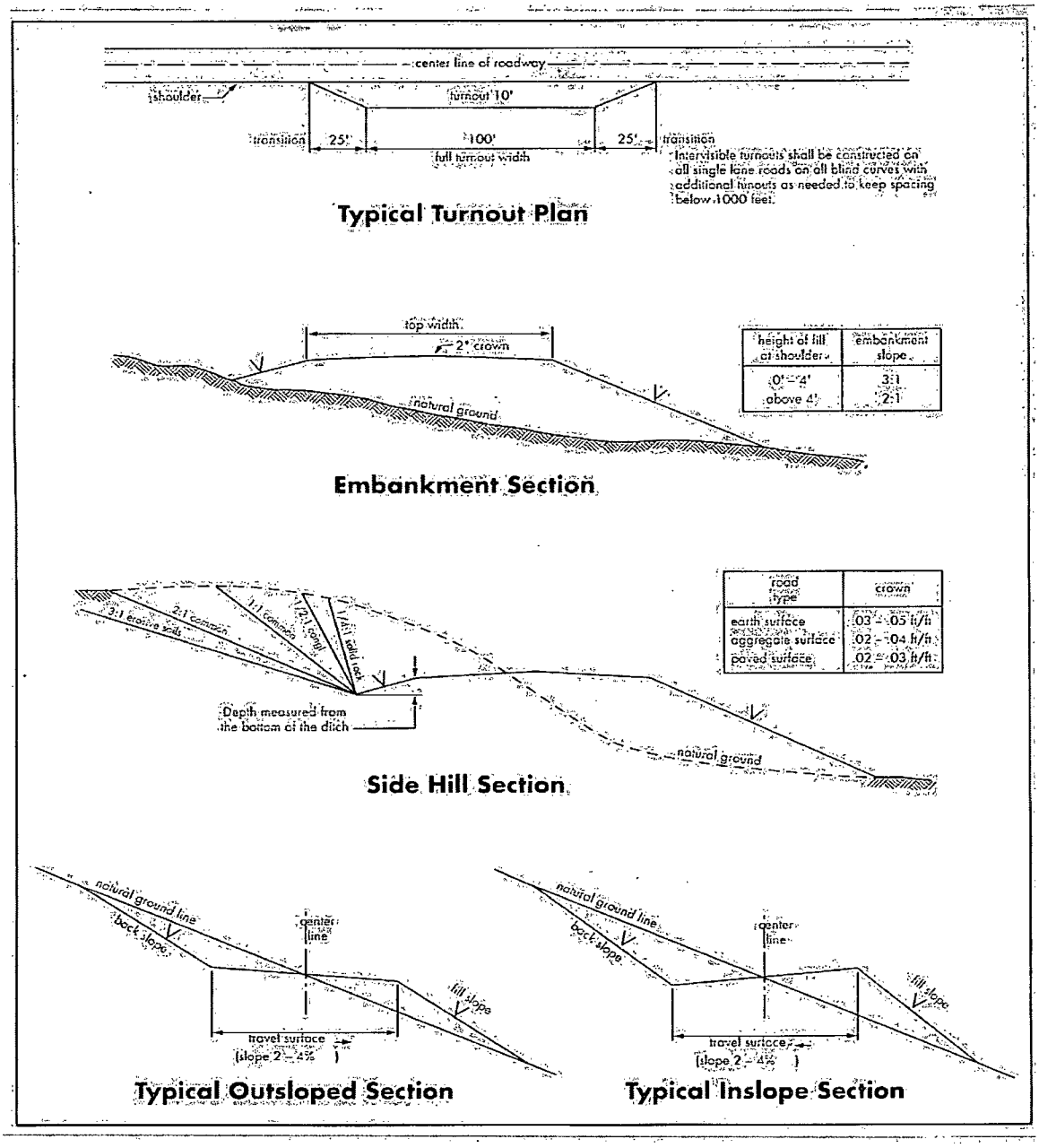
Where entry is required across a fence line, the fence shall be braced and tied off on both sides of the passageway prior to cutting.

The operator shall notify the private surface landowner or the grazing allotment holder prior to crossing any fence(s).

Public Access

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

Figure 1 – Cross Sections and Plans For Typical Road Sections



VII. DRILLING

A. DRILLING OPERATIONS REQUIREMENTS

The BLM is to be notified in advance for a representative to witness:

a. Spudding well (minimum of 24 hours)
b. Setting and/or Cementing of all casing strings (minimum of 4 hours)
c. BOPE tests (minimum of 4 hours)

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

1. **Hydrogen Sulfide (H2S) monitors shall be installed prior to drilling out the surface shoe and a Hydrogen Sulfide (H2S) Drilling Plan shall be activated 500 feet prior to drilling into the Queen 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. 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.).

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.

Secretary's Potash
Possibility of water and brine flows in the Artesia and Salado Groups.
Possibility of lost circulation in the Artesia Group.

1. The **13-3/8** inch surface casing shall be set at approximately **450** feet (a minimum of 25 feet into the Rustler Anhydrite 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 intermediate casing is:

☒ Cement to surface. If cement does not circulate see B.1.a, c-d above. **Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to potash.**

Formation below the 9-5/8" shoe to be tested according to Onshore Order 2.III.B.1.i. Test to be done as a mud equivalency test using the mud weight necessary for the pore pressure of the formation below the shoe (not the mud weight required to prevent dissolving the salt formation) and the mud weight for the bottom of the hole. Report results to BLM office.

Pilot hole is required to have a plug at the bottom of the hole. If two plugs are set, the BLM is to be contacted (575-361-2822) prior to tag of bottom plug, which must be a minimum of 200' in length. Operator can set one plug from bottom of pilot hole to kick-off point and save the WOC time for tagging the first plug.

Centralizers required through the curve and a minimum of one every other joint.

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

Operator has proposed DV tool at depth between 6500'-7000', but will adjust cement proportionately if moved. DV tool shall be set a minimum of 50' below previous shoe and a minimum of 200' above current shoe. Operator shall submit sundry if DV tool depth cannot be set in this range. If an ECP is used, it is to be set a minimum of 50' below the shoe to provide cement across the shoe. If it cannot be set below the shoe, a CBL shall be run to verify cement coverage.

a. First stage to DV tool:

☒ Cement to circulate. If cement does not circulate, contact the appropriate BLM office before proceeding with second stage cement job. Operator should have plans as to how they will achieve approved top of cement on the next stage.

b. Second stage above DV tool:

☒ Cement should tie-back at least 500 feet into previous casing string. Operator shall provide method of verification. **Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to potash.**

4. 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 **3000 (3M)** psi.

    a. **For surface casing only:** If the BOP/BOPE is to be tested against casing, the wait on cement (WOC) time for that casing is to be met (see WOC statement at start of casing section). Independent service company required.

3. 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 **5000 (5M)** psi. **5M system requires an HCR valve, remote kill line and annular to match. The remote kill line is to be installed prior to testing the system and tested to stack pressure.**

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

    a. In potash areas, 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. For all casing strings, casing cut-off and BOP installation can be initiated at twelve hours after bumping the plug. However, **no tests** shall commence until the cement has had a minimum of 24 hours setup time.

    b. The tests shall be done by an independent service company utilizing a test plug **not a cup or J-packer**. The operator also has the option of utilizing an independent tester to test without a plug (i.e. against the casing) pursuant to Onshore Order 2 with the pressure not to exceed 70% of the burst rating for the casing. Any test against the casing must meet the WOC time for water basin (18 hours) or potash (24 hours) or 500 pounds compressive strength, whichever is greater, prior to initiating the test (see casing segment as lead cement may be critical item).

    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.

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.

Containment Structures
The containment structure shall be constructed to hold the capacity of the entire contents of the largest tank, plus 24 hour production, unless more stringent protective requirements are deemed necessary by the Authorized Officer.

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, Munsell Soil Color Chart # 5Y 4/2

B. PIPELINES (Not applied for in the APD)

C. ELECTRIC LINES (Not applied for in the APD)

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