

**NM OIL CONSERVATION**

ARTESIA DISTRICT

Form C-102

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

JAN 05 2018

Revised August 1, 2011

Submit one copy to appropriate District Office

RECEIVED

AMENDED REPORT

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: (505) 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

WELL LOCATION AND ACREAGE DEDICATION PLAT

<sup>1</sup> API Number <b>30-015-44600</b>		<sup>2</sup> Pool Code <b>97869</b>		<sup>3</sup> Pool Name <b>SWD; Siluro-Devona</b>	
<sup>4</sup> Property Code <b>320498</b>		<sup>5</sup> Property Name <b>COTTONWOOD FEE SWD</b>			<sup>6</sup> Well Number <b>1</b>
<sup>7</sup> OGRID NO. <b>372603</b>		<sup>8</sup> Operator Name <b>3BEAR FIELD SERVICES, LLC</b>			<sup>9</sup> Elevation <b>3483'</b>

<sup>10</sup> 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>0</b>	<b>19</b>	<b>26S</b>	<b>26E</b>		<b>330</b>	<b>SOUTH</b>	<b>1662</b>	<b>EAST</b>	<b>EDDY</b>

<sup>11</sup> 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
<sup>12</sup> Dedicated Acres		<sup>13</sup> Joint or Infill		<sup>14</sup> Consolidation Code		<sup>15</sup> Order No.			

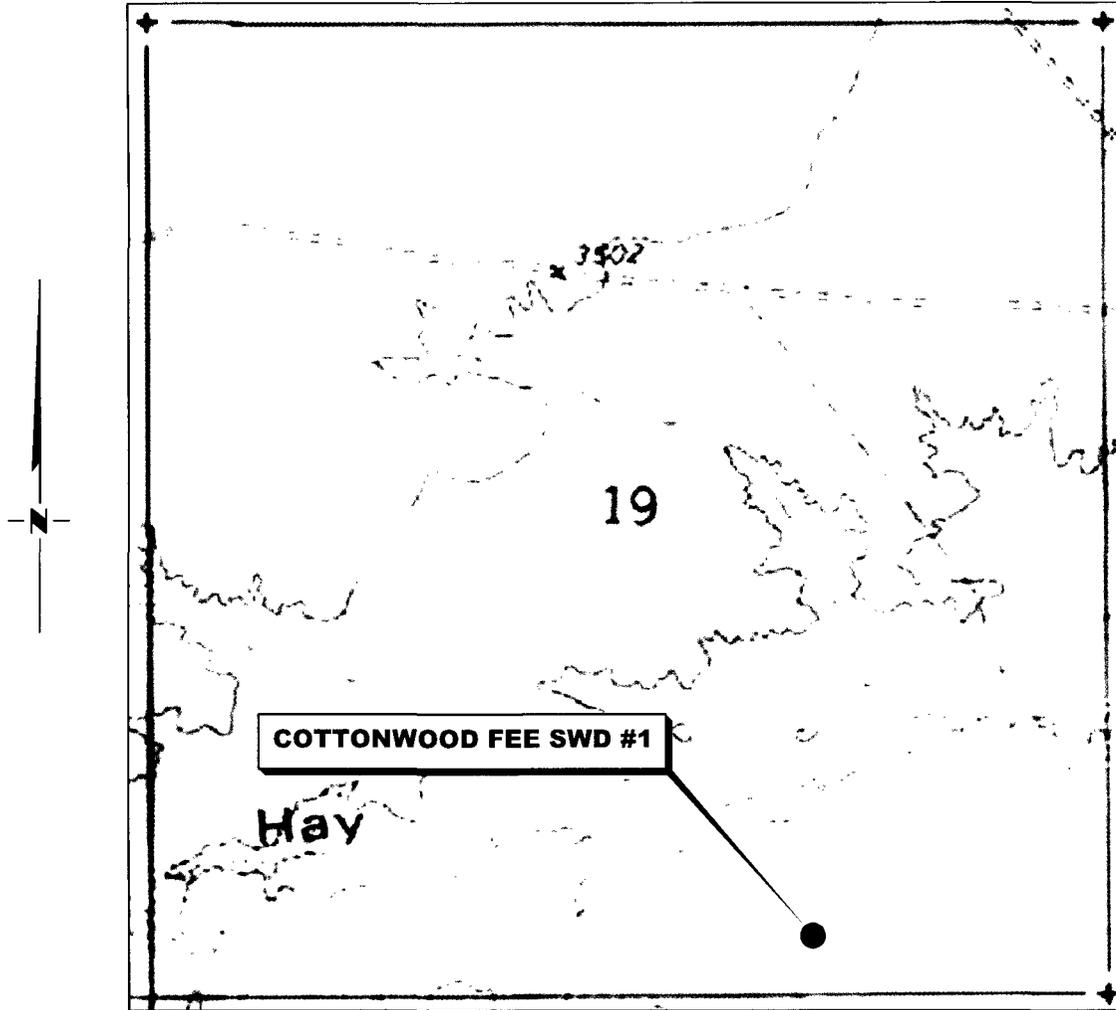
No allowable will be assigned to this completion until all interest have been consolidated or a non-standard unit has been approved by the division.

<p>LOT 1</p> <p>LOT 2</p> <p>LOT 3</p> <p>19</p> <p>S.L. 1662'</p> <p>330'</p>	<p><sup>17</sup> OPERATOR CERTIFICATION</p> <p><i>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</i></p> <p><i>Rory McMin</i> 15 December 2017 Signature Date</p> <p>RORY MCMINN Printed Name</p> <p>RORY@RMCMINN.COM E-mail Address</p>
	<p><sup>18</sup> SURVEYOR CERTIFICATION</p> <p><i>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.</i></p> <p>11-29-2017 Date of Survey</p> <p>Signature and Seal of Professional Surveyor</p> <p>19680 Certificate Number</p>

Job No.: LS1711740

RMP 1-5-18

# LOCATION VERIFICATION MAP



*SECTION 19, TWP. 26 SOUTH, RGE. 26 EAST,  
N. M. P. M., EDDY COUNTY, NEW MEXICO*

OPERATOR: 3Bear Field Services, LLC  
 LEASE: Cottonwood Fee SWD  
 WELL NO.: 1  
 ELEVATION: 3483'

LOCATION: 330' FSL & 1662' FEL  
 CONTOUR INTERVAL: 10'  
 USGS TOPO. SOURCE MAP:  
Jumping Spring, NM (P. E. 1985)

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NO.	REVISION	DATE
JOB NO.: LS1711740		
DWG. NO.: 1711740LVM		

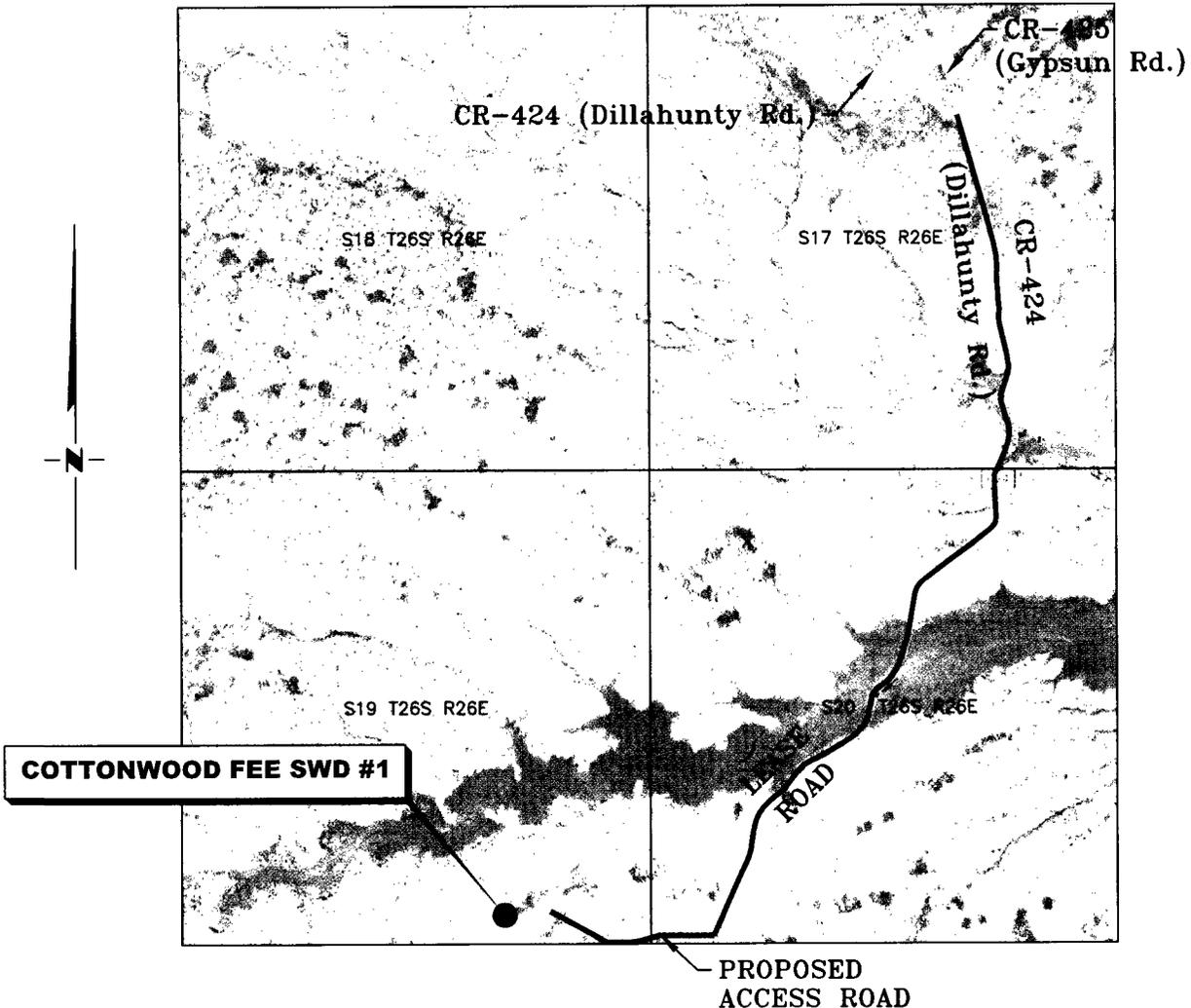
# RRC

308 W. BROADWAY ST., HOBBS, NM 88240 (575) 964-8200

SCALE: 1" = 1000'  
 DATE: 11-29-2017  
 SURVEYED BY: BK/CG  
 DRAWN BY: AiAC  
 APPROVED BY: RMH  
 SHEET: 1 OF 1

# VICINITY MAP

NOT TO SCALE



*SECTION 19, TWP. 26 SOUTH, RGE. 26 EAST,  
N. M. P. M., EDDY COUNTY, NEW MEXICO*

OPERATOR: 3Bear Field Services, LLC  
 LEASE: Cottonwood Fee SWD  
 WELL NO.: 1

LOCATION: 330' FSL & 1662' FEL  
 ELEVATION: 3483'

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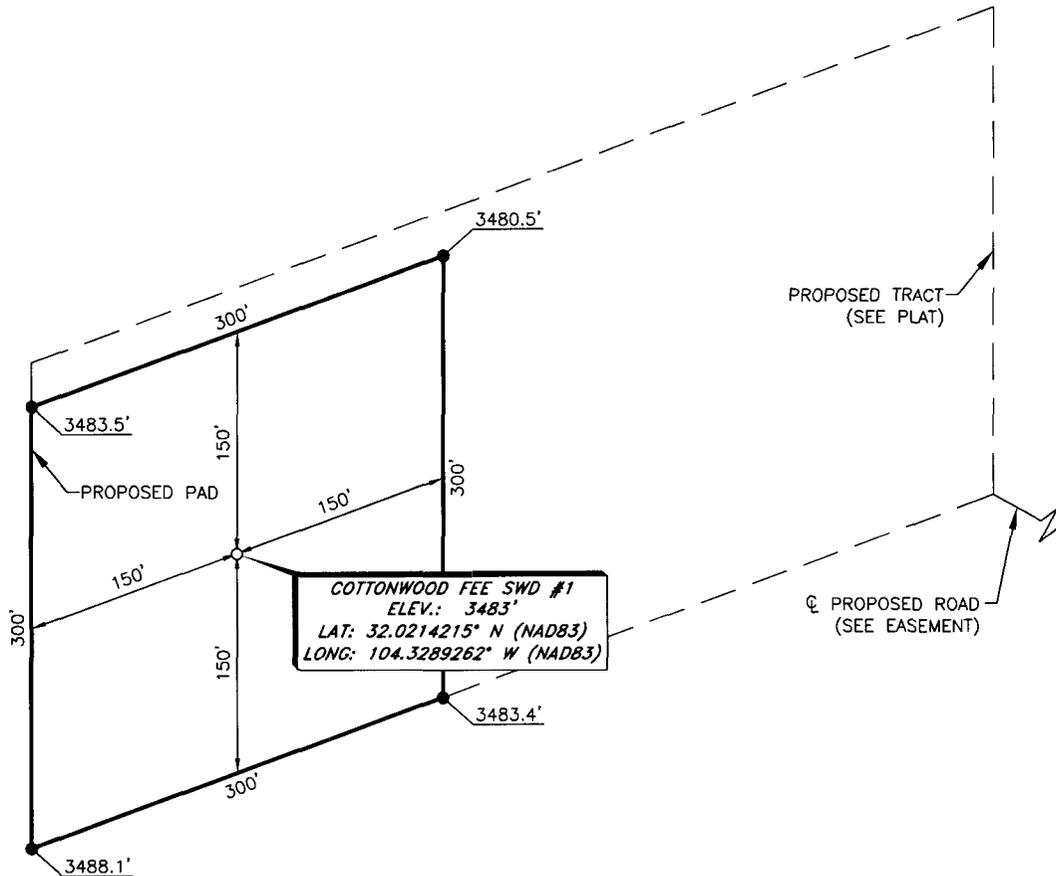
NO.	REVISION	DATE
JOB NO.: LS1711740		
DWG. NO.: 1711740VM		

# RRC

308 W. BROADWAY ST., HOBBS, NM 88240 (575) 964-8200

SCALE: N / A
DATE: 11-29-2017
SURVEYED BY: BK/CG
DRAWN BY: AiAC
APPROVED BY: RMH
SHEET: 1 OF 1

**3BEAR FIELD SERVICES, LLC  
COTTONWOOD FEE SWD #1  
(330' FSL & 1662' FEL)  
SECTION 19, T26S, R26E  
N. M. P. M., EDDY COUNTY, NEW MEXICO**



DIRECTIONS TO LOCATION

From the intersection of CR-425 (Gypsum Rd.) and CR-424 (Dillahunty Rd.),  
Go South on CR-424 approx. 0.9 miles to lease road;  
Go Southwest on lease road approx. 1.1 miles to a "Y";  
Turn right and go Southwest approx. 165 feet to proposed road on the right;  
Turn right and go West on proposed road approx. 0.4 miles to proposed location  
on the left.

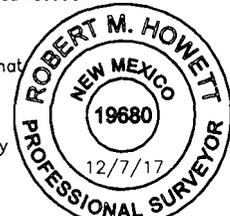


SCALE: 1" = 100'  
0 50' 100'

BEARINGS ARE GRID NAD 83  
NM EAST  
DISTANCES ARE HORIZ. GROUND.

I, R. M. Howett, a N. M. Professional Surveyor, hereby certify that I prepared this unclassified survey of a well location from an actual survey made on the ground under my direct supervision, said survey and plat meet the Min. Stds. for Land Surveying in the State of N. M. and are true and correct to the best of my knowledge and belief.

*Robert M. Howett*  
Robert M. Howett NM PS 19680



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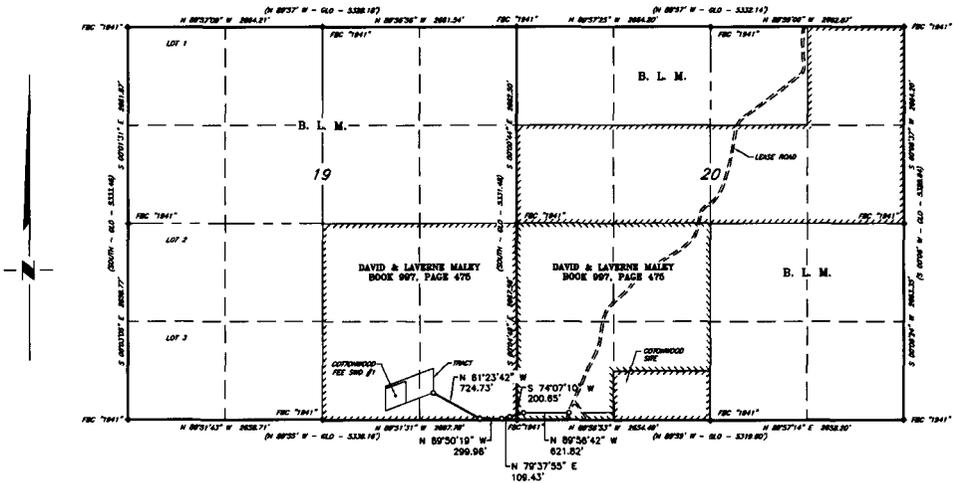
NO.	REVISION	DATE
JOB NO.: LS1711740		
DWG. NO.: 1711740PAD		



308 W. BROADWAY ST., HOBBS, NM 88240 (575) 964-8200

SCALE: 1" = 100'
DATE: 11-29-2017
SURVEYED BY: JF/BK
DRAWN BY: AiAC
APPROVED BY: RMH
SHEET : 1 OF 1

**3BEAR FIELD SERVICES, LLC  
 OVERALL OF PROPOSED ACCESS ROAD  
 FOR THE COTTONWOOD FEE SWD #1  
 SECTIONS 19 AND 20, T26S, R26E  
 N. M. P. M., EDDY COUNTY, NEW MEXICO**



SCALE: 1" = 2000'  
 0 1000' 2000'

BEARINGS ARE GRID NAD 83  
 NM EAST  
 DISTANCES ARE HORIZ. GROUND.

**LEGEND**

( ) RECORD DATA - GLO  
 ◆ FOUND MONUMENT AS NOTED  
 — PROPOSED ACCESS ROAD

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NO.	REVISION	DATE
JOB NO.: LS1711740		
DWG. NO.: 1711740RD1.1		

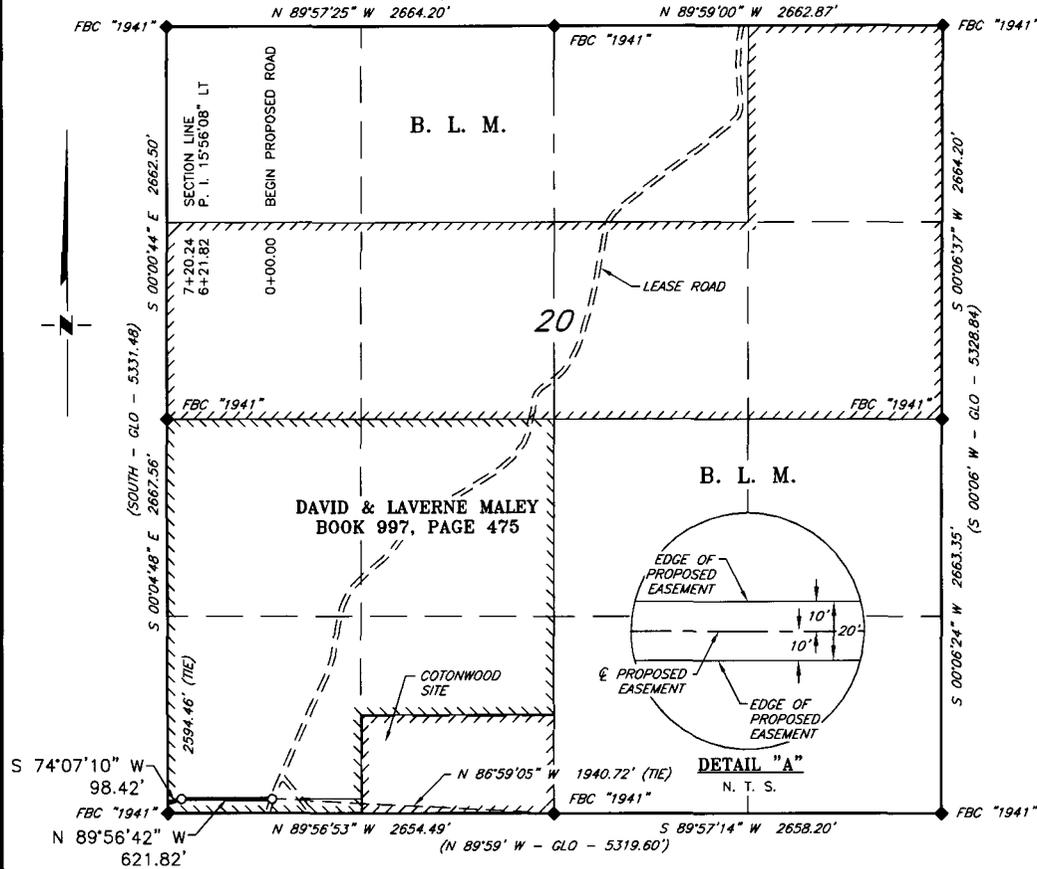


308 W. BROADWAY ST., HOBBS, NM 88240 (575) 964-8200

SCALE: 1" = 2000'
DATE: 11-29-2017
SURVEYED BY: BK/CG
DRAWN BY: AiAC
APPROVED BY: RMH
SHEET: 1 OF 3

**3BEAR FIELD SERVICES, LLC  
PROPOSED ACCESS ROAD FOR THE  
COTTONWOOD FEE SWD #1  
SECTION 20, T26S, R26E  
N. M. P. M., EDDY COUNTY, NEW MEXICO**

(N 89°57' W - GLO - 5332.14')



**DESCRIPTION**

A strip of land 20 feet wide, being 720.24 feet or 43.651 rods in length, lying in Section 20, Township 26 South, Range 26 East, N. M. P. M., Eddy County, New Mexico, being 10 feet left and 10 feet right of the following described survey of a centerline across the lands of David & Laverne Maley, according to a deed filed for record in Book 997, Page 475, of the Deed Records of Eddy County, New Mexico:

BEGINNING at Engr. Sta. 0+00, a point in the Southwest quarter of Section 20, which bears, N 86°59'05" W, 1,940.72 feet from a brass cap, stamped "1941", found for the South quarter corner of Section 20;

Thence, N 89°56'42" W, 621.82 feet, to Engr. Sta. 6+21.82, a P. I. of 15°56'08" left:

Thence, S 74°07'10" W, 98.42 feet, to Engr. Sta. 7+20.24, a point on the West line of Section 20, which bears, S 00°04'48" E, 2,594.46 feet from a brass cap, stamped "1941", found for the West quarter corner of Section 20.

Said strip of land contains 0.331 acres, more or less, and is allocated by forties as follows:

SCALE: 1" = 1000'      SW 1/4 SW 1/4      43.651 Rods      0.331 Acres

BEARINGS ARE GRID NAD 83  
NM EAST  
DISTANCES ARE HORIZ. GROUND.

**LEGEND**

( ) RECORD DATA - GLO

◆ FOUND MONUMENT AS NOTED

— PROPOSED ACCESS ROAD

I, R. M. Howett, a N. M. Professional Surveyor, hereby certify that I prepared this plat from an actual survey made on the ground under my direct supervision, said survey and plat meet the Min. Stds. for Land Surveying in the State of N. M. and are true and correct to the best of my knowledge and belief.

*Robert M. Howett*  
Robert M. Howett      NM PS 19680



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NO.	REVISION	DATE
JOB NO.:	LS1711740	
DWG. NO.:	1711740RD1.2	

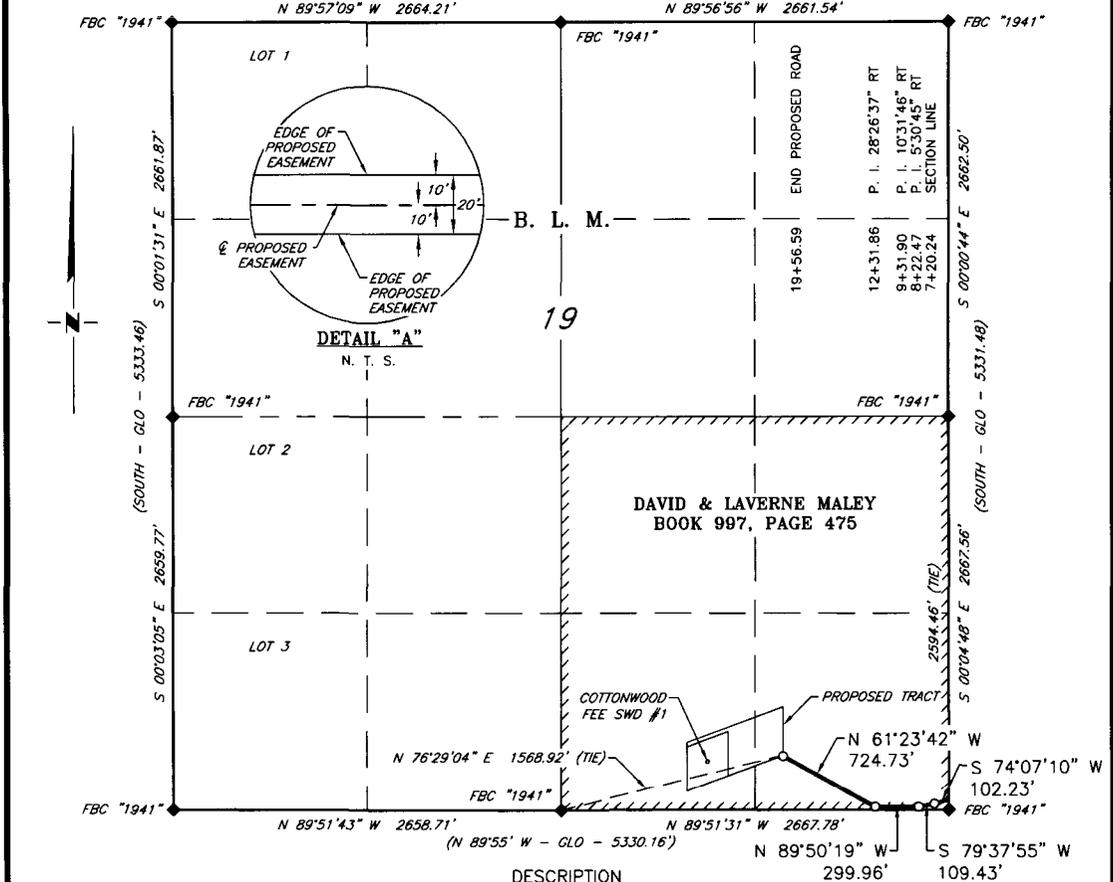


308 W. BROADWAY ST., HOBBS, NM 88240 (575) 964-8200

SCALE:	1" = 1000'
DATE:	11-29-2017
SURVEYED BY:	BK/CG
DRAWN BY:	AiAC
APPROVED BY:	RMH
SHEET:	2 OF 3

**3BEAR FIELD SERVICES, LLC  
 PROPOSED ACCESS ROAD FOR THE  
 COTTONWOOD FEE SWD #1  
 SECTION 19, T26S, R26E  
 N. M. P. M., EDDY COUNTY, NEW MEXICO**

(N 89°57' W - GLO - 5328.18')



A strip of land 20 feet wide, being 1,236.35 feet or 74.930 rods in length, lying in Section 19, Township 26 South, Range 26 East, N. M. P. M., Eddy County, New Mexico, being 10 feet left and 10 feet right of the following described survey of a centerline across the lands of David & Laverne Maley, according to a deed filed for record in Book 997, Page 475, of the Deed Records of Eddy County, New Mexico:

BEGINNING at Engr. Sta. 7+20.24, a point on the East line of Section 19, which bears, S 00°04'48" E, 2,594.46 feet from a brass cap, stamped "1941", found for the East quarter corner of Section 19;

Thence, S 74°07'10" W, 102.23 feet, to Engr. Sta. 8+22.47, a P. I. of 5°30'45" right:

Thence, S 79°37'55" W, 109.43 feet, to Engr. Sta. 9+31.90, a P. I. of 10°31'46" right:

Thence, N 89°50'19" W, 299.96 feet, to Engr. Sta. 12+31.86, a P. I. of 28°26'37" right:

Thence, N 61°23'42" W, 724.73 feet, to Engr. Sta. 19+56.59, the End of Survey, a point in the Southeast quarter of Section 19, which bears, N 76°29'04" E, 1,568.92 feet from a brass cap, stamped "1941", found for the South quarter corner of Section 19.

Said strip of land contains 0.568 acres, more or less, and is allocated by forties as follows:

SCALE: 1" = 1000'  
 0 500' 1000'

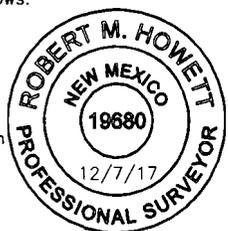
SE 1/4 SE 1/4      74.930 Rods      0.568 Acres

BEARINGS ARE GRID NAD 83  
 NM EAST  
 DISTANCES ARE HORIZ. GROUND.

LEGEND  
 ( ) RECORD DATA - GLO  
 ◆ FOUND MONUMENT AS NOTED  
 — PROPOSED ACCESS ROAD

I, R. M. Howett, a N. M. Professional Surveyor, hereby certify that I prepared this plat from an actual survey made on the ground under my direct supervision, said survey and plat meet the Min. Stds. for Land Surveying in the State of N. M. and are true and correct to the best of my knowledge and belief.

*Robert M. Howett*  
 Robert M. Howett      NM PS 19680



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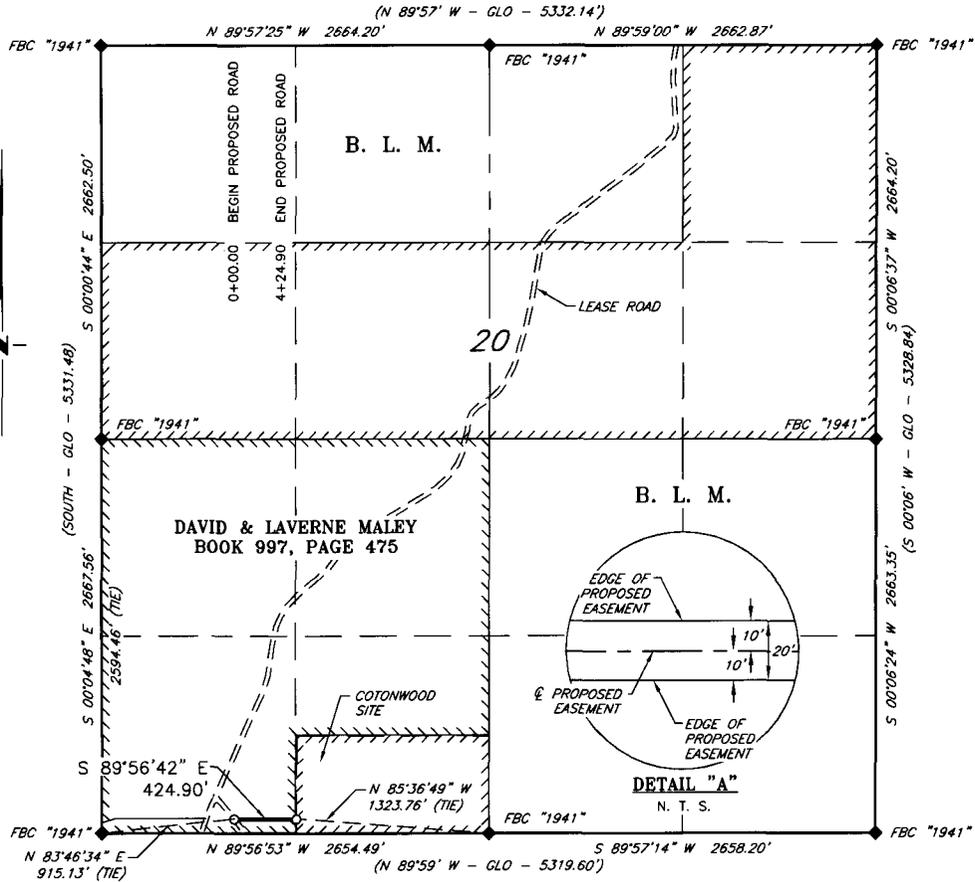
NO.	REVISION	DATE
JOB NO.: LS1711740		
DWG. NO.: 1711740RD1.3		



308 W. BROADWAY ST., HOBBS, NM 88240 (575) 964-8200

SCALE: 1" = 1000'
DATE: 11-29-2017
SURVEYED BY: BK/CG
DRAWN BY: AiAC
APPROVED BY: RMH
SHEET: 3 OF 3

**3BEAR FIELD SERVICES, LLC  
PROPOSED ACCESS ROAD TO THE  
COTTONWOOD SITE  
SECTION 20, T26S, R26E  
N. M. P. M., EDDY COUNTY, NEW MEXICO**



**DESCRIPTION**

A strip of land 20 feet wide, being 424.90 feet or 25.751 rods in length, lying in Section 20, Township 26 South, Range 26 East, N. M. P. M., Eddy County, New Mexico, being 10 feet left and 10 feet right of the following described survey of a centerline across the lands of David & Laverne Maley, according to a deed filed for record in Book 997, Page 475, of the Deed Records of Eddy County, New Mexico:

BEGINNING at Engr. Sta. 0+00, a point in the Southwest quarter of Section 20, which bears, N 83°46'34" E, 915.13 feet from a brass cap, stamped "1941", found for the Southwest corner of Section 20;

Thence, S 89°56'42" E, 424.90 feet, to Engr. Sta. 4+24.90, the End of Survey, a point in the Southwest quarter of Section 20, which bears, N 85°36'49" W, 1,323.76 feet from a brass cap, stamped "1941", found for the South quarter corner of Section 20.

Said strip of land contains 0.195 acres, more or less, and is allocated by forties as follows:

SCALE: 1" = 1000'	SW 1/4 SW 1/4	25.302 Rods	0.192 Acres
0 500' 1000'	SE 1/4 SW 1/4	0.449 Rods	0.003 Acres

BEARINGS ARE GRID NAD 83  
NM EAST  
DISTANCES ARE HORIZ. GROUND.

**LEGEND**

- ( ) RECORD DATA - GLO
- ◆ FOUND MONUMENT AS NOTED
- PROPOSED ACCESS ROAD

I, R. M. Howett, a N. M. Professional Surveyor, hereby certify that I prepared this plat from an actual survey made on the ground under my direct supervision, said survey and plat meet the Min. Stds. for Land Surveying in the State of N. M. and are true and correct to the best of my knowledge and belief.

*Robert M. Howett*  
Robert M. Howett NM PS 19680



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NO.	REVISION	DATE
JOB NO.: LS1711740		
DWG. NO.: 1711740RD2		

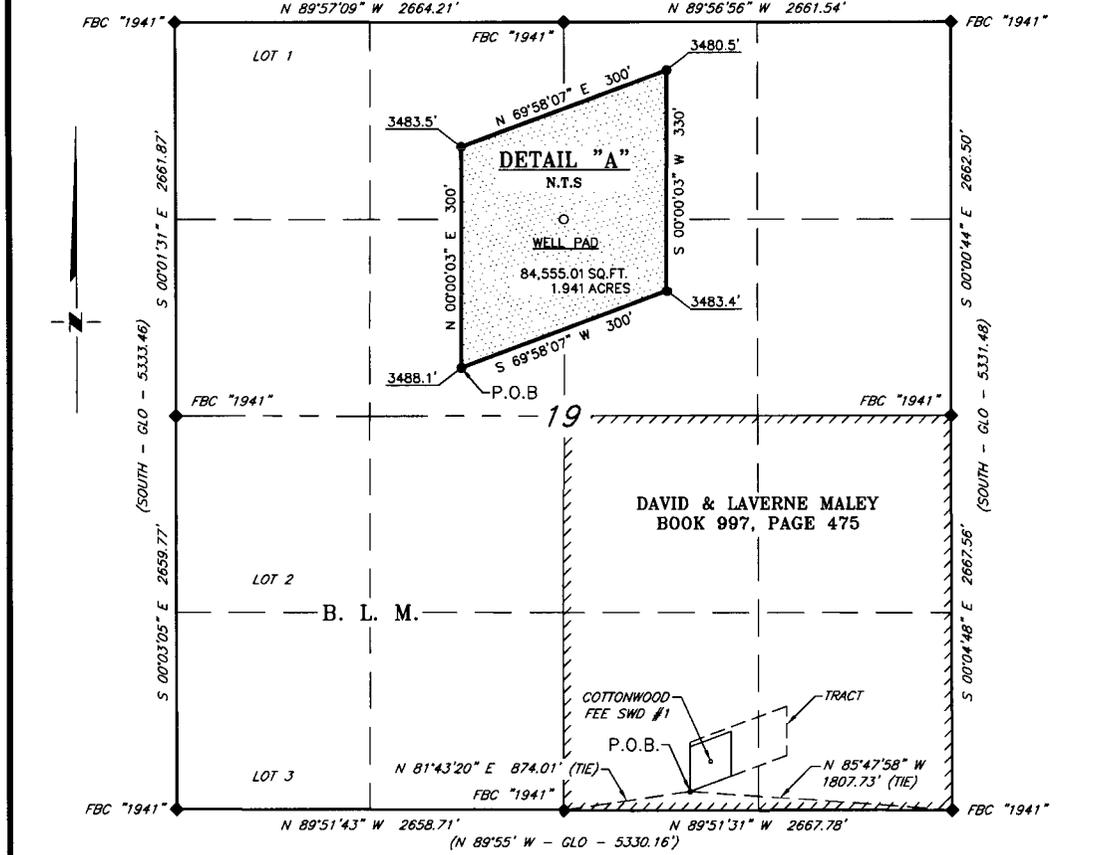


308 W. BROADWAY ST., HOBBS, NM 88240 (575) 964-8200

SCALE: 1" = 1000'
DATE: 11-29-2017
SURVEYED BY: BK/CG
DRAWN BY: AiAC
APPROVED BY: RMH
SHEET: 1 OF 1

**3BEAR FIELD SERVICES, LLC  
SURVEY FOR THE PROPOSED  
COTTONWOOD FEE SWD #1 PAD  
SECTION 19, T26S, R26E  
N. M. P. M., EDDY COUNTY, NEW MEXICO**

(N 89°57' W - GLO - 5328.18')



**DESCRIPTION**

A tract of land situated within the Southeast quarter of Section 19, Township 26 South, Range 26 East, N. M. P. M., Eddy County, New Mexico, across the lands of David & Laverne Maley, according to a deed filed for record in Book 997, Page 475, of the Deed Records of Eddy County, New Mexico, and being more particularly described by metes and bounds as follows:

BEGINNING at a point, which bears N 81°43'20" E, 874.01 feet from a brass cap, stamped "1941", found for the South quarter corner of Section 19, and bears N 85°47'58" W, 1,807.73 feet from a brass cap, stamped "1941", found for the Southeast corner of Section 19;

- Thence N 00°00'03" E, 300 feet, to a point;
- Thence N 69°58'07" E, 300 feet, to a point;
- Thence S 00°00'03" W, 300 feet, to a point;
- Thence S 69°58'07" W, 300 feet, to the Point of Beginning.

Said tract of land contains 84,555.01 square feet or 1.941 acres, more or less and is allocated by forties as:

SW 1/4 SE 1/4    84,555.01 Sq. Ft.    1.941 Acres

SCALE: 1" = 1000'  
0    500'    1000'  
BEARINGS ARE GRID NAD 83  
NM EAST  
DISTANCES ARE HORIZ. GROUND.

LEGEND  
( ) RECORD DATA - GLO  
◆ FOUND MONUMENT AS NOTED

I, R. M. Howett, a N. M. Professional Surveyor, hereby certify that I prepared this plat from an actual survey made on the ground under my direct supervision, said survey and plat meet the Min. Stds. for Land Surveying in the State of N. M. and are true and correct to the best of my knowledge and belief.

*Robert M. Howett*  
Robert M. Howett    NM PS 19680



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NO.	REVISION	DATE
JOB NO.: LS1711740		
DWG. NO.: 1711740TR1		

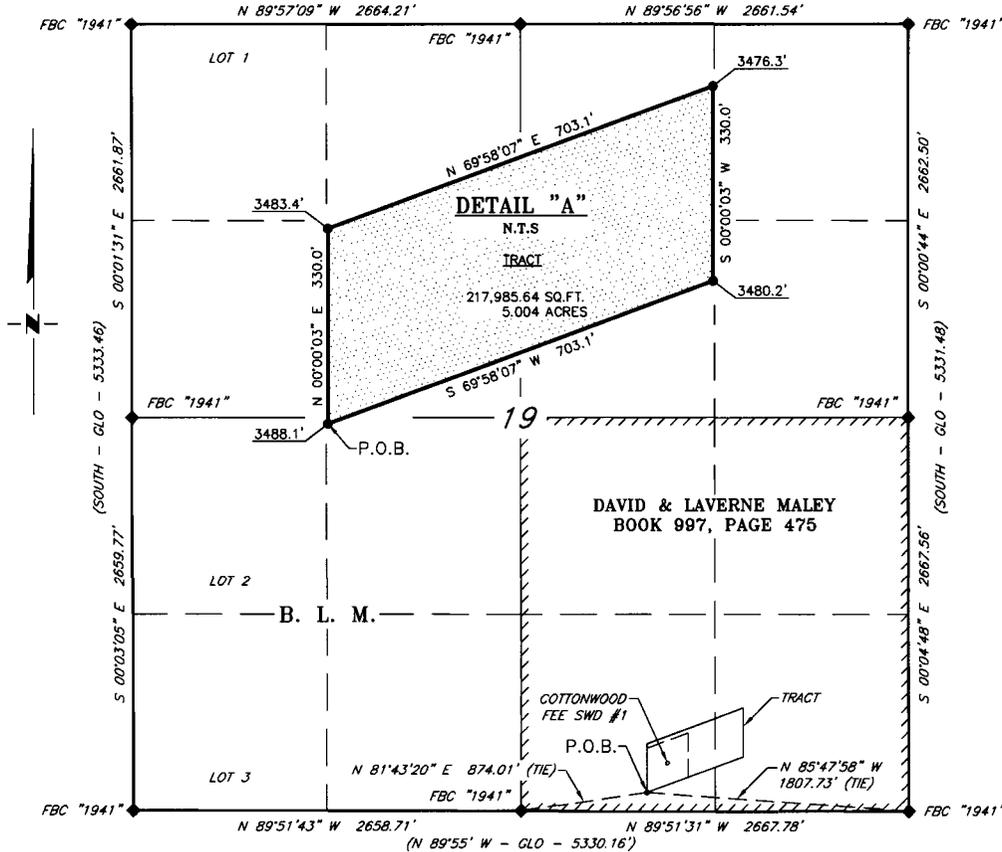
**RRC**

308 W. BROADWAY ST., HOBBS, NM 88240    (575) 964-8200

SCALE: 1" = 1000'
DATE: 11-29-2017
SURVEYED BY: BK/CG
DRAWN BY: AiAC
APPROVED BY: RMH
SHEET: 1 OF 1

**3BEAR FIELD SERVICES, LLC  
SURVEY FOR THE PROPOSED  
COTTONWOOD FEE SWD #1 TRACT  
SECTION 19, T26S, R26E  
N. M. P. M., EDDY COUNTY, NEW MEXICO**

(N 89°57' W - GLO - 5328.18')



**DESCRIPTION**

A tract of land situated within the Southeast quarter of Section 19, Township 26 South, Range 26 East, N. M. P. M., Eddy County, New Mexico, across the lands of David & Laverne Maley, according to a deed filed for record in Book 997, Page 475, of the Deed Records of Eddy County, New Mexico, and being more particularly described by metes and bounds as follows:

BEGINNING at a point, which bears N 81°43'20" E, 874.01 feet from a brass cap, stamped "1941", found for the South quarter corner of Section 19, and bears N 85°47'58" W, 1,807.73 feet from a brass cap, stamped "1941", found for the Southeast corner of Section 19;

Thence N 00°00'03" E, 330 feet, to a point;

Thence N 69°58'07" E, 703.1 feet, to a point;

Thence S 00°00'03" W, 330 feet, to a point;

Thence S 69°58'07" W, 703.1 feet, to the Point of Beginning.

Said tract of land contains 217,985.64 square feet or 5.004 acres, more or less and is allocated by forties as:

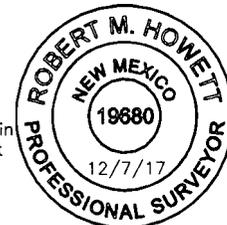
SW 1/4 SE 1/4	154,740.89 Sq. Ft.	3.552 Acres
SE 1/4 SE 1/4	63,244.75 Sq. Ft.	1.452 Acres

SCALE: 1" = 1000'  
0 500' 1000'  
BEARINGS ARE GRID NAD 83  
NM EAST  
DISTANCES ARE HORIZ. GROUND.

LEGEND  
( ) RECORD DATA - GLO  
◆ FOUND MONUMENT AS NOTED

I, R. M. Howett, a N. M. Professional Surveyor, hereby certify that I prepared this plat from an actual survey made on the ground under my direct supervision, said survey and plat meet the Min. Stds. for Land Surveying in the State of N. M. and are true and correct to the best of my knowledge and belief.

*Robert M. Howett*  
Robert M. Howett NM PS 19680



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NO.	REVISION	DATE
JOB NO.: LS1711740		
DWG. NO.: 1711740TR2		



308 W. BROADWAY ST., HOBBS, NM 88240 (575) 964-8200

SCALE: 1" = 1000'
DATE: 11-29-2017
SURVEYED BY: BK/CG
DRAWN BY: AiAC
APPROVED BY: RMH
SHEET: 1 OF 1

ADDENDUM  
to  
APPLICATION TO DRILL  
Cottonwood Fee SWD #1  
3Bear Field Services, LLC  
Unit Letter O, 330' FSL & 1662' FEL, Section 19  
T26S, R26E, N.M.P.M Survey  
Eddy County, NM

This attachment is a continuation of responses to the questions asked within the NM OCD Form C-101 Application to Drill.

1. Location: SHL 330 FSL & 1662 FEL  
BHL 330 FSL & 1662 FEL
2. Elevation above Sea Level at Ground Reference: 3483'
3. Geologic name of surface formation: Quaternary Alluvium Deposits
4. Drilling tools and associated equipment: Conventional rotary drilling rig utilizing a managed fluid as the circulating medium for well control and for solids removal.
5. Proposed drilling depth: MD 14600' TVD 14600'
6. Estimated tops of geological markers:

0' to 85'	Surface Redbed, Red Sandstone, Gypsum, Conglomerates & FW Sands
85'-1625'	Castile-Anhydrite & Salt
1625'-5010'	Delaware Mountain Group-Sandstone, Siltstone & Shale
5010'-5890'	Bone Spring-Limestone & Shale
5890'-6415'	1 <sup>st</sup> Bone Spring Sand-Sandstone, Siltstone, & Shale
6415'-6835'	2 <sup>nd</sup> Bone Spring Sand- Sandstone, Siltstone, & Shale
6835'-7805'	3 <sup>rd</sup> Bone Spring Limestone-Limestone, Sandstone & Shale
7805'-7970'	3 <sup>rd</sup> Bone Spring Sand- Sandstone, Siltstone, & Shale
7970'-8410'	Wolfcamp-Siltstone, Limestone & Shale
8410'- 8835'	Wolfcamp "B"-Sandstone & Shale
8835'-9535'	Wolfcamp "C"-Limestone & Shale
9535'-9660'	Strawn-Limestone
9660'-10310'	Atoka-Shale & Limestone
10310'-11070'	Morrow Clastics-
7. Potential mineral bearing formations:  
Yates, Seven Rivers, Queen, Glorieta, Yeso, Delaware Section, Bone Spring Section, Wolfcamp Section-Oil and Atoka/Morrow – Gas

8. Proposed Mud Circulating System:

Depth	Type Mud	Mud Weight	Mud Viscosity	pH	Cl-ppm	% Solids
0-300	SPUD	8.4-9.7	32-38	10.0	1-6K	3%-8%
300-1950	BRINE	10.0	28.0	10.0	186K	.75%-1.0%
1,950-8,000	CB	9.3-9.4	28.0	10.0	120-160K	.5%-75%
8,000-8,400	CB	9.3-9.6	28.0	10.0	120-160K	.75%-1.0%
8,400-10,850	BR/POLY	10.0-10.5	38-45	10.0	186K	3.0%-6.0%
10,850-11,760	BR/POLY	10.5-12.0	40-50	10.0	186K	5.0%-7.0%
11,760-13,000	CB	8.9-9.0	28.0	10.0	3-6K	.5%-75%

Sufficient mud materials will be kept on location at all times in order to combat lost circulation or pressure. Mud viscosity and water loss may be adjusted from the above referenced table in order to run open-hole logs and casing.

9. Casing and Cementing Program:

<b>DRILLING:</b>							
Description	Process	Bottom of Pipe	Size of Drill Hole	Size of Pipe	Weight per Foot	API Grade	Thread Type
Conductor	Spud well	300	26	20	94	H-40	Buttress
Surface	Intermediate	1950	17-1/2	13-3/8	54.5	J-55	8rd ST&C
Production	Production	8100	12.25	9.625	43.5	HCL-80	8rd LT&C
Production	Production Liner	11700	8.75	7	29	HCP-110	8rd LT&C
<b>COMPLETION:</b>							
Disposal	Tubing	1		4 1/2	12.75	P-110	CS Hydrill/PH6 W/Teflon Ring

10. Cementing:

<b>CEMENT PROGRAM:</b>							
Description	Bottom of Pipe	Size of Drill Hole	Size of Pipe	Cement Type & Additives	Cement Volume	Top of Cement	
Conductor	300	26	20	Class C w/2% KCL	675 Sacks	Surface	
Surface	1950	17-1/2	13-3/8	LEAD: Class C w/2% KCL + Celloflake+Bentonite Extender TAIL: Class C w/1% PF1 Calcium	900 Sacks 200 Sacks	Surface Surface	
Production	8100	12.25	9 5/8	LEAD: 50/50 P/H _ 5% BWOW & Salt + 10% Bentonite Gel + Celloflake TAIL: Class 50/50 P/H + 2% PF20 Gel + 3% Fluid Loss	1400 Sacks 300 Sacks	Surface Surface	
Production	11700	8.75	7	Class H 50/50 +2% Bentonite Gel + 5% Fluid Loss	940 Sacks	Top of Liner	

According to borings in Section 20, groundwater can be found at 33' from surface. The closest producing water well is 3/4 mile to northeast of proposed SWD well site. This well produces from 33' from surface.

11. Pressure Control Equipment;

Exhibit E. A 13-3/8" 5000 PSI working pressure BOP system tested to 3000 PSI consisting of one set of blind rams and one set of pipe rams and a 5000 PSI annular preventer. A choke manifold and 120 gallon accumulator with floor and remote operating stations and auxiliary power system. Rotating head as needed. A Kelly cock will be installed and maintained in operable condition and a drill string safety valve in the open position will be available on the rig floor. Mud gas separator will be available if drilling into H2S areas.

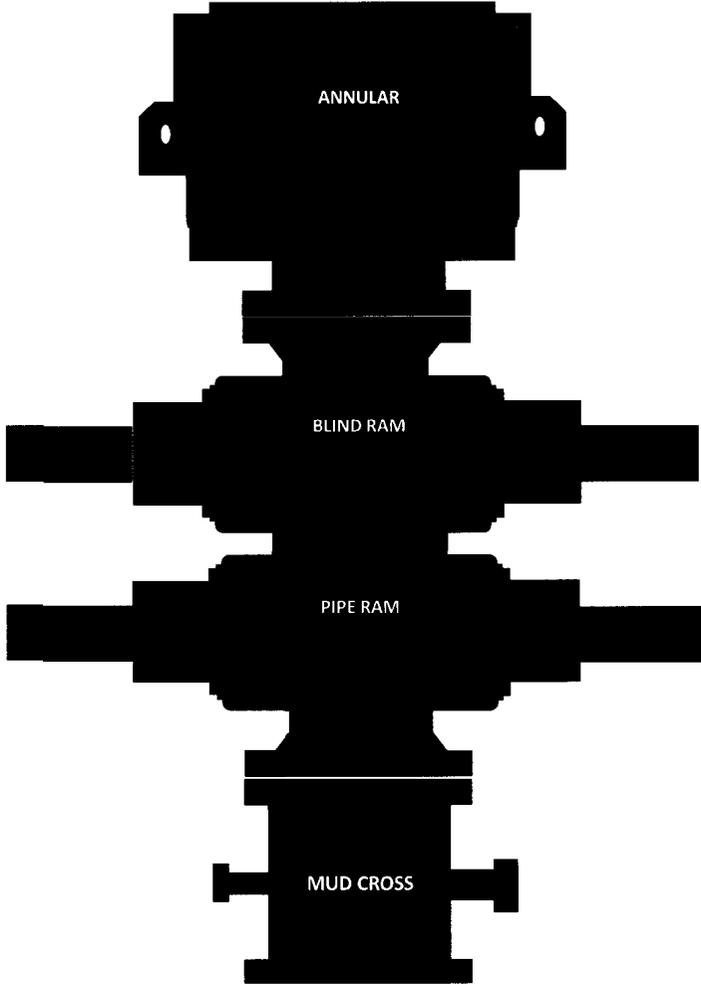
BOP unit will be hydraulically operated. BOP will be nipped up and operated at least once per day while drilling and the blind rams will be operated when out of the hole during trips. No abnormal pressure or temperature is anticipated. From the base of the 13-3/8" casing through the running of the production liner, the well will be equipped with a 5000 PSI BOP system tested to 3000 PSI.

BOPS will be tested by an independent service company to 250 PSI low and 3000 PSI high. Schaffer will be tested to 250 PSI low and 1500 PSI high.



# 5M BOPE SCHEMATIC

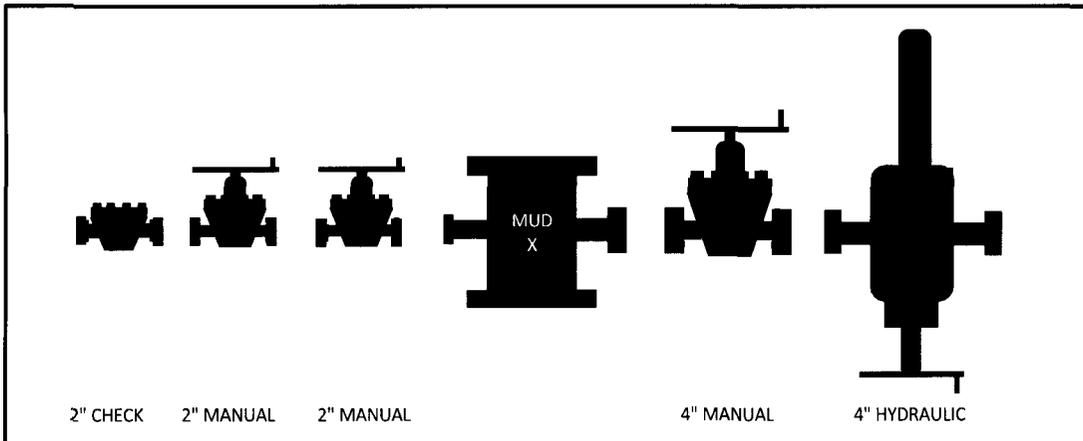
RIG #1



**ANNULAR**  
 STYLE: SHAFFER  
 BORE: 13 5/8"    PRESSURE: 5,000  
 HEIGHT: 45 1/2"    WEIGHT: 13,650

**DOUBLE RAM**  
 STYLE: SHAFFER LWS  
 BORE: 13 5/8"    PRESSURE: 5,000  
 RAMS: TOP: BLIND    BTM: 4 1/2" PIPE  
 HEIGHT: 50 1/2"    WEIGHT: 13,800

**MUD CROSS**  
 LENGTH: 24"  
 OUTLETS: 2" x 5M    4" x 5M  
 FLANGES: 13 5/8" 5M X 13 5/8" 5M



2" CHECK

2" MANUAL

2" MANUAL

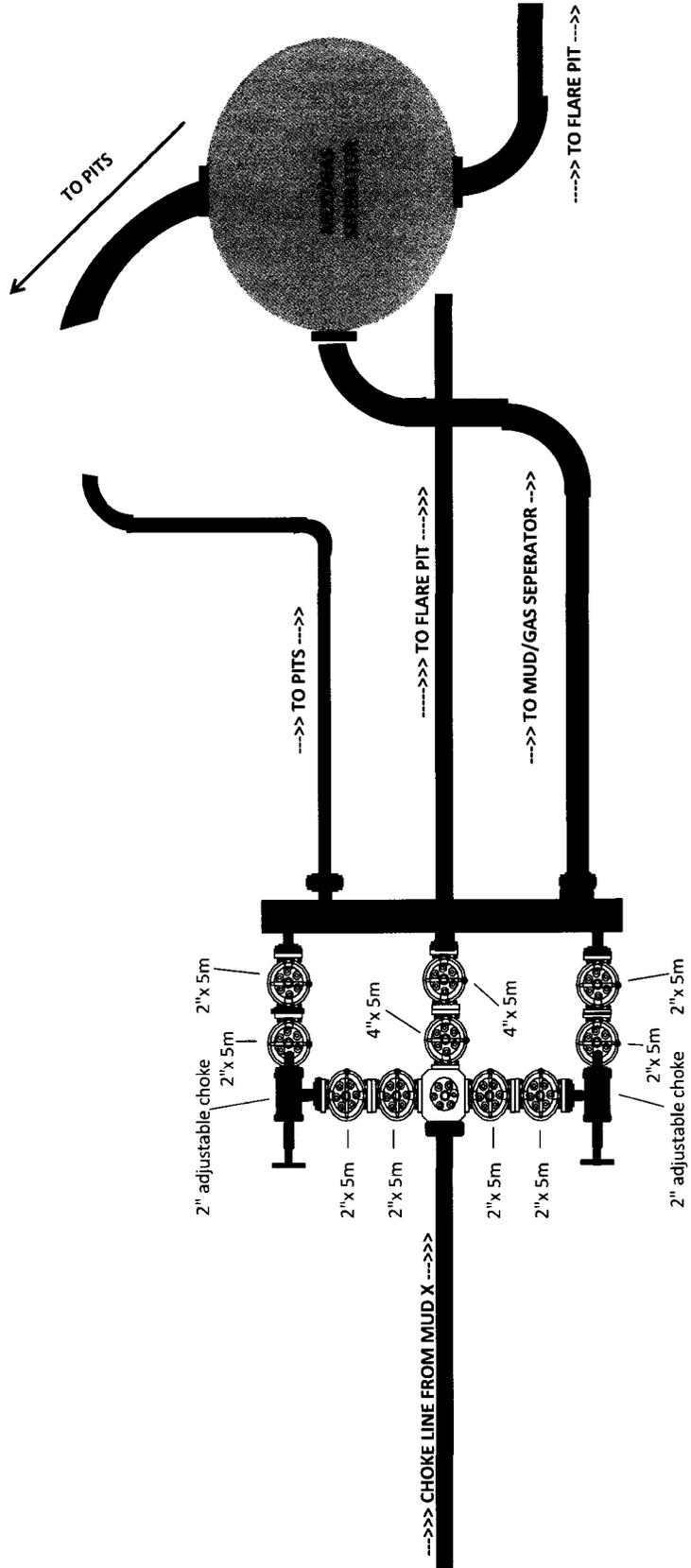
MUD  
X

4" MANUAL

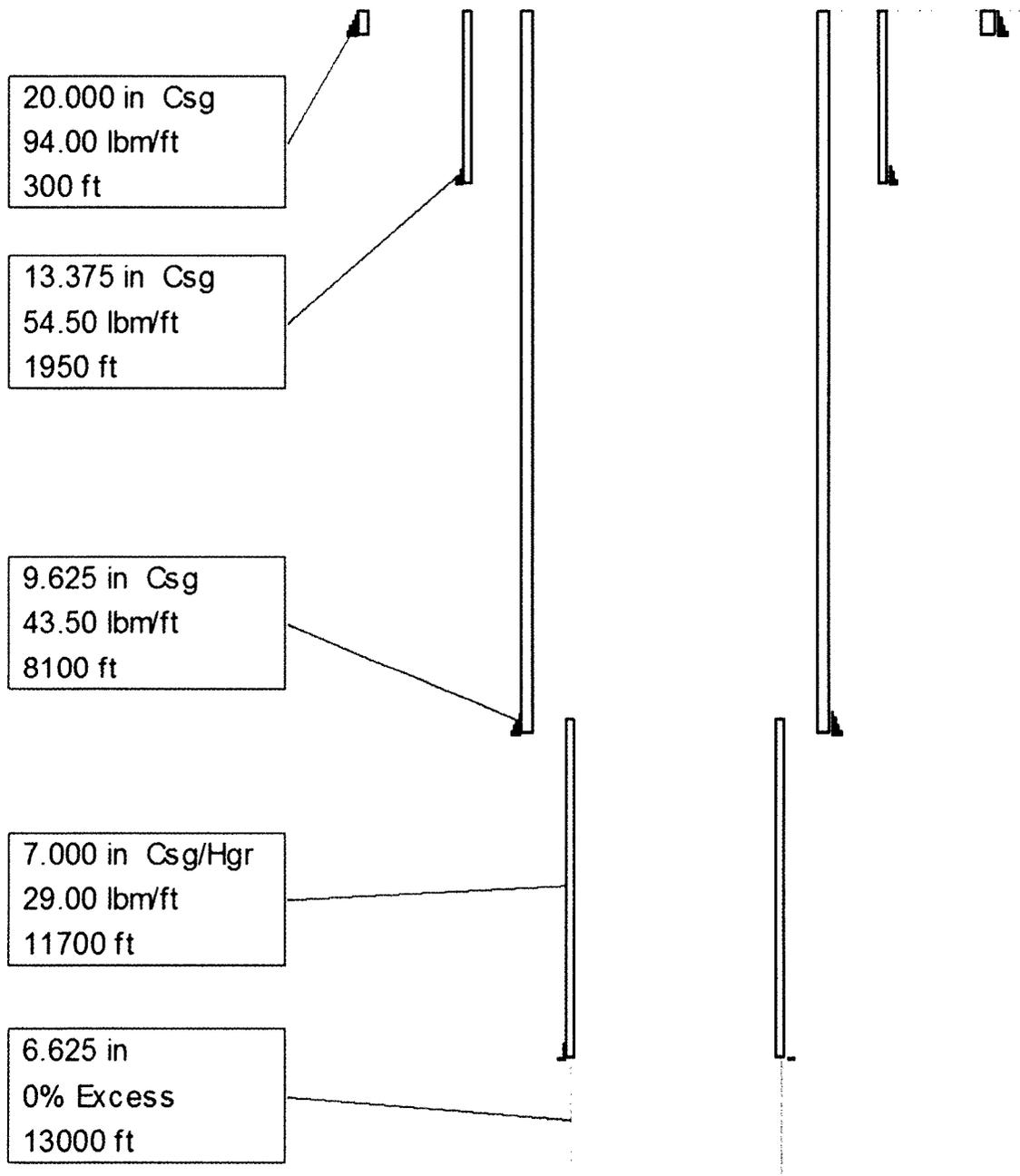
4" HYDRAULIC



# 5M CHOKE MANIFOLD ARRANGEMENT



**Cottonwood Fee SWD #1**  
**3Bear Field Services, LLC**  
**#3**  
**Casing Design**  
**Created on 12/15/2017 7:30:14 AM**



## HYDROGEN SULFIDE DRILLING OPERATIONS PLAN

Libby Berry Fee SWD #1

Unit O , Section 19

T26S, R26E, Eddy County, NM

1. All personnel admitted to drilling location must be H2S certified:  
All Company and Contract personnel admitted on location must be trained by a qualified H2S instructor to the following:
  - A. Characteristics of H2S
  - B. Physical effects and hazards
  - C. Proper use of safety equipment and life support systems
  - D. Principle and operation of H2S detectors, warning system and briefing areas
  - E. Evacuation procedure, routes and first aid
  - F. Proper use of 30 minute pressure demand pack
2. H2S Detection and Alarm Systems:
  - A. H2S detectors and audio alarm system to be located at bell nipple, end of flowline (mud pit) and on derrick floor or doghouse.
3. Windssocks and wind streamers:
  - A. Windssock at mud pit should be high enough to be readily visible
  - B. Windssock at briefing area should be high enough to be readily visible
4. Condition Flags and Signs:
  - A. Warning signs on access road to location
  - B. Flags to be displayed on sign at entrance to location.
    - a. Green flag indicates normal safe condition.
    - b. Yellow flag indicates potential pressure and danger.
    - c. Red flag indicates danger (H2S present in dangerous concentration). Only emergency personnel admitted to location
5. Well control equipment:
  - A. See Exhibit E
6. Communication:
  - A. While working under masks, chalkboards will be used for communication
  - B. Hand signals will be used where chalkboard is inappropriate
  - C. Two way radio will be used to communicate off location in case emergency help is required. In most cases cellular telephones will be available at drilling foreman's trailer or living quarters.
7. Drillstem Testing:
  - A. No DST's nor cores are planned for this drilling program
8. Metallurgical effect of H2S:
  - A. Drilling contractor shall be required to be familiar with the effects of H2S on tubular goods and other mechanical equipment
9. Mud system changes to control H2S:
  - A. Should H2S be encountered, the mud system will be altered as necessary to maintain control of the formation. A mud gas separator will be placed in service along with H2S scavengers as needed.

## **Emergency Procedures**

In the event of a release of gas containing H<sub>2</sub>S, the first responders must:

- Isolate the area and prevent entry by other persons into the area;
- Evacuate any public places encompassed by the release area;
- Be equipped with H<sub>2</sub>S monitors and air packs in order to control the release;
- Use the “buddy system” to ensure that no injuries occur during the response;
- Take precautions to avoid personal injury during this operation;
- Contact operator and/or local officials to aid in the operation – a list of safety contact numbers is attached;
- Have received training in the:  
Detection of H<sub>2</sub>S, and  
Become trained in the measures for protection against the gas, and  
Become trained in the use of the equipment used for protection and emergency response.

## **Ignition of the Gas Source**

Should control of the well deteriorate or be considered lost and ignition is a possibility or is being considered, take care to protect against exposure to Sulphur Dioxide (SO<sub>2</sub>). Intentional ignition must be coordinated with the NMOCD, the operator, and both the State and Local officials. Once the State Police become involved, they shall be the Incident Command on scene. Take care to protect downwind during the release and during the ignition phase.

**Characteristics of H<sub>2</sub>s and SO<sub>2</sub>**

Common Name	Chemical Formula	Specific Gravity	Threshold Limit	Hazardous Limit	Lethal Concentration
Hydrogen Sulfide	H <sub>2</sub> S	1.189 Air=1	10 ppm	100 ppm/hr	600 ppm
Sulphur Dioxide	SO <sub>2</sub>	2.21 Air=1	2 ppm	N/A	1000 ppm

H2S Contingency Plan and Emergency Contacts  
 Libby Berry Fee SWD #1  
 3Bear Field Service, LLC  
 Unit H, Section 26, T20S, R34E

<b><u>Company Office:</u></b>		Office	Direct	Mobile
3Bear Energy, LLC		303/626-8290		
<b><u>Key Personnel</u></b>				
Name	Title	Office	Direct	Mobile
Scott Spicher	VP/CEO	303/626-8290	303/862-3962	720/202-2824
Mike Solomon	VP/COO	303/626-8290	303/862-3960	303/921-9117
Phelps White	Drilling Consultant			575/626-7660
Rory McMinn	Advisor			575/626-7100
<b><u>Eunice, NM</u></b>				
Ambulance			911	
State Police		575/392-5580		
City Police		575/394-2112		
Sheriff's Office		575/396-3611		
Fire Department		575/394-3258		
<b><u>Hobbs, NM</u></b>				
Ambulance			911	
State Police		575/392-5580		
City Police		575/397-9265		
Sheriff's Office		575/396-3611		
Fire Department		575/397-9311		
New Mexico Oil Conservation Division		575/393-6161		
<b><u>Carlsbad, NM</u></b>				
Ambulance			911	
State Police		575/885-3137		
City Police		575/885-2111		
Sheriff's Office		575/887-7551		
Fire Department		575/887-3798		
Local Emergency Planning		575/887-6544		
<b><u>Santa Fe, NM</u></b>				
New Mexico Emergency Response Commission		505/476-9600		
New Mexico Emergency Response Commission 24 hrs		505/827-9126		
New Mexico Emergency Operations Center		505/476-9635		
<b><u>National</u></b>				
National Emergency Response Center, Wash, DC		800/424-8802		
Medical				
Flight for Life - 4000 24th St., Lubbock, TX		806/743-9911		
Aerocare - R3, Box 49C, Lubbock, TX		806/747-8923		
Med Flight Air Amb - 2301 Yale Blvd. SE #D3, Albuquerque, NM		505-842-4433		
SB Air Med Service - 2505 Clark Carr Loop S.E., Albuquerque, NM		505/842-4949		
<b><u>Other</u></b>				
Boots & Coots IWC		800/256-9688		
Elite Well Service				
Cudd Pressure Control		432/699-0139		
		575/746-2757		