

Submit 1 Copy To Appropriate District Office
District I - (575) 393-6161
1625 N. French Dr., Hobbs, NM 88240
District II - (575) 748-1283
811 S. First St., Artesia, NM 88210
District III - (505) 334-6178
1000 Rio Brazos Rd., Aztec, NM 87410
District IV - (505) 476-3460
1220 S. St. Francis Dr., Santa Fe, NM 87505

NM OIL CONSERVATION
State of New Mexico
ARTESIA DISTRICT
Energy, Minerals and Natural Resources
JUN 18 2015
OIL CONSERVATION DIVISION
1220 S. St. Francis Dr.
RECEIVED
Santa Fe, NM 87505

Form C-103
Revised July 18, 2013

SUNDRY NOTICES AND REPORTS ON WELLS (DO NOT USE THIS FORM FOR PROPOSALS TO DRILL OR TO DEEPEN OR PLUG BACK TO A DIFFERENT RESERVOIR. USE "APPLICATION FOR PERMIT" (FORM C-101) FOR SUCH PROPOSALS.)		WELL API NO. 30-015-41407
1. Type of Well: Oil Well ☐ Gas Well ☒ Other ☐		5. Indicate Type of Lease STATE ☒ FEE ☐
2. Name of Operator Caza Operating, LLC		6. State Oil & Gas Lease No. VB-2115
3. Address of Operator 200 Loraine, Suite 1550, Midland, Texas 79701		7. Lease Name or Unit Agreement Name Mad River 13 State
4. Well Location Unit Letter N : 330 feet from the South line and 2310 feet from the West line Section 13 Township 24S Range 27E NMPM County Eddy		8. Well Number 1H
11. Elevation (Show whether DR, RKB, RT, GR, etc.) 3129 GL		9. OGRID Number 249099
		10. Pool name or Wildcat Black River, Wolfcamp East G

12. Check Appropriate Box to Indicate Nature of Notice, Report or Other Data

NOTICE OF INTENTION TO:

PERFORM REMEDIAL WORK ☐ PLUG AND ABANDON ☐
TEMPORARILY ABANDON ☐ CHANGE PLANS ☒
PULL OR ALTER CASING ☐ MULTIPLE COMPL ☐
DOWNHOLE COMMINGLE ☐
CLOSED-LOOP SYSTEM ☐
OTHER: ☐

SUBSEQUENT REPORT OF:

REMEDIAL WORK ☐ ALTERING CASING ☐
COMMENCE DRILLING OPNS. ☐ P AND A ☐
CASING/CEMENT JOB ☐
OTHER: ☐

13. Describe proposed or completed operations. (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work). SEE RULE 19.15.7.14 NMAC. For Multiple Completions: Attach wellbore diagram of proposed completion or recompletion.

Caza Operating, LLC respectfully request permission to change the target of the lateral in the subject well's approved APD from the Bone Springs interval @ $\pm 9120'$ to the Wolfcamp interval $\pm 9875'$. A pilot hole will be drilled below 7" casing to 11,100'. We will plug back to KOP. Attached is the new directional summary, cement program & Casing design.

Type	Hole size	Casing Size	Casing Weight	Setting Depth	Sacks Cement	TOC estimated
Production Intermediate	8.75"	7.0"	29#	9200'	1161	1900' calc
Production Liner	6.125"	4.5"	13.5#	top 9000' Bot 14,046'	281	9000'

Spud Date:

Rig Release Date:

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

SIGNATURE

A.B. Sam

TITLE VP Operations

DATE 6/9/2015

Type or print name

A.B. Sam

E-mail address: *tsam@cazapetro.com*

PHONE: 432 682 7424

For State Use Only

APPROVED BY:

RP Dade

TITLE *Dist # Supervisor*

DATE 6/23/2015

Conditions of Approval (if any):

Well name:

Mad River 13 State #1

Operator: **Caza Operating, LLC**

String type: **Production Intermediate**

Location: SL = SE/SW Sec 13, T24S, R27E, Eddy, NM.
BHL = NE/NW Sec 13, T24S, R27E, Eddy, NM.

Design parameters:

Collapse

Mud weight: 9.50 ppg

Design is based on evacuated pipe.

Minimum design factors:

Collapse:

DF 1.125

Burst:

DF 1.10

Environment:

H2S considered? No
Surface temperature: 75.00 °F
Bottom hole temp 144 °F
Temperature gradient: 0.75 °F/100ft
Minimum sect length: 1,500 ft
Minimum Drift: 6.056 in
Cement top: 1,900 ft

Burst

Max anticipated surface

pressure frac: 8,884.99 psi

Internal gradient: 0.12 psi/ft

Calculated BHP 9,988.98 psi

No backup mud specified.

Tension:

8 Rd STC: 1.80 (J)

8 Rd LTC: 1.80 (J)

Buttress: 1.60 (J)

Premium: 1.50 (J)

Body yield: 1.50 (B)

Non-directional string.

Re subsequent strings:

Tension is based on buoyed weight.
Neutral pt: 7,877.07 ft

Next setting depth: 10,901 ft
Next mud weight: 18.000 ppg
Next setting BHP: 10,193 psi
Fracture mud wt: 30.000 ppg
Fracture depth: 10,901 ft
Injection pressure 16,989 psi

Run Seq	Segment Length (ft)	Size (in)	Nominal Weight (lbs/ft)	Grade	End Finish	True Vert Depth (ft)	Measured Depth (ft)	Drift Diameter (in)	Internal Capacity (ft³)
1	9200	7	29.00	P-110	LT&C	9200	9200	6.059	1918.9
Run Seq	Collapse Load (psi)	Collapse Strength (psi)	Collapse Design Factor	Burst Load (psi)	Burst Strength (psi)	Burst Design Factor	Tension Load (Kips)	Tension Strength (Kips)	Tension Design Factor
1	4540	8530	1.879	9989	11220	1.12	228	797	3.49 J
Prepared by: Tony Sam					Phone: (432) 682 7424 FAX: (432) 682 7425			Date: June 9, 2015 Midland, Texas	

Remarks:

Collapse is based on a vertical depth of 9200 ft, a mud weight of 9.5 ppg. The casing is considered to be evacuated for collapse purposes.
Collapse strength is based on the Westcott, Dunlop & Kemler method of biaxial correction for tension.

Burst strength is not adjusted for tension.

Engineering responsibility for use of this design will be that of the purchaser.

Well name:

Mad River 13 State #1

Operator: **Caza Operating, LLC**

String type: **Production Liner Frac**

Location: **SL = SE/SW Sec 13, T24S, R27E, Eddy, NM.**

BHL = NE/NW Sec 13, T24S, R27E, Eddy, NM.

Design parameters:

Collapse

Mud weight: 18.00 ppg
Internal fluid density: 3.000 ppg

Minimum design factors:

Collapse:

DF 1.125

Environment:

H2S considered? No
Surface temperature: 75.00 °F
Bottom hole temp: 149 °F
Temperature gradient: 0.75 °F/100ft
Minimum sect length: 1,500 ft
Minimum Drift: 3.790 in
Cement top: 9,000 ft

Surface pressure: 250 psi

Burst:

DF 1.10

Burst

Max anticipated surface pressure Frac:

8,048.83 psi

Internal gradient:

0.12 psi/ft

Calculated BHP

9,233.84 psi

Annular backup:

4.00 ppg

Tension:

8 Rd STC: 1.80
8 Rd LTC: 1.80
Buttress: 1.60
Premium: 1.50
Body yield: 1.50

Liner top:

9,000 ft

Directional well information:

(J) Kick-off point 9302 ft
(J) Departure at shoe: 4303 ft
(J) Maximum dogleg: 11.17 %/100ft
(J) Inclination at shoe: 90 °

Tension is based on buoyed weight.

Neutral pt: 9,668.08 ft

Run Seq	Segment Length (ft)	Size (in)	Nominal Weight (lbs/ft)	Grade	End Finish	True Vert Depth (ft)	Measured Depth (ft)	Drift Diameter (in)	Internal Capacity (ft³)
1	5046	4.5	13.50	P-110	Buttress	9875	14046	3.795	422.9

Run Seq	Collapse Load (psi)	Collapse Strength (psi)	Collapse Design Factor	Burst Load (psi)	Burst Strength (psi)	Burst Design Factor	Tension Load (Kips)	Tension Strength (Kips)	Tension Design Factor
1	7945	10680	1.344	7259	12410	1.71	9	422	48.648

Prepared

by: Tony Sam

Phone: (432) 682 7424

FAX: (432) 682 7425

Date:

June 9, 2015

Midland, Texas

Remarks:

For this liner string, the top is rounded to the nearest 100 ft. Collapse is based on a vertical depth of 9875 ft, a mud weight of 18 ppg. An internal gradient of .156 psi/ft was used for collapse from TD to 0 ft. Collapse strength is based on the Westcott, Dunlop & Kemler method of biaxial correction for tension.

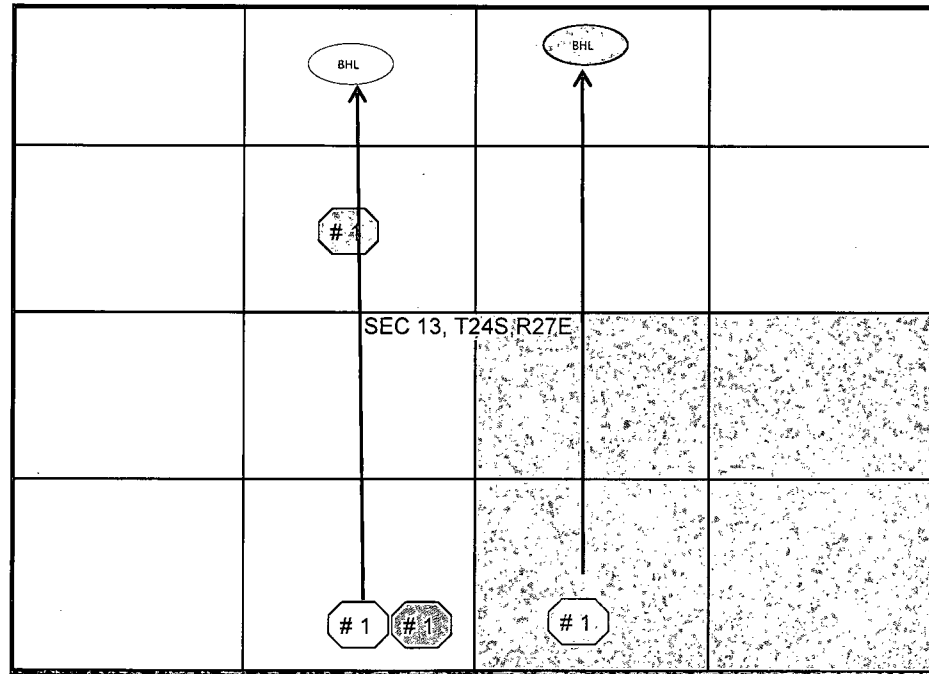
Burst strength is not adjusted for tension.

Collapse strength is (biaxially) derated for doglegs in directional wells by multiplying the tensile stress by the cross section area to calculate a tensile load which is added to the axial load.

Engineering responsibility for use of this design will be that of the purchaser.

Mad River 13 St. # 1H_2nd Bones Springs Horizontal

330 FSL & 2310 FWL, Sec 13, T-24-S, R-27-E, Eddy County, New Mexico



Well Name	Surface Location	Depth and Strata	Current Prod Zone	Bottom Hole Location	
Mad River 13 State # 1H	330 FSL & 2310 FWL	TVD = 9875 Wlfcmp Horz	Not Drilled	660 FNL & 1980 FWL	± 9875 TVL
Bongo Fee #1H	330 FSL & 1980 FEL	TD = 7200 2nd BS Horz	Not Drilled	330 FNL & 1980 FEL	COG Perm
Brantley 13 State # 1	660 FSL & 2310 FWL	TD = 12900	P&A	Same	HNG ReEn
Beeman 13 # 1	1980 FNL & 1980 FWL	TD=2565	P&A	Same	Cable tool

LONG's METHOD OF SURVEY COMPUTATION

OBLIQUE CIRCULAR ARC INTERPOLATION

6000	MD OF INTERPOLATION DEPTH,(feet)
#N/A	TVD COORDINATE OF THE DEPTH (feet)
#N/A	N/S COORDINATE OF DEPTH (feet)
#N/A	E/W COORDINATE OF DEPTH (feet)

3 D DISTANCE BETWEEN STATION A AND STATION B

DISTANCE TABLE

STATION A	STATION B
400.00	600.00
300.00	400.00
100.00	300.00
300.00	ft

TABLE OF SURVEY STATIONS

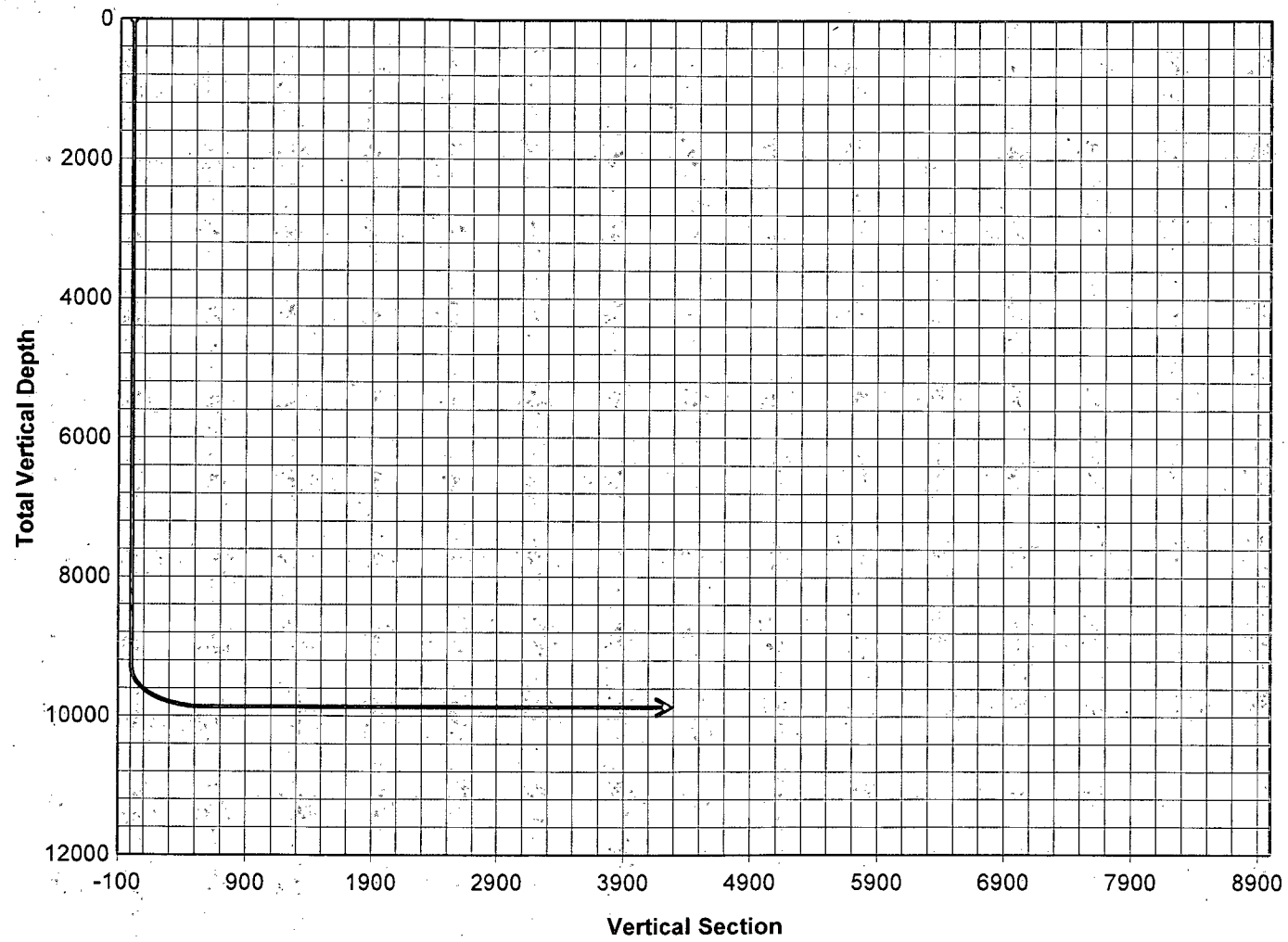
Calculator =

STA #	ΔMD ft	INCL deg	AZIM deg	MD ft	TVD ft	N+/S- ft	E+/W- ft	DLS deg/100FT
1	TIE POINT =>	0	0	9302.00	9302.00	0.00	0.00	-
2	100	10	300	9402.00	9401.49	4.35	-7.54	10.00
3	100	20	305	9502.00	9497.97	18.54	-29.12	10.07
4	100	30	310	9602.00	9588.49	44.49	-62.37	10.21
5	100	40	315	9702.00	9670.32	83.39	-104.36	10.40
6	100	50	320	9802.00	9740.96	135.60	-151.84	10.60
7	100	60	325	9902.00	9798.27	200.61	-201.45	10.80
8	100	70	330	10002.00	9840.50	277.00	-249.92	10.97
9	100	80	335	10102.00	9866.37	362.59	-294.37	11.10
10	100	90	340	10202.00	9875.08	454.49	-332.40	11.17
11	100	90	345	10302.00	9875.08	549.83	-362.46	5.00
12	100	90	350	10402.00	9875.08	647.43	-384.09	5.00
13	100	90	355	10502.00	9875.08	746.54	-397.14	5.00
14	100	90	360	10602.00	9875.08	846.42	-401.50	5.00
15	100	90	1	10702.00	9875.08	946.41	-400.63	1.00
16	100	90	1	10802.00	9875.08	1046.40	-398.89	0.00
17	100	90	1	10902.00	9875.08	1146.38	-397.14	0.00
18	100	90	1	11002.00	9875.08	1246.37	-395.40	0.00
19	100	90	1	11102.00	9875.08	1346.35	-393.65	0.00
20	100	90	1	11202.00	9875.08	1446.34	-391.91	0.00
21	100	90	1	11302.00	9875.08	1546.32	-390.16	0.00
22	100	90	1	11402.00	9875.08	1646.30	-388.41	0.00
23	100	90	1	11502.00	9875.08	1746.29	-386.67	0.00
24	100	90	1	11602.00	9875.08	1846.27	-384.92	0.00
25	100	90	1	11702.00	9875.08	1946.26	-383.18	0.00
26	100	90	1	11802.00	9875.08	2046.24	-381.43	0.00
27	100	90	1	11902.00	9875.08	2146.23	-379.69	0.00
28	100	90	1	12002.00	9875.08	2246.21	-377.94	0.00
29	100	90	1	12102.00	9875.08	2346.20	-376.20	0.00
30	100	90	1	12202.00	9875.08	2446.18	-374.45	0.00
31	100	90	1	12302.00	9875.08	2546.17	-372.71	0.00
32	100	90	1	12402.00	9875.08	2646.15	-370.96	0.00
33	100	90	1	12502.00	9875.08	2746.14	-369.22	0.00
34	100	90	1	12602.00	9875.08	2846.12	-367.47	0.00
35	100	90	1	12702.00	9875.08	2946.11	-365.73	0.00
36	100	90	1	12802.00	9875.08	3046.09	-363.98	0.00
37	100	90	1	12902.00	9875.08	3146.08	-362.24	0.00

Mad River 13 State # 1H
Caza Operating, LLC
Eddy County, New Mexico

38	100	90	1	13002.00	9875.08	3246.06	-360.49	0.00
39	100	90	1	13102.00	9875.08	3346.05	-358.75	0.00
40	100	90	1	13202.00	9875.08	3446.03	-357.00	0.00
41	100	90	1	13302.00	9875.08	3546.02	-355.26	0.00
42	100	90	1	13402.00	9875.08	3646.00	-353.51	0.00
43	100	90	1	13502.00	9875.08	3745.98	-351.76	0.00
44	100	90	1	13602.00	9875.08	3845.97	-350.02	0.00
45	100	90	2	13702.00	9875.08	3945.93	-347.40	1.00
46	100	90	2.5	13802.00	9875.08	4045.86	-343.48	0.50
47	100	90	3	13902.00	9875.08	4145.74	-338.68	0.50
48	100	90	3	14002.00	9875.08	4245.60	-333.44	0.00
49	44	90	3	14046.00	9875.08	4289.54	-331.14	0.00

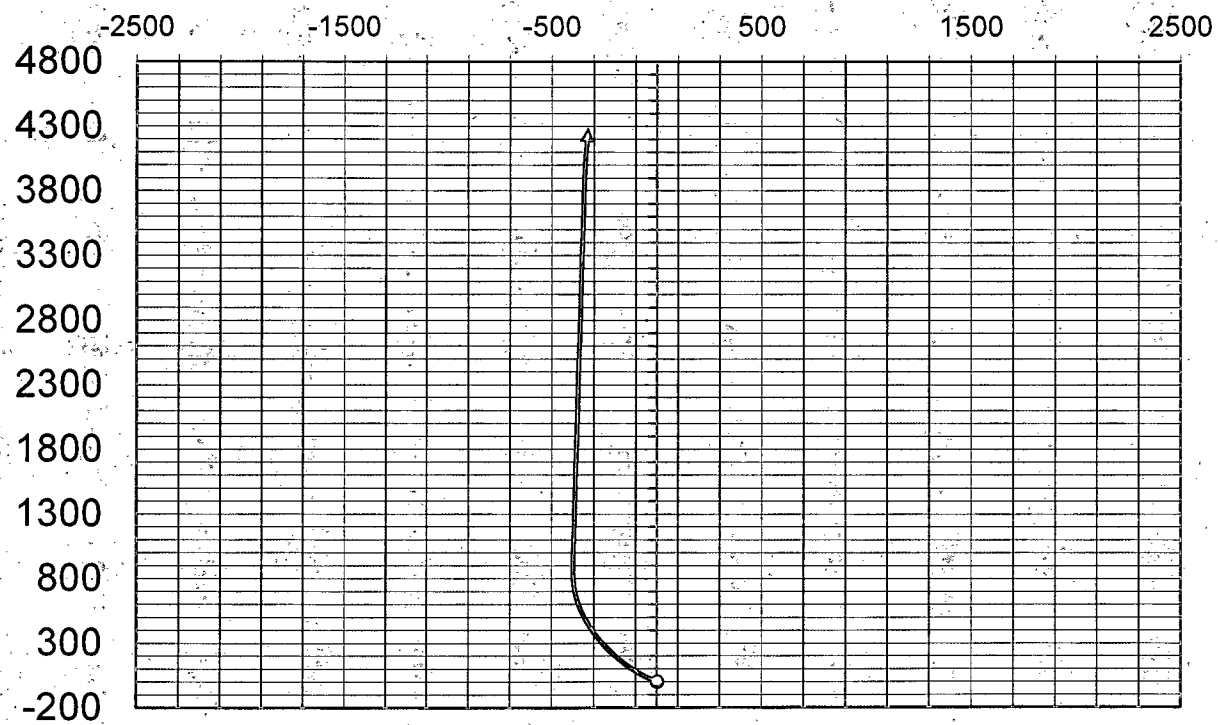
Mad River 13 State # 1H



Horizontal Plane Footage +East/-West

○→ Mad River 13 State #1H

Footage + North/- South



Mad River 13 State Com # 1H "Cement Program"

Section 13, T24S, R27E, Eddy County, New Mexico

1. **Surface hole depth = 500 ft. TOC @surface w/ 50% W/O**

Surface hole = 17.5 inch

Surface casing = 13.375" 48# H-40 STC

Float Collar 1 jts up.

Hardware needed = 8 spring centralizers

1 Guide shoe "Tx Pattern"

1 Insert float valve (1 jt Up)

1 thread lock compound

1 collar stop

Engineering Data "Surface":

500 ft 17.5 inch hole x 13.375" csg = .6946 cu ft X 500 X 1.5 excess = 521 cu ft

40 ft 13.375" 48 # casing volume= .8817 X 40 ft = 36 cu ft

Total Cement volume required = 557 cu ft.

Lead slurry = 359 cu ft "C" w/ 4% Gel & 2% CaCl₂ .25pps CelloFlake 13.5 ppg yield 1.75 cu ft/sk = **(205 sks)**

Tail Slurry = 198 cu ft Class "C" w/ 2% CaCl₂ 14.8 ppg yield 1.32 cu ft / sk = **(150 sks)**

2. **Intermediate hole depth= 2400 ft. TOC @Surface w/ 50% W/O**

Intermediate hole = 12.25 inch

Intermediate Casing = 9.625" 36# J-55 LTC

Float Collar 1 jts up.

Hardware needed = 12 spring centralizers

1 Guide Shoe

1 float collar (1 jt up)

1 thread lock compound

Engineering Data "Intermediate":

1900 ft 12.25 inch open hole x 9.625 csg = .3132 cu ft X 1900 X 1.5 excess = 893 cu ft

500 ft 9.625 x 13.375" casing = .3765 cu ft/ft X 500 = 188 cu ft

40 ft 9.625"36 # casing volume= .434 X 40 ft = 18 cu ft

Total Cement volume required = 1099 cu ft.

Lead = 835 cu ft 35.65 poz "C" w/ 5% salt & 6% gel 12.4 ppg yield 2.09 cu ft/sk = **(400sks)**

Tail Slurry = 264 cu ft Class "C" w/ 1% CaCl₂ 14.8 ppg yield 1.32 cu ft / sk = **(200 sks)**

3. **Production Intermediate Hole depth= 9200 ft. TOC @ 1900 ft w/ 35% W/O**

Production Hole = 8.75inch to 9200' MD

Production Hole Casing = 7.0 inch 29 # P-110 LTC

Hardware Needed = 25 spring Centralizers

PDC Drillable Float Collar (1 jt up)
PDC Drillable Float Shoe

TOC calculated to 1900 ft w/ 35% Washout.

Engineering Data "Production Intermediate":

Slurry coverage= (9200 ft to 1,900 ft)

6800 ft 8.75 inch open hole x 7.0" casing = 6800 X .1503 x 1.35% excess = **1380 cu ft.**

500 ft 9-5/8" x 7.0" csg. = .1668 x 500' = **84 cu ft.**

40 ft 7.0" 29# Shoe joint = **9 cu ft**

Total Cement volume required = 1473 cu ft.

Lead Slurry = (7500-1900 ft).

Slurry = 50/50 Poz/"H" mixed @14.1 ppg w/ yield 1.3 cu ft/sk 5 lb/sk gilsonite+1/8 lb/sk cello Flake+1/4% = **1119 cu ft (861 sks)**

Tail Slurry Coverage = (9200-7500 ft).

9200-7500 ft 8.75 inch open hole x 7.0" = 1700 X .1503 x 1.35% excess = **345 cu ft.**

40 ft 7.0" 29 # casing shoe joint volume= .2085 X 40 ft = **9 cu ft**

Slurry = 15.6 ppg "H" 1.18 yield = (300 sks)

4. Production liner depth= 14,046 ft. "9875 ft" TVD. TOC @ 9000 ft w/ 35% W/O

Production Hole = 6.125 inch to 14,046 ft. Note:

Lateral TVD = 9875'

Lateral KOP = ± 9300'

EOC = ± 10,202'

Lateral length ± 3844'

Top of Liner ± 9000 ft'

Production Liner Casing = 4-1/2 inch 13.5# HCP-110 CDC

Hardware Needed = 45 Rigid Centralizers for Lateral. (1 every other Jt)

Landing Collar (2 jts up)

Float Collar (1 jt up)

Float Shoe

TOC calculated to 9000 ft w/ 35% Washout open hole.

Engineering Data "Production Liner":

200 ft 7" 29# X 4-1/2" Csg= 200' X .0981 cu ft / ft = **20 cu ft.**

4846 ft 6.125 inch open hole x 4-1/2" 13.5 # Liner = 4025' X .0942 x 1.35 excess=
616cuft

88 ft 4.5" 13.5# casing shoe joint (2) volume= .0838 X 88 ft = **8 cu ft**

Total Cement volume required = 644 cu ft.

Slurry (14,046'-9000')= 644 cu ft "H" SoluCem mixed 15.0 ppg w/ yield of 2.53 cu ft/sk w/ fluid loss control + Defoamer "Acid soluble" = 281 sks

5. Plug Back cement for Pilot hole = (11,100' – 9200 ft).

Hole size = 6.125" + 35% washout = .276 cu ft x 1900 ft = 525 Cu Ft

Cement plug = 16.4 ppg class "H" 1.0 yield (525 sks)