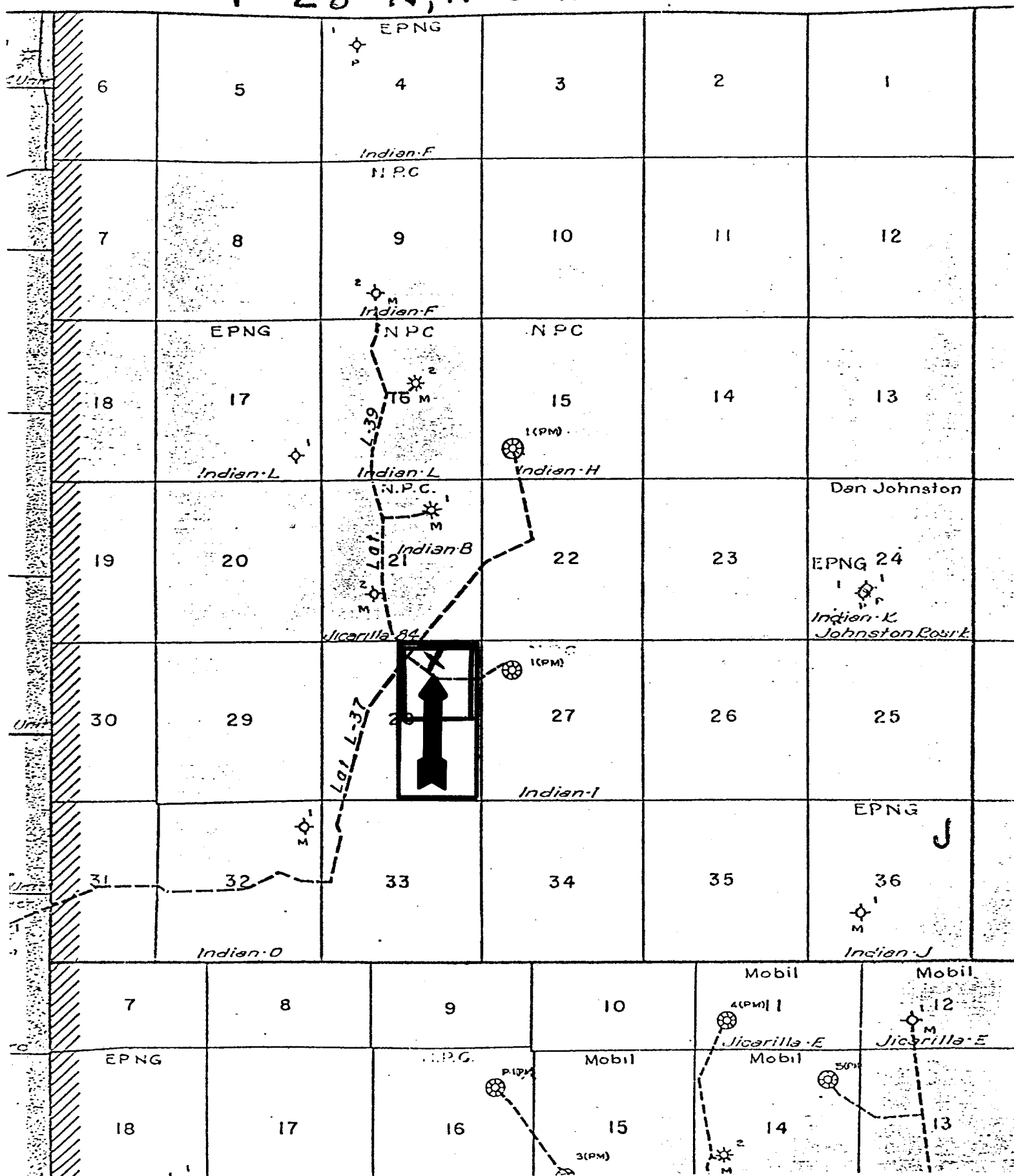


T-28-N, R-3-W



✕ Well Location

▬ Pictured Cliffs Acreage

▬ Mesa Verde Acreage

June #1

T-28-N, R-3-W

Jerome P. McHugh
Application for Downhole Commingling

June #1 Well
Rio Arriba County, New Mexico

CASE NO. 6145

EXHIBIT NO. 1

RESUME OF DRILLING AND
COMPLETION OF JUNE #1 WELL

Jerome P. McHugh
Application for Downhole Commingling

June #1 Well
Rio Arriba County, New Mexico

CASE NO. 6145

EXHIBIT NO. 2

1-McHugh 1-Phillips (Henderson) 1-Phillips (Stoner) 1-File
Post Office Box 234
Zip Code 87401

TELEPHONE: 325-0238
Area Code 505

THOMAS A. DUGAN

Registered Professional Engineer

709 BLOOMFIELD Rd.
FARMINGTON, NEW MEXICO

Jerome P. McHugh
June #1
1110' FNL - 1560' FEL
Section 28, T28N, R3W
Rio Arriba County, New Mexico
Elevation - 6935' GR

MORNING REPORT

11-21-76 Moved in Ludwick rig and spudded 12-1/4" hole @ 8:00 AM 11-20-76.
Drilled to 200' and shut down.

11-22-76 Sunday - did not work.

11-23-76 Finished drilling 12-1/4" hole to 268'. Ran 8 jts 8-5/8" OD 24#
8R ST&C csg. TE 265' set @ 265' GR, 276' RKB. Cemented by Woodco
w/135 sx Class "B" neat. Good cement to surface. POB 7:00 PM
11-22-76. Now waiting on rotary rig.

WAITING ON ROTARY RIG

11-27-76 Moved in and rigged up Young Drilling Company. Drilling w/wtr @
1351', Bit #2.

11-28-76 Drilling @ 2124', Bit #3.
WT 9.2 VIS 34 PH 9.0

11-29-76 Depth 2505'. Trip for Bit #4.
WT 9.0 VIS 34 WL 8.4

11-30-76 Depth 2939'. Trip for Bit #5. Lost circulation @ 2532', approx
150 bbls.

12-1-76 Depth 3394'. Trip for Bit #6.
WT 9.0 VIS 39 WL 8.5

12-2-76 Depth 3736'. Bit #6 out @ 3624', made 229' in 12 hrs.
WT 8.9 VIS 34 WL 9.0

12-3-76 Depth 4168'. Drilling w/Bit #8. Bit #7 out @ 3949', made 325'
in 12 1/4 hrs.
WT 8.9 VIS 36 WL 11.0

12-4-76 Drilling @ 4550', Bit #9.
WT 9.1 VIS 34

MORNING REPORT (Cont'd)

12-5-76 Drilling @ 4937', Bit #10. Bit #9 out @ 4857', made 377'.

12-6-76 Drilling @ 5181', Bit #11.
WT 9.0 VIS 37 WL 8.2 DEV 1-1/4° @ 5154'

12-7-76 Drilling @ 5490', Bit #11.
WT 9.0 VIS 38 WL 8.4

12-8-76 Trip @ 5790' for Bit #12.
WT 9.0 VIS 38 WL 8.4

12-9-76 Drilling @ 5958', Bit #12.
WT 9.0 VIS 43 WL 7.4

12-10-76 TD 6106'. Logging with Go International. Unable to get logs down.
WT 9.2 VIS 63 WL 7.6 DEV 1-1/2° @ 6106'.

12-11-76 TD 6106'. Log stopped @ 1520', made short trip, log stopped @ 549', made short trip, log stopped @ 1030', made short trip, log stopped @ 1320', made short trip to 3300', circulated hole, log stopped @ 5875'. Ran drill pipe to btm, circulated hole. POH, logs went to btm, logging.

12-12-76 Go International ran induction electrical survey and gamma-ray density logs. Laid down drill pipe. Ran 148 jts 5-1/2" OD 15.5# K-55 8R ST&C CF&I csg set @ 6105' RKB. Cemented first stage w/225 sx 2% Lodense 1/4# Cello-flake/sk (total slurry 450 cu ft). Good mud circulation while cementing. Worked csg OK while cementing. Max cementing press 600 psi. POB 12:15 AM 12-12-76. Opened stage tool, circ hole 4 hrs. (Had considerable trouble with BJ cement truck thawing out lines and cementing second stage.) Cemented second stage thru Baker stage tool @ 3965' w/250 sx 3% Lodense plus 100 sx 2% Lodense 1/4# Cello-flake per sk (total slurry 900 cu ft). Max cementing press 800 psi. Good mud returns while cementing, no cement to surface. POB 6:15 AM 12-12-76. Temp -2° F. Set slips, released rig.

WAITING ON COMPLETION

DAILY REPORT

12-15-76 Moved in Farmington Well Service completion rig.

12-16-76 Rigged up, installed wellhead, went in hole with 4-3/4" bit on 2-3/8" tbg to stage tool @ 3965'. Unable to get pump pit and rotating head. Shut down.

DAILY REPORT (Cont'd)

- 12-17-76 Waiting on drilling equipment.
- 12-18-76 Unable to get engines started on drilling equipment, repairing equipment.
- 12-19-76 Drilled stage tool @ 3965'. Cleaned out to 6058', Western Company displaced hole, press tested csg and BOP to 4000 psi - held OK. Spotted 300 gal 15% HCl on btm, pulled tbg and bit.
- 12-20-76 PBTD 6058'. Go International late for job. Ran gamma-ray correlation log. Ran select-fire gun, did not shoot, gun wet, was not made up correctly. Perf one hole/2 feet 6017-6027', 5918-5928', and 5614-5634' (total of 20 0.44" holes). Western Company frac Mesaverde fm. Pumped 84 bbls, shut down. ISDP 1100 psi. Pumped 264 bbls fluid @ 2500 psi, 28 BPM, shut down. Pumped 500 gal 15% HCl, when acid on perf, shut down 3 min. Pumped total of 409 bbls pad. Frac well using 1698 hp, 1712 bbls wtr, 43,386 lbs 20-40 sd. IF 2400 psi, Max 2900 psi, Min 1900 psi, Avg 2200 psi, Final 2400 psi, Avg IR 31.5 BPM. Dropped 8 balls, press increased to 2900 psi, developed bad leak in wellhead below tbg head, shut down. Bled well back, found hole in bradenhead. Set Baker bridge plug @ 3950'. Removed tbg head, 5-1/2" csg had jumped out of csg slips and gone down hole 8".
- 12-21-76 Dug out csg head to surface csg. Cut off 5-1/2" csg below slips and removed csg head, welded onto 5-1/2" csg, installed new csg head, unable to pull csg weld above slips, removed csg head, welder cut off collar on top of surface csg, installed csg head, set 5-1/2" csg slips with 100,000 lbs tension, cut off 5-1/2" csg, installed tbg head and BOP.
- 12-22-76 Western Company late for job, dropped frac head off of truck on highway, car hit head and wrecked car, sand truck broke down. Pressure tested csg, wellhead and BOP to 4000 psi - held OK. Go International tagged up on bridge plug @ 3948'. Perf one hole each @ 3630', 3652', 3764', 3794', and 3825'. Perf one hole/2 feet 3599-3609' and 3730-3750' (total of 20 holes 0.44" diameter). Breakdown PC fm @ 3000 psi, established IR @ 19 BPM, 3450 psi. ISDP 700 psi. Acidized well w/500 gal 15% HCl, 35 balls, one good press break while pumping balls down, balled off perf @ 4000 psi, pumping 1/2 BPM, bled press off, well flowing back steady. Go International attempted to run junk basket, had wrong gauge ring, got correct gauge ring out of town, attempted to pump into well while waiting on gauge ring, pumped @ 15 BPM, 2400 psi. Shut down, balls still on perf. Go International ran junk basket, recovered one ball. Western Company frac Pictured Cliffs fm using 1905 hp,

DAILY REPORT (Cont'd)

1393 bbls wtr, 40,000 lbs 10-20 sd. IF 3000 psi, Max 3650 psi, Avg 2950 psi, Min 2300 psi, Final 2300 psi, ISDP 700 psi. Avg IR 27 BPM, Max IR 34 BPM, 10-Min SI 700 psi. Frac started to sand out once, cut sand, press leveled out and broke back, re-started sand, completed job and shut well in overnight.

- 12-23-76 Opened well to pit after being shut in 14 hrs. Flowed well back strong while going in hole to recover BP. Had 80' sand on top of BP. Circulated sand out of hole, well flowing back small amount, released BP, well stopped flowing back, pulled BP. Shut BOP and left well open to pits thru 2" line off tbg head.
- 12-24-76 Shut down for Christmas.
- 12-25-76 Shut down for Christmas.
- 12-26-76 Shut down for Christmas.
- 12-27-76 Well dead. Went in hole with 2-3/8" tbg, tagged sand @ 6020'. Attempted to circ out sand, unable to get circulation. Pumped in 125 bbls wtr, set tbg @ 5880', swabbed tbg, fluid level 1800', show of gas. Swabbed 3 hrs.
- 12-28-76 Swabbed well 8 hrs, swabbed est 25 bbls wtr/hr, wtr heavily gas cut. Well making small amount gas on annulus, fluid level constant @ 1800'.
- 12-29-76 Swabbed well 3 hrs, recovering est 25 bbls wtr/hr, wtr heavily gas cut, fluid level 1800'. Ran tbg to check sand fillup. Laid down 2-3/8" tbg.
- 12-30-76 Well dead. Ran 1-1/4" OD tbg, tagged sand @ 6019', landed tbg 183 jts 1-1/4" OD 2.4# JCW 10R EUE Wheeling tbg set @ 5940' RKB. Installed wellhead. Released rig.
- WAITING ON SWABBING UNIT 12-31-76 thru 1-4-77
- 1-4-77 Moved swabbing unit, did not get to location because of snow.
- 1-5-77 Moved in swabbing unit. Swabbed 1-1/4" tbg from depth 5400', fluid level @ 2500', swabbed 6-1/2 hrs @ est 15 bbls wtr/hr. No csg press.
- 1-6-77 Swabbed well from 5940', swabbing est 15 bbls frac wtr/hr, fluid level @ 2500'. Csg press 130 psi. Swabbed 8 hrs.

DAILY REPORT (Cont'd)

1-7-77 Swabbed well from 5940', swabbing est 15 bbls frac wtr/hr, fluid level @ 2500'. Csg press 330 psi. Swabbed well 8 hrs.

1-8-77 Swabbed well from 5940', swabbing est 15 bbls frac wtr/hr, fluid level @ 2500'. Csg press 410 psi. Swabbed well 8 hrs.

1-9-77 Shut down for Sunday and snow storm.

1-10-77 Had trouble getting unit started because of cold weather, called mechanic out from town. Started swabbing at noon. Swabbed well 5 hrs @ est rate of 15 bbls/hr. Csg press 525 psi, wtr gas cut and well kicking but will not flow, swabbing from btm, dropped soap sticks.

1-11-77 Swabbed well from 5940'. Swabbed well 8 hrs at est 15 bbls frac water per hr. Csg press 625 psi. Frac water gas cut.

1-12-77 Swabbed well from 5940'. Swabbed well 8 hrs at est 15 bbls frac water per hr. Csg press 700 psi. Well kicking and water gas cut, will burn while pulling swab.

1-13-77 Swabbed well from 5940'. Swabbed well 8-1/2 hrs @ est 15 bbls frac wtr/hr. Csg press 835 psi. Well kicking and wtr gas cut.

1-14-77 Swabbed well from 5940'. Swabbed well 8-1/2 hrs @ est 15 bbls frac wtr/hr. Csg press 950 psi. Wtr very gas cut.

1-15-77 Swabbed well from 5940'. Swabbed well 8-1/2 hrs @ est 15 bbls frac wtr/hr. Csg press 1000 psi. Well flowing at end of day. Left well open to pit.

1-16-77 Shut down - Sunday.

1-17-77 Well dead. Csg press 1000 psi. Swabbed well from btm. Well flowing 20-30 min, then died.

1-18-77 Swabbed and flowed well 8 hrs. Csg press 1125 psi. Well flowed 30 min and died. Injected 10 gal liquid soap down csg.

1-19-77 Swabbed and flowed well 8 hrs. Csg press 1125 psi. Injected 5 gal liquid soap down csg.

1-20-77 Csg press 1125 psi. Well flowing by heads. Released swabbing unit.

FINAL REPORT

REMEDIAL OPERATIONS

3-11-77 Moved in Farmington Well Service pulling unit and rigged up.
Prep to pull tbg.

3-12-77 Pulled 1-1/4" tbg and ran 1-1/4" tbg w/Baker Model "R" packer.
Discovered crew had run packer upside down when getting ready
to set packer. Pulled tbg and packer. Prep to rerun packer.

3-13-77 Sunday - did not work.

3-14-77 Ran 1-1/4" tbg w/Baker Model "R" single grip packer as follows:

15 jts 1-1/4" 2.4# 10R	
EUE J-CW tbg -----	492.31'
Baker Model "R" single grip	
packer w/straight thru adapter -----	---
168 jts 1-1/4" 2.4# 10R	
EUE J-CW tbg -----	<u>5436.74'</u>
Total Equipment	5929.05'
Set @ RKB	5940.00'
Packer @ RKB	5448.00'

Set 10,000# weight on packer. Nippled up wellhead and swabbed
3 hrs. Slight show gas.

3-15-77 Released Farmington Well Service pulling unit and moved in
Farmington Well Service swabbing unit. Swabbed 1-1/4" tbg 5 hrs,
fluid level staying @ approx 1000'. Show of gas.

3-16-77 Swabbed well 8 hrs, fluid level staying approx 1000'. Well kicked
off @ 4:30 PM, flowed for 1 hr. Shut well in because gas was blow-
ing across dehydrator w/fire still burning.

3-17-77 Well would not kick off. Swabbed in. Kicked off twice during day.
Will not stay flowing.

3-18-77 Swabbed well 9 hrs. Kicked off twice during day. Left well flow-
ing to pit.

3-19-77 Swabbed well 8 hrs. Kicked off 3 times, flowed 1 hr 15 min first
time, 30 min second time, and 15 min third time.

REMEDIAL OPERATIONS (Cont'd)

3-20-77 Sunday - did not work.

3-21-77 Swabbed well 9 hrs. Kicked off twice during day. Will not remain flowing.

3-22-77 Swabbed well 9 hrs. Kicked off twice during day. Flowed total of 1-1/2 hrs.

3-23-77 Swabbed well 9 hrs. Kicked off twice during day. Flowed total of 1-1/4 hrs.

3-24-77 Swabbed well 9 hrs. Kicked off three times during day. Flowed total of 2 hrs.

3-25-77 Swabbed well 9 hrs. Kicked off three times during day. Left well flowing.

3-26-77 Well dead. Dropped soap and shut well in. Rigged down swabbing unit and moved to Burke #1 Well.

SHUT-IN

6-21-77 Moved in Farmington Well Service pulling unit from Burke #2. Rigged up and pulled 1-1/4" tbg and Model "R" packer. Brought packer to town to be re-dressed.

6-22-77 Picked up 13 jts 2-3/8" tbg on sand line and set Baker retrievable bridge plug @ 5750'. Ran Baker Model "R" packer on 1-1/4" tbg. Tbg set @ 5676' w/packer @ 5400' to test Cliff House zone by itself. Rigged up and swabbed tbg 3 hrs, show gas, fluid level remaining @ 1200' from surface.

6-23-77 Swabbed well 10 hrs, unable to lower fluid level, slight show gas, no evidence packer not holding.

6-24-77 Pulled 1-1/4" tbg and packer. Picked up Baker retrieving head and made trip in hole to retrieve bridge plug, had trouble getting hold of bridge plug. Pulled bridge plug and shut down for night.

Jerome P. McHugh
June #1
Page 8

REMEDIAL OPERATIONS (Cont'd)

6-25-77 Ran 1-1/4" tbg string as follows:

7 jts 1-1/4" OD 2.4# 10R EUE	
JCW tbg -----	225.38'
Baker Model "R" single grip	
packer w/straight through adaptor -----	---
176 jts 1-1/4" OD 2.4# 10R EUE	
JCW tbg -----	<u>5703.67'</u>
TOTAL EQUIPMENT -----	5929.05
Set @ RKB -----	5940.00'

with packer set @ 5715' RKB

Set packer w/10,000# set down weight. Nippled up wellhead and moved pulling unit to Burke #2.

10-31-77 Rigged up F.W.S. pulling unit. P.O.H. and laid down 1-1/4" tbg. Ran Baker retrievable B.P. set @ 3910' RKB. Ran 122 jts. 2-3/8" OD 4.7# 8 Rd. EUE "B" condition tbg. TE 3837.57' set @ 3848'. Ran 2" swab tbg OK. Released pulling unit. Prep. to move in swabbing unit.

11-1-77 Moved in F.W.S. swabbing unit. Swabbed 2-3/8" tbg 5 hrs. Fluid level @ 900' when starting to swab. Lowered fluid level to 1300' @ end of day. Show of gas ahead of swab each run.

11-2-77 Swabbed well 8 hrs. Fluid level @1300' when starting down to 1900' at end of day. Csg. press. built up from 300 psi to 450 psi during day. Well showing gas each run.

11-3-77 Csg. press 750 psi. Well kicked off after 4 runs, flowed for 2-1/2 hrs and died. Continued swabbing the rest of day. Fluid level remaining approximately 3000'. Well kicks off and flows each swab run from 10 to 30 min. Csg. press. at end of day 300 psi.

REMEDIAL OPERATIONS

- 11-14-77 Moved in and rigged up Bedford Inc. pulling unit. Pulled and stood back 2-3/8" tbg.
- 11-15-77 Picked up Baker Model "R" single grip packer. Ran 2-3/8" tbg and attempted to push bridge plug down hole to test Cliff House perms. Unable to get bridge plug to move down hole. P.O.H.
- 11-16-77 Picked up Baker Hydrostatic tubing bailer and retrieving head. Went in hole and retrieved bridge-plug. Laid down 2-3/8" tbg. Nippled up wellhead and released pulling unit.

T-28-N, R-3-W

0 6	5	0 4	3	2	1
7	8	9	10	11	12
18	17	16	15 * 2291 0	14	13
19	20	21	22	23	24 0
30	29	28 X	* 2607 0 27	26	25
31	32	33	34	35	36

1976 PRODUCTION
GAVILAN PICTURED CLIFFS POOL WELLS

— Gas Production
— Oil Production
X Well Location

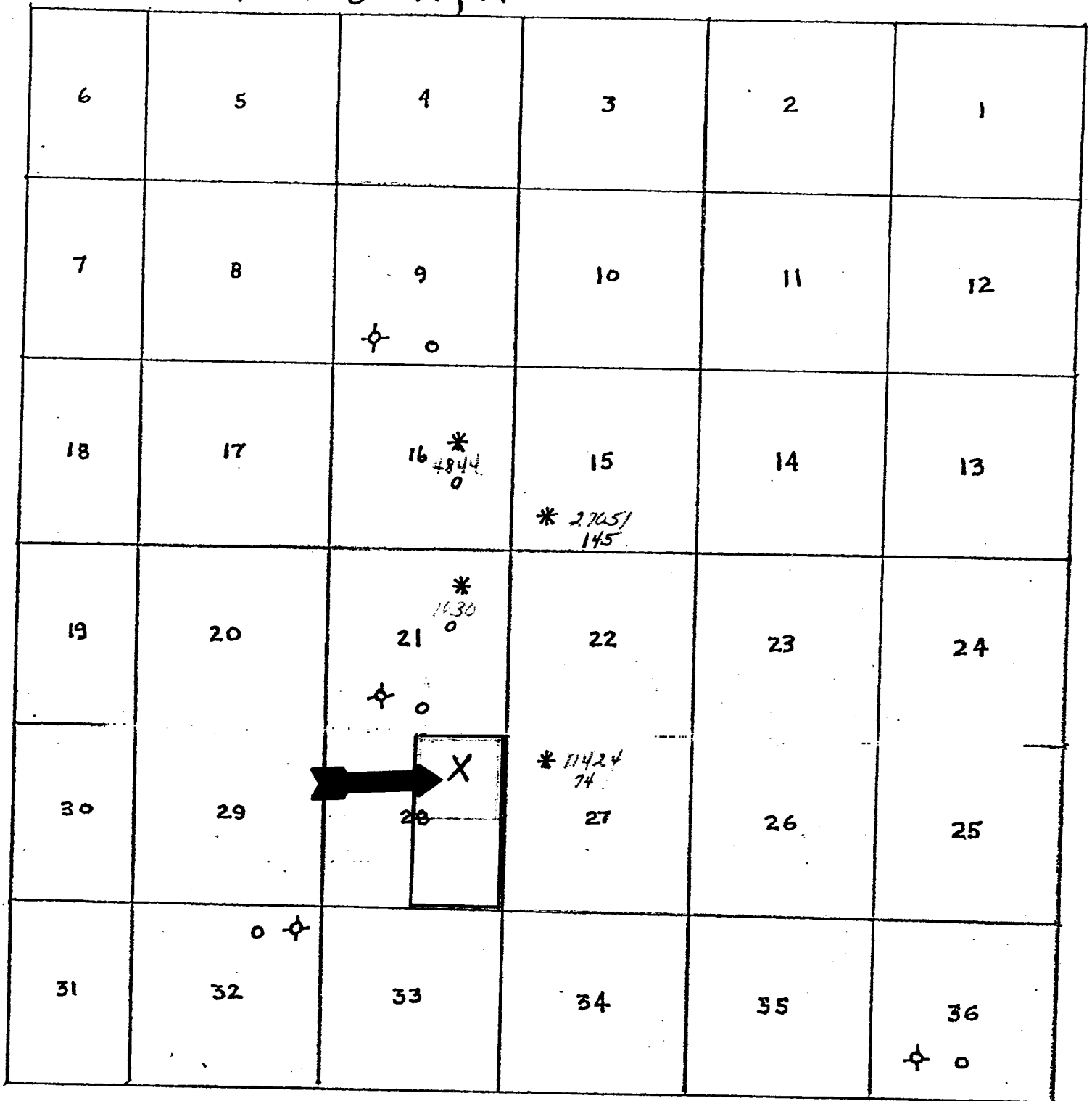
Jerome P. McHugh
Application for Downhole Commingling

June #1 Well
Rio Arriba County, New Mexico

CASE NO. 6145

EXHIBIT NO. 3

T-28-N, R-3-W



1976 PRODUCTION
BLANCO MESAVERDE POOL WELLS

— Gas Production
— Oil Production
X Well Location

*proposed allocation
50% of gas
to each zone
100% of oil
to MV*

<p>Jerome P. McHugh Application for Downhole Commingling</p> <p>June #1 Well Rio Arriba County, New Mexico</p> <p>CASE NO. <u>6145</u></p> <p>EXHIBIT NO. <u>4</u></p>
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