

OIL CONSERVATION DIVISION  
P. O. Box 2088  
Santa Fe, New Mexico 87504-2088

|   |               |   |                     |               |          |
|---|---------------|---|---------------------|---------------|----------|
| APPLICATION FOR PERMIT TO DRILL, DEEPEN,<br>OR PLUG BACK        |               | API NO. (assigned by OCD on new well)                           |                     |               |          |
|   |               | 5. Indicate Type of Lease<br>Fee                                |                     |               |          |
|   |               | 6. State Oil & Gas Lease No.                                    |                     |               |          |
| 1a. Type of Work<br>Plug Back<br>b. Type of Well<br>GAS         |               | 7. Lease Name or Unit Agreement Name<br>Allison Unit            |                     |               |          |
| 2. Name of Operator<br>Meridian Oil Inc.                        |               | 8. Well No.<br>#40  |                     |               |          |
| 3. Address of Operator<br>P.O. BOX 4289<br>FARMINGTON, NM 87499 |               | 9. Pool Name or Wildcat<br><del>Basin Dakota</del><br>Blanco-MV |                     |               |          |
| 4. Well Location<br>1000' FNL, 990' FEL, Section 19, T32N, R06W |               |   |                     |               |          |
| 10. Proposed Depth  |               | 11. Formation<br>Dakota   | 12. Rotary or C.T.  |               |          |
| 13. Elevation<br>6511' GL                                       | 14. Bond Type | 15. Drill Contractor  | 16. Est. Start Date |               |          |
| 17. PROPOSED CASING AND CEMENT PROGRAM                          |               |   |                     |               |          |
| SIZE HOLE   | SIZE CASING   | WT. PER FT.   | SET. DEPTH          | SKS OF CEMENT | EST. TOP |
|   |               |   |                     |               |          |

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

SIGNATURE John Mulholland (JBK) TITLE Regulatory Affairs DATE 6-2-92  
(This space for State Use)

APPROVED BY ORIGINAL SIGNED BY ERNIE BUSCH TITLE DEPUTY OIL & GAS INSPECTOR, DIST. #3 DATE JUL - 6 1992  
Conditions of approval, if any:

Notify OCD before commencing plug back operations  
at least 24 hrs. in advance.  
Notify OCD when casing leak is located to determine  
if CTO needs to be lowered.

NEW MEXICO OIL CONSERVATION COMMISSION  
WELL LOCATION AND ACREAGE DEDICATION PLAT

Subject Well  
Well Name

All distances must be from the corner of the well.

Meridian Oil Inc.

ALLISON UNIT

(SEC)

40

1

19

32-N

6-W

SAN JUAN

1000

NORTH

990

EAST

6511

~~W~~ NW

*Alonso*  
EAST ALONSO

321.00

1. Outline the acreage dedicated to the subject well by colored pencil or machine marks on the plat below.
2. If more than one lease is dedicated to the well, outline each and identify the ownership thereof (owners to whom interest and royalty).
3. If more than one lease of different ownership is dedicated to the well, have the interests of all owners consolidated by communitization, unitization, force-pooling, etc.

☒ Yes ☐ No If answer is "yes," type of consolidation: Unitization

If answer is "no," list the owners and tract descriptions which have actually been consolidated (Use reverse side of this form if necessary.)

No allowable will be assigned to the well until all interests have been consolidated (by communitization, unitization, forced-pooling, or otherwise for unit or non-standard unit, eliminating such interests, has been approved by the Commission.

CERTIFICATION

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

*Peggy Bradfield*  
Peggy Bradfield

Regulatory Affairs

Meridian Oil Inc.

6-2-92

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

JULY 27, 1973

*David W. Kline*  
1760

RECEIVED  
JUN - 2 1992  
OIL CON. DIV.  
DIST. 3

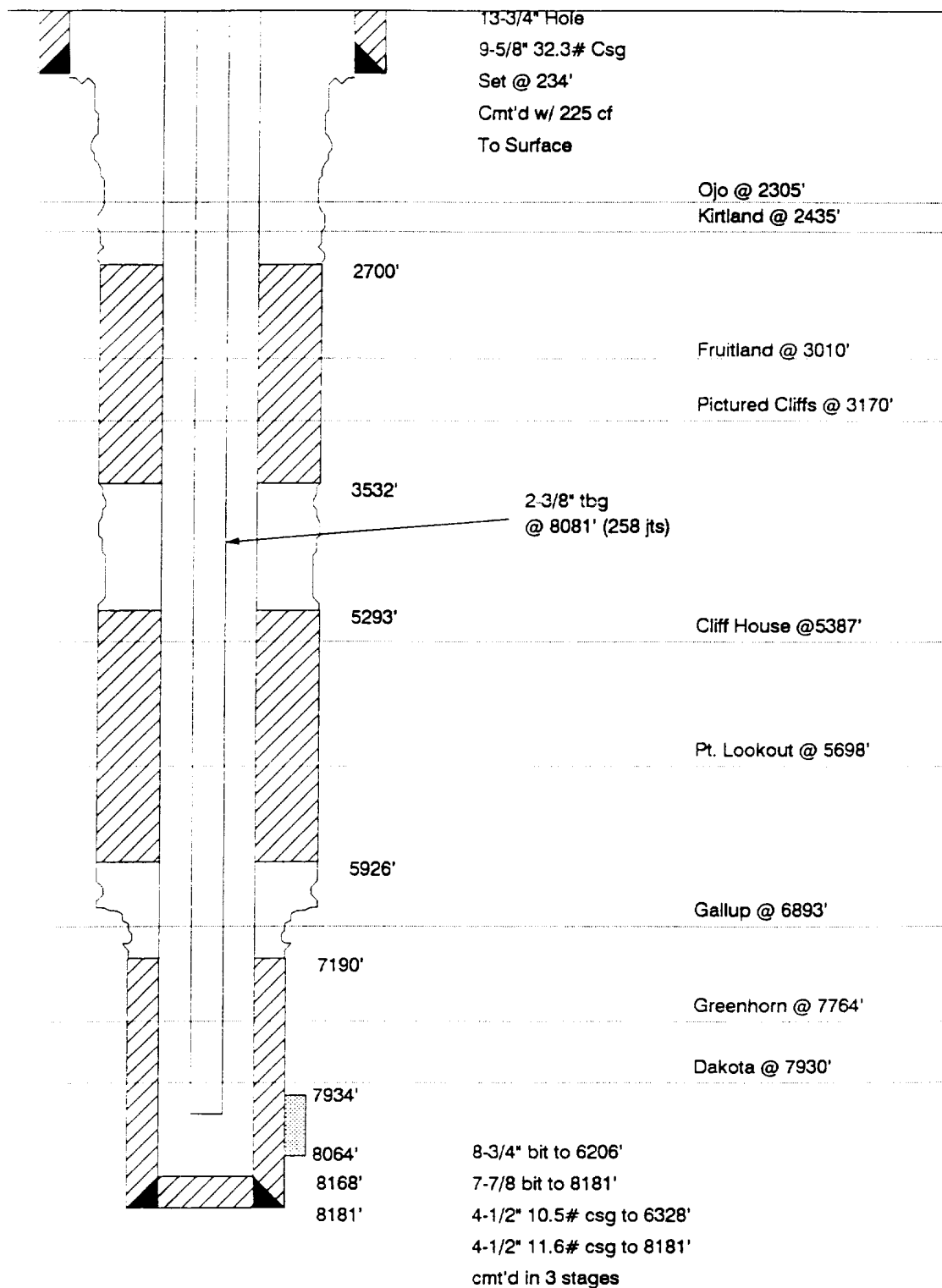
SECTION 19

SEE

SF-081155

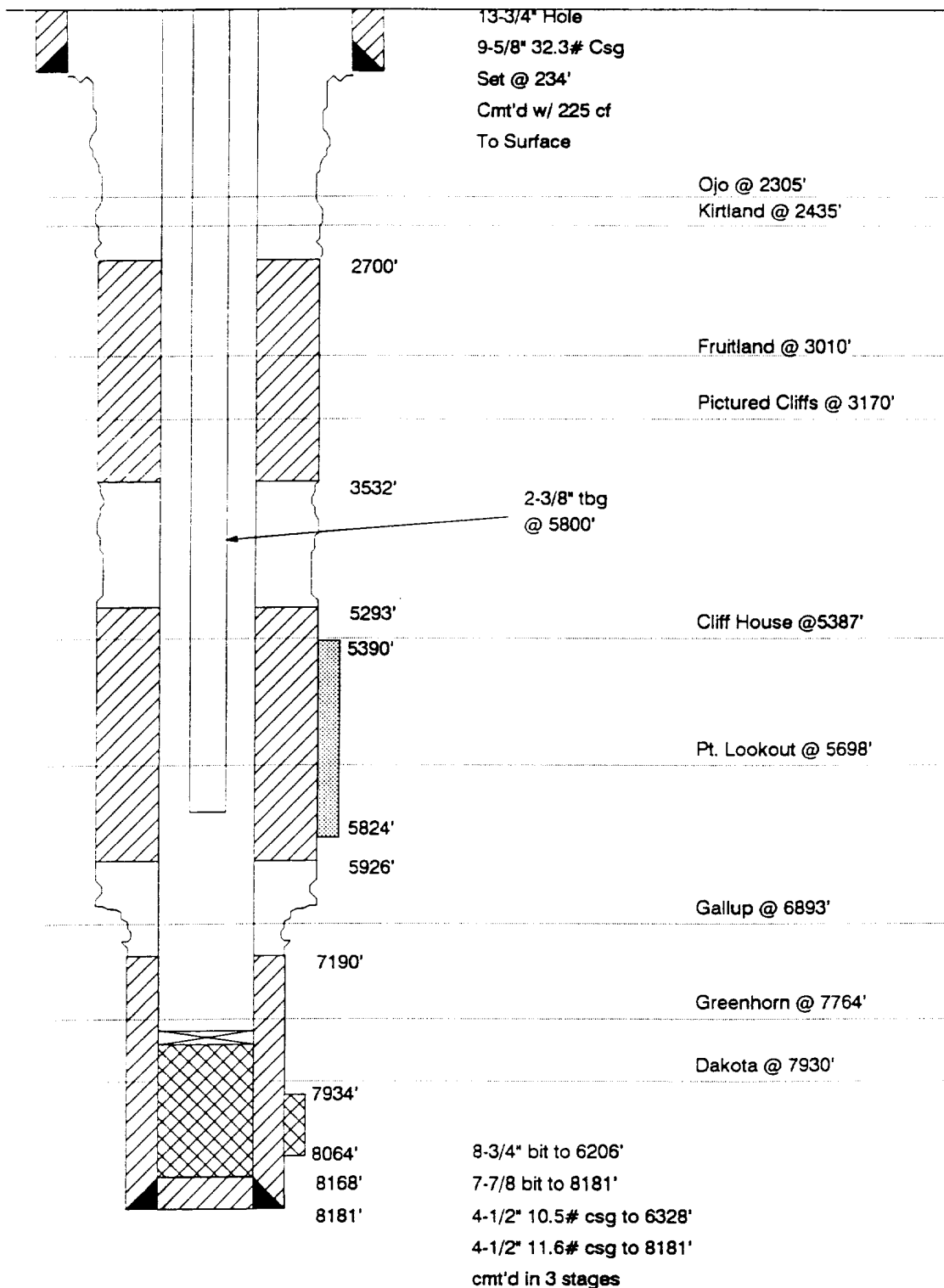
Allison Unit #40  
NE/4 Section 19, 32N-6W  
Present Wellbore Schematic

Elevation: 6511', KB: 14'



Allison Unit #40  
NE/4 Section 19, 32N-6W  
Proposed Wellbore Schematic

Elevation: 6511', KB: 14'



**Allison Unit #40  
Mesaverde Recompletion  
NE Section 19, T32n-R6W  
San Juan County, New Mexico  
5/3/92**

1. Inspect location and roads for repair. Install location anchors if needed.
2. Hold safety meeting. Comply with all MOI, NMOCD and BLM rules and regulations. MIRU. Place fire and safety equipment in strategic locations.
3. Kill well with water if necessary. ND WH, NU BOP's. TOOH with 258 joints 2-3/8" 4.7# K-55 tubing set at 8081'. Visually inspect tubing while tripping out. PU 2-3/8" workstring to temporarily replace bad joints (only 5800' of tubing will be landed after the recompletion).
4. RU wireline. Wireline set a cement retainer (CR) at 7850'. Attempt to load hole with water. Run CBL-CCL-GR from 6000' to TOC (5293' calc) and from 3600' to TOC (2700' TS). Record fluid level for estimate of depth of casing failure. RD wireline. Pressure test casing to 1100 psi for 15 minutes if possible.
5. TIH with tubing and sting into CR. Obtain gauge if possible. Report gauge to production engineering before proceeding. Land tubing, ND BOP's, NU WH. RDMO. SI well for pressure stabilization. After surface pressures have stabilized for a week, obtain bottom hole pressure with slickline. Attempt to flow test the well. Report both bottom hole pressure and flow test results to production engineering.

Continue with the following recompletion procedure if it is decided to recomplete (a repair procedure will be provided) or a P&A procedure will be provided.

6. Install 13x400 bbl frac tanks and 1x400 bbl rig tank on location. Have frac tanks cleaned before filling with frac water.
7. Hold safety meeting. Comply with all MOI, NMOCD and BLM rules and regulations. MIRU. Place fire and safety equipment in strategic locations. Kill well if necessary. ND WH, NU BOP's. Unseat tubing.
8. Establish injection rate into Dakota formation. Pump 50 sxs class B cement into Dakota perforations (hole volume below cement retainer plus 100% excess). Sting out of CR and spot 5 sxs (>50 feet) of cement on top of the retainer. Reverse circulate 1-1/2 tubing volumes. TOOH.
9. TIH with tubing and packer. Locate casing failure and determine injection rate and pressures into the failure. Report findings to production engineering. Engineering will provide repair or P&A procedure.

10. After repairing the failure and drilling out to at least 5850', pressure test casing to 1100 psi for 15 minutes. TOOH. Fill frac tanks with 4,250 usable bbls of filtered (25 micron) 2% KCl water. Add biocide to tanks before filling with water.
11. RU wireline. Perforate the following Point Lookout intervals with 3-1/8" HSC with 10 gram (Dp=0.38"; Lp=16.7") PML Owen charges at 2 spf and 180 phasing:

|                   |                        |
|-------------------|------------------------|
| • 5686-90'        | 4'                     |
| • 5701-45'        | 44'                    |
| • 5751-58'        | 7'                     |
| • 5766-71'        | 5'                     |
| • 5779-85'        | 6'                     |
| • 5794-5800'      | 6'                     |
| • <u>5819-24'</u> | <u>5'</u>              |
| •                 | 77' - 154 perforations |

12. PU 2-7/8" N-80 workstring with shaved collars. TIH with 2-7/8" workstring and packer. Spot 135 gallons 7-1/2% HCl from 5850-5650'. Set packer @ 5350'. RU acid pump. Pressure test surface lines to 6000 psi. Place 500 psi of pressure on backside. Break down perforations with 3500 gal. 7-1/2% HCl and 500 balls at maximum rate possible with pressure limitations. Monitor casing pressure during stimulation. Add the following to the acid:
  - 1/1000 gal CCC-3 clay control agent
  - 4/1000 gal SSS-2 silt suspender
  - 1/1000 gal CIA-1 inhibitor
  - 5/1000 gal CA-4 sequestering agent
13. Release packer then TIH and knock balls off perforations. PU and reset packer @ 5350'. Place 500 psi of pressure on backside.
14. Rig up stimulation company. Stimulate Point Lookout per attached stimulation procedure. Stimulate during daylight. Pressure test surface lines to 6000 psi. Maximum allowable treating pressure is 5000 psi. Monitor casing pressure during stimulation.
15. Release packer and TOOH. RU wireline. Wireline set a RBP @ 5670'. Perforate the following Point Lookout intervals with 3-1/8" HSC with 10 gram (Dp=0.38"; Lp=16.7") PML Owen charges at 2 spf and 180 phasing:

|                   |                       |
|-------------------|-----------------------|
| • 5390-97'        | 7'                    |
| • 5427-23'        | 5'                    |
| • 5525-42'        | 7'                    |
| • 5599-5606'      | 7'                    |
| • 5618-34'        | 6'                    |
| • <u>5650-56'</u> | <u>6'</u>             |
| •                 | 38' - 76 perforations |

16. TIH with 2-7/8" workstring and packer. Spot 214 gallons 7-1/2% HCl from 5670-5350'. Set packer @ 5350'. RU acid pump. Pressure test surface lines to 6000 psi. Place 500 psi of pressure on backside. Break down perforations with 1800 gal. 7-1/2% HCl and 300 balls at maximum rate possible with pressure limitations. Monitor casing pressure during stimulation. Add the following to the acid:
  - 1/1000 gal CCC-3 clay control agent
  - 4/1000 gal SSS-2 silt suspender
  - 1/1000 gal CIA-1 inhibitor
  - 5/1000 gal CA-4 sequestering agent
17. Release packer then TIH and knock balls off perforations. PU and reset packer @ 5350'. Place 500 psi of pressure on backside.
18. Rig up stimulation company. Stimulate Point Lookout per attached stimulation procedure. Stimulate during daylight. Pressure test surface lines to 6000 psi. Maximum allowable treating pressure is 5000 psi. Monitor casing pressure during stimulation.
19. Flow well back to pit for clean up. Obtain gauge and report to production engineering before retrieving RBP. When well dies, release packer and tubing and TOOH. TIH with tubing and retrieve RBP. TOOH. TIH with 2-3/8 tubing and CO to COTD. Flow well to pit until fluid returns are negligible. Take final gauge.
20. Land 2-3/8" tubing at 5800'. ND BOP's, NU WH. RDMO. Install surface facilities then return to production.

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J. A. Howieson

Vendors:  
Wireline Services - Petro Wireline (326-6669)  
Stimulation Services - Smith Energy (327-7281)

jbk:JBK

# Stimulation Procedure Meridian Oil Inc.

| General Information |                                 | Well Configuration               | Formation Stimulation Data |
|---------------------|---------------------------------|----------------------------------|----------------------------|
| Well Name:          | <b>Allison Unit #40</b>         | Casing: 2-7/8" N-80 tbg to 5350' | Frac Gradient: 0.5 psi/ft  |
| Location:           | NE/4 Section 19, T32N-R6W       | 4-1/2" 10.5# to PBTD             | BH Temp: 145 F             |
| Formation:          | <b>Meneffee/Cliff House (2)</b> | Capacity: 0.0058 bbl/ft          | Antic. BH Pres: 2762 psi   |
| Vendors:            |                                 | PBTD: 7800 ft                    |                            |
| Stimulation:        | Smith Energy (327-7281)         | Top Perf: 5390 ft                |                            |
| Tagging:            | N/A                             | Bot Perf: 5656 ft                |                            |
| Fluid:              | 30# Linear Gel                  | Midpoint: 5523 ft                |                            |
| Note:               |                                 | Perforations                     |                            |
|                     |                                 | 2 spf                            |                            |
|                     |                                 | 76 holes                         |                            |
|                     |                                 | 0.38 " holes                     |                            |
|                     |                                 | N/A " penetration                |                            |
|                     |                                 | Vol. to: (gal)                   |                            |
|                     |                                 | PBTD: 1,897                      |                            |
|                     |                                 | Top Per: 1,311                   |                            |
|                     |                                 | 5370': 1,306                     |                            |
|                     |                                 | Percent Pad: 40%                 |                            |
|                     |                                 | Net Pay: 38 ft                   |                            |
|                     |                                 | lb prop/net ft pay: 1,974 lb/ft  |                            |
|                     |                                 | Job Duration: 57.6 min           |                            |

## Stimulation Schedule

| Stage | Sand Mesh | Stage Sand Conc. ppg | Slurry Rate bpm | Stage Fluid gal | Job Cum Fluid gal | Stage Sand lbs | Job Cum Sand lbs | Stage Slurry gal | Job Cum Slurry gal | Stage Time min | Job Cum Time min | Comments |
|-------|-----------|----------------------|-----------------|-----------------|-------------------|----------------|------------------|------------------|--------------------|----------------|------------------|----------|
| Pad   | N/A       | 0                    | 30              | 26,394          | 26,394            | 0              | 0                | 26,394           | 26,394             | 21             | 21               |          |
| 2     | 20/40     | 1                    | 30              | 15,000          | 41,394            | 15,000         | 15,000           | 15,678           | 42,072             | 12             | 33               |          |
| 3     | 20/40     | 2                    | 30              | 12,000          | 53,394            | 24,000         | 39,000           | 13,085           | 55,157             | 10             | 44               |          |
| 4     | 20/40     | 3                    | 30              | 12,000          | 65,394            | 36,000         | 75,000           | 13,628           | 68,785             | 11             | 55               |          |
| Flush | N/A       | 0                    | 15              | 1,897           | 67,291            | 0              | 75,000           | 1,897            | 70,682             | 3              | 58               |          |
|       |           | lb/ft                | Ave.            | Total           |                   | Total          |                  | Total            |                    | Total          |                  |          |
|       |           | 1,974                | 29              | 67,291          |                   | 75,000         |                  | 70,682           |                    | 58             |                  |          |

## Volumes and Additives

|  |   |         |     |       |       |           |
|--|---|---------|-----|-------|-------|-----------|
| Water Vol=   | 1,602   | treat + | 181 | xcs = | 1,783 | bbl (MOI) |
| Fluid Volume:                                      | 1,783 bbl potential treating volume             |         |     |       |       |           |
| 40/70 Brady Sand:                                  | 0 lbs   |         |     |       |       |           |
| 20/40 Brady Sand:                                  | 75,000 lbs                                      |         |     |       |       |           |
| Fluid:   | 30# Linear Guar Gel mixed on the fly            |         |     |       |       |           |
| Breaker:   | Enzyme breaker designed for 3 hour break @ 150F |         |     |       |       |           |
| Biocide (added to tanks before filling with water) |   |         |     |       |       |           |
| Radioactive Tagging                                | N/A   |         |     |       |       |           |

## Equipment

|                           |       |  |
|---------------------------|-------|--|
| Tanks:                    | 6     | x400 bbl (supplied by MOI)                 |
| Filled w/                 | 1,783 | bbls filtered (25 micron) 2% KCl wtr (MOI) |
| Computer Van              |       |  |
| Quality Control Equipment |       |  |

## Comments and Special Instructions

### **MAXIMUM ALLOWABLE TREATING PRESSURE: 5000 PSI.**

Rig up with surface lines rated to at least 6000 psi working pressure.  
Hold safety meeting with everyone on location before pressure testing surface lines.  
Pressure test surface lines to 6000 psi.  
Monitor casing pressures during stimulation for packer integrity.



# Stimulation Procedure Meridian Oil Inc.

| General Information |                           | Well Configuration               | Formation Stimulation Data |             |
|---------------------|---------------------------|----------------------------------|----------------------------|-------------|
| Well Name:          | Allison Unit #40          | Casing: 2-7/8" N-80 tbg to 5350' | Frac Gradient::            | 0.5 psi/ft  |
| Location:           | NE/4 Section 19, T32N-R6W | 4-1/2" 10.5# to PBTD             | BH Temp:                   | 145 F       |
| Formation:          | Point Lookout (1)         | Capacity: 0.0058 bbl/ft          | Antic. BH Pres:            | 2878 psi    |
| Vendors             |                           | PBTD: 7800 ft                    | Vol. to: (gal)             |             |
| Stimulation:        | Smith Energy (327-7281)   | Top Perf: 5686 ft                | PBTD:                      | 1,897       |
| Tagging:            | N/A                       | Bot Perf: 5824 ft                | Top Per:                   | 1,383       |
| Fluid:              | 30# Linear Gel            | Midpoint: 5755 ft                | 5676':                     | 1,380       |
| Note:               |                           | Perforations                     | Percent Pad:               | 40%         |
|                     |                           | 2 spf                            | Net Pay:                   | 77 ft       |
|                     |                           | 154 holes                        | lb prop/net ft pay:        | 1,494 lb/ft |
|                     |                           | 0.38 " holes                     | Job Duration:              | 80.2 min    |
|                     |                           | N/A " penetration                |                            |             |

## Stimulation Schedule

| Stage | Sand Mesh | Stage Sand Conc. ppg | Slurry Rate bpm | Stage Fluid gal | Job Cum Fluid gal | Stage Sand lbs | Job Cum Sand lbs | Stage Slurry gal | Job Cum Slurry gal | Stage Time min | Job Cum Time min | Comments |
|-------|-----------|----------------------|-----------------|-----------------|-------------------|----------------|------------------|------------------|--------------------|----------------|------------------|----------|
| Pad   | N/A       | 0                    | 30              | 37,011          | 37,011            | 0              | 0                | 37,011           | 37,011             | 29             | 29               |          |
| 2     | 20/40     | 1                    | 30              | 15,000          | 52,011            | 15,000         | 15,000           | 15,678           | 52,689             | 12             | 42               |          |
| 3     | 20/40     | 2                    | 30              | 20,000          | 72,011            | 40,000         | 55,000           | 21,809           | 74,498             | 17             | 59               |          |
| 4     | 20/40     | 3                    | 30              | 20,000          | 92,011            | 60,000         | 115,000          | 22,713           | 97,211             | 18             | 77               |          |
| Flush | N/A       | 0                    | 15              | 1,897           | 93,908            | 0              | 115,000          | 1,897            | 99,108             | 3              | 80               |          |
|       |           | lb/ft                | Ave.            | Total           |                   | Total          |                  | Total            |                    | Total          |                  |          |
|       |           | 1,494                | 29              | 93,908          |                   | 115,000        |                  | 99,108           |                    | 80             |                  |          |

## Volumes and Additives

|  |   |         |     |       |       |           |
|--|---|---------|-----|-------|-------|-----------|
| Water Vol=   | 2,236   | treat + | 181 | xcs = | 2,417 | bbl (MOI) |
| Fluid Volume:                                      | 2,417 bbl potential treating volume             |         |     |       |       |           |
| 40/70 Brady Sand:                                  | 0 lbs   |         |     |       |       |           |
| 20/40 Brady Sand:                                  | 115,000 lbs                                     |         |     |       |       |           |
| Fluid:   | 30# Linear Guar Gel mixed on the fly            |         |     |       |       |           |
| Breaker:   | Enzyme breaker designed for 3 hour break @ 150F |         |     |       |       |           |
| Biocide (added to tanks before filling with water) |   |         |     |       |       |           |
| Radioactive Tagging                                | N/A   |         |     |       |       |           |

## Equipment

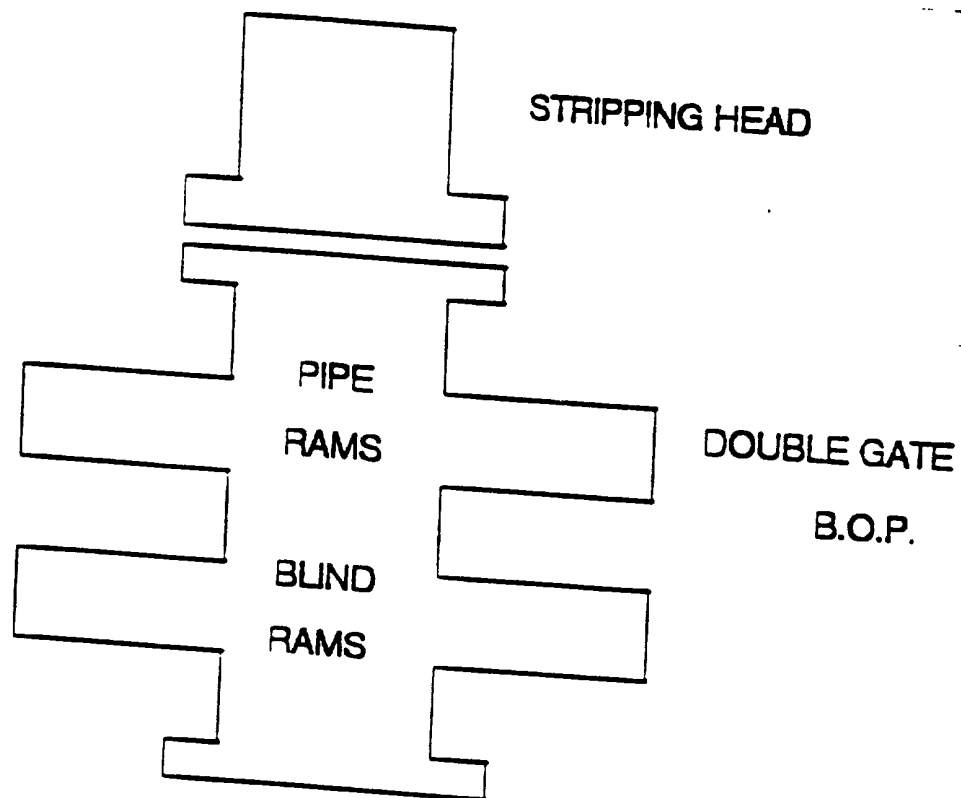
|                           |       |  |
|---------------------------|-------|--|
| Tanks:                    | 7     | x400 bbl (supplied by MOI)                 |
| Filled w/                 | 2,417 | bbls filtered (25 micron) 2% KCl wtr (MOI) |
| Computer Van              |       |  |
| Quality Control Equipment |       |  |

## Comments and Special Instructions

### MAXIMUM ALLOWABLE TREATING PRESSURE: 5000 PSI.

Rig up with surface lines rated to at least 6000 psi working pressure.  
Hold safety meeting with everyone on location before pressure testing surface lines.  
Pressure test surface lines to 6000 psi.  
Monitor casing pressures during stimulation for packer integrity.

# WORKOVER / RECOMPLETION B.O.P. SCHEMATIC



MINIMUM: 6" 2000 PSI DOUBLE GATE B.O.P.  
MAXIMUM ANTICIPATED SHUT-IN WELLHEAD  
PRESSURE IS LESS THAN 2000 PSI