

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

SUBMIT IN TRIPLICATE*
(Other instructions on re-
verse side)

Form approved.
Budget Bureau No. 1004-0135
Expires August 31, 1985

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—" for such proposals.)

1. OIL WELL <input type="checkbox"/> GAS WELL <input type="checkbox"/> X OTHER	7. UNIT AGREEMENT NAME
2. NAME OF OPERATOR Meridian Oil Inc.	8. FARM OR LEASE NAME Pump Canyon SWD
3. ADDRESS OF OPERATOR Post Office Box 4289, Farmington, NM 87499	9. WELL NO. 1
4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.* See also space 17 below.) At surface 1725'S, 1850'E	10. FIELD AND POOL, OR WILDCAT Morrison Entrada
14. PERMIT NO.	11. SEC. T. R. M. OR R.R. AND SURVEY OR AREA Sec. 7, T-30-N, R-8 -W N.M.P.M.
15. ELEVATIONS (Show whether DF, ST, GR, etc.) 5972'GL	12. COUNTY OR PARISH 13. STATE San Juan NM

13. Check Appropriate Box To Indicate Nature of Notice, Report, or Other Data

NOTICE OF INTENTION TO:

TEST WATER SHUT-OFF <input type="checkbox"/>	PULL OR ALTER CASING <input type="checkbox"/>
FRACTURE TREAT <input type="checkbox"/>	MULTIPLE COMPLETE <input type="checkbox"/>
SHOOT OR ACIDIZE <input type="checkbox"/>	ABANDON* <input type="checkbox"/>
REPAIR WELL <input type="checkbox"/>	CHANGE PLANS <input type="checkbox"/>
(Other) <input type="checkbox"/>	

SUBSEQUENT REPORT OF:

WATER SHUT-OFF <input type="checkbox"/>	REPAIRING WELL <input type="checkbox"/>
FRACTURE TREATMENT <input type="checkbox"/>	ALTERING CASING <input type="checkbox"/>
SHOOTING OR ACIDIZING <input type="checkbox"/>	ABANDONMENT* <input type="checkbox"/>
(Other) <input type="checkbox"/>	

(NOTE: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)

17. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)*

It is intended to perform the following work:

MOL&RU. Pull 4 1/2" injection string. Fracture and complete the Morrison and Bluff zones. Set permanent packer @ +7560'. Sting back in with 4 1/2" injection string. Resume injection operations.

DIST. 3

18. I hereby certify that the foregoing is true and correct

SIGNED [Signature]

TITLE Regulatory Affairs (WS)

DATE

07-26-89

(This space for Federal or State office use)

APPROVED BY _____
CONDITIONS OF APPROVAL, IF ANY:

TITLE _____

APPROVED

JUL 27 1989

AREA MANAGER

*See Instructions on Reverse Side

NMOCH

Pump Canyon SWD #1
Recompletion Procedure

1. Notify BLM and NMOCD 24 hours before workover operations begin.
 2. Spot 10 - 550 bbl frac tanks. Inspect tanks and clean as necessary. Shut well in for 12 hours.
 3. RU line from wellhead to frac tanks. Blow tubing down recording rate and pressure every 30 minutes. Obtain a temperature reading of the water. Prepare to perform step rate test on the Entrada zone. Filter tanks to 5 microns.
 4. RU treatment company, test surface lines to 3000-psi. RU lines from surface facilities to frac tanks. This will allow refill during test using site equipment.
 5. Perform step rate test using attached schedule for Entrada formation. Using surface pressures and computer van plot pressure vs rate until parting pressure is observed. Then increase rate to 30 BPM. Pump facilities dry.
 6. Prepare area wells for slowdown. Pump Canyon SWD #1 will be out of service for ±9 days.
 7. MOL with rig. Hold safety meeting. Abide by all MOI, NMOCD and BLM safety regulations. Place proper fire and safety signs at strategic points.
 8. Depending on results of flow back test, RU wireline. Run blind box and sinker bar to TD at ±8510'. Record BHT. Note any fill in tour report. Run wireline at reduced speed to protect internal coating. Set a retrievable bridge plug (4.5" 11.6# csg) at ±8190' with wireline. RD release wireline unit.
 9. Blow down tubing and casing. Note continued flow in tour report. Pull out of tie back sleeve at 8169'.
 10. RU casing crew with laydown machine. Prepare to laydown 4 1/2" internally coated pipe. Use caution to insure proper protection of the internal surface and threads. TOOH laying down pipe. Have FO safety valve on rig floor for the 4 1/2" 10.5# pipe.
 11. PU casing scraper (gauged for 7" - 23#) on 2 7/8" American openhole 10.4# grade E drill pipe. TIH to ±8160'. Circulate hole clean with filtered water. Note tight spots in tour report.
- NOTE: Baker liner hanger would not pass tight spot at 2023'.
Had to machine down to a 6" O.D.

Pump Canyon SWD #1
Recompletion Procedure
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12. Pressure test to 3000-psi (save all charts for wellfile).
 - If test holds TOOH.
 - If test fails - TOOH and PU 7" fullbore Uni-VI packer and 7" retrievable bridge plug. Set packer at $\pm 8130'$ test backside to 3000-psi. Test under packer to 3000-psi. If Baker Liner Hanger is leaking set RBP at $\pm 8150'$, test to 3000-psi. If 7" casing has failed, isolate and repair leak as necessary.
13. RU wireline unit. Run dump bailer and spot 4 CF of 20/40 sand to cover from 8190' to 8166' or 5' above 7" RBP.
14. Perforate the Bluff zone using a 4" hollow steel carrier. Shoot with 2 SPF, 120° phase, 0.5" dia Atlas 19 gram charges across the following intervals: 7908'-7916', 7928'-7934', 7956'-7990', 8010'-8020', and 8040'-8084' for a total of 204 holes.

RD release wireline unit.
15. TIH with 7" Uni-VI and tubing control valve in the closed position. Set packer at $\pm 7860'$. PT annulus to 1000-psi. Open control valve.
16. RU swab unit, recover 53 bbls of fluid. Then catch 3 samples marked with depth, time and date. Note fluid description in town report.
17. Release packer TIH to $\pm 8100'$. Spot 545 gals of 15 1/2% HCl inhibited acid, from 8100' to 7800'. Set packer at $\pm 8000'$. Breakdown perforations below packer. Pump down casing side and breakdown perms from 7908'-7990'. Displace acid into perforations. Record ISIP for each zone. Release packer, TOOH.
18. NU treesaver. Test.
19. RU treatment company. Hold safety meeting. Test surface lines to 5000-psi. Establish rate and breakdown formation. Record ISIP. Max treating pressure is 4000-psi. Fracture stimulate Bluff using 40# linear gel. Pump at 80 BPM using the following schedule. Flush with water.

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 Recompletion Procedure
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<u>Stage</u>	<u>Total Rate BPM</u>	<u>Sand LBS</u>	<u>Stage Vol. BBLS</u>	<u>Slurry Vol. BBLS</u>	<u>CUM Vol. BBLS</u>	<u>Sand Hit @ BBLS</u>
PRE-PAD	80	---	238	238	238	
PAD	80	---	654	654	654	---
0.5 PPG	80	2,499	119	122	776	965
1.0 PPG	80	8,000	190	199	975	1,087
1.5 PPG	80	15,000	238	254	1,230	1,286
2.0 PPG	80	20,000	238	260	1,490	1,540
2.5 PPG	80	25,000	238	265	1,755	1,800
3.0 PPG	80	36,000	286	325	2,080	2,066
3.5 PPG	80	42,000	286	331	2,411	2,391
4.0 PPG	80	40,000	238	282	2,693	2,722
4.5 PPG	80	45,000	238	287	2,980	3,004
5.0 PPG	80	50,000	238	293	3,273	3,291
FLUSH	80	---	308	308	2,388	---

Treatment Summary

- Proppant = 283,500 lbs of 20/40 sand
 - Water = 3,842 bbl or 9 - 500 bbl tanks
 - Monitor treatment with computer van
 - Add B-5 Breaker to allow gel to break in 2 hours
 - Pump time = 44 minutes
 - ND treesaver when conditions allow for safe operations.
20. Allow 2 hours for gel to break. TIH with 2 7/8" working string and 7" 23# casing scraper clean to RBP.
21. Prepare to run step rate test on the Bluff zone. RU pump trucks with computer van. Perform test as follows:
- Load hole with filtered fruitland coal water.
 - Start pumping at 1/2 BPM for 10 minutes. Then increase by 1/2 BPM increments every 10 minutes.
 - Plot Calc BHP vs Rate until fracture extension pressure is observed.
22. RU wireline unit. Set RBP at $\pm 7870'$. Test plug to 3000-psi for 15 minutes. Spot 2 CF of 20/40 sand on top of plug.

Pump Canyon SWD #1
Recompletion Procedure
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23. Perforate the Morrison sandstone using a 4" hollow steel carrier gun. Shoot with 2 spf, 120° phase, 0.5" dia Atlas 19 gram charges across the following intervals: 7628'-7660', 7686'-7700', 7724'-7746', 7754'-7758', 7786'-7804', and 7820'-7844' for a total of 228 shots.
24. Run in the hole with gauge ring to ±7861' (top of sand plug). Set RBP-resetable at ±7850'. RD release wireline unit.
25. PU retrieving head, 10' pup joint, Uni-VI packer with tubing control valve in the closed position. Set packer at ±7600'. PT annulus to 1000-psi. Open control valve.
26. RU swab unit recover 54 bbls of fluid. Then catch 3 samples marked with depth, time, and date. Note sample descriptions in tour report.
27. Release packer. Prepare to break down perforations over the following intervals with 15% HCl inhibited acid. Record ISIP over each zone. Save pressure charts.
 - Spot 545 gals acid from 7840'
 - Set packer at ±7770', breakdown 7786'-7844', release packer
 - Retrieve RBP at 7850'. Set RBP at ±7770', set packer at ±7710'. Breakdown zone from 7724'-7758'.
 - Pressure down casing breaking down zone 7628'-7700'
 - Release packer, retrieve RBP at 7770', TOOH.
28. NU treesaver.
29. RU treatment company; hold safety meeting. Test surface lines to 5000-psi. Establish rate and breakdown formations. Record ISIP. Treat with 30% borate X-link gel. Pump at a total fluid rate of 60-50 BPM using the following schedule. Flush with fresh water.

<u>Stage</u>	<u>Total Rate BPM</u>	<u>Sand LBS</u>	<u>Stage Vol. BBLS</u>	<u>Slurry Vol. BBLS</u>	<u>CUM Vol. BBLS</u>	<u>Sand Hit @ BBLS</u>
PRE-PAD	60	----	238	238	238	
PAD	50	----	734	734	734	---
0.5 PPG	50	2,499	119	122	856	1,034
1.0 PPG	50	10,000	238	249	1,105	1,155
1.5 PPG	50	7,500	119	127	1,232	1,404
2.0 PPG	50	20,000	238	260	1,492	1,532
2.5 PPG	50	12,500	119	133	1,624	1,791
3.0 PPG	50	30,000	238	271	1,895	1,924
3.5 PPG	50	17,500	119	138	2,033	2,195
4.0 PPG	50	40,000	238	282	2,315	2,333
5.0 PPG	50	25,000	119	146	2,461	2,615
6.0 PPG	50	30,000	119	152	2,613	2,761
7.0 PPG	50	35,000	119	157	2,770	2,913
8.0 PPG	50	40,000	119	163	2,933	3,070
FLUSH	50	---	297	297	2,192	---

Treatment Summary:

- Proppant = 270,000 lbs 20/40 sand
 - Water = 3,646 bbls or 9 - 500 bbl tanks
 - Monitor treatment with computer van
 - Add B-5 Breaker to allow gel to break in 2 hours
 - Tag sand with 0.4 mc Ir-192 per 1000 lbs sand
 - Pump time = 64 minutes
 - ND treesaver when conditions allow for safe operations
30. Allow 2 hours for gel to break. TIH with 2 7/8" workstring and 7" 23# casing scraper. Clean to RBP at $\pm 7870'$. TOOH.
31. Run after frac log from 7870' to 7300'.
32. Prepare to run step rate test on the Morrison zone. RU pump trucks with computer van. Perform test as follows:
- Load hole with filtered fruitland coal water.
 - Start pumping at 1/2 BPM for 10 minutes, then increase by 1/2 BPM increments every 10 minutes.
 - Plot calc BHP vs Rate until parting pressure is observed.
33. PU retrieving tool, TIH cleaning to $\pm 7870'$. Note fill in tour report, latch and retrieve bridge plug. TOOH.
34. PU retrieving tool, 2 jts 2 3/8" tubing, X-over, on 2 7/8" DP. TIH cleaning to liner top at $\pm 8169'$. Clean to RBP at $\pm 8190'$. Latch and release plug.
- Note flow at surface. If flow and pressure allows TOOH, otherwise RU snubbing unit and snub drillpipe and tubing out of the hole.
 - Lay down drill pipe.
35. RU wireline unit with lubricator. PU OTIS Perma-Drill WB packer with seal bore extension, pup joint, and X nipple. Have WL retrievable plug set in X-nipple covered with grease. Set packer at $\pm 7560'$. RD release wireline unit. PT packer to 2000-psi.
36. RU casing crew; PU mule shoe guide, seal assembly with 8 seals, locator and X-nipple on 4 1/2" 10.5# K-55 internally coated pipe. Use caution to protect pipe while running in the hole. Rabbit all joints.

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Recompletion Procedure
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37. Circulate corrosion inhibitor. Techni-Hib 370 1% blend (± 149 total bbls) to 4 1/2" x 7" annulus. Sting into packer at $\pm 7560'$. Land tubing with 30,000# on packer. ND BOP, NU wellhead. PT seals and tubing string to 2500-psi.
38. RU wireline and retrieve blanking plug in X-nipple.
39. PT annulus to 1000-psi for 15 minutes. Have BLM and NMOCD witness pressure test. Save pressure charts for well file.
40. RD release rig.
41. Prepare to run step rate test over combined intervals. Have NMOCD witness test. Fill up frac tanks with filtered water from surface facilities.
 - Load hole with filtered fruitland coal water.
 - RU Tefteller, run bomb to $\pm 8050'$. Set clock to record on 1 minute intervals for 2 hrs (to reach 8050') 15 seconds for 12 hours.
 - After bomb starts 15 second reading perform test.
 - Start by pumping at 1/2 BPM for 10 minutes. Then increase by 1/2 BPM every 10 minutes until parting pressure is observed.
 - Plot calc BHP vs Rate until parting pressure is obtained.
42. RU wireline company run spinner survey recording both injection and static conditions. Obtain BHT. RD release wireline unit.
43. Obtain maximum surface injection pressure from NMOCD. Commence injection operations.

Approve: _____
K. F. Raybon

Approve Operations: _____
D. C. Walker

Pertinent Information: Lost 1400 bbls of LCM mud at 8273' - 8276' during drilling operations. Set 7" at 8202' with external packer at 8196'. Drill to TD with air-foam. During sidewall coring operations recovered large amount iron fines. Probable cause corrosion problems associated with air drilling, extent unknown.

Special Considerations: This will be an injection well with a tight matrix porosity. Use caution when applying pipe dope.

Vendors:

Perforators:	Basin Perforators	(505) 327-5244
Treatment Co:	Western Company	(505) 327-6222
Rental Packers:	Guiberson Packers	(505) 327-9127
Perm. Packer:	OTIS Engineering	(505) 327-0491
Pressure Bomb:	Tefteller, Inc.	(505) 325-8961
Casing Crew:	San Juan Casing	(505) 325-5835
Snubbing Unit:	Cudd Pressure Control	(505) 327-7249
Packer Fluid:	Unichem International	(505) 327-7775
Tag Sand:	Protechnics	(505) 326 7133
Spinner Survey:	Schlumberger	(505) 325-5006