submitted in lieu of Form 3160-5

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

RECEIVED
BLM
96 JUL 15 PM 3:49
070 FARMINGTON, NM

Sundry Notices and Reports on Wells

1. **Type of Well**
GAS

2. **Name of Operator**
MERIDIAN OIL

3. **Address & Phone No. of Operator**
PO Box 4289, Farmington, NM 87499 (505) 326-9700

4. **Location of Well, Footage, Sec., T, R, M**
1000'FNL, 1850'FWL, Sec.26, T-26-N, R-6-W, NMPM
C

5. **Lease Number**
SF-079266

6. **If Indian, All. or Tribe Name**

7. **Unit Agreement Name**

8. **Well Name & Number**
Vaughn #12E

9. **API Well No.**
30-039-23922

10. **Field and Pool**
Blanco MV/Basin DK/
Ensenada Gallup EXT

11. **County and State**
Rio Arriba Co, NM

12. **CHECK APPROPRIATE BOX TO INDICATE NATURE OF NOTICE, REPORT, OTHER DATA**

Type of Submission	Type of Action		
_X_ Notice of Intent	___ Abandonment	___ Change of Plans	
	_X_ Recompletion	___ New Construction	
___ Subsequent Report	___ Plugging Back	___ Non-Routine Fracturing	
	___ Casing Repair	___ Water Shut off	
___ Final Abandonment	___ Altering Casing	___ Conversion to Injection	
	_X_ Other - Commingle		

13. **Describe Proposed or Completed Operations**

It is intended to add the Gallup and Mesaverde formations to the subject well and commingle with the Dakota. Casing failures that are found will be repaired, and the well returned to production. Down hole commingle order R-10239 has been obtained from the New Mexico Oil Conservation Division.

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JUL 24 1996
OIL CON. DIV.
DIST. 3

14. **I hereby certify that the foregoing is true and correct.**

Signed Peggy Stallcord (JME3) Title Regulatory Administrator Date 7/15/96

(This space for Federal or State Office use)
APPROVED BY _____ Title _____ Date _____
CONDITION OF APPROVAL, if any:

NMOCD

for Enron don't need NSL

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BLM

Hold C-104
for NSL

District I
PO Box 1980, Hobbs, NM 88241-1980
District II
PO Drawer DD, Artesia, NM 88211-0719
District III
1000 Rio Brazos Rd., Aztec, NM 87410
District IV
PO Box 2088, Santa Fe, NM 87504-2088

State of New Mexico
Energy, Minerals & Natural Resources Department

OIL CONSERVATION DIVISION
PO Box 2088
Santa Fe, NM 87504-2088

96 JUL 15 PM 3:49
070 FARMINGTON, NM

Form C-102
Revised February 21, 1994
Instructions on back
Submit to Appropriate District Office
State Lease - 4 Copies
Fee Lease - 3 Copies

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

¹ API Number	² Pool Code	³ Pool Name
30-039-23922	72319 96321/71599	Blanco MV/Ensenada Gal/Basin DK

⁴ Property Code	⁵ Property Name	⁶ Well Number
7623	Vaughn	12E

⁷ OGRID No.	⁸ Operator Name	⁹ Elevation
14538	MERIDIAN OIL INC.	6348'

¹⁰ Surface Location

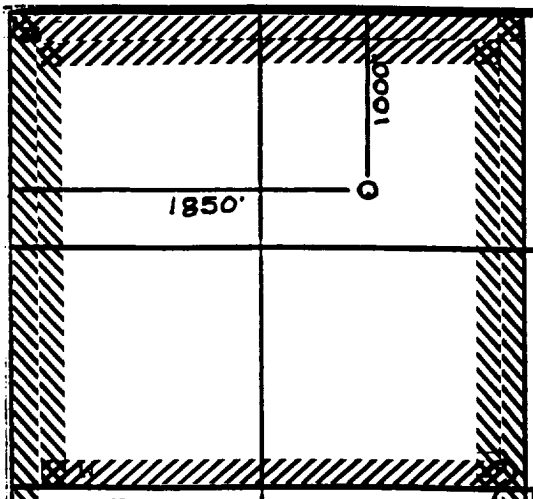
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
C	26	26 N	6 W		1000	North	1850	West	R.A.

¹¹ 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

¹² Dedicated Acres	¹³ Joint or Infill	¹⁴ Consolidation Code	¹⁵ Order No.
W/320 160-W/320			

NO ALLOWABLE WILL BE ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATED OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION



Not resurveyed, prepared from a plat dated 10-15-8[illegible] by Fred B. Kerr Jr.

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JUL 24 1996
OIL CON. DIV.
DIST. 3

¹⁷ OPERATOR CERTIFICATION

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

Signature

Peggy Bradfield
Printed Name

Regulatory Administrator
Title

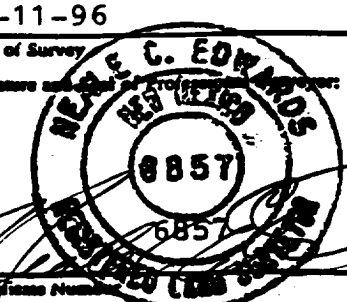
7-15-96
Date

¹⁸ SURVEYOR CERTIFICATION

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.

7-11-96
Date of Survey

Signature and Seal of Professional Surveyor:



Certificate Number

Vaughn #12E
Blanco Mesaverde/Undesignated Gallup/Basin Dakota Workover
UnitC-Sec26-T26N-R06W
Lat: 36° 27' 44"
Long: 107° 26' 22"

- Comply with all BLM, NMOCD, & MOI rules & regulations.
- **Always Hold Safety Meetings.** Place fire and safety equipment in strategic locations.
- **Lower Dakota stimulation will entail high surface pressures = 8500 psi.**
- 2-3/8" 5.95# P-110 tubing required for overbalanced surge (7150' +/- required).
- 2-7/8" N-80 Buttress Frac String (6600' +/- required).
- Fifty (50) joints 2-3/8" 4.7# EUE J-55 tubing and six (6) 3-1/8" drill collars on location
- **8** frac tanks required for fracture stimulations. Use 2% KCl water.
- **Acetic acid** will be used for Gallup stimulation.
- **Immediate flowback will be implemented on the fracs.**
- Use drill gas or Nitrogen **ONLY** for all operations - **NO AIR.**
- Ensure CIBPs used are T-Lok for easier drilling of stacked plugs.

This well is part of the 1996 Klein/Vaughn Mesaverde/Gallup/Dakota commingle program. The well is currently completed in the Dakota and producing 349 MCFD / 3 BOPD. Cumulative Dakota production is 1330 MMCF/ 9.4 MBO.

Lower Dakota pay will be added. The Dakota will then be temporarily abandoned so that the Gallup (Niobrara) and Mesaverde (Point Lookout) intervals can be added. All three zones will be commingled immediately upon completion of the workover.

NOTE: All plunger lift equipment, if any, should have been removed from the tubing by the lease operator.

1. MIRU. Record and report SI pressures on tubing, casing, & bradenhead. Lay blowdown line. Blow down casing & tubing. Kill well w/ 2% KCl down tubing. ND WH, NU BOP.

2. TOOH, rabbit, & strap 2-3/8" tubing (from 7065', SN @ 7031'). Visually inspect tubing, note any scale in tubing. Replace any damaged joints. Utilize tubing for 2-3/8" workstring.

3. PU 3-7/8" bit, float, six (6) 3-1/8" drill collars on 2-3/8" tbg. Clean out w/ gas to PBTD @ **7179'**. Drill additional hole to new PBTD of **7210'** (casing set @ 7220'). Note drilling mud in returns if any. TOOH with bit & collars.

4. PU 5" RBP & 5" packer combination on 2-3/8". TIH & RBP @ **6700'**. Load hole from bottom w/ 2% KCl water.

5. Pressure test entire casing string to 1000 psi for 10 minutes. If PT does not hold, pull above DV tools @ 5472' and 2841' & test below each to 1000 psi. Locate hole(s). TOOH. Engineering will provide a squeeze procedure if required.

6. RU wireline. Run GR-CCL-CBL from 6700' to surface under 1000 psi w/ no gaps. Note and report all cement tops and quality of bond over both Gallup & Mesaverde intervals. If cement is not covering the Gallup interval, a block squeeze may be performed across the Gallup. Engineering will provide a squeeze procedure if required.

7. Complete all squeeze cementing operations which will be determined based upon pressure test information and bond quality. WOC recommended time. Drill out cement. Pressure test to 1000 psi. If

casing integrity is not sound, identify leaks, & engineering will recommend squeeze procedure & modify stimulation work.

8. If no squeeze work is necessary and the casing held a solid test @ 1000 psi (no bleedoff), isolate wellhead with 2 joints 2-7/8" tbg and PKR. Test casing string to 3800 psi. If the test holds, make necessary adjustments to frac down casing. If test does not hold, bleed off and retest to 1000 psi to make sure no new leaks developed.

9. PU retrieving head on tbg, TIH to RBP @ 6700'. Latch onto RBP, TOOH. Stand 2-3/8" back.

Lower Dakota Completion:

10. Prepare to perforate Lower Dakota underbalanced. Kill well if necessary. Fluid level should be no less than @ 6000', and as close to that as possible.

11. RU wireline under lubricator, test to 1000 psi. Prepare to perforate Lower Dakota underbalanced. Perforate the following zone with a 3-3/8" TAG gun w/ 32g Owen 306 charges, 4 SPF @ 60° phasing (0.53" diameter, 15" formation penetration). Add as much extra length as possible to the gun to minimize gun movement while perforating. (More than one gun run may be necessary.)

7110' - 7120'

7154' - 7206'

(62' @ 4 SPF = 248 holes)

12. Pull gun out of hole. RD wireline. Note any casing pressure.

13. If well shows weak response to underbalanced perforating, PU 2-3/8" Owen Overbalance Surge Valve on 2-3/8" P-110 tubing string. TIH, set PKR @ 7130' - Note that this is below perfs @ 7110' - 7120'. **Surge valve should be pinned to shear at 10,000 psi absolute pressure (NOT differential).**

14. RU immediate flowback equipment. See attached diagram for suggested system.

15. Pressure test surface lines and flowback equipment to 9500 psi. **Maximum surface pressure = 8500 psi.** Pressure up tubing f/ surface with nitrogen to **5000 psi.**

16. Pump 2% KCl down tubing until valve shears or until surface pressure reaches **8500 psi** (about 12.6 bbls). At 8500 psi surface pressure, the BHP at the surge valve is 10,500 psi. Error on surge valve is +/- 5% of shear value. 10% of 10,000 psi = 500 psi, pin should shear.

17. If pin does not shear, DO NOT exceed max surface pressure. Bleed pressure back to 7500 psi, pump 2% KCl until pressure reaches 8500 psi. Continue bleed off / repressure cycle until pin shears.

18. After overbalanced surge, open tubing up to pit on 1/4" positive choke to flow back.

19. Swab test if necessary to determine if zone is wet. Consult engineering for this decision. Release PKR, TOOH.

20. If decision is made to surge the interval f/ 7110' - 7120', wireline set 5" CIBP @ 7140'. TIH w/ surge assembly, set PKR @ 7096' (note Upper Dakota perf @ 7089'). **Surge valve should be pinned to shear at 10,000 psi absolute pressure (NOT differential).** (If decision is made not to surge the upper zone, go to Step #27.)

21. RU immediate flowback equipment. See attached diagram for suggested system.

22. Pressure test surface lines and flowback equipment to 9500 psi. **Maximum surface pressure = 8500 psi.** Pressure up tubing f/ surface with nitrogen to **5000 psi.**

23. Pump 2% KCl down tubing until valve shears or until surface pressure reaches **8500 psi** (about 12.7 bbls). At 8500 psi surface pressure, the BHP at the surge valve is 10,500 psi. Error on surge valve is +/- 5% of shear value. 10% of 10,000 psi = 500 psi, pin should shear.

24. If pin does not shear, DO NOT exceed max surface pressure. Bleed pressure back to 7500 psi, pump 2% KCl until pressure reaches 8500 psi. Continue bleed off / repressure cycle until pin shears.

25. After overbalanced surge, open tubing up to pit on 1/4" positive choke to flow back.

26. Swab test if necessary to determine if zone is wet. Consult engineering for this decision. Release PKR, TOOH. If upper zone is wet and lower one is not, these perfs will have to be squeezed.

NOTE: After Lower Dakota is complete, lay down 2-3/8" P-110 tubing when TOOH, Change rams to 2-7/8".

27. **If all Lower Dakota zones are wet**, RU wireline under lubricator if necessary, set CIBP @ 7100'.

28. PU 5" CIBP on tubing, TIH. Set CIBP @ 6550' to T&A entire Dakota zone.

Niobrara Completion:

29. Spot 350 gallons **10% acetic acid** (w/ 2 gal/1000 corrosion inhibitor) across Gallup @ 6492'. TOOH.

30. RU wireline under packoff. Perforate Gallup top-down in acid @ the following depths with 3-1/8" HSC gun w/ Owen 306 12 g charges (0.31" hole, 11" penetration), 1 SPF @ 180 degree phasing. Engineering may modify perforations based upon bond character.

6050'	**6054'**	**6060'**	**6085'**	**6091'**	**6103'**
6135'	**6140'**	**6173'**	**6197'**	**6200'**	**6208'**
6211'	**6225'**	**6228'**	**6236'**	**6242'**	**6261'**
6310'	**6315'**	**6488'**	**6492'**		

(22 total holes, 442' of interval)

31. PU 5" FB PKR, 1.81" profile nipple, 4 joints 2-3/8" 4.7# N-80 tubing, 2-3/8" x 2-7/8" buttress changeover, 2.25" profile nipple, and 2-7/8" 8.7# N-80 Buttress frac string. TIH above CIBP and below bottom perforation. Test CIBP to 3800 psi. Release PKR, pull uphole & set PKR 100' above top Gallup perforation. Hold 500 psi on annulus during acid job.

32. RU stimulation company. Pressure test surface lines to 7500 psi. **Max pressure = 6500 psi**. Prepare to break down Niobrara w/ 250 gallons **10% acetic acid** (w/ 2 gal/1000 corrosion inhibitor) and 44 7/8" 1.3 s.g. ball sealers. Attempt to achieve 20 BPM on breakdown, go higher if possible. Release pressure, RD stimulation company. Release PKR & TIH knocking balls below bottom perforation. Pull up and reset PKR.

33. RU immediate flowback equipment (frac nipple, valve, tee, etc.). See attached diagram.

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34. RU stimulation company. Pressure test surface lines to 7500 psi. **Maximum STP = 6500 psi.** Hold 500 psi on annulus. Fracture stimulate the Niobrara w/ 20# linear gel w/ 70Q N2 foam and 50,000# Tempered DC sand. See attached frac schedule for details. *(1 frac tanks needed)*

35. Flow back well immediately after shutdown -- **NOTE: Time from frac shut-down until flow tee is opened for flow back should be around 30 seconds. Time is critical to achieve reverse gravel packing. Flowback rate not to exceed 4 BPM - choke flowback line as necessary.** Frac company is to monitor flowback pressures for 30 minutes after shutdown. Flowback should continue for as long as possible while still allowing for completion of both stages within 24 hours. Blow down to release pressure when necessary.

36. Release PKR, TOOH w/ 2-7/8" tubing and PKR. RU wireline under packoff. Make 5" gauge ring run to 5300'. Set 5" CIBP @ 5275'.

Point Lookout Completion:

37. TIH w/ PKR on 2-7/8" and test CIBP to 3800 psi. Spot 300 gallons 7.5% HCl acid (w/ 2 gal/1000 corrosion inhibitor) at 5223' across Mesaverde. TOOH.

38. Perforate Mesaverde top-down in acid @ the following depths 3-1/8" HSC gun w/ Owen 306 12 g charges (0.31" hole, 11" penetration), 1 SPF @ 180 degree phasing. Engineering may modify perforations based upon bond character.

4888'	**4892'**	**4895'**	**4898'**	**4901'**	**4994'**
4997'	**5000'**	**5004'**	**5008'**	**5025'**	**5038'**
5041'	**5074'**	**5089'**	**5099'**	**5101'**	**5153'**
5156'	**5160'**	**5168'**	**5171'**	**5220'**	**5223'**

(24 total holes, 335' of interval)

39. PU 5" FB PKR, 1.81" profile nipple, 4 joints 2-3/8" 4.7# N-80 tubing, 2-3/8" x 2-7/8" buttress changeover, 2.25" profile nipple, and 2-7/8" 8.7# N-80 Buttress frac string. Set PKR 100' above top Mesaverde perforation. Hold 500 psi on annulus during acid job.

40. RU stimulation company. Pressure test surface lines to 7500 psi. **Max pressure = 6500 psi.** Prepare to break down Mesaverde w/ 300 gallons **7.5% HCl acid** (w/ 2 gal/1000 corrosion inhibitor) and 48 7/8" 1.3 s.g ball sealers. Attempt to achieve 20 BPM on breakdown, go higher if possible. Release pressure, RD stimulation company. Release PKR & TIH knocking balls below bottom perforation. Pull up and reset PKR.

41. RU immediate flowback equipment (frac nipple, valve, tee, etc.). See attached diagram

42. RU stimulation company. Pressure test surface lines to 7500 psi. **Maximum STP = 6500 psi.** Hold 500 psi on annulus. Fracture stimulate the Mesaverde w/ 100,000# 20/40 sand in slickwater + 30% N2 foam. See attached frac schedule for details. *(7 frac tanks needed)*

43. Flow back well immediately after shutdown -- **NOTE: Time from frac shut-down until flow tee is opened for flow back should be around 30 seconds. Time is critical to achieve reverse gravel packing. Flowback rate not to exceed 4 BPM - choke flowback line as necessary.** Frac company is to monitor flowback pressures for 30 minutes after shutdown. Flowback should continue for as long as necessary to release PKR.

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44. Release PKR & TOOH laying down 2-7/8" N-80 tubing. Change out rams to 2-3/8".

45. TIH w/ 3-7/8" bit and drill collars on 2-3/8" tubing and clean out to CIBP @ 5275'. Drill CIBP, clean out to CIBP @ 6550'. Drill CIBP, clean out to PBTD @ 7210' (if Lower Dakota zones are wet, PBTD will be 7100'). Clean up to +/- 5 BPH and trace to no sand. Obtain final pitot gauge. TOOH.

46. Prepare to run production tubing string as follows: expendable check, one joint 2-3/8" tubing, 1.78" seating nipple, and remaining tubing. Rabbit tubing in the hole, land @ bottom DK perf.

47. ND BOP, NU WH. Pump off expendable check and flow well up tubing. RD & release rig to next location.

48. Notify Marketing & government agencies that commingled production from all horizons MV, GP, & DK will occur in order to finalize allocation formula. At end of 90 days, the allocation formula will be submitted to NMOCD for approval, **production will commence prior to actual allocation approval.**

Concur: JDS 7/17/96
Northeast Basin Team Leader

Approved: W.J. Lee 7/18/96
Drilling Superintendent

JME JME

Recommended Vendors:

Overbalance Surge Valve	Owen Oil Tools	(817) 551-0540
Stimulation, N2 for OB perf'ing	Rig Dependent	
Cased Hole Services	Rig Dependent	
Engineering	Joan Easley	599-4026-work 324-2717-pager 327-6843-home

Meridian Oil
7/15/96:dla

PERTINENT DATA SHEET
VAUGHN #12E

Location: 1000' FNL, 1850' FWL
Unit C, Section 26, T26N, R6W
Rio Arriba County, NM

Field: Basin Dakota

Spud Date: 11-05-85
Completion Date: 12-10-85
Cathodic Protection: 1992

Elevation: 6348' GL
LAT: 36° 27' 44"
LONG: 107° 26' 22"
DP#: 54439A
GWI: 100%
NRI: 68.25%
TD: 7220'
PBTD: 7179'

Casing Record:

Hole Size	Casing Size	Weight & Grade	Depth Set	Sxs Cement	Cement Type
12-1/4"	9-5/8"	32.3#, H-40	225'	160 (189 ft3)	B w/3% CaCl, 1/4#/sk gelflake
7-7/8"	5"	23.2#, V-105, C-75	7220'	430 (659 ft3)	330sx B 65/35 w/6% gel, 2% CaCl
					100sx B 50/50 w/2% gel, 2% CaCl
		Stage Tool	5472'	420 (680 ft3)	B 65/35 w/6% gel, 2% CaCl
		Stage Tool	2841'	400 (648 ft3)	B 65/35 w/6% gel, 2% CaCl
					good circulation all stages

Tubing Record:

Tubing Size	Weight & Grade	Depth Set	BHA
2-3/8"	4.7#, J-55	7065'	SN 1 jt off btm @ 7031'
			expendable check on btm

Formation Tops:

Ojo Alamo	2007'	Chacra	3526'	Mancos	5373'
Kirtland	2198'	Mesaverde	4300'	Gallup	5915'
Fruitland	2468'	Menefee	4350'	Greenhorn	6782'
Pictured Cliffs	2644'	Pt. Lookout	4873'	Graneros	6832'
				Dakota	6957'

Logging Record:

Ind. Electrolog Gamma Ray, Gamma Ray Correlation log, Temp Survey

Stimulation:

Perf'd 6875', 6878', 6881', 6884', 6895', 6897', 6911', 6914', 6995', 6998', 7001', 7004', 7011', 7014', 7038', 7041', 7044', 7047', 7068', 7070', 7072', 7074', 7083', 7086', 7089' w/25 SPZ.
Frac'd w/65,000# 40/60 sand, 85,830 gal slickwater

Workover History:

3-31-94 Ran pressure gauge. Pressure @ 7030' was 516 psi. Csg pressure = 431 psi
Tbg pressure = 422 psi.

Production History: Current Production: 349 MCFD 2.9 BOPD
Initial Deliverability No Info Latest Deliverability: 356 MCFD 3 BOPD
Cum Gas: 1330 MMCF Cum Oil: 9379 BOP ISITP: 1507 ISICP: 1508

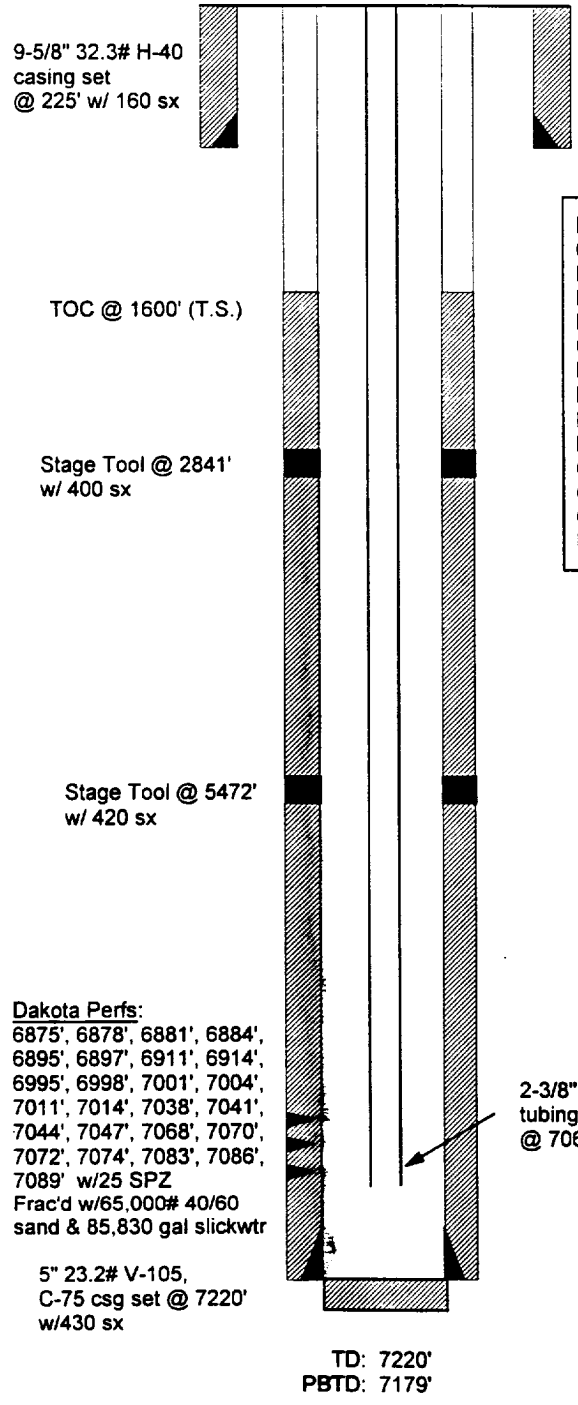
Transporter: Oil/Condensate: Giant Transporation Gas: El Paso Natural Gas

JME

VAUGHN #12E

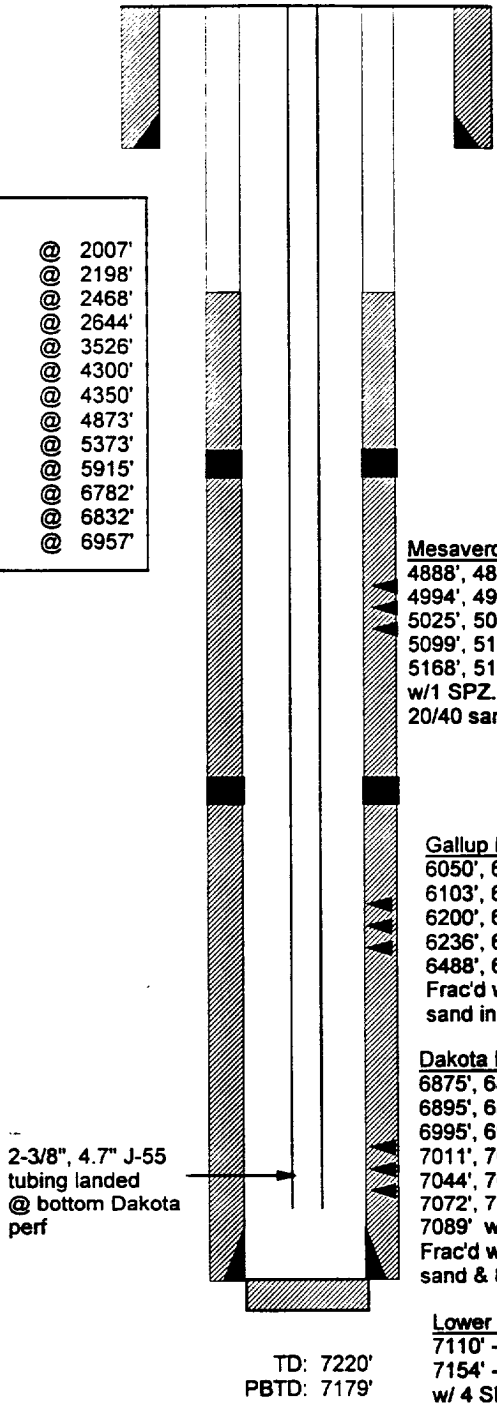
Basin Dakota
Unit C, Section 26, T26N, R6W
Rio Arriba County, NM
Elevation: 6576' GL
LAT: 36° 27' 44"
LONG: 107° 26' 22"
date spud: 11-05-85

Current



Formation Tops		
Ojo Alamo	@	2007'
Kirtland	@	2198'
Fruitland	@	2468'
Pictured Cliffs	@	2644'
Chacra	@	3526'
Mesaverde	@	4300'
Menefee	@	4350'
Point Lookout	@	4873'
Mancos	@	5373'
Gallup	@	5915'
Greenhorn	@	6782'
Graneros	@	6832'
Dakota	@	6957'

Final



Mesaverde Perfs:
4888', 4892', 4895', 4898', 490
4994', 4997', 5000', 5004', 500
5025', 5038', 5041', 5074', 508
5099', 5101', 5153', 5156', 516
5168', 5171', 5220', 5223'
w/1 SPZ. Frac'd w/ 100,000# 20/40 sand in slickwater + 30%

Gallup Perfs:
6050', 6054', 6060', 6085', 60
6103', 6135', 6140', 6173', 61
6200', 6208', 6211', 6225', 62
6236', 6242', 6261', 6310', 63
6488', 6492' w/1 SPZ
Frac'd w 50,000# Tempered L
sand in 20# lin gel w/ 70Q N2

Dakota Perfs:
6875', 6878', 6881', 6884', 6895', 6897', 6911', 6914', 6995', 6998', 7001', 7004', 7011', 7014', 7038', 7041', 7044', 7047', 7068', 7070', 7072', 7074', 7083', 7086', 7089' w/25 SPZ
Frac'd w/65,000# 40/60 sand & 85,830 gal wtr.

Lower Dakota Perfs:
7110' - 7120'
7154' - 7206'
w/ 4 SPF (248 holes)

Meridian Oil Inc.
06/05/96: dla

Vaughn #12E
Alternate Procedure Items for Fracing Down Casing

The workover procedure for this well has been written assuming that it will be necessary to frac down tubing (worst case scenario).

If no squeeze operations are necessary and the subsequent pressure test to 3800 psi (Step #8) is okay, we will frac down casing. Alternate frac designs for this possibility are attached.

If we can frac down casing, we will still spot acid and pressure test bridge plugs as before. We will do the acid breakdown down casing and retrieve balls with a junk basket. The frac will still be flowed back immediately.

Concur: _____ 7/11/96
Northeast Basin Team Leader

Approved: _____ 7/18/96
Drilling Superintendent

JME
599-4026-work
324-2717-pager
327-6843-home