

## SUMMARY OF OIL PRODUCTION & FREE PRODUCT

### BURLINGTON (BROG):

1. Hampton 4M Wellhead Oil Production  
1985-1997: Mesa Verde: 673 bbl = 28,266 gallons  
Dakota: 5,233 bbl = 219,786 gallons  
TOTAL: 5,906 bbl = 248,052 gallons
2. Separator = 99% efficient at product separation: 245,572 gallons recovered, stored onsite, & sold by BROG
3. 1995 Production records: 320 bbl short of average oil production  
13,440 gallons oil unaccounted for in 1995
4. Free product storage at Hampton 4M Site:  
300 bbl MV Tank = 12,600 gallons >22,000 gallon liquid storage capacity  
210 bbl DK Tank = 8,820 gallons  
(2) 500-gallon produced liquid tanks  
(2) surface impoundments

99% Free product produced by the Hampton 4M well was managed and handled by BROG.

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### PNM (<June 30, 1995) /WILLIAMS (>June 30, 1995):

1. Maximum Free Product available for pass-through to PNM/WFS Dehydrator: 2,480 gallons  
(1% of Hampton 4M wellhead oil produced)
2. 1 500-gallon produced liquid tank: 500 gallon liquid storage capacity onsite
3. Production ratio: 73% Dakota = 1810 gallons  
27% Mesa Verde = 670 gallons
4. Product infiltrating into subsurface depends on volatility:  
Dakota API = 68; assume 90% flashes off on discharge = 181 gallons to subsurface  
Mesa Verde API = 55; assume 40% flashes on discharge = 402 gallons to subsurface

Maximum possible discharge to subsurface via PNM/WFS dehydrator: 583 gallons free product

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### FREE PRODUCT

Plume volume estimates : 7,700 to 13,000 gallons

Assumes 15% to 25% porosity; product thickness 3x aquifer thickness; internal plume shape similar to external plume shape; structural control by well pad boundaries; data: pre-recovery maximum, July, & Oct. 1998 data

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### CONCLUSIONS

- 99% Oil produced at this site managed and handled by BROG
- Free product in subsurface represents 3 to 5 % of oil production on record for Hampton 4M well.
- Free product in subsurface represents 3 to 5% of free product handled by BROG.
- Free product in subsurface is 13 to 23 times greater than maximum product potentially reaching PNM/WFS dehydrator.
- Product unaccounted for by BROG in 1995 alone is approximately 100 to 125% of the free product plume volume
- Maximum possible free product via PNM/WFS dehydrator: 5 to 8% free product in subsurface
- Subsurface free product recovered by PNM remediation system in 1998: >1,000 gallons
- PNM's remediation of >1,000 gallons has removed the quantity of free product potentially attributable to PNM

