

D.S.T. #1

Ran DST #1 4480'-4550' (70') tested San Andres. Tool open 1 hr. 15 min, shut in for 15 min BU. Weak blow immediately, died in 1 hr. Recovered 10' slightly oil and gas cut mud. IFP 0#, FFP 0#, SIP 0#, MCP 2195#, 1" TC, 5/8" BC. Samples had poor show.

DST #2

Ran DST #2 8098'-8140' (42'). Tool open 4 hours, shut in for 30 min BU. Had fair blow immed., gas to surface in 3 hours 15 min, rec. 60' of slightly oil cut and heavily gas cut mud. Filtrate of mud in tool titrated 80,000 PPM, mud in pits 82,000 PPM. IFP 40#, FFP 40#, SIP 400#, MCP 4415#, 1" TC, 5/8" BC.

DST #3

Ran DST #3. Tested 8138'-8197' (59') Wolfcamp. Tool open 3 hours, had good blow throughout test, no gas to surface. Shut in for 30 min BU. Rec. 100' slightly oil and gas cut drilling fluid. IFP 25#, FFP 60#, SIP 200#, MCP 4350#. Pit mud titrates 80,000 PPM, mud in tool titrates 70,000 PPM.

DST #4

Ran DST #4, 8197'-8255' (58'). Tested Wolfcamp. Tool open 1 hour 20 min, shut in for 30 min BU. Tool open with weak blow, died in 37 min, reopened tool after 45 min, got weak blow died in 17 min. Rec. 90' of mud titrating 78,000 PPM. No show. Pit mud titrates 87,000 PPM. IFP 40#, FFP 90#, SIP 130#, MCP 4190#, 1" TC, 5/8" BC.

DST #5

Ran DST #5. Tested 8420'-8500' (80') Wolfcamp lime. Tool open 4 hours. Shut in for 30 min BU. Tool open with weak blow increased to good blow, gas in 1 hour 25 min, flowed at rate of 9.2 MCF/day. Rec. 1185 (87 bbls) of heavily oil and gas cut mud (30% oil) and 90' (0.3 bbl) of clean 46.8 deg gravity oil. IFP 70#, FFP 375#, SIP 865#, MCP 4315#, 1" TC, 5/8" BC.

DST #6

Ran DST #6 8499'-8575' (76') Wolfcamp (Saunders). Tool open 4 hours, got good blow immed. Continued throughout test, shut in for 30 min BU. Rec. 600' (4.5 bbls) gas cut mud, bottom 5' slightly oil cut. IFP 60#, FFP 240#, SIP 355#, MCP 4530#, 1" TC, 5/8" BC.

DST #7

Ran DST #7 8615'-8691' (76') Saunders-Penn. Tool open 1 hour shut in for 20 min BU. Tool open w/weak blow died in 8 min, reopened after 40 min, died in 3 min. Rec. 60' of drilling fluid, no show. IFP 30#, FFP 60#, SIP 60#, MCP 4400#, 1" TC, 5/8" BC.

1. The first part of the paper is devoted to a general discussion of the problem of the existence of solutions of the system of equations (1) for arbitrary values of the parameters  $\alpha$  and  $\beta$ .

## 2. Results

2.1. In the first section we shall consider the case when the parameters  $\alpha$  and  $\beta$  are arbitrary. It is shown that the system of equations (1) has solutions for arbitrary values of the parameters  $\alpha$  and  $\beta$  if and only if the condition

$$\alpha + \beta = 1 \quad (2)$$

is satisfied. In this case the solutions of the system of equations (1) are given by the formulas

## 3. Conclusion

3.1. In the second section we shall consider the case when the parameters  $\alpha$  and  $\beta$  are arbitrary. It is shown that the system of equations (1) has solutions for arbitrary values of the parameters  $\alpha$  and  $\beta$  if and only if the condition

$$\alpha + \beta = 1 \quad (3)$$

is satisfied. In this case the solutions of the system of equations (1) are given by the formulas

## 4. References

4.1. In the third section we shall consider the case when the parameters  $\alpha$  and  $\beta$  are arbitrary. It is shown that the system of equations (1) has solutions for arbitrary values of the parameters  $\alpha$  and  $\beta$  if and only if the condition

$$\alpha + \beta = 1 \quad (4)$$

is satisfied. In this case the solutions of the system of equations (1) are given by the formulas