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DEPARTMENT OF MINES
SOUTH AUSTRALIA

FLOW AND PRESSURE TESTING OF BORES

GREAT ARTESIAN BASIN EASTERN MARGIN

Progress Report No 1.

INTRODUCTION

Six bores near the South Australian - New South Wales border were selected to be established as observation bores. Three of these bores, namely Coomana, New Tilcha and Fortville proved to be in sound condition and annual readings can be made without additional work.

A report on the condition of Old Tilcha bore is included.

TEST RESULTS

Muloowurtina Bore

Grid L5 P.S. 11[8] P.L. 2139 Block 798

Depth 1432'

Tested on 9.10.65

Static Pressure 37 p.s.i.

Temperature 128°F

Flow 9,700 gallons per hour

Orifice plate not fitted

Remarks

Head in good condition. Leak appeared from beneath surface after flow shut off for 1 hour.

1 new valve fitted. 1 flange blanked off.

Yandama Bore

Grid L4 P.S. 11[8] P.L. 2139 Block 798

Depth	1642'
Tested on	10.10.65
Static Pressure	35 p.s.i.
Temperature	134°F
Flow	11,300 gallons per hour
Orifice plate	Not fitted

Remarks

Head in good condition. Flow line recently repaired and in good condition. Both valves were freed and turned off for testing. After the flow was shut off for 5 minutes a leak appeared from beneath the surface.

No new valves fitted.

Coonana Bore

Grid L4 P.S. 11[8] P.L. 1602 Block 861

Depth	2030'
Tested on	11.10.65
Static Pressure	23 p.s.i.
Temperature	131°F
Flow	11,200 g.p.h.
Orifice plate	Not fitted

Remarks

Head in good condition. One valve removed and replaced with blank plate. Other valve repaired and replaced. Flow line badly corroded and leaking. Bore head and flow line partially covered with sand.

New Tilcha Bore

Grid L 4 P.S. 11^{N} P.L. 1602 Block 861

Depth	2353'
Tested on	12.10.65
Static Pressure	60 p.s.i.
Temperature	132°F
Flow	33,600 gallons per hour
Orifice plate	Not fitted.

Remarks

Head in good condition. One valve removed and replaced with blank plate. One new valve fitted. Brass flow pipe corroded and leaking. Flow line to Tilcha Creek corroded, broken and collapsed. Head dry.

Old Tilcha Bore

Grid L4 P.S. 11^{N} P.L. 1602 Block 861

Depth 2345'

Located ¼ mile east of New Tilcha on southern side of Tilcha Creek.

2 ft of 6" casing above ground. No flow at surface but water can be heard escaping underground approximately 200' beneath surface. Stone or piece of wood blocking hole above water level.

Recommendation

This bore should be cleaned out and cemented off as it is of no further use.

Fortville No. 1 (Linden Station)

Grid L 4 P.S. 11^N P.L. 2186 Block 1093

Depth T.D. 3610' Producing water from 3000'

Tested on 14.10.65

Static Pressure 24 p.s.i.

Temperature 172^oF

Flow Open hole 12,100 g.p.h.

Controlled 3,700 g.p.h.

Orifice plate 1" diameter orifice in stainless steel plate.

Remarks

Good condition. Valves operating. The flow of 18,000 gallons per hour on completion of the bore has decreased to 12,100 gallons per hour in 16 months.

Dullingar Bore

Grid L 3 P.S. 15^S P.L. 1714 Block 757

Depth T.D. 11,588 Producing water from 7933' - 7976'

Inspected on 15.10.65.

A 4" pipe has been welded to the 9⅝" bore casing and a 4" threaded valve fitted with a short reducing piece to a 3" valve. Both valves have been broken and water is spurting from the stem of the 4" valve. A screwed plug with orifice has been fitted to a short length of pipe from the 3" valve.

The bore-head is flooded to a depth of 6" to 1' with deep soft mud below. The cement block around the bore-head has broken and subsided allowing free movement of the 9⅝" casing.

Access to the bore-head is difficult on foot and impossible with a truck.

No work was attempted on the bore.

Recommendations

It is recommended that the bore be brought under control by fitting a new valve and a flow line to take the water away from the bore-head. Access to the bore-head could be obtained by building a track from a low sand ridge on the northern side. A new cement block could then be set to hold the bore-head casing.

SUMMARY AND CONCLUSION

The pressures recorded are lower and the flows smaller than in the central portion of the Great Artesian Basin.

Muloowurtina and Yandama bores began to leak from beneath the surface when the flow was shut in. Further deterioration can be expected and these bores will not be suitable as observation bores until repaired.

The decrease in the flow of Fortville Bore in the first year is consistent with the "flush" flows experienced in Queensland and New South Wales. This bore is the only one fitted with an orifice plate and the relatively small flow of 3,700 gallons per hour has proved adequate for stock use.

Dullingari Bore completed as a water producer in late 1962 has shown very rapid deterioration of the bore-head. It is recommended that this bore be repaired and brought under control as soon as possible and then maintained in a sound dry condition.

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