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PLANS Nil.

Envelope 458

COMPANY CONFIDENTIAL 2

PHOSPHATE SPOT TESTING OF SELECTED CORES AND CUTTINGS FROM BORES IN SOUTH AUSTRALIA.

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Melbourne, Victoria.

April 5, 1965

Spot testing of certain cores and cuttings from bores in South Australia was carried out in the core library of the S.A. Geological Survey between February 22 and March 12.

Only one sample gave a yellow, moderate reaction with ammonium molybdate, which was from the Kulpara Limestone in the Minlaton No. 1 bore. All other samples tested gave less than weak precipitates and a majority gave essentially nil reaction. Results are shown in the attached logs.

The cores and cuttings of only three stratigraphic intervals were selected and tested:-

1. The Cretaceous Albian-Aptian interval (so-called "fishscale zone").
2. The Cretaceous Transition Beds of the Blythesdale Group.
3. The Lower Cambrian Parara and Kulpara limestones.

Bores that intersected these intervals were selected and stratigraphic data was obtained for each bore, if it was available. The Cretaceous bores are all located in the Great Artesian Basin, while the single Cambrian bore is from the Eyre Peninsula.

The following bores were examined -

Cretaceous Bores

-Lake Harry
Toonketcher
Chappalanna
Jewellery
Nickoftime
Tooperrawarrina
Quartpot
Troudannina
-Dulkaninna
-Clayton
Peachawarrina
-Innaminka No. 1
Orientos No. 1
Cootabarlow
-Putamurdie No. 1
-Witcherrie No. 1
Birdsville Town Bore
-Santos Oodnadatta No. 1
Fortville No. 1
Daly Mine
Wilkatana No. 1

Cambrian Bore

-Minlaton No. 1

The phosphate spot testing was done with an acid solution of ammonium molybdate. The samples were tested as follows:

a) A small portion of core or cuttings, representative of a particular depth, was placed on a test plate;

b) A few drops of ammonium molybdate solution was added;

c) The reaction with this solution (if any) was then noted by examination under a microscope.

Code used in Description of the Reaction

A letter code was used. The first letter or letters describe the colour of the precipitate obtained -

Y = Yellow
YG = Yellowish-green
GY = Greenish-yellow
G = Green

The second letter or letters describe the intensity of the precipitate -

Copious yellow precipitate	=	S	= Strong
Cloudy yellow precipitate	=	M	= Moderate
Distinct yellow precipitate	=	W	= Weak
Trace of yellow precipitate	=	VW	= Very Weak

These intensity values are only arbitrary and, in many cases, it was difficult to determine which value to use.

The last letter in the code referred to the rate of reaction -

S = Slow
F = Fast

-N- indicates no reaction

DALY MINE BORE

Depth (feet)	Reaction	Formation	Remarks
5	-N-	Unknown	These rocks have been subjected to varying degress of metamorphism.
13	YVWS		
23	-N-		
27	-N-		
37	YG Trace		
46	YG Trace		
51	-N-		
56	-N-		
61	-N-		
71	YVWS		
76	YVWS		
81	Y Trace		
86	Y Trace		
93	-N-		
98	-N-		
106	YVWS		
113	-N-		
121	-N-		
130	Y Trace		
140	Y Trace		
150	Y Trace		
156	-N-		
164	-N-		
178	-N-		
183	-N-		
194	-N-		
199	-N-		

Below the 200 ft. depth are the metallic ore zones.

Spot samples gave negative results.

WILKATANA NO. 1

Depth (feet)	Reaction	Formation	Remarks
723	YWF	Unknown	Evaporite Beds
777	-N-		
788	-N-		
797	-N-		
811	-N-		
823	-N-		
835	-N-		
847	-N-		
860	-N-		
871	-N-		
888	-N-		
900	-N-		
910	-N-		
917	-N-		
927	-N-		
935	-N-		
947	-N-		
957	-N-		
978	-N-		
1000	-N-		
1010	-N-		
1018	-N-		
1026	Trace		
1036	Trace		
1047	-N-		
1058	-N-		
1068	-N-		
1079	-N-		
1088	-N-		
1090	Trace		
1104	-N-		
1119	-N-		
1129	-N-		
1139	-N-		
1149	-N-		
1159	-N-		Massive fine grained limestone
1174	-N-		
1192	-N-		
1203	-N-		

WILKATANA NO. 1 (Cont'd)

Depth (feet)	Reaction	Formation	Remarks
1212	YVWS	Unknown	
1220	Trace		
1233	-N-		
1243	-N-		
1253	-N-		
1263	Trace		
1270	-N-		
1283	-N-		
1290	-N-		
1300	-N-		
1310	Y Trace		
1320	Y Trace		
1332	YVWS		
1336	Y Trace		

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MINLATON NO. 1

Depth (feet)	Reaction	Formation	Remarks
616	-N-	Ramsay Limestone Mid.Cambrian	
620	-N-	" " "	
629	-N-	" " "	
639	-N-	" " "	
648	-N-	" " "	
649	-N-	" " "	
659	-N-	" " "	
679	-N-	" " "	
689	-N-	" " "	
707	-N-	" " "	
719	-N-	" " "	
729	-N-		
732	-N-		
1123	-N-	Unnamed	
1134	-N-	"	
1140	Trace	"	
1151	Trace	"	
1160	Trace	"	
1171	Trace	"	
1176	Trace	"	
1148	YVWF		
		1194	
1195	YVWF	Parara Limestone Lower Cambrian	
1205	YVWF	" " " "	
1215	YVWF	" " " "	
1226	YVWF	" " " "	
1253	YMF	" " " "	
1274	-N-	" " " "	
1290	-N-	" " " "	
1281	-N-	" " " "	
1301	-N-	" " " "	
1313	-N-	" " " "	
1318	-N-	" " " "	
1324	-N-	" " " "	
1335	-N-	" " " "	
1345	-N-	" " " "	
1355	-N-	" " " "	
1368	-N-	" " " "	
1379	-N-	" " " "	
1398	-N-	" " " "	
1408	-N-	" " " "	
1424	YVWF	" " " "	
1434	-N-	" " " "	

MINLATON NO. 1 (Cont'd)

Depth (feet)	Reaction	Formation	Remarks
1455	-N-	Parara Limestone Lower Cambrian	
1465	YVWF	" " " "	
1485	YVWF	" " " "	
1496	YWF	" " " "	
1506	-N-	" " " "	
1512	YVWF	" " " "	
1530	GVWF	" " " "	
1539	-N-	" " " "	
1549	YVWF	" " " "	
1560	YVWF	" " " "	
1586	YVWF	" " " "	
1617	-N-	" " " "	
1627	-N-	" " " "	
1637	-N-	" " " "	
1654	-N-	" " " "	
1665	-N-	" " " "	
1680	GVWF	" " " "	
1700	-N-	" " " "	
1721	YWF	" " " "	
1730	YWF	" " " "	
1760	YWF	" " " "	
1790	GYWF	" " " "	
1850	YGVWF	" " " "	
1860	YGVWF	" " " "	
1891	YWF	" " " "	
1913	GWF	" " " "	
1923	YVWF	" " " "	
1973	GVWF	" " " "	
1983	GVWF	" " " "	
1993	-N-	" " " "	
2014	GWF	" " " "	
2060	GMF	" " " "	
2045	YWF	" " " "	
2019	-N-	" " " "	
2111	GWF	" " " "	
2101	YWF	" " " "	
		2118	
2143	-N-	Kulpara Limestone Lower Cambrian	
2151	YVWF	" " " "	
2075	YWF	" " " "	
2080	YVWF	Parara Limestone Lower Cambrian	
2116	YWF	" " " "	
2108	YVWF	" " " "	

MINLATON NO. 1 (Cont'd)

Depth (feet)	Reaction	Formation	Remarks
2134	-N-	Kulpara Limestone Lower Cambrian	
2138	YWF	" " " "	
2167	-N-	" " " "	
2183	-N-	" " " "	
2212	-N-	" " " "	
2203	-N-	" " " "	
2198	-N-	" " " "	
2249	-N-	" " " "	
2228	-N-	" " " "	
2242	-N-	" " " "	
2283	-N-	" " " "	
2293	-N-	" " " "	
2304	-N-	" " " "	
2324	-N-	" " " "	
2345	-N-	" " " "	
2348	-N-	" " " "	
2372	-N-	" " " "	
2365	-N-	" " " "	
2386	-N-	" " " "	
2404	-N-	" " " "	
2432	-N-	" " " "	
2443	-N-	" " " "	
2421	-N-	" " " "	
2450	-N-	" " " "	
2461	-N-	" " " "	
2477	-N-	" " " "	
2485	-N-	" " " "	
2488	-N-	" " " "	
2494	-N-	" " " "	
2518	-N-	" " " "	
2525	-N-	" " " "	
2536	-N-	" " " "	
2546	-N-	" " " "	
2563	-N-	" " " "	
2573	-N-	" " " "	
2583	-N-	" " " "	
2591	-N-	" " " "	
2597	-N-	" " " "	
2610	-N-	" " " "	
2630	-N-	" " " "	
2637	-N-	" " " "	
2654	-N-	" " " "	
2691	-N-	" " " "	

MINLATON NO. 1 (Cont'd)

Depth (feet)	Reaction	Formation	Remarks
2700	-N-	Kulpara Limestone Lower Cambrian	
2705	-N-	" " " "	
2728	-N-	" " " "	
2741	-N-	" " " "	
2763	-N-	" " " "	
2778	-N-	" " " "	
2798	-N-	" " " "	
2815	-N-	" " " "	
2828	-N-	" " " "	
2848	-N-	" " " "	
2856	-N-	" " " "	
2870	-N-	" " " "	
2879	-N-	" " " "	
2884	-N-	" " " "	
2914	-N-	" " " "	
2938	-N-	" " " "	
2928	Y Trace	" " " "	
2968	-N-	" " " "	
3004	-N-	" " " "	
3024	-N-	" " " "	
3031	-N-	" " " "	
3041	-N-	" " " "	
3054	YVWS	" " " "	
3074	-N-	" " " "	
3081	YVWS	" " " "	
3104	Y Trace	" " " "	
3125	YVWF	Unnamed	
3134	YVWF	"	
3141	YVWF	"	
3161	YVWF	"	
3174	YVWF	"	
3183	YVWF	"	
3195	YVWF	"	
3215	YVWF	"	
3234	YVWF	"	
3241	YVWF	"	

ORIENTOS NO. 1

Depth (feet)	Reaction	Formation			Remarks
2950	GY Trace	Tambo Formation		Albian	
2960	-N-	"	"	"	
2970	-N-	"	"	"	
2980	GY Trace	"	"	"	
3000	-N-	"	"	"	
2990	-N-	"	"	"	
3010	GY Trace	"	"	"	
		3014			
3020	-N-	Roma Formation		Aptian	
3030	YGVWF	"	"	"	
3040	-N-	"	"	"	
3050	YG Trace	"	"	"	
4080	-N-	Transition Beds Blythesdale		Aptian-Neocomian Group	Traces
4090	-N-	"	"	"	"
4100	-N-	"	"	"	"
4110	-N-	"	"	"	
4120	YVWF	"	"	"	
4130	-N-	"	"	"	
4140	-N-	"	"	"	
4150	Y Trace	"	"	"	
4160	Y Trace	"	"	"	
4170	Y Trace	"	"	"	
4180	Y Trace	"	"	"	
4190	Y Trace	"	"	"	
4200	GVWF	"	"	"	
4210	YVWF	"	"	"	
4220	GYVWF	"	"	"	
4230	YGVWF	"	"	"	
4240	GVWF	"	"	"	
4250	-N-	"	"	"	
4260	-N-	"	"	"	
4270	YVWF	"	"	"	
4280	YVWF	"	"	"	
4290	YVWF	"	"	"	
4300	YVWF	"	"	"	
4310	YVWF	"	"	"	
4320	YVWF	"	"	"	
4330	YVWF	"	"	"	
4340	YVWF	"	"	"	
4350	YVWF	"	"	"	

ORIENTOS NO. 1 (Cont'd)

Depth (feet)	Reaction	Formation			Remarks
4360	YVWF	Transition Beds Blythesdale	Group	Aptian-Neocomian	
4370	YWF	"	"	"	
4380	YWF	"	"	"	

COOTABARLOW

Depth (feet)	Reaction	Formation	Remarks
1336	-N-	Aptian-Albian	
1348	G Trace	" "	
1352	-N-	" "	
1372	YVWF	" "	
1374	-N-	" "	
		1390	
1393	-N-	Blythesdale Group U. Jurassic	
1401	-N-	" " "	
1427	-N-	" " "	
1447	-N-	" " "	
1467	-N-	" " "	
1472	-N-	" " "	

Cores very poorly identified.

Depths tested were those that could be accurately determined.

INNAMINKA NO. 1

Depth (feet)	Reaction	Formation			Remarks
3942	-N-				Cores
3947	Y Trace				"
4031	Y Trace				"
4039	Y Trace				"
4040	YVWF				"
4048	-N-				"
2680-2690	Y Trace	? Tambo Formation		Albian	Cuttings
2700-2710	Y Trace	"	"	"	"
2730-2740	YVWF	"	"	"	"
2740-2750	-N-	"	"	"	"
2760-2770	-N-	"	"	"	"
		2770			
2780-2790	-N-	Roma Formation		Aptian	"
2800-2810	-N-	"	"	"	"
2820-2830	-N-	"	"	"	"
2840-2850	-N-	"	"	"	"
2860-2870	-N-	"	"	"	"
2880-2890	Y Trace	"	"	"	"
2900-2910	YVWF	"	"	"	"
2920-2930	YVWF	"	"	"	"
2940-2950	-N-	"	"	"	"
2960-2970	-N-	"	"	"	"
2980-2990	-N-	"	"	"	"
2990-3000	-N-	"	"	"	"
3930-3940	-N-	? Upper Blythesdale		Neocomian	"
3950-3960	YVWF	Group	"	"	"
3970-3980	Trace	"	"	"	"
4010-4020	YVWF	"	"	"	"
4030-4040	-N-	"	"	"	"
4050-4060	YVWF	"	"	"	"
4070-4080	YVWF	"	"	"	"
4090-4100	YVWF	"	"	"	"
4110-4120	YVWF	"	"	"	"
4130-4140	YVWF	"	"	"	"
4150-4160	YVWF	"	"	"	"
4160-4170	Y Trace	"	"	"	"
4180-4190	Y Trace	"	"	"	"
4200-4210	-N-	"	"	"	"
4220-4230	YVWF	"	"	"	"
4240-4250	Trace	"	"	"	"
4260-4270	YVWF	"	"	"	"

INNAMINKA NO. 1 (Cont'd)

Depth (feet)	Reaction	Formation	Remarks
4280-4290	-N-	? Upper Blythesdale Neocomian Group	Cuttings
4300	-N-	"	"
4320	-N-	" " "	"
4340		(No sample)	
4360	-N-	" " "	"
4380	-N-	" " "	"
4400	-N-	" " "	"
4420	-N-	" " "	"
4440	-N-	" " "	"
4460	-N-	" " "	"
4480	-N-	" " "	"
4500	-N-	" " "	"
4520	-N-	" " "	"
4540	-N-	" " "	"
4560	-N-	" " "	"
4580	YWF	" " "	"
4590	-N-	" " "	"
4600	-N-	" " "	"

PUTAMURDIE NO. 1

Depth (feet)	Reaction	Formation				Remarks
3250	-N-	Fishscale Zone		Lower Albian		
3280	YVWF	"	"	"	"	
		3305				
3310	YVWF	Roma Formation		Lower Aptian		
3340	-N-	"	"	"	"	
3370	-N-	"	"	"	"	
3430	YVWF	"	"	"	"	
3440	-N-	"	"	"	"	
3460	-N-	"	"	"	"	
3490	YVWF	"	"	"	"	
3520	YVWF	"	"	"	"	
3550	YWF	"	"	"	"	
3580	YVWF	"	"	"	"	
3610	-N-	"	"	"	"	
3640	-N-	"	"	"	"	
3670	YWF	"	"	"	"	
3700	YVWF	"	"	"	"	
3730	-N-	"	"	"	"	
3760	YVWF	"	"	"	"	
3790	GVWF	"	"	"	"	
3820	YVWF	"	"	"	"	
3850	-N-	"	"	"	"	
3880	YWF	"	"	"	"	
3910	YVWF	"	"	"	"	
3940	YVWF	"	"	"	"	
		3970				
3970	-N-	Transition Beds		Lower Aptian-Neocomian		
4000	YVWF	"	"	"	"	
4030	YVWF	"	"	"	"	
4060	YVWF	"	"	"	"	
4090	-N-	"	"	"	"	
		4103				
4120	-N-	Mooga Sandstone		U. Jurassic		
4150	YVWF	"	"		"	

DULKANINNA BORE

Depth (feet)	Reaction	Formation	Remarks
320-344	YVWF		
344-400	-N-		
400-410	-N-		
410-455	YVWF		
455-465	-N-		
465-485	YVWF		
485-522	-N-		
522-585	-N-		
585-836	-N-		
836-855	-N-		

All the available material for this bore was tested.

It is an old bore and the correlation has not been worked out. Also, many of the samples have been lost.

CLAYTON BORE

Depth (feet)	Reaction	Formation	Remarks
345-348	YVWF		
348-391	Y Trace		
391-427	-N-		
427-450	YVWF		
450-482	Y Trace		
482-512	Y Trace		
512-555	Y Trace		
555-580	-N-		
580-607	Y Trace		
607-670	-N-		
670-700	Y Trace		No correlation available. All material available was tested.
700-790	-N-		
790-875	-N-		
875-908	-N-		
908-914	Y Trace		Very old bore.
914-920	-N-		
920-930	Y Trace		
930-938	-N-		
938-959	-N-		
959-984	Y Trace		
984-1007	-N-		
1007-1042	-N-		
1042-1085	-N-		
1085-1097	-N-		
1097-1139	-N-		
1139-1176	-N-		
1176-1215	-N-		
1215-1276	-N-		
1276-1356	-N-		
1356-1357	-N-		
1357-1418	Y Trace		
1418-1582	-N-		
1582-1587	-N-		
1587-1589	YVWF		
1589-1598	-N-		
1598-1599	YVWF		
1599-1611	-N-		
1611-1616	-N-		
1616-1622	YVWF		
1622-1640	-N-		
1640-1669	-N-		
1669-1704	-N-		

PEACHAWARRINA BORE

Depth (feet)	Reaction	Formation	Remarks
1218-1297	Y Trace		
1297-1449	-N-		
1449-1580	-N-		
1580-1582	Y Trace		
1582-1664	-N-		
1664-1665	YVWF		
1665-1840	-N-		
1840-2043	-N-		
2043-2209	-N-		
2209-2295	-N-		
2295-2314	-N-		
2314-2325	-N-		
2325-2332	-N-		
2332-2342	Y Trace		
2342-2348	YG Trace		
2348-2375	Y Trace		
2375-2398	Y Trace		
2398-2407	Y Trace		
2407-2464	YVWF		

1052-2464 Marine

BLACK OAK

Depth (feet)	Reaction	Formation	Remarks
450	-N-	The only core available is from 448'6" to 454'0".	

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BIRDSVILLE TOWN BORE

Depth (feet)	Reaction	Formation				Remarks
2900-2910	YVWF	Tambo	Formation	Lower	Cretaceous	Trace
2910-2920	YVWF	"	"	"	"	"
2920-2930	YVWF	"	"	"	"	"
2930-2940	YVWF	"	"	"	"	"
2940-2950	YVWF	"	"	"	"	"
2950-2960	YVWF	"	"	"	"	"
2960-2970	YVWF	"	"	"	"	"
2970-2980	YVWF	"	"	"	"	
		2980				
2980-2990	-N-	Fishscale	Zone	Lower	Cretaceous	"
2990-3000	-N-	"	"	"	"	"
3000-3010	-N-	"	"	"	"	"
3010-3020	-N-	3013				
3020-3030	YVWF	Roma	Formation	Lower	Cretaceous	"
3030-3040	YVWF	"	"	"	"	"
3040-3050	YVWF	"	"	"	"	"
3050-3060	YVWF	"	"	"	"	"
3060-3070	YVWF	"	"	"	"	"
3070-3080	YVWF	"	"	"	"	"
3080-3090	YVWF	"	"	"	"	"
3090-3100	YVWF	"	"	"	"	"
3100-3110	YGVWF	"	"	"	"	"
3110-3120	YVWF	"	"	"	"	"
3120-3130	YVWF	"	"	"	"	"
3130-3140	YVWF	"	"	"	"	"
3140-3150	YVWF	"	"	"	"	"
3150-3160	YVWF	"	"	"	"	"
3160-3170	YVWF	"	"	"	"	"
3170-3180	YVWF	"	"	"	"	"
3180-3190	YVWF	"	"	"	"	"
3190-3200	YVWF	"	"	"	"	"
3200-3210	YVWF	"	"	"	"	"
3210-3220	YVWF	"	"	"	"	"
3220-3230	YVWF	"	"	"	"	"
3230-3240	YVWF	"	"	"	"	"
3240-3250	YVWF	"	"	"	"	"
3250-3260	YVWF	"	"	"	"	"
3260-3270	-N-	"	"	"	"	"
3270-3280	-N-	"	"	"	"	"
3280-3290	-N-	"	"	"	"	"
3290-3300	YVWF	"	"	"	"	"
3300-3310	-N-	"	"	"	"	"

BIRDSVILLE TOWN BORE (Cont'd)

Depth (feet)	Reaction	Formation				Remarks
3310-3320	YVWF	Roma	Formation	Lower	Cretaceous	Trace'
3320-3330	-N-	"	"	"	"	"
3330-3340	-N-	"	"	"	"	"
3340-3350	-N-	"	"	"	"	"
3350-3360	-N-	"	"	"	"	"
3360-3370	-N-	"	"	"	"	"
	missing					
3380-3390	YVWF	"	"	"	"	"
3390-3400	YVWF	"	"	"	"	"
3400-3410	YVWF	"	"	"	"	"
3410-3420	Y Trace	"	"	"	"	"
3420-3430	YVWF	"	"	"	"	"
3430-3440	YVWF	"	"	"	"	"
3440-3450	missing	"	"	"	"	"
3450-3460	YWF	"	"	"	"	"
3460-3470	Y Trace	"	"	"	"	"
3470-3480	Y Trace	"	"	"	"	"
3480-3490	Y Trace	"	"	"	"	"
3490-3500	Y Trace	"	"	"	"	"
3500-3510	YVWF	"	"	"	"	"
3510-3520	YVWF	"	"	"	"	"
3520-3530	YVWF	"	"	"	"	"
3530-3540	YVWF	"	"	"	"	"
3540-3550	YVWF	"	"	"	"	"
3550-3560	YVWF	"	"	"	"	"
3560-3570	YVWF	"	"	"	"	"
3570-3580	YVWF	"	"	"	"	"
3580-3590	YVWF	"	"	"	"	"
3590-3600	YVWF	"	"	"	"	"
3600-3610	YVWF	"	"	"	"	"
3610-3620	YVWF	"	"	"	"	"
3620-3630	YVWF	"	"	"	"	"
3630-3640	YVWF	"	"	"	"	"
3640-3650	YVWF	"	"	"	"	"
3650-3660	YVWF	"	"	"	"	"
3660-3670	YVWF	"	"	"	"	"
3670-3680	YVWF	"	"	"	"	"
3680-3690	YVWF	"	"	"	"	"
		3691				
3690-3700	YVWF	Transition	Beds	Lower	Cretaceous	
3700-3710	YVWF	"	"	"	"	"

BIRDSVILLE TOWN BORE (Cont'd)

Depth (feet)	Reaction	Formation	Remarks
3710-3720	YVWF	Transition Beds Lower Cretaceous	Trace
3720-3730	YVWF	" " " "	"
3730-3740	YVWF	" " " "	"
3740-3750	YWF	" " " "	
3750-3760	YVWF	" " " "	
3760-3770	YVWF	" " " "	
3770-3780	YVWF	" " " "	
3780-3790	YVWF	" " " "	
3790-3800	YVWF	" " " "	
3800-3810	YVWF	" " " "	
3810-3820	YVWF	" " " "	
3820-3830	YVWF	" " " "	
3830-3840	YVWF	" " " "	
3840-3850	YWF	" " " "	
3850-3860	YVWF	3857	
		Mooga Sandstone U. Jurassic	

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WITCHERRIE NO. 1

Depth (feet)	Reaction	Formation			Remarks
300-310	YVWF	Tambo	Formation	Albian	
310-320	YVWF	"	"	"	
320-330	YVWF	"	"	"	
330-340	YVWF	"	"	"	
340-350	YWF	"	"	"	
350-360	YVWF	"	"	"	
360-370	YVWF	"	"	"	
370-380	YVWF	"	"	"	Trace only
380-390	YVWF	"	"	"	" "
		396			
390-400	YVWF	Roma	Formation	Aptian	" "
400-410	YVWF	"	"	"	
410-420	YVWF	"	"	"	
420-430	YVWF	"	"	"	
430-440	YVWF	"	"	"	
440-450	YVWF	"	"	"	
450-460	YVWF	"	"	"	
460-470	YVWF	"	"	"	
470-480	YVWF	"	"	"	
480-490	YVWF	"	"	"	
490-500	YVWF	"	"	"	
500-510	-N-	"	"	"	
510-520	-N-	"	"	"	
520-530	YVWF	"	"	"	
530-540	YWF	"	"	"	
550-560	-N-	"	"	"	
560-570	YVWF	"	"	"	
570-580	YVWF	"	"	"	
580-590	YVWF	"	"	"	
590-600	YVWF	"	"	"	
600-610	-N-	"	"	"	
610-620	YWF	"	"	"	
620-630	-N-	"	"	"	
630-640	-N-	"	"	"	
640-650	-N-	"	"	"	
650-660	GWF	"	"	"	
660-670	-N-	"	"	"	
670-680	YWF	"	"	"	
680-690	-N-	"	"	"	
690-700	YWF	"	"	"	
700-710	YVWF	"	"	"	
710-720	-N-	"	"	"	
720-730	-N-	"	"	"	

WITCHERRIE NO. 1 (Cont'd)

Depth (feet)	Reaction	Formation			Remarks
730-740	YWF	Roma	Formation	Aptian	
740-750	-N-	"	"	"	
750-760	YGVWF	"	"	"	
760-770	YVWF	"	"	"	
770-780	-N-	"	"	"	
780-790	YVWF	"	"	"	
790-800	YVWF	"	"	"	
800-810	YVWF	"	"	"	
810-820	-N-	"	"	"	
820-830	YVWF	"	"	"	
830-840	-N-	"	"	"	Trace
840-850	-N-	"	"	"	"
850-860	-N-	"	"	"	"
860-870	-N-	"	"	"	"
870-880	-N-	"	"	"	"
880-890	YWF	"	"	"	
890-900	-N-	"	"	"	
900-910	-N-	"	"	"	
		910			
910-920	YWF	Transition	Beds	Neocomian	
920-930	-N-	"	"	"	
930-940	-N-	"	"	"	
940-950	-N-	"	"	"	
950-960	YVWF	"	"	"	
960-970	-N-	"	"	"	
970-980	YVWF	"	"	"	
980-990	-N-	"	"	"	
990-1000	-N-	"	"	"	
1000-1010	YWF	"	"	"	
1010-1020	-N-	"	"	"	) Quartz
1020-1030	-N-	"	"	"	) Sand
1030-1040	-N-	1037			)
		Mooga	Sandstone	Upper Jurassic	

SANTOS - OODNADATTA

Depth (feet)	Reaction	Formation	Remarks
418	-N-	Albian	
420	-N-	"	
422	YVWF	"	
425	YVWF	"	
428	GVWF	"	
430	YVWF	"	
432	YVWF	"	
434	-N-	"	
435	YVWF	"	Trace
437	YVWF	"	"
438	YVWF	"	"
440	YVWF	"	"
441	YVWF	"	
443	YVWF	"	
445	-N-	"	
446	YVWF	"	
448	YVWF	"	
450	YVWF	) "	
452	YVWF	)———	
455	YVWF	) Aptian	
457	-N-	"	
460	-N-	"	
463	YVWF	"	
467	-N-	"	
470	-N-	"	
475	YVWF	"	
480	YVWF	"	
485	-N-	"	
490	-N-	"	
495	-N-	"	
500	-N-	"	
505	-N-	"	
510	-N-	"	
515	-N-	"	
520	-N-	"	
525	-N-	"	
530	YVWF	"	
540	-N-	"	
550	-N-	"	
560	YVWF	"	
570	YVWF	"	
580	YVWF	"	
590	YVWF	"	
600	YVWF	"	

SANTOS - OODNADATTA (Cont'd)

Depth (feet)	Reaction	Formation	Remarks
610	YVWF	Aptian	
620	YWF	"	
630	-N-	"	
640	YVWF	"	
650	YVWF	"	
670	-N-	"	
680	-N-	"	
690	-N-	"	
700	YVWF	"	
710	YVWF	"	
720	YVWF	"	
730	-N-	"	
740	YVWF	"	
750	YVWF	"	
760	-N-	"	
770	YVWF	"	
780	-N-	"	
790	YVWF	"	
800	YVWF	"	
782	YVWF	"	
810	YVWF	"	
820	-N-	"	
830	YVWF	"	
840	YVWF	"	
850	-N-	"	
860	-N-	"	
870	YVWF	"	
880	YVWF	"	
890	-N-	"	
900	YVWF	"	
932	YVWF	"	
947	YVWF	"	
966	YVWF	"	

FORTVILLE NO. 3

Depth (feet)	Reaction	Formation			Remarks
1710-1730	-N-	Tambo	Formation	Albian	) Very slow
1730-1750	-N-	"	"	"	) Yellow Green
					) reaction
1750-1770	YVWS	"	"	"	
1770-1790	YVWS	"	"	"	
1790-1810	YVWS	"	"	"	
1810-1830	YVWF	"	"	"	
1830-1850	YVWF	"	"	"	
1850-1870	YWF	1853			
1870-1890	YVWF	Roma	Formation	Aptian	
1890-1910	YVWF	"	"	"	
1910-1930	YVWF	"	"	"	
1930-1950	YVWF	"	"	"	
1950-1970	YWF	"	"	"	
1970-1990	-N-	"	"	"	
1990-2010	YVWF	"	"	"	
2010-2030	YVWF	"	"	"	
2030-2050	-N-	"	"	"	
2050-2070	-N-	"	"	"	
2070-2090	-N-	"	"	"	
2090-2110	-N-	"	"	"	
2110-2130	YVWF	"	"	"	
2130-2150	-N-	"	"	"	
2150-2170	YVWF	"	"	"	
2170-2190	YWF	"	"	"	
2190-2210	YVWF	"	"	"	
2230-2250	YVWF	"	"	"	
2210-2230	YVWF	"	"	"	
2250-2270	Y Trace	"	"	"	
2270-2290	YGVWF	"	"	"	
2290-2310	YVWF	"	"	"	
2310-2330	YVWF	"	"	"	
2330-2350	YVWF	"	"	"	
2350-2370	YVWF	"	"	"	
2370-2390	YVWF	"	"	"	
2390-2410	YVWF	"	"	"	
2410-2430	YWF	"	"	"	
2430-2450	YVWF	"	"	"	
2450-2460	YVWF	"	"	"	
2460-2470	YWF	"	"	"	
2470-2480	YWF	"	"	"	
2480-2490	YVWF	"	"	"	
2490-2500	YVWF	"	"	"	

FORTVILLE NO. 3 (Cont'd)

Depth (feet)	Reaction	Formation			Remarks
2500-2510	YVWF	Roma	Formation	Aptian	
2510-2520	YVWF	"	"	"	
2520-2530	YVWF	"	"	"	
2530-2540	YVWF	"	"	"	
2540-2550	-N-	"	"	"	
2550-2560	YVWF	"	"	"	
2560-2570	YVWF	"	"	"	
2570-2580	YWF	"	"	"	
2580-2590	YVWF	"	"	"	
2590-2600	-N-	"	"	"	
2600-2610	-N-	"	"	"	
2610-2620	-N-	"	"	"	
2620-2630	YVWF	"	"	"	
2630-2640	-N-	2634			
2640-2650	-N-	Transition	Beds	Aptian-Neocomian	
2650-2660	-N-	"	"	"	
2660-2670	YVWF	"	"	"	
2670-2680	-N-	"	"	"	
2680-2690	YVWF	"	"	"	
2690-2700	YWF	"	"	"	
2700-2710	YWF	"	"	"	
2710-2720	YWF	"	"	"	
2720-2730	YWF	"	"	"	
2730-2740	YVWF	"	"	"	
2740-2750	YVWF	"	"	"	
2750-2760	YVWF	"	"	"	
2770-2780	YWF	"	"	"	
2780-2790	YVWF	"	"	"	
2790-2800	YVWF	"	"	"	
2800-2810	YGVWF	"	"	"	
2810-2820	YGVWF	"	"	"	
2820-2830	YVWF	"	"	"	
2830-2840	YVWF	"	"	"	
2840-2850	YVWF	"	"	"	
2850-2860	-N-	"	"	"	
2860-2870	YVWF	"	"	"	
2870-2880	YWF	"	"	"	
2880-2890	YVWF	"	"	"	
2890-2900	YVWF	"	"	"	
2900-2910	-N-	"	"	"	
2930-2940	YVWF	"	"	"	
2940-2950	YVWF	"	"	"	
2950-2960	YVWF	"	"	"	
2960-2970	YVWF	"	"	"	

FORTVILLE NO. 3 (Cont'd)

Depth (feet)	Reaction	Formation	Remarks
2970-2980	YVWF	Transition Beds Aptian-Neocomian	
2980-2990	YVWF	" " "	
2990-3000	YVWF	" " "	
3000-3010	YWF	" " "	