

BASIC



6 pages.

OIL and GAS DIVISION

18 JUN 1982

GEOCHEMICAL STUDY.

**PYROLYSIS / T.O.C. PROFILE
FERGUSONS HILL - 1 WELL,
OTWAY BASIN, AUSTRALIA:
2024' - 11500'**

BY

**BROWN & RUTH LABORATORIES
22-12-1981.**

GEOCHEMICAL REPORT.

**FERGUSONS HILL - 1.
BROWN & RUTH LAB.**

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OIL and GAS DIVISION

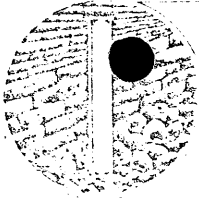
18 JUN 1982

CONTRACT SERVICE REPORT

Pyrolysis/T.O.C. Profile

Fergusons Hill No. 1 Well
Otway Basin, Australia
(2,024' - 11,500')

~~PLEASE RETURN~~
~~to~~
~~CHEVRON OVERSEAS~~
~~I. C.~~



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December 22, 1981

Chevron Overseas Petroleum, Inc.
575 Market Street
San Francisco, California 94105

Attention: Gerard J. Demaison

Gentlemen:

This report presents the results of our geochemical analysis of ninety-two (92) samples from the Fergusons Hill No. 1 Well, Otway Basin, Australia. The work was authorized by your Service Order S03456 of March 23, 1981.

All unused sample material is being returned under separate cover.

We are pleased to have been of service to Chevron. If you have any questions regarding the work, then please contact us.

Very truly yours,

Brown & Ruth Laboratories, Inc.

Gary W. Ruth

GWR/ab
Enclosure

CONTRACT SERVICE REPORT - 228

CLIENT: Chevron Overseas Petroleum, Inc.
575 Market Street
San Francisco, California 94105

WELL: Ferguson Hill No. 1, Otway Basin, Australia

AUTHORIZATION: G. J. Demaison - Service Order S03456

SAMPLE DESCRIPTION

A total of sixty-seven (67) cuttings samples and twenty-five (25) cores were analyzed from the well interval 2024 feet to 11,500 feet. The sample quality was generally good, although some were contaminated with metal shavings and lost circulation material, mainly plastic fiber and walnut shell.

SAMPLE PREPARATION

Instructions submitted with the samples directed that Rock-Eval pyrolysis and Total Organic Carbon (T.O.C.) determinations be carried out on each sample.

Prior to analysis, each sample was visually examined using a binocular microscope and lost circulation material was removed. The samples were then ground to a fine powder and analyzed.

ANALYTICAL DETERMINATIONS

A fraction of the ground sample material was used for pyrolysis in a Rock-Eval analyzer. A separate fraction of the same ground sample material was acidified then analyzed for organic carbon content by combustion in a Leco Carbon Analyzer.

TABLE I

Results of Organic Carbon Analysis and Rock-Eval Pyrolysis

Sample Number	Well Depth*	T.O.C. (%)	S1 (mg/g)	S2 (mg/g)	S3 (mg/g)	Tmax (°C)	PI	S2/S3	HI	OI
228-001c	2024	1.29	<0.10							
228-002c	2437	0.78	<0.10	0.28	1.72	423	--			
228-003c	2449	10.77	1.69	0.18	0.60	436	--	0.17	22	133
228-004	2480-2490	Sample Contaminated		23.70	6.01	421	0.07	0.30	23	77
228-005c	2745	12.04	0.18					3.94	220	56
228-006c	3110	1.89;1.89	<0.10	4.98	9.68	445	0.03			
228-007c(x)	4094	3.00	<0.10	0.52	0.94	433	--	0.51	41	80
228-007c(y)	4094	21.85	1.51	1.63	0.47	434	0.16	0.55	28	50
228-007c(z)	4094	21.82	2.59	46.81	3.93	430	0.03	0.42	54	16
228-008c	4515	1.12	<0.10	69.81	5.17	428	0.04	11.92	214	18
228-009c	5078	1.54	<0.10	0.40	0.27	436	--	13.51	320	24
228-010c	5555	0.67	<0.10	0.23	0.30	**	--	1.47	36	24
228-011	5580-5590	0.78	<0.10	0.68	0.66	436	--	0.76	35	19
228-012	5780-5790	0.53	<0.10	0.45	1.34	439	--	1.04	101	99
228-013c	5942	0.56	<0.10	0.35	1.06	448	--	0.34	58	172
228-014	5970-5980	0.52	<0.10	0.37	0.16	430	0.22	0.33	66	200
228-015	6180-6190	0.57	<0.10	0.23	1.08	482	--	2.27	66	29
228-016c	6408	0.66	<0.10	0.20	1.79	489	--	0.21	44	208
228-017	6450-6460	0.45;0.45	<0.10	0.32	2.84	467	--	0.11	35	314
228-018c	6555	0.68	0.10	0.16	0.80	**	--	0.11	48	430
228-019	6580-6590	1.16	0.19	0.32	0.22	451	0.24	0.20	36	178
228-020	6920-6930	1.70	0.17	1.52	0.67	438	0.11	1.49	47	32
228-021	7036-7040	Sample Contaminated		2.13	1.00	438	0.07	2.28	131	58
228-022c	7040	0.55	<0.10					2.13	125	59
228-023c	7224	1.00	0.13	0.28	0.12	445	--			
228-024	7220-7225	0.91	<0.10	0.78	0.14	445	0.15	2.34	51	22
228-025	7320-7330	0.69	<0.10	0.36	1.78	427	--	5.56	78	14
228-026c	7335	0.92	0.16	0.51	1.38	435	--	0.20	40	196
228-027	7420-7430	0.73	<0.10	0.69	0.25	443	0.19	0.37	74	200
228-028	7520-7530	0.74	<0.10	0.53	1.53	439	--	2.79	75	27
228-029	7620-7630	7.92;7.63	0.30	0.38	1.71	444	--	0.35	73	210
228-030	7720-7730	0.93	<0.10	11.54	2.47	435	0.03	0.22	51	231
228-031c	7818	1.11	0.12	0.61	1.38	439	0.11	4.67	151	32
228-032	7825-7830	0.66	<0.10	0.83	0.32	442	0.13	0.44	66	148
228-033	7920-7930	1.37	<0.10	0.25	1.07	443	--	2.61	75	29
228-034	8020-8030	0.78	0.12	0.80	1.92	441	--	0.23	37	162
228-035	8120-8130	Sample Contaminated		0.74	2.17	438	0.14	0.42	58	140
228-036	8220-8230	0.65	<0.10					0.34	95	278
				0.35	1.10	442	--			
								0.32	54	169

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TABLE I

Results of Organic Carbon Analysis and Rock-Eval Pyrolysis

Sample Number	Well Depth*	T.O.C. (%)	S1 (mg/g)	S2 (mg/g)	S3 (mg/g)	Tmax (°C)	PI	S2/S3	HI	OI
228-037c	8260	0.37	<0.10	0.20	0.23	455	--	0.84	54	62
228-038	8320-8330	0.81	<0.10	0.65	1.21	442	--	0.54	80	149
228-039	8420-8430	1.00	<0.10	0.49	1.38	445	--	0.36	49	138
228-040	8520-8530	1.29	<0.10	0.72	1.34	447	--	0.54	56	109
228-041	8620-8630	1.01	<0.10	0.81	1.08	440	--	0.75	80	107
228-042	8720-8730	0.84	<0.10	0.68	1.11	442	--	0.61	81	132
228-043c	8768	0.81	<0.10	0.41	<0.10	451	--	--	51	--
228-044	8780-8790	0.97	<0.10	0.65	0.83	445	--	0.78	67	86
228-045	8830-8840	1.04	<0.10	0.52	1.03	447	--	0.50	50	99
228-046	8890-8900	0.86	<0.10	0.56	0.76	446	--	0.73	65	89
228-047	8950-8960	0.74	<0.10	0.59	0.76	445	--	0.77	80	103
228-048	9020-9030	0.84	<0.10	0.53	1.20	441	--	0.44	63	143
228-049	9080-9090	1.05	<0.10	0.78	0.90	444	--	0.87	74	86
228-050	9140-9150	0.79	<0.10	0.37	1.00	445	--	0.37	46	127
228-051c	9196	0.70	0.11	0.34	0.23	458	--	1.48	49	33
228-052	9200-9210	0.97	<0.10	0.81	0.78	442	--	1.04	83	80
228-053	9270-9280	0.69	0.10	0.48	0.77	449	0.17	0.63	70	112
228-054	9330-9340	1.10	0.13	0.72	0.98	446	0.15	0.74	66	89
228-055	9400-9410	0.82	<0.10	0.59	0.71	450	--	0.83	72	87
228-056	9460-9470	1.09	0.16	0.86	0.61	449	0.15	1.42	79	56
228-057	9530-9540	0.98	<0.10	0.37	0.70	456	--	0.53	38	71
228-058	9610-9620	0.98	0.10	0.66	0.58	448	--	1.13	67	59
228-059c	9626	0.98	0.16	0.58	0.10	464	0.21	5.54	59	10
228-060	9680-9690	1.03	<0.10	0.55	0.59	449	--	0.92	53	58
228-061	9740-9750	1.33;1.33	<0.10	0.67	0.75	455	--	0.90	50	56
228-062	9810-9820	0.89	<0.10	0.16	1.17	458	--	0.14	18	131
228-063	9870-9880	0.79	<0.10	0.56	0.67	447	0.15	0.84	71	85
228-064	9940-9950	0.80	<0.10	0.42	0.62	454	--	0.68	53	78
228-065	10010-10020	0.72	<0.10	0.32	0.38	452	--	0.84	45	53
228-066	10060-10070	0.82	0.11	0.56	0.53	452	0.17	1.07	68	65
228-067c	10096	1.00	0.13	0.33	<0.10	471	0.27	--	33	--
228-068	10120-10130	0.85	<0.10	0.36	0.20	458	--	1.75	42	24
228-069	10180-10190	0.77	0.11	0.41	0.35	457	0.21	1.17	53	45
228-070	10250-10260	0.67	<0.10	0.26	0.35	483	--	0.73	39	52
228-071	10310-10320	0.89	<0.10	0.38	0.23	460	--	1.66	43	26
228-072	10370-10380	0.76;0.76	<0.10	0.22	0.48	**	--	0.46	29	63
228-073	10430-10440	0.82	<0.10	<0.10	0.64	**	--	--	--	78

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TABLE I

Results of Organic Carbon Analysis and Rock-Eval Pyrolysis

Sample Number	Well Depth*	T.O.C. (%)	S1 (mg/g)	S2 (mg/g)	S3 (mg/g)	Tmax (°C)	PI	S2/S3	HI	OI
228-074	10500-10510	0.98	0.15	0.59	0.58	464	0.20	1.01	60	59
228-075	10560-10570	0.95	<0.10	0.22	0.70	455	--	0.32	24	73
228-076	10630-10640	0.91	0.12	0.63	0.46	455	0.15	1.38	69	51
228-077	10680-10690	0.61	<0.10	<0.10	0.58	**	--	--	--	95
228-078	10740-10750	0.61	<0.10	0.33	0.45	473	--	0.73	54	74
228-079	10810-10820	1.08	<0.10	0.19	0.60	469	--	0.31	17	56
228-080	10870-10880	0.89	0.13	0.50	0.49	464	0.20	1.02	56	55
228-081	10920-10930	1.16	0.10	0.43	0.37	463	0.19	1.15	37	32
228-082	10970-10980	0.93	0.10	0.63	0.44	446	0.14	1.42	68	47
228-083	11030-11040	1.08	<0.10	0.30	0.76	457	--	0.40	28	70
228-084	11090-11094	0.93	0.14	0.59	0.53	453	0.19	1.11	63	57
228-085	11140-11150	0.93	<0.10	0.31	0.43	460	--	0.70	33	47
228-086c	11180	0.69	<0.10	0.26	0.31	**	--	0.85	38	45
228-087	11210-11220	1.11	<0.10	0.42	0.35	452	--	1.19	38	32
228-088	11260-11270	1.31	0.10	0.66	0.58	474	0.22	1.13	50	44
228-089	11320-11330	1.28	0.10	0.66	0.56	471	0.21	1.18	52	44
228-090	11370-11380	0.94	0.11	0.46	0.50	466	0.20	0.92	49	53
228-091c	11419	1.42	<0.10	0.40	0.27	490	--	1.47	28	19
228-092	11430-11440	2.42	0.19	1.12	0.58	444	0.14	1.94	46	24
228-093	11490-11500	2.46	0.26	1.41	0.49	464	0.15	2.86	57	20

* Well depth in feet

** Unable to determine due to insufficient S2 yield, multiple peaks, etc.

T.O.C. = Total Organic Carbon; S1 = Free Hydrocarbons; S2 = Hydrocarbon yield from pyrolysis;

S3 = CO₂ produced during pyrolysis stage; Tmax = Temperature at maximum hydrocarbon generation during pyrolysis;

PI = Production Index; HI = Hydrogen Index; OI = Oxygen Index.

c = Core sample

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