ROUTINE CORE ANALYSIS REPORT

of

HALIBUT NO. 2

for

ESSO AUSTRALIA LTD

by

ACS LABORATORIES PTY LTD

20 July, 1995

ACS LABORATORIES PTY. LTD.

Esso Australia Ltd
360 Elizabeth Street
MELBOURNE VIC 3000

Attention: A. Mills

REPORT: 002-214 - WELL NAME: HALIBUT NO. 2

CLIENT REFERENCE:	Contract No. 2710080 RFS No. 5
MATERIAL:	Core Plugs
LOCALITY:	Gippsland Basin
WORK REQUIRED:	Routine Core Analysis

Please direct technical enquiries regarding this work to the signatory below under whose supervision the work was carried out.

W J (Bill) DERKSEMA
Laboratory Supervisor
on behalf of ACS Laboratories Pty. Ltd.

CONTENTS

PLOTS

20 July, 1995

ACS LABORATORIES PTY. LTD.

Esso Australia Ltd
360 Elizabeth Street
MELBOURNE VIC 3000

Attention: A. Mills

FINAL DATA REPORT - ROUTINE CORE ANALYSIS

REPORT: 002-214 WELL NAME: HALIBUT NO. 2

LOGISTICS

246 core plugs were delivered to ACS Laboratories, Brisbane on 19 May 1995. The plugs (including vertical plugs) arrived stored in vials and consisted of 34 plugs from Core No. 1, 108 plugs from Core No. 2 and 104 plugs from Core No. 3.

INTRODUCTION

The following report includes tabular data of permeability to air, helium injection porosity and density determinations. Data presented graphically includes a core log plot of the above and a porosity versus permeability to air plot.

STUDY AIMS

The analyses were performed with the following aims:

1. To provide overburden air permeability, helium injection porosity and density data.

Samples were prepared and analysed as follows:

1. SAMPLE EXTRACTION

Plugs from Core Nos. 1, 2 and 3 were extracted initially in a Soxhlet with toluene solvent, followed by solvent Soxhlet extraction using 3:1 chloroform/methanol, providing a second clean to remove any remaining oil and salt. core plugs were removed and checked under ultraviolet light to ensure all hydrocarbons had been removed.

2. SAMPLE DRYING

After cleaning, all plugs were dried in a controlled humidity environment at 50°C and 50% relative humidity. The plugs were stored in an airtight plastic container and allowed to cool to room temperature before analysis.

3. OVERBURDEN AIR PERMEABILITY

The plugs are placed in a heavy duty Hassler sleeve. The assembly is loaded into a thick walled hydrostatic cell capable of withstanding the simulated reservoir overburden stress. The overburden pressure used, as supplied by Esso, was 4100 psi.

During the measurement a known air pressure is applied to the upstream face of the sample, creating a flow of air through the sample. Permeability for each sample is then calculated using Darcy's Law through knowledge of the upstream pressure and flow rate during the test, the viscosity of air and the plug dimensions.

4. OVERBURDEN HELIUM INJECTION POROSITY

Overburden Helium Injection Porosities are determined indirectly by the following method:

The apparent grain volume of each sample was measured by expansion of helium into the sample loaded in a matrix cup. The grain volume is derived by application of Boyle's law. The bulk volume of the sample is determined by mercury immersion. The sample is then loaded into a hydrostatic cell where the pore volume reduction, from ambient to the applied overburden stress is determined by measuring changes in the helium pressure within the pore space and applying Boyle's law. The reduction in the bulk volume is assumed to be equivalent to a reduction in the pore volume. Grain volume remains constant. Where samples are sleeved, corrections are made to account for the weight and volume of sleeves and screens.

5. APPARENT GRAIN DENSITY

The apparent grain density is determined by dividing the weight of the plug by the grain volume determined from the helium injection porosity measurement.

6. ABSOLUTE GRAIN DENSITY

A plug offcut, uncleaned and oven dried, is used for this measurement. The sample is crushed to approximately grain size or a little coarser and the granular material weighed. The volume of the grains is determined by pyconometry. By this means the actual density of the grains is determined.

On completion of the analysis the plug samples were re-wrapped in gladwrap and tissue, and are presently stored at ACS Laboratories for possible future studies.

We have enjoyed working for Esso and look forward to working with you in the near future.

END OF REPORT

OVERBURDEN ANALYSIS PRELIMINARY REPORT

Company ESSO AUSTRALIA LTD.
Well HALIBUT No.2

Core Interval Core 1: 2350.00-2356.60m
Core Interval Core 2: 2410.00-2428.50m
Core Interval Core 3: 2428.50-2447.00m

Overburden Pressure 4100 psi

Sample Number	Depth (meters)	Permeability to Air (milliDarcy's)	Porosity (percent)	Grain Density Calculated (g/cm^3)	Grain Density Absolute (g/cm^3)	Remarks
1 R	2350.06	1.12	12.5	2.77	2.75	C#1 Slvd
3 R	2350.20	0.49	10.7	2.76	2.79	Sleeved
5 R	2350.40	0.16	11.3	2.84	2.89	
7 R	2350.61	0.35	11.5	2.86	2.84	
9 R	2350.80	0.07	8.6	2.77	2.78	
11 V	2350.95	0.06	10.1	2.76	2.75	Slv-Vert
13 R	2351.13	4192	17.6	2.69	2.67	Sleeved
14 R	2351.20	4665	18.5	2.68	2.65	Sleeved
16 R	2351.40	3237	17.1	2.70	2.66	Sleeved
20 R	2351.60	8244	19.2	2.70	2.67	Sleeved
25 R	2351.80	3037	16.5	2.75	2.67	Sleeved
27 V	2351.95	1.94	15.2	2.64	2.64	Slv-Vert
28 R	2352.06	11601	16.4	2.68	2.64	Sleeved
32 R	2352.25	12738	19.7	2.66	2.65	Sleeved
36 R	2352.40	5659	18.4	2.64	2.63	Sleeved
41 R	2352.60	508	14.7	2.64	2.63	Sleeved
46 R	2352.80	7827	17.9	2.64	2.62	Sleeved
48 R	2353.04	0.09	8.3	2.64	2.64	Sleeved
54 R	2353.25	1452	11.9	2.64	2.64	Sleeved
58 R	2353.40	8361	18.8	2.65	2.63	Sleeved
65 R	2353.65	15.6	12.4	2.63	2.62	Sleeved
69 R	2353.80	0.12	12.3	2.64	2.64	
73 R	2354.08	4918	16.6	2.66	2.62	Sleeved
76 R	2354.20	0.01	6.1	2.65	2.64	
81 R	2354.40	0.05	7.4	2.64	2.64	
86 R	2354.60	7097	18.7	2.64	2.62	Sleeved
91 R	2354.80	3.44	13.4	2.65	2.62	Sleeved
93 V	2354.95	0.05	13.0	2.61	2.62	Slv-Vert
94 R	2355.07	0.23	12.6	2.64	2.63	
97 R	2355.17	0.12	12.3	2.63	2.62	
102 R	2355.40	7199	16.8	2.69	2.66	Sleeved
105 R	2355.60	3106	14.7	2.65	2.63	Sleeved
107 R	2355.80	0.19	10.3	2.66	2.64	
112 R	2356.20	9183	23.4	2.66	2.65	B#1 Slvd
120 R	2410.08	587	20.3	2.65	2.63	C#2
123 R	2410.20	1364	21.6	2.65	2.63	
128 R	2410.39	1385	22.3	2.64	2.62	
133 R	2410.60	4852	22.7	2.64	2.62	
138 R	2410.82	615	22.2	2.65	2.64	
140 V	2410.95	1114	24.4	2.64	2.62	Vertical
141 R	2411.03	2507	25.3	2.64	2.62	
145 R	2411.25	1256	23.6	2.65	2.63	

OVERBURDEN ANALYSIS PRELIMINARY REPORT

Company ESSO AUSTRALIA LTD.
Well HALIBUT No.2

Core Interval Core 1: 2350.00-2356.60m
Core Interval Core 2: 2410.00-2428.50m
Core Interval Core 3: 2428.50-2447.00m

Overburden Pressure 4100 psi

Sample Number	Depth (meters)	Permeability to Air (milliDarcy's)	Porosity (percent)	Grain Density Calculated (g/cm^3)	Grain Density Absolute (g/cm^3)	Remarks
150 R	2411.40	851	22.6	2.64	2.62	
152 R	2411.60	3003	23.5	2.65	2.63	
154 R	2411.80	6252	20.8	2.66	2.65	
156 V	2411.95	3824	20.4	2.65	2.64	Vertical
157 R	2412.03	3119	18.0	2.65	2.63	
161 R	2412.25	4725	18.3	2.66	2.65	
165 R	2412.40	16873	22.4	2.66	2.64	
169 R	2412.55	16410	21.9	2.65	2.63	
174 R	2412.80	14558	21.3	2.67	2.64	
176 V	2412.95	16793	22.9	2.65	2.64	Vertical
177 R	2413.04	12974	22.0	2.65	2.63	
181 R	2413.20	17308	22.6	2.66	2.63	
185 R	2413.40	17072	18.5	2.66	2.64	
189 R	2413.60	15997	18.4	2.66	2.64	
194 R	2413.80	18268	20.8	2.66	2.64	
196 V	2413.95	16344	18.4	2.66	2.64	Vertical
197 R	2414.03	17419	21.2	2.66	2.66	
199 R	2414.20	17540	21.5	2.66	2.65	
201 R	2414.40	17759	21.2	2.66	2.64	Sleeved
203 R	2414.60	14362	20.0	2.65	2.63	Sleeved
205 R	2414.80	5622	16.3	2.65	2.64	Sleeved
207 V	2414.95	2559	13.4	2.64	2.64	Vertical
208 R	2415.04	4195	14.6	2.65	2.63	
210 R	2415.20	3857	15.8	2.65	2.64	
212 R	2415.40	6917	16.9	2.65	2.64	
214 R	2415.60	8004	16.7	2.65	2.64	
584 R	2415.95	< 0.01	3.4	2.70	2.75	C#2 Vert
585 R	2416.07	< 0.01	4.4	2.70	2.70	
587 R	2416.20	0.01	5.3	2.71	2.71	
589 R	2416.40	0.05	7.0	2.69	2.67	
591 R	2416.60	< 0.01	7.5	3.01	3.15	
218 R	2416.80	0.18	10.6	2.68	2.66	
593 V	2416.95	7.41	16.9	2.68	2.72	Vertical
220 R	2417.04	19.3	17.0	2.68	2.66	
222 R	2417.20	0.74	11.8	2.66	2.65	
224 R	2417.40	3.66	13.3	2.66	2.64	
226 R	2417.60	0.07	8.2	2.65	2.62	
228 R	2417.80	0.03	8.2	2.70	2.67	
230 V	2417.95	0.07	10.2	2.69	2.69	Vertical
231 R	2418.03	0.40	11.5	2.68	2.67	
233 R	2418.20	0.07	9.1	2.71	2.66	
237 R	2418.40	0.08	9.7	2.72	2.70	

OVERBURDEN ANALYSIS PRELIMINARY REPORT

Company ESSO AUSTRALIA LTD.
Well HALIBUT No.2

Core Interval Core 1: 2350.00-2356.60m
Core Interval Core 2: 2410.00-2428.50m
Core Interval Core 3: 2428.50-2447.00m

Overburden Pressure 4100 psi

Sample Number	Depth (meters)	Permeability to Air (milliDarcy's)	Porosity (percent)	Grain Density Calculated (g/cm^3)	Grain Density Absolute (g/cm^3)	Remarks
242 R	2418.60	1.68	13.2	2.70	2.66	
244 R	2418.80	0.18	10.3	2.65	2.63	
246 V	2418.95	1.64	14.1	2.64	2.62	Vertical
247 R	2419.03	68.5	16.0	2.65	2.63	
249 R	2419.20	0.29	11.3	2.66	2.63	
251 R	2419.40	130	19.0	2.65	2.62	
253 R	2419.60	58.3	15.4	2.66	2.63	
255 R	2419.80	32.1	15.2	2.66	2.63	
257 V	2419.95	0.57	13.2	2.65	2.62	Vertical
258 R	2420.03	4.63	13.6	2.65	2.64	
260 R	2420.20	26.3	14.2	2.66	2.64	
262 R	2420.35	2192	18.7	2.65	2.63	
266 R	2420.55	1155	21.8	2.67	2.66	
270 R	2420.80	421	18.9	2.69	2.71	
272 V	2420.95	0.91	14.2	2.70	2.69	Vertical
273 R	2421.03	23.0	14.9	2.73	2.71	
275 R	2421.20	1281	19.1	2.68	2.66	
277 R	2421.40	5680	23.9	2.65	2.64	
279 R	2421.60	6806	25.1	2.65	2.63	
281 R	2421.80	2115	22.7	2.65	2.64	
283 V	2421.95	1473	19.6	2.65	2.64	Vertical
284 R	2422.03	1917	22.8	2.64	2.62	
286 R	2422.20	3126	22.7	2.65	2.65	
292 R	2422.45	2934	22.7	2.65	2.65	
294 R	2422.60	3720	23.1	2.64	2.64	
296 R	2422.80	4745	23.7	2.64	2.64	
298 V	2422.95	361	20.8	2.65	2.64	Vertical
299 R	2423.04	213	16.2	2.67	2.66	
301 R	2423.20	4459	23.5	2.64	2.63	
303 R	2423.40	2229	22.5	2.65	2.64	
305 R	2423.60	3757	23.3	2.66	2.64	
307 R	2423.80	3587	22.6	2.65	2.63	
309 V	2423.95	4078	24.0	2.64	2.62	Vertical
310 R	2424.03	1464	21.6	2.65	2.62	
312 R	2424.20	1740	22.9	2.65	2.61	
314 R	2424.40	994	19.8	2.65	2.61	
320 V	2424.95	0.02	7.6	2.67	2.65	Vertical
321 R	2425.03	0.05	6.2	2.62	2.62	
323 R	2425.20	0.08	8.6	2.64	2.62	
325 R	2425.40	0.05	9.9	2.66	2.64	
327 R	2425.60	0.02	7.9	2.62	2.64	
329 R	2425.80	0.03	7.4	2.63	2.61	VF

OVERBURDEN ANALYSIS PRELIMINARY REPORT

Company ESSO AUSTRALIA LTD.
Well HALIBUT No.2

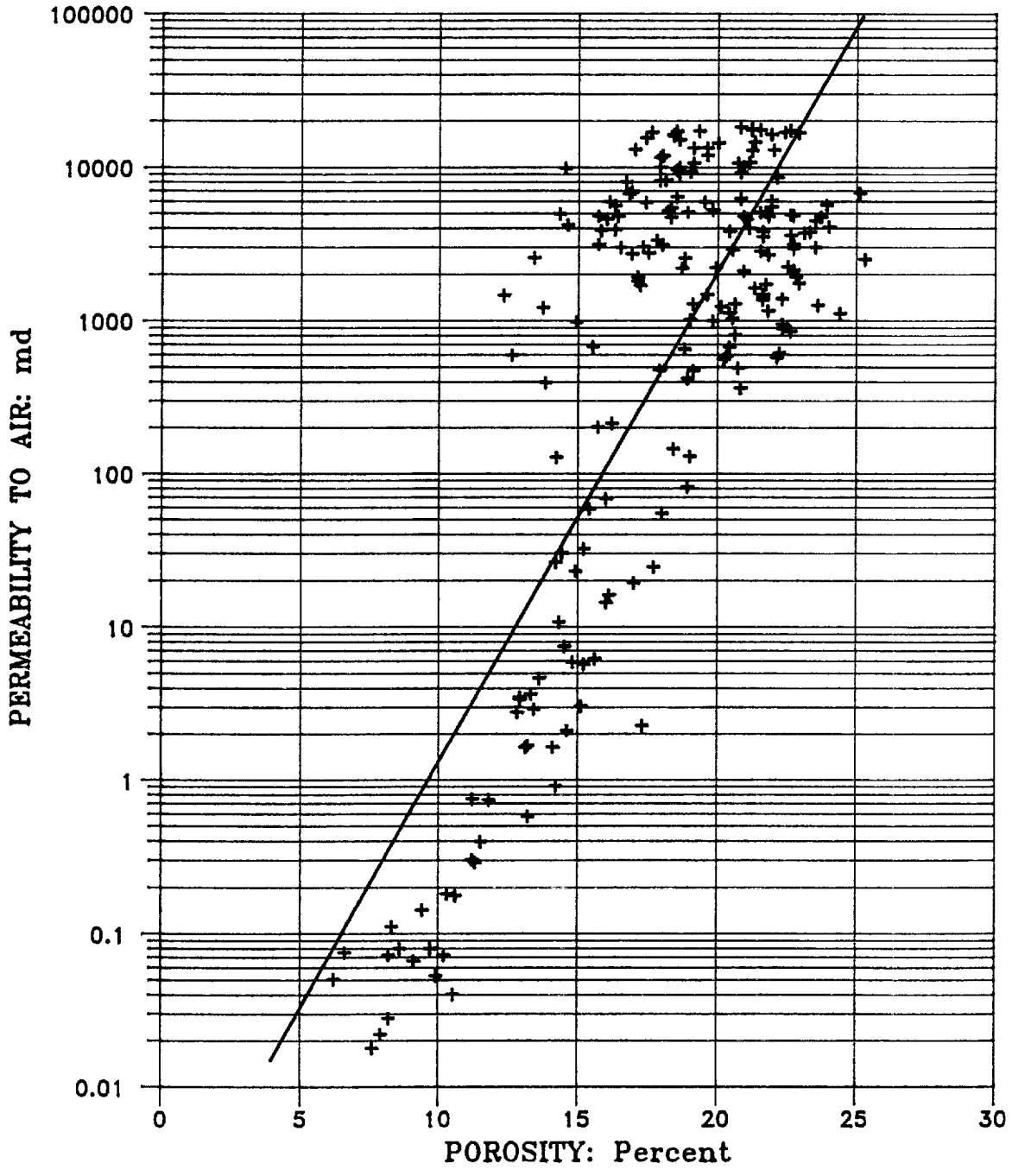
Core Interval Core 1: 2350.00-2356.60m
Core Interval Core 2: 2410.00-2428.50m
Core Interval Core 3: 2428.50-2447.00m

Overburden Pressure 4100 psi

Sample Number	Depth (meters)	Permeability to Air (milliDarcy's)	Porosity (percent)	Grain Density Calculated (g/cm^3)	Grain Density Absolute (g/cm^3)	Remarks
331 V	2425.95	< 0.01	6.8	2.63	2.61	Vertical
332 R	2426.04	7.46	14.5	2.63	2.62	
334 R	2426.20	202	15.7	2.63	2.62	
336 R	2426.40	951	22.3	2.63	2.62	
341 R	2426.60	54.6	18.0	2.63	2.63	
343 R	2426.80	145	18.4	2.63	2.63	
345 V	2426.95	24.5	17.7	2.63	2.63	Vertical
346 R	2427.04	1231	20.1	2.64	2.63	
348 R	2427.20	1689	17.2	2.64	2.63	
350 R	2427.40	652	18.8	2.58	2.57	VF
352 R	2427.60	676	15.5	2.61	2.62	
354 R	2427.80	30.1	14.4	2.64	2.63	
356 V	2427.90	16.0	16.1	2.64	2.64	Vertical
357 R	2428.00	5.89	14.8	2.62	2.60	
359 R	2428.19	491	20.7	2.65	2.64	
361 R	2428.35	81.4	18.9	2.66	2.66	B#2
365 R	2428.80	.11	8.3	2.67	2.66	C#3
369 R	2429.22	.30	11.2	2.66	2.66	
373 V	2429.45	2.27	17.3	2.64	2.63	Vertical
374 R	2429.60	886	22.3	2.65	2.63	
376 R	2429.80	571	22.1	2.65	2.64	
381 R	2430.00	807	20.6	2.64	2.65	
384 R	2430.20	1031	20.5	2.64	2.64	
388 V	2430.45	< 0.01	3.9	2.58	2.61	Vertical
389 R	2430.60	472	19.1	2.64	2.65	
391 R	2430.80	1117	20.4	2.64	2.63	
393 R	2431.00	1626	21.3	2.64	2.63	
395 R	2431.20	2.90	13.4	2.66	2.64	
397 R	2431.40	3.48	12.9	2.63	2.63	
399 V	2431.45	2.10	14.6	2.65	2.66	Vertical
400 R	2431.60	2.77	12.8	2.65	2.64	
402 R	2431.80	14.3	16.0	2.65	2.64	
404 R	2432.00	1.63	13.1	2.65	2.64	
406 R	2432.20	.08	6.6	2.62	2.64	VF
408 R	2432.40	475	17.9	2.54	2.57	Coaly
410 V	2432.45	1015	19.0	2.60	2.59	Vertical
411 R	2432.60	1395	21.6	2.60	2.62	
413 R	2432.80	1719	21.7	2.63	2.71	
415 R	2433.00	3801	21.6	2.63	2.64	
417 R	2433.20	2885	20.5	2.63	2.65	
419 R	2433.40	2669	21.8	2.64	2.64	
421 V	2433.45	2834	21.5	2.64	2.63	Vertical

POROSITY vs PERMEABILITY
At Overburden Pressure

Company: ESSO AUSTRALIA LTD.
Well: HALIBUT No.2
Depth: 2410.08 – 2446.60 Metres
OB Press: 4100



CORE PLOT

OVERBURDEN ANALYSIS PRELIMINARY REPORT

Company ESSO AUSTRALIA LTD.
Well HALIBUT No.2

Core Interval Core 1: 2350.00-2356.60m
Core Interval Core 2: 2410.00-2428.50m
Core Interval Core 3: 2428.50-2447.00m

Overburden Pressure 4100 psi

Sample Number	Depth (meters)	Permeability to Air (milliDarcy's)	Porosity (percent)	Grain Density Calculated (g/cm^3)	Grain Density Absolute (g/cm^3)	Remarks
422 R	2433.60	5507	21.9	2.63	2.62	
427 R	2433.80	4900	22.6	2.63	2.61	
429 R	2434.00	1800	17.1	2.63	2.63	
431 R	2434.20	5062	21.5	2.64	2.64	
433 R	2434.40	12866	21.2	2.65	2.65	
435 V	2434.45	10723	21.1	2.66	2.64	Vertical
436 R	2434.60	6071	21.9	2.65	2.64	
438 R	2434.80	9236	20.8	2.65	2.64	
440 R	2435.00	8595	22.1	2.65	2.64	
442 R	2435.20	11520	17.9	2.65	2.64	
444 R	2435.36	10615	19.1	2.65	2.64	
448 V	2435.45	4769	20.9	2.64	2.64	Vertical
449 R	2435.60	2193	19.9	2.64	2.64	
451 R	2435.75	2543	18.8	2.65	2.64	
455 R	2436.00	9991	17.9	2.66	2.65	
457 R	2436.20	10614	20.7	2.65	2.64	
459 R	2436.34	8170	17.9	2.65	2.65	
463 V	2436.45	5237	19.8	2.65	2.64	Vertical
464 R	2436.60	5925	19.5	2.65	2.66	
468 R	2436.85	16837	17.6	2.65	2.65	
470 R	2437.00	15507	17.4	2.66	2.67	
472 R	2437.20	8244	18.1	2.64	2.66	Sleeved
474 V	2437.35	9309	19.0	2.64	2.64	Vertical
475 R	2437.40	1908	17.1	2.64	2.65	
477 R	2437.60	13362	19.1	2.65	2.64	
479 R	2437.80	17205	19.3	2.65	2.64	
481 R	2438.00	9120	18.6	2.65	2.63	
483 R	2438.20	4771	21.8	2.65	2.63	
485 R	2438.40	9593	18.5	2.65	2.64	
487 R	2438.45	5424	18.3	2.65	2.64	Slv-Vert
488 R	2438.60	3007	17.3	2.64	2.63	
490 R	2438.80	5099	21.7	2.64	2.64	
492 R	2439.00	4599	21.0	2.64	2.64	
494 R	2439.20	11906	19.6	2.65	2.62	
496 R	2439.40	3496	21.6	2.65	2.64	
498 R	2439.45	3968	21.1	2.65	2.64	
499 R	2439.60	1280	20.6	2.64	2.64	
501 R	2439.80	1211	13.7	2.64	2.62	
503 R	2440.00	5084	18.9	2.64	2.64	
505 R	2440.18	5198	18.2	2.64	2.65	
507 R	2440.40	973	14.9	2.65	2.66	
509 V	2440.45	2749	17.5	2.64	2.66	Vertical

OVERBURDEN ANALYSIS PRELIMINARY REPORT

Company ESSO AUSTRALIA LTD.
Well HALIBUT No.2

Core Interval Core 1: 2350.00-2356.60m
Core Interval Core 2: 2410.00-2428.50m
Core Interval Core 3: 2428.50-2447.00m

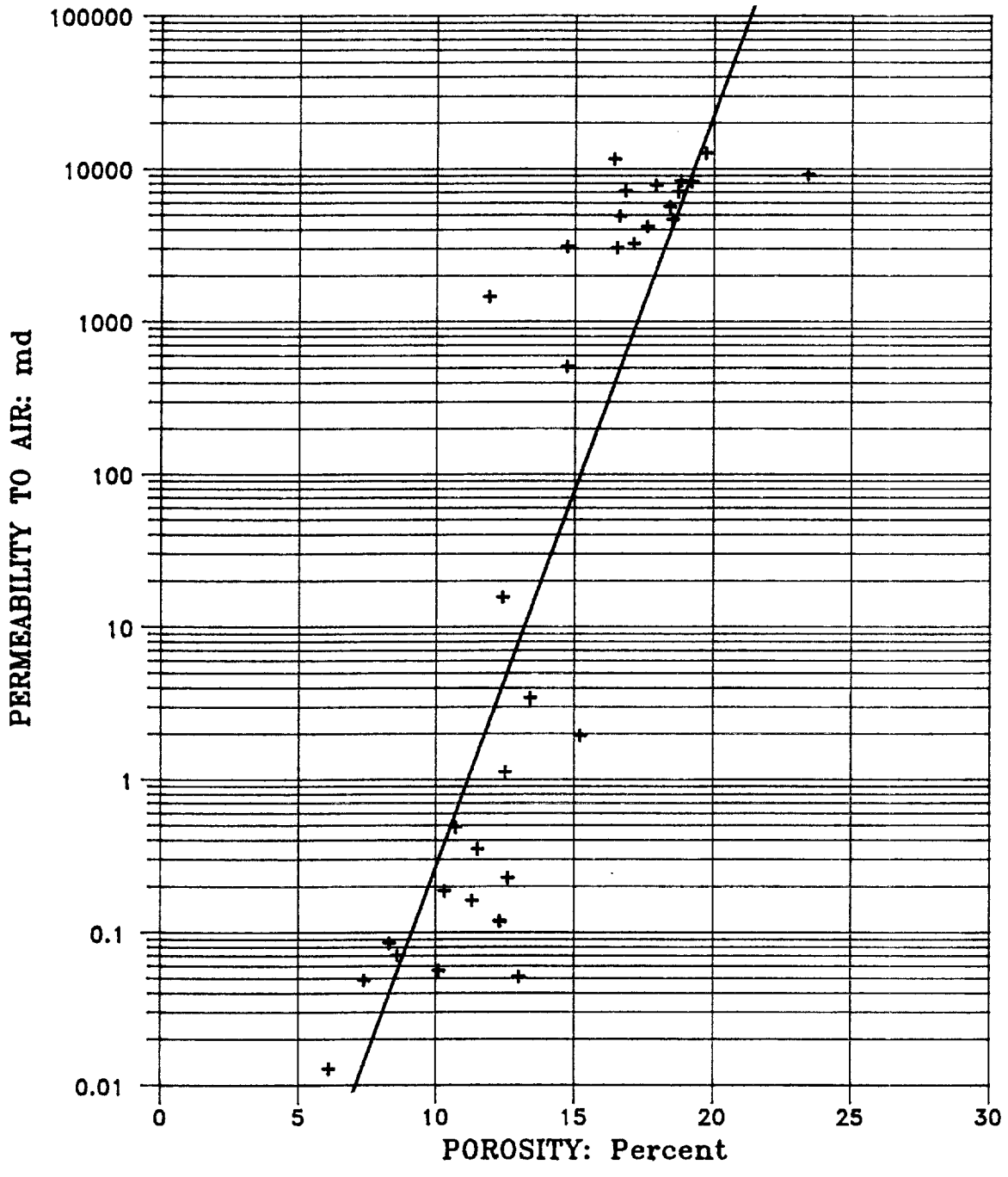
Overburden Pressure 4100 psi

Sample Number	Depth (meters)	Permeability to Air (milliDarcy's)	Porosity (percent)	Grain Density Calculated (g/cm^3)	Grain Density Absolute (g/cm^3)	Remarks
510 R	2440.60	2096	20.9	2.65	2.63	
512 R	2440.80	9841	14.5	2.64	2.64	
514 R	2441.00	1455	12.3	2.64	2.63	
516 R	2441.20	4786	15.7	2.64	2.64	
518 R	2441.40	671	20.4	2.63	2.64	
520 V	2441.45	558	20.2	2.63	2.63	Vertical
522 R	2441.60	9998	18.6	2.64	2.64	
523 R	2441.80	15082	18.6	2.64	2.63	
525 R	2441.95	12998	17.0	2.64	2.64	
527 R	2442.20	394	13.8	2.64	2.63	
529 R	2442.40	5896	17.4	2.64	2.65	
531 V	2442.45	2711	16.9	2.64	2.63	Vertical
532 R	2442.55	3111	15.7	2.64	2.62	
536 R	2442.80	4787	16.4	2.65	2.65	
538 R	2443.00	13347	19.6	2.65	2.65	
540 R	2443.20	11865	18.0	2.64	2.65	
542 R	2443.40	6402	18.5	2.64	2.63	
544 V	2443.45	3310	17.8	2.64	2.64	Vertical
545 R	2443.60	4589	16.0	2.63	2.63	
547 R	2443.80	594	12.6	2.64	2.65	
549 R	2444.03	4952	14.3	2.65	2.65	
551 R	2444.20	5959	16.1	2.64	2.65	
553 R	2444.40	3904	16.3	2.64	2.64	
555 V	2444.45	2986	16.5	2.64	2.65	Vertical
556 R	2444.60	6681	16.8	2.65	2.64	
558 R	2444.80	10064	20.9	2.64	2.63	
560 R	2445.00	127	14.2	2.65	2.65	
562 R	2445.20	0.14	9.4	2.62	2.62	
564 R	2445.40	6.20	15.6	2.62	2.63	
566 V	2445.45	3.04	15.1	2.59	2.62	Vertical
567 R	2445.60	3.37	12.9	2.61	2.62	
569 R	2445.80	5.72	15.2	2.63	2.64	
575 R	2446.20	10.7	14.3	2.62	2.61	
577 R	2446.40	0.75	11.2	2.60	2.60	
579 V	2446.45	0.04	10.5	2.66	2.68	Vertical
580 R	2446.60	< 0.01	4.3	2.67	2.66	

POROSITY vs PERMEABILITY CROSSPLOT

POROSITY vs PERMEABILITY
At Overburden Pressure

Company: ESSO AUSTRALIA LTD.
Well: HALIBUT No.2
Depth: 2350.06 – 2356.20 Metres
OB Press: 4100



ACS LABORATORIES PTY. LTD.
ACN 008 273 005

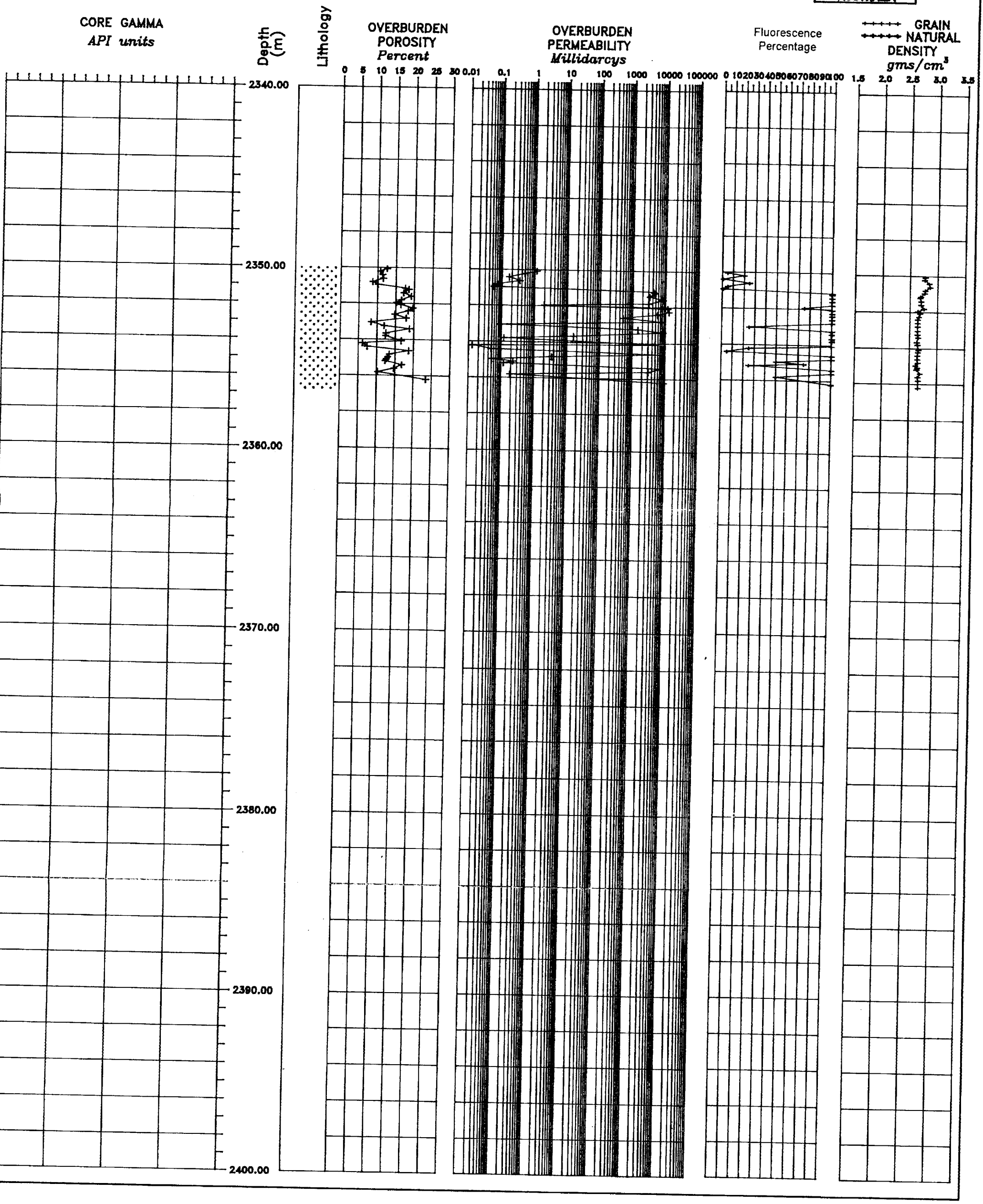
CORE PLOT

Scale 1 : 200

Company: ESSO AUSTRALIA LTD.
Well: HALIBUT No.2
Field:
Location:

File No.: 2-214
Core Int: 2350.00-2356.60m
Core Int:
Core Int:

ACS LABORATORIES AUSTRALIA



ACS LABORATORIES PTY. LTD.
ACN 008 273 005

CORE PLOT

Scale 1 : 200

Company: ESSO AUSTRALIA LTD.
Well: HALIBUT No.2
Field:
Location:

File No.: 2-214
Core Int:
Core Int: 2410.00-2428.50m
Core Int: 2428.50-2447.00m

ACS LABORATORIES AUSTRALIA