March 21 1972 WDW 8269CC
see Jan 20 '72 S. Futter ADDENDUM
2/11-1

Amoco Production Company
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Research Center
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William R. Walton
Geological Research
Director

March 21, 1972

File: Technical Service 8269CC (Addendum)

Exploration Manager
Amoco Europe, Incorporated
46-47 Pall Mall
London S.W.1, England

Dear Sir:

Subject: Source rock evaluation, Amoco Norway 2/11-1 well, North Sea

Source rock-oil correlation analyses were run on a Jurassic shale core from the subject well to avoid the contamination evident in previous such analyses on cuttings from this well (Technical Service 8269CC). As described in the attached report by Wallace Dow, the core is free from interfering contamination. The analyses show the presence of very good quality oil source rock in the Jurassic section. The rock extracts are correlative with oils produced from Tertiary and Cretaceous reservoirs in the United Kingdom portion of the North Sea, indicating that the source of these oils is in the Jurassic.

Source rock-oil correlation analyses on samples from five additional North Sea wells have been completed and will be reported under Technical Service Nos. 8355CC and 8361CC.

Very truly yours,

William R Walton
JAM

Received

Attachment

cc: K. D. Soule, Amoco Norway
Chief Geologist, AIOC

2/11-1 Jurassic.

AMOCO PRODUCTION COMPANY
RESEARCH CENTER

SOURCE ROCK EVALUATION

- Amoco Norway 2/11-1 well, North Sea -

Geochemistry Group

W. G. Dow
J. A. Williams

tion: Exploration Manager, Amoco Europe
K. D. Soule, Amoco Norway
Chief Geologist, AIOC
W. R. Walton
J. A. Momper

Technical Service 8269CC (Addendum)
Amoco Europe Incorporated

James A Momper
3-21-72

OFFICE Amoco Europe AREA North Sea

AUTHORIZED BY K. D. Soule DATE 10-11-71

TECHNICAL SERVICE NUMBER 8269CC (addendum)

STATE (PROVINCE) COUNTY WELL LOCATION Amoco Norway 2/11-1

Amoco Production Company
RESEARCH CENTER
SOURCE ROCK EVALUATIONS

SAMPLE NUMBER	SAMPLE TYPE	SAMPLE QUALITY	FORMATION	LITHOLOGY	DEPTH	INSOLUBLE RESIDUE %	ORGANIC CARBON WT. %	EXTRACTABLE ORGANIC Bbl/ACRE FT.	EXTRACT. HYDROCARBON Bbl/ACRE FT.	EXTRACT. ORG. / TOTAL ORG.	RATING	
ANO-133	Core	Good	Jurassic	shale	12,700'	90.4	1.9	111.7	60.0	0.23	V. Good	
-134	"	"	"	"	12,700	91.3	2.3	138.9	60.9	0.24	"	

REMARKS:

REFERENCE: T.S. 8269CC, 1-20-72
T.S. 8355CC, Pending

orgC Extr
2.1% 111.7
138.9
250.6
avg 125.3

125.3 + 12.5 / 2 = 65.6

ANALYST J. A. Schleicher DATE MAR 21 1972

TABLE 1

T.S. 8269CC (Addendum)
Amoco Europe Incorporated
Amoco Norway 2/11-1 well
North Sea

INTRODUCTION

A previous report (T.S. 8269CC) found the cuttings from the Amoco Norway 2/11-1 well to be highly contaminated with oil from the drilling fluid. Because of the contamination, reliable source rock data could not be obtained. Since cores are less likely to be contaminated by drilling fluids, it was decided to analyse two Jurassic shale samples from a core taken at about 12,700 feet. A recently completed technical service memo on the nearby Phillips 2/7-1X well (T.S. 8355CC) reported conclusive data on the Jurassic section of the North Sea Basin. The conclusions herein rely heavily on the foundation built in that report.

CONCLUSIONS

1) Both samples of Jurassic shale analysed are rated as very good hydrocarbon source rocks based on the weight percent organic carbon they contain.

2) The rocks analysed have been subjected to sufficient thermal energy to generate hydrocarbons and are therefore considered to be EFFECTIVE source rocks.

3) On the basis of weight percent hydrogen in the kerogen, the samples analysed are considered to be primarily oil source rocks.

4) The extracts from the subject samples are correlative with J(b) oils produced from Tertiary and Cretaceous reservoirs in the United Kingdom sector of the North Sea Basin. It was reported in T.S. 8355CC that the upper 1700 feet of Jurassic shale in the Phillips No. 2/7-1X well contained extracts which resembled the isotopically light United Kingdom oils while older Jurassic shales contained extracts which were similar to the isotopically heavier Norwegian oils.

5) The samples analysed represent EFFECTIVE oil source rocks and are believed to be part of the Jurassic section which produced the J(b) type oil found in Tertiary and Cretaceous reservoirs in the United Kingdom sector of the North Sea Basin.

Wallace G. Dow

WGD:glj

OFFICE Amoco Europe AREA North Sea

AUTHORIZED BY K. D. Soule DATE 10-11-71

TECHNICAL SERVICE NUMBER 8269CC (addendum)

STATE (PROVINCE) COUNTY WELL LOCATION Amoco Norway 2/11-1

Amoco Production Company

RESEARCH CENTER
ORGANIC DIAGENESIS DATA

SAMPLE			FORMATION	LITHOLOGY	DEPTH	ELEMENTAL ANALYSIS, PERCENT				RATIO	STATE OF	HYDROCARBON TYPE BY	
NUMBER	TYPE	QUALITY				CARBON	HYDROGEN	OXYGEN	NITROGEN	H/C	DIAGENESIS	% HYDROGEN	PYROLYSIS
ANO-133	Core		Jurassic	shale	12,700'	81.2	7.5	9.1	2.2	1.11	peak hydrocarbon generation	oil	
-134	"		"	"	12,700	84.9	7.6	5.1	2.4	1.08	"	"	
						avg 83.050							

REMARKS:

Unlike the cuttings from the Amoco Norway 2/11-1 well, the core samples analysed in this report have not been contaminated by the drilling fluid.

ANALYST Roger E. LaPlante DATE MAR 21 1972

TABLE 2

Amoco Production Company
RESEARCH CENTER
CORRELATION ANALYSES

OFFICE Amoco Europe AREA North Sea

AUTHORIZED BY K. D. Soule DATE 10-11-71

TECHNICAL SERVICE NUMBER 8269CC (addendum)

OIL ☐ ROCK ☒

STATE (PROVINCE)

SAMPLE	FIELD	COUNTY	WELL AND LOCATION	PAY SAMPLE INTERVAL	CARBON ISOTOPE δC^{13} ‰ ~~ALIPHATIC~~ EXTRACT	~~WHOLE OIL~~ TOTAL ORG.	[1] OPTICAL ROTATION, DEGREES	INFRARED SPECTRUM TYPE	ISOMER DISTRIB.	HEAVY HC DISTRIB.	°API @ 60 °F		OIL TYPE
ANO-133			Amoco Norway 2/11-1	Jurassic 12,700'	-31.3*			B Mod		Fig. 1			J(b)
-134			"	"	-31.3*			"		"			J(b)

REMARKS: *These extracts are like North Sea J(b) oils in every way except they are about 2.5 per mil lighter (more negative) isotopically than J(b) oils or J(b) extracts recovered from Jurassic shale in the Phillips No. 2/7-1X well (T.S. 8355CC). The produced oils and the samples composited over large stratigraphic intervals in the Phillips well represent average isotope values derived from a wide range of individual facies. The core extract was apparently obtained from a single facies which contains isotopically light organic material.

[1] POSITIVE UNLESS OTHERWISE INDICATED; NOT RUN ON ROCK EXTRACTS

ANALYST J. A. Williams DATE MAR 21 1972

TABLE 3

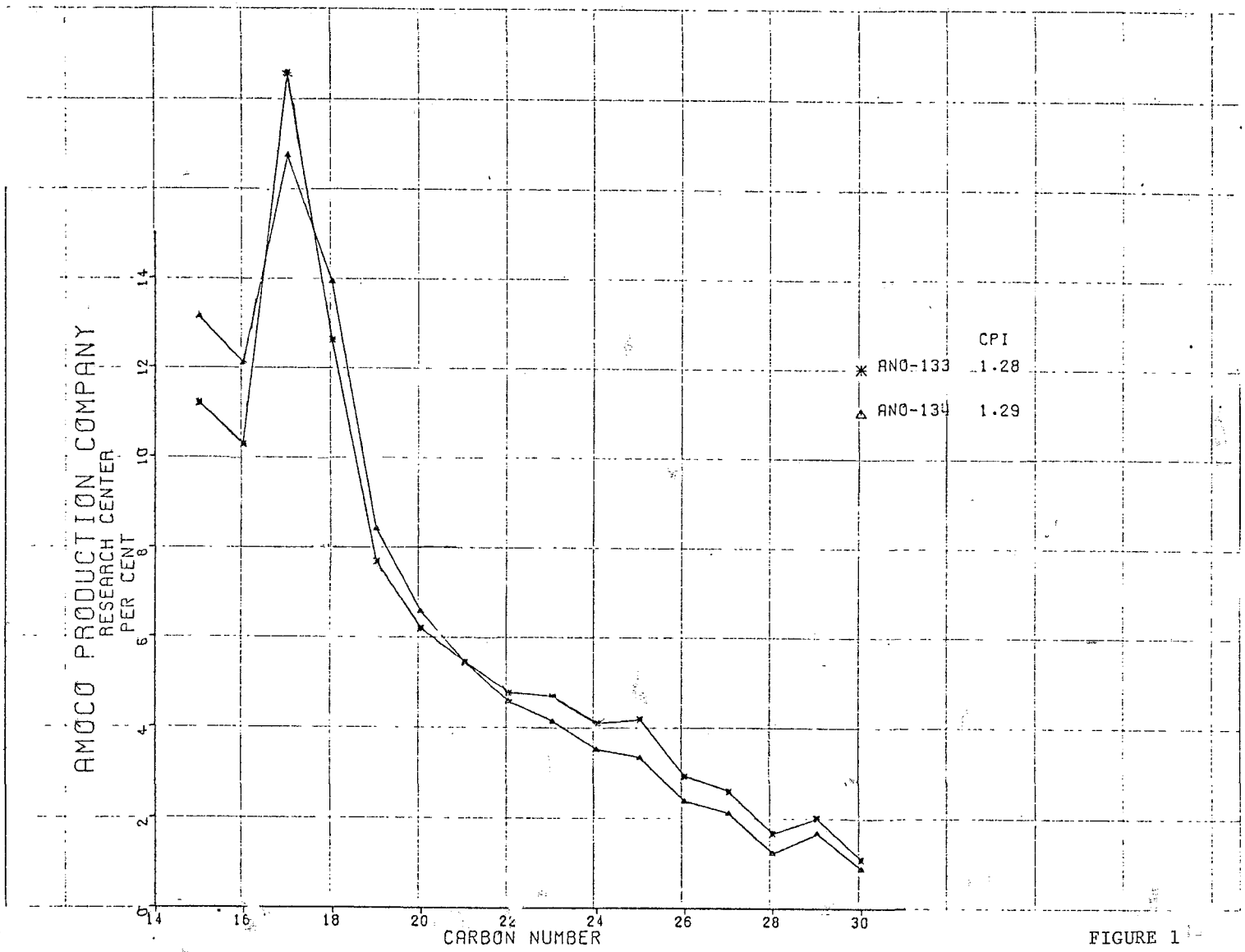

FIGURE 1

T.S. 8269CC (Addendum)
North Sea
MAR 31 1972

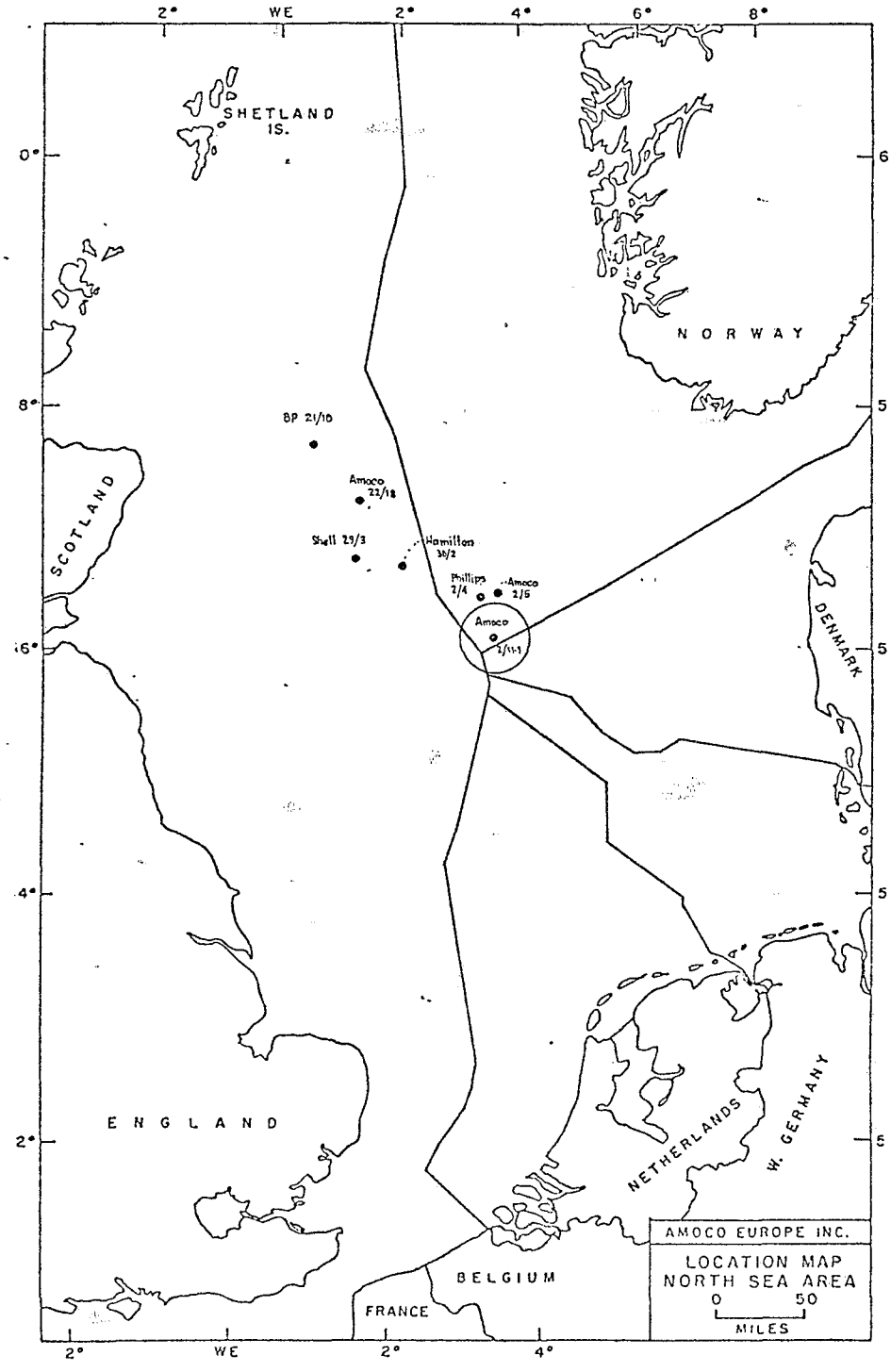

FIGURE 2

T.S. 8269CC (Addendum)

MAR 21 1972