



August 1, 1972

INTER-OFFICE CORRESPONDENCE / SUBJECT: Norway/Prod/Bream 17/12 Well No. 1X
BARTLESVILLE, OKLAHOMA

Water Analysis

WFB-37-72

Mr. O. D. Thomas
International Department
1711 Phillips Building

In response to Mr. J. K. Fetters' request of July 17, 1972, the water samples from Drill Stem Tests No. 3, 4 and 7 of the Bream 17/12 Well No. 1X, Norwegian Sector, North Sea, have been analyzed and the results are attached.

The analyses, including measurements of pH, specific gravity at 60/60°F, sulfides as H₂S, and concentrations of inorganic ions, were made by Earlougher, Engineering, Tulsa, Oklahoma.

W. F. Buce

W. F. Buce
262 RB #1, Ext. 3538

WFB:nw
Attachments (3)

cc: R & D Files (EX-4-3-9)
B. M. Boyce (8) ✓
R. V. Smith (r) RBN
W. F. Buce

PHILLIPS PETROLEUM COMPANY
BARTLESVILLE, OKLAHOMA

LAB. SAMPLE NO. EE 914

WATER ANALYSIS

FIELD SAMPLE NO.

June 17/12
IX

FIELD Bream

FORMATION Danian Lime

DEPTH 7574-7594'

POINT OF SAMPLING Reverse circulator #3, DST 3

SAMPLED BY

DATE 6-5-72
2100 hrs

TWP.

RGE.

~~STATE~~

North Sea

Swedish Sector

		MILLIGRAMS PER LITER	MILLIEQUIVALENTS PER LITER	PARTS PER MILLION	PER CENT
Na	Na	3,938	171.29	3,908	36.35
Ca	Ca	10	.50	10	.09
Mg	Mg	29	2.38	29	.27
Fe	Fe	0	0	0	0
Fe	Fe	240		238	2.21
OH	OH	0	0	0	0
CO ₃	CO ₃	149	4.96	148	1.38
HCO ₃	HCO ₃	595	9.76	590	5.49
Cl	Cl	5,035	141.98	4,996	46.46
SO ₄	SO ₄	840	17.47	833	7.75
TOTAL DISSOLVED SOLIDS (SUM.)		10,836		10,752	100.00
pH WHEN SAMPLED					
pH IN LAB			9.2		
RESISTIVITY, OHM-METERS AT 77 °F			.603		
SPECIFIC GRAVITY 60 / 60 °F			1.0077		
TOTAL SULFIDE AS H ₂ S			0		
TOTAL HARDNESS AS Ca CO ₃					

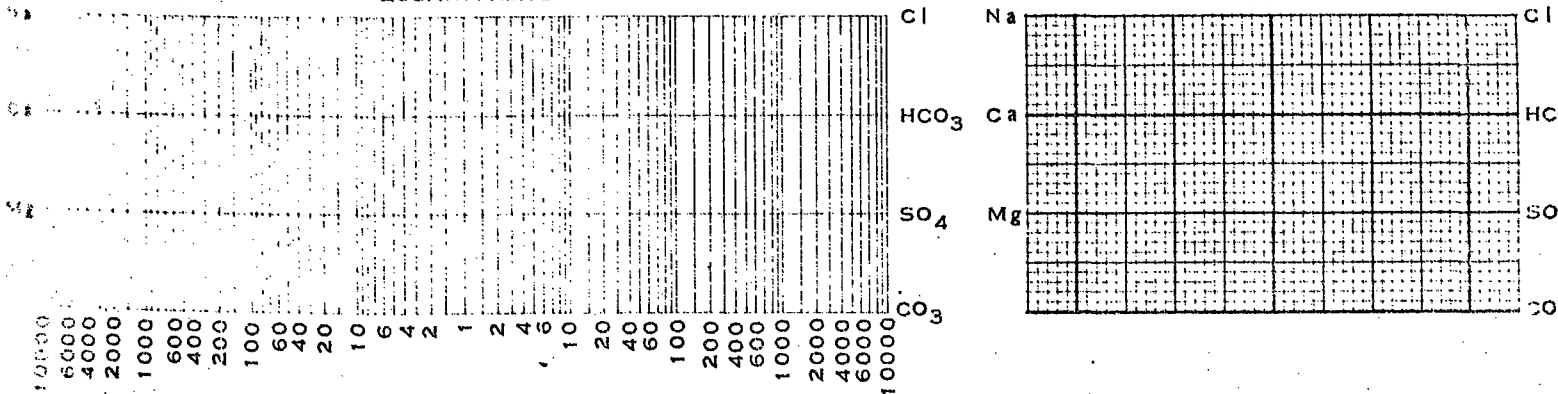
REMARKS:

WATER ANALYSIS PATTERNS

MEQ PER UNIT

LOGARITHMIC

STANDARD



SAMPLE RECEIVED: 7-21-72
ANALYSIS COMPLETED: 7-25-72
ANALYST: TNH (EE)
ANALYSIS REQUESTED BY: W. F. Bruce

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4-W. F. Bruce

(International Dept., AFE No. NW-5605)

2.07-18731-D

PHILLIPS PETROLEUM COMPANY
BARTLESVILLE, OKLAHOMA

Attachment to WFB-37-72
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LAB. SAMPLE NO. EE-915
FIELD SAMPLE NO.

WATER ANALYSIS

LEASE Block 17/12
WELL NO. IX
LOCATION
SEC. TWP. RGE.
CONTRACT ~~XXXX~~ ~~XXXX~~

FIELD Bream
FORMATION Danian Lime
DEPTH 7530-7560'
POINT OF SAMPLING Reverse circulator #3, DST
SAMPLED BY DATE 6-6-72

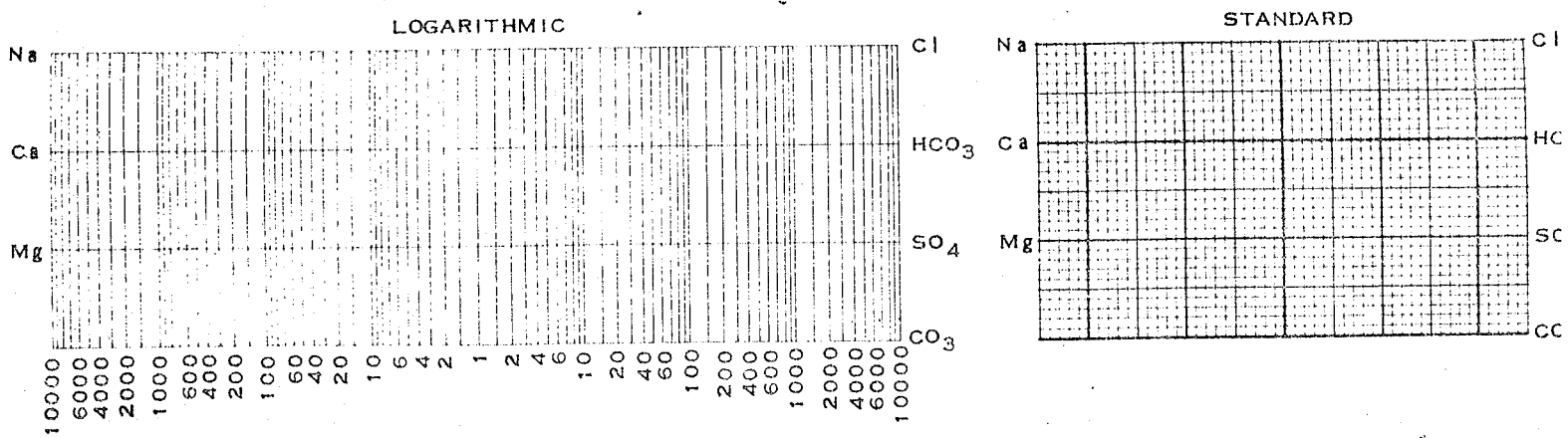
Norwegian Sector North Sea

2215 hrs

		MILLIGRAMS PER LITER	MILLIEQUIVALENTS PER LITER	PARTS PER MILLION	PER CENT
SODIUM (BY DIFFERENCE)	Na	33,440	1,454.44	30,920	29.12
CALCIUM	Ca	8,520	425.15	7,878	7.42
MAGNESIUM	Mg	1,444	118.70	1,335	1.26
BARIUM	Ba				
IRON, DISSOLVED	Fe	220		203	.19
IRON, TOTAL	Fe	0		0	0
HYDROXIDE	OH	0	0	0	0
CARBONATE	CO ₃	0	0	0	0
BICARBONATE	HCO ₃	600	9.84	555	.52
CHLORIDE	Cl	70,210	1,979.92	64,920	61.13
SULFATE	SO ₄	410	8.53	379	.36
TOTAL DISSOLVED SOLIDS (SUM.)		114,844		106,190	100.00
pH WHEN SAMPLED					
pH IN LAB		7.6			
RESISTIVITY, OHM-METERS AT 77 °F		.070			
SPECIFIC GRAVITY 60/60 °F		1.0815			
TOTAL SULFIDE AS		0			
TOTAL HARDNESS AS CaCO ₃					

REMARKS:

WATER ANALYSIS PATTERNS
MEQ PER UNIT



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ANALYST: TMI (EE)
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LAB. SAMPLE NO. EE-916
FIELD SAMPLE NO.

WATER ANALYSIS

LEASE **Block 17/12**

WELL NO. **IX**

LOCATION

SEC. TWP. RGE.

~~XXXXXX~~ **Norwegian Sector** ~~XXXXXX~~ **North Sea**

FIELD **Bream**
FORMATION **Danian Lime**

DEPTH **7691-7703**

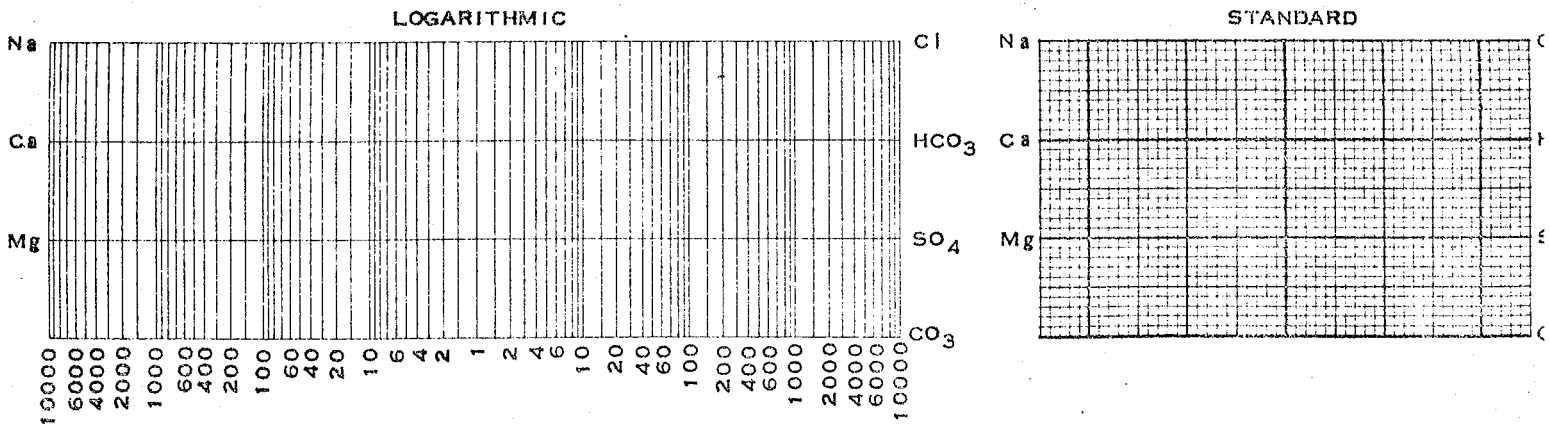
POINT OF SAMPLING **Reverse circulator of DST 7**

SAMPLED BY DATE **6-16-72**

		MILLIGRAMS PER LITER	MILLIEQUIVALENTS PER LITER	PARTS PER MILLION	PER CENT
SODIUM (BY DIFFERENCE)	Na	32,220	1,401.43	29,710	27.79
CALCIUM	Ca	10,600	528.94	9,776	9.15
MAGNESIUM	Mg	1,025	84.26	945	.88
BARIUM	Ba				
IRON, DISSOLVED	Fe	195		180	.17
IRON, TOTAL	Fe	0		0	0
HYDROXIDE	OH	0	0	0	0
CARBONATE	CO ₃	91	3.03	84	.08
BICARBONATE	HCO ₃	283	4.64	261	.24
CHLORIDE	Cl	70,210	1,979.92	64,750	60.57
SULFATE	SO ₄	1,300	27.04	1,199	1.12
TOTAL DISSOLVED SOLIDS (SUM.)		115,924		106,905	
pH WHEN SAMPLED					
pH IN LAB		8.8			
RESISTIVITY, OHM-METERS AT 77 °F		.070			
SPECIFIC GRAVITY 60/60 °F		1.0243			
TOTAL SULFIDE AS		0			
TOTAL HARDNESS AS CaCO ₃					

REMARKS:

WATER ANALYSIS PATTERNS
MEQ PER UNIT



SAMPLE RECEIVED: **7-21-72**
ANALYSIS COMPLETED: **7-25-72**
ANALYST: **TNL (EE)**
ANALYSIS REQUESTED BY:

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