DNR MISSOURI SAMPLE WELL-LOG LIBRARY DGLS

LOG NUMBER 028673

OWNER: AMOCO Production Company
PLUGGED CONFIDENTIAL? -1 **RELEASE DATE:**
WELL TYPE: Oil Well
DRILLER: Noble Drilling
LEASENAME: Spence Trust Well #1
DRILL DATE: 1988/02/13 **PERMIT #:**
LOGGER: Deason, K. **LOGDATE:** 1988/12/00
TYPE OF LOG: S **SAMPLE SAVED?** 0

MISSOURI , **COUNTY:** Dunklin
SECTION: 10 **TOWNSHIP:** 17 N **RANGE** 08 E
SW of SW of SW
LATITUDE: 36.12047
LONGITUDE: -90.19429
QUAD NAME: ARBYRD

OTHER DATABASES: API OIL AND GAS FILE
ID NUMBER: 069-20001
DATABASE 2:
ID NUMBER:
DATABASE 3
ID NUMBER

ELEVATION: 250 **BASE:** S **BEDROCK @** 280 **FEET**
TOTAL DEPTH: 10089 **INTERVAL CORED:** 0 TO 0
YIELD: **DRAWDOWN:**
STATIC WATER LEVEL BEFORE: **AFTER:**

WATER AT:

TOP FORMATION: WILCOX GROUP
BOTTOM FORMATION: LAMOTTE SANDSTONE

REMARKS: #1 SPENCE TRUST

CONSTRUCTION DATA

	DEPTH:	DIAMETER	CASING MATERIAL
CASING:	47	24	
	250	16	
	2037	10.75	
	0	0	

I/O:
SIZE HOLE: 0

DATE PLUGGED: DATE ABANDONED:
Plug Depth TOP: 0 Plug Depth Bottom: 0
GROUTING:

PUMP:

Capacity	Pump Type	Set at:	Total Depth:	Screen Type:	Size:	Length:	Slot:
0		0	0		0	0	0

Well Treatment: Type Devised:
Type of Completion
Oil Production: Gas Production:
Perforation Interval: Top: 0 Bottom: 0
Tube Pressure:

Water Analysis:

OPEN FORMATIONS Top Formation: CANADIAN (IBEXIAN) SERIES
Bottom Formation: LAMOTTE SANDSTONE

LOG NUMBER 028673

STRATIGRAPHY

TOP	BOT	FORMATION NAME	LITHOLOGY PRIMARY	LITHOLOGY SECONDARY	LITHOLOGY MINOR	MINERALS PRIMARY	OCC.	MINERALS SECONDAR	OCC	MINERALS MINOR
0	60	NO SAMPLES					0		0	
60	280	QUATERNARY SYSTEM					0		0	
60	280	HOLOCENE ALLUVIUM	SAND	GRAVEL	SILT		0		0	
280	1512	CENOZOIC ERATHEM					0		0	
280	970	EOCENE SERIES					0		0	
280	580	CLAIBORNE GROUP	SAND	CLAY	GRAVEL		0		0	
580	970	WILCOX GROUP	SAND	SILT	CLAY		0		0	
970	1512	PALEOCENE SERIES					0		0	
970	1490	PORTERS CREEK CLAY	CLAY	SILT	SAND		0		0	
1490	1512	CLAYTON FORMATION	SAND	CLAY			0		0	
1512	1960	MESOZOIC ERATHEM					0		0	
1512	1960	CRETACEOUS SYSTEM					0		0	
1512	1535	OWL CREEK FORMATION	LIMESTONE	SHALE	SAND		0		0	
1535	1960	McNAIRY FORMATION	SHALE	SAND	LIMESTONE		0		0	

1960	5445	ORDOVICIAN SYSTEM				0	0
1960	5445	CANADIAN (IBEXIAN) SERIES	DOLOMITE	LIMESTONE	SAND	0	0
5435	5445	GUNTER SANDSTONE MEMBER	SANDSTONE			0	0
5435	5445	GUNTER SANDSTONE MEMBER	SANDSTONE			0	0
5445	9989	CAMBRIAN SYSTEM				0	0
5445	9989	UPPER CAMBRIAN SERIES				0	0
5445	6825	EMINENCE-POTOSI DOLOMITES	DOLOMITE	LIMESTONE	CHERT	0	0
6825	7560	DERBY-DOERUN DOLOMITE	LIMESTONE	DOLOMITE	SHALE	0	0
7510	7680	DAVIS FORMATION	LIMESTONE	SHALE		0	0
7680	9935	BONNETERRE FORMATION	LIMESTONE	DOLOMITE		0	0
9935	9989	LAMOTTE SANDSTONE	SANDSTONE			0	0

Permit #: 20001

County: DUNKIN

CONFIDENTIAL UNTIL:

Date Issued: 11-18-87

Date Cancelled:

Date Plugged: 02-21-88

OGC FORMS	Date Received
1	
2	
3	11-18-87
3i	
4	11-18-87
4i	
5	04-11-88
6	
7	04-11-88
8	
11	
12	
Misc. Form 2	

	TYPE	ID #	Date Received
Logs	Drillers		
Samples	chip		
	core		
Analyses	water		
	core		

Additional Submitted Data:

COMMENTS:

Missouri Oil and Gas Council

Form OGC-3

APPLICATION FOR PERMIT TO DRILL, DEEPEN, OR PLUG BACK

APPLICATION TO DRILL ☑ DEEPEN ☐ PLUG BACK ☐

for an oil well ☑ or gas well ☐

NAME OF COMPANY OR OPERATOR Amoco Production Company DATE 11/11/87

Box 3092 (Address) Houston (City) Texas (State) 77253

DESCRIPTION OF WELL AND LEASE

Name of lease	Well number	Elevation (ground)
Spence Trust	1	249TM

WELL LOCATION (give footage from section lines) 500 ft. from (N) (S) sec. line 500 ft. from (E) (W) sec. line

WELL LOCATION Section 10 Township 17N Range 8E County Dunkin

Nearest distance from proposed location to property or lease line 500 feet

Distance from proposed location to nearest drilling, completed or applied for well on the same lease N/A feet

Proposed depth	Drilling contractor, name & address	Rotary or Cable Tools	Approx. date work will start
Below 4,000	Noble Drilling	Rotary	12/1/87

Number of acres in lease 160

Number of wells on lease, including this well, completed in or drilling to this reservoir: 1

Number of abandoned wells on lease: N/A

If lease, purchased with one or more wells drilled, from whom purchased Name _____ Address _____

No. of Wells: producing _____ injection _____ inactive _____ abandoned _____

Status of Bond Single Well ☒ Amt. $4,000.00 Blanket Bond ☐ Amt _____ ☐ ON FILE ☑ ATTACHED

Remarks (If this is an application to deepen or plug back, briefly describe work to be done, giving present producing zone and expected new producing zone) use back of form if needed

Proposed casing program

amt	size	wt./ft	cem.
250'	16"	65#	Class H
2600'	10-3/4	51#	Class H
Total Depth	5-1/2	17#	Class H

Approved casing — To be filled in by State Geologist

amt	size	wt./ft	cem.
✓	✓	✓	✓
✓	✓	✓	✓
✓	✓	✓	✓

I, the undersigned, state that I am the Representative of the Amoco Production Co. (company), and that I am authorized by said company to make this report, and that this report was prepared under my supervision and direction and that the facts stated therein are true, correct and complete to the best of my knowledge

Signature Mary Corley

Permit Number 20001

Approval Date 11/18/87

Approved By Jasper Hodge Williams BWM

☑ Drillers log required

☑ E-logs required if run

☑ Core analysis required if run

☑ Drill stem test info. required if run

☑ Samples required

☐ Samples not required

Note: This Permit not transferable to any other person or to any other location

Remit two copies to: Missouri Oil and Gas Council P.O. Box 250 Rolla, Mo. 65401

One will be returned for driller's signature

RECEIVED NOV 18 1987 MO Oil & Gas Council Economic Geology

WATER SAMPLES REQUIRED @

Approval of this permit by the Oil and Gas Council does not constitute endorsement of the geologic merits of the proposed well nor endorsement of the qualifications of the permitted

3/12/82

I _____ of the _____

Company confirm that an approved drilling permit has been obtained by the owner of this well. Council approval of this permit will be shown on this form by presence of a permit number and signature of authorized Council representative.

Driller's signature _____

Date _____

4-27-83

Missouri Oil and Gas Council

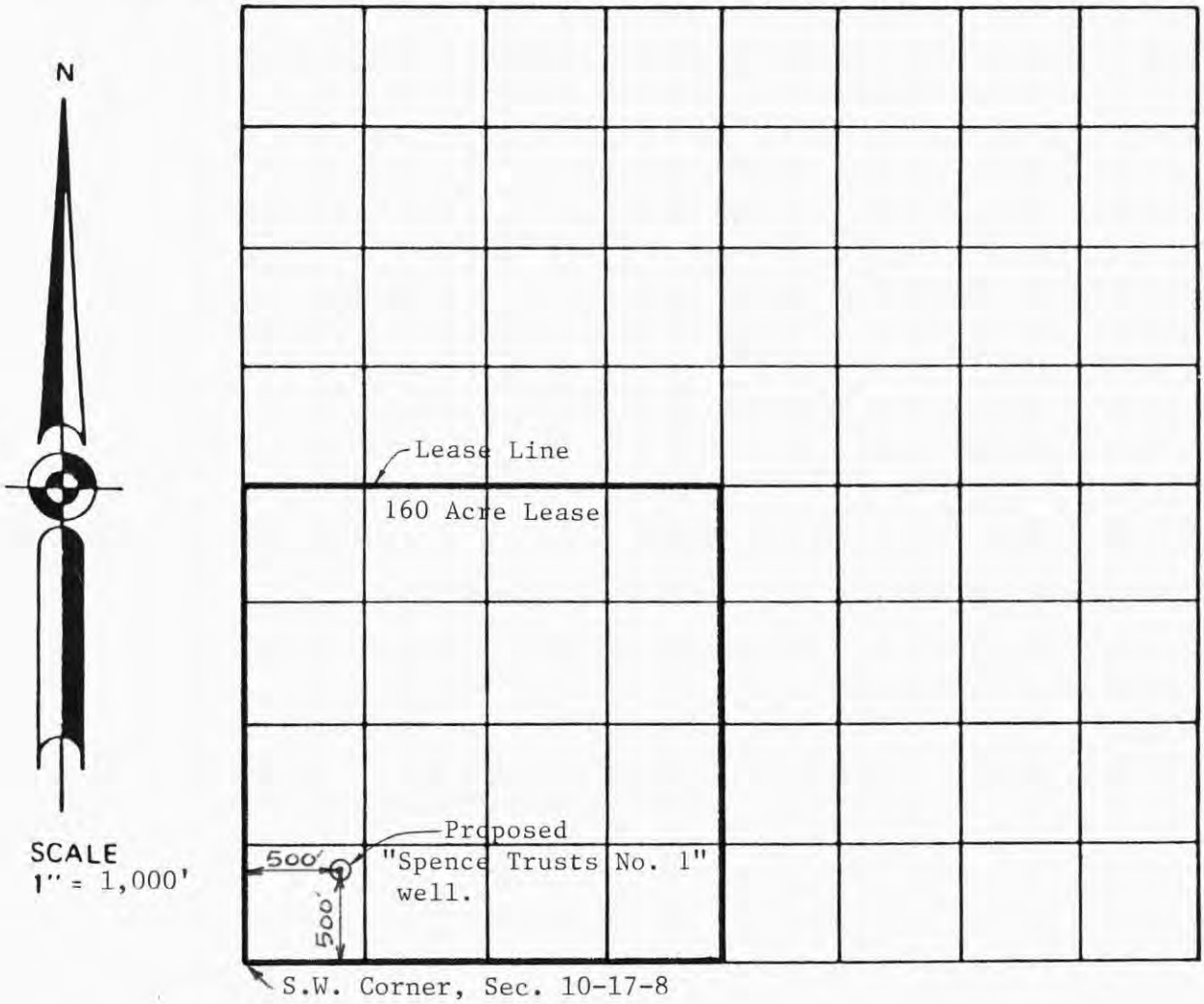
WELL LOCATION PLAT

Form OGC-4

Owner: AMOCO Production Company

Lease Name: Spence TrustsNo. 1 County: Dunklin

500 feet from S (N)-(S) section line and 500 feet from W (E)-(W) section line of Sec. 10, Twp. 17 N., Range 8 E.



SCALE
1" = 1,000'

REMARKS: No other well on this lease.

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MO Oil & Gas Council
Economic Geology

INSTRUCTIONS

On the above plat, show distance of the proposed well from the two nearest section lines, the nearest lease line, and from the nearest well on the same lease completed in or drilling to the same reservoir. Do not confuse survey lines with lease lines. See rule 10 CSR 50 2 030 for survey requirements. Lease lines must be marked

This is to Certify that I have executed a survey to accurately locate oil and gas wells in accordance with 10 CSR 50-2.030 and that the results are correctly shown on the above plat.

(SEAL)

B. Neil Lewis

B. Neil Lewis — Registered Land Surveyor

LS-912 — Number

Remit two copies to: Missouri Oil and Gas Council
P.O. Box 250, Rolla, MO 65401

One will be returned.

MISSOURI DEPARTMENT OF NATURAL RESOURCES
MISSOURI OIL AND GAS COUNCIL

WELL COMPLETION OR RECOMPLETION REPORT AND WELL LOG

Form OGC-5

☒ NEW WELL ☐ WORKOVER ☐ DEEPEN ☐ PLUG BACK ☐ INJECTION ☐ SAME RESERVOIR ☐ DIFFERENT RESERVOIR ☐ OIL ☐ GAS ☐ DRY

OWNER: Amoco Production Company	ADDRESS: P.O. Box 660, Tyler, Texas 75703
LEASE NAME: Spence Trusts	WELL NUMBER: 1
LOCATION: 500' FSL x 500 FWL	SEC. TWP. AND RANGE OR BLOCK AND SURVEY: Section 10-17N-8E

COUNTY	PERMIT NUMBER (OGC-3 OR OGC-3I)	DATE SPUDDED	DATE TOTAL DEPTH REACHED	DATE COMPLETED READY TO PRODUCE OR INJECT	ELEVATION (DF, RKR, RT, OR Gr.) FEET	ELEVATION OF CASING HD. FLANGE FEET
Dunklin	2001	Nov. 27, 1987	2/14/88	N/A	249.5'	

TOTAL DEPTH	PLUG BACK TOTAL DEPTH
10,089	N/A

PRODUCING OR INJECTION INTERVAL(S) FOR THIS COMPLETION	ROTARY TOOLS USED (INTERVAL)	CABLE TOOLS USED (INTERVAL)
	Surface TO 10,089	N/A
	DRILLING FLUID USED LSND Polymer	

WAS THIS WELL DIRECTIONALLY DRILLED?	WAS DIRECTIONAL SURVEY MADE?	WAS COPY OF DIRECTIONAL SURVEY FILED?	DATE FILED
N/A	N/A		

TYPE OF ELECTRICAL OR OTHER LOGS RUN (LIST LOGS FILED WITH THE STATE GEOLOGIST)	DATE FILED
Filed Previously	March 23, 1988

CASING RECORD

CASING (REPORT ALL STRINGS SET IN WELL - CONDUCTOR, SURFACE, INTERMEDIATE, PRODUCING, ETC.)

PURPOSE	SIZE HOLE DRILLED	SIZE CASING SET	WEIGHT (LB. FT)	DEPTH SET	SACKS CEMENT	AMOUNT PULLED
Conductor		24"	65	47'	200sx Class "H"	
Surface	20"	16"	65#	250'	600sx Class "H"	
Intermediate	14-3/4"	10-3/4"	51#	2037'	2250sx Class "H"	
Intermediate	9-1/2"	7-5/8"	29.7#	8041'	400 sx Class "H"	7760'

TUBING RECORD

SIZE IN.	DEPTH SET FEET	PACKER SET AT FEET	SIZE INCH

LINER RECORD

TOP FEET	BOTTOM FEET	SACKS CEMENT	SCREEN FEET

PERFORATION RECORD

NUMBER PER FEET	SIZE AND TYPE	DEPTH INTERVAL

ACID, SHOT, FRACTURE, CEMENT SQUEEZE RECORD

AMOUNT AND KIND OF MATERIAL USED	DEPTH INTERVAL

INITIAL PRODUCTION

DATE OF FIRST PRODUCTION OR INJECTION	PRODUCING METHOD (INDICATE IF FLOWING, GAS LIFT, OR PUMPING — IF PUMPING, SHOW SIZE AND TYPE OF PUMP.

DATE OF TEST	HOURS TESTED	CHOKE SIZE	OIL PRODUCED DURING TEST bbls.	GAS PRODUCED DURING TEST MCF	WATER PRODUCED DURING TEST bbls.	OIL GRAVITY API (CORR.)

TUBING PRESSURE	CASING PRESSURE	CALCULATED RATE OF PRODUCTION PER 24 HOURS	OIL bbls.	GAS MCF	WATER bbls.	GAS OIL RATIO

DISPOSITION OF GAS (STATE WHETHER VENTED, USED FOR FUEL OR SOLD)

METHOD OF DISPOSAL OF MUD PIT CONTENTS
Pumped down well

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APR 11 1988
MO Oil & Gas Council
Economic Geology

CERTIFICATE: I, THE UNDERSIGNED, STATE THAT I AM THE Representative OF THE Amoco Production Company COMPANY, AND THAT I AM AUTHORIZED BY SAID COMPANY TO MAKE THIS REPORT, AND THAT THIS REPORT WAS PREPARED UNDER MY SUPERVISION AND DIRECTION AND THAT THE FACTS STATED THEREIN ARE TRUE, CORRECT AND COMPLETE TO THE BEST OF MY KNOWLEDGE.

DATE	SIGNATURE
4/5/88	Richard Judge

DETAIL OF FORMATIONS PENETRATED			
Formation	Top	Bottom	Description (See * below)
			*SEE ATTACHED

*Show all important zones of porosity, detail of all cores, and all drill-stem tests, including depth interval tested, cushion used, time tool open, flowing and shut-in pressures, and recoveries.

INSTRUCTIONS:

Attach drillers log or other acceptable log of well if available

This Well Completion or Recompletion report and well log shall be filed with the Missouri State Geologist not later than 30 days after project completion.

Missouri Oil and Gas Council

Form OGC-7

PLUGGING RECORD

Owner	Address
Amoco Production Company	P.O. Box 660, Tyler, Texas

Name of Lease	Well No.	Permit Number (OGC-3 or OGC-3I number)
Spence Trusts	1	20001

Location of Well	Sec-Twp-Rng or Block & Survey	County
500' FSL x 500 FWL	Section 10-17N-8E	Dunklin

Application to drill this well was filed in name of	Has this well ever produced oil or gas?	Character of well at completion (initial production) Oil (bbls/day)	Gas (MCF/day)	Dry?
Amoco Production Company	no			yes

Date Abandoned	Total depth	Amount well producing prior to abandonment Oil (bbls/day)	Gas (MCF/day)	Water (bbls/day)
February 21, 1988	10,089			

Name of each formation containing oil or gas. Indicate which formation open to well bore at time of abandonment.	Fluid content of each formation	Depth interval of each formation	Size, kind, & depth of plugs used. Indicate zones squeeze cemented, giving amount cement.
			1950' - cmt. retainer
			50sx below retainer
			20sx above retainer
			surface - 20sx plug

Size pipe	Put in well (ft)	Pulled out (ft)	Left in well (ft)	Give depth and method of parting casing (shot, ripped, etc.)	Packers and shoes
24"	47	0	47		
16"	250	0	250		
10-3/4"	2037	0	2037		
7-5/8"	8041	0	281	7760' - cut & pull	

Was well filled with mud-laden fluid?	Indicate deepest formation containing fresh water.
yes	

NAMES AND ADDRESSES OF ADJACENT LEASE OPERATORS OR OWNERS OF THE SURFACE

Name	Address	Direction from this well:
Dr. George Spence Anne Spence	P.O. Box 17, Kennett, MO 63857	Surface Owner

RECEIVED
APR 11 1988
MO Oil & Gas Council
Economic Geology

Method of disposal of mud pit contents:
Pumped down well

Use reverse side for additional detail.

File this form in duplicate with

CERTIFICATE: I, the undersigned, state that I am the Representative of the Amoco Production Company (Company), and that I am authorized by said company to make this report; and that this report was prepared under my supervision and direction and that the facts stated therein are true, correct, and complete to the best of my knowledge.

Signature [signature]

Remit two copies to: Missouri Oil and Gas Council
P.O. Box 250, Rolla, MO 65401

One will be returned.

3/12/82

DETAIL OF FORMATIONS PENETRATED			
Formation	Top	Bottom	Description (See * below)
			*SEE ATTACHED

*Show all important zones of porosity, detail of all cores, and all drill-stem tests, including depth interval tested, cushion used, time tool open, flowing and shut-in pressures, and recoveries.

INSTRUCTIONS:

Attach drillers log or other acceptable log of well if available

This Well Completion or Recompletion report and well log shall be filed with the Missouri State Geologist not later than 30 days after project completion.

Temporary No. _____

5-25-89

MISSOURI GEOLOGICAL SURVEY AND WATER RESOURCES, ROLLA, MISSOURI

COUNTY Dunklin
COMPANY OR OWNER Amoco Production CO.
FARM Spence Trust WELL NO. 1
LOCATION 500'FSL & 500 FWL NESWSW SEC 10 T 17N R 8e
CONTRACTOR/DRILLER Noble Drilling
COMMENCED _____ COMPLETED _____
PRODUCTION Dry
CASING RECORD 24" set to 47', 7 5/8 set to 8606'
WATER RECORD _____
SOURCE OF LOG _____
REMARKS Logged by Ken Deason
Permit #20001

MGS LOG NO. 28673

ELEV. 249.5' GL 272.5' KB
TOTAL DEPTH 10089'
SWL _____

NO. SAMPLES _____ SAMPLES RECEIVED _____

FORMATION	FROM (ft)	TO (to)
Quarternary System	o	280
Tertiary System		
Claiborne Group	380	580
Wilcox Group		
Floor Island Fm.	580	687
Fort Pillow Frm.	687	970
Midway Group		
Porters Creek Fm.	970	1490
Clayton Fm.	1490	1512
Owl Creek	1512	1535
Cretaceous System		
McNary Fm.	1535	1955
Upper Knox Group		
Powell Fm.?	1955	2030
Ordovician System		
Upper Knox Group	2030	3080
Middle Knox Group	3080	5435
Gunter Member	5435	5445
Cambrian System		

FORMATION	FROM (ft)	TO (to)
Lower Knox Group	5445	6825
Elvins Group	6825	7510
Davis Shale	7510	7680
Bonneterre Fm.	7680	9935
Lamotte Fm.	9935	10089

AMOCO PRODUCTION COMPANY

SPENCE TRUST NO.1

DUNKLIN COUNTY, MISSOURI

069-20001

SUBMITTED BY

EMMETT KEENER
CHRIS GALLAGHER

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Introduction

I. INTRODUCTION

The operator, Amoco Production Company, drilled a Knox, Bonneterre wildcat, the Spence Trust No. 1 in Dunklin County, Missouri. Their purpose was to test the permeability, porosity and possible hydrocarbon production of these zones.

An N.L. Baroid Logging Systems MWD 2000 Logging Unit, Unit #40077 was used on the Spence Trust No.1, to aid in the safe and economical completion of the well. Mud weights were kept to a minimum and circulating hydraulics were maximized in order to prevent hole problems and expedite the drilling process. Close communication between the mud logging crew, drilling crew and Amoco personnel, was maintained to avoid costly and catastrophic events.

This final well report is intended to be a summary of the drilling events. It is hoped that this report will be of use in planning future wells. Should there be any questions raised by this report, or further information is required, we can be contacted through the Lafayette, Louisiana office. We would be glad to help you in any way possible.

The NL Baroid Logging System field personnel involved with the Spence Trust #1 were as follows:

Emmett Keener:	Sr. Unit Captain
Chris Gallagher:	Sr. Unit Captain
James Goldsby:	Sr. ADT Engineer

WELL INFO

II. GENERAL WELL INFORMATION

A. WELL INFORMATION AND LOCATION

COMPANY.....AMOCO PRODUCTION COMPANY

WELL NAME.....SPENCE TRUST NO.1

LOCATION.....500' FSL AND 500' FWL
SEC 10 17N 8E

A.P.I. NO.....2406920001

PERMANENT DATUM.....GROUND LEVEL

DEPTH MEASURED FROM.....KELLY BUSHING

ELEVATION

KELLY BUSHING.....272.5'

GROUND LEVEL.....249.5'

TOTAL DEPTH.....10089'MD

SPUD DATE.....11/27/87

T.D. DATE.....02/13/88

TOTAL DAYS.....79

NO. OF BITS USED.....24

MUD TYPE.....LOW SOLIDS NON DISPERSED
0'MD TO 10089'MD

II. GENERAL WELL INFORMATION

B. RIG INFORMATION

DRILLING CONTRACTOR.....NOBLE DRILLING

RIG NUMBER.....OW762

RIG EQUIPMENT

DRAW WORKS.....OILWELL 760

ROTARY TABLE.....OILWELL 27.5"

PUMPS.....GARDNER DENVER PZ-9

SHAKERS.....DERRICK

DE-SANDER.....SWACO

DE-SILTER.....SWACO

DE-GASSER.....DRACO

BOP.....CAMERON TYPE U

HYDRIL WITH 2 SETS OF PIPE RAMS AND 1 SET OF BLIND RAMS.

II. GENERAL WELL INFORMATION

C. N.L. BAROID LOGGING SYSTEMS

LOGGING SERVICES SUPPLIED:

TYPE OF SERVICE.....MWD 2000

SYSTEM 2000 PRIMARY MONITORING FUNCTIONS:

HOOKLOAD AND CALCULATED STRING WEIGHT

WEIGHT ON BIT

ROTARY SPEED

ROTARY TORQUE

STANDPIPE PRESSURE

CABLE WEAR

DEPTH: HOLE DEPTH, BIT DEPTH AND DEPTH ON JOINT

HOURS ON BIT: DRILLING HOURS & CIRCULATING HOURS

TRIP MONITORING: VOLUMES AND PRESSURES

DRILL RATE: AVERAGED OVER 1', 5' AND 25' INTERVALS

RUN SPEED: DRILLPIPE & CASING (AVERAGE & MAXIMUM)

ACCELERATION

PUMP SPEED

CALCULATED FLOW IN

MEASURED FLOW OUT

MUD CONDUCTIVITY: IN, OUT, LAGGED & DIFFERENTIAL

MUD TEMPERATURE: IN, OUT, LAGGED & DIFFERENTIAL

MUD CHLORIDES: IN, OUT, DIFFERENTIAL, TRIP

PIT VOLUMES: ACTIVE SYSTEM, RESERVE SYSTEM

TRIP TANK

FLAME IONIZATION GAS DETECTOR: TOTAL HYDROCARBONS

FLAME IONIZATION CHROMATOGRAPH: SYSTEM INTERFACED

H2S DETECTOR: 4 PT. SOLID STATE MONITORING SYSTEM

II. GENERAL WELL INFORMATION

C. N.L. BAROID LOGGING SYSTEMS

SYSTEM 2000 ENGINEERING FUNCTIONS:

- TOTAL SYSTEM HYDRAULICS CALCULATIONS
  - CIRCULATING HYDRAULICS
  - SURGE/SWAB PRESSURES
- STRING AND HOLE GEOMETRIES
- NEUTRAL POINT AND AVAILABLE WEIGHT
- FREE POINT CALCULATIONS
- DRILLING MODEL CALCULATIONS
  - TOOTH WEAR CORRECTED "D" EXPONENT
  - BOURGOYNE/YOUNG DERIVED DRILLING MODEL
  - TOOTH AND BEARING WEAR
  - DRILLING COST
- INTERFACED OFFLINE PC WITH HARD DISK
  - DATABASE
  - PLOTTING FUNCTIONS

SUMMARY

III. WELL SUMMARY

The Spence Trust No.1 was located 500' FSL and 500' FWL of Section 10 Township 17N Range 8E in Dunklin County, Missouri.

Objectives were as follows:

Knox	1946'MD
Elvins Group	6721'MD
Bonneterre	7256'MD
Lamotte	8606'MD

Proposed TD was 10000'MD.

No anticipated pore pressures were put in the well prognosis. Anticipated mud weights ranged from 8.60 PPG. to 10.0 PPG.. Estimated pore pressures while drilling ranged from 9.0 PPG. to 9.50 PPG., while mud weights ranged from 8.3 PPG. to 10.0 PPG..

Casing strings for this well were set as follows:

24" Surface pipe	47'MD.
16" Conductor pipe	250'MD.
10 3/4" Surface casing	2037'MD.
7 5/8" Casing	8041'MD.

The well was spudded on November 27, 1987 and drilled to a depth of 10089' MD.. The total depth of 10089'MD was reached on February 13, 1988. The well was wireline logged at 10089'MD and a decision was made to plug the well after recovering the 7 5/8" casing.

4-27-83

Missouri Oil and Gas Council

WELL LOCATION PLAT

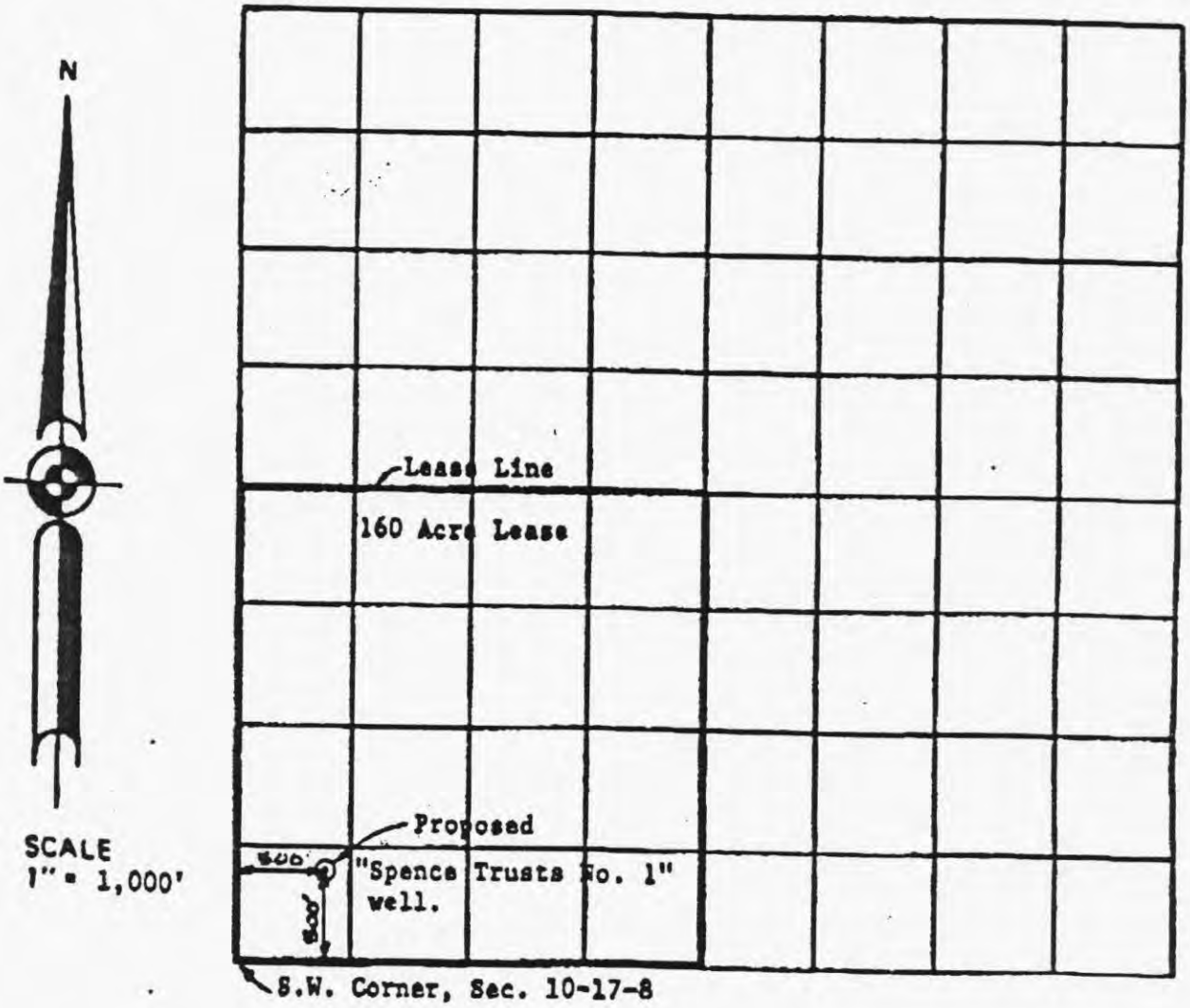
4

Form OGC-4

Owner: AMOCO Production Company

Lease Name: Spence TrustsNo. 1 County: Dunklin

500 feet from S (N)-(S) section line and 500 feet from W (E)-(W) section line of Sec. 10, Twp. 17 N., Range 8 E.



REMARKS: No other well on this lease.

RECEIVED
NOV 18 1987
MO Oil & Gas Council
Economic Geology

INSTRUCTIONS

On the above plat, show distance of the proposed well from the nearest section lines, the nearest lease line, and from the nearest well on the same lease completed in or drilling to the same reservoir. Do not confuse survey lines with lease lines. See rule 10 CSR 50-2.030 for survey requirements. Lease lines must be marked.

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P.O. Box 250, Rolla, MO 65401
One will be returned.

This is to Certify that I have executed a survey to accurately locate oil and gas wells in accordance with 10 CSR 50-2.030 and that the results are correctly shown on the above plat.

B. Neil Lewis

(SEAL)

B. Neil Lewis
Registered Land Surveyor

LS-912
Number

Geology

IV. GEOLOGY

A. Geology Summary

Sample collection and formation evaluation began at 0'MD and continued through to 10089' TD. Cutting samples were caught and analyzed every 30' from 0' to 2500'MD. From 2500'MD to TD of 10089' the samples were caught every 10', except in zones of interest or where parameters dictated a possible change in formation, then samples were caught as often as possible.

Lithology descriptions are recorded on the HYDROCARBON (PPM) EVALUATION logs in the remarks column located to the right of the interpretive column. A descriptive and an interpretive column were used, respectively, to graphically represent what we saw and what we believed to have been drilling for each particular interval.

Gas readings were designed to serve as one guide to the zones of interest and as an aiding parameter in evaluating changes in formation pressures. Total gas was monitored by a flame ionization detector (F.I.D.), which has proven to be far superior in accuracy compared to other methods of total gas determination. Total gas is recorded on all formation evaluation logs in the gas column located to the right of the depth column. Outputs from the gas detector are recorded in units, where fifty (50) units is one percent(1%) methane in air. Gas chromatographic breakdowns were performed using a Baroid Reflux Steam Still in conjunction with a FID/GC 2000 chromatograph system. The use of the steam still, which separates the heavier hydrocarbons (C1 - C5+) from the mud, allows for accurate hydrocarbon ratios from periodic samples taken from the suction pit and the flowline to enable the generation of precise show evaluation reports during the zones of interest.

The GC (gas chromatograph) 2000 is N.L. Baroid Logging Systems latest effort in the area of formation evaluation through gas detection and show analysis. An extensive software package incorporated into the MWD 2000 Logging Unit along with some plumbing and electronic hardware changes to our existing FID chromatograph makes for a faster more precise hydrocarbon analysis.

Plumbing changes in the GC 2000 incorporate a more efficient hydrogen carrier system, which provides a faster elution time compared to using an air carrier system (C5 - pentane elution time of 180 seconds compared to 7.6 minutes using air carrier and C4 - butane elution time of 90 seconds compared to 4 minutes using air carrier). Using hydrogen as a carrier provides accurate and detailed sample analysis through C5 every 6 feet or through C4 every 3 feet while drilling 100 ft./hr..

IV. GEOLOGY

A. Geology Summary (Cont'd)

Other advantages of using a hydrogen carrier over air carrier is the cleaner carrier minimizes restrictions, thus allowing for more efficient separation of hydrocarbons. The calibration of the gas chromatograph is more precise because the same gas is used for the carrier and the fuel.

The electrical modifications include the use of an extremely sensitive wide range logarithmic amplifier. This allows for the detection of gases in concentrations as low as 10 ppm. to an accuracy of 1/2 ppm..

A sample analysis report is generated on the MWD 2000 systems keyboard every time a new sample is taken. The report includes individual gas ppm's, retention times, show analysis results, the lagged sample depths and whether or not the gas trap efficiency factors were applied to the results. By incorporating an additional Teletype into the GC 2000 system, an optional columnar report can be generated. This optional report provides more information and trends can be easily spotted. Gas chromatography results are recorded respectively in the C1 through C4 columns located to the right of the depth column. Separate show evaluation reports were also generated through zones of possible interest.

B. Lithology Descriptions

Interval I (0'MD - 250'MD)

Quaternary system:
- Pleistocene series:
  - Recent alluvium: 0'MD - 250'MD

Lithology in this section consisted of unconsolidated sand and chert. The sand was clear, white, medium to coarse grain, subangular to round, poorly sorted and unconsolidated.

The chert was yellow, clear and very hard.

Interval II (250'MD - 2037'MD)

Quaternary system:
- Pleistocene series:
  - Recent alluvium: 250'MD - 276'MD

Lithology in this section consisted of sand. The sand was clear,white, medium to coarse grained, subround to angular and unconsolidated.

IV. GEOLOGY

B. Lithology Descriptions (Cont'd)

Interval II (250'MD - 2037'MD)

Tertiary system:
Eocene series:
Claiborne group: 276'MD - 572'MD

Lithology in this interval consisted of siltstone, sand, chert and lignite. The siltstones were dark brown, medium soft and very silty.

The sands were clear, white, light gray, fine to coarse grained, round to angular, poor to medium sorting, unconsolidated to well consolidated with traces of fossils, pyrite and glauconite.

The chert was yellow, orange and very hard.

The lignite was black, brown and soft.

Tertiary system:
Eocene series:
Wilcox group:
Flour Island formation: 572'MD - 688'MD

Lithology in this interval consisted of siltstone, sand and lignite. The siltstone was light gray, very soft and sandy.

The sands were clear, fine to coarse grained, subround to subangular, poorly sorted, loosely to unconsolidated with traces of glauconite.

The lignite was black, brown and soft.

Tertiary system:
Eocene series:
Wilcox group:
Fort Pillow formation: 688'MD - 977'MD

Lithology in this interval consisted of siltstone, sand and chert. The siltstone was light gray, white green, very soft and sandy.

The sands were white, clear, frosted, fine to medium grained, subround to subangular, poor to medium sorting and unconsolidated with traces of glauconite.

The chert was orange and very hard.

IV. GEOLOGY

B. Lithology Descriptions (Cont'd)

Interval II (250'MD - 2037'MD)

Tertiary system:
Paleocene series:
Midway group:
Porters Creek shale: 977'MD - 1490'MD

Lithology in this section consisted of shale, siltstone and sand. The shale was medium to dark gray, soft to firm, silty, sandy and calcareous. Shale densities were lighter than 1.90 gm/cc.

The siltstone was medium gray, very soft and sandy.

The sands were white, clear, fine grained, subangular, poorly sorted and silty with traces of glauconite.

Upper Cretaceous system: 1490'MD - 1952'MD

Lithology in this section consisted of shale, sand, and limestone. The shale was medium to dark gray, soft and silty with traces of glauconite and pyrite. Shale densities on these samples were 1.90 gm/cc.

The sands were clear, white, light gray, fine to medium grained and unconsolidated with traces of glauconite.

The limestone was brown, tan, buff, hard, dense and fine to microcrystalline.

Ordovician system:
Canadian series:
Upper Knox group: 1952'MD - 2037'MD

Lithology in this interval consisted of shale, sand and limestone. The shale was dark gray, soft and very silty with traces of pyrite. Shale densities were 1.90 gm/cc.

The sands were white, clear, fine grained and unconsolidated.

The limestone was buff, tan, brown, hard, dense and fine to microcrystalline.

Interval III (2037'MD - 8041'MD)

Ordovician system:
Canadian series:
Upper Knox group: 2037'MD - 3090'MD

IV. GEOLOGY

B. Lithologic Descriptions (Cont'd)

Interval III (2037'MD - 8041'MD)

Lithology in this section consisted of limestone. The limestone was white, cream, tan, brown, buff, hard, dense, fine to microcrystalline, sucrosic, silty, argillaceous, oolitic in part with traces of pyrite.

Ordovician system:
Canadian series:
Middle Knox group:
Roubidoux and Gasconade formations 3090'MD - 5430'MD

Lithology in this section consisted of sand, chert, limestone and dolomite. The sands were clear, very fine to medium grained, subround to angular and unconsolidated.

The chert was translucent, white, brown, very hard.

The limestone was white, cream, light gray, tan, buff, brown, hard, dense, fine to microcrystalline, sucrosic and argillaceous with traces of oolites, chert, pyrite and clear quartz grains.

The dolomite was white, cream, brown, light to dark brown, hard, dense, fine to microcrystalline, sucrosic, silty and sandy with traces of chert, pyrite, oolites, styolites and fractures with pyrite fill.

Ordovician system:
Canadian series:
Middle Knox group:
Gunter sandstone: 5430'MD - 5450'MD

Lithology in this interval consisted of sand and dolomite. The sand was clear, frosted, fine to medium grained, subangular to round, unconsolidated and consolidated with dolomite.

The dolomite was light to dark gray, hard, dense, fine crystalline, very sucrosic and sandy.

Cambrian system:
Croixan series:
Lower Knox group: 5450'MD - 6835'MD

Lithology in this interval consisted of shale, sand, chert, limestone and dolomite. The shale was dark gray, black, hard, blocky, siliceous and dolomitic with a trace of pyrite. No shale densities were run.

IV. GEOLOGY

B. Lithologic Descriptions (Cont'd)

Interval III (2037'MD - 8041'MD)

The sands were clear, fine to medium grained, subround to angular and unconsolidated.

The chert was gray, brown, smoky, translucent, very hard.

The limestone was light to dark gray, white, light brown, hard, dense, fine to microcrystalline and argillaceous with traces of oolites.

The dolomite was white, light brown, tan, buff, light to dark gray, hard, dense, fine to coarse crystalline, sucrosic, sandy and oolitic with traces of pyrite.

Cambrian system:
    Albertan series:
        Elvins group:
        Derby Doe Run formation: 6835'MD - 7512'MD

Lithology in this section consisted of shale, limestone and dolomite. The shale was dark gray, black, firm to hard, blocky and calcareous with traces of pyrite.

The limestone was white, cream, light to dark gray, tan, hard, dense, fine to cryptocrystalline, sucrosic, argillaceous and oolitic with traces of pyrite, styolites and fossils.

The dolomite was white, light gray, micro to medium crystalline, sucrosic with traces of oolites, pyrite, styolites, quartz crystals and calcite crystals in fractures and vugs.

Core #1 was taken from 7000'MD to 7031'MD.

Core #2 was taken from 7275'MD to 7305'MD.

Cambrian system:
    Albertan series:
        Elvins group:
        Davis shale: 7512'MD - 7680'MD

Lithology in this section consisted of shale, limestone and dolomite. The shale was dark gray, black, firm and calcareous with a trace of pyrite.

The limestone was medium to dark gray, fine to medium grained, fine to microrystalline, sucrosic and argillaceous with a trace of pyrite, oolites and fossil fragments.

The dolomite was clear, white, dark gray, hard, dense, very fine grained, sucrosic and argillaceous.

IV. GEOLOGY

B. Lithologic Descriptions (Cont'd)

Interval III (2037'MD - 8041'MD)

Cambrian system:
Albertan series:
Bonneterre formation: 7680'MD - 8041'MD

Lithology in this section consisted of shale, limestone and dolomite. The shale was dark gray, black, blocky, firm and calcareous with a trace of pyrite.

The limestone was white, cream, medium to dark gray, hard, dense, microcrystalline, fine grained, sucrosic and argillaceous with traces of oolites, pyrite and fossil fragments.

The dolomite was white cream, medium to dark gray, clear, hard, dense, very fine to medium crystalline, sucrosic and argillaceous with traces of pyrite and fractures filled with calcite and dolomite.

Core #3 was taken from 7692'MD to 7722'MD.

Core #4 was taken from 7722'MD to 7752'MD.

Interval IV (8041'MD - 10089'MD)

Cambrian system:
Albertan series:
Bonneterre formation: 8041'MD - 9931'MD

Lithology in this section consisted of shale, sand, limestone and dolomite. The shale was medium to dark gray, brick red, very soft to hard and silty.

The sands were clear, white, light gray, very fine to coarse grained, subround to subangular, well sorted, unconsolidated to slightly consolidated with calcareous-siliceous cement.

The limestone was white, light to dark gray, brown, hard, dense, fine to microcrystalline, sucrosic, oolitic and argillaceous with traces of pyrite and glauconite.

The dolomite was light to dark gray, white, hard, dense, fine to microcrystalline, sucrosic, argillaceous and oolitic with traces of pyrite and glauconite.

IV. GEOLOGY

B. Lithology Descriptions (Cont'd)

Interval IV (8041'MD - 10089'MD)

Cambrian system:
Albertan series:
Lamotte sandstone: 9931'MD - 10089'MD

Lithology in this interval consisted of limestone, dolomite and sandstone. The limestone was white, light to medium gray, hard, fine crystalline and sucrosic with traces of oolites and pyrite.

The dolomite was medium to dark gray, hard, dense, fine crystalline, sucrosic and argillaceous.

The sandstone was clear, white, light to medium gray, very fine grained, subangular, medium to well sorted, tight and friable with calcareous - siliceous cement and traces of pyrite and glauconite.

INTERNAL

DISC

AMOCO PRODUCTION COMPANY

SPENCE TRUST NO.1

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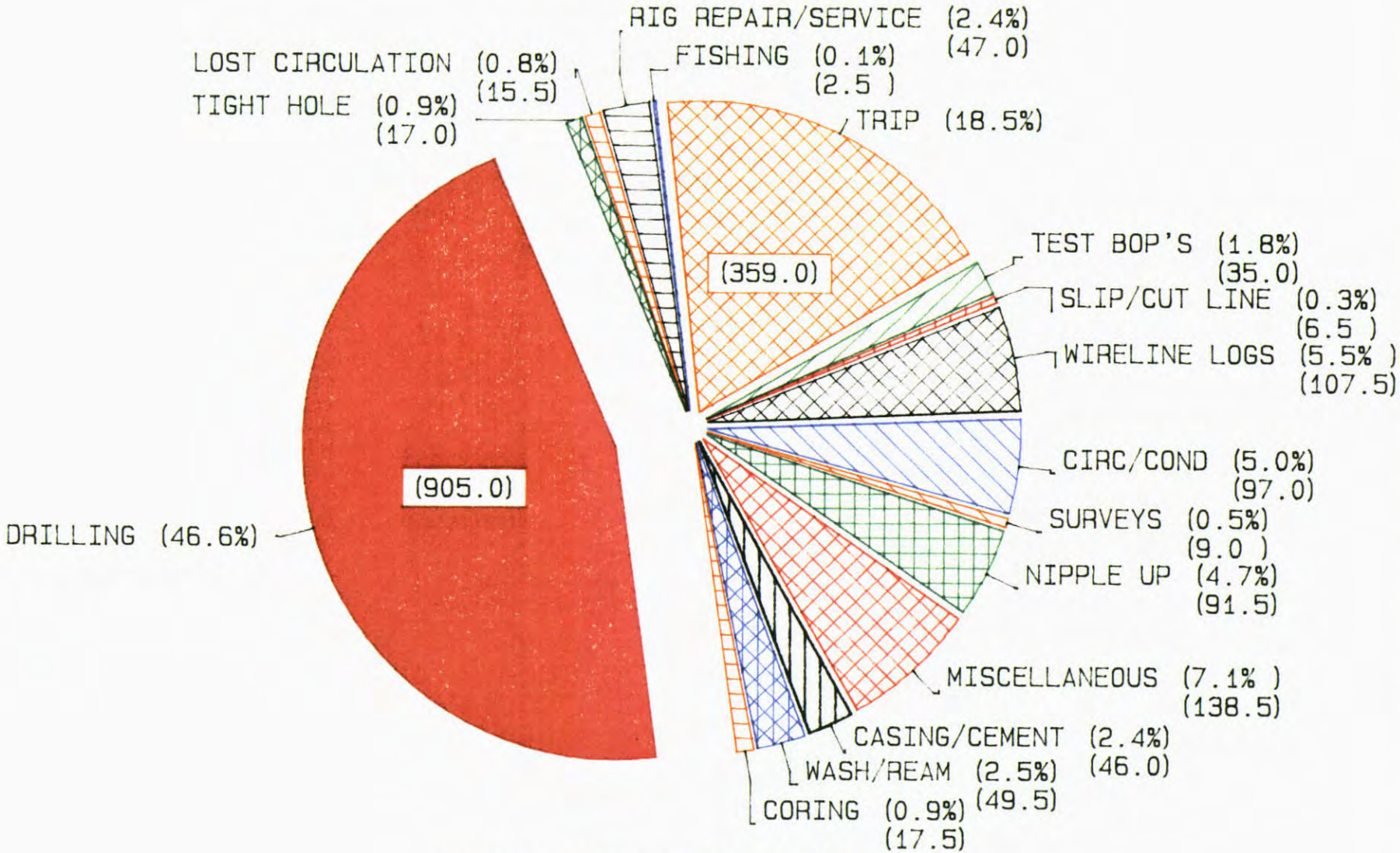

TOTAL TIME DISTRIBUTION

0'MD TO 10089'MD

AMSTTDT

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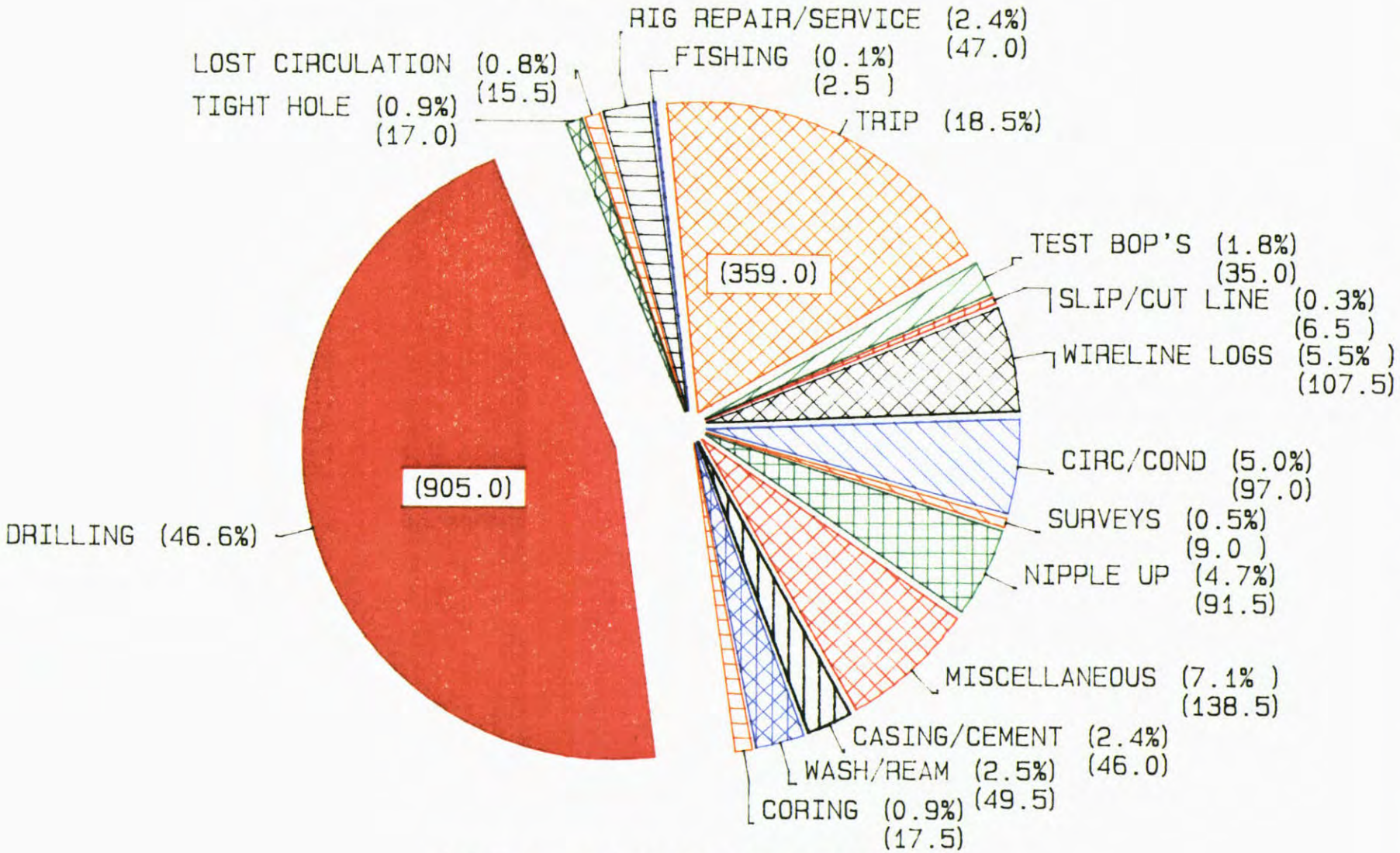
DUNKLIN COUNTY, MISSOURI



TOTAL TIME DISTRIBUTION

0'MD TO 10089'MD

AMSTTDT

CASING RECORD

SIZE: 24" OD 23.5" ID GRADE: NA WT.: 65 LB./FT.
FOOTAGE 47'

HUNG FROM: 0' MD; 0' TVD

TO DEPTH: 47' MD; 47' TVD

SHOE LITHOLOGY: SAND: WHITE, CLEAR, COARSE GRAIN, SUBANGULAR TO ANGULAR, POORLY SORTED, UNCONSOLIDATED

TYPE OF CEMENT: 200 SACKS OF CLASS H + 2% CaCl + .25% FLOCELE SACKS: 200

TOTAL: 200 sacks

LEAK-OFF TEST: NA

COMMENTS: SURFACE CONDUCTOR

CASING RECORD

SIZE: 16.00"OD 15.25"ID GRADE: H-40 WT.: 65.00 LB./FT.

FOOTAGE: 250'

HUNG FROM: 0' MD; 0' TVD

TO DEPTH: 250' MD; 250' TVD

SHOE LITHOLOGY: SAND: CLEAR, WHITE, MEDIUM GRAIN, SUBANGULAR, UNCONSOLIDATED

TYPE OF CEMENT: 600 SACKS OF CLASS H SACKS: 600

TOTAL: 600 sacks

LEAK-OFF TEST: N/A

COMMENTS: NONE

V. WELL DISCUSSION BY INTERVAL

A. Interval I (0'MD - 250'MD)

Drilled from November 27, 1987 to November 29, 1987
1 bit run
250'drilled in 11.5 rotating hours
21.7 ft./hr. average drill rate

New bit no.1 (20.0", Smith S33J, jets 16-16-16) was run in conductor to 47' where cement was tagged. A 24" conductor was set before the well was spudded. Drilled from 47'to 92' and lost circulation. Mixed a high viscosity and pumped the same. Continued to circulate, mix mud and high viscosity slugs. The pipe became stuck but was able to be worked free. Built mud volume as circulation continued. Drilled from 92' to 250'and pulled bit no. 1 out of the hole after drilling 250' in 11.5 rotating hours for an average drill rate of 21.7 ft./hr. The average rotary speed was 67 RPM and the weight on bit averaged 15.0 klbs. Bit no. 1 was graded 1-0-I.

Rigged up and ran 6 joints of 16.0" H-40 casing (65.0 lb./ft.) to 250'. The casing was cemented with 600 sacks of Class H cement+ .2%CL. + Flocele. The cement job was topped with 50 sacks Class H + .2%CL. Waited on cement and retopped with 50 sacks of Class H + .2%CL. Waited on cement and nippled down.

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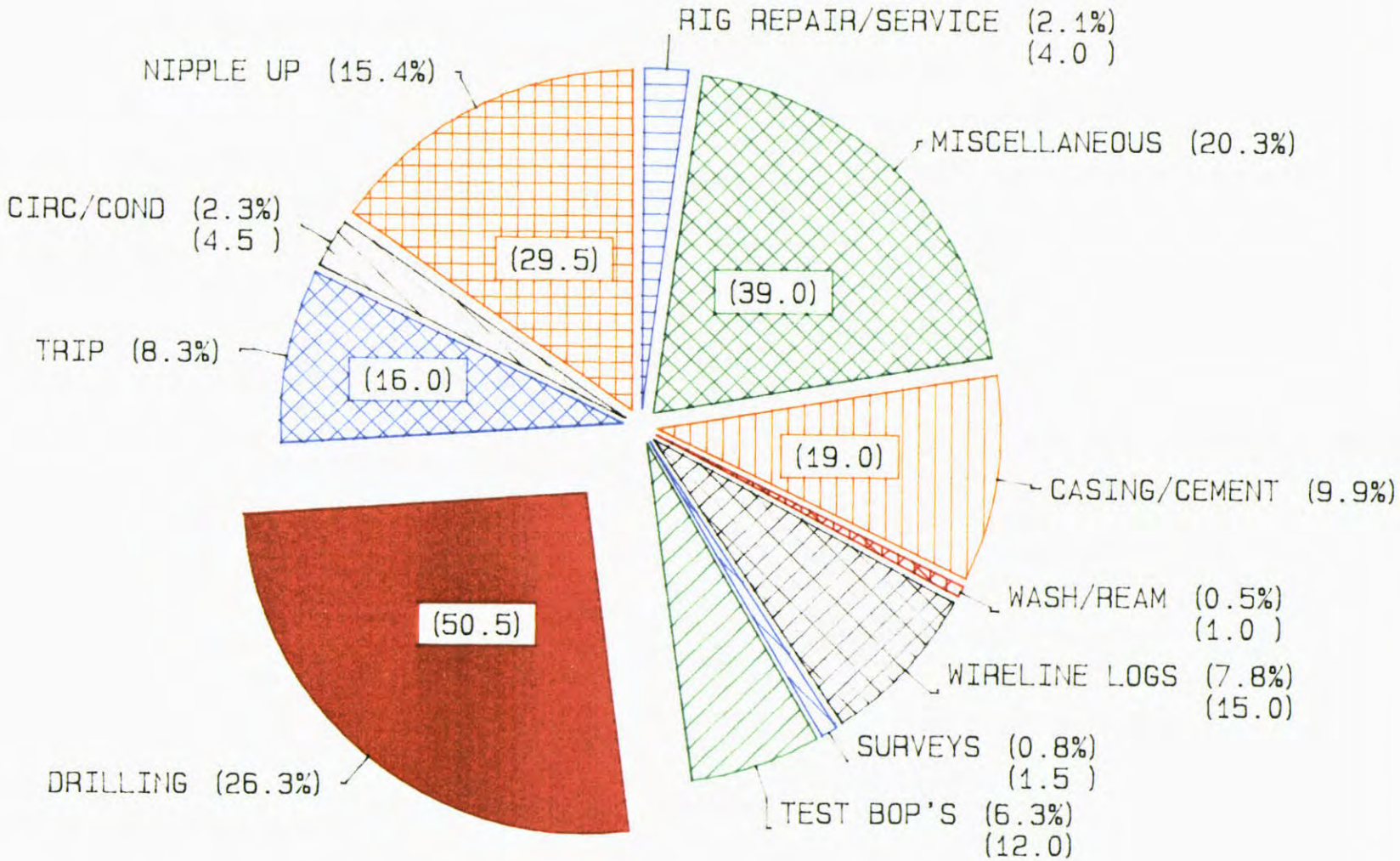
SPENCE TRUST NO.1

DUNKLIN COUNTY, MISSOURI



TIME DISTRIBUTION - INTERVAL II

250'MD TO 2037'MD

AMSTTD2

CASING RECORD

SIZE: 10.75"OD 9.850"ID GRADE: L-80 WT.: 51.0 LB./FT.

FOOTAGE: 2037'

HUNG FROM: 0' MD; 0' TVD

TO DEPTH: 2037' MD; 2037' TVD

SHOE LITHOLOGY: LIMESTONE: DARK GRAY, BROWN, FINE TO MICROCRYSTALLINE, HARD, DENSE

TYPE OF CEMENT: 2250 SACKS OF CLASS H SACKS: 2250

TOTAL: 2250 sacks

LEAK-OFF TEST: 8.8 PPG AT 10000 PSI. = 12.0 E.M.W.

COMMENTS: NONE

V. WELL DISCUSSION BY INTERVAL

B. Interval II (250'MD - 2037'MD)

Drilled from November 30, 1987 to December 6, 1987.
1 bit run
1787' drilled in 38.3 rotating hours
46.7 ft./hr. average drill rate

New bit no. 2 (14.75", Security S33S, jets 16-16-16) was run in the hole at 250'MD. Drilled to 490'MD, where a wireline survey was made. The survey was 1/2 degree. Drilled from 490'MD to 1014'MD and made another wireline survey of 1/4 degrees. Drilled from 1014'MD to 1496'MD, circulated bottoms up and ran a wireline survey of 1/4 degrees. Drilled from 1496'MD to 2012'MD and made a wireline survey of 3/4 degrees. Drilled from 2012'MD to 2037'MD, circulated and conditioned the hole to run wireline logs. Bit no. 2 was pulled out of the hole at 2037'MD after drilling 1787' in 38.3 rotating hours for an average drill rate of 46.66 ft./hr. The average rotary speed was 80 RPM and the weight on bit averaged 21.0 klbs. Bit no. 2 was graded 3-0-IN. Tripped out to run wireline logs. Logs ran were FDC, CNL, GR., Dual Induction, Sonic and a Microlog. A wiper trip was made after the wireline logs were ran.

Rigged up to run 10.75" casing. Ran 48 joints of 10.75" casing(L-80, 51.0 lb./ft.) to 2037'MD. Cemented the casing with 2250 sacks of Class "H" cement. Nippled down. Nippled up and began testing the BOP stack.

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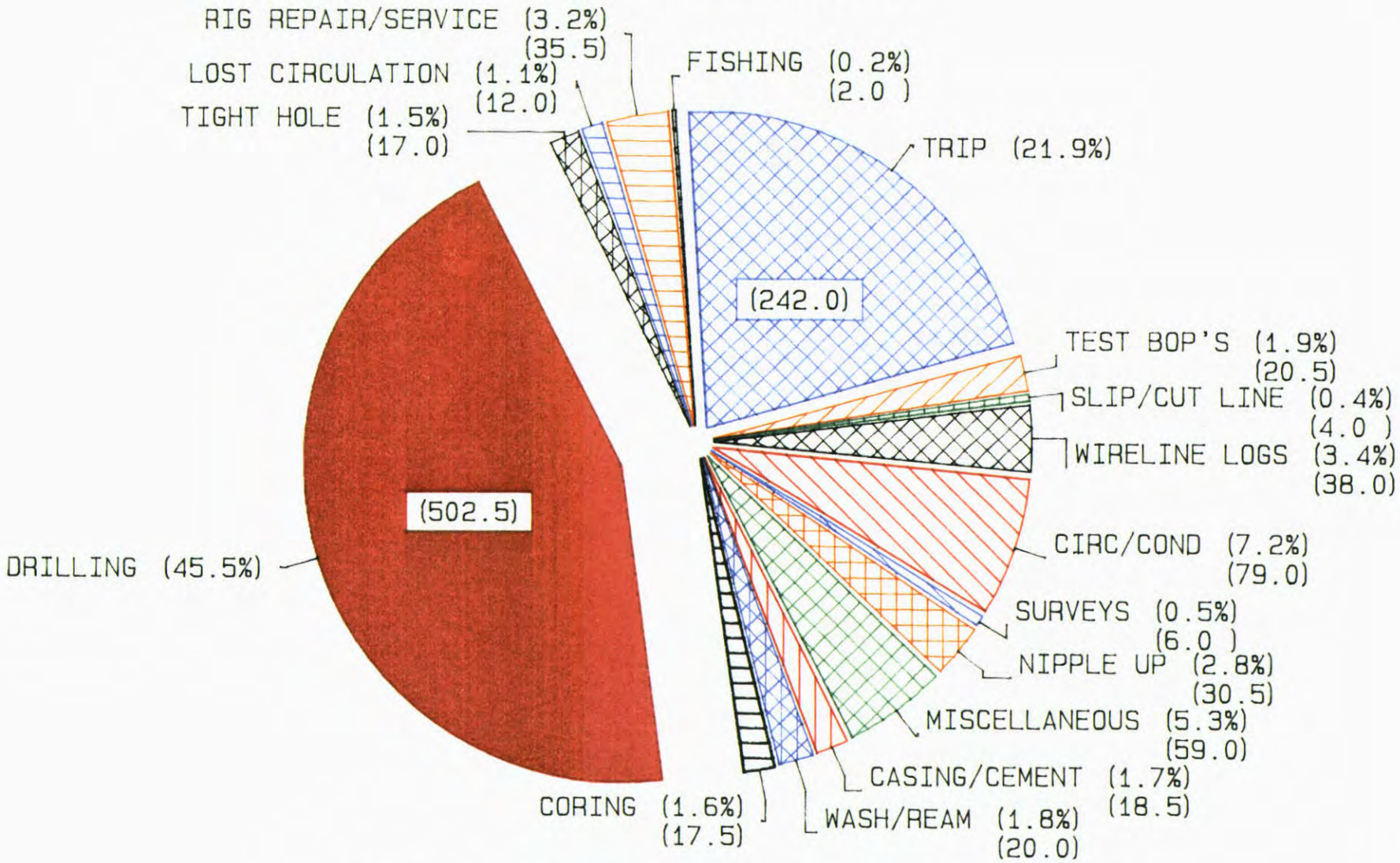
SPENCE TRUST NO.1

DUNKLIN COUNTY, MISSOURI



TIME DISTRIBUTION - INTERVAL III

2037'MD TO 8041'MD

AMSTTD3

CASING RECORD

SIZE: 7.625"OD 6.875"ID GRADE: N-80 WT.: 29.70 LB./FT.

FOOTAGE: 8041'

HUNG FROM: 0' MD; 0' TVD

TO DEPTH: 8041' MD: 8041' TVD

SHOE LITHOLOGY: DOLOMITE: LIGHT TO MEDIUM GRAY, HARD, DENSE, FINE CRYSTALLINE AND SUCROSIC WITH TRACES OF PYRITE

TYPE OF CEMENT: LEAD: 200 SACKS CLASS H + .6% HALAD 322 MIXED AT 16.4 LB./GAL. TAIL: 200 SACKS CLASS H + .6% HALAD 322 MIXED AT 17.3 LB./GAL.

SACKS: 400

TOTAL: 400 sacks

LEAK-OFF TEST: 8.3 PPG AT 1550 PSI. = 12.0 PPG E.M.W.

COMMENTS: NONE

V. WELL DISCUSSION BY INTERVAL

C. Interval III (2037'MD - 8041'MD)

Drilled from December 7, 1987 to January 22, 1987
10 bit runs
4 core barrel runs
6004' drilled in 501.5 rotating hours
11.97 ft./hr. average drill rate

New bit no. 3 (9.5", Hughes J-3, jets 11-11-11) was run in the hole to 1962'MD. The plug, float equipment and cement were drilled from 1962'MD to 2037'MD. Fifteen feet of new formation was drilled from 2037'MD to 2052'MD. Bottoms up were circulated out. The shoe was tested with a 8.9 PPG mud weight at 325 psi. yielding a leakoff test of 12.0 EMW. Drilled from 2052'MD to 2290'MD and ran a survey. The survey at 2290'MD was 3 degrees. Drilled from 2290'MD to 2301'MD and ran a survey. The survey at 2301'MD was 3/4 degree. Bit no.3 was pulled out of the hole at 2301 after drilling 264' in 26.2 rotating hours for an average drill rate of 10.08 ft./hr. The average rotary speed was 83 RPM and the weight on bit averaged 22.3 klbs. Bit no. 3 was graded 3-0-IN.

New bit no. 4 (9.5", Hughes J-33, jets 11-11-10) was run in the hole to 2301'MD. There was no trip gas or mud cut and trip chlorides were 200 ppm. Drilled from 2301'MD to 2450'MD, where a survey was taken. The survey at 2376'MD was 3/4 degrees. Drilled from 2450'MD to 2870'MD with no problems and ran a survey. The survey at 2870'MD was 1/2 degree. Drilled from 2870'MD to 3176'MD with no problems. Bit no. 4 was pulled out of the hole at 3176'MD after drilling 875' in 53.6 rotating hours for an average drill rate of 16.33 ft./hr. The average rotary speed was 79 RPM and the weight on bit averaged 42.7 klbs. Bit no. 4 was graded 6-0-IN.

New bit no. 5 (9.5", Hughes ATJ-33, jets 11-11-10) was run in the hole to 3175', where a survey was made. The survey at 3175'MD was 3/4 degrees. Drilled from 3176'MD to 3420'MD with no problems. Bit no. 5 was pulled out of the hole at 3420'MD after drilling 244' in 20.3 rotating hours for an average drill rate of 12.02 ft./hr. The average rotary speed was 83 RPM and the weight on bit averaged 44.5 klbs. Bit no. 5 was graded 8-0-IN.

New bit no. 6 (9.5", Hughes ATJ-55R, jets 11-11-10) was run in the hole to 3370'MD. Washed and reamed 50' to bottom with no fill. Drilled from 3420'MD to 3918'MD with no problems and ran a survey. The survey at 3918'MD was 1 1/4 degrees. Drilled from 3918'MD to 4430'MD with no problems and ran a survey. The survey at 4430'MD was 1 1/4 degrees. Drilled from 4430'MD to 4517'MD with no problems. Bit no. 6 was pulled out of the hole at 4517'MD after drilling 1097' in 77.4 rotating hours for an average drill rate of 14.17 ft./hr. The average rotary speed was 72 RPM and the weight on bit averaged 46.4 klbs.

V. WELL DISCUSSION BY INTERVAL

C. Interval III (2037'MD - 8041'MD) (CONT'D)

Bit no.6 was graded 8-0-OUT.

New bit no. 7 (9.5", Hughes ATJ-55R, jets 11-11-10) was run in the hole to 4418'MD. The bottom hole assembly was checked on the trip in and one cracked drill collar was laid down. Washed and reamed from 4420'MD to 4517'MD. No fill was encountered. Drilled from 4517'MD to 4930'MD with no problems and ran a survey. The survey at 4930'MD was 1 1/4 degrees. Drilled from 4930'MD to 5158'MD with no problems and ran a survey. The survey at 5157'MD was 1 1/4 degrees. Bit no. 7 was pulled out of the hole at 5158'MD after drilling 641' in 47.9 rotating hours for an average drill rate of 13.38 ft./hr. The average rotary speed was 65 RPM and the weight on bit averaged 45.0 klbs. Bit no. 7 was graded 8-0-OUT 1/2".

New bit no. 8 (9.5", Smith F-5, jets 11-11-10) was run in the hole to 5067'MD. Washed and reamed from 5067'MD to 5158'MD. The last 15' of reaming was hard. Drilled from 5158'MD to 5648'MD with no problems and ran a survey. The survey at 5644'MD was 1 1/4 degrees. Drilled from 5648'MD to 6033'MD with no problems and ran a survey. The survey at 6031'MD was 3/4 degree. Bit no. 8 was pulled out of the hole at 6033'MD after drilling 875' in 77.5 rotating hours for an average drill rate of 11.29 ft./hr. The average rotary speed was 50 RPM and the weight on bit averaged 45 klbs. Bit no. 8 was graded 8-0-OUT 1/8".

New bit no. 9 (9.5", Smith F-5, jets 11-11-10) was run in the hole to 5973'MD. Washed and reamed from 5973'MD to 6033'MD. The screws in the brake block sheared. Pulled out of the hole to repair the brake blocks. Ran bit no. 9 in the hole to 5958'MD. Washed and reamed from 5958'MD to 6033'MD and encountered no fill. Drilled from 6033'MD to 6251'MD with no problems. Bit no. 9 was pulled out of the hole at 6251'MD after drilling 218' in 18.2 rotating hours for an average drill rate of 11.98 ft./hr. The average rotary speed was 45 RPM and the weight on bit averaged 60 klbs. Bit no. 9 was graded 1-0-IN.

New bit no. 10 (9.5", Hughes J-77, jets 11-11-10) was run in the hole to 6189'MD. Washed and reamed 62' to 6251'MD with no fill being encountered. Drilled from 6251'MD to 7000'MD with no hole problems, circulated out and ran a survey. The survey at 7000'MD was 2 1/4 degrees. A decision was made to run a 30' core barrel because of indicators of fractures. Bit no. 10 was pulled out of the hole at 7000'MD after drilling 749' in 61.6 rotating hours for an average drill rate of 12.16 ft.//hr. The average rotary speed was 44 RPM and the weight on bit averaged 50.3 klbs. Bit no. 10 was graded 6-0-IN.

V. WELL DISCUSSION BY INTERVAL

C. Interval III (2037'MD - 8041'MD) (CONT'D)

New core bit no. 11 (8.75", Eastman Christensen C-23, tfa 0.40) was run in the hole to 7000'MD. Cored from 7000'MD to 7030'MD with no problems. Circulated bottoms up. Pulled core bit no. 11 out of the hole at 7030'MD after coring 30' in 9.1 rotating hours for an average drill rate of 3.30 ft./hr. The average rotary speed was 88 RPM and the weight on bit averaged 17.9 klbs. Core bit no. 11 was not graded. Thirty feet of core #1 was recovered and laid down.

Rerun bit no. 9 (9.5", Smith F-5, jets 11-11-10) was run in the hole to 7000'MD. Washed and reamed from 7000'MD to 7030'MD. Drilled from 7030'MD to 7275'MD with no problems. A decision was made to core at 7275'MD. A survey of 2 degrees was made at 7275'MD. Pulled rerun bit no. 9 out of the hole at 7275'MD after drilling 275' in 20.8 rotating hours for an average drill rate of 13.22 ft./hr. The average rotary speed was 49 RPM and the weight on bit averaged 49.5 klbs. Bit no. 9 was graded 6-0-OUT 1/8".

Rerun core bit no. 11.1 (8.75", Eastman Christensen C-23, tfa 0.40) in the hole to 7275'MD. Cored from 7275'MD to 7306'MD with no drilling problems. Circulated bottoms up. Pulled rerun core bit no. 11.1 out of the hole at 7306'MD after coring 31' in 7.7 rotating hours for an average drill rate of 4.03 ft./hr. The average rotary speed was 65 RPM and the weight on bit averaged 20.9 klbs. Rerun core bit no. 11.1 was not graded. Thirty feet of core #2 was recovered and laid down.

New bit no. 12 (9.5", Hughes J55R, jets 11-11-11) was run in the hole with a junk basket to 7275'MD. Washed and reamed from 7275'MD to 7306'MD. Drilled from 7306'MD to 7692'MD and had a drill collar pin snap in a clean break. The fish consisted of 16 drill collars, 3 stabilizers, 1 3 point roller reamer and 1 junk basket. The fish was 509' long. Pulled out of the hole with the drill string above the fish.

Picked up a 7 1/8" overshot and tripped in to screw onto the fish. Tagged the fish and worked over it. Chained out of the hole with the fish. Bit no. 12 was fished out of the hole at 7692'MD after drilling 386' in 36.6 rotating hours for an average drill rate of 10.55 ft./hr. The average rotary speed was 57 RPM and the weight on bit averaged 36.6 klbs. Bit no. 12 was graded 5-0-IN.

V. WELL DISCUSSION BY INTERVAL

C. Interval III (2037'MD - 8041'MD) (CONT'D)

Rerun core bit no. 11.2 (8.75", Eastman Christensen C-23, tfa 0.40) in the hole to 7692'MD. Cored from 7692'MD to 7722'MD with no problems. Circulated bottoms up. Rerun core bit no. 11.2 was pulled out of the hole at 7722'MD after drilling 30' in 7.1 rotating hours for an average drill rate of 4.23 ft./hr. The average rotary speed was 71 RPM and the weight on bit averaged 20.2 klbs. Rerun bit no. 11.2 was not graded. Thirty feet of core was recovered and laid down.

Rerun core bit no. 11.3 (8.75", Eastman Christensen C-23, tfa 0.40) in the hole to 7722'MD. Cored from 7722'MD to 7752'MD with no problems. Circulated bottoms up. Rerun core bit no. 11.3 was pulled out of the hole at 7752'MD after drilling 30' in 8.0 rotating hours for an average drill rate of 3.88 ft./hr. The average rotary speed was 83 RPM and the weight on bit averaged 21.2 klbs. Rerun bit no. 11.3 was not graded. The first twenty nine feet of core was recovered and laid down.

Rerun bit no. 12.1 (9.5", Hughes J55R, jets 11-11-11) was run in the hole to 7692'MD. Thawed out a frozen standpipe, then washed and reamed from 7692'MD to 7752'MD. Drilled from 7752'MD to 7791'MD and lost circulation. Mixed and spotted 30 bbls @ 25 lb./bbl. with 1790 strokes. Mixed and spotted another 30 bbl. pill. Built volume in the pit and spotted a third 30 bbl. kwik seal pill. Pulled rerun bit no. 12 out of the hole at 7791'MD after drilling 39' in 2.6 rotating hours for an average drill rate of 15.0 ft./hr. The average rotary speed was 50 RPM and the weight on bit averaged 47.3 klbs. No grade was available for rerun bit no. 12. A SLM was made on the pipe on the trip out.

New bit no. 13 (9.5", HTC ATJ-44, jets none) was run in the hole to 7791'MD. Bottom was tagged at 7791'MD. Mixed a 30 bbl. kwik seal pill @ 40 lb./bbl. and pumped the pill with water. Pulled bit no. 13 out of the hole at 7791'MD with no footage drilled and no rotating hours. Bit no. 13 was not graded.

Tripped in the hole with a cementing joint and rigged up Dowell to cement. Began pumping with Dowell and got returns. Turned on the rig pumps and began circulating. Mixed and pumped a slug. Pulled out of the hole.

Began tripping in the hole with rerun bit no.13 and lost mud in hole with 4 stands in. Pulled rerun bit no. 13 out of the hole and tested the blowout preventors. Ran RR. bit no. 13 in the hole and tagged bottom at 7791'MD. Built volume in the pits. Began drilling with no returns. Drilled from 7791'MD to 7799'MD pumping a high viscosity pill every hour. One pill was pumped down the drill pipe, the next pill was pumped down the annulus. Drilled from 7799'MD to 7902'MD and spotted a 30 bbl., 50 viscosity pill on bottom. Pulled out of the hole making a SLM.

V. WELL DISCUSSION BY INTERVAL

C. Interval III (2037'MD - 8041'MD) (CONT'D)

Pulled RR bit no. 13 out of the hole at 7902'MD after drilling 111' in 13.4 rotating hours for an average drill rate of 8.3 ft./hr. The average rotary speed was 42 RPM and the weight on bit averaged 27.4 klbs. RR. bit no. 13 was not graded.

Picked up a mixing joint and tripped in the hole to 7651'MD. Pulled out of the hole to 7493'MD and rigged up Dowell. Pumped a 50 bbl. Gunk squeeze. Pulled 16 stands of drill pipe from 7493'MD to 6006'MD. Pumped 25 bbls down the drill pipe and pulled out of the hole. The well began flowing. Shut in the well, but had no casing pressure. Tripped in the hole to 2037'MD, the bottom of the 10 3/4" casing. The well was still flowing. Shut in the well and had 40 psi. on the casing. Opened the well, pumped a slug and pulled out of the hole. Pumped pills to kill the well.

RR bit no. 13 in the hole to 7817'MD. Washed and reamed from 7817'MD to 7902'MD. Conditioned the mud while building a barite pill. Pumped the barite pill. Rigged up air pumps and began circulating with aerated mud. Attempted to flow the well, the well would not flow. Drilled from 7902'MD to 7924'MD and lost returns. Pulled 5 stands of pipe to 7460'MD. Pumped a pill and tripped in the hole to 7924'MD. Drilled from 7924'MD to 7999'MD. Pumped high viscosity pills down the drill pipe and the annulus. Drilled from 7999'MD to 8041'MD with no returns. Pumped a 30 bbl. high viscosity pill down the drill pipe. Made a 6 stand short trip. Picked up the kelly and attempted to circulate at 7454'MD. Tripped in the hole to 8041'MD and attempted to circulate but had no returns. Spotted a 30 bbl. high viscosity pill on bottom. Dropped a Totco and strapped out of the hole. The survey at 8040'MD was 2 1/4 degrees. Pulled RR bit no. 13 out of the hole at 8041'MD to run wireline logs. RR bit no. 13 drilled 117' in 13.5 rotating hours for an average drill rate of 8.7 ft./hr. The average rotary speed was 79 RPM and the weight on bit averaged 27.4 klbs. RR bit no. 13 was not graded.

Rigged up Schlumberger and began running wireline logs.
Run #1 - Dual Induction, Gamma Ray
Run #2 - GR., ML., CNL, FDC
Run #3 - Sonic, NGT
Rigged down Schlumberger.

Rigged up Gearhart for sidewall cores. Ran 30 sidewall cores from 6838'MD to 7971'MD. Rigged down Gearhart.

Made a wiper trip and began laying down drill pipe and drill collars.

V. WELL DISCUSSION BY INTERVAL

C. Interval III (2037'MD - 8041'MD) (CONT'D)

The 30 sidewall cores were taken as follows:

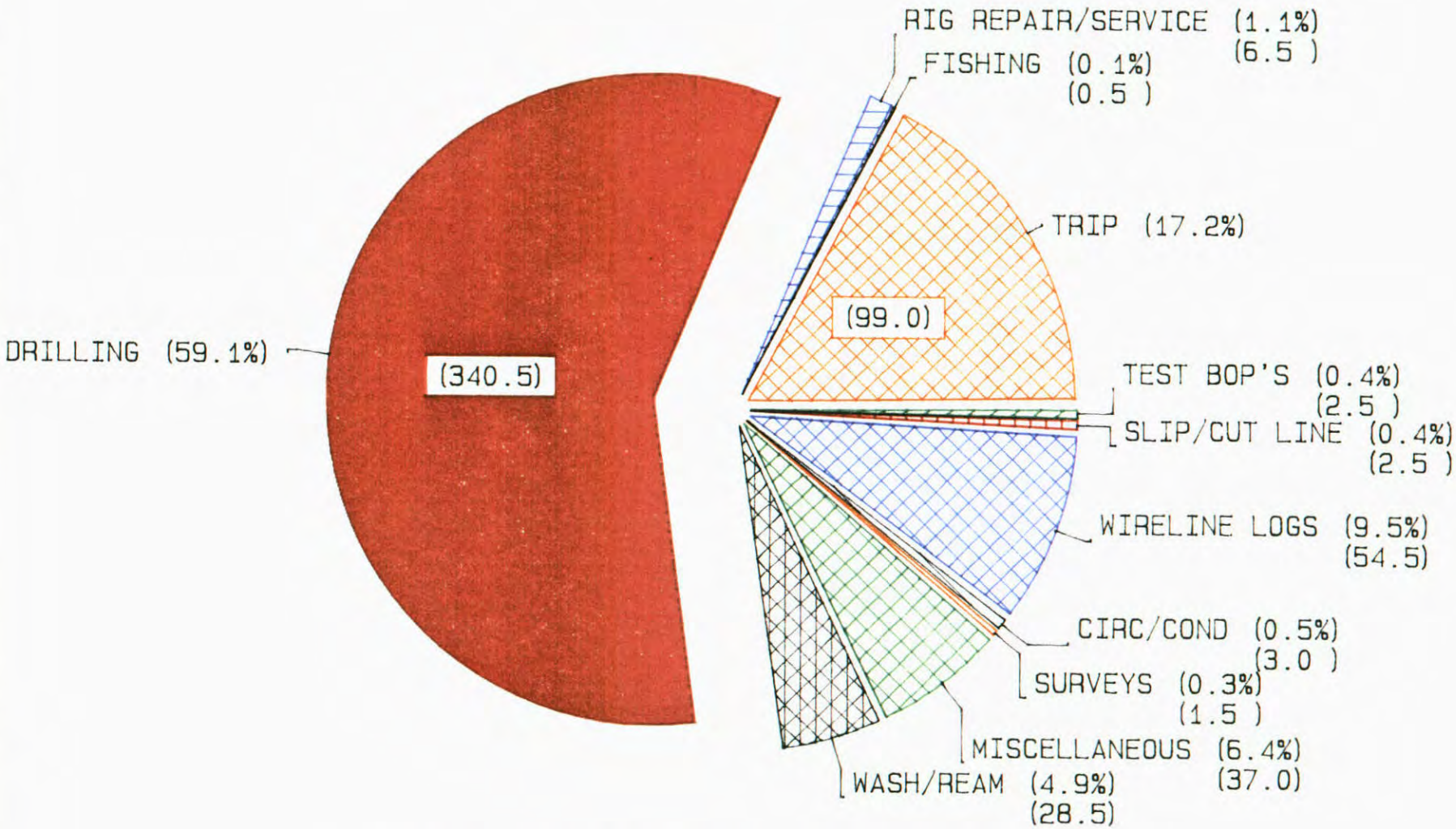
1. 6838'	16. 7550'
2. 6845'	17. 7568'
3. 6856'	18. 7595'
4. 6866'	19. 7632'
5. 6875'	20. 7676'
6. 6892'	21. 7808'
7. 6903'	22. 7820'
8. 6933'	23. 7830'
9. 6960'	24. 7866'
10. 6976'	25. 7880'
11. 6987'	26. 7889'
12. 7077'	27. 7904'
13. 7450'	28. 7944'
14. 7515'	29. 7957'
15. 7535'	30. 7971'

Changed pipe rams and rigged up the casing crew. Ran 186 joints of 7 5/8" casing (N-80, 29.70 lb./ft.) to 8041'MD. Cemented the casing with a lead of 200 sacks of Class H + 0.6% Halad 322 mixed at 16.4 lb/gal. There were no returns. The cement job was tailed with 200 sacks of Class H + 0.6% Halad 322 mixed at 17.3 lb/gal. There were partial returns. Bumped the plug, set the casing in slips and began nipple down. Finished nipple down and installed the wellhead. Nippled up and changed the pipe rams to 3 1/2". Tested the BOP's to 5000 psi. Picked up NB 14 (6.75", HTC J-3, jets 10-10-10) and began tripping in the hole with 4.625" drill collars, 3.5" hevi wate and 3.5" drill pipe. As the bottom hole assembly was being run in the hole, a die dropped from the slips into the hole. Pulled out of the hole. Picked up a magnet and tripped in the hole to 7644'MD where the top of the cement was tagged. Fished for the die with the magnet, then pulled out of the hole. The die was not recovered.

AMOCO PRODUCTION COMPANY

SPENCE TRUST NO.1

DUNKLIN COUNTY, MISSOURI



TIME DISTRIBUTION INTERVAL IV

8041'MD TO 10089'MD

AMSTTD4

V. WELL DISCUSSION BY INTERVAL

D. Interval IV (8041'MD - 10089'MD)

Drilled from January 23, 1988 to February 13,1988
11 bit runs
2048' drilled in 328.1 rotating hours
6.24 ft./hr. average drill rate

Picked up a reverse circulating basket and tripped in the hole. Fished with the circulating basket and drilled 5' of cement. Pulled out of the hole. Recovered the pin which had held the die, but the die was not recovered. Opened the BOP doors and checked for the slip die with negative results.

New bit no. 14 (6.75", Hughes J-3, jets 10-10-10) was run in the hole to 7646'MD. Drilled junk, cement and the DV tool from 7646'MD to 7656'MD. Picked up additional drill pipe to trip in and tag the cement at 7987'MD. Tested the DV tool and the casing to 2000 lbs. Drilled out the cement, float collar and shoe. Drilled 5' of new formation from 8041'MD to 8046'MD. The float collar was located at 7995'MD and the shoe was located at 8039'MD. Spotted a 30 barrel pill on bottom. Pumped 100 barrels at 3 bbls/min. down the backside of the pipe. Rigged up Haliburton and tested the casing seat with 8.3 lb/gal mud to 1550 psi., yielding a 12.0 lb/gal E.M.W. Drilled from 8046'MD to 8061'MD with no hole problems. Pulled bit no. 14 out of the hole at 8061'MD after drilling 20' in 4.6 rotating hours for an average drill rate of 4.4 ft/hr. The average rotary speed was rpm and the weight on bit averaged klbs. Bit no. 14 was graded 7-0-OUT. NOTE: Bit no. 14 drilled up a considerable amount of junk from the casing job and the lost die. Part of the die was recovered in the junk basket when bit no. 14 was pulled.

New bit no.15 (6.5", Hughes J-44, jets 10-10-10) was run in the hole to 8060'MD. Circulated at 8060'MD to clean the junk off the bottom of the hole. Drilled from 8061'MD to 8260'MD with torque increasing in intervals. With junk in the hole, a decision was made to pull the bit rather than risk losing a cone if the junk had damaged the bit. Pumped a slug and dropped a Totco survey. The survey at 8237'MD was 2 degrees. Pulled bit no. 15 out of the hole at 8260'MD after drilling 199' in 19.6 rotating hours for an average drill rate of 10.2 ft/hr. The average rotary speed was 46 rpm and the weight on bit averaged 31.8 klbs. Bit no.15 was graded 2-0-OUT. Only one tooth on one cone had been broken. From seeing the bit, the torque was believed to have been caused by the stabilizers going through formation changes.

New bit no.16 (6.5", Hughes J-44, jets 10-10-10) was run in the hole to 8240'MD. Washed and reamed 20' to bottom. Drilled from 8260'MD to 8494'MD with the drill string torquing.

V. WELL DISCUSSION BY INTERVAL

D. Interval IV (8041'MD- 10089'MD) (CONT'D)

Bit no. 16 was pulled from the hole at 8494'MD after drilling 234' in 29.0 rotating hours for an average drill rate of 8.1 ft/hr. The average rotary speed was 41 rpm and the weight on bit averaged 34.8 klbs. Bit no. 16 was graded 8-8-OUT.

New bit no. 17 (6.5", Hughes ATJ-55R, jets 10-10-10) was run in the hole to 8466'MD. Washed and reamed from 8466'MD to 8494'MD with no fill. Drilled from 8494'MD to 8749'MD with the drill string torquing. Pulled bit no. 17 out of the hole at 8749'MD after drilling 255' in 31.3 rotating hours for an average drill rate of 8.2 ft/hr. A survey was dropped at 8749'MD of 2 3/4 degrees. The average rotary speed was 46 rpm and the weight on bit averaged 33.2 klbs. Bit no. 17 was graded 8-Effective-IN.

New bit no. 18 (6.5", Hughes ATJ-55R, no jets) was run in the hole to 1442'MD. Rigged up to circulate with air and mud. Ran bit no.18 in the hole to 8724'MD. Washed and reamed from 8724'MD to 8749'MD. Drilled from 8749'MD to 8787'MD with no increase in the penetration rate. Shut off the air and began drilling with mud. The penetration rate increased from 5 ft/hr. to 8 ft/hr. The rate of penetration dropped after drilling a sandy zone from 8 ft/hr. to 3 ft/hr. Bit no. 18 was pulled out of the hole at 8795'MD after drilling 46' in 9.3 rotating hours for an average drill rate of 5.0 ft/hr. The average rotary speed was 42 rpm and the weight on bit averaged 32.9 klbs. Bit no. 18 was graded 1-Effective-IN.

New bit no. 19 (6.5", Security M84F, jets 10-10-11) was run in the hole to 8795'MD. Drilled from 8795'MD to 8894'MD with the drill string torquing. Bit no. 19 was pulled out of the hole at 8894'MD after drilling 99' in 21.3 rotating hours for an average drill rate of 4.7 ft/hr. The average rotary speed was 42 rpm and the weight on bit averaged 32.9 klbs. Bit no. 19 was graded 8-Effective-IN.

New bit no. 20 (6.5", Hughes ATJ-77, jets 10-10-10) was run in the hole to 8829'MD. Washed and reamed from 8829'MD to 8894'MD. Drilled from 8894'MD to 9165'MD with the drill string torquing. Bit no. 20 was pulled out of the hole at 9165'MD after drilling 271' in 52.3 rotating hours for an average drill rate of 5.2 ft/hr. The average rotary speed was 47 rpm and the weight on bit averaged 34.1 klbs. Bit no. 20 was graded 3-Effective-IN. A survey was made at 9150'MD of 2 1/2 degrees.

New bit no. 21 (6.5", Hughes ATJ-77, jets 10-10-10) was run in the hole to 9123'MD. Washed and reamed from 9123'MD to 9165'MD. Drilled from 9165'MD to 9459'MD with the drill string torquing and dropped a Totco survey. The survey at 9459'MD was 1 3/4 degrees. Pulled bit no. 21 out of the hole at 9459'MD after drilling 294' in 55.1 rotating hours for an average drill rate of 5.3 ft/hr.

V. WELL DISCUSSION BY INTERVAL

D. Interval IV (8041'MD - 10089'MD) (CONT'D)

The average rotary speed was 45 rpm and the weight on bit averaged 35.7 klbs. Bit no. 21 was graded 8-8-OUT 1/8".

New bit no. 22 (6.5", Hughes ATJ-77, jets 10-10-10) was run in the hole to 8862'MD. Washed and reamed from 8862'MD to 9459'MD. Drilled from 9459'MD to 9653'MD with the drill string torquing and dropped a survey. The survey at 9653'MD was 2 3/4 degrees. Pulled bit no. 22 out of the hole at 9653'MD after drilling 194' in 40.4 rotating hours for an average drill rate of 4.8 ft/hr. The average rotary speed was 45 rpm and the weight on bit averaged 34.6 klbs. Bit no. 22 was graded 8-Effective-OUT 1/8".

New bit no. 23 (6.5", Hughes ATJ-77, jets 10-10-10) was run in the hole to 9573'MD. Washed and reamed from 9573'MD to 9653'MD. Drilled from 9653'MD to 9901'MD with no problems and dropped a survey. Bit no. 23 was pulled from the hole at 9901'MD after drilling 248' in 34.2 rotating hours for an average drill rate of 7.25 ft/hr. The average rotary speed was 45 rpm and the weight on bit averaged 38.8 klbs. Bit no. 23 was graded 5-Effective-IN.

New bit no. 24 (6.5", Hughes ATJ-77, jets 10-10-10) was run in the hole to 9566'MD. Washed and reamed from 9566'MD to 9901'MD. Drilled from 9901'MD to 10089'MD with no problems. Made a 5 stand short trip and circulated out. Dropped a survey and pulled out of the hole. The survey at 10089'MD was 3 3/4 degrees. Bit no. 24 was pulled out of the hole at 10089'MD after drilling 188' in 31.0 rotating hours for an average drill rate of 6.1 ft/hr. The average rotary speed was 45 rpm and the weight on bit averaged 31.2 klbs. Bit no. 24 was graded 8-Effective-OUT 1/2".

The T.D. of 10089'MD was reached on February 13, 1988, when the wireline logging began. Rigged up Schlumberger and ran the following logs:

Run #1 Dual Induction, Gamma Ray

Run #2 LithoDensity, Gamma Ray, Compensated Neutron

Run #3 Digital Sonic, Natural Gamma Ray

Rigged down Schlumberger and rigged up the Amoco logging truck.

Run #4 Bore Hole Gravity Meter Survey

Rigged down Amoco and rigged up a Geophysical logging truck.

Run #5 VSP log

Rigged down Geophysical and began pumping down the reserve pit.

V. WELL DISCUSSION BY INTERVAL

D. Interval IV (8041'MD - 10089'MD) (Cont'd)

N.L. Baroid Logging unit no. 40077 was released on February 15, 1988, after a decision had been reached to plug and abandon the well. The well was not plugged at the release of the logging unit.

Plots

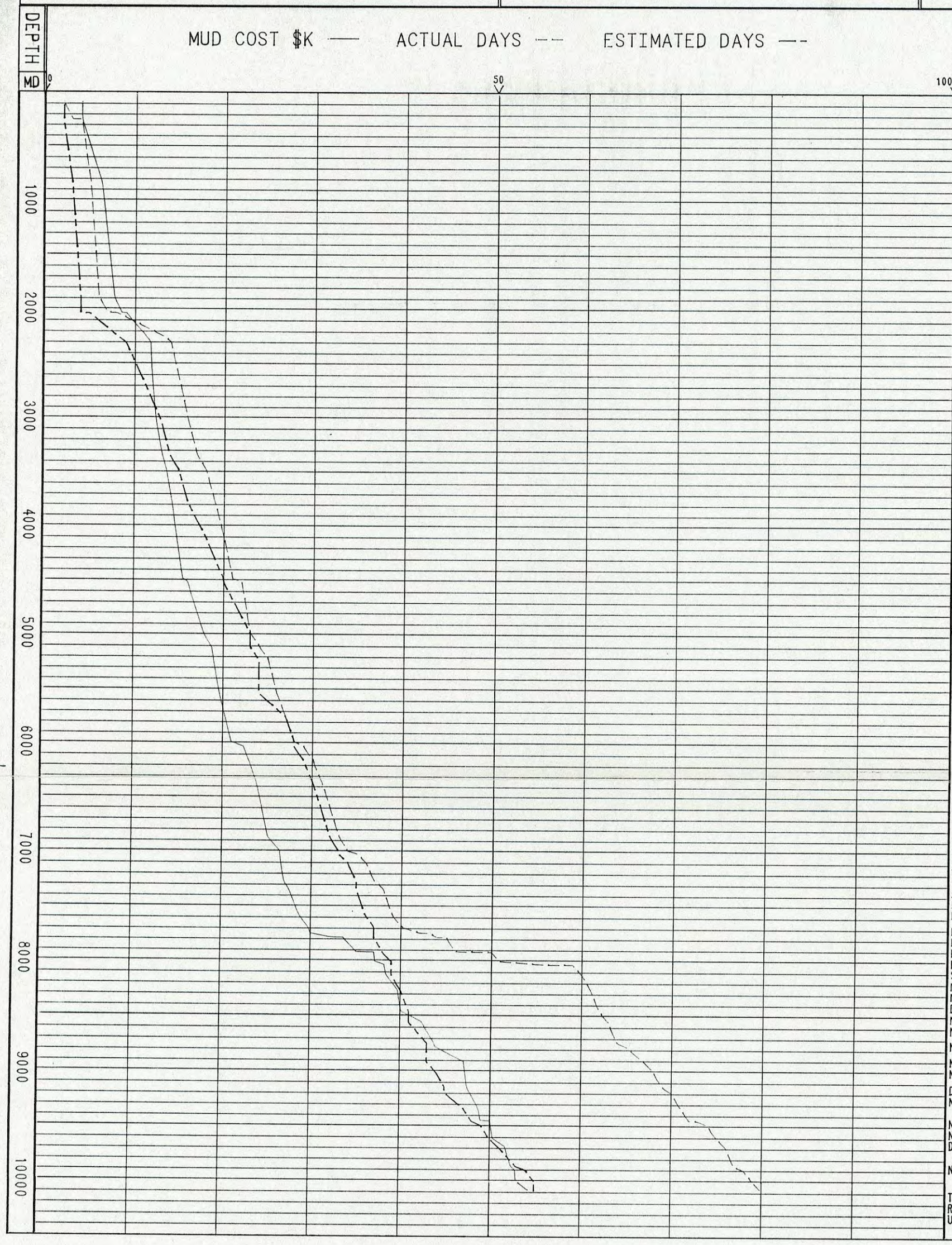
BAROID PETROLEUM SERVICES
BLS-2000 COMPUTERIZED LOG

WELL SPENCE TRUST NO. 1
COMPANY AMOCO PRODUCTION COMPANY
LOCATION DUNKLIN COUNTY, MISSOURI

NB New Bit	NCB New Core Bit	CKF Check for Flow
NR No Returns	CO Circulate Out	LAT Log after Trip
TG Trip Gas	CG Connection Gas	DST Drill Stem Test
DC Depth Corr	TCL Trip Chlorides	DS Direc Survey

BAROID LOGGING SYSTEMS

COST & DAY LOG



REMARKS

24" CONDUCTOR SET AT 60'
NB#1 SEC S3SJ 20"
SET 16" CSG. AT 250'
NB#2 SEC S33S 14.75"
DS 1/2

CKF

DS 1/4

DS 1/4

SET 10.75" CSG. AT 2037'
NB#3 HTC J3 9.50"
NB#4 HTC J-33 DS 3
DS 3/4

DS 1/2

NB#5 HTC ATJ-33 DS 3/4

NB#6 HTC ATJ-55R

DS 1 1/4

NB#7 HTC ATJ-55R DS 1 1/4

DS 1 1/4

NB#8 STC F5 DS 1 1/4

CKF
DS 1 1/4

NB#9 STC F5 DS 3/4

NB#10 HTC J77

CKF

NB#11 EC C-23 8.75" CORE#1
RR#9 STC F5
CO DS 2 1/4

RR#11 EC C-23 CORE#2
NB#12 HTC J55R
DS 2

RR#11 CORE#3 CORE#4
RR#12 HTC J55R NB#13 HTC ATJ-44
RR#13 HTC ATJ-44
DRILL WITH AIR/MUD
SET 7 5/8" CSG AT 8041'
NB#14 HTC J3 DS 2 1/4
NB#15 HTC J44
DS 2
NB#16 HTC J44 DS 2
NB#17 HTC J-55R

NB#18 HTC ATJ-55R DS 2 3/4

NB#19 SEC M84F
NB#20 HTC ATJ-77

DS 2 1/2
NB#21 HTC ATJ-77

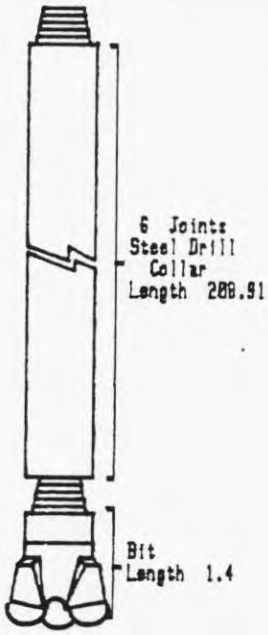
NB#22 HTC ATJ-77
NB#23 HTC ATJ-77
DS 2 3/4

NB#24 HTC ATJ-77

T.D. WELL AT 10089' ON 2/13/88
RUN E-LOGS DS 3 3/4
UNIT RELEASED 2/15/88 P&A

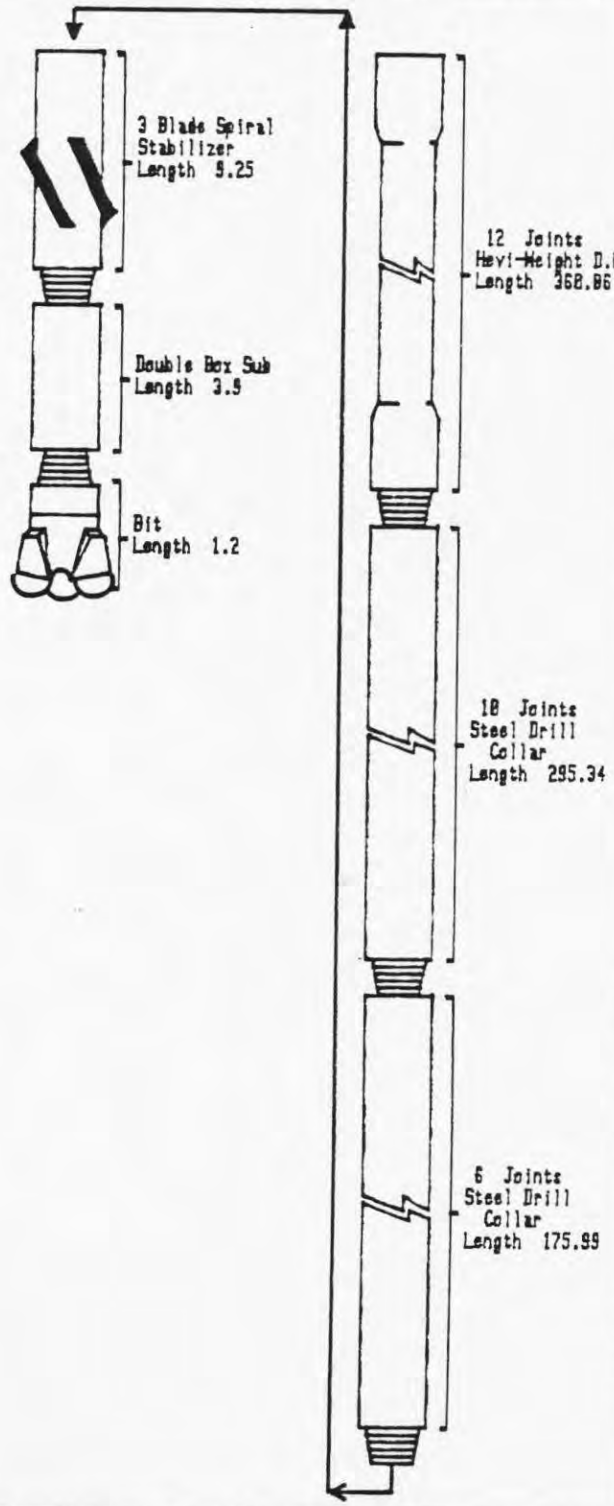
Operator	AMOCO PROD. CO.	**Bit No.**	1	**Type**	SMITH S3SJ	**IADC Code**	1/1/1
Contractor	NOBLE	**Depth In**	0'	**Depth Out**	250'	**Footage**	250
Rig Number	0W762			**O.D.**	**I.D.**	**Wt/Ft**	
Location	WILDCAT	**Drill Pipe**		5.0	4.276	19.5	
Well	SPENCE TRUST NO.1	**Hevi-Height**		NA	NA	NA	
County	DUNKLIN, MISSOURI	**Drill Collars**		8.0	2.875	150.0	
Unit #	40077						

MWD / Baroid Logging Systems



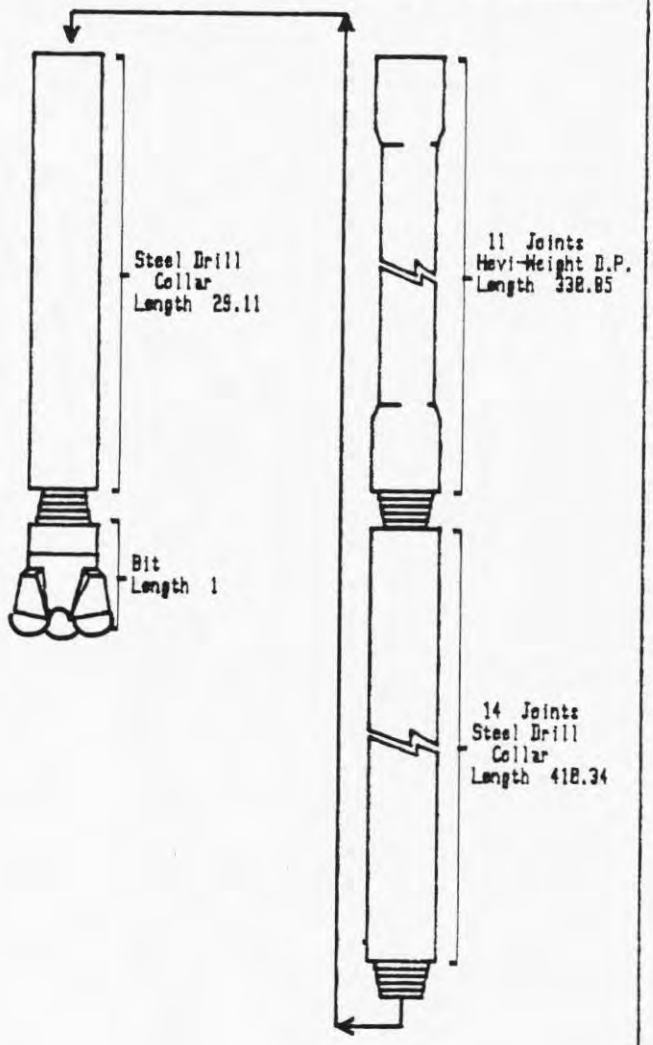
Operator	AMOCO PROD. CO.	**Bit No.**	2	**Type**	SECURITY S3SJ	**IADC Code**	1/1/4
Contractor	NOBLE	**Depth In**	250'	**Depth Out**	2037'	**Footage**	1787
Rig Number	OW762			**O.D.**	**I.D.**	**Wt/Ft**	
Location	WILDCAT	**Drill Pipe**		5.0	4.276	19.5	
Well	SPENCE TRUST NO.1	**Hevi-Weight**		5.0	3.0	49.3	
County	DUNKLIN, MISSOURI	**Drill Collars**		8.5/7	2.3/2.5	179/114	
Unit #	40077						

NL MWD / Baroid Logging Systems



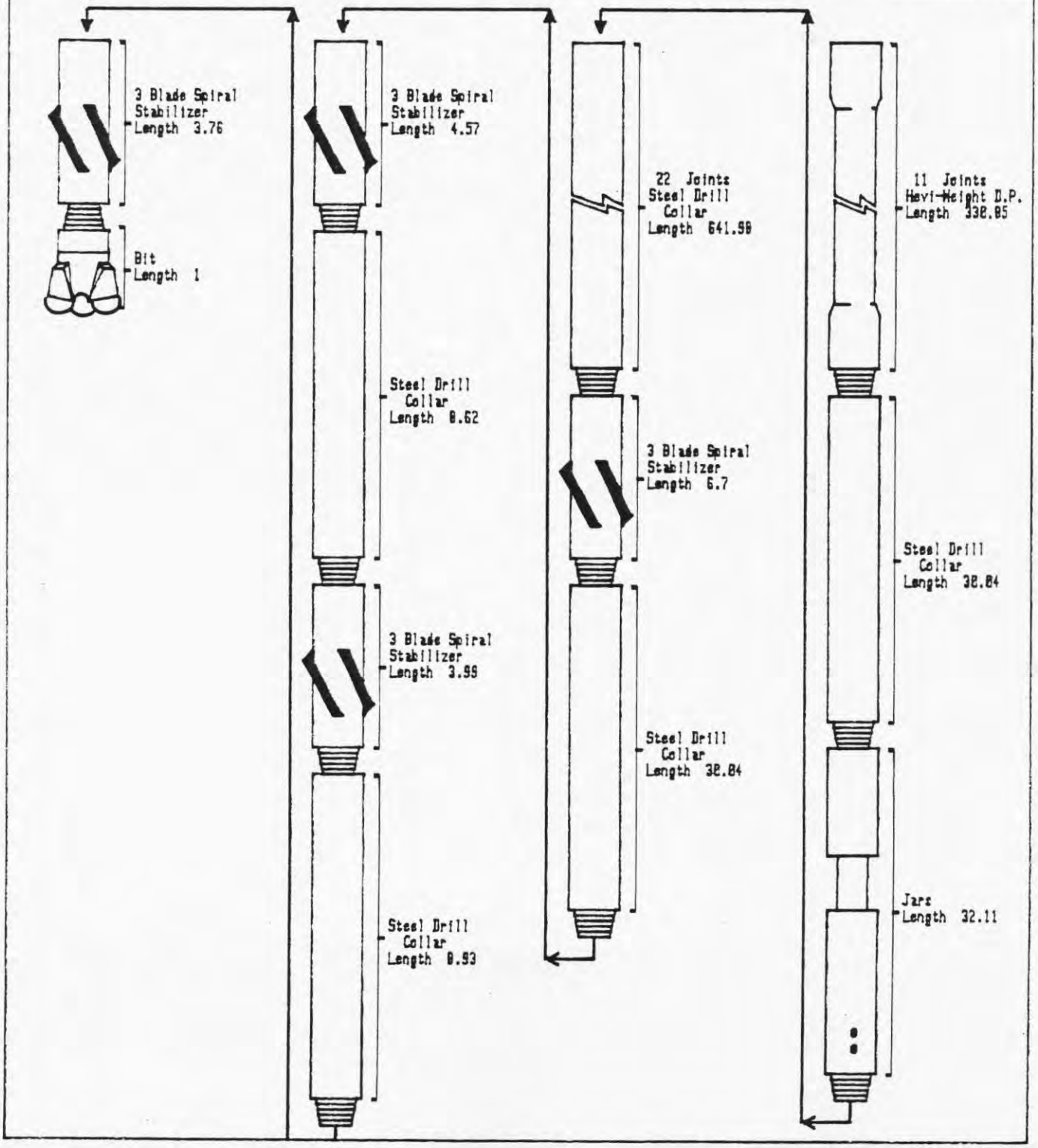
Operator	AMOCO PROD. CO.	**Bit No.**	3	**Type**	HUGHES J-3	**IADC Code**	1/3/6
Contractor	NOBLE	**Depth In**	2037'	**Depth Out**	2301'	**Footage**	264
Rig Number	OW762			**O.D.**	**I.D.**	**Wt/Ft**	
Location	WILDCAT	**Drill Pipe**		5.0	4.276	19.5	
Well	SPENCE TRUST NO.1	**Hevi-Weight**		5.0	3.0	49.3	
County	DUNKLIN, MISSOURI	**Drill Collars**		7.0	2.50	114.0	
Unit #	40077						

MWD / Baroid Logging Systems



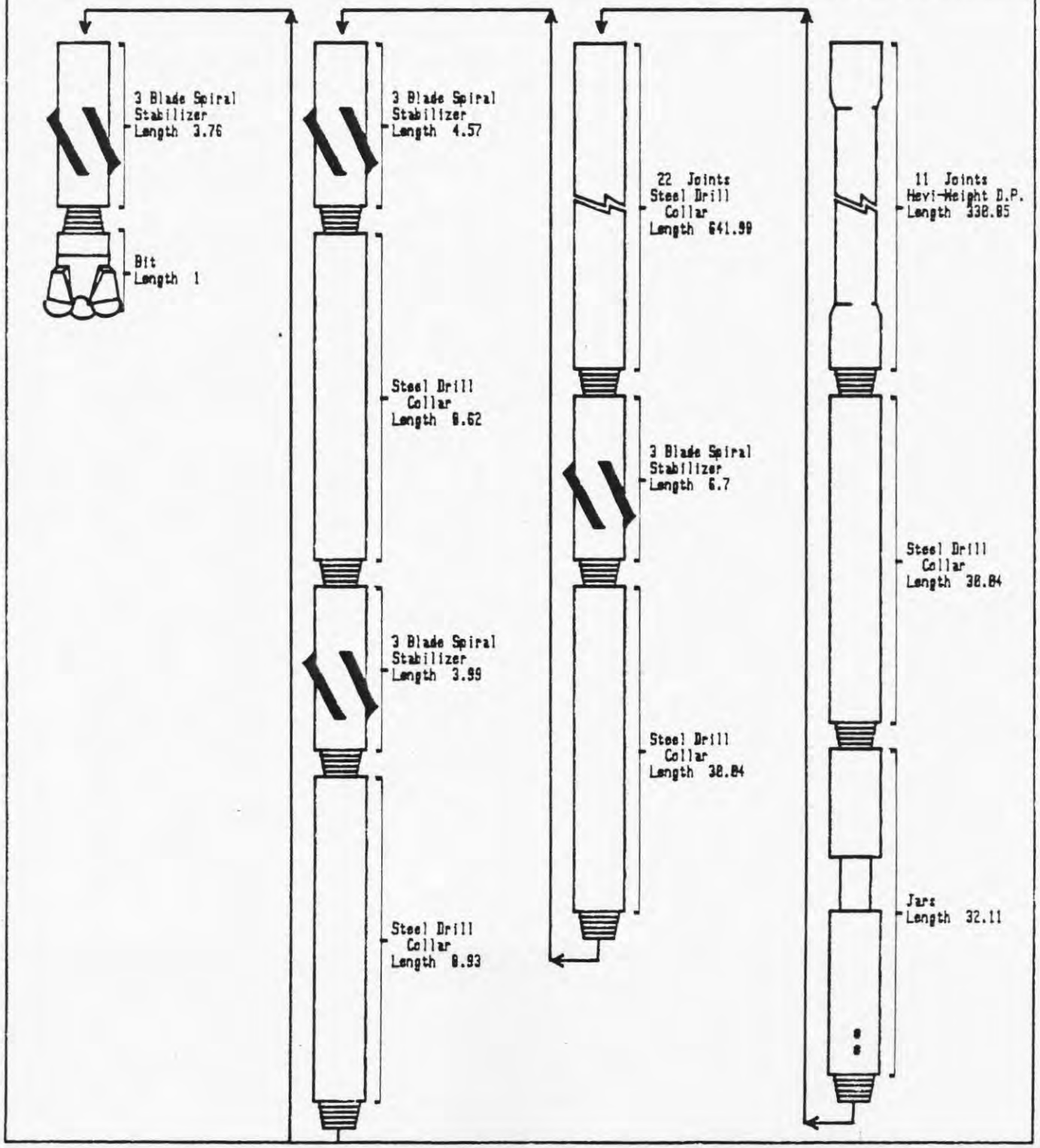
Operator	AMOCO PROD. CO.	**Bit No.**	4	**Type**	HUGHES ATJ-33	**IADC Code**	5/3/7
Contractor	NOBLE	**Depth In**	2301'	**Depth Out**	3176'	**Footage**	875
Rig Number	0W762			**O.D.**	**I.D.**	**Wt/Ft**	
Location	WILDCAT	**Drill Pipe**		5.0	4.276	19.5	
Well	SPENCE TRUST NO.1	**Hevi-Weight**		5.0	3.0	49.3	
County	DUNKLIN, MISSOURI	**Drill Collars**		7.0	2.5	114	
Unit #	40077						

NL MWD / Baroid Logging Systems



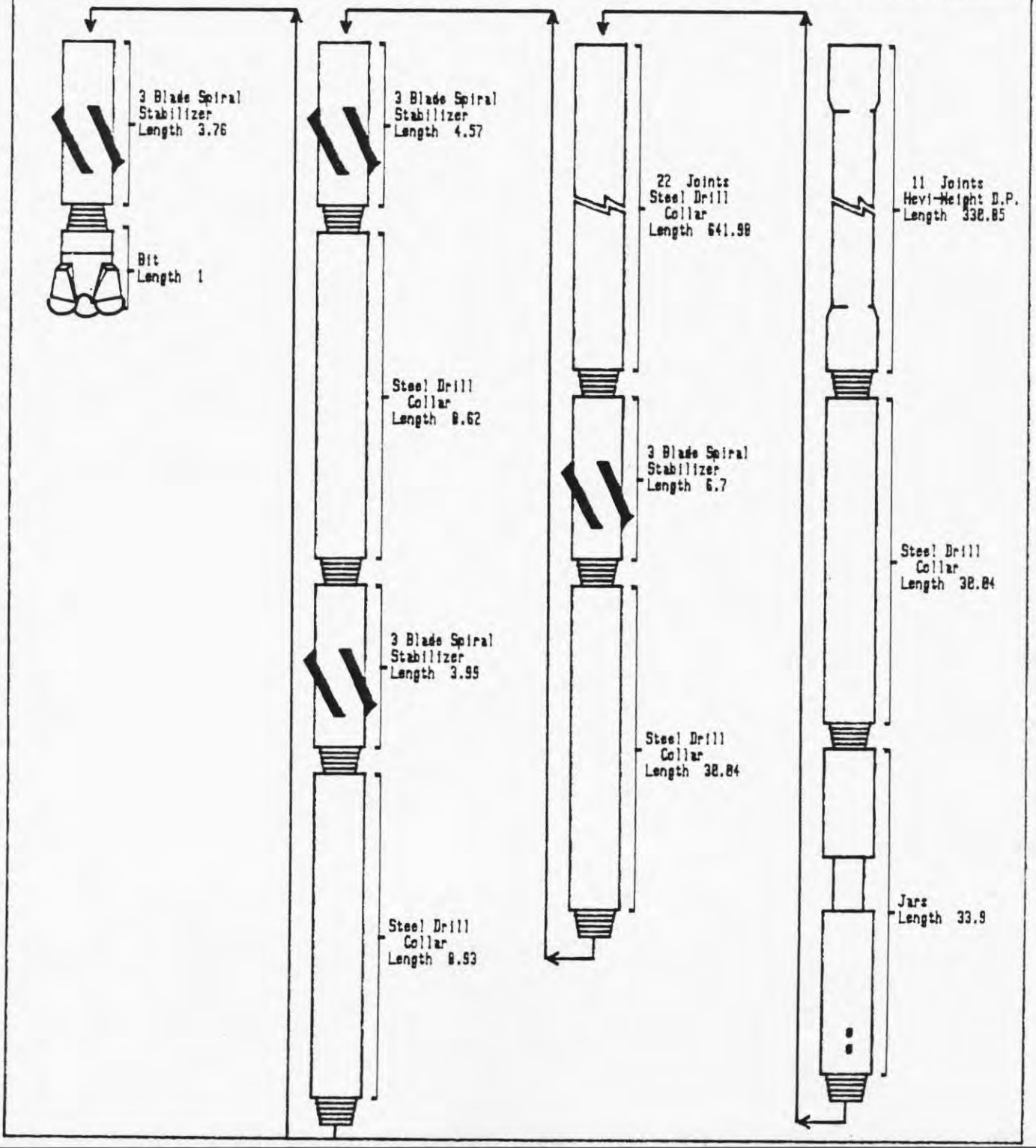
Operator	AMOCO PROD. CO.	**Bit No.**	5	**Type**	HUGHES ATJ-33	**IADC Code**	5/3/7
Contractor	NOBLE	**Depth In**	3176'	**Depth Out**	3420'	**Footage**	244
Rig Number	OW762			**O.D.**	**I.D.**	**Wt/Ft**	
Location	WILDCAT	**Drill Pipe**		5.0	4.276	19.5	
Well	SPENCE TRUST NO.1	**Hevi-Weight**		5.0	3.0	49.3	
County	DUNKLIN, MISSOURI	**Drill Collars**		7.0	2.5	114.0	
Unit #	40077						

MWD / Baroid Logging Systems



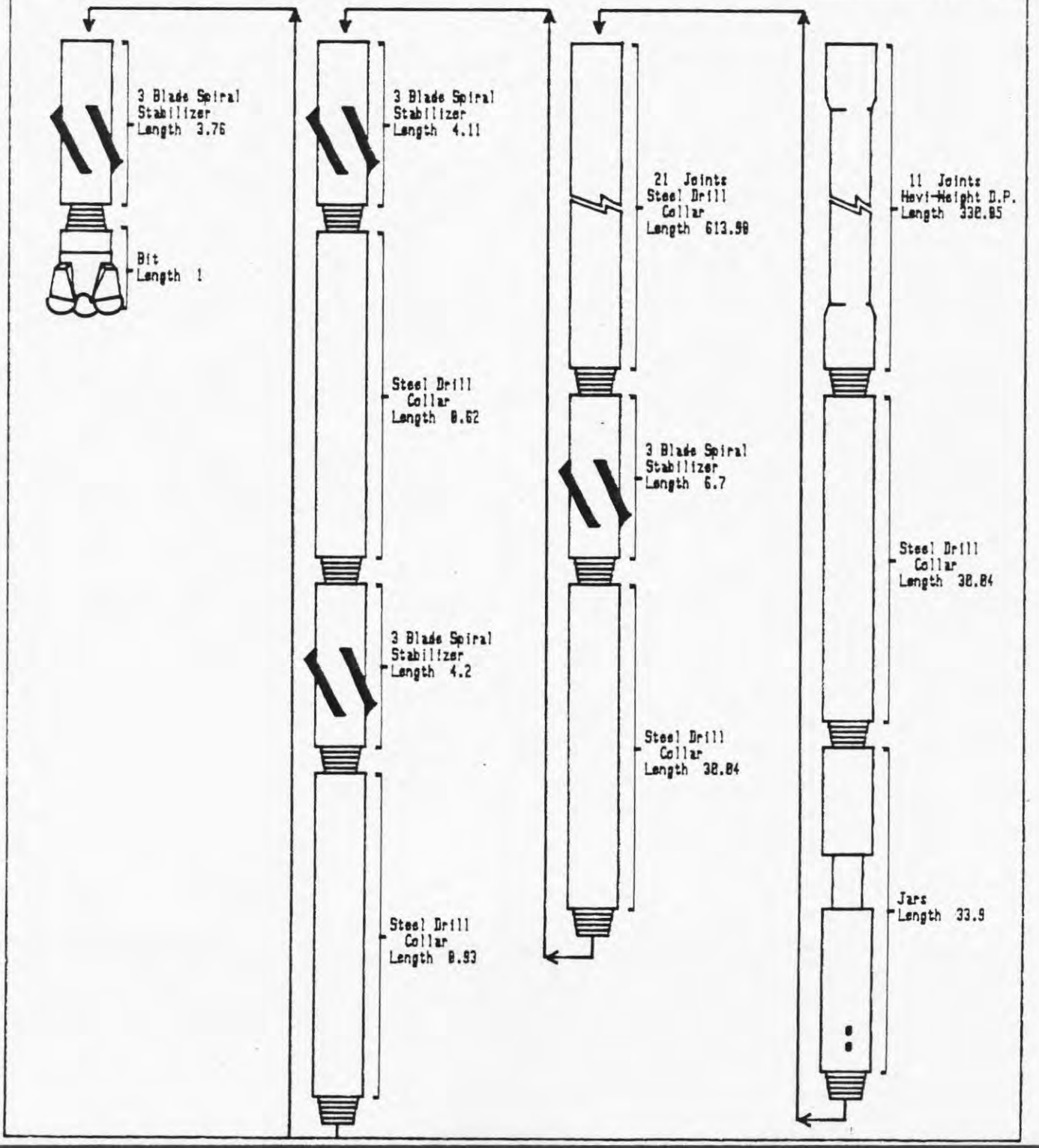
Operator	AMOCO PROD. CO.	**Bit No.**	6	**Type**	HUGHES ATJ-55A	**IADC Code**	6/2/7
Contractor	NOBLE	**Depth In**	3420'	**Depth Out**	4517'	**Footage**	1097
Rig Number	OW762			**O.D.**	**I.D.**	**Wt/Ft**	
Location	WILDCAT	**Drill Pipe**		5.0	4.276	19.5	
Well	SPENCE TRUST NO.1	**Hevi-Weight**		5.0	3.0	49.3	
County	DUNKLIN, MISSOURI	**Drill Collars**		7.0	2.5	114.0	
Unit #	40077						

MWD / Baroid Logging Systems



Operator	AMOCO PROD. CO.	**Bit No.**	7	**Type**	HUGHES ATJ-55	**IADC Code**	6/2/7
Contractor	NOBLE	**Depth In**	4517'	**Depth Out**	5158'	**Footage**	641
Rig Number	OW762			**O.D.**	**I.D.**	**Wt/Ft**	
Location	WILDCAT	**Drill Pipe**		5.0	4.276	19.5	
Well	SPENCE TRUST NO.1	**Hevi-Weight**		5.0	3.0	49.3	
County	DUNKLIN, MISSOURI	**Drill Collars**		7.0	2.5	114.0	
Unit #	40077						

MWD / Baroid Logging Systems



Operator	AMOCO PROD. CO.	**Bit No.**	8	**Type**	SMITH F-5	**IADC Code**	6/2/7
Contractor	NOBLE	**Depth In**	5158'	**Depth Out**	6033'	**Footage**	875
Rig Number	0W762			**O.D.**	**I.D.**	**Wt/Ft**	
Location	WILDCAT	**Drill Pipe**		5.0	4.276	19.5	
Well	SPENCE TRUST NO.1	**Hevi-Weight**		5.0	3.0	49.3	
County	DUNKLIN, MISSOURI	**Drill Collars**		7.0	2.5	114.0	
Unit #	40077						

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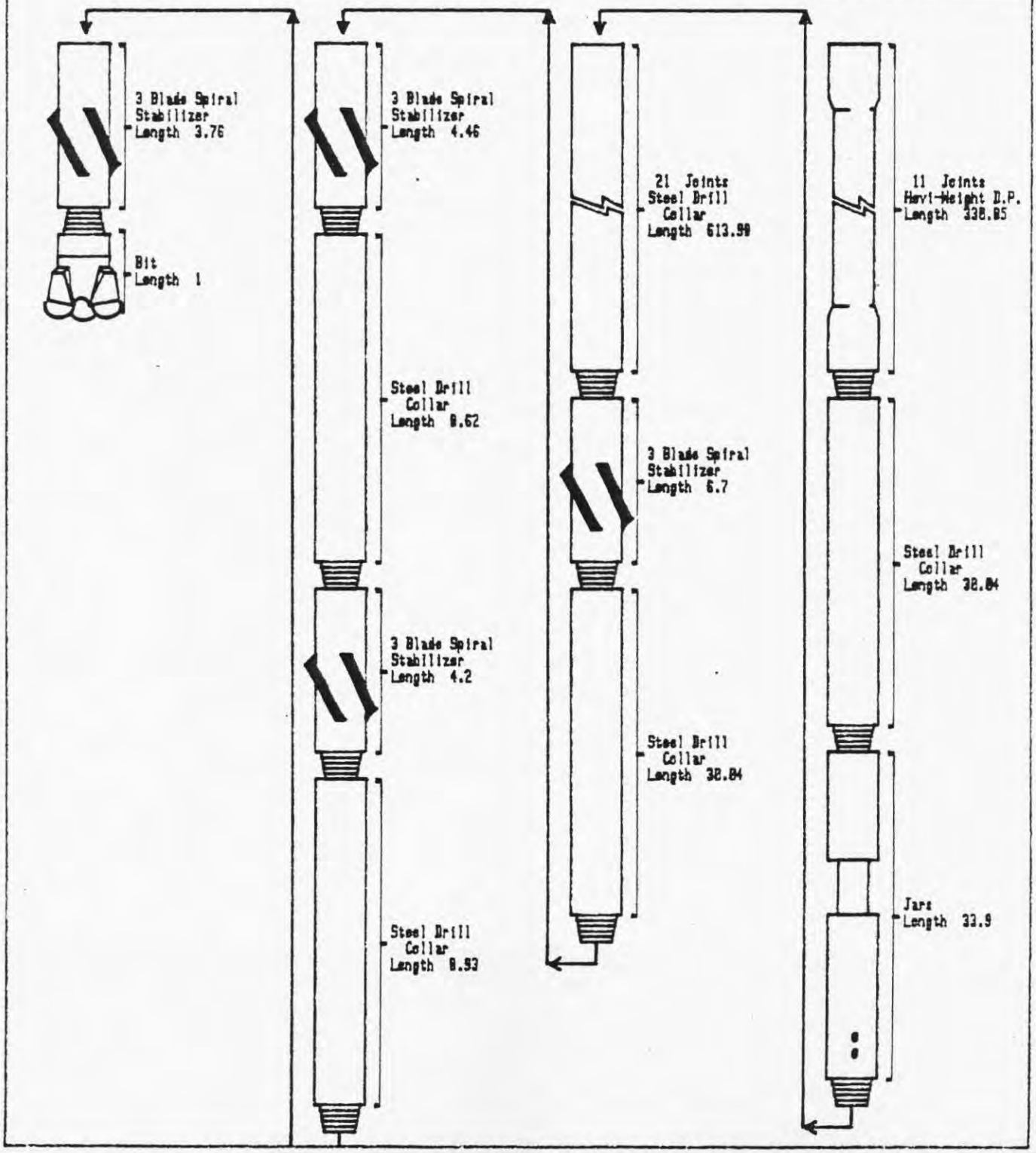
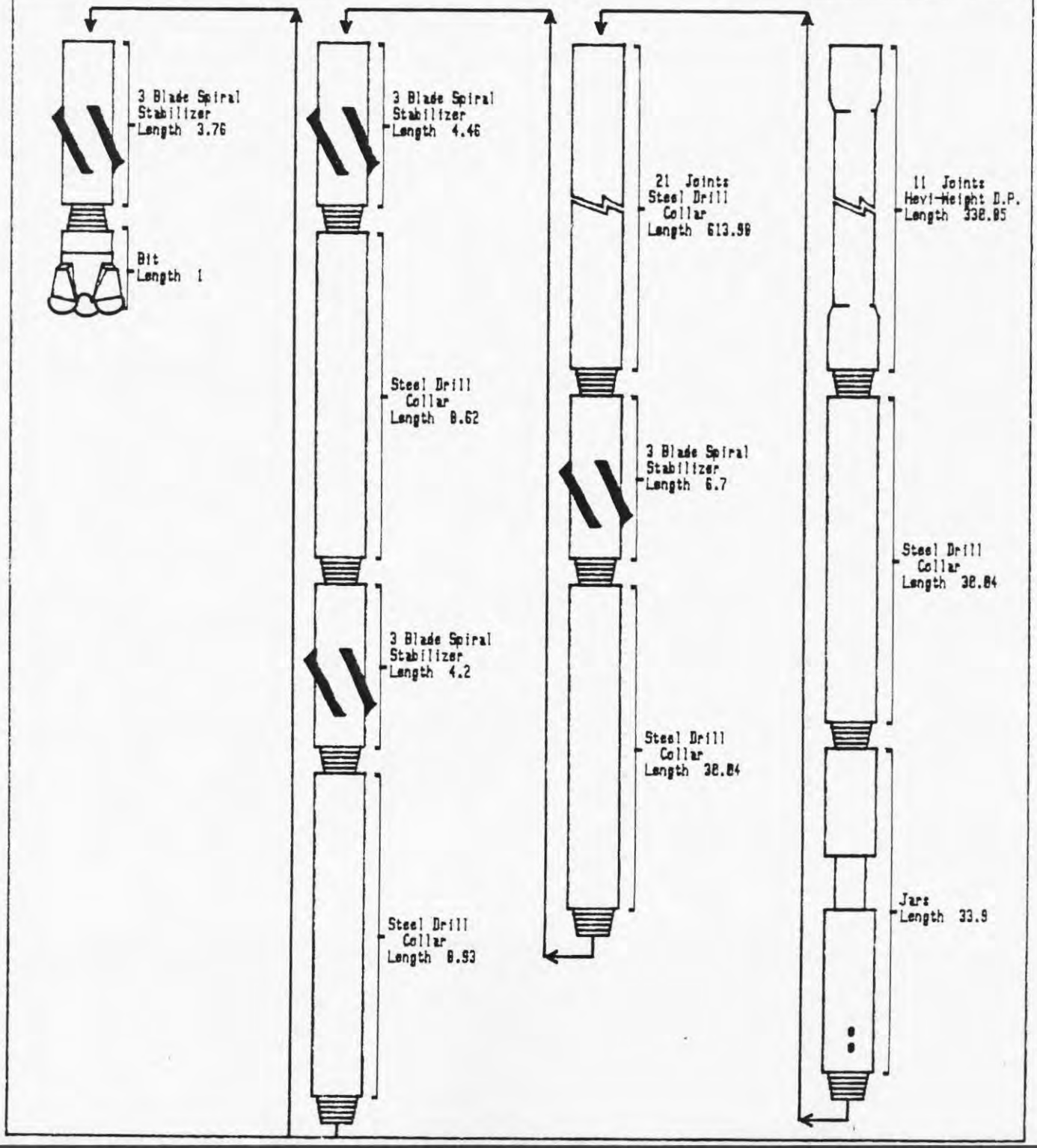


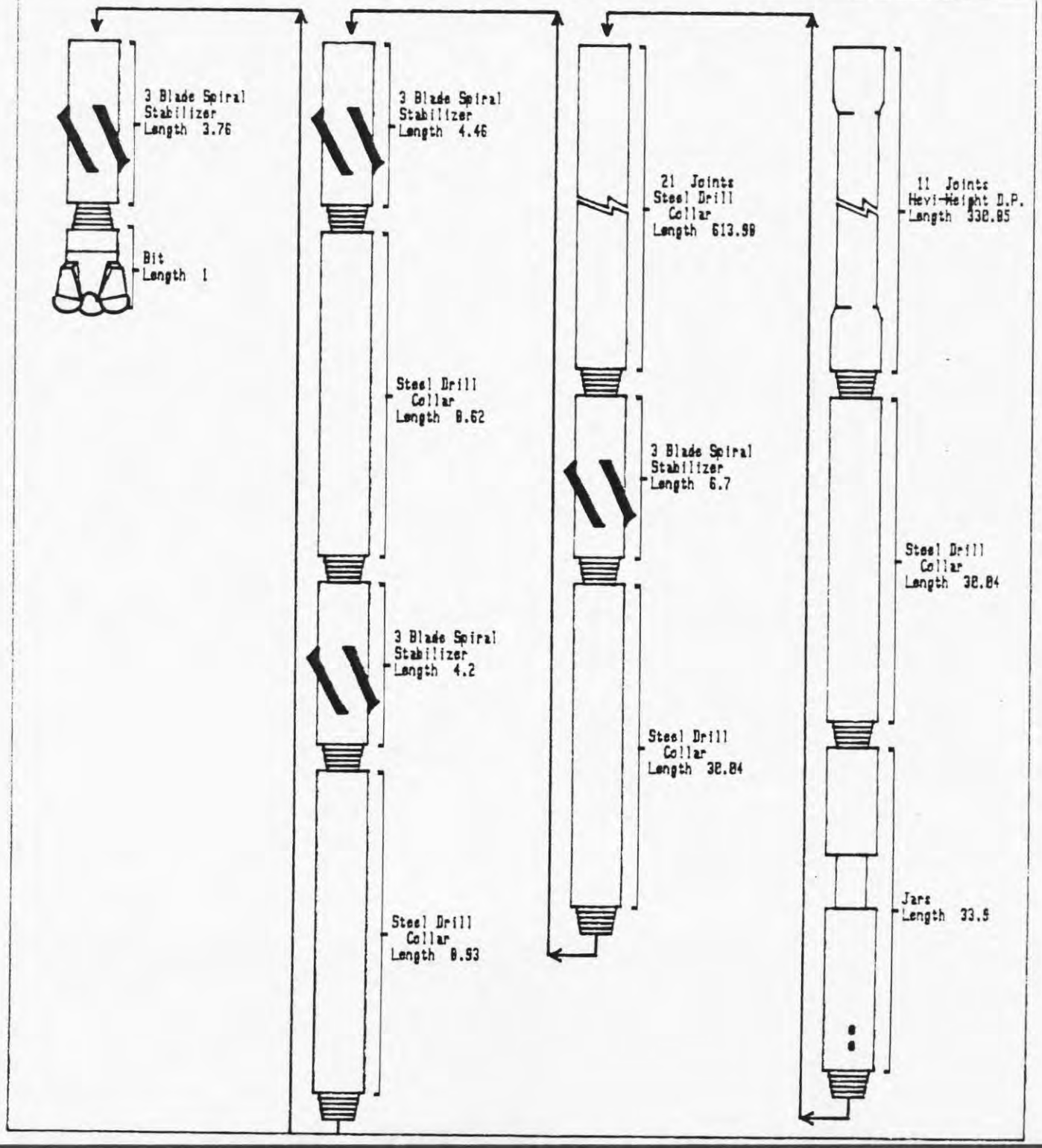
Operator	AMOCO PROD. CO.	**Bit No.**	9	**Type**	SMITH F-5	**IADC Code**	6/2/7
Contractor	NOBLE	**Depth In**	6033'	**Depth Out**	6251'	**Footage**	218
Rig Number	OW762			**O.D.**	**I.D.**	**Wt/Ft**	
Location	WILDCAT	**Drill Pipe**		5.0	4.276	19.5	
Well	SPENCE TRUST NO.1	**Hevi-Weight**		5.0	3.0	49.3	
County	DUNKLIN, MISSOURI	**Drill Collars**		7.0	2.50	114.0	
Unit #	40077						

MWD / Baroid Logging Systems



Operator	AMOCO PROD. CO.	**Bit No.**	10	**Type**	HUGHES J-77	**IADC Code**	7/3/7
Contractor	NOBLE	**Depth In**	6251'	**Depth Out**	7000'	**Footage**	749
Rig Number	OW762			**O.D.**	**I.D.**	**Wt/Ft**	
Location	WILDCAT	**Drill Pipe**		5.0	4.276	19.5	
Well	SPENCE TRUST NO.1	**Hevi-Weight**		5.0	3.0	49.3	
County	DUNKLIN, MISSOURI	**Drill Collars**		7.0	2.50	114.0	
Unit #	40077						

MWD / Baroid Logging Systems



Operator	AMOCO PROD. CO.	**Bit No.**	11	**Type**	EC C-23	**IADC Code**	NA
Contractor	NOBLE	**Depth In**	7000'	**Depth Out**	7030'	**Footage**	30
Rig Number	OW762			**O.D.**	**I.D.**	**Wt/Ft**	
Location	WILDCAT	**Drill Pipe**		5.0	4.276	19.5	
Well	SPENCE TRUST NO.1	**Hevi-Weight**		5.0	3.0	49.3	
County	DUNKLIN, MISSOURI	**Drill Collars**		7.0	2.50	114.0	
Unit #	40077						

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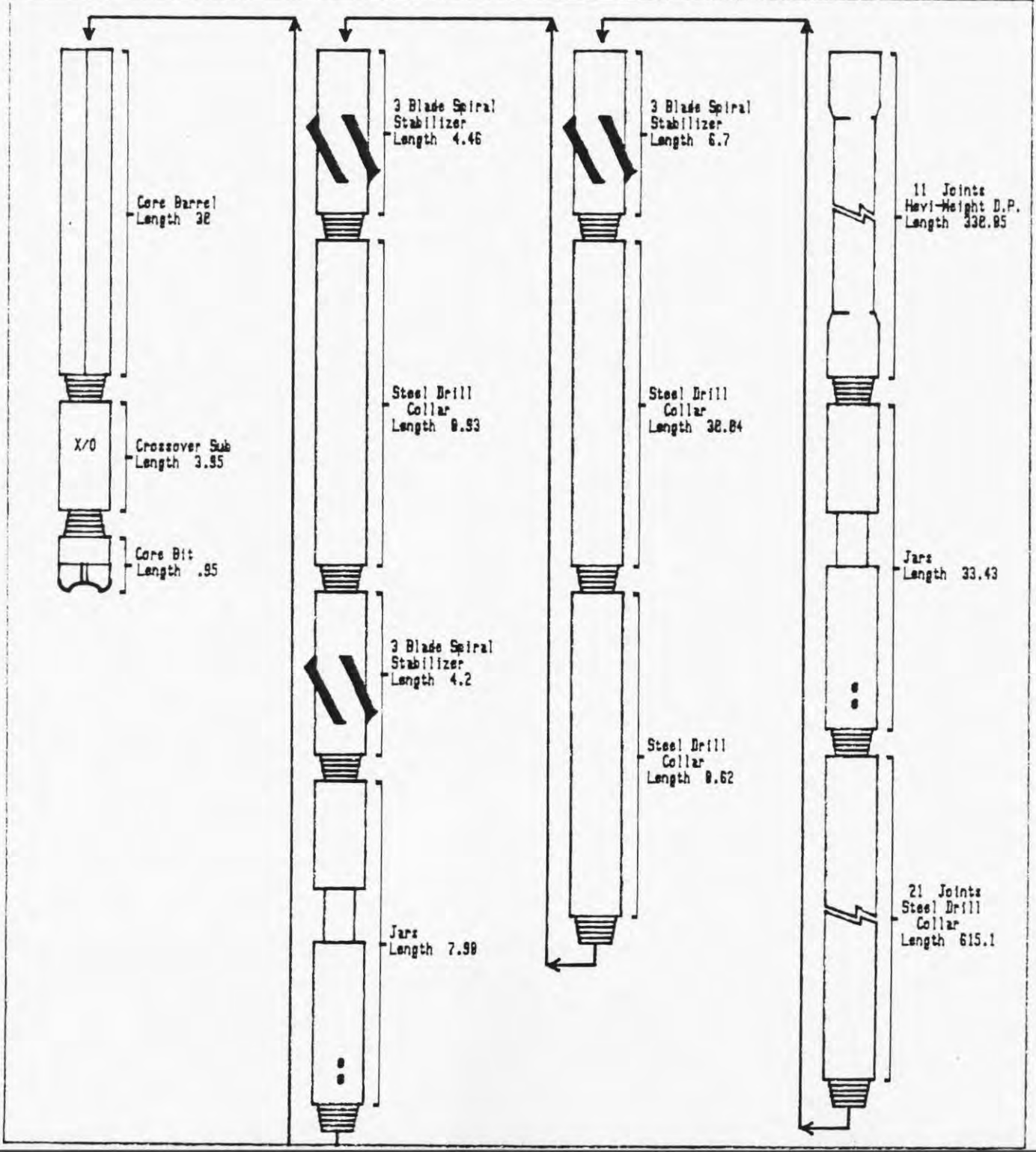

Operator	AMOCO PROD. CO.	**Bit No.**	9.1	**Type**	SMITH F-5	**IADC Code**	6/2/7
Contractor	NOBLE	**Depth In**	7030'	**Depth Out**	7275'	**Footage**	245
Rig Number	OW762			**O.D.**	**I.D.**	**Wt/Ft**	
Location	WILDCAT	**Drill Pipe**		5.0	4.276	19.5	
Well	SPENCE TRUST NO.1	**Hevi-Weight**		5.0	3.0	49.3	
County	DUNKLIN, MISSOURI	**Drill Collars**		7.0	2.5	114.0	
Unit #	40077						

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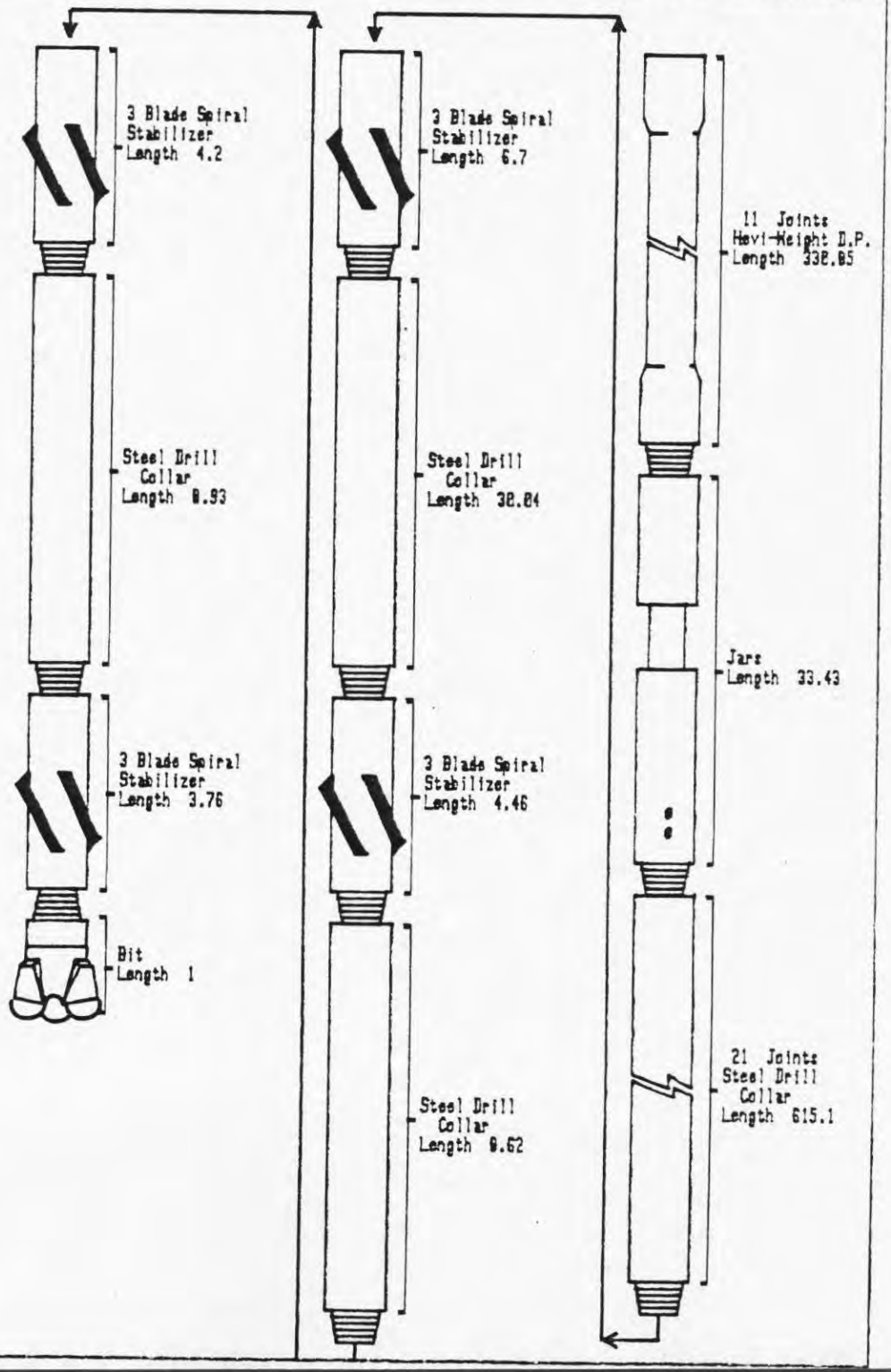

Operator	AMOCO PROD. CO.	**Bit No.**	11.1	**Type**	EC C-23	**IADC Code**	NA
Contractor	NOBLE	**Depth In**	7275'	**Depth Out**	7306'	**Footage**	31
Rig Number	OW762			**O.D.**	**I.D.**	**Wt/Ft**	
Location	WILDCAT	**Drill Pipe**		5.0	4.276	19.5	
Well	SPENCE TRUST NO.1	**Hevi-Weight**		5.0	3.0	49.3	
County	DUNKLIN, MISSOURI	**Drill Collars**		7.0	2.5	114.0	
Unit #	40077						

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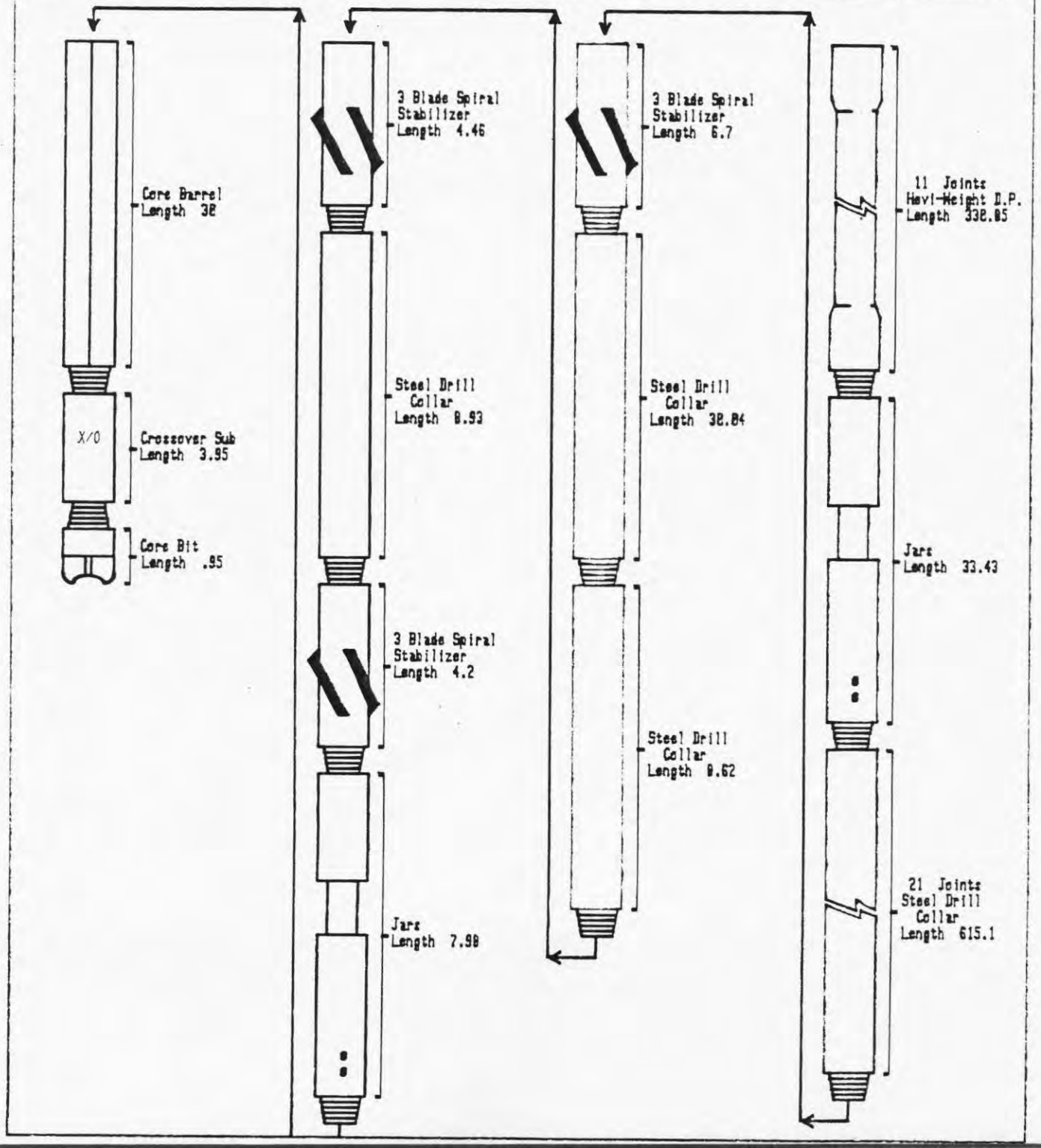

Operator	AMOCO PROD. CO.	**Bit No.**	12	**Type**	HUGHES J55R	**IADC Code**	6/2/7
Contractor	NOBLE	**Depth In**	7306'	**Depth Out**	7691'	**Footage**	385
Rig Number	OW762			**O.D.**	**I.D.**	**Wt/Ft**	
Location	WILDCAT	**Drill Pipe**		5.0	4.276	19.5	
Well	SPENCE TRUST NO.1	**Hevi-Weight**		5.0	3.0	49.3	
County	DUNKLIN, MISSOURI	**Drill Collars**		7.0	2.5	114.0	
Unit #	40077						

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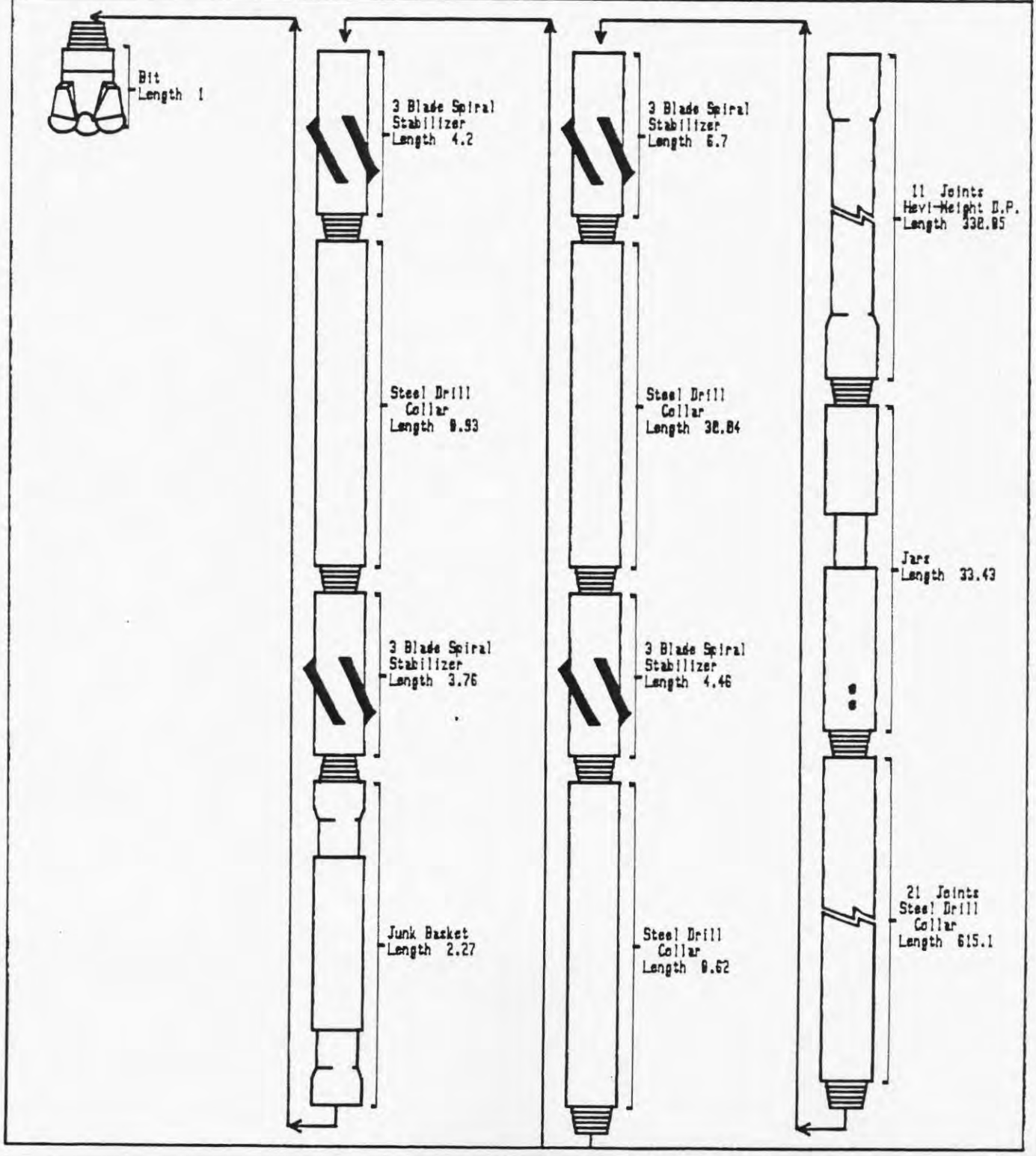

Operator	AMOCO PROD. CO.	**Bit No.**	11.2	**Type**	EC C-23	**IADC Code**	NA
Contractor	NOBLE	**Depth In**	7691'	**Depth Out**	7721'	**Footage**	30
Rig Number	OW762			**O.D.**	**I.D.**	**Wt/Ft**	
Location	WILDCAT	**Drill Pipe**		5.0	4.276	19.5	
Well	SPENCE TRUST NO.1	**Hevi-Weight**		5.0	3.0	49.3	
County	DUNKLIN, MISSOURI	**Drill Collars**		7.0	2.5	114.0	
Unit #	40077						

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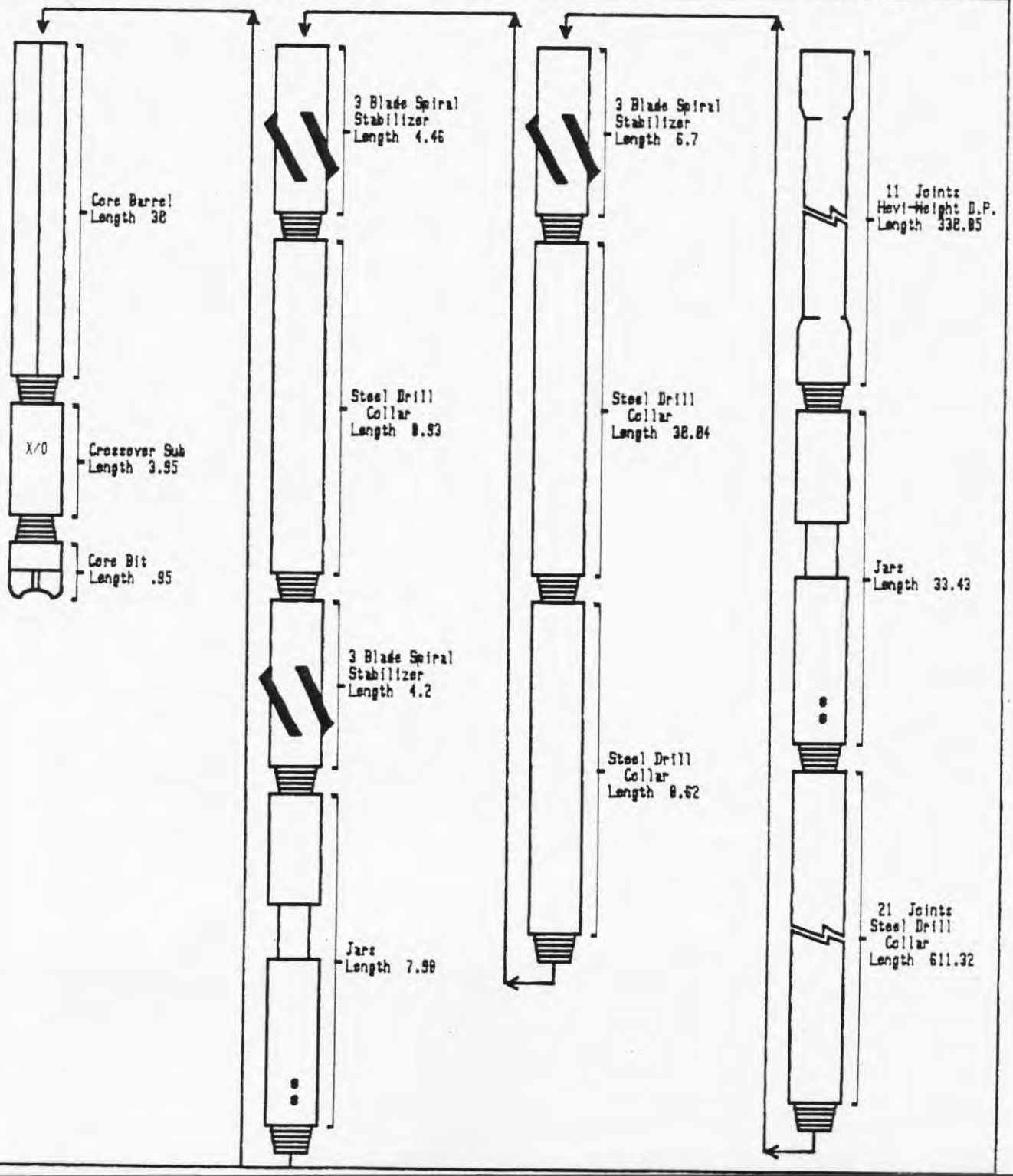

Operator	AMOCO PROD. CO.	**Bit No.**	11.3	**Type**	EC C-23	**IADC Code**	NA
Contractor	NOBLE	**Depth In**	7721'	**Depth Out**	7752'	**Footage**	31
Rig Number	OW762			**O.D.**	**I.D.**	**Wt/Ft**	
Location	WILDCAT	**Drill Pipe**		5.0	4.276	19.5	
Well	SPENCE TRUST NO.1	**Hevi-Weight**		5.0	3.0	49.3	
County	DUNKLIN, MISSOURI	**Drill Collars**		7.0	2.5	114.0	
Unit #	40077						

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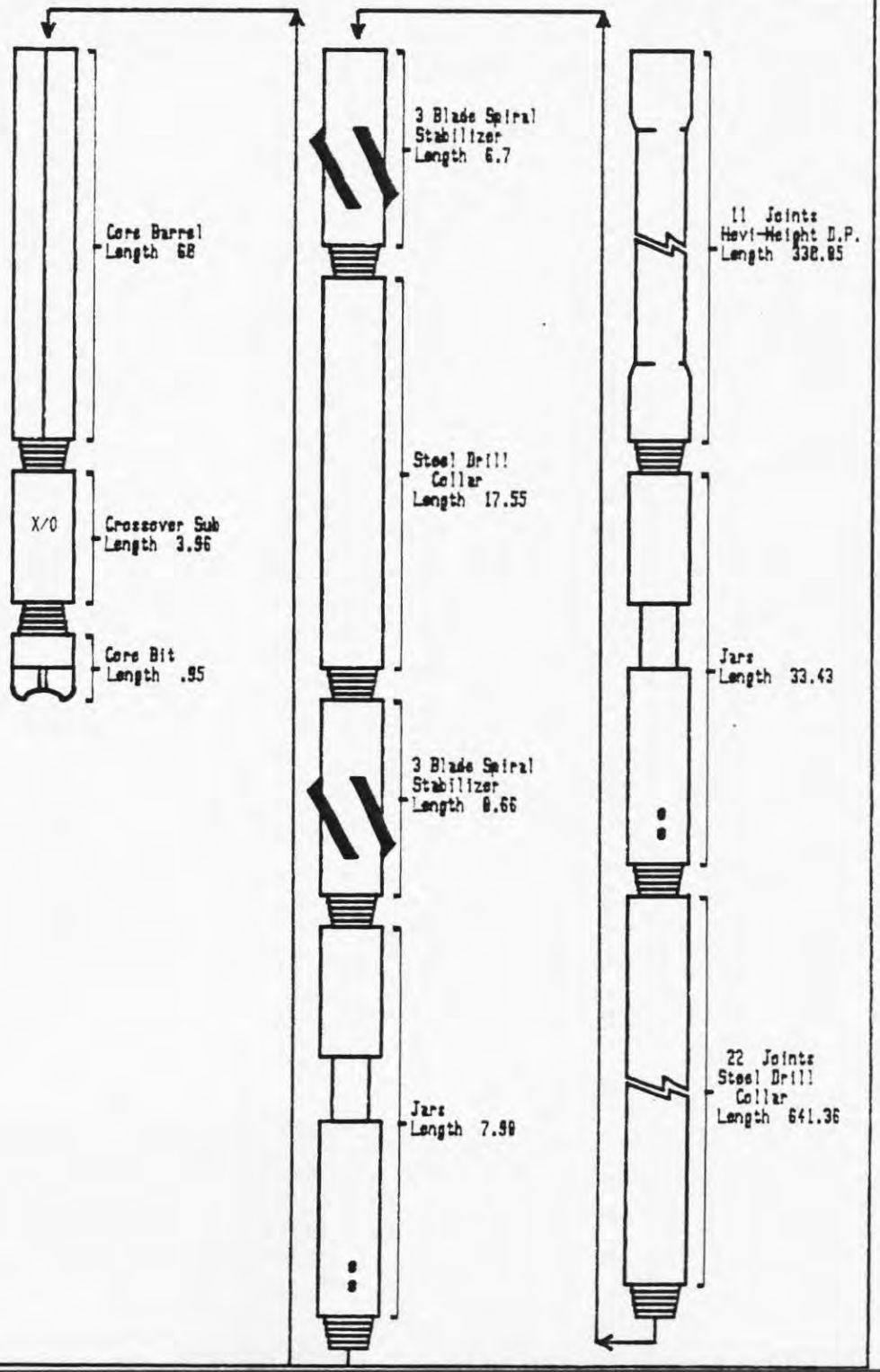

Operator	AMOCO PROD. CO.	**Bit No.**	12.1	**Type**	HUGHES J55R	**IADC Code**	6/2/7
Contractor	NOBLE	**Depth In**	7752'	**Depth Out**	7791'	**Footage**	39
Rig Number	OW762						
Location	WILDCAT		**O.D.**	**I.D.**	**Wt/Ft**		
Well	SPENCE TRUST NO.1	**Drill Pipe**	5.0	4.276	19.5		
County	DUNKLIN, MISSOURI	**Hevi-Weight**	5.0	3.0	49.3		
Unit #	40077	**Drill Collars**	7.0	2.5	114.0		

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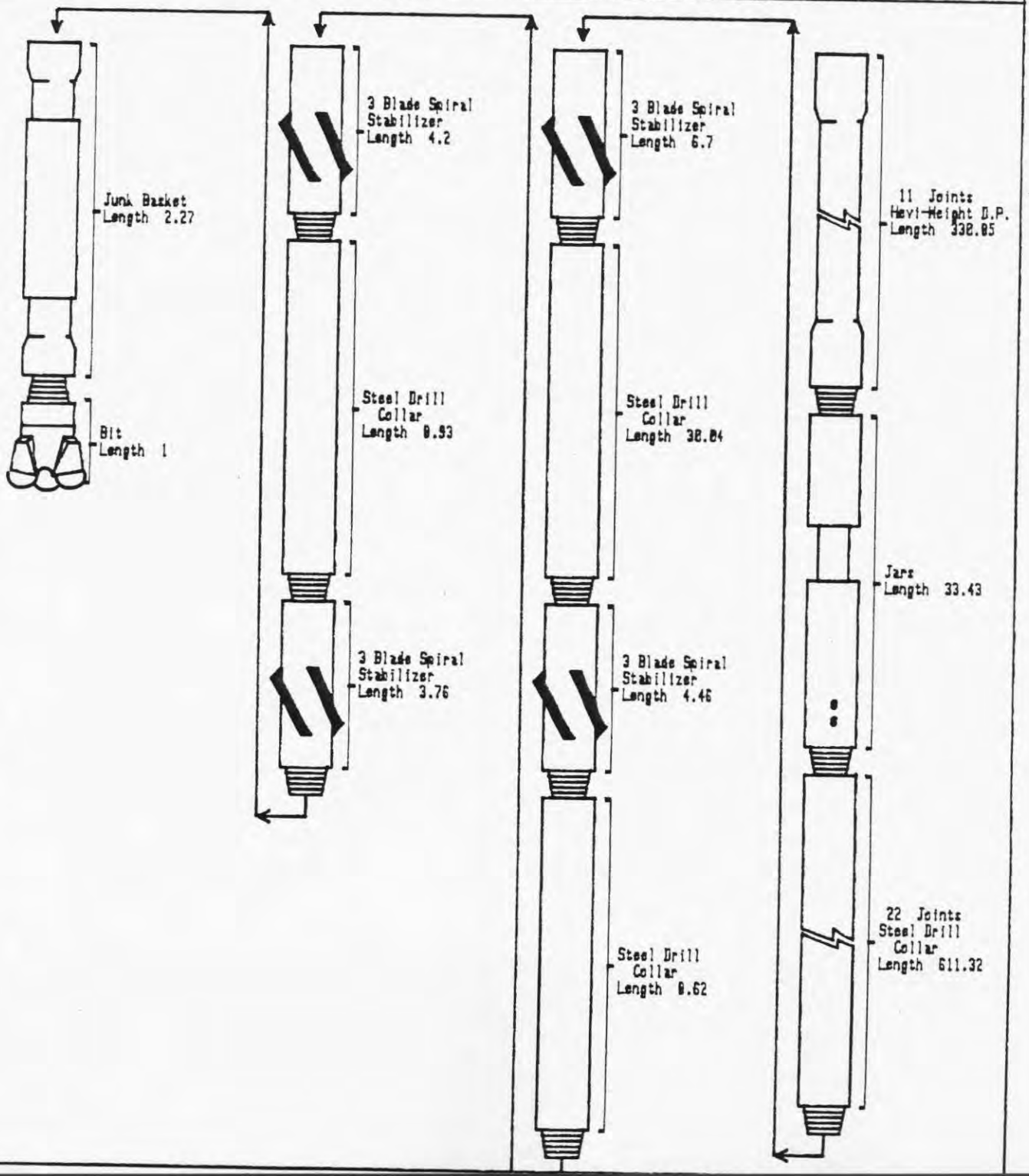

Operator	AMOCO PROD. CO.	**Bit No.**	13	**Type**	HUGHES J44	**IADC Code**	6/1/7
Contractor	NOBLE	**Depth In**	7791'	**Depth Out**	7791'	**Footage**	0
Rig Number	OW762			**O.D.**	**I.D.**	**Wt/Ft**	
Location	WILDCAT	**Drill Pipe**		5.0	4.276	19.5	
Well	SPENCE TRUST NO.1	**Hevi-Weight**		5.0	3.0	49.3	
County	DUNKLIN, MISSOURI	**Drill Collars**		7.0	2.5	114.0	
Unit #	40077						

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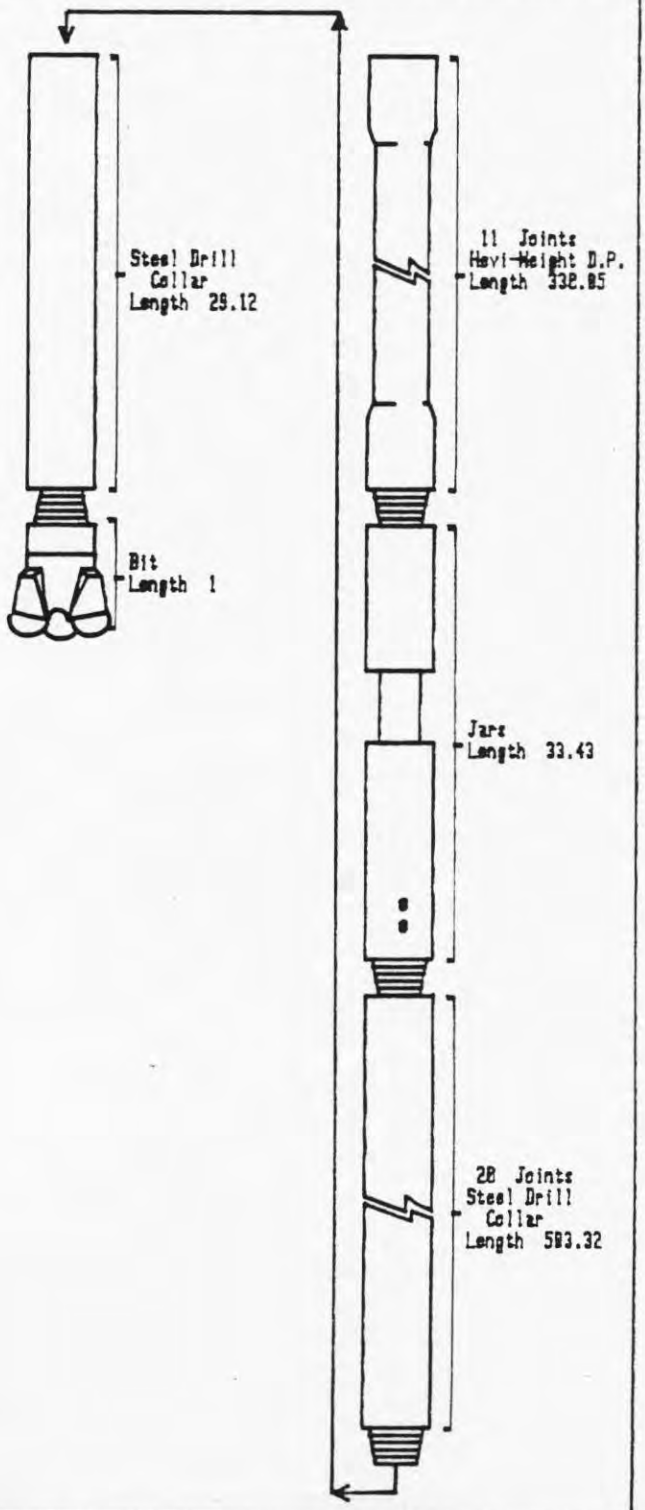

Operator	AMOCO PROD. CO.	**Bit No.**	13.1	**Type**	HUGHES J44	**IADC Code**	6/1/7
Contractor	NOBLE	**Depth In**	7791'	**Depth Out**	7902'	**Footage**	111
Rig Number	OW762			**O.D.**	**I.D.**	**Wt/Ft**	
Location	WILDCAT	**Drill Pipe**		5.0	4.276	19.5	
Well	SPENCE TRUST NO.1	**Hevi-Weight**		5.0	3.0	49.3	
County	DUNKLIN, MISSOURI	**Drill Collars**		7.0	2.5	114.0	
Unit #	40077						

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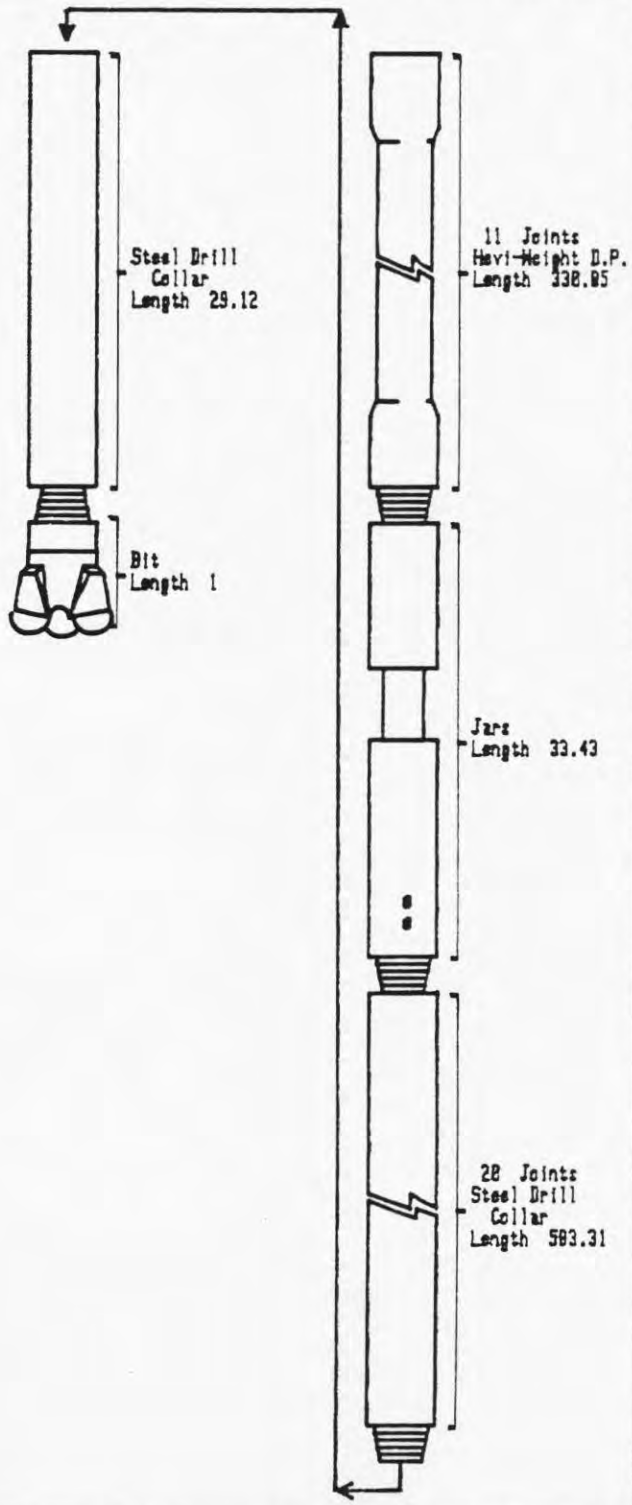

Operator	AMOCO PROD. CO.	**Bit No.**	13.2	**Type**	HUGHES J44	**IADC Code**	6/1/7
Contractor	NOBLE	**Depth In**	7902'	**Depth Out**	8041'	**Footage**	139
Rig Number	OW762			**O.D.**	**I.D.**	**Wt/Ft**	
Location	WILDCAT	**Drill Pipe**		5.0	4.276	19.5	
Well	SPENCE TRUST NO.1	**Hevi-Weight**		5.0	3.0	49.3	
County	DUNKLIN, MISSOURI	**Drill Collars**		7.0	2.5	114.0	
Unit #	40077						

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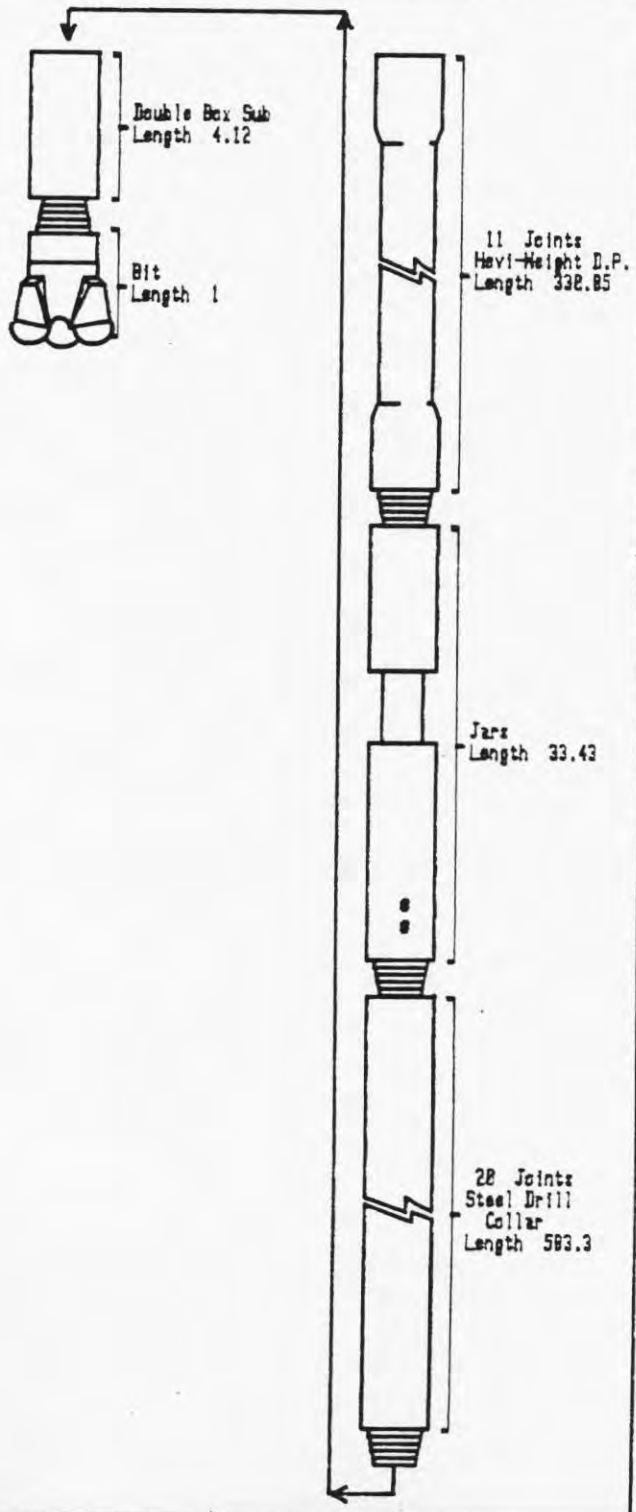

Operator	AMOCO PROD. CO.	**Bit No.**	14	**Type**	HUGHES J3	**IADC Code**	1/3/6
Contractor	NOBLE	**Depth In**	8041'	**Depth Out**	8061'	**Footage**	20
Rig Number	OW762			**O.D.**	**I.D.**	**Wt/Ft**	
Location	WILDCAT	**Drill Pipe**		3.5	2.6	13.3	
Well	SPENCE TRUST NO.1	**Hevi-Weight**		3.5	2.06	25.3	
County	DUNKLIN, MISSOURI	**Drill Collars**		4.63	2.25	47.0	
Unit #	40077						

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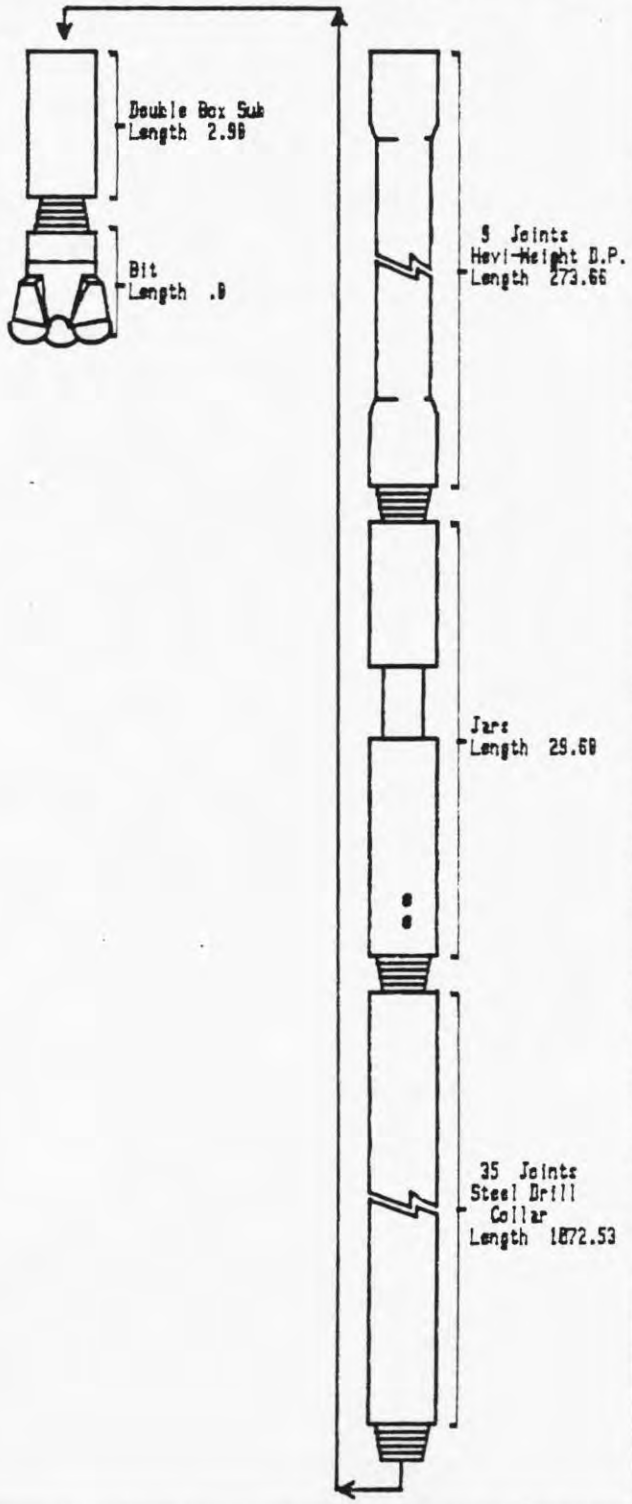

Operator	AMOCO PROD. CO.	**Bit No.**	15	**Type**	HUGHES J44	**IADC Code**	6/1/7
Contractor	NOBLE	**Depth In**	8061'	**Depth Out**	8260'	**Footage**	199
Rig Number	OW762			**O.D.**	**I.D.**	**Wt/Ft**	
Location	WILDCAT	**Drill Pipe**		3.5	2.6	13.3	
Well	SPENCE TRUST NO.1	**Hevi-Weight**		3.5	2.06	25.3	
County	DUNKLIN, MISSOURI	**Drill Collars**		4.63	2.25	47.0	
Unit #	40077						

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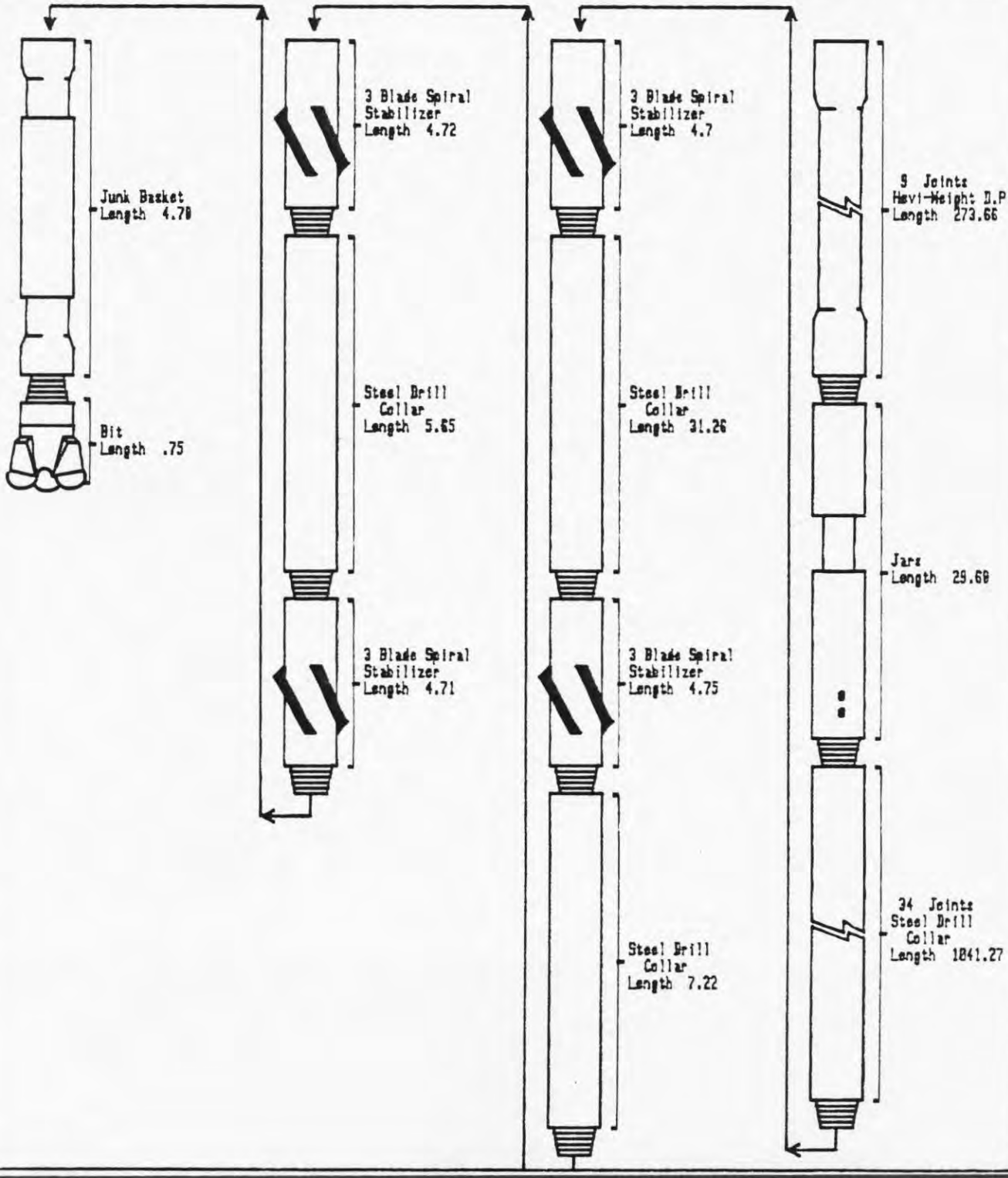

Operator	AMOCO PROD. CO.	**Bit No.**	16	**Type**	HUGHES J44	**IADC Code**	6/1/7
Contractor	NOBLE	**Depth In**	8260'	**Depth Out**	8494'	**Footage**	234
Rig Number	OW762			**O.D.**	**I.D.**	**Wt/Ft**	
Location	WILDCAT	**Drill Pipe**		3.5	2.6	13.3	
Well	SPENCE TRUST NO.1	**Hevi-Weight**		3.5	2.06	25.3	
County	DUNKLIN, MISSOURI	**Drill Collars**		4.63	2.25	47.0	
Unit #	40077						

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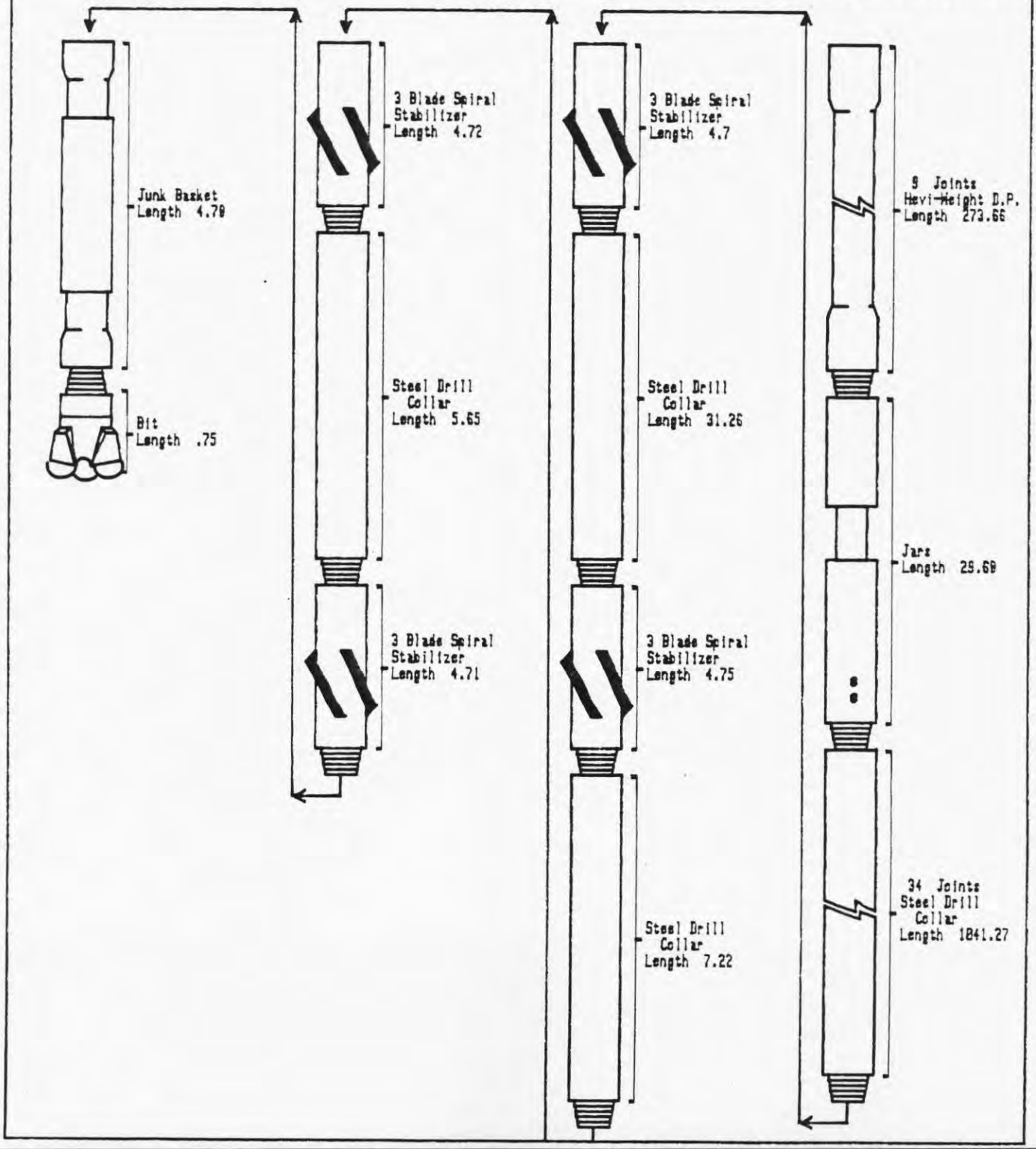

Operator	AMOCO PROD. CO.	**Bit No.**	17	**Type**	HUGHES J55R	**IADC Code**	6/2/7
Contractor	NOBLE	**Depth In**	8494'	**Depth Out**	8749'	**Footage**	255
Rig Number	OW762			**O.D.**	**I.D.**	**Wt/Ft**	
Location	WILDCAT	**Drill Pipe**		3.5	2.6	13.3	
Well	SPENCE TRUST NO.1	**Hevi-Weight**		3.5	2.06	25.3	
County	DUNKLIN, MISSOURI	**Drill Collars**		4.63	2.25	47.0	
Unit #	40077						

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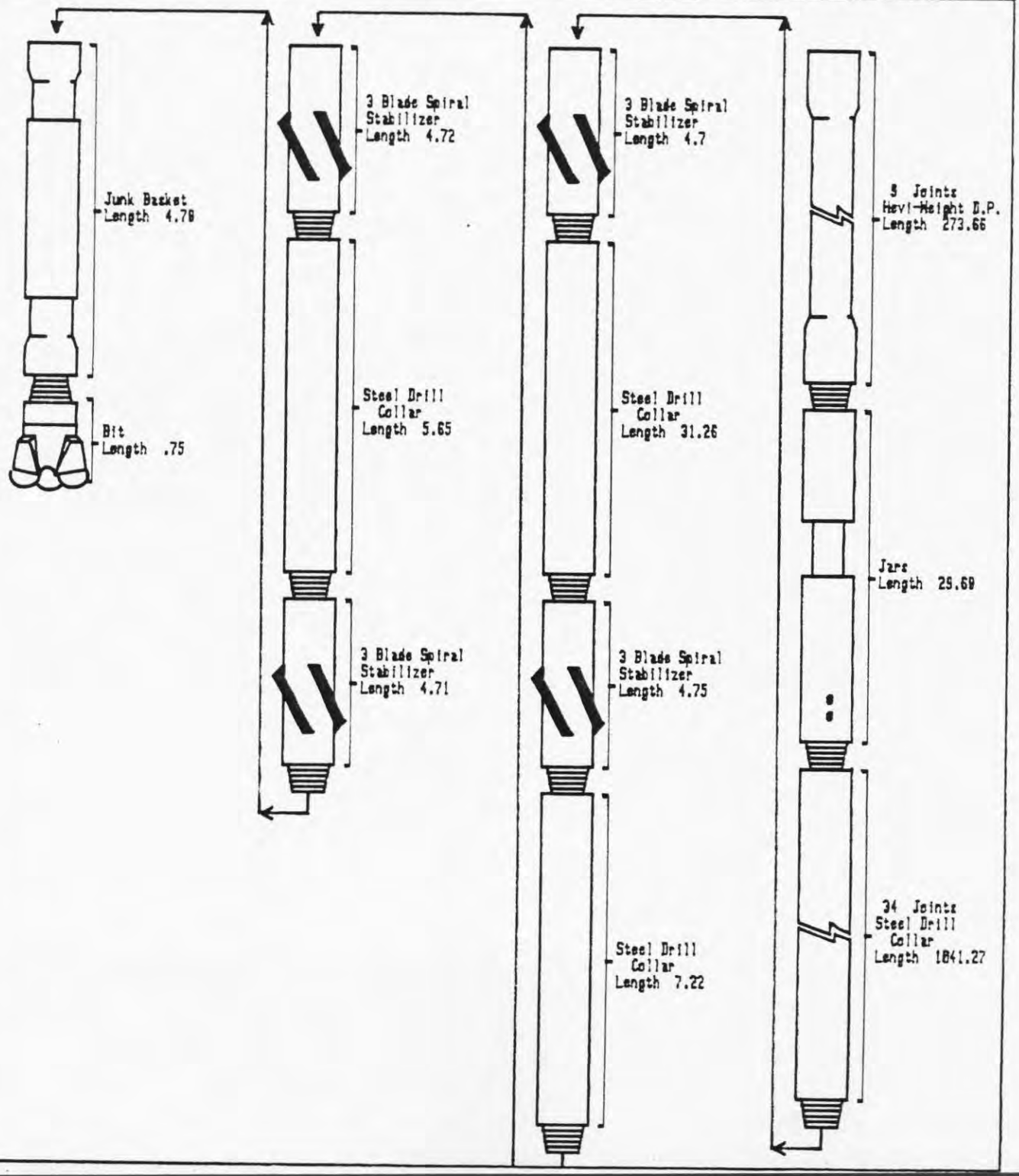

Operator	AMOCO PROD. CO.	**Bit No.**	1B	**Type**	HUGHES ATJ55R	**IADC Code**	6/2/7
Contractor	NOBLE	**Depth In**	8749'	**Depth Out**	8795'	**Footage**	46
Rig Number	OW762			**O.D.**	**I.D.**	**Wt/Ft**	
Location	WILDCAT	**Drill Pipe**		3.5	2.6	13.3	
Well	SPENCE TRUST NO.1	**Hevi-Weight**		3.5	2.06	25.3	
County	DUNKLIN, MISSOURI	**Drill Collars**		4.63	2.25	47.0	
Unit #	40077						

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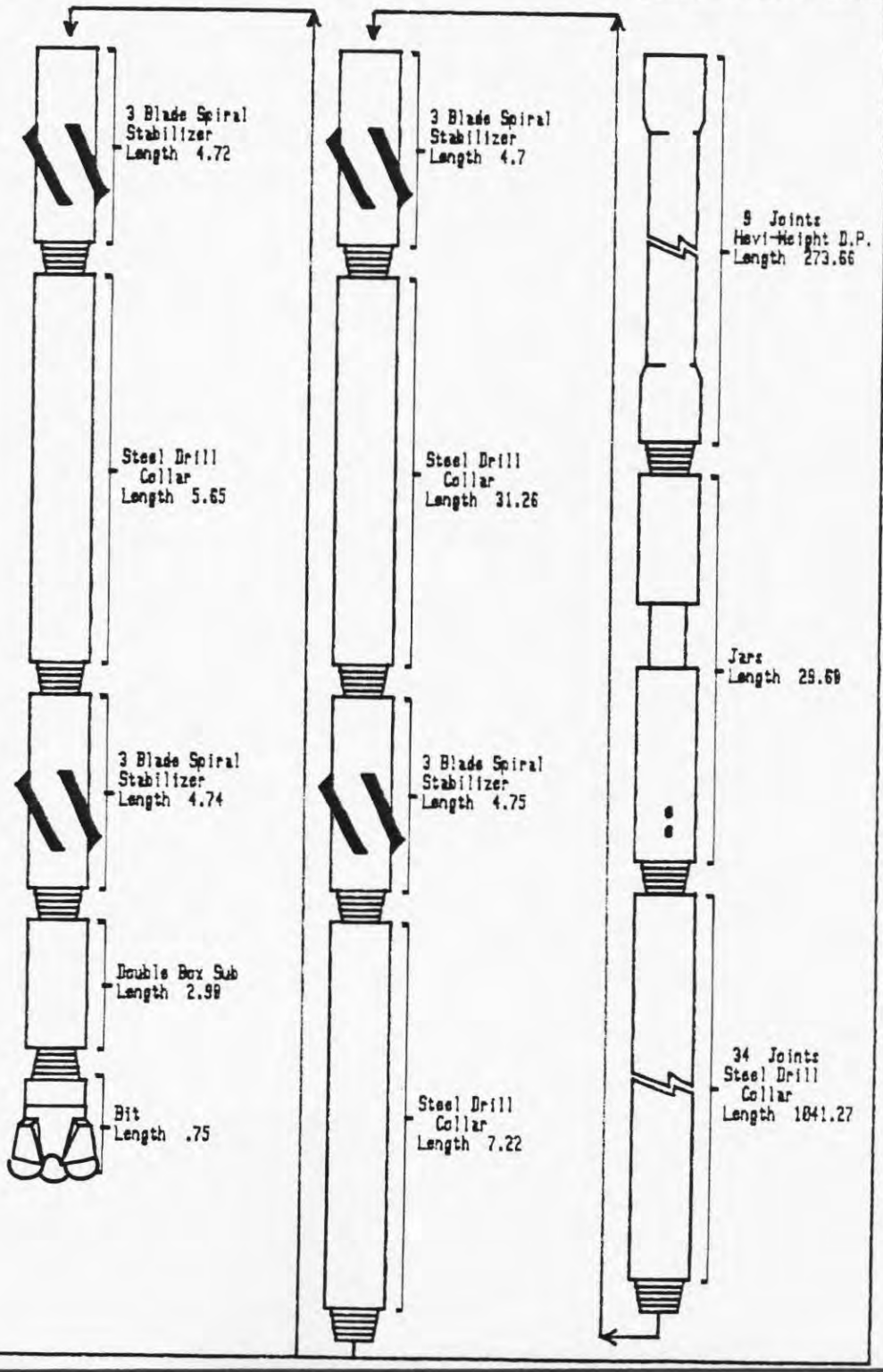

Operator	AMOCO PROD. CO.	**Bit No.**	19	**Type**	SECURITY M84F	**IADC Code**	6/1/7
Contractor	NOBLE	**Depth In**	8795′	**Depth Out**	8894′	**Footage**	99
Rig Number	OW762			**O.D.**	**I.D.**	**Wt/Ft**	
Location	WILDCAT	**Drill Pipe**		3.5	2.6	13.3	
Well	SPENCE TRUST NO.1	**Hevi-Weight**		3.5	2.06	25.3	
County	DUNKLIN, MISSOURI	**Drill Collars**		4.63	2.25	47.0	
Unit #	40077						

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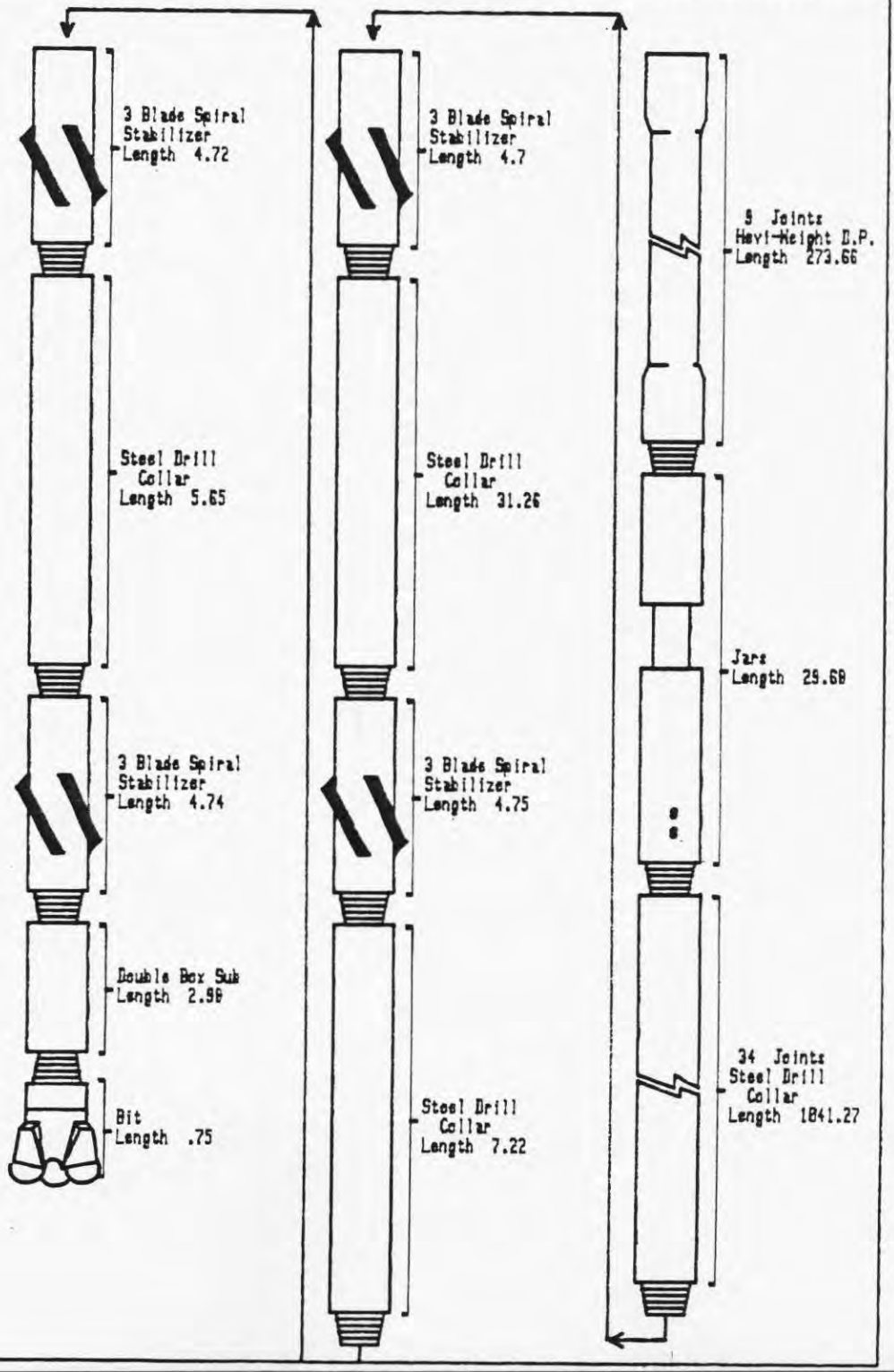

Operator	AMOCO PROD. CO.	**Bit No.**	20	**Type**	HUGHES ATJ77	**IADC Code**	7/3/7
Contractor	NOBLE	**Depth In**	8894'	**Depth Out**	9165'	**Footage**	271
Rig Number	OW762			**O.D.**	**I.D.**	**Wt/Ft**	
Location	WILDCAT	**Drill Pipe**		3.5	2.6	13.3	
Well	SPENCE TRUST NO.1	**Hevi-Weight**		3.5	2.06	25.3	
County	DUNKLIN, MISSOURI	**Drill Collars**		4.63	2.25	47.0	
Unit #	40077						

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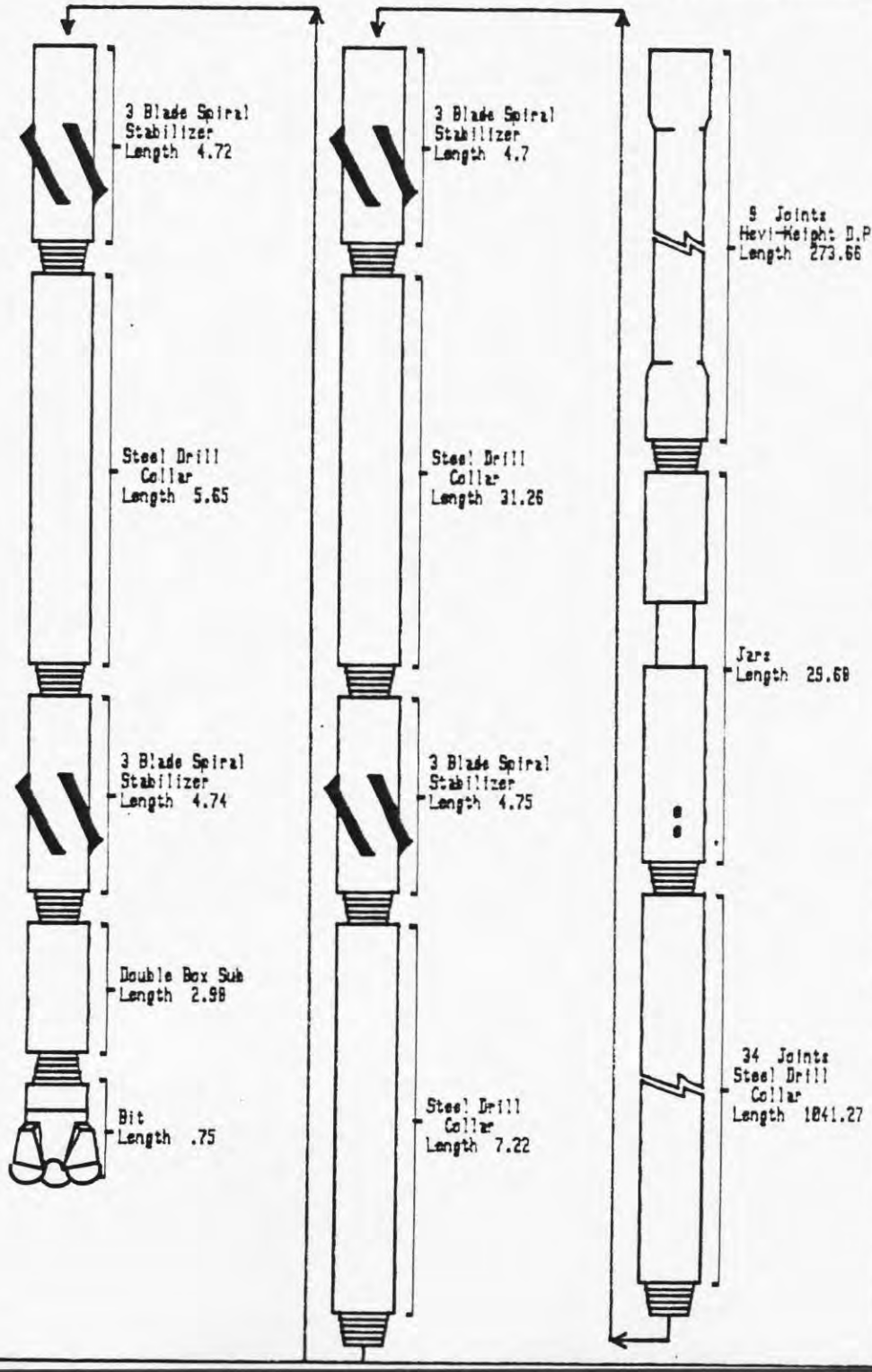

Operator	AMOCO PROD. CO.	**Bit No.**	21	**Type**	HUGHES ATJ77	**IADC Code**	7/3/7
Contractor	NOBLE	**Depth In**	9165'	**Depth Out**	9459'	**Footage**	294
Rig Number	OW762			**O.D.**	**I.D.**	**Wt/Ft**	
Location	WILDCAT	**Drill Pipe**		3.5	2.6	13.3	
Well	SPENCE TRUST NO.1	**Hevi-Weight**		3.5	2.06	25.3	
County	DUNKLIN, MISSOURI	**Drill Collars**		4.63	2.25	47.0	
Unit #	40077						

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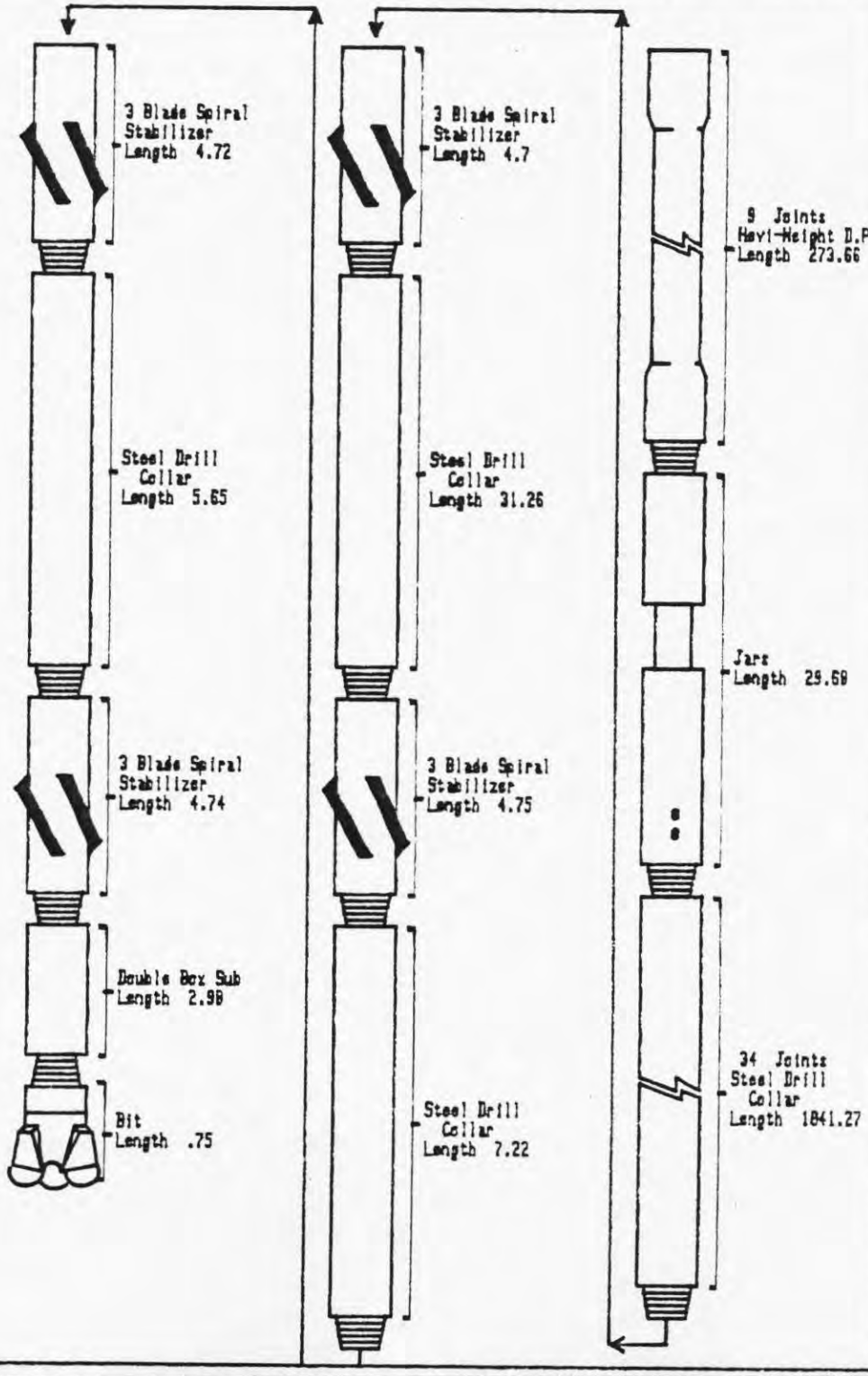

Operator	AMOCO PROD. CO.	**Bit No.**	22	**Type**	HUGHES ATJ77	**IADC Code**	7/3/7
Contractor	NOBLE	**Depth In**	9459'	**Depth Out**	9653'	**Footage**	194
Rig Number	OW762			**O.D.**	**I.D.**	**Wt/Ft**	
Location	WILDCAT	**Drill Pipe**		3.5	2.6	13.3	
Well	SPENCE TRUST NO.1	**Hevi-Weight**		3.5	2.06	25.3	
County	DUNKLIN, MISSOURI	**Drill Collars**		4.63	2.25	47.0	
Unit #	40077						

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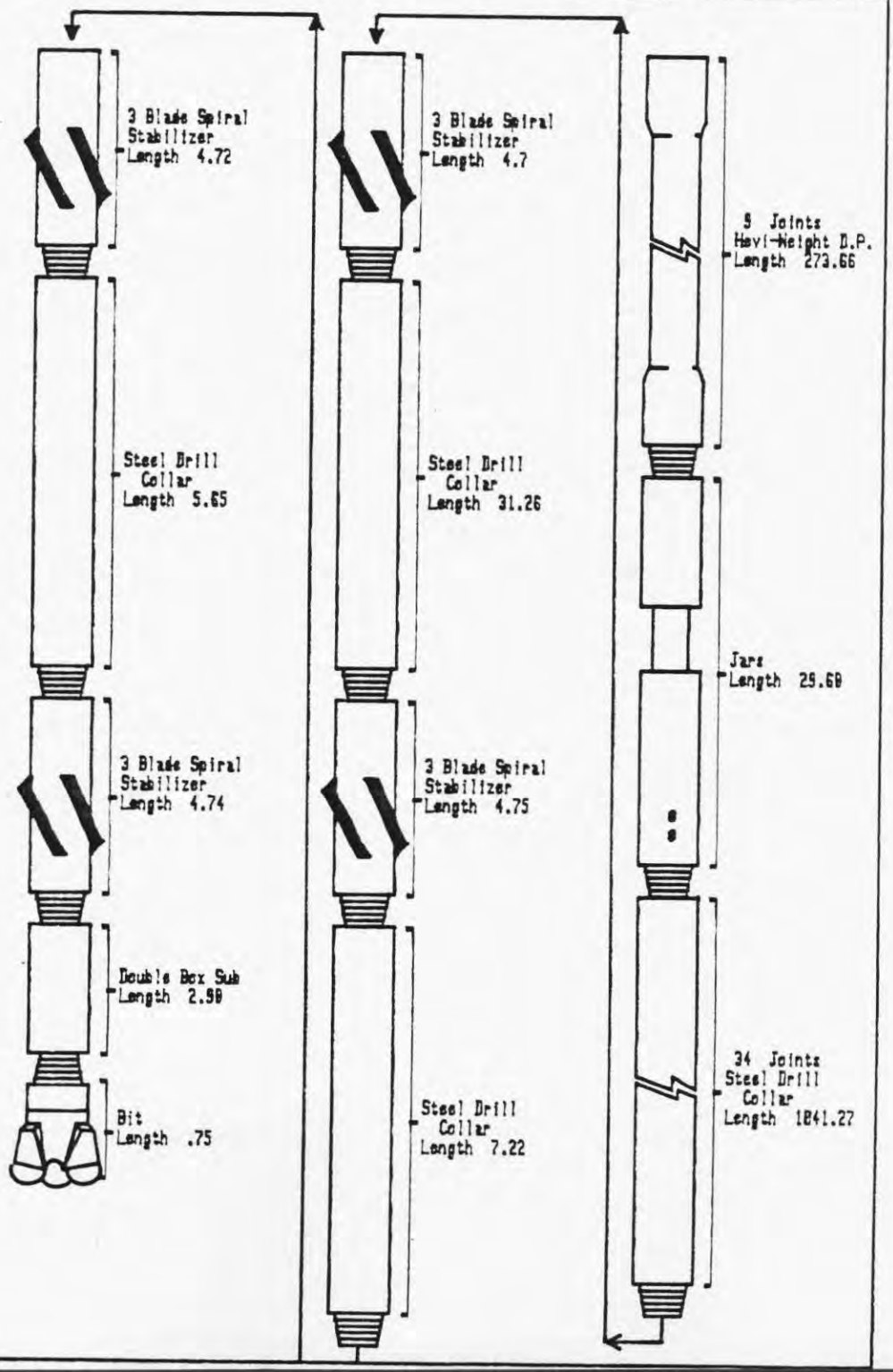

Operator	AMOCO PROD. CO.	**Bit No.**	23	**Type**	HUGHES ATJ77	**IADC Code**	7/3/7
Contractor	NOBLE	**Depth In**	9653'	**Depth Out**	9900'	**Footage**	247
Rig Number	OW762			**O.D.**	**I.D.**	**Wt/Ft**	
Location	WILDCAT	**Drill Pipe**		3.5	2.6	13.3	
Well	SPENCE TRUST NO.1	**Hevi-Weight**		3.5	2.06	25.3	
County	DUNKLIN, MISSOURI	**Drill Collars**		4.63	2.25	47.0	
Unit #	40077						

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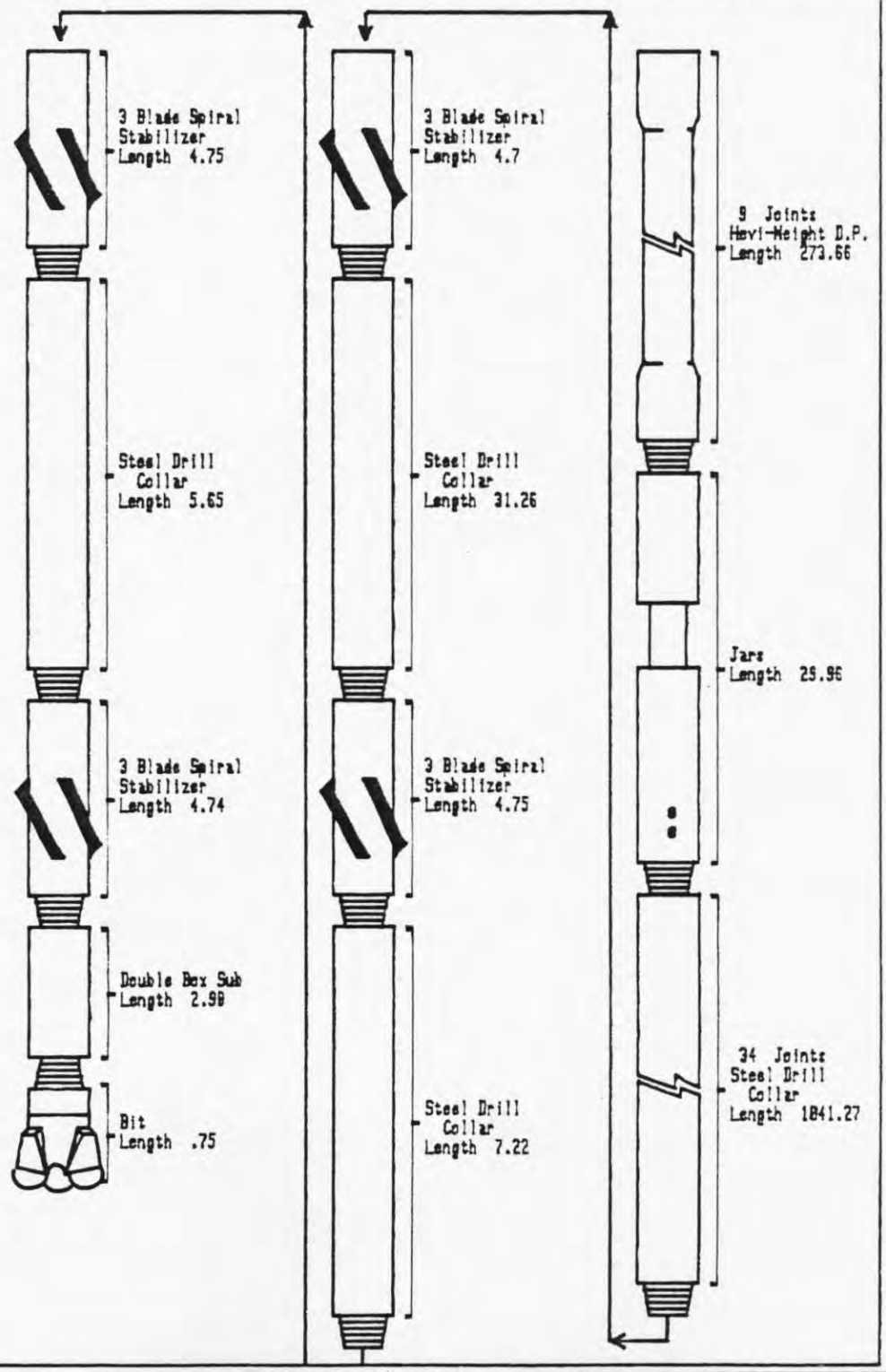
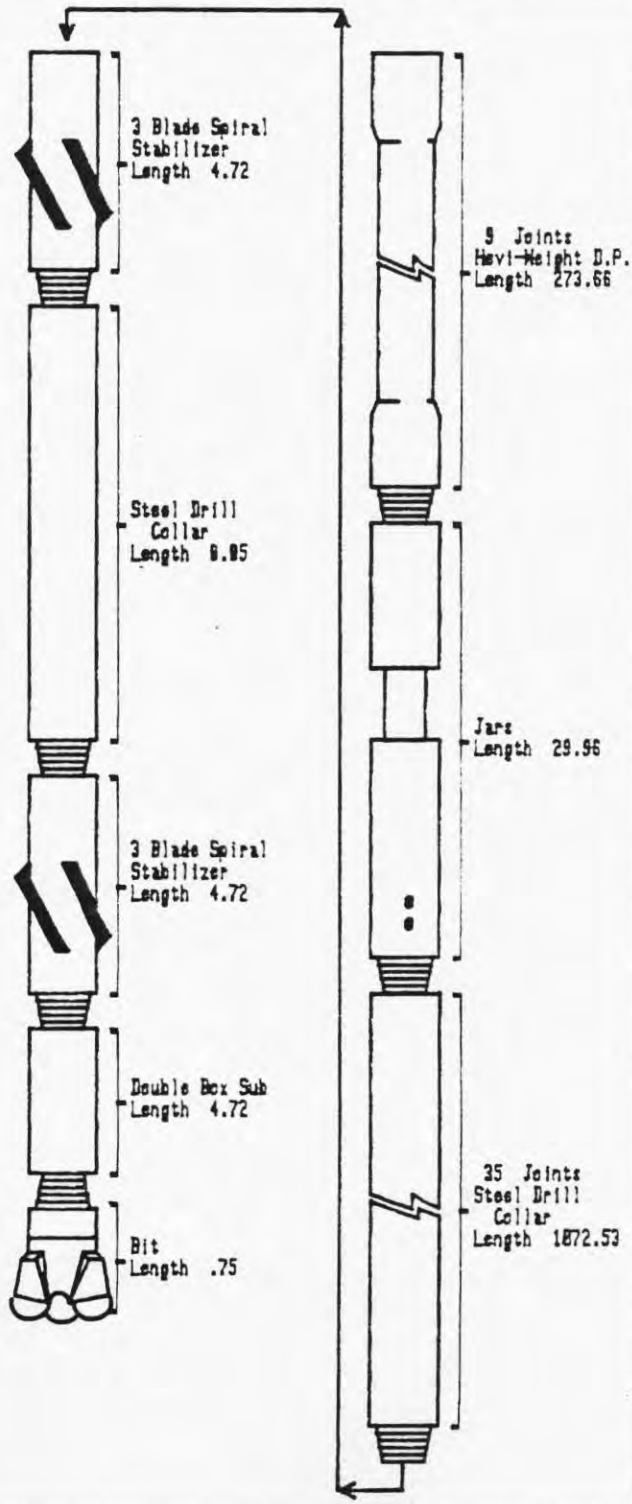


Operator	AMOCO PROD. CO.	**Bit No.**	24	**Type**	HUGHES ATJ77	**IADC Code**	7/3/7
Contractor	NOBLE	**Depth In**	9900′	**Depth Out**	10089′	**Footage**	189
Rig Number	OW762			**O.D.**	**I.D.**	**Wt/Ft**	
Location	WILDCAT	**Drill Pipe**		3.5	2.6	13.3	
Well	SPENCE TRUST NO.1	**Hevi-Weight**		3.5	2.06	25.3	
County	DUNKLIN, MISSOURI	**Drill Collars**		4.63	2.25	47.0	
Unit #	40077						

MWD / Baroid Logging Systems



Surveys

VII. SURVEYS

MD	INC. - degrees
490' -	1/2
1014' -	1/4
1496' -	1/4
2012' -	3/4
2290' -	3
2301' -	3/4
2376' -	3/4
2870' -	1/2
3175' -	3/4
3918' -	1 1/4
4430' -	1 1/4
4930' -	1 1/4
5157' -	1 1/4
5644' -	1 1/4
6031' -	3/4
7000' -	2 1/4
7275' -	2
8040' -	2 1/4
8237' -	2
8749' -	2 3/4
9150' -	2 1/2
9459' -	1 3/4
9652' -	2 3/4
10089'-	3 3/4

REMARKS

VIII. REMARKS AND RECOMMENDATIONS

A. Pore pressure

Various parameters were used to estimate the pore pressures. Among these were "Dc" exponent, temperature trends, normalized drill rate, shale density, background gas, trip gas, connection gas and hole conditions such as torque, drag and fill. Of these, only "Dc" exponent, shale density and normalized drill rate are quantitative, that is they can, with overlays or calculations actually give a measurement of the estimated pore pressure. The other parameters are qualitative, that is they may indicate that the pore pressure is increasing but not by how much.

"Dc" exponent was the primary parameter used while parameters such as background gas, temperature trends and hole conditions were used as supporting parameters. Normal pressures were found to be throughout the entire hole.

B. Casing Depths

The 24" surface pipe was set at 47'MD. No leakoff test was run.

The 16" conductor pipe was set at 250'MD. No leakoff test was run.

The 10 3/4" surface casing was set at 2037'MD. The leakoff test yielded a 12.0 PPG E.M.W.

The 7 5/8" casing was set at 8041'MD. The leakoff test yielded a 12.0 PPG E.M.W.

C. Hole Problems

The well was never shut in to control formation pressure.

In the top sections of the hole, some lost circulation problems in the sand occurred, but control drilling (keeping the drilling rates below approximately 160 ft./hr.) helped somewhat. A control drilling rate of approximately 60 ft./hr. would have been more beneficial, allowing the sand time to clear the hole and also this rate of controlled drilling could help from getting to far into a break before a flow check could be made.

VIII. REMARKS AND RECOMMENDATIONS

D. Hydraulics

The hydraulics were fairly adequate throughout this well. The MWD 2000 logging unit has a circulating and what-if hydraulics program available on demand. Programs are also available for optimized jet impact, as well as optimized hydraulic horsepower. Printouts of these values were generated upon request and turned in prior to running a new bit.

.E. Summary of Recommendations

The well was drilled safely, efficiently, and economically. To briefly summarize recommendations for future wells:

1. Control drill at 60 ft./hr. through the top sections of the hole or where sand or other hole problems may dictate.

2. Make sure all drill breaks are checked for flow and circulated out where necessary.

3. Circulate bottoms up at least twice before increasing the mud weight.

4. In top sections of the hole, where sand problems are encountered, circulate bottoms up every 2 to 3 joints.

DATA INFO.

INTERVAL SUMMARY

INTERVAL	DEPTHS	DATES	DAYS	HOLE SIZE	BITS	CASING	DEPTH SET	MUD WT.	MUD COST
I	0'-250'	11/27/87-11/29/87	3	20"	1	16.0" H-40	250'	9.3	4032.
II	250'-2037'	11/30/87-12/6/87	7	14.75"	1	10.75" L-80	2037'	9.3	5023.
III	2037'-8041'	12/7/87-1/22/88	47	9.5"	11	7.625" N-80	8041'	8.34	29138
IV	8041'-10089'	1/23/88-2/13/88	22	6.5"	11	NA	NA	8.5	16125
TOTAL	0'-10089'	11/27/87-2/13/88	79	20"-6.5"	24	NA	NA	8.3-9.3	54318

DAYS / DEPTH / MUD COST

WELL No 1

SPUD DATE 11/27/

DAY	DATE	MIDNIGHT DEPTH	MUD COST CUMULATIVE	DAY	DATE	MIDNIGHT DEPTH	MUD COST CUMULATIVE	DAY	DATE	MIDNIGHT DEPTH	MUD CO CUMULATI
1	11/28	92	$1934	41	1/7	7752	$30023				
2	11/29	250	$4032	42	1/8	7791	$30023				
3	11/30	250	$4032	43	1/9	7791	$32186				
4	12/1	526	$6270	44	1/10	7791	$33609				
5	12/2	1721	$7727	45	1/11	7842	$33845				
6	12/3	2037	$8564	46	1/12	7927	$35070				
7	12/4	2037	$9055	47	1/13	7927	$35070				
8	12/5	2037	SET ↑	48	1/14	7927	$35384				
9	12/6	2037	10 3/4"	49	1/15	7927	$37042				
10	12/7	2037	CSG	50	1/16	8033	37152				
11	12/8	2037	↓	51	1/17	8041	37653				
12	12/9	2240	$11168	52	1/18	8041	37855				
13	12/10	2346	$11759	53	1/19	8041	38030				
14	12/11	2731	$12011	54	1/20	8041	38193				
15	12/12	3072	$12438	55	1/21	8041	38193				
16	12/13	3340	$13139	56	1/22	8041	38193				
17	12/14	3520	$13614	57	1/23	8041	38193				
18	12/15	3813	$14255	58	1/24	8046	38193				
19	12/16	4127	$14796	59	1/25	8122	38390				
20	12/17	4485	$15491	60	1/26	8287	39706				
21	12/18	4525	$16066	61	1/27	8475	40117				
22	12/19	4832	$17817	62	1/28	8586	42412				
23	12/20	5113	$18726	63	1/29	8749	43752				
24	12/21	5265	$18988	64	1/30	8785	43909				
25	12/22	5530	$19619	65	1/31	8850	45445				
26	12/23	5750	$20694	66	2/1	8917	47095				
27	12/24	5981	$21011	67	2/2	9007	47256				
28	12/25	6031	$22400	68	2/3	9145	47453				
29	12/26	6199	$22964	69	2/4	9200	47811				
30	12/27	6347	$23800	70	2/5	9334	48708				
31	12/28	6600	$24452	71	2/6	9454	49605				
32	12/29	6896	$25114	72	2/7	9459	50067				
33	12/30	7000	$26490	73	2/8	9490	50167				
34	12/31	7032	$26490	74	2/9	9615	50397				
35	1/1	7138	$26648	75	2/10	9690	51713				
36	1/2	7284	$27002	76	2/11	9870	52436				
37	1/3	7371	$27563	77	2/12	9990	52862				
38	1/4	7605	$28677	78	2/13	10000	52982				
39	1/5	7691	$29700	79	2/14	10088	54318				

Berold Logging Systems

BIT AND HYDRAULIC SUMMARY

WELL: SPENCE TRUST #1
RIG: DW 762 NOBLE
DATE: 11/27/87

OPERATOR: AMOCO PROD. CO
OP. REP.: CARMAN / YOUNG
BLS. REP.: GALLAGHER/GOLDGRABER

	1	2
PUMP:	PZ-9	PZ-9
DIAMETER:	6 1/2	6 1/2
STROKE:	9"	9"
OUTPUT:	.052/.066	.052/.066

RIG COST: 166.67 /hr.
TRIP TIME: 1000 FT/HR
CONN TIME: 4.0 min

DATE IN	BIT NO	BIT TYPE	IADC CODE	BIT SIZE	JET SIZES	DEPTH OUT	INTERVAL	BIT HRS	BIT WT	BIT RPM	PUMP SPM	PUMP D/P	PUMP PRESS	DP/DC SIZE	VELOCITY DP/DC	VELOCITY JET	BIT-HHP /INS	BIT-HHP %	MUD WT	MUD PV/YP	COND TBG	COST /FT	GEOLOGY FORM	GEOLOGY TYPE	REMARKS
11/27	1	STC F47	1-1-1	20"	16-16-16	250	250	11.5	15.0	67	99	325	900	5"/8 1/2"	0/20	175	0.3	28	9.3	7/15	1-0-I	NA		SD-SH	
11/30	2	STC F35	1-1-4	14.75"	16-16-16	1037	1787	39.3	21.0	80	94	600	1600	5"/8 1/2", 7"	101/222	320	1.8	49	9.3	10/12	3-0-I	$8.		SD-LS-SH	
12/7	3	HTC J-3	1-3-6	9.5	11-11-11	2301	264	262	22.3	89	100	314	1185	5"/7"	53/188	192	0.3	18	8.7	4/6	6-0-I	$6.		SD-LS-DOL	
12/9	4	HTC J-33	5-3-7	9.5	11-11 10	2176	875	53.6	42.7	79	100	369	1573	5"/7"	224/136	448	4.7	100	8.9	4/5	6-0-I	$20.		LS-DOL.	
12/12	5	HTC ATJ-33	5-3-7	9.5	11-11 10	3420	244	203	44.5	93	101	371	1827	5"/7"	223/137	461	5.2	88	8.9	5/6	8-0-I	NA	KNOX	LS-DOL, CHT	PYR.
12/15	6	HTC ATJ-33R	6-2-7	9.5	11-11 10	4517	1097	77.4	46.4	72	101	371	1899	5"/7"	221/139	454	4.9	84	8.7	7/7	3-0	$20	KNOX	DOL LS CHT	PYR.
12/17	7	HTC ATJ-33R	6-2-7	9.5	11-11 10	5158	641	47.9	45	65	101	371	1961	5"/7"	223/137	454	4.9	82.6	8.8	7/7	3-00	$27	KNOX	SD DOL LS CHT	OUT OF GAUGE 1/8"
12/20	8	SHT F5	6-2-7	9.5	11-11 10	6033	875	77.5	45	50	100	369	2050	5"/7"	215/135	440	4.6	77.2	8.9	7/7	3-0-0	$26	KNOX	SD DOL CHT PYR	OUT OF GAUGE 3/4"
12/24	9	SHT F5	6-2-7	9.5	11-11 10	6251	218	18.2	60	45	100	369	2050	5"/7"	136/246	443	4.7	84.6	8.9	7/7	1-0-I	$49	KNOX	DOL CHT	$5500
12/26	10	HTC J77	7-3-7	9.5	11-11 10	7000	749	61.6	50.3	44	99	365	1861	5"/7"	119/189	253	1.5	152.1	8.9	7/7	6-0-I	$23	KNOX BLUFF	DOL LS SH	$5500
12/30	11	EC C-33	NA	8.75	TFA .40	7030	30	9.1	17.9	88	91	291	900	5"/7"	119/189	253	1.5	152.1	8.9	9/10	NG	NA	BOWER TERRE	LS DOL	CORE BIT RECOVER 30'
12/31	RR 9	STC F5	6-2-7	9.5	11-11 10	7275	275	20.8	49.5	49	100	359	1900	5"/7"	133/211	433	4.4	80.7	8.9	9/12	6-0-0	$41	BOWER TERRE	LS DOL	OUT 1/8"
1/1	RR 11	EC C-23	NA	8.75	TFA .40	7306	31	7.7	20.9	65	91	291	899	5"/7"	120/190	252	1.4	152.3	8.9	10/10	NG	NA	BOWER TERRE	LS DOL	CORE BIT RECOVER 30'
1/2	12	HTC J55R	6-2-7	9.5	11-11-11	7692	386	36.6	47.8	57	101	377	2002	5"/7"	103/220	434	4.7	74.6	9.02	9/9	5-0-I		BOWER TERRE	LS DOL SH	TWIST OFF IN DC'S 509' FISH
1/4	RR 11	EC C-23	NA	8.75	TFA .40	7722	30	7.1	20.2	71	79	292	1093	5"/7"	85/178	253	1.5	34.6	8.91	10/9	NG	NA	BOWER TERRE	DOL.	CORE BIT RECOVERY 30'
1/5	RR 12-1	HTC ATJ-26	NA	8.75	TFA .40	7752	30	8.0	21.2	83	78	290	1088	5"/7"	78/179	232	1.2	35.7	8.91	7/8	NG	NA	BOWER TERRE	DOL.	CORE BIT RECOVER 29'
1/6	13	HTC J55R	6-2-7	9.5	11-11-11	7791	39	2.6	47.3	50	78	292	901	5"/7"	79/174	236	2.1	99.2	8.93	7/7	NG	NA	BOWER TERRE	DOL.	LOST CIRC. POOH TO LAYDOWN STAB
1/8	13	HTC ATJ-26	6-1-7	9.5	42-42-42 NO JETS	7791	0	COULD	NOT	CIRCULATE - LOST				CIRCULATION				(SEE REMARKS)							NO FORMATION DRILLED UPPER 15 TAG BOTTOM AFTER LOSING CIRC.
1/10	RR 13	HTC ATJ-26	6-1-7	9.5	42-42-42 NO JETS	7902	111	13.4	27.4	42	79	288	286	5"/7"	114/181	30	0	2.5	8.34	NA	NG	NA	BOWER TERRE		CIRC - NO RETURNS
1/13	RR 13	HTC ATJ-26	6-1-7	9.5	42-42-42 NO JETS	8041	117	18.5	27.4	42	79	288	286	5"/7"	137/219	36	0	2.4	8.34	NA	NG	NA	BOWER TERRE		CIRC WITH AIR & MUD [illegible]
1/23	14	HTC J3	1-3-6	6.75	10-10-10	8061	20	46	16.0	46	100	222	2204	4 1/2" 4 5/8	162/286	323	8.0	106	8.34	NA	7-00	413	BOWER TERRE	DOL	DRILLED JUNK, CHT TO 20 NEW HOLE
1/24	15	HTC J114	6-1-7	6.5	10-10-10	8260	199	19.6	31.8	46	94	297	2361	4 1/2" 4 5/8	179/197	394	9.0	131	8.6	3/2	7-00	45	BOWER TERRE	DOL/LS	TARR

Baroid Logging Systems

BIT AND HYDRAULIC SUMMARY

WELL: SPELLCE TRUST #1
RIG: DWI 762 NORLE
DATE: 11/27/87

OPERATOR: AMOCO PROD. CO
OP. REP.: CARMAN / YOUNG
BLS. REP.: GALLAGHER / GOLDSBY / MERRED

	1	2
PUMP:	P-9	P-9
DIAMETER:	6½" / 5½"	6½" / 5½"
STROKE:	9"	9"
OUTPUT:	.052 / .0166	.092 / .0166

RIG COST: 166.67 / hr.
TRIP TIME: 1000 FT / hr.
CONN TIME: 40 MIN

DATE IN	BIT NO	BIT TYPE	IADC CODE	BIT SIZE	JET SIZES	DEPTH OUT	INTERVAL	BIT HRS	BIT WT	BIT RPM	PUMP SPM	PUMP O/P	PUMP PRESS	DP/DC SIZE	VELOCITY DP/DC	VELOCITY JET	BIT-HHP /IN2	BIT-HHP %	MUD WT	MUD PV/YP	COND TRQ	COST /FT	GEOLOGY FORM	GEOLOGY TYPE	REMARKS
1/27	17	HTC ATJ 33R	627	6.5	3-10	8749	255	34.3	33.2	46	92	256	2895	3½/4⅝	176/297	350	4.2	39.3	8.6	5/5	883	45	Bowie Tensleep	LS DOL	TEETH SHOT BEARING EFFECTIVE
1/29	18	HTC ATJ 33R	627	6.5	OPEN	8795	46	9.3	32.9	42	109	302	2396	3½/4⅝	211/357	215	1.9	15.2	8.7	3/8	188	161	N/A	LS DOL	PULLED GREEN
1/30	19	SDC MDHE	617	6.5	3-10 1-11	8894	99	21.3	32.9	42	93	287	2096	3½/4⅝	180/304	335	3.9	41.9	8.6	7/8	880	50	N/A	DOL LS	OUT OF GAUGE TEETH SHOT BEARING EFF
1/31	20	HTC ATJ 33	737	6.5	3-10	9165	271	52.3	34.1	47	91	252	2455	3½/4⅝	179/294	347	4.0	37.3	8.5	4/1	381	59	N/A	DOL LS	
2/3	21	HTC ATJ 33	737	6.5	3-10	9459	294	55.1	35.7	45	90	246	2510	3½/4⅝	173/291	343	3.8	35.6	8.5	5/1	880	56	N/A	DOL LS	OUT ¼"
2/6	22	HTC ATJ 33	737	6.5	3-10	9653	194	40.9	34.6	45	90	250	2495	3½/4⅝	176/299	301	2.6	35.0	8.6	2/2	860	70	N/A	DOL LS	OUT ¼"
2/9	23	HTC ATJ 33	737	6.5	3-10	9901	248	39.2	31.8	45	90	250	2468	3½/4⅝	203/292	344	3.9	36.7	8.5	1/2	581	50	N/A	DOL LS	STABILIZER AND ROW COLLAPSE BEARING AT JOINTS
2/11	24	HTC ATJ 33	737	6.5	3-10	10089	188	31.0	31.2	45	90	250	2498	3½/4⅝	204/295	349	4.1	37.0	8.5	3/3	860	62	LANSING	SS	TRIP TO C-LOG OUT ¼" TO REACHED 2-13-88

DAILY MUDLOGGER REPORT

OPERATIONS GEOLOGIST: STEVE ROHR (713-556-2528) 2931

DATE: 12 - 1 - 87

WELL NAME: SPENCE TRUST #1
OPERATOR: AMOCO PRODUCTION COMPANY
LOCATION: DUNKLIN COUNTY, MISSOURI
SPUD DATE: 11-28-87
TIME: 0600

LOGGING COMPANY: NL BAROID
MUDLOGGER: EMMETT KEENER / CHRIS GALLK
GEOLOGIST: TODD STEPHENSON
SAMPLE INTERVAL: 250' - 915'

TD: 915

FOOTAGE LAST 24 HOURS: 665'

CURRENT OPERATION: DRILLING

STRATIGRAPHIC INTERVAL CURRENTLY DRILLING: WILCOX GROUP

DRILLING RATE: 30 ft/hr to 1200 ft/hr.

LAG TIME: 1850 stks b.u. 10 minutes

WEIGHT ON BIT: 0 - 5 KLB
PUMP OR AIR PRESSURE: 1645 Pump 1 92 spm Pump 2 93 spm
RPM (ROTARY SPEED). 85 - 90
TORQUE (ROTARY TORQUE:BIT CHATTER) 20-25 amps

MUD WEIGHT (lbs/gal): 9.1
MUD VISCOSITY)MARSH FUNNEL): 37
MUD SALINITY (PPM): 400

BIT NO. (TYPE): #2 SECURITY S33S

SHOWS: NONE

TESTS: Check trap line and gas detector

WIRE LINE SURVEYS: N/A

FORMATION TOPS: NA

LITHOLOGIC DESCRIPTION: Sd: Clr, Wh, Fros, F-m Gr, Subang-Subrnd, m srT, uncons, tr lit, tr glauc

COMMENTS: Samples are clean like beach sand
BKGD GAS 0-15 units

DAILY MUDLOGGER REPORT

OPERATIONS GEOLOGIST: STEVE ROHR (713-556-2528)

DATE: 12/2/87

WELL NAME: SPENCE TRUST #1
OPERATOR: AMOCO PRODUCTION COMPANY
LOCATION: DUNKLIN COUNTY, MISSOURI
SPUD DATE: 11-28-87
TIME: 0600

LOGGING COMPANY: NL BAROID
MUDLOGGER: CHRIS GALLAGHER
GEOLOGIST: TODD STEPHENSON
SAMPLE INTERVAL: 915 - 1925

TD: 1925 ft 915 FOOTAGE LAST 24 HOURS: 1010
CURRENT OPERATION: DRILLING

STRATIGRAPHIC INTERVAL CURRENTLY DRILLING:

DRILLING RATE: 48 FT/HR TO 136 FT/HR LAG TIME: 4160 STKS DU 23.5 MINUTES
WEIGHT ON BIT: 0 - 20 KLB
PUMP OR AIR PRESSURE: 1650
RPM (ROTARY SPEED). 35 - 100
TORQUE (ROTARY TORQUE:BIT CHATTER) 20 - 25 AMPS

MUD WEIGHT (lbs/gal): 9.2
MUD VISCOSITY)MARSH FUNNEL): 38
MUD SALINITY (PPM): 400

BIT NO. (TYPE): 2 SECURITY S335 2-16 1-18 14 3/4"

SHOWS: NONE

TESTS: GAS DETECTOR & GC2000

WIRE LINE SURVEYS: n.a

FORMATION TOPS: NA

LITHOLOGIC DESCRIPTION: 80% SD - CLR WH F CR SUB RD UNCONS
20% SH - DK GY SFT-FRM SLTY TR PYR. TR GLAUC

COMMENTS: DRILLING AHEAD BACK GROUND GAS 0-15 UNITS

SH/ea
263/B

DAILY MUDLOGGER REPORT

OPERATIONS GEOLOGIST: STEVE ROHR (713-556-2528)

DATE: 12/3/87

WELL NAME: SPENCE TRUST #1
OPERATOR: AMOCO PRODUCTION COMPANY
LOCATION: DUNKLIN COUNTY, MISSOURI
SPUD DATE: 11-28-87
TIME: 0600

LOGGING COMPANY: NL BAROID
MUDLOGGER: CHRIS GALLAGHER
GEOLOGIST: TODD STEPHENSON
SAMPLE INTERVAL: 1925 - 2037

TD: 2037

FOOTAGE LAST 24 HOURS: 112

CURRENT OPERATION: RUNNING WIRELINE LOGS

STRATIGRAPHIC INTERVAL CURRENTLY DRILLING: KNOX

DRILLING RATE: 4-8 FT/HR TO KNOX 4-5 FT/HR IN KNOX

LAG TIME: 46 MINS.

WEIGHT ON BIT: 35-45 KLB
PUMP OR AIR PRESSURE: 1685
RPM (ROTARY SPEED). 70
TORQUE (ROTARY TORQUE:BIT CHATTER) 25 AMP

MUD WEIGHT (lbs/gal): 9.3
MUD VISCOSITY)MARSH FUNNEL): 46
MUD SALINITY (PPM): 400

BIT NO. (TYPE): 2 SECURITY S33S 2-16's 1-18 14 3/4"

SHOWS: NONE

TESTS: GAS DETECTOR + GC2000

WIRE LINE SURVEYS: 3/4° 2002 FT

FORMATION TOPS: KNOX ~~1930~~ 1961

LITHOLOGIC DESCRIPTION: LS - DK GY BRN, F-XLN TO MICRO XLN, DNSE, ND

COMMENTS: RUN WIRELINE LOGS, SET CSG.

SN/ea
263/B

DAILY MUDLOGGER REPORT

OPERATIONS GEOLOGIST: STEVE ROHR (713-556-2528)

DATE: 12-4-87

WELL NAME: SPENCE TRUST #1

OPERATOR: AMOCO PRODUCTION COMPANY

LOCATION: DUNKLIN COUNTY, MISSOURI

SPUD DATE: 11-28-87

TIME: 0600

LOGGING COMPANY: NL BAROID

MUDLOGGER: CHRIS JIM

GEOLOGIST: TODD STEPHENSON

SAMPLE INTERVAL:

TD: 2037

FOOTAGE LAST 24 HOURS: 0

CURRENT OPERATION: R.U to Run 10 3/4" CSG

STRATIGRAPHIC INTERVAL CURRENTLY DRILLING: Knox

DRILLING RATE: NA

WEIGHT ON BIT: NA

LAG TIME: 46 MIN

PUMP OR AIR PRESSURE: 1127

RPM (ROTARY SPEED). NA

TORQUE (ROTARY TORQUE:BIT CHATTER) NA

MUD WEIGHT (lbs/gal): 9.3

MUD VISCOSITY)MARSH FUNNEL): 47

MUD SALINITY (PPM): 400

BIT NO. (TYPE): 2 SEC S33S 1787' 46'/HR AVG 38.3 HRS

SHOWS: NONE

TESTS: GC 2000

WIRE LINE SURVEYS:

FORMATION TOPS:

LITHOLOGIC DESCRIPTION: 2037' LS DK GY F-MICRO XLN ONSE HD

COMMENTS: Run WIRELINE LOGS, made wiper trip, CIRC & COND MUD to RUN 10 3/4" CSG

SN/ea
263/B

DAILY MUDLOGGER REPORT

OPERATIONS GEOLOGIST: STEVE ROHR (713-556-2528)
DATE: 12-5-87

WELL NAME: SPENCE TRUST #1
OPERATOR: AMOCO PRODUCTION COMPANY
LOCATION: DUNKLIN COUNTY, MISSOURI
SPUD DATE: 11-28-87
TIME: 0600

LOGGING COMPANY: NL BAROID
MUDLOGGER: CHRIS JIM
GEOLOGIST: TODD STEPHENSON
SAMPLE INTERVAL:

TD: 2037
FOOTAGE LAST 24 HOURS: 0
CURRENT OPERATION: WORK ON BOP STACK

STRATIGRAPHIC INTERVAL CURRENTLY DRILLING: KNOX

DRILLING RATE: NA
LAG TIME: 46 MIN
WEIGHT ON BIT: NA
PUMP OR AIR PRESSURE: NA
RPM (ROTARY SPEED). NA
TORQUE (ROTARY TORQUE:BIT CHATTER) NA

MUD WEIGHT (lbs/gal):
MUD VISCOSITY)MARSH FUNNEL):
MUD SALINITY (PPM):

BIT NO. (TYPE): NA

SHOWS: NONE

TESTS: TEST GAS TRAP LINE + GC 2000

WIRE LINE SURVEYS:

FORMATION TOPS:

LITHOLOGIC DESCRIPTION:

COMMENTS: WET SAMPLES MAILED 12/4/87 50'—2037'
GREYHOUND RECEIPT'S 202-476, 202-475, 202-473, 202-474, 202-477,

SN/ea
263/B

DAILY MUDLOGGER REPORT

OPERATIONS GEOLOGIST: STEVE ROHR (713-556-2528)

DATE: 12-6-87

WELL NAME: SPENCE TRUST #1

OPERATOR: AMOCO PRODUCTION COMPANY

LOCATION: DUNKLIN COUNTY, MISSOURI

SPUD DATE: 11-28-87

TIME: 0600

LOGGING COMPANY: NL BAROID

MUDLOGGER: CHRIS SIM

GEOLOGIST: TODD STEPHENSON

SAMPLE INTERVAL:

TD: 2037

FOOTAGE LAST 24 HOURS: 0

CURRENT OPERATION: WORK ON BOP

STRATIGRAPHIC INTERVAL CURRENTLY DRILLING:

DRILLING RATE: NA

LAG TIME:

WEIGHT ON BIT: NA

PUMP OR AIR PRESSURE: NA

RPM (ROTARY SPEED). NA

TORQUE (ROTARY TORQUE:BIT CHATTER)

MUD WEIGHT (lbs/gal):

MUD VISCOSITY)MARSH FUNNEL):

MUD SALINITY (PPM):

BIT NO. (TYPE): NA

SHOWS: NONE

TESTS: TEST GAS DETECTOR

WIRE LINE SURVEYS:

FORMATION TOPS:

LITHOLOGIC DESCRIPTION:

COMMENTS: WORK ON BOP

SN/ea
263/B

DAILY MUDLOGGER REPORT

OPERATIONS GEOLOGIST: STEVE ROHR (713-556-2528)

DATE: 12-7-87

WELL NAME: SPENCE TRUST #1
OPERATOR: AMOCO PRODUCTION COMPANY
LOCATION: DUNKLIN COUNTY, MISSOURI
SPUD DATE: 11-28-87
TIME: 0600

LOGGING COMPANY: NL BAROID
MUDLOGGER: CHRIS JIM
GEOLOGIST: TODD STEPHENSON
SAMPLE INTERVAL:

TD: 2077
CURRENT OPERATION:

FOOTAGE LAST 24 HOURS: 0

STRATIGRAPHIC INTERVAL CURRENTLY DRILLING:

DRILLING RATE: NA
WEIGHT ON BIT: NA
PUMP OR AIR PRESSURE: NA
RPM (ROTARY SPEED). NA
TORQUE (ROTARY TORQUE:BIT CHATTER)

LAG TIME:

MUD WEIGHT (lbs/gal):
MUD VISCOSITY)MARSH FUNNEL):
MUD SALINITY (PPM):

BIT NO. (TYPE): NA

SHOWS:

TESTS:

WIRE LINE SURVEYS:

FORMATION TOPS:

LITHOLOGIC DESCRIPTION:

COMMENTS: FINISH NIPPLE UP AND TEST BOP'S

SN/ea
263/B

DAILY MUDLOGGER REPORT

OPERATIONS GEOLOGIST: STEVE ROHR (713-556-2528)

DATE: 12-8-87

WELL NAME: SPENCE TRUST #1
OPERATOR: AMOCO PRODUCTION COMPANY
LOCATION: DUNKLIN COUNTY, MISSOURI
SPUD DATE: 11-28-87
TIME: 0600

LOGGING COMPANY: NL BAROID
MUDLOGGER: JIM GOLDSBY
GEOLOGIST: TODD STEPHENSON
SAMPLE INTERVAL: 2037-2055

TD: 2054
CURRENT OPERATION: DRILLING

FOOTAGE LAST 24 HOURS: 17 FT

STRATIGRAPHIC INTERVAL CURRENTLY DRILLING: KNOX

DRILLING RATE: 5.0 FT/HR 12 MIN PER FT
WEIGHT ON BIT: 20 KLB
PUMP OR AIR PRESSURE: 1650
RPM (ROTARY SPEED): 70-80
TORQUE (ROTARY TORQUE:BIT CHATTER) 150 AMPS

LAG TIME: 1930 STRKS BOTTOMS UP 24 MIN

MUD WEIGHT (lbs/gal): 8.3
MUD VISCOSITY)MARSH FUNNEL): 30
MUD SALINITY (PPM): 300

BIT NO. (TYPE): J3 BIT NO 3 NOZZLES 3-11

SHOWS: NONE

TESTS: TEST GAS DETECTOR

WIRE LINE SURVEYS: NONE

FORMATION TOPS:

LITHOLOGIC DESCRIPTION: 100% L.S. - MED PY BRN TAN F- MICRO XLN HD, DNSE

COMMENTS: TESTED FORM TO 12.0 PPG DRILLING AHEAD

SN/ea
263/B

DAILY MUDLOGGER REPORT

OPERATIONS GEOLOGIST: STEVE ROHR (713-556-2528)

DATE: 12-5-87

WELL NAME: SPENCE TRUST #1
OPERATOR: AMOCO PRODUCTION COMPANY
LOCATION: DUNKLIN COUNTY, MISSOURI
SPUD DATE: 11-28-87
TIME: 0600

LOGGING COMPANY: NL BAROID
MUDLOGGER: JIM GOLDSBY
GEOLOGIST: TODD STEPHENSON
SAMPLE INTERVAL: 2055 - 2290

TD: 2280

FOOTAGE LAST 24 HOURS: 235

CURRENT OPERATION: DRILLING

STRATIGRAPHIC INTERVAL CURRENTLY DRILLING: KNOX

DRILLING RATE: 11.0 ft/hr 5.4 min/ft. LAG TIME: 2060 stks
WEIGHT ON BIT: 30 KLB
PUMP OR AIR PRESSURE: 1450
RPM (ROTARY SPEED). 70 - 80
TORQUE (ROTARY TORQUE:BIT CHATTER) 195 AMPS

MUD WEIGHT (lbs/gal): 8.5
MUD VISCOSITY)MARSH FUNNEL): 32
MUD SALINITY (PPM): 200

BIT NO. (TYPE): J3 BIT NO 3 NOZZLES 3-11

SHOWS: NONE

TESTS: TEST GAS TRAP LINE AND TEST GAS DETECTOR

WIRE LINE SURVEYS: N.A

FORMATION TOPS:

LITHOLOGIC DESCRIPTION: 100% LS- wh/CRM TN DK BRN SUC
F-MICRO XLN HD DNSE

COMMENTS: DRILLING AHEAD BACK GROUND GAS 1 UNIT

SN/oo

DAILY MUDLOGGER REPORT

OPERATIONS GEOLOGIST: STEVE ROHR (713-556-2528)

DATE: 12-10-87

WELL NAME: SPENCE TRUST #1
OPERATOR: AMOCO PRODUCTION COMPANY
LOCATION: DUNKLIN COUNTY, MISSOURI
SPUD DATE: 11-28-87
TIME: 0600

LOGGING COMPANY: NL BAROID
MUDLOGGER: JIM GOLDSB,
GEOLOGIST: TODD STEPHENSON
SAMPLE INTERVAL: 2290 - 2453

TD: 2453
CURRENT OPERATION: DRILLING

FOOTAGE LAST 24 HOURS: 163

STRATIGRAPHIC INTERVAL CURRENTLY DRILLING: KNOX

DRILLING RATE: 20 FT PER HR 3MIN/FT
WEIGHT ON BIT: 45-50 KLB
PUMP OR AIR PRESSURE: 1600
RPM (ROTARY SPEED). 70-80
TORQUE (ROTARY TORQUE:BIT CHATTER) 200 AMP

LAG TIME: 2120 STKS BOTTOMS UP 213 MIN

MUD WEIGHT (lbs/gal): 8.7
MUD VISCOSITY)MARSH FUNNEL): 34
MUD SALINITY (PPM): 250

BIT NO. (TYPE): ATJ-33 BIT NO 4 2-11 6-10

SHOWS: NONE

TESTS: TEST GAS TRAP LINE TEST GAS DETECTOR

WIRE LINE SURVEYS: $\frac{3}{4}$° AT 2376'

FORMATION TOPS:

LITHOLOGIC DESCRIPTION: LS. wh LT gy TN DK BRN F-MICRO XLN HD DNSE

COMMENTS: DRILLING AHEAD BACKGROUND GAS 1UNIT

SN/ea
263/B

DAILY MUDLOGGER REPORT

OPERATIONS GEOLOGIST: STEVE ROHR (713-556-2528)

DATE: 12-11-87

WELL NAME: SPENCE TRUST #1
OPERATOR: AMOCO PRODUCTION COMPANY
LOCATION: DUNKLIN COUNTY, MISSOURI
SPUD DATE: 11-28-87
TIME: 0600

LOGGING COMPANY: NL BAROID
MUDLOGGER: JIM GOLDSBY
GEOLOGIST: TODD STEPHENSON
SAMPLE INTERVAL: 2453-2827

TD: 2827

FOOTAGE LAST 24 HOURS: 374

CURRENT OPERATION: DRILLING

STRATIGRAPHIC INTERVAL CURRENTLY DRILLING: KNOX

DRILLING RATE: 16 FT/HR 3.75 MN/FT

LAG TIME: 2390 STKS BOTTOMS UP 24 MIN

WEIGHT ON BIT: 40-50
PUMP OR AIR PRESSURE: 1600
RPM (ROTARY SPEED). 70-80
TORQUE (ROTARY TORQUE:BIT CHATTER)

MUD WEIGHT (lbs/gal): 87
MUD VISCOSITY)MARSH FUNNEL): 34
MUD SALINITY (PPM): 300

BIT NO. (TYPE): ATJ-33 BIT NO 4 2-11 1-10

SHOWS: NONE

TESTS: TEST GAS TRAP LINE TEST GAS DETECTOR

WIRE LINE SURVEYS: NONE

FORMATION TOPS:

LITHOLOGIC DESCRIPTION: 100% L.S. - WH CRM TAN DK BRN F-MICRO XLN HD DNSE

COMMENTS: DRILLING AHEAD BACKGROUND GAS 1 UNIT

SN/ea
263/B

DAILY MUDLOGGER REPORT

OPERATIONS GEOLOGIST: STEVE ROHR (713-556-2528)

DATE: 12-12-87

WELL NAME: SPENCE TRUST #1
OPERATOR: AMOCO PRODUCTION COMPANY
LOCATION: DUNKLIN COUNTY, MISSOURI
SPUD DATE: 11-28-87
TIME: 0600

LOGGING COMPANY: NL BAROID
MUDLOGGER: JIM GOODSBY
GEOLOGIST: TODD STEPHENSON
SAMPLE INTERVAL: 2827-3145

TD: 3145

FOOTAGE LAST 24 HOURS: 318

CURRENT OPERATION: DRILLING

STRATIGRAPHIC INTERVAL CURRENTLY DRILLING: KNOX

DRILLING RATE: 15 FT/HR 4 MIN/FT

LAG TIME: 26.5 MIN 2620 STKS BOTTOMS UP

WEIGHT ON BIT: 40-50 KLB
PUMP OR AIR PRESSURE: 1600
RPM (ROTARY SPEED). 70-8
TORQUE (ROTARY TORQUE:BIT CHATTER) 200 AMP

MUD WEIGHT (lbs/gal): 8.9
MUD VISCOSITY)MARSH FUNNEL): 33
MUD SALINITY (PPM): 400

BIT NO. (TYPE): ATJ-33 BIT NO 4 2-11 1-10

SHOWS: NONE

TESTS: TEST GAS TRAP LINE, TEST GAS DETECTOR

WIRE LINE SURVEYS: 2897 $\frac{1}{2}$°

FORMATION TOPS: N A

LITHOLOGIC DESCRIPTION: 80% LS - wh CRM TN F-XLN SUC HD
20% DOL - wh LT gy F-XLN U SUC SNDY

COMMENTS: DRILLING AHEAD BACK GROUND GAS 1 UNIT

DAILY MUDLOGGER REPORT

OPERATIONS GEOLOGIST: STEVE ROHR (713-556-2528)

DATE: 12-13-87

WELL NAME: SPENCE TRUST #1

OPERATOR: AMOCO PRODUCTION COMPANY

LOCATION: DUNKLIN COUNTY, MISSOURI

SPUD DATE: 11-28-87

TIME: 0600

LOGGING COMPANY: NL BAROID

MUDLOGGER: JIM GOLDSBY

GEOLOGIST: TODD STEPHENSON

SAMPLE INTERVAL: 3145 - 3389

TD: 3389

CURRENT OPERATION: DRILLING

FOOTAGE LAST 24 HOURS: 244

STRATIGRAPHIC INTERVAL CURRENTLY DRILLING:

DRILLING RATE: 7.7

WEIGHT ON BIT: 40-50 KLB

PUMP OR AIR PRESSURE: 1900

RPM (ROTARY SPEED). 70-80

TORQUE (ROTARY TORQUE:BIT CHATTER) 260 AMPS

LAG TIME: 2790 STKS BOTTOMS UP 28.2 MIN

MUD WEIGHT (lbs/gal): 8.9

MUD VISCOSITY)MARSH FUNNEL): 34

MUD SALINITY (PPM): 500

BIT NO. (TYPE): ATJ-33 BIT NO. 5 2-11 1-10

SHOWS: NONE

TESTS: TEST GAS TRAP LINE TEST GAS DETECTOR

WIRE LINE SURVEYS: N.A

FORMATION TOPS:

LITHOLOGIC DESCRIPTION: 70% DOL - LT-MED GY WH F-XLN U. SUC

30% L.S. - WH CRM TN BRN MICRO XLN MD DNSE TR CHERT

COMMENTS: DRILLING AHEAD BACK GROUND GAS 5 UNITS

SN/ea
263/B

DAILY MUDLOGGER REPORT

OPERATIONS GEOLOGIST: STEVE ROHR (713-556-2528)

DATE: 12-14-87

WELL NAME: SPENCE TRUST #1
OPERATOR: AMOCO PRODUCTION COMPANY
LOCATION: DUNKLIN COUNTY, MISSOURI
SPUD DATE: 11-28-87
TIME: 0600

LOGGING COMPANY: NL BAROID
MUDLOGGER: JIM GOLDSBY
GEOLOGIST: TODD STEPHENSON
SAMPLE INTERVAL: 3389-3550

TD: 3550

FOOTAGE LAST 24 HOURS: 99 FT

CURRENT OPERATION: DRILLING

STRATIGRAPHIC INTERVAL CURRENTLY DRILLING: KNOX

DRILLING RATE: 16.2 FT/HR 3.7 MIN/FT

LAG TIME: 2540 STKS BOTTOMS UP 25.1 MIN

WEIGHT ON BIT: 40-50 KLB
PUMP OR AIR PRESSURE: 1500
RPM (ROTARY SPEED). 70-80
TORQUE (ROTARY TORQUE:BIT CHATTER) 270 AMPS

MUD WEIGHT (lbs/gal): 8.8
MUD VISCOSITY)MARSH FUNNEL): 34
MUD SALINITY (PPM): 550

BIT NO. (TYPE): ATJ-55 BIT NO 6 2-11 1-10

SHOWS: NONE

TESTS: TEST GAS DETECTOR

WIRE LINE SURVEYS: NA

FORMATION TOPS:

LITHOLOGIC DESCRIPTION: 100% DOL - LT-MED GY WH F-XLN HD SUC SNDY

COMMENTS: DRILLING AHEAD BACKGROUND 5 UNITS

SN/ea
263/B

DAILY MUDLOGGER REPORT

OPERATIONS GEOLOGIST: STEVE ROHR (713-556-2528)

DATE: 12-15-87

WELL NAME: SPENCE TRUST #1
OPERATOR: AMOCO PRODUCTION COMPANY
LOCATION: DUNKLIN COUNTY, MISSOURI
SPUD DATE: 11-28-87
TIME: 0600

LOGGING COMPANY: NL BAROID
MUDLOGGER: EMMETT KEENER
GEOLOGIST: TODD STEPHENSON
SAMPLE INTERVAL: 3590-3880

TD: 3897'
CURRENT OPERATION: DRILLING

FOOTAGE LAST 24 HOURS: 307'

STRATIGRAPHIC INTERVAL CURRENTLY DRILLING: KNOX

DRILLING RATE: 14 ft/hr 4.4 min/ft
LAG TIME: 3150 stks bottoms up 31.6 minutes
WEIGHT ON BIT: 40-50 KLB
PUMP OR AIR PRESSURE: 1900 @ 100 spm on pump 1
RPM (ROTARY SPEED): 74
TORQUE (ROTARY TORQUE:BIT CHATTER) 270

MUD WEIGHT (lbs/gal): 8.8
MUD VISCOSITY)MARSH FUNNEL): 34
MUD SALINITY (PPM): 500

BIT NO. (TYPE): #6 ATJ-55R 2-11 1-10

SHOWS: NA

TESTS: NA

WIRE LINE SURVEYS: NA.

FORMATION TOPS:

LITHOLOGIC DESCRIPTION: 60% DOL: CRM, BRN, GY, HD, DNSE, FXLN SLTY
40% LS: WH, CRM, HD, F-MICROXLN, SUC, TR QTZ

COMMENTS: DRILLING AHEAD AVG BKGD GAS 6-8 units
Samples from 3820' MD to present TD contain clear and translucent quartz

SN/ea
263/B

5000 units = 100% gas in c

DAILY MUDLOGGER REPORT

OPERATIONS GEOLOGIST: STEVE ROHR (713-556-2528)

DATE: 12/16/87

WELL NAME: SPENCE TRUST #1

OPERATOR: AMOCO PRODUCTION COMPANY

LOCATION: DUNKLIN COUNTY, MISSOURI

SPUD DATE: 11-28-87

TIME: 0600

LOGGING COMPANY: NL BAROID

MUDLOGGER: EMMETT KEENER

GEOLOGIST: TODD STEPHENSON

SAMPLE INTERVAL: 3880 - 4210

TD: 4224

FOOTAGE LAST 24 HOURS: 327

CURRENT OPERATION: DRILLING AHEAD

STRATIGRAPHIC INTERVAL CURRENTLY DRILLING: KNOX

DRILLING RATE: 13 - 23 FT/HR

LAG TIME: 3900 STKS 34 MIN

WEIGHT ON BIT: 45/50

PUMP OR AIR PRESSURE: 1940

RPM (ROTARY SPEED). 60 - 65

TORQUE (ROTARY TORQUE:BIT CHATTER) 220

MUD WEIGHT (lbs/gal): 8.8

MUD VISCOSITY)MARSH FUNNEL): 34

MUD SALINITY (PPM): 950

BIT NO. (TYPE): #6 HTC ATJ 55R 2-11 1-10

SHOWS: NONE

TESTS: CALIBRATE GC2000, TEST GAS DETECTOR AT TRAP W/CARBIDE

WIRE LINE SURVEYS: 2870 1/2° 3918 1 1/4°

FORMATION TOPS: NONE

LITHOLOGIC DESCRIPTION: 80 % LS- WH CLM TN LT GY HD FXLN SUC
10 % DOL LT DK GY HD FGR SUC SLTY
10 % CHRT BRN TRANS HD

COMMENTS:

SN/ea
263/B

DAILY MUDLOGGER REPORT

OPERATIONS GEOLOGIST: STEVE ROHR (713-556-2528)
DATE: 12/17/87

WELL NAME: SPENCE TRUST #1
OPERATOR: AMOCO PRODUCTION COMPANY
LOCATION: DUNKLIN COUNTY, MISSOURI
SPUD DATE: 11-28-87
TIME: 0600

LOGGING COMPANY: NL BAROID
MUDLOGGER: EMMETT KEENER
GEOLOGIST: TODD STEPHENSON
SAMPLE INTERVAL: 4210-4517

TD: 4517
FOOTAGE LAST 24 HOURS: 307
CURRENT OPERATION: TRIP OUT FOR NEW BIT

STRATIGRAPHIC INTERVAL CURRENTLY DRILLING: KNOX

DRILLING RATE: 7.2 MIN/FT
LAG TIME: 32 min. 3602 stks
WEIGHT ON BIT: 50 KLB
PUMP OR AIR PRESSURE: 1919
RPM (ROTARY SPEED). 70
TORQUE (ROTARY TORQUE:BIT CHATTER) 198

MUD WEIGHT (lbs/gal): 8.8
MUD VISCOSITY)MARSH FUNNEL): 35
MUD SALINITY (PPM): 400

BIT NO. (TYPE): #6 HTC ATJ-55R 2-11 1-10

SHOWS: NA

TESTS: NA

WIRE LINE SURVEYS: 4430' — 1¼°

FORMATION TOPS: NA

LITHOLOGIC DESCRIPTION: 80% DOL: WH, LT-M GY, HD, DNSE SUC F XLN TR STY TR PYR
20% LS: WH TN HD DNSE F MICROXLN

COMMENTS: TRIP FOR N.B.

SN/ea
263/B

ATTN:

DAILY MUDLOGGER REPORT

OPERATIONS GEOLOGIST: STEVE ROHR (713-556-2528)

DATE: 12-18-87

WELL NAME: SPENCE TRUST #1

OPERATOR: AMOCO PRODUCTION COMPANY

LOCATION: DUNKLIN COUNTY, MISSOURI

SPUD DATE: 11-27-87

TIME: 0600

LOGGING COMPANY: NL BAROID

MUDLOGGER: EMMETT KEENER

GEOLOGIST: TODD STEPHENSON

SAMPLE INTERVAL: 4510 - 4590

TD: 4602

FOOTAGE LAST 24 HOURS: 85

CURRENT OPERATION: DRILLING

STRATIGRAPHIC INTERVAL CURRENTLY DRILLING: KNOX

DRILLING RATE: 4.3 MIN/FT 12-16 FT/HR

LAG TIME: 3660 STKS 37 MIN.

WEIGHT ON BIT: 45 - 50 KLBS

PUMP OR AIR PRESSURE: 1910 psi

RPM (ROTARY SPEED). 60 rpm

TORQUE (ROTARY TORQUE:BIT CHATTER) 180 amps

MUD WEIGHT (lbs/gal): 8.7+

MUD VISCOSITY)MARSH FUNNEL): 33

MUD SALINITY (PPM): 350

BIT NO. (TYPE): #7 HTC ATJ-55R 2-11 1-10

SHOWS: NA

TESTS: CK H_2S sensor & gas detector, CALIBRATE H_2S GAS DETECTOR

WIRE LINE SURVEYS: NA

FORMATION TOPS: NA

LITHOLOGIC DESCRIPTION: 4590' 70% LS- TN CRM WH HD ONSE F-MICRO XLN, TR PYR

30% DOL- LT M GY HD ONSE, F XLN TR PYR

TR CHRT

COMMENTS:

DAILY MUDLOGGER REPORT

OPERATIONS GEOLOGIST: ~~STEVE ROHR~~ TODD STEPHENSON (713-556-2528)

DATE: 12-19-87

WELL NAME: SPENCE TRUST #1
OPERATOR: AMOCO PRODUCTION COMPANY
LOCATION: DUNKLIN COUNTY, MISSOURI
SPUD DATE: 11-27-87
TIME: 0600

LOGGING COMPANY: NL BAROID
MUDLOGGER: EMMETT KEENER
GEOLOGIST: TODD STEPHENSON
SAMPLE INTERVAL: 4590 - 4910

TD: 4910

FOOTAGE LAST 24 HOURS: 320

CURRENT OPERATION: DRILLING

STRATIGRAPHIC INTERVAL CURRENTLY DRILLING: KNOX

DRILLING RATE: 12.6 ft/hr. 4.8 min/ft

LAG TIME: 46 min. 4630 stks

WEIGHT ON BIT: 45-50 KLBS
PUMP OR AIR PRESSURE: 1850
RPM (ROTARY SPEED). 65
TORQUE (ROTARY TORQUE:BIT CHATTER) 190

MUD WEIGHT (lbs/gal): 8.8
MUD VISCOSITY)MARSH FUNNEL): 35
MUD SALINITY (PPM): 400

BIT NO. (TYPE): #7 HTC ATJ-55R 9 ½" 2-11 1-10

SHOWS: NA

TESTS: CARBIDE
TRAP
FLOW CHECKS

WIRE LINE SURVEYS: NA

FORMATION TOPS: NA

LITHOLOGIC DESCRIPTION: 90% DOL: WH, LT-M GY, HD, F-MICROXLN, TR PYR, TR OOL
10% LS: TN, WH, HD, F-MICROXLN

COMMENTS: ON BOTTOM HOURS 28.3 hrs.

SH/ea
263/B

DAILY MUDLOGGER REPORT

OPERATIONS GEOLOGIST: ~~STEVE ROHR~~ TODD STEPHENSON (713-556-2528)

DATE: 12/20/87

WELL NAME: SPENCE TRUST #1
OPERATOR: AMOCO PRODUCTION COMPANY
LOCATION: DUNKLIN COUNTY, MISSOURI
SPUD DATE: 11-27-87
TIME: 0600

LOGGING COMPANY: NL BAROID
MUDLOGGER: EMMETT REENER
GEOLOGIST: TODD STEPHENSON
SAMPLE INTERVAL: 4910 – 5158

TD: 5158

FOOTAGE LAST 24 HOURS: 248'

CURRENT OPERATION: TRIP OUT

STRATIGRAPHIC INTERVAL CURRENTLY DRILLING: KNOX

DRILLING RATE: 6.1 min/FT 10 FT/HR

LAG TIME: 4080 stks 40.4 min

WEIGHT ON BIT: 41 KLBS
PUMP OR AIR PRESSURE: 1956
RPM (ROTARY SPEED). 65
TORQUE (ROTARY TORQUE:BIT CHATTER) 225 – 290 amps

MUD WEIGHT (lbs/gal): 8.9
MUD VISCOSITY)MARSH FUNNEL): 35
MUD SALINITY (PPM): 450

BIT NO. (TYPE): #7 HTC ATJ-55R 9⅝" 2-11 1-10

SHOWS: NA 641' 13.4'/HR 457 WOB 1840 & 26
65 RO
375 390 SD

TESTS: CARBIDE

WIRE LINE SURVEYS: 4930' 1¼°

FORMATION TOPS: NA

LITHOLOGIC DESCRIPTION: 30% DOL: LT-M GY, HD, DNSE, F XLN SUC TR PYR
10% LS: WH, TN, HD, DNSE, F XLN, SUC
60% SD: CLR, HD, F-M GR, ANG, UNCONS

COMMENTS: on bottom hours 47.9

SN/ea
263/B

DAILY MUDLOGGER REPORT

OPERATIONS GEOLOGIST: STEVE ROHR (713-556-2528)
DATE: 12-21-87

WELL NAME: SPENCE TRUST #1
OPERATOR: AMOCO PRODUCTION COMPANY
LOCATION: DUNKLIN COUNTY, MISSOURI
SPUD DATE: 11-27-87
TIME: 0600

LOGGING COMPANY: NL BAROID
MUDLOGGER: EMMETT KEENER
GEOLOGIST: TODD STEPHENSON
SAMPLE INTERVAL: 5158 - 5335

TD: 5335
FOOTAGE LAST 24 HOURS: 177
CURRENT OPERATION: DRILLING

STRATIGRAPHIC INTERVAL CURRENTLY DRILLING: KNOX

DRILLING RATE: 16 FT/HR 3.8 min/FT
LAG TIME: 4920 stks 50.0 min
WEIGHT ON BIT: 50 KLBS
PUMP OR AIR PRESSURE: 20 30 psi.
RPM (ROTARY SPEED). 50-52 rpm
TORQUE (ROTARY TORQUE:BIT CHATTER) 160-170 amps

MUD WEIGHT (lbs/gal): 8.9
MUD VISCOSITY)MARSH FUNNEL): 33
MUD SALINITY (PPM): 300

BIT NO. (TYPE): #8 STC F-5 2-11 1-10 9.5"

SHOWS: NA

TESTS: CK gas trap
CK H_2S sensors

WIRE LINE SURVEYS: 5157' 1¼°

FORMATION TOPS: NA

LITHOLOGIC DESCRIPTION: 100% DOL: DK GY, HD, F XLN, SUC, V SLTY, TR PYR TR OOL

COMMENTS: on bottom hours - 14.5 DRILLING AHEAD 8 UNITS BACKGROUND GAS

SR/ea
263/B

DAILY MUDLOGGER REPORT

ATTN: TODD STEPHENSON
OPERATIONS GEOLOGIST: ~~STEVE ROHR~~ (713-556-2528)

DATE: 12/22/87

WELL NAME: SPENCE TRUST #1
OPERATOR: AMOCO PRODUCTION COMPANY
LOCATION: DUNKLIN COUNTY, MISSOURI
SPUD DATE: 11-27-87
TIME: 0600

LOGGING COMPANY: NL BAROID
MUDLOGGER: CHRIS & JIM
GEOLOGIST: TODD STEPHENSON
SAMPLE INTERVAL: 5335- 5557

TD: 5597

FOOTAGE LAST 24 HOURS: 262

CURRENT OPERATION: DRILLING

STRATIGRAPHIC INTERVAL CURRENTLY DRILLING: KNOX

DRILLING RATE: 9.5 FT/HR 6 MIN/FT

LAG TIME: 5150 STKS BOTTOMS UP 52 MINS

WEIGHT ON BIT: 45-50
PUMP OR AIR PRESSURE: 2020
RPM (ROTARY SPEED): 50
TORQUE (ROTARY TORQUE:BIT CHATTER) 145-160

MUD WEIGHT (lbs/gal): 8.9
MUD VISCOSITY)MARSH FUNNEL): 35
MUD SALINITY (PPM): 250

BIT NO. (TYPE): #8 SMITH F5 2-11 1-10 JETS 9 1/2"

SHOWS: NA

TESTS: TEST H_2S SENSOR AT CELLAR W/40PPM

WIRE LINE SURVEYS: NA

FORMATION TOPS: NA

LITHOLOGIC DESCRIPTION:

COMMENTS: ON BOTTOM HRS @0600 =
5330-5380 100% DOL DK GY LT GY HD FXLN SUC SLTY
5380-90 90% SD CLR HD F M GR SUBANG
5390 5430 100% DOL M GY HD FXLN SUC
5440-5450 20% SD AT 40' 90% AT 50 CLR FRST F M GR SUBANG CONS/DOL CMT
5460 CHT WHCLR VHD ANG
5470-5560 DOL DK LT GY XLN ONSE SUC
5550 DOL W/ABNT CHT 5550 20% CHT
60 40% CHT DOL BRN
70 20%

SN/ea
263/B

DAILY MUDLOGGER REPORT

ATTN: BERT CORWIN

OPERATIONS GEOLOGIST: [redacted] (713-556-2528)

DATE: 12/23/87

WELL NAME: SPENCE TRUST #1
OPERATOR: AMOCO PRODUCTION COMPANY
LOCATION: DOWKLIN COUNTY, MISSOURI
SPUD DATE: 11-27-87
TIME: 0600

LOGGING COMPANY: NL BAROID
MUDLOGGER: CHRIS & JIM
GEOLOGIST: TODD STEPHENSON
SAMPLE INTERVAL: 5597 - 5821

TD: 5821

FOOTAGE LAST 24 HOURS: 224

CURRENT OPERATION: DRILLING

STRATIGRAPHIC INTERVAL CURRENTLY DRILLING: KNOX

DRILLING RATE: 11 FT/HR 5.4 min/FT

LAG TIME: 51.1 MIN 5060 STKS BOTTOMS

WEIGHT ON BIT: 45-50
PUMP OR AIR PRESSURE: 1975
RPM (ROTARY SPEED). 50
TORQUE (ROTARY TORQUE:BIT CHATTER) 145-

MUD WEIGHT (lbs/gal): 8.9+
MUD VISCOSITY)MARSH FUNNEL): 34
MUD SALINITY (PPM): 300

BIT NO. (TYPE): #8 SMITH F5 2-11 1-10 JETS 9 1/2"

SHOWS: NONE

TESTS: CALIBRATE GC2000 w/1% C_1-C_5

DROP CARBIDE AT CONN @ 5787', 102 units @ 6100 STKS = 46 bbl washout = 528 STROKES.
.088 bbls STROKE

WIRE LINE SURVEYS: $1\frac{1}{4}°$ AT 5444

FORMATION TOPS: NA

LITHOLOGIC DESCRIPTION: 100% DOL - DK-MED GY HD F-XLN SUC SNDY TR CHERT

COMMENTS: DRILLING AHEAD

SN/ea
263/R

DAILY MUDLOGGER REPORT

OPERATIONS GEOLOGIST: STEVE ROHR (713-556-2528)

DATE: 12/24/87

WELL NAME: SPENCE TRUST #1
OPERATOR: AMOCO PRODUCTION COMPANY
LOCATION: DUNKLIN COUNTY, MISSOURI
SPUD DATE: 11-27-87
TIME: 0600

LOGGING COMPANY: NL BAROID
MUDLOGGER: JIM
GEOLOGIST: TODD STEPHENSON
SAMPLE INTERVAL: 5821-6033

TD: 6033

FOOTAGE LAST 24 HOURS: 212

CURRENT OPERATION: POOH FOR NB#9

STRATIGRAPHIC INTERVAL CURRENTLY DRILLING:

DRILLING RATE: 10 FT/HR 6.9 MIN/FT

LAG TIME: 5199 STKS 53 MIN.

WEIGHT ON BIT: 45-50
PUMP OR AIR PRESSURE: 2048
RPM (ROTARY SPEED). 50
TORQUE (ROTARY TORQUE:BIT CHATTER) 150-214

MUD WEIGHT (lbs/gal): 9.0
MUD VISCOSITY)MARSH FUNNEL): 35
MUD SALINITY (PPM): 300

BIT NO. (TYPE): #8 SMITH F5 875' 11.3 FT/HR 77.5 HRS ON BIT

SHOWS: NA

TESTS: NA

WIRE LINE SURVEYS: NA

FORMATION TOPS: NA

LITHOLOGIC DESCRIPTION: 6030' DOL GY DK GY FXLN SUG SNDY TR PYR

COMMENTS:

SN/ea
263/B

DAILY MUDLOGGER REPORT

OPERATIONS GEOLOGIST: STEVE ROHR (713-556-2528)

DATE: 12/25/87

WELL NAME: SPENCE TRUST #1

OPERATOR: AMOCO PRODUCTION COMPANY

LOCATION: DUNKLIN COUNTY, MISSOURI

SPUD DATE: 11-27-87

TIME: 0600

LOGGING COMPANY: NL BAROID

MUDLOGGER: JIM

GEOLOGIST: TODD STEPHENSON

SAMPLE INTERVAL: 0

TD: 6033

FOOTAGE LAST 24 HOURS: 0

CURRENT OPERATION: TRIP WORK ON RIG DRAW WORKS

STRATIGRAPHIC INTERVAL CURRENTLY DRILLING:

DRILLING RATE: NA

LAG TIME:

WEIGHT ON BIT: NA

PUMP OR AIR PRESSURE: NA

RPM (ROTARY SPEED). NA

TORQUE (ROTARY TORQUE:BIT CHATTER) NA

MUD WEIGHT (lbs/gal): 8.9

MUD VISCOSITY)MARSH FUNNEL): 33

MUD SALINITY (PPM): 300

BIT NO. (TYPE): #9 SMITH F5 9 1/2" 2-11 1-10

SHOWS: NONE

TESTS:

WIRE LINE SURVEYS:

FORMATION TOPS:

LITHOLOGIC DESCRIPTION:

COMMENTS: TRIP FOR N.B 9 WORK ON RIG DRAW WORKS

SN/ea
263/B

DAILY MUDLOGGER REPORT

OPERATIONS GEOLOGIST: STEVE ROHR (713-556-2528)

DATE: 12/26/87

WELL NAME: SPENCE TRUST #1
OPERATOR: AMOCO PRODUCTION COMPANY
LOCATION: DUNKLIN COUNTY, MISSOURI
SPUD DATE: 11-27-87
TIME: 0600

LOGGING COMPANY: NL BAROID
MUDLOGGER: JIM G. CHRIS G.
GEOLOGIST: TODD STEPHENSON
SAMPLE INTERVAL: 6033 - 6251

TD: 6251

FOOTAGE LAST 24 HOURS: 218

CURRENT OPERATION: TRIP FOR N.B.

STRATIGRAPHIC INTERVAL CURRENTLY DRILLING:

DRILLING RATE: 13.3 FT/HR 4.2 MIN/FT

LAG TIME: 5360 STKS 55 MIN.

WEIGHT ON BIT: 48-50
PUMP OR AIR PRESSURE: 1928
RPM (ROTARY SPEED). 46
TORQUE (ROTARY TORQUE: BIT CHATTER) 160 - 185

MUD WEIGHT (lbs/gal): 8.9
MUD VISCOSITY)MARSH FUNNEL): 37
MUD SALINITY (PPM): 300

BIT NO. (TYPE): #9 SMITH F5

SHOWS: NA

TESTS: TEST GAS DETECTOR

WIRE LINE SURVEYS: NA

FORMATION TOPS: NA

LITHOLOGIC DESCRIPTION: 90% DOL WH CLR DK GY F - CXLN SUC INPTS ONSE HD

10% CHT - DK GY TRANS VHD ANG

COMMENTS: TRIP FOR N.B. BACKGROUND GAS 7 UNITS

SN/ea
263/B

DAILY MUDLOGGER REPORT

OPERATIONS GEOLOGIST: STEVE ROHR (713-556-2528)

DATE: 12-27-87

WELL NAME: SPENCE TRUST #1

OPERATOR: AMOCO PRODUCTION COMPANY

LOCATION: DONKLIN COUNTY, MISSOURI

SPUD DATE: 11-27-87

TIME: 0600

LOGGING COMPANY: NL BAROID

MUDLOGGER: CHRIS G. JIM E.

GEOLOGIST: TODD STEPHENSON

SAMPLE INTERVAL: 6251 - 6408

TD: 6408

FOOTAGE LAST 24 HOURS: 157

CURRENT OPERATION: DRILLING

STRATIGRAPHIC INTERVAL CURRENTLY DRILLING:

DRILLING RATE: 10 FT/HR 6 min/FT

LAG TIME: 56.2 min 56 20 STKS BOTTOMS

WEIGHT ON BIT: 45-50 KLB

PUMP OR AIR PRESSURE: 2000

RPM (ROTARY SPEED). 40-45

TORQUE (ROTARY TORQUE:BIT CHATTER) 150

MUD WEIGHT (lbs/gal): 8.9

MUD VISCOSITY)MARSH FUNNEL): 36

MUD SALINITY (PPM): 350

BIT NO. (TYPE): #10 HTC J-77 2-11 1-10 JETS

SHOWS: NONE

TESTS: CARBIDE LAG AT CONN 6367 = 59661 washout

WIRE LINE SURVEYS: N.A

FORMATION TOPS:

LITHOLOGIC DESCRIPTION: 100% DOL - DK GY BRN F XLN DNSE HD SUC

COMMENTS: DRILLING AHEAD BACKGROUND GAS 5 UNITS

SR/ea
263/B

DAILY MUDLOGGER REPORT

OPERATIONS GEOLOGIST: STEVE ROHR (713-556-2528)

DATE: 12-28-87

WELL NAME: SPENCE TRUST #1
OPERATOR: AMOCO PRODUCTION COMPANY
LOCATION: DOWRLIN COUNTY, MISSOURI
SPUD DATE: 11-27-87
TIME: 0600

LOGGING COMPANY: NL BAROID
MUDLOGGER: JIM & CHRIS
GEOLOGIST: TODD STEPHENSON
SAMPLE INTERVAL: 6408 - 6676

TD: 6676

FOOTAGE LAST 24 HOURS: 268

CURRENT OPERATION: DRILLING

STRATIGRAPHIC INTERVAL CURRENTLY DRILLING:

DRILLING RATE: 11.4 FT/HR 5.5 MIN/FT

LAG TIME: 5820 STKS BOTTOMS UP

WEIGHT ON BIT: 47-53
PUMP OR AIR PRESSURE: 1860
RPM (ROTARY SPEED). 46
TORQUE (ROTARY TORQUE:BIT CHATTER) 170

MUD WEIGHT (lbs/gal): 8.8+
MUD VISCOSITY)MARSH FUNNEL): 37
MUD SALINITY (PPM): ~~300~~

BIT NO. (TYPE): #10 HTC J-77 2-11 1-10

SHOWS: NA

TESTS: CLEANE OUT TRAP LINE + TESTED WITH CARBIDE

WIRE LINE SURVEYS: NA

FORMATION TOPS: NA

LITHOLOGIC DESCRIPTION: 6660' DOL LTGY BRN F-C XLN OOL NO DNSE

COMMENTS: DRILLING AHEAD BACKGROUND GAS 6 UNITS

SN/ea
263/B

DAILY MUDLOGGER REPORT

OPERATIONS GEOLOGIST: STEVE ROHR (713-556-2528)
DATE: 12-29-87

WELL NAME: SPENCE TRUST #1
OPERATOR: AMOCO PRODUCTION COMPANY
LOCATION: DURKLIN COUNTY, MISSOURI
SPUD DATE: 11-27-87
TIME: 0600

LOGGING COMPANY: NL BAROID
MUDLOGGER: JIM GOLDSBY
GEOLOGIST: TODD STEPHENSON
SAMPLE INTERVAL: 6676-6969

TD: 6969
FOOTAGE LAST 24 HOURS: 293
CURRENT OPERATION: DRILLING

STRATIGRAPHIC INTERVAL CURRENTLY DRILLING:

DRILLING RATE: 13.1 FT/HR 5.3 MIN/FT
LAG TIME: 61.7 MIN 6150 STKS BOTTOMS UP
WEIGHT ON BIT: 50-55 KLB
PUMP OR AIR PRESSURE: 1900
RPM (ROTARY SPEED). 45-50
TORQUE (ROTARY TORQUE:BIT CHATTER) 170-180 AMPS

MUD WEIGHT (lbs/gal): 8.9
MUD VISCOSITY)MARSH FUNNEL): 36
MUD SALINITY (PPM): 250

BIT NO. (TYPE): #10 HTC J-77 2-11 1-10

SHOWS: NONE

TESTS: TEST GAS DETECTOR

WIRE LINE SURVEYS: NA

FORMATION TOPS:

LITHOLOGIC DESCRIPTION: 60% SH - DK GY BLK FRM HD V CALC
20% LS - WH CRM LT-MED GY HD F XLN
20% DOL - WH LT-MED GY HD F-C XLN SUC

COMMENTS: DRILLING AHEAD BACKGROUND GAS 6 UNITS

SN/ea

DAILY MUDLOGGER REPORT

OPERATIONS GEOLOGIST: STEVE ROHR (713-556-2528)

DATE: 12-30-87

WELL NAME: SPENCE TRUST #1

OPERATOR: AMOCO PRODUCTION COMPANY

LOCATION: DUNKLIN COUNTY, MISSOURI

SPUD DATE: 11-27-87

TIME: 0600

LOGGING COMPANY: NL BAROID

MUDLOGGER: JIM GLOSBY

GEOLOGIST: TODD STEPHENSON

SAMPLE INTERVAL: 6969

TD: 7000

FOOTAGE LAST 24 HOURS: 31

CURRENT OPERATION: TRIP IN HOLE WITH CORE BIT NO 1

STRATIGRAPHIC INTERVAL CURRENTLY DRILLING:

DRILLING RATE: 11.9 FT/HR 5.0 MIN/FT

LAG TIME:

WEIGHT ON BIT: 50-55 KLB

PUMP OR AIR PRESSURE: 1900

RPM (ROTARY SPEED). 45-50

TORQUE (ROTARY TORQUE:BIT CHATTER) 170-180 AMPS

MUD WEIGHT (lbs/gal): 8.9

MUD VISCOSITY)MARSH FUNNEL): 38

MUD SALINITY (PPM): 300

BIT NO. (TYPE): CORE BIT NO 1 M.C. 23

SHOWS: NONE

TESTS: TEST GAS DETECTOR

WIRE LINE SURVEYS: 2 1/4° AT 7000'

FORMATION TOPS:

LITHOLOGIC DESCRIPTION: 100% L.S. - WH LT GY F-M XLN TR FOSS TR PYR.

COMMENTS: TRIP IN HOLE WITH CORE BIT NO. 1

SN/ea

DAILY MUDLOGGER REPORT

OPERATIONS GEOLOGIST: STEVE ROHR (713-556-2528)

DATE: 12-31-87

WELL NAME: SPENCE TRUST #1
OPERATOR: AMOCO PRODUCTION COMPANY
LOCATION: DUNKLIN COUNTY, MISSOURI
SPUD DATE: 11-27-87
TIME: 0600

LOGGING COMPANY: NL BAROID
MUDLOGGER: JIM GOLDSBY
GEOLOGIST: TODD STEPHENSON
SAMPLE INTERVAL: 7000 - 7030

TD: 7030

FOOTAGE LAST 24 HOURS: 30

CURRENT OPERATION: TRIP IN HOLE

STRATIGRAPHIC INTERVAL CURRENTLY DRILLING:

DRILLING RATE: 3.9

LAG TIME:

WEIGHT ON BIT: 5-20 KLB
PUMP OR AIR PRESSURE: 1000
RPM (ROTARY SPEED). 80
TORQUE (ROTARY TORQUE:BIT CHATTER) 240 AMPS

MUD WEIGHT (lbs/gal): 8.9
MUD VISCOSITY)MARSH FUNNEL): 39
MUD SALINITY (PPM): 300

BIT NO. (TYPE): CORE BIT 11

SHOWS: NONE

TESTS: TEST GAS DETECTOR

WIRE LINE SURVEYS: NONE

FORMATION TOPS:

LITHOLOGIC DESCRIPTION: 100% DOL - LIMEY DOL LTGY WH TN OOLTIC HD DNSE

COMMENTS: TRIP IN HOLE WITH R.R. BIT NO 9 FS

SN/ea

1/1/88

WELL NAME: SPENCE TRUST #1
OPERATOR: AMOCO PRODUCTION COMPANY
LOCATION: DUNKLIN COUNTY, MISSOURI
SPUD DATE: 11-27-87
TIME: 0600

LOGGING COMPANY: NL BAROID
MUDLOGGER: JIM GOLOSIN
GEOLOGIST: TODD STEPHENSON
SAMPLE INTERVAL: 7030 - 7206

TD: 7206
CURRENT OPERATION: DRILLING

FOOTAGE LAST 24 HOURS: 176

STRATIGRAPHIC INTERVAL CURRENTLY DRILLING:

DRILLING RATE: 12.3 FT/HR 4.4 MIN/FT
WEIGHT ON BIT: 50-55 KLB
PUMP OR AIR PRESSURE: 2000
RPM (ROTARY SPEED). 45-50
TORQUE (ROTARY TORQUE:BIT CHATTER) 175-200 AMPS

LAG TIME: 64.3 MINS 6330 STKS BOTTOMS UP

MUD WEIGHT (lbs/gal): 8.9
MUD VISCOSITY)MARSH FUNNEL): 40
MUD SALINITY (PPM): 300

BIT NO. (TYPE): R.R. BIT NO 9 F5

SHOWS: NONE

TESTS: TEST GAS DETECTOR TEST GAS TRAP LINE

WIRE LINE SURVEYS: NA

FORMATION TOPS:

LITHOLOGIC DESCRIPTION: 100% LS - WH LT GY BRN HD MICRO XLN DNSE TR PYR

COMMENTS: DRILLING AHEAD BACK GROUND GAS 5UNITS

SN/ea
263/B

DAILY MUDLOGGER REPORT

OPERATIONS GEOLOGIST: STEVE ROHR (713-556-2528)
DATE: 1-2-88

WELL NAME: SPENCE TRUST #1
OPERATOR: AMOCO PRODUCTION COMPANY
LOCATION: DURKLIN COUNTY, MISSOURI
SPUD DATE: 11-27-87
TIME: 0600

LOGGING COMPANY: NL BAROID
MUDLOGGER: JIM GOLDSBY
GEOLOGIST: TODD STEPHENSON
SAMPLE INTERVAL: 7206 - 7305

TD: 7305
FOOTAGE LAST 24 HOURS: 99
CURRENT OPERATION: CIRC BOTTOMS UP

STRATIGRAPHIC INTERVAL CURRENTLY DRILLING:

DRILLING RATE: 4.6 FT/HR 13.1 MIN/FT
LAG TIME: 6390 STKS BOTTOMS UP
WEIGHT ON BIT: 10-20 KLB
PUMP OR AIR PRESSURE: 900
RPM (ROTARY SPEED). 65
TORQUE (ROTARY TORQUE:BIT CHATTER) 260 AMPS

MUD WEIGHT (lbs/gal): 8.9
MUD VISCOSITY)MARSH FUNNEL): 38
MUD SALINITY (PPM): 350

BIT NO. (TYPE): RR DC D-23 CORE BIT

SHOWS: NONE

TESTS: TEST GASTRAP LINE FOR LEAKS TEST GAS DETECTOR

WIRE LINE SURVEYS: NA

FORMATION TOPS:

LITHOLOGIC DESCRIPTION: 70% DOL - WH LT GY HD F-C XLN CALC
30% LS - WH LT GY TN HD MICRO XLN DNSE

COMMENTS: CIRC BOTTOMS UP BACKGROUND GAS 4 UNITS

SN/ea
263/B

ATTN BARB BENTLEY

ATTN: BARB BENTLEY
EXT 4451

DAILY MUDLOGGER REPORT

OPERATIONS GEOLOGIST: STEVE ROHR (713-556-2528)
DATE: 1-3-88

WELL NAME: SPENCE TRUST #1
OPERATOR: AMOCO PRODUCTION COMPANY
LOCATION: DUNKLIN COUNTY, MISSOURI
SPUD DATE: 11-27-88
TIME: 0600

LOGGING COMPANY: NL BAROID
MUDLOGGER: JIM GOLDSBY
GEOLOGIST: TODD STEPHENSON
SAMPLE INTERVAL: 7305 - 7423

TD: 7423
FOOTAGE LAST 24 HOURS: 118
CURRENT OPERATION: DRILLING

STRATIGRAPHIC INTERVAL CURRENTLY DRILLING: BONNETERRE

DRILLING RATE: 10.3 FT/HR 5.8 MIN/FT
LAG TIME: 6480 STKS BOTTOMS UP 63.2 MIN
WEIGHT ON BIT: 50-55 KLB
PUMP OR AIR PRESSURE: 2000
RPM (ROTARY SPEED). 55
TORQUE (ROTARY TORQUE:BIT CHATTER) 190 AMPS

MUD WEIGHT (lbs/gal): 9.0
MUD VISCOSITY)MARSH FUNNEL): 41
MUD SALINITY (PPM): 300

BIT NO. (TYPE): NB NO 12 J55R

SHOWS: NONE

TESTS: TEST GAS DETECTOR

WIRE LINE SURVEYS: N.A

FORMATION TOPS: NA

LITHOLOGIC DESCRIPTION: 100% LS - MED - DK GY HO F - MICRO XLN
OOC ARG

COMMENTS: DRILLING AHEAD BACK GROUND GAS 10 UNITS

SH/ea

ATTN: BARB BENTLEY
EXT. 4451
TIGHT

DAILY MUDLOGGER REPORT

OPERATIONS GEOLOGIST: STEVE ROHR (713-556-2528)
DATE: 1-4-88

WELL NAME: SPENCE TRUST #1
OPERATOR: AMOCO PRODUCTION COMPANY
LOCATION: DUNKLIN COUNTY, MISSOURI
SPUD DATE: 11-27-88
TIME: 0600

LOGGING COMPANY: NL BAROID
MUDLOGGER: JIM GOLDSBY
GEOLOGIST: TODD STEPHENSON
SAMPLE INTERVAL: 7423-7666

TD: 7666
FOOTAGE LAST 24 HOURS: 243
CURRENT OPERATION: DRILLING

STRATIGRAPHIC INTERVAL CURRENTLY DRILLING: BONNETERRE

DRILLING RATE: 10.0 FT/HR 6.4 MIN/FT.
LAG TIME: 6660 STKS 65.1 MINS BOTTOMS UP
WEIGHT ON BIT: 45-50 KLB
PUMP OR AIR PRESSURE: 2000
RPM (ROTARY SPEED). 55-60
TORQUE (ROTARY TORQUE:BIT CHATTER) 190 AMPS

MUD WEIGHT (lbs/gal): 8.9
MUD VISCOSITY)MARSH FUNNEL): 36
MUD SALINITY (PPM): 300

BIT NO. (TYPE): N.B. NO 12 J55R

SHOWS: NONE

TESTS: TEST - GAS DETECTOR

WIRE LINE SURVEYS: N.A

FORMATION TOPS:

LITHOLOGIC DESCRIPTION: 70% LS - MED LT DK GY HD F-MICRO XLN VERY ARG
30% SH - DK GY BLK BLKY FRM V CALC

COMMENTS: DRILLING AHEAD BACKGROUND GAS 10 UNITS

SN/ea

DAILY MUDLOGGER REPORT

OPERATIONS GEOLOGIST: STEVE ROHR (713-556-2528)

DATE: 1-5-88

WELL NAME: SPENCE TRUST #1
OPERATOR: AMOCO PRODUCTION COMPANY
LOCATION: DUNKLIN COUNTY, MISSOURI
SPUD DATE: 11-27-87
TIME: 0600

LOGGING COMPANY: NL BAROID
MUDLOGGER: EMMETT KEENER
GEOLOGIST: TODD STEPHENSON
SAMPLE INTERVAL: 7666 - 7691

TD: 7691

FOOTAGE LAST 24 HOURS: 25

CURRENT OPERATION: TRIP IN TO CORE CORE #3

STRATIGRAPHIC INTERVAL CURRENTLY DRILLING: BONNETERRE

DRILLING RATE: 4.6 MIN/FT 15 FT/HR

LAG TIME: 66 MINUTES 6670 STKS

WEIGHT ON BIT: 46.9
PUMP OR AIR PRESSURE: 1980
RPM (ROTARY SPEED). 59
TORQUE (ROTARY TORQUE:BIT CHATTER) 196

MUD WEIGHT (lbs/gal): 8.9
MUD VISCOSITY)MARSH FUNNEL): 37
MUD SALINITY (PPM): 250

BIT NO. (TYPE): RR#113 CORE BIT EC D23 8.75"

SHOWS: NONE

TESTS: TEST GAS TRAP

WIRE LINE SURVEYS: NA

FORMATION TOPS: NA

LITHOLOGIC DESCRIPTION: 40% LS: m-DK GY, F GR, SUC, ARG, TR OOL, TR PYR, TR FOSS FRAG
60% SH: DK GY, BLK, BLKY, FRM, CALC, TR PYR

COMMENTS: LOST FISH OF 16 DRILL COLLARS, STABILIZERS, REAMER AND BIT #12 IN HOLE. FISH WAS RECOVERED ON FIRST ATTEMPT CORE BARREL BEING RUN IN

SH/ea
263/B

DAILY MUDLOGGER REPORT

OPERATIONS GEOLOGIST: STEVE ROHR (713-556-2528)
DATE: 1-6-88

WELL NAME: SPENCE TRUST #1
OPERATOR: AMOCO PRODUCTION COMPANY
LOCATION: DUNKLIN COUNTY, MISSOURI
SPUD DATE: 11-27-87
TIME: 0600

LOGGING COMPANY: NL BAROID
MUDLOGGER: EMMETT KEENER
GEOLOGIST: TODD STEPHENSON
SAMPLE INTERVAL: 7691 - 7739

TD: 7739
FOOTAGE LAST 24 HOURS: 48
CURRENT OPERATION: CORING

STRATIGRAPHIC INTERVAL CURRENTLY DRILLING: BONNETERRE

DRILLING RATE: 3.6 FT/HR 16.6 MIN/FT
LAG TIME: 85.1 min 6700 Stks Bto up
WEIGHT ON BIT: 20 - 21 KLBS
PUMP OR AIR PRESSURE: 1090 psi
RPM (ROTARY SPEED). 80 rpm
TORQUE (ROTARY TORQUE:BIT CHATTER) 283 amps

MUD WEIGHT (lbs/gal): 8.9
MUD VISCOSITY)MARSH FUNNEL): 38
MUD SALINITY (PPM): 350

BIT NO. (TYPE): RR # 11 EC C-23

SHOWS: NONE

TESTS: TEST GAS TRAP

WIRE LINE SURVEYS: NA

FORMATION TOPS: NA

LITHOLOGIC DESCRIPTION: 80% DOL: WH CRM TN LT-DK GY, F-MICROXLN, ARG, SL TR BOL, TR PYR, TR FRAC W/CALC FILL
10% LS: WH, HD, DNSE, XLN, TR ORG MIN FLUOR
10% SH: DK GY-BLK FRM, BLKY, TR PYR, SLI CALC

COMMENTS: CORED 7691.7 to 7721.7 - CORE #3
PRESENTLY RUNNING CORE #4

DAILY MUDLOGGER REPORT

OPERATIONS GEOLOGIST: STEVE ROHR (713-556-2528)

DATE: 1-7-88

WELL NAME: SPENCE TRUST #1
OPERATOR: AMOCO PRODUCTION COMPANY
LOCATION: DUNKLIN COUNTY, MISSOURI
SPUD DATE: 11-27-87
TIME: 0600

LOGGING COMPANY: NL BAROID
MUDLOGGER: EMMETT KEENER
GEOLOGIST: TODD STEPHENSON
SAMPLE INTERVAL: 7739 - 7752

TD: 7752

FOOTAGE LAST 24 HOURS: 13

CURRENT OPERATION: THAWING STANDPIPE - FROZEN

STRATIGRAPHIC INTERVAL CURRENTLY DRILLING: BONNE TERRE

DRILLING RATE: 21.1 MIN/FT @ 7752'

LAG TIME: 6680 STKS bottoms u

WEIGHT ON BIT: 22.4 KLBS
PUMP OR AIR PRESSURE: 1134 psi.
RPM (ROTARY SPEED). 82
TORQUE (ROTARY TORQUE:BIT CHATTER) 284

MUD WEIGHT (lbs/gal): 9.0
MUD VISCOSITY)MARSH FUNNEL): 37
MUD SALINITY (PPM): 350

BIT NO. (TYPE): RR# 12 HTC J55R

SHOWS: NA

TESTS: TEST GAS TRAP

WIRE LINE SURVEYS: NA

FORMATION TOPS: NA

LITHOLOGIC DESCRIPTION: 80% DOL: DK BRN, TN, WH, MICRO-F XLN TR OOL TR CALC FILLED FRAC.
20% LS: DK GY, HD, F XLN, TR PYR

COMMENTS: Recovered top 29' of 30' CORE #4
TRIP IN W/RR #12
Stand pipe frozen - work to thaw standpipe

SN/ea
263/B

DAILY MUDLOGGER REPORT

OPERATIONS GEOLOGIST: STEVE ROHR (713-556-2528)

DATE: 1/8/88

WELL NAME: SPENCE TRUST #1
OPERATOR: AMOCO PRODUCTION COMPANY
LOCATION: DUNKLIN COUNTY, MISSOURI
SPUD DATE: 11-27-87
TIME: 0600

LOGGING COMPANY: NL BAROID
MUDLOGGER: ERNEST KEENER
GEOLOGIST: TODD STEPHENSON
SAMPLE INTERVAL: 7752 - 7791

TD: 7791

FOOTAGE LAST 24 HOURS: 39

CURRENT OPERATION: TRYING TO REGAIN CIRCULATION

STRATIGRAPHIC INTERVAL CURRENTLY DRILLING: BONNE TERRE

DRILLING RATE: 1.7 min/ft
WEIGHT ON BIT: 36.4 KLBS
PUMP OR AIR PRESSURE: 2070
RPM (ROTARY SPEED): 51
TORQUE (ROTARY TORQUE:BIT CHATTER) 205

LAG TIME: 6720 stks

MUD WEIGHT (lbs/gal): 9.0
MUD VISCOSITY)MARSH FUNNEL): 38
MUD SALINITY (PPM): 350

BIT NO. (TYPE): RR # 12 HTC J55R 9.5" 3-11's

SHOWS: NA

TESTS: TEST GAS TRAP

WIRE LINE SURVEYS: NA

FORMATION TOPS: NA

LITHOLOGIC DESCRIPTION: 100% DOLOMITE: WH, CRM, CLR, HB, DNSE
VF-M XLN, TR PYR

COMMENTS: DRILLED 12-16 ft/hr AVG BACKGROUND GAS 6 units
DRILL BREAK 7790-7791 ~56 ft/hr
LOST CIRC @ 7791'
PUMPED 1 LCM PILL
PUMPED ANOTHER LCM PILL

SN/ea
263/B

DAILY MUDLOGGER REPORT

OPERATIONS GEOLOGIST: STEVE ROHR (713-556-2528)

DATE: 1-9-88

WELL NAME: SPENCE TRUST #1
OPERATOR: AMOCO PRODUCTION COMPANY
LOCATION: DUNKLIN COUNTY, MISSOURI
SPUD DATE: 11-27-87
TIME: 0600

LOGGING COMPANY: NL BAROID
MUDLOGGER: EMMETT KEENER
GEOLOGIST: TODD STEPHENSON
SAMPLE INTERVAL: —

TD: 7791

FOOTAGE LAST 24 HOURS: 0

CURRENT OPERATION: TRIP OUT TO RUN SQUEEZE

STRATIGRAPHIC INTERVAL CURRENTLY DRILLING: BONDE TERRE

DRILLING RATE: NA
WEIGHT ON BIT: NA
PUMP OR AIR PRESSURE: NA
RPM (ROTARY SPEED): NA
TORQUE (ROTARY TORQUE:BIT CHATTER) NA

LAG TIME: 6740 Bottoms up

MUD WEIGHT (lbs/gal): 8.7
MUD VISCOSITY)MARSH FUNNEL): 32
MUD SALINITY (PPM): 200

BIT NO. (TYPE): #13 HTC ATJ 44 9.5" NO JETS

SHOWS: NA

TESTS: TEST GAS TRAP

WIRE LINE SURVEYS: NA

FORMATION TOPS: NA

LITHOLOGIC DESCRIPTION: NA

COMMENTS: LOST CIRC AT 7791'MD
PUMPED THREE LCM PILLS, NO RETURN
TAGGED BOTTOM AT 7791'MD HAD 1' OF DROP
FROM 7790'MD TO 7791'MD
DOWELL ON STANDBY TO RUN SQUEEZE

SN/ea
263/B

DAILY MUDLOGGER REPORT

OPERATIONS GEOLOG'ST: STEVE ROHR (713-556-2528)

DATE: 1-10-88

WELL NAME: SPENCE TRUST #1

OPERATOR: AMOCO PRODUCTION COMPANY

LOCATION: DUNKLIN COUNTY, MISSOURI

SPUD DATE: 11-27-87

TIME: 0600

LOGGING COMPANY: NL BAROID

MUDLOGGER: EMMETT KEENER

GEOLOGIST: TODD STEPHENSON

SAMPLE INTERVAL: 7791

TD: 7791' MD

FOOTAGE LAST 24 HOURS: 0

CURRENT OPERATION: TRIP

STRATIGRAPHIC INTERVAL CURRENTLY DRILLING: BONNE TERRE

DRILLING RATE: NA

LAG TIME: NA

WEIGHT ON BIT: NA

PUMP OR AIR PRESSURE: NA

RPM (ROTARY SPEED): NA

TORQUE (ROTARY TORQUE:BIT CHATTER) NA

MUD WEIGHT (lbs/gal): 8.8

MUD VISCOSITY)MARSH FUNNEL): 30

MUD SALINITY (PPM): 350

BIT NO. (TYPE): #13 HTC ATJ-44 9.5" NO JETS

SHOWS: NA

TESTS: NA

WIRE LINE SURVEYS: NA

FORMATION TOPS: NA

LITHOLOGIC DESCRIPTION: NA

COMMENTS: LOST CIRC
TRIP IN TO SQUEEZE, REGAIN CIRC
TRIP OUT
PICK UP BIT #13
TRIP IN - 4 stds in last circ

SN/ea
263/B

DAILY MUDLOGGER REPORT

OPERATIONS GEOLOGIST: STEVE ROHR (713-556-2528)
DATE: 1-11-88

WELL NAME: SPENCE TRUST #1
OPERATOR: AMOCO PRODUCTION COMPANY
LOCATION: DUNKLIN COUNTY, MISSOURI
SPUD DATE: 11-27-87
TIME: 0600

LOGGING COMPANY: NL BAROID
MUDLOGGER: EMMETT KEENER
GEOLOGIST: TODD STEPHENSON
SAMPLE INTERVAL: 7791 - 7881

TD: 7881
FOOTAGE LAST 24 HOURS: 90
CURRENT OPERATION: DRILLING

STRATIGRAPHIC INTERVAL CURRENTLY DRILLING: BONNE TERRE

DRILLING RATE: 36.3 FT/HR
LAG TIME: 6790 stks bottoms up
WEIGHT ON BIT: 27 KLB
PUMP OR AIR PRESSURE: 257 psi
RPM (ROTARY SPEED). 47 rpm
TORQUE (ROTARY TORQUE:BIT CHATTER) 177

MUD WEIGHT (lbs/gal): 8.34
MUD VISCOSITY)MARSH FUNNEL): 26
MUD SALINITY (PPM): NA

BIT NO. (TYPE): RR# 13 HTC ATJ-44 9⅞"

SHOWS: NA

TESTS: NA

WIRE LINE SURVEYS: NA

FORMATION TOPS: NA

LITHOLOGIC DESCRIPTION: NA

COMMENTS: on bottom hrs 6.8 hrs
Loss — total strokes = 4474 = 4090 bbls

— NO RETURNS —

SN/ea
263/B

DAILY MUDLOGGER REPORT

OPERATIONS GEOLOGIST: STEVE ROHR (713-556-2528)
DATE: 1-12-88

WELL NAME: SPENCE TRUST #1
OPERATOR: AMOCO PRODUCTION COMPANY
LOCATION: DUNKLIN COUNTY, MISSOURI
SPUD DATE: 11-27-87
TIME: 0600

LOGGING COMPANY: NL BAROID
MUDLOGGER: CHRIS - JIM
GEOLOGIST: TODD STEPHENSON
SAMPLE INTERVAL: 7881

TD: 7902'
FOOTAGE LAST 24 HOURS: 21
CURRENT OPERATION: TIH W/ON CEMENT

STRATIGRAPHIC INTERVAL CURRENTLY DRILLING: BONNE TERRE

DRILLING RATE: 6.6 FT/HR 9.6 MIN/FT
LAG TIME: 6960 STKS BOTTOMS U
WEIGHT ON BIT: 26
PUMP OR AIR PRESSURE: 300
RPM (ROTARY SPEED): 50
TORQUE (ROTARY TORQUE:BIT CHATTER) 170

MUD WEIGHT (lbs/gal): 9.34 FRESH WATER
MUD VISCOSITY)MARSH FUNNEL): 26
MUD SALINITY (PPM): 300

BIT NO. (TYPE): #13 HTC ATJ44

SHOWS: NONE

TESTS: CALIBRATE GC2000 TEST GAS TRAP

WIRE LINE SURVEYS: NONE

FORMATION TOPS: NONE

LITHOLOGIC DESCRIPTION: NO RETURNS

COMMENTS: STAP OUT OF HOLE. STRAP SHOWS VOID TO BE 5' FROM 7790 - 7795. LOGS WERE CORRECTED BACK WITH CORRECT DRILL RATE AND GAS LAG CORRECTED ON LOGS. TD IS 7902' TIH HOLE TO PUMP JUNK CEMENT JOB.

SN/aa
263/B

NOTE CORRECTION STRAP SHOWS VOID TO BE 5' FROM 7790 - 7795'

DAILY MUDLOGGER REPORT

OPERATIONS GEOLOGIST: STEVE ROHR (713-556-2528)
DATE: 1/13/88

WELL NAME: SPENCE TRUST #1
OPERATOR: AMOCO PRODUCTION COMPANY
LOCATION: DUNKLIN COUNTY, MISSOURI
SPUD DATE: 11-27-87
TIME: 0600

LOGGING COMPANY: NL BAROID
MUDLOGGER: CHRIS JIM
GEOLOGIST: TODD STEPHENSON
SAMPLE INTERVAL: NA

TD: 7902
FOOTAGE LAST 24 HOURS: 0
CURRENT OPERATION:

STRATIGRAPHIC INTERVAL CURRENTLY DRILLING: BONNE TERRE

DRILLING RATE: NA
LAG TIME: 6960 BOTTOMS UP
WEIGHT ON BIT: NA
PUMP OR AIR PRESSURE: NA
RPM (ROTARY SPEED). NA
TORQUE (ROTARY TORQUE:BIT CHATTER) NA

MUD WEIGHT (lbs/gal): 8.34 WATER
MUD VISCOSITY)MARSH FUNNEL): 26
MUD SALINITY (PPM): 300

BIT NO. (TYPE): #13 HTC ATJ 44

SHOWS: NONE

TESTS: TEST GAS TRAP

WIRE LINE SURVEYS: NONE

FORMATION TOPS: NONE

LITHOLOGIC DESCRIPTION:

COMMENTS: RUN GUNK SQUEEZE NO 2. WELL STARTED FLOWING WHILE LAYING DOWN 5" DP FLOWING BACK GUNK SQUEEZE, 61 UNITS DIESEL FUEL & KEROSENE FROM SQUEEZE, T.I.H.

SR/ea
263/B

DAILY MUDLOGGER REPORT

OPERATIONS GEOLOGIST: STEVE ROHR (713-556-2528)

DATE: 1-14-88

WELL NAME: SPENCE TRUST #1

OPERATOR: AMOCO PRODUCTION COMPANY

LOCATION: DUNKLIN COUNTY, MISSOURI

SPUD DATE: 11-27-87

TIME: 0600

LOGGING COMPANY: NL BAROID

MUDLOGGER: CHRIS / JIM

GEOLOGIST: TODD STEPHENSON

SAMPLE INTERVAL:

TD: 7902

FOOTAGE LAST 24 HOURS: 0

CURRENT OPERATION: BUILDING MW TO 8.5ppg.

STRATIGRAPHIC INTERVAL CURRENTLY DRILLING: BONNE TERRE

DRILLING RATE: NA

LAG TIME: 6810 STKS

WEIGHT ON BIT: NA

PUMP OR AIR PRESSURE:

RPM (ROTARY SPEED). NA

TORQUE (ROTARY TORQUE:BIT CHATTER) NA

MUD WEIGHT (lbs/gal): 8.91

MUD VISCOSITY)MARSH FUNNEL): 26

MUD SALINITY (PPM): 2300

BIT NO. (TYPE): RR#13 HTC ATJ44

SHOWS: NONE

TESTS: CLEAN out trap line AND CALIBRATE GAS DETECTOR.

WIRE LINE SURVEYS: NONE

FORMATION TOPS: NONE

LITHOLOGIC DESCRIPTION: NONE

COMMENTS: WELL STILL FLOWING, building Mud wt to 8.5ppg to kill water flow.

SN/ea
263/B

DAILY MUDLOGGER REPORT

OPERATIONS GEOLOGIST: STEVE ROHR (713-556-2528)

DATE: 1-15-88

WELL NAME: SPENCE TRUST #1
OPERATOR: AMOCO PRODUCTION COMPANY
LOCATION: DUNKLIN COUNTY, MISSOURI
SPUD DATE: 11-27-87
TIME: 0600

LOGGING COMPANY: NL BAROID
MUDLOGGER: JIM
GEOLOGIST: TODD STEPHENSON
SAMPLE INTERVAL: NA

TD: 7902

FOOTAGE LAST 24 HOURS: 0

CURRENT OPERATION: WORKING ON RIG

STRATIGRAPHIC INTERVAL CURRENTLY DRILLING: BONNE TERRE

DRILLING RATE: NA

LAG TIME: 6810 STKS

WEIGHT ON BIT: NA
PUMP OR AIR PRESSURE: NA
RPM (ROTARY SPEED). NA
TORQUE (ROTARY TORQUE:BIT CHATTER) NA

MUD WEIGHT (lbs/gal): 8.34 Water
MUD VISCOSITY)MARSH FUNNEL): 36
MUD SALINITY (PPM): 300

BIT NO. (TYPE): #13 ATJ 44

SHOWS: NA

TESTS: CLEAN TRAP LINE

WIRE LINE SURVEYS: NA

FORMATION TOPS: NA

LITHOLOGIC DESCRIPTION: NA

COMMENTS: FIXING LEAKS FOR AIR-mud DRILLING

SN/ea
263/B

DAILY MUDLOGGER REPORT

OPERATIONS GEOLOGIST: STEVE ROHR (713-556-2528)

DATE: 1-16 88

WELL NAME: SPENCE TRUST #1
OPERATOR: AMOCO PRODUCTION COMPANY
LOCATION: DUNKLIN COUNTY, MISSOURI
SPUD DATE: 11-27-88
TIME: 0600

LOGGING COMPANY: NL BAROID
MUDLOGGER: JIM / CHRIS
GEOLOGIST: TODD STEPHENSON
SAMPLE INTERVAL: NO RETURNS

TD: 8041

FOOTAGE LAST 24 HOURS: 139

CURRENT OPERATION: CIRC 6 STDS FROM BOTTOM, PUMPING WATER NO RETURNS

STRATIGRAPHIC INTERVAL CURRENTLY DRILLING: BONNE TERRE

DRILLING RATE: 6.7 MIN/FT 9.3 - 10.6 FT/HR

LAG TIME: 6950 STKS

WEIGHT ON BIT: 30
PUMP OR AIR PRESSURE: 250
RPM (ROTARY SPEED). 40
TORQUE (ROTARY TORQUE:BIT CHATTER) 181

MUD WEIGHT (lbs/gal): 8.34 WATER
MUD VISCOSITY)MARSH FUNNEL): 36
MUD SALINITY (PPM): 300

BIT NO. (TYPE): #13 HTC ATJ-44

SHOWS: NONE

TESTS: TRAP TEST

WIRE LINE SURVEYS: NONE

FORMATION TOPS: NONE NO RETURNS

LITHOLOGIC DESCRIPTION: NO RETURNS

COMMENTS: DRILLED TO 8041 W/NO RETURNS MADE SHORT TRIP 3' FILL, CIRC. 6 STDS FROM BOTTOM

SN/ea
263/B

DAILY MUDLOGGER REPORT

OPERATIONS GEOLOGIST: STEVE ROHR (713-556-2528)

DATE: 1-17-88

WELL NAME: SPENCE TRUST #1
OPERATOR: AMOCO PRODUCTION COMPANY
LOCATION: DUNKLIN COUNTY, MISSOURI
SPUD DATE: 11-27-87
TIME: 0600

LOGGING COMPANY: NL BAROID
MUDLOGGER: JIM
GEOLOGIST: TODD STEPHENSON
SAMPLE INTERVAL: NA

TD: 8041

FOOTAGE LAST 24 HOURS: 0

CURRENT OPERATION: RUNNING WIRELINE LOGS

STRATIGRAPHIC INTERVAL CURRENTLY DRILLING: BONNE TERRE

DRILLING RATE: NA

LAG TIME: 8628 STKS

WEIGHT ON BIT: NA
PUMP OR AIR PRESSURE: NA
RPM (ROTARY SPEED). NA
TORQUE (ROTARY TORQUE:BIT CHATTER) NA

MUD WEIGHT (lbs/gal): 8.39 FRESH WATER
MUD VISCOSITY)MARSH FUNNEL): 36
MUD SALINITY (PPM): 300

BIT NO. (TYPE):

SHOWS: NONE

TESTS: NONE

WIRE LINE SURVEYS: NONE

FORMATION TOPS: NONE

LITHOLOGIC DESCRIPTION: NONE

COMMENTS: CHANGED PUMP LINERS out to 5½" x 9" @ 95% 2631 gal/stk or .063 bbl/stk

SN/ea
263/B

DAILY MUDLOGGER REPORT

OPERATIONS GEOLOGIST: STEVE ROHR (713-556-2528)
DATE: 1-18-88

WELL NAME: SPENCE TRUST #1
OPERATOR: AMOCO PRODUCTION COMPANY
LOCATION: DUNKLIN COUNTY, MISSOURI
SPUD DATE: 11-27-87
TIME: 0600

LOGGING COMPANY: NL BAROID
MUDLOGGER: JIM GOLDSBY
GEOLOGIST: TODD STEPHENSON
SAMPLE INTERVAL: NA

TD: 8041
FOOTAGE LAST 24 HOURS: 0
CURRENT OPERATION: RUNNING ROTARY CORES

STRATIGRAPHIC INTERVAL CURRENTLY DRILLING: BONNE TERRE

DRILLING RATE: NA
LAG TIME: 8628 STKS
WEIGHT ON BIT: NA
PUMP OR AIR PRESSURE: NA
RPM (ROTARY SPEED). NA
TORQUE (ROTARY TORQUE:BIT CHATTER) NA

MUD WEIGHT (lbs/gal): 8.34 FRESH WATER
MUD VISCOSITY)MARSH FUNNEL): 36
MUD SALINITY (PPM): 300

BIT NO. (TYPE): NA

SHOWS: NA

TESTS: NA

WIRE LINE SURVEYS: NA

FORMATION TOPS: NA

LITHOLOGIC DESCRIPTION: NA

COMMENTS: 3 LOG RUNS made: DIGITAL SONIC; NATURAL GAMMA RAY; FDC; DUAL INDUCTION GAMMA; MICRO LOG GAMMA RAY 8032 LOGGER DEPTH

Running 30 CORES.

SN/ea
263/B

DAILY MUDLOGGER REPORT

OPERATIONS GEOLOGIST: STEVE ROHR (713-556-2528)
DATE: 1-19-88

WELL NAME: SPENCE TRUST #1
OPERATOR: AMOCO PRODUCTION COMPANY
LOCATION: DUNKLIN COUNTY, MISSOURI
SPUD DATE: 11-27-87
TIME: 0600

LOGGING COMPANY: NL BAROID
MUDLOGGER: JIM GOLDSBY
GEOLOGIST: TODD STEPHENSON
SAMPLE INTERVAL: NA

TD: 8041
FOOTAGE LAST 24 HOURS: 0
CURRENT OPERATION: PUMP OUT RESERVE PIT & CIRC

STRATIGRAPHIC INTERVAL CURRENTLY DRILLING: BONNE TERRE

DRILLING RATE: NA
LAG TIME: 8627 STKS
WEIGHT ON BIT: NA
PUMP OR AIR PRESSURE: NA
RPM (ROTARY SPEED). NA
TORQUE (ROTARY TORQUE:BIT CHATTER) NA

MUD WEIGHT (lbs/gal): 8.33 FRESH WATER
MUD VISCOSITY)MARSH FUNNEL): 36
MUD SALINITY (PPM): 300

BIT NO. (TYPE): NA

SHOWS: NA

TESTS: NA

WIRE LINE SURVEYS: NA

FORMATION TOPS: NA

LITHOLOGIC DESCRIPTION: NA

COMMENTS: LAYED DOWN 5" DRILL PIPE AND 7" COLLARS

SN/ea
263/B

DAILY MUDLOGGER REPORT

OPERATIONS GEOLOGIST: STEVE ROHR (713-556-2528)

DATE: 1-20-88

WELL NAME: SPENCE TRUST #1
OPERATOR: AMOCO PRODUCTION COMPANY
LOCATION: DUNKLIN COUNTY, MISSOURI
SPUD DATE: 11-27-87
TIME: 0600

LOGGING COMPANY: NL BAROID
MUDLOGGER: JIM GOLOSKY
GEOLOGIST: TODD STEPHENSON
SAMPLE INTERVAL: NA

TD: 9041

FOOTAGE LAST 24 HOURS: 0

CURRENT OPERATION: RUN 7⅝ CSG + CEMENT

STRATIGRAPHIC INTERVAL CURRENTLY DRILLING: BONNE TERRE

DRILLING RATE: NA

LAG TIME:

WEIGHT ON BIT: NA
PUMP OR AIR PRESSURE: NA
RPM (ROTARY SPEED). NA
TORQUE (ROTARY TORQUE:BIT CHATTER) NA

MUD WEIGHT (lbs/gal): 8.33
MUD VISCOSITY)MARSH FUNNEL): 36
MUD SALINITY (PPM): 300

BIT NO. (TYPE): NA

SHOWS: NA

TESTS: NA

WIRE LINE SURVEYS: NA

FORMATION TOPS: NA

LITHOLOGIC DESCRIPTION: NA

COMMENTS: RUN 7⅝ CSG + CEMENT SAME

SR/ea
263/B

DAILY MUDLOGGER REPORT

OPERATIONS GEOLOGIST: STEVE ROHR (713-556-2528)

DATE: 1-21-88

WELL NAME: SPENCE TRUST #1

OPERATOR: AMOCO PRODUCTION COMPANY

LOCATION: DUNKLIN COUNTY, MISSOURI

SPUD DATE: 11-27-87

TIME: 0600

LOGGING COMPANY: NL BAROID

MUDLOGGER: JIM GOLDSBY

GEOLOGIST: TODD STEPHENSON

SAMPLE INTERVAL: NA

TD: 8041

FOOTAGE LAST 24 HOURS: 0

CURRENT OPERATION: NIPPLE UP

STRATIGRAPHIC INTERVAL CURRENTLY DRILLING: BONNE TERRE

DRILLING RATE: NA

LAG TIME:

WEIGHT ON BIT: NA

PUMP OR AIR PRESSURE: NA

RPM (ROTARY SPEED). NA

TORQUE (ROTARY TORQUE:BIT CHATTER) NA

MUD WEIGHT (lbs/gal): 8.34

MUD VISCOSITY)MARSH FUNNEL): 21

MUD SALINITY (PPM): 300

BIT NO. (TYPE): NA

SHOWS: NA

TESTS: NA

WIRE LINE SURVEYS: NA

FORMATION TOPS: NA

LITHOLOGIC DESCRIPTION: NA

COMMENTS: NIPPLE UP BOP + TEST SAME

SN/ea
263/B

DAILY MUDLOGGER REPORT

OPERATIONS GEOLOGIST: STEVE ROHR (713-556-2528)
DATE: 1-22-88

WELL NAME: SPENCE TRUST #1
OPERATOR: AMOCO PRODUCTION COMPANY
LOCATION: DUNKLIN COUNTY, MISSOURI
SPUD DATE: 11-27-87
TIME: 0600

LOGGING COMPANY: NL BAROID
MUDLOGGER: JIM GOLOSBY
GEOLOGIST: TODD STEPHERSON
SAMPLE INTERVAL: NA

TD: 8041
FOOTAGE LAST 24 HOURS: 0
CURRENT OPERATION: PICK UP 3½ DRILL PIPE

STRATIGRAPHIC INTERVAL CURRENTLY DRILLING: BONNE TERRE

DRILLING RATE: NA
LAG TIME:
WEIGHT ON BIT: NA
PUMP OR AIR PRESSURE: NA
RPM (ROTARY SPEED). NA
TORQUE (ROTARY TORQUE:BIT CHATTER) NA

MUD WEIGHT (lbs/gal): 8.34
MUD VISCOSITY)MARSH FUNNEL): 26
MUD SALINITY (PPM): 300

BIT NO. (TYPE): J3 BIT NO 14 3-10

SHOWS: NA

TESTS: NA

WIRE LINE SURVEYS: NA

FORMATION TOPS: NA

LITHOLOGIC DESCRIPTION: NA

COMMENTS: PICK UP 3½ DRILL PIPE

SN/ea
263/B

DAILY MUDLOGGER REPORT

OPERATIONS GEOLOGIST: STEVE ROHR (713-556-2528)

DATE: 1-23-88

WELL NAME: SPENCE TRUST #1
OPERATOR: AMOCO PRODUCTION COMPANY
LOCATION: DUNKLIN COUNTY, MISSOURI
SPUD DATE: 11-27-87
TIME: 0600

LOGGING COMPANY: NL BAROID
MUDLOGGER: JIM GOLOSBY
GEOLOGIST: TODD STEPHENSON
SAMPLE INTERVAL: NA

TD: 8041

FOOTAGE LAST 24 HOURS: 0

CURRENT OPERATION: TRIP OUT OF HOLE.

STRATIGRAPHIC INTERVAL CURRENTLY DRILLING: BONNE TERRE

DRILLING RATE: NA

LAG TIME:

WEIGHT ON BIT: NA
PUMP OR AIR PRESSURE: NA
RPM (ROTARY SPEED). NA
TORQUE (ROTARY TORQUE:BIT CHATTER) NA

MUD WEIGHT (lbs/gal): 8.34
MUD VISCOSITY)MARSH FUNNEL): 26
MUD SALINITY (PPM): 300

BIT NO. (TYPE): JUNK BASKET

SHOWS: NA

TESTS: NA

WIRE LINE SURVEYS: NA

FORMATION TOPS: NA

LITHOLOGIC DESCRIPTION: NA

COMMENTS: TRIP OUT HOLE WITH JUNK BASKET

SN/ea
263/B

DAILY MUDLOGGER REPORT

OPERATIONS GEOLOGIST: STEVE ROHR (713-556-2528)

DATE: 1-24-87

WELL NAME: SPENCE TRUST #1

LOGGING COMPANY: NL BAROID

OPERATOR: AMOCO PRODUCTION COMPANY

MUDLOGGER: JIM GOLOSBY

LOCATION: DUNKLIN COUNTY, MISSOURI

GEOLOGIST: TODD STEPHENSON

SPUD DATE: 11-27-87

SAMPLE INTERVAL: 8041'- 8060'

TIME: 0600

TD: 8060'

FOOTAGE LAST 24 HOURS: 19

CURRENT OPERATION: DRILLING

STRATIGRAPHIC INTERVAL CURRENTLY DRILLING: BONNE TEARE

DRILLING RATE: 5.1 FT/HR 12.8 MIN/FT

LAG TIME: 4180 STKS BOTTOMS UP

WEIGHT ON BIT: 15 KLB

PUMP OR AIR PRESSURE: 2200

RPM (ROTARY SPEED). 40-45

TORQUE (ROTARY TORQUE:BIT CHATTER) 80-90 AMPS

MUD WEIGHT (lbs/gal): 8.34

MUD VISCOSITY)MARSH FUNNEL): 27

MUD SALINITY (PPM): N/A

BIT NO. (TYPE): BIT NO 14 J3 HTC 6.75" 10-10-10

SHOWS: NONE

TESTS: TEST GAS DETECTOR

WIRE LINE SURVEYS: NONE

FORMATION TOPS: N A

LITHOLOGIC DESCRIPTION: 100% DOL - LT-MED GY F XLN HD DNSE

COMMENTS: TESTED FORMATION TO 12.0 PPG AMW
CL FROM BOTTOMS UP AT 8046 FT WAS 1900 PPM

DAILY MUDLOGGER REPORT

OPERATIONS GEOLOGIST: STEVE ROHR (713-556-2528)

DATE: 1-25-87

WELL NAME: SPENCE TRUST #1
OPERATOR: AMOCO PRODUCTION COMPANY
LOCATION: DUNKLIN COUNTY, MISSOURI
SPUD DATE: 11-27-87
TIME: 0600

LOGGING COMPANY: NL BAROID
MUDLOGGER: EMMETT KEENER
GEOLOGIST: TODD STEPHENSON
SAMPLE INTERVAL: 8060 - 8188

TD: 8188'

FOOTAGE LAST 24 HOURS: 128'

CURRENT OPERATION: DRILLING

STRATIGRAPHIC INTERVAL CURRENTLY DRILLING: BONNE TERRE

DRILLING RATE: 13.5 ft/hr 4.2 min/ft.

LAG TIME: 4240 stk bottoms up

WEIGHT ON BIT: 35 KLB
PUMP OR AIR PRESSURE: 2200
RPM (ROTARY SPEED). 45
TORQUE (ROTARY TORQUE:BIT CHATTER) 110 AMPS

MUD WEIGHT (lbs/gal): 8.6
MUD VISCOSITY)MARSH FUNNEL): 30
MUD SALINITY (PPM):. 1700

BIT NO. (TYPE): 6.5" BIT 15 J-44 HTC 10-10-10

SHOWS: NONE

TESTS: CK GAS DETECTOR AT GAS TRAP

WIRE LINE SURVEYS: NA.

FORMATION TOPS: NA

LITHOLOGIC DESCRIPTION: 80% DOL: WH, CRM, LT-m GY, HD, DNS, F XLN, SUC, TR PYR, TR GLAUC
20% LS: WH, HD, DNS, MICROXLN

COMMENTS: hours on bit 13.0

SN/ea
263/8

DAILY MUDLOGGER REPORT

OPERATIONS GEOLOGIST: STEVE ROHR (713-556-2528)

DATE: 1-26-88

WELL NAME: SPENCE TRUST #1
OPERATOR: AMOCO PRODUCTION COMPANY
LOCATION: DUNKLIN COUNTY, MISSOURI
SPUD DATE: 11-27-87
TIME: 0600

LOGGING COMPANY: NL BAROID
MUDLOGGER: EMMETT REENER
GEOLOGIST: TODD STEPHENSON
SAMPLE INTERVAL: 8188-8333

TD: 8333'

FOOTAGE LAST 24 HOURS: 45

CURRENT OPERATION: DRILLING

STRATIGRAPHIC INTERVAL CURRENTLY DRILLING: BONNETERRE

DRILLING RATE: 6.9 ft/hr 9.1 min/ft

LAG TIME: 4090 stk B.U

WEIGHT ON BIT: 36 KLB
PUMP OR AIR PRESSURE: 2500
RPM (ROTARY SPEED): 39
TORQUE (ROTARY TORQUE:BIT CHATTER) 155

MUD WEIGHT (lbs/gal): 8.6
MUD VISCOSITY)MARSH FUNNEL): 31
MUD SALINITY (PPM): 1700

BIT NO. (TYPE): #16 HTC J-44

SHOWS: N A

TESTS: TEST GAS TRAP AT SHAKER

WIRE LINE SURVEYS: 8237' 2°

FORMATION TOPS: NA

713-987-5855

LITHOLOGIC DESCRIPTION: 40% DOL M-DK GY F XLN SUC HD DNS ARG
60% LS WH LT-DK GY HD DNS F XLN ARG SUC TI
PYR TR GLAUC

COMMENTS: TORQUE - BELIEVED CAUSED BY STABILIZERS HANGING IN FORMATION CHANGES
hours on bit 8.6

DAILY MUDLOGGER REPORT

OPERATIONS GEOLOGIST: STEVE ROHR (713-556-2528)
DATE: 1-27-88

WELL NAME: SPENCE TRUST #1
OPERATOR: AMOCO PRODUCTION COMPANY
LOCATION: DUNKLIN COUNTY, MISSOURI
SPUD DATE: 11-27-87
TIME: 0600

LOGGING COMPANY: NL BAROID
MUDLOGGER: EMMETT KEENER
GEOLOGIST: TODD STEPHENSON
SAMPLE INTERVAL: 8333' - 8494'

TD: 8494'
FOOTAGE LAST 24 HOURS: 161'
CURRENT OPERATION: TRIP OUT FOR NEW BIT

STRATIGRAPHIC INTERVAL CURRENTLY DRILLING: BONNE TERRE

DRILLING RATE: 5.7 ft/hr 10.1 min/ft
LAG TIME: 4150 strks bottoms up
WEIGHT ON BIT: 35.9 KLBS
PUMP OR AIR PRESSURE: 2460
RPM (ROTARY SPEED). 45
TORQUE (ROTARY TORQUE:BIT CHATTER) 130 amps

MUD WEIGHT (lbs/gal): 8.7
MUD VISCOSITY)MARSH FUNNEL): 32
MUD SALINITY (PPM): 1500

BIT NO. (TYPE): # 16 HTC J44

SHOWS: NA

TESTS: TEST GAS DETECTOR AT TRAP

WIRE LINE SURVEYS: NA

FORMATION TOPS: NA

LITHOLOGIC DESCRIPTION: 90% LS: WH, CRM LT-DK GY, HD, DNS, F XLN OOL, TR PYR, TR GLAUC
10% DOL: M GY, HD, DNS, F XLN, SUC, OOL

COMMENTS: ROP dropped to 17.8 min/ft - 3 ft/hr - was decided to pull bit, NO FORMATION CHANGE

DAILY MUDLOGGER REPORT

OPERATIONS GEOLOGIST: STEVE ROHR (713-556-2528)
DATE: 1-28-88

WELL NAME: SPENCE TRUST #1
OPERATOR: AMOCO PRODUCTION COMPANY
LOCATION: DUNKLIN COUNTY, MISSOURI
SPUD DATE: 11-27-87
TIME: 0600

LOGGING COMPANY: NL BAROID
MUDLOGGER: EMMETT KEENER
GEOLOGIST: TODD STEPHENSON
SAMPLE INTERVAL: 8494'-8639'

TD: 8639'
FOOTAGE LAST 24 HOURS: 145'
CURRENT OPERATION: DRILLING

STRATIGRAPHIC INTERVAL CURRENTLY DRILLING: BONNETERRE

DRILLING RATE: 8.8 FT/HR 6.2 MIN/FT.
LAG TIME: 4520 stks 6.4
WEIGHT ON BIT: 35 KLB
PUMP OR AIR PRESSURE: 2390
RPM (ROTARY SPEED): 46
TORQUE (ROTARY TORQUE:BIT CHATTER) 80-200

MUD WEIGHT (lbs/gal): 8.6
MUD VISCOSITY)MARSH FUNNEL): 32
MUD SALINITY (PPM): 1400

BIT NO. (TYPE): #17 HTC ATJ 55R 3-10's

SHOWS: NA

TESTS: CARBIDE THROUGH DRILL PIPE

WIRE LINE SURVEYS: NA

FORMATION TOPS: NA

LITHOLOGIC DESCRIPTION: 10% DOL: m-DK GY, HD, DNS, F XLN, SUC, TR PYR
90% LS: WH, LT-m GY, CRM, HD, DNS, SUC, F XLN, TR PYR, TR GLAUC

COMMENTS: hours on bit 16.1

SN/ea
263/B

DAILY MUDLOGGER REPORT

OPERATIONS GEOLOGIST: STEVE BOHR (713-556-2528)

DATE: 1-29-88

WELL NAME: SPENCE TRUST #1
OPERATOR: AMOCO PRODUCTION COMPANY
LOCATION: DUNKLIN COUNTY, MISSOURI
SPUD DATE: 11-27-87
TIME: 0600

LOGGING COMPANY: NL BAROID
MUDLOGGER: EMMETT KEENER
GEOLOGIST: TODD STEPHENSON
SAMPLE INTERVAL: 8639'-8749

TD: 8749'

FOOTAGE LAST 24 HOURS: 110'

CURRENT OPERATION: TRIP IN and RIG UP TO CIRCULATE WITH AIR

STRATIGRAPHIC INTERVAL CURRENTLY DRILLING: BONNE TERRE

DRILLING RATE: 11.0 min/FT

LAG TIME: 4494 STKS - bottoms

WEIGHT ON BIT: 31.9 KLB
PUMP OR AIR PRESSURE: 2377
RPM (ROTARY SPEED): 46
TORQUE (ROTARY TORQUE: BIT CHATTER) 140

MUD WEIGHT (lbs/gal): 8.7
MUD VISCOSITY (MARSH FUNNEL): 38
MUD SALINITY (PPM): 1500

BIT NO. (TYPE): #18 HTC ATJ 55R

SHOWS: NA

TESTS: NA

WIRE LINE SURVEYS: 8749' 2 3/4°

FORMATION TOPS: NA

LITHOLOGIC DESCRIPTION: 90% LS WH CRM LT-M GY HD DNS F-M XLN SUC TR PYR TR GLAUC
10% DOL DK GY HD DNS F-M XLN SUC

COMMENTS: BIT 17 WORN OUT WITH 31.3 hours on bottom
Rig up to circ w/air

SN/ea
267/B

DAILY MUDLOGGER REPORT

OPERATIONS GEOLOGIST: STEVE ROHR (713-556-2528)

DATE: 1-30-88

WELL NAME: SPENCE TRUST #1
OPERATOR: AMOCO PRODUCTION COMPANY
LOCATION: DUNKLIN COUNTY, MISSOURI
SPUD DATE: 11-27-87
TIME: 0600

LOGGING COMPANY: NL BAROID
MUDLOGGER: EMMETT REENER
GEOLOGIST: TODD STEPHENSON
SAMPLE INTERVAL: 8749' - 8795'

TD: 8795'

FOOTAGE LAST 24 HOURS: 36'

CURRENT OPERATION: TRIP FOR NEW BIT

STRATIGRAPHIC INTERVAL CURRENTLY DRILLING: BONNE TERRE

DRILLING RATE: 3.6 Ft/hr 19.1 min/ft

LAG TIME: 4570 stks bottoms up

WEIGHT ON BIT: 33 KLBS
PUMP OR AIR PRESSURE: 2330
RPM (ROTARY SPEED): 40
TORQUE (ROTARY TORQUE:BIT CHATTER) 145

MUD WEIGHT (lbs/gal): 8.7
MUD VISCOSITY)MARSH FUNNEL): 38
MUD SALINITY (PPM): 1500

BIT NO. (TYPE): #18 HTC ATJ-55R

SHOWS: NA

TESTS: TEST TRAP & GAS DETECTOR

WIRE LINE SURVEYS: NA

FORMATION TOPS: NA

LITHOLOGIC DESCRIPTION: 40% DOL m-DK GY HD DNS ARG F-M XLN SUC
60% LS WH LT-DK GY HD DNS ARG F-M XLN SUC SDY
TR PYR TR HEM

COMMENTS: hours on bit #18 9.3 on bottom

SN/ea
263/B

DAILY MUDLOGGER REPORT

OPERATIONS GEOLOGIST: STEVE ROHR (713-556-2528)
DATE: 1-31-88

WELL NAME: SPENCE TRUST #1
OPERATOR: AMOCO PRODUCTION COMPANY
LOCATION: DUNKLIN COUNTY, MISSOURI
SPUD DATE: 11-27-87
TIME: 0600

LOGGING COMPANY: NL BAROID
MUDLOGGER: EMMETT KEENER
GEOLOGIST: TODD STEPHENSON
SAMPLE INTERVAL: 8795' - 8880'

TD: 8880'
FOOTAGE LAST 24 HOURS: 85'
CURRENT OPERATION: DRILLING

STRATIGRAPHIC INTERVAL CURRENTLY DRILLING: BONNE TERRE

DRILLING RATE: 7 ft/hr.
LAG TIME: 4630 stks-bottoms up
WEIGHT ON BIT: 33 KLBS
PUMP OR AIR PRESSURE: 2400
RPM (ROTARY SPEED): 45
TORQUE (ROTARY TORQUE:BIT CHATTER) 175

MUD WEIGHT (lbs/gal): 8.7
MUD VISCOSITY)MARSH FUNNEL): 35
MUD SALINITY (PPM): 1400

BIT NO. (TYPE): #19 SEC M84F 6.5"

SHOWS: NA

TESTS: NA

WIRE LINE SURVEYS: NA

FORMATION TOPS: NA

LITHOLOGIC DESCRIPTION: 90% DOL: LT-DK GY HD DNS ARG F-MXLN SUC TR PY
10% LS: WH CRM LT-M GY HD DNS ARG F-MXLN SUC TR PYR

COMMENTS: COMPUTER DOWN AT 8850'MD, PARTS BEING FLOWN IN
GAS DETECTOR, CHROMATOGRAPH & H_2S Sensors still in operating condition
Using rig geolograph for ROP and rig pumps for lag.

SN/ea
263/B

DAILY MUDLOGGER REPORT

OPERATIONS GEOLOGIST: STEVE BOHR (713-556-2528)

DATE: 2-1-88

WELL NAME: SPENCE TRUST #1
OPERATOR: AMOCO PRODUCTION COMPANY
LOCATION: DUNKLIN COUNTY, MISSOURI
SPUD DATE: 11-27-87
TIME: 0600

LOGGING COMPANY: NL BAROID
MUDLOGGER: JIM GOLDSBY
GEOLOGIST: TODD STEPHENSON
SAMPLE INTERVAL: 8880' - 8943'

TD: 8943

FOOTAGE LAST 24 HOURS: 63'

CURRENT OPERATION: DRILLING

STRATIGRAPHIC INTERVAL CURRENTLY DRILLING: BONNE TERRE

DRILLING RATE: 4.0 FT/HR 15 MIN/FT

LAG TIME: 4640 stks bottoms

WEIGHT ON BIT: 33 KLBS
PUMP OR AIR PRESSURE: 2430
RPM (ROTARY SPEED): 50
TORQUE (ROTARY TORQUE:BIT CHATTER) 140

MUD WEIGHT (lbs/gal): 8.4
MUD VISCOSITY)MARSH FUNNEL): 27
MUD SALINITY (PPM): 1300

BIT NO. (TYPE): #20 HTC ATJ 77 6.5" 3-10's

SHOWS: NONE

TESTS: TEST GAS DETECTOR AT TRAP

WIRE LINE SURVEYS: NA

FORMATION TOPS: NA

LITHOLOGIC DESCRIPTION: 70% DOL - wh clr HD DNSE F XLN TR PYR TR GLAUC
30% LS - wh clr F XLN HD DNSE

COMMENTS: DRILLING AHEAD

SN/ea
263/B

DAILY MUDLOGGER REPORT

OPERATIONS GEOLOGIST: STEVE ROHR (713-556-2528)
DATE: 2-2-88

WELL NAME: SPENCE TRUST #1
OPERATOR: AMOCO PRODUCTION COMPANY
LOCATION: DUNKLIN COUNTY, MISSOURI
SPUD DATE: 11-27-87
TIME: 0600

LOGGING COMPANY: NL BAROID
MUDLOGGER: CHRIS
GEOLOGIST: TODD STEPHENSON
SAMPLE INTERVAL: 8943 - 9030

TD: 9050
FOOTAGE LAST 24 HOURS: 107
CURRENT OPERATION: DRILLING

STRATIGRAPHIC INTERVAL CURRENTLY DRILLING: BONNETERRE

DRILLING RATE: 11.7 MIN/FT 5.1 FT/HR
LAG TIME: 4700 STKS / 52 MIN
WEIGHT ON BIT: 33-35
PUMP OR AIR PRESSURE: 2439
RPM (ROTARY SPEED): 45-55
TORQUE (ROTARY TORQUE:BIT CHATTER) 110-213

MUD WEIGHT (lbs/gal): 8.5 PP
MUD VISCOSITY)MARSH FUNNEL): 29
MUD SALINITY (PPM): 1100

BIT NO. (TYPE): #20 HTC ATJ-77 6.5" 3-10's

SHOWS: NONE

TESTS: TEST GAS TRAP & RUN CALIBRATION GAS IN GC2000

WIRE LINE SURVEYS: NA

FORMATION TOPS: NA

LITHOLOGIC DESCRIPTION:
9030' DOL 30% DK GY CLR, FXLN, SUCS, DNSE HD
LS 70% LS DK GY CLR FXLN, SUCS, OOL DNSE HD

COMMENTS:

SR/ea
263/B

DAILY MUDLOGGER REPORT

OPERATIONS GEOLOGIST: STEVE ROHR (713-556-2528)
DATE: 2-3-88

WELL NAME: SPENCE TRUST #1
OPERATOR: AMOCO PRODUCTION COMPANY
LOCATION: DUNKLIN COUNTY, MISSOURI
SPUD DATE: 11-27-87
TIME: 0600

LOGGING COMPANY: NL BAROID
MUDLOGGER: CHRIS GALLAGHER
GEOLOGIST: TODD STEPHENSON
SAMPLE INTERVAL: 9030 - 9160

TD: 9165
FOOTAGE LAST 24 HOURS: 115
CURRENT OPERATION: TRIPPING FOR NEW BIT #21

STRATIGRAPHIC INTERVAL CURRENTLY DRILLING: BOWING TERRE

DRILLING RATE: 8.8 MIN/FT 6.8 FT/HR
LAG TIME: 4750 STKS 52 MIN
WEIGHT ON BIT: 35
PUMP OR AIR PRESSURE: 2456
RPM (ROTARY SPEED). 45
TORQUE (ROTARY TORQUE:BIT CHATTER) 140-223

MUD WEIGHT (lbs/gal): 8.5
MUD VISCOSITY)MARSH FUNNEL): 28
MUD SALINITY (PPM): 1200

BIT NO. (TYPE): #20 HTC ATJ-77 271', 52.3 HRS ON BIT

SHOWS: N/A

TESTS: GAS DETECTOR & GC2000

WIRE LINE SURVEYS:

FORMATION TOPS: N/A

LITHOLOGIC DESCRIPTION: 9160 90% LS - DK GY, GY, OOLTIC DNSE XLN HD
10% DOL DK GY GY XLN DNSE HD

COMMENTS:

SN/ea
263/B

DAILY MUDLOGGER REPORT

DATE: 2-4-88

OPERATIONS GEOLOGIST: STEVE ROHR (713-556-2528)

LOGGING COMPANY: NL BAROID
MUDLOGGER: CHRIS GALLAGHER
GEOLOGIST: TODD STEPHENSON
SAMPLE INTERVAL: 9160

WELL NAME: SPENCE TRUST #1
OPERATOR: AMOCO PRODUCTION COMPANY
LOCATION: DUNKLIN COUNTY, MISSOURI
SPUD DATE: 11-27-87
TIME: 0600

FOOTAGE LAST 24 HOURS: 81

TD: 9246
CURRENT OPERATION: DRILLING AHEAD

STRATIGRAPHIC INTERVAL CURRENTLY DRILLING: BONNETERRE

LAG TIME: 4770 STKS 53 MIN.

DRILLING RATE: 10.6 MIN/FT 5.7 FT/HR
WEIGHT ON BIT: 35
PUMP OR AIR PRESSURE: 2447
RPM (ROTARY SPEED): 45
TORQUE (ROTARY TORQUE:BIT CHATTER) 113-252

MUD WEIGHT (lbs/gal): 8.5
MUD VISCOSITY)MARSH FUNNEL): 28
MUD SALINITY (PPM): 1200

BIT NO. (TYPE): #21 HTC ATJ-77 3-10's

SHOWS: N/A

TESTS: CALIBRATE GC2000 TEST GAS DETECTOR FROM TRAP

WIRE LINE SURVEYS: 9160 2½°

FORMATION TOPS: N/A

LITHOLOGIC DESCRIPTION: 80% LS - DK M GY, FXLN, SUCS ONSE HD
20% DOL. LTGY GY FXLN, ONSE HD

COMMENTS: BIT #21 HRS = 126

SN/ea

DAILY MUDLOGGER REPORT

OPERATIONS GEOLOGIST: STEVE ROHR (713-556-2528)

DATE: 2-5-88

WELL NAME: SPENCE TRUST #1
OPERATOR: AMOCO PRODUCTION COMPANY
LOCATION: DUNKLIN COUNTY, MISSOURI
SPUD DATE: 11-27-87
TIME: 0600

LOGGING COMPANY: NL BAROID
MUDLOGGER: CHRIS CALLAGHER
GEOLOGIST: TODD STEPHENSON
SAMPLE INTERVAL: 9240 - 9370

TD: 9377

FOOTAGE LAST 24 HOURS: 131

CURRENT OPERATION: DRILLING

STRATIGRAPHIC INTERVAL CURRENTLY DRILLING: BONNETERRE

DRILLING RATE: 4.8 FT/HR 12.7 MIN/FT

LAG TIME: 53.8 MIN 4840 STK

WEIGHT ON BIT: 35-36
PUMP OR AIR PRESSURE: 2532
RPM (ROTARY SPEED). 45
TORQUE (ROTARY TORQUE:BIT CHATTER) 120 - 161

MUD WEIGHT (lbs/gal): 8.5
MUD VISCOSITY)MARSH FUNNEL): 28
MUD SALINITY (PPM): 1100

BIT NO. (TYPE): #21 HTC ATJ-77

SHOWS: N/A

TESTS: NA

WIRE LINE SURVEYS: NA

FORMATION TOPS: NA

LITHOLOGIC DESCRIPTION: 9370- 70% LS LT M GY FXLN DNSE HD
30% DOL DK GY FLXLN DNSE VHD

COMMENTS: #21 HOURS = 35.9 HRS

SN/ea
263/B

DAILY MUDLOGGER REPORT

OPERATIONS GEOLOGIST: STEVE ROHR (713-556-2528)

DATE: 2-6-88

WELL NAME: SPENCE TRUST #1
OPERATOR: AMOCO PRODUCTION COMPANY
LOCATION: DUNKLIN COUNTY, MISSOURI
SPUD DATE: 11-27-87
TIME: 0600

LOGGING COMPANY: NL BAROID
MUDLOGGER: CHRIS GALLAGHER
GEOLOGIST: TODD STEPHENSON
SAMPLE INTERVAL: 9370 - 9459

TD: 9459

FOOTAGE LAST 24 HOURS: 82

CURRENT OPERATION: TRIPPING FOR NEW BIT 22

STRATIGRAPHIC INTERVAL CURRENTLY DRILLING: BONNETERRE

DRILLING RATE: 18.4 MIN/FT 3.3 FT/HR

LAG TIME: 54 MIN

WEIGHT ON BIT: 38
PUMP OR AIR PRESSURE: 2585
RPM (ROTARY SPEED): 45
TORQUE (ROTARY TORQUE:BIT CHATTER) 186

MUD WEIGHT (lbs/gal): 8.5
MUD VISCOSITY)MARSH FUNNEL): 28
MUD SALINITY (PPM): 1200

BIT NO. (TYPE): # 22 HTC ATJ 77

SHOWS: NA

TESTS: NA

WIRE LINE SURVEYS: NA

FORMATION TOPS: NA

LITHOLOGIC DESCRIPTION: 9459 60% OOL DLGY, CLR, FXLN, DNSE VHD
40% LS LTGY CLR FXLN DNSE HD
TR PYR

COMMENTS: BIT #21 HTC ATJ 77 55.1 HRS 294'

SN/ea
263/B

DAILY MUDLOGGER REPORT

DATE: 2-7-88

OPERATIONS GEOLOGIST: STEVE ROHR (713-556-2528)

LOGGING COMPANY: NL BAROID
MUDLOGGER: CHRIS GALLAGHER
GEOLOGIST: TODD STEPHENSON
SAMPLE INTERVAL: 9459-

WELL NAME: SPENCE TRUST #1
OPERATOR: AMOCO PRODUCTION COMPANY
LOCATION: DUNKLIN COUNTY, MISSOURI
SPUD DATE: 11-27-87
TIME: 0600

TD: 9459
FOOTAGE LAST 24 HOURS: 0
CURRENT OPERATION: REAMING TO BOTTOM

STRATIGRAPHIC INTERVAL CURRENTLY DRILLING: BONNETERRE

LAG TIME: 4850 STKS 60MIN

DRILLING RATE: NA
WEIGHT ON BIT: NA
PUMP OR AIR PRESSURE: 2042
RPM (ROTARY SPEED): NA
TORQUE (ROTARY TORQUE:BIT CHATTER) NA

MUD WEIGHT (lbs/gal): 8.5
MUD VISCOSITY)MARSH FUNNEL): 29
MUD SALINITY (PPM): 1250

BIT NO. (TYPE): # 22 HTC ATJ-77 3 10's

SHOWS: NONE

TESTS: NA

WIRE LINE SURVEYS: 9459' 1 3/4°

FORMATION TOPS: N/A

LITHOLOGIC DESCRIPTION: 9459 44% LS - LT GY CLR FXLN DNSE HD TR PYR
56% DOL - DK GY GY CLR FXLN DNSE VHD

COMMENTS: REAM BACK TO BOTTOM FROM 8862'

SN/ea
263/B

DAILY MUDLOGGER REPORT

OPERATIONS GEOLOGIST: STEVE ROHR (713-556-2528)

DATE: 2-8-88

WELL NAME: SPENCE TRUST #1
OPERATOR: AMOCO PRODUCTION COMPANY
LOCATION: DUNKLIN COUNTY, MISSOURI
SPUD DATE: 11-27-87
TIME: 0600

LOGGING COMPANY: NL BAROID
MUDLOGGER: CHRIS GALLAGHER
GEOLOGIST: TODD STEPHENSON
SAMPLE INTERVAL: 9459-9526

TD: 9526
CURRENT OPERATION: DRILLING

FOOTAGE LAST 24 HOURS: 67

STRATIGRAPHIC INTERVAL CURRENTLY DRILLING: BONNE TERRE

DRILLING RATE: 5.9 FT/HR 101 MIN/FT
WEIGHT ON BIT: 35 KLB
PUMP OR AIR PRESSURE: 2500
RPM (ROTARY SPEED) 45
TORQUE (ROTARY TORQUE:BIT CHATTER) 186

LAG TIME: 4900 STKS BOTTOMS

MUD WEIGHT (lbs/gal): 8.5
MUD VISCOSITY)MARSH FUNNEL): 28
MUD SALINITY (PPM): 1200

BIT NO. (TYPE): #22 HTC ATJ-77 3-10

SHOWS: NA

TESTS: TEST GAS TRAP, TEST GC2000

WIRE LINE SURVEYS: NA

FORMATION TOPS: NA

LITHOLOGIC DESCRIPTION: 90% LS - DK GY F XLN DNSE HD OOL AR
10% DOL - MED GY F XLN DNSE HD

COMMENTS: DRILLING AHEAD

SN/ea
263/B

DAILY MUDLOGGER REPORT

OPERATIONS GEOLOGIST: STEVE ROHR (713-556-2528)
DATE: 2-9-88

WELL NAME: SPENCE TRUST #1
OPERATOR: AMOCO PRODUCTION COMPANY
LOCATION: DUNKLIN COUNTY, MISSOURI
SPUD DATE: 11-27-87
TIME: 0600

LOGGING COMPANY: NL BAROID
MUDLOGGER: JIM GOODSON
GEOLOGIST: TODD STEPHENSON
SAMPLE INTERVAL: 9526 - 9645

TD: 9645
FOOTAGE LAST 24 HOURS: 119
CURRENT OPERATION: DRILLING

STRATIGRAPHIC INTERVAL CURRENTLY DRILLING: BONNE TERRE

DRILLING RATE: 4.1 ft/hr 13.2 min/ft
LAG TIME: 4950 stks 58 min. bottoms
WEIGHT ON BIT: 35 klb
PUMP OR AIR PRESSURE: 2500
RPM (ROTARY SPEED): 45
TORQUE (ROTARY TORQUE:BIT CHATTER) 186 Amp

MUD WEIGHT (lbs/gal): 8.5
MUD VISCOSITY)MARSH FUNNEL): 28
MUD SALINITY (PPM): 1300

BIT NO. (TYPE): #22 HTC ATJ-77 3-10

SHOWS: NA

TESTS: TEST GAS TRAP

WIRE LINE SURVEYS: NA

FORMATION TOPS: NA

LITHOLOGIC DESCRIPTION: 90% LS- WH-MED GY F XLN HD DNSE
10% DOL- MED GY F XLN DNSE HD

COMMENTS: DRILLING AHEAD

DAILY MUDLOGGER REPORT

OPERATIONS GEOLOGIST: STEVE ROHR (713-556-2528)

DATE: 2-10-88

WELL NAME: SPENCE TRUST #1
OPERATOR: AMOCO PRODUCTION COMPANY
LOCATION: DUNKLIN COUNTY, MISSOURI
SPUD DATE: 11-27-87
TIME: 0600

LOGGING COMPANY: NL BAROID
MUDLOGGER: JIM GOLDSBY
GEOLOGIST: TODD STEPHENSON
SAMPLE INTERVAL: 9645-9771

TD: 9771'

FOOTAGE LAST 24 HOURS: 126

CURRENT OPERATION: DRILLING

STRATIGRAPHIC INTERVAL CURRENTLY DRILLING: BONNE TERRE

DRILLING RATE: 6.9 MIN/FT 8.4 FT/HR

LAG TIME: 56 min 5010 stks bottoms up

WEIGHT ON BIT: 35 KLB
PUMP OR AIR PRESSURE: 2500
RPM (ROTARY SPEED). 45
TORQUE (ROTARY TORQUE:BIT CHATTER) 125 AMPS

MUD WEIGHT (lbs/gal): 8.5
MUD VISCOSITY)MARSH FUNNEL): 29
MUD SALINITY (PPM): 1300

BIT NO. (TYPE): #23 HTC ATJ-77 3-10

SHOWS: NONE

TESTS: TEST GAS TRAP & GC 2000

WIRE LINE SURVEYS: 2 3/4" 9645'

FORMATION TOPS: NA

LITHOLOGIC DESCRIPTION: 40% LS - WH - LT GY MED GY F XLN HD DNSE
60% DOL - M - MED GY F XLN HD SW DNSE SNDY

COMMENTS: DRILLING AHEAD

SN/ea
263/B

DAILY MUDLOGGER REPORT

OPERATIONS GEOLOGIST: STEVE ROHR (713-556-2528)

DATE: 2-11-88

WELL NAME: SPENCE TRUST #1
OPERATOR: AMOCO PRODUCTION COMPANY
LOCATION: DUNKLIN COUNTY, MISSOURI
SPUD DATE: 11-27-87
TIME: 0600

LOGGING COMPANY: ML BAROID
MUDLOGGER: JIM GOLDSBY
GEOLOGIST: TODD STEPHENSON
SAMPLE INTERVAL: 9771-9854

TD: 9854

FOOTAGE LAST 24 HOURS: 123

CURRENT OPERATION: DRILLING

STRATIGRAPHIC INTERVAL CURRENTLY DRILLING: BONNE TERRE

DRILLING RATE: 3.4 FT/HR 17.5 MIN/FT

LAG TIME: 57 MINS 5070 STKS BOTTOMS UP

WEIGHT ON BIT: 35 KLB
PUMP OR AIR PRESSURE: 2500
RPM (ROTARY SPEED). 45
TORQUE (ROTARY TORQUE: BIT CHATTER) 200 AMPS

MUD WEIGHT (lbs/gal): 8.5
MUD VISCOSITY)MARSH FUNNEL): 29
MUD SALINITY (PPM): 1200

BIT NO. (TYPE): #23 HTC ATJ-77 3-10

SHOWS: NONE

TESTS: TEST GAS TRAP TEST GC 2000

WIRE LINE SURVEYS: N.A

FORMATION TOPS: N A

LITHOLOGIC DESCRIPTION: 60% LS - LH - CT GY F XLN HD DNSE ARG
40% DOL - DK GY F XLN HD DNSE SUC U. ARG

COMMENTS: DRILLING AHEAD

SN/ea
263/B

DAILY MUDLOGGER REPORT

OPERATIONS GEOLOGIST: STEVE ROHR (713-556-2528)

DATE: 2-12-88

WELL NAME: SPENCE TRUST #1
OPERATOR: AMOCO PRODUCTION COMPANY
LOCATION: DUNKLIN COUNTY, MISSOURI
SPUD DATE: 11-27-87
TIME: 0600

LOGGING COMPANY: NL BAROID
MUDLOGGER: JIM GOLNSOY
GEOLOGIST: TODD STEPHENSON
SAMPLE INTERVAL: 9894 - 9925

TD: 9925

FOOTAGE LAST 24 HOURS: 31

CURRENT OPERATION: DRILLING

STRATIGRAPHIC INTERVAL CURRENTLY DRILLING: BONNE TERRE

DRILLING RATE: 8.7 FT/HR 6.9 MIN/FT

LAG TIME: 56.4 MIN 5070 STKS BOTTOMS

WEIGHT ON BIT: 35 KLB
PUMP OR AIR PRESSURE: 2500
RPM (ROTARY SPEED): 45
TORQUE (ROTARY TORQUE:BIT CHATTER) 155 AMPS

MUD WEIGHT (lbs/gal): 8.5
MUD VISCOSITY)MARSH FUNNEL): 31
MUD SALINITY (PPM): 1100

BIT NO. (TYPE): #24 HTC ATJ-77 3-10

SHOWS: NONE

TESTS: TEST GAS TRAP TEST GC 2000

WIRE LINE SURVEYS: $3\frac{1}{2}°$ AT 9901

FORMATION TOPS: N A

LITHOLOGIC DESCRIPTION: 70% LS - WH LT GY F XLN HD DNSE
30% DOL - LT GY MED GY F XLN HD DNSE

COMMENTS: DRILLING AHEAD

SN/ea
263/B

DAILY MUDLOGGER REPORT

OPERATIONS GEOLOGIST: STEVE ROHR (713-556-2528)

DATE: 2-13-88

WELL NAME: SPENCE TRUST #1
OPERATOR: AMOCO PRODUCTION COMPANY
LOCATION: DUNKLIN COUNTY, MISSOURI
SPUD DATE: 11-27-87
TIME: 0600

LOGGING COMPANY: NL BAROID
MUDLOGGER: JIM GOLOSKY
GEOLOGIST: TODD STEPHENSON
SAMPLE INTERVAL: 9925' - 10057'

TD: 10057'

FOOTAGE LAST 24 HOURS: 132

CURRENT OPERATION: DRILLING

STRATIGRAPHIC INTERVAL CURRENTLY DRILLING: LAMOTTE

DRILLING RATE: 7.1 FT/HR (9.7 MIN/FT)

LAG TIME: 5130 STKS bottoms up (57 min)

WEIGHT ON BIT: 30 KLB
PUMP OR AIR PRESSURE: 2900
RPM (ROTARY SPEED): 45
TORQUE (ROTARY TORQUE: BIT CHATTER) 155 AMPS

MUD WEIGHT (lbs/gal): 8.5
MUD VISCOSITY (MARSH FUNNEL): 31
MUD SALINITY (PPM): 1100

BIT NO. (TYPE): #24 HTC ATJ-77 3-10

SHOWS: NONE

TESTS: TEST GAS TRAP TEST GC 2.00

WIRE LINE SURVEYS: N.A

FORMATION TOPS: LAMOTTE SST AT 9945

LITHOLOGIC DESCRIPTION: 100% SST - WH LT-MGRY UF-F GR SBANG MS CALC SILIC CMT

COMMENTS: DRILLING AHEAD

SN/ea
263/B

DAILY MUDLOGGER REPORT

OPERATIONS GEOLOGIST: STEVE ROHR (713-556-2528)

DATE: 2-14-88

WELL NAME: SPENCE TRUST #1
OPERATOR: AMOCO PRODUCTION COMPANY
LOCATION: DONKLIN COUNTY, MISSOURI
SPUD DATE: 11-27-87
TIME: 0600

LOGGING COMPANY: NL BAROID
MUDLOGGER: JIM GOLUSKU
GEOLOGIST: TODD STEPHENSON
SAMPLE INTERVAL: 10057'-10088'

TD: 10088'

FOOTAGE LAST 24 HOURS: 31

CURRENT OPERATION: E LOG

STRATIGRAPHIC INTERVAL CURRENTLY DRILLING: LAMOTTE

DRILLING RATE: 5.2 FT/HR 11.5 MIN/FT

LAG TIME: 57.2 MIN 5140 STKS BOTTOM

WEIGHT ON BIT: 30 KLB
PUMP OR AIR PRESSURE: 2500
RPM (ROTARY SPEED): 45
TORQUE (ROTARY TORQUE:BIT CHATTER) 150 AMP

MUD WEIGHT (lbs/gal): 8.5
MUD VISCOSITY)MARSH FUNNEL): 35
MUD SALINITY (PPM): 1100

BIT NO. (TYPE): #24 HTC ATJ-77 310

SHOWS: NONE

TESTS: TEST GAS TRAP

WIRE LINE SURVEYS: 3 3/4° 10,088

FORMATION TOPS:

LITHOLOGIC DESCRIPTION: 100% SST - WH LT-MED GY VF GR SBANG W SRT TGT FRI CALC SILIC CMT TR PYR TR GLAUC

COMMENTS: E LOG

SN/ea
263/B

DAILY MUDLOGGER REPORT

OPERATIONS GEOLOGIST: STEVE ROHR (713-556-2528)

DATE: 2-15-88

WELL NAME: SPENCE TRUST #1
OPERATOR: AMOCO PRODUCTION COMPANY
LOCATION: DUNKLIN COUNTY, MISSOURI
SPUD DATE: 11-27-87
TIME: 0600

LOGGING COMPANY: NL BAROID
MUDLOGGER: JIM GOLDSBY
GEOLOGIST: TODD STEPHENSON
SAMPLE INTERVAL: 0

TD: 10088

FOOTAGE LAST 24 HOURS: 0

CURRENT OPERATION: E LOG

STRATIGRAPHIC INTERVAL CURRENTLY DRILLING: LAMOTTE

DRILLING RATE: NA

LAG TIME:

WEIGHT ON BIT: NA
PUMP OR AIR PRESSURE: NA
RPM (ROTARY SPEED). NA
TORQUE (ROTARY TORQUE:BIT CHATTER) NA

MUD WEIGHT (lbs/gal): 8.5
MUD VISCOSITY)MARSH FUNNEL): 33
MUD SALINITY (PPM): 1100

BIT NO. (TYPE): NA

SHOWS: NA

TESTS: TEST GAS TRAP

WIRE LINE SURVEYS: NA

FORMATION TOPS:

LITHOLOGIC DESCRIPTION: NA

COMMENTS: RUN VELOCITY SURVEY

SN/ea
263/B

Baroid Petroleum Services

Baroid Division/NL Industries, Inc.

DRILLING MUD RECORD

CASING PROGRAM: 24 inch at 47'
16 inch at 250'
10.75 inch at 2037'
7.625 inch at 8041'
inch at

COMPANY AMOCO PRODUCTION COMPANY STATE MISSOURI

WELL SPENCE TRUST #1 PARISH/COUNTY DUNKLIN SEC 10 TWP 17 N RNG 8E

CONTRACTOR NOBLE LOCATION MISSOURI

BAROID ENGINEERS KEENER, GALLAGHER, GOLDSBY SPUD DATE 11-27-87 TOTAL DEPTH 10089'

DATE	DEPTH	WEIGHT	VISCOSITY		Yp	GELS	pH	FILTRATION			FILTRATE ANALYSIS					SAND	RETORT			CEC	Ca+
19 87	feet	lb/gal	Sec API @ 90 °F	PV @ ___ °F		10 sec/ 10 min	Strip ☐ Meter ☒	ml API	HTHP @ 250 °F	Cake 1/32	Pm	Pf	Mf	Cl ppm	Ca ppm	%	Solids %	Oil %	Water %	Mud me/ml	Exc lb/b
11/28	92	8.8	40	4	12	3/21	9.0	N.C.	NA	2	.4	.1	.2	400	40	.5	3.5	0	96	3.1	.05
11/29	250	9.3	46	7	15	3/39	9.2	N.C	NA	2	.5	.2	.4	300	40	1.0	7.0	0	92	3.7	.03
11/30	250		MUD USED WAS DRILL WATER NO REPORT																		
12/1	838	9.1	37	6	9	2/29	8.8	13.4	NA	2	.3	TR	.1	400	NIL	1.0	5.5	0	93.5	2.5	.05
12/2	1893	9.2	38	8	11	2/16	8.9	12.8	NA	2	.4	.1	.2	400	NIL	1.0	6.5	0	92.5	2.65	.05
12/3	2037	9.3	46	10	12	4/13	8.7	11.7	NA	2	.3	.1	.2	400	NIL	1.0	7.0	0	98.0	3.0	.02
12/4	2037	9.3	47	11	12	4/15	8.6	11.2	NA	2	.3	.1	.3	400	NIL	TR	7.0	0	93.0	3.0	0
12/5			SET	10 3/4		CASING															
12/6			"	"		"															
12/7			"	"		"															
12/8			"	"		"															
12/9	2240	8.5	32	3	3	2/4	8.0	17.2	NA	2	.2	TR	.3	200	TR	.5	1.6	0	98.4	2.5	0
12/10	2300	8.7	34	4	6	2/7	8.3	17.4	NA	2	.2	TR	.4	250	TR	.5	2.75	0	97.25	2.63	0
12/11	2653	8.7	34	5	9	2/9	8.1	17.2	NA	2	.15	TR	.3	300	TR	.5	2.75	0	97.25	2.5	0
12/12	3029	8.9	33	4	5	2/6	8.4	16.8	NA	2	.2	TR	.3	400	TR	.5	4.2	0	95.8	2.25	0
12/13	3345	8.9	34	5	6	2/8	8.1	16.4	NA	2	.15	TR	.3	500	TR	.25	4.2	0	95.8	2.5	0
12/14	3480	8.8+	34	4	8	2/6	8.0	16.2	NA	2	.1	TR	.3	550	TR	TR	3.5	0	96.5	2.75	0
12/15	3780	8.8	34	6	7	2/11	8.3	16.0	NA	2	.15	TR	.3	500	TR	TR	3.5	0	96.5	2.63	0
12/16	4100	8.8	34	6	8	2/13	8.1	16.2	NA	2	.1	TR	.35	450	TR	TR	3.5	0	96.5	2.5	0
12/17	4485	8.8+	35	6	9	3/11	8.0	16.8	62.0	2	.1	.05	.30	400	TR	.125	3.5	0	96.5	2.6	0
12/18	4517	8.8+	33	5	5	2/7	8.0	17.4	NA	2	.1	TR	.3	350	TR	.125	3.4	0	96.6	2.5	0
12/19	4790	8.8	35	6	8	3/10	7.9	11.6	NA	2	.1	TR	.25	400	TR	.125	3.5	0	96.5	2.63	0
12/20	5110	8.9	35	7	7	3/10	8.0	12.0	41.4	2	.1	TR	.25	350	TR	.125	4.2	0	95.8	3.0	0
12/21	5230	8.9	35	6	5	2/6	8.0	13.0	NA	2	.1	TR	.25	300	TR	.25	4.2	0	95.8	2.5	0
12/22	5530	8.9	35	6	8	3/7	8.0	13.4	NA	2	.1	TR	.3	250	TR	.25	4.5	0	95.8	2.5	0
12/23	5730	8.9+	34	7	7	3/6	8.0	14.8	NA	2	.1	TR	.25	300	TR	.25	4.5	0	95.5	2.6	0
12/24	5987	9.0	35	7	9	3/9	8.2	13.8		2	.1	TR	.4	300	TR	TR	TR	0	95	2.5	0
12/25	6033	8.9	33	5	6	2/7	8.3	14.0		2	.1	TR	.45	300	TR	TR	4.2	0	95.8	2.75	0
12/26	6031	8.9+	34	7	7	3/6	8.0	14.5		2	.1	TR	.25	300	TR	.25	4.5	0	93.5	2.6	0
12/27	6323	8.9	37	7	11	3/14	8.4	13.2		2	.1	TR	.5	300	TR	TR	4.2	0	95.8	2.87	0
12/28	6525	8.8+	37	7	9	3/18	8.3	12.0	38.2	2	.25	TR	.45	300	TR	TR	3.5	0	96.5	2.6	0
12/29	6867	8.9	36	7	7	3/15	8.1	12.4	37.8	2	.2	TR	.4	250	TR	TR	4.2	0	95.8	2.5	0
12/30	[illegible]	8.4+	38	8	10	3/1	8.1	[illegible]	38.1	2	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

Baroid Petroleum Services

Baroid Division/NL Industries, Inc.

DRILLING MUD RECORD

CASING PROGRAM: 24 inch at 47'
16 inch at 250
10.75 inch at 2037
7 6.625 inch at 8041
inch at

COMPANY AMOCO PRODUCTION COMPANY STATE MISSOURI

WELL SPENCE TRUST #1 PARISH/COUNTY DUNKLIN SEC 10 TWP 17N RNG 8E

CONTRACTOR NOBLE LOCATION MISSOURI

BAROID ENGINEERS KEENER, GALLAGHER, GOLDSBY SPUD DATE 11-27-87 TOTAL DEPTH 10089'

DATE	DEPTH	WEIGHT	VISCOSITY		Yp	GELS	pH	FILTRATION			FILTRATE ANALYSIS					SAND	RETORT			CEC	Ca+
1987/88	feet	lb/gal	Sec API @ ___ °F	PV @ ___ °F		10 sec/ 10 min	Strip ☐ Meter ☒	ml API	HTHP @ ___ °F	Cake 1/32	Pm	Pf	Mf	Cl ppm	Ca ppm	%	Solids %	Oil %	Water %	Mud me/ml	Exce lb/b
12/31	7030	8.9	39	8	11	3/14	8.0	10.8	–	2	.3	TR	.35	300	TR	TR	4.2	0	95.8	2.9	0
1/1	7138	8.9	40	9	12	3/15	8.1	11.4	36.8	2	.3	TR	.4	300	TR	TR	4.2	0	95.8	2.8	0
1/2	7277	8.9	38	10	10	3/12	8.1	12.6	–	2	.3	.05	.4	350	TR	TR	4.2	0	95.8	2.8	0
1/3	7340	9.0	41	12	11	4/14	8.0	12.2	–	2	.3	TR	.35	300	TR	TR	4.9	0	95.1	2.9	0
1/4	7580	8.9	36	9	7	3/10	8.0	12.5	34.3	2	.3	TR	.4	300	TR	TR	4.2	0	95.8	3.0	0
1/5	7690	8.9	37	10	9	3/11	8.1	12.8	–	2	.3	TR	.4	250	TR	TR	4.2	0	95.8	3.0	0
1/6	7721	8.9	38	7	8	3/10	8.0	11.0	34.9	2	.25	TR	.35	350	TR	TR	4.2	0	95.8	2.8	0
1/7	7751	9.0	37	7	7	2/8	8.1	11.2	35.4	2	.3	TR	.4	350	TR	TR	4.8	0	95.2	2.87	0
1/8	7752	9.0	38	7	9	3/14	8.2	11.0	35.4	2	.25	TR	.3	350	TR	TR	4.8	0	95.2	2.8	0
1/9	7791	8.7	32	4	6	2/7	8.0	15.6	35.4	2	.1	TR	.2	200	TR	TR	2.6	0	97.4	2.5	0
1/10	7791	8.8	30	3	5	1/6	8.0	16.8	48.8	2	.1	TR	.2	350	TR	TR	3.5	0	96.5	2.10	0
1/11	7833	8.34	26	NO RETURNS			DRY DRILLING		W/WATER												
1/12	7927	8.34	26	WATER																	
1/13	7927	8.34	26	WATER																	
1/14	7927	8.34	26	WATER																	
1/15	7927	8.34	26	WATER																	
1/16	8010	8.34	26	WATER																	
1/17	8041	8.34	26	WATER																	
1/18				NO REPORT																	
1/19	8041	8.34	26	WATER																	
1/20	8041	8.34	26	WATER																	
1/21	8041	8.34	26	WATER																	
1/22	8041	8.34	26	WATER																	
1/23	8041	8.34	26	WATER																	
1/24	8041	8.34	26	WATER																	
1/25	8131	8.6	30	2	2	0/2	9.0	39.6	NC	2	.4	.2	.3	1700	80	TR	2	0	98	1.50	.02
1/26	8268	8.6	31	2	3	0/3	8.6	27.8	NC	2	.5	.2	.4	1700	60	TR	2	0	98	2.00	.02
1/27	8465	8.7	32	3	4	1/4	8.5	25.0	NC	2	.45	.2	.4	1500	80	TR	2.7	0	97.3	2.0	.01
1/28	8560	8.7	34	5	5	2/7	8.9	13.8	38.0	2	.6	.25	.5	1400	40	TR	3	0	97	2.4	.02
1/29	8745	8.7	38	6	8	3/8	9.0	12.3	33.6	2	.65	.25	.5	1500	40	TR	3	0	97	2.5	.03
1/30	8780	8.7	38	7	8	3/8	8.9	12.0	NC	2	.6	.25	.55	1500	40	TR	3	0	97	2.5	.01
1/31	8850	8.7	35	7	6	3/6	8.8	14.0	NA	2	.55	.25	.50	1400	40	TR	3	0	97	2.5	.01

Baroid Petroleum Services

Baroid Division/NL Industries, Inc.

DRILLING MUD RECORD

CASING PROGRAM: 24 inch at 47
16 inch at 250
10.75 inch at 2037
7.625 inch at 8041
___ inch at ___

COMPANY AMOCO PRODUCTION COMPANY STATE MISSOURI

WELL SPENCE TRUST #1 PARISH/COUNTY DUNKLIN SEC 10 TWP 17N RNG 8E

CONTRACTOR NOBLE LOCATION MISSOURI

BAROID ENGINEERS KEENER, GALLAGHER, GOLDSBY SPUD DATE 11-27-87 TOTAL DEPTH 10089

DATE	DEPTH	WEIGHT	VISCOSITY		Yp	GELS	pH	FILTRATION			FILTRATE ANALYSIS					SAND	RETORT			CEC	Ca++
1987/88	feet	lb/gal	Sec API @ ___ °F	PV @ ___ °F		10 sec/ 10 min	Strip ☐ Meter ☒	ml API	HTHP @ 225 °F	Cake 1/32	Pm	Pf	Mf	Cl ppm	Ca ppm	%	Solids %	Oil %	Water %	Mud me/ml	Excess lb/bbl
2/2	9009	8.5	28	4	2	0/2	8.0	23.5	64.6	2	.2	.05	.3	1100	40	TR	1.3	0	98.7	1.8	0
2/3	9145	8.5	28	4	1	0/1	8.1	25.0	NA	2	.2	TR	.25	1200	40	TR	1.3	0	98.7	1.8	0
2/4	9200	8.5	29	3	1	0/1	8.3	25.8	NA	2	.25	TR	.3	1200	40	TR	1.3	0	98.7	1.75	0
2/5	9334	8.5	28	4	1	0/2	8.0	26.4	NA	2	.2	TR	.35	1100	20	TR	1.3	0	98.7	1.60	0
2/6	9447	8.5	28	5	1	0/3	8.3	28.4	NA	2	.2	TR	.3	1200	20	TR	1.3	0	98.7	1.66	0
2/7	9459	8.5	29	4	2	0/2	8.0	28.8	NA	2	.2	TR	.35	1250	20	TR	1.3	0	98.7	1.60	0
2/8	9490	8.5	28	3	1	0/1	7.9	30.4	NA	2	.1	TR	.2	1200	20	TR	1.3	0	98.7	2.0	0
2/9	9615	8.5	28	2	2	0/1	7.8	26.4	NA	2	.1	TR	.2	1300	TR	TR	1.3	0	98.7	2.38	0
2/10	9690	8.5	29	3	2	0/1	7.9	24.4	NA	2	.05	TR	.3	1300	TR	TR	1.5	0	98.5	2.25	0
2/11	9870	8.5	29	4	2	0/1	8.0	18.2	NA	2	.1	TR	.3	1200	TR	TR	1.5	0	98.5	2.75	0
2/12	9990	8.5	31	4	3	1/3	8.0	14.0	NA	2	.15	.05	.25	1100	TR	TR	1.5	0	98.5	2.62	0
2/13	10000	8.5	31	3	3	1/2	7.8	16.8	NA	2	.2	.05	.25	1100	TR	TR	1.5	0	98.5	2.62	0
2/14	10089	8.5	35	5	7	2/6	7.9	14.8	38.6	2	.2	.05	.25	1100	TR	TR	1.5	0	98.5	2.62	0
2/15	10089	8.5	35	4	4	2/4	7.9	14.2	NA	2	.2	.05	.25	1150	TR	TR	1.5	0	98.5	2.62	0

Baroid Petroleum Services

Baroid Division/NL Industries, Inc.

DRILLING MUD RECORD

CASING PROGRAM: 24 inch at 47'; 16 inch at 250'; 10.75 inch at 2037'; 7.625 inch at 8041'; ___ inch at ___

COMPANY AMOCO PRODUCTION COMPANY STATE MISSOURI

WELL SPENCE TRUST #1 PARISH/COUNTY DUNKLIN SEC 10 TWP 17N RNG 8E

CONTRACTOR NOBLE LOCATION MISSOURI

BAROID ENGINEERS KEENER, GALLAGHER, GOLDSBY SPUD DATE 11-27-87 TOTAL DEPTH 10089'

DATE	DEPTH	WEIGHT	VISCOSITY		Yp	GELS	pH	FILTRATION			FILTRATE ANALYSIS					SAND	RETORT			CEC	Ca++
19 87	feet	lb/gal	Sec API @ 90 °F	PV @ ___ °F		10 sec/ 10 min	Strip ☐ Meter ☒	ml API	HTHP @ 250 °F	Cake 1/32	Pm	Pf	Mf	Cl ppm	Ca ppm	%	Solids %	Oil %	Water %	Mud me/ml	Excess lb/bbl
11/28	92	8.8	40	4	12	3/21	9.0	N.C.	NA	2	.4	.1	.2	400	40	.5	3.5	0	96	3.1	.05
11/29	250	9.3	46	7	15	3/39	9.2	N.C.	NA	2	.5	.2	.4	300	40	1.0	7.0	0	92	3.7	.03
11/30	250		MUD USED WAS DRILL WATER NO REPORT																		
12/1	838	9.1	37	6	9	2/29	8.8	13.4	NA	2	.3	TR	.1	400	NIL	1.0	5.5	0	93.5	2.5	.05
12/2	1893	9.2	38	8	11	2/16	8.9	12.8	NA	2	.4	.1	.2	400	NIL	1.0	6.5	0	92.5	2.65	.05
12/3	2037	9.3	46	10	12	4/13	8.7	11.7	NA	2	.3	.1	.2	400	NIL	1.0	7.0	0	93.0	3.0	.02
12/4	2037	9.3	47	11	12	4/15	8.6	11.2	NA	2	.3	.1	.3	400	NIL	TR	7.0	0	93.0	3.0	0
12/5			SET	10 3/4		CASING															
12/6			"	"		"															
12/7			"	"		"															
12/8			"	"		"															
12/9	2240	8.5	32	3	3	2/4	8.0	17.2	NA	2	.2	TR	.3	200	TR	.5	1.6	0	98.4	2.5	0
12/10	2300	8.7	34	4	6	2/7	8.3	17.4	NA	2	.2	TR	.4	250	TR	.5	2.75	0	97.25	2.63	0
12/11	2653	8.7	34	5	9	2/9	8.1	17.2	NA	2	.15	TR	.3	300	TR	.5	2.75	0	97.25	2.5	0
12/12	3029	8.9	33	4	5	2/6	8.4	16.8	NA	2	.2	TR	.3	400	TR	.5	4.2	0	95.8	2.22	0
12/13	3345	8.9	34	5	6	2/8	8.1	16.4	NA	2	.15	TR	.3	500	TR	.25	4.2	0	95.8	2.5	0
12/14	3480	8.8+	34	4	8	2/6	8.0	16.2	NA	2	.1	TR	.3	550	TR	TR	3.5	0	96.5	2.75	0
12/15	3780	8.8	34	6	7	2/11	8.3	16.0	NA	2	.15	TR	.3	500	TR	TR	3.5	0	96.5	2.63	0
12/16	4100	8.8	34	6	8	2/13	8.1	16.2	NA	2	.1	TR	.35	450	TR	TR	3.5	0	96.5	2.5	0
12/17	4485	8.8+	35	6	9	3/11	8.0	16.8	62.0	2	.1	.05	.30	400	TR	.125	3.5	0	96.5	2.6	0
12/18	4517	8.8+	33	5	5	2/7	8.0	17.4	NA	2	.1	TR	.3	350	TR	.125	3.4	0	96.6	2.5	0
12/19	4790	8.8	35	6	8	3/10	7.9	11.6	NA	2	.1	TR	.25	400	TR	.125	3.5	0	96.5	2.63	0
12/20	5110	8.9	35	7	7	3/10	8.0	12.0	41.4	2	.1	TR	.25	350	TR	.125	4.2	0	95.8	3.0	0
12/21	5230	8.9	35	6	5	2/6	8.0	13.0	NA	2	.1	TR	.25	300	TR	.25	4.2	0	95.8	2.5	0
12/22	5530	8.9	35	6	8	3/7	8.0	13.4	NA	2	.1	TR	.3	250	TR	.25	4.5	0	95.8	2.5	0
12/23	5730	8.9+	34	7	7	3/6	8.0	14.5	NA	2	.1	TR	.25	300	TR	.25	4.5	0	95.5	2.6	0
12/24	5987	9.0	35	7	9	3/9	8.2	13.8		2	.1	TR	.3	300	TR	TR	TR	0	95	2.5	0
12/25	6033	8.9	33	5	6	2/7	8.3	14.0		2	.1	TR	.45	300	TR	TR	4.2	0	95.8	2.75	0
12/26	6031	8.9+	34	7	7	3/6	8.0	14.5		2	.1	TR	.25	300	TR	.25	4.5	0	95.5	2.6	0
12/27	6323	8.9	37	7	11	3/14	8.4	13.2		2	.1	TR	.5	300	TR	TR	4.2	0	95.8	2.87	0
12/28	6525	8.8+	37	7	9	3/18	8.3	12.0	38.2	2	.25	TR	.45	300	TR	TR	3.5	0	96.5	2.6	0
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	7	3/15	8.1	12.4	38.8	2	.2	TR	.4	250	TR	TR	4.2	0	95.8	2.5	0

Baroid Petroleum Services

Baroid Division/NL Industries, Inc.

DRILLING MUD RECORD

CASING PROGRAM: 24 inch at 47' ft
16 inch at 250 ft
10.75 inch at 2037 ft
7 6.625 inch at 8041 ft
inch at ft

COMPANY AMOCO PRODUCTION COMPANY STATE MISSOURI

WELL SPENCE TRUST #1 PARISH/COUNTY DUNKLIN SEC 10 TWP 17N RNG 8E

CONTRACTOR NOBLE LOCATION MISSOURI

BAROID ENGINEERS KEENER, GALLAGHER, GOLDSBY SPUD DATE 11-27-87 TOTAL DEPTH 10089'

DATE	DEPTH	WEIGHT	VISCOSITY		Yp	GELS	pH	FILTRATION			FILTRATE ANALYSIS					SAND	RETORT			CEC	Ca++
1987/88	feet	lb/gal	Sec API @ ___ °F	PV @ ___ °F		10 sec/ 10 min	Strip ☐ Meter ☑	ml API	HTHP @ ___ °F	Cake 1/32	Pm	Pf	Mf	Cl ppm	Ca ppm	%	Solids %	Oil %	Water %	Mud me/ml	Excess lb/bbl
12/31	7030	8.9	39	8	11	3/14	8.0	10.8	–	2	.3	TR	.35	300	TR	TR	4.2	0	95.8	2.9	0
1/1	7138	8.9	40	9	12	3/15	8.1	11.4	36.8	2	.3	TR	.4	300	TR	TR	4.2	0	95.8	2.8	0
1/2	7277	8.9	38	10	10	3/12	8.1	12.6	–	2	.3	.05	.4	350	TR	TR	4.2	0	95.8	2.8	0
1/3	7340	9.0	41	12	11	4/14	8.0	12.2	–	2	.3	TR	.35	300	TR	TR	4.9	0	95.1	2.9	0
1/4	7580	8.9	36	9	7	3/10	8.0	12.5	34.3	2	.3	TR	.4	300	TR	TR	4.2	0	95.0	3.0	0
1/5	7690	8.9	37	10	9	3/11	8.1	12.8	–	2	.3	TR	.4	250	TR	TR	4.2	0	95.8	3.0	0
1/6	7721	8.9	38	7	8	3/10	8.0	11.0	34.9	2	.25	TR	.35	350	TR	TR	4.2	0	95.8	2.8	0
1/7	7751	9.0	37	7	7	2/8	8.1	11.2	35.4	2	.3	TR	.4	350	TR	TR	4.8	0	95.2	2.87	0
1/8	7752	9.0	38	7	9	3/14	8.2	11.0	35.4	2	.25	TR	.3	350	TR	TR	4.8	0	95.2	2.8	0
1/9	7791	8.7	32	4	6	2/7	8.0	15.8	35.4	2	.1	TR	.2	200	TR	TR	2.6	0	97.4	2.5	0
1/10	7791	8.8	30	3	5	1/6	8.0	16.8	48.8	2	.1	TR	.2	350	TR	TR	3.5	0	96.5	2.10	0
1/11	7833	8.34	26	NO RETURNS			DRY DRILLING		W/WATER												
1/12	7927	8.34	26	WATER																	
1/13	7927	8.34	26	WATER																	
1/14	7927	8.34	26	WATER																	
1/15	7927	8.34	26	WATER																	
1/16	8010	8.34	26	WATER																	
1/17	8041	8.34	26	WATER																	
1/18				NO REPORT																	
1/19	8041	8.34	26	WATER																	
1/20	8041	8.34	26	WATER																	
1/21	8041	8.34	26	WATER																	
1/22	8041	8.34	26	WATER																	
1/23	8041	8.34	26	WATER																	
1/24	8041	8.34	26	WATER																	
1/25	8131	8.6	30	2	2	0/2	9.0	39.6	NC	2	.4	.2	.3	1700	80	TR	2	0	98	1.50	.025
1/26	8268	8.6	31	2	3	0/3	8.6	27.8	NC	2	.5	.2	.4	1700	60	TR	2	0	98	2.00	.025
1/27	8465	8.7	32	3	4	1/4	8.5	25.0	NC	2	.45	.2	.4	1500	80	TR	2.7	0	97.3	2.0	.013
1/28	8560	8.7	34	5	5	2/7	8.7	13.8	38.0	2	.6	.25	.5	1400	40	TR	3	0	97	2.4	.025
1/29	8745	8.7	38	6	8	3/8	9.0	12.3	33.8	2	.65	.25	.5	1500	40	TR	3	0	97	2.5	.038
1/30	8780	8.7	38	7	8	3/8	8.7	12.0	NC	2	.6	.25	.55	1500	40	TR	3	0	97	2.5	.013
1/31	8850	8.7	35	7	6	3/6	8.8	14.0	NA	2	.55	.25	.50	1400	40	TR	3	0	97	2.5	.013

Baroid Petroleum Services

Baroid Division/NL Industries, Inc.

DRILLING MUD RECORD

CASING PROGRAM: 24 inch at 47
16 inch at 250
10.75 inch at 2037
7.625 inch at 8041
___ inch at ___

COMPANY AMOCO PRODUCTION COMPANY STATE MISSOURI

WELL SPENCE TRUST #1 PARISH/COUNTY DUNKLIN SEC 10 TWP 17N RNG 8E

CONTRACTOR NOBLE LOCATION MISSOURI

BAROID ENGINEERS KEENER, GALLAGHER, GOLDSBY SPUD DATE 11-27-87 TOTAL DEPTH 10089

DATE	DEPTH	WEIGHT	VISCOSITY		Yp	GELS	pH	FILTRATION			FILTRATE ANALYSIS					SAND	RETORT			CEC	Ca++
1987/88	feet	lb/gal	Sec API @ ___ °F	PV @ ___ °F		10 sec/ 10 min	Strip ☐ Meter ☒	ml API	HTHP @ 225 °F	Cake 1/32	Pm	Pf	Mf	Cl ppm	Ca ppm	%	Solids %	Oil %	Water %	Mud me/ml	Excess lb/bbl
2/2	9009	8.5	28	4	2	0/2	8.0	23.5	64.6	2	.2	.05	.3	1100	40	TR	1.3	0	98.7	1.8	0
2/3	9145	8.5	28	4	1	0/1	8.1	25.0	NA	2	.2	TR	.25	1200	40	TR	1.3	0	98.7	1.8	0
2/4	9200	8.5	29	3	1	0/1	8.3	25.8	NA	2	.25	TR	.3	1200	40	TR	1.3	0	98.7	1.75	0
2/5	9334	8.5	28	4	1	0/2	8.0	26.4	NA	2	.2	TR	.25	1100	20	TR	1.3	0	98.7	1.60	0
2/6	9447	8.5	28	5	1	0/3	8.3	28.4	NA	2	.2	TR	.3	1200	20	TR	1.3	0	98.7	1.66	0
2/7	9459	8.5	29	4	2	0/2	8.0	28.8	NA	2	.2	TR	.35	1250	20	TR	1.3	0	98.7	1.60	0
2/8	9490	8.5	28	3	1	0/1	7.9	30.4	NA	2	.1	TR	.2	1200	20	TR	1.3	0	98.7	2.0	0
2/9	9615	8.5	28	2	2	0/1	7.8	26.4	NA	2	.1	TR	.2	1300	TR	TR	1.3	0	98.7	2.38	0
2/10	9690	8.5	29	3	2	0/1	7.9	24.4	NA	2	.05	TR	.3	1300	TR	TR	1.5	0	98.5	2.25	0
2/11	9870	8.5	29	4	2	0/1	8.0	18.2	NA	2	.1	TR	.3	1200	TR	TR	1.5	0	98.5	2.75	0
2/12	9990	8.5	31	4	3	1/3	8.0	14.0	NA	2	.15	.05	.25	1100	TR	TR	1.5	0	98.5	2.62	0
2/13	10000	8.5	31	3	3	1/2	7.8	16.8	NA	2	.2	.05	.25	1100	TR	TR	1.5	0	98.5	2.62	0
2/14	10087	8.5	35	5	7	2/6	7.9	14.8	38.6	2	.2	.05	.25	1100	TR	TR	1.5	0	98.5	2.62	0
2/15	10089	8.5	35	4	4	2/4	7.9	14.9	NA	2	.2	.05	.25	1150	TR	TR	1.5	0	98.5	2.62	0

TIME DISTRIBUTION

SHEET No 1

WELL NO SPENCE TRUST #1

SPUD DATE 11-27-87

DAYS	DATE	DRILLING	CONNECTION	TRIP	CIRC/COND	WASH/REAM	RUN CSG CEMENT	E. LOGS	DEV. SURV.	DIRECTION WORK	NIPPLE UP	TEST BOP	SLIP/CUT LINE	RIG REP	LOST CIRC	KILL WELL SHUT IN	TIGHT HOLE	STUCK PIPE	FISHING	RIG UP	MISCELLAN
1	11/27	5													3.5					12	3.5
2	11/28	6.5		2	10.5		4							1							
3	11/29						4.5				19.5										
4	11/30	9.5		.5							8.5			2.5							3
5	12/1	22			.5				1.5												
6	12/2	19		3.5										1.5							
7	12/3			5.5	2.5	1		15													
8	12/4			4.5	1.5		16														2
9	12/5						3				3										18
10	12/6										18	6									
11	12/7			2								6									16
12	12/8	21												1							2
13	12/9	11		3.5					1.0					1.5							7
14	12/10	23							.5					.5							
15	12/11	23							.5					.5							
16	12/12	19.5		4										.5							
17	12/13	20		3		.5								.5							
18	12/14	23.5												.5							
19	12/15	23							.5					.5							
20	12/16	23							.5					.5							
21	12/17	4.5		14		5								.5							
22	12/18	23.5												.5							
23	12/19	22.5							1.0					.5							
24	12/20	13.5			9.5	.5								.5							
25	12/21	23.5												.5							
26	12/22	21.5							1.0					1.5							
27	12/23	23.5												.5							
28	12/24	3		12.5	1	.5			1.0					6							
29	12/25	14.5		8		.5								1							
30	12/26	15		8.5		.5															
31	12/27	23.5												.5							
32	12/28	23.5												.5							
33	12/29	8.5		6.5	4									5							
34	12/30			12	2.5													9.5			
35	12/31	10		6		4							1.5	.5							2
36	1/1	12		5.5	2.5													3.0			1
37	1/2	7		6	2	3												4.5			1.5
38	1/3	23.5													.5						
39	1/4	8.5		12.5																.5	11.5

CUMULATIVE TIME DISTRIBUTION

WELL No SPENCE TRUST #1

SPUD DATE 11-27-87

SHEET No 2

DAYS	DATE	DRILLING	CONNECTION	TRIP	CIRC/COND	WASH/REAM	RUN CSG CEMENT	E. LOGS	DEV. SURV.	DIRECTION WORK	NIPPLE UP	TEST B.O.P.	SLIP/CUT LINE	RIG REP.	LOST CIRC.	KILL WELL SHUT IN	TIGHT HOLE	STUCK PIPE	FISHING	CORE	MISCELAN.	TOTAL
40	1/5			8	2.5															7	6.5	24
41	1/6			8.5	3								1	1						10.5		24
42	1/7	3		1		4.5															15.5	24
43	1/8			10.5								1.5			12							24
44	1/9			17	6																1	24
45	1/10	3		9.5	.5							8									3	24
46	1/11	12.5		8.5	1		2															24
47	1/12			20.5			2						1.5									24
48	1/13			17																	7	24
49	1/14			2	15	1								6								2
50	1/15	14.5		1	.5									4							4	2
51	1/16	1		6.5	12.5			4														2
52	1/17							24														2
53	1/18			7	7			10														2
54	1/19			7.5	8.5		6														2	2
55	1/20				1		8.5				14.5											2
56	1/21										16	8										2
57	1/22			14.5								3							1.5		5	2
58	1/23	1		10.5	.5							.5	1.5						.5		9.5	2
59	1/24	12		6	1							2									3	2
60	1/25	16		6		.5			1					.5								2
61	1/26	23.5												.5								2
62	1/27	14.5		9										.5								2
63	1/28	21		2					.5					.5								2
64	1/29	7		4		1															12	2
65	1/30	15		9																		2
66	1/31	14		8.5		1															.5	2
67	2/1	23.5												.5								2
68	2/2	23.5												.5								2
69	2/3	10		9.5		.5							1								3	2
70	2/4	23.5												.5								2
71	2/5	23.5												.5								2
72	2/6	2		9.5		7															5.5	2
73	2/7	10.5		.5		11.5								.5					1			2
74	2/8	23.5												.5								2
75	2/9	14		8.5		1.5																2
76	2/10	23.5												.5								2
77	2/11	7		12		2.5															2.5	2
78	2/12	20				3								1								2

CUMULATIVE TIME DISTRIBUTION

SHEET No 3

WELL No SPENCE TRUST #1

SPUD DATE 11-27-87

DAYS	DATE	DRILLING	CONNECTION	TRIP	CIRC/COND	WASH/REAM	RUN CSG CEMENT	E. LOGS	DEV. SURV.	DIRECTION WORK	NIPPLE UP	TEST B.O.P.	SLIP/CUT LINE	RIG REP.	LOST CIRC.	KILL WELL SHUT IN	TIGHT HOLE	STUCK PIPE	FISHING		MISCELAN.	TOTAL
79	2/13	12		4	1.5			6.5														24
80	2/14							24														24
81	2/15							24														24

Logs

DUNKLIN COUNTY, MISSOURI

API # 24-069-20001-00

AMOCO PRODUCTION COMPANY

1 SPENCE TRUSTS

MISSOURI DEPARTMENT OF NATURAL RESOURCES
Division of Geology and Land Survey
P.O. Box 250, Rolla, Missouri 65401

TO: Maturation and Source Analyses (1 page)
Water Analysis (1 page)
Core Analysis Report (6 pages)
Well Information Summary (2 pages)
Whole Core Description (9 pages)
Cross Section

POSTMASTER: This package may be opened for postal inspection. Return postage guaranteed.

A-2931

Larron Laboratory

General Office: 529 Broadway / Cape Girardeau, Missouri / 63701 / 314-334-8910
Branch Office: 711 W. Broadway / Mayfield, Kentucky / 42066 / 502-247-6982

Div. of MEAD Technologies, Inc.

ANALYTICAL TESTING AND CONSULTING

January 18, 1988

Amoco Products Company
P.O. Box 660
Tyler, TX 75710
Attn: Chas. Tayler

Invoice #MB-025

LL #88C-7080C

Sample: Well Bore

EPA Method Used	Sample Received: 01/13/88	
273.1	Sodium	1250 mg/l
215.1	Calcium	185 mg/l
242.1	Magnesium	43 mg/l
258.1	Potassium	28 mg/l
236.1	Iron	<0.05 mg/l
243.1	Manganese	0.07 mg/l
150.1	pH	7.40
325.3	Total Chloride	2200 mg/l
375.4	Sulfate	160 mg/l
310.1	Alkalinity (as $CaCO_3$)	182 mg/l
160.1	Total Dissolved Solids	3756 mg/l

David J. Roth
General Manager

CORE ANALYSIS REPORT

FOR

AMOCO PRODUCTION COMPANY

SPENCE TRUSTS NO. 1 WELL
WILDCAT
DUNKLIN COUNTY, MISSOURI

PRELIMINARY REPORT

SUBJECT TO CORRECTION

These analyses, opinions or interpretations are based on observations and materials supplied by the client to whom; and for whose exclusive and confidential use; this report is made. The interpretations or opinions expressed represent the best judgment of Core Laboratories (all errors and omissions excepted); but Core Laboratories and its officers and employees, assume no responsibility and make no warranty or representations, as to the productivity, proper operations, or profitableness of any oil, gas or other mineral well or formation in connection with which such report is used or relied upon.

CORE LABORATORIES

Company : AMOCO PRODUCTION COMPANY
Well : SPENCE TRUSTS NO. 1 WELL

Field : WILDCAT
Formation : BONNETERRE

File No.: 57182-13015
Date : 27-JAN-1988

TABLE I

SUMMARY OF CORE DATA

ZONE AND CUTOFF DATA

ZONE:

Identification ---------	NOT SPECIFIED
Top Depth ----------	7000.0 ft
Bottom Depth ----------	7752.0 ft
Number of Samples --------	120

DATA TYPE:

Porosity ----------	(HELIUM)
Permeability ----------	(90 DEG) Kair

CUTOFFS:

Porosity (Minimum) -------	0.0 %
Porosity (Maximum) -------	100.0 %
Permeability (Minimum) ---	0.0000 md
Permeability (Maximum) ---	100000. md
Water Saturation (Maximum)	100.0 %
Oil Saturation (Minimum) -	0.0 %
Grain Density (Minimum) --	2.00 gm/cc
Grain Density (Maximum) --	3.00 gm/cc
Lithology Excluded -------	NONE

CHARACTERISTICS REMAINING AFTER CUTOFFS

ZONE:

Number of Samples -----	119
Thickness Represented -	119.0 ft

POROSITY:

Storage Capacity ------	114.5 ϕ-ft
Arithmetic Average ----	1.0 %
Minimum ----------	0.1 %
Maximum ----------	5.8 %
Median ----------	0.7 %
Standard Deviation ----	±0.9 %

GRAIN DENSITY:

Arithmetic Average ----	2.81 gm/cc
Minimum ----------	2.71 gm/cc
Maximum ----------	2.94 gm/cc
Median ----------	2.76 gm/cc
Standard Deviation ----	±0.08 gm/cc

PERMEABILITY:

Flow Capacity ---------	167.7 md-ft
Arithmetic Average ----	1.41 md
Geometric Average -----	0.06 md
Harmonic Average ------	0.01 md
Minimum ----------	0.00 md
Maximum ----------	69.0 md
Median ----------	0.05 md
Standard Dev. (Geom) --	$K \cdot 10^{\pm 1.049}$ md

HETEROGENEITY (Permeability):

Dykstra-Parsons Var. --	0.873
Lorenz Coefficient ----	0.886

AVERAGE SATURATIONS (Pore Volume):

Oil ----------	0.0 %
Water ----------	49.7 %

CORE LABORATORIES

Company : AMOCO PRODUCTION COMPANY
Well : SPENCE TRUSTS NO. 1 WELL
Location : SEC. 10-17N-8E
Co,State : DUNKLIN COUNTY, MISSOURI

Field : WILDCAT
Formation : BONNETERRE
Coring Fluid : WATER BASE MUD
Elevation :

File No.: 57182-13015
Date : 27-JAN-1988
API No. :
Analysts: DEVIER

CORE ANALYSIS RESULTS

SAMPLE NUMBER	DEPTH ft	PERMEABILITY (MAXIMUM) Kair md	PERMEABILITY (90 DEG) Kair md	PERMEABILITY (VERTICAL) Kair md	POROSITY (HELIUM) %	SATURATION (PORE VOLUME) OIL %	SATURATION (PORE VOLUME) WATER %	GRAIN DENSITY gm/cc	DESCRIPTION
1	7000.0- 01.0	0.12	0.09	0.01	0.5	0.0	80.0	2.72	Ls gry microxln sty dns
2	7001.0- 02.0	0.14	0.09	0.02	0.6	0.0	88.0	2.73	Ls gry microxln sty dns
3	7002.0- 03.0	22.0	15.0	0.80	2.5	0.0	95.0	2.76	Ls gry microxln mic slily sh slily dol slily pyr
4	7003.0- 04.0	2.20	2.00	0.02	0.8	0.0	90.0	2.73	Ls gry microxln sty slily mic
5	7004.0- 05.0	0.02	0.01	0.02	0.5	0.0	90.0	2.72	Ls gry microxln sty slily mic
6	7005.0- 06.0	0.04	0.03	0.01	0.3	0.0	85.0	2.72	Ls gry microxln sty slily mic
7	7006.0- 07.0	0.60	0.49	0.01	1.0	0.0	88.5	2.72	Ls gry microxln slily mic
8	7007.0- 08.0	0.07	0.06	0.02	0.8	0.0	80.0	2.71	Ls gry microxln slily mic dns
9	7008.0- 09.0	0.02	0.01	0.03	0.4	0.0	80.0	2.73	Ls gry microxln sty slily mic dns
10	7009.0- 10.0	<.01	<.01	0.01	0.4	0.0	80.0	2.72	Ls gry microxln slily mic dns
11	7010.0- 11.0	0.03	0.01	0.01	0.4	0.0	86.4	2.72	Ls gry microxln sty slily mic dns
12	7011.0- 12.0	0.02	0.01	0.02	0.6	0.0	79.5	2.71	Ls gry microxln sty slily mic dns
13	7012.0- 13.0	0.05	0.02	0.01	0.6	0.0	82.4	2.72	Ls gry microxln slily mic dns slily pyr
14	7013.0- 14.0	0.22	0.08	0.01	0.6	0.0	86.5	2.71	Ls gry microxln sty dns
* 15	7014.0- 15.0		<.01		2.0	0.0	55.7	2.76	Ls gry microxln slily mic dns slily pyr
16	7015.0- 16.0	11.0	1.00	0.02	0.8	0.0	79.6	2.72	Ls gry microxln sty dns slily pyr
17	7016.0- 17.0	0.46	0.35	0.03	0.8	0.0	81.3	2.73	Ls gry microxln sty dns slily pyr
18	7017.0- 18.0	0.07	0.04	0.02	0.8	0.0	80.5	2.74	Ls gry microxln slily mic dns slily pyr
19	7018.0- 19.0	0.02	0.02	0.02	0.7	0.0	79.5	2.72	Ls gry microxln slily mic dns slily pyr
20	7019.0- 20.0	0.85	0.68	0.02	0.6	0.0	80.0	2.77	Ls gry microxln slily mic dns slily pyr
21	7020.0- 21.0	0.12	0.11	0.02	0.5	0.0	90.0	2.73	Ls gry microxln sty dns slily pyr
22	7021.0- 22.0	1.20	0.04	0.01	0.5	0.0	97.1	2.72	Ls gry microxln sty dns slily pyr
23	7022.0- 23.0	0.07	0.04	0.01	1.0	0.0	78.0	2.73	Ls gry microxln dns slily pyr
24	7023.0- 24.0	19.0	0.78	0.04	1.8	0.0	75.0	2.72	Ls gry microxln dns slily pyr
25	7024.0- 25.0	4.20	1.80	0.01	1.2	0.0	80.2	2.74	Ls gry microxln dns slily pyr
26	7025.0- 26.0	0.05	0.03	<.01	0.6	0.0	87.5	2.73	Ls gry microxln dns slily pyr
27	7026.0- 27.0	0.35	0.34	0.01	0.7	0.0	81.4	2.73	Ls gry microxln dns slily pyr min frac

CORE LABORATORIES

Company : AMOCO PRODUCTION COMPANY
Well : SPENCE TRUSTS NO. 1 WELL

Field : WILDCAT
Formation : BONNETERRE

File No.: 57182-13015
Date : 27-JAN-1988

CORE ANALYSIS RESULTS

SAMPLE NUMBER	DEPTH ft	PERMEABILITY (MAXIMUM) Kair md	PERMEABILITY (90 DEG) Kair md	PERMEABILITY (VERTICAL) Kair md	POROSITY (HELIUM) %	SATURATION (PORE VOLUME) OIL %	SATURATION (PORE VOLUME) WATER %	GRAIN DENSITY gm/cc	DESCRIPTION
28	7027.0- 28.0	17.0	0.49	0.45	0.8	0.0	92.0	2.72	Ls gry microxln sty dns slily pyr
29	7028.0- 29.0	1.50	0.25	0.04	1.0	0.0	71.4	2.74	Ls gry microxln sty dns slily pyr
30	7029.0- 30.0	2.10	0.95	0.16	0.9	0.0	66.0	2.73	Ls gry microxln sty dns slily pyr
* 31	7030.0- 31.0		0.01		1.0	0.0	54.4	2.73	Ls gry microxln dns slily pyr
					7031.0-7275.0	DRILLED			
32	7275.0- 76.0	0.04	0.02	0.02	0.2	0.0	90.0	2.74	Ls gry microxln dns slily pyr
33	7276.0- 77.0	0.02	0.01	0.02	0.3	0.0	88.9	2.74	Ls gry microxln dns slily pyr
34	7277.0- 78.0	0.02	0.01	0.01	0.2	0.0	95.2	2.72	Ls gry microxln dns slily pyr
35	7278.0- 79.0	0.01	0.01	0.01	0.4	0.0	88.3	2.73	Ls gry microxln dns slily pyr
36	7279.0- 80.0	0.01	0.01	0.02	0.1	0.0	90.0	2.71	Ls gry microxln dns sty slily pyr
37	7280.0- 81.0	0.03	0.02	0.02	0.2	0.0	92.0	2.72	Ls gry microxln dns slily pyr
38	7281.0- 82.0	0.02	0.01	0.01	0.3	0.0	89.5	2.72	Ls gry microxln dns sty slily pyr
39	7282.0- 83.0	0.11	0.01	0.03	0.2	0.0	80.0	2.72	Ls gry microxln dns sty slily pyr
40	7283.0- 84.0	0.03	0.02	0.02	0.2	0.0	90.0	2.71	Ls gry microxln dns sty slily pyr
41	7284.0- 85.0	<.01	<.01	0.03	0.2	0.0	90.0	2.72	Ls gry microxln dns sty
42	7285.0- 86.0	0.01	<.01	0.01	0.3	0.0	93.3	2.72	Ls gry microxln dns
43	7286.0- 87.0	<.01	<.01	0.01	0.1	0.0	93.5	2.72	Ls gry microxln dns
44	7287.0- 88.0	0.02	0.01	0.02	0.2	0.0	91.3	2.72	Ls gry microxln dns
45	7288.0- 89.0	0.01	<.01	0.01	0.2	0.0	90.9	2.71	Ls gry microxln dns sty
46	7289.0- 90.0	<.01	<.01	0.03	0.4	0.0	92.0	2.72	Ls gry microxln dns sty
47	7290.0- 91.0	0.01	0.01	0.03	0.3	0.0	80.9	2.72	Ls gry microxln dns sty min frac
48	7291.0- 92.0	3.40	0.52	0.01	0.3	0.0	91.1	2.72	Ls gry microxln dns sty frac
49	7292.0- 93.0	0.02	<.01	0.02	0.4	0.0	89.7	2.73	Ls gry microxln dns sty
50	7293.0- 94.0	0.01	0.01	0.02	0.4	0.0	90.0	2.72	Ls gry microxln dns sty min frac
51	7294.0- 95.0	<.01	<.01	0.02	0.6	0.0	82.9	2.73	Ls gry microxln sty dns slily pyr min frac
52	7295.0- 96.0	<.01	<.01	0.03	0.3	0.0	85.7	2.74	Ls gry microxln sty dns slily pyr min frac
53	7296.0- 97.0	0.01	<.01	0.03	0.1	0.0	88.2	2.72	Ls gry microxln sty dns slily pyr min frac

CORE LABORATORIES

Company : AMOCO PRODUCTION COMPANY
Well : SPENCE TRUSTS NO. 1 WELL

Field : WILDCAT
Formation : BONNETERRE

File No.: 57182-13015
Date : 27-JAN-1988

CORE ANALYSIS RESULTS

SAMPLE NUMBER	DEPTH ft	PERMEABILITY (MAXIMUM) Kair md	PERMEABILITY (90 DEG) Kair md	PERMEABILITY (VERTICAL) Kair md	POROSITY (HELIUM) %	SATURATION (PORE VOLUME) OIL %	SATURATION (PORE VOLUME) WATER %	GRAIN DENSITY gm/cc	DESCRIPTION
54	7297.0- 98.0	0.01	<.01	0.01	0.3	0.0	80.0	2.74	Ls gry microxln sty dns slily pyr
55	7298.0- 99.0	<.01	<.01	0.01	0.5	0.0	78.6	2.76	Ls gry microxln sty dns slily pyr
56	7299.0- 00.0	0.02	0.01	0.02	0.3	0.0	87.5	2.71	Ls gry microxln sty dns slily pyr
57	7300.0- 01.0	0.02	0.02	0.01	0.9	0.0	75.0	2.74	Ls gry microxln sty dns slily pyr
58	7301.0- 02.0	0.41	0.06	0.06	0.9	0.0	72.5	2.74	Ls gry microxln sty dns slily pyr min frac
					7302.0-7303.0	RUBBLE			
* 59	7303.0- 04.0		<.01		0.4	0.0	88.5	2.74	Ls gry microxln sty dns
60	7304.0- 05.0	0.09	0.04	0.02	0.6	0.0	84.0	2.73	Ls gry microxln sty dns
* 61	7305.0- 06.0		0.03		0.4	0.0	90.0	2.72	Ls gry microxln sty dns
					7306.0-7692.0	DRILLED			
62	7692.0- 93.0	168.	23.0	1.40	1.7	0.0	30.0	2.90	Dol lt gry p.p. vug slily pyr VF
63	7693.0- 94.0	98.0	18.0	6.50	0.9	0.0	48.3	2.88	Dol lt gry p.p. vug VF
64	7694.0- 95.0	0.17	0.13	0.02	1.2	0.0	30.9	2.89	Dol lt gry vug dns sty min frac
65	7695.0- 96.0	0.04	0.03	0.03	0.8	0.0	47.0	2.90	Dol lt gry dns sty pyr
66	7696.0- 97.0	0.02	0.01	0.01	1.0	0.0	52.2	2.89	Dol lt gry dns pyr
67	7697.0- 98.0	0.93	0.68	0.13	1.5	0.0	27.1	2.88	Dol lt gry vug dns frac
68	7698.0- 99.0	0.33	0.19	0.02	0.8	0.0	41.1	2.87	Dol lt gry dns frac
69	7699.0- 00.0	10.0	0.87	0.04	1.0	0.0	35.0	2.88	Dol lt gry vug dns frac
70	7700.0- 01.0	0.79	0.46	0.03	0.8	0.0	50.0	2.87	Dol lt gry vug dns frac
71	7701.0- 02.0	0.36	0.16	0.04	0.7	0.0	40.0	2.92	Dol lt gry dns frac slily pyr
72	7702.0- 03.0	0.27	0.12	0.04	0.5	0.0	50.8	2.89	Dol lt gry vug dns slily pyr
73	7703.0- 04.0	0.33	0.18	0.25	0.7	0.0	56.9	3.02	Dol lt gry vug dns frac v pyr
74	7704.0- 05.0	0.13	0.08	0.02	0.9	0.0	48.4	2.92	Dol lt gry dns v pyr
75	7705.0- 06.0	1.40	0.25	0.03	0.7	0.0	65.6	2.88	Dol lt gry vug dns v pyr
76	7706.0- 07.0	3.60	2.10	0.03	0.7	0.0	60.0	2.89	Dol lt gry vug dns frac v pyr

CORE LABORATORIES

Company : AMOCO PRODUCTION COMPANY
Well : SPENCE TRUSTS NO. 1 WELL

Field : WILDCAT
Formation : BONNETERRE

File No.: 57182-13015
Date : 27-JAN-1988

CORE ANALYSIS RESULTS

SAMPLE NUMBER	DEPTH ft	PERMEABILITY (MAXIMUM) Kair md	PERMEABILITY (90 DEG) Kair md	PERMEABILITY (VERTICAL) Kair md	POROSITY (HELIUM) %	SATURATION (PORE VOLUME) OIL %	SATURATION (PORE VOLUME) WATER %	GRAIN DENSITY gm/cc	DESCRIPTION
77	7707.0- 08.0	0.81	0.39	0.04	0.6	0.0	56.0	2.88	Dol lt gry vug dns frac v pyr
78	7708.0- 09.0	0.15	0.13	0.04	0.7	0.0	50.0	2.87	Dol lt gry vug dns
79	7709.0- 10.0	0.56	0.22	0.03	0.7	0.0	42.2	2.87	Dol lt gry vug dns
80	7710.0- 11.0	0.18	0.18	0.01	0.3	0.0	82.5	2.87	Dol lt gry dns
81	7711.0- 12.0	0.03	0.03	0.03	0.3	0.0	72.0	2.90	Dol lt gry dns sty slily pyr
82	7712.0- 13.0	2.30	0.19	0.05	1.2	0.0	33.6	2.89	Dol lt gry vug dns frac
83	7713.0- 14.0	2.40	0.21	0.20	0.8	0.0	48.2	2.90	Dol lt gry slily vug dns slily pyr VF
84	7714.0- 15.0	0.30	0.05	0.12	5.8	0.0	33.6	2.88	Dol lt gry slily vug dns slily pyr
* 85	7715.0- 16.0		0.01		4.8	0.0	31.5	2.89	Dol lt gry vug dns slily pyr frac
86	7716.0- 17.0	5.78	0.83	1.30	2.8	0.0	40.0	2.84	Dol lt gry vug dns frac
87	7717.0- 18.0	14.0	13.0	2.50	1.0	0.0	57.1	2.88	Dol lt gry vug dns frac
88	7718.0- 19.0	0.19	0.02	0.03	1.4	0.0	31.8	2.89	Dol lt gry vug dns VF
89	7719.0- 20.0	0.22	0.07	0.03	0.9	0.0	60.8	2.88	Dol lt gry vug dns sty
90	7720.0- 21.0	26.0	0.10	0.05	3.5	0.0	55.7	2.88	Dol lt gry vug dns
* 91	7721.0- 22.0		0.02		0.7	0.0	76.0	2.90	Dol lt gry vug dns frac
* 92	7722.0- 23.0		0.01		0.6	0.0	80.0	2.94	Dol lt gry vug dns frac
x 93	7723.0- 24.0		69.0		2.4	0.0	52.1	2.88	Dol lt gry vug dns frac
94	7724.0- 25.0	13.0	0.28	0.07	1.2	0.0	19.1	2.88	Dol lt gry vug dns VF
95	7725.0- 26.0	38.0	3.50	5.50	3.1	0.0	20.0	2.89	Dol lt gry vug dns VF
* 96	7726.0- 27.0		0.01		2.1	0.0	23.2	2.89	Dol lt gry vug dns VF
97	7727.0- 28.0	0.03	0.03	<.01	1.1	0.0	26.3	2.90	Dol lt gry vug dns slily pyr
98	7728.0- 29.0	54.0	0.05	0.04	1.7	0.0	27.0	2.88	Dol lt gry vug dns frac slily pyr sty
99	7729.0- 30.0	0.12	0.07	0.14	0.6	0.0	57.1	2.91	Dol lt gry slily vug slily pyr
100	7730.0- 31.0	0.23	0.09	0.03	1.7	0.0	29.5	2.88	Dol lt gry slily vug dns slily pyr
101	7731.0- 32.0	0.08	0.04	0.04	1.2	0.0	35.7	2.88	Dol lt gry slily vug dns slily pyr
102	7732.0- 33.0	0.58	0.18	0.03	2.1	0.0	25.4	2.81	Dol lt gry slily vug dns slily pyr
103	7733.0- 34.0	0.04	0.02	0.01	2.3	0.0	22.4	2.87	Dol lt gry slily vug dns slily pyr
104	7734.0- 35.0	0.34	0.34	0.04	1.3	0.0	25.7	2.89	Dol lt gry slily vug dns frac
105	7735.0- 36.0	27.0	1.60	0.10	1.6	0.0	23.8	2.89	Dol lt gry vug dns slily pyr frac

CORE LABORATORIES

Company : AMOCO PRODUCTION COMPANY
Well : SPENCE TRUSTS NO. 1 WELL

Field : WILDCAT
Formation : BONNETERRE

File No.: 57182-13015
Date : 27-JAN-1988

CORE ANALYSIS RESULTS

SAMPLE NUMBER	DEPTH ft	PERMEABILITY (MAXIMUM) Kair md	PERMEABILITY (90 DEG) Kair md	PERMEABILITY (VERTICAL) Kair md	POROSITY (HELIUM) %	SATURATION (PORE VOLUME) OIL %	SATURATION (PORE VOLUME) WATER %	GRAIN DENSITY gm/cc	DESCRIPTION
* 106	7736.0- 37.0		0.05		1.4	0.0	24.8	2.88	Dol lt gry vug dns frac
* 107	7737.0- 38.0		0.01		1.3	0.0	25.3	2.91	Dol lt gry vug dns frac
108	7738.0- 39.0	9.30	0.08	0.10	1.2	0.0	25.7	2.92	Dol lt gry vug dns slily pyr frac sty
109	7739.0- 40.0	0.12	0.08	0.09	1.1	0.0	18.9	2.90	Dol lt gry vug dns slily pyr frac sty
110	7740.0- 41.0	0.06	0.02	0.01	0.5	0.0	48.3	2.90	Dol lt gry vug dns sty
111	7741.0- 42.0	0.03	0.01	<.01	1.3	0.0	29.3	2.90	Dol lt gry vug dns sty
112	7742.0- 43.0	0.03	0.02	<.01	2.0	0.0	18.0	2.90	Dol lt gry vug dns
113	7743.0- 44.0	0.02	0.01	<.01	0.7	0.0	47.1	2.91	Dol lt gry vug dns
114	7744.0- 45.0	0.03	0.03	<.01	0.5	0.0	58.0	2.91	Dol lt gry slily vug dns sty
115	7745.0- 46.0	0.64	0.15	0.07	0.6	0.0	37.5	2.89	Dol lt gry slily vug dns sty frac
116	7746.0- 47.0	0.27	0.06	0.14	1.7	0.0	19.3	2.91	Dol lt gry slily vug dns sty
117	7747.0- 48.0	2.80	1.70	0.03	1.4	0.0	22.8	2.90	Dol lt gry slily vug dns sty frac
118	7748.0- 49.0	0.24	0.12	0.02	1.3	0.0	21.3	2.89	Dol lt gry slily vug dns slily pyr
119	7749.0- 50.0	0.07	0.07	0.01	0.7	0.0	33.3	2.89	Dol lt gry slily vug dns slily pyr
120	7750.0- 51.0	3.10	2.90	0.16	1.2	0.0	27.5	2.89	Dol lt gry slily vug dns sty slily pyr

* DENOTES PLUG PERMEABILITY

x DENOTES OPEN VERTICAL FRACTURE

WELL INFORMATION SUMMARY

Amoco Production Company
#1 Spence Trusts
API # 24-069-20001-00
Location: 500' FWL x 500' FSL, Sec. 10, T17N, R8E; Lat. 36°07'45'N
Long. 90°11'25"W

County: Dunklin
State: Missouri
Elevation: G.L. 249.5' KB 273.5'
TD: 10089'
Spud Date: 11-27-87
PxA: 2-18-88
Casing: 16" @ 250; 10 3/4" @ 2037'; 7 5/8" @ 8029'
BHT: 166°F

Wireline Log Suite:

1. Natural Gamma Ray Spectrometry (5" = 100')
2. Dual Induction - Gamma Ray (1" = 100' and 5" = 100')
3. Digital Array Sonic - Gamma Ray (5" = 100')
4. Litho-Density/Compensated Neutron - Gamma Ray (5" = 100')
5. Microlog (5" = 100')
6. Borehole Gravity Meter (5" = 100')

Formation Tops:

	Log Depth	Subsea
Eocene		
Claiborne Group	276'	(+2)
Wilcox Group		
Flour Island Fm.	572'	(-298)
Ft. Pillow S.S.	688'	(-414)
Paleocene		
Midway Group		
Porters Creek Fm.	977'	(-703)
Upper Cretaceous		
McNairy Fm.	1490'	(-1216)
Lower Ordovician		
Upper Knox Group	1952'	(-1678)
Middle Knox Group	3050'	(-2776)
Gunter S.S.	5430'	(-5156)
Upper Cambrian		
Lower Knox Group	5450'	(-5176)
Elvins Group		
Derby-Doerun Fm.	6835'	(-6561)
Davis Shale	7512'	(-7238)
Bonneterre Fm.	7680'	(-7406)
Lamotte Ss.	9931'	(-9657)

Well Information Summary
Page two (2)

Core # 1
Interval: 7000 - 7031 (Derby - Doerun)
Recovery: 31'

Core # 2
Interval: 7275 - 7305 (Derby - Doerun)
Recovery: 30'

Core # 3
Interval: 7692 - 7722 (Bonneterre)
Recovery: 30'

Core # 4
Interval: 7722 - 7752 (Bonneterre)
Recovery: 30'

Sidewall Cores (Rotary): 6838', 6845', 6856', 6866', 6875', 6892', 6903', 6933', 6960', 6976', 6987', 7077', 7450', 7515', 7535', 7550', 7568', 7632', 7676', 7820', 7866', 7880', 7889', 7904', 7944', 7957', 7971'

Lost Circulation Zones: 7785-90'; 7843-50'; drilled blind with no sample returns from 7785-8041'

March 2, 1988

Re: Whole Core Description
Amoco #1 Spence Trusts
Dunklin County, Missouri
Described by: S. Rohr and T. Stephenson

Core #1 7000' - 7031' (Derby-Doerun)
Recovered 31'

Depth	Description
7000' - 7002'3"	Limy dolomite, white to gray to tan, fine xln, sli oolitic, stylolitic, oolite mudstone to packstone, hd, dense, sli fractured, no visible porosity.
7002'3" - 7003'	Limy dolomite, white to gray to dark gray to tan, fine xln, sli oolitic, limestone rip-up clasts, hd, dense, no visible porosity.
7003' - 7004'8"	Limy dolomite, white to gray, fine xln, some shale partings and stylolites, sli oolitic, hd, dense, no visible porosity.
7004' - 7006'	Limy dolomite, white to gray, fine xln, sli oolitic, hd, dense, sli fractured, no visible porosity.
7006' - 7008'5"	Limy dolomite, white to gray, fine xln, sli oolitic, with shale partings, stylolitic, hd, dense, no visible porosity.
7008'5" - 7008'8"	Limy dolomite, white to gray to dark gray, fine xln, oolitic packstone to grainstone, sli fractured, no visible porosity.
7008'8" - 7016'	Limy dolomite, white to gray to dark gray, fine xln, sli oolitic, with shale partings and stylolites, hd, dense, no visible porosity.

7016' - 7018'10"	Limy dolomite, white to gray to dark gray, fine xln, oolitic packstone to grainstone, sli fractured, hd, dense, no visible porosity.
7018'10" - 7019'8"	Limy dolomite, white to gray to dark gray, fine xln, oolitic packstone to grainstone, sli fractured, hd, dense, no visible porosity.
7019'8" - 7022'2"	Limy dolomite, white to gray to dark gray, fine xln, sli oolitic, with shale partings and stylolites, sli fractured, hd, dense, no visible porosity.
7022'2" - 7022'8"	Limy dolomite, white to gray to dark gray, fine xln, oolitic packstone to grainstone, sli fractured, hd, dense, no visible porosity.
7022'8 - 7024'2"	Limy dolomite, white to gray to dark gray, fine xln, sli oolitic, hd, dense, no visible porosity.
7024'2" - 7027'	Limy dolomite, white to gray to dark gray, fine xln, sli oolitic, sli fractured, some shale partings, hd, dense, no visible porosity.
7027' - 7029'5"	Limy dolomite, white to gray to dark gray, fine xln, oolitic packstone to grainstone, hd, dense, no visible porosity.
7029'5" - 7030'9"	Limy dolomite, white to gray to dark gray, fine xln, sli oolitic, some shale partings, hd, dense no visible porosity.

SR/cm/04

March 2, 1988

Re: Whole Core Description
Amoco #1 Spence Trusts
Dunklin County, Missouri
Described by: S. Rohr and T. Stephenson

Core #2 7275' - 7305' (Derby-Doerun)
Recovered 30'

Depth	Description
7275' - 7277'3"	Limy dolomite, gray to dark gray, fine xln, slightly oolitic, some shale partings, stylolitic argillaceous, no visible porosity.
7277'3" - 7277'6"	Limy dolomite, gray to dark gray, fine xln, sli oolitic, argillaceous, no visible porosity.
7277'6" - 7278'	Limy dolomite, gray to dark gray, fine xln, sli oolitic, with shale partings, stylolitic, no visible porosity.
7278' - 7278'6"	Limy dolomite, gray to dark gray, fine xln, oolitic wackestone to grainstone, argillaceous, no visible porosity.
7278'6" - 7281'8"	Limy dolomite, gray to dark gray, fine xln, sli oolitic, shale partings, stylolitic, argillaceous, no visible porosity.
7281'8" - 7282'2"	Limy dolomite, gray to dark gray, fine xln, oolitic wackestone to grainstone, argillaceous, no visible porosity.
7282'2" - 7285'10"	Limy dolomite, gray to dark gray, fine xln, sli oolitic, shale partings, stylolitic, no visible porosity.
7285'10" - 7286'	Limy dolomite, gray to dark gray, fine-med xln, oolitic wackestone to grainstone, argillaceous, no visible porosity.

7286' - 7289'	Limy dolomite, gray to dark gray, fine xln, sli oolitic, shale partings, stylolitic, argillaceous, no visible porosity.
7289'6" - 7294"	Limy dolomite, gray to dark gray, fine xln, sli oolitic, shale partings, stylolitic, argillaceous, no visible porosity.
7294' - 7294'6"	Limy dolomite, gray to dark gray, fine-med xln, oolitic wackestone to grainstone, argillaceous, no visible porosity.
7294'6" - 7305'	Limy dolomite, gray to dark gray to v dark gray, fine xln, sli oolitic, shale partings, stylolitic, argillaceous, no visible porosity.

SR/cm/7

March 2, 1988

Re: Whole Core Description
Amoco #1 Spence Trusts
Dunklin County, Missouri
Described by: S. Rohr and T. Stephenson

Core #3 7692' - 7722' (Bonneterre)
Recovered 30'

Depth	Description
7692' - 7693'	Dolomite, med to dark gray, wackestone to packstone, argillaceous, tr to fair vuggy porosity.
7693' - 7710'	Dolomite, lt - med gray, algal boundstone, vuggy porosity filled with calcite, some calcite filled vugs are lined with pyrite, no obvious permeability.
7710' - 7714'	Dolomite, lt-med gray, algal wackestone, fractured.
7714' - 7722'	Dolomite, lt-med gray, algal wackestone, sli stylolitic, solution collapse features, vuggy porosity filled with calcite, some vugs are open and lined with calcite, no obvious permeability.

SR/cm/8

March 2, 1988

Re: Whole Core Description
Amoco #1 Spence Trusts
Dunklin County, Missouri
Described by: S. Rohr and T. Stephenson

Core #4 7722' - 7752' (Bonneterre)
Recovered 29'

Depth	Description
7722' - 7732'	Dolomite, lt-med gray, algal wackestone to boundstone, vuggy porosity lined with calcite and sphalerite, brecciated, no obvious permeability.
7732' - 7735'6"	Dolomite, lt-dark gray, fine to coarsely xln, solution collapse zone with angular clasts, tr pyrite.
7735'6" - 7736'	Dolomite, lt gray, fine xln, oolitic grainstone, no visible porosity.
7736' - 7737'6"	Dolomite, lt-med gray, algal wackestone to boundstone, med to coarsely xln, dense, no visible porosity.
7737'6" - 7751'	Dolomite, lt gray, fine xln, oolitic grainstone, pin-point vuggy porosity, brecciated, no obvious permeability.

SR/cm/9

February 18, 1988

Re: Sidewall Core Descriptions
Amoco #1 Spence Trusts
Dunklin County, Missouri
Described by: R. Tobin and T. Stephenson

Depth	Formation	Description
6838'	Derby-Doerun	Limestone (mudstone), light-medium gray, fine xln, pelletal, trace of interxln porosity, thin black calcareous shale laminations (< 1 mm ea.), pyrite associated with laminations; bioturbated
6845'	Derby-Doerun	Limestone (mudstone), medium gray, fine xln, pelletal; thin black calcareous shale laminations (< 1 mm. ea. but combine to give a 1.0 cm thick interval); pyrite associated with laminations; bioturbated
6856' (thin-section)	Derby-Doerun	Limestone (grainstone), medium gray, medium xln, skeletal fragments (trilobite, crinoid), pelletal, oolitic; abundant stylolites; tight
6866'	Derby-Doerun	Limestone (mudstone), dark gray, dense, pelletal, scattered pyrite; thin black calcareous shale laminations (< 1 mm ea.); trace of calcite-filled fracture (1-2 mm)
6875'	Derby-Doerun	Limestone (mudstone), dark gray, fine xln, skeletal fragments (trilobite), pelletal, oolitic(?), scattered pyrite, trace of coarse white calcite spar; thin black calcareous shale laminations (<1 mm ea.); mottled
6892'	Derby-Doerun	Limestone (mudstone), dark gray, fine xln, pelletal, scattered pyrite; thin black calcareous shale laminations (< 1 mm ea.); mottled
6903'	Derby-Doerun	Limestone (mudstone), medium-dark gray, fine xln, stylolitic; pyrite scattered throughout sample and also concentrated along stylolite; thin black calcareous shale laminations (< 1 mm ea.)

Sidewall Core Descriptions
Amoco #1 Spence Trusts
Page two (2)

6903'	Derby-Doerun	Limestone (mudstone), medium dark gray, fine xln, trace of scattered pyrite; thin black calcareous shale laminations (< 1 mm ea.); mottled
6960'	Derby-Doerun	Dolomite (mudstone), light-medium gray, medium xln, stylolitic; thin calcite-filled fracture (< 5 mm); tight
6976'	Derby-Doerun	LImestone (mudstone), dark gray-black, very fine xln, dense
6987' (thin-section)	Derby-Doerun	Dolomite (original fabric unknown), white, very coarse xln, trace of interxln porosity (< 1%), trace of fracturing
7077' (thin-section)	Derby-Doerun	Dolomite (original fabric unknown), white, very coarse xln, stylolitic, trace of fracturing; tight
7450'	Derby-Doerun/Davis	Limestone (mudstone), dark gray-black, dense, trace of thin calcite-filled fractures (< 1 mm), skeletal fragments (trilobite)
7515'	Davis	Limestone (packstone), medium gray, fine-medium xln, skeletal fragments (trilobite, brachiopod, crinoid); tight
7535'	Davis	Shale, dark gray-black, dense, calcareous; thin medium-dark gray limestone laminations
7550'	Davis	Shale, dark gray-black, dense, calcareous; faint trace of mottled laminations
7568' (thin-section)	Davis	Limestone (packstone), medium gray, slightly dolomitic (approx. 15%); skeletal fragments (trilobite, crinoid, conodont?), pelloidal, stylolitic,; tight
7632'	Davis	Limestone (mudstone), medium-dark brownish gray, fine xln, dense; mottled laminations
7676'	Davis	Shale, dark gray-black, dense, calcareous, scattered pyrite
7820' (thin-section)	Bonneterre	Dolomite (grainstone), medium gray, medium xln, oolitic, approx. 2% interxln & micro porosity

Sidewall Core Descriptions
Amoco #1 Spence Trusts
Page three (3)

7865 (thin section)	Bonneterre	Dolomite (grainstone), medium gray, medium xln, approx. 1% fracture & vuggy porosity
7880' (thin-section)	Bonneterre	Dolomite (grainstone), medium gray, fine xln, oolitic, stylolitic, skeletal fragments (trilobite spines?); tight
7889'	Bonneterre	Dolomite (grainstone), medium gray, fine xln, oolitic, thin calcite-filled fracture (< 1 mm)
7904' (thin-section)	Bonneterre	Dolomite (mudstone), medium gray, fine xln, < 1% fracture porosity
7944' (thin-section)	Bonneterre	Dolomite (mudstone), dark gray, fine xln, stylolitic, anhydrite-healed fracture; tight
7957'	Bonneterre	Limestone (mudstone), dark gray, fine xln, dense, slightly dolomitic; mottled; thin calcite-filled fractures (1-2 mm)
7971' (thin-section)	Bonneterre	Limestone (packstone), dark gray, stylolitic, slightly dolomitic; (approx. 10%), skeletal fragments (trilobite, crinoid), pelloidal; silty

Amoco Production Company
Houston, Texas

March 22, 1988

Todd Stephenson
18.116

RE: **Mississippi Embayment, Amoco #1 Spence Trust, Dunklin County, Missouri**

Maturation Well # 2054

Maturation and source analyses have been completed for the above well. This data changes little concerning our interpretation of the Mississippi Embayment. The maturation level is peak gas and the dark shales in the Cambrian Elvin's Group types as non-source. The results are as follows :

Footage	Formation	Source	Visual (TAI)	Potential
6300-6380	Knox	-	6	-
6500-6600	Knox	-	6	-
6600-6700	Knox	-	6	-
6800-6900	Elvins	-	6	-
6840-6900	Elvins	0.2	6	Non
6866-6892	Elvins	0.3	6	Non
6900-6950	Elvins	0.1	6	Non
6903-6960	Elvins	0.05	6	Non
7420-7510	Elvins	0.2	6	Non
7510-7600	Elvins	0.05	6	Non
7515-7568	Elvins	<0.05	6	Non
7600-7690	Elvins	0.2	6	Non
7632-7676	Elvins	<0.05	6	Non
7733	Bonneterre	0.01	High 6	Non
7971	Bonneterre	0.05	High 6	Non

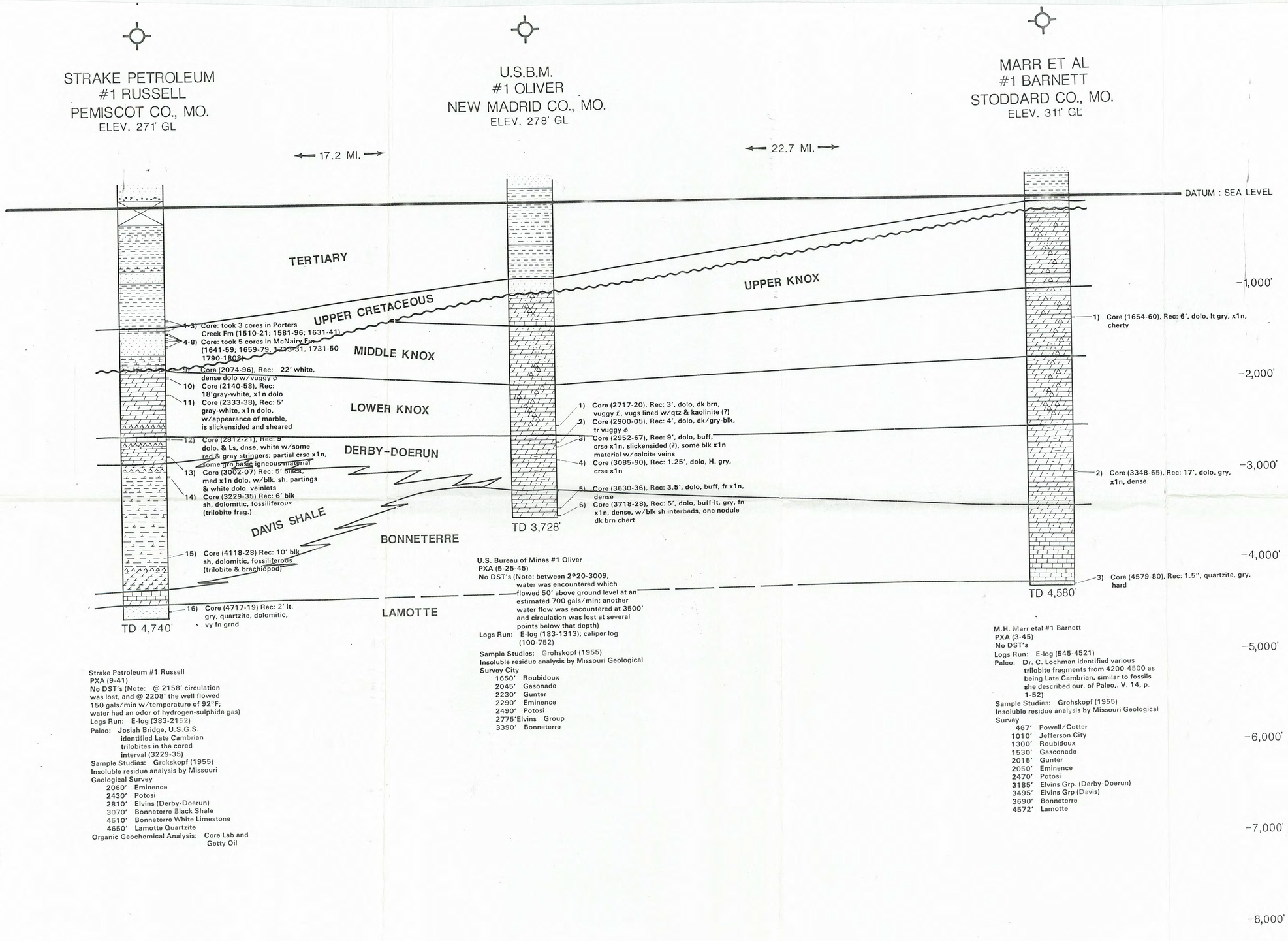
This well is slightly lower rank (but still in the gas phase) than the Amoco #1 Burmah P. Haynes but the source rock potential is the same (NON). These two wells, along with additional geochemcial analysis by Amoco, Geochem, Getty Oil, and Shell Oil infers a very negative assessment of Cambrian source potential in the Reelfoot Rift. This leads to an extremely high risk for hydrocarbon exploration potential in this area.

Brenda Claxton

Brenda Claxton

TS/emt

Bonneterre Shelf
Margin Map



Strake Petroleum #1 Russell
PXA (9-41)
No DST's (Note: @ 2158' circulation was lost, and @ 2208' the well flowed 150 gals/min w/temperature of 92°F; water had an odor of hydrogen-sulphide gas)
Logs Run: E-log (383-2152)
Paleo: Josiah Bridge, U.S.G.S. identified Late Cambrian trilobites in the cored interval (3229-35)
Sample Studies: Grokskopf (1955)
Insoluble residue analysis by Missouri Geological Survey

2060'	Eminence
2430'	Potosi
2810'	Elvins (Derby-Doerun)
3070'	Bonneterre Black Shale
4510'	Bonneterre White Limestone
4650'	Lamotte Quartzite

Organic Geochemical Analysis: Core Lab and Getty Oil

U.S. Bureau of Mines #1 Oliver
PXA (5-25-45)
No DST's (Note: between 2°20-3009, water was encountered which flowed 50' above ground level at an estimated 700 gals/min; another water flow was encountered at 3500' and circulation was lost at several points below that depth)
Logs Run: E-log (183-1313); caliper log (100-752)
Sample Studies: Grohskopf (1955)
Insoluble residue analysis by Missouri Geological Survey City

1650'	Roubidoux
2045'	Gasonade
2230'	Gunter
2290'	Eminence
2490'	Potosi
2775'	Elvins Group
3390'	Bonneterre

M.H. Marr etal #1 Barnett
PXA (3-45)
No DST's
Logs Run: E-log (545-4521)
Paleo: Dr. C. Lochman identified various trilobite fragments from 4200-4500 as being Late Cambrian, similar to fossils she described our. of Paleo,. V. 14, p. 1-52)
Sample Studies: Grohskopf (1955)
Insoluble residue analysis by Missouri Geological Survey

467'	Powell/Cotter
1010'	Jefferson City
1300'	Roubidoux
1530'	Gasconade
2015'	Gunter
2050'	Eminence
2470'	Potosi
3185'	Elvins Grp. (Derby-Doerun)
3495'	Elvins Grp (Davis)
3690'	Bonneterre
4572'	Lamotte

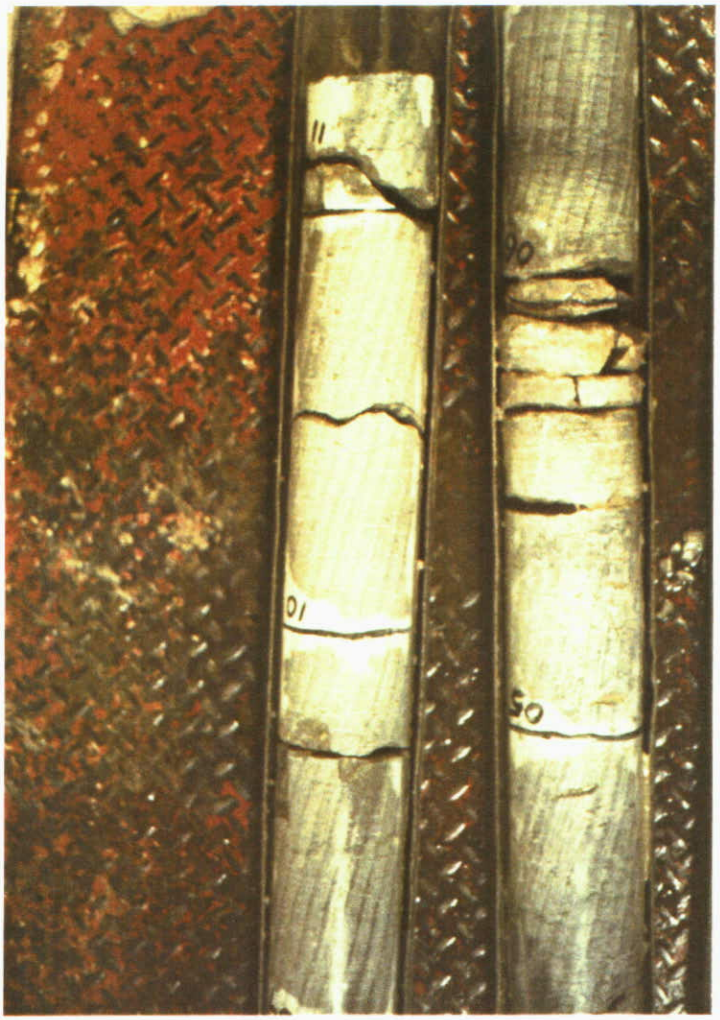
AMOCO PRODUCTION COMPANY
HOUSTON REGION
SOUTHEAST TEXAS EAST CENTRAL DIVISION
STRUCTURAL CROSS SECTION A-A'
BONNETERRE SHELF MARGIN
-LEGEND-
Vertical Scale 1" : 500'
Horizontal Scale 1" : 2 MILES
Vert. Ex.
ENCL. NO.
REPORT NO.
DRAFTED BY
DATE 7-87
GEOL. T. STEPHENSON

Amoco

#1 - Spence Trust.

Core #1

7000 - 7031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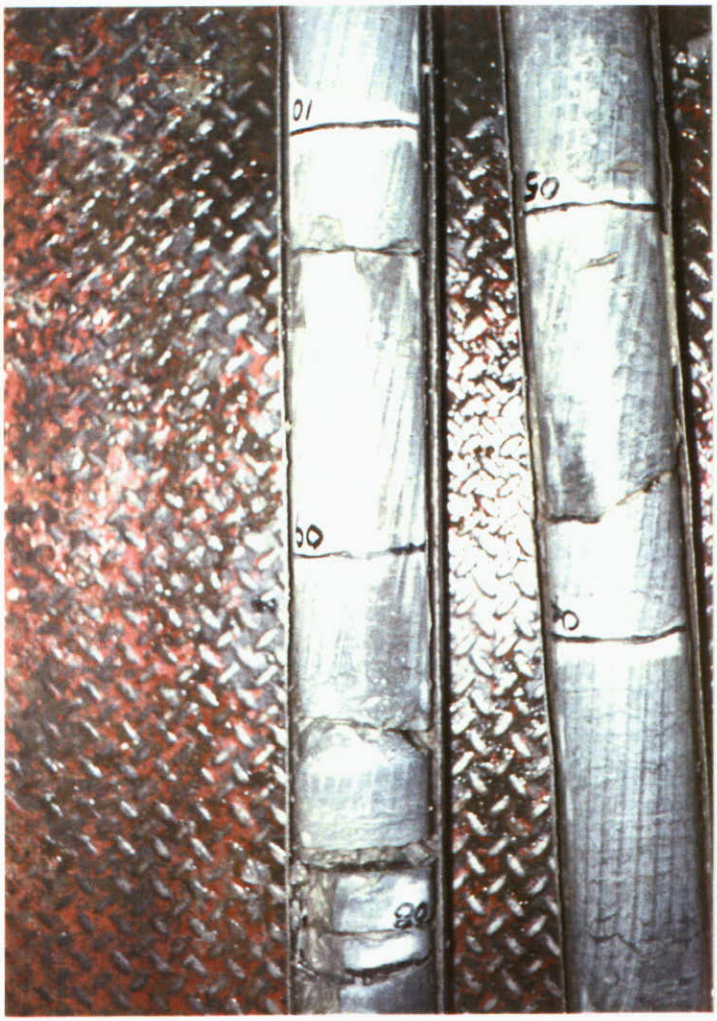
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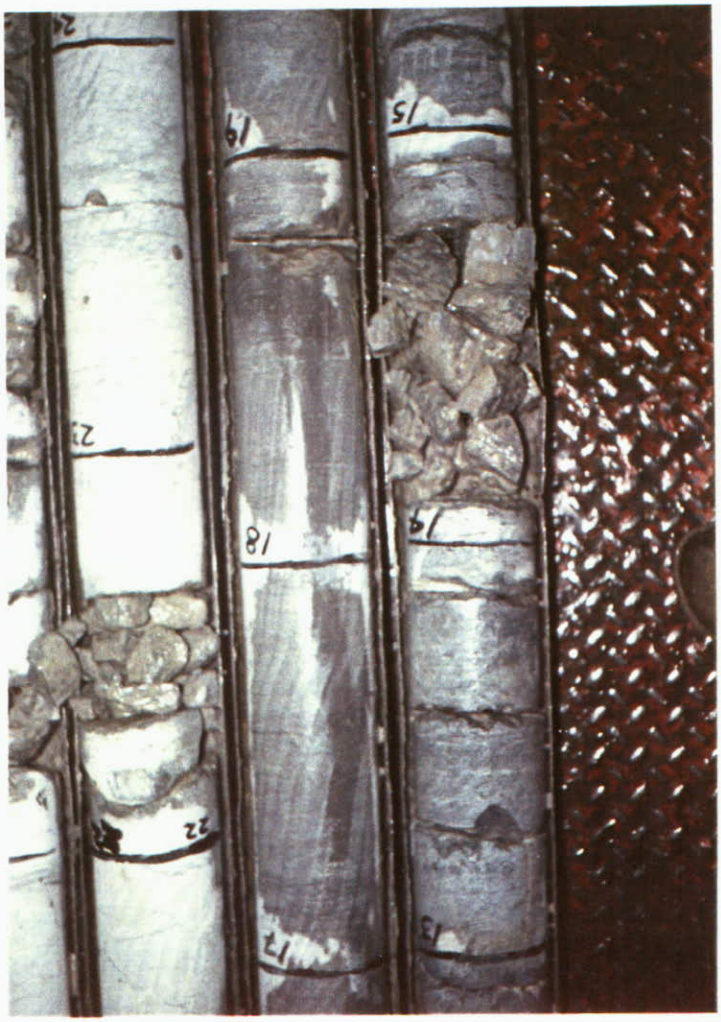
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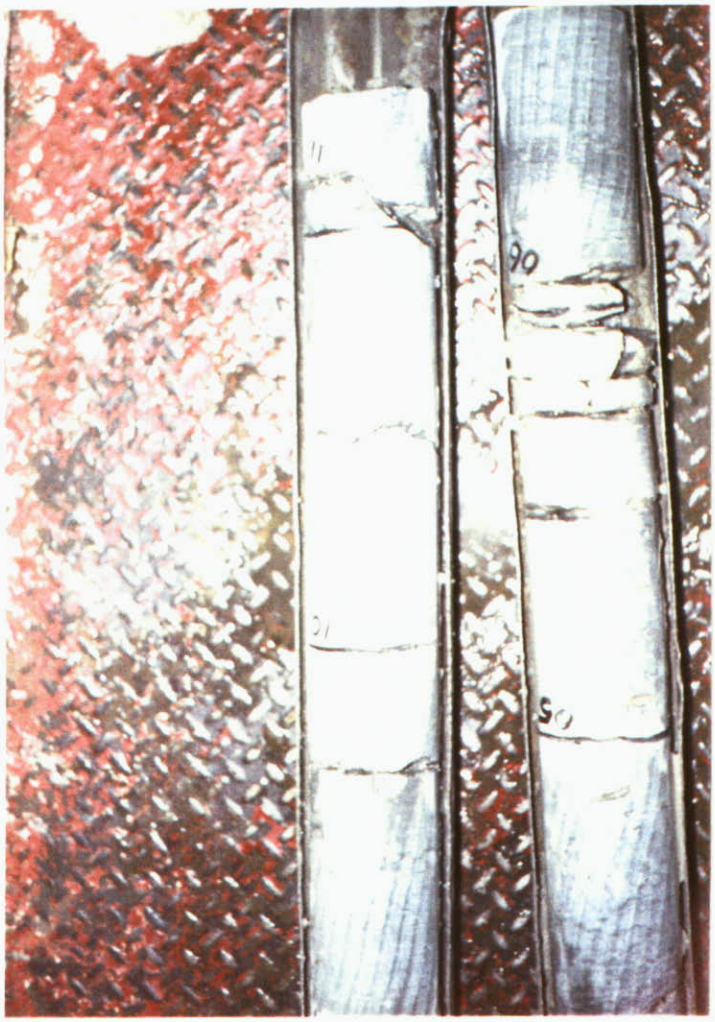
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Amoco
#1 - Spence Trust.
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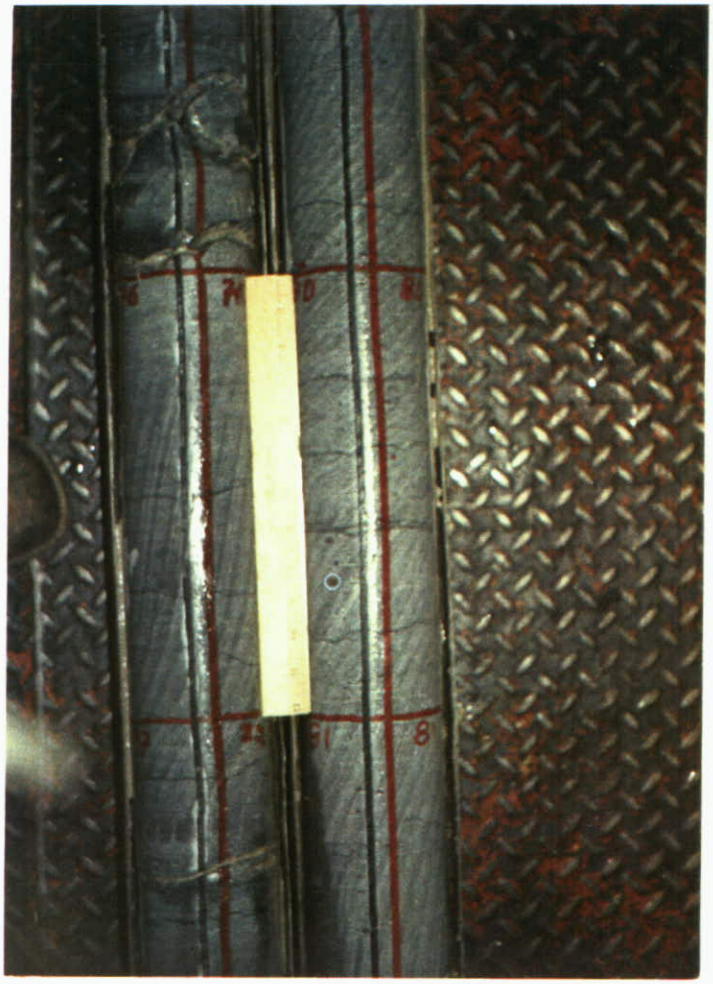

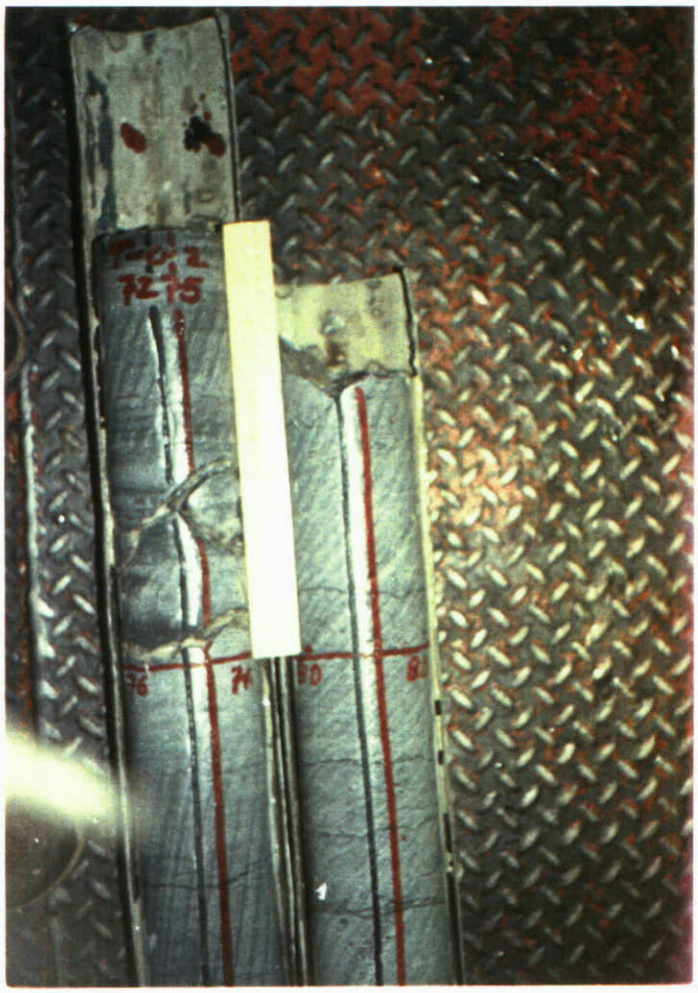

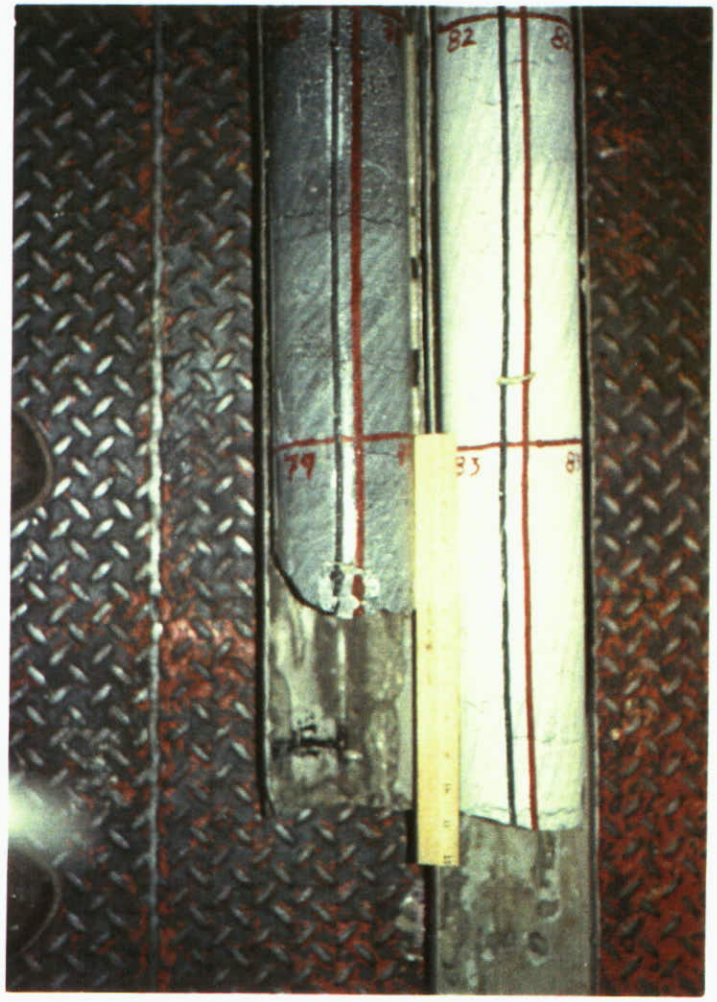

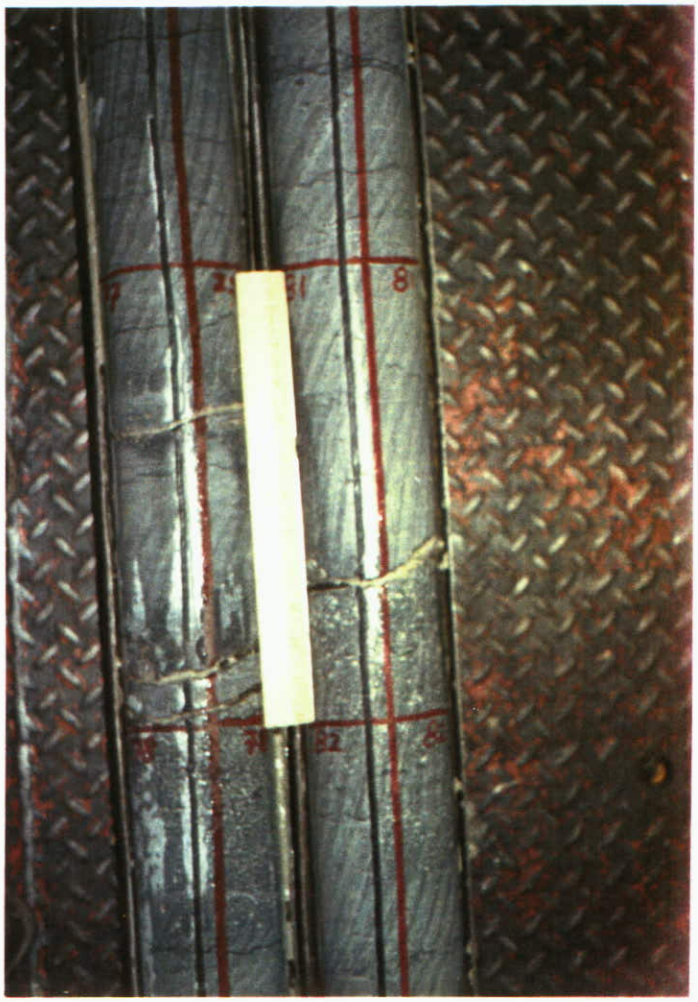

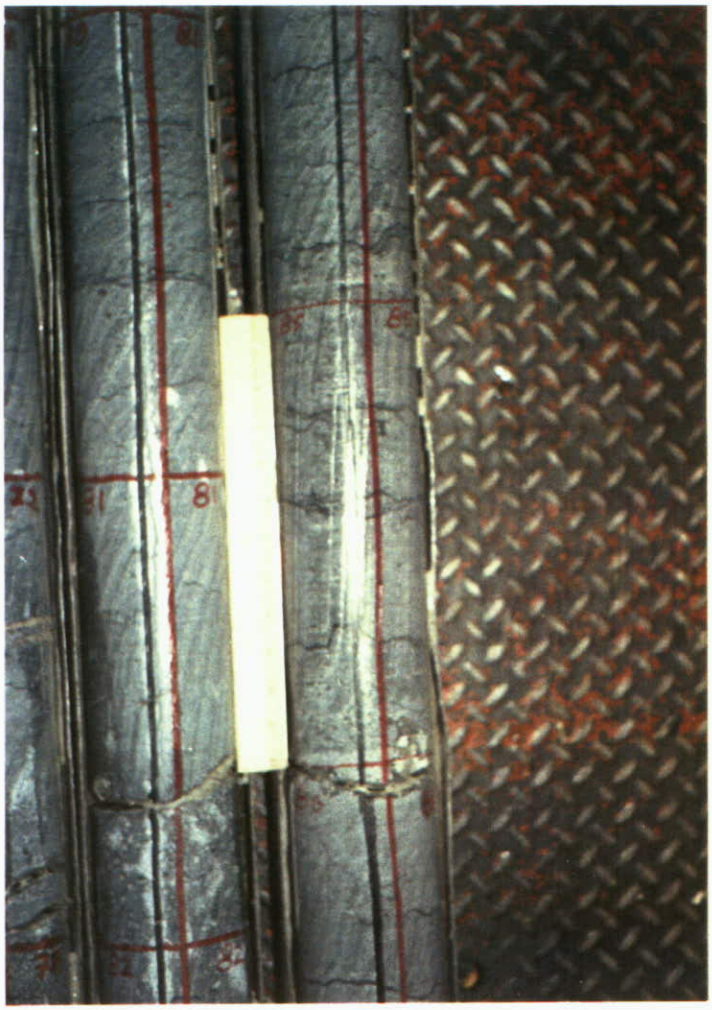

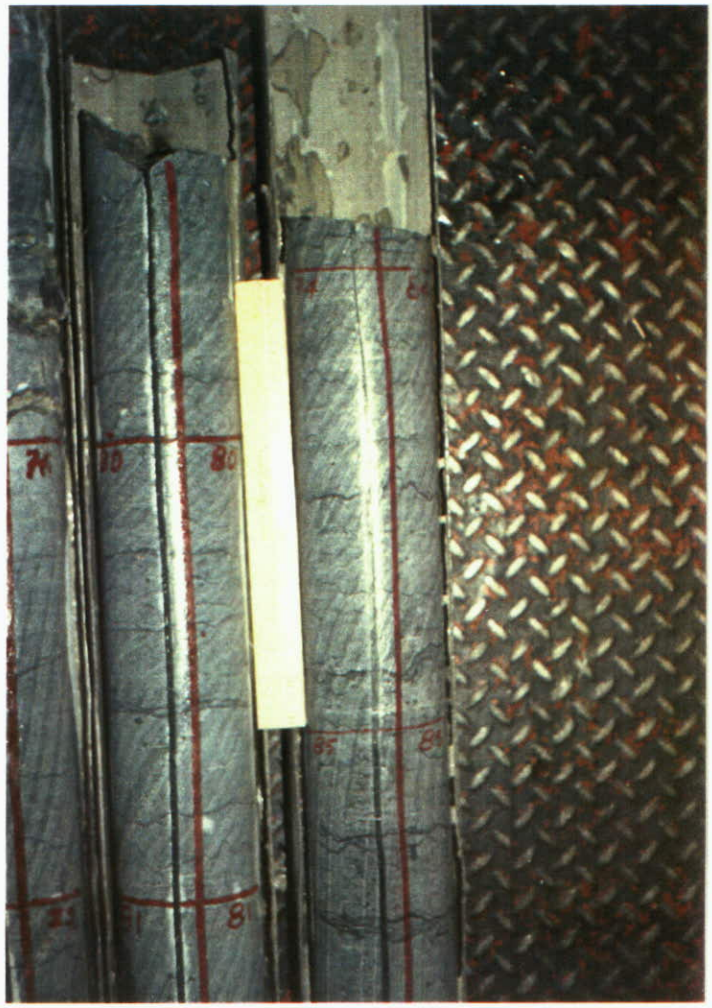

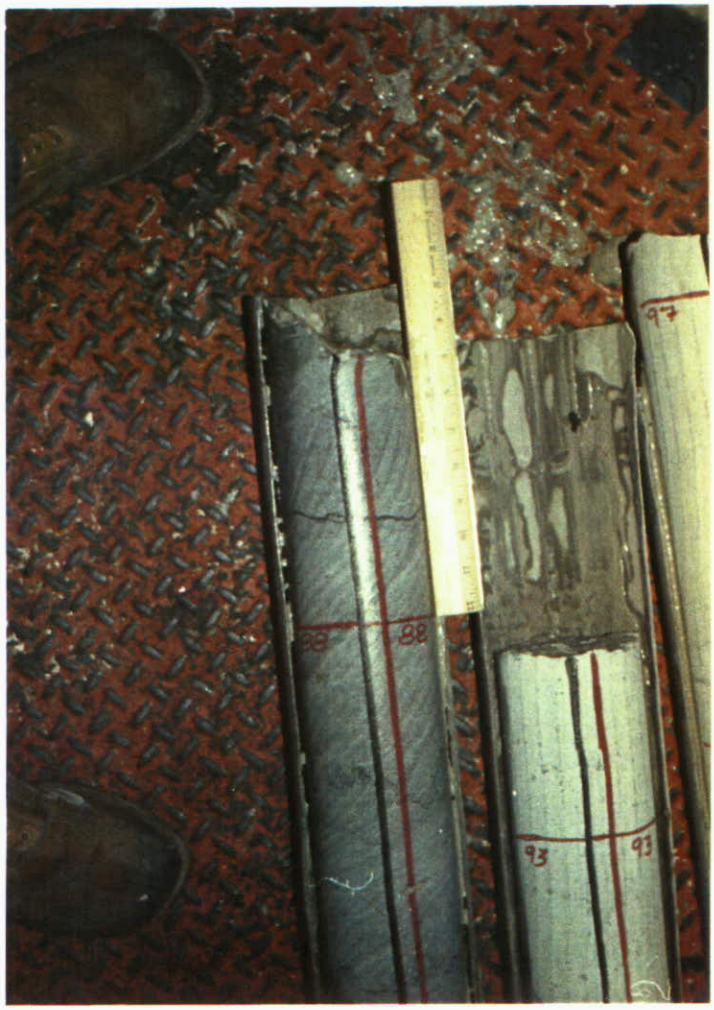

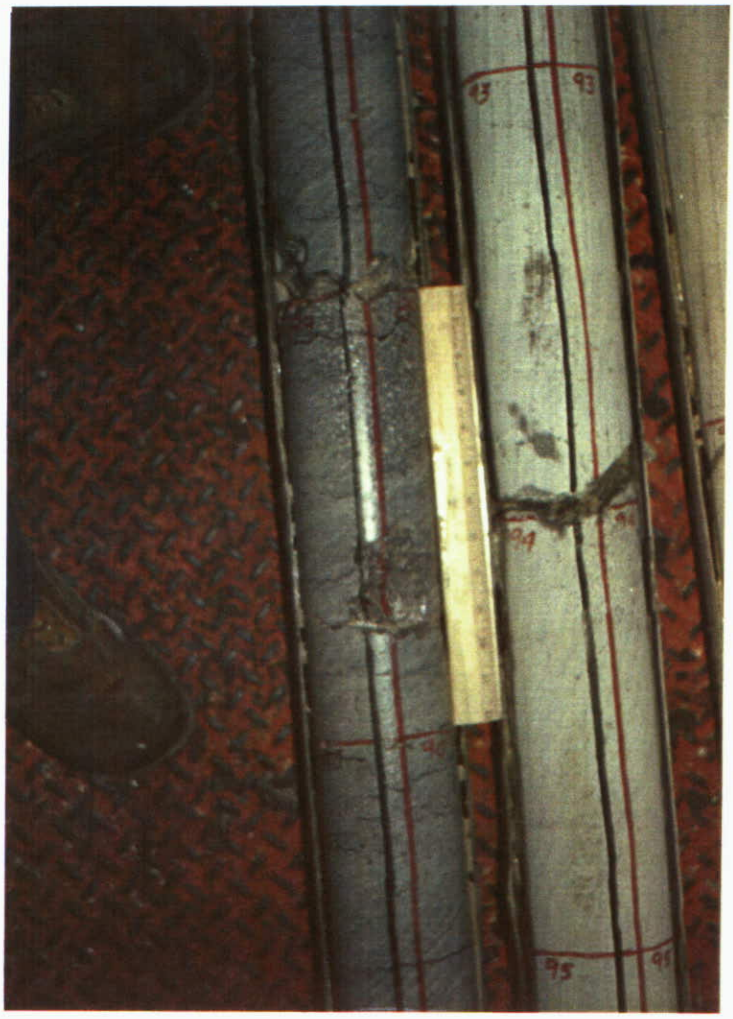

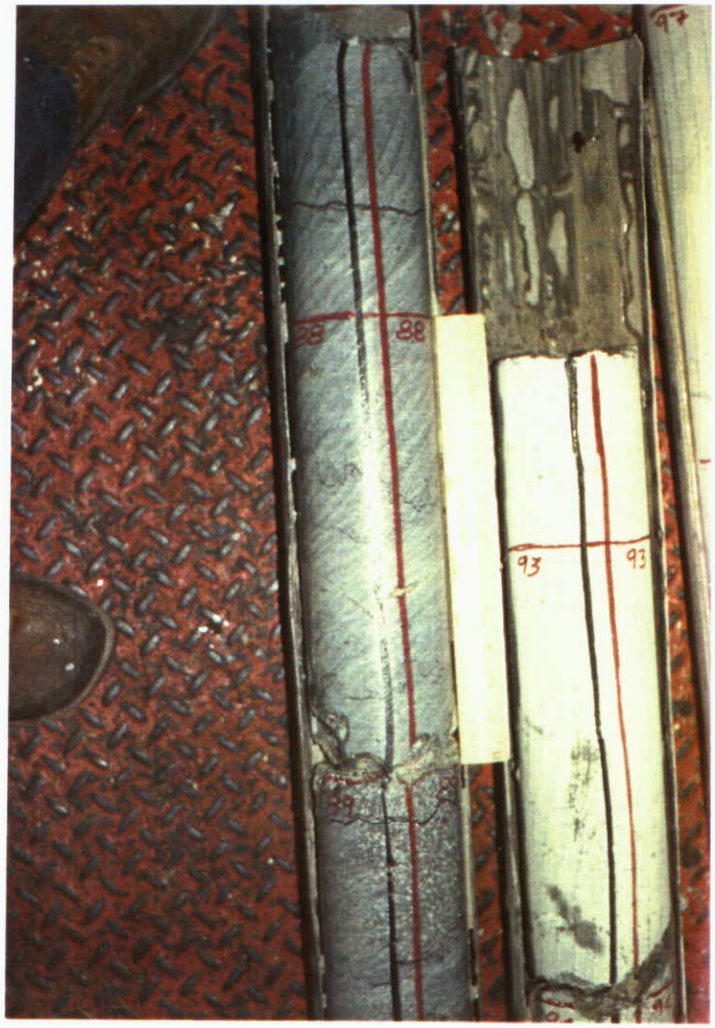

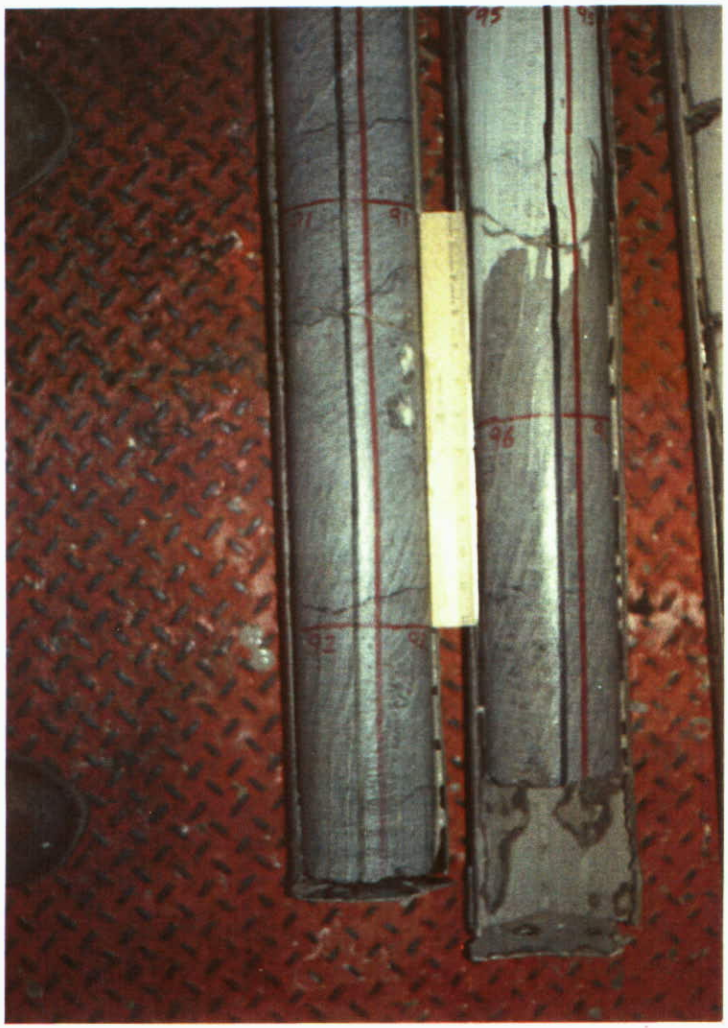

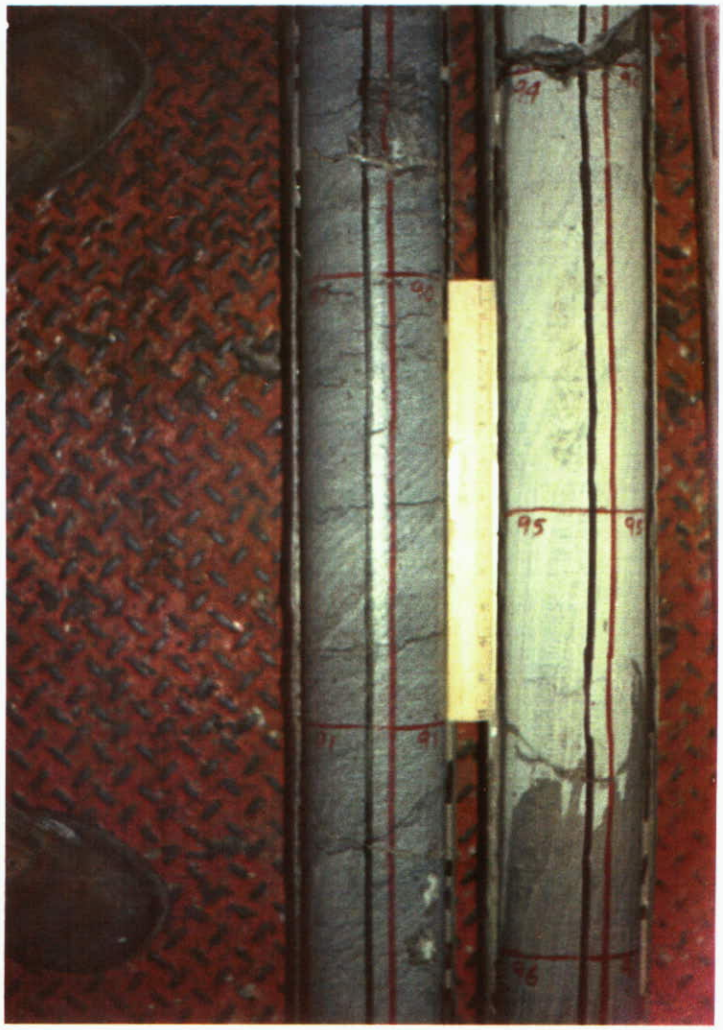

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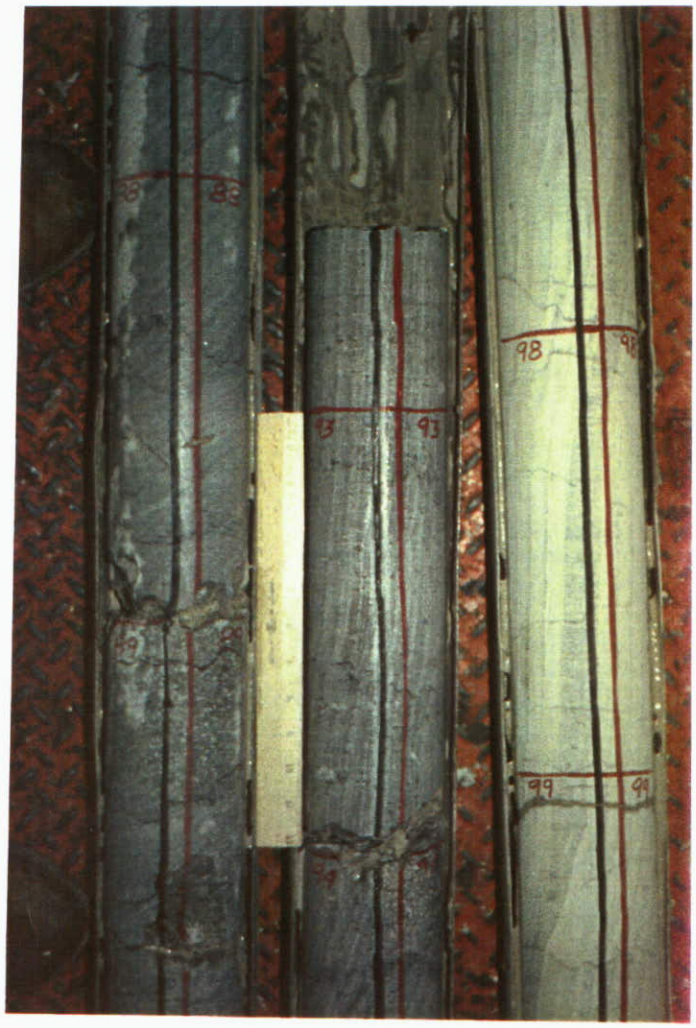
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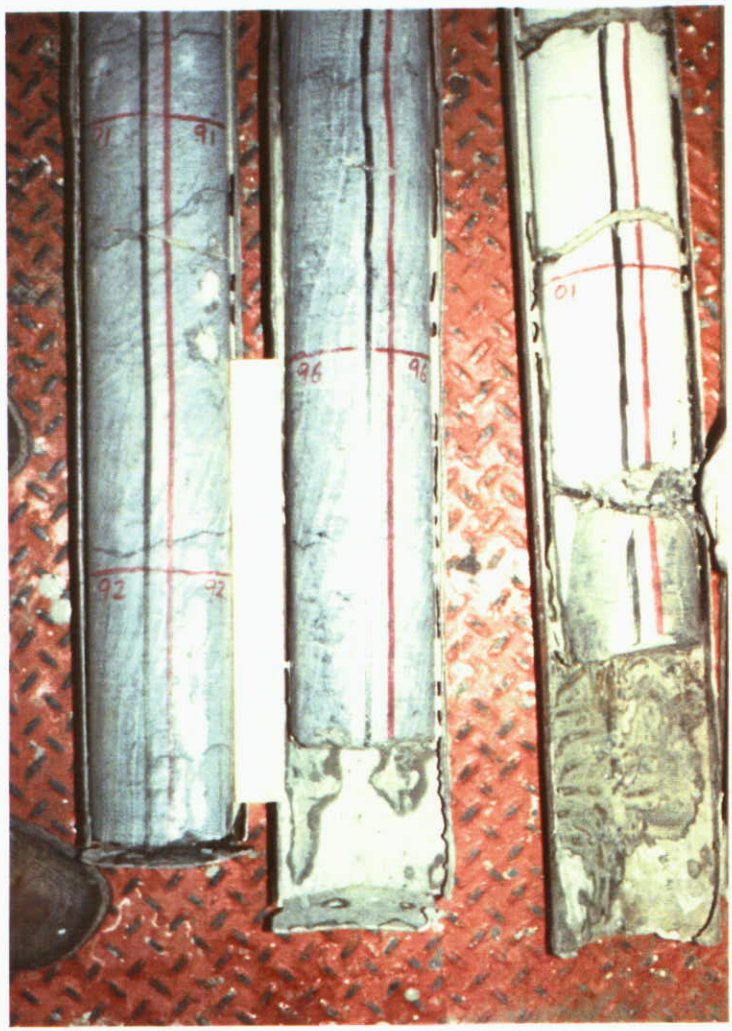
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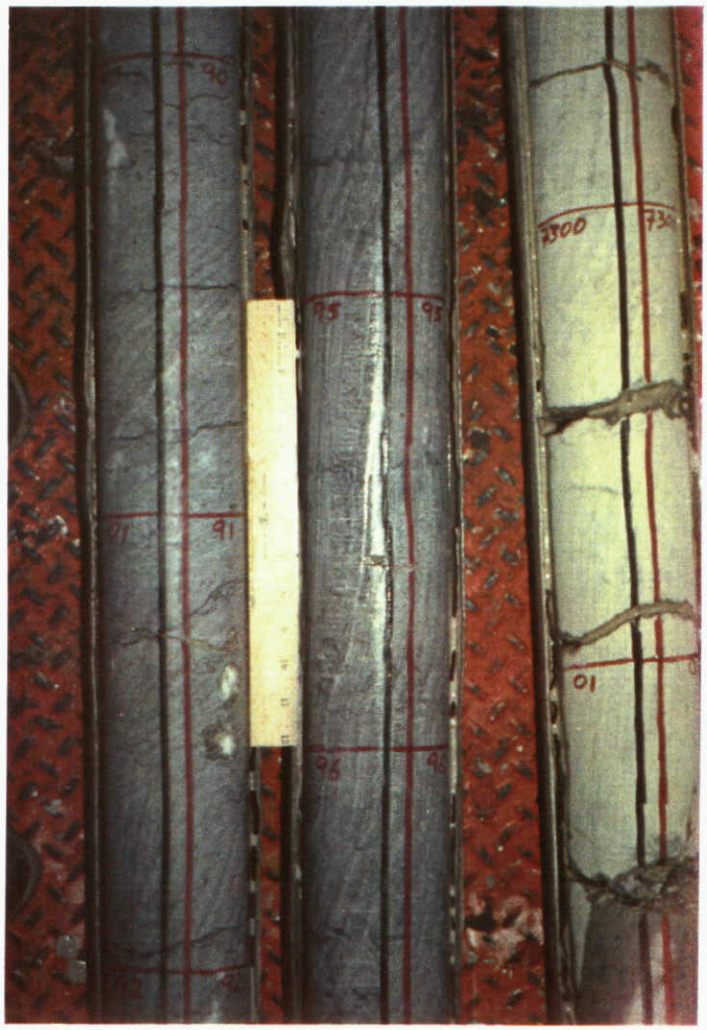
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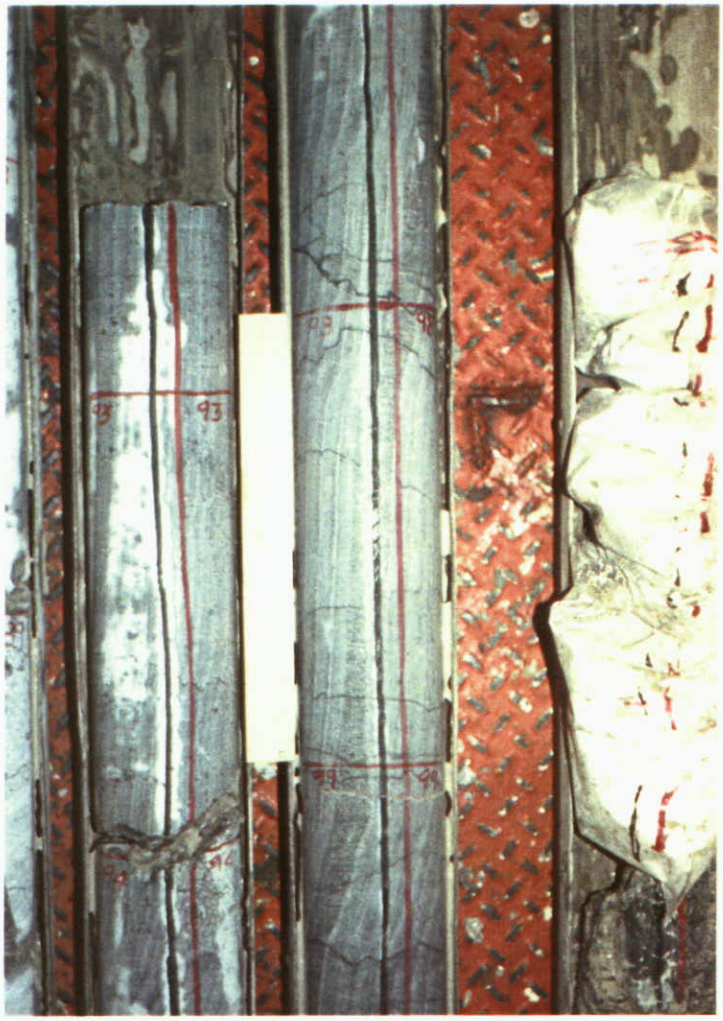
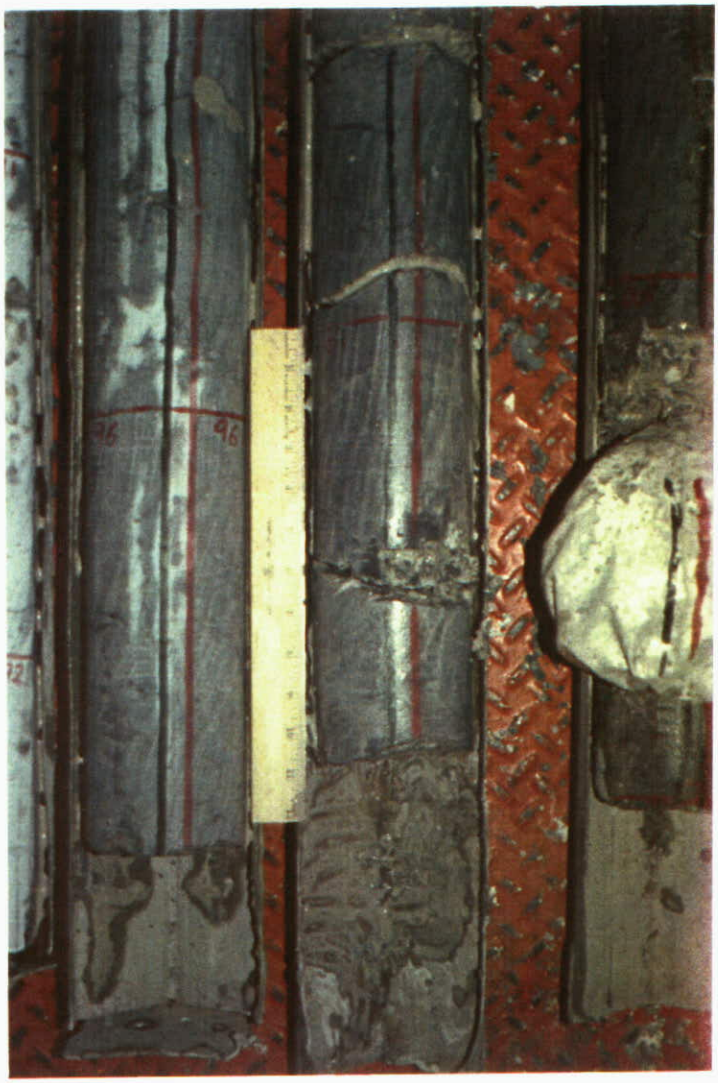
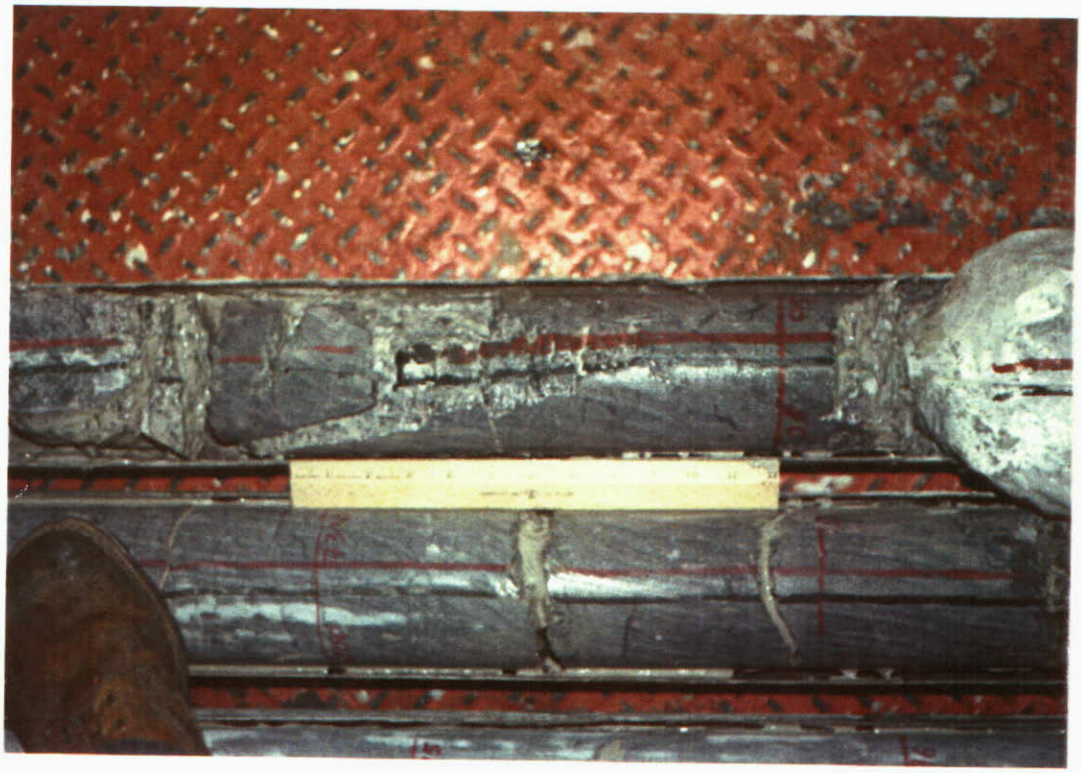
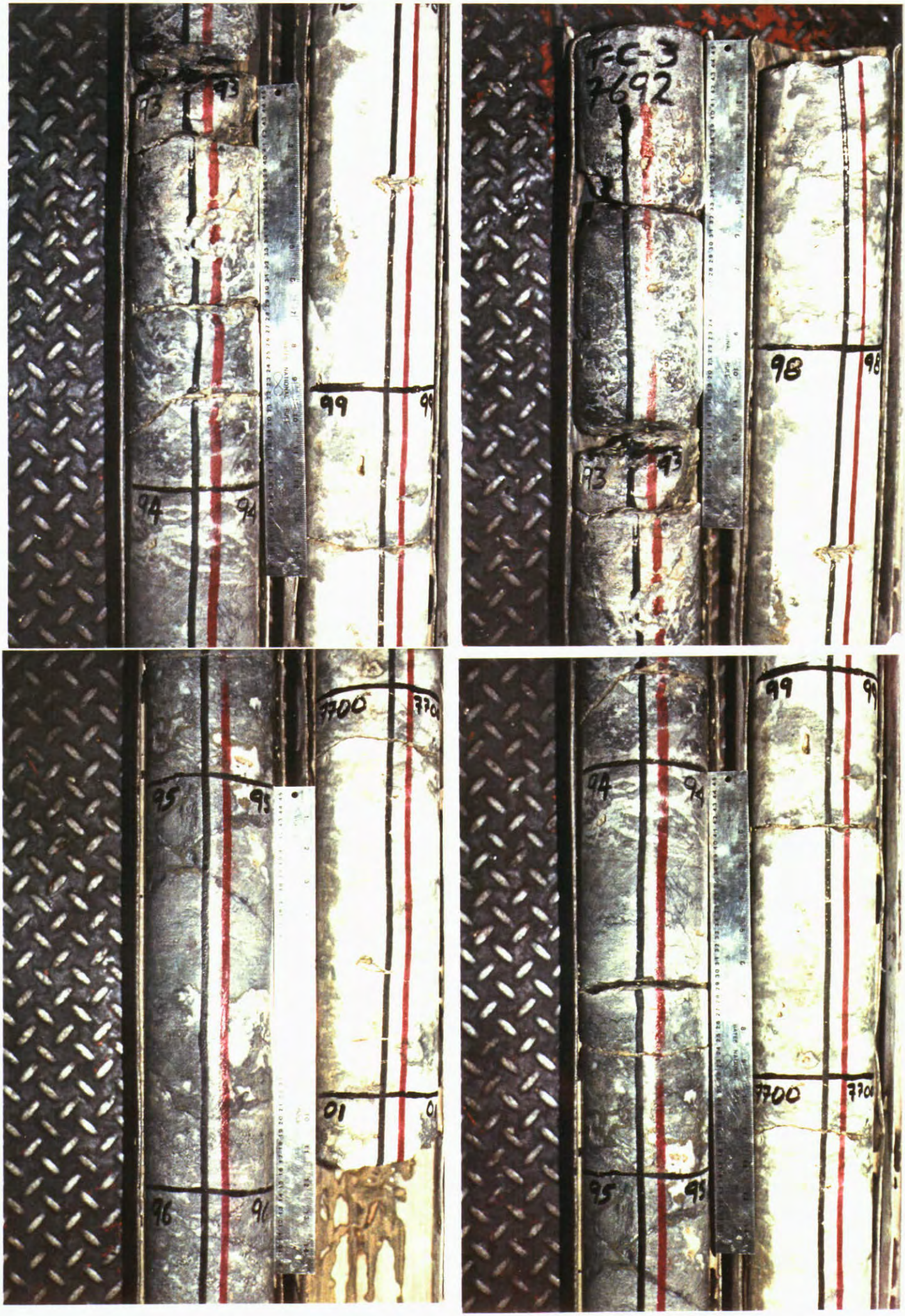






Amoco
#1 - Spence Trust.
Core #3
7692-7722.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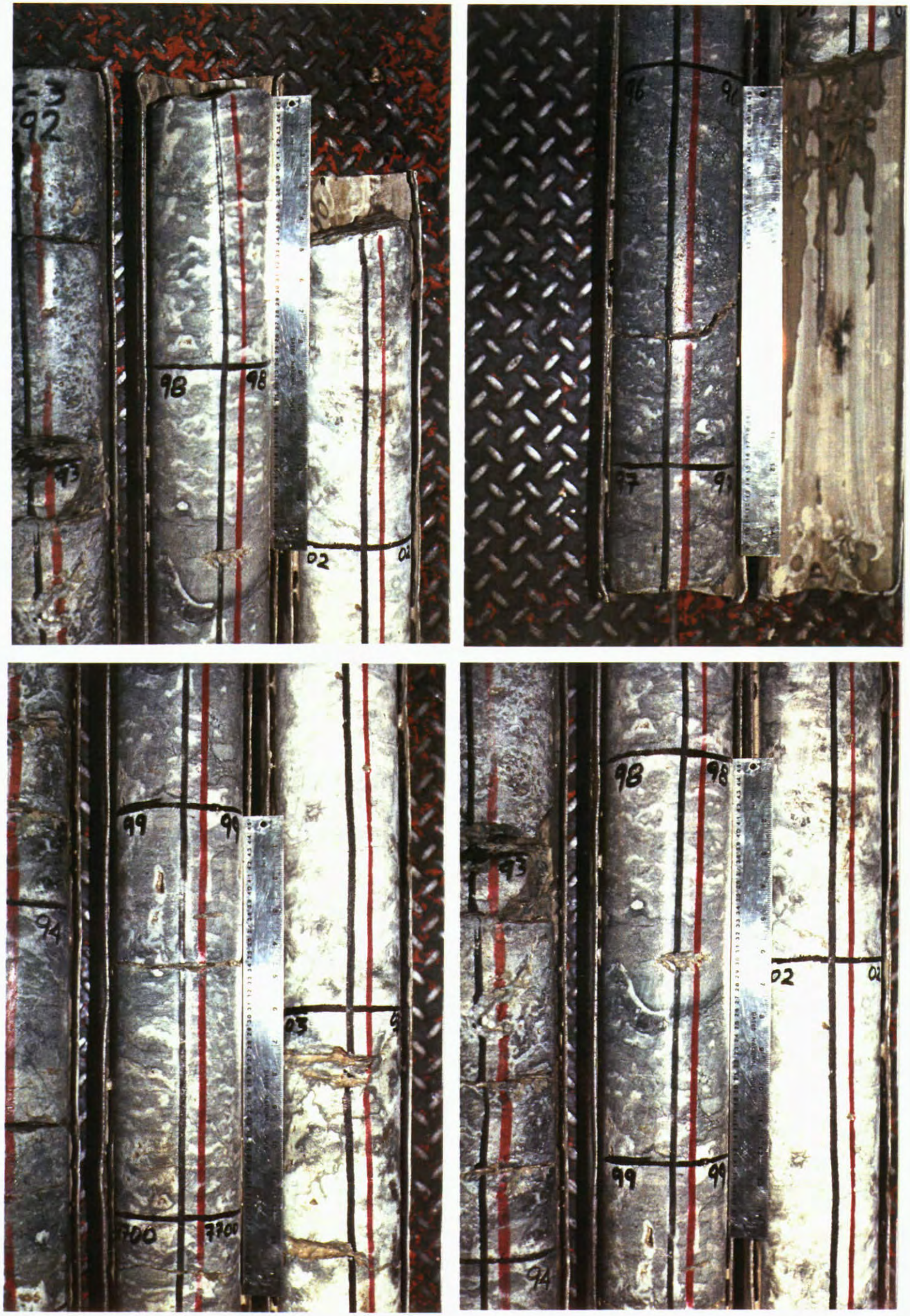
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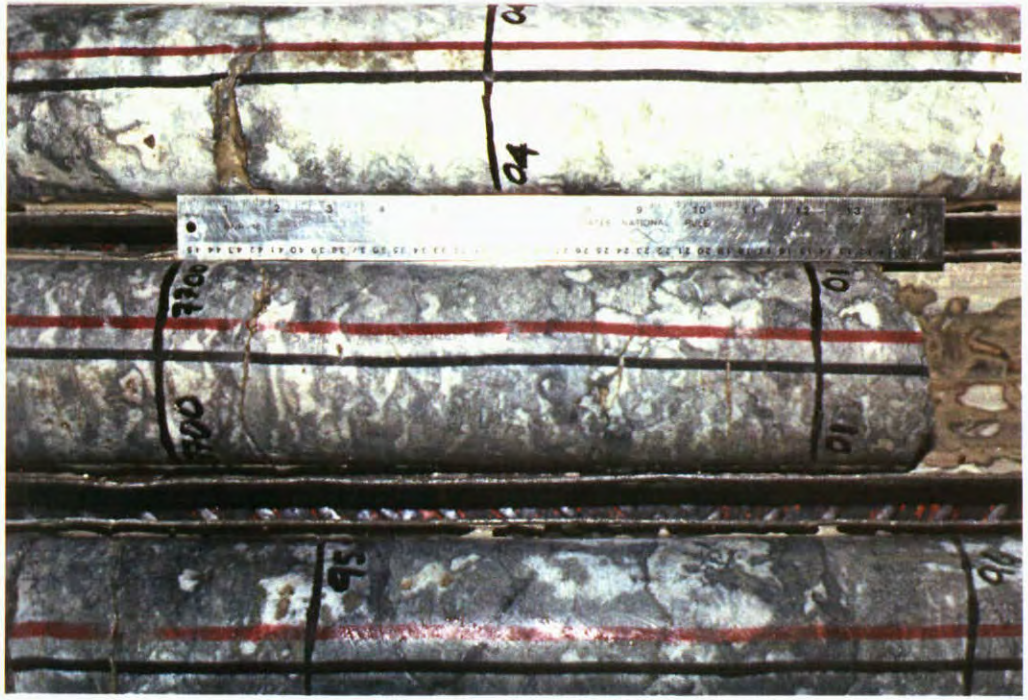

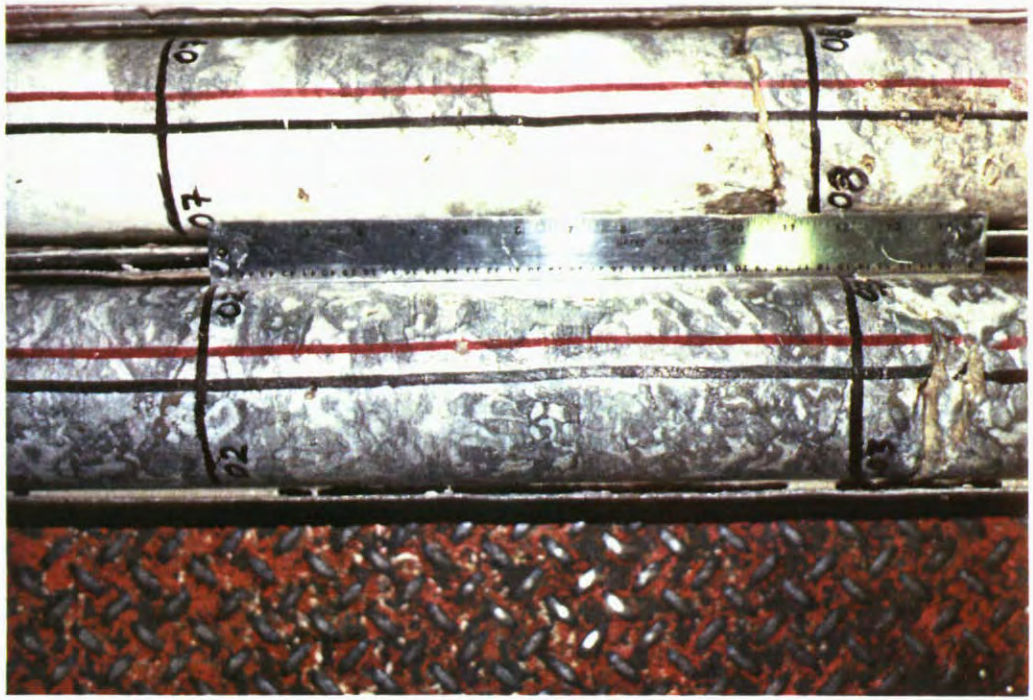

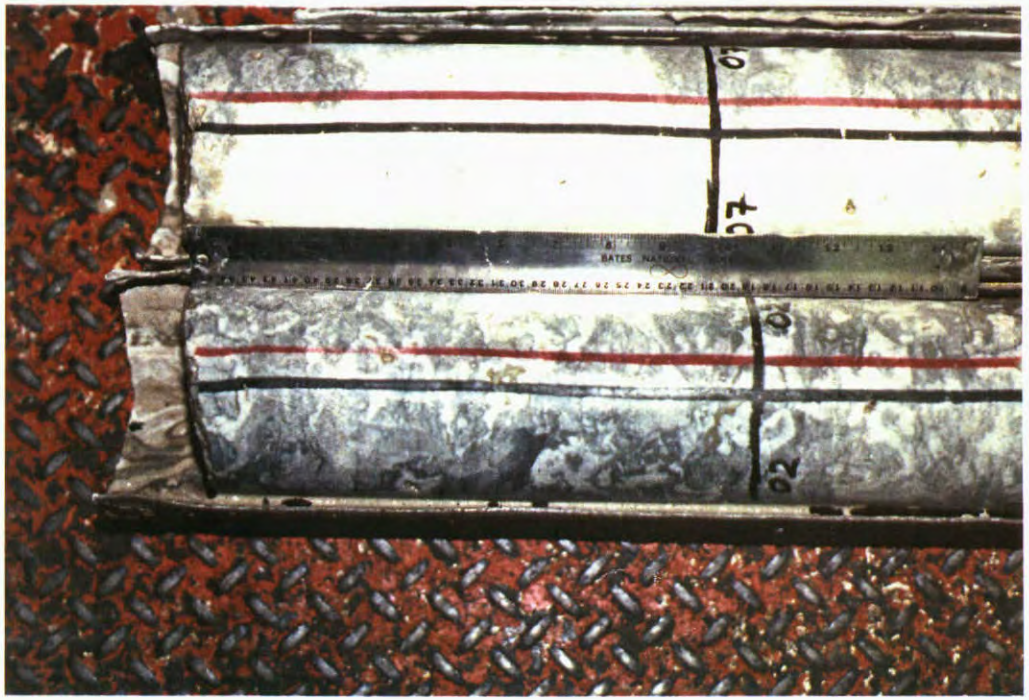

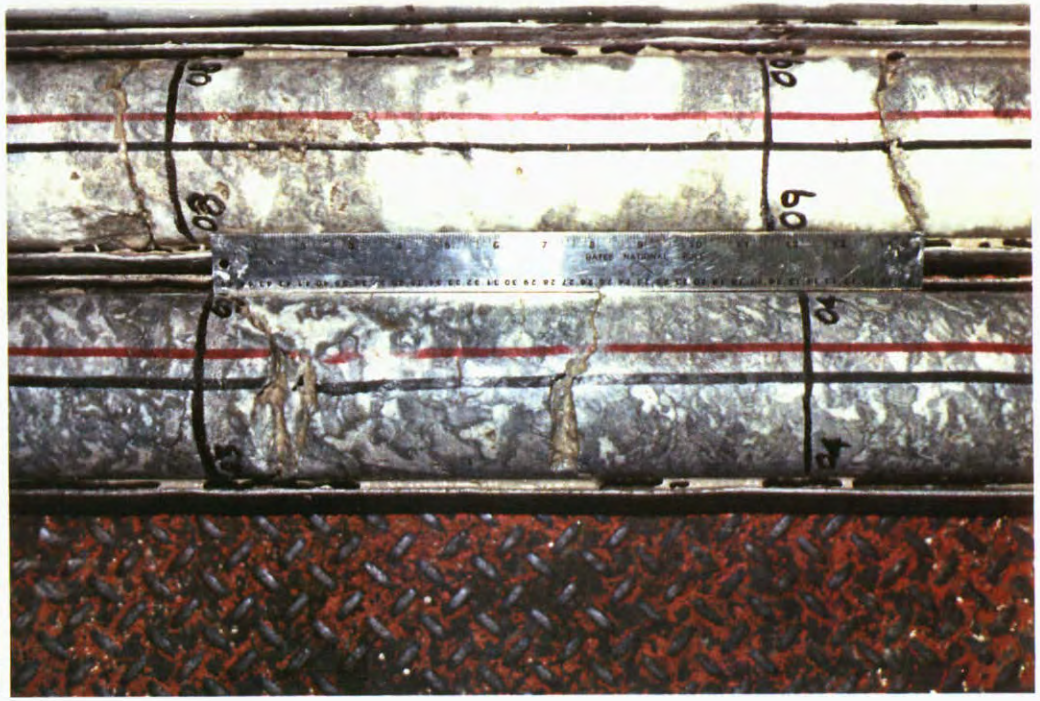

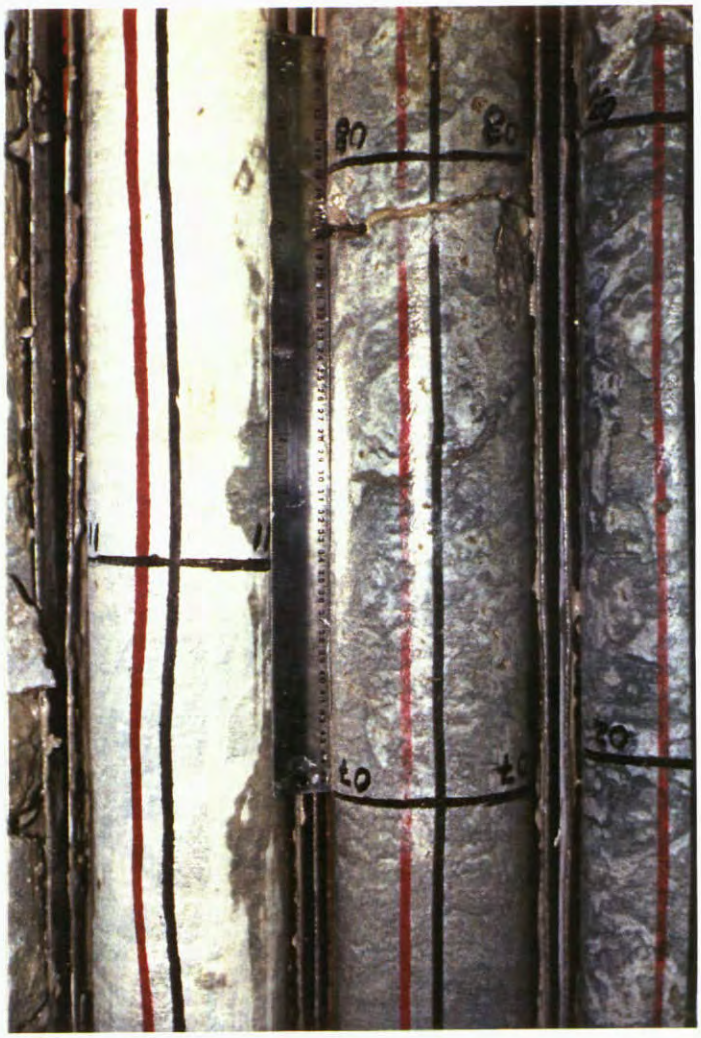

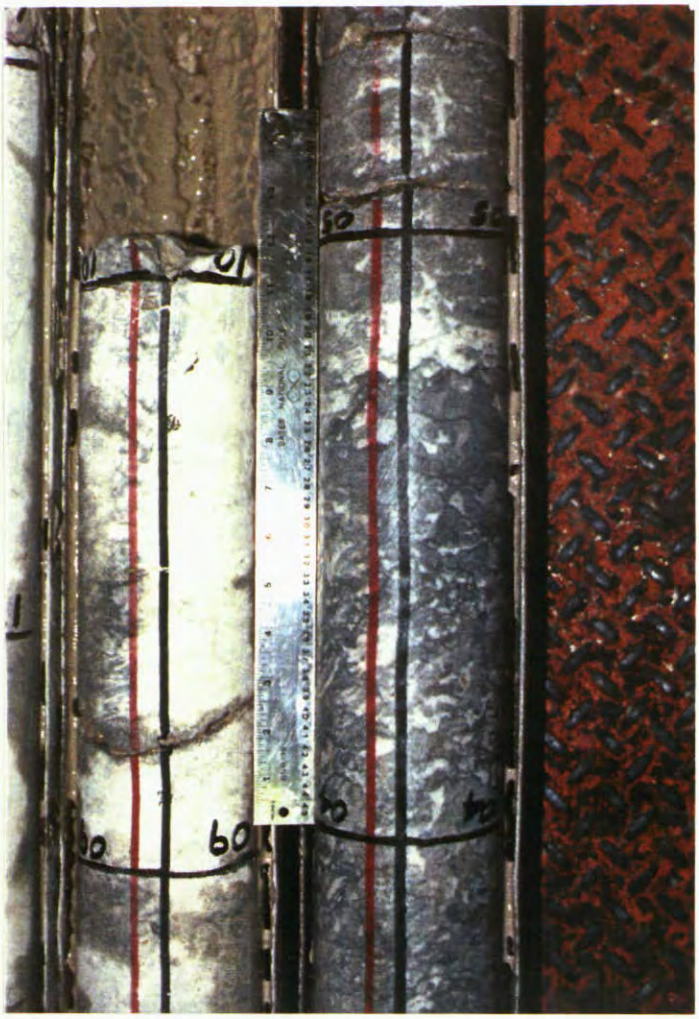

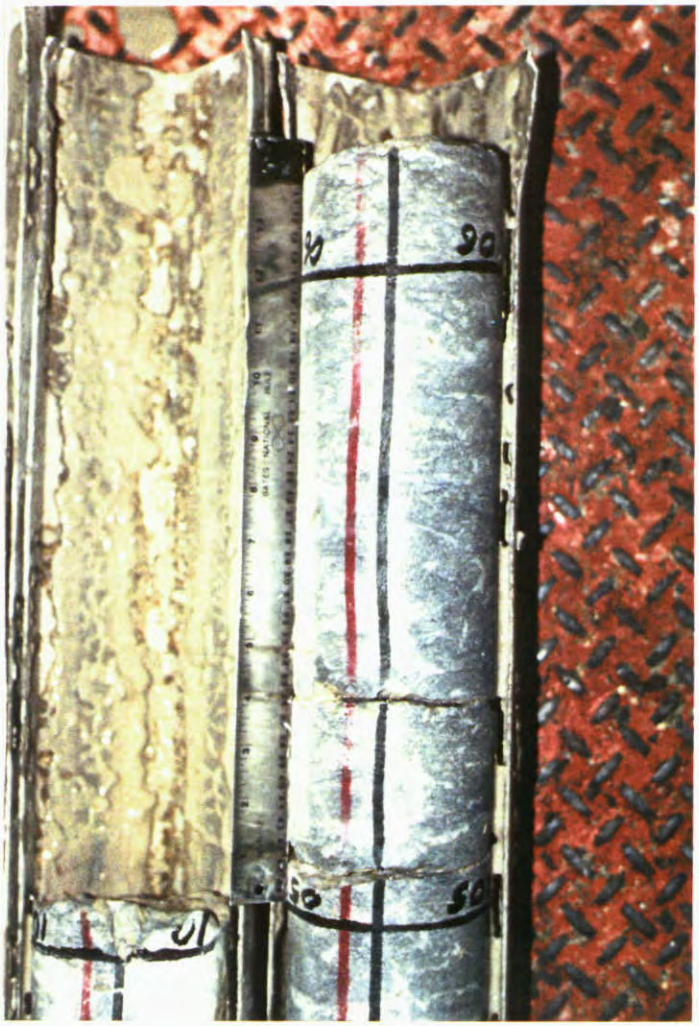

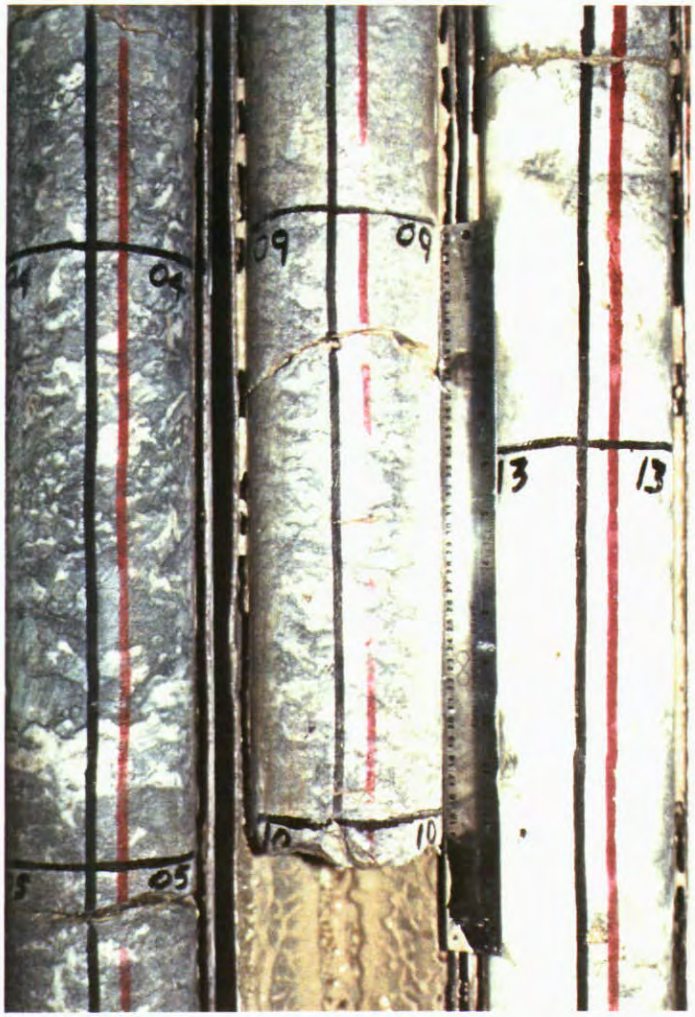
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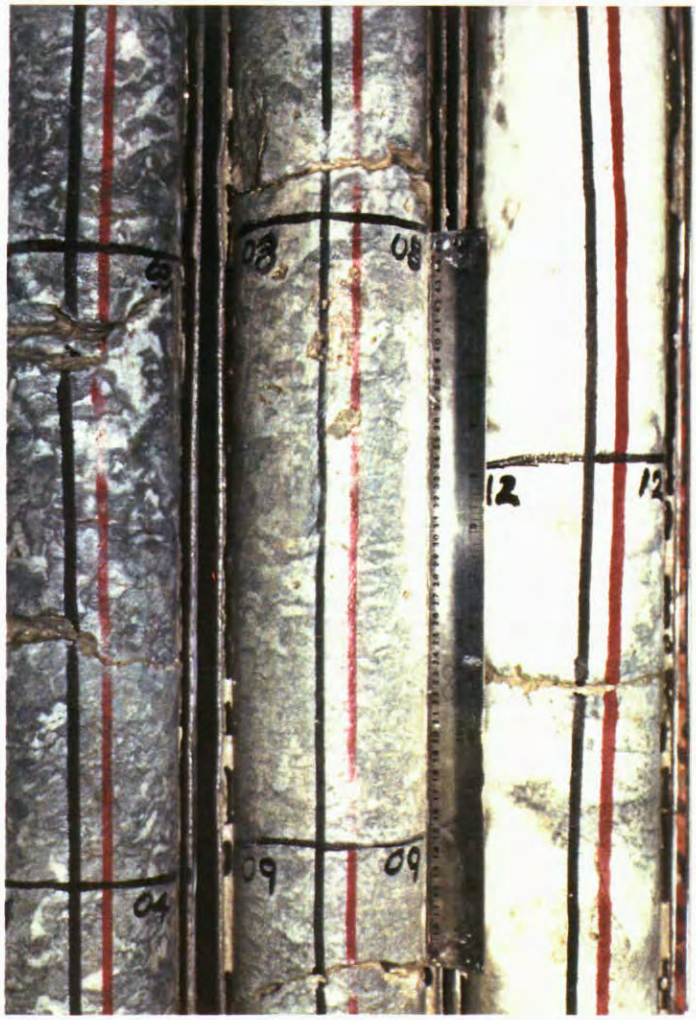
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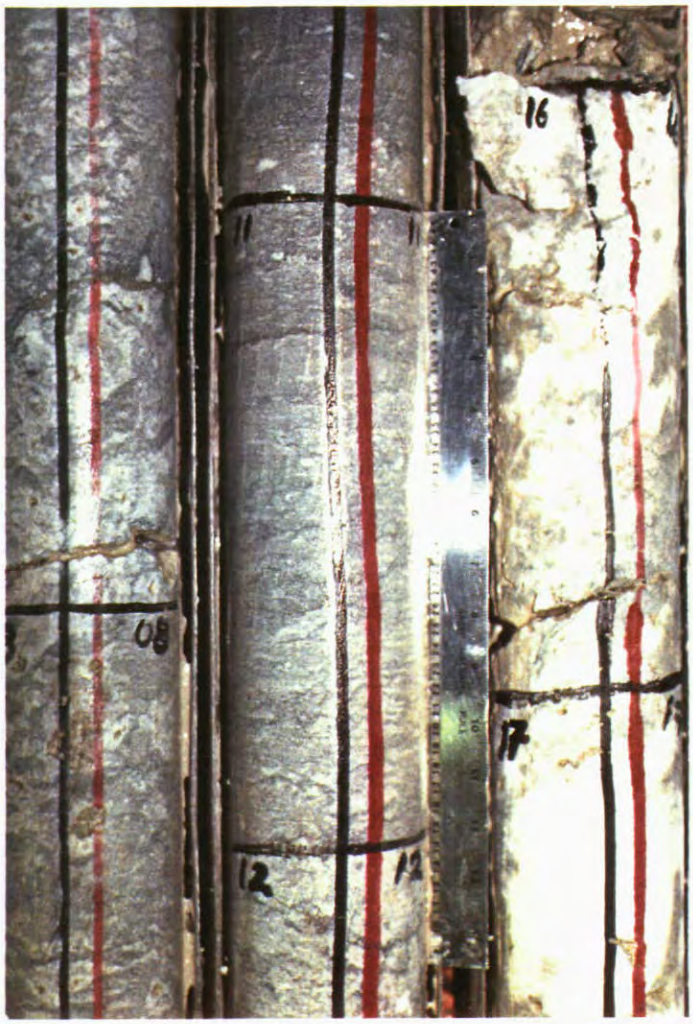
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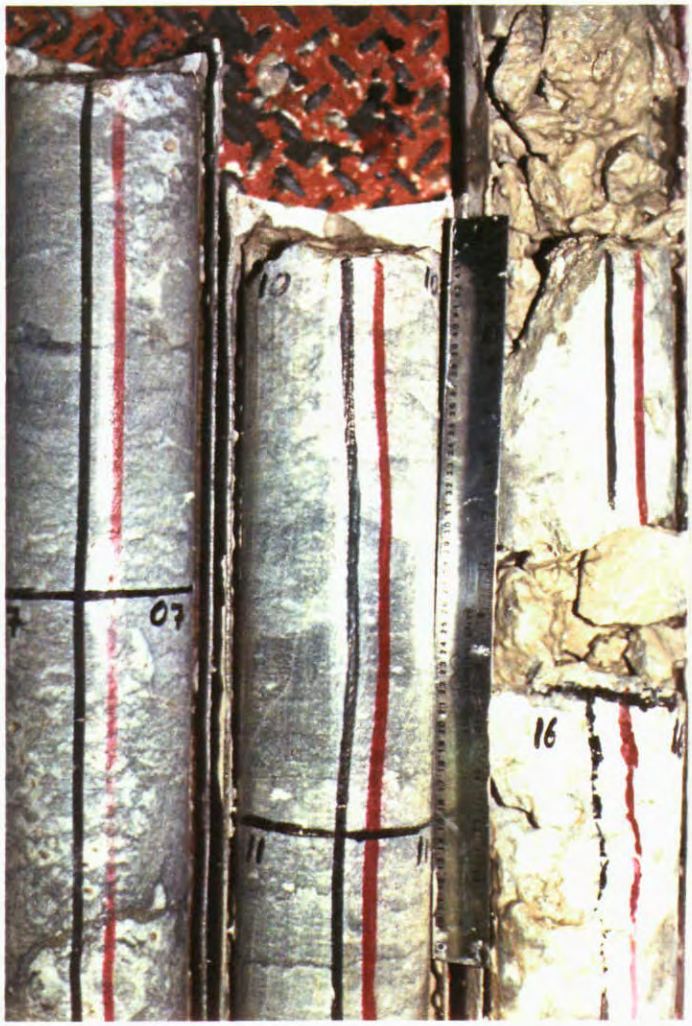
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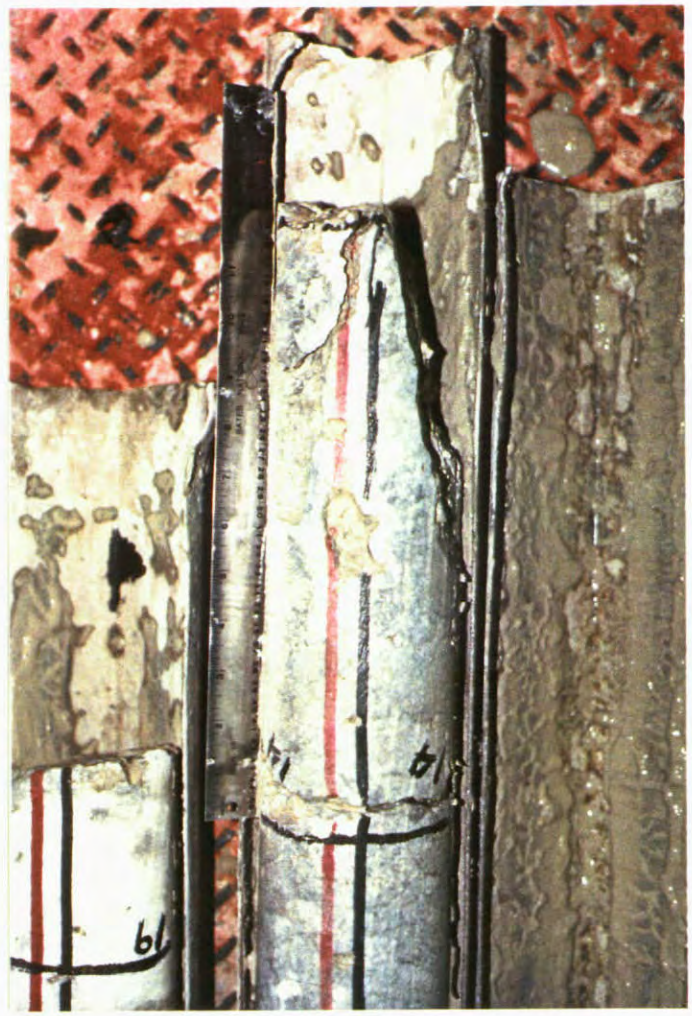

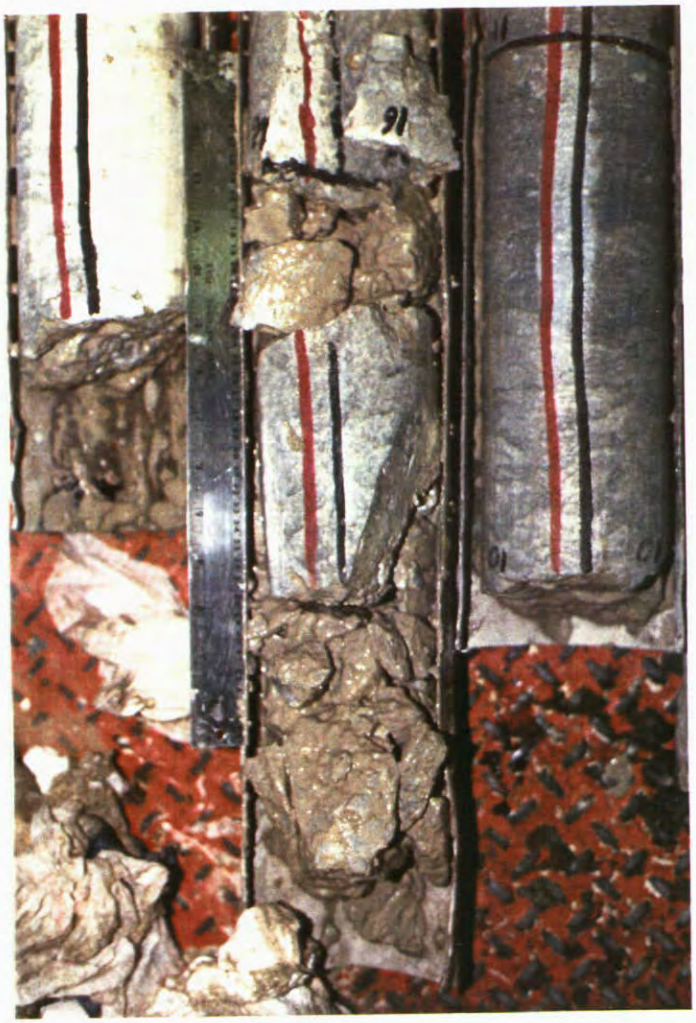

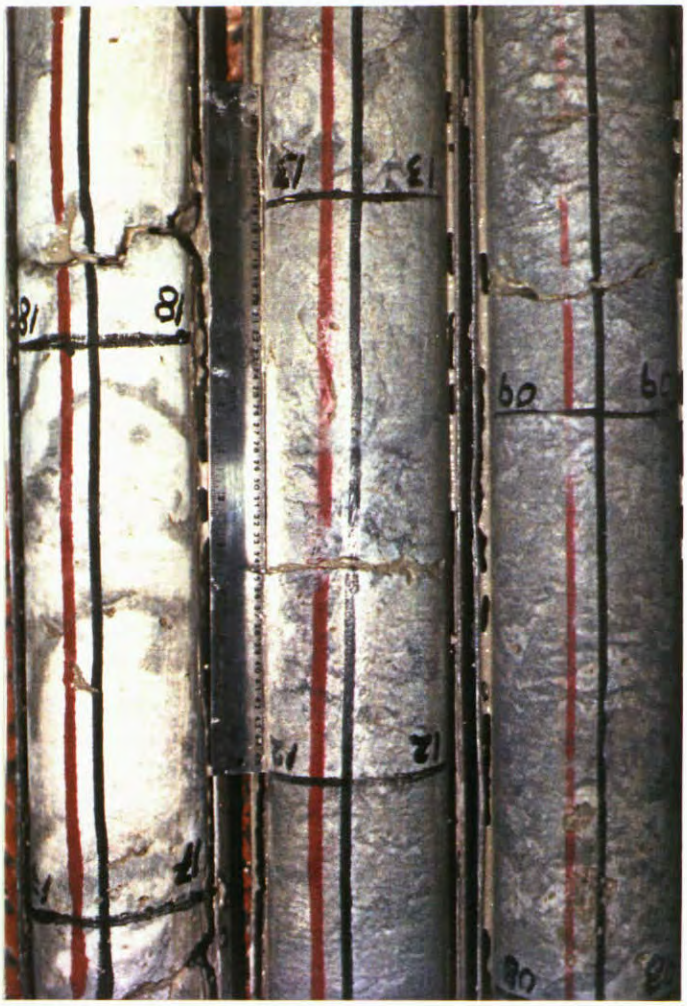

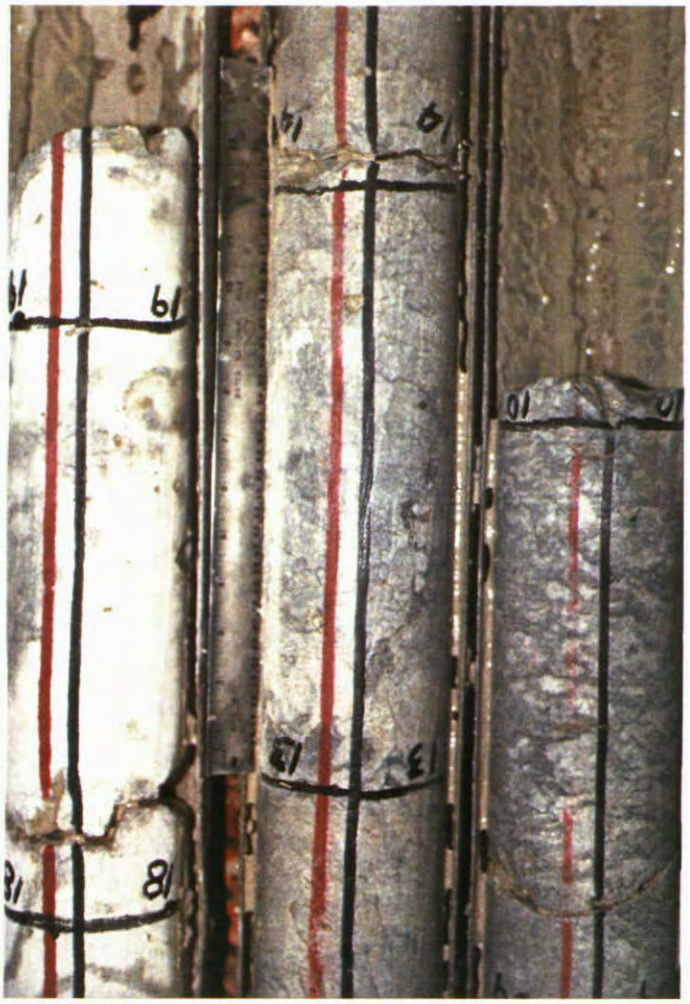

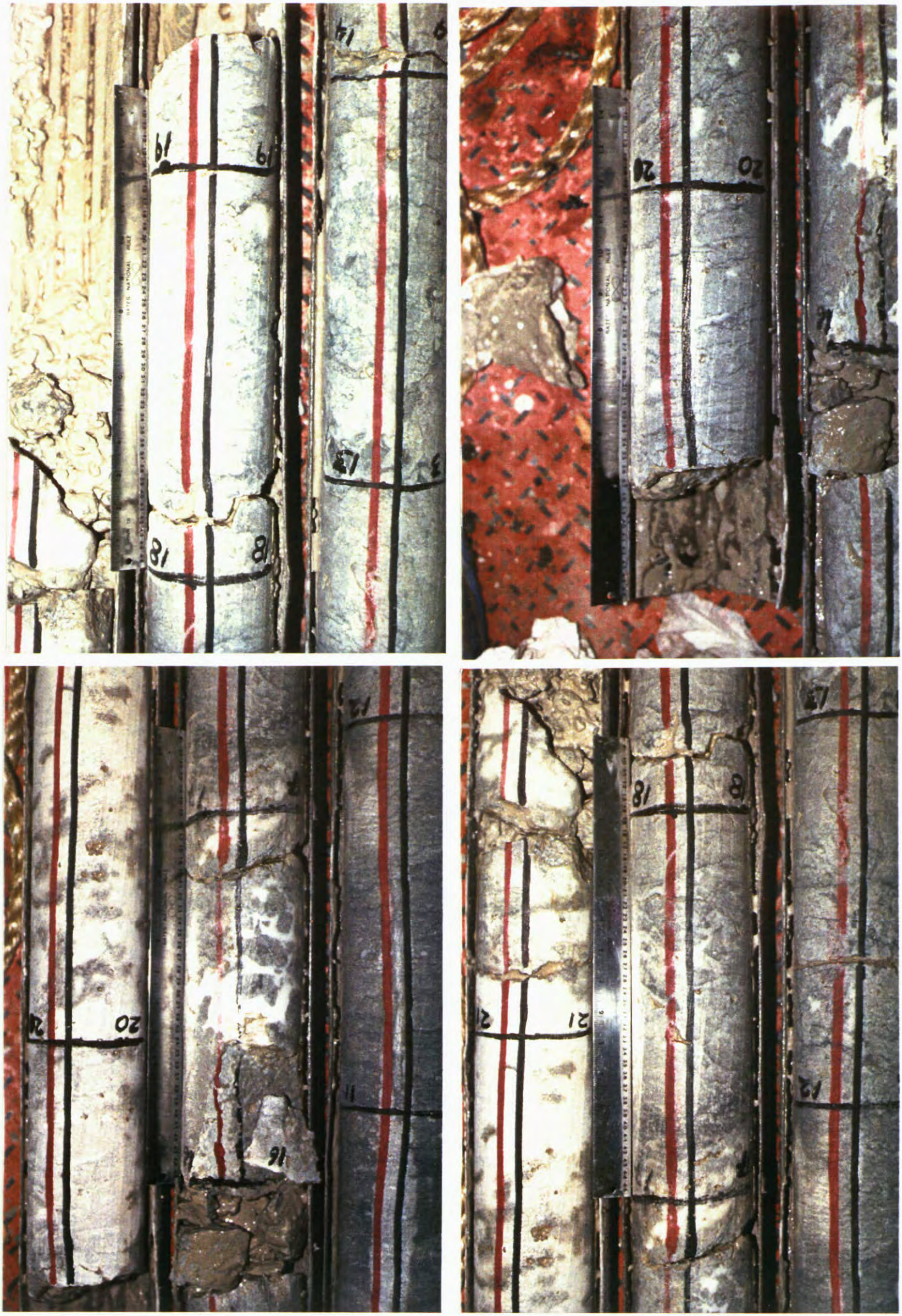

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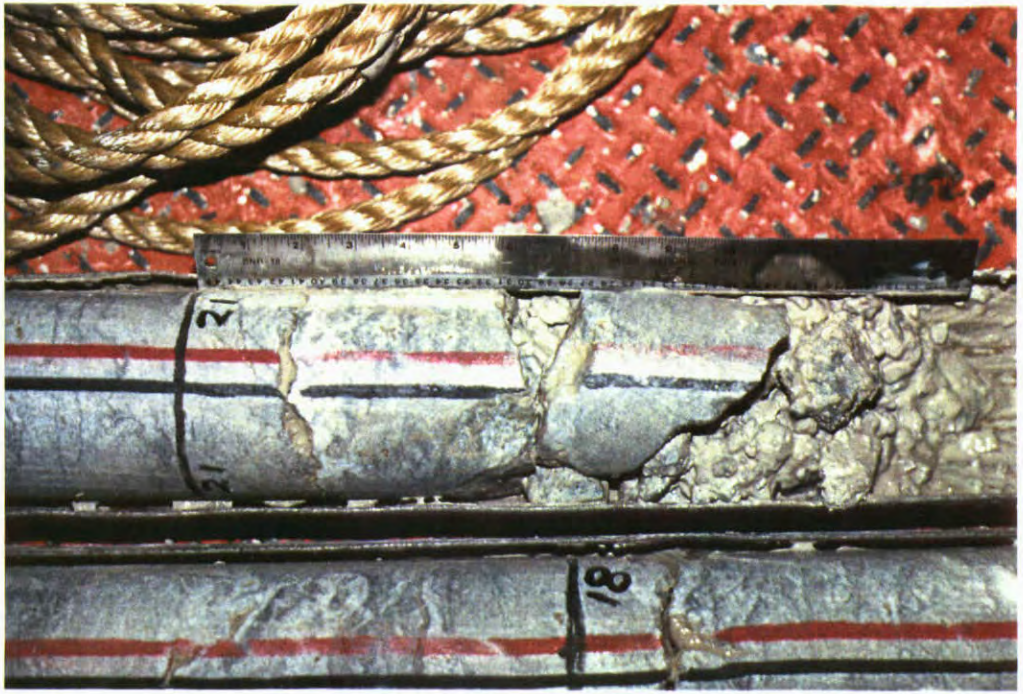
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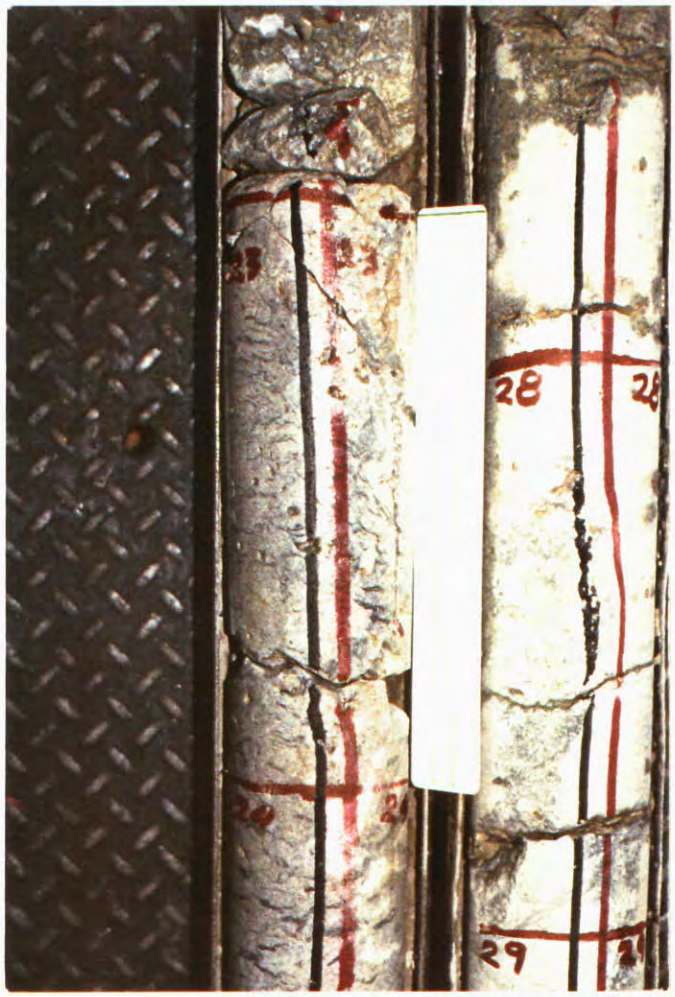
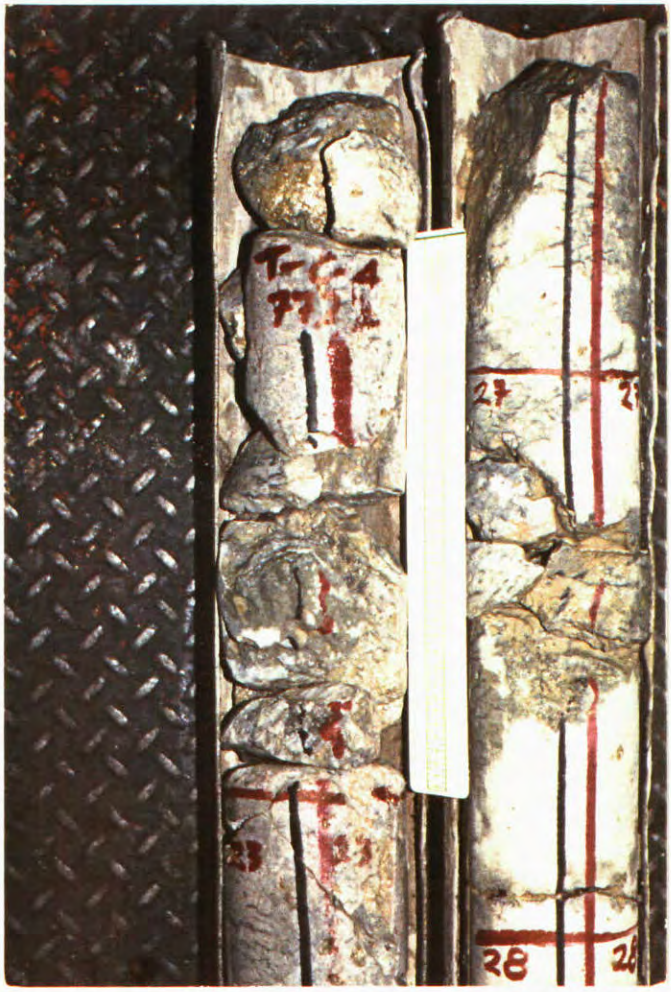
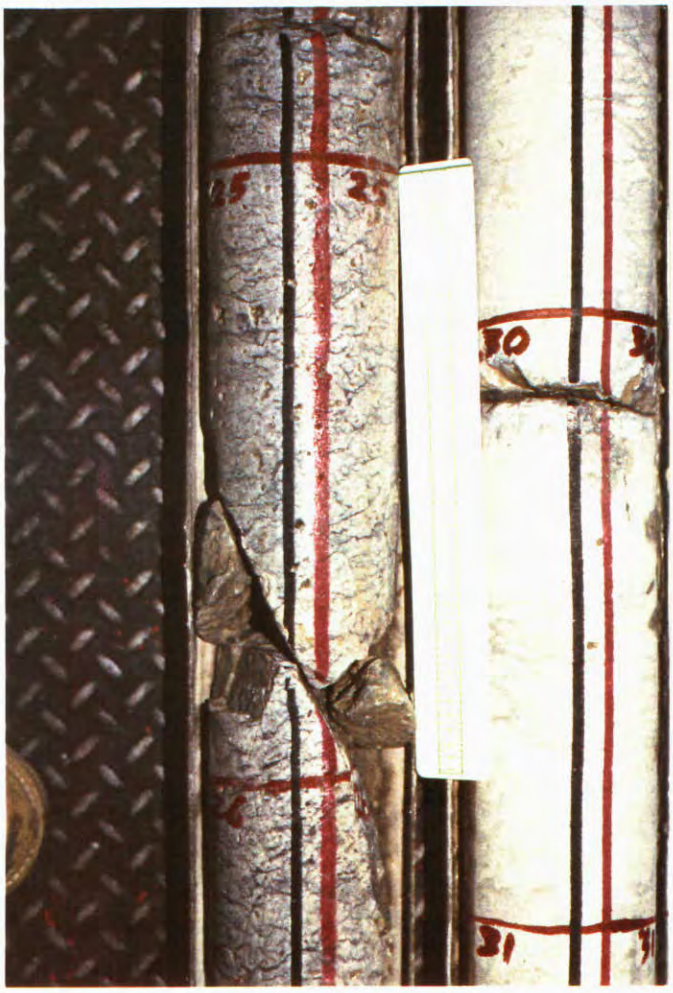
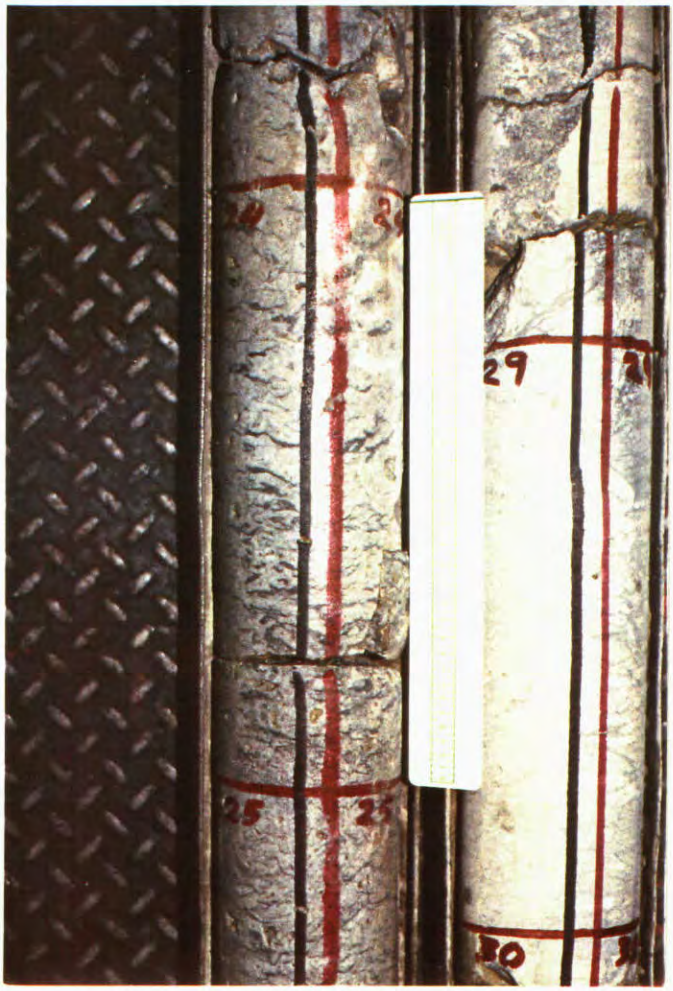
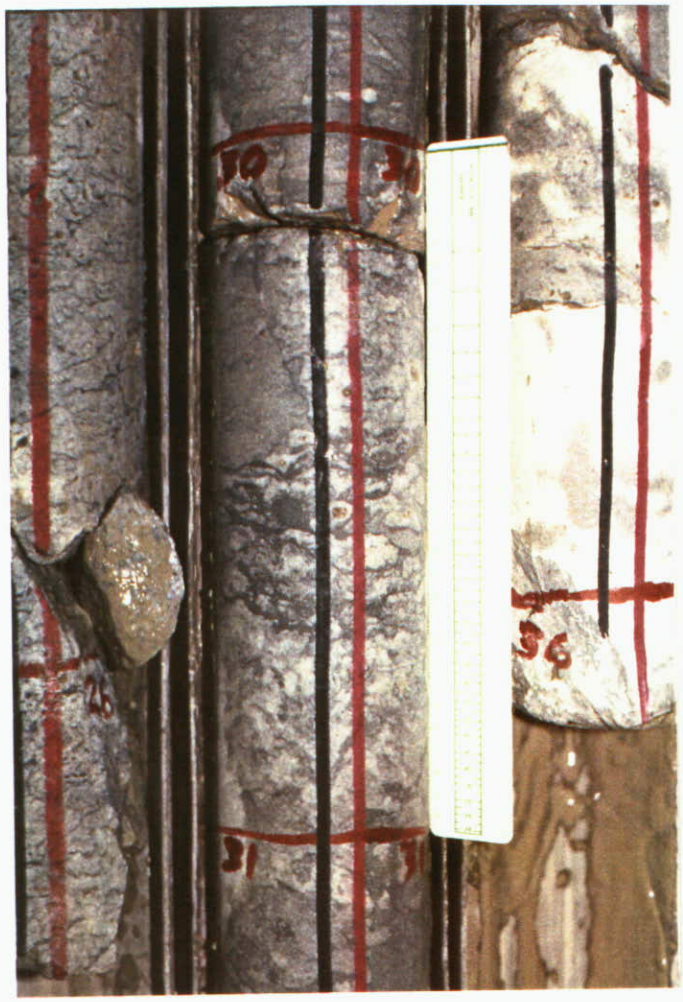
Amoco
#1 Spence Trust.
Core #4
7722-52'

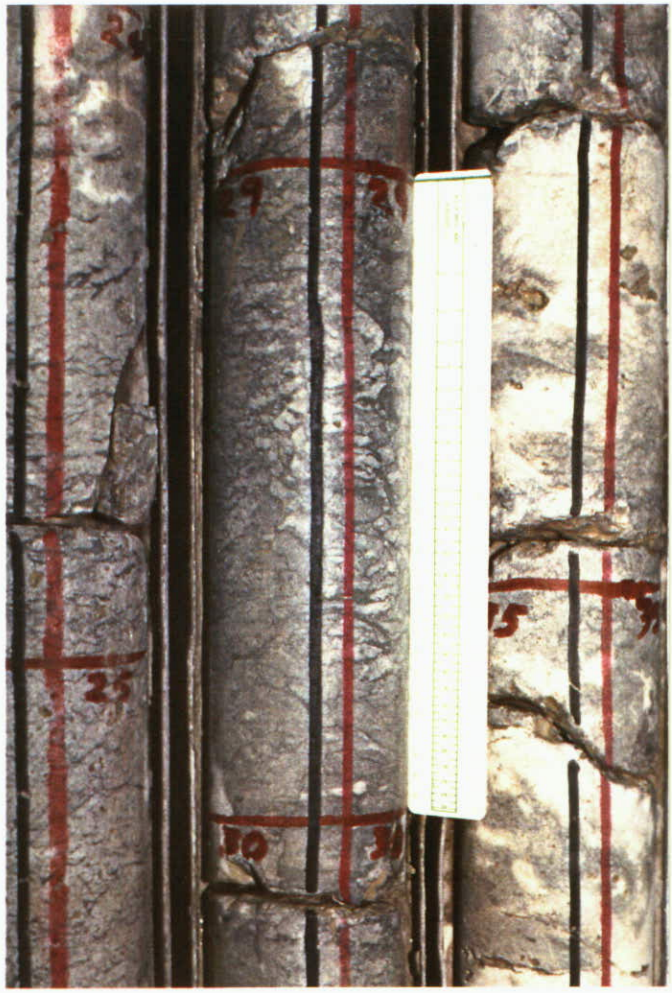


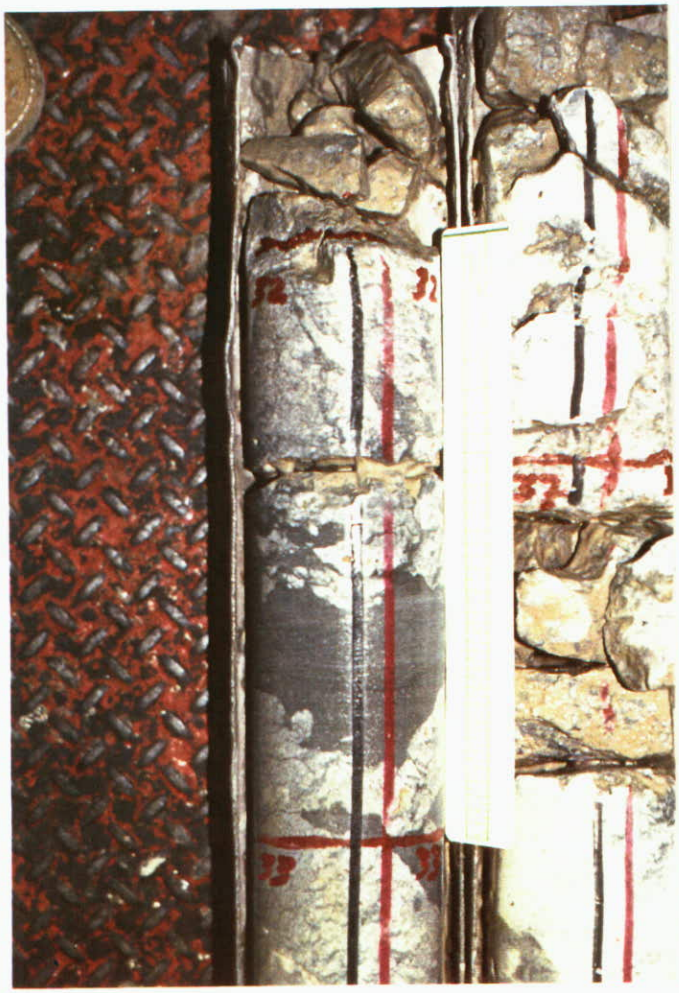


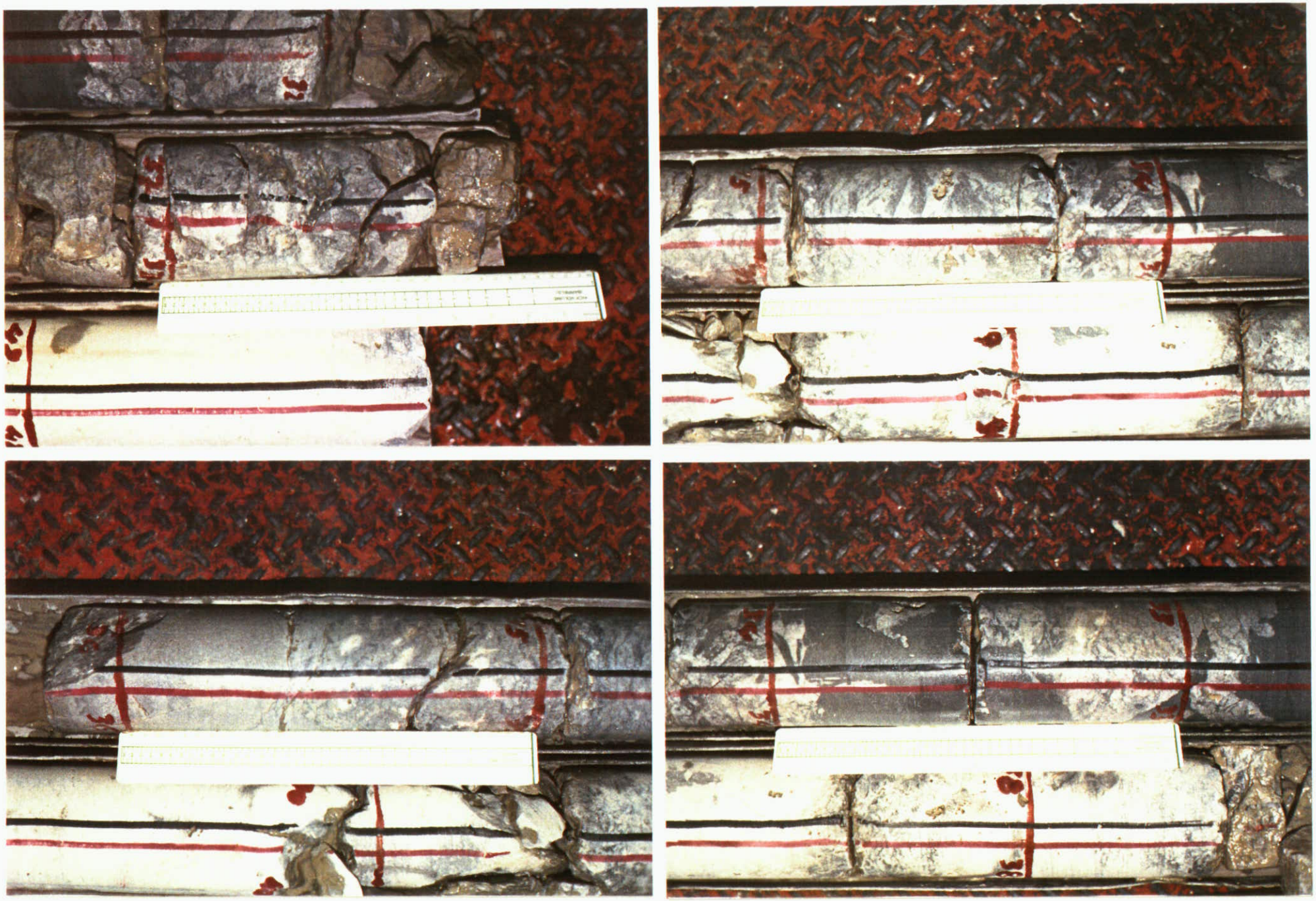


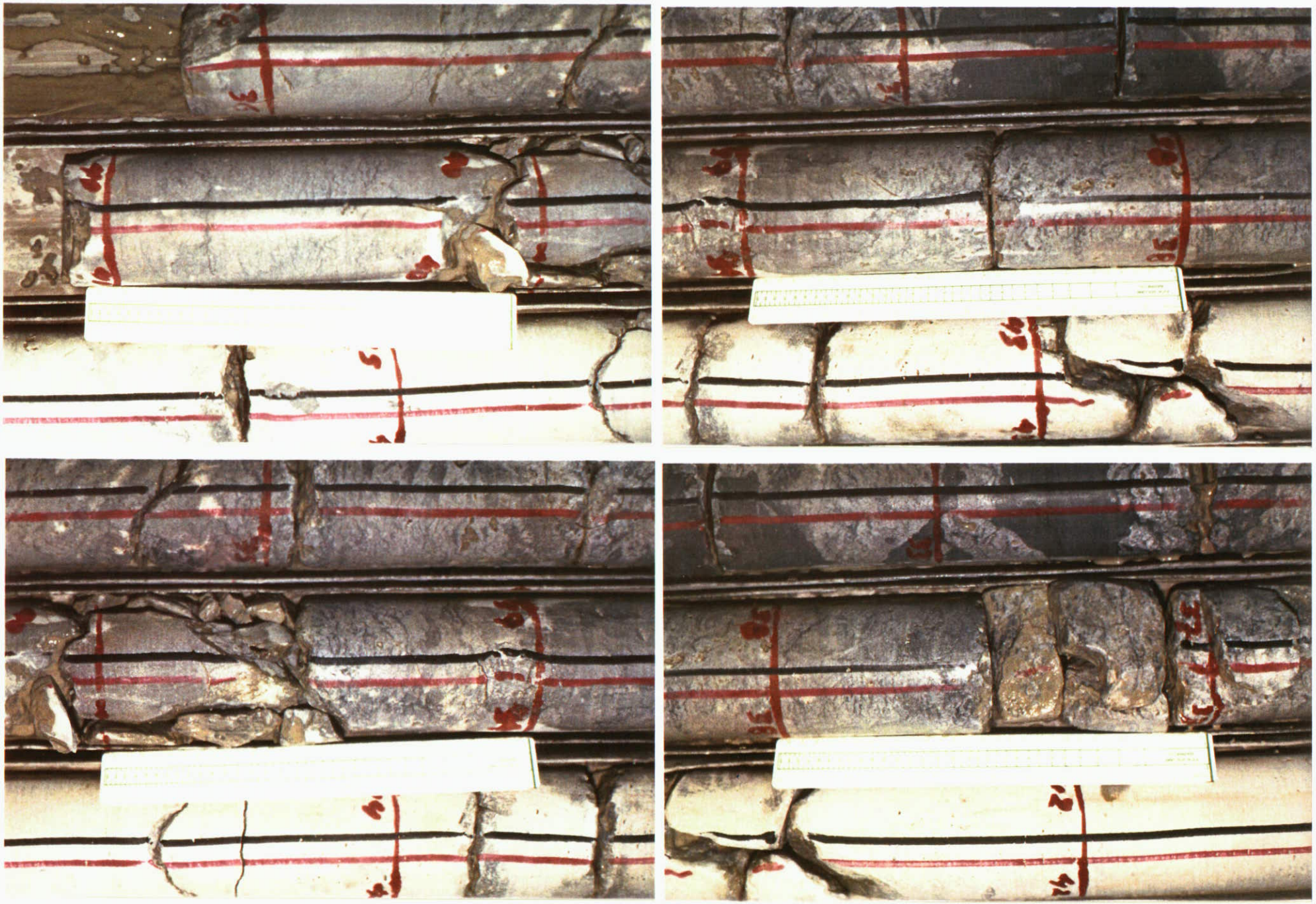


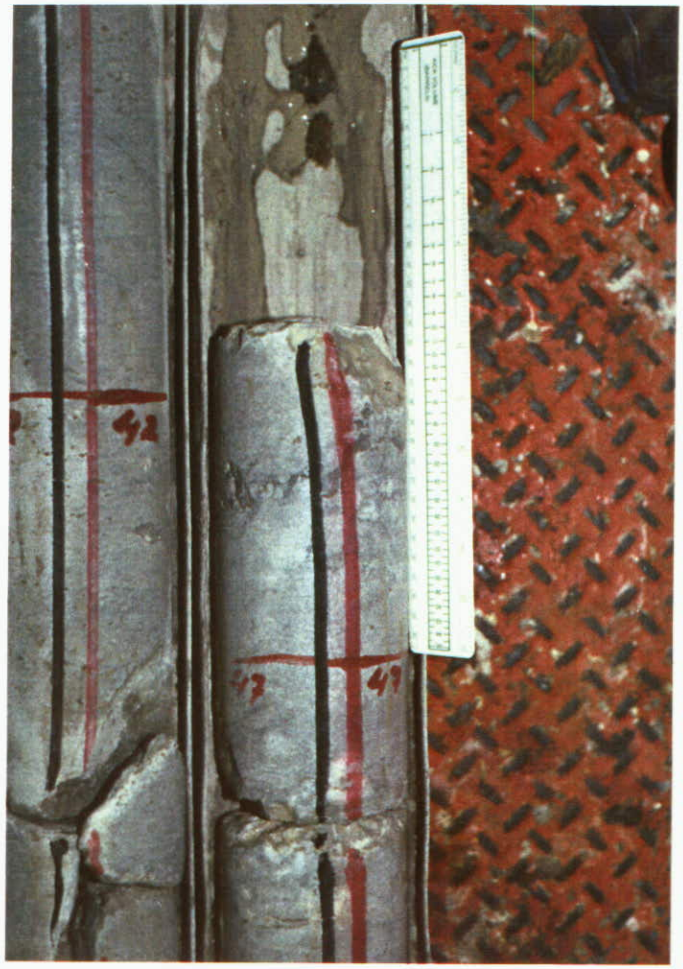


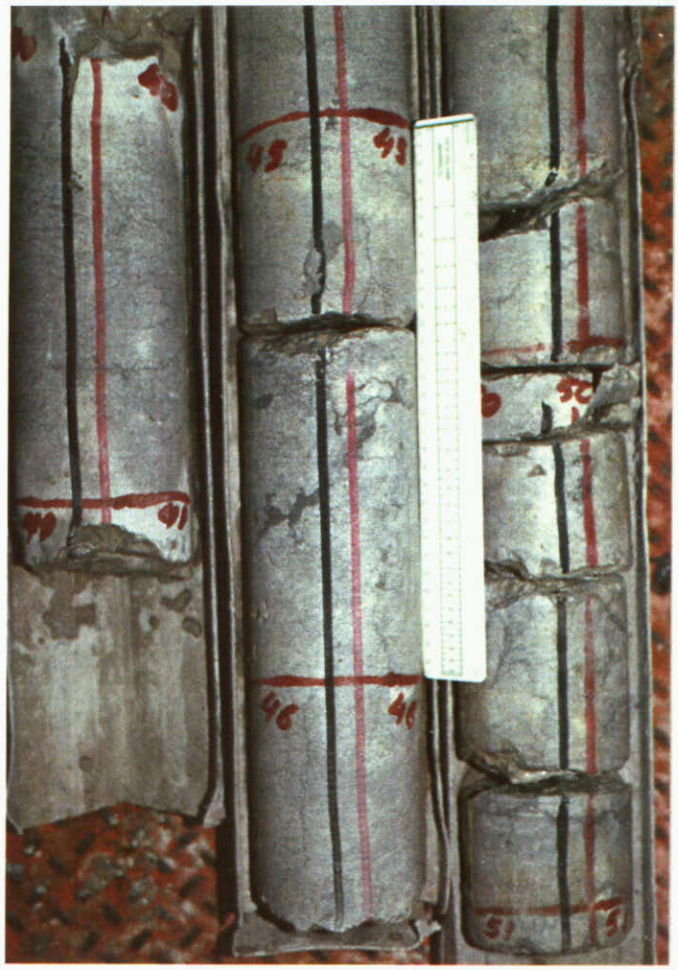


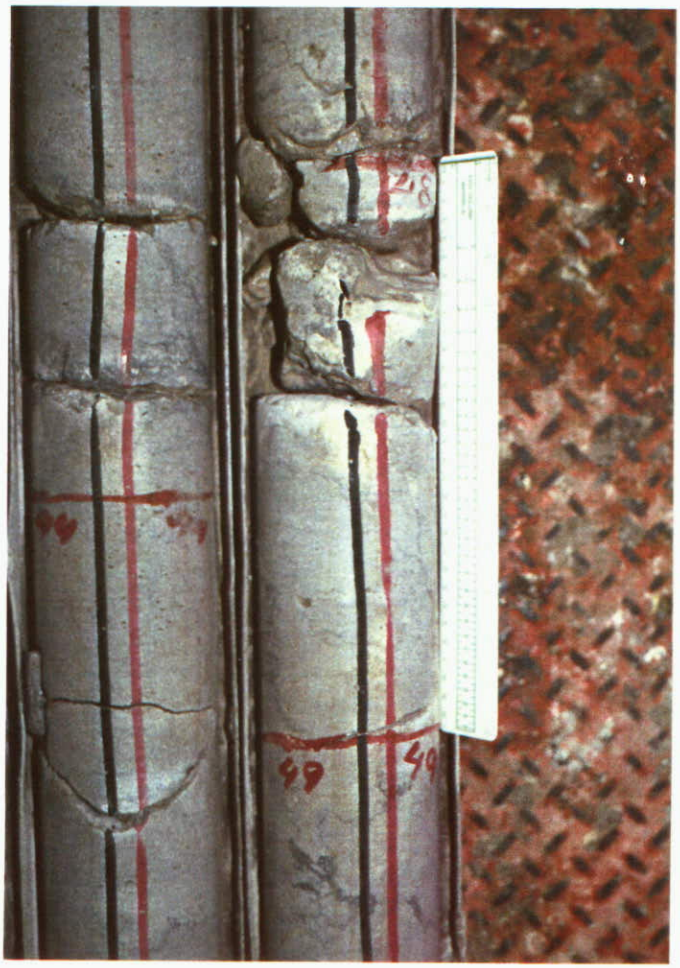












49
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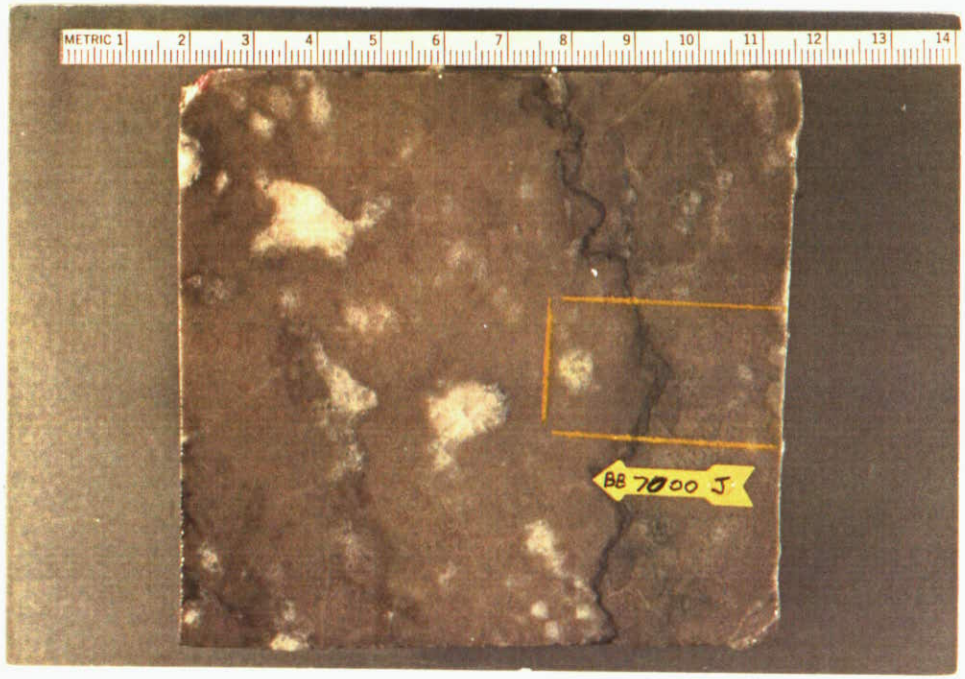
51

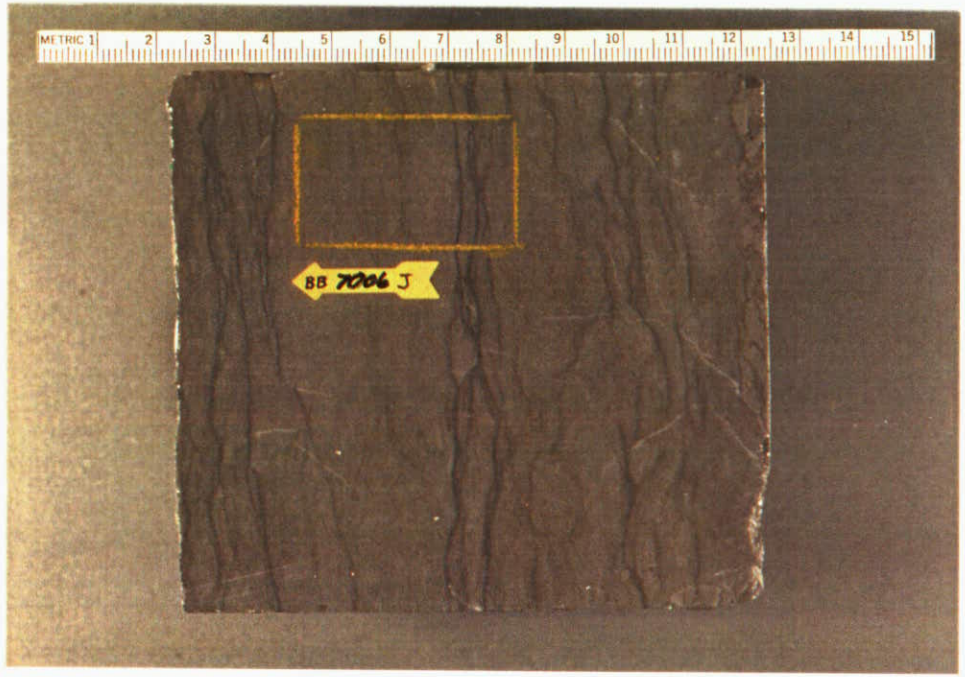
Amoco
#1 Spence Trust.
Polished slabs.
(selected intervals).


METRIC 1 2 3 4 5 6 7 8 9 10 11 12 13 14
BB 7000 J

METRIC 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
BB 7003 J

BB7002 J
3 4 5 6 7 8 9 10 11

METRIC 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
BB 7005 J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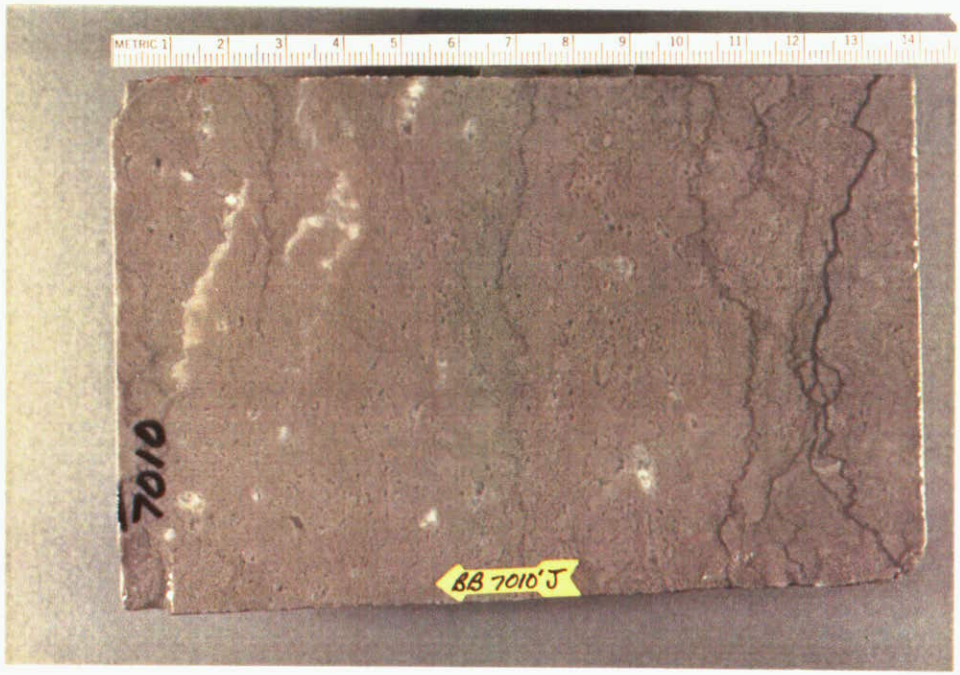
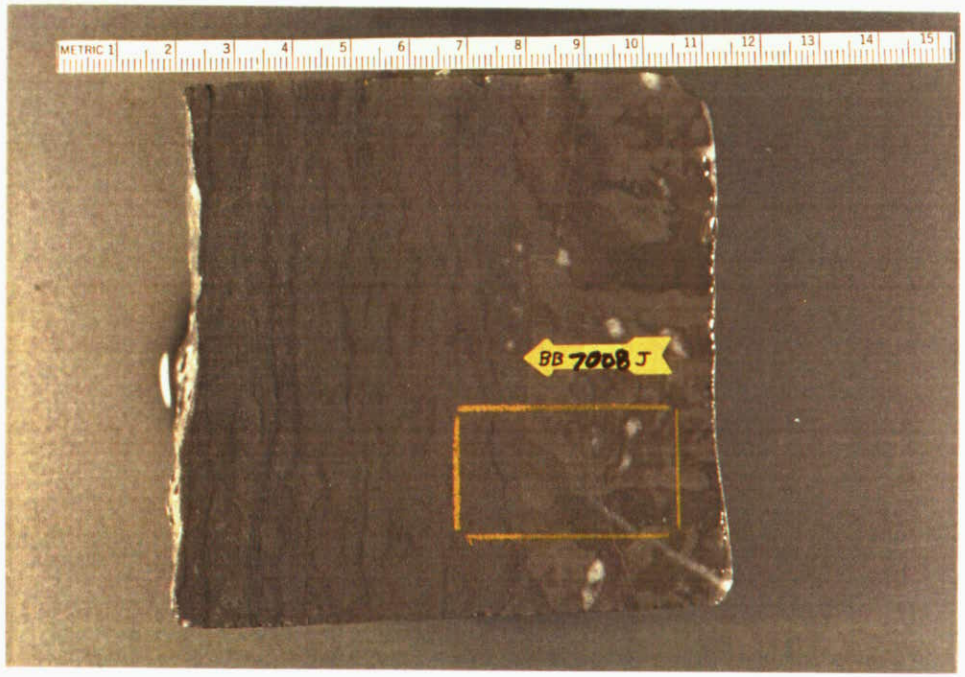
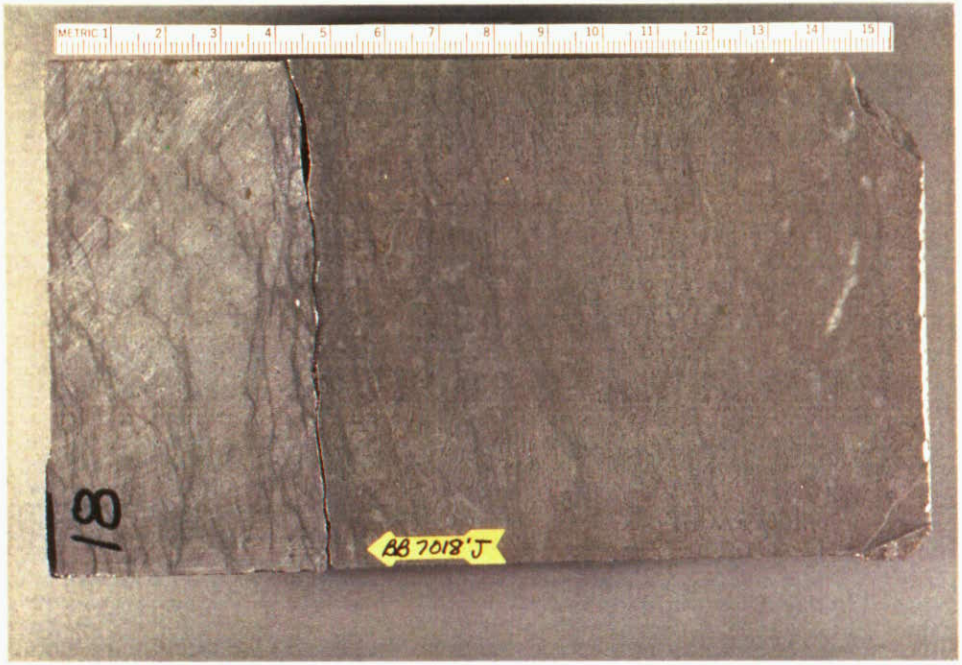
BB 7006 J

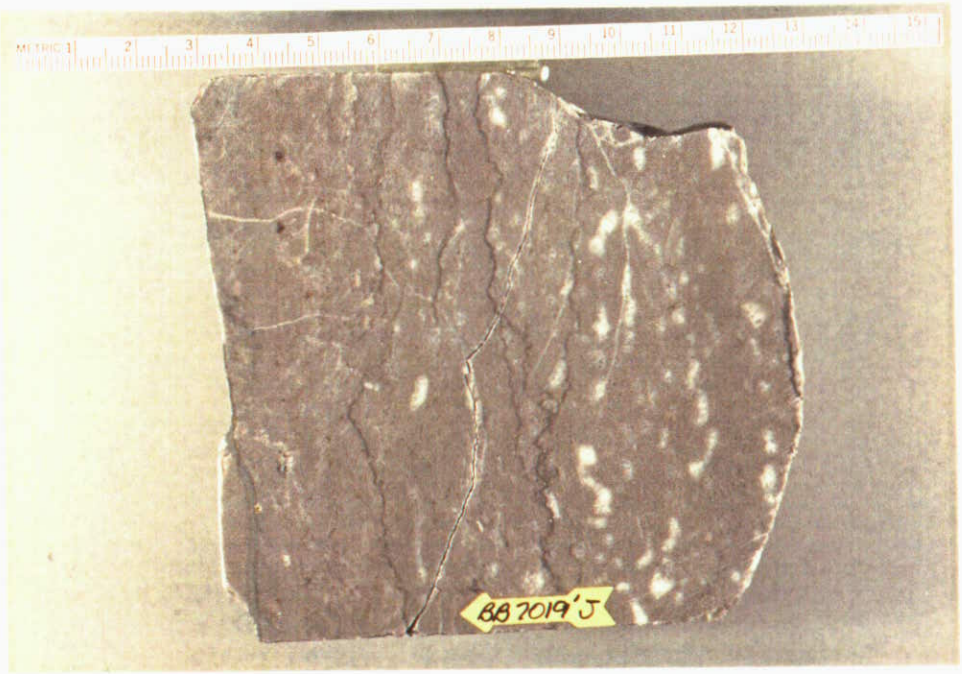

METRIC 1 2 3 4 5 6 7 8 9 10 11 12 13 14
7010
BB 7010' J

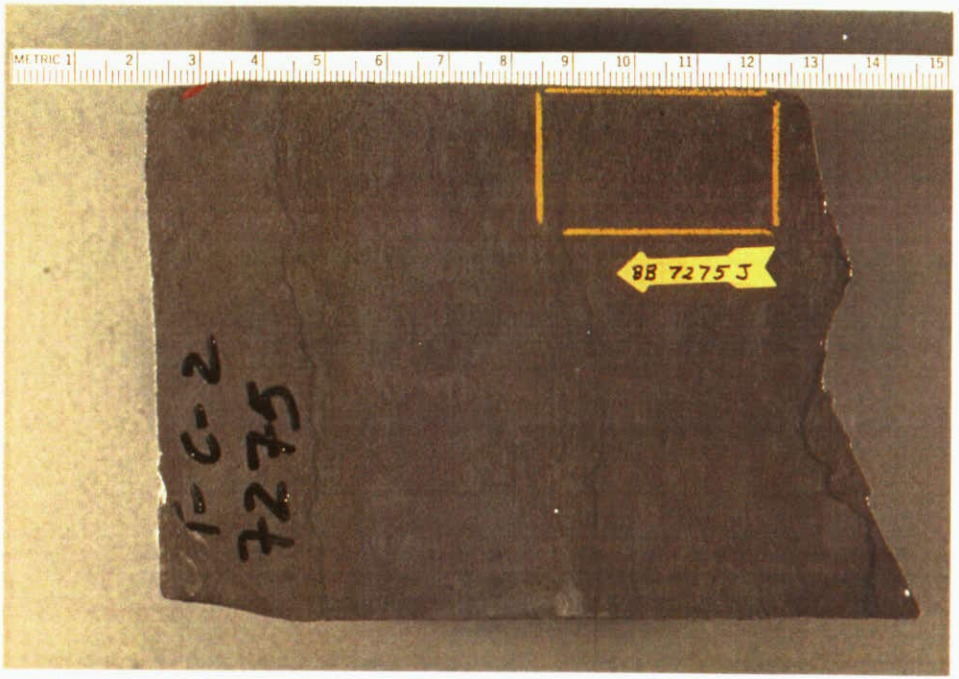

METRIC 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
BB 7008 J

BB 7012' J

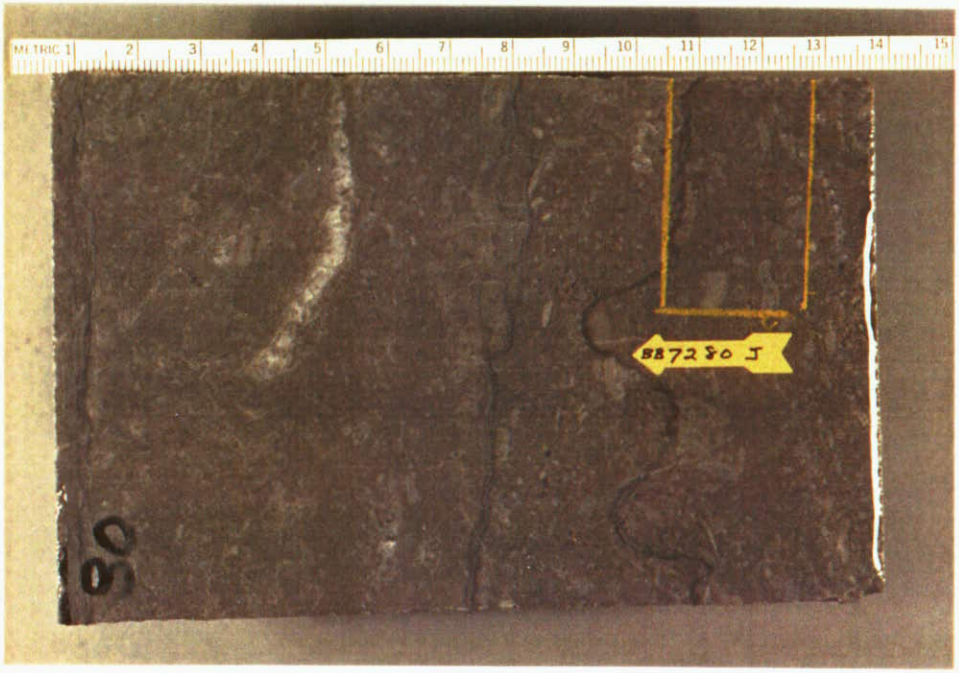

METRIC 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
18
BB 7018'J

METRIC 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
17
BB 7023'J


METRIC 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
BB 7019'J


METRIC 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
BB 7275 J
1-C-2
7275

BB 7278 J


BB7280 J
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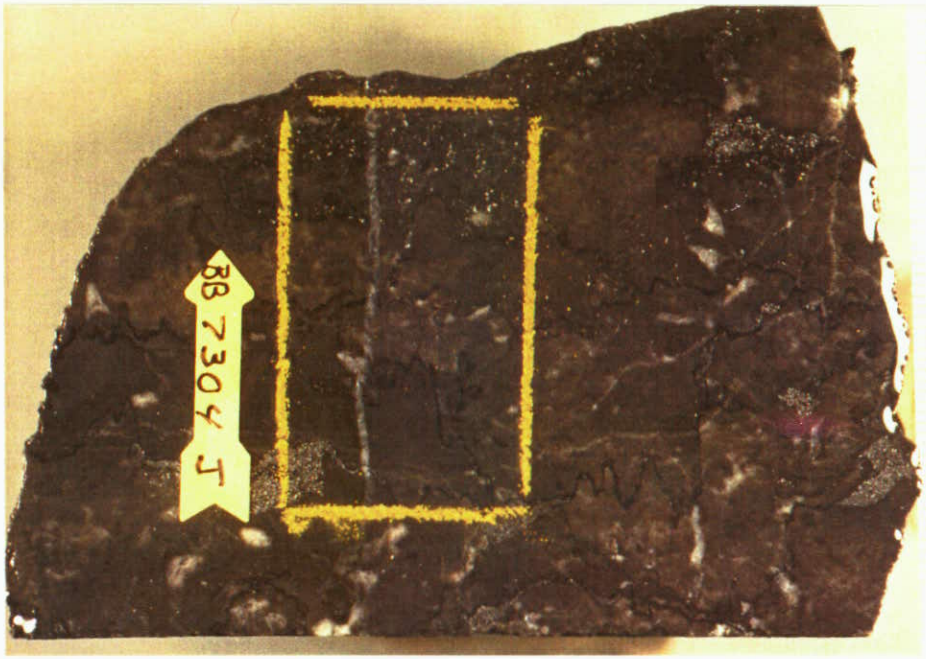
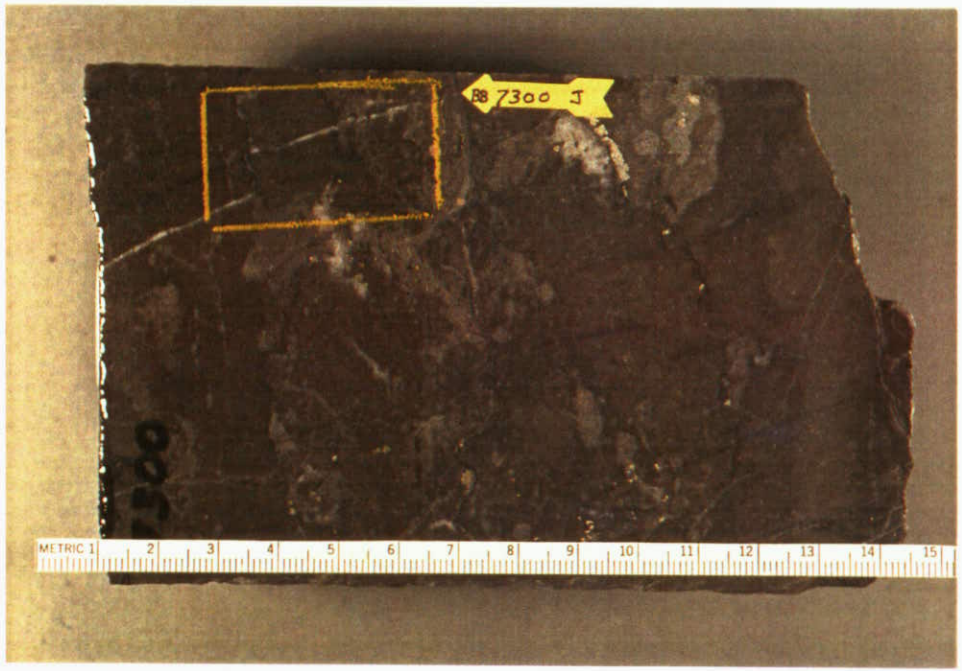
BB7279'J
7279

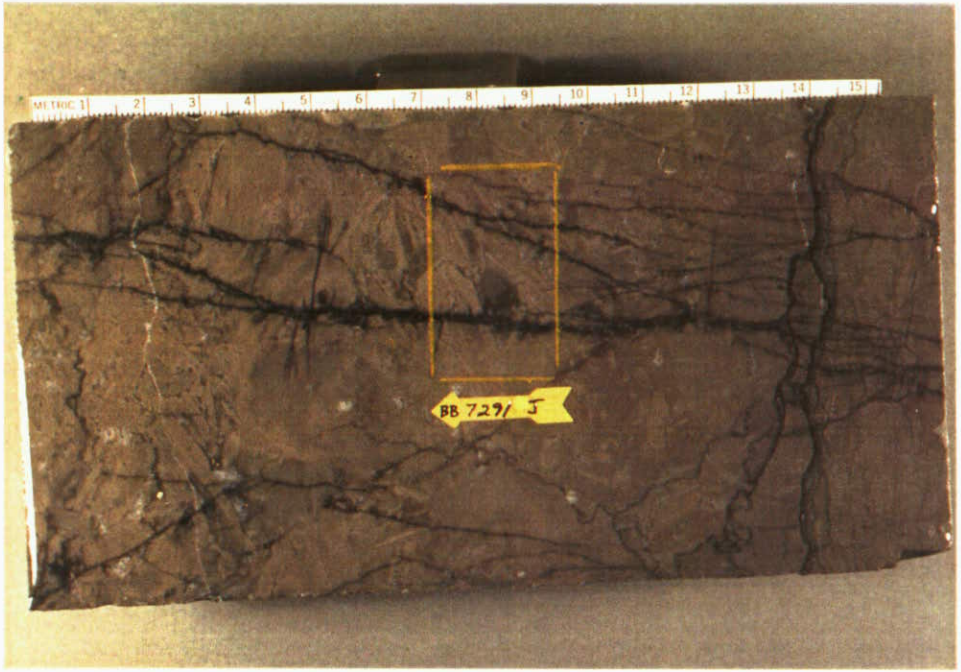
BB7288'J
88

BB 7297 J


BB 7304 J


BB 7300 J

BB 7692 J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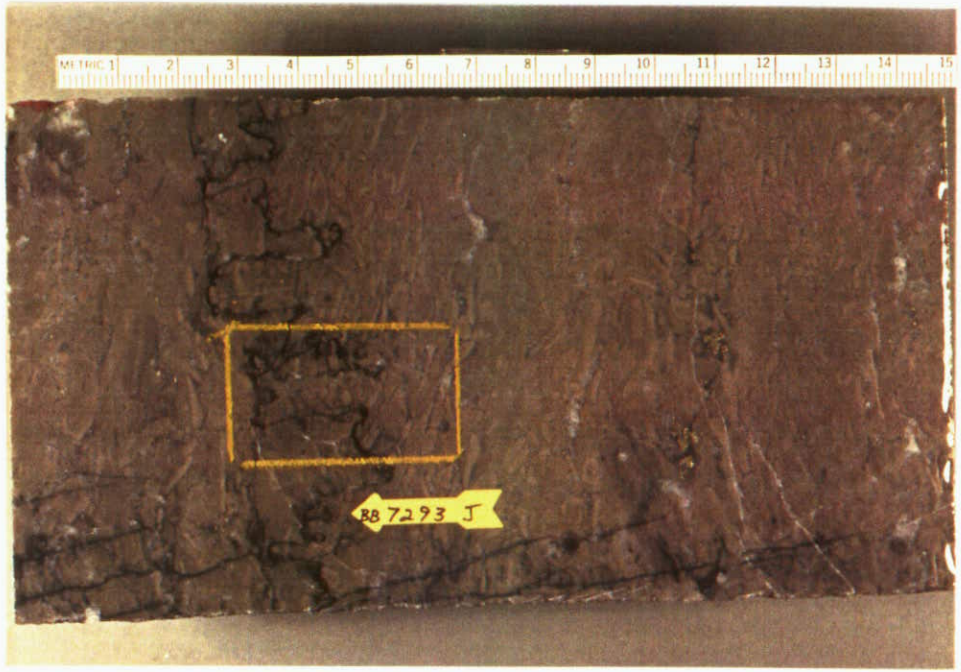
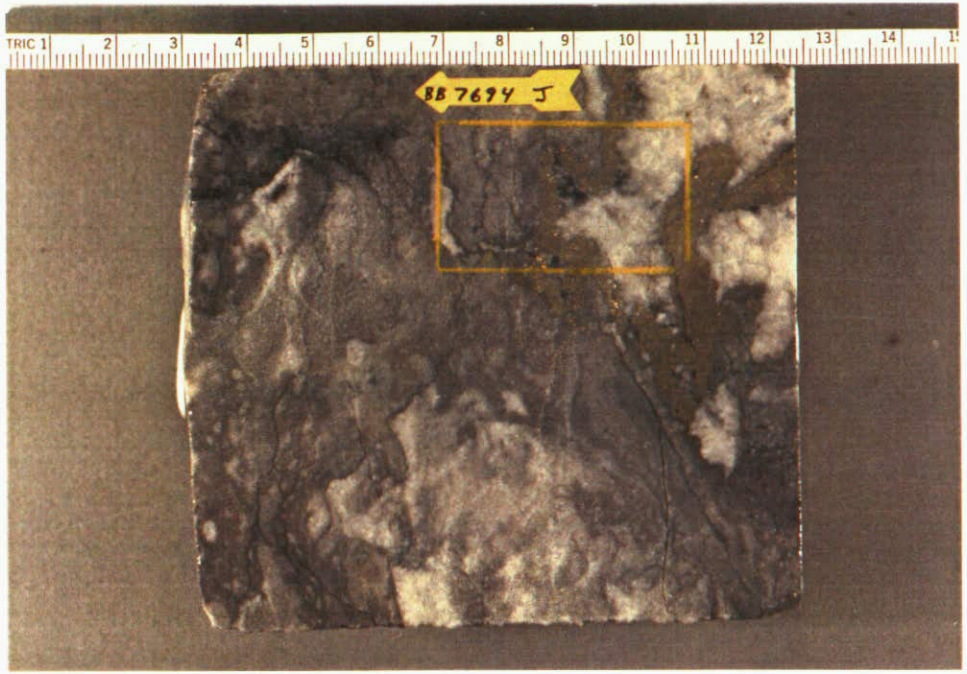
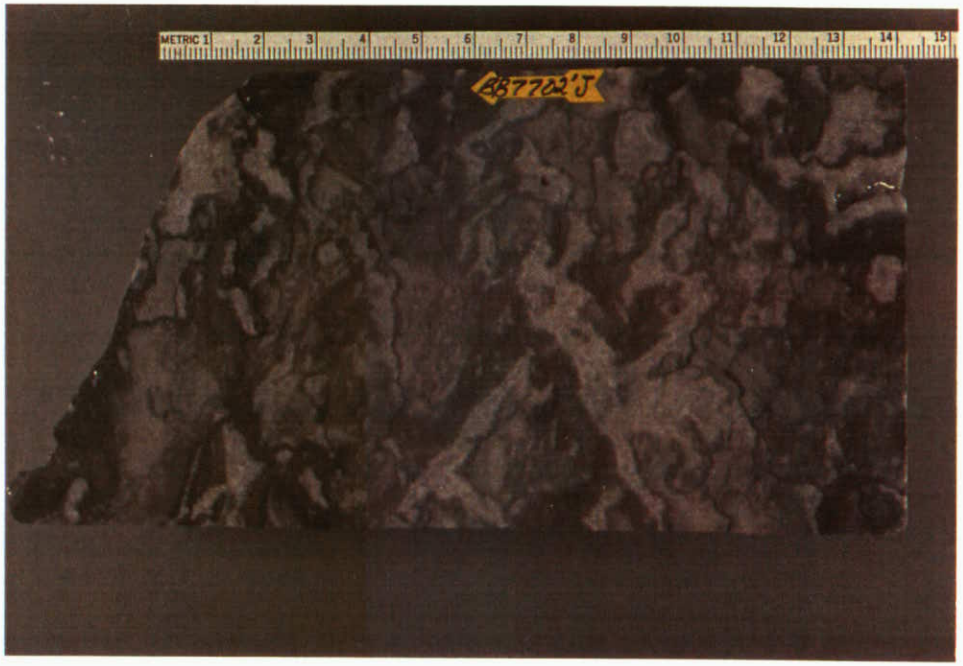
BB 7291 J

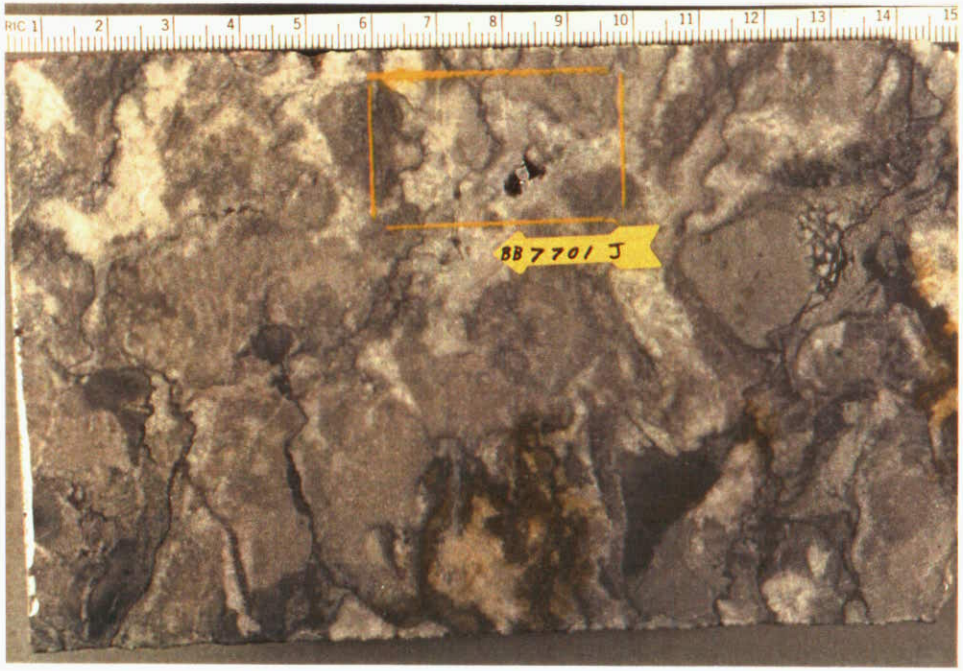

METRIC 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
BB 7293 J

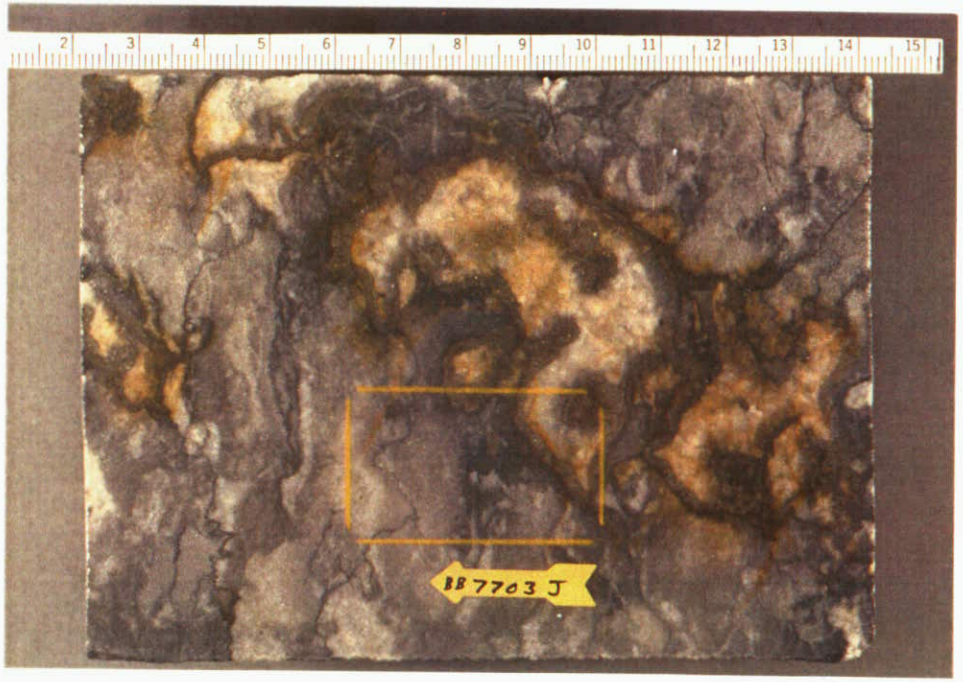
METRIC 1 2 3 4 5 6 7 8 9 10 11 12 13 14
BB 7292 J

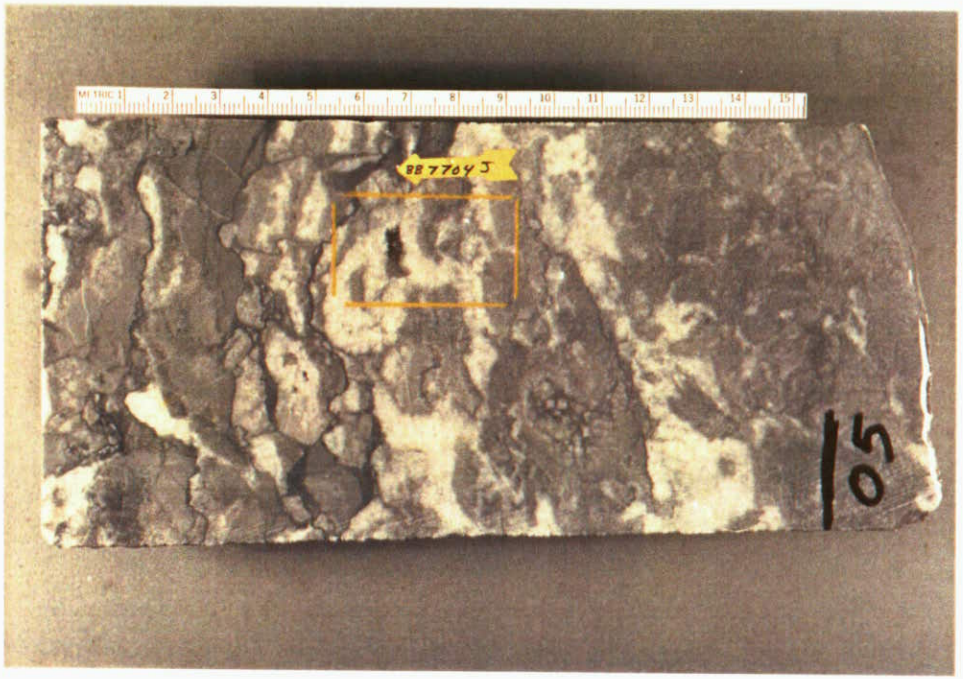
METRIC 1 2 3 4 5 6 7 8 9 10 11 12 13 14
BB 7294 J

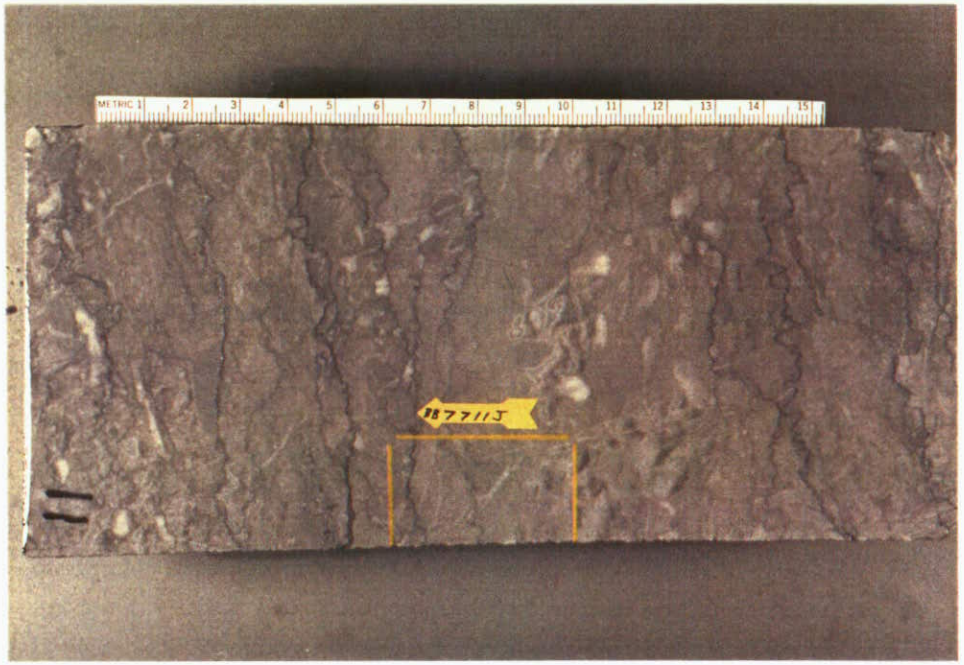

BB 7694 J


BB7702 J


BB 7701 J


BB 7703 J


METRIC 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
BB 7704 J
105


METRIC 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
BB 7711 J
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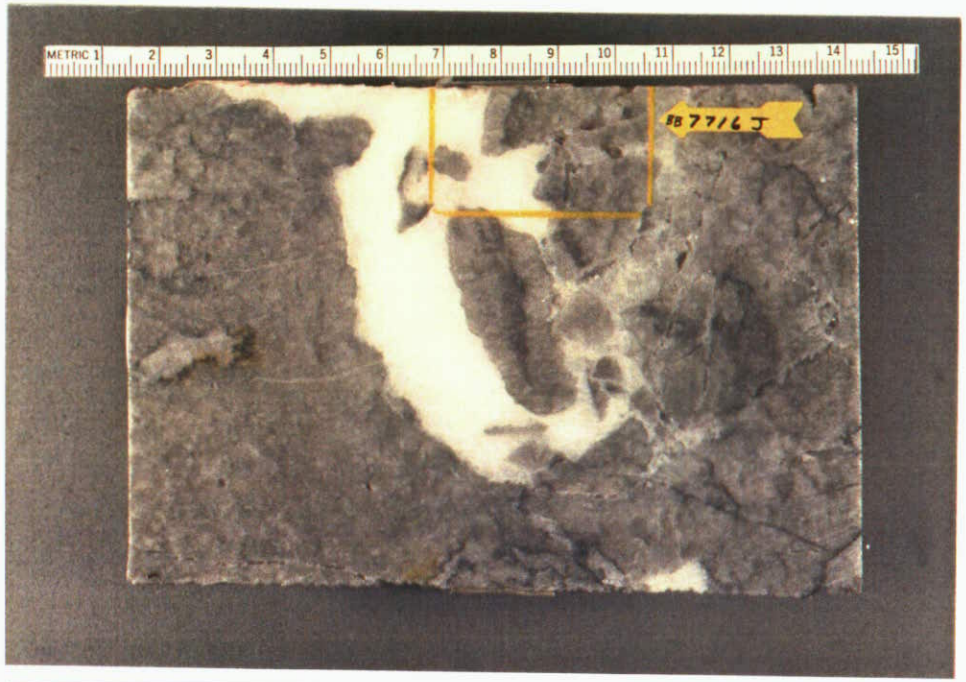
METRIC 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
BB 7709 J

METRIC 1 2 3 4 5 6 7 8 9 10 11 12 13
BB 7715 J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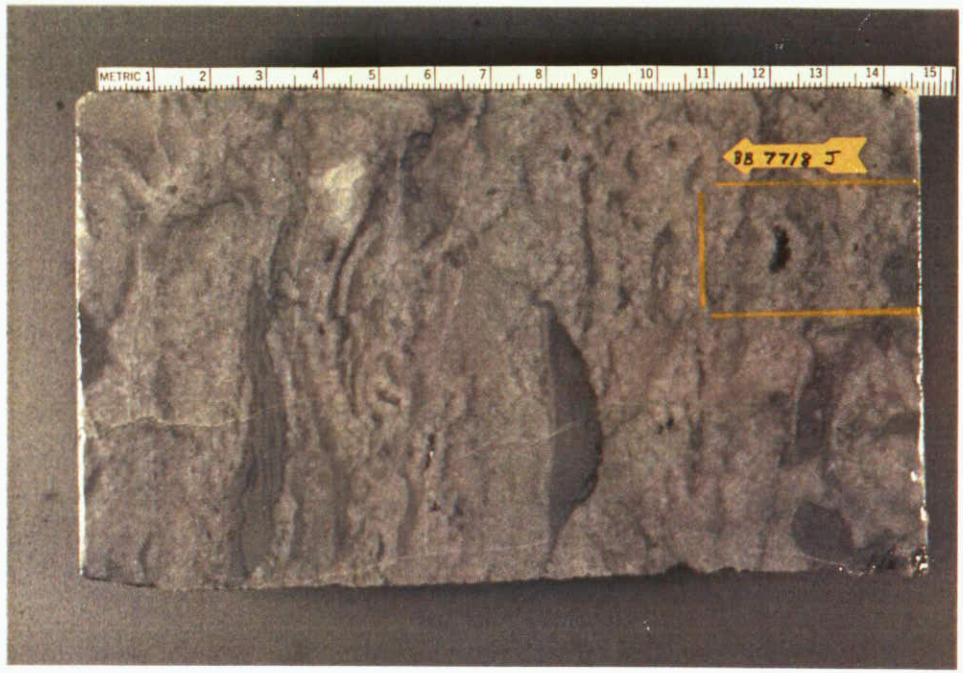
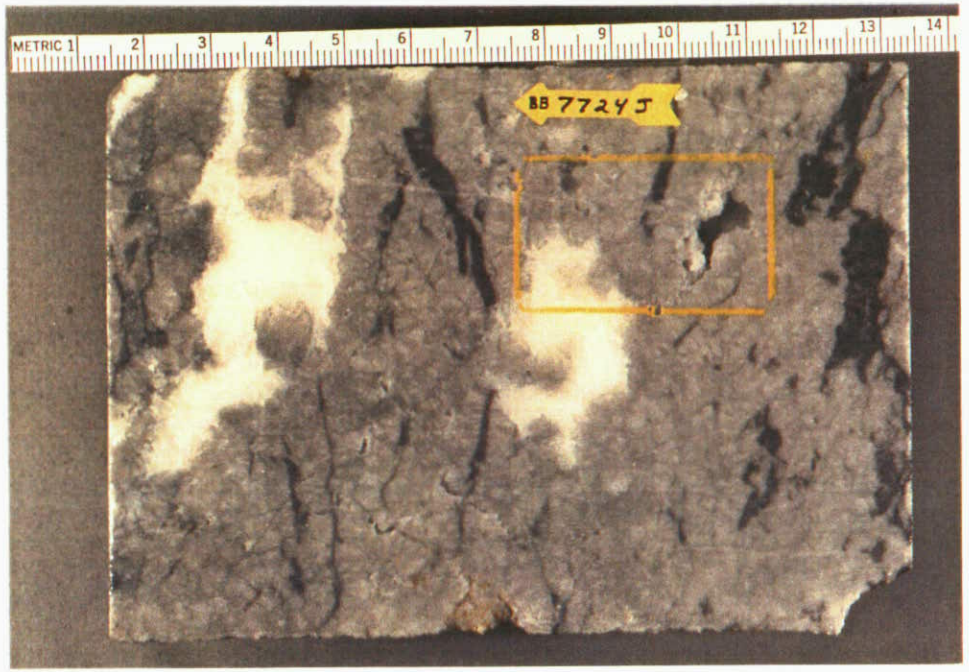
BB 7716 J


METRIC 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
BB 7718 J

ETRIC 1 2 3 4 5 6 7 8 9 10 11 12
BB 7716' J
16

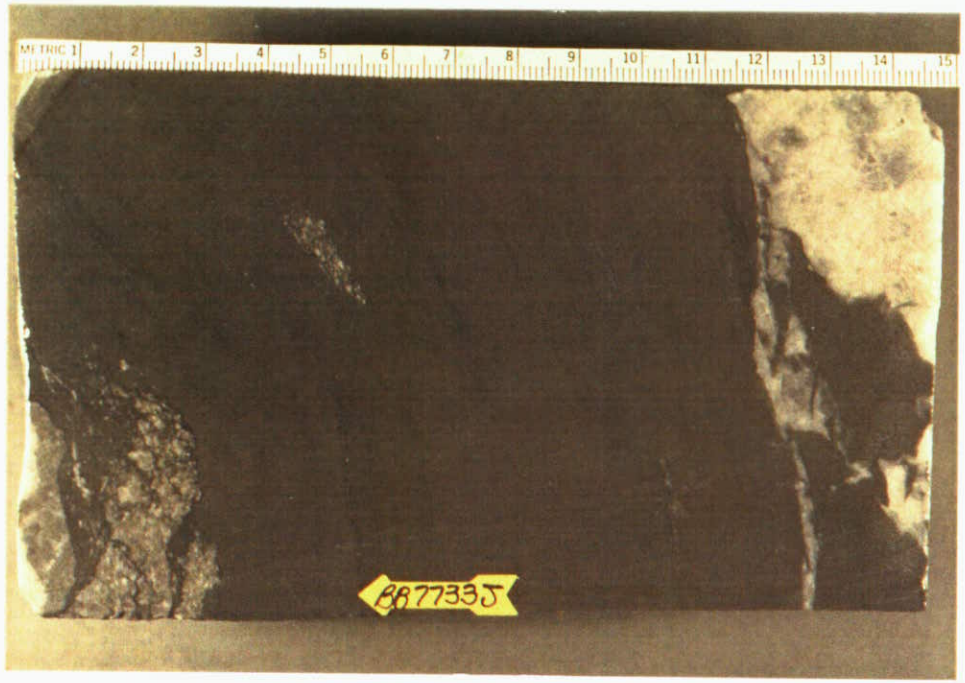
12 13 14 15 16 17 18 19 20 21 22 23 24 25 26


METRIC 1 2 3 4 5 6 7 8 9 10 11 12 13 14
BB 7724 J

METRIC 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
BB 7730 J

METRIC 1 2 3 4 5 6 7 8 9 10 11 12 13 14
25
BB 7725 J

METRIC 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
BB 7733 J

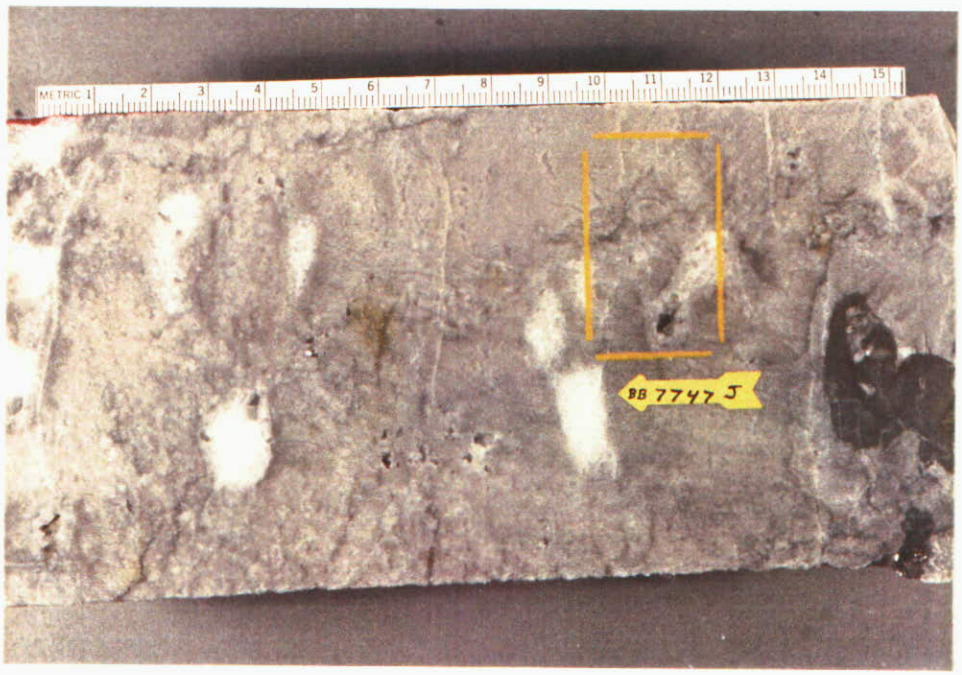

BB7733J

BB 7735 J

BB 7738 J

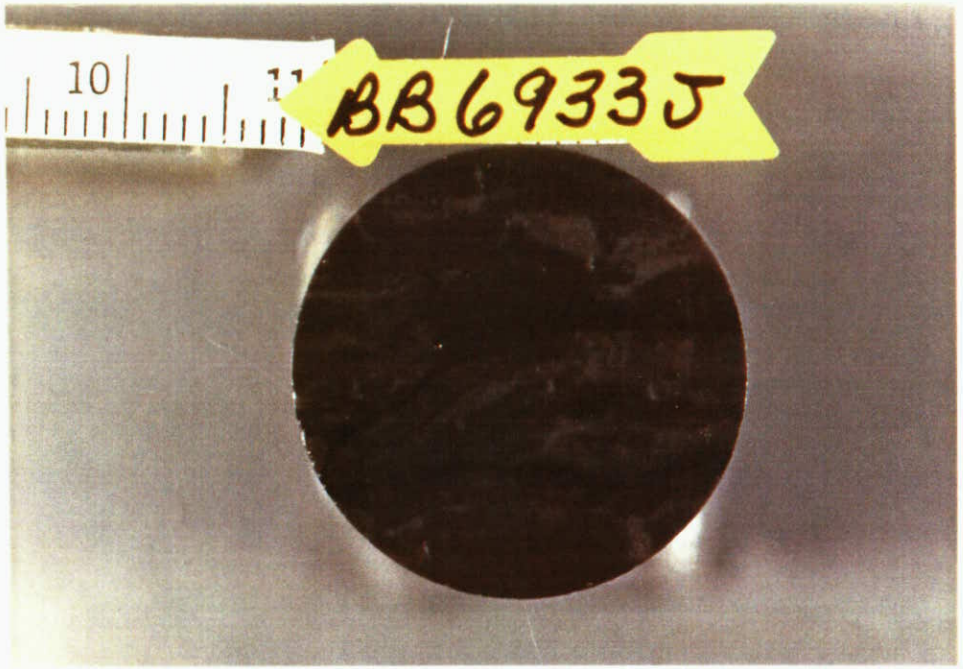
43
BB 7743 J

42
BB 7742 J


BB 7747 J

Amoco
#1 Spence Trust.
Sidewall Cores.

10
BB 6987 J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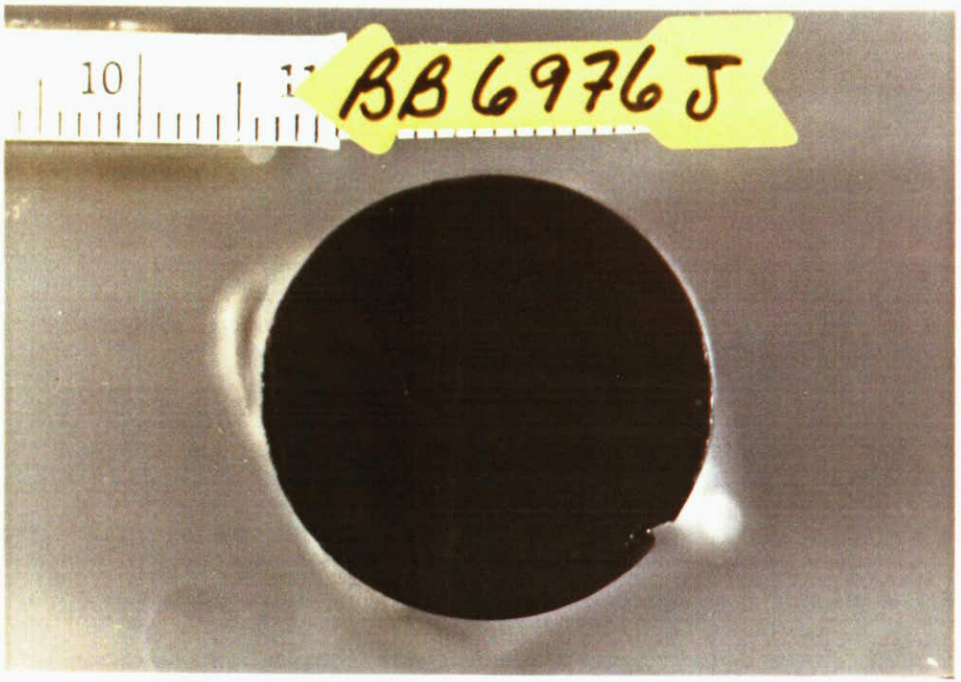
BB 6933 J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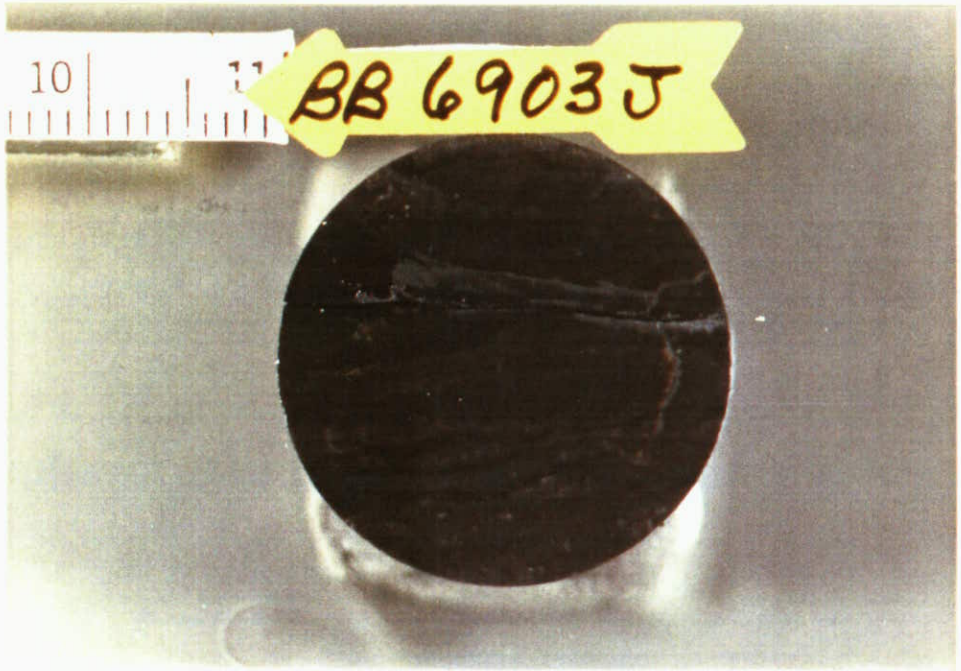
BB 6976 J

10
BB 6960 J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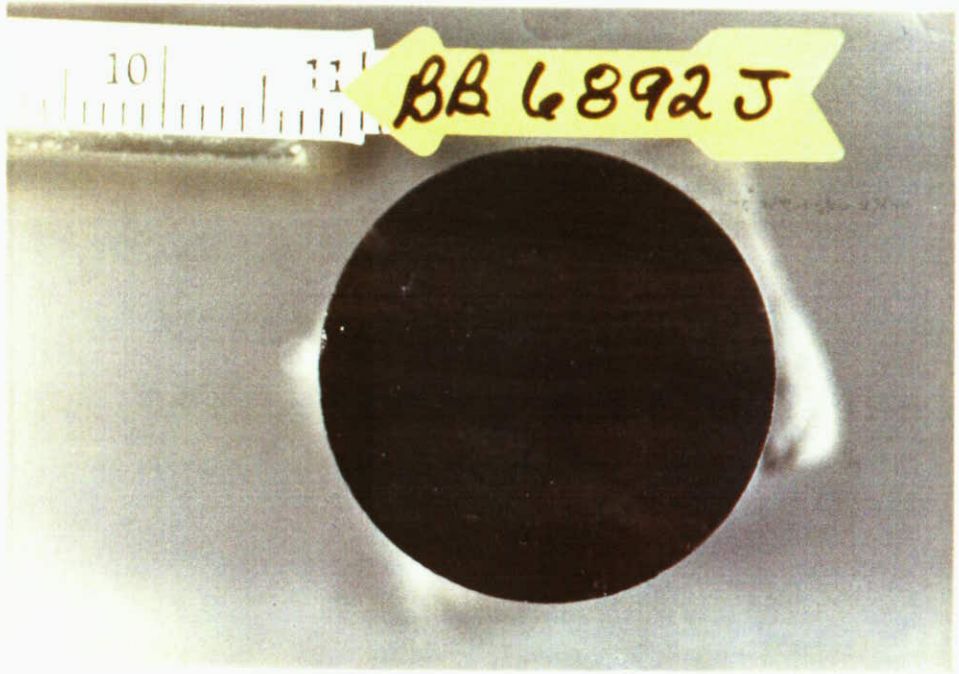
11
BB 6903 J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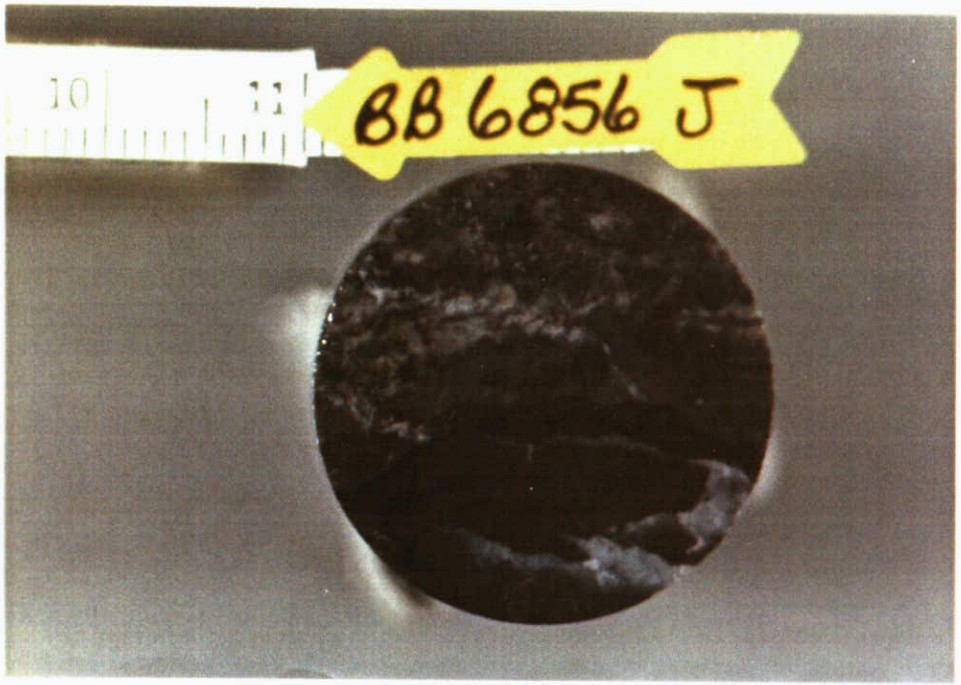
BB 6892 J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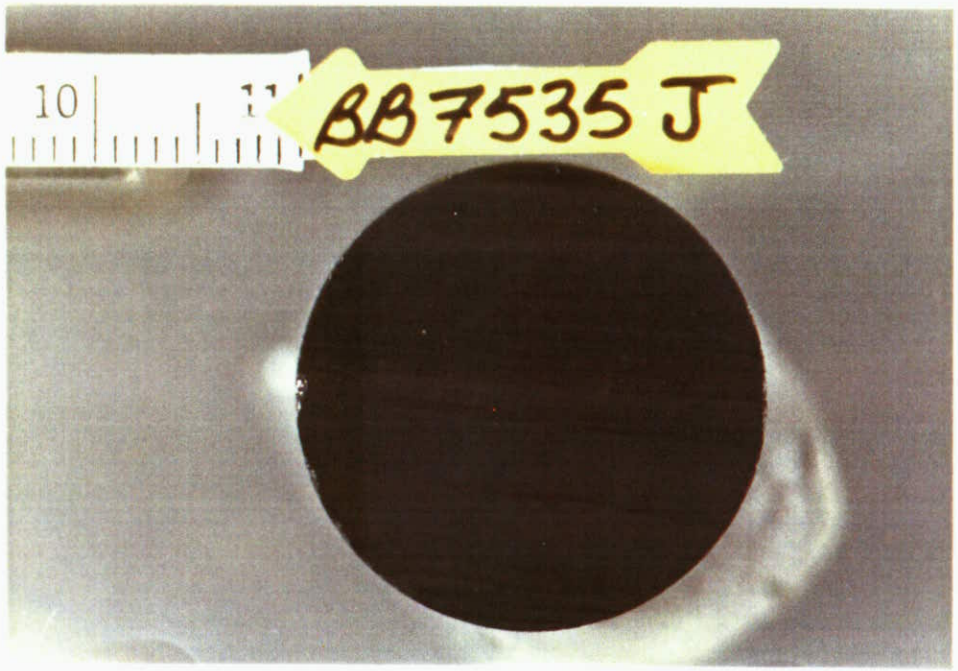
BB 6856 J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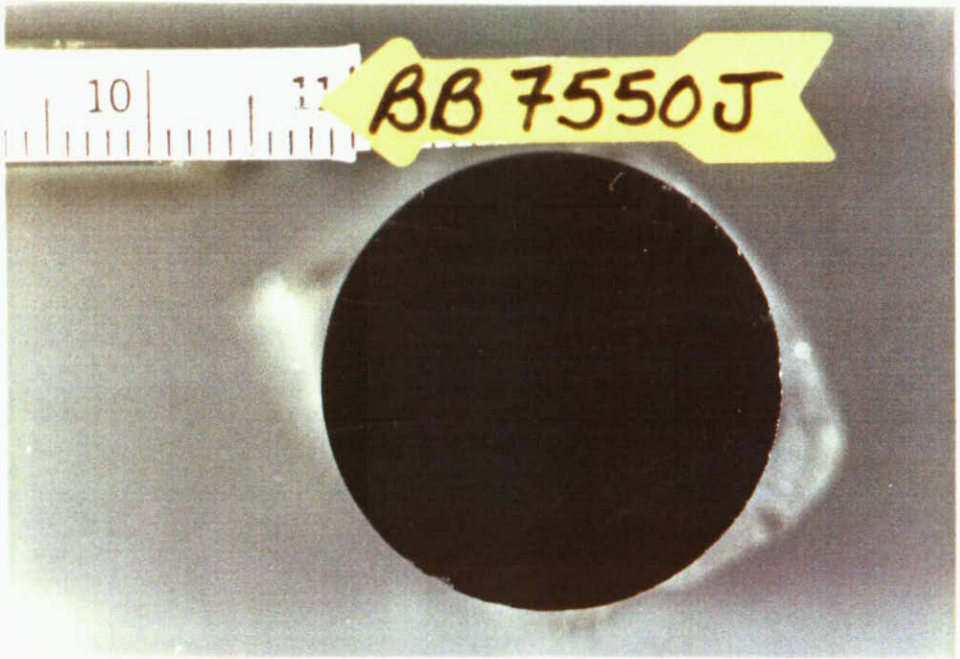
BB 7535 J

9
10
BB 6838 J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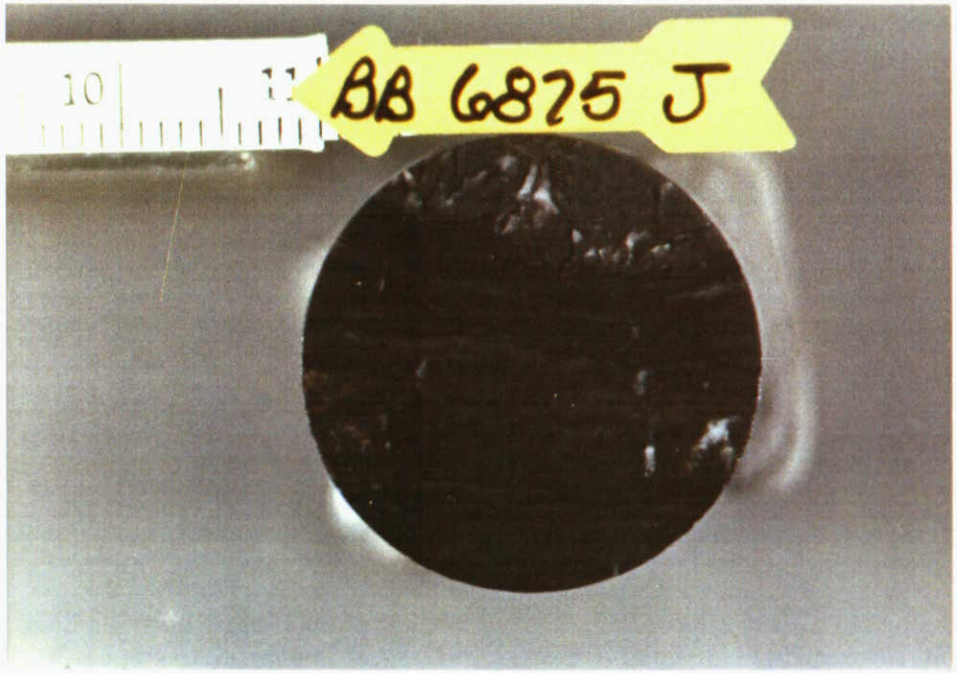
BB 7550 J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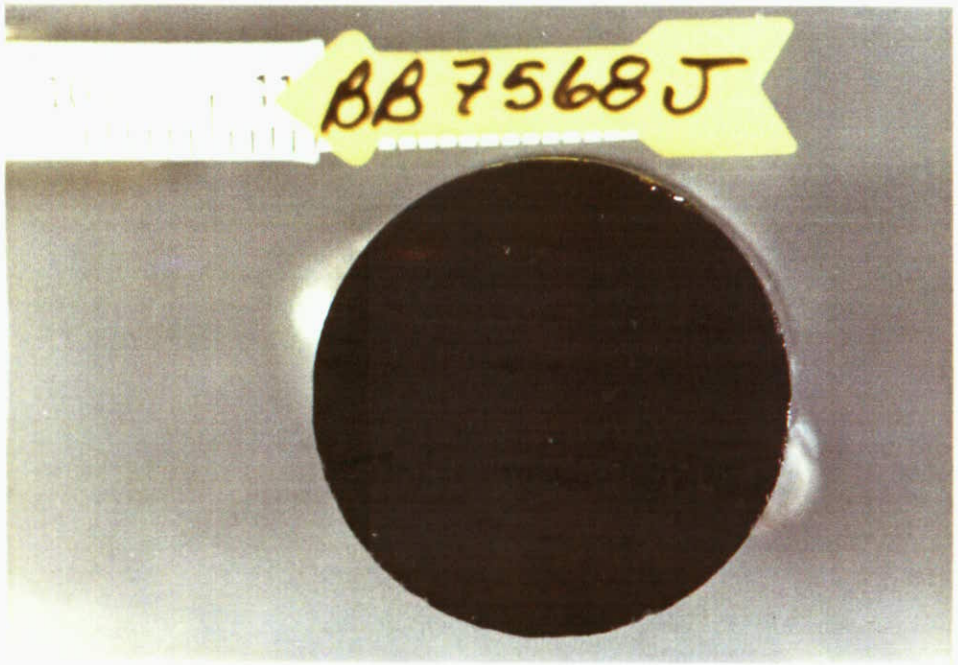
BB 6875 J


BB 7568 J

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BB 7595 J

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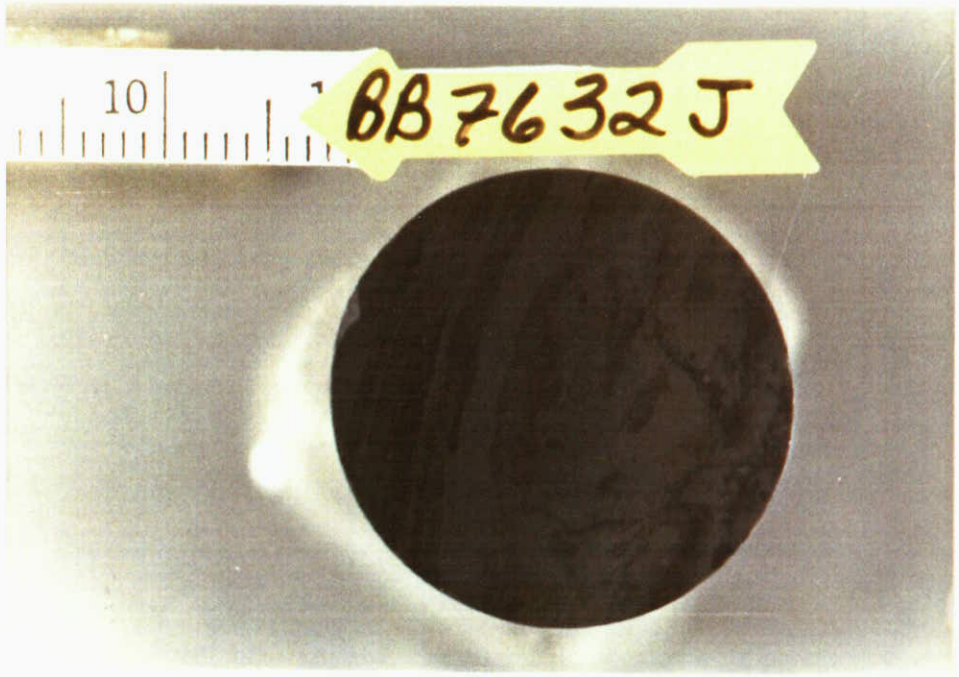
BB 7808 J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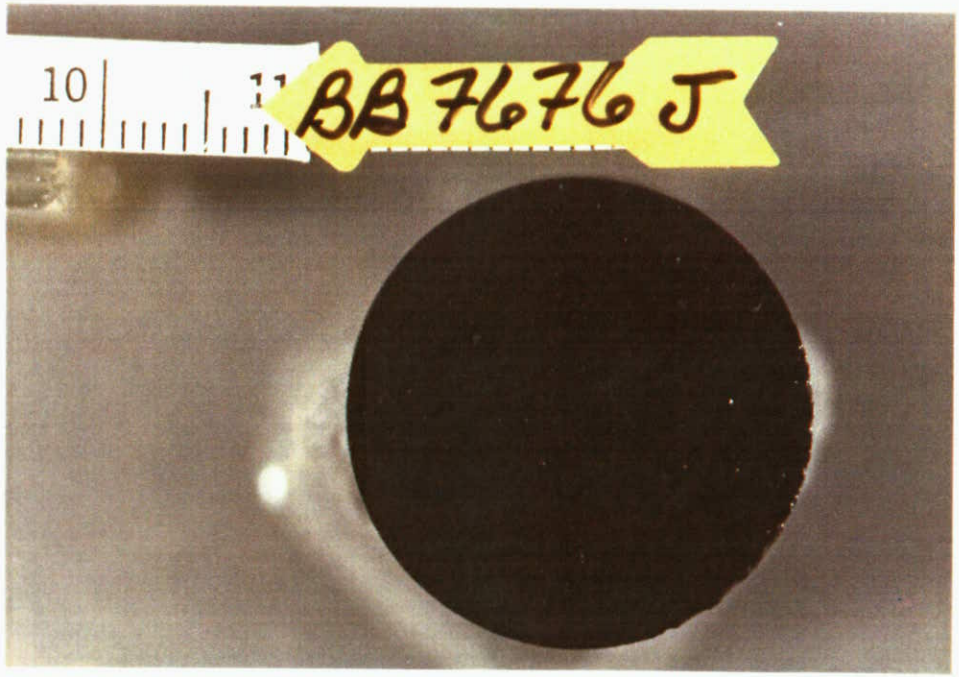
BB 7632 J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BB 7676 J

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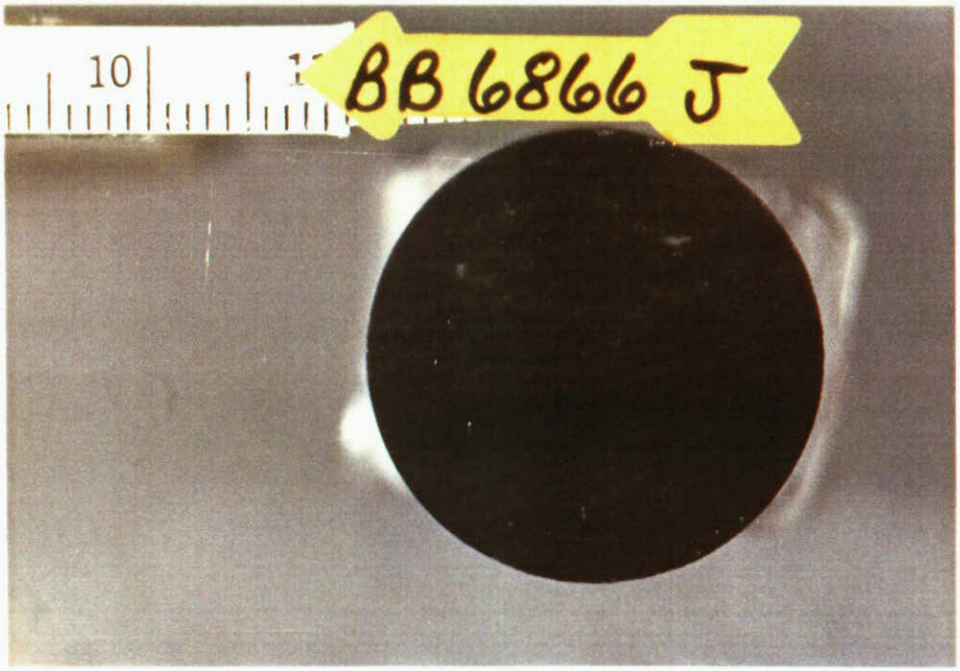
BB 7830 J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BB 6866 J

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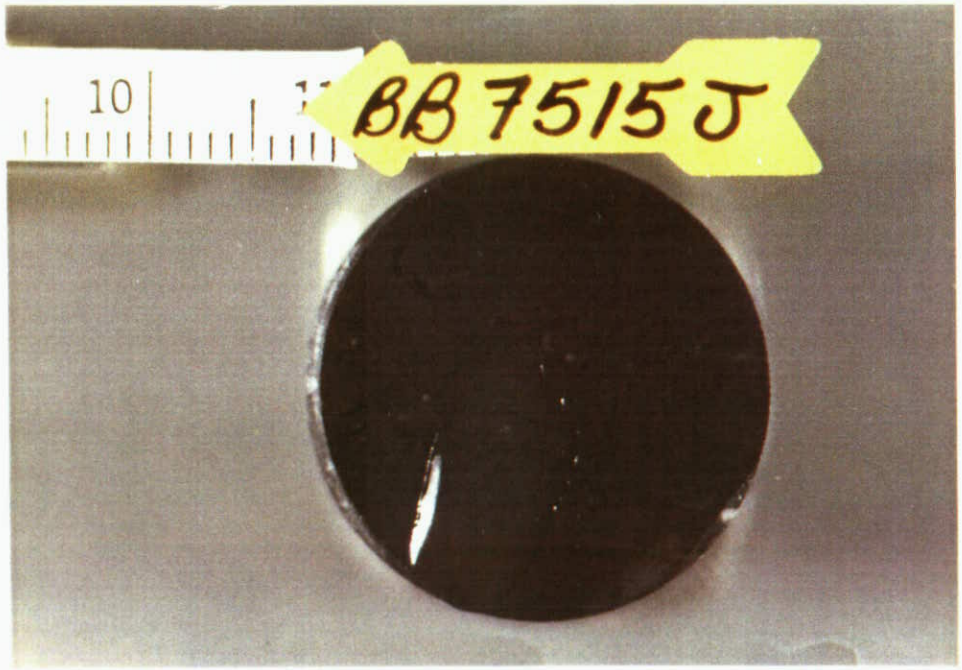
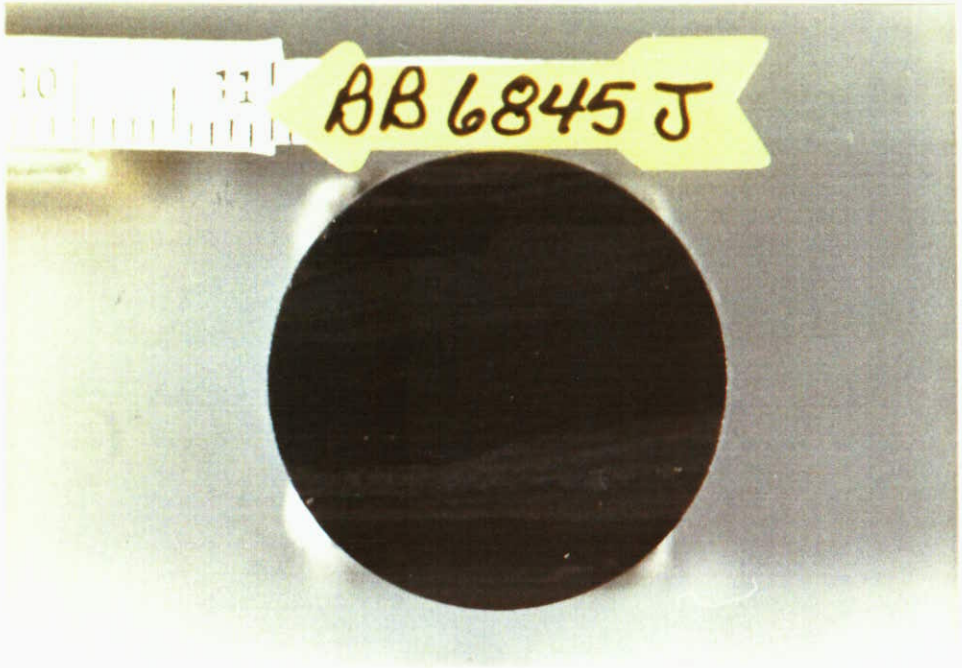
BB 7866 J


10
BB 7515 J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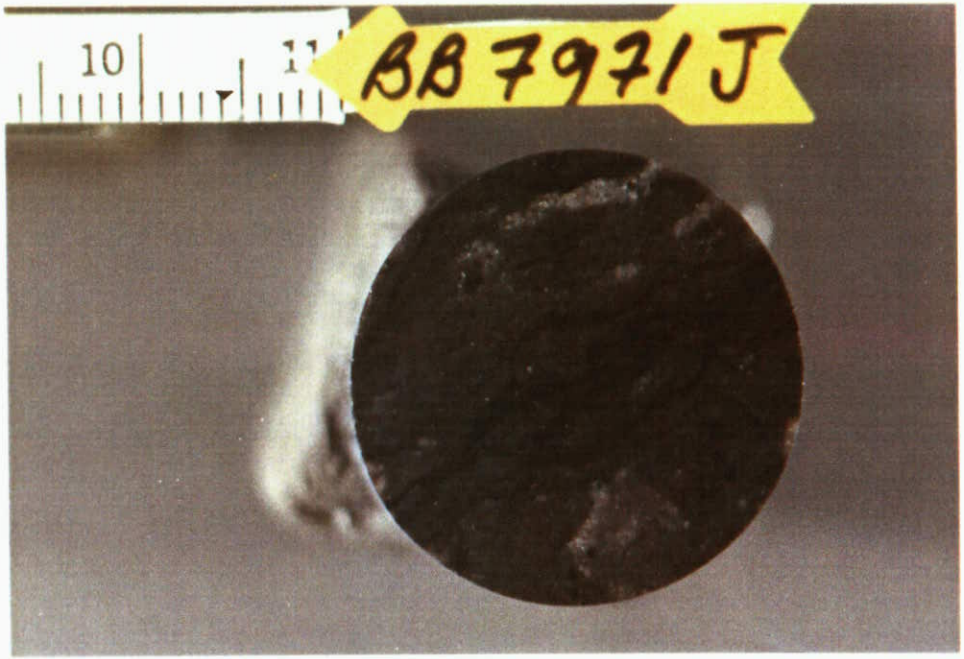
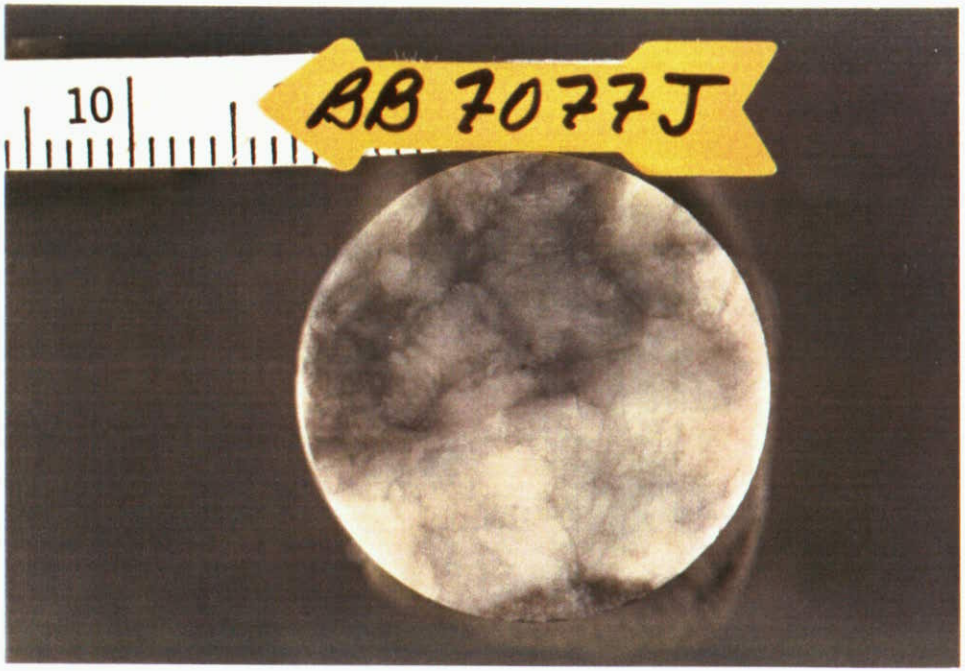

BB 7971 J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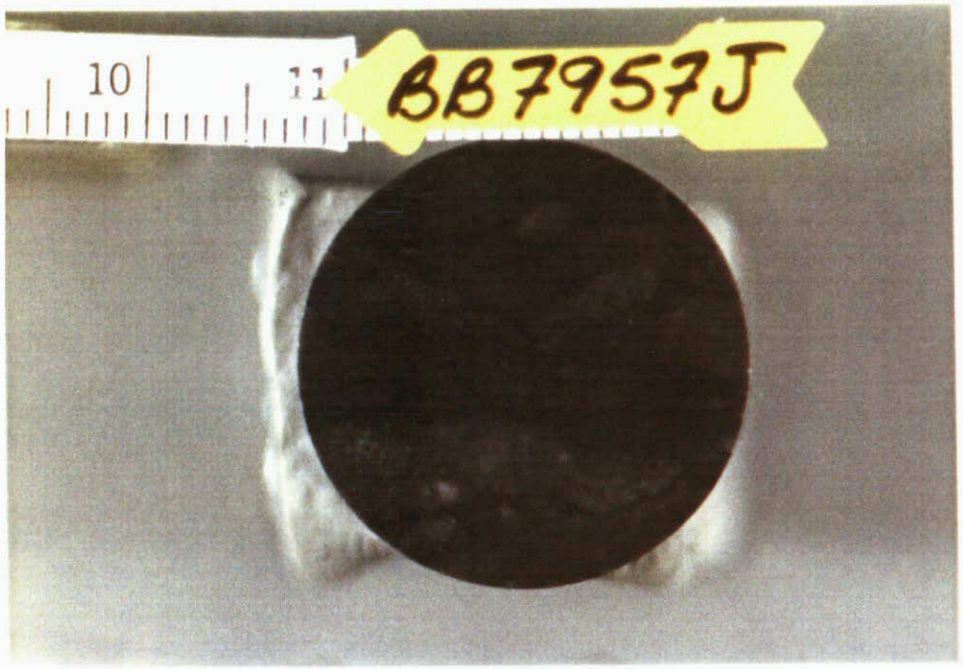
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BB7957J

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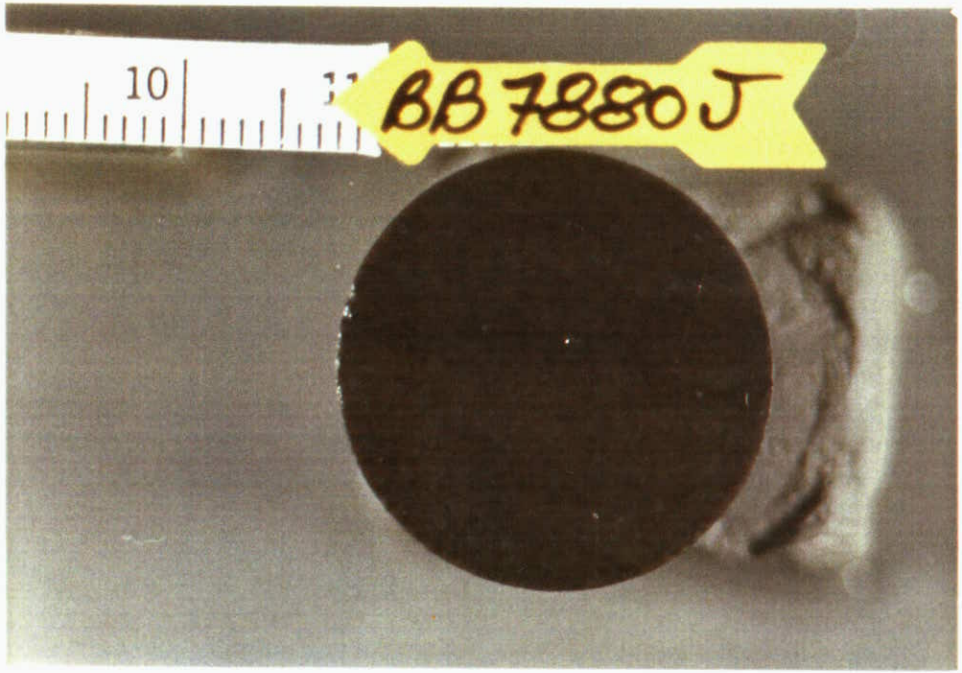
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BB7880J

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BB7904J

IV. GEOLOGY

B. Lithology Descriptions (Cont'd)

Interval II (250'MD - 2037'MD)

Tertiary system:
Eocene series:
Claiborne group: 276'MD - 572'MD

Lithology in this interval consisted of siltstone, sand, chert and lignite. The siltstones were dark brown, medium soft and very silty.

The sands were clear, white, light gray, fine to coarse grained, round to angular, poor to medium sorting, unconsolidated to well consolidated with traces of fossils, pyrite and glauconite.

The chert was yellow, orange and very hard.

The lignite was black, brown and soft.

Tertiary system:
Eocene series:
Wilcox group:
Flour Island formation: 572'MD - 688'MD

Lithology in this interval consisted of siltstone, sand and lignite. The siltstone was light gray, very soft and sandy.

The sands were clear, fine to coarse grained, subround to subangular, poorly sorted, loosely to unconsolidated with traces of glauconite.

The lignite was black, brown and soft.

Tertiary system:
Eocene series:
Wilcox group:
Fort Pillow formation: 688'MD - 977'MD

Lithology in this interval consisted of siltstone, sand and chert. The siltstone was light gray, white green, very soft and sandy.

The sands were white, clear, frosted, fine to medium grained, subround to subangular, poor to medium sorting and unconsolidated with traces of glauconite.

The chert was orange and very hard.

IV. GEOLOGY

B. Lithology Descriptions (Cont'd)

Interval II (250'MD - 2037'MD)

Tertiary system:
Paleocene series:
Midway group:
Porters Creek shale: 977'MD - 1490'MD

Lithology in this section consisted of shale, siltstone and sand. The shale was medium to dark gray, soft to firm, silty, sandy and calcareous. Shale densities were lighter than 1.90 gm/cc.

The siltstone was medium gray, very soft and sandy.

The sands were white, clear, fine grained, subangular, poorly sorted and silty with traces of glauconite.

Upper Cretaceous system: 1490'MD - 1952'MD

Lithology in this section consisted of shale, sand, and limestone. The shale was medium to dark gray, soft and silty with traces of glauconite and pyrite. Shale densities on these samples were 1.90 gm/cc.

The sands were clear, white, light gray, fine to medium grained and unconsolidated with traces of glauconite.

The limestone was brown, tan, buff, hard, dense and fine to microcrystalline.

Ordovician system:
Canadian series:
Upper Knox group: 1952'MD - 2037'MD

Lithology in this interval consisted of shale, sand and limestone. The shale was dark gray, soft and very silty with traces of pyrite. Shale densities were 1.90 gm/cc.

The sands were white, clear, fine grained and unconsolidated.

The limestone was buff, tan, brown, hard, dense and fine to microcrystalline.

Interval III (2037'MD - 8041'MD)

Ordovician system:
Canadian series:
Upper Knox group: 2037'MD - 3090'MD

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IV. GEOLOGY

B. Lithologic Descriptions (Cont'd)

Interval III (2037'MD - 8041'MD)

Lithology in this section consisted of limestone. The limestone was white, cream, tan, brown, buff, hard, dense, fine to microcrystalline, sucrosic, silty, argillaceous, oolitic in part with traces of pyrite.

Ordovician system:
Canadian series:
Middle Knox group:
Roubidoux and Gasconade formations 3090'MD - 5430'MD

Lithology in this section consisted of sand, chert, limestone and dolomite. The sands were clear, very fine to medium grained, subround to angular and unconsolidated.

The chert was translucent, white, brown, very hard.

The limestone was white, cream, light gray, tan, buff, brown, hard, dense, fine to microcrystalline, sucrosic and argillaceous with traces of oolites, chert, pyrite and clear quartz grains.

The dolomite was white, cream, brown, light to dark brown, hard, dense, fine to microcrystalline, sucrosic, silty and sandy with traces of chert, pyrite, oolites, styolites and fractures with pyrite fill.

Ordovician system:
Canadian series:
Middle Knox group:
Gunter sandstone: 5430'MD - 5450'MD

Lithology in this interval consisted of sand and dolomite. The sand was clear, frosted, fine to medium grained, subangular to round, unconsolidated and consolidated with dolomite.

The dolomite was light to dark gray, hard, dense, fine crystalline, very sucrosic and sandy.

Cambrian system:
Croixan series:
Lower Knox group: 5450'MD - 6835'MD

Lithology in this interval consisted of shale, sand, chert, limestone and dolomite. The shale was dark gray, black, hard, blocky, siliceous and dolomitic with a trace of pyrite. No shale densities were run.

BLS-2000 COMPUTERIZED LOG
NR No Retd
INTERVAL DISC.
PLOTS

IV. GEOLOGY

B. Lithologic Descriptions (Cont'd)

Interval III (2037'MD - 8041'MD)

The sands were clear, fine to medium grained, subround to angular and unconsolidated.

The chert was gray, brown, smoky, translucent, very hard.

The limestone was light to dark gray, white, light brown, hard, dense, fine to microcrystalline and argillaceous with traces of oolites.

The dolomite was white, light brown, tan, buff, light to dark gray, hard, dense, fine to coarse crystalline, sucrosic, sandy and oolitic with traces of pyrite.

Cambrian system:
Albertan series:
Elvins group:
Derby Doe Run formation: 6835'MD - 7512'MD

Lithology in this section consisted of shale, limestone and dolomite. The shale was dark gray, black, firm to hard, blocky and calcareous with traces of pyrite.

The limestone was white, cream, light to dark gray, tan, hard, dense, fine to cryptocrystalline, sucrosic, argillaceous and oolitic with traces of pyrite, styolites and fossils.

The dolomite was white, light gray, micro to medium crystalline, sucrosic with traces of oolites, pyrite, styolites, quartz crystals and calcite crystals in fractures and vugs.

Core #1 was taken from 7000'MD to 7031'MD.

Core #2 was taken from 7275'MD to 7305'MD.

Cambrian system:
Albertan series:
Elvins group:
Davis shale: 7512'MD - 7680'MD

Lithology in this section consisted of shale, limestone and dolomite. The shale was dark gray, black, firm and calcareous with a trace of pyrite.

The limestone was medium to dark gray, fine to medium grained, fine to microrystalline, sucrosic and argillaceous with a trace of pyrite, oolites and fossil fragments.

The dolomite was clear, white, dark gray, hard, dense, very fine grained, sucrosic and argillaceous.

IV. GEOLOGY

B. Lithologic Descriptions (Cont'd)

Interval III (2037'MD - 8041'MD)

Cambrian system:
Albertan series:
Bonneterre formation: 7680'MD - 8041'MD

Lithology in this section consisted of shale, limestone and dolomite. The shale was dark gray, black, blocky, firm and calcareous with a trace of pyrite.

The limestone was white, cream, medium to dark gray, hard, dense, microcrystalline, fine grained, sucrosic and argillaceous with traces of oolites, pyrite and fossil fragments.

The dolomite was white cream, medium to dark gray, clear, hard, dense, very fine to medium crystalline, sucrosic and argillaceous with traces of pyrite and fractures filled with calcite and dolomite.

Core #3 was taken from 7692'MD to 7722'MD.

Core #4 was taken from 7722'MD to 7752'MD.

Interval IV (8041'MD - 10089'MD)

Cambrian system:
Albertan series:
Bonneterre formation: 8041'MD - 9931'MD

Lithology in this section consisted of shale, sand, limestone and dolomite. The shale was medium to dark gray, brick red, very soft to hard and silty.

The sands were clear, white, light gray, very fine to coarse grained, subround to subangular, well sorted, unconsolidated to slightly consolidated with calcareous-siliceous cement.

The limestone was white, light to dark gray, brown, hard, dense, fine to microcrystalline, sucrosic, oolitic and argillaceous with traces of pyrite and glauconite.

The dolomite was light to dark gray, white, hard, dense, fine to microcrystalline, sucrosic, argillaceous and oolitic with traces of pyrite and glauconite.