G02943 OGC # 2C034

FINAL PRINT

COMPENSATED NEUTRON LITHODENSITY LOG

CSU field log

RECEIVED
FEB 0 1 1988
MO Oil & Gas Council
Economic Geology

COMPANY: THE STONE PETROLEUM CORPORATION
WELL: WILBUR WRIGHT FARMS
FIELD: RUHAMHUCK
COUNTY: ATCHISON
STATE: MISSOURI
NATION: USA
LOCATION: 1120' FSL & 1828' FWL
SEC: 15 TWP: 63 NORTH RGE: 40 WEST

OTHER SERVICES-
DIL-SFL-GR
BHC-GR
LDT-CNL-GR
CYBERLOOK

PERMANENT DATUM: GROUND LEVEL ELEVATIONS-
ELEV. OF PERM. DATUM: 891.7 F KB: 897.7 F
LOG MEASURED FROM: K.B. DF: 896.7 F
6.0 F ABOVE PERM. DATUM GL: 891.7 F
DRLG. MEASURED FROM: KELLY BUSHING

DATE: 15 DEC 87
RUN NO: 1

PROGRAM TAPE NO: 26.2
SERVICE ORDER NO: 508074

DEPTH-DRILLER: 2813.0 F
DEPTH-LOGGER: 2813.0 F
BTM. LOG INTERVAL: 2810.0 F
TOP LOG INTERVAL: 377.0 F

CASING-DRILLER: 8 5/8" 377 F
CASING-LOGGER: 377 F
CASING WEIGHT: 24.0 LB/F
BIT SIZE: 12 1/4" 377 F 7 7/8" 2813 F
DEPTH:

TYPE FLUID IN HOLE: GEL CHEMICAL
DENSITY: 9.1 LB/G
VISCOSITY: 44.0 S
PH: 11.0
FLUID LOSS: 8.8 C3
SOURCE OF SAMPLE: FLOWLINE
RM: 1.211 OHMM AT 45.0 DEGF
RMF: .962 OHMM AT 49.0 DEGF
RMC: 1.784 OHMM AT 49.0 DEGF
SOURCE RMF/RMC: PRESSED /PRESSED
RM AT BHT: .636 OHMM AT 92.0 DEGF
RMF AT BHT: .544 OHMM AT 92.0 DEGF
RMC AT BHT: 1.009 OHMM AT 92.0 DEGF

TIME CIRC. STOPPED: 12:30 12/15
TIME LOGGER ON BTM.: 21:45 12/15

MAX. REC. TEMP: 92.0 DEGF

LOGGING UNIT NO: 8365
LOGGING UNIT LOC: GREAT BEND
RECORDED BY: PA POLT
WITNESSED BY: BRUCE LANGHAUS

REMARKS:

SONDE ECCENTRALIZED, BOWSPRING RAN ON NEUTRON.
NEUTRON AND DENSITY RAN IN COMBINATION.
SCALES AND CURVES PRESENTED AT CLIENTS' REQUEST.
CHLORIDES 1900 PPM.

EQUIPMENT NUMBERS-

DRS B 3761	CNC HA 374	CNB AB 3374	PDH L 2765
PGD D 2773	TCC A 1721	SGC SA 378	TCM AB 1024
NSC D 1799			

ALL INTERPRETATIONS ARE OPINIONS BASED ON INFERENCES FROM ELECTRICAL OR OTHER MEASUREMENTS AND WE CANNOT, AND DO NOT GUARANTEE THE ACCURACY OR CORRECTNESS OF ANY INTERPRETATIONS, AND WE SHALL NOT, EXCEPT IN THE CASE OF GROSS OR WILLFUL NEGLIGENCE ON OUR PART, BE LIABLE OR RESPONSIBLE FOR ANY LOSS, COSTS, DAMAGES OR EXPENSES INCURRED OR SUSTAINED BY ANYONE RESULTING FROM ANY INTERPRETATION MADE BY ANY OF OUR OFFICERS, AGENTS OR EMPLOYEES. THESE INTERPRETATIONS ARE ALSO SUBJECT TO OUR GENERAL TERMS AND CONDITIONS AS SET OUT IN OUR CURRENT PRICE SCHEDULE.

AFTER SURVEY TOOL CHECK SUMMARY

PERFORMED: 87/12/15
PROGRAM FILE: LEP (VERSION 26.2 00/00/00)

CNTH TOOL CHECK

	JIG BEFORE	JIG AFTER
NRAT	2.212	2.221

POROSITY CHANGE (LIME): .001

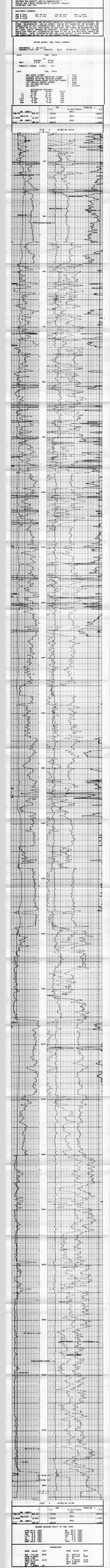
LDTC TOOL CHECK

DRS SONDE NUMBER : 3761
NUCLEAR SERVICE CARTRIDGE NUMBER : 1799
POWERED DETECTOR HOUSING NUMBER : 2765
POWERED GAMMA-GAMMA DETECTOR NUMBER : 2773
LDT LOGGING SOURCE NUMBER : 6981
LDT CALIBRATION MODE : WATE
MUD DENSITY : 8.00000

BACKGROUND MEASURED	BEFORE	AFTER	UNITS
LL	17.29	17.31	CPS
LU	67.75	67.8	CPS
LS	51.21	51.21	CPS
LITH	5.082	5.02	CPS
SS1	13.96	14.16	CPS
SS2	9.625	9.66	CPS

GR (GAPI) 150.00 — 300.00 | PEF 0.0 — 10.000 | TENS(LB) 10000. — 0.0
CALI(IN) 6.0000 — 16.000 | NPHI .70000 — .30000
GR (GAPI) 0.0 — 150.00 | DPHI .30000 — -.1000
NPHI .30000 — -.1000

FILE 3 15-DEC-87 23:09



FILE 3 15-DEC-87 21:50

GR (GAPI) 150.00 — 300.00 | PEF 0.0 — 10.000 | TENS(LB) 10000. — 0.0
CALI(IN) 6.0000 — 16.000 | NPHI .70000 — .30000
GR (GAPI) 0.0 — 150.00 | DPHI .30000 — -.1000
NPHI .30000 — -.1000

SENSOR MEASURE POINT TO TOOL ZERO

STSG	27.6	FEET	GR	32.2	FEET
NCML	23.2	FEET	SCNL	23.7	FEET
SS2	2.0	FEET	FCNL	23.2	FEET
LITH	2.5	FEET	SS1	2.0	FEET
LU	2.5	FEET	LS	2.5	FEET
CALI	2.6	FEET	LL	2.5	FEET
NRAT	23.2	FEET	TENS	-.9	FEET

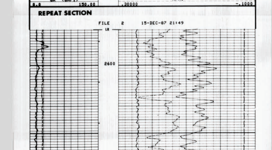
PARAMETERS

NAME	VALUE	UNIT	NAME	VALUE	UNIT
BHT	110.000	DEGF	TD	6000.00	F
PSNR	2.25200		SHT	65.0000	DEGF
MATR	LIME		HC	BS	
MDEN	2.71000	G/C3	FD	1.00000	G/C3
LPCS	TWIN		WMUD	9.00000	LB/G
BHS	OPEN		DHC	NONE	
BS	7.87500	IN			

GR (GAPI) 150.00 — 300.00 | PEF 0.0 — 10.000 | TENS(LB) 10000. — 0.0
CALI(IN) 6.0000 — 16.000 | NPHI .70000 — .30000
GR (GAPI) 0.0 — 150.00 | DPHI .30000 — -.1000
NPHI .30000 — -.1000

REPEAT SECTION

FILE 2 15-DEC-87 21:49



REPEAT SECTION FILE 2 15-DEC-87 21:41

GR (GAPI) 150.00 — 300.00 | PEF 0.0 — 10.000 | TENS(LB) 10000. — 0.0
CALI(IN) 6.0000 — 16.000 | NPHI .70000 — .30000
GR (GAPI) 0.0 — 150.00 | DPHI .30000 — -.1000
NPHI .30000 — -.1000

SENSOR MEASURE POINT TO TOOL ZERO

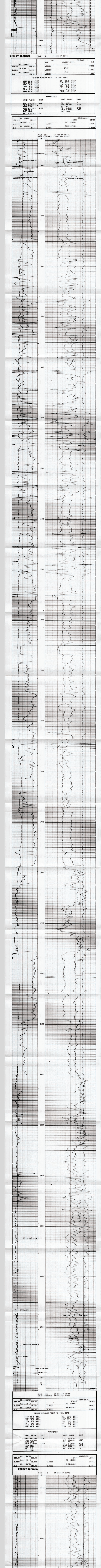
STSG	27.6	FEET	GR	32.2	FEET
NCML	23.2	FEET	SCNL	23.7	FEET
SS2	2.0	FEET	FCNL	23.2	FEET
LITH	2.5	FEET	SS1	2.0	FEET
LU	2.5	FEET	LS	2.5	FEET
CALI	2.6	FEET	LL	2.5	FEET
NRAT	23.2	FEET	TENS	-.9	FEET

PARAMETERS

NAME	VALUE	UNIT	NAME	VALUE	UNIT
BHT	110.000	DEGF	TD	6000.00	F
PSNR	2.25200		SHT	65.0000	DEGF
MATR	LIME		HC	BS	
MDEN	2.71000	G/C3	FD	1.00000	G/C3
LPCS	TWIN		WMUD	9.00000	LB/G
BHS	OPEN		DHC	NONE	
BS	7.87500	IN			

GR (GAPI) 150.00 — 300.00 | DRHO(G/C3) -.2500 — .25000
CALI(IN) 6.0000 — 16.000 | RO (OHMM) 1.0000 — 10000.
GR (GAPI) 0.0 — 150.00 | RHOB(G/C3) 2.0000 — 3.0000

FILE 106 15-DEC-87 23:40
DATA ACQUIRED 15-DEC-87 23:09



FILE 106 15-DEC-87 23:32
DATA ACQUIRED 15-DEC-87 21:51

GR (GAPI) 150.00 — 300.00 | DRHO(G/C3) -.2500 — .25000
CALI(IN) 6.0000 — 16.000 | RO (OHMM) 1.0000 — 10000.
GR (GAPI) 0.0 — 150.00 | RHOB(G/C3) 2.0000 — 3.0000

SENSOR MEASURE POINT TO TOOL ZERO

STSG	27.6	FEET	GR	32.2	FEET
NCML	23.2	FEET	SCNL	23.7	FEET
SS2	2.0	FEET	FCNL	23.2	FEET
LITH	2.5	FEET	SS1	2.0	FEET
LU	2.5	FEET	LS	2.5	FEET
CALI	2.6	FEET	LL	2.5	FEET
NRAT	23.2	FEET	TENS	-.9	FEET

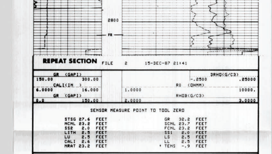
PARAMETERS

NAME	VALUE	UNIT	NAME	VALUE	UNIT
BHT	110.000	DEGF	TD	6000.00	F
PSNR	2.25200		SHT	65.0000	DEGF
MATR	LIME		HC	BS	
MDEN	2.71000	G/C3	FD	1.00000	G/C3
LPCS	TWIN		WMUD	8.00000	LB/G
BHS	OPEN		DHC	NONE	
DO	0.0	F	BS	7.87500	IN
PP	NORM				

GR (GAPI) 150.00 — 300.00 | DRHO(G/C3) -.2500 — .25000
CALI(IN) 6.0000 — 16.000 | RO (OHMM) 1.0000 — 10000.
GR (GAPI) 0.0 — 150.00 | RHOB(G/C3) 2.0000 — 3.0000

REPEAT SECTION

FILE 2 15-DEC-87 21:49



REPEAT SECTION FILE 2 15-DEC-87 21:41

GR (GAPI) 150.00 — 300.00 | DRHO(G/C3) -.2500 — .25000
CALI(IN) 6.0000 — 16.000 | RO (OHMM) 1.0000 — 10000.
GR (GAPI) 0.0 — 150.00 | RHOB(G/C3) 2.0000 — 3.0000

SENSOR MEASURE POINT TO TOOL ZERO

STSG	27.6	FEET	GR	32.2	FEET
NCML	23.2	FEET	SCNL	23.7	FEET
SS2	2.0	FEET	FCNL	23.2	FEET
LITH	2.5	FEET	SS1	2.0	FEET
LU	2.5	FEET	LS	2.5	FEET
CALI	2.6	FEET	LL	2.5	FEET
NRAT	23.2	FEET	TENS	-.9	FEET

PARAMETERS

NAME	VALUE	UNIT	NAME	VALUE	UNIT
BHT	110.000	DEGF	TD	6000.00	F
PSNR	2.25200		SHT	65.0000	DEGF
MATR	LIME		HC	BS	
MDEN	2.71000	G/C3	FD	1.00000	G/C3
LPCS	TWIN		WMUD	9.80000	LB/G
BHS	OPEN		DHC	NONE	
BS	7.87500	IN			

BEFORE SURVEY CALIBRATION SUMMARY

PERFORMED: 87/12/15
PROGRAM FILE: LEP (VERSION 26.2 00/00/00)

SGTL DETECTOR CALIBRATION SUMMARY

	MEASURED BKGD	MEASURED JIG	CALIBRATED	UNITS
GR	30	193	165	GAPI

CNTH DETECTOR CALIBRATION SUMMARY

	TANK INPUT	TANK CALIBRATED	JIG MEASURED	JIG CALIBRATED
NRAT	2.25200	2.158	2.308	2.212

LDTC DETECTOR CALIBRATION SUMMARY

DRS SONDE NUMBER : 3761
NUCLEAR SERVICE CARTRIDGE NUMBER : 1799
POWERED DETECTOR HOUSING NUMBER : 2765
POWERED GAMMA-GAMMA DETECTOR NUMBER : 2773
LDT LOGGING SOURCE NUMBER : 6981
LDT CALIBRATION MODE : WATE
MUD DENSITY : 8.00000

MEASURED	BKGD	AL+FE	AL	UNITS
LL	17.2	83.8	92.6	CPS
LU	67.7	129.2	142.5	CPS
LS	51.2	148.5	163.8	CPS
LITH	5.0	30.9	46.1	CPS
SS1	13.9	168.8	186.5	CPS
SS2	9.6	239.3	260.7	CPS

LDTC CALIPER CALIBRATION SUMMARY

	MEASURED SMALL	MEASURED LARGE	CALIBRATED SMALL	CALIBRATED LARGE	UNITS
CALI	8.0	12.3	8.0	12.0	IN

SHOP SUMMARY

PERFORMED: 08-DEC-87 15:42
PROGRAM FILE: CCSHOP (VERSION 30.22 87/02/09 87/02/09)

CNTH DETECTOR CALIBRATION SUMMARY

	TANK MEASURED	TANK CALIBRATED	JIG MEASURED	JIG CALIBRATED
NRAT	2.252	2.158	2.269	2.174

(CNC:374 , CNB:3374)

LDTC DETECTOR CALIBRATION SUMMARY

DRS SONDE NUMBER : 3761
NUCLEAR SERVICE CARTRIDGE NUMBER : 1799
POWERED DETECTOR HOUSING NUMBER : 2765
POWERED GAMMA-GAMMA DETECTOR NUMBER : 2773
LDT LOGGING SOURCE NUMBER : 6981
LDT CALIBRATION MODE : WATE

MASTER CALIBRATED	BKGD	AL+FE	AL	UNITS
LL	17.5	83.8	92.6	CPS
LU	68.1	129.2	142.5	CPS
LS	51.6	148.4	163.9	CPS
LITH	5.1	30.9	46.1	CPS
SS1	14.1	168.8	186.5	CPS
SS2	9.7	239.3	260.8	CPS

HV SETTINGS
HV LS : 1891.3 V
HV SS : 2162.1 V

SPECTRUM QUALITY RATIOS

QRLS	.6501
QRSS	.7152
QRLI	.2813
QLIR	1.3521
QR	.9992

CSU field log

COMPENSATED NEUTRON LITHODENSITY LOG W/