



ATLAS
INDUCTION FOCUSED LOG
SERVICES
JUN 21 1993 3 AM CALIPER

COMPANY: ELK EXPLORATION INC.
WELL: HSR HALL 12-31
FIELD: MATTERBERG
COUNTY: WELD
STATE: COLORADO

LOCATION: HSR & 27TH FSL
SEC 31 T1P 4N R6E 65W
TWP 4N R6E 65W
NAD/54
EQUATION: 49.4778
EQUATION: 49.4778

OTHER SERVICES
CDL - CM - CR

IN MAKING INTERPRETATIONS OF LOGS OUR
PROPERTY AND/OR INTERESTS. THE
INTERPRETATIONS ARE OPINIONS BASED
ON THE LOGS AND OTHER INFORMATION
AVAILABLE TO US. WE CANNOT AND WE DO
NOT GUARANTEE THE ACCURACY OR CORRECT-
NESS OF ANY INTERPRETATION. WE SHALL
NOT BE LIABLE OR RESPONSIBLE FOR ANY
LOSSES, COSTS, DAMAGES, OR EXPENSES INCUR-
RED BY THE CUSTOMER INCURRED OR SUSTAINED BY THE
CUSTOMER RESULTING FROM ANY INTERPRE-
TATION MADE BY ANY OF OUR EMPLOYEES.

REMARKS
BOREHOLE VOLUME COMPUTED FOR 4.5" CASING
CALIPER VERIFIED IN CASING

RIG: EXETER #68
CREW: WADL & WRIGHT

EQUIPMENT DATA

NO.	TRIP	TOOL	DATE	NO.	TRIP	TOOL	DATE	NO.	TRIP	TOOL	DATE
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1	1	1	1	1	1	1	1	1	1	1	1
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2	2	2	2	2	2	2	2	2	2	2	2
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3	3	3	3	3	3	3	3	3	3	3	3
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4	4	4	4	4	4	4	4	4	4	4	4
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5	5	5	5	5	5	5	5	5	5	5	5
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6	6	6	6	6	6	6	6	6	6	6	6
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87	87	87	87	87	87	87	87	87	87	87	87
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88	88	88	88	88	88	88	88	88	88	88	88
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89	89	89	89	89	89	89	89	89	89	89	89
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91	91	91	91	91	91	91	91	91	91	91	91
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92	92	92	92	92	92	92	92	92	92	92	92
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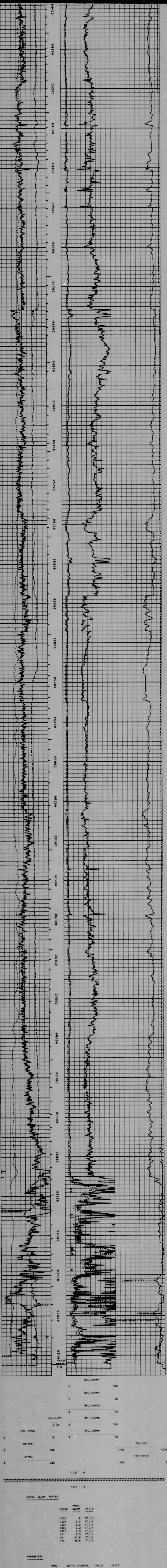
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94	94	94	94	94	94	94	94	94	94	94	94
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95	95	95	95	95	95	95	95	95	95	95	95
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96	96	96	96	96	96	96	96	96	96	96	96
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97	97	97	97	97	97	97	97	97	97	97	97
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FILE: 4

FILE: 2

CURVE DELAY REPORT

CURVE	PHYS. DELAY	UNITS
OFDC	0	FT, IN
CILM	0.0	FT, IN
UCLP	0.0	FT, IN
CILD	0.3	FT, IN
UCLD	0.3	FT, IN
SP	0.3	FT, IN
GR	0.3	FT, IN
CAL	0.3	FT, IN

PARAMETERS

NAME	DEPTH INTERVAL	VALUE	UNITS
0.0	7442 TO 7192	4.500	INCH
RU	7442 TO 7192	0.000	OHM-M

DISPLAY SCALE CHANGES

*** NONE ***

COMPANY: ELK EXPLORATION INC. RUN: 1

WELL NAME: HSR HALL 12-31 TRIP: 1

SERVICE: KR212L FILE: 2 DATE: 02/23/93 TIME: 15:33:57

REVISION: FSY5256 REV:0002 VER:2.0 MODE: RECORD

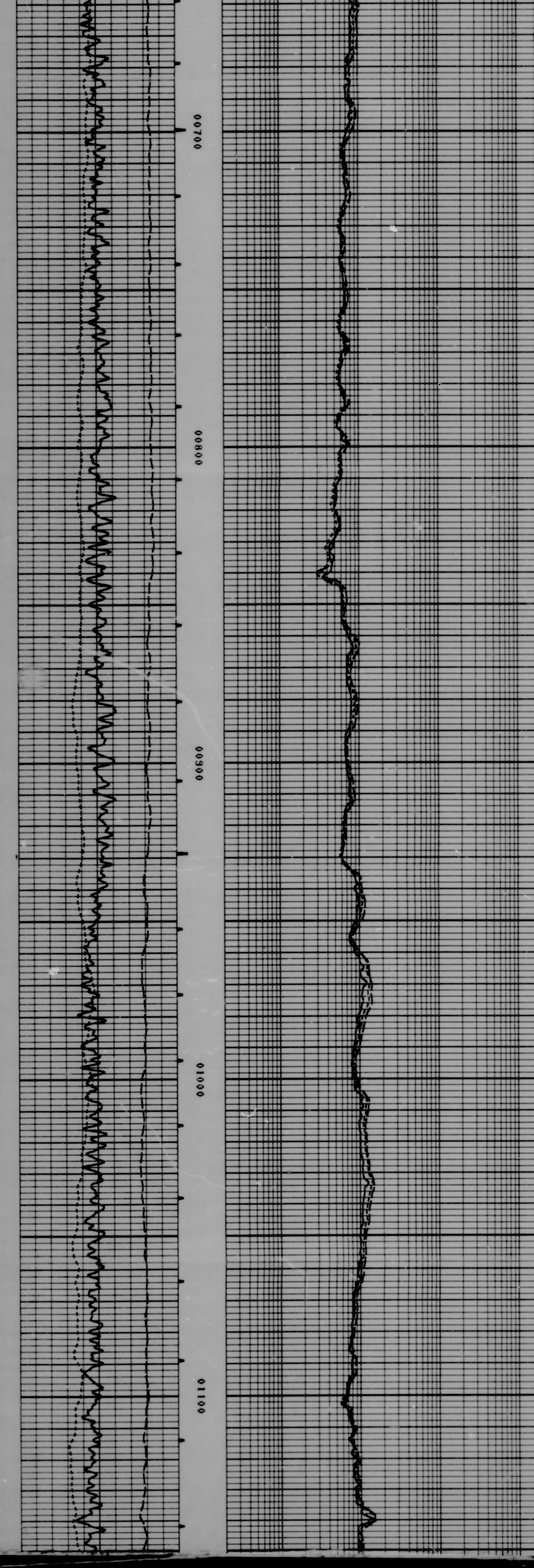
VCL (CUFT) 0.30 0.2 RILD (OHM) 2000

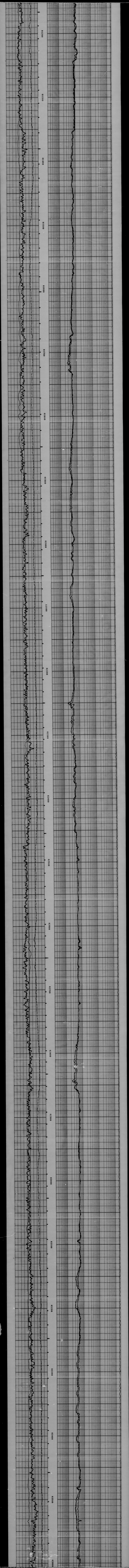
CAL (INCH) 18 0.2 RILM (OHM) 2000

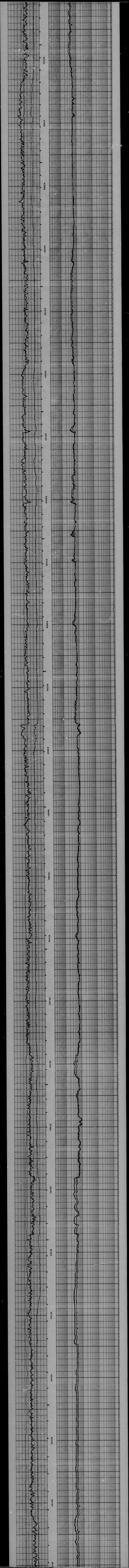
GR (API) 200 0.2 RFDC (OHM) 2000

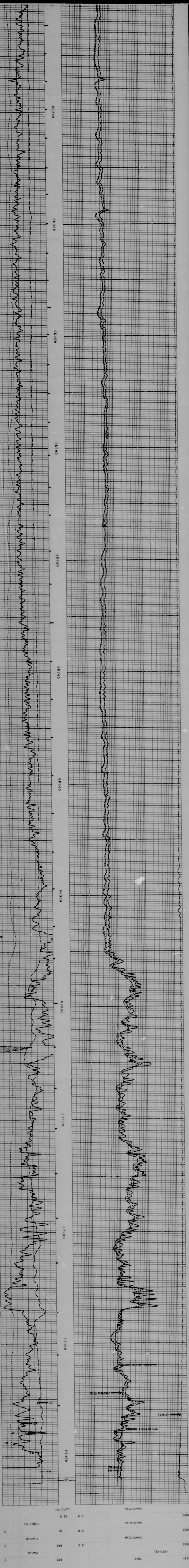
SP (MU) 200 0.2 TEN (LBS) 4750

CILD (MM-HO) 1000 -250









UOL (CUFT)	0.30	0.2	RILD (CHMM)	2800
CAL (INCH)	18	0.2	RILM (CHMM)	2800
GR (API)	200	0.2	RFDC (CHMM)	2800
SP (MU)	200	4750	TEN (LBS)	-250

FILE: 4

REPEAT SECTION

FILE: 3

CURVE DELAY REPORT

CURVE	PHYS. DELAY	UNITS
OFDC	0	FT. IN
CILM	6.0	FT. IN
UILM	6.0	FT. IN
CILD	6.3	FT. IN
UULD	9.3	FT. IN
SP	9.3	FT. IN
GR	23.6	FT. IN
CAL	32.6	FT. IN

PARAMETERS

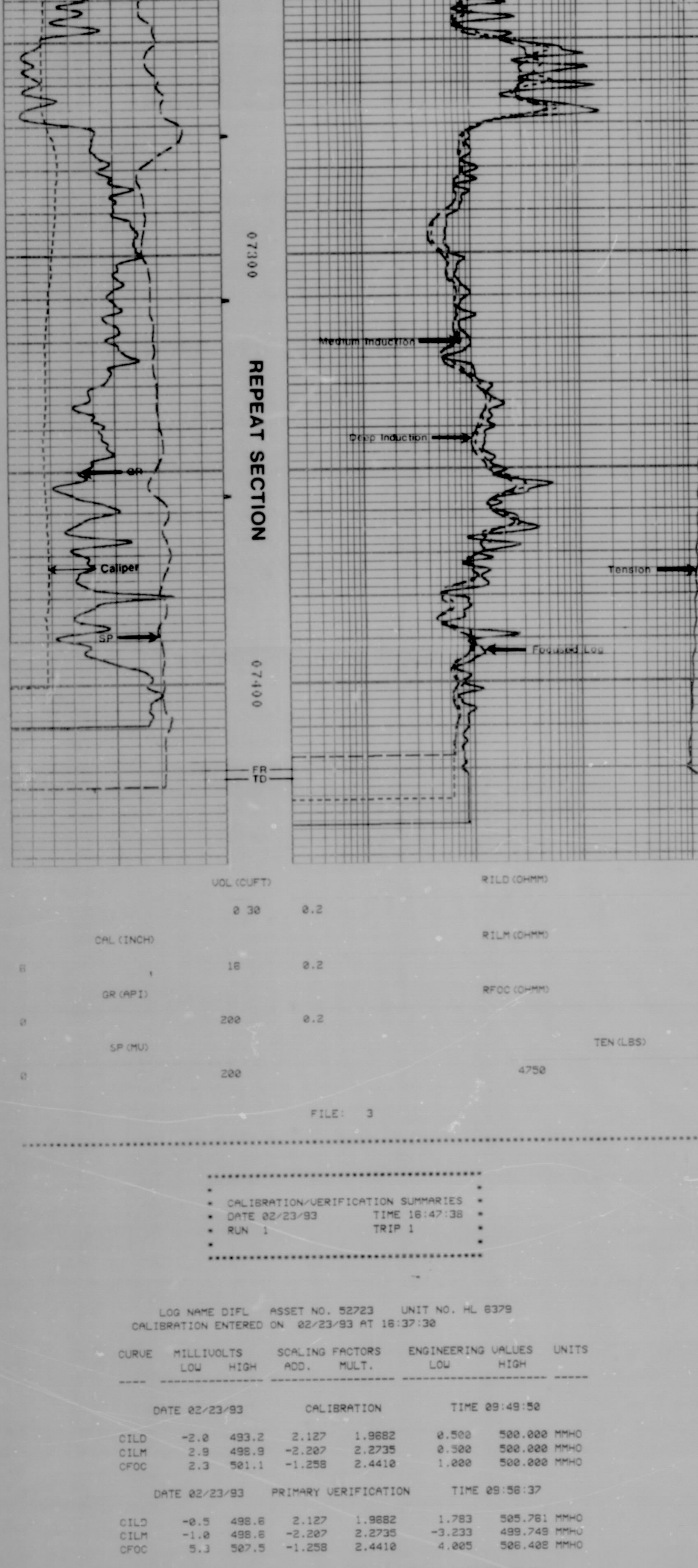
NAME	DEPTH INTERVAL	UMLU	UNITS
O.D.	7442 TO 7155	4.500	INCH
R/L	7442 TO 7155	0.000	CHMM-M

DISPLAY SCALE CHANGES

*** NONE ***

COMPANY: ELK EXPLORATION INC. RUN: 1
WELL NAME: HSR HALL 12-31 TRIP: 1
SERVICE: KR212L FILE: 3 DATE: 02/23/93 TIME: 15:40:57
REVISION: FSY2556 REV:0002 VER:2.0 MODE: RECORD

UOL (CUFT)	0.30	0.2	RILD (CHMM)	2800
CAL (INCH)	18	0.2	RILM (CHMM)	2800
GR (API)	200	0.2	RFDC (CHMM)	2800
SP (MU)	200	4750	TEN (LBS)	-250



UOL (CUFT)	0.30	0.2	RILD (CHMM)	2800
CAL (INCH)	18	0.2	RILM (CHMM)	2800
GR (API)	200	0.2	RFDC (CHMM)	2800
SP (MU)	200	4750	TEN (LBS)	-250

FILE: 3

ATLAS WIRELINE SERVICES

LOG NAME CILM ASSET NO. 52723 UNIT NO. HL 6379
CALIBRATION ENTERED ON 02/23/93 AT 18:37:30

CURVE	MILLIVOLTS	SCALING FACTORS	ENGINEERING VALUES	UNITS
	LOW HIGH	ADD. MULT.	LOW HIGH	

DATE	02/16/93	CALIBRATION	TIME 09:49:50
CILD	-0.3	493.2 2.127 1.9882	0.500 500.000 MMHO
CILM	-0.8	496.6 -2.287 2.2735	0.500 500.000 MMHO
OFDC	2.9	581.1 -1.258 2.4418	1.800 500.000 MMHO

DATE	02/23/93	PRIMARY VERIFICATION	TIME 09:58:37
CILD	-0.3	498.6 2.127 1.9882	1.783 505.761 MMHO
CILM	-0.8	497.7 -2.287 2.2735	-3.233 499.748 MMHO
OFDC	5.1	587.5 -1.258 2.4418	4.065 506.488 MMHO

DATE	02/23/93	BEFORE LOG VERIFICATION	TIME 15:03:32
CILD	-0.3	498.1 2.127 1.9882	2.132 505.168 MMHO
CILM	-0.8	497.7 -2.287 2.2735	-2.921 499.808 MMHO
OFDC	5.4	493.1 -1.258 2.4418	4.181 495.008 MMHO

DATE	02/23/93	AFTER LOG VERIFICATION	TIME 16:38:24
CILD	-0.3	496.2 2.127 1.9882	1.908 502.600 MMHO
CILM	-0.8	492.9 -2.287 2.2735	-3.198 503.434 MMHO
OFDC	5.1	499.2 -1.258 2.4418	3.828 499.138 MMHO

LOG NAME GR ASSET NO. 73473 UNIT NO. HL 6379
CALIBRATION ENTERED ON 02/23/93 AT 13:08:07

CURVE	COUNTS/SEC	SCALING FACTORS	ENGINEERING VALUES	UNITS
	LOW HIGH <td>ADD. MULT.<td>LOW HIGH<td></td></td></td>	ADD. MULT. <td>LOW HIGH<td></td></td>	LOW HIGH <td></td>	

DATE	02/16/93	CALIBRATION	TIME 16:38:24
GR	99.5	258.5 0.000 0.7934	0.000 150.000 API

DATE	02/16/93	PRIMARY VERIFICATION	TIME 16:43:29
GR	99.4	257.0 0.000 0.7934	78.114 227.718 API

DATE	02/23/93	BEFORE LOG VERIFICATION	TIME 13:04:48
GR	82.6	251.7 0.000 0.7934	49.709 199.749 API

DATE	02/23/93	AFTER LOG VERIFICATION	TIME 16:42:51
GR	82.1	251.6 0.000 0.7934	49.253 199.669 API

LOG NAME CAL ASSET NO. 55719 UNIT NO. HL 6379
CALIBRATION ENTERED ON 02/23/93 AT 12:59:50

CURVE	MILLIVOLTS	SCALING FACTORS	ENGINEERING VALUES	UNITS
	LOW HIGH <td>ADD. MULT.<td>LOW HIGH<td></td></td></td>	ADD. MULT. <td>LOW HIGH<td></td></td>	LOW HIGH <td></td>	

DATE	02/16/93	CALIBRATION	TIME 17:11:25
CAL	4310.6	12872.5 3.357 0.0078	8.000 16.000 INCH

DATE	02/16/93	PRIMARY VERIFICATION	TIME 17:12:09
CAL	4267.4	E 3.357 0.0078	7.955 E INCH

DATE	02/23/93	BEFORE LOG VERIFICATION	TIME 14:59:00
CAL	4466.7	E 3.357 0.0078	7.981 E INCH

DATE	02/23/93	AFTER LOG VERIFICATION	TIME 16:37:14
CAL	4449.1	E 3.357 0.0078	7.943 E INCH