

DI-DRIL, INC.
BAKERSFIELD, CALIFORNIA

MAGNETIC DIRECTIONAL SURVEY
BY ANGLE AVERAGE METHOD

FOR

* ARCO OIL & GAS *

JOB NUMBER: B 4127

WELL NAME: CFI 33-9

LOCATION: PITTSBURG

SURVEY DATE: 30 AUGUST 1986

SURVEY ENGINEER: MIKE MERRITT

MAGNETIC DECLINATION: 21.00E

TIE-ON COORDINATES AT: 645 M.D.

TAKEN FROM: DATA SURVEY SHEET

***** DEPTH MEASURED IN FEET *****

COMMENTS:

*** THIS DIRECTIONAL SURVEY REPORT IS ***
** CORRECT TO THE BEST OF MY KNOWLEDGE ***
* AND IS SUPPORTED BY ACTUAL FIELD DATA! *
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** ***** **
** COMPANY REPRESENTATIVE **

DI-DRIL, INC.
 BAKERSFIELD, CALIFORNIA

JOB NUMBER: B 4127

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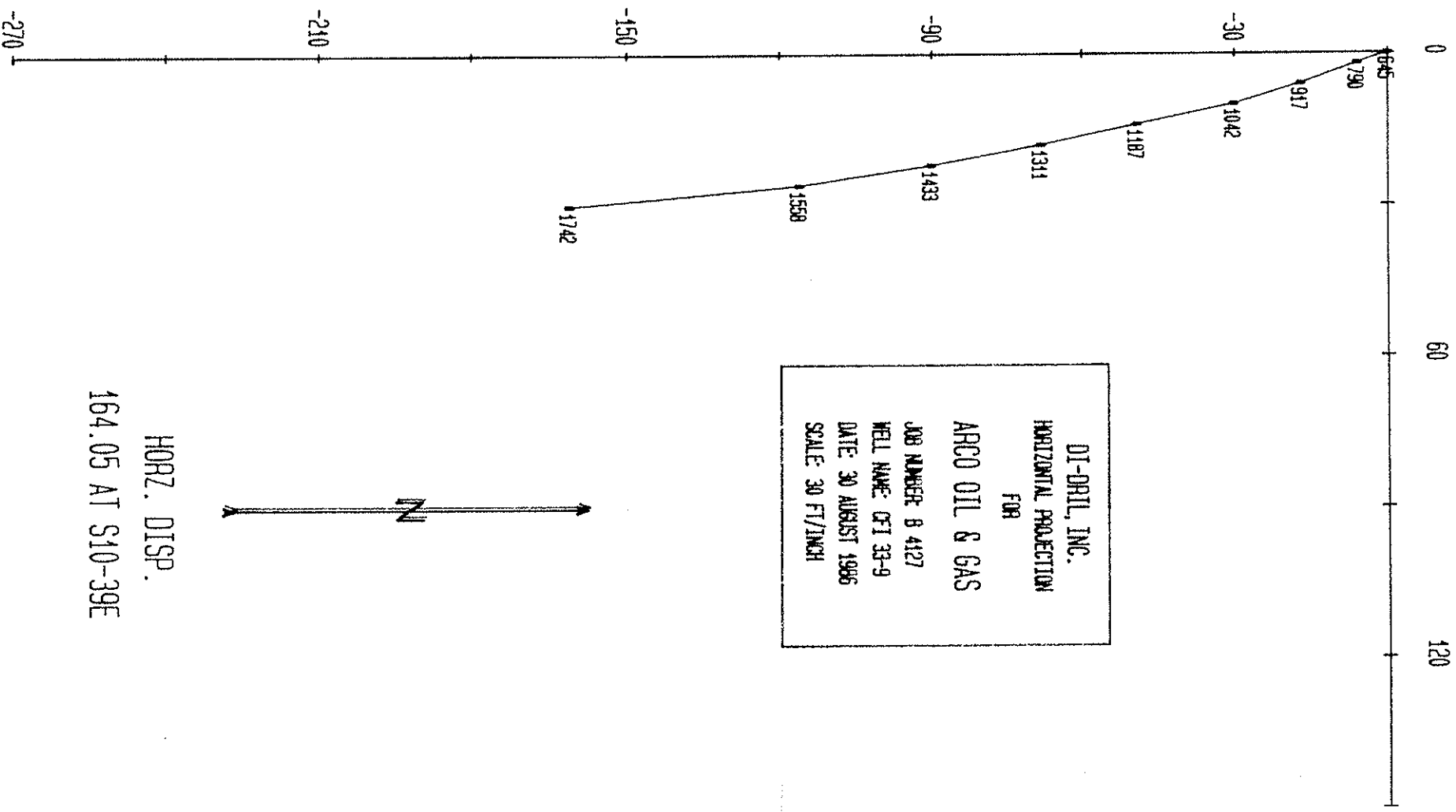
INRUN SURVEY
 BY

BY ANGLE AVERAGE METHOD

MEAS. DEPTH	VERT. DEPTH	VERT. SECT.	COURSE DEV.	INCL	BEARING	COORDINATES			STATION DISP.	DISPLACEMENT	
						LATITUDE	DEPARTURE	D-LEG PER 100		DISP.	DIRECTION
645.00	645.00	0.00	0.00	00-00	S22-00E	0.00 N	0.00 E	0.00	0.00	AT	N00-00E
790.00	789.88	5.89	6.01	04-45	S22-00E	5.57 S	2.25 E	3.28	6.01	AT	S22-00E
917.00	916.34	17.37	11.62	05-45	S17-00E	16.53 S	6.13 E	0.87	17.63	AT	S20-21E
1042.00	1040.57	31.20	13.88	07-00	S14-00E	29.90 S	9.84 E	1.03	31.48	AT	S18-13E
1187.00	1184.29	50.41	19.24	08-15	S14-00E	48.57 S	14.49 E	0.86	50.68	AT	S16-37E
1311.00	1306.76	69.81	19.40	09-45	S09-00E	67.58 S	18.36 E	1.36	70.03	AT	S15-12E
1433.00	1426.67	92.29	22.49	11-30	S09-00E	89.79 S	21.88 E	1.43	92.42	AT	S13-42E
1558.00	1548.88	118.52	26.26	12-45	S07-00E	115.79 S	25.53 E	1.05	118.58	AT	S12-26E
1742.00	1727.12	164.05	45.68	16-00	S05-00E	161.23 S	30.31 E	1.79	164.05	AT	S10-39E

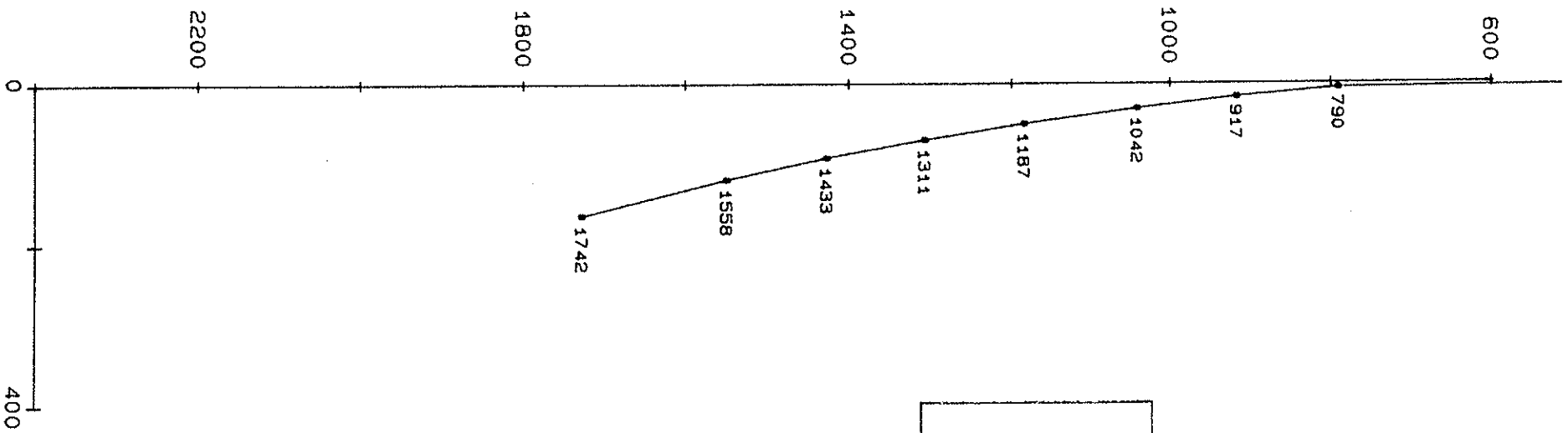
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*                                     *
*           THE HORIZONTAL DISPLACEMENT AT THE DEPTH OF           *
*                                     *
* 1742.00 FEET EQUALS 164.05 FEET AT S10-39E *
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HORZ. DISP.

164.05 AT S10-39E



DI-DRILL, INC.
VERTICAL PROJECTION
FOR
ARCO OIL & GAS
JOB NUMBER: B 4127
WELL NAME: CFI 33-9
DATE: 30 AUGUST 1986
SCALE: 200 FT/INCH