

DI-DRILL, INC.
BAKERSFIELD, CALIFORNIA

MAGNETIC DIRECTIONAL SURVEY
BY ANGLE AVERAGE METHOD

FOR

* OREGON NATURAL GAS *

JOB NUMBER: B4263

WELL NAME: 33-D-3

LOCATION: COLUMBIA COUNTY

SURVEY DATE: 14 JUNE 1988

SURVEY ENGINEER: GEORGE LOVE

MAGNETIC DECLINATION: 21.00E

TIE-ON COORDINATES AT: 585 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! *****

***** COMPANY REPRESENTATIVE *****

DI-DRILL, INC.
BAKERSFIELD, CALIFORNIA

JOB NUMBER: B4263

WELL NAME: 33-D

INRUN SURVEY
BY

BY ANGLE AVERAGE METHOD

MEAS. DEPTH	VERT. DEPTH	VERT. SECT.	COURSE DEV.	INCL	BEARING	COORDINATES LATITUDE	DEPARTURE	D-LEG PER 100	STATION DISP.	DISPLACEMENT DIRECTION
585.00	585.00		0.00	00-00	N21-00E	0.00 N	0.00 E	0.00	0.00	AT N00-00E
664.00	665.99	0.67	1.03	01-30	N21-00E	0.97 N	0.37 E	1.90	1.03	AT N21-00E
725.00	724.93	2.92	2.79	03-45	N05-00W	3.73 N	0.76 E	4.08	3.81	AT N11-30E
787.00	786.70	7.98	5.27	06-00	N19-00W	8.89 N	0.34 W	4.08	8.89	AT N02-10W
818.00	817.50	11.53	3.58	07-15	N24-00W	12.21 N	1.65 W	4.44	12.32	AT N07-41W
880.00	878.84	20.52	8.99	09-25	N34-00W	20.07 N	6.00 W	4.19	20.95	AT N16-39W
989.00	986.53	37.31	16.89	08-25	N35-00W	34.00 N	15.57 W	0.93	37.39	AT N24-37W
1095.00	1091.47	52.13	14.91	07-45	N34-00W	46.28 N	24.01 W	0.64	52.14	AT N27-26W
1203.00	1198.25	68.32	16.20	09-30	N26-00W	60.31 N	32.11 W	1.96	68.32	AT N28-02W
1295.00	1288.92	83.89	15.58	10-00	N27-00W	74.25 N	39.06 W	0.57	83.90	AT N27-45W
1388.00	1380.54	99.84	15.95	09-45	N27-00W	88.46 N	46.31 W	0.27	99.85	AT N27-38W
1481.00	1472.24	115.38	15.55	09-30	N26-00W	102.38 N	53.24 W	0.32	115.39	AT N27-29W
1571.00	1561.07	129.84	14.47	09-00	N28-00W	115.27 N	59.81 W	0.66	129.86	AT N27-25W
1663.00	1651.84	144.83	14.99	09-45	N26-00W	128.62 N	66.62 W	0.89	144.85	AT N27-23W
1815.00	1800.58	176.08	31.28	14-00	N26-00W	156.73 N	80.33 W	2.80	176.12	AT N27-08W
1945.00	1926.23	209.42	33.37	15-45	N26-00W	186.73 N	94.96 W	1.35	209.48	AT N26-57W
2042.00	2019.76	235.14	25.72	15-00	N29-00W	209.54 N	106.83 W	1.13	235.20	AT N27-01W
2132.00	2106.74	258.24	23.10	14-45	N28-00W	229.84 N	117.86 W	0.40	258.30	AT N27-09W
2257.00	2227.89	289.01	30.77	13-45	N28-00W	257.01 N	132.30 W	0.80	289.06	AT N27-14W
2381.00	2348.65	317.17	28.16	12-30	N29-00W	281.76 N	145.74 W	1.02	317.22	AT N27-21W
2773.00	2733.29	392.69	75.64	09-45	N34-00W	346.25 N	185.26 W	0.74	392.69	AT N28-09W
2932.00	2890.33	417.52	24.87	08-15	N29-00W	367.45 N	198.25 W	1.06	417.52	AT N28-21W

JOB NUMBER: B4263

DI-DRILL, INC.
BAKERSFIELD, CALIFORNIA

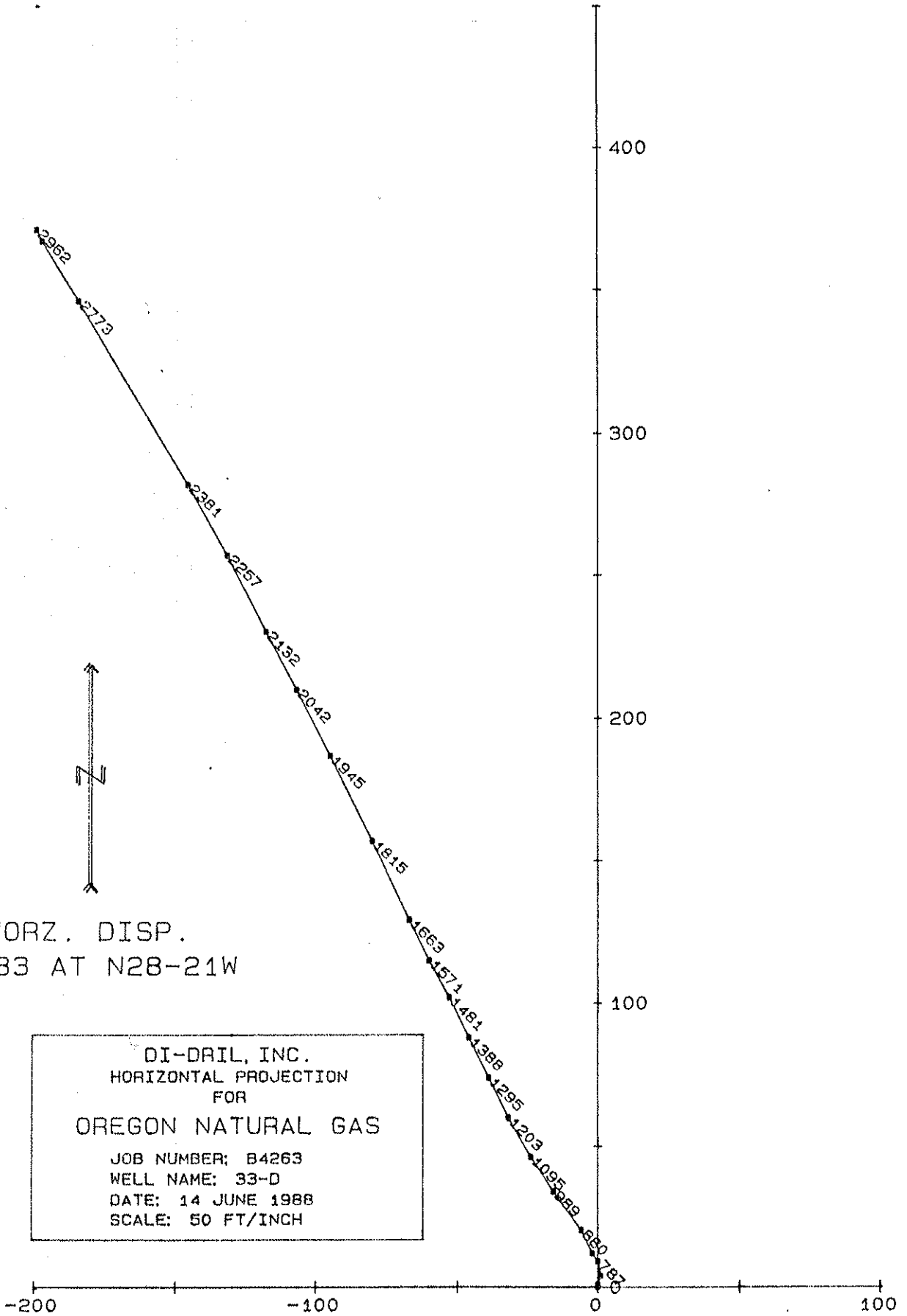
WELL NAME: 33-D

INRUN SURVEY
BY

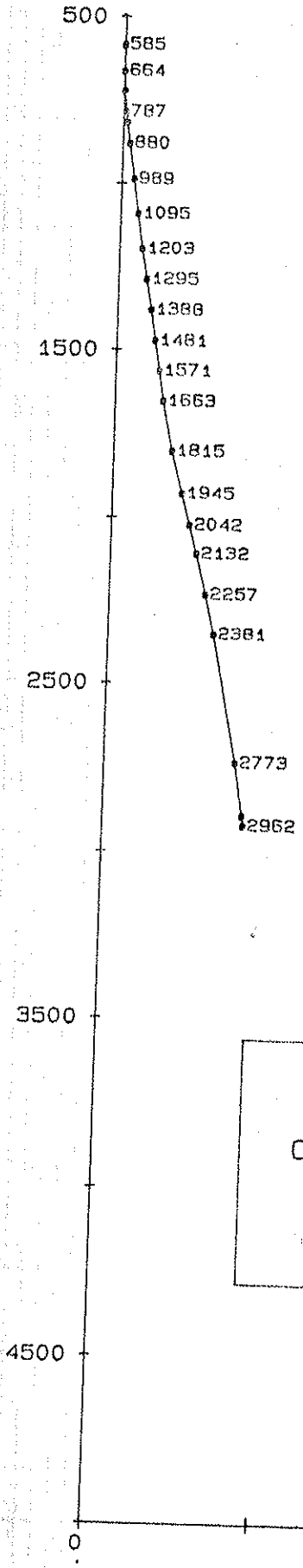
BY ANGLE AVERAGE METHOD

MEAS. DEPTH	VERT. DEPTH	VERT. SECT.	COURSE DEV.	INCL	BEARING	COORDINATES	D-LEG DEPARTURE PER 100	STATION DISPLACEMENT	DISP. DIRECTION
2962.00	2920.02	421.83	4.30	08-15	N29-00W	371.22 N 200.34 W	0.00	421.83	AT N28-21W

 * THE HORIZONTAL DISPLACEMENT AT THE DEPTH OF *
 * 2962.00 FEET EQUALS 421.83 FEET AT N28-21W *
 * *****



DI-DRIL, INC.
 HORIZONTAL PROJECTION
 FOR
 OREGON NATURAL GAS
 JOB NUMBER: B4263
 WELL NAME: 33-D
 DATE: 14 JUNE 1988
 SCALE: 50 FT/INCH



DI-DRIL, INC.
VERTICAL PROJECTION
FOR
OREGON NATURAL GAS
JOB NUMBER: B4263
WELL NAME: 33-D
DATE: 14 JUNE 1988
SCALE: 500 FT/INCH