

US ROCKIES REGION PLANNING

COLORADO NORTHERN ZONE - 83

WELD_FEHRN 17-32 PAD

FEHRN 41-32

FEHRN 41-32

Plan: FEHRN 41-32 (wp01)

Standard Planning Report

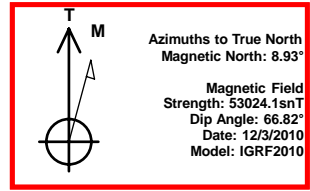
03 February, 2011



Weatherford®

Project: COLORADO NORTHERN ZONE - 83
 Site: WELD_FEHRN 17-32 PAD
 Well: FEHRN 41-32
 Wellbore: FEHRN 41-32
 Section:
 SHL:
 Design: FEHRN 41-32 (wp01)
 Latitude: 40.097328
 Longitude: -104.795485
 GL: 4916.00
 KB: gl @ 4916.00ft

FORMATION TOP DETAILS		
TVDPath	MDPath	Formation
4117.00	4212.49	PK Depth
4487.00	4592.99	SX Depth
7132.00	7253.20	NIO Depth
7457.00	7578.20	CD Depth
7547.00	7668.20	GH Depth
7897.00	8018.20	J Depth



WELL DETAILS: FEHRN 41-32

+N/-S	+E/-W	Northing	Ground Level: Easting	4916.00 Latitude	Longitude	Slot
0.00	0.00	1279083.95	3197088.65	40.097328	-104.795485	

CASING DETAILS

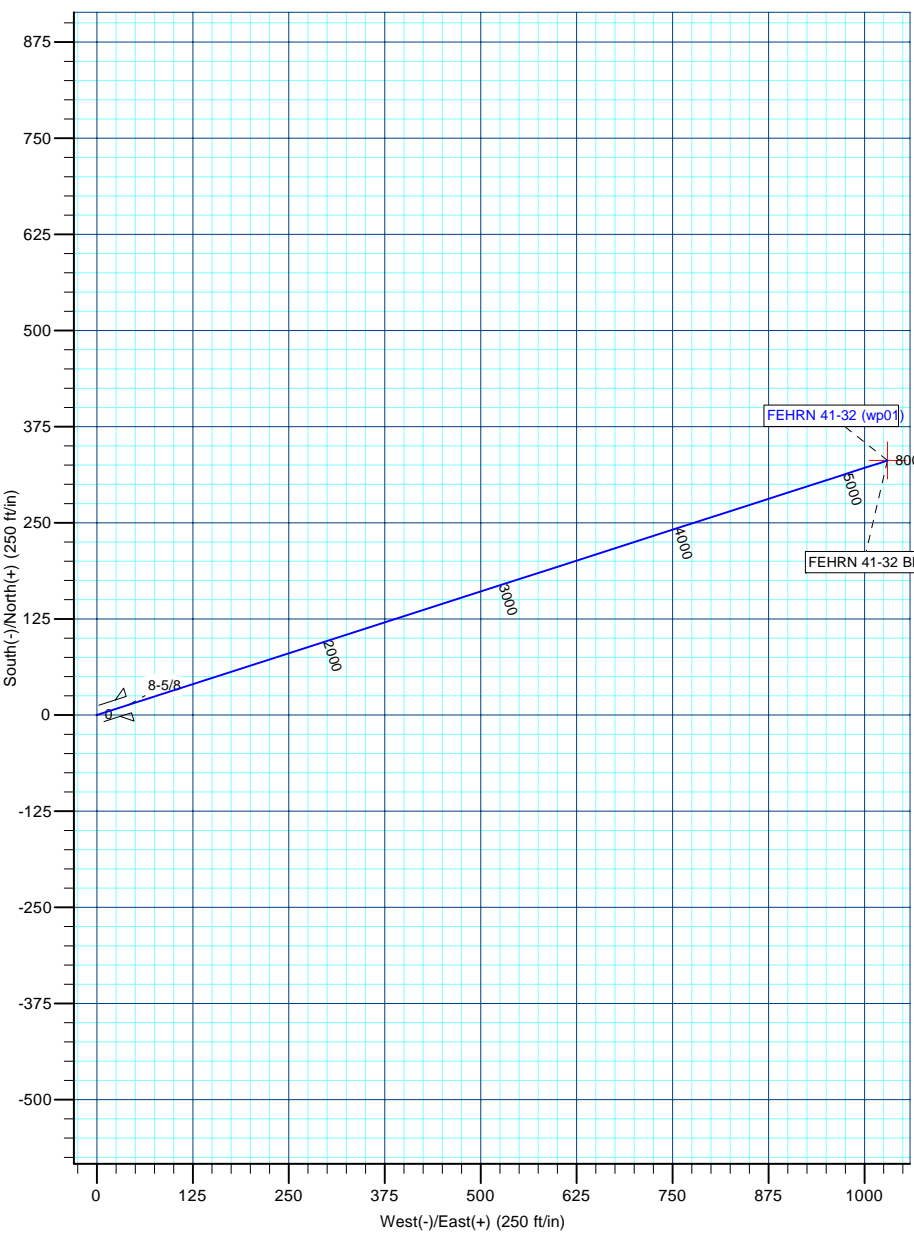
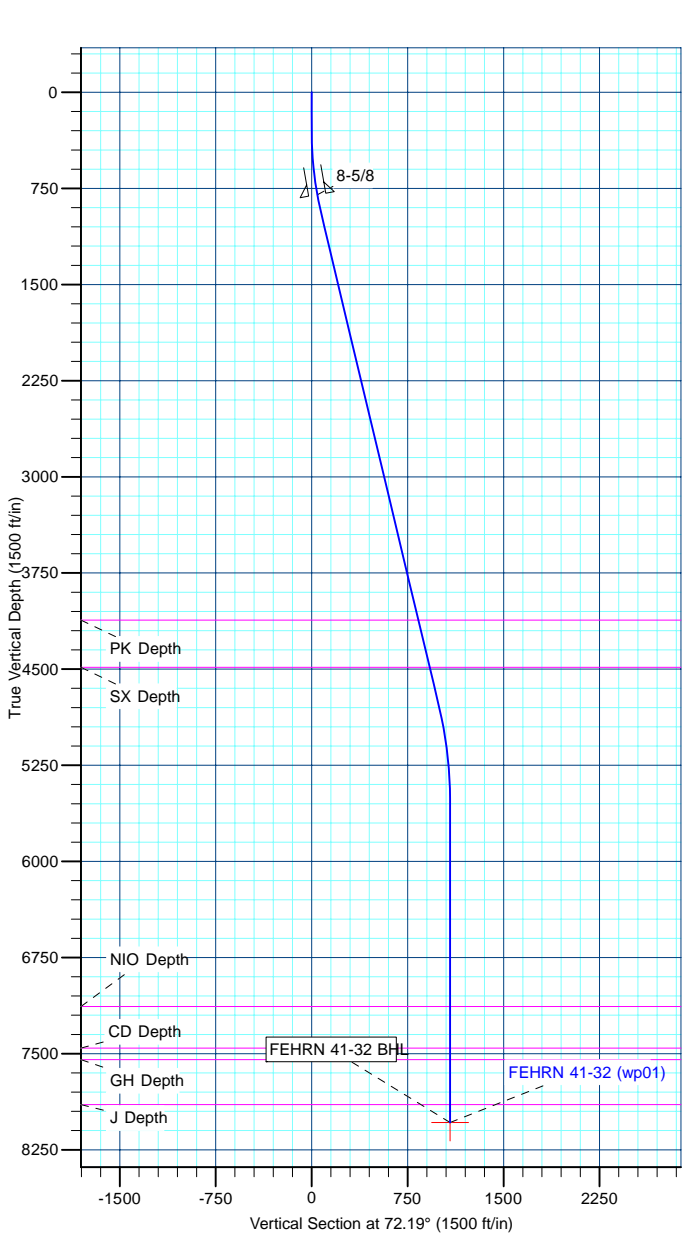
TVD	MD	Name	Size
800.00	802.57	8-5/8	8-5/8

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape Point
FEHRN 41-32 BHL	8037.00	330.83	1030.04	1279422.95	3198116.03	40.098236	-104.791803	

SECTION DETAILS

MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00
974.29	13.49	72.19	968.09	24.15	75.21	2.00	72.19	78.99
4887.58	13.49	72.19	4773.47	303.23	944.09	0.00	0.00	991.59
5658.20	0.00	0.00	5537.00	330.83	1030.04	1.75	180.00	1081.86
8158.20	0.00	0.00	8037.00	330.83	1030.04	0.00	0.00	1081.86



Database:	edm5000p	Local Co-ordinate Reference:	Well FEHRN 41-32
Company:	US ROCKIES REGION PLANNING	TVD Reference:	gl @ 4916.00ft
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	gl @ 4916.00ft
Site:	WELD_FEHRN 17-32 PAD	North Reference:	True
Well:	FEHRN 41-32	Survey Calculation Method:	Minimum Curvature
Wellbore:	FEHRN 41-32		
Design:	FEHRN 41-32 (wp01)		

Project	COLORADO NORTHERN ZONE - 83		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Northern Zone		

Site	WELD_FEHRN 17-32 PAD				
Site Position:		Northing:	1,279,083.46 ft	Latitude:	40.097327
From:	Lat/Long	Easting:	3,197,067.90 ft	Longitude:	-104.795559
Position Uncertainty:	0.00 ft	Slot Radius:	0 "	Grid Convergence:	0.46 °

Well	FEHRN 41-32					
Well Position	+N/-S	0.32 ft	Northing:	1,279,083.95 ft	Latitude:	40.097328
	+E/-W	20.76 ft	Easting:	3,197,088.65 ft	Longitude:	-104.795485
Position Uncertainty		0.00 ft	Wellhead Elevation:		Ground Level:	4,916.00 ft

Wellbore	FEHRN 41-32				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	12/3/2010	8.92	66.82	53,024

Design	FEHRN 41-32 (wp01)			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.00	0.00	0.00	72.19

Plan Sections										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00	
974.29	13.49	72.19	968.09	24.15	75.21	2.00	2.00	0.00	72.19	
4,887.58	13.49	72.19	4,773.47	303.23	944.09	0.00	0.00	0.00	0.00	
5,658.20	0.00	0.00	5,537.00	330.83	1,030.04	1.75	-1.75	0.00	180.00	
8,158.20	0.00	0.00	8,037.00	330.83	1,030.04	0.00	0.00	0.00	0.00	FEHRN 41-32 BHL

Database:	edm5000p	Local Co-ordinate Reference:	Well FEHRN 41-32
Company:	US ROCKIES REGION PLANNING	TVD Reference:	gl @ 4916.00ft
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	gl @ 4916.00ft
Site:	WELD_FEHRN 17-32 PAD	North Reference:	True
Well:	FEHRN 41-32	Survey Calculation Method:	Minimum Curvature
Wellbore:	FEHRN 41-32		
Design:	FEHRN 41-32 (wp01)		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00
400.00	2.00	72.19	399.98	0.53	1.66	1.75	2.00	2.00	0.00
500.00	4.00	72.19	499.84	2.13	6.64	6.98	2.00	2.00	0.00
600.00	6.00	72.19	599.45	4.80	14.94	15.69	2.00	2.00	0.00
700.00	8.00	72.19	698.70	8.53	26.54	27.88	2.00	2.00	0.00
800.00	10.00	72.19	797.47	13.31	41.44	43.52	2.00	2.00	0.00
802.57	10.05	72.19	800.00	13.45	41.86	43.97	2.00	2.00	0.00
8-5/8									
900.00	12.00	72.19	895.62	19.14	59.60	62.60	2.00	2.00	0.00
974.29	13.49	72.19	968.09	24.15	75.21	78.99	2.00	2.00	0.00
1,000.00	13.49	72.19	993.08	25.99	80.91	84.98	0.00	0.00	0.00
1,100.00	13.49	72.19	1,090.33	33.12	103.12	108.30	0.00	0.00	0.00
1,200.00	13.49	72.19	1,187.57	40.25	125.32	131.63	0.00	0.00	0.00
1,300.00	13.49	72.19	1,284.81	47.38	147.52	154.95	0.00	0.00	0.00
1,400.00	13.49	72.19	1,382.05	54.51	169.73	178.27	0.00	0.00	0.00
1,500.00	13.49	72.19	1,479.30	61.64	191.93	201.59	0.00	0.00	0.00
1,600.00	13.49	72.19	1,576.54	68.78	214.13	224.91	0.00	0.00	0.00
1,700.00	13.49	72.19	1,673.78	75.91	236.34	248.23	0.00	0.00	0.00
1,800.00	13.49	72.19	1,771.02	83.04	258.54	271.55	0.00	0.00	0.00
1,900.00	13.49	72.19	1,868.27	90.17	280.74	294.87	0.00	0.00	0.00
2,000.00	13.49	72.19	1,965.51	97.30	302.95	318.19	0.00	0.00	0.00
2,100.00	13.49	72.19	2,062.75	104.43	325.15	341.51	0.00	0.00	0.00
2,200.00	13.49	72.19	2,160.00	111.56	347.35	364.83	0.00	0.00	0.00
2,300.00	13.49	72.19	2,257.24	118.70	369.56	388.15	0.00	0.00	0.00
2,400.00	13.49	72.19	2,354.48	125.83	391.76	411.47	0.00	0.00	0.00
2,500.00	13.49	72.19	2,451.72	132.96	413.96	434.79	0.00	0.00	0.00
2,600.00	13.49	72.19	2,548.97	140.09	436.17	458.11	0.00	0.00	0.00
2,700.00	13.49	72.19	2,646.21	147.22	458.37	481.43	0.00	0.00	0.00
2,800.00	13.49	72.19	2,743.45	154.35	480.58	504.75	0.00	0.00	0.00
2,900.00	13.49	72.19	2,840.69	161.48	502.78	528.08	0.00	0.00	0.00
3,000.00	13.49	72.19	2,937.94	168.62	524.98	551.40	0.00	0.00	0.00
3,100.00	13.49	72.19	3,035.18	175.75	547.19	574.72	0.00	0.00	0.00
3,200.00	13.49	72.19	3,132.42	182.88	569.39	598.04	0.00	0.00	0.00
3,300.00	13.49	72.19	3,229.67	190.01	591.59	621.36	0.00	0.00	0.00
3,400.00	13.49	72.19	3,326.91	197.14	613.80	644.68	0.00	0.00	0.00
3,500.00	13.49	72.19	3,424.15	204.27	636.00	668.00	0.00	0.00	0.00
3,600.00	13.49	72.19	3,521.39	211.40	658.20	691.32	0.00	0.00	0.00
3,700.00	13.49	72.19	3,618.64	218.54	680.41	714.64	0.00	0.00	0.00
3,800.00	13.49	72.19	3,715.88	225.67	702.61	737.96	0.00	0.00	0.00
3,900.00	13.49	72.19	3,813.12	232.80	724.81	761.28	0.00	0.00	0.00
4,000.00	13.49	72.19	3,910.36	239.93	747.02	784.60	0.00	0.00	0.00
4,100.00	13.49	72.19	4,007.61	247.06	769.22	807.92	0.00	0.00	0.00
4,200.00	13.49	72.19	4,104.85	254.19	791.42	831.24	0.00	0.00	0.00
4,212.49	13.49	72.19	4,117.00	255.08	794.20	834.16	0.00	0.00	0.00
PK Depth									
4,300.00	13.49	72.19	4,202.09	261.32	813.63	854.56	0.00	0.00	0.00
4,400.00	13.49	72.19	4,299.34	268.45	835.83	877.88	0.00	0.00	0.00
4,500.00	13.49	72.19	4,396.58	275.59	858.03	901.20	0.00	0.00	0.00
4,592.99	13.49	72.19	4,487.00	282.22	878.68	922.89	0.00	0.00	0.00
SX Depth									

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Site:	WELD_FEHRN 17-32 PAD	North Reference:	True
Well:	FEHRN 41-32	Survey Calculation Method:	Minimum Curvature
Wellbore:	FEHRN 41-32		
Design:	FEHRN 41-32 (wp01)		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
4,600.00	13.49	72.19	4,493.82	282.72	880.24	924.53	0.00	0.00	0.00
4,700.00	13.49	72.19	4,591.06	289.85	902.44	947.85	0.00	0.00	0.00
4,800.00	13.49	72.19	4,688.31	296.98	924.64	971.17	0.00	0.00	0.00
4,887.58	13.49	72.19	4,773.47	303.23	944.09	991.59	0.00	0.00	0.00
4,900.00	13.27	72.19	4,785.55	304.10	946.83	994.46	1.75	-1.75	0.00
5,000.00	11.52	72.19	4,883.22	310.67	967.26	1,015.93	1.75	-1.75	0.00
5,100.00	9.77	72.19	4,981.50	316.32	984.84	1,034.39	1.75	-1.75	0.00
5,200.00	8.02	72.19	5,080.29	321.04	999.56	1,049.85	1.75	-1.75	0.00
5,300.00	6.27	72.19	5,179.51	324.85	1,011.40	1,062.29	1.75	-1.75	0.00
5,400.00	4.52	72.19	5,279.06	327.72	1,020.35	1,071.69	1.75	-1.75	0.00
5,500.00	2.77	72.19	5,378.86	329.66	1,026.40	1,078.04	1.75	-1.75	0.00
5,600.00	1.02	72.19	5,478.80	330.67	1,029.55	1,081.35	1.75	-1.75	0.00
5,658.20	0.00	0.00	5,537.00	330.83	1,030.04	1,081.86	1.75	-1.75	0.00
5,700.00	0.00	0.00	5,578.80	330.83	1,030.04	1,081.86	0.00	0.00	0.00
5,800.00	0.00	0.00	5,678.80	330.83	1,030.04	1,081.86	0.00	0.00	0.00
5,900.00	0.00	0.00	5,778.80	330.83	1,030.04	1,081.86	0.00	0.00	0.00
6,000.00	0.00	0.00	5,878.80	330.83	1,030.04	1,081.86	0.00	0.00	0.00
6,100.00	0.00	0.00	5,978.80	330.83	1,030.04	1,081.86	0.00	0.00	0.00
6,200.00	0.00	0.00	6,078.80	330.83	1,030.04	1,081.86	0.00	0.00	0.00
6,300.00	0.00	0.00	6,178.80	330.83	1,030.04	1,081.86	0.00	0.00	0.00
6,400.00	0.00	0.00	6,278.80	330.83	1,030.04	1,081.86	0.00	0.00	0.00
6,500.00	0.00	0.00	6,378.80	330.83	1,030.04	1,081.86	0.00	0.00	0.00
6,600.00	0.00	0.00	6,478.80	330.83	1,030.04	1,081.86	0.00	0.00	0.00
6,700.00	0.00	0.00	6,578.80	330.83	1,030.04	1,081.86	0.00	0.00	0.00
6,800.00	0.00	0.00	6,678.80	330.83	1,030.04	1,081.86	0.00	0.00	0.00
6,900.00	0.00	0.00	6,778.80	330.83	1,030.04	1,081.86	0.00	0.00	0.00
7,000.00	0.00	0.00	6,878.80	330.83	1,030.04	1,081.86	0.00	0.00	0.00
7,100.00	0.00	0.00	6,978.80	330.83	1,030.04	1,081.86	0.00	0.00	0.00
7,200.00	0.00	0.00	7,078.80	330.83	1,030.04	1,081.86	0.00	0.00	0.00
7,253.20	0.00	0.00	7,132.00	330.83	1,030.04	1,081.86	0.00	0.00	0.00
NIO Depth									
7,300.00	0.00	0.00	7,178.80	330.83	1,030.04	1,081.86	0.00	0.00	0.00
7,400.00	0.00	0.00	7,278.80	330.83	1,030.04	1,081.86	0.00	0.00	0.00
7,500.00	0.00	0.00	7,378.80	330.83	1,030.04	1,081.86	0.00	0.00	0.00
7,578.20	0.00	0.00	7,457.00	330.83	1,030.04	1,081.86	0.00	0.00	0.00
CD Depth									
7,600.00	0.00	0.00	7,478.80	330.83	1,030.04	1,081.86	0.00	0.00	0.00
7,668.20	0.00	0.00	7,547.00	330.83	1,030.04	1,081.86	0.00	0.00	0.00
GH Depth									
7,700.00	0.00	0.00	7,578.80	330.83	1,030.04	1,081.86	0.00	0.00	0.00
7,800.00	0.00	0.00	7,678.80	330.83	1,030.04	1,081.86	0.00	0.00	0.00
7,900.00	0.00	0.00	7,778.80	330.83	1,030.04	1,081.86	0.00	0.00	0.00
8,000.00	0.00	0.00	7,878.80	330.83	1,030.04	1,081.86	0.00	0.00	0.00
8,018.20	0.00	0.00	7,897.00	330.83	1,030.04	1,081.86	0.00	0.00	0.00
J Depth									
8,100.00	0.00	0.00	7,978.80	330.83	1,030.04	1,081.86	0.00	0.00	0.00
8,158.20	0.00	0.00	8,037.00	330.83	1,030.04	1,081.86	0.00	0.00	0.00
FEHRN 41-32 BHL									

Database:	edm5000p	Local Co-ordinate Reference:	Well FEHRN 41-32
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Well:	FEHRN 41-32	Survey Calculation Method:	Minimum Curvature
Wellbore:	FEHRN 41-32		
Design:	FEHRN 41-32 (wp01)		

Design Targets

Target Name

- hit/miss target	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N-S (ft)	+E-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
FEHRN 41-32 BHL - plan hits target center - Point	0.00	0.00	8,037.00	330.83	1,030.04	1,279,422.95	3,198,116.03	40.098236	-104.791803

Casing Points

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")
802.57	800.00	8-5/8	8-5/8	11

Formations

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
4,212.49	4,117.00	PK Depth			
4,592.99	4,487.00	SX Depth			
7,253.20	7,132.00	NIO Depth			
7,578.20	7,457.00	CD Depth			
7,668.20	7,547.00	GH Depth			
8,018.20	7,897.00	J Depth			