

US ROCKIES REGION PLANNING

COLORADO NORTHERN ZONE - 83

WELD_NORTHGLENN STATE PAD

Northglenn State 15-36

Northglenn State 15-36

Plan: Northglenn State 15-36 (wp01)

Standard Planning Report

25 April, 2011



Project: COLORADO NORTHERN ZONE - 83
Site: WELD_NORTHGLENN STATE PAD
Well: Northglenn State 15-36
Wellbore: Northglenn State 15-36
Section:
SHL:
Design: Northglenn State 15-36 (wp01)
Latitude: 40.003710
Longitude: -104.951437
GL: 5120.00
KB: WELL @ 5120.00ft (Original Well Elev)

FORMATION TOP DETAILS

TVDPath	MDPath	Formation
4096.00	4204.91	PK Depth
4846.00	4954.91	SX Depth
7456.00	7564.91	NIO Depth
7902.00	8010.91	CD Depth
7972.00	8080.91	GH Depth
8323.00	8431.91	J Depth



Azimuths to True North
Magnetic North: 8.95°

Magnetic Field
Strength: 52916.4snT
Dip Angle: 66.70°
Date: 4/18/2011
Model: IGRF2010

WELL DETAILS: Northglenn State 15-36

+N/-S	+E/-W	Northing	Ground Level: Easting	5120.00 Latitude	Longitude	Slot
0.00	0.00	1244673.60	3153672.55	40.003710	-104.951437	

CASING DETAILS

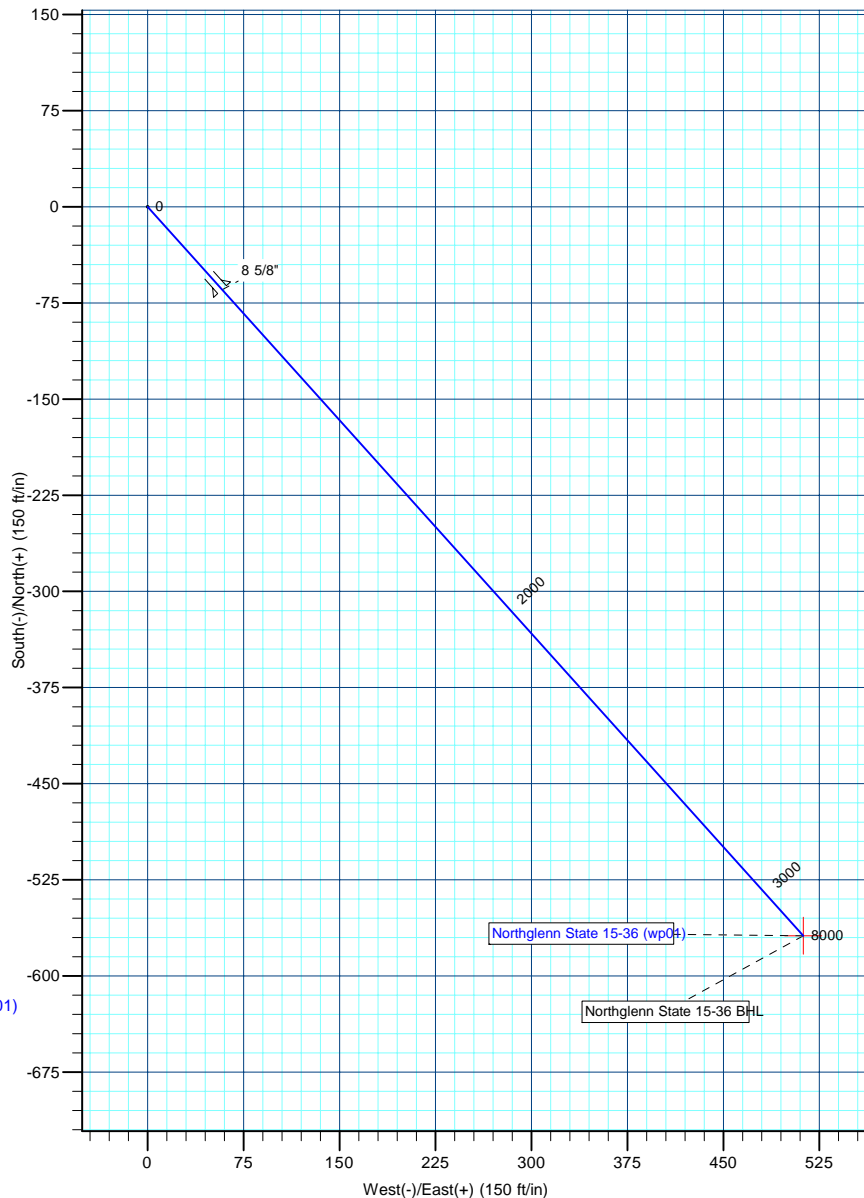
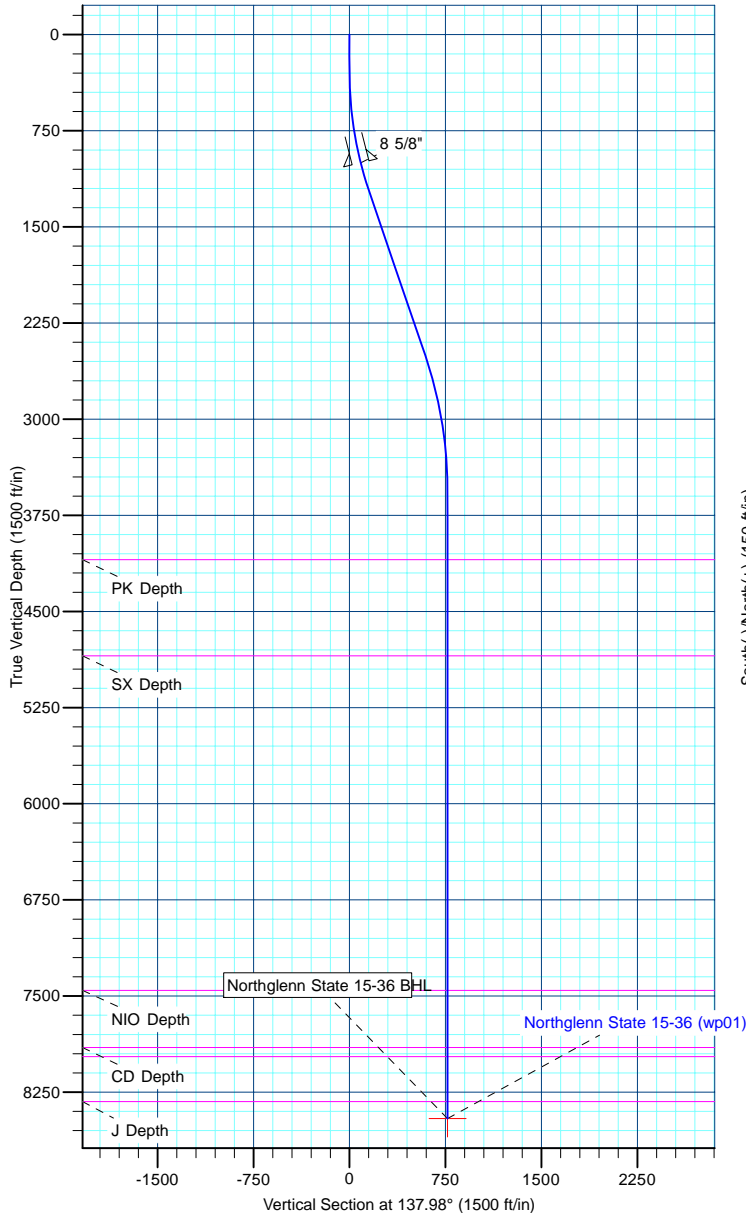
TVD	MD	Name	Size
1000.00	1007.16	8 5/8"	8-5/8

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape Point
Northglenn State 15-36 BHL	8456.00	-568.61	512.38	1244108.17	3154188.45	40.002149	-104.949608	

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
1245.95	18.92	137.98	1228.86	-114.97	103.60	2.00	137.98	154.76
2583.82	18.92	137.98	2494.45	-437.22	393.98	0.00	0.00	588.54
3664.91	0.00	0.00	3556.00	-568.61	512.38	1.75	180.00	765.41
8564.91	0.00	0.00	8456.00	-568.61	512.38	0.00	0.00	765.41



Database:	edm5000p	Local Co-ordinate Reference:	Well Northglenn State 15-36
Company:	US ROCKIES REGION PLANNING	TVD Reference:	WELL @ 5120.00ft (Original Well Elev)
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	WELL @ 5120.00ft (Original Well Elev)
Site:	WELD_NORTHGLENN STATE PAD	North Reference:	True
Well:	Northglenn State 15-36	Survey Calculation Method:	Minimum Curvature
Wellbore:	Northglenn State 15-36		
Design:	Northglenn State 15-36 (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_NORTHGLENN STATE PAD			
Site Position:		Northing:	1,244,823.33 ft	Latitude:	40.004121
From:	Lat/Long	Easting:	3,153,671.35 ft	Longitude:	-104.951438
Position Uncertainty:	0.00 ft	Slot Radius:	0 "	Grid Convergence:	0.35

Well	Northglenn State 15-36					
Well Position	+N-S	-149.73 ft	Northing:	1,244,673.60 ft	Latitude:	40.003710
	+E-W	0.28 ft	Easting:	3,153,672.55 ft	Longitude:	-104.951437
Position Uncertainty		0.00 ft	Wellhead Elevation:		Ground Level:	5,120.00 ft

Wellbore	Northglenn State 15-36				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	4/18/2011	8.95	66.70	52,916

Design	Northglenn State 15-36 (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	137.98

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	
1,245.95	18.92	137.98	1,228.86	-114.97	103.60	2.00	2.00	0.00	137.98	
2,583.82	18.92	137.98	2,494.45	-437.22	393.98	0.00	0.00	0.00	0.00	
3,664.91	0.00	0.00	3,556.00	-568.61	512.38	1.75	-1.75	0.00	180.00	
8,564.91	0.00	0.00	8,456.00	-568.61	512.38	0.00	0.00	0.00	0.00	Northglenn State 15

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Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	WELL @ 5120.00ft (Original Well Elev)
Site:	WELD_NORTHGLENN STATE PAD	North Reference:	True
Well:	Northglenn State 15-36	Survey Calculation Method:	Minimum Curvature
Wellbore:	Northglenn State 15-36		
Design:	Northglenn State 15-36 (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	137.98	399.98	-1.30	1.17	1.75	2.00	2.00	0.00
500.00	4.00	137.98	499.84	-5.18	4.67	6.98	2.00	2.00	0.00
600.00	6.00	137.98	599.45	-11.66	10.51	15.69	2.00	2.00	0.00
700.00	8.00	137.98	698.70	-20.71	18.66	27.88	2.00	2.00	0.00
800.00	10.00	137.98	797.47	-32.33	29.13	43.52	2.00	2.00	0.00
900.00	12.00	137.98	895.62	-46.51	41.91	62.60	2.00	2.00	0.00
1,000.00	14.00	137.98	993.06	-63.22	56.97	85.10	2.00	2.00	0.00
1,007.16	14.14	137.98	1,000.00	-64.51	58.13	86.84	2.00	2.00	0.00
8 5/8"									
1,100.00	16.00	137.98	1,089.64	-82.44	74.29	110.98	2.00	2.00	0.00
1,200.00	18.00	137.98	1,185.27	-104.16	93.86	140.21	2.00	2.00	0.00
1,245.95	18.92	137.98	1,228.86	-114.97	103.60	154.76	2.00	2.00	0.00
1,300.00	18.92	137.98	1,279.98	-127.99	115.33	172.29	0.00	0.00	0.00
1,400.00	18.92	137.98	1,374.58	-152.08	137.04	204.71	0.00	0.00	0.00
1,500.00	18.92	137.98	1,469.18	-176.16	158.74	237.13	0.00	0.00	0.00
1,600.00	18.92	137.98	1,563.78	-200.25	180.45	269.56	0.00	0.00	0.00
1,700.00	18.92	137.98	1,658.37	-224.34	202.15	301.98	0.00	0.00	0.00
1,800.00	18.92	137.98	1,752.97	-248.42	223.86	334.40	0.00	0.00	0.00
1,900.00	18.92	137.98	1,847.57	-272.51	245.56	366.83	0.00	0.00	0.00
2,000.00	18.92	137.98	1,942.17	-296.60	267.27	399.25	0.00	0.00	0.00
2,100.00	18.92	137.98	2,036.77	-320.68	288.97	431.67	0.00	0.00	0.00
2,200.00	18.92	137.98	2,131.36	-344.77	310.68	464.10	0.00	0.00	0.00
2,300.00	18.92	137.98	2,225.96	-368.86	332.38	496.52	0.00	0.00	0.00
2,400.00	18.92	137.98	2,320.56	-392.94	354.09	528.94	0.00	0.00	0.00
2,500.00	18.92	137.98	2,415.16	-417.03	375.79	561.37	0.00	0.00	0.00
2,583.82	18.92	137.98	2,494.45	-437.22	393.98	588.54	0.00	0.00	0.00
2,600.00	18.64	137.98	2,509.77	-441.09	397.47	593.75	1.75	-1.75	0.00
2,700.00	16.89	137.98	2,605.00	-463.75	417.89	624.25	1.75	-1.75	0.00
2,800.00	15.14	137.98	2,701.11	-484.24	436.35	651.84	1.75	-1.75	0.00
2,900.00	13.39	137.98	2,798.03	-502.54	452.84	676.47	1.75	-1.75	0.00
3,000.00	11.64	137.98	2,895.65	-518.63	467.34	698.13	1.75	-1.75	0.00
3,100.00	9.89	137.98	2,993.89	-532.50	479.84	716.80	1.75	-1.75	0.00
3,200.00	8.14	137.98	3,092.65	-544.13	490.33	732.46	1.75	-1.75	0.00
3,300.00	6.39	137.98	3,191.84	-553.52	498.79	745.10	1.75	-1.75	0.00
3,400.00	4.64	137.98	3,291.38	-560.66	505.21	754.70	1.75	-1.75	0.00
3,500.00	2.89	137.98	3,391.16	-565.53	509.61	761.26	1.75	-1.75	0.00
3,600.00	1.14	137.98	3,491.09	-568.14	511.95	764.77	1.75	-1.75	0.00
3,664.91	0.00	0.00	3,556.00	-568.61	512.38	765.41	1.75	-1.75	0.00
3,700.00	0.00	0.00	3,591.09	-568.61	512.38	765.41	0.00	0.00	0.00
3,800.00	0.00	0.00	3,691.09	-568.61	512.38	765.41	0.00	0.00	0.00
3,900.00	0.00	0.00	3,791.09	-568.61	512.38	765.41	0.00	0.00	0.00
4,000.00	0.00	0.00	3,891.09	-568.61	512.38	765.41	0.00	0.00	0.00
4,100.00	0.00	0.00	3,991.09	-568.61	512.38	765.41	0.00	0.00	0.00
4,200.00	0.00	0.00	4,091.09	-568.61	512.38	765.41	0.00	0.00	0.00
4,204.91	0.00	0.00	4,096.00	-568.61	512.38	765.41	0.00	0.00	0.00
PK Depth									
4,300.00	0.00	0.00	4,191.09	-568.61	512.38	765.41	0.00	0.00	0.00
4,400.00	0.00	0.00	4,291.09	-568.61	512.38	765.41	0.00	0.00	0.00
4,500.00	0.00	0.00	4,391.09	-568.61	512.38	765.41	0.00	0.00	0.00
4,600.00	0.00	0.00	4,491.09	-568.61	512.38	765.41	0.00	0.00	0.00

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Well:	Northglenn State 15-36	Survey Calculation Method:	Minimum Curvature
Wellbore:	Northglenn State 15-36		
Design:	Northglenn State 15-36 (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)
4,700.00	0.00	0.00	4,591.09	-568.61	512.38	765.41	0.00	0.00	0.00
4,800.00	0.00	0.00	4,691.09	-568.61	512.38	765.41	0.00	0.00	0.00
4,900.00	0.00	0.00	4,791.09	-568.61	512.38	765.41	0.00	0.00	0.00
4,954.91	0.00	0.00	4,846.00	-568.61	512.38	765.41	0.00	0.00	0.00
SX Depth									
5,000.00	0.00	0.00	4,891.09	-568.61	512.38	765.41	0.00	0.00	0.00
5,100.00	0.00	0.00	4,991.09	-568.61	512.38	765.41	0.00	0.00	0.00
5,200.00	0.00	0.00	5,091.09	-568.61	512.38	765.41	0.00	0.00	0.00
5,300.00	0.00	0.00	5,191.09	-568.61	512.38	765.41	0.00	0.00	0.00
5,400.00	0.00	0.00	5,291.09	-568.61	512.38	765.41	0.00	0.00	0.00
5,500.00	0.00	0.00	5,391.09	-568.61	512.38	765.41	0.00	0.00	0.00
5,600.00	0.00	0.00	5,491.09	-568.61	512.38	765.41	0.00	0.00	0.00
5,700.00	0.00	0.00	5,591.09	-568.61	512.38	765.41	0.00	0.00	0.00
5,800.00	0.00	0.00	5,691.09	-568.61	512.38	765.41	0.00	0.00	0.00
5,900.00	0.00	0.00	5,791.09	-568.61	512.38	765.41	0.00	0.00	0.00
6,000.00	0.00	0.00	5,891.09	-568.61	512.38	765.41	0.00	0.00	0.00
6,100.00	0.00	0.00	5,991.09	-568.61	512.38	765.41	0.00	0.00	0.00
6,200.00	0.00	0.00	6,091.09	-568.61	512.38	765.41	0.00	0.00	0.00
6,300.00	0.00	0.00	6,191.09	-568.61	512.38	765.41	0.00	0.00	0.00
6,400.00	0.00	0.00	6,291.09	-568.61	512.38	765.41	0.00	0.00	0.00
6,500.00	0.00	0.00	6,391.09	-568.61	512.38	765.41	0.00	0.00	0.00
6,600.00	0.00	0.00	6,491.09	-568.61	512.38	765.41	0.00	0.00	0.00
6,700.00	0.00	0.00	6,591.09	-568.61	512.38	765.41	0.00	0.00	0.00
6,800.00	0.00	0.00	6,691.09	-568.61	512.38	765.41	0.00	0.00	0.00
6,900.00	0.00	0.00	6,791.09	-568.61	512.38	765.41	0.00	0.00	0.00
7,000.00	0.00	0.00	6,891.09	-568.61	512.38	765.41	0.00	0.00	0.00
7,100.00	0.00	0.00	6,991.09	-568.61	512.38	765.41	0.00	0.00	0.00
7,200.00	0.00	0.00	7,091.09	-568.61	512.38	765.41	0.00	0.00	0.00
7,300.00	0.00	0.00	7,191.09	-568.61	512.38	765.41	0.00	0.00	0.00
7,400.00	0.00	0.00	7,291.09	-568.61	512.38	765.41	0.00	0.00	0.00
7,500.00	0.00	0.00	7,391.09	-568.61	512.38	765.41	0.00	0.00	0.00
7,564.91	0.00	0.00	7,456.00	-568.61	512.38	765.41	0.00	0.00	0.00
NIO Depth									
7,600.00	0.00	0.00	7,491.09	-568.61	512.38	765.41	0.00	0.00	0.00
7,700.00	0.00	0.00	7,591.09	-568.61	512.38	765.41	0.00	0.00	0.00
7,800.00	0.00	0.00	7,691.09	-568.61	512.38	765.41	0.00	0.00	0.00
7,900.00	0.00	0.00	7,791.09	-568.61	512.38	765.41	0.00	0.00	0.00
8,000.00	0.00	0.00	7,891.09	-568.61	512.38	765.41	0.00	0.00	0.00
8,010.91	0.00	0.00	7,902.00	-568.61	512.38	765.41	0.00	0.00	0.00
CD Depth									
8,080.91	0.00	0.00	7,972.00	-568.61	512.38	765.41	0.00	0.00	0.00
GH Depth									
8,100.00	0.00	0.00	7,991.09	-568.61	512.38	765.41	0.00	0.00	0.00
8,200.00	0.00	0.00	8,091.09	-568.61	512.38	765.41	0.00	0.00	0.00
8,300.00	0.00	0.00	8,191.09	-568.61	512.38	765.41	0.00	0.00	0.00
8,400.00	0.00	0.00	8,291.09	-568.61	512.38	765.41	0.00	0.00	0.00
8,431.91	0.00	0.00	8,323.00	-568.61	512.38	765.41	0.00	0.00	0.00
J Depth									
8,500.00	0.00	0.00	8,391.09	-568.61	512.38	765.41	0.00	0.00	0.00
8,564.91	0.00	0.00	8,456.00	-568.61	512.38	765.41	0.00	0.00	0.00
Northglenn State 15-36 BHL									

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Well:	Northglenn State 15-36	Survey Calculation Method:	Minimum Curvature
Wellbore:	Northglenn State 15-36		
Design:	Northglenn State 15-36 (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
- Shape									
Northglenn State 15-3	0.00	0.00	8,456.00	-568.61	512.38	1,244,108.17	3,154,188.45	40.002149	-104.949608
- plan hits target center									
- Point									

Casing Points

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")
1,007.16	1,000.00	8 5/8"	8-5/8	11

Formations

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
4,204.91	4,096.00	PK Depth		0.00	
4,954.91	4,846.00	SX Depth			
7,564.91	7,456.00	NIO Depth			
8,010.91	7,902.00	CD Depth			
8,080.91	7,972.00	GH Depth			
8,431.91	8,323.00	J Depth			