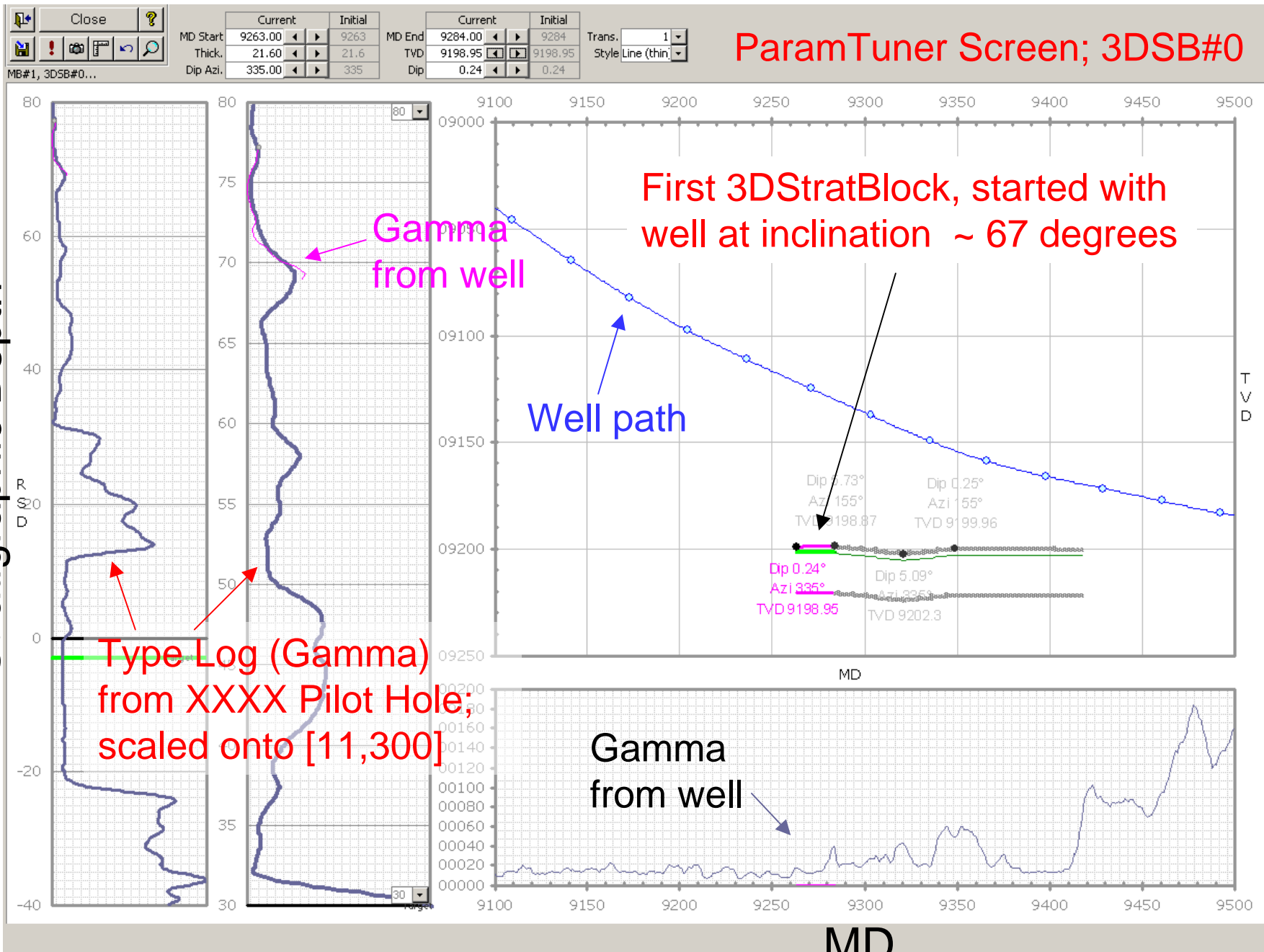


# Geosteering Example Using SES 3.11

10/16/2007

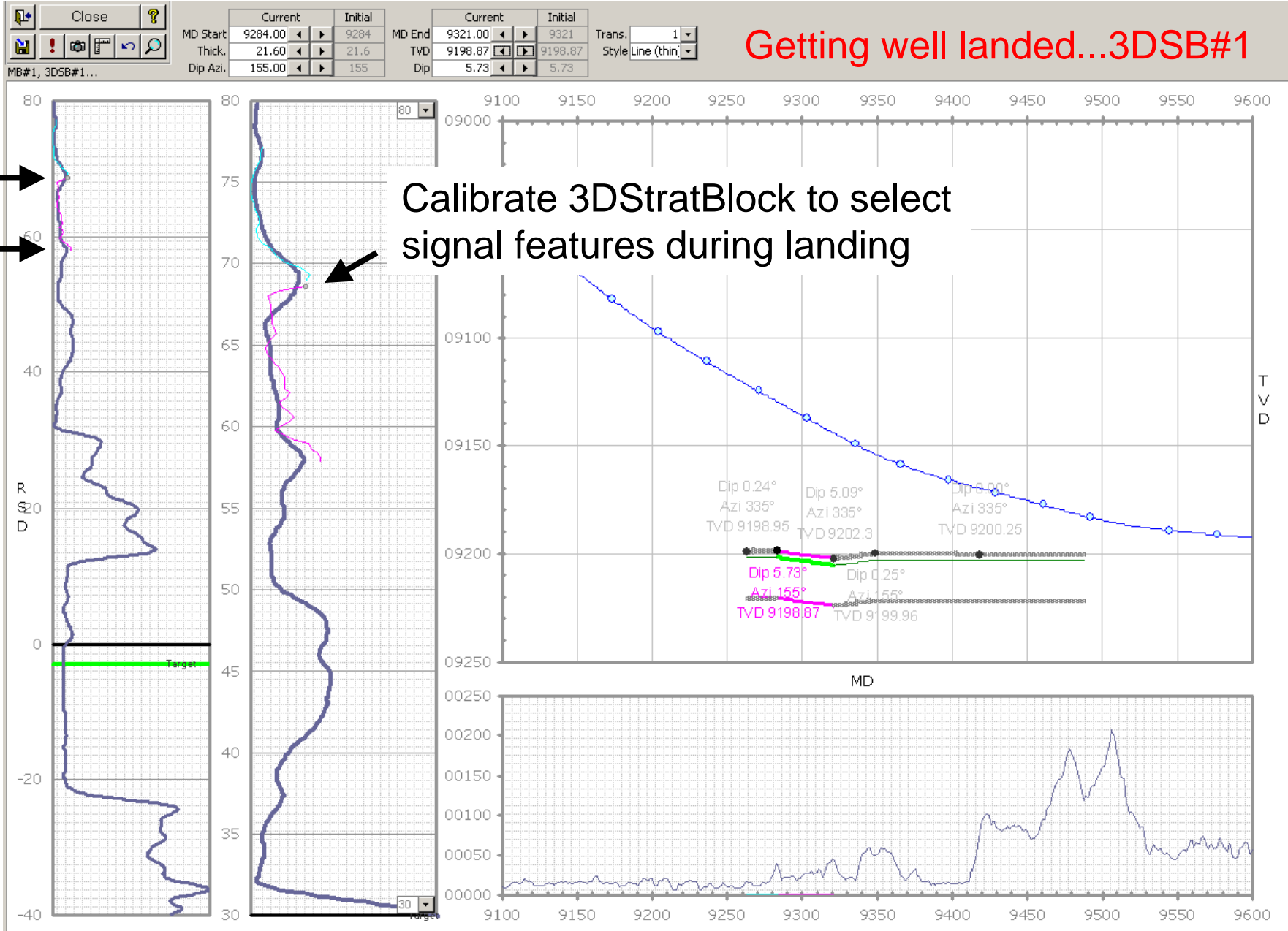
Stoner Engineering LLC

Stratigraphic Depth

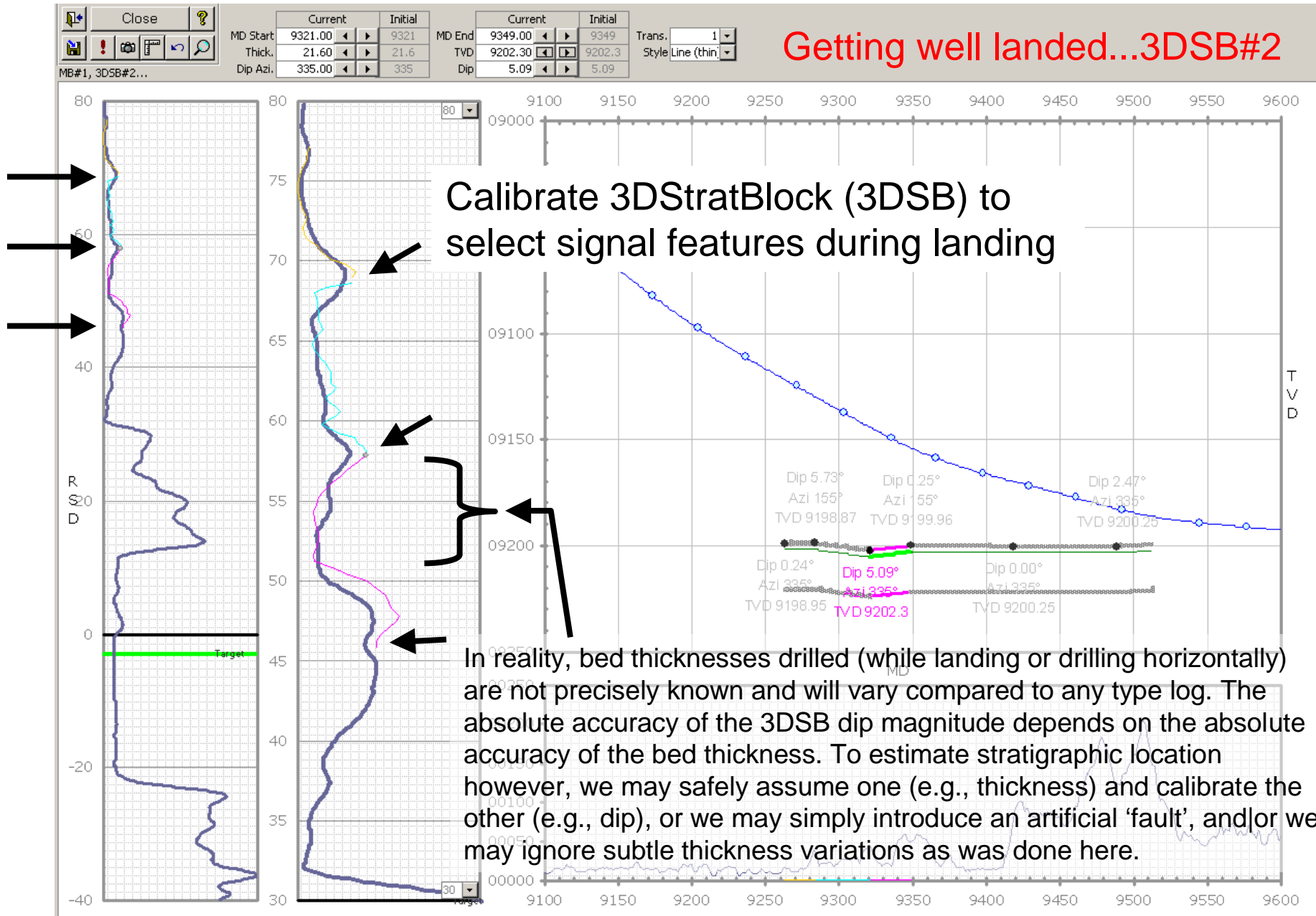


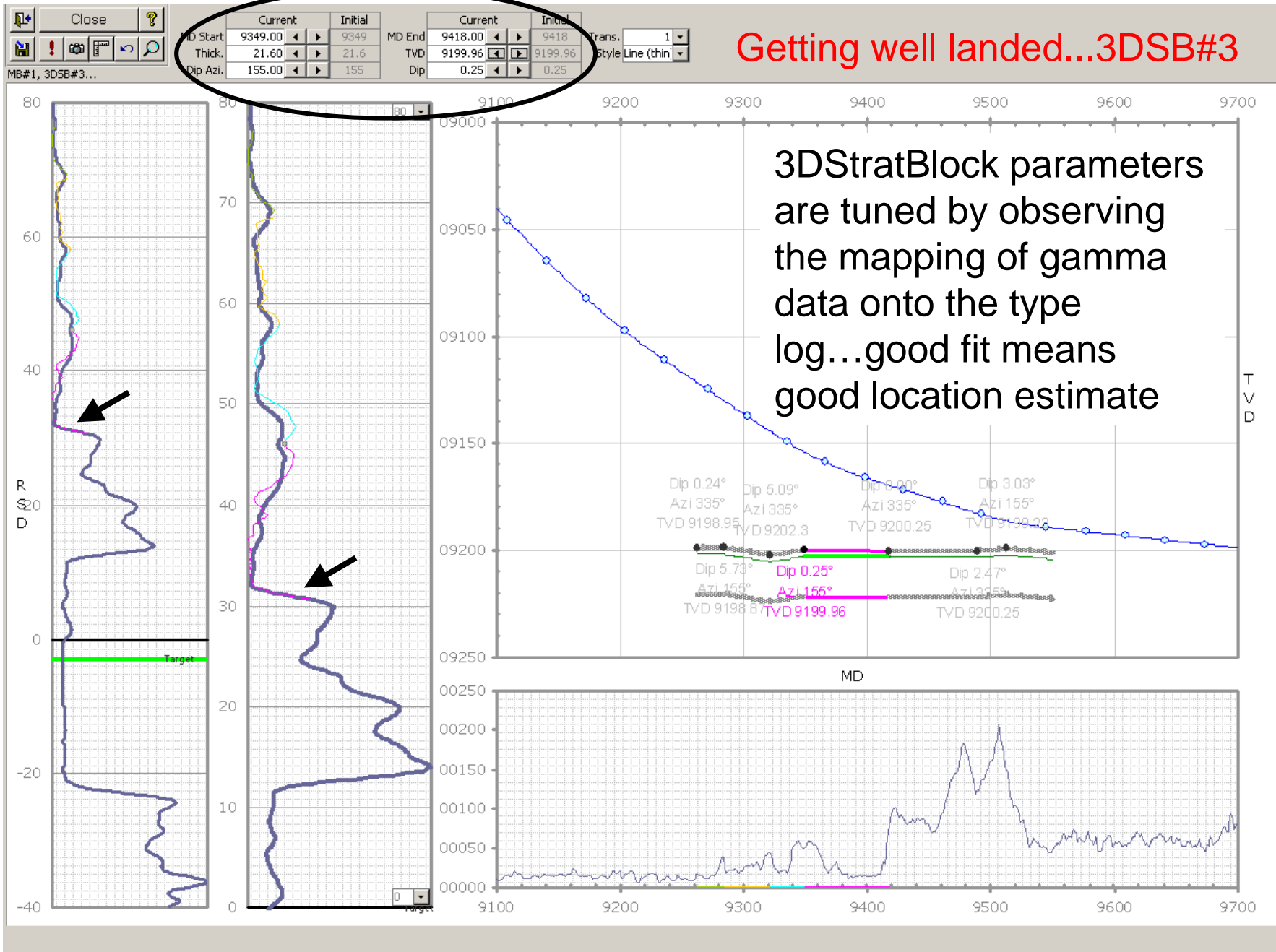
## Getting well landed...3DSB#1

Calibrate 3DStratBlock to select  
signal features during landing



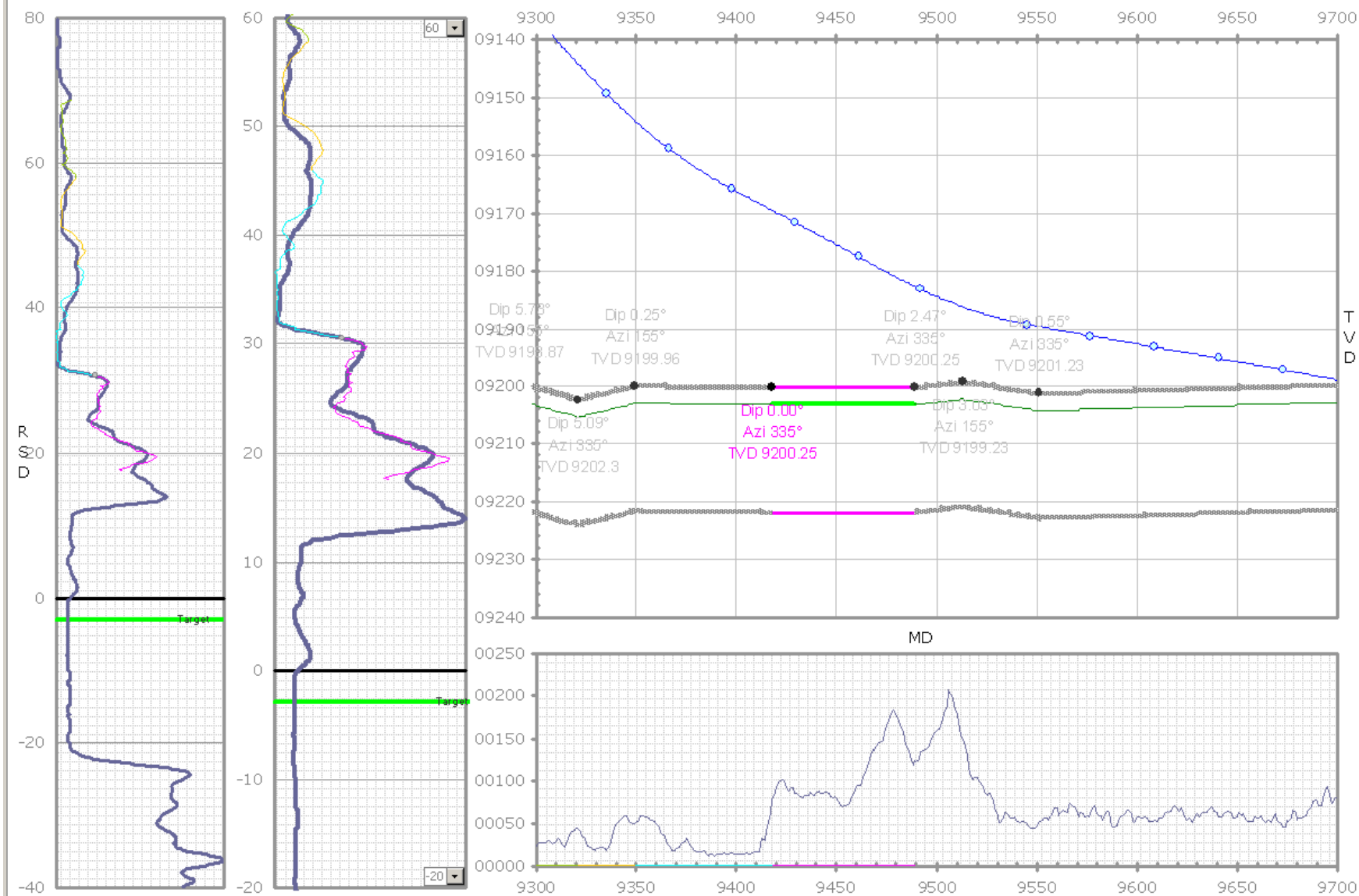
## Getting well landed...3DSB#2



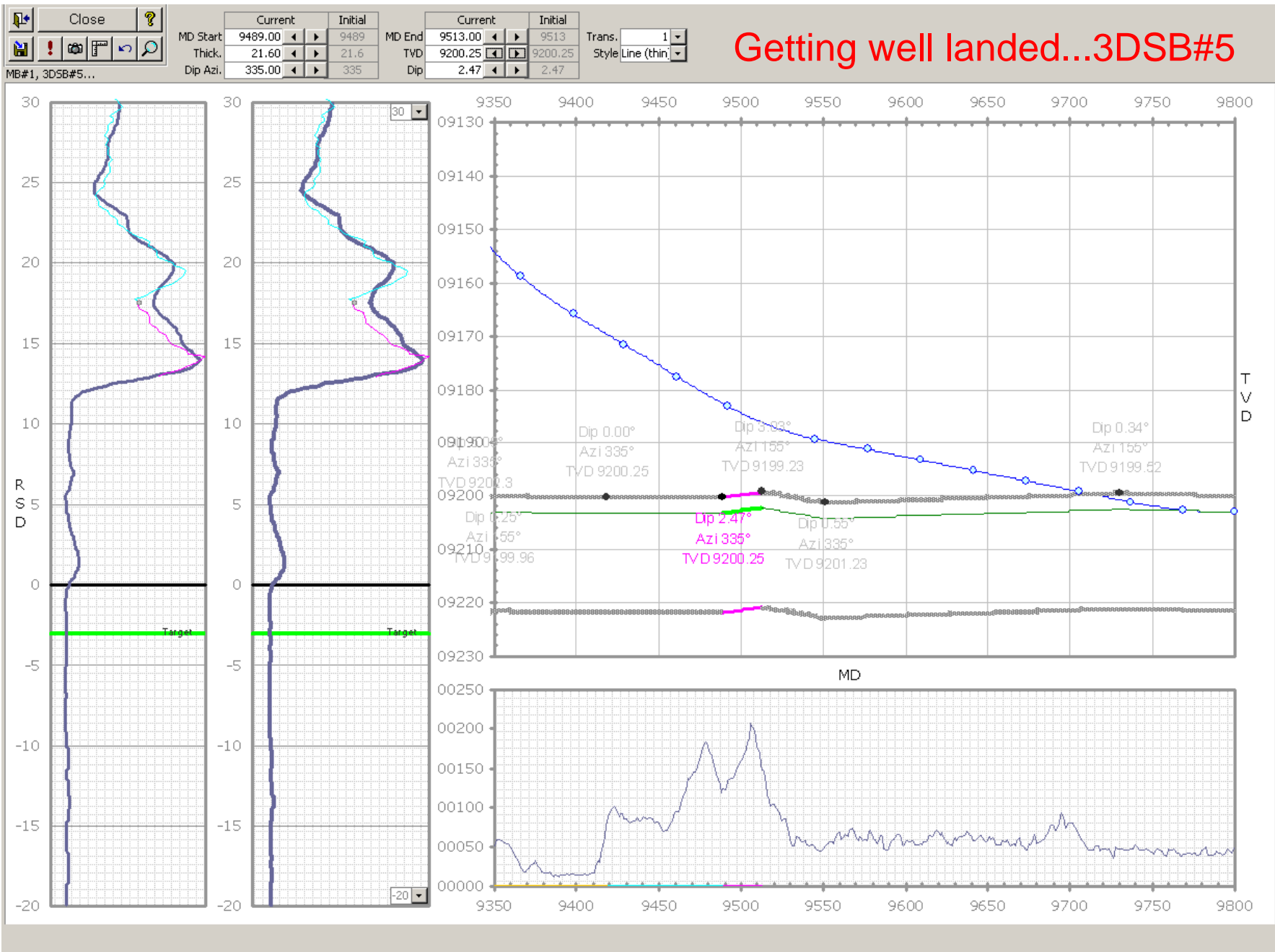


Current		Initial		Current		Initial	
MD Start	9418.00	◀ ▶	9418	MD End	9489.00	◀ ▶	9489
Thick.	21.60	◀ ▶	21.6	TVD	9200.25	◀ ▶	9200.25
Dip Azi.	335.00	◀ ▶	335	Dip	0.00	◀ ▶	0

Trans.  Style



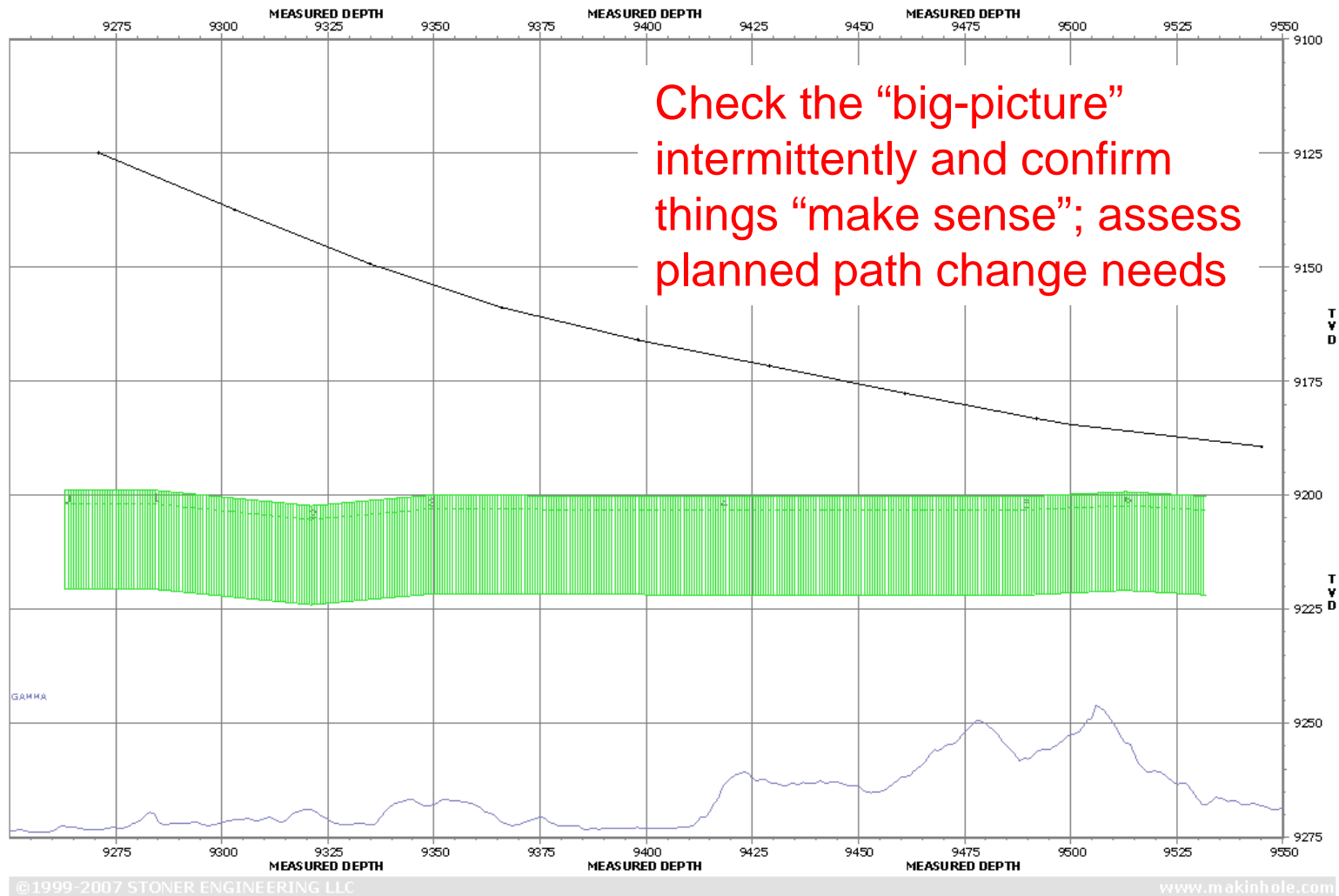


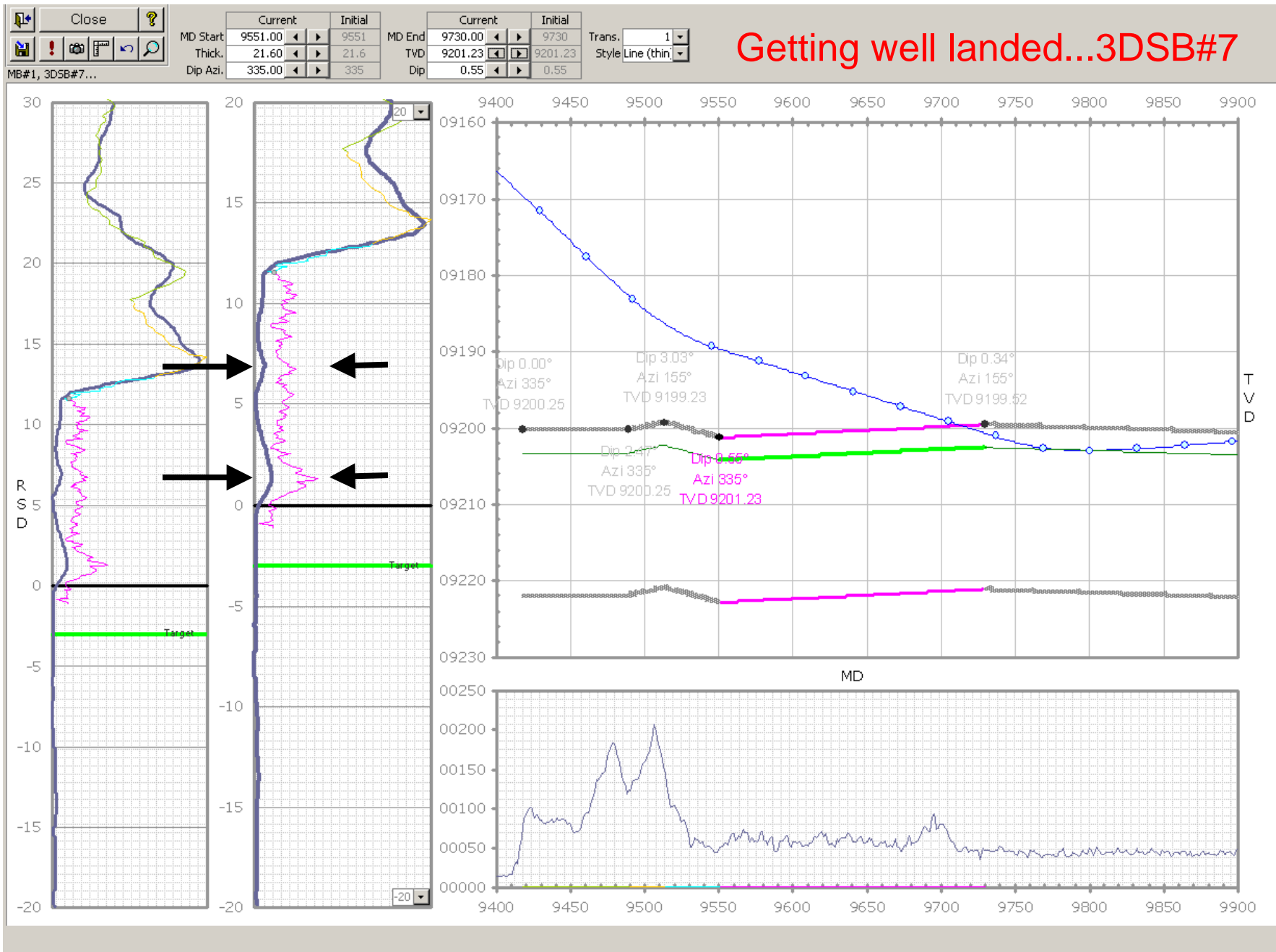




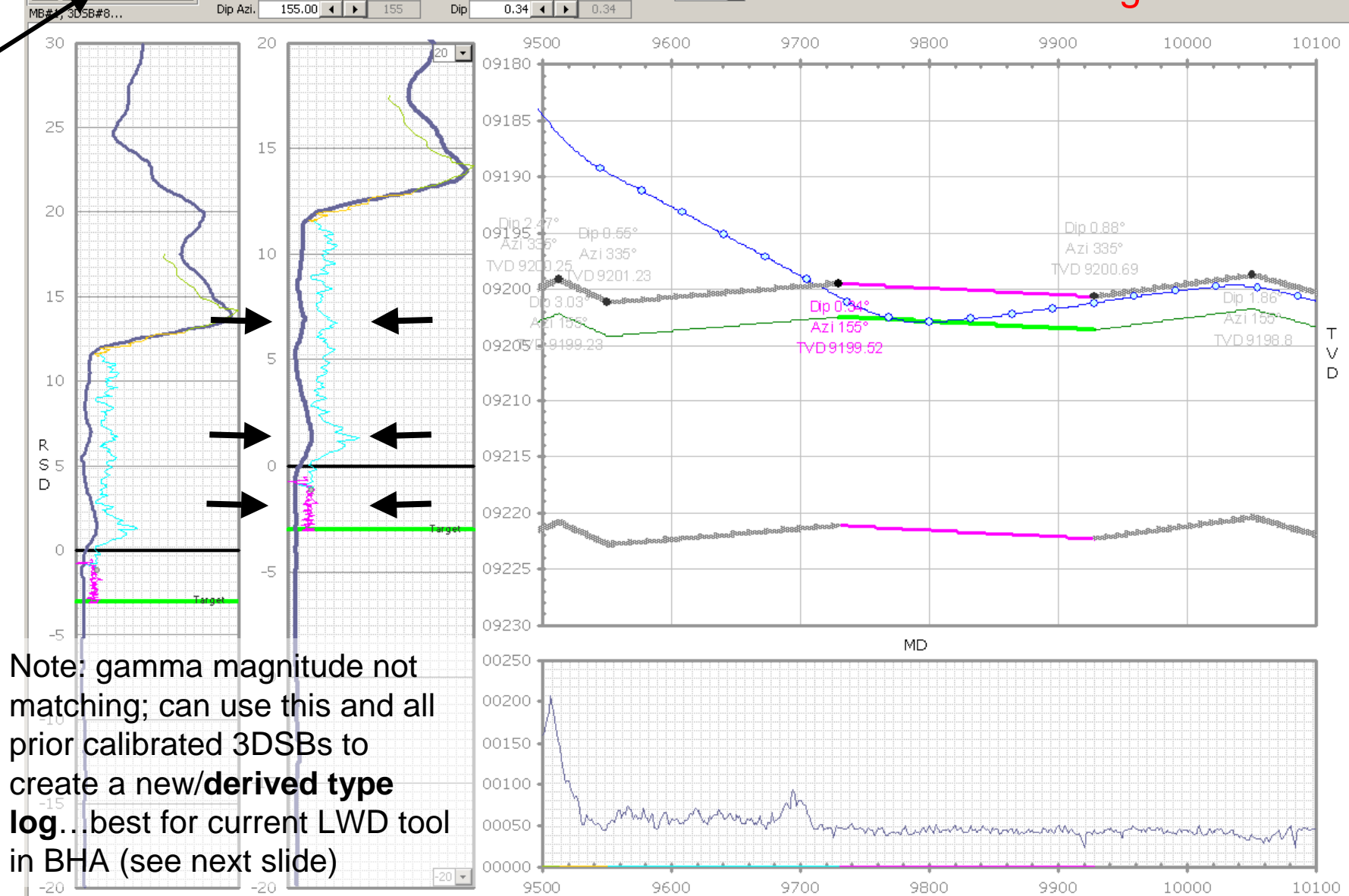


## Cross-section Screen





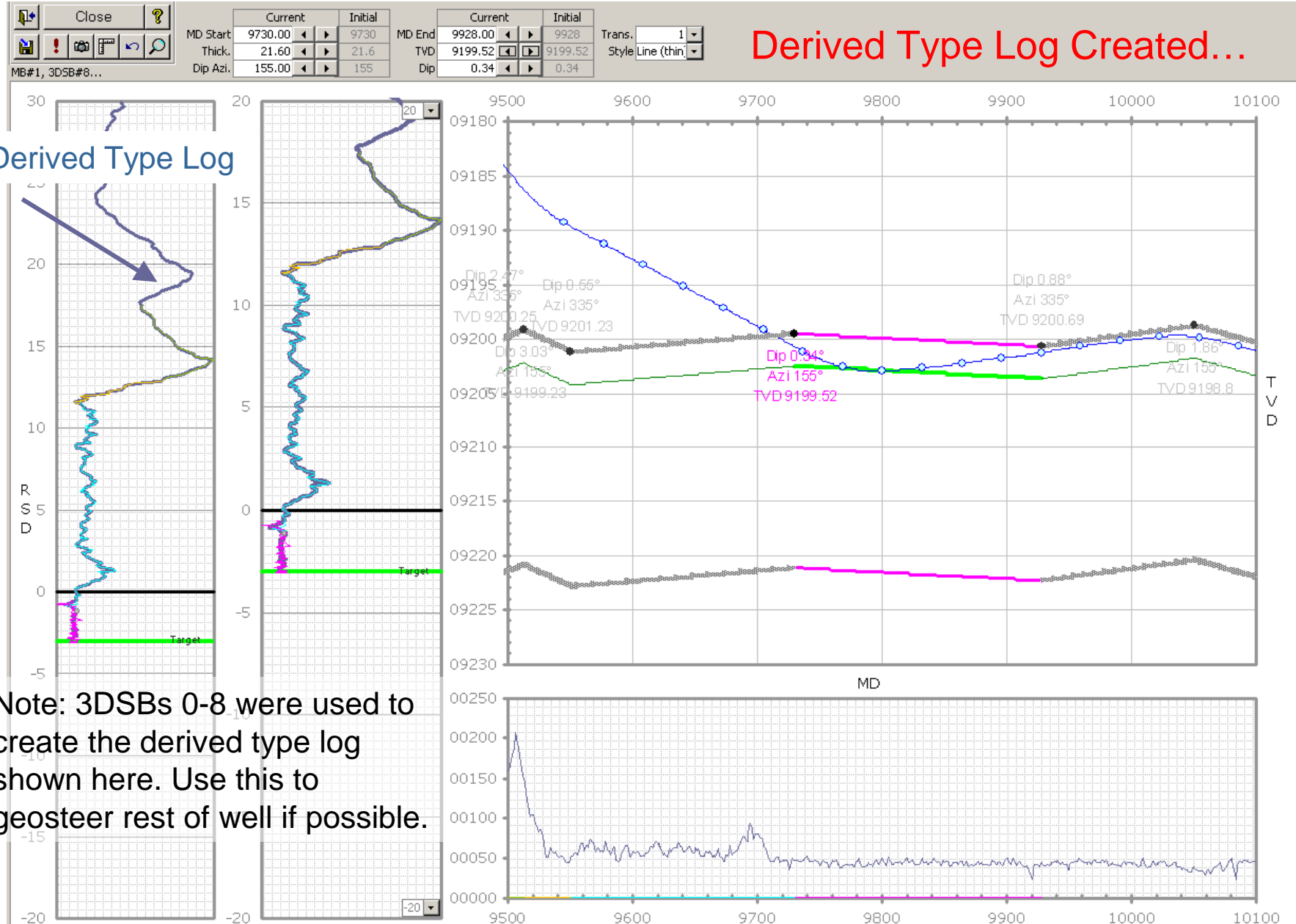
Well landed on target...3DSB#8

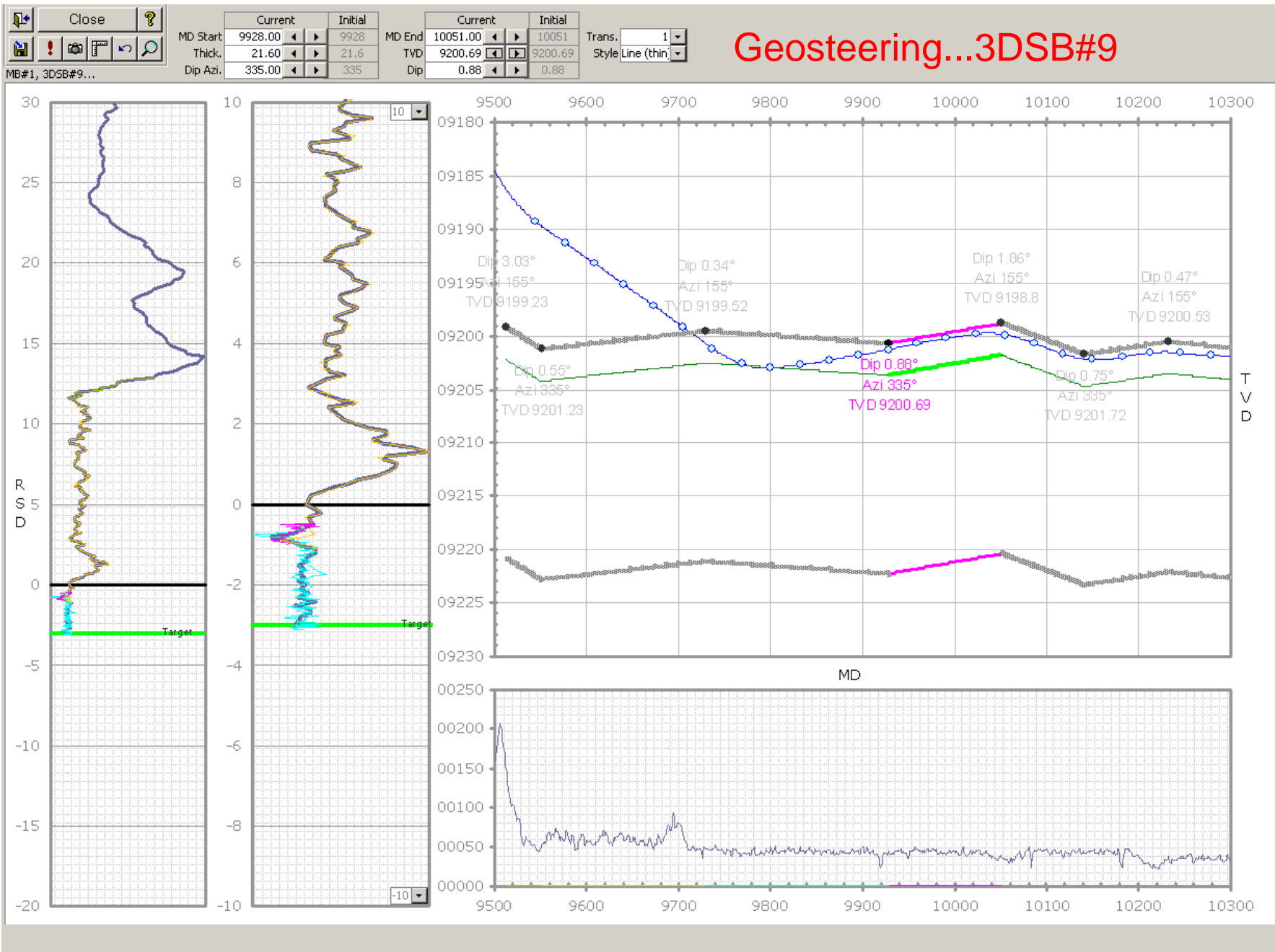


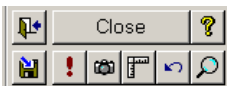
# Derived Type Log Created...

## Derived Type Log

Note: 3DSBs 0-8 were used to create the derived type log shown here. Use this to geosteer rest of well if possible.







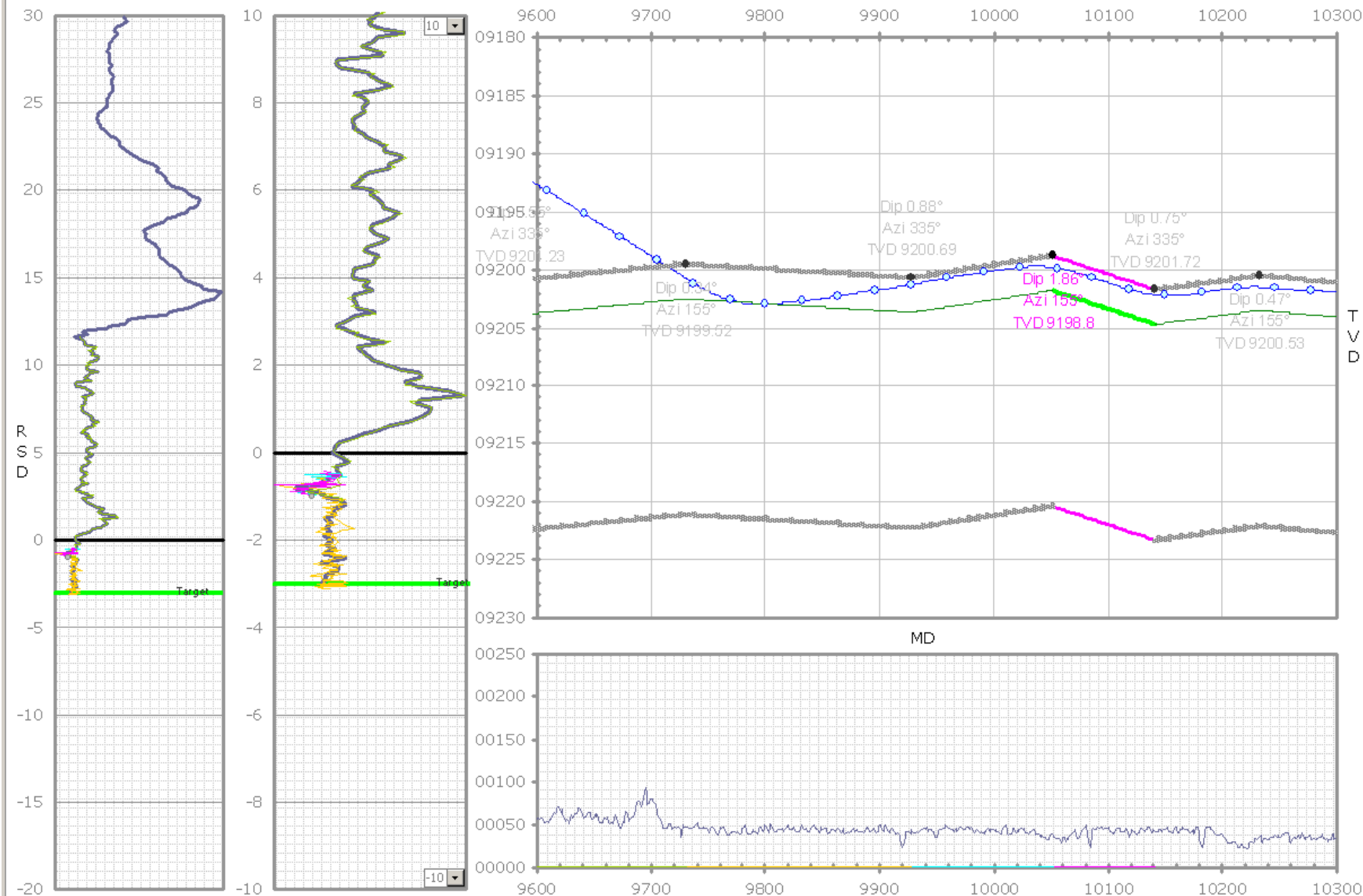
	Current	Initial
MD Start	10051.00	10051
Thick.	21.60	21.6
Dip Azi.	155.00	155

	Current	Initial
MD End	10141.00	10141
TVD	9198.80	9198.8
Dip	1.86	1.86

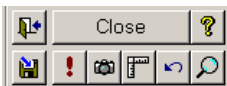
Trans. 1  
Style Line (thin)

# Geosteering...3DSB#10

MB#1, 3DSB#10...







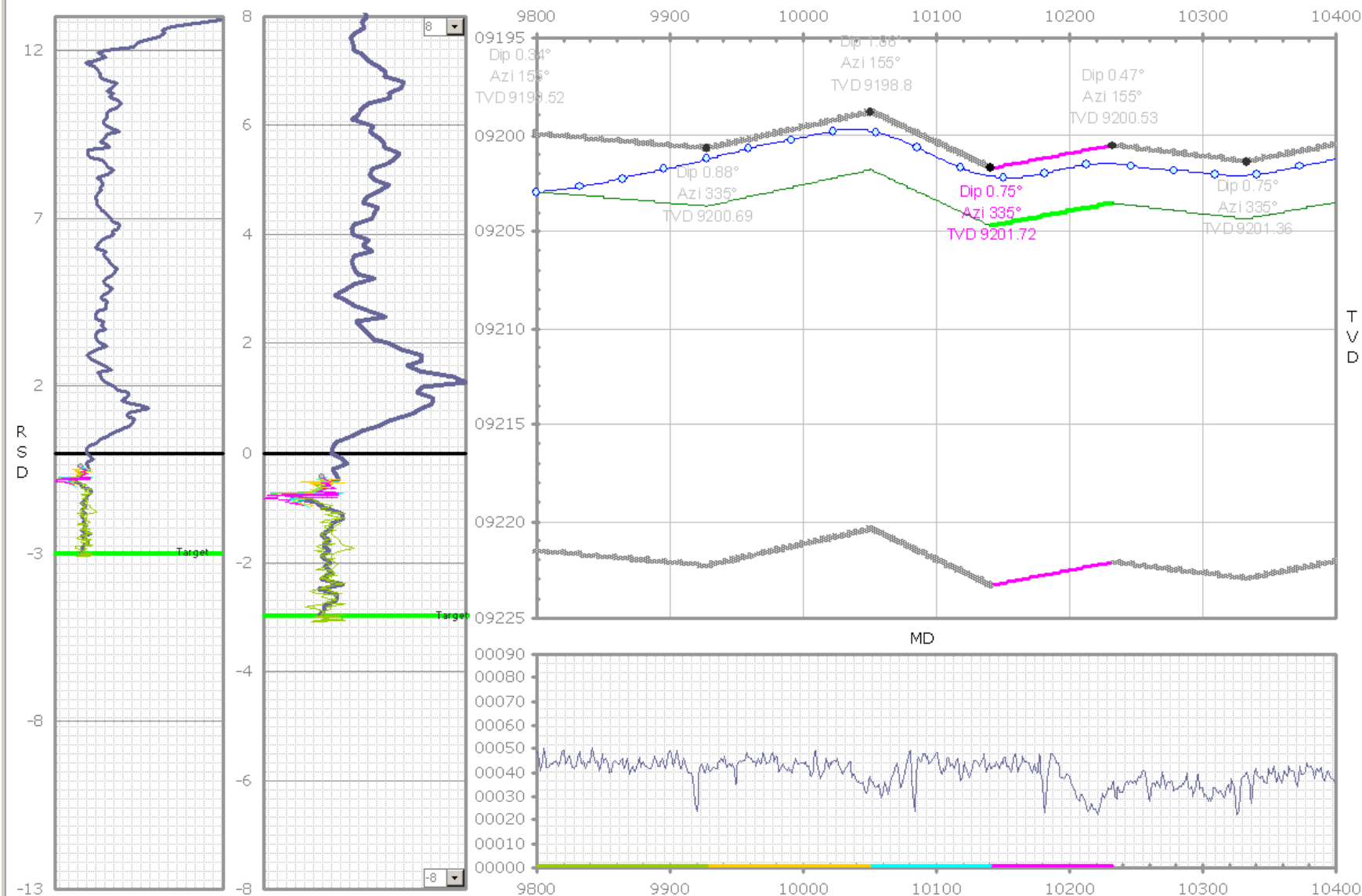
MD Start	Current	Initial
	10141.00	10141
Thick.	21.60	21.6
Dip Azi.	335.00	335

MD End	Current	Initial
	10232.00	10232
TVD	9201.72	9201.72
Dip	0.75	0.75

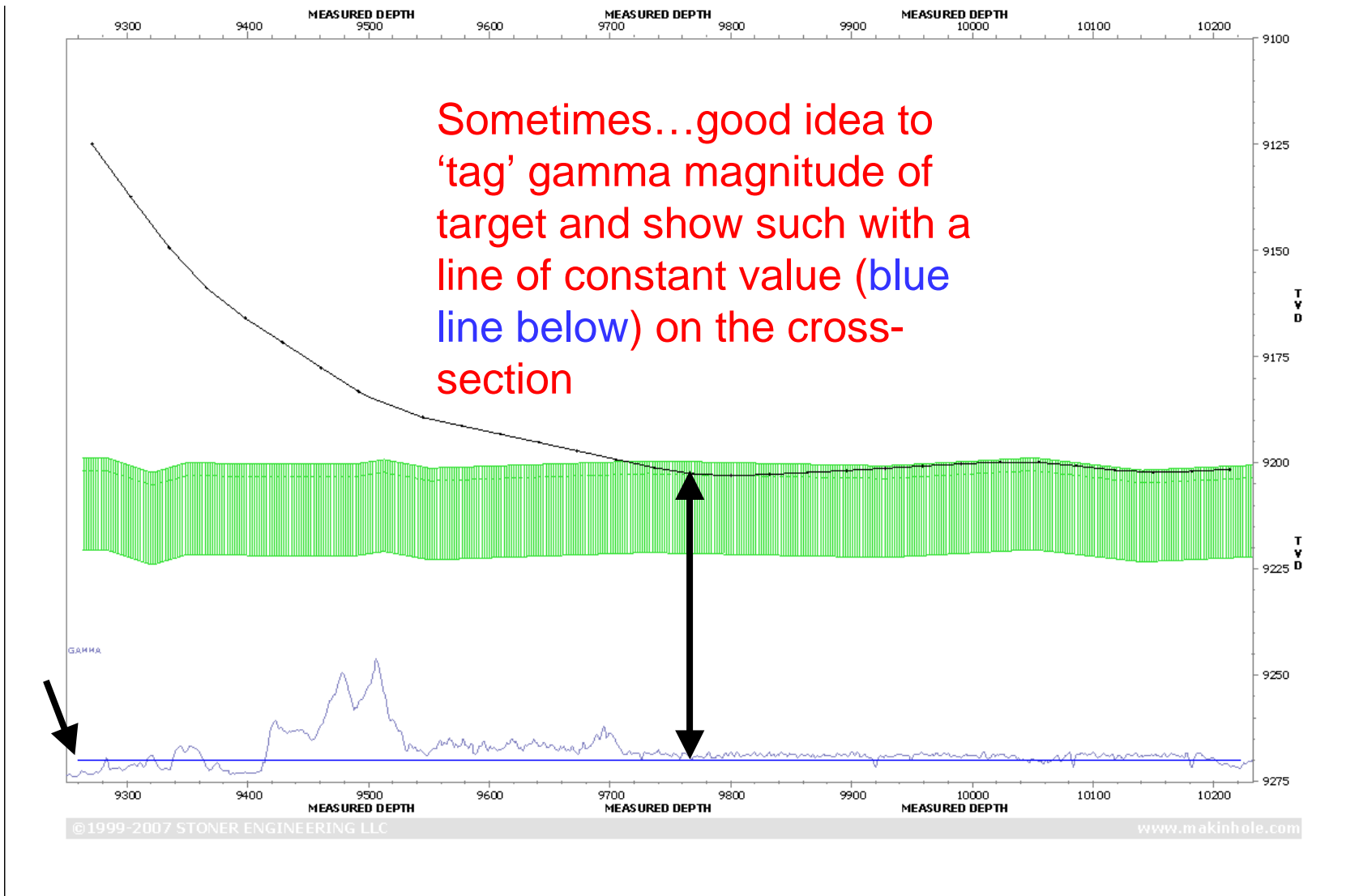
Trans. 1  
Style Line (thin)

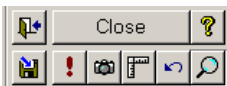
## Geosteering...3DSB#11

MB#1, 3DSB#11...



## Cross-section Screen





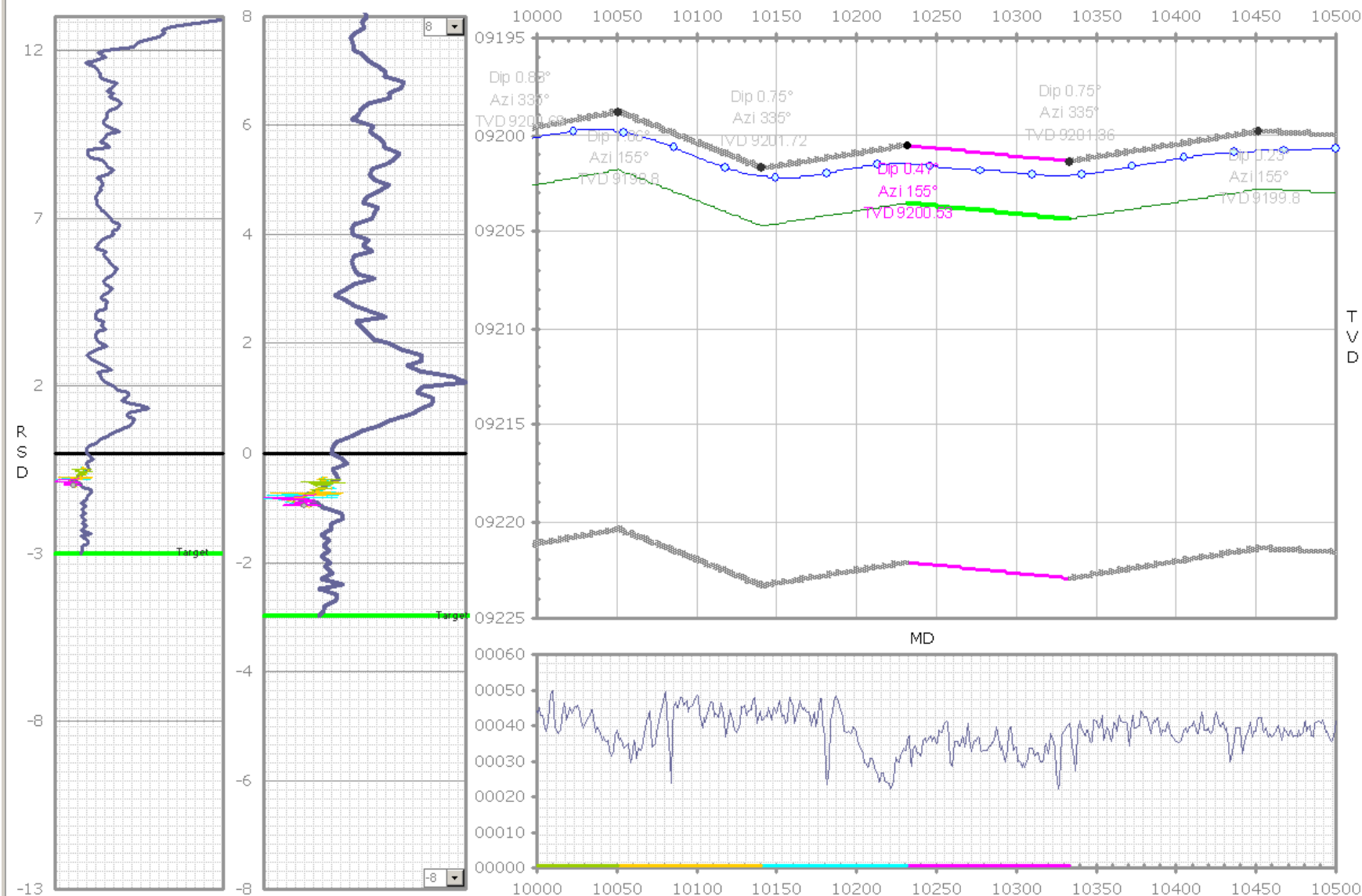
	Current	Initial
MD Start	10232.00	10232
Thick.	21.60	21.6
Dip Azi.	155.00	155

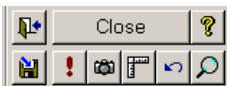
	Current	Initial
MD End	10333.00	10333
TVD	9200.53	9200.53
Dip	0.47	0.47

Trans. 1  
Style Line (thin)

## Geosteering...3DSB#12

MB#1, 3DSB#12...





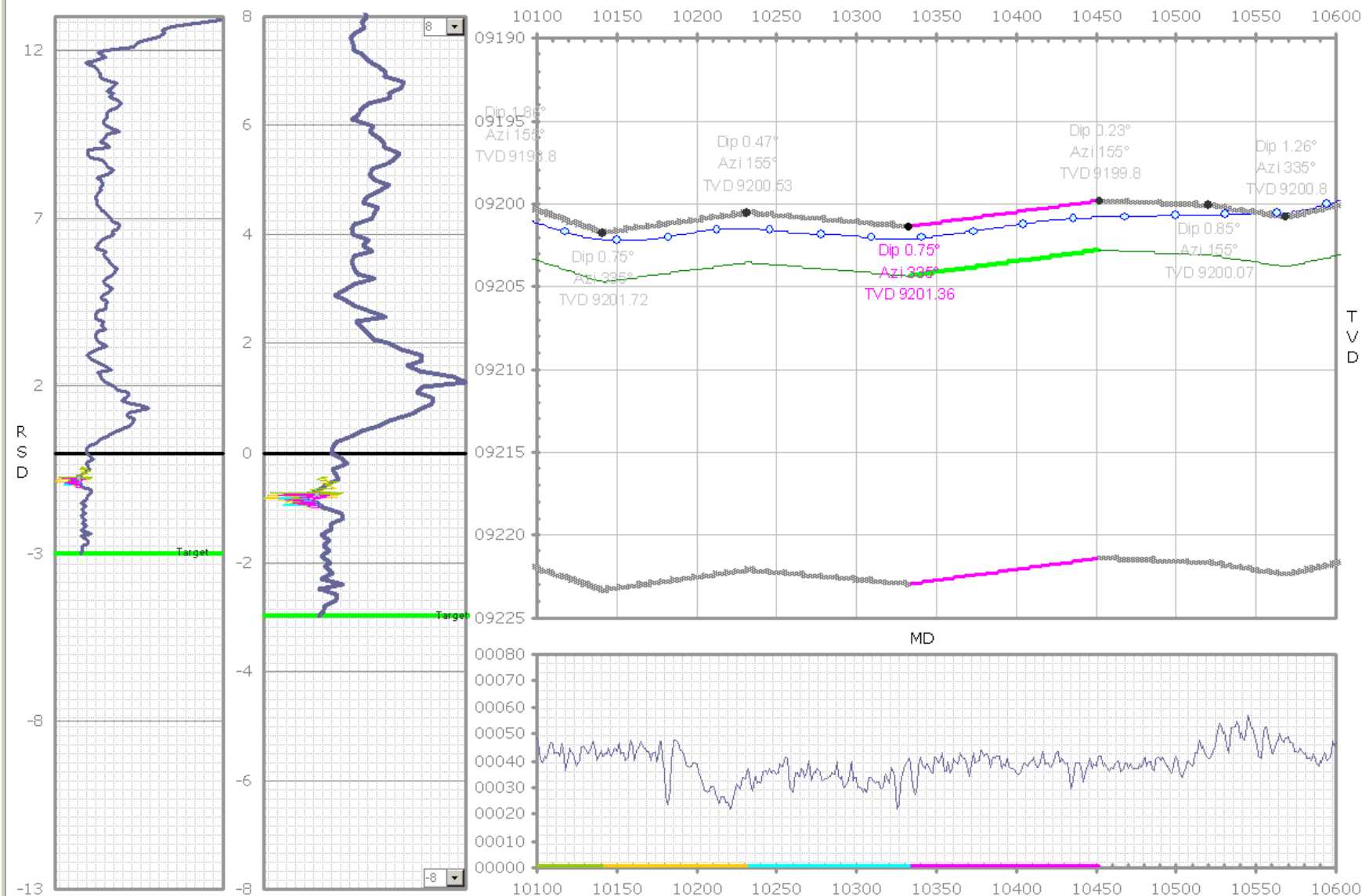
	Current	Initial
MD Start	10333.00	10333
Thick.	21.60	21.6
Dip Azi.	335.00	335

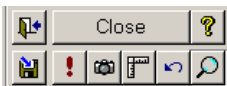
	Current	Initial
MD End	10452.00	10452
TVD	9201.36	9201.36
Dip	0.75	0.75

Trans. 1  
Style Line (thin)

## Geosteering...3DSB#13

MB#1, 3DSB#13...

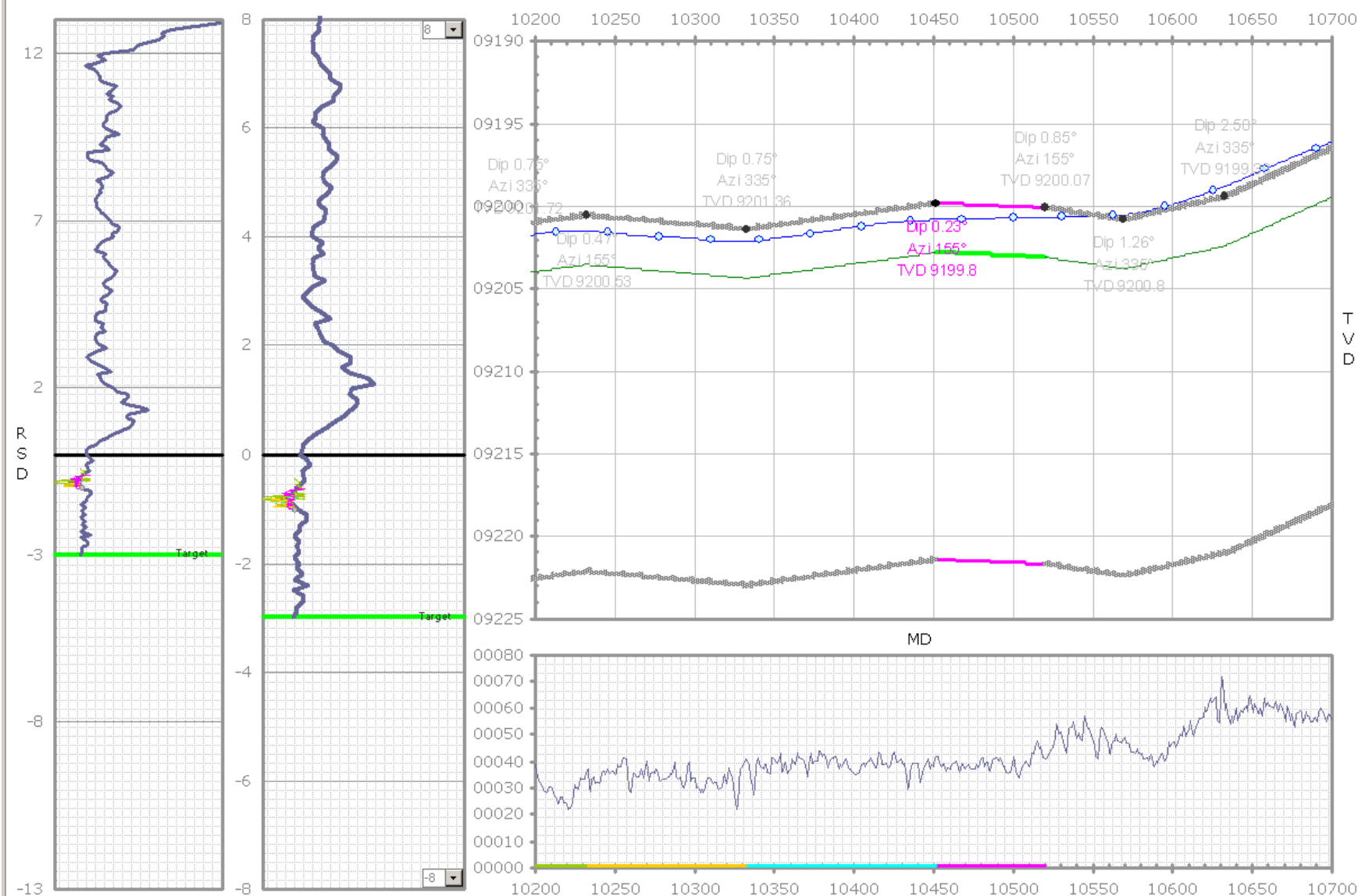




	Current		Initial			Current		Initial			
MD Start	10452.00	◀ ▶	10452		MD End	10520.00	◀ ▶	10520		Trans.	1
Thick.	21.60	◀ ▶	21.6		TVD	9199.80	◀ ▶	9199.8		Style	Line (thin)
Dip Azi.	155.00	◀ ▶	155		Dip	0.23	◀ ▶	0.23			

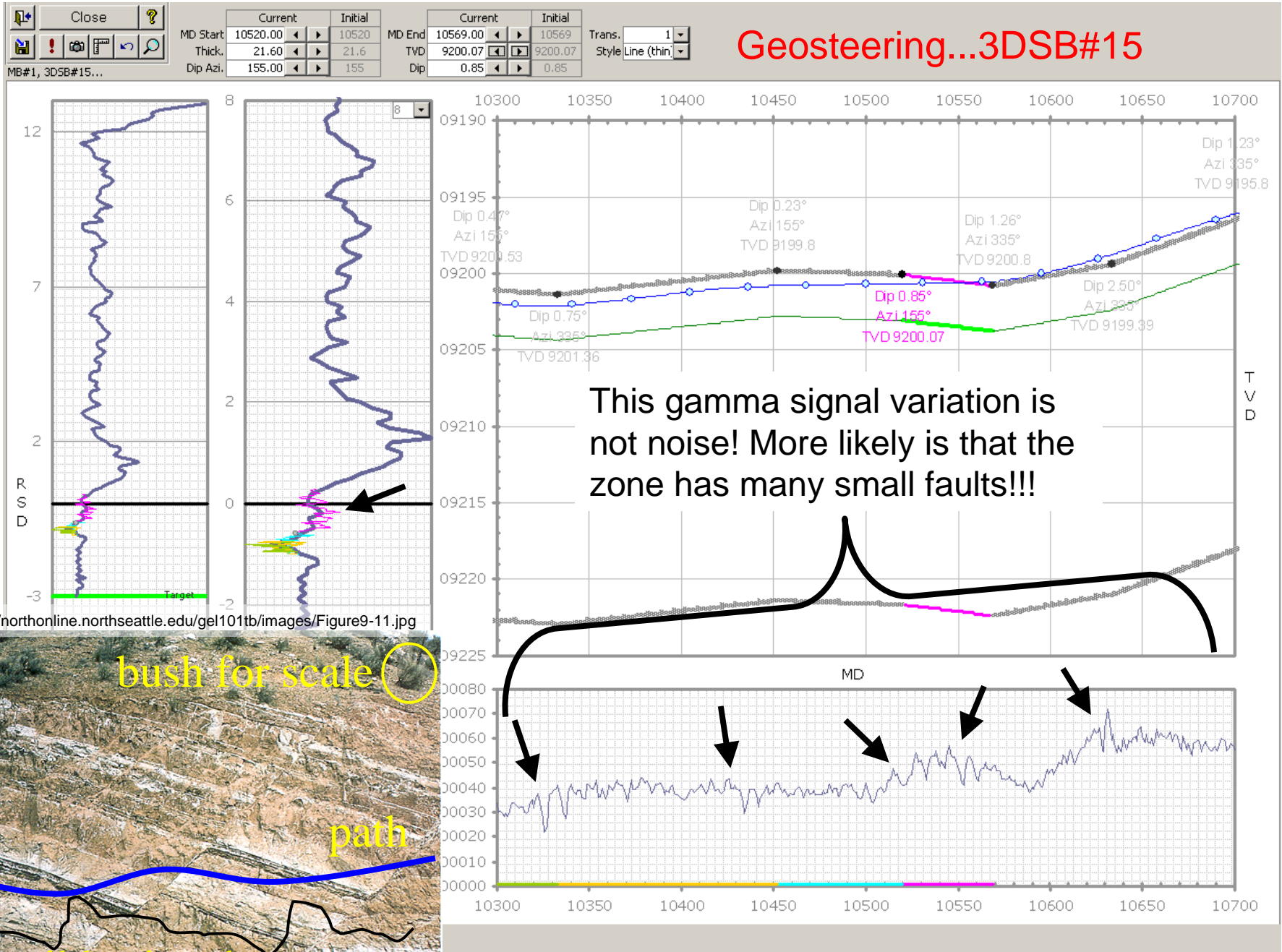
## Geosteering...3DSB#14

MB#1, 3DSB#14...

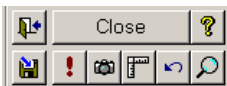




# Geosteering...3DSB#15







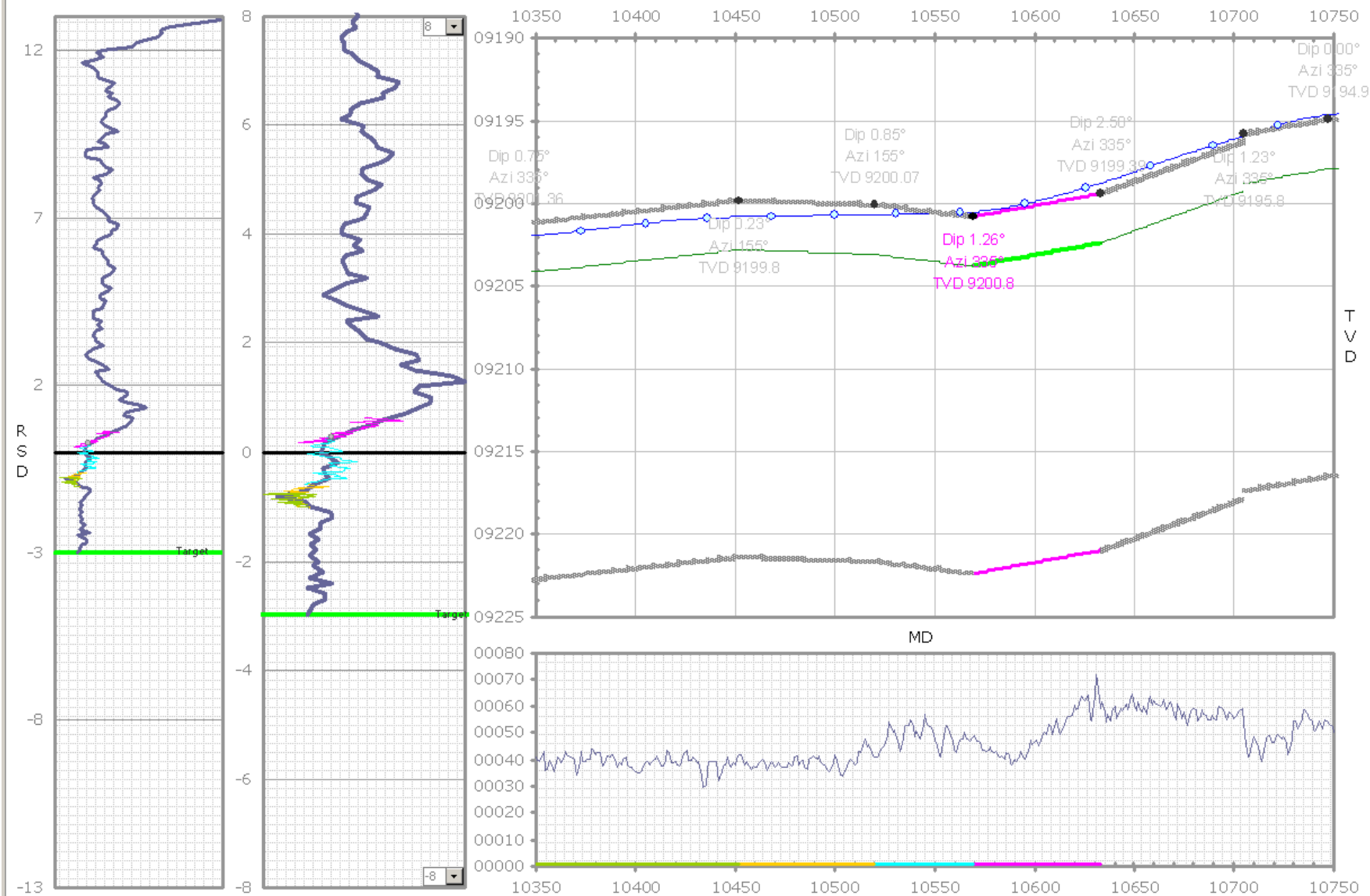
	Current	Initial
MD Start	10569.00	10569
Thick.	21.60	21.6
Dip Azi.	335.00	335

	Current	Initial
MD End	10633.00	10633
TVD	9200.80	9200.8
Dip	1.26	1.26

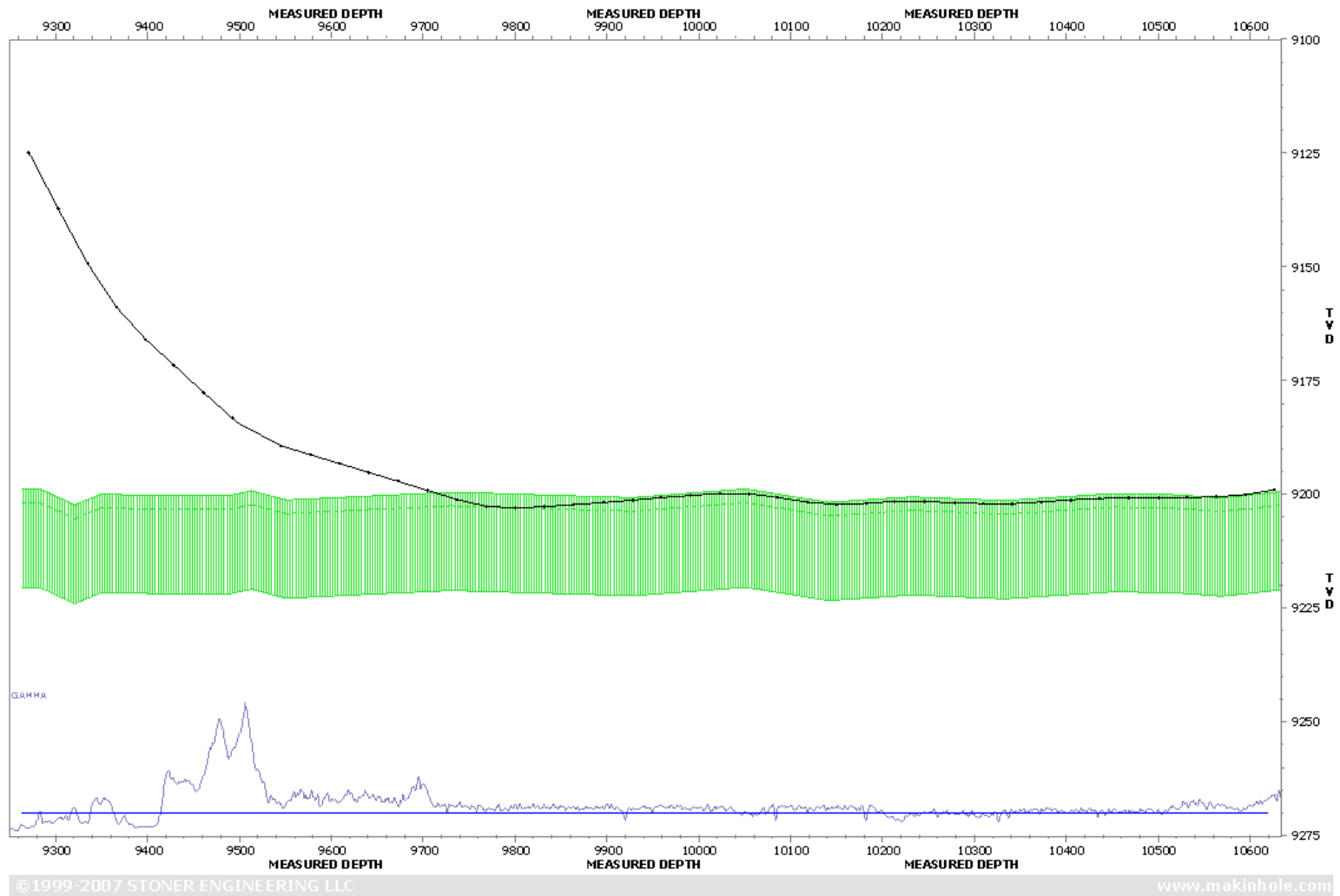
Trans. 1  
Style Line (thin)

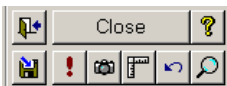
## Geosteering...3DSB#16

MB#1, 3DSB#16...



## Cross-section Screen





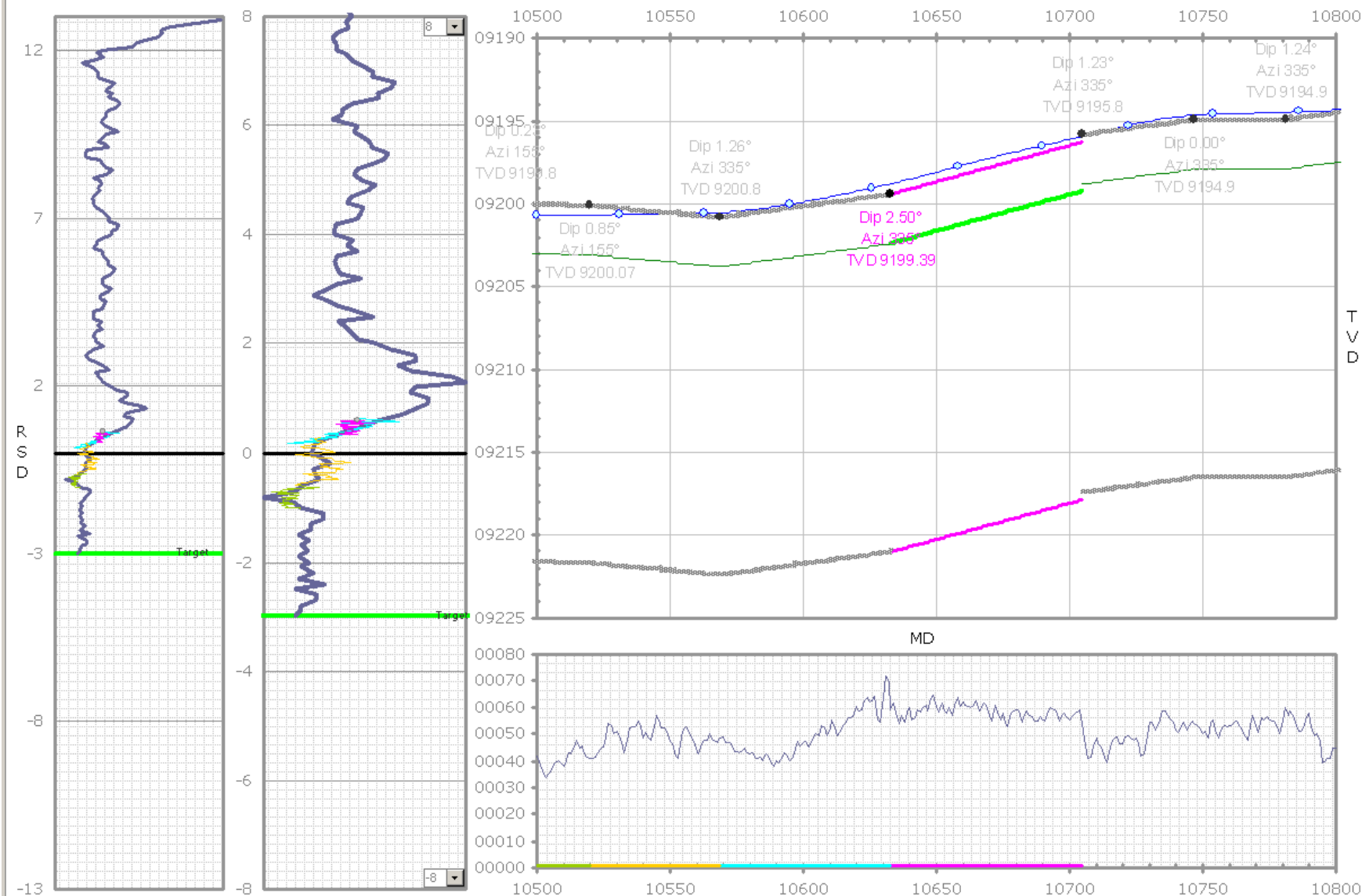
MD Start	10633.00	Initial	10633
Thick.	21.60		21.6
Dip Azi.	335.00		335

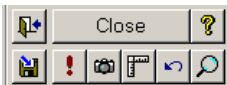
MD End	10705.00	Initial	10705
TVD	9199.39		9199.39
Dip	2.50		2.5

Trans. 1  
Style Line (thin)

# Geosteering...3DSB#17

MB#1, 3DSB#17...





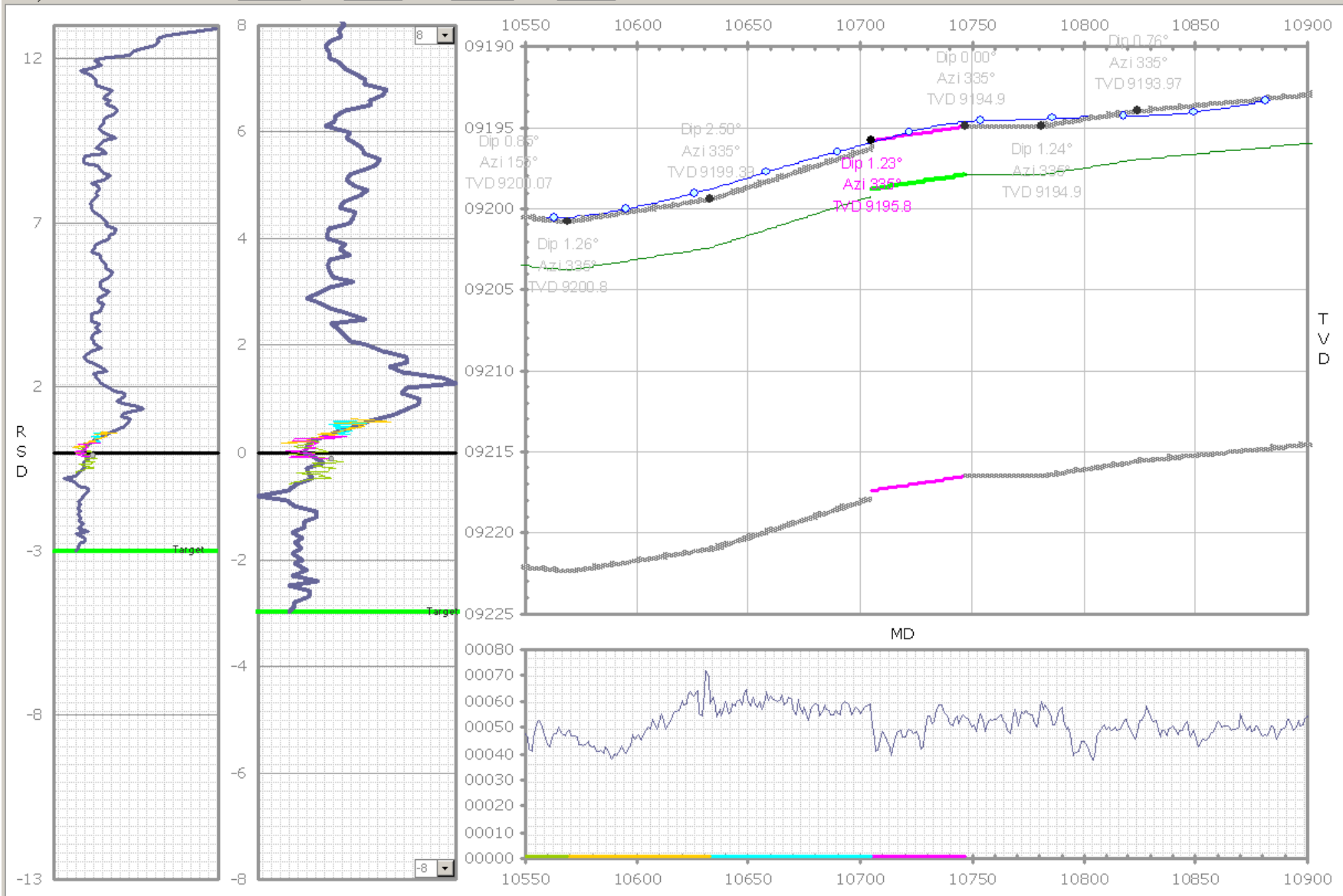
	Current	Initial
MD Start	10705.00	10705
Thick.	21.60	21.6
Dip Azi.	335.00	335

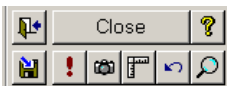
	Current	Initial
MD End	10747.00	10747
TVD	9195.80	9195.8
Dip	1.23	1.23

Trans. 1  
Style Line (thin)

## Geosteering...3DSB#18

MB#1, 3DSB#18...





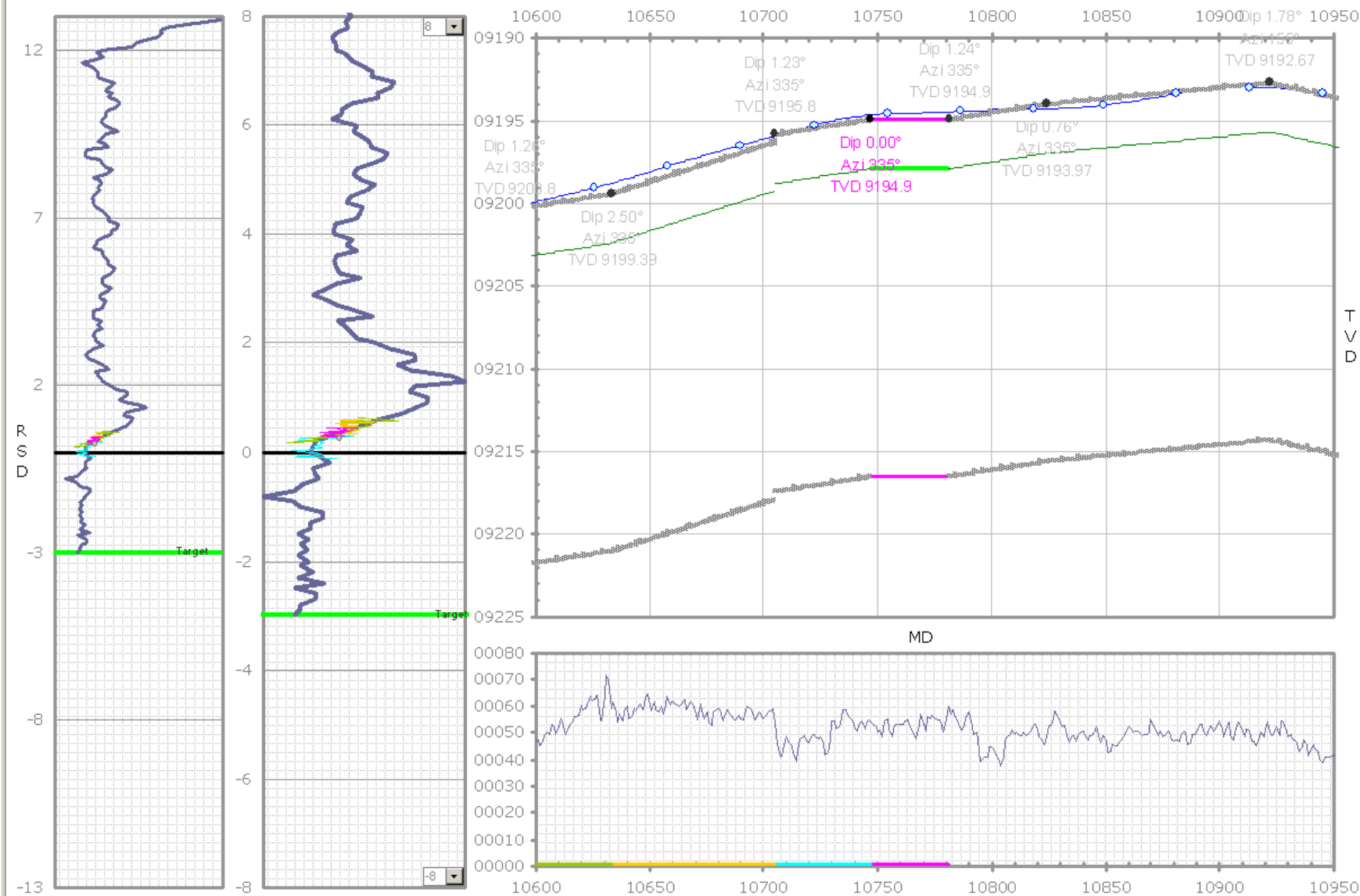
	Current	Initial
MD Start	10747.00	10747
Thick.	21.60	21.6
Dip Azi.	335.00	335

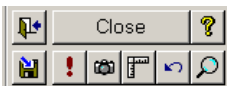
	Current	Initial
MD End	10781.00	10781
TVD	9194.90	9194.9
Dip	0.00	0

Trans. 1  
Style Line (thin)

# Geosteering...3DSB#19

MB#1, 3DSB#19...





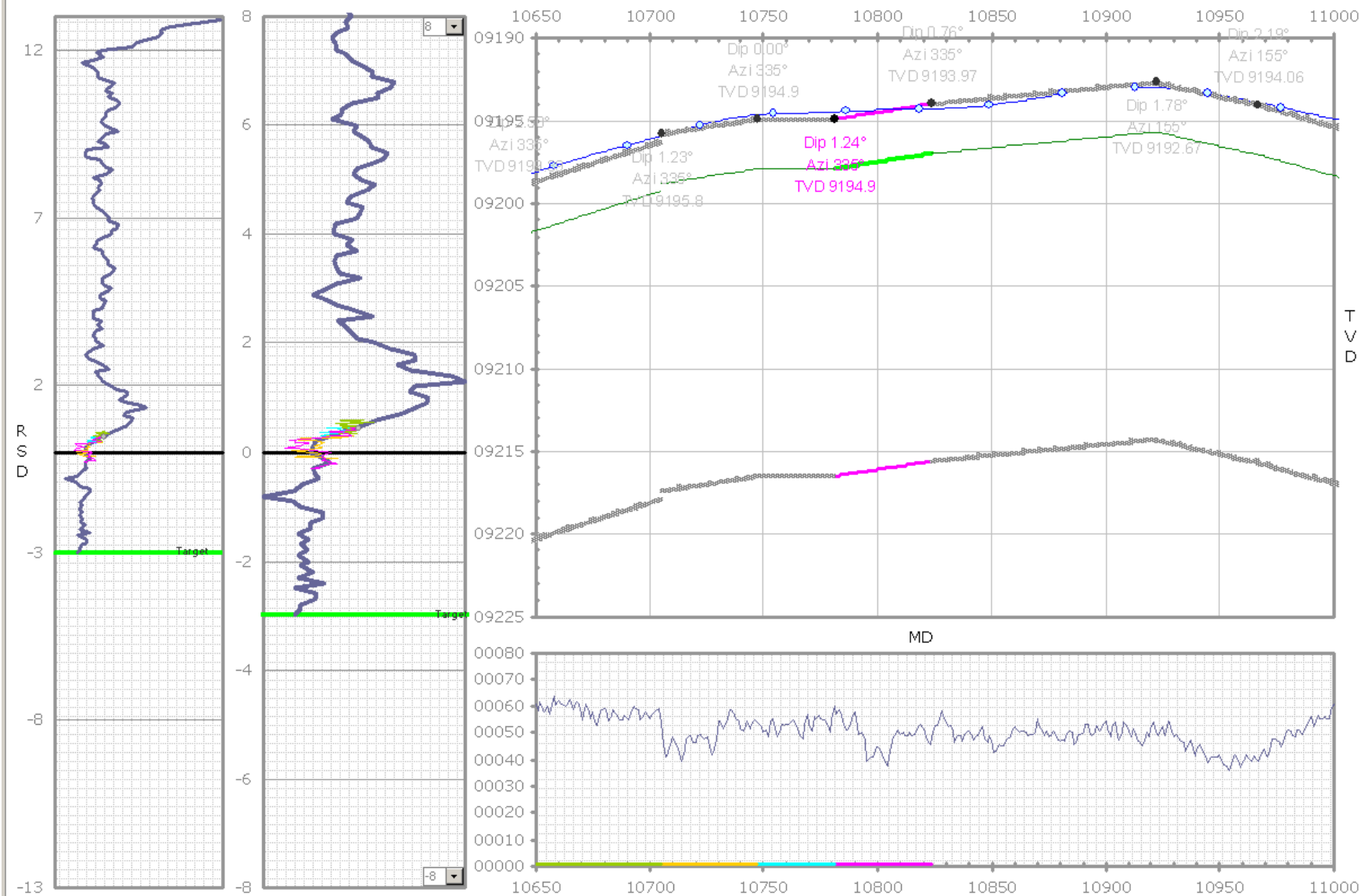
	Current	Initial
MD Start	10781.00	10781
Thick.	21.60	21.6
Dip Azi.	335.00	335

	Current	Initial
MD End	10824.00	10824
TVD	9194.90	9194.9
Dip	1.24	1.24

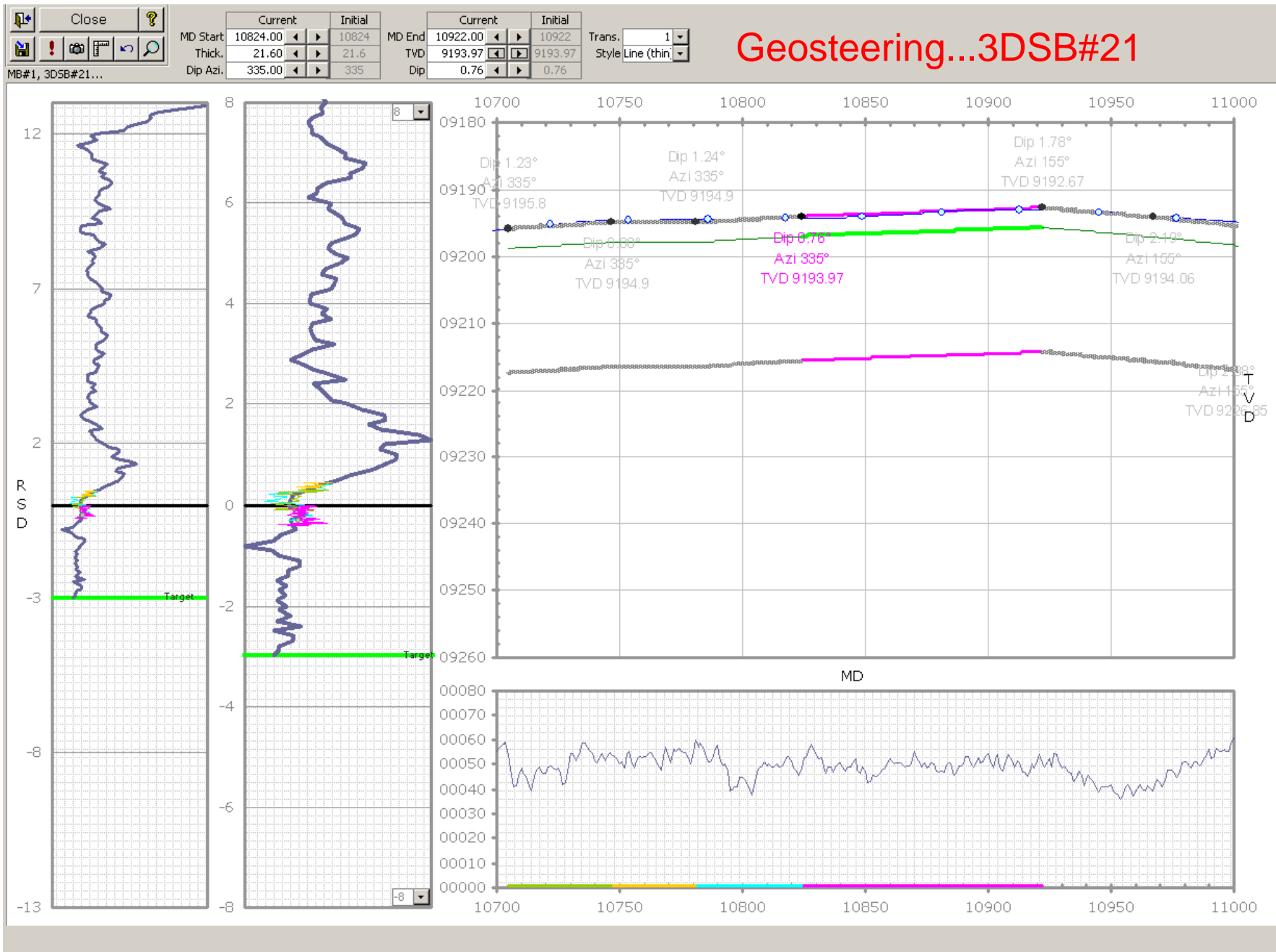
Trans. 1  
Style Line (thin)

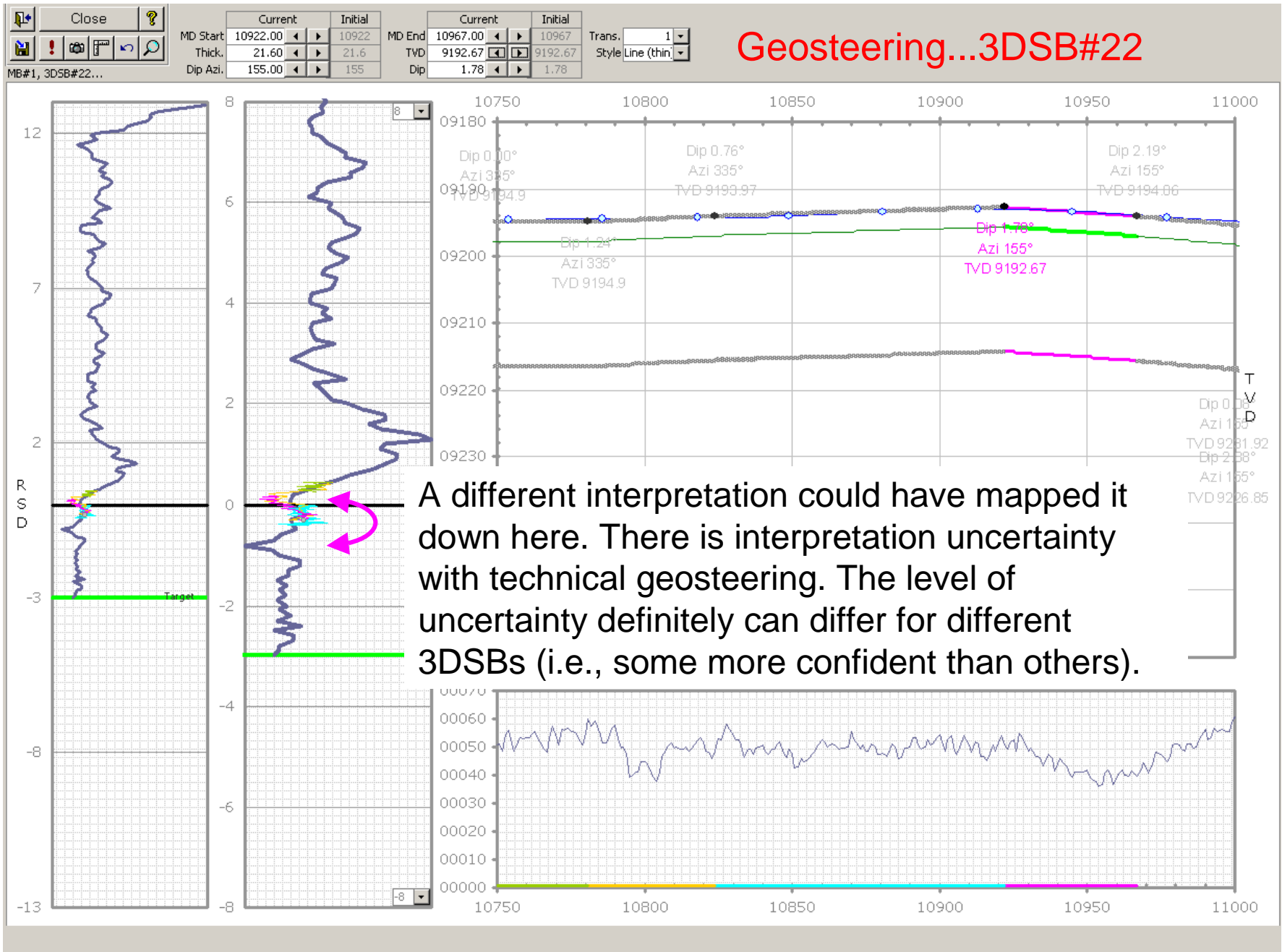
## Geosteering...3DSB#20

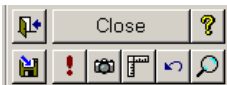
MB#1, 3DSB#20...











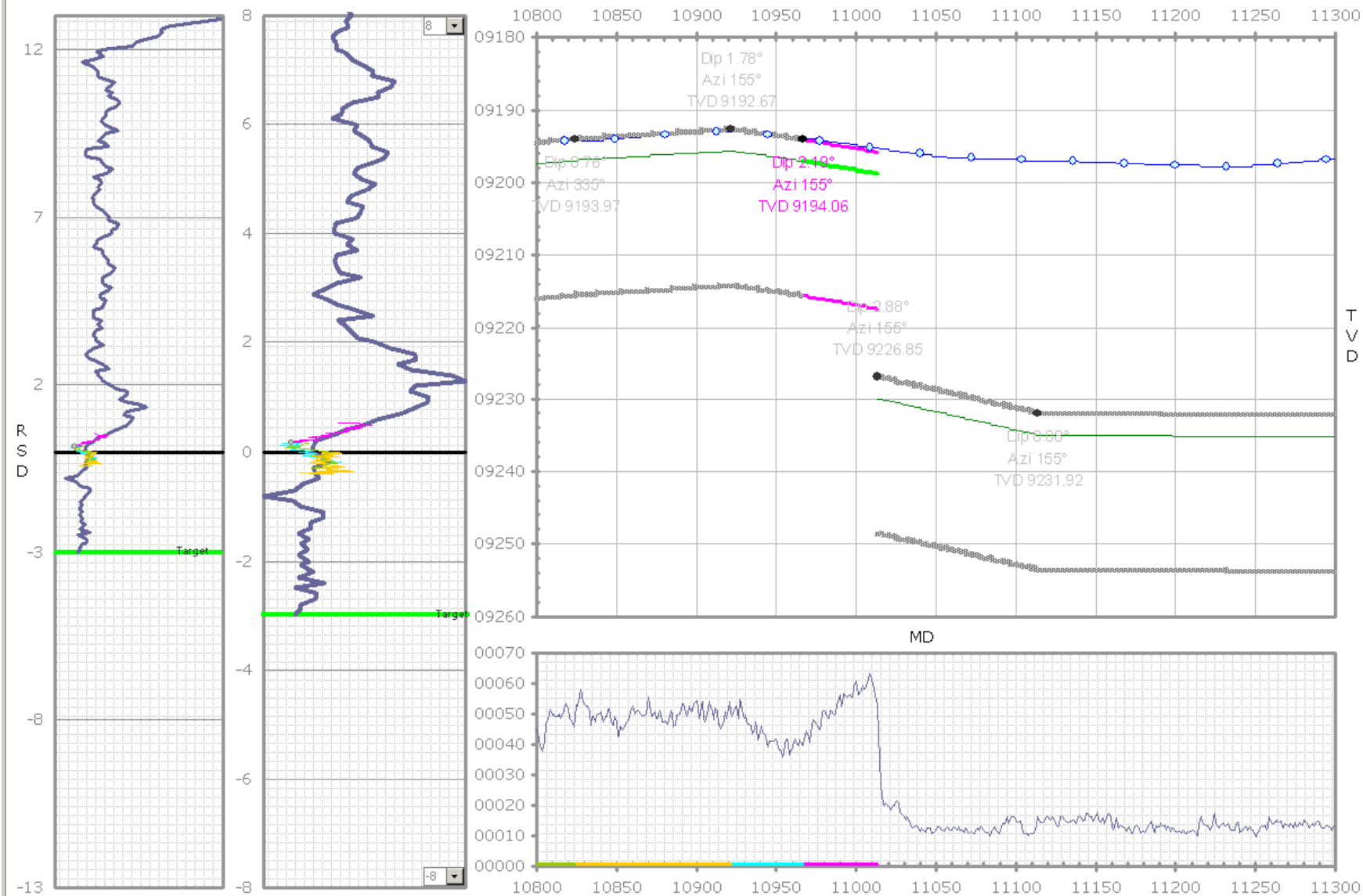
	Current	Initial
MD Start	10967.00	10967
Thick.	21.60	21.6
Dip Azi.	155.00	155

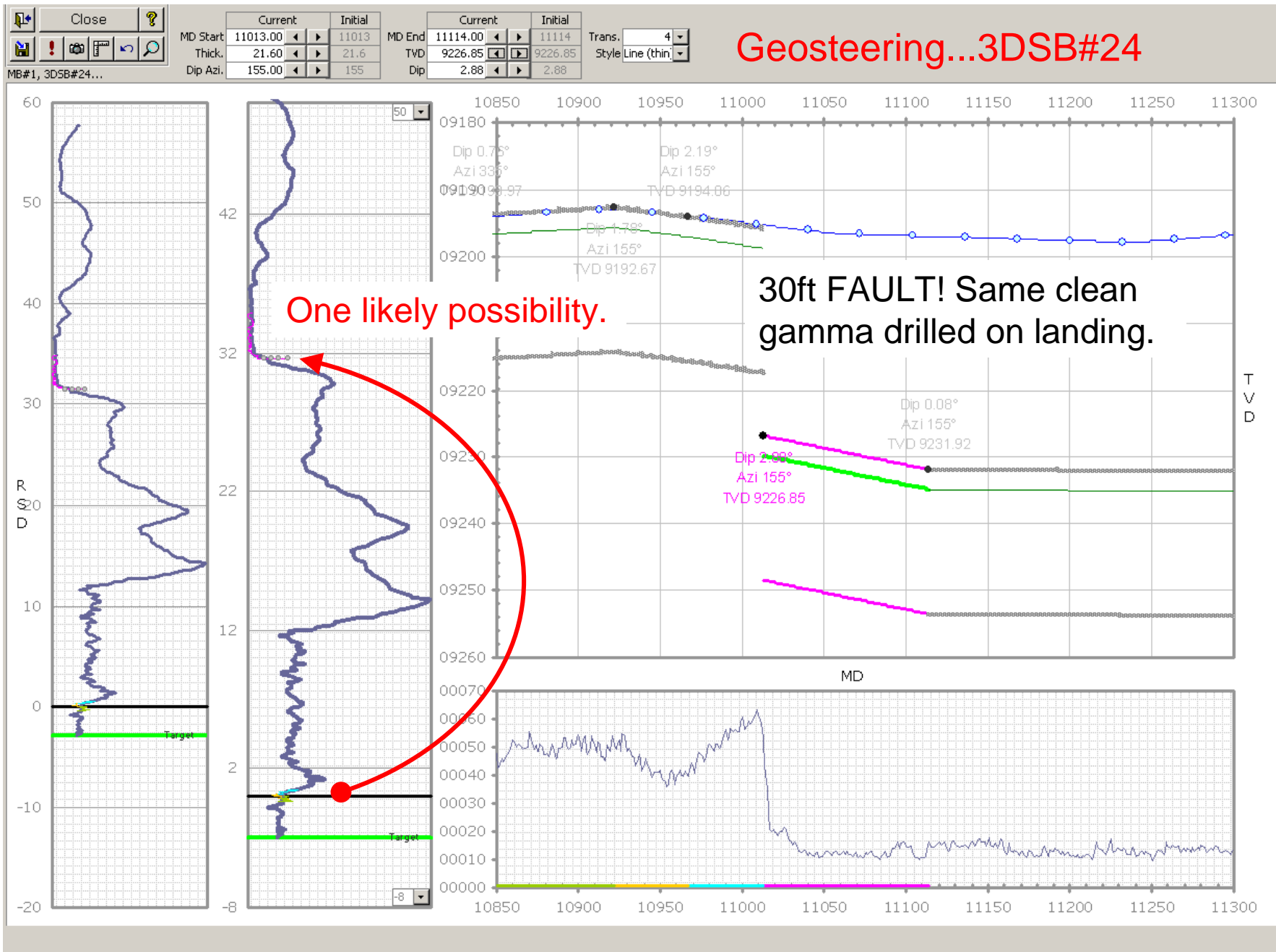
	Current	Initial
MD End	11013.00	11013
TVD	9194.06	9194.06
Dip	2.19	2.19

Trans. 1  
Style Line (thin)

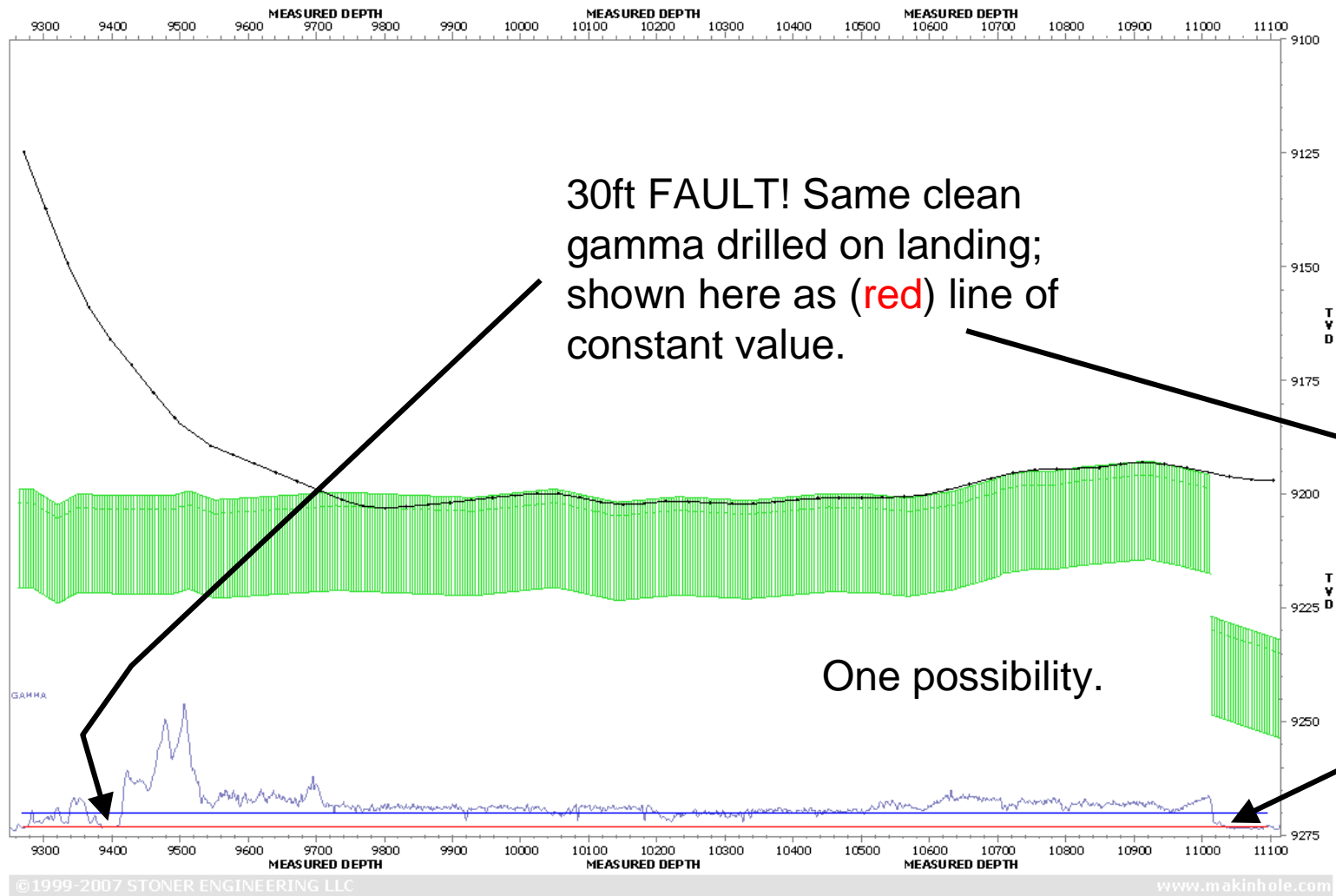
## Geosteering...3DSB#23

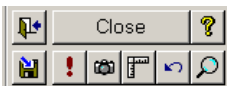
MB#1, 3DSB#23...





## Cross-section Screen





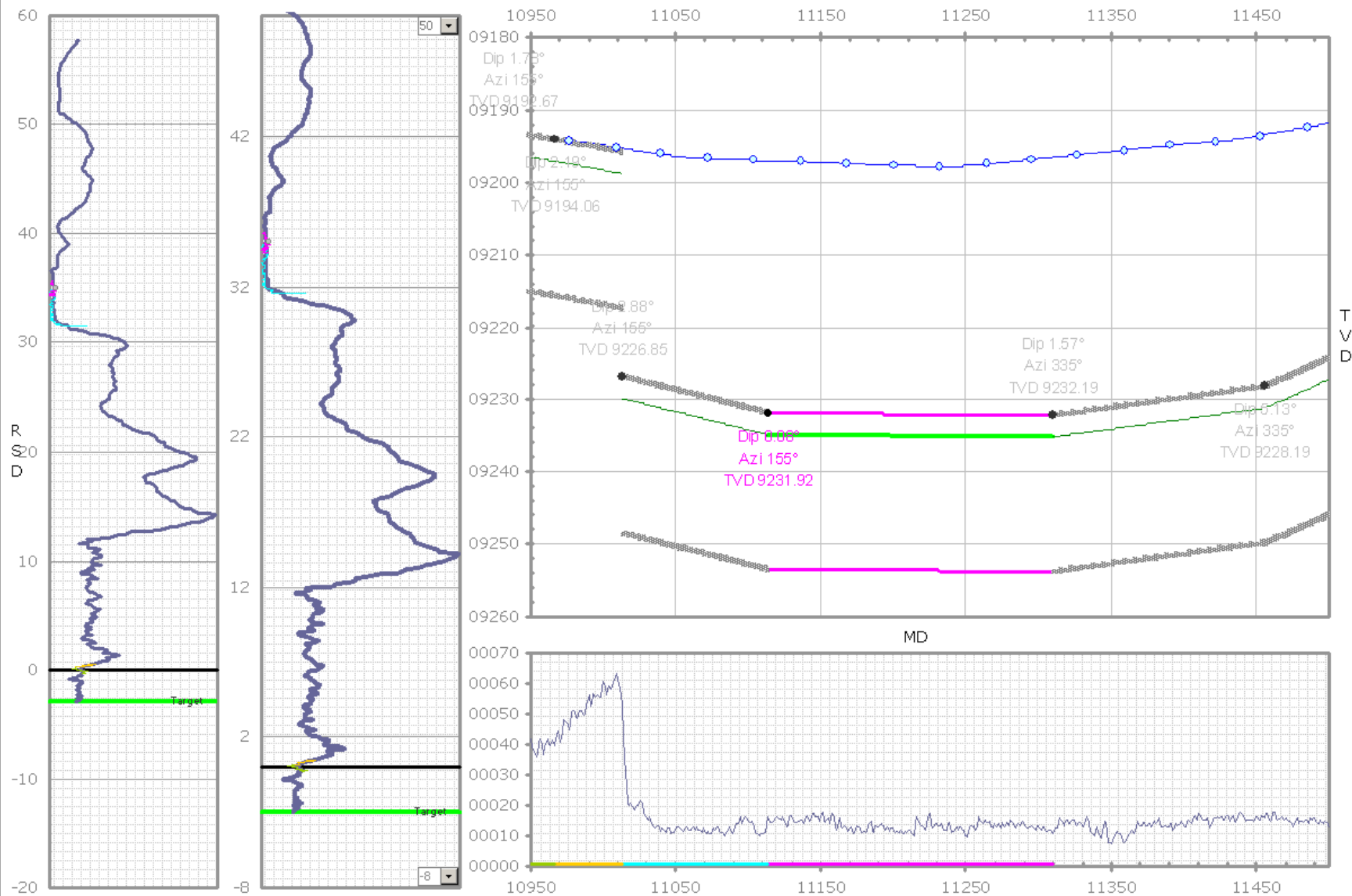
	Current	Initial
MD Start	11114.00	11114
Thick.	21.60	21.6
Dip Azi.	155.00	155

	Current	Initial
MD End	11310.00	11310
TVD	9231.92	9231.92
Dip	0.08	0.08

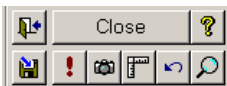
Trans. 1  
Style Line (thin)

## Geosteering...3DSB#25

MB#1, 3DSB#25...







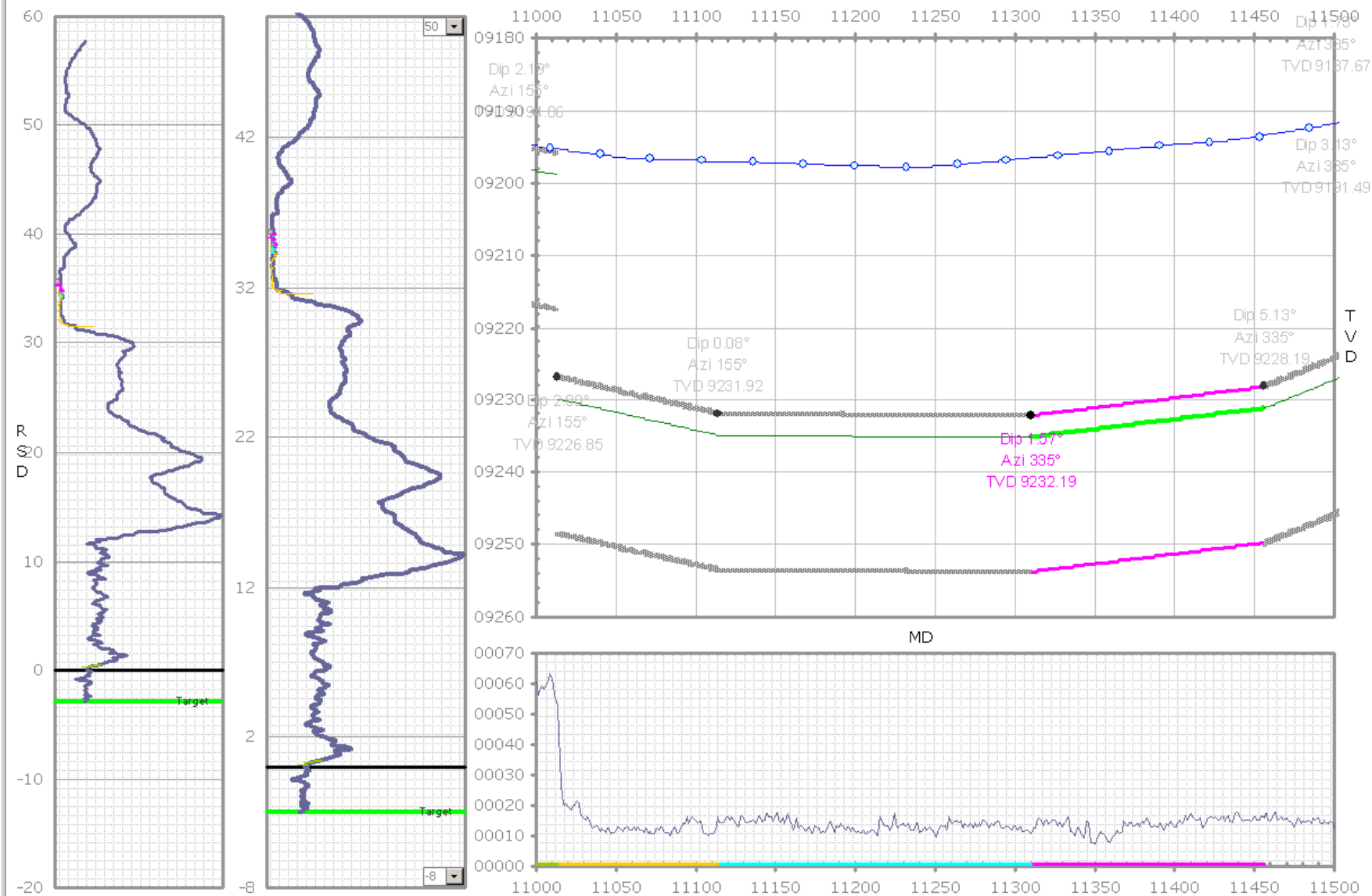
	Current	Initial
MD Start	11310.00	11310
Thick.	21.60	21.6
Dip Azi.	335.00	335

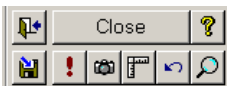
	Current	Initial
MD End	11456.00	11456
TVD	9232.19	9232.19
Dip	1.57	1.57

Trans. 1  
Style Line (thin)

## Geosteering...3DSB#26

MB#1, 3DSB#26...





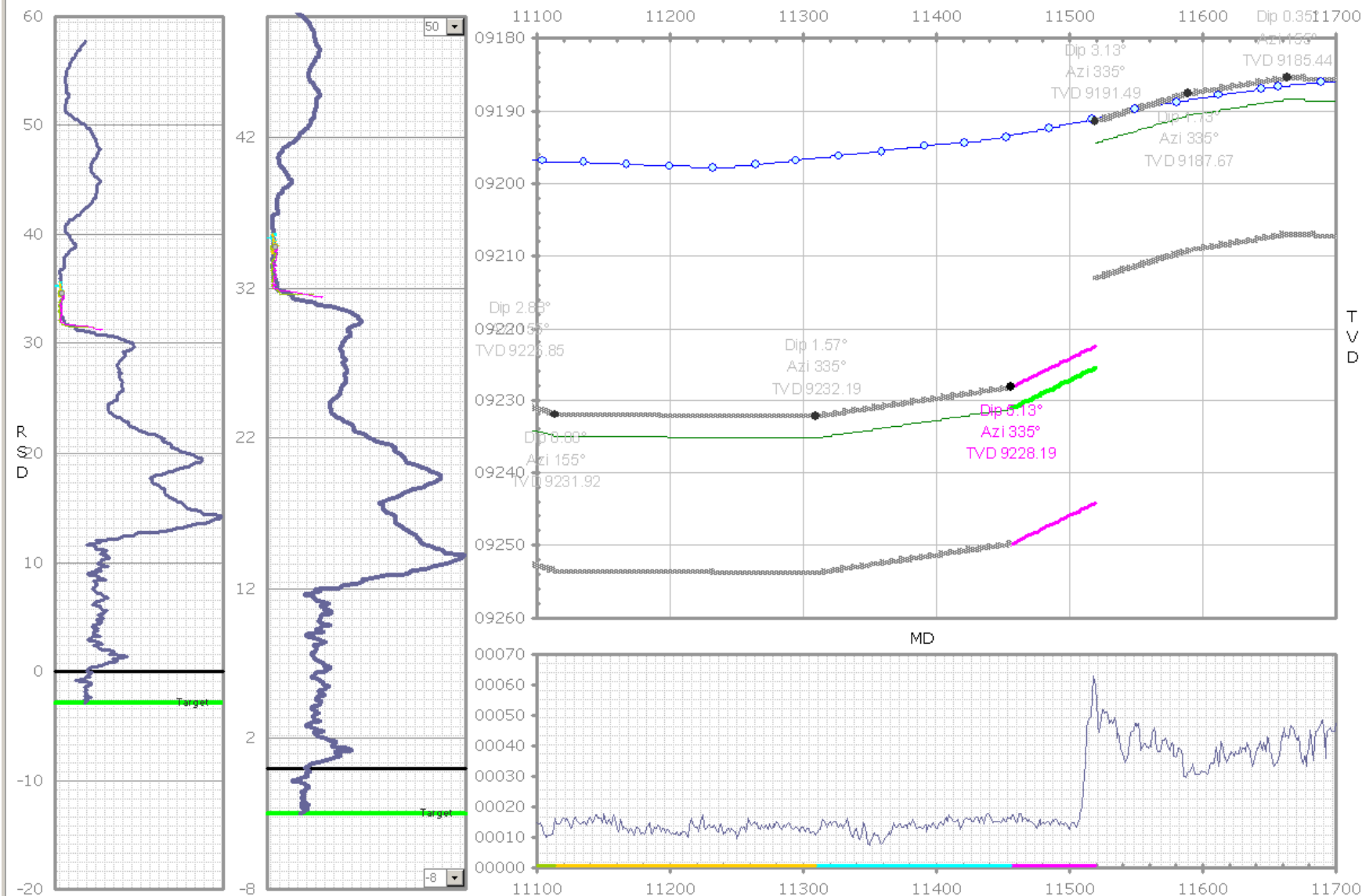
	Current	Initial
MD Start	11456.00	11456
Thick.	21.60	21.6
Dip Azi.	335.00	335

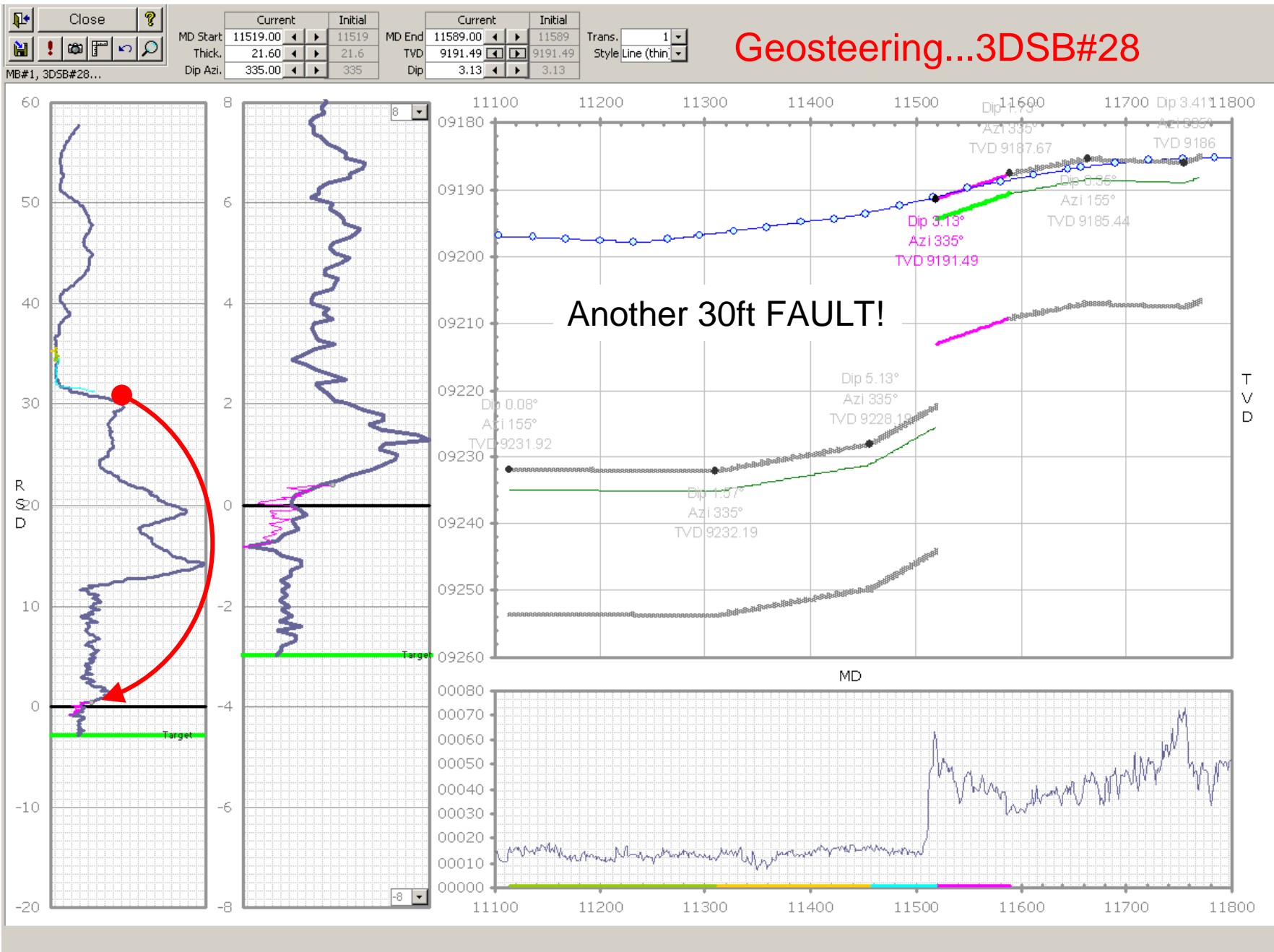
	Current	Initial
MD End	11519.00	11519
TVD	9228.19	9228.19
Dip	5.13	5.13

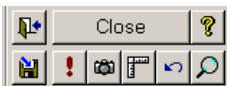
Trans. 1  
Style Line (thin)

## Geosteering...3DSB#27

MB#1, 3DSB#27...

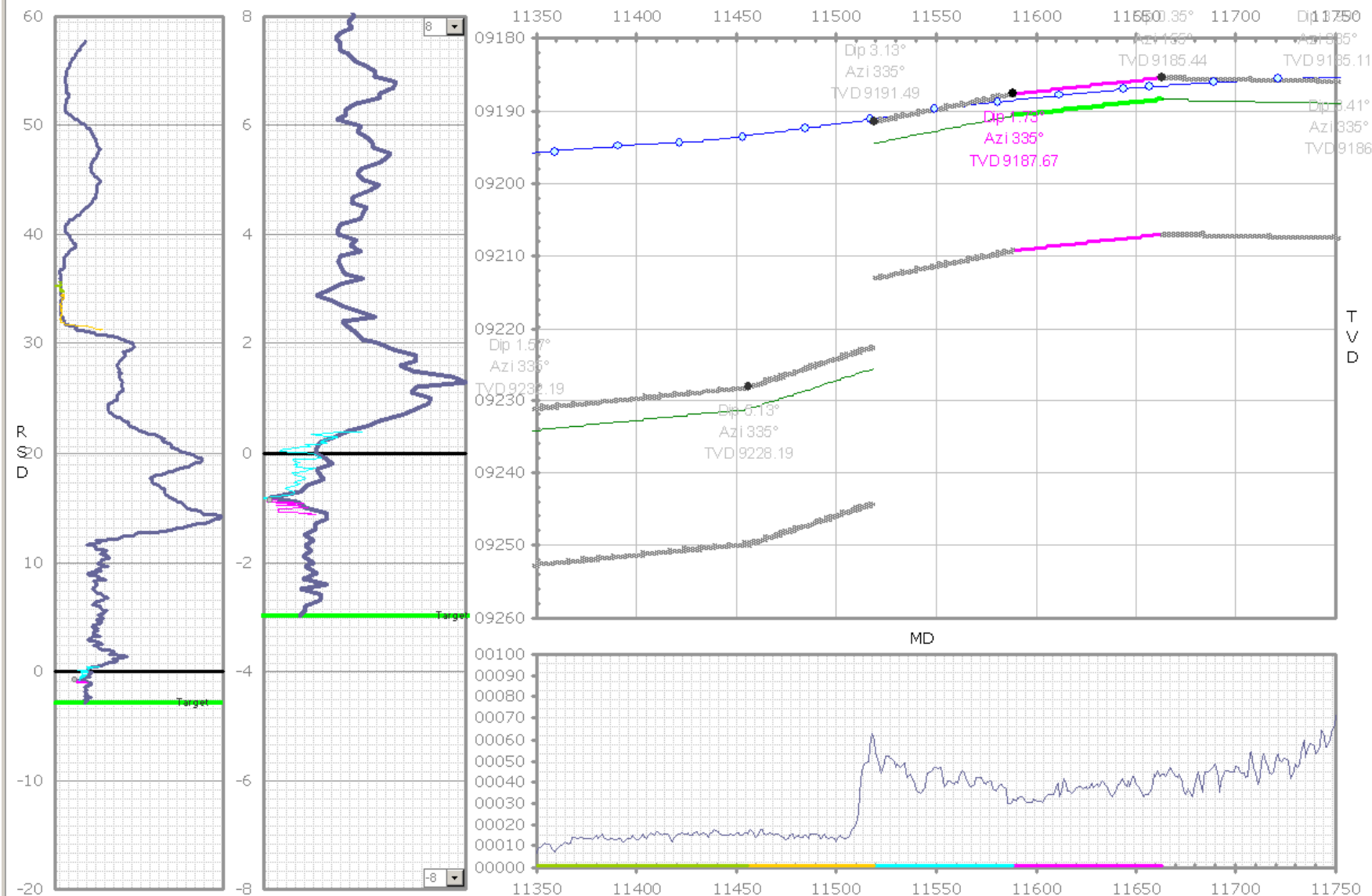






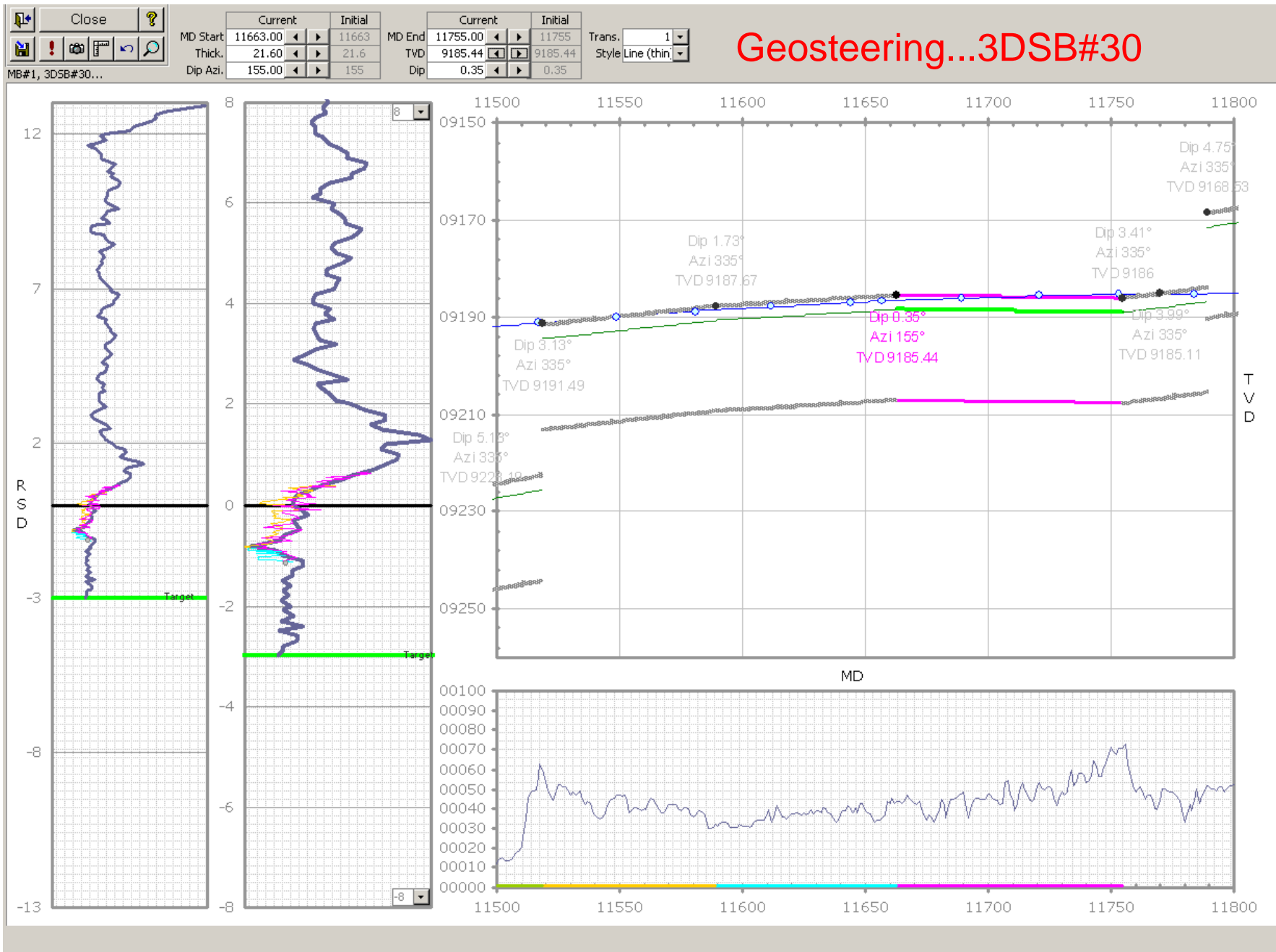
MD Start	Current	Initial	MD End	Current	Initial	Trans.	Style
	11589.00	11589		11663.00	11663		
	Thick.	21.60		TVD	9187.67		
Dip Azi.	335.00	335	Dip	1.73	1.73		Line (thin)

# Geosteering...3DSB#29

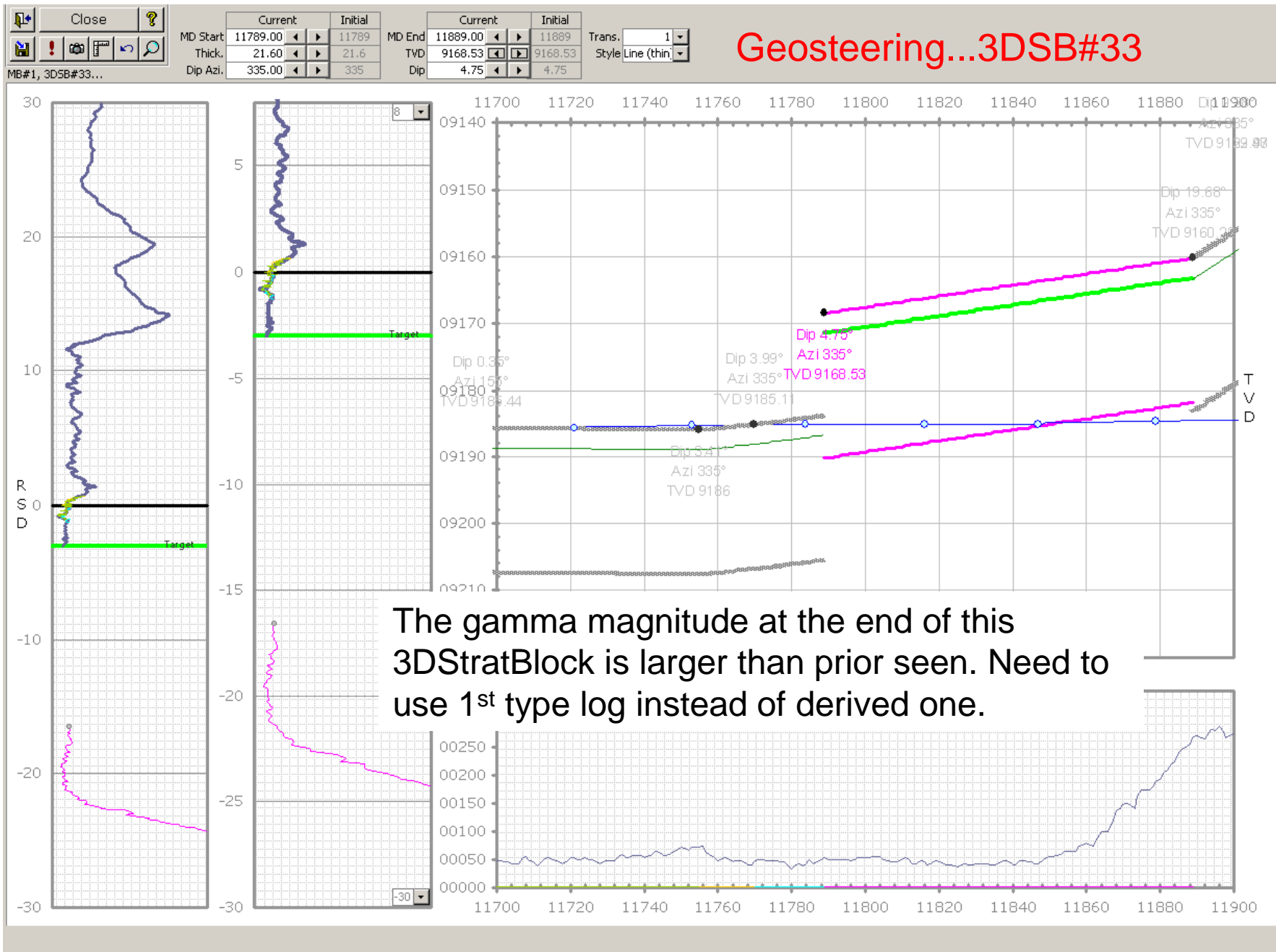


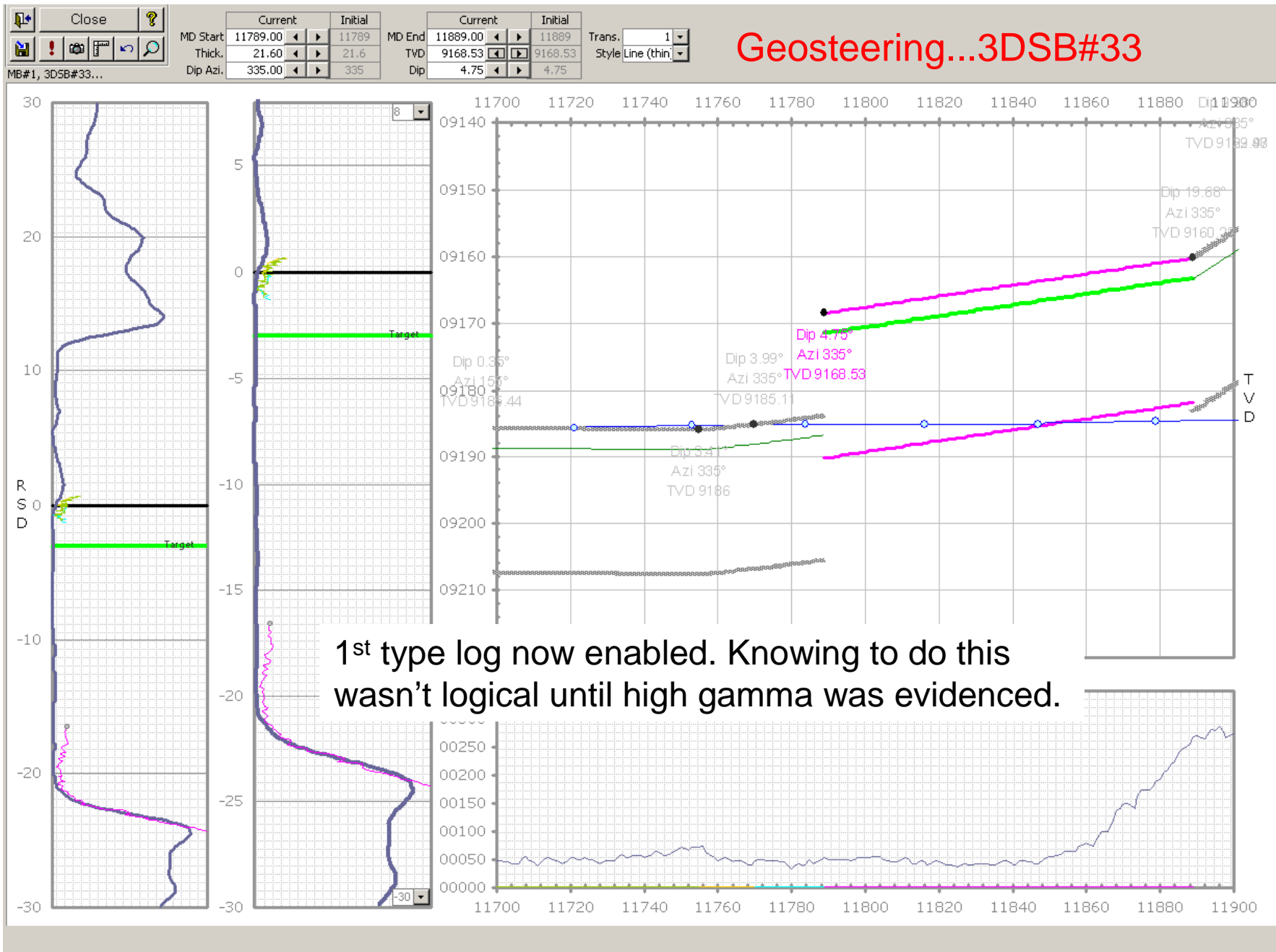
## Cross-section Screen



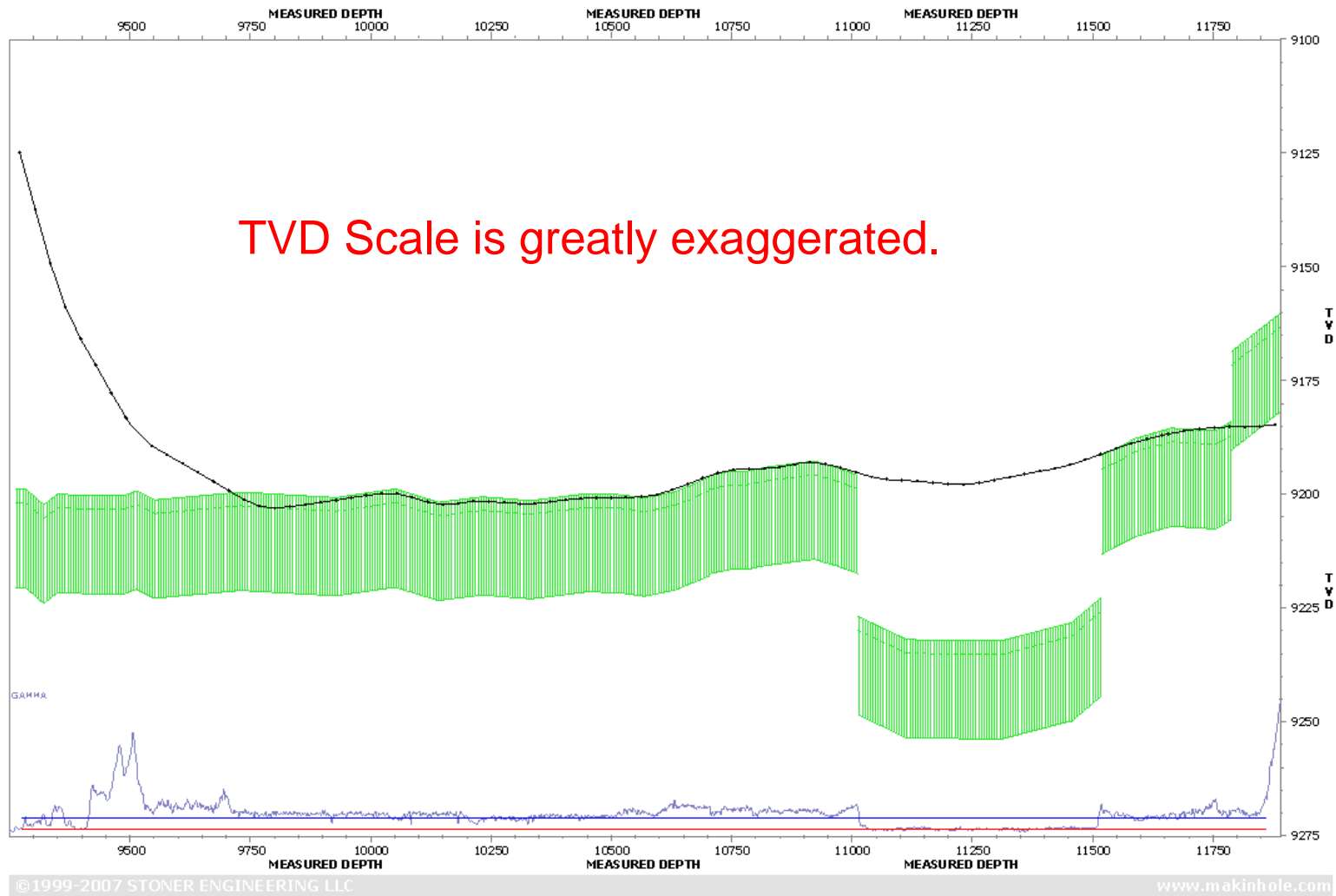




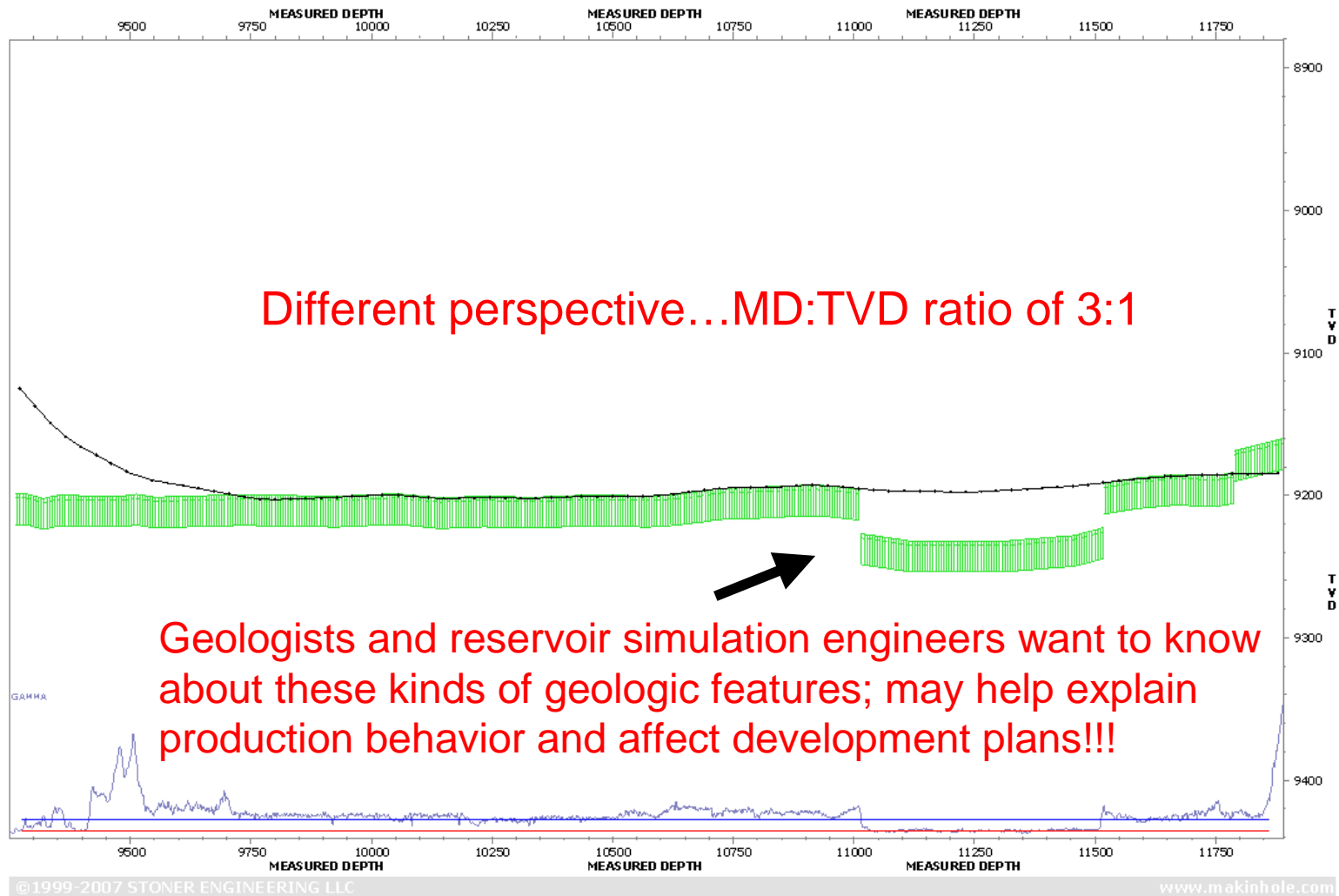




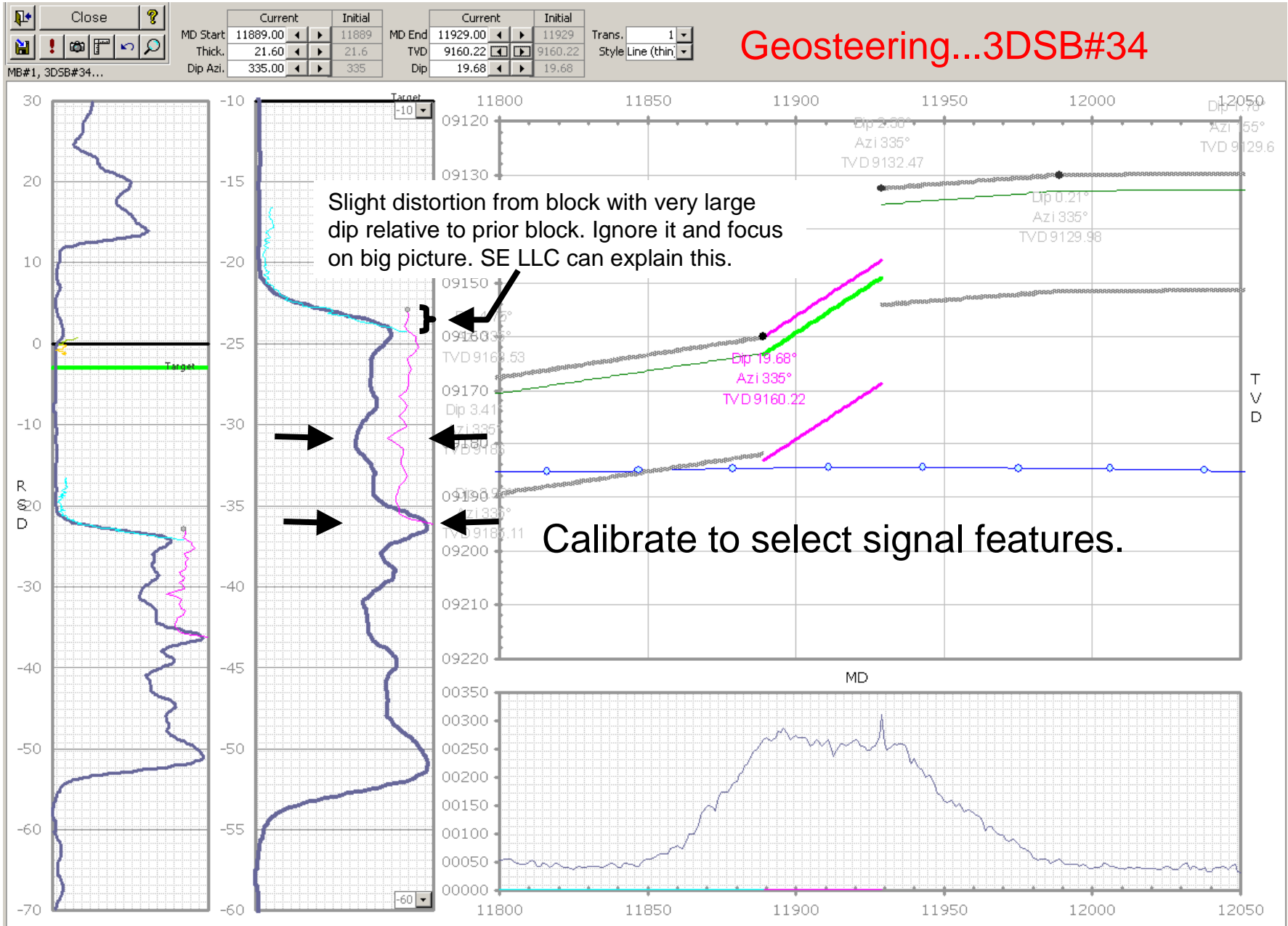
## Cross-section Screen

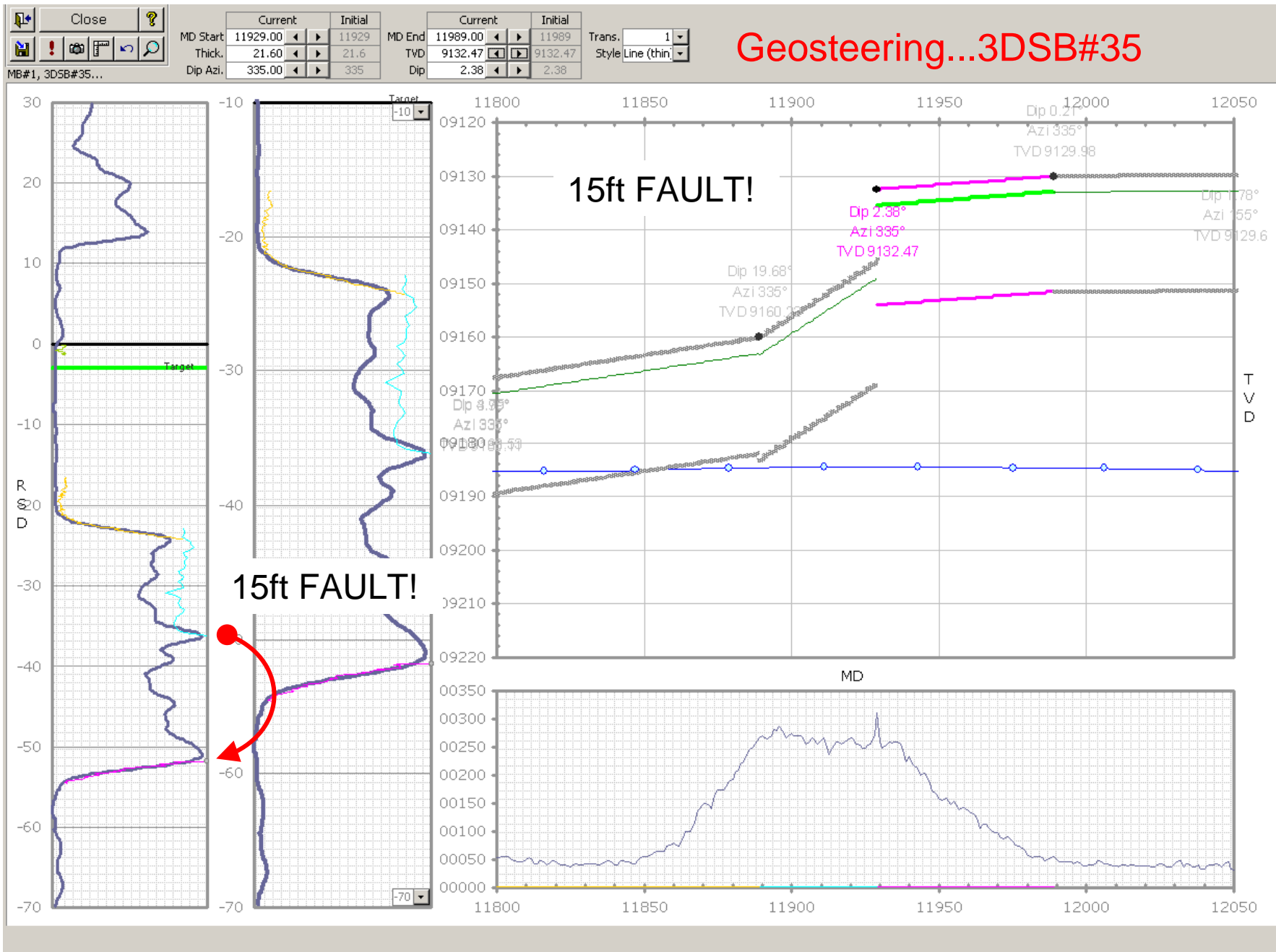


## Cross-section Screen

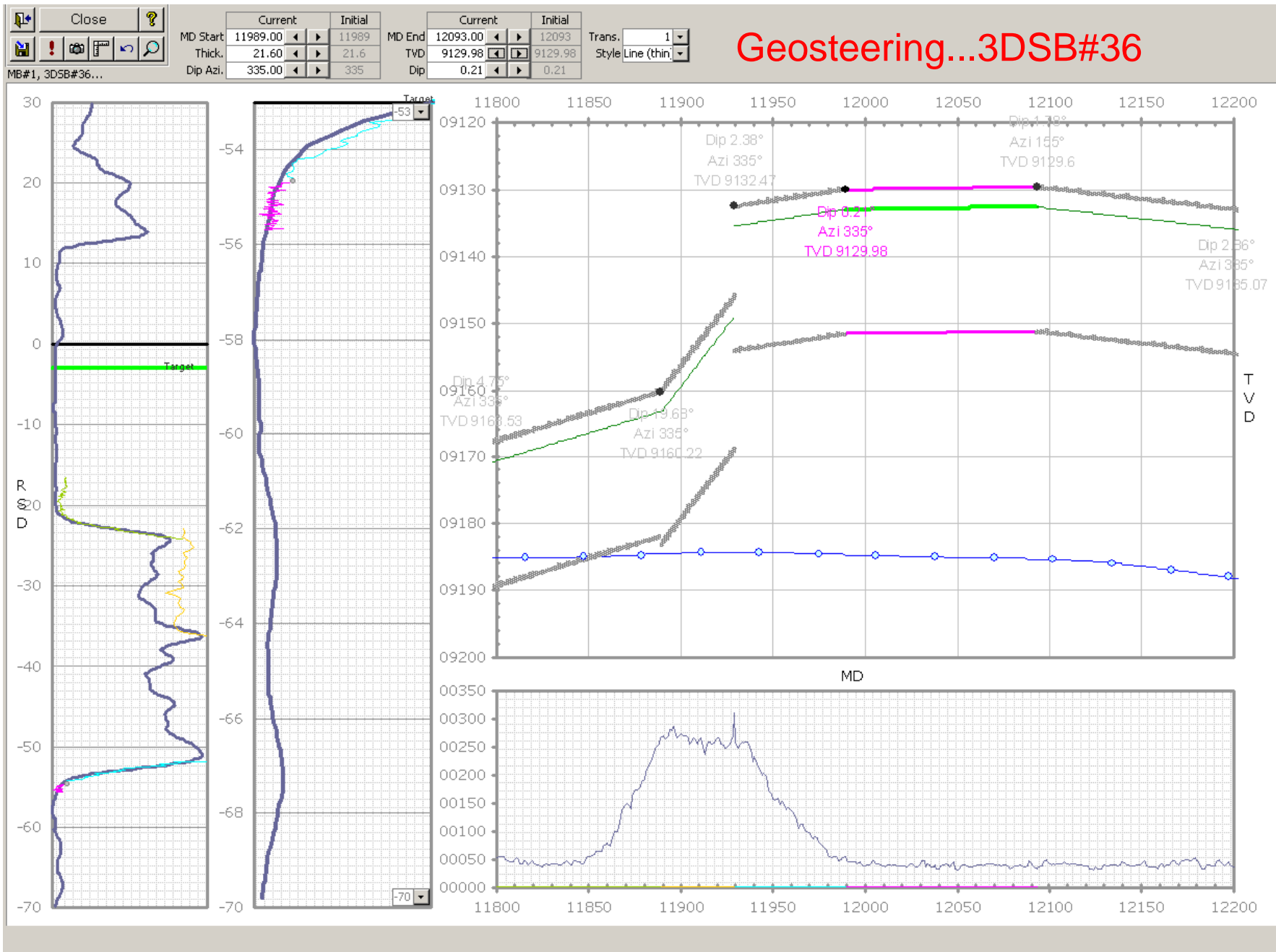


# Geosteering...3DSB#34

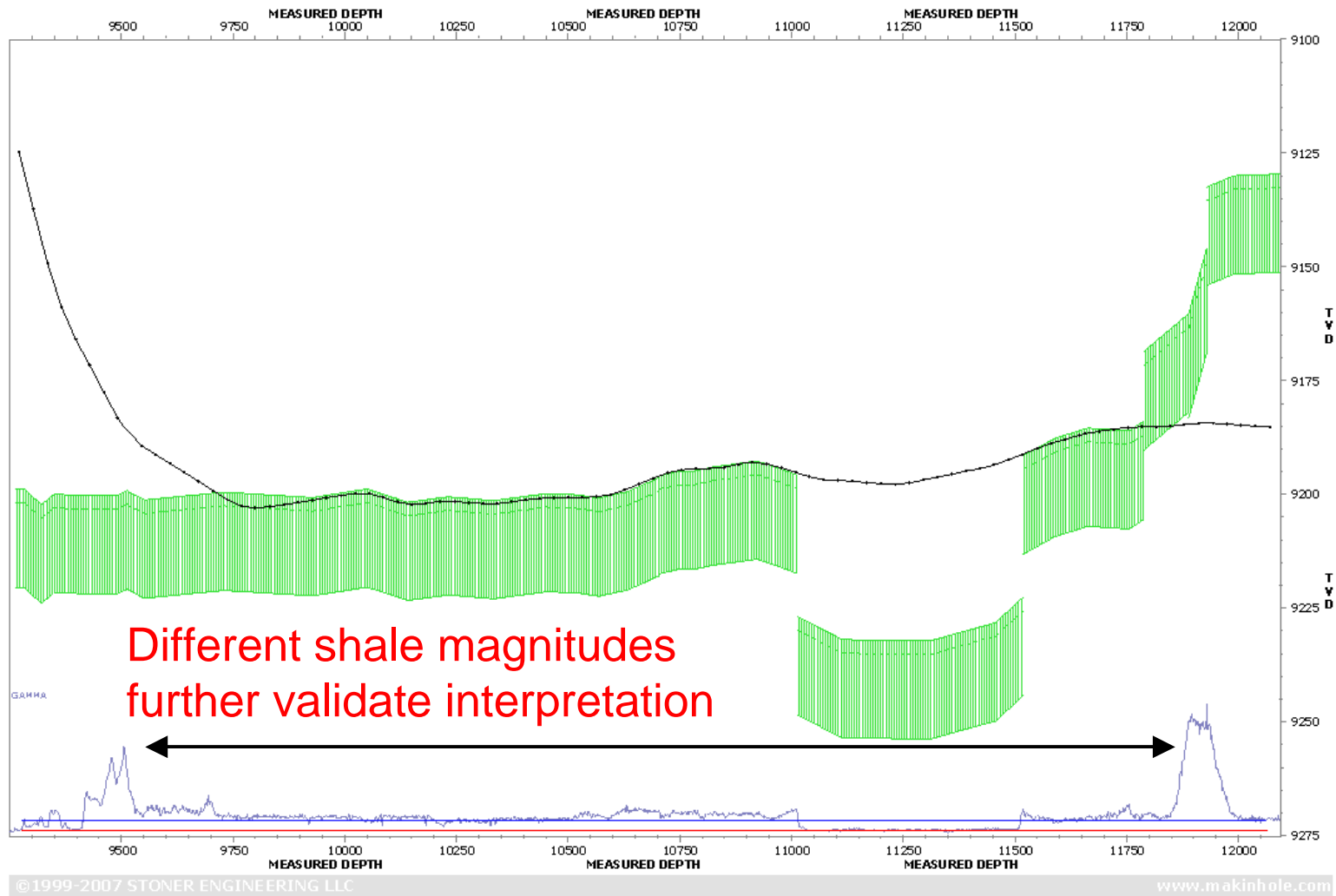


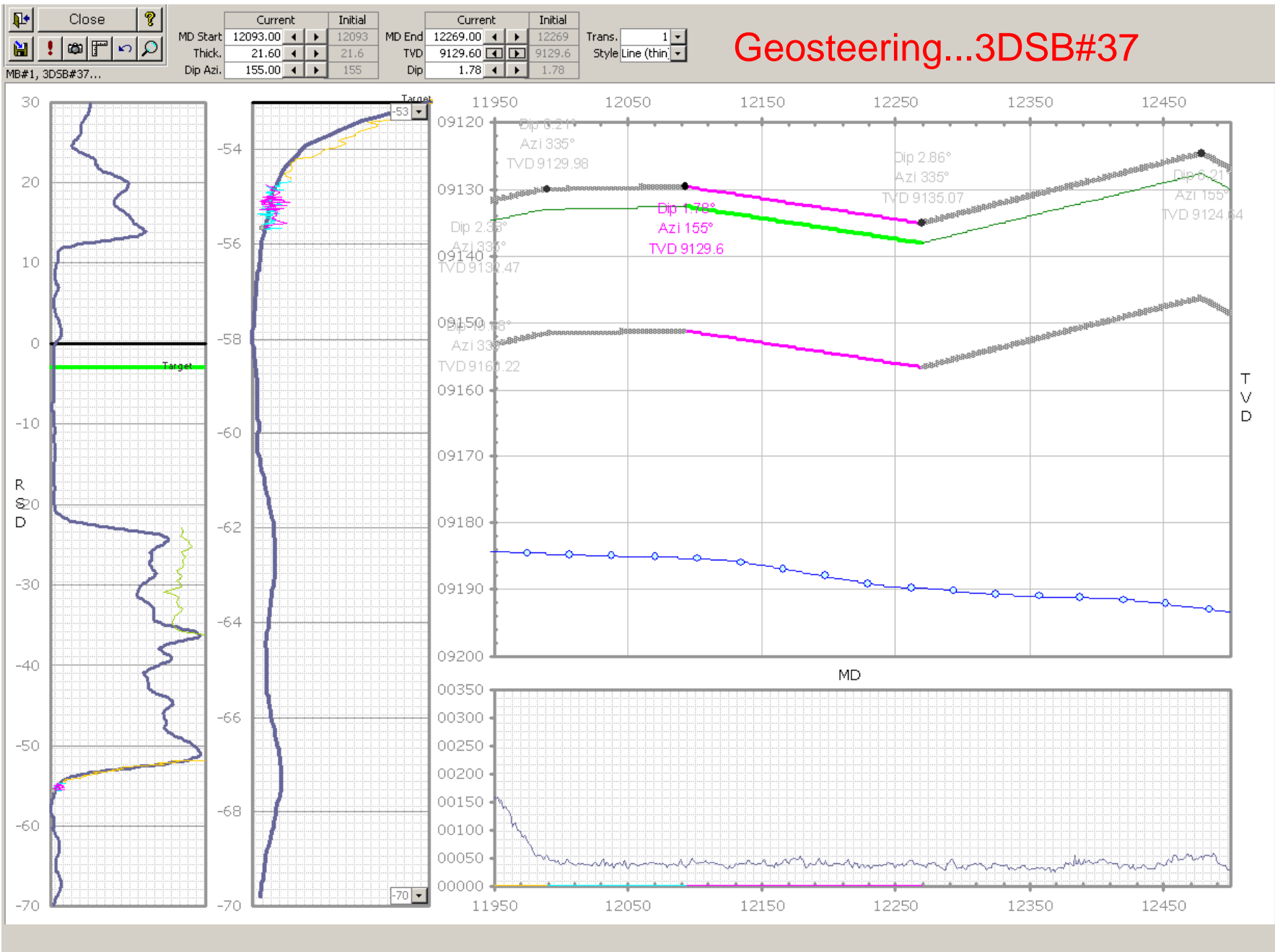




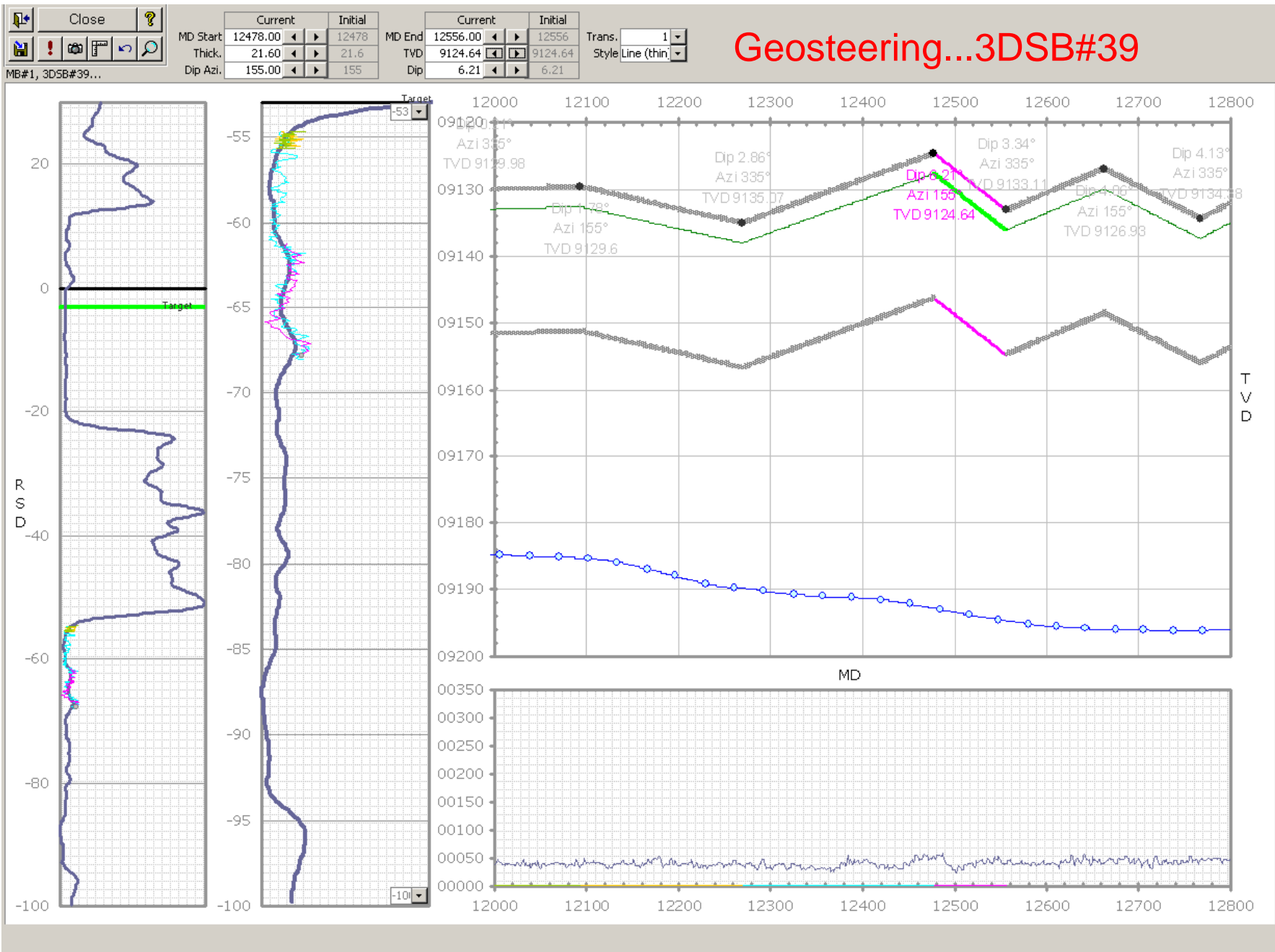


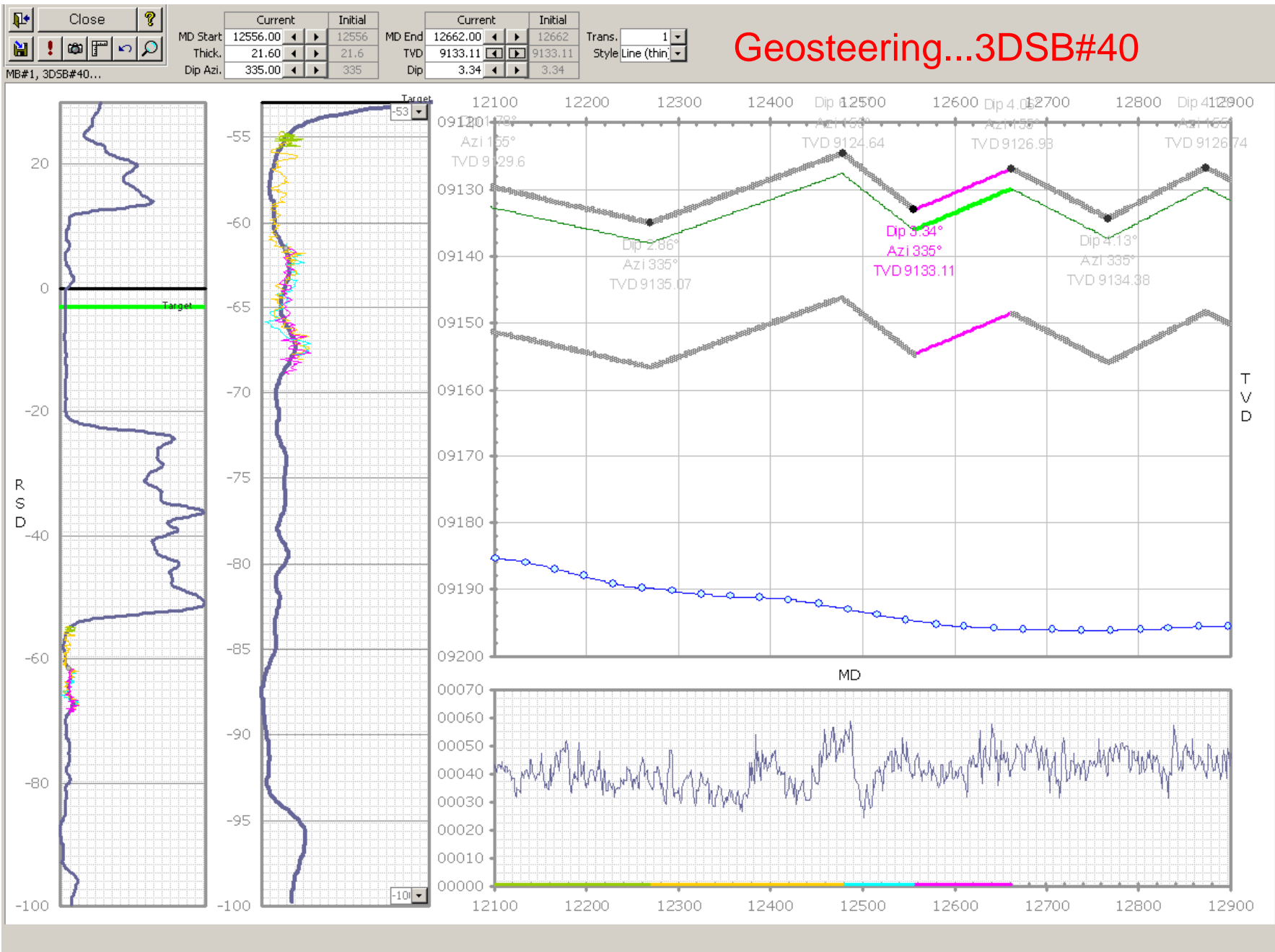
## Cross-section Screen





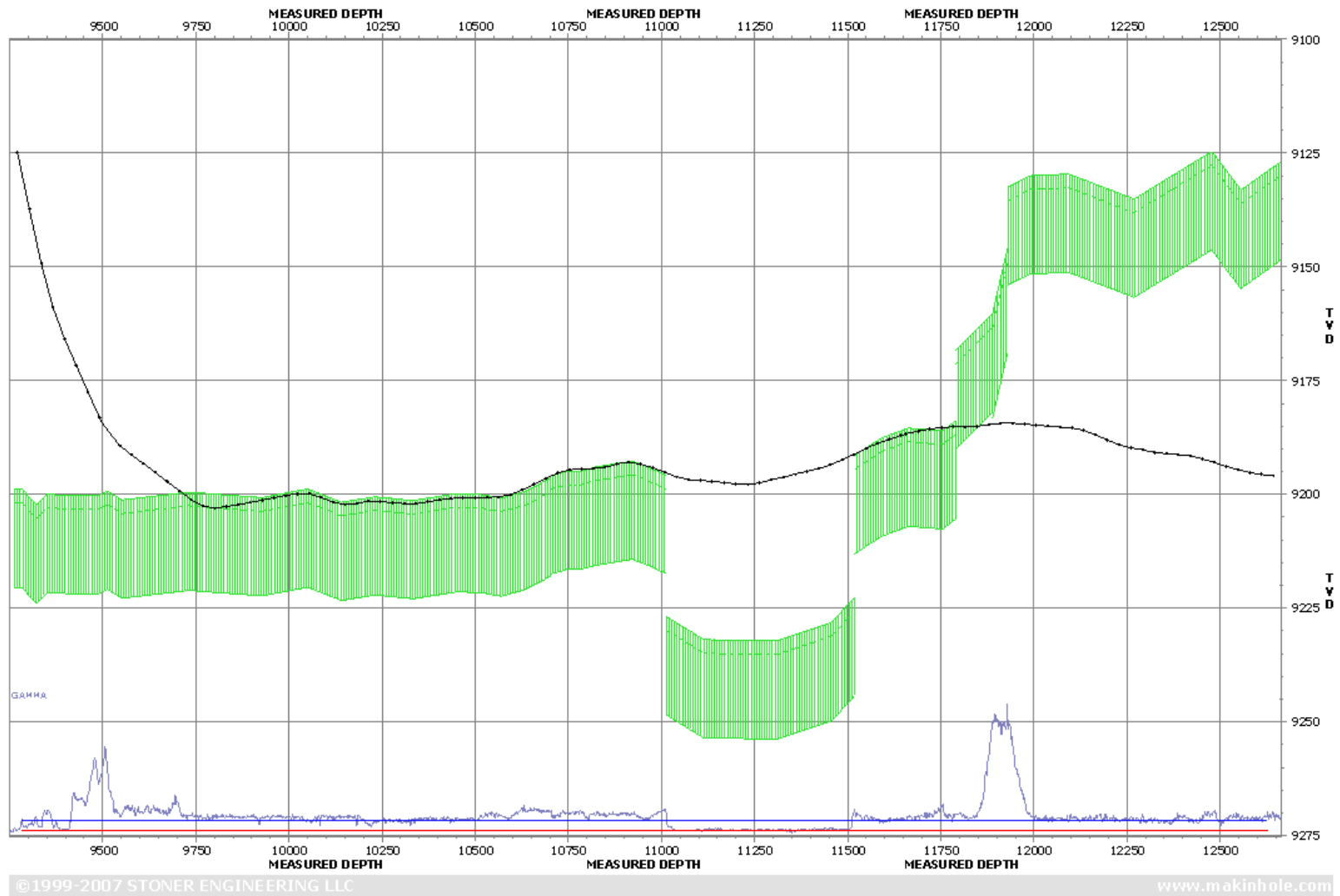






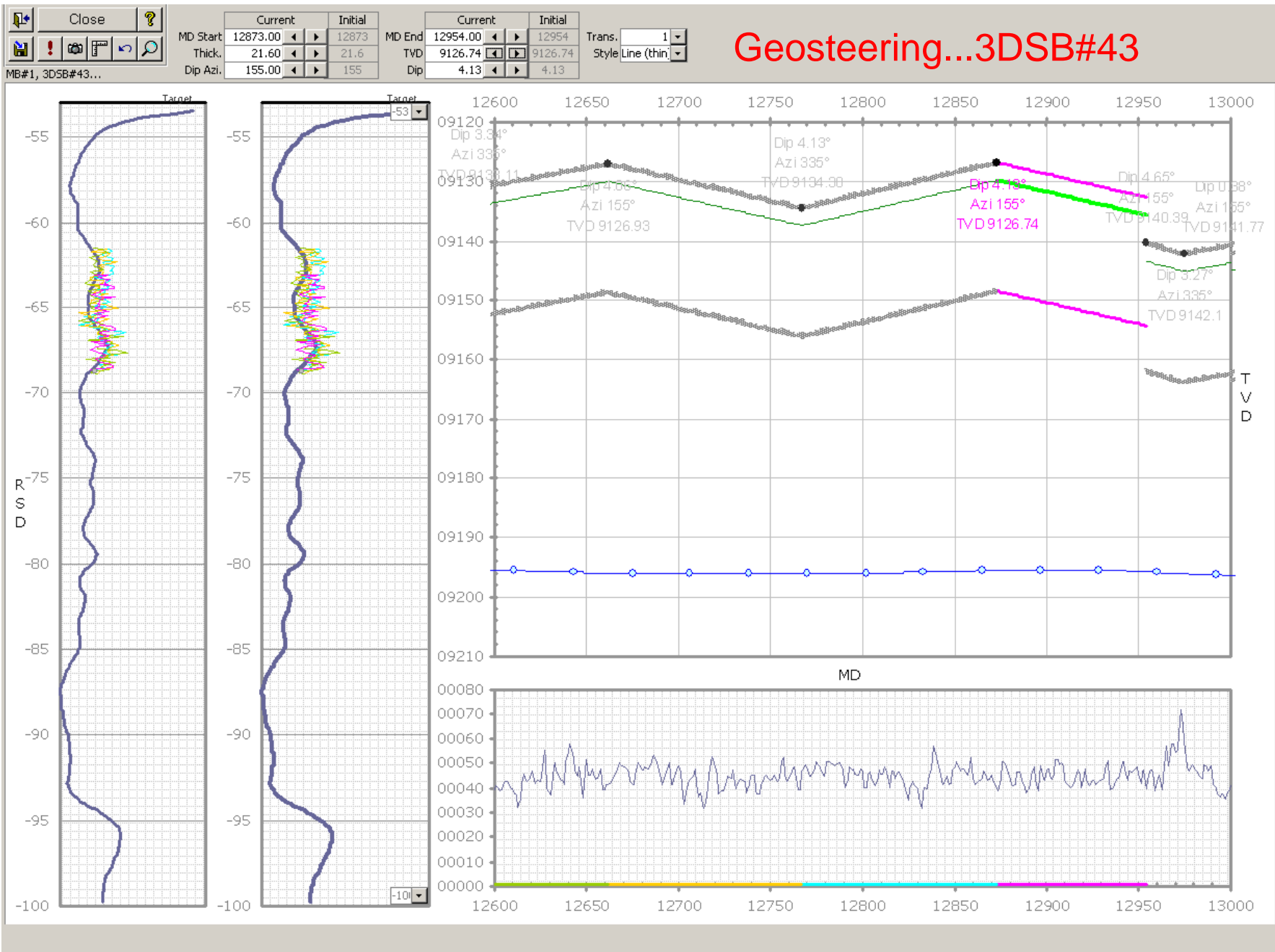


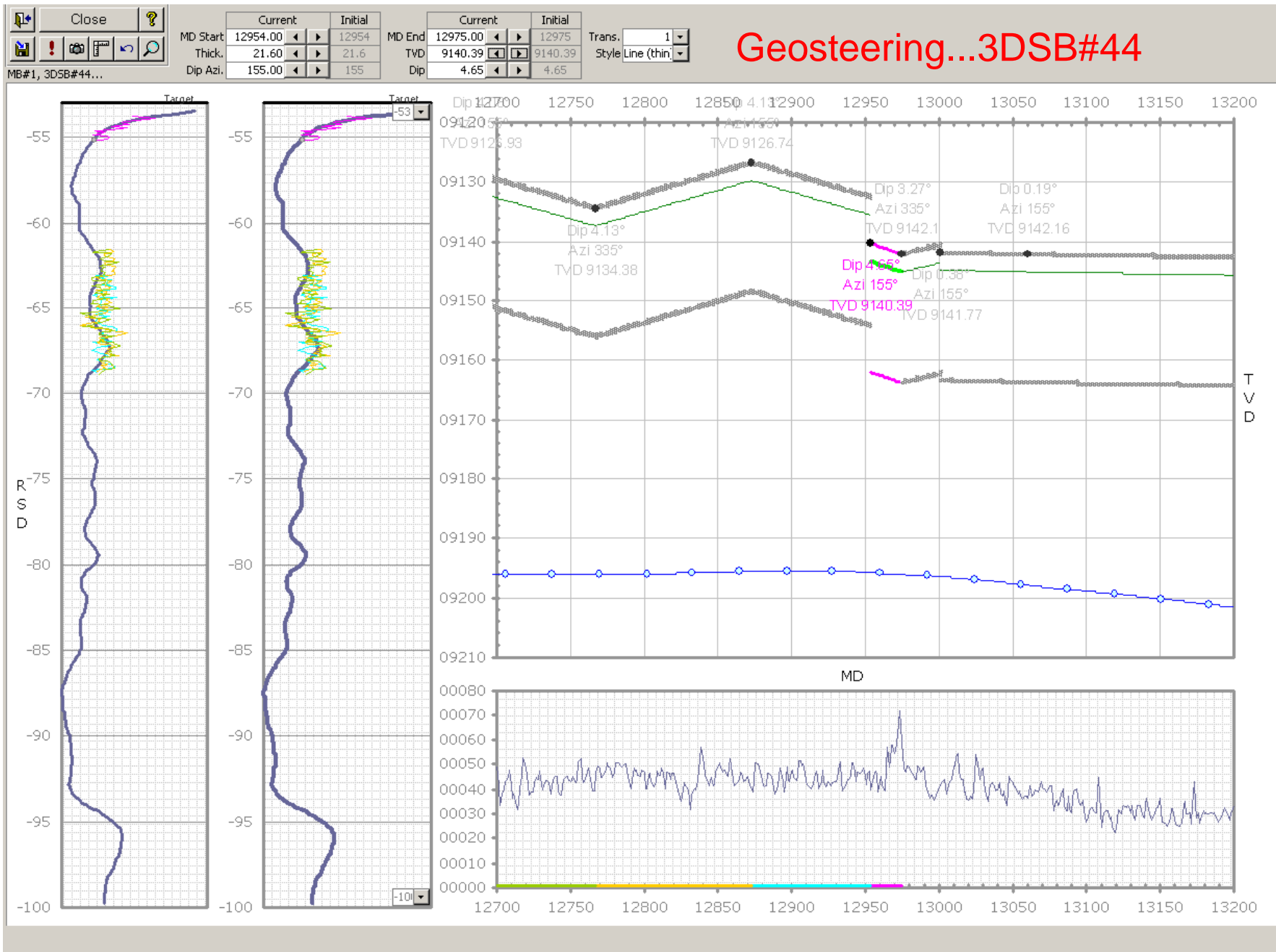
## Cross-section Screen

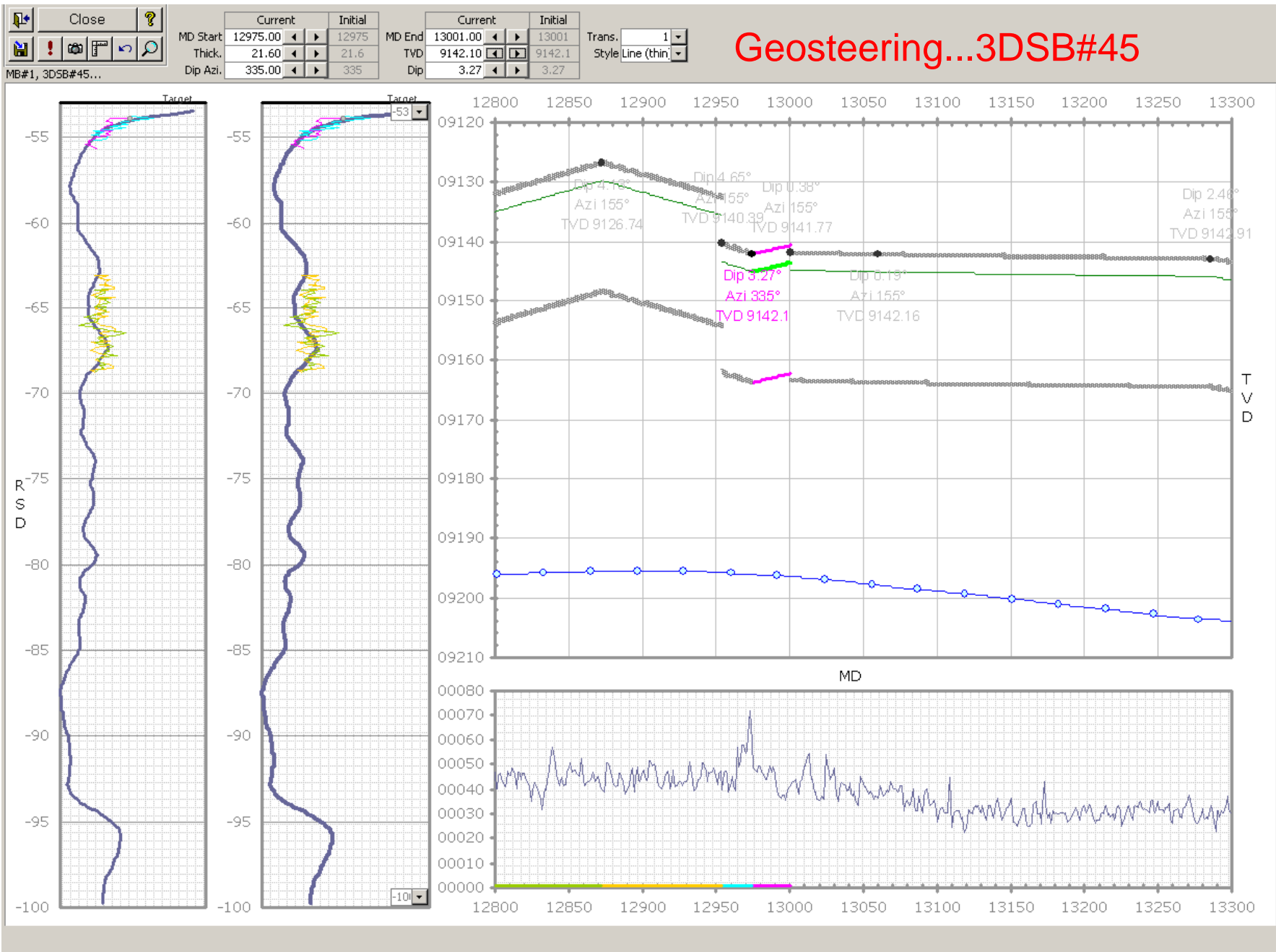




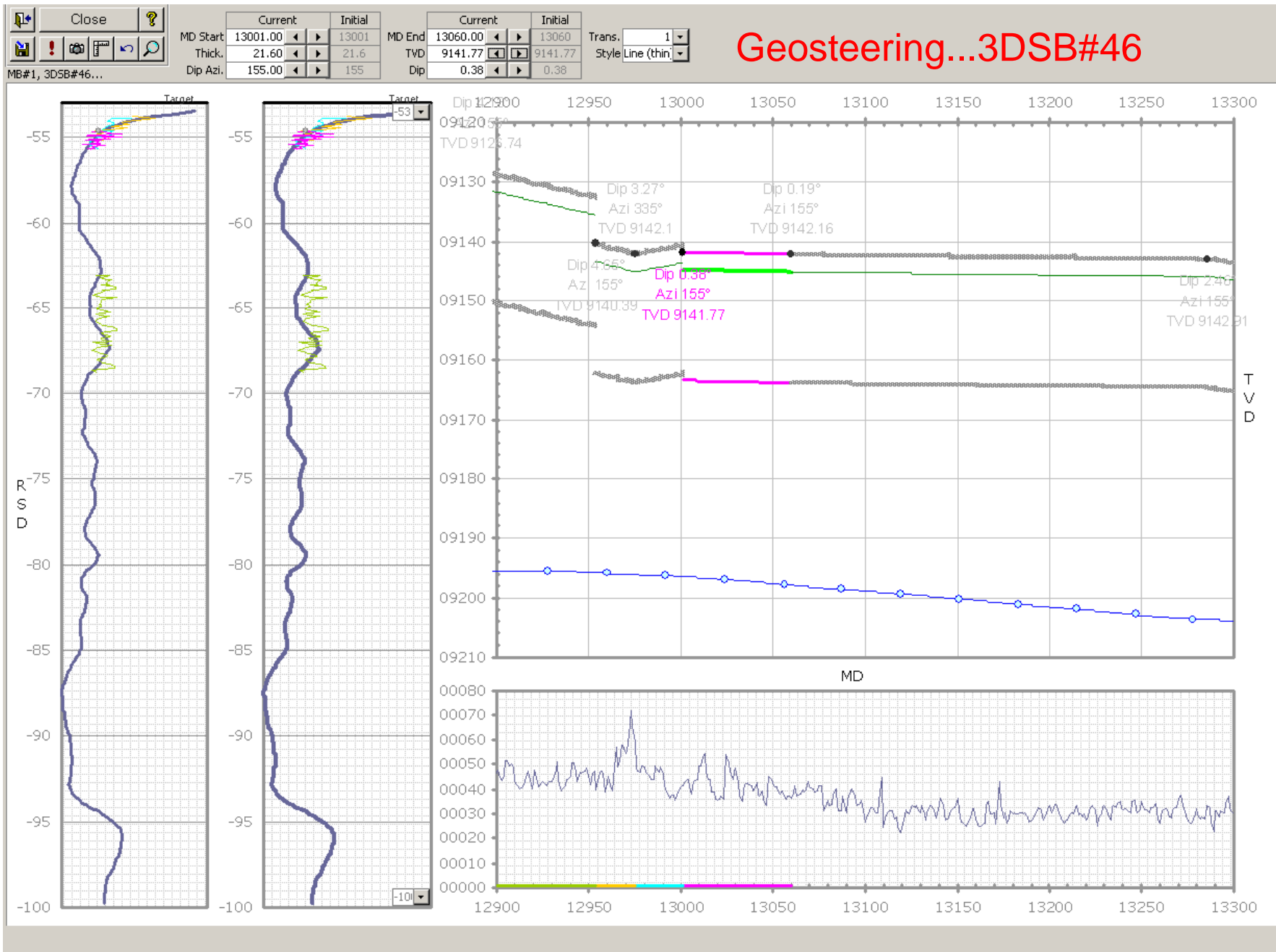




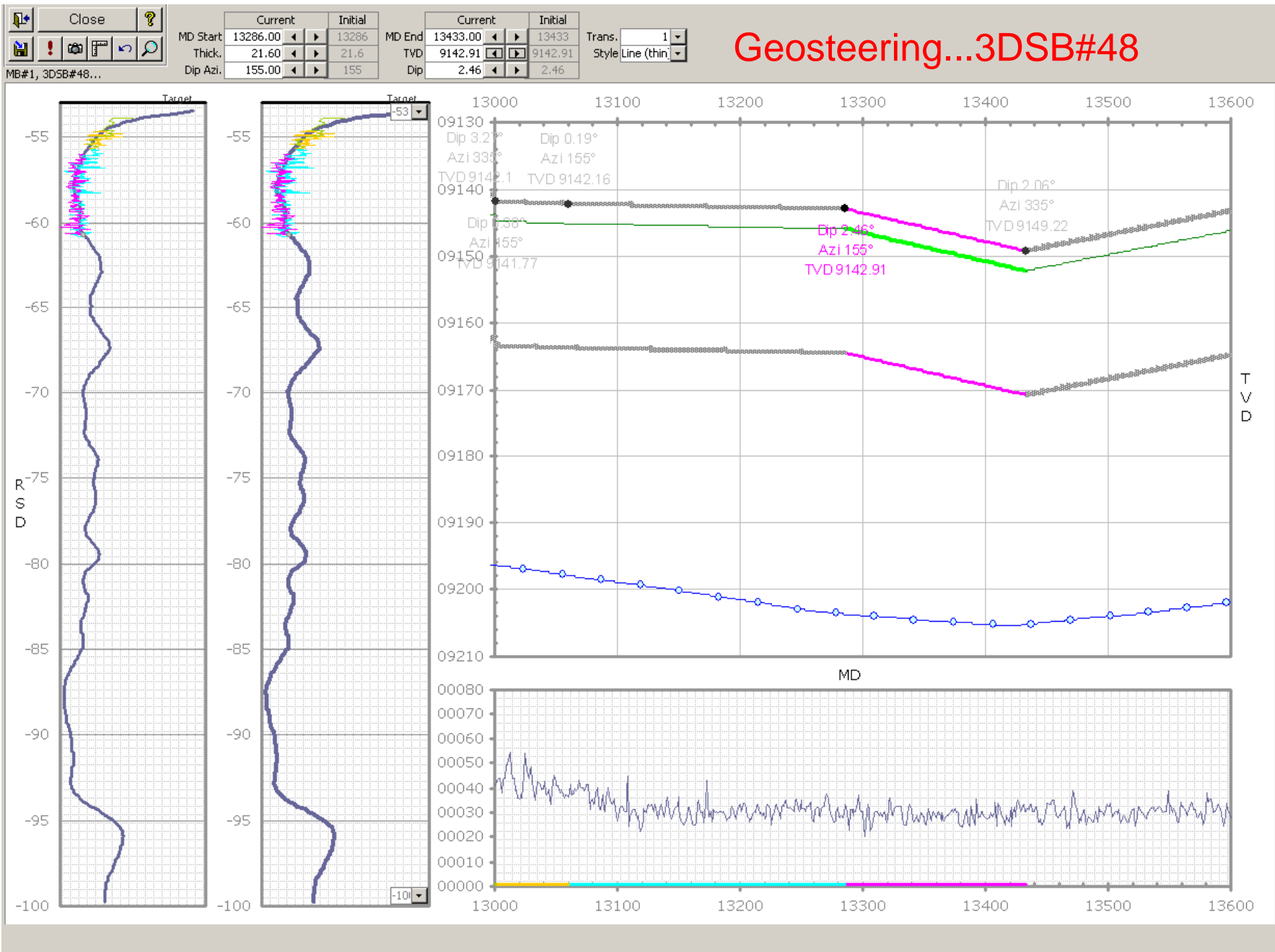


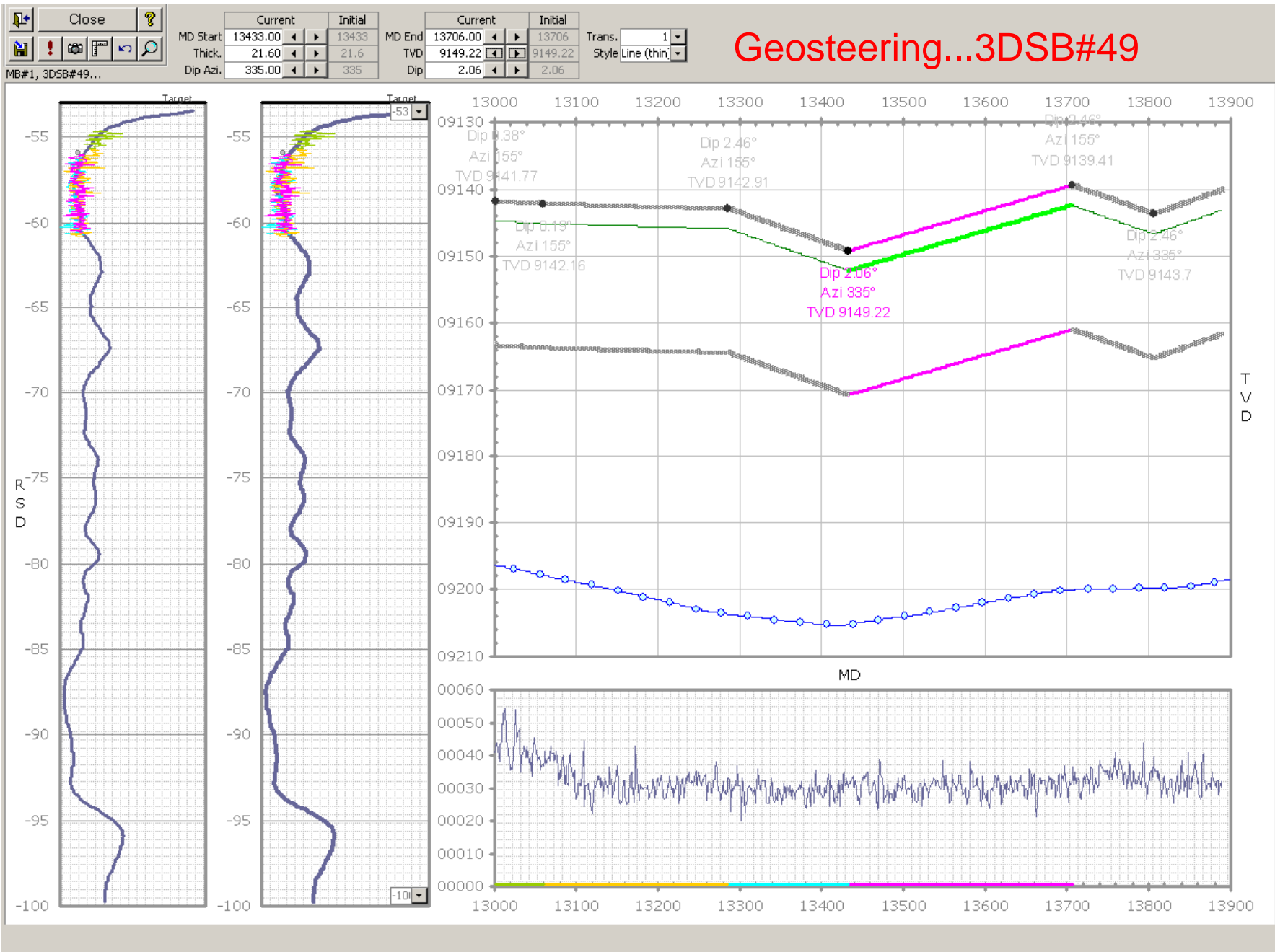


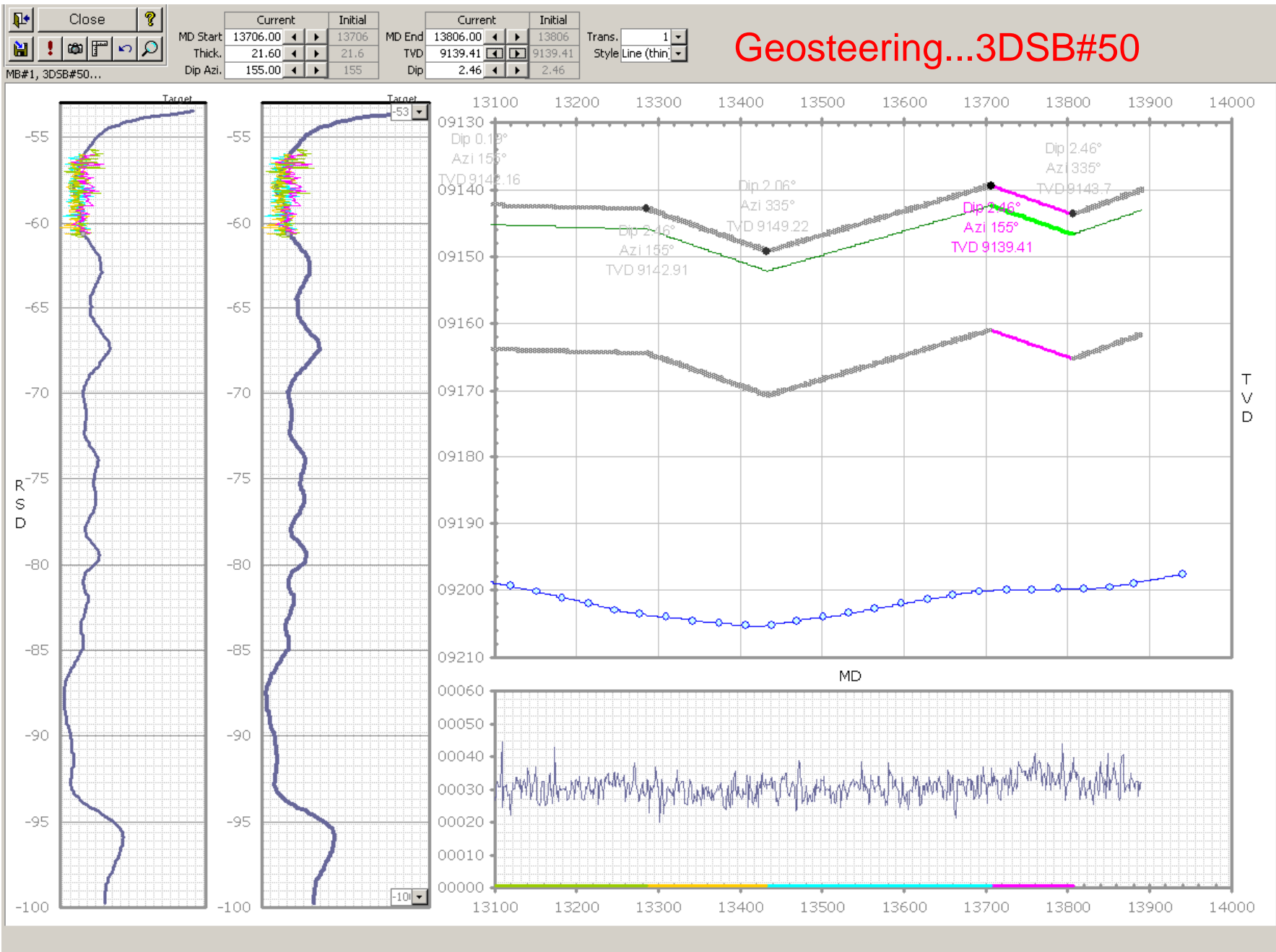






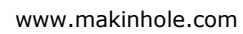






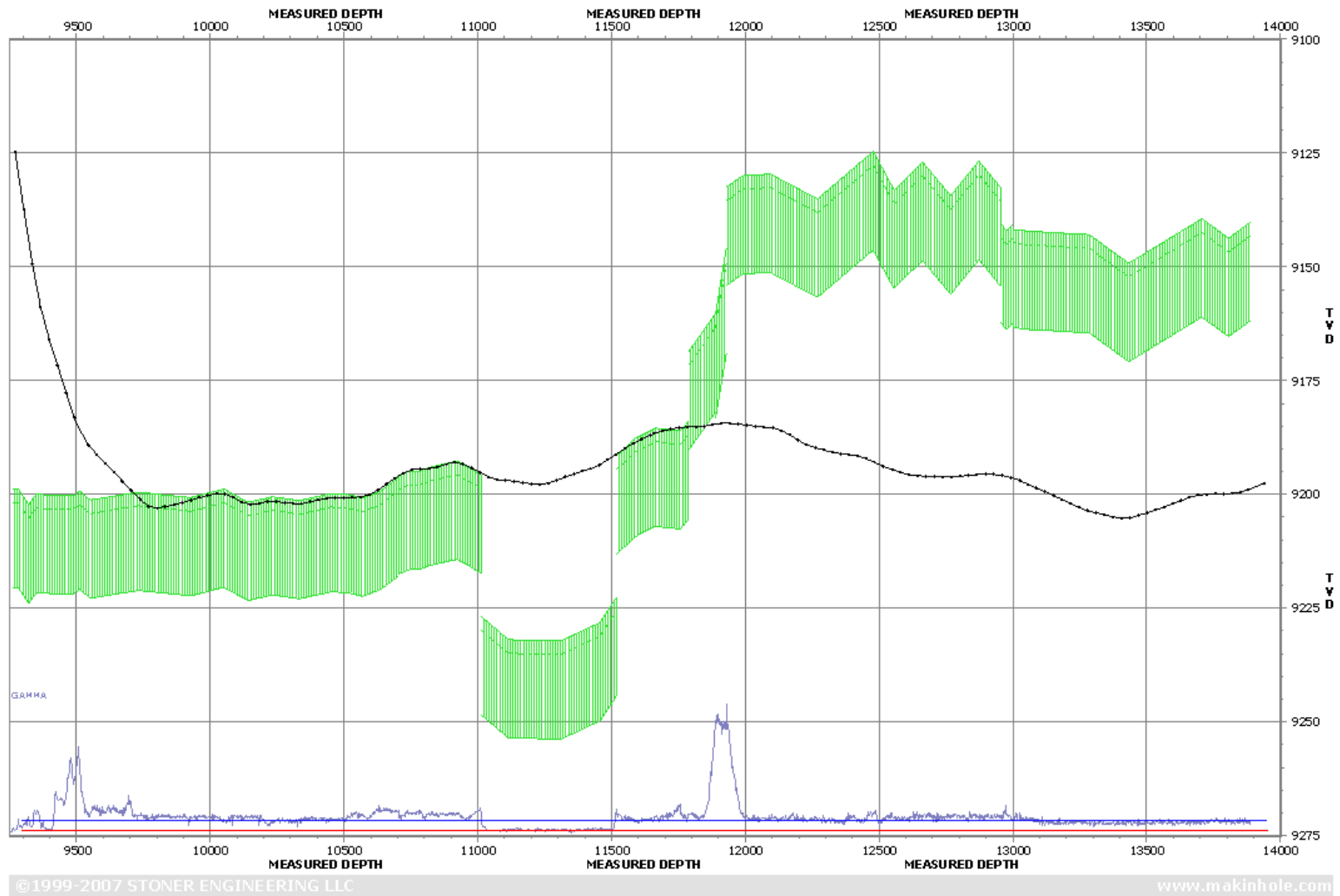
Close		<table border="1"> <thead> <tr> <th></th> <th>Current</th> <th>Initial</th> </tr> </thead> <tbody> <tr> <td>MD Start</td> <td>13806.00</td> <td>13806</td> </tr> <tr> <td>Thick.</td> <td>21.60</td> <td>21.6</td> </tr> <tr> <td>Dip Azi.</td> <td>335.00</td> <td>335</td> </tr> </tbody> </table>			Current	Initial	MD Start	13806.00	13806	Thick.	21.60	21.6	Dip Azi.	335.00	335	<table border="1"> <thead> <tr> <th></th> <th>Current</th> <th>Initial</th> </tr> </thead> <tbody> <tr> <td>MD End</td> <td>13890.00</td> <td>13890</td> </tr> <tr> <td>TVD</td> <td>9143.70</td> <td>9143.7</td> </tr> <tr> <td>Dip</td> <td>2.46</td> <td>2.46</td> </tr> </tbody> </table>			Current	Initial	MD End	13890.00	13890	TVD	9143.70	9143.7	Dip	2.46	2.46	Trans. <input type="text" value="1"/>
	Current	Initial																												
MD Start	13806.00	13806																												
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MD End	13890.00	13890																												
TVD	9143.70	9143.7																												
Dip	2.46	2.46																												
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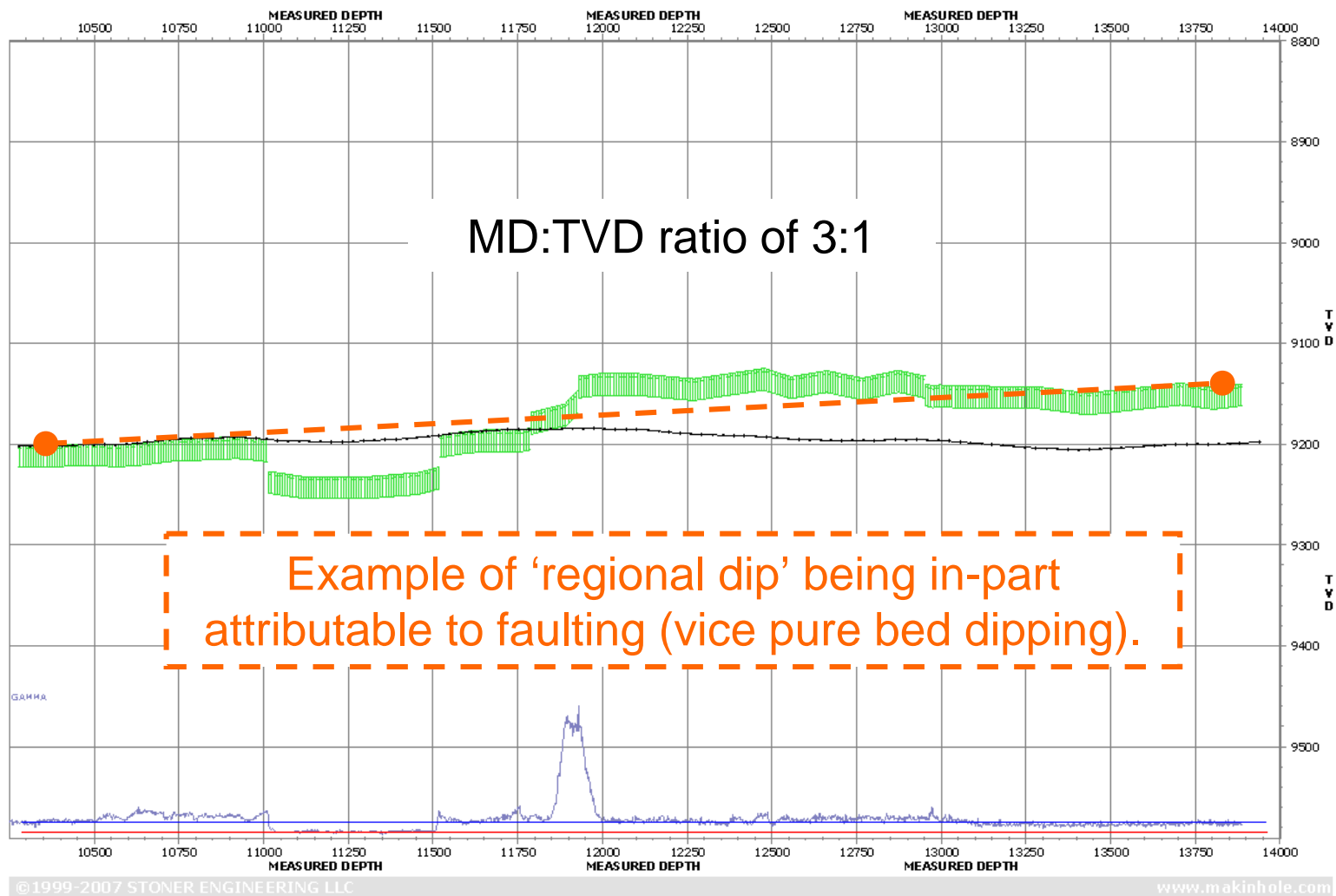
MB#1, 3D5B#51...



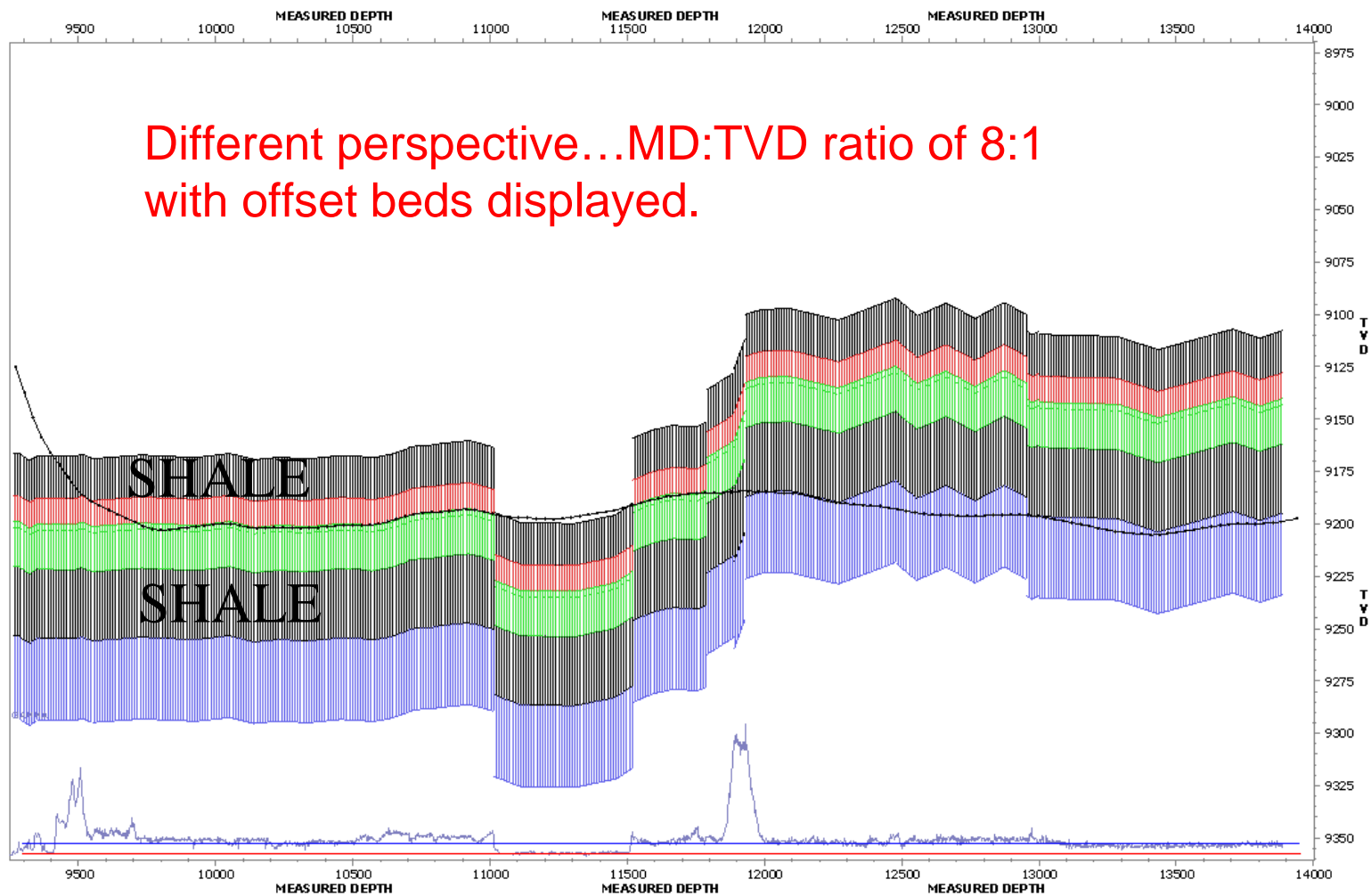


## Cross-section Screen





Different perspective...MD:TVD ratio of 8:1  
with offset beds displayed.



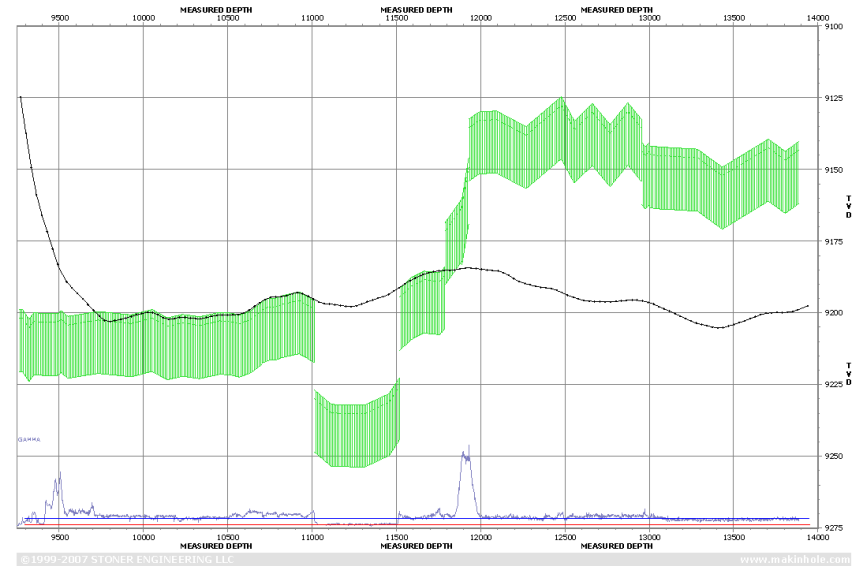
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## Export Coordinates of Zone Top (@RSD=0) to transfer to other software

MD	TVD	N	E	3DStratBlock	X	Y	Z
9263	9198.95	-308.7897	190.1086	0	190.1086	-308.7897	-9198.95
9273.5	9198.909	-317.5543	194.216	0	194.216	-317.5543	-9198.909
9284	9198.869	-326.3216	198.3187	0	198.3187	-326.3216	-9198.869
9284	9198.87	-326.3216	198.3187	1	198.3187	-326.3216	-9198.87
9302.5	9200.579	-341.7505	205.5431	1	205.5431	-341.7505	-9200.579
9321	9202.295	-357.2545	212.7546	1	212.7546	-357.2545	-9202.295
9321	9202.3	-357.2545	212.7546	2	212.7546	-357.2545	-9202.3
9335	9201.139	-369.1066	218.1962	2	218.1962	-369.1066	-9201.139
9349	9199.963	-381.105	223.6849	2	223.6849	-381.105	-9199.963
9349	9199.96	-381.105	223.6849	3	223.6849	-381.105	-9199.96
9372	9200.057	-401.1848	232.9072	3	232.9072	-401.1848	-9200.057
9395	9200.154	-421.624	242.1672	3	242.1672	-421.624	-9200.154
9418	9200.253	-442.2223	251.4756	3	251.4756	-442.2223	-9200.253
9418	9200.25	-442.2223	251.4756	4	251.4756	-442.2223	-9200.25
9441.667	9200.25	-463.3412	261.2475	4	261.2475	-463.3412	-9200.25
9465.333	9200.25	-484.4075	271.0441	4	271.0441	-484.4075	-9200.25
9489	9200.25	-505.4823	280.9357	4	280.9357	-505.4823	-9200.25
9489	9200.25	-505.4823	280.9357	5	280.9357	-505.4823	-9200.25
9501	9199.739	-516.1826	286.0159	5	286.0159	-516.1826	-9199.739
9513	9199.227	-526.8948	291.1666	5	291.1666	-526.8948	-9199.227
9513	9199.231	-526.8948	291.1666	6	291.1666	-526.8948	-9199.231
9532	9200.23	-543.8654	299.4616	6	299.4616	-543.8654	-9200.23
9551	9201.232	-560.8293	307.9076	6	307.9076	-560.8293	-9201.232
9551	9201.231	-560.8293	307.9076	7	307.9076	-560.8293	-9201.231
9595.75	9200.802	-600.8305	327.7794	7	327.7794	-600.8305	-9200.802
9640.5	9200.373	-640.8033	347.7099	7	347.7099	-640.8033	-9200.373

- Geologists familiar with the play and privy to all data sources can produce the most-likely interpretation(s)
- 3D Technical geosteering software (**SES**), when correctly applied, may enable a quantum leap of interpretation confidence compared to legacy geosteering methods that rely only on drafting tools



**Mike Stoner, Ph.D.**  
**Founder & Managing Director**  
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