

GeoEast解释-常规合成记录标定

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中油油气勘探软件国家工程研究中心

2026年6月23日

GeoEast

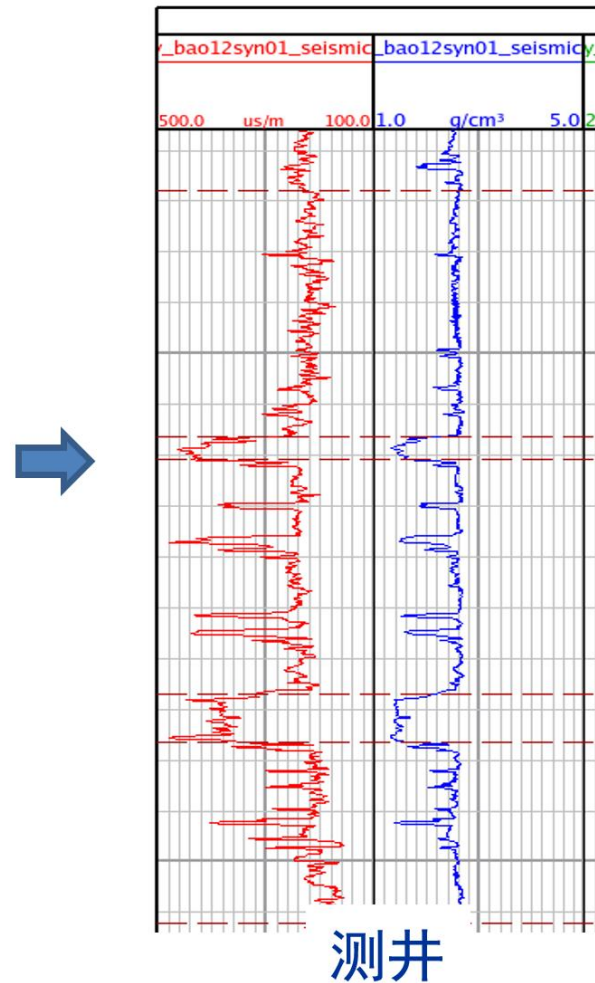
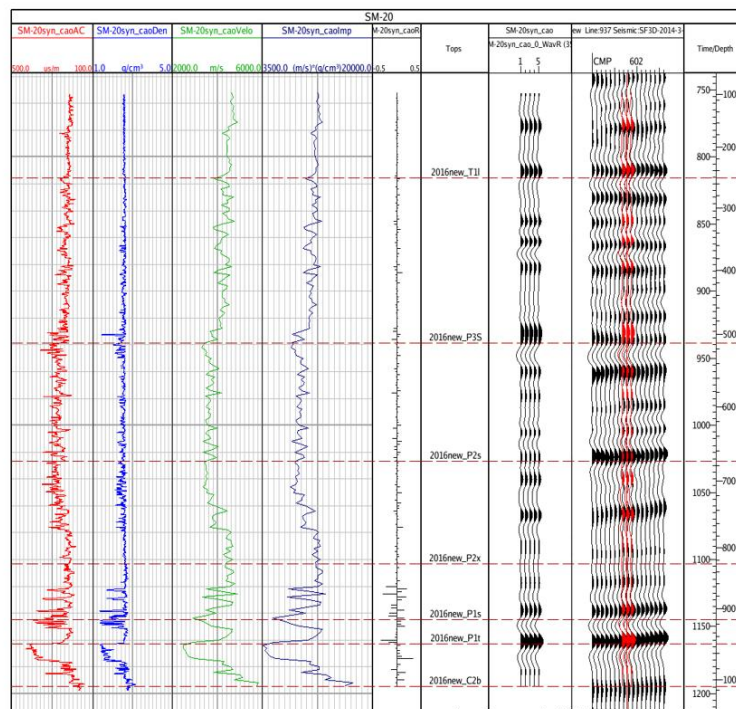
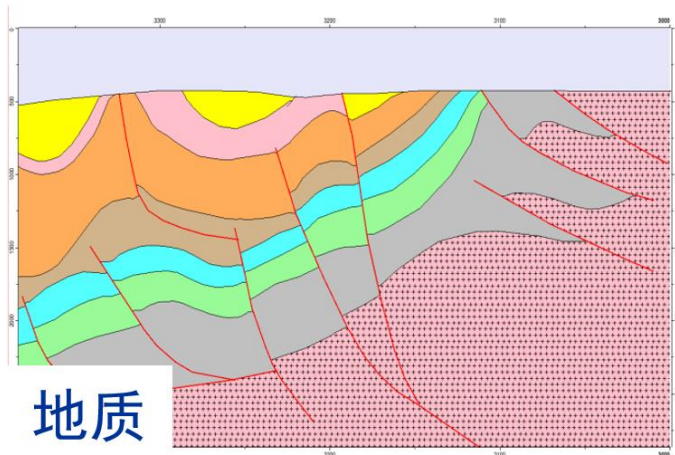
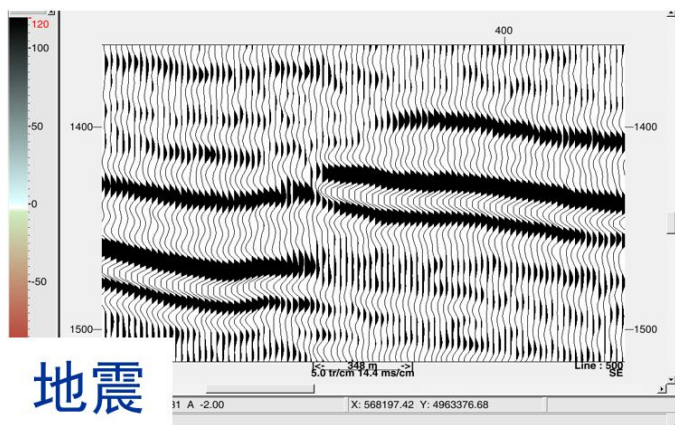




一、常规合成记录标定概述



合成记录标定目的：确定合理的时深关系



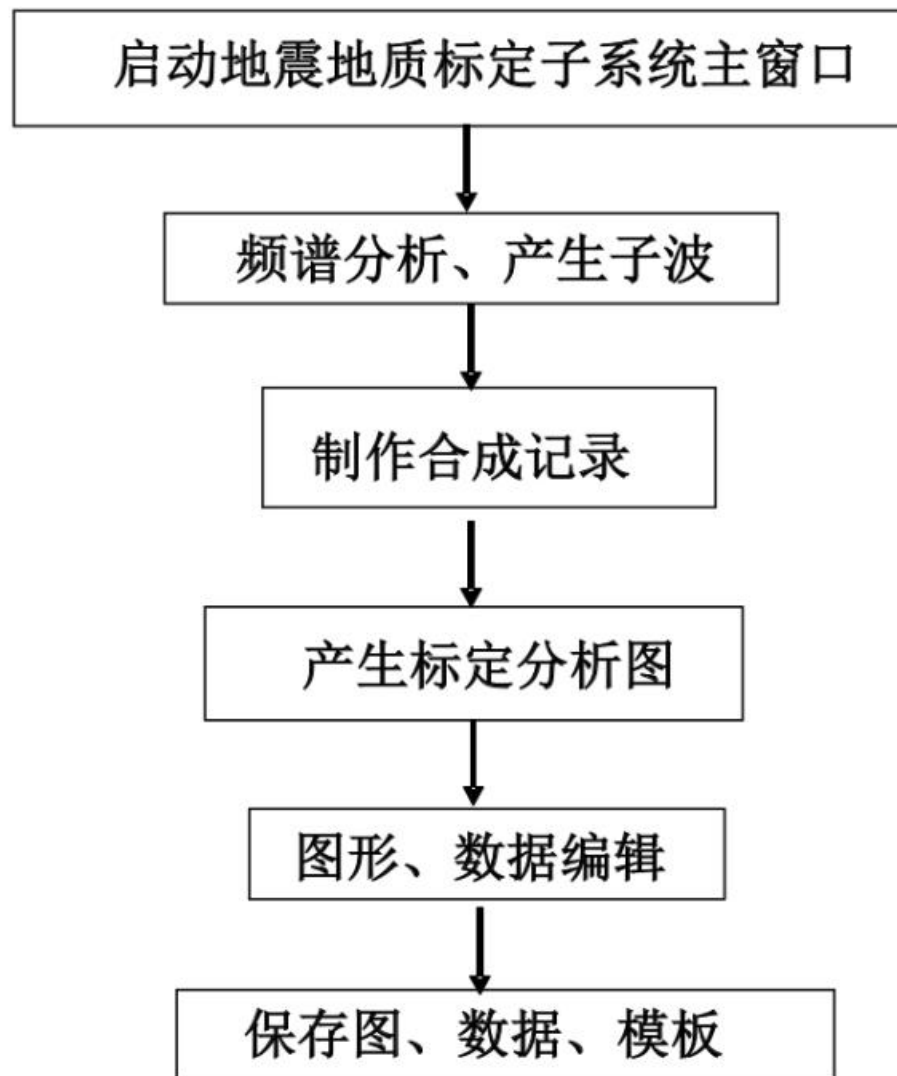


一、常规合成记录标定概述



数据准备:

- 建立项目、建立工区（地震基准面）、加载地震
- 加载井口坐标（KB）、井轨迹、AC（单位公制、无异常值）

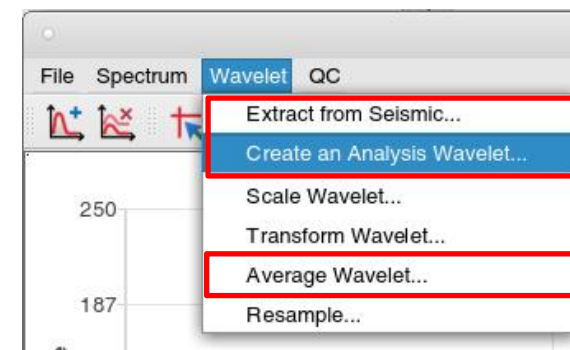
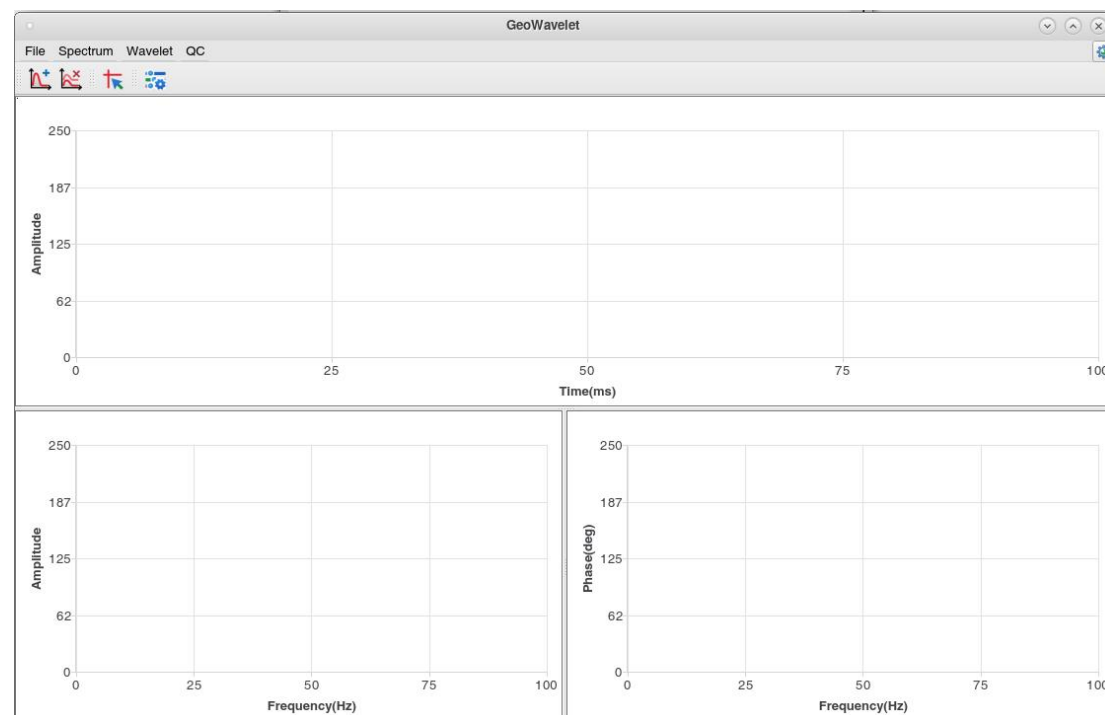




二、生成子波



启动:





二、生成子波-雷克子波

Set Wavelet

WaveletType

☒ Ricker ☐ Bandpass ☐ Yu's

雷克子波 带通子波 余氏子波

Spectrum Analysis ...

Low Cut 10 High Cut 75 Dom Freq 40

Low Pass 15 High Pass 70

Length 100 (40 ~ 800ms) Interval 1 ms

Phase 0 deg -180 180

Output Wavelet rick45 List...

Calculate Calculate&Save Spectrum QC Close

Spectrum Analysis

Select Volume

Name mig

Window Range

Mode Z - Z

Start Value 1250 0 2500

End Value 1750 0 2500

Line-Trace Range

Start Line 630 500 780

End Line 630 500 780

Start CMP 261 220 700

End CMP 261 220 700

Location with well H47

Calculate Close

Select Seismic Volume

Select Data Volume

Survey Type 3D

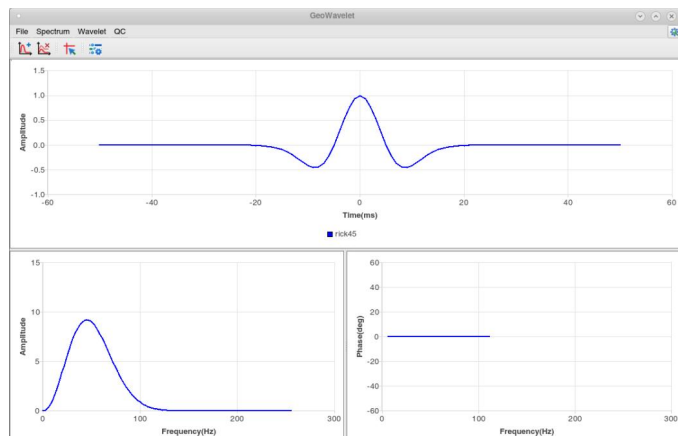
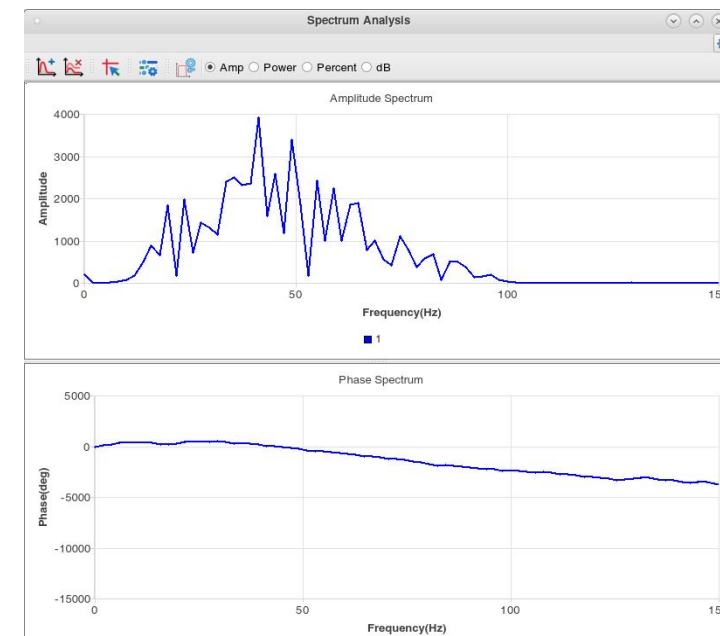
Survey List

Data Volume

Filter mig

Well projected position: Search Line & CMP

OK Cancel





二、生成子波-雷克子波



Set Wavelet

WaveletType

☒ Ricker ☐ Bandpass ☐ Yu's

Spectrum Analysis ...

Low Cut 10 High Cut 75 Dom Freq 45
Low Pass 15 High Pass 70 主频

Length 100 (40 ~ 800ms) Interval 1 ms
Phase 0 deg -180 180

Output Wavelet rick45 List...

Calculate Calculate&Save **Spectrum QC** Close

Compare Wavelet Amplitude with Seismic

Select Volume

Name mlg ...

Window Range

Mode Z - Z

Start Value 1250 0 2500
End Value 1750 0 2500

☐ From Basemap

From Well :

H47

Well Name Filter H47

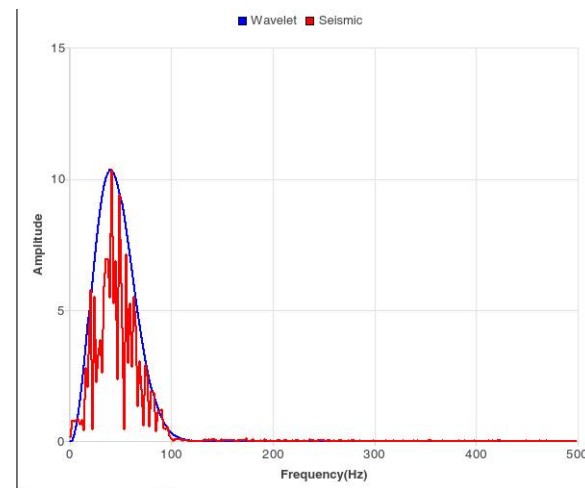
Search Direction: Both

Search Radius(T): 0

Line CMP

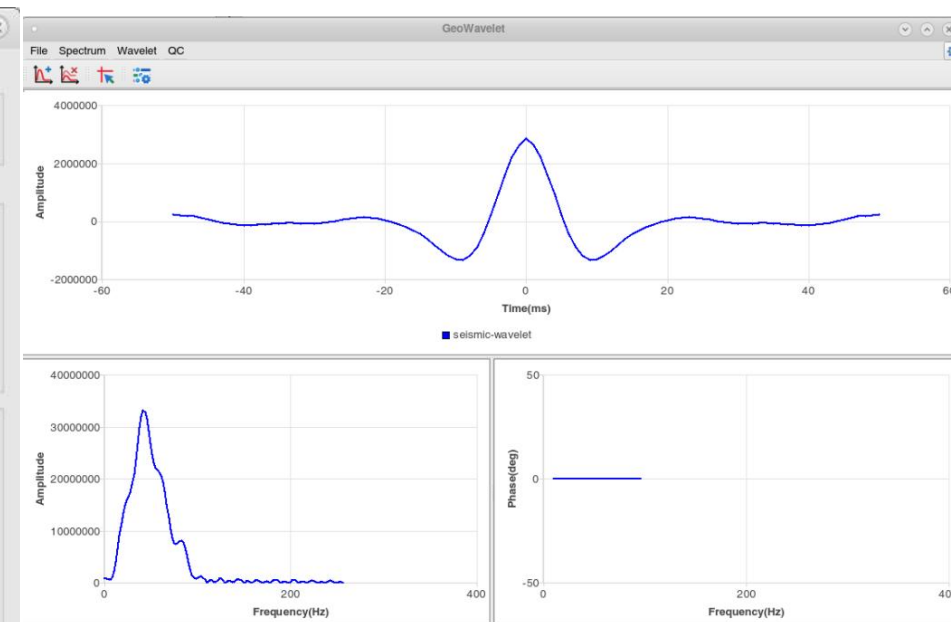
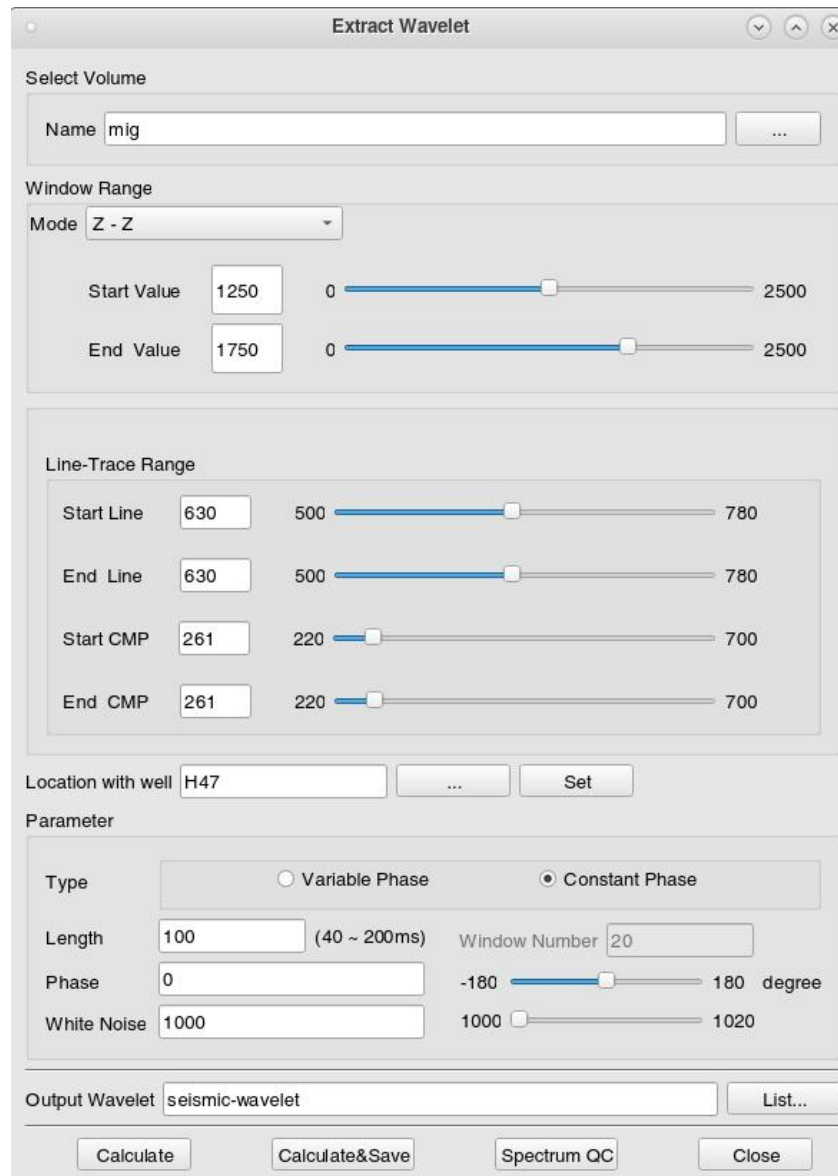
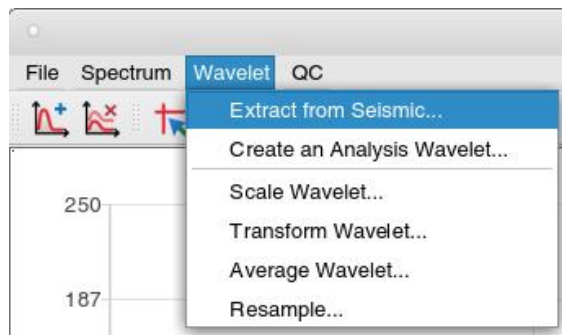
1 630 261

Calculate Close



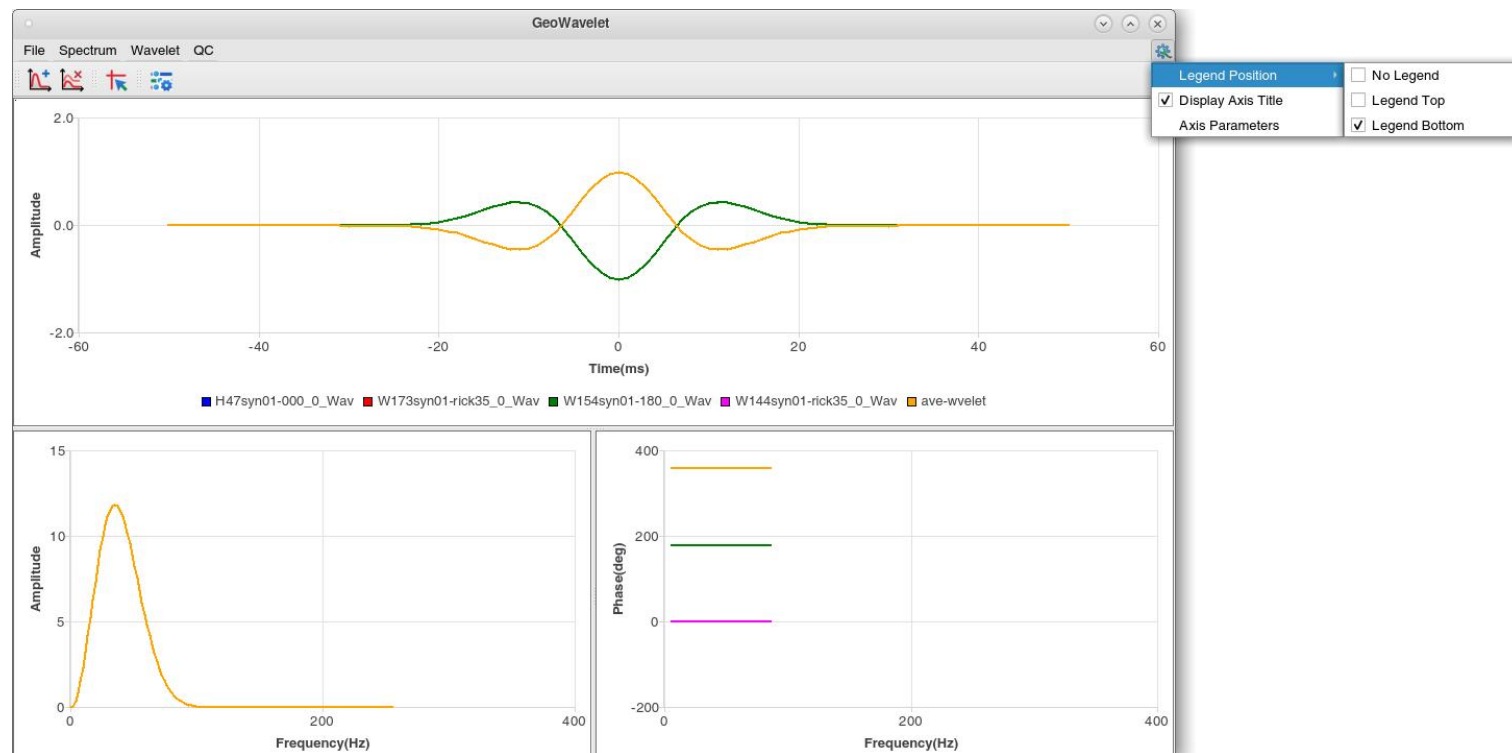
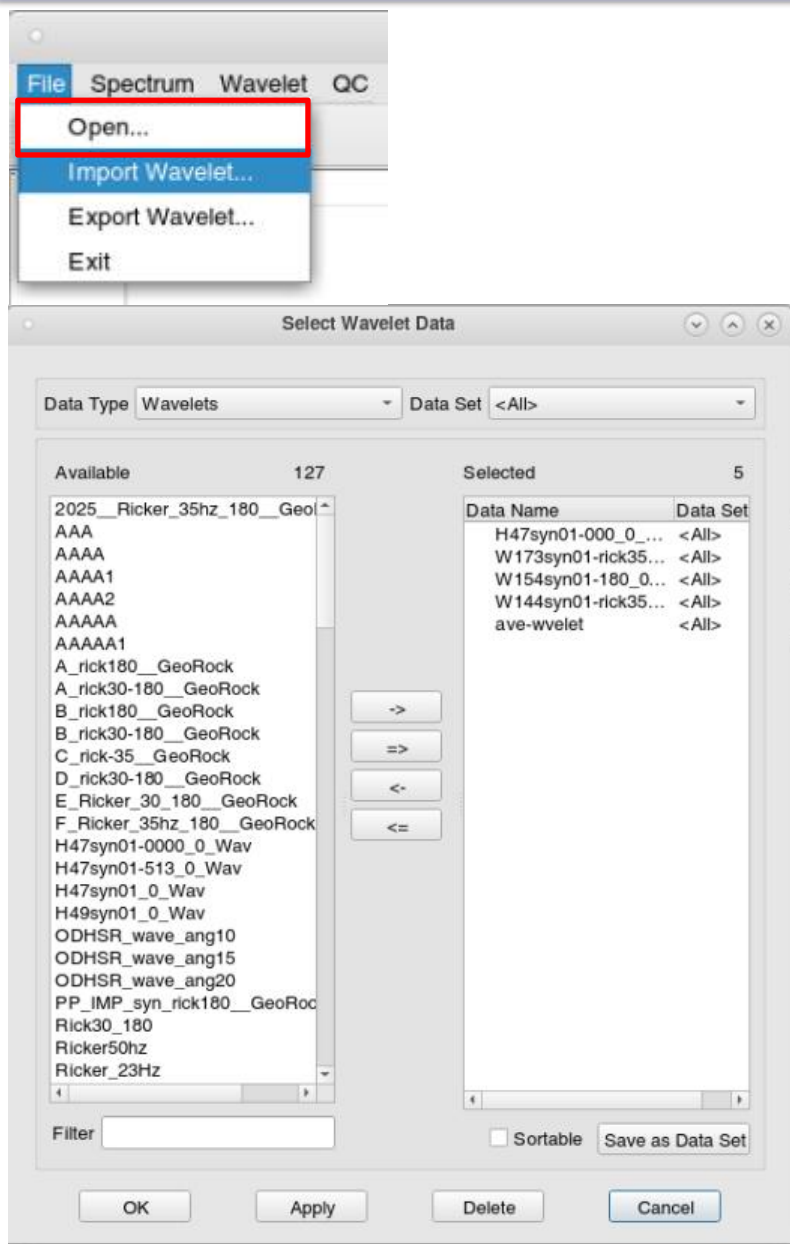


二、生成子波-井旁地震道提取子波



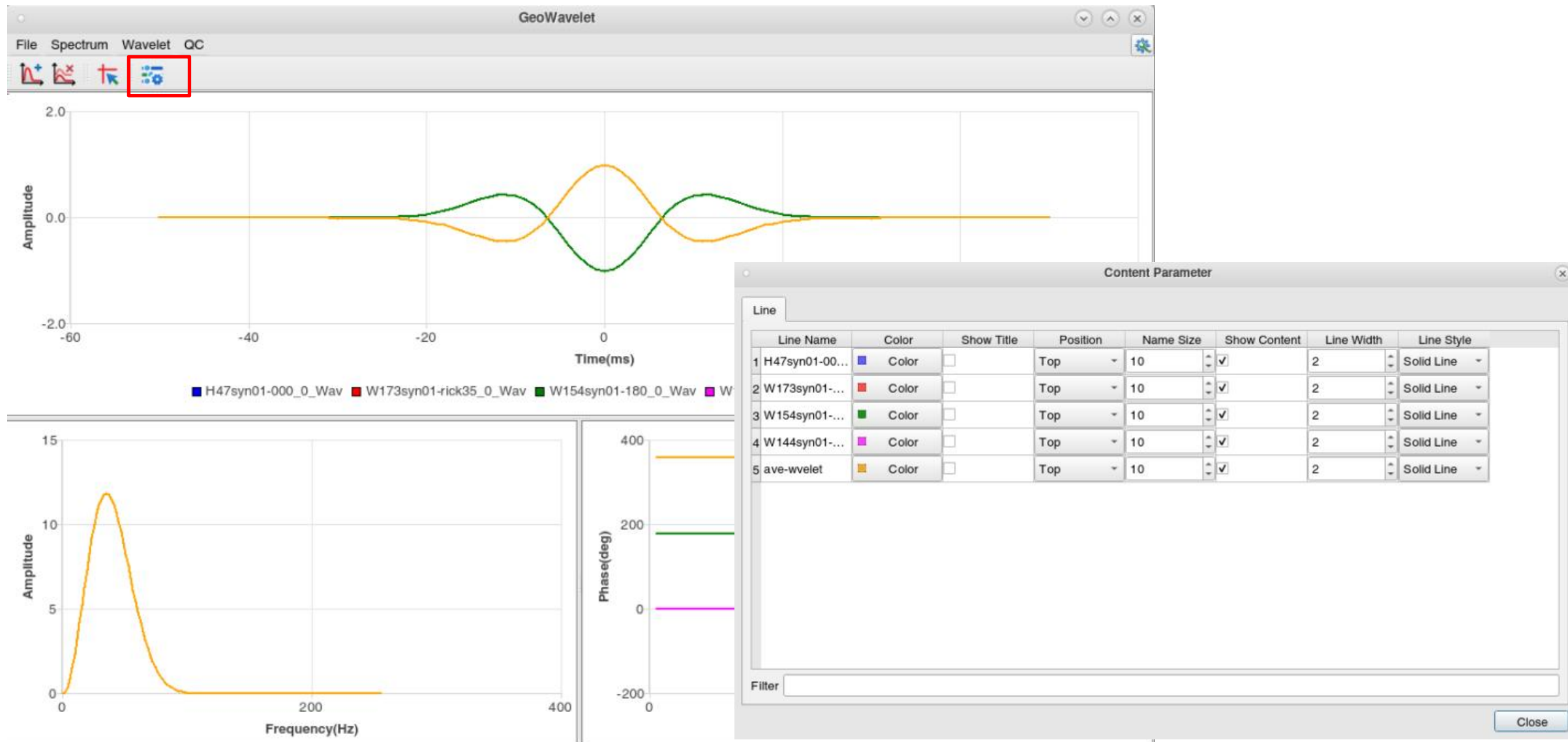


二、生成子波-子波显示



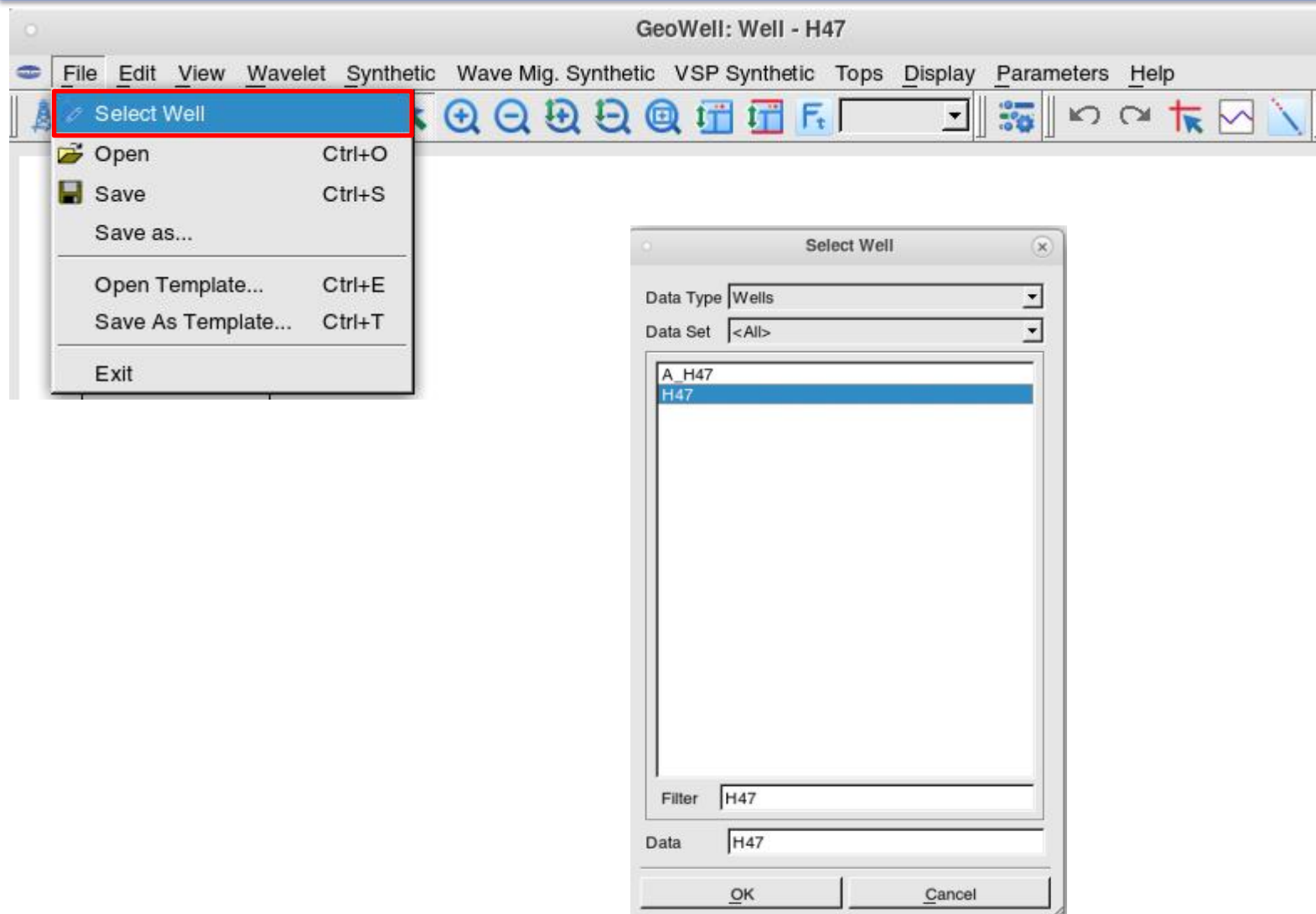


二、生成子波-子波显示



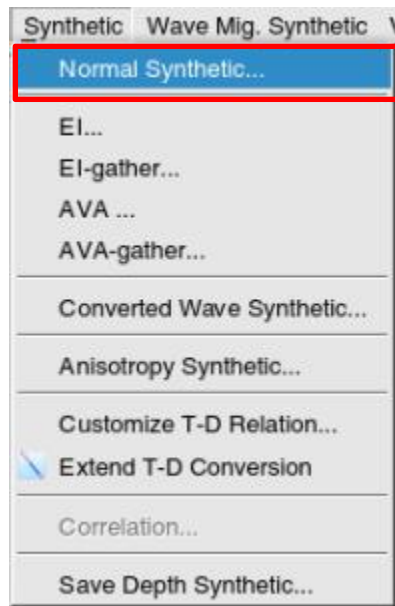


三、合成记录标定





三、合成记录标定



Create Synthetic

☒ Select AC Data

Name

☐ Select DEN Data

Name

☐ Constant

☐ Check-Shot

☒ DT ☐ Modify AC

Select Survey

Name

Datum (m)

Select Wavelet

Name

Set Parameter

KB (m)	0	Depth Range (tvd m)	(228.750~2438.750)
Start V0 (m/s)	2000	Start Depth (tvd m)	228.750
Synthetic Interval (ms)	1	End Depth (tvd m)	2438.750

Synthetic Name

初始速度

输入数据:

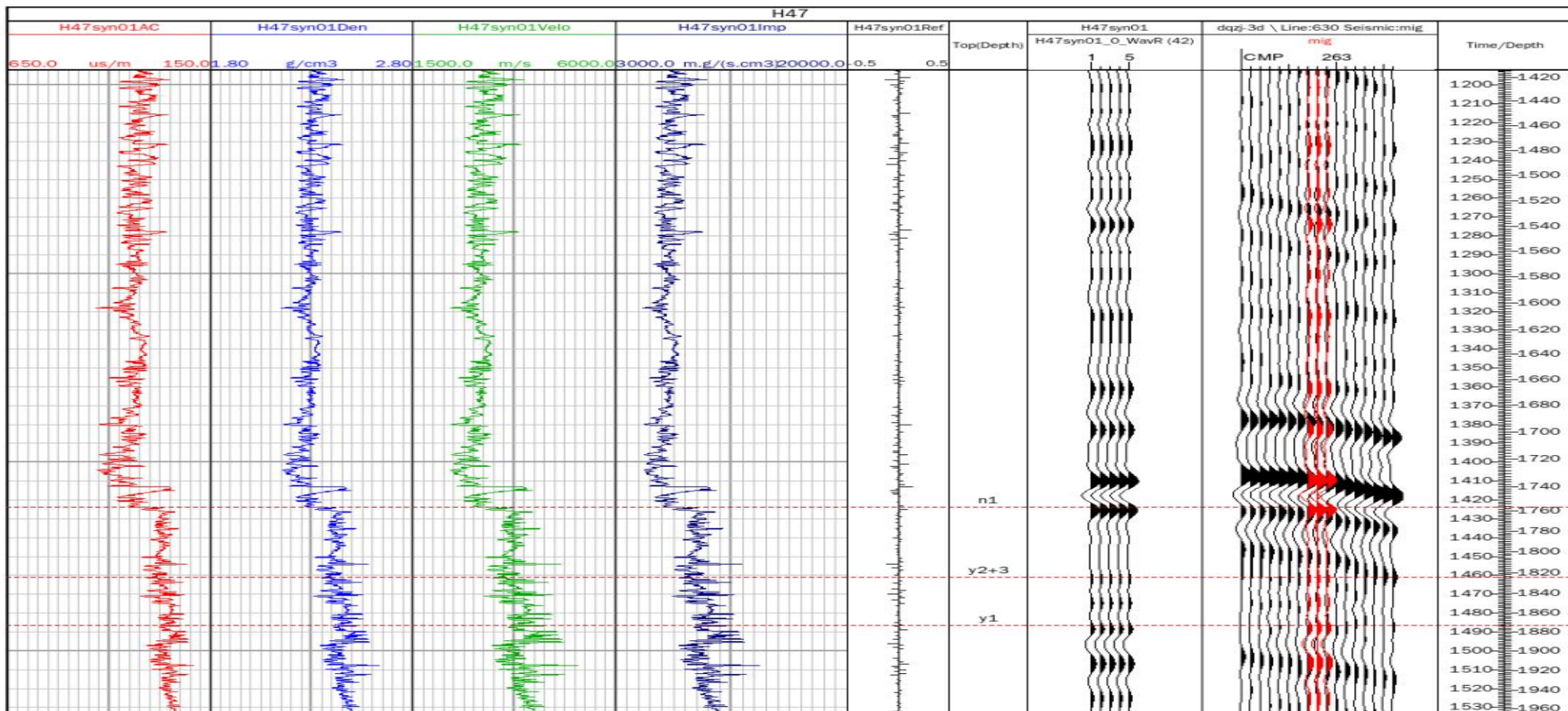
- AC: 声波测井曲线 (公制)
- DEN: 密度曲线 (可选)
- Check-Shot: (VSP时深关系合成记录制作选择)
- 工区\地震
- 子波
- 输入初始速度
- 声波曲线制作合成记录的深度范围



三、合成记录标定



声波 密度 速度 纵波阻抗 反射系数 分层 合成记录 地震叠合合成记录





三、合成记录标定



GeoEast 2026 User: wgy DB: ndp_check_intp Host: 130.1.131.5

Processing VMB PSDM MC OnSiteQC VSP Structural Interpretation Reservoir Prediction Geological Analysis Seismic Guided Drilling Unconventional Seismic Prediction MCI GME Tools Smarter

PostProcessing WellPre Well MultiWell Seismic Basemap Insight SEM Velocity Mapping CGM

Data Explorer

A_wgy_project_44

- Geographic Information
- Combined Fault Polygons
- Combined Horizons
- Combined Traverses
- Mappings
- Wavelet
- Specimens
- Wells
 - Data Type
 - Well Information
 - Log Curve
 - Lith
 - OGW
 - Top Version
 - Path
 - Synthetic
 - <All>
 - 41wells_cp
 - 41wells_id
 - 41wells_ys
 - 9well-wgy
 - A-Cluster-well
 - AAAAA
 - AC_Wellset
 - AC_Wellset_180
 - A_test_Cluster_well
 - D_Cluster
 - He_Shui_wellset_orig
 - YanShuiWu_wellset
 - aaa_cluster
 - bad_bad_lim
 - bad_lim
 - cc
 - dqzi-wellset
 - dqzi_3d
 - good_lim
 - jingsai_wellset
 - lith_well_set_180
 - lith_wellset
 - middle_limi
 - por_sw_wellset
 - shanxi-taiyuan-cp
 - shanxi-taiyuan-cp-shenceng
 - shuipingjing_wellset
 - wellinfo
 - yanan-yanchang-cp
 - zhongshengjie-cp-qianceng
- YC_2D_survey
- dqzi-2d
- JingSai_DaXueSheng_new
- ODHSR
- QK_3D
- YC_3D

Well

Count: 10

Filter: H

Look for: in Log Name

☒ Real-time ☐ Exact Math

Well Name	Log Name	Log Type	Version	Range	Interval	Domain	Sample Count	Curve Min Value	Curve Max Value	Cre
41 H47	P_AC	P_AC	3	226.25 ~ 2434.25	0.125	Depth	17665	172.5577831	1003.363605	wgy
42 H47	P_AC_from_RT	P_AC	2	226.25 ~ 2434.25	0.125	Depth	17665	172.5577831	1003.363605	wgy
43 H47	P_AC_from_RT	P_AC	1	226.25 ~ 2434.25	0.125	Depth	17665	172.5577831	1003.363605	wgy
44 H47	RT	RT	2	226.25 ~ 2434.25	0.125	Depth	17665	0.0225	142.265	wgy
45 H47	DDDDP_AC	P_AC	1	1590.25 ~ 2438.75	0.125	Depth	6789	170.79	432.14625	wgy
46 H47	CCCCP_AC	P_AC	1	1590.25 ~ 2438.75	0.125	Depth	6789	170.79	432.14625	wgy
47 H47	AP_AC	P_AC	1	0 ~ 5000	0.125	Depth	40001	170.634	564.7008126	wgy
48 H47	AGR	GR	1	0 ~ 5000	0.125	Depth	40001	44.5833	222.5941559	wgy
49 H47	PP_IMP	PP_IMP	1	228.75 ~ 2438.75	0.125	Depth	17681	1649.313144	5860.496736	wgy
50 H47	AAAA	P_AC	1	1590.25 ~ 2438.75	0.125	Depth	6789	287.70834	317.99957	wgy
51 H47	A_REFC	PP_RC	1	0 ~ 2437	1	Depth	2438	-0.1832953542	0.195723787	wgy
52 H47	A_VEL	P_VEL	1	0 ~ 2437	1	Depth	2438	1651.412354	5778.974121	wgy
53 H47	A_IMP	PP_IMP	1	0 ~ 2437	1	Depth	2438	3263.480713	15619.52051	wgy
54 H47	A_VEL_Interval	P_VEL	1	228.75 ~ 2438.75	0	Depth	7	0	4413.008789	wgy
55 H47	AAAAAAAAAAAAA	P_AC	1	228.75 ~ 2438.75	0.125	Depth	17681	170.634	606.313	wgy
56 H47	AAAAAAAAAAAAAP_AC	P_AC	1	228.75 ~ 2438.75	0.125	Depth	17681	100	100	wgy
57 H47	H47syn01Den	DEN	1	228.75 ~ 2438.75	0.125	Depth	17681	1.975547489	2.712347321	wgy
58 H47	H47syn01DT	P_TD	1	228.75 ~ 2438.75	0.125	Depth	17681	228.75	1687.447186	wgy
59 H47	H47syn01Velo	P_VEL	1	228.75 ~ 2438.75	0.125	Depth	17681	1649.313144	5860.496736	wgy
60 H47	H47syn01Ref	PP_RC	1	229 ~ 1687	1	Time	1459	-0.1701033089	0.1646137605	wgy
61 H47	H47syn01Imp	PP_IMP	1	228.75 ~ 2438.75	0.125	Depth	17681	3258.296439	15895.70262	wgy
62 H47	H47syn01AC	P_AC	1	228.75 ~ 2438.75	0.125	Depth	17681	170.634	606.313	wgy
63 H47	P_AC	P_AC	3	1590.25 ~ 2438.75	0.125	Depth	6789	170.634	435.66	wgy
64 H47	P_VEL	P_VEL	1	0.125 ~ 2599.88	0.125	Depth	20799	0	23.0083	wgy
65 H47	POR	POR	1	0.125 ~ 2599.88	0.125	Depth	20799	0	23.0083	wgy
66 H47	RT	RT	1	0.125 ~ 2599.88	0.125	Depth	20799	-0.9553	142.265	wgy
67 H47	P_AC	P_AC	1	228.75 ~ 2438.75	0.125	Depth	17681	170.634	606.313	wgy
68 H47	SP	SP	1	235.5 ~ 2434.13	0.125	Depth	17590	-95.1575	-1.0975	wgy
69 H47	P_AC	P_AC	2	228.75 ~ 1637.75	0.125	Depth	11273	248.81	606.313	wgy
70 H47	DEN	DEN	1	1172.13 ~ 2426.13	0.125	Depth	10033	1.6499	2.6955	wgy
71 H47	GR	GR	1	219.625 ~ 2420.88	0.125	Depth	17611	44.5833	453.1062	wgy



三、合成记录标定



声波

密度

速度

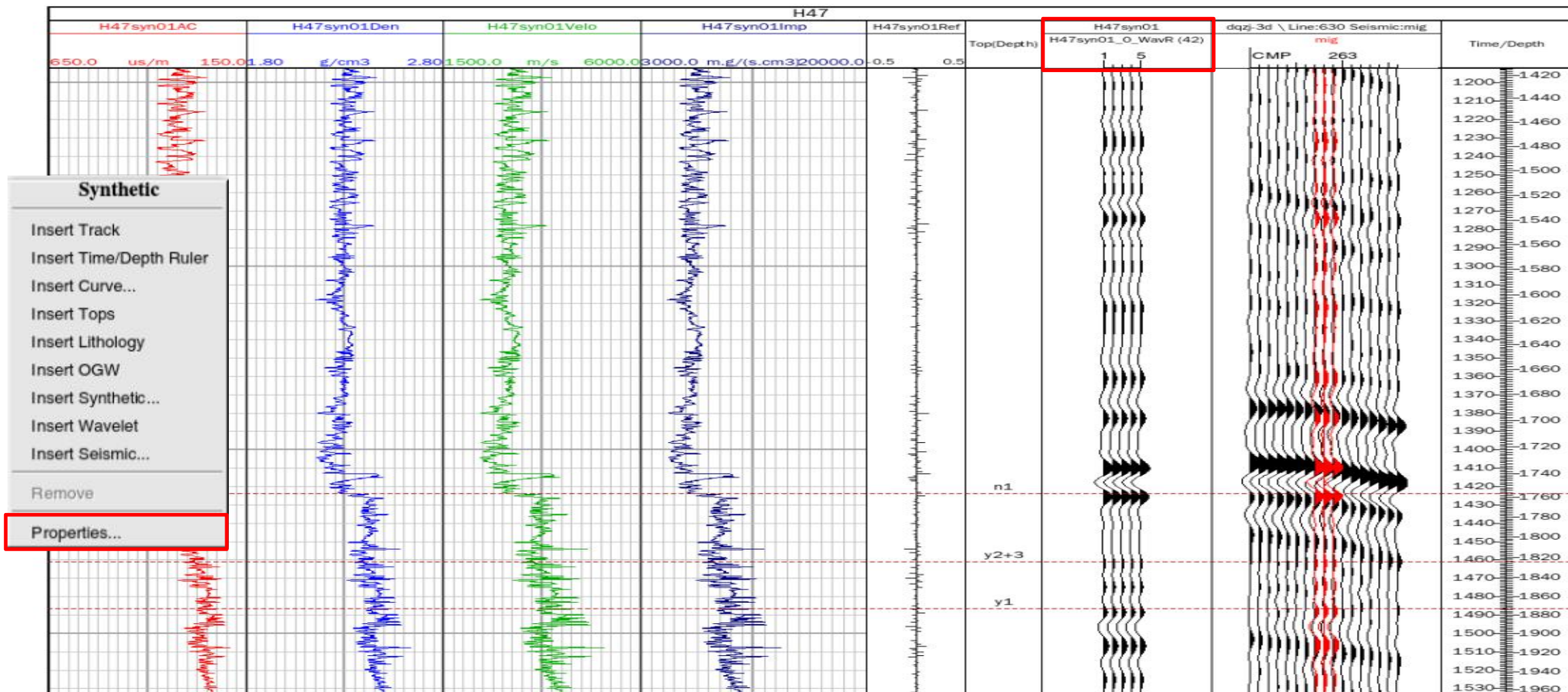
纵波阻抗

反射系数

分层

合成记录

地震叠合合成记录





三、合成记录标定

声波

密度

速度

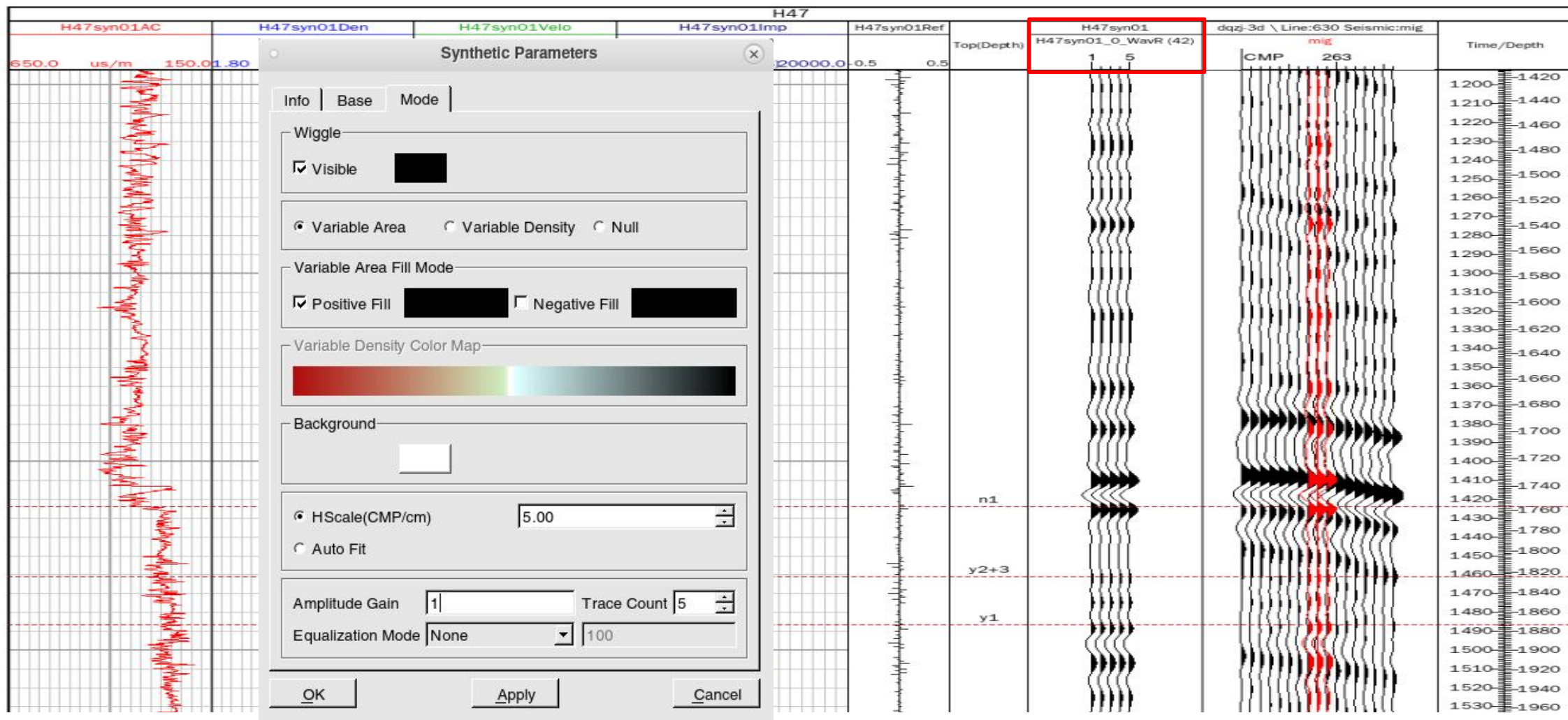
纵波阻抗

反射系数

分层

合成记录

地震叠合合成记录





三、合成记录标定



声波

密度

速度

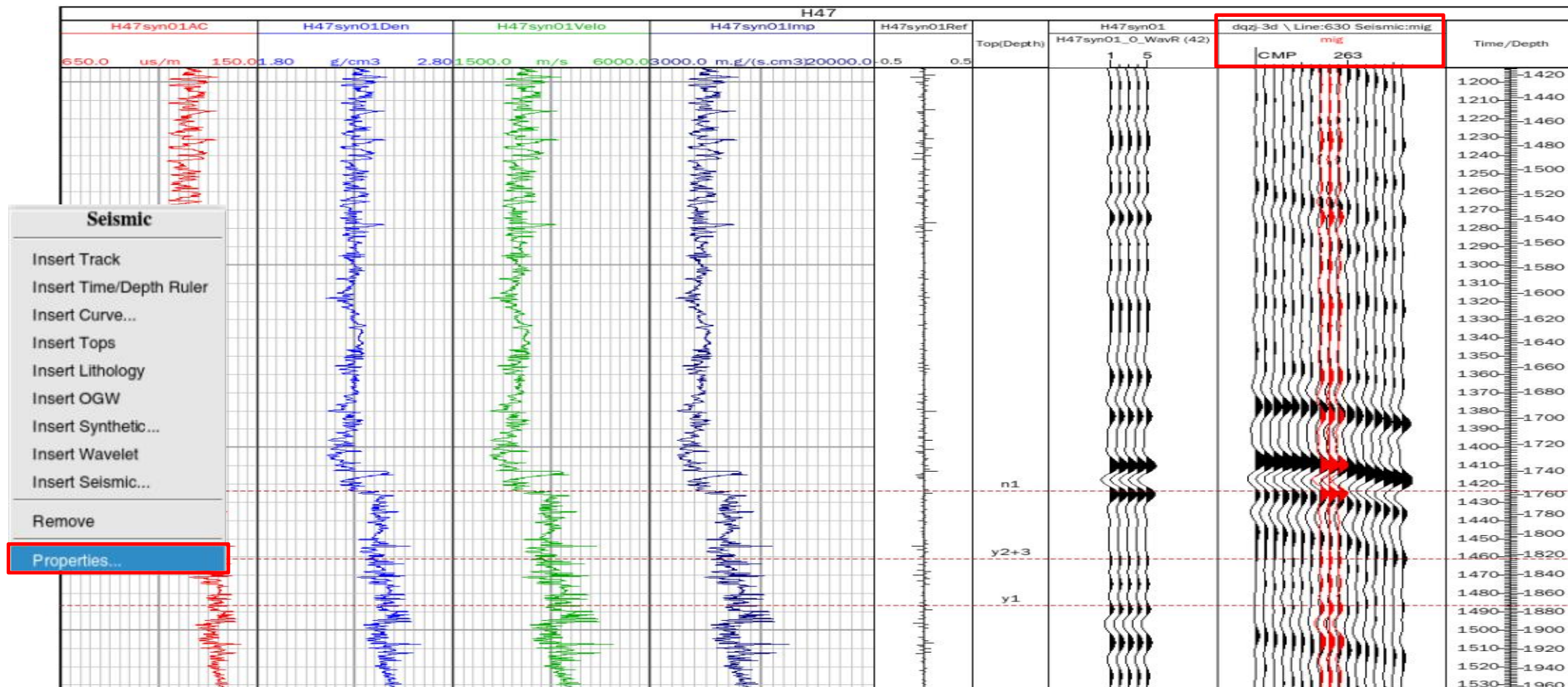
纵波阻抗

反射系数

分层

合成记录

地震叠合合成记录





三、合成记录标定

声波

密度

速度

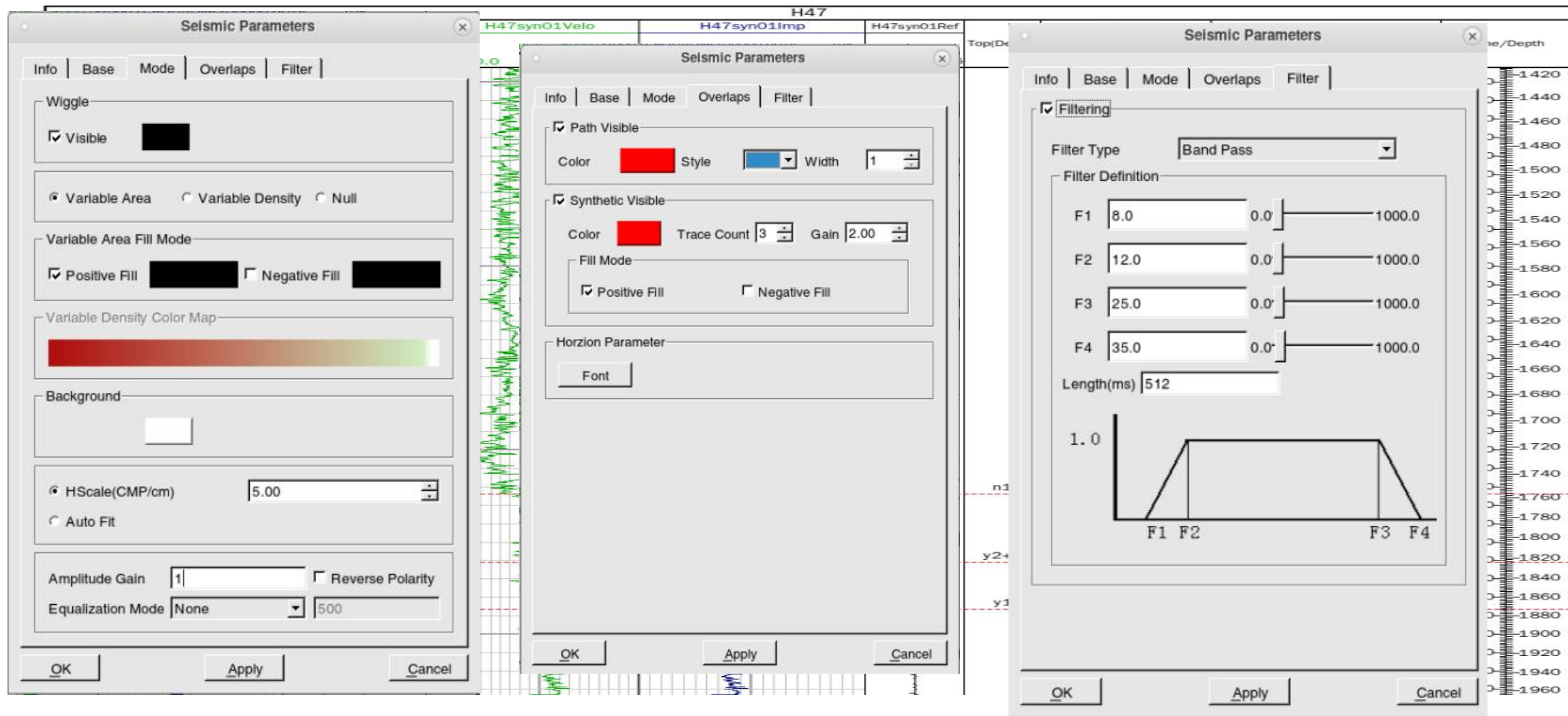
纵波阻抗

反射系数

分层

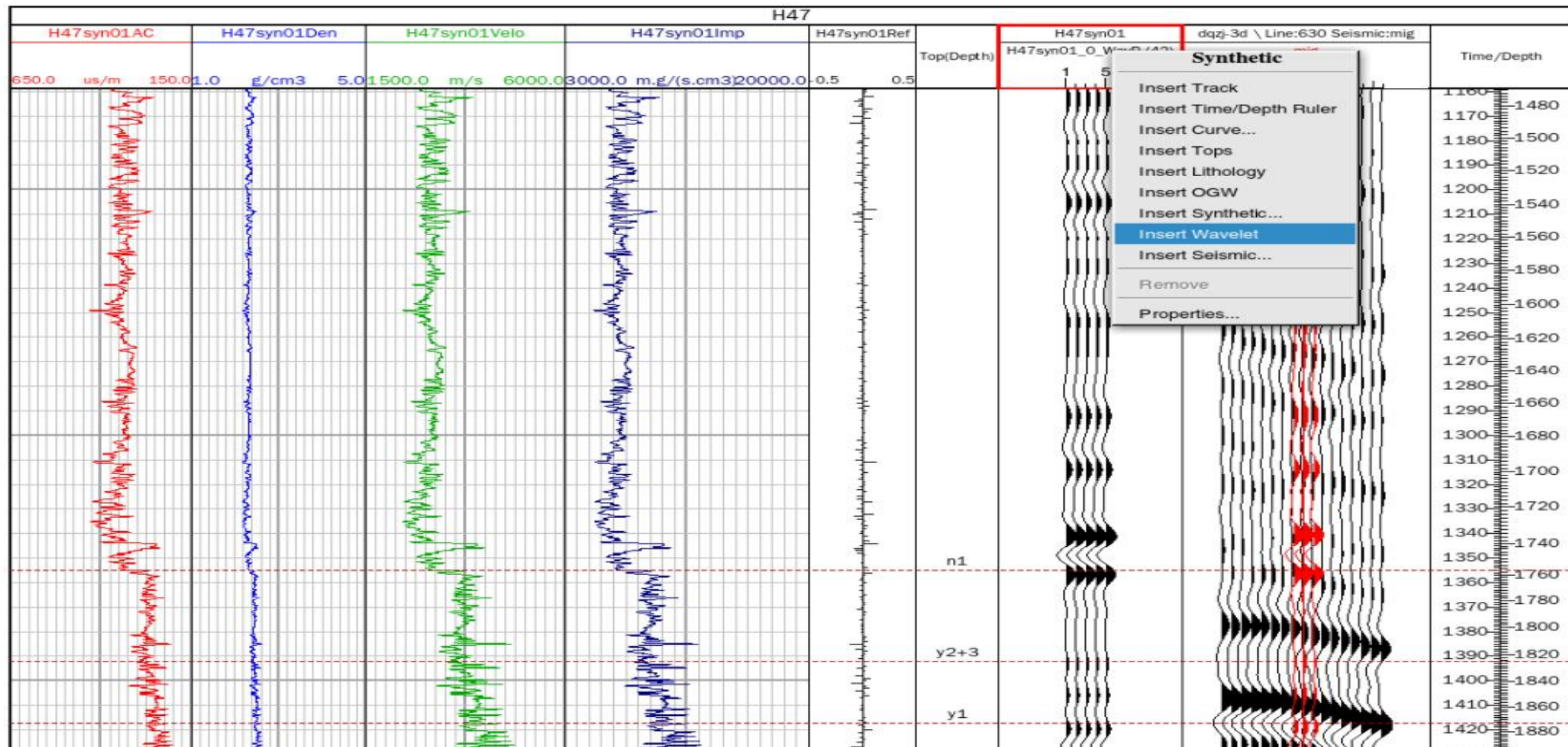
合成记录

地震叠合合成记录



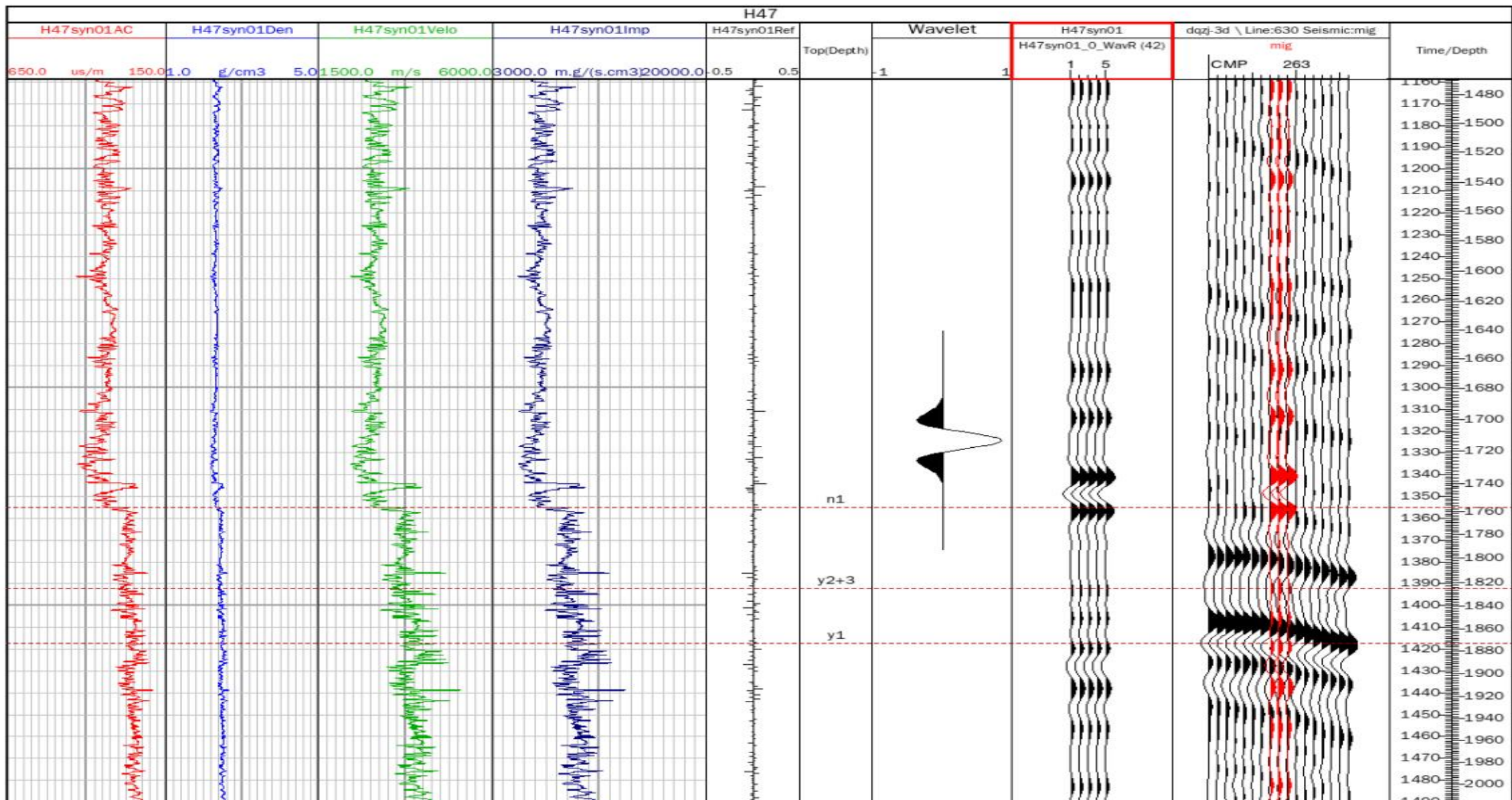


三、合成记录标定



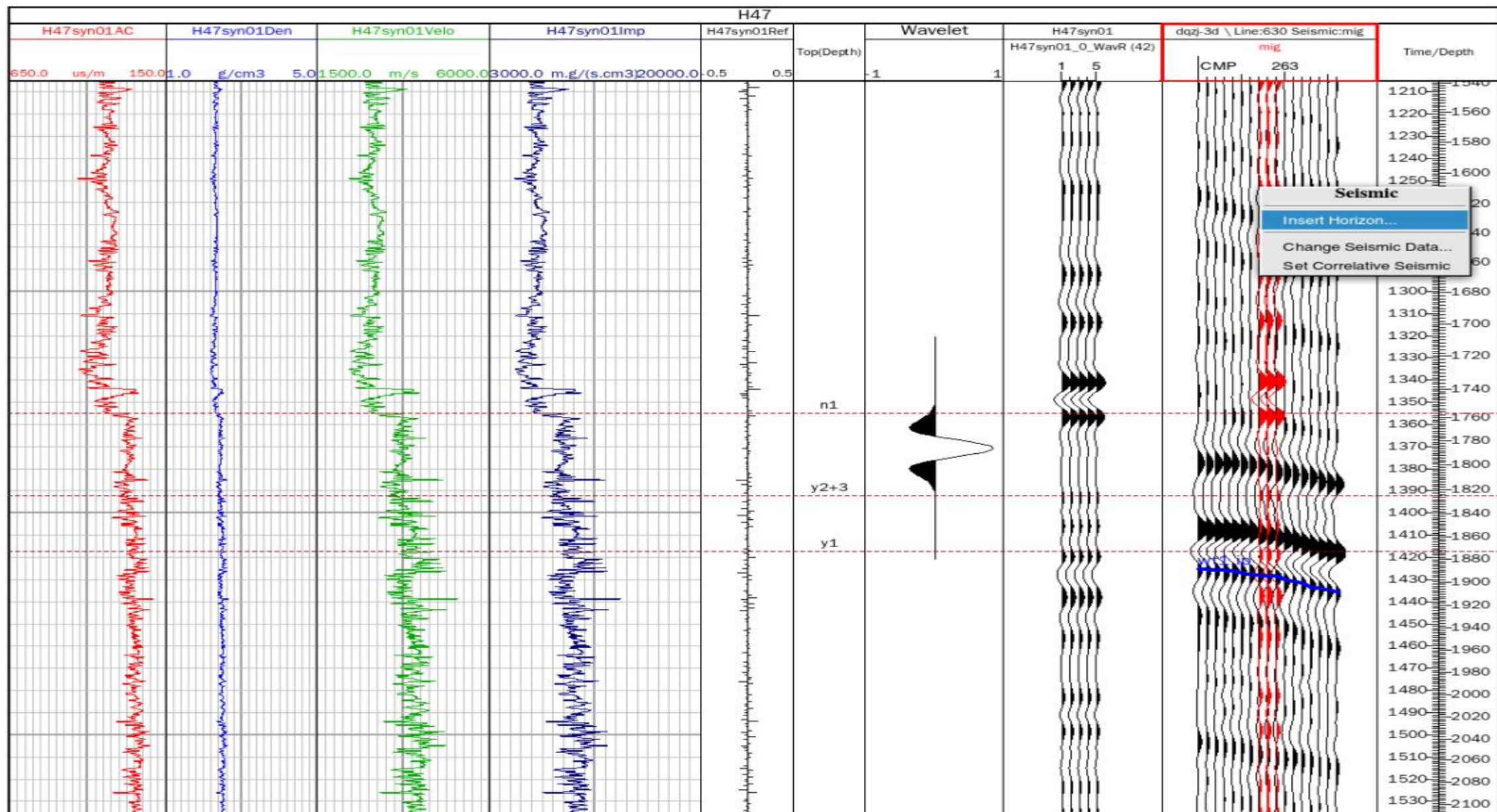


三、合成记录标定



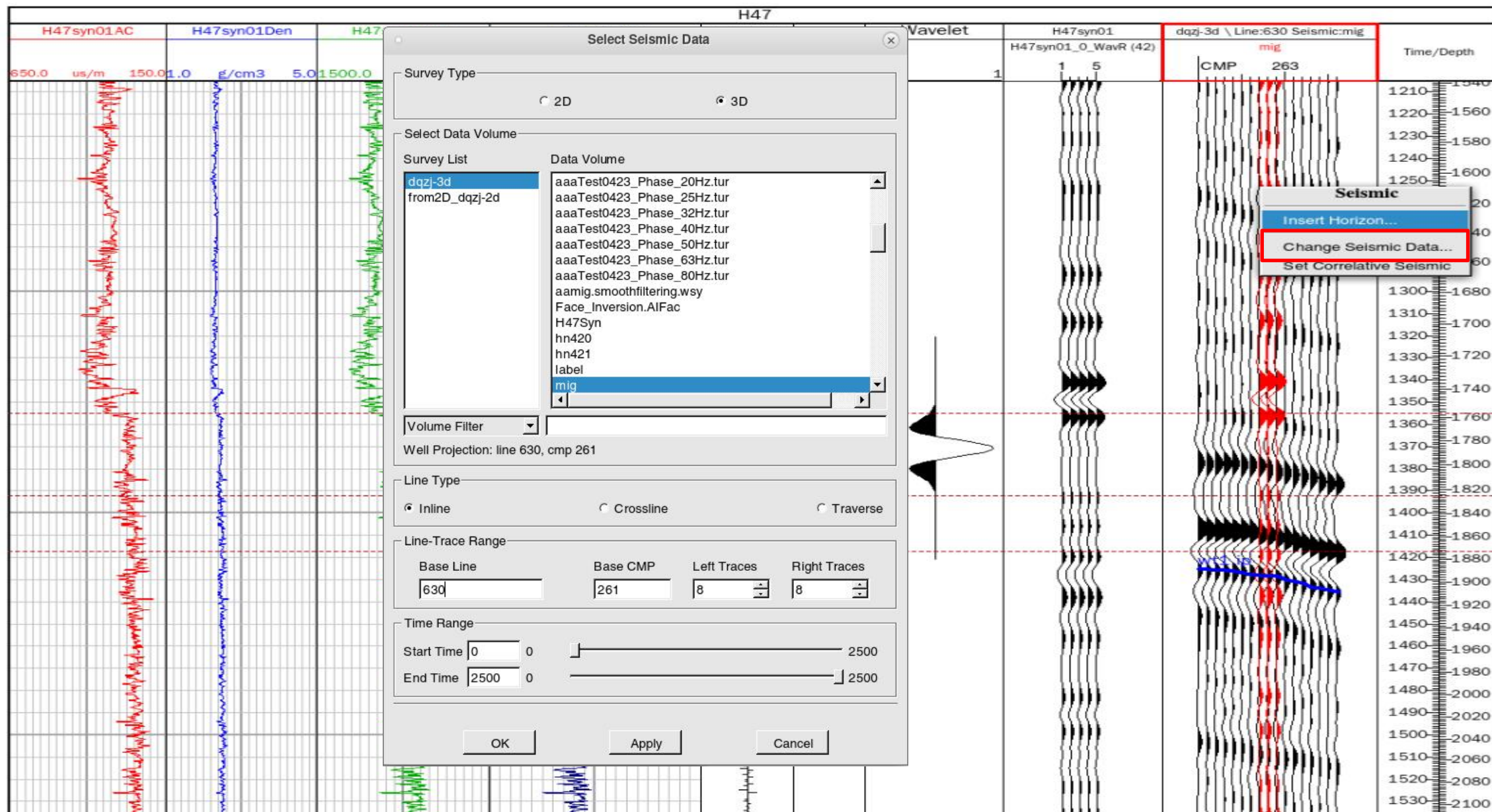


三、合成记录标定





三、合成记录标定





三、合成记录标定



Seismic

Insert Horizon...

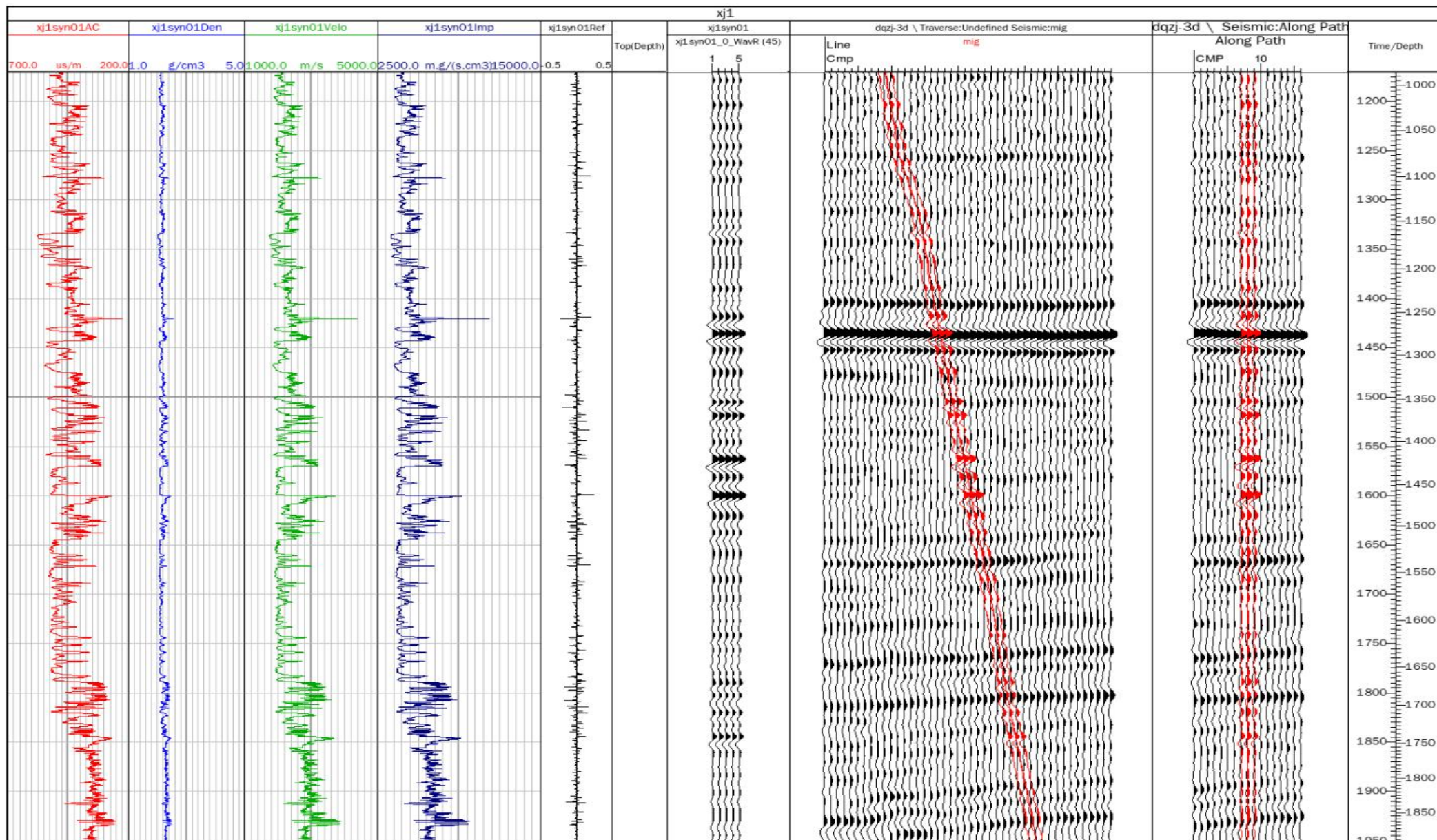
Change Seismic Data...

Set Correlative Seismic

Well Path Traverse

Along Path Section...

- 斜井合成记录场景中地震数据可以沿着井轨迹显示
- 可以显示井轨迹垂直剖面





三、合成记录标定



Synthetic

Vertical Shift in Time

Modify Start V0

Auto Move...

Stretch/Squeeze

Stretch/Squeeze Recalculation

Contribution

Display Correlative Curve...

Display Slowness

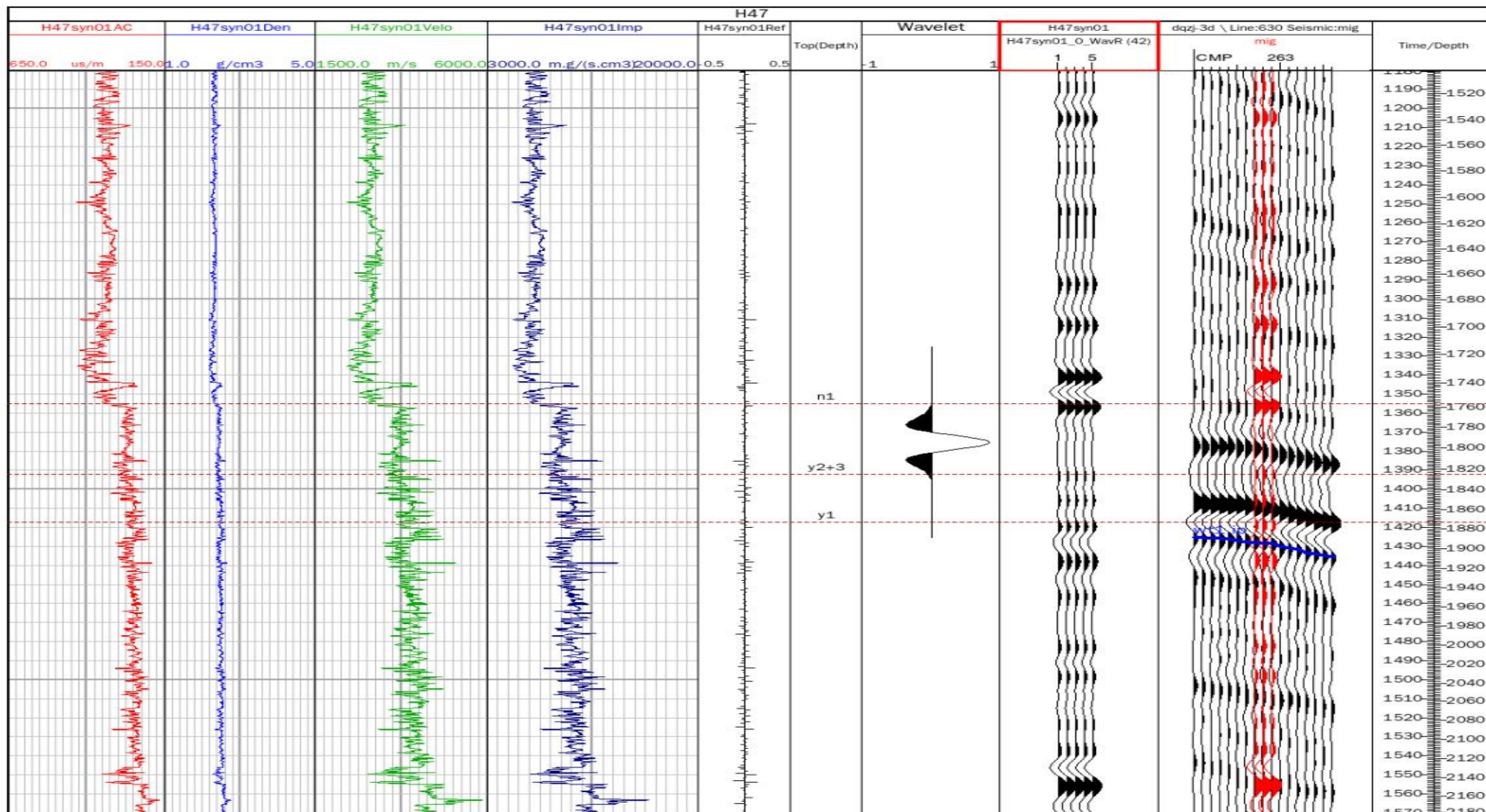
Export ASCII File...

Create Seismic...

Save

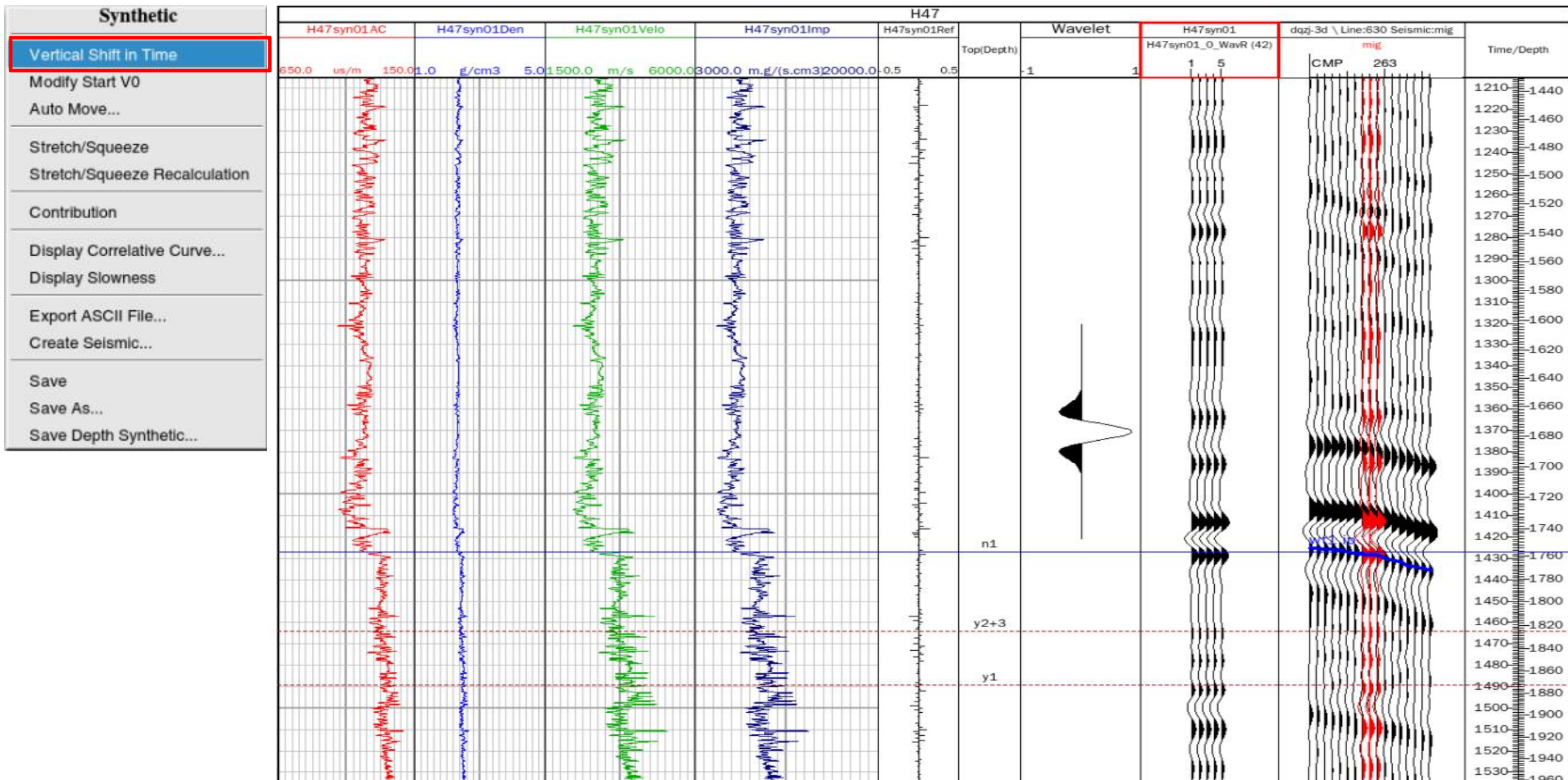
Save As...

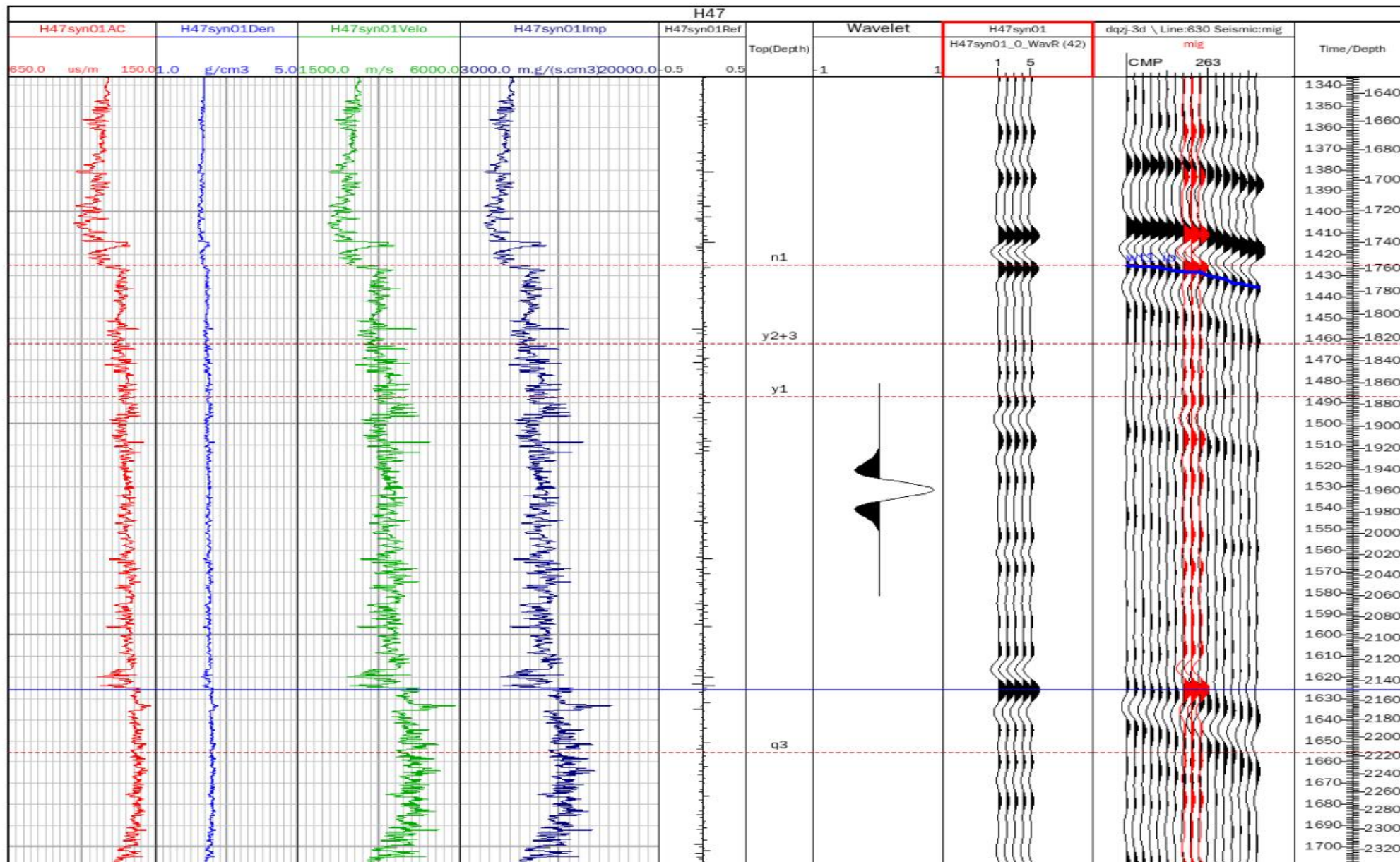
Save Depth Synthetic...





三、合成记录标定







三、合成记录标定



Synthetic

Vertical Shift in Time

Modify Start V0

Auto Move...

Stretch/Squeeze

Stretch/Squeeze Recalculation

Contribution

Display Correlative Curve...

Display Slowness

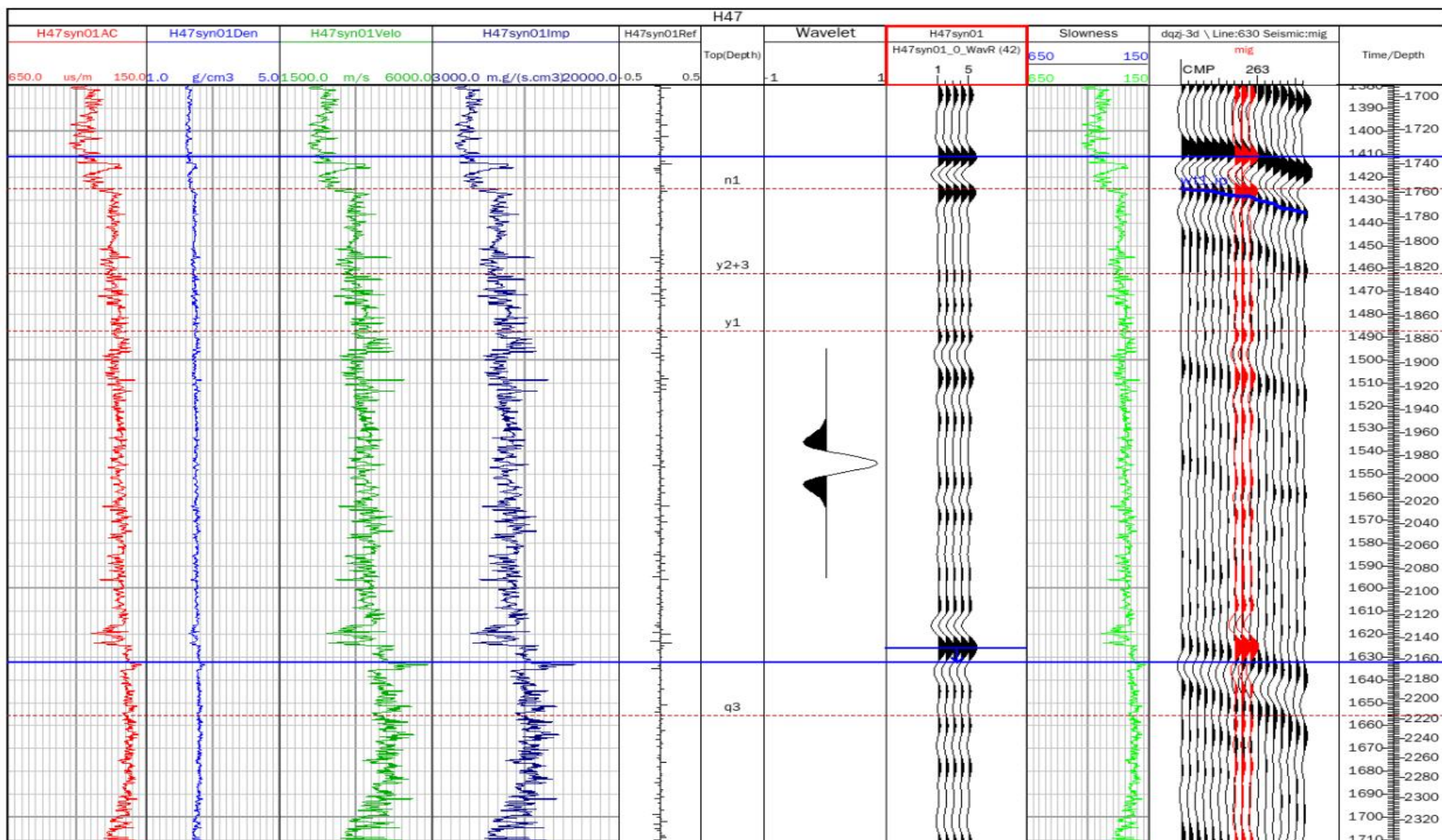
Export ASCII File...

Create Seismic...

Save

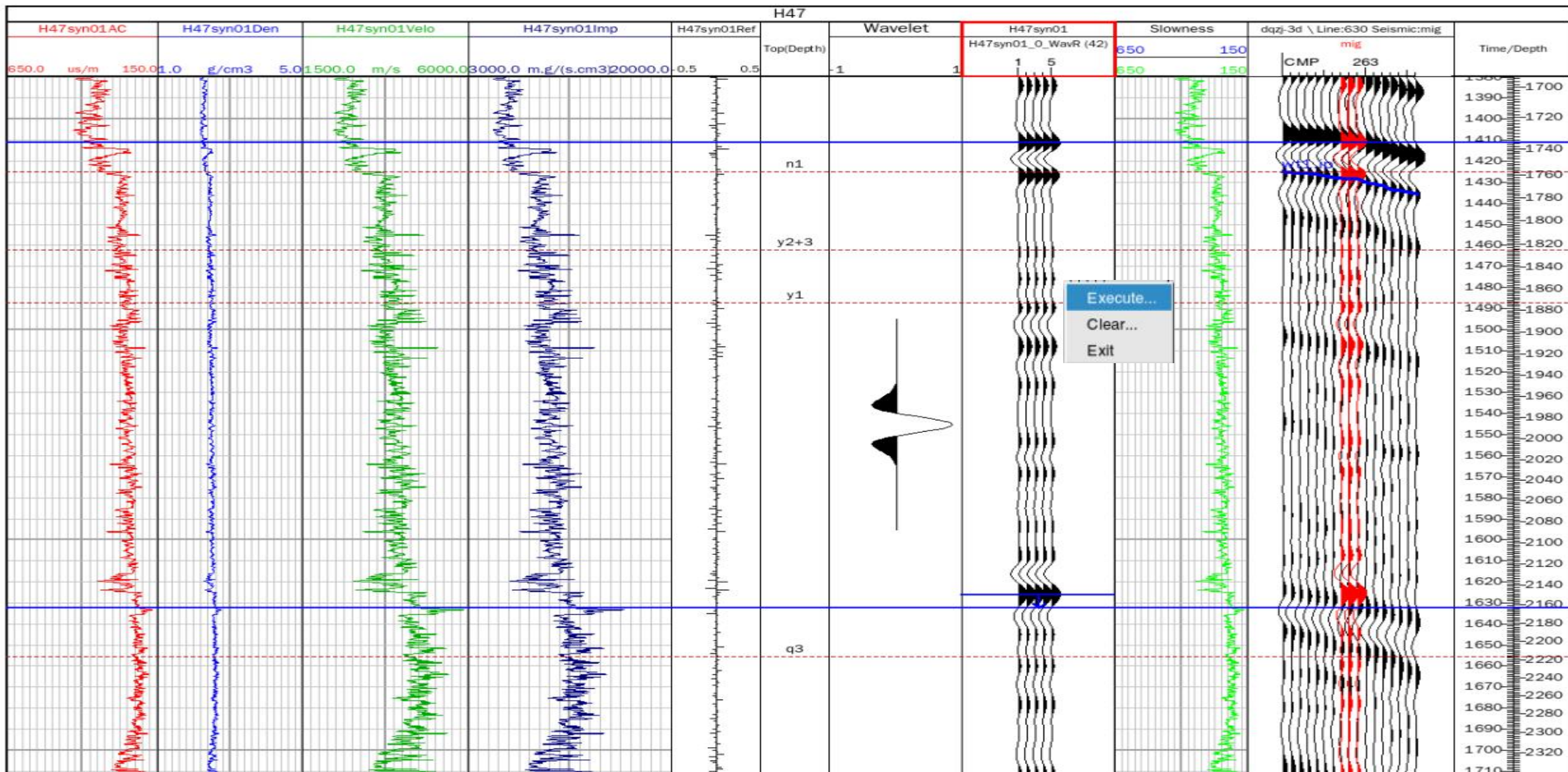
Save As...

Save Depth Synthetic...



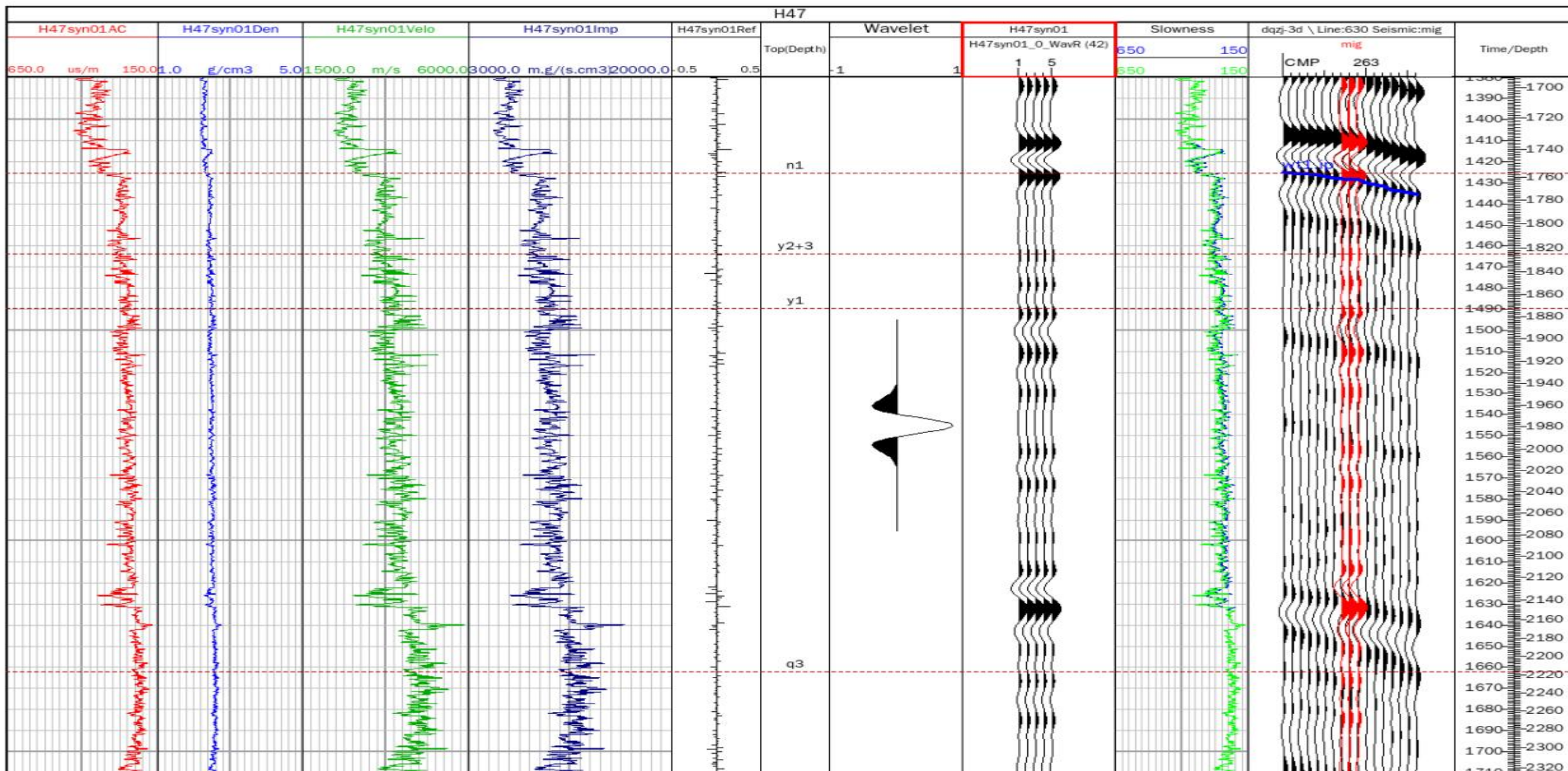


三、合成记录标定



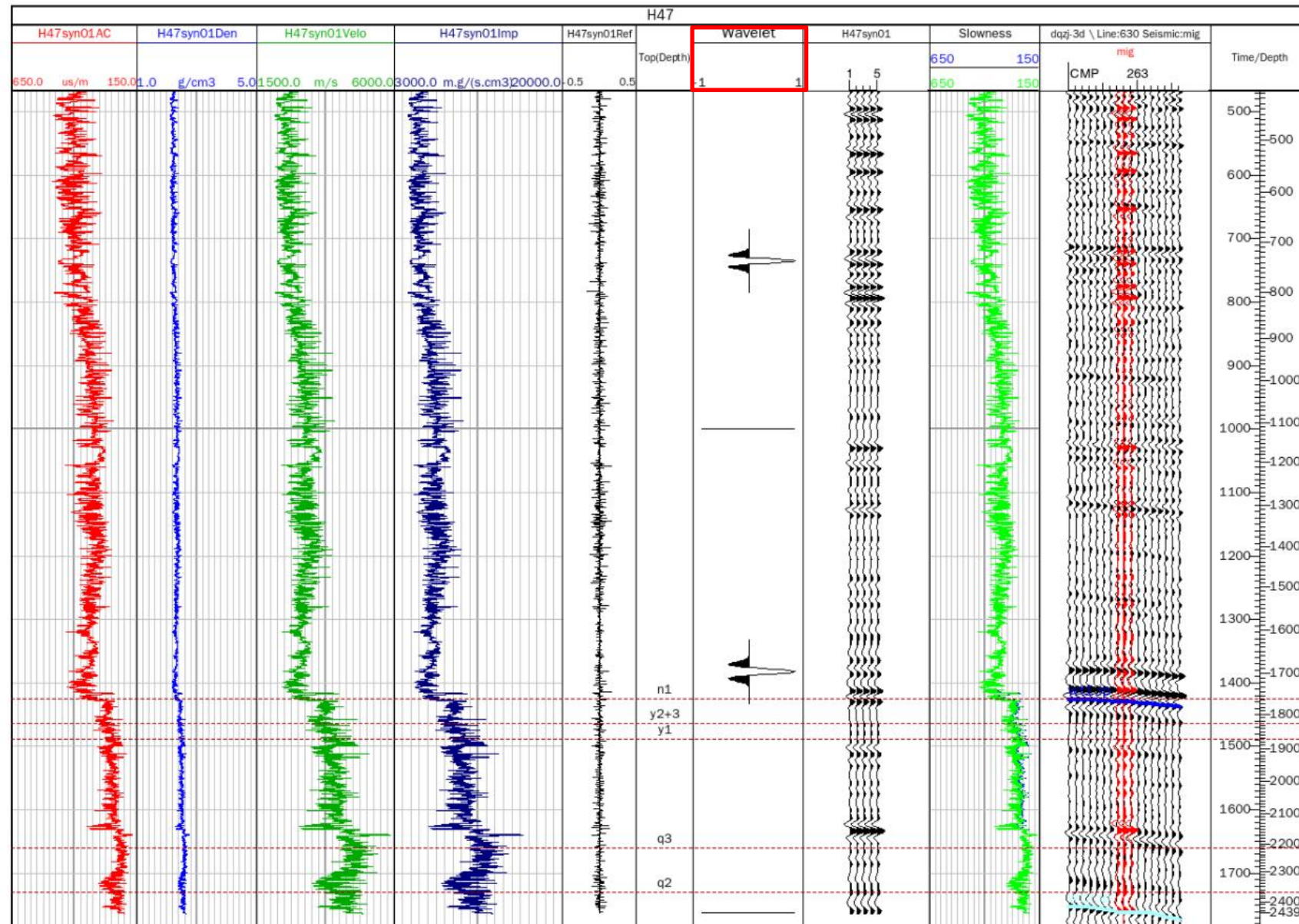
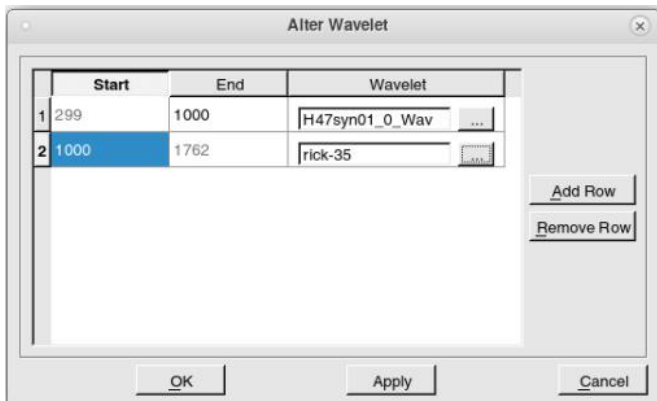


三、合成记录标定



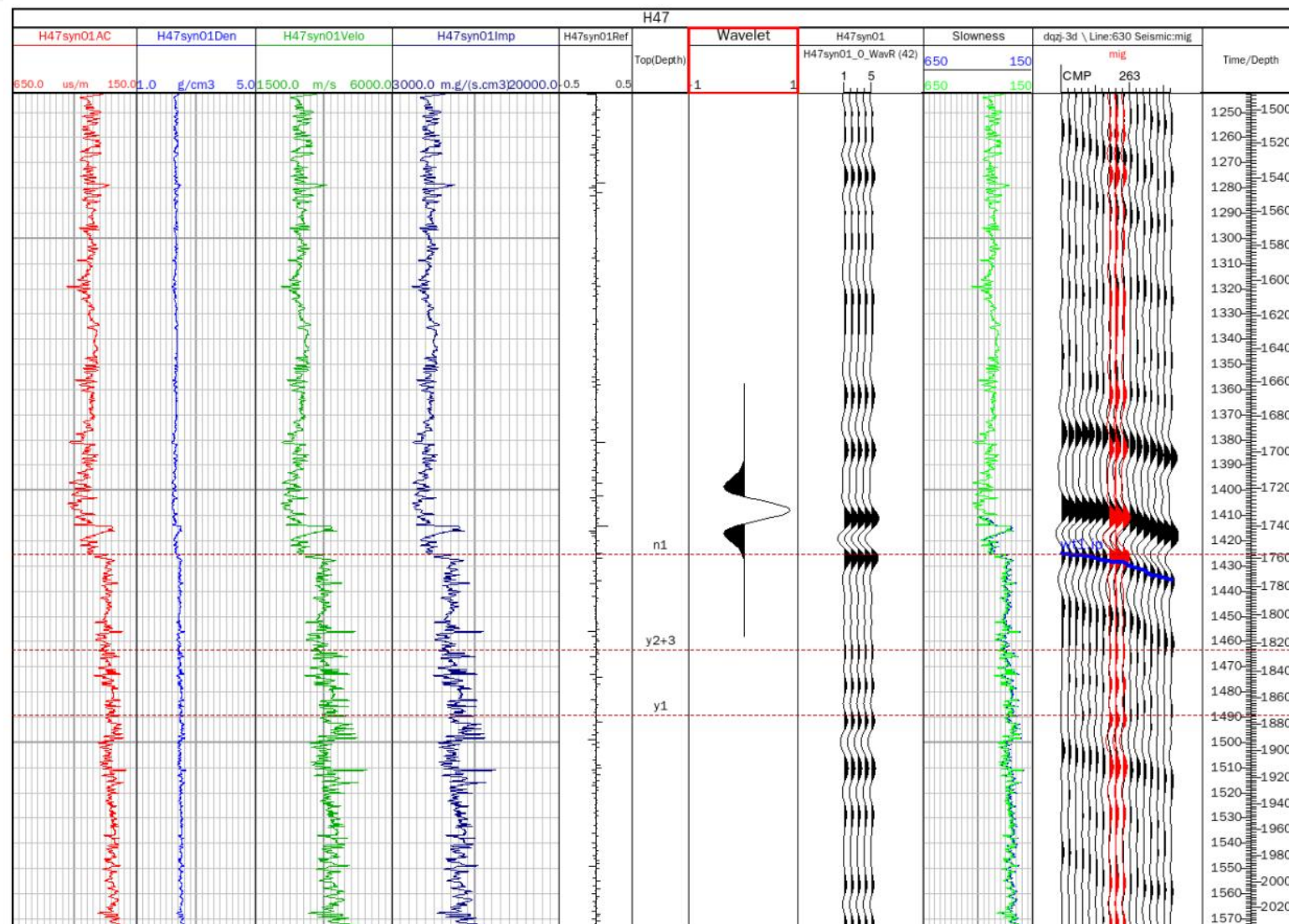
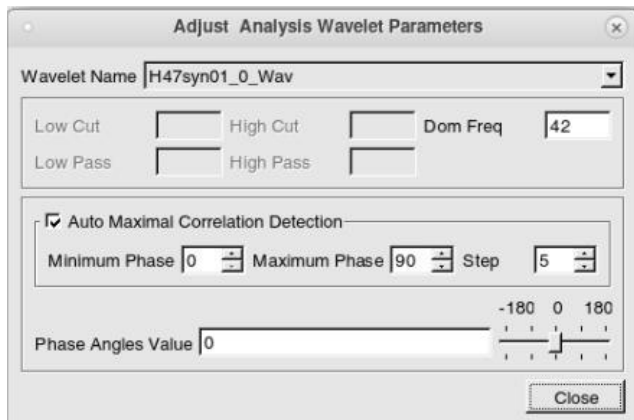
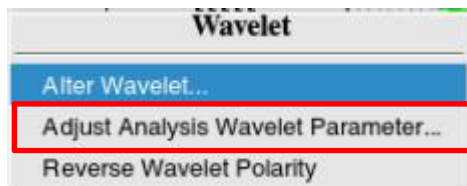


三、合成记录标定





三、合成记录标定





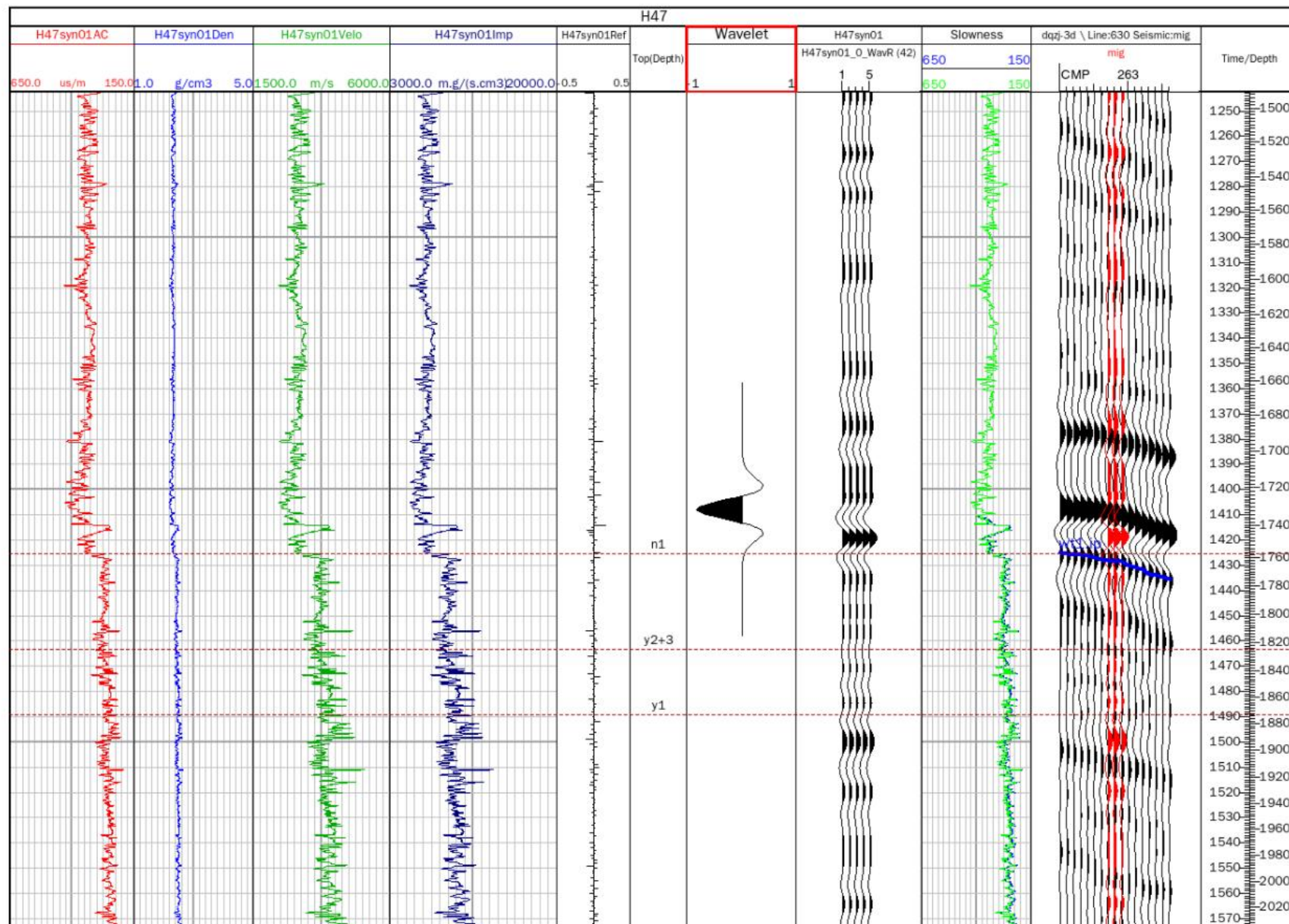
三、合成记录标定

Wavelet

Alter Wavelet...

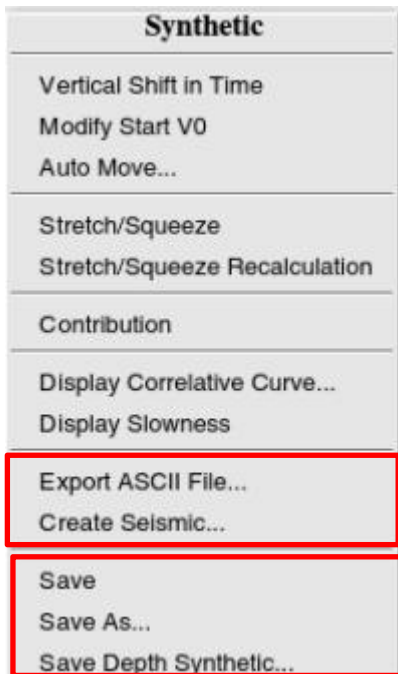
Adjust Analysis Wavelet Parameter...

Reverse Wavelet Polarity





三、合成记录标定

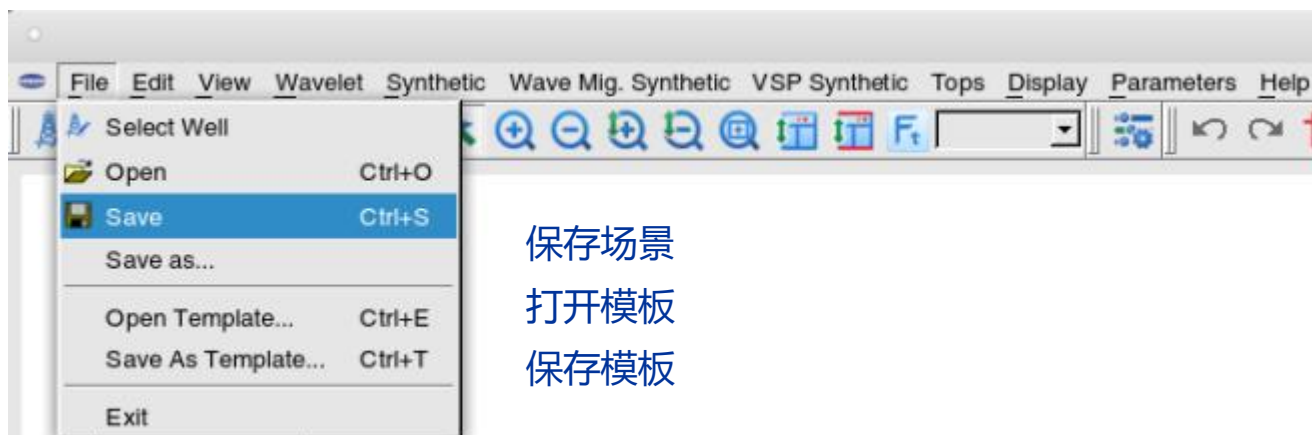


合成记录保存成外部ASCII文件

合成记录保存成地震数据

保存合成记录及相关数据

将时间域合成记录保存为深度域合成记录



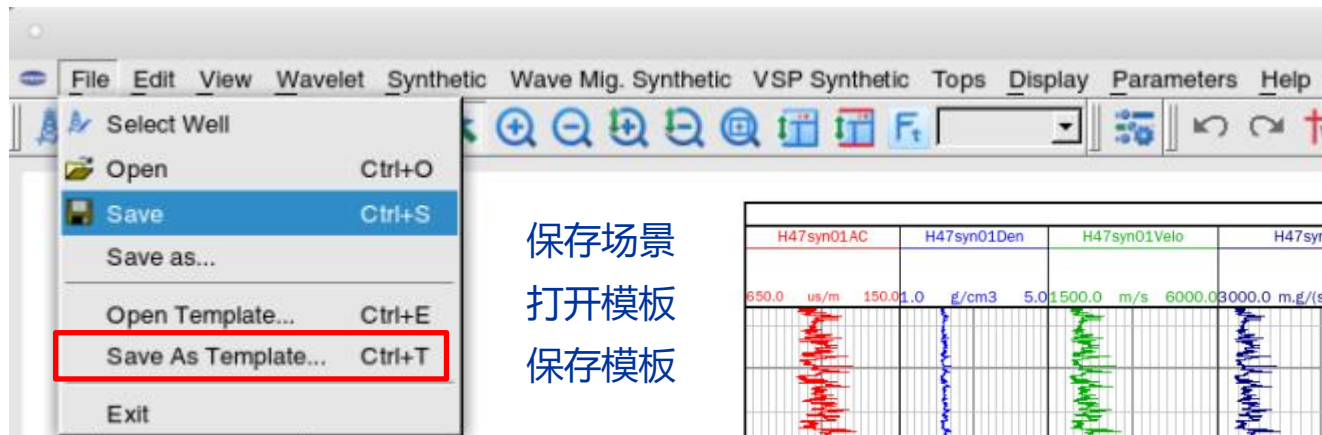
保存场景

打开模板

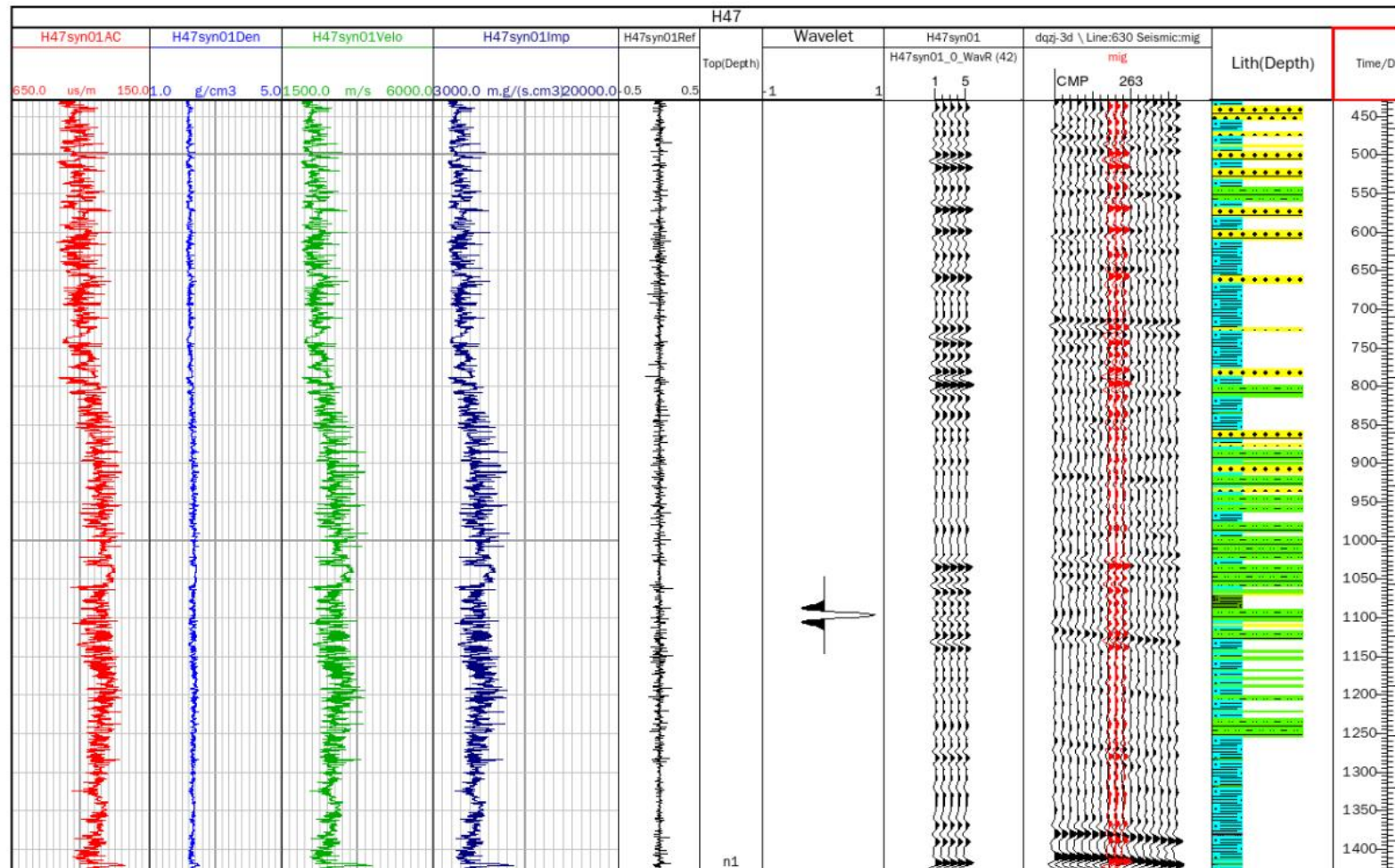
保存模板



三、合成记录标定

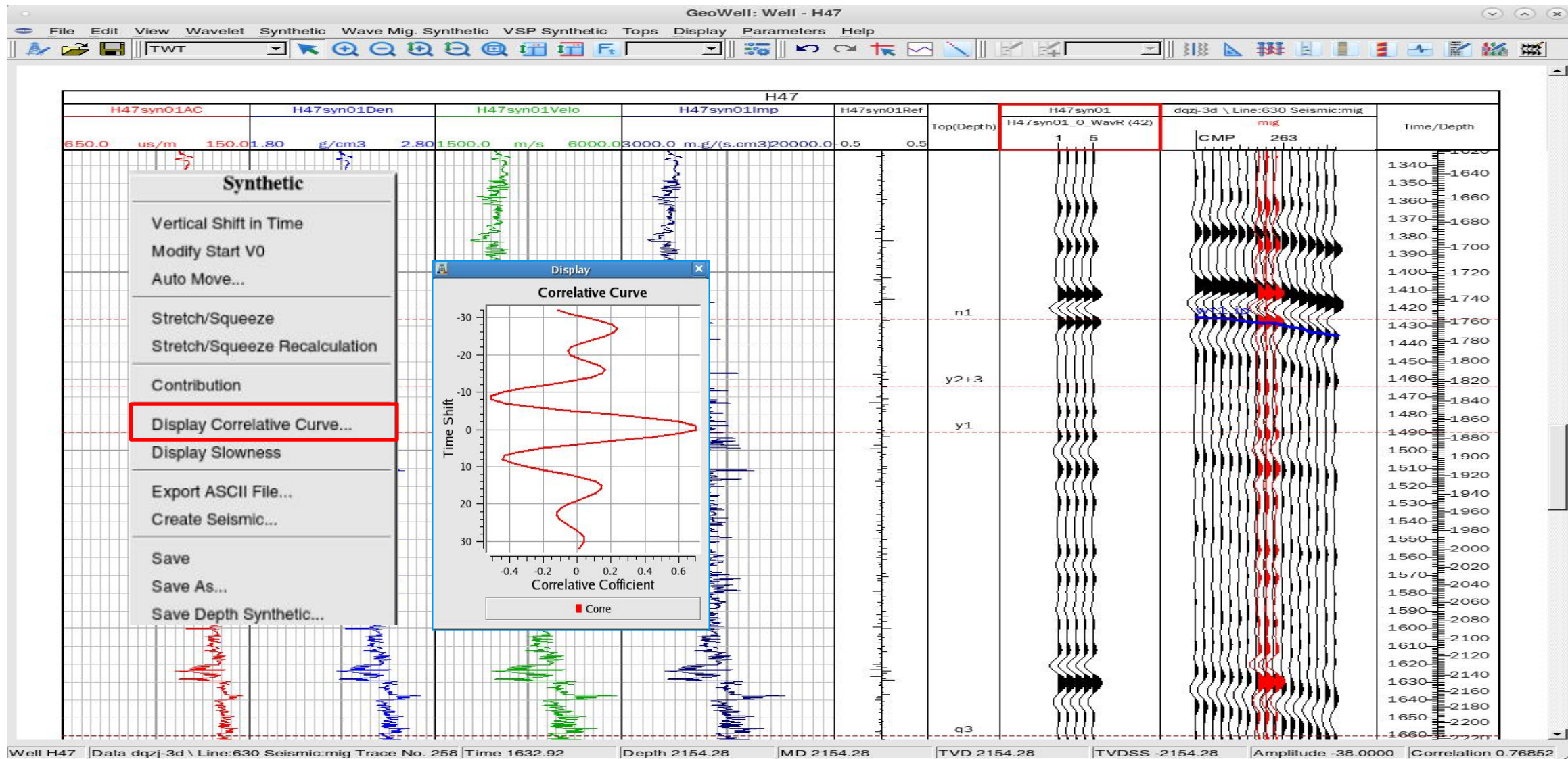


保存场景
打开模板
保存模板



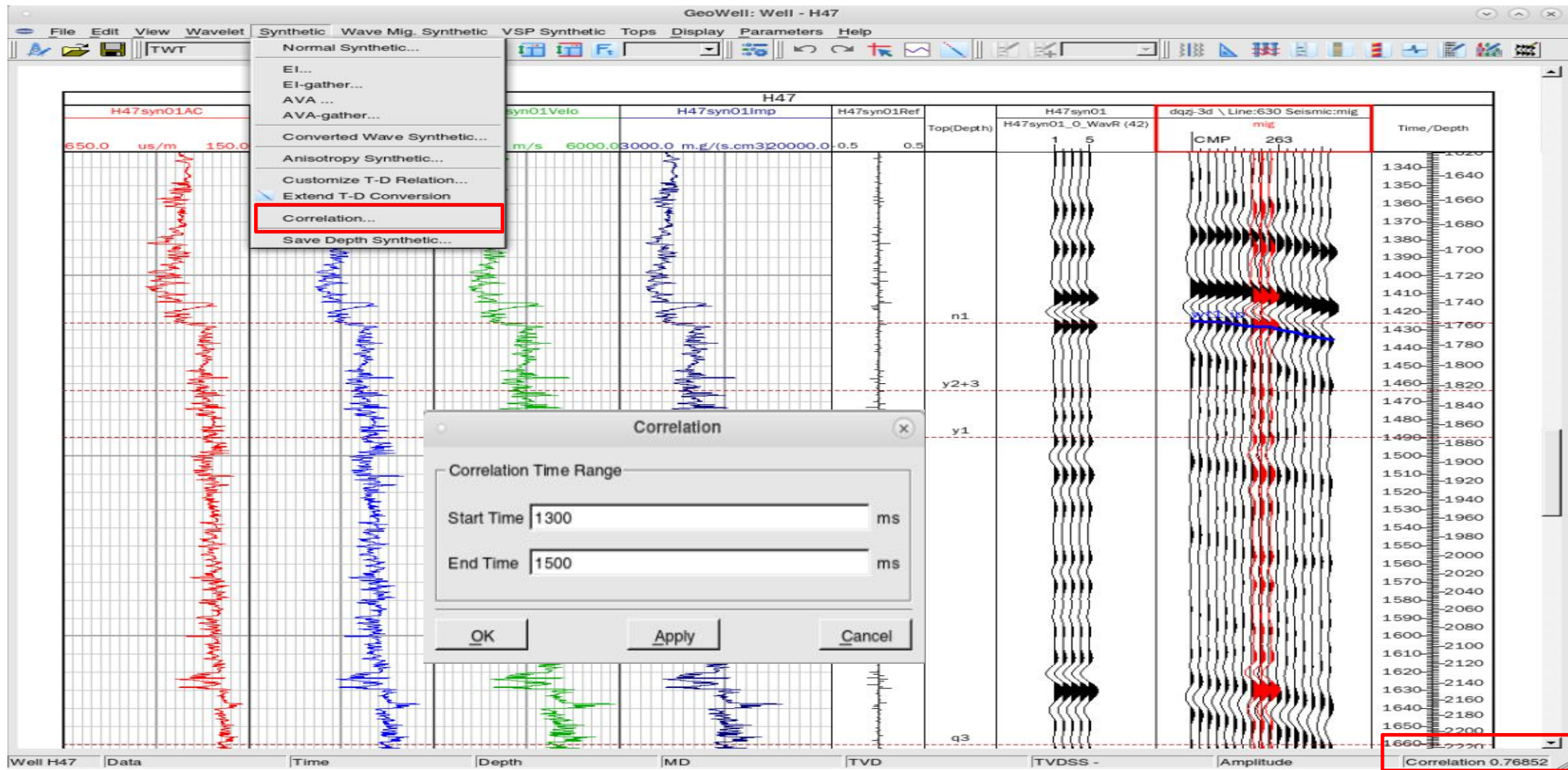


四、标定结果质控





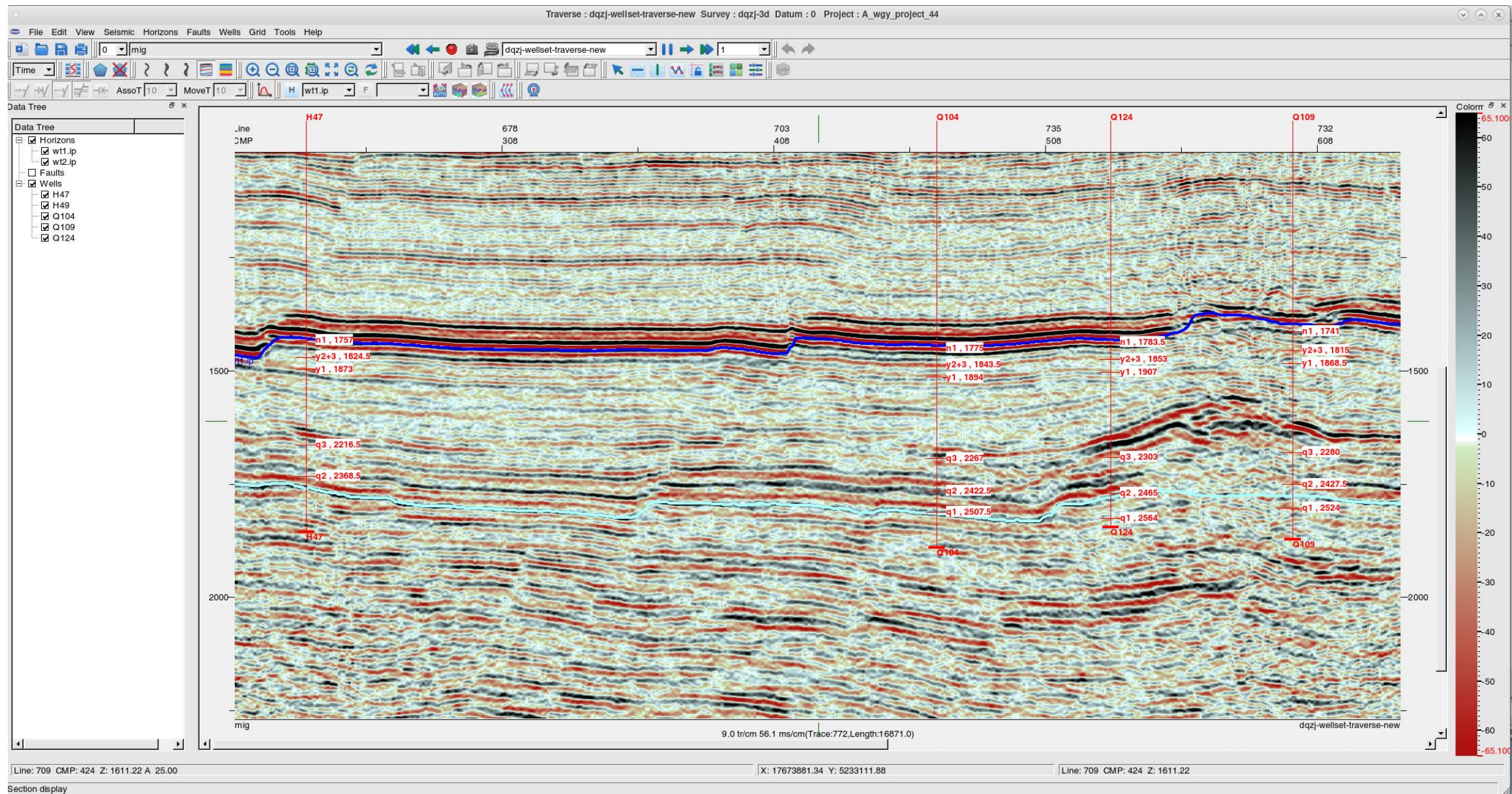
四、标定结果质控



合成记录与地震数据相关系数

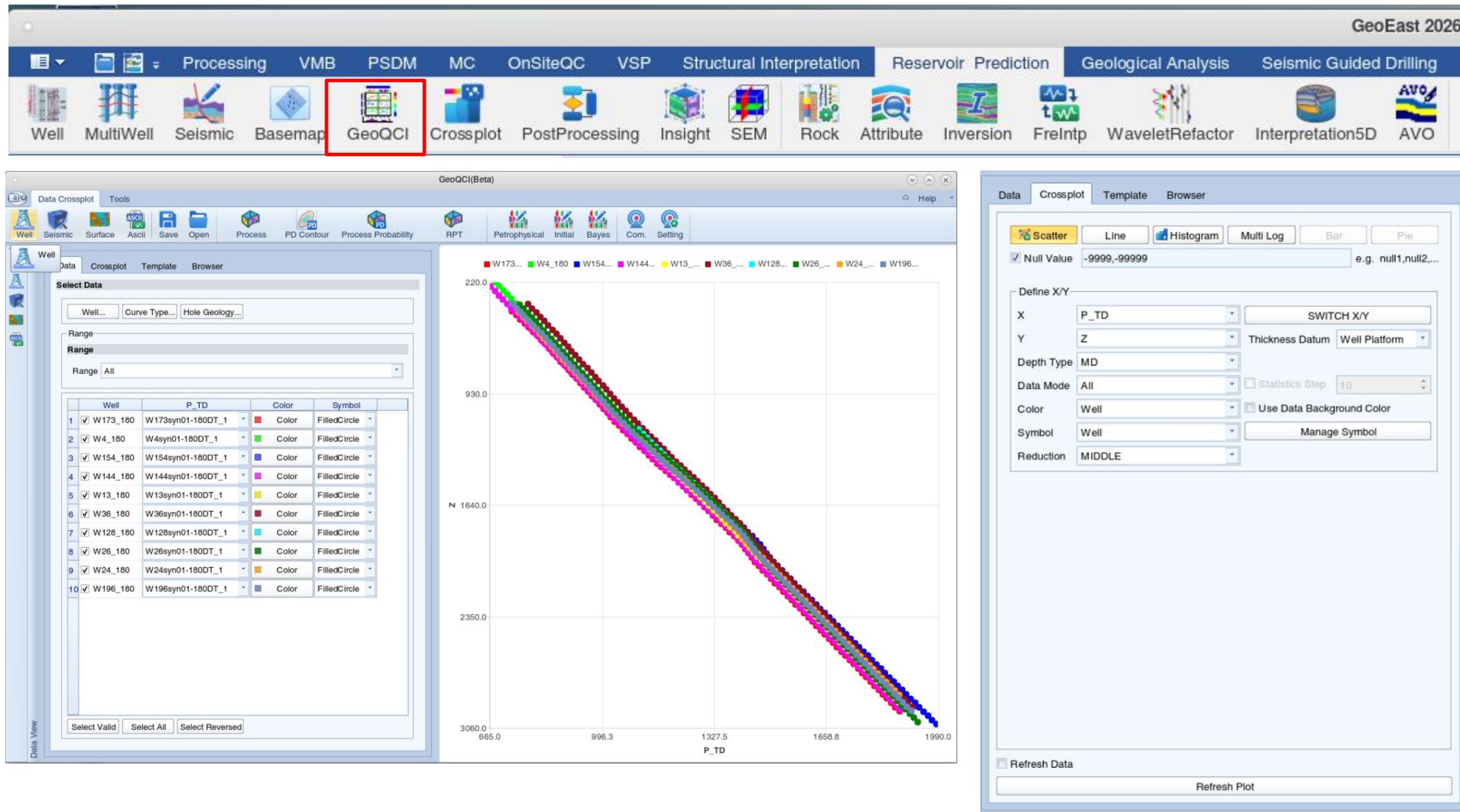


四、标定结果质控



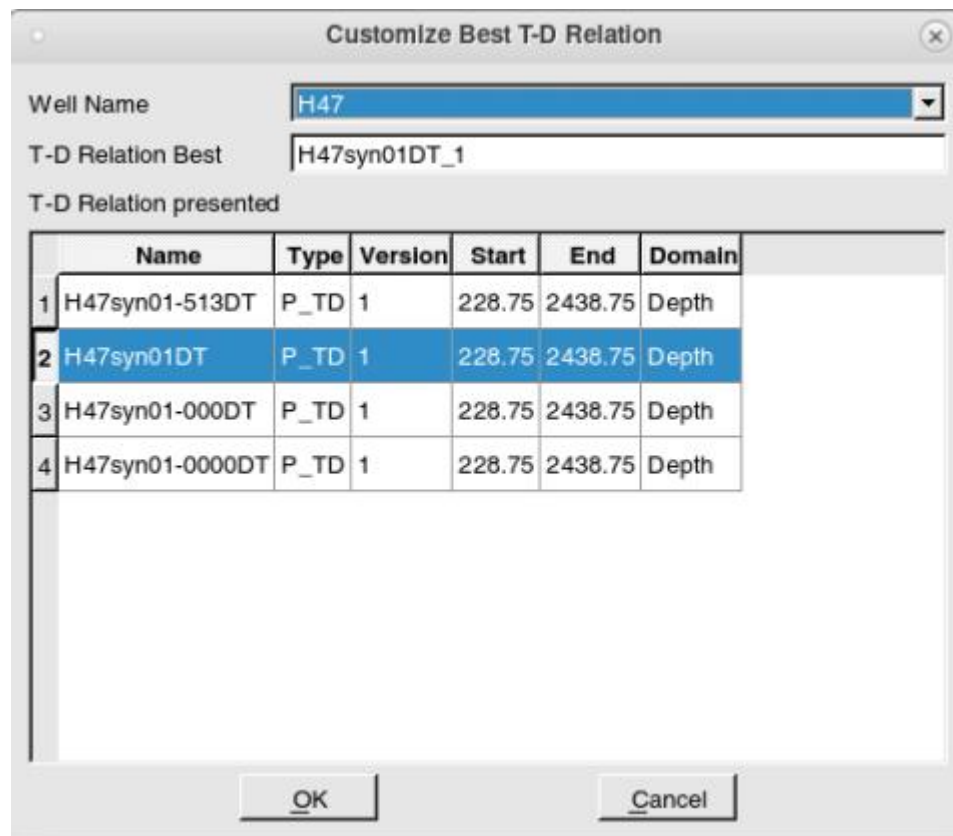
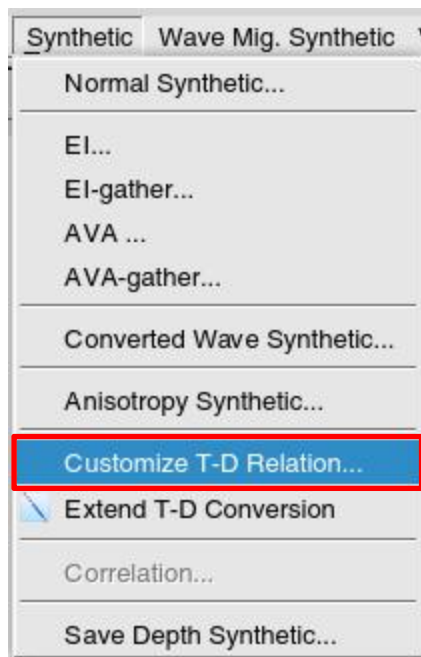


四、标定结果质控





四、设置本井缺省时深关系





五、辅助功能-子波贡献率分析



Synthetic

Vertical Shift in Time

Modify Start V0

Auto Move...

Stretch/Squeeze

Stretch/Squeeze Recalculation

Contribution

Display Correlative Curve...

Display Slowness

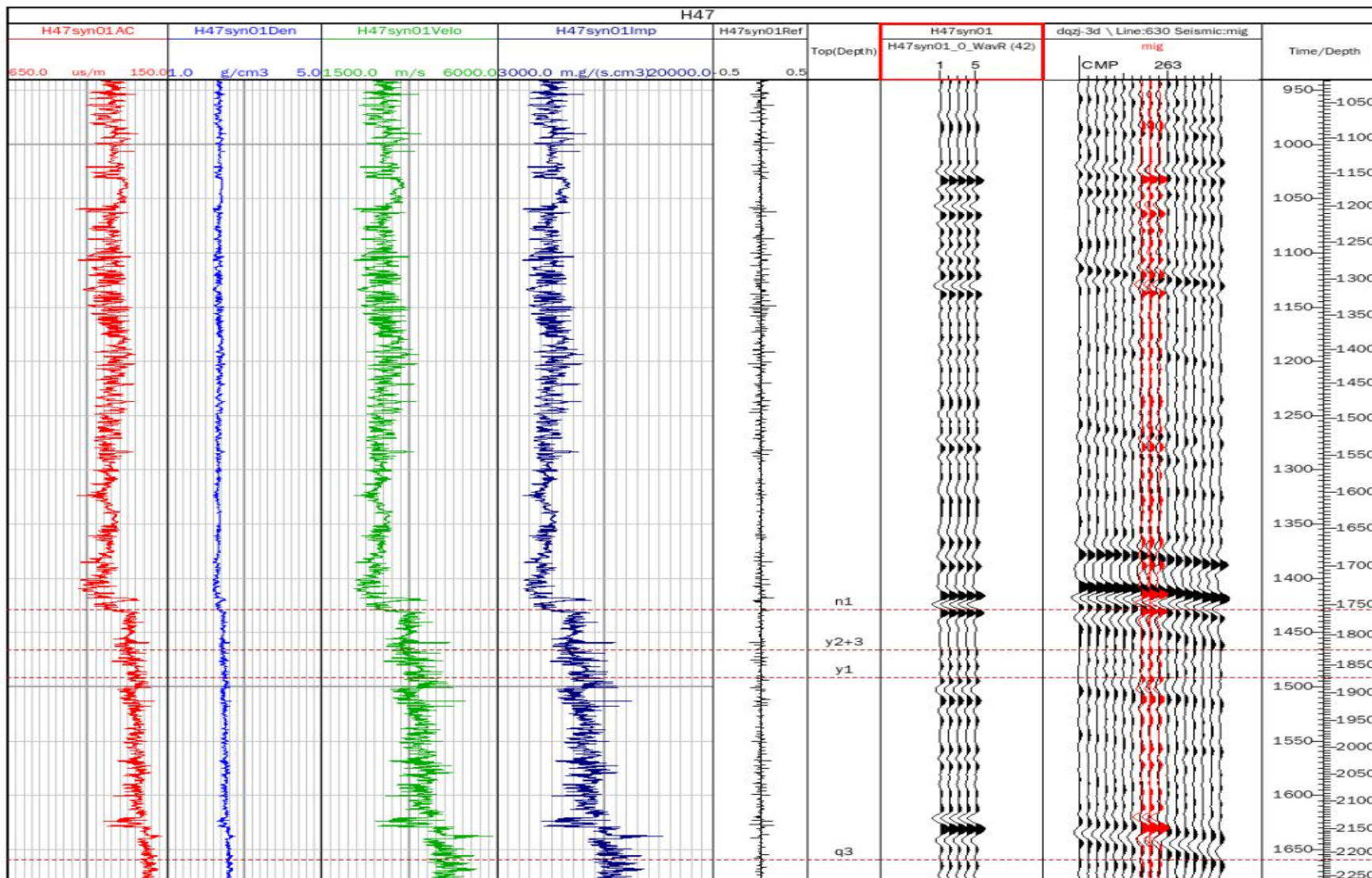
Export ASCII File...

Create Seismic...

Save

Save As...

Save Depth Synthetic...





五、辅助功能-子波贡献率分析



Synthetic

Vertical Shift in Time

Modify Start V0

Auto Move...

Stretch/Squeeze

Stretch/Squeeze Recalculation

Contribution

Display Correlative Curve...

Display Slowness

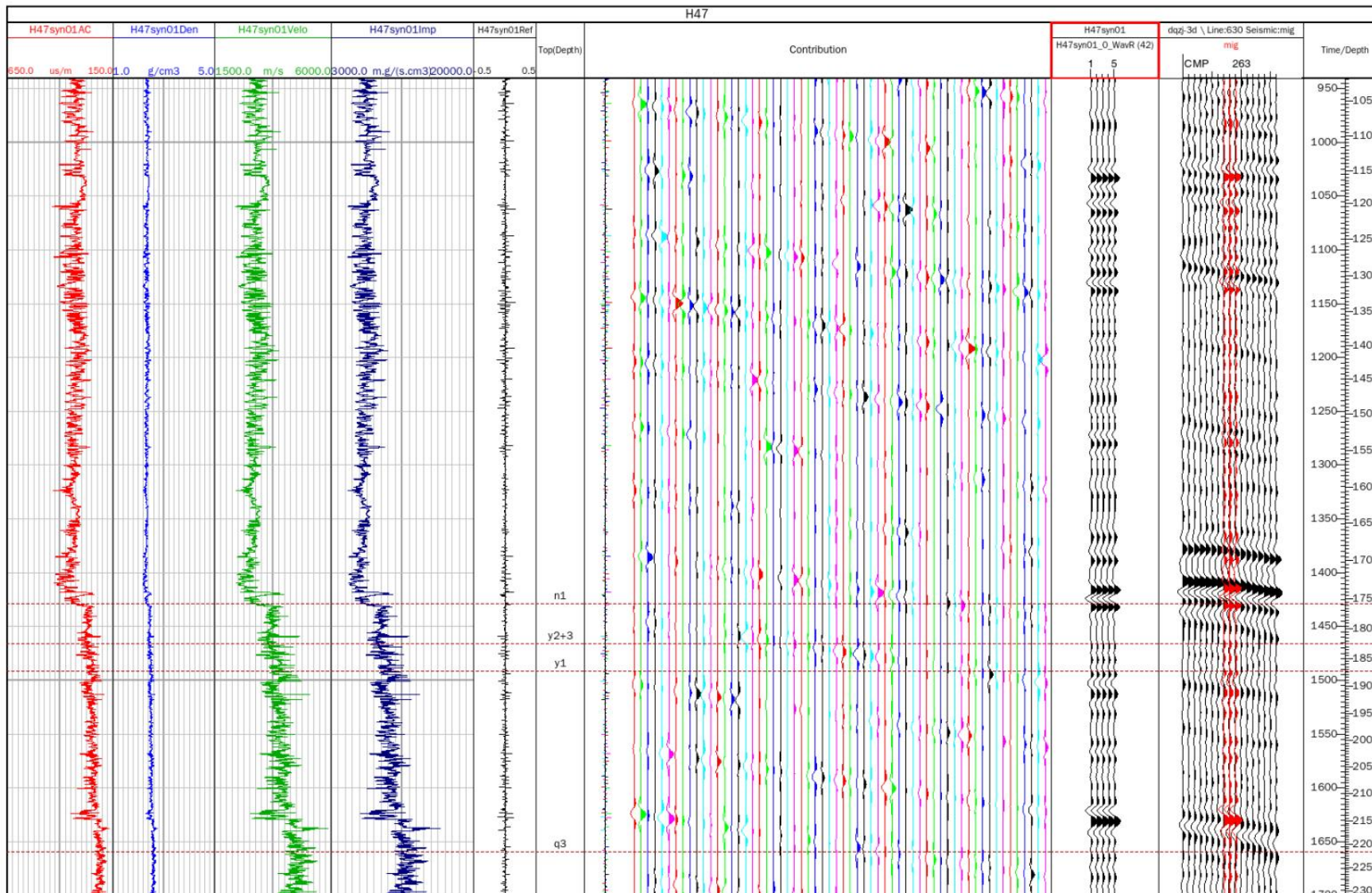
Export ASCII File...

Create Seismic...

Save

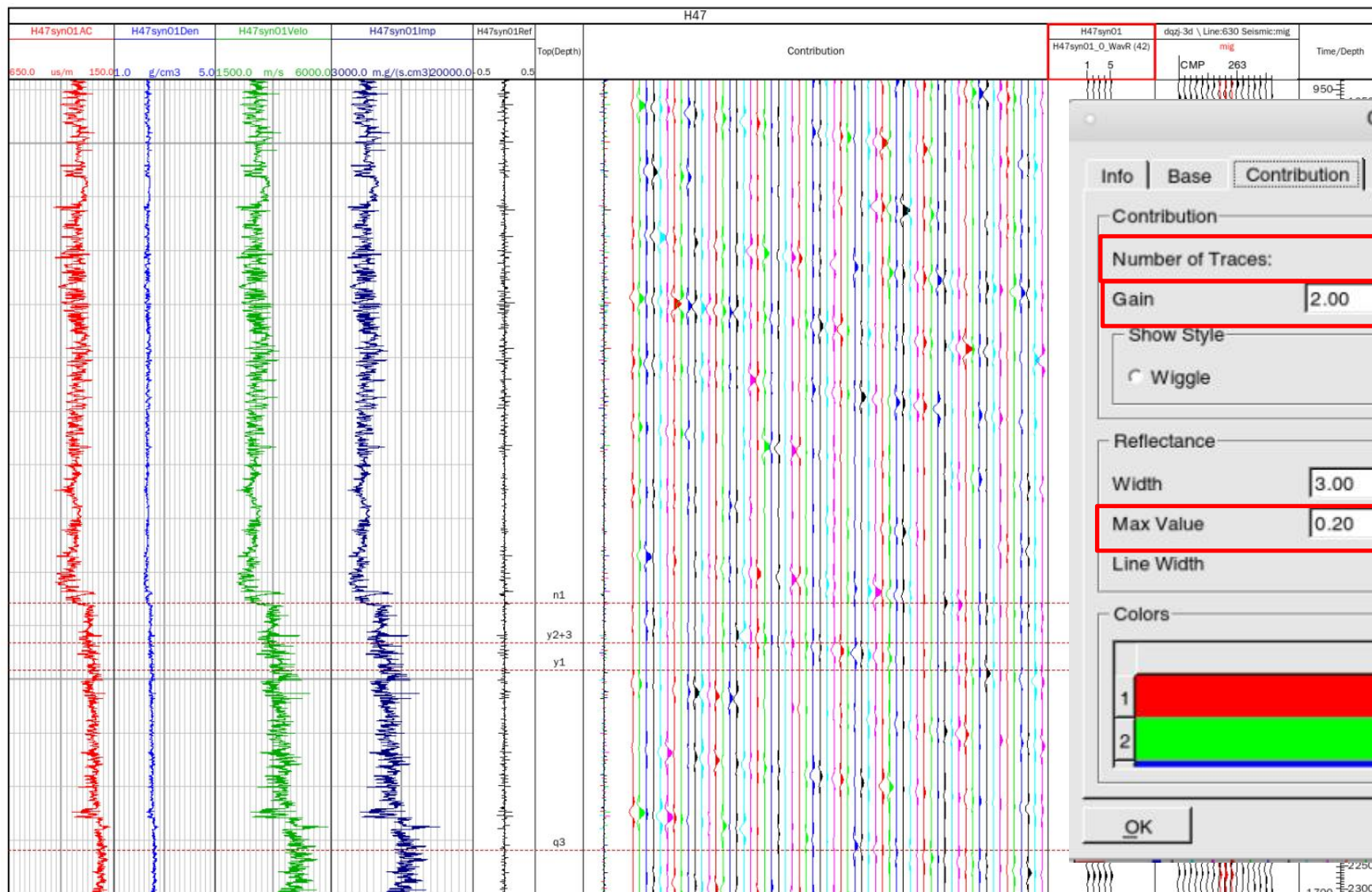
Save As...

Save Depth Synthetic...





五、辅助功能-子波贡献率分析



Contribution Parameters

Info | Base | Contribution

Contribution

Number of Traces: 100

Gain: 2.00

Show Style

☐ Wiggle ☒ Wiggle+Variable Area

Reflectance

Width: 3.00

Max Value: 0.20

Line Width: 1

Colors

Colors

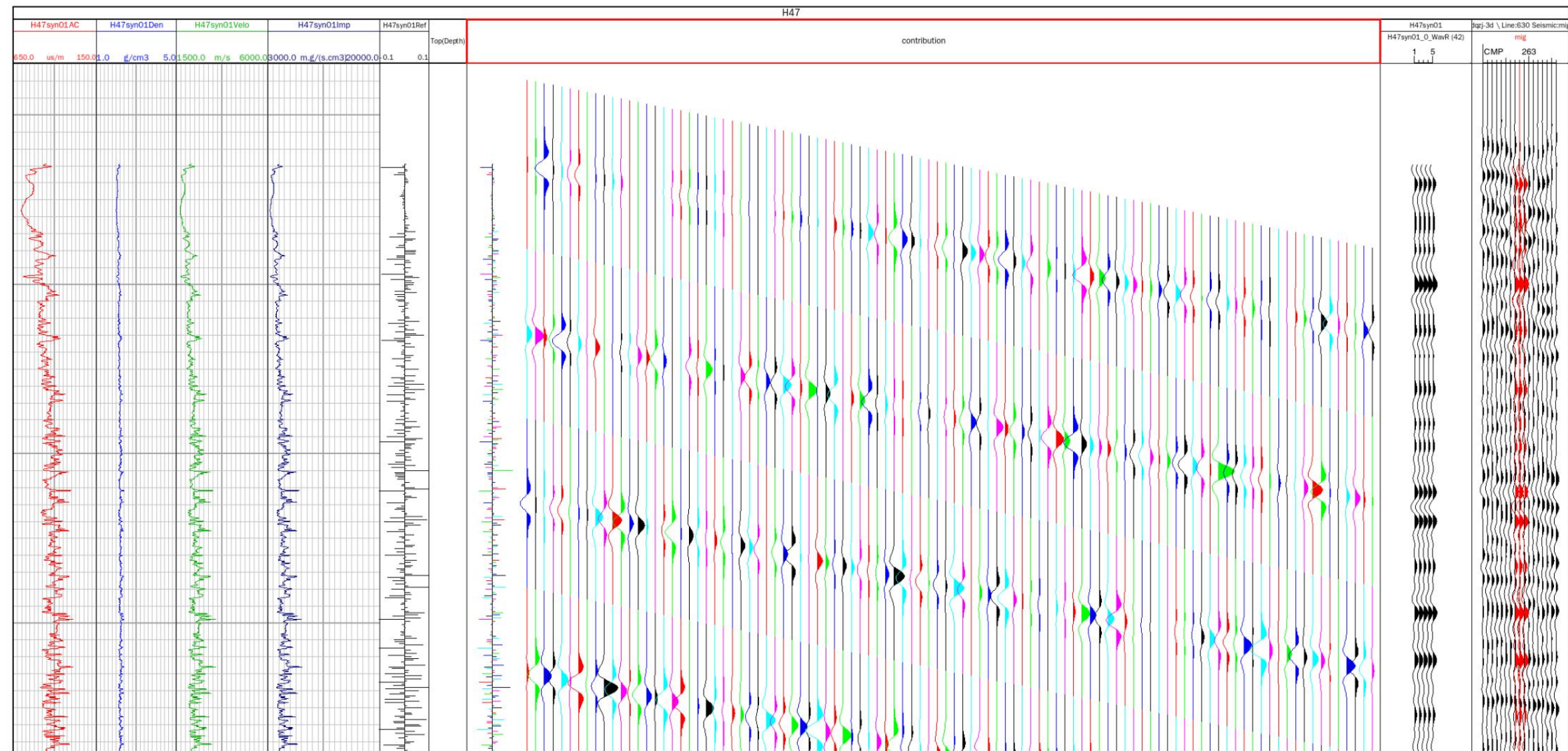
1 2

Add Delete

OK Apply Cancel

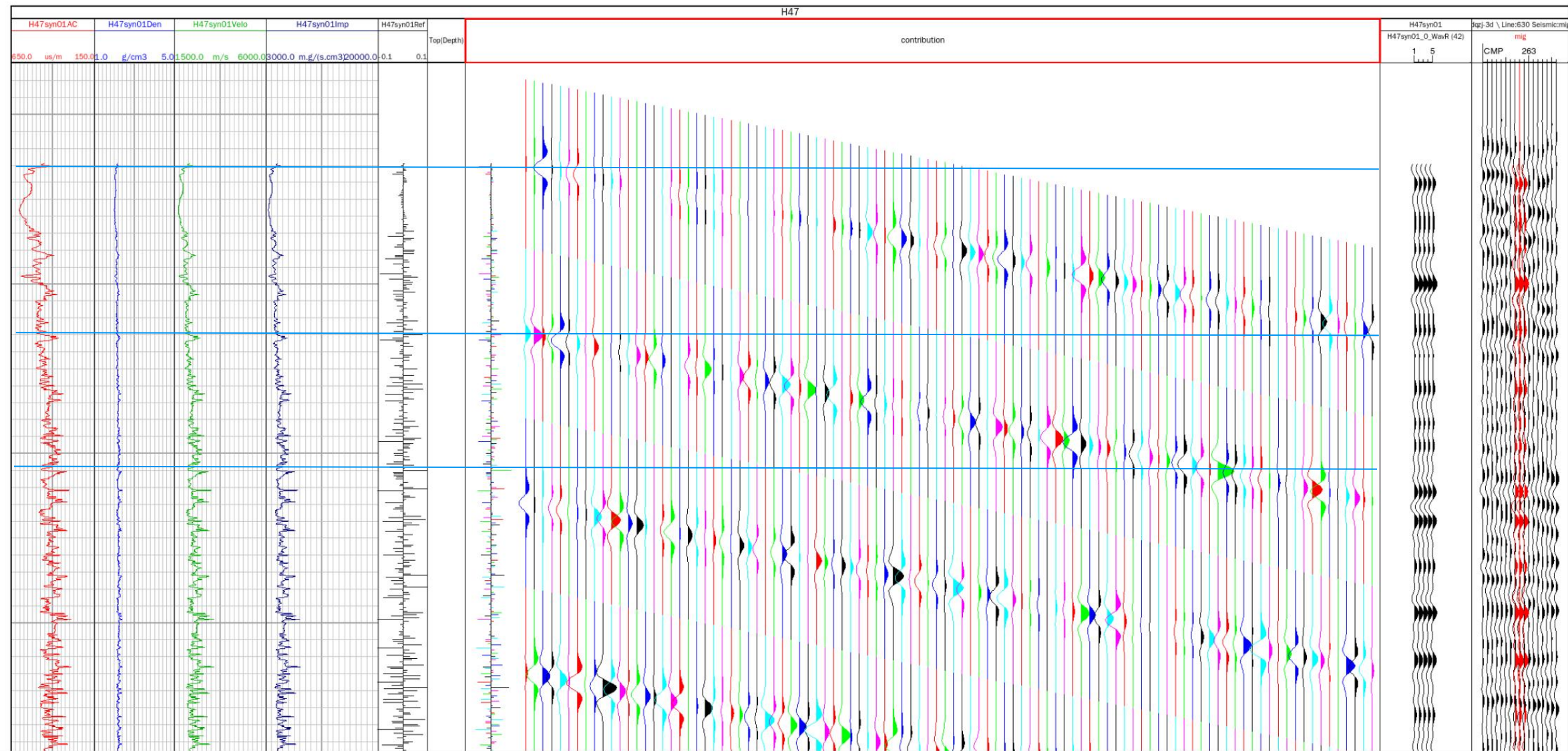


五、辅助功能-子波贡献率分析



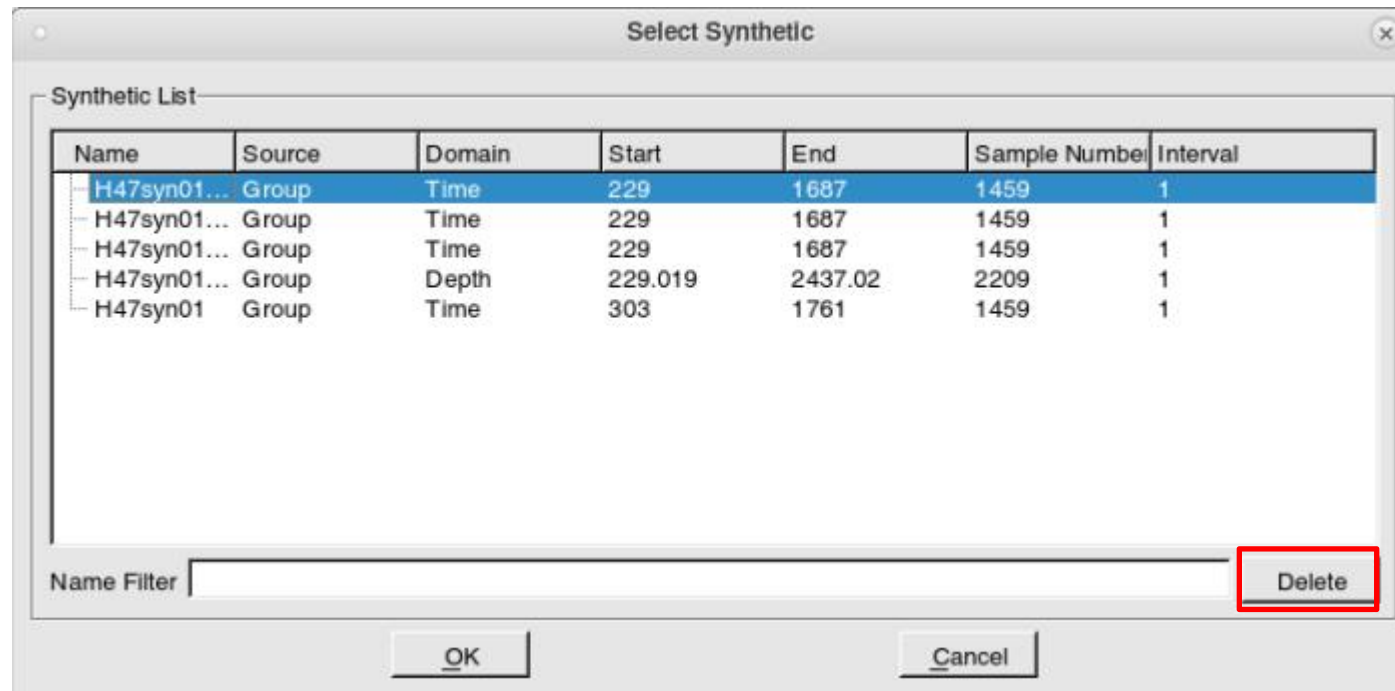


五、辅助功能-子波贡献率分析



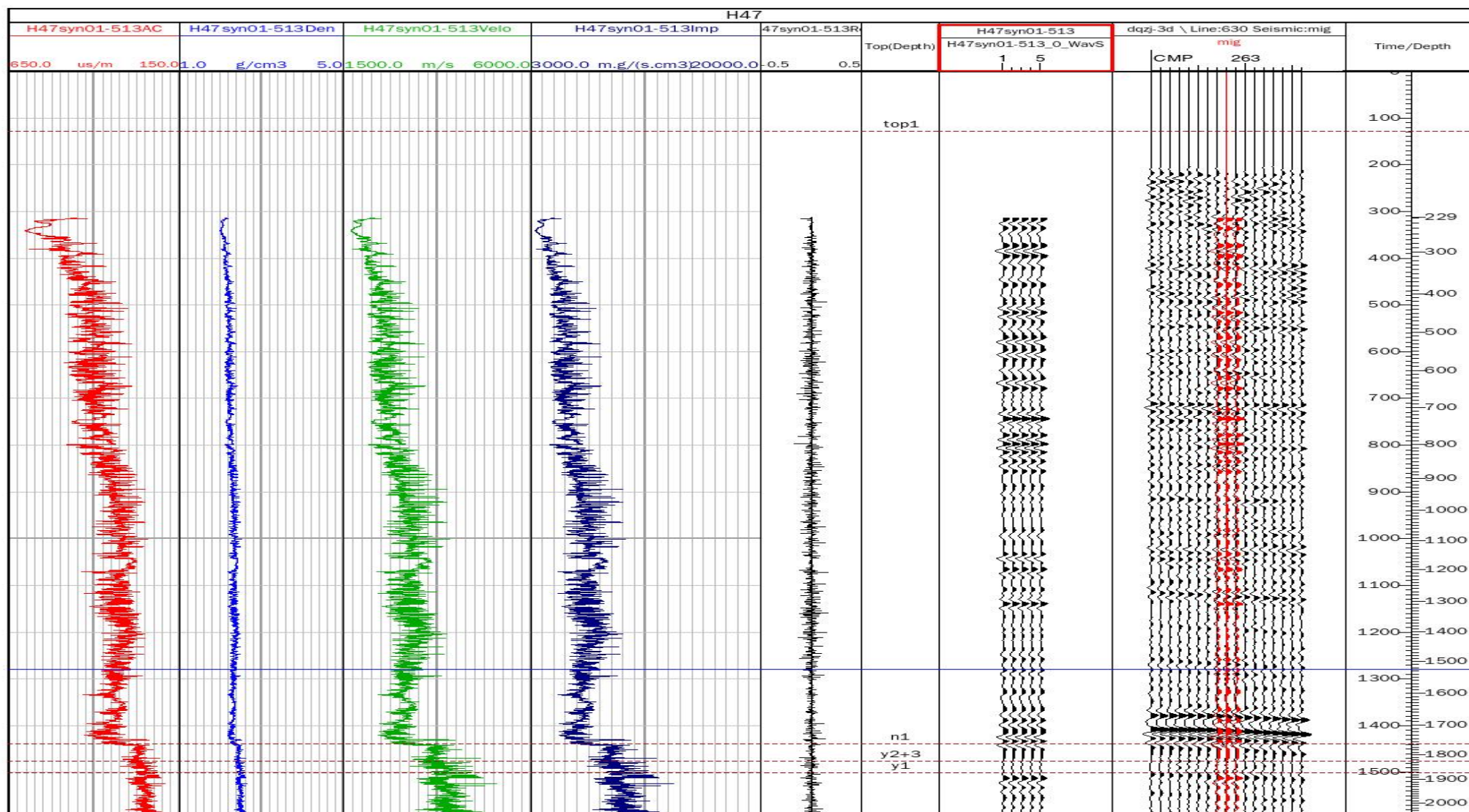


五、辅助功能-删除合成记录



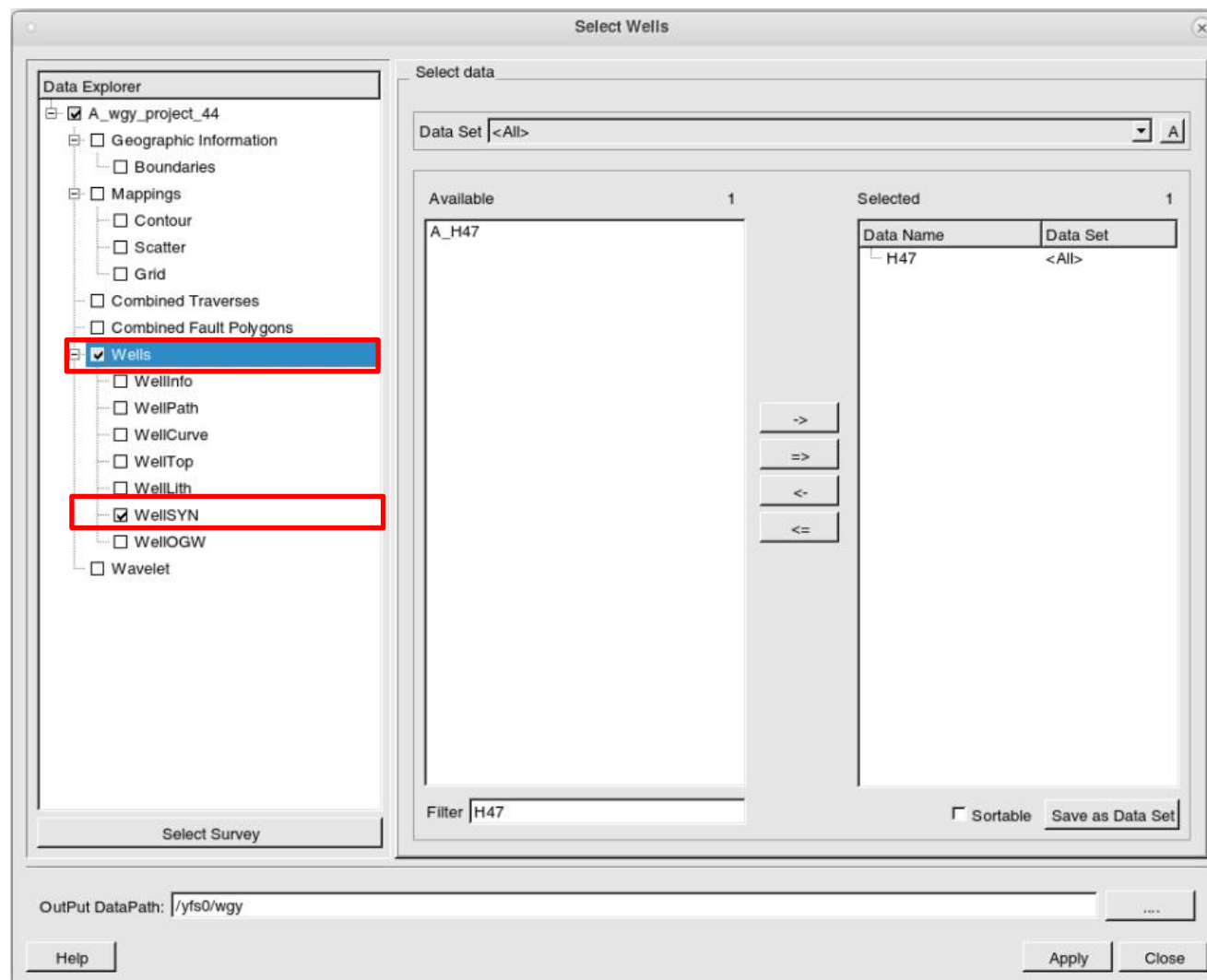
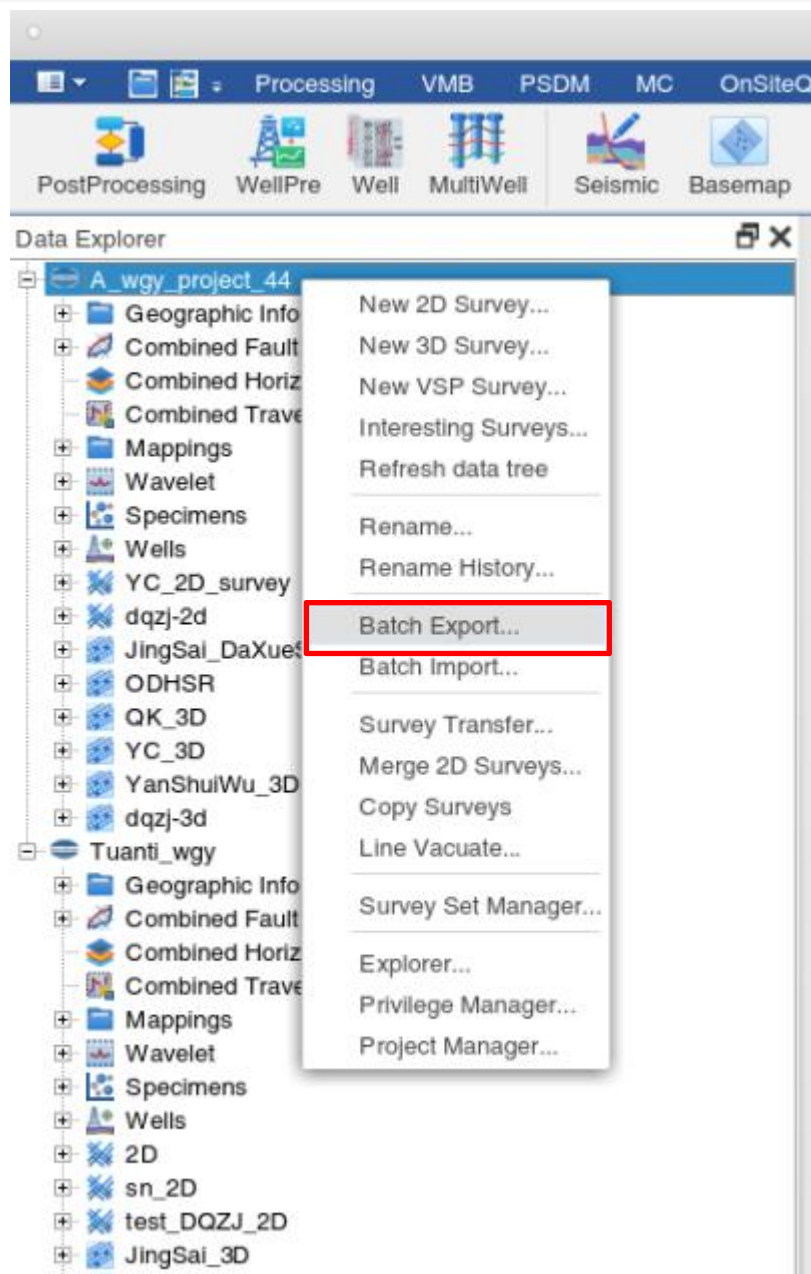


五、辅助功能-时深关系自动延申





五、辅助功能-合成记录数据输出





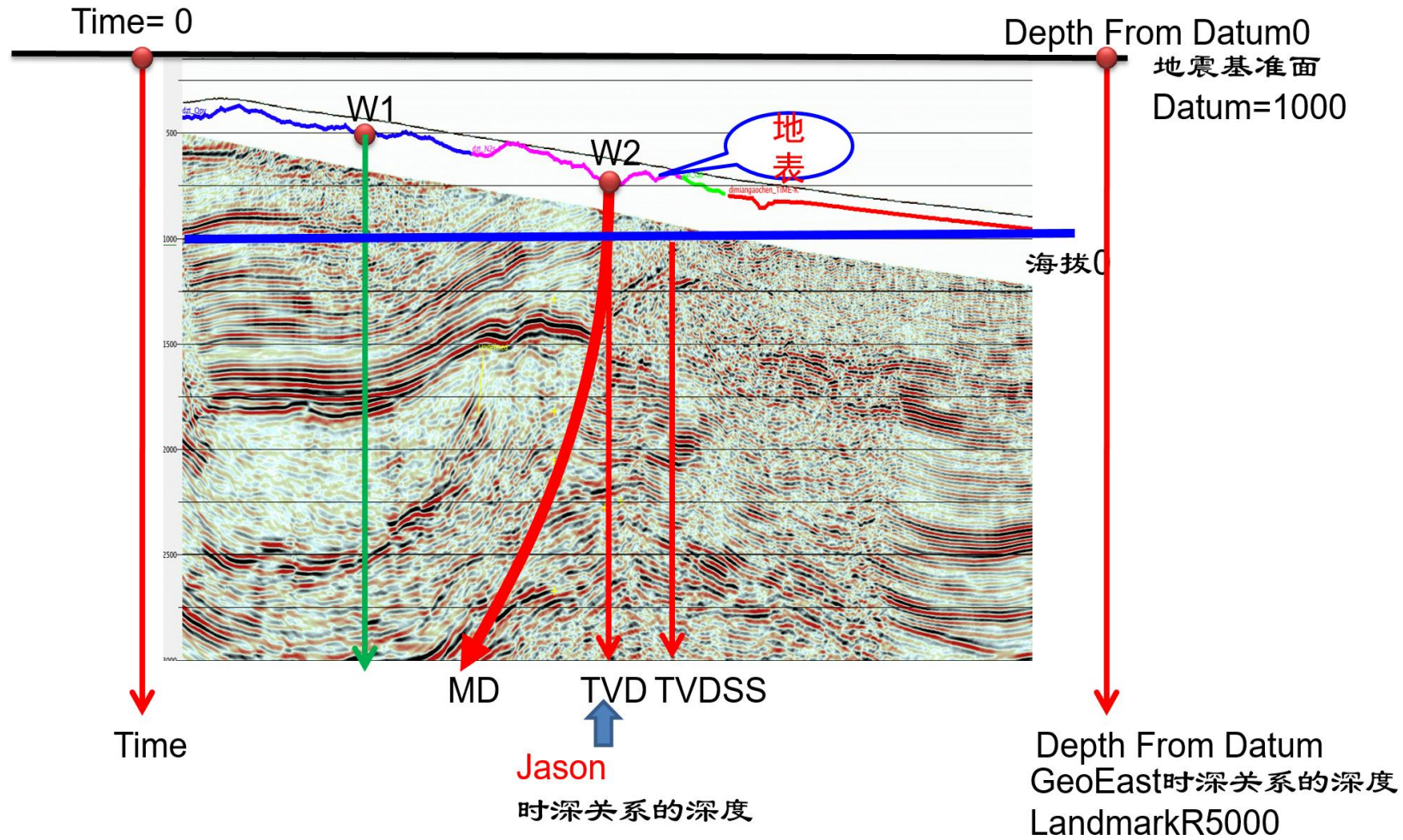
注意事项



- 声波曲线是公制的
- 地震基准面参数一定设置
- 井补心海拔参数要设置
- 地震基准面对应井时深关系的零深度零时间



注意事项



感谢大家对GeoEast软件的 信任和支持!

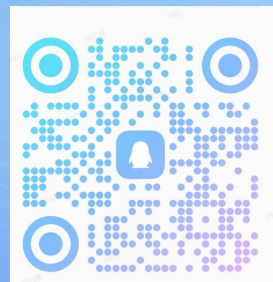
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