



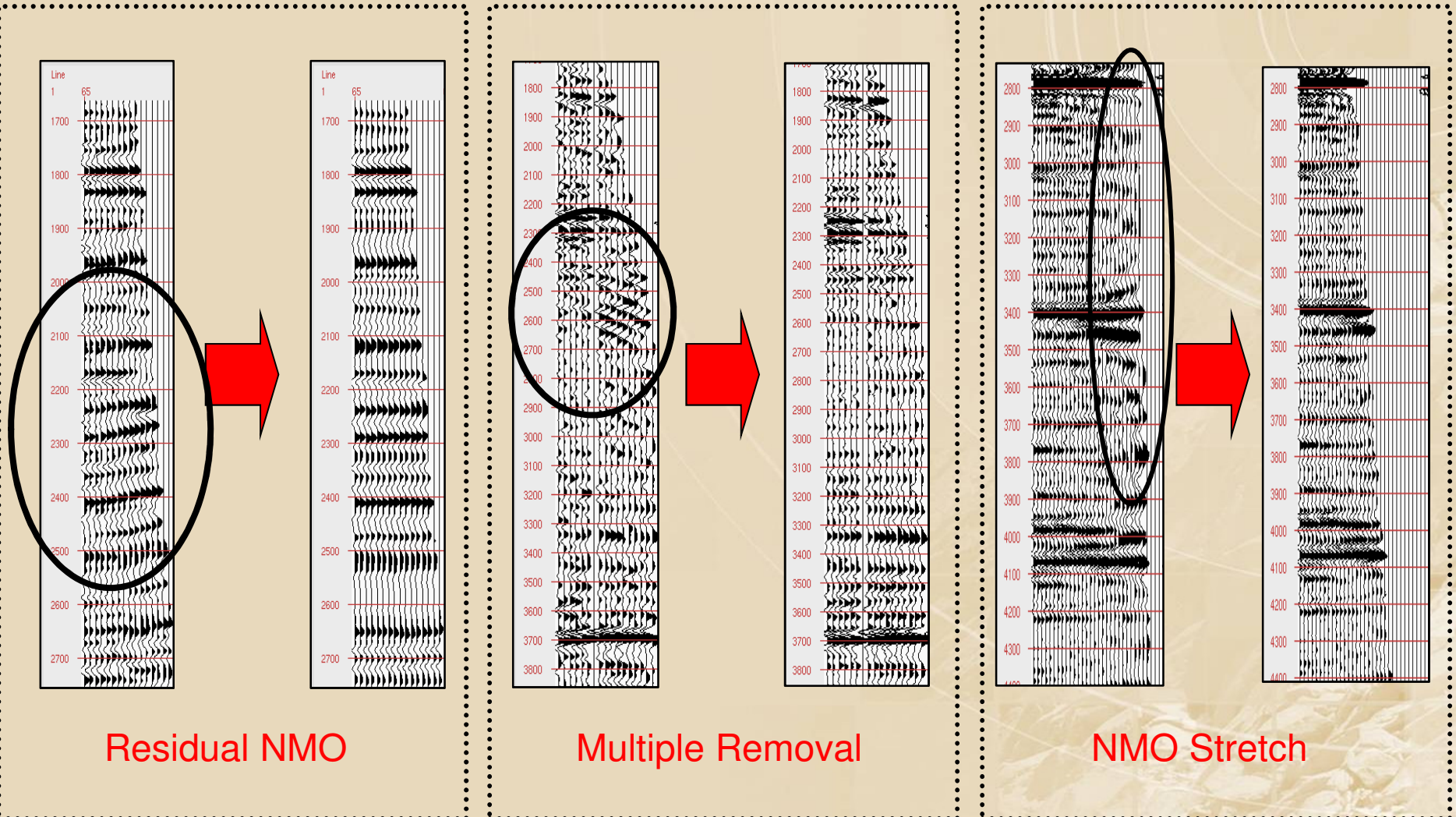
# DHI Consortium

*Processing Impact on AVO Products*

*Roger Young*

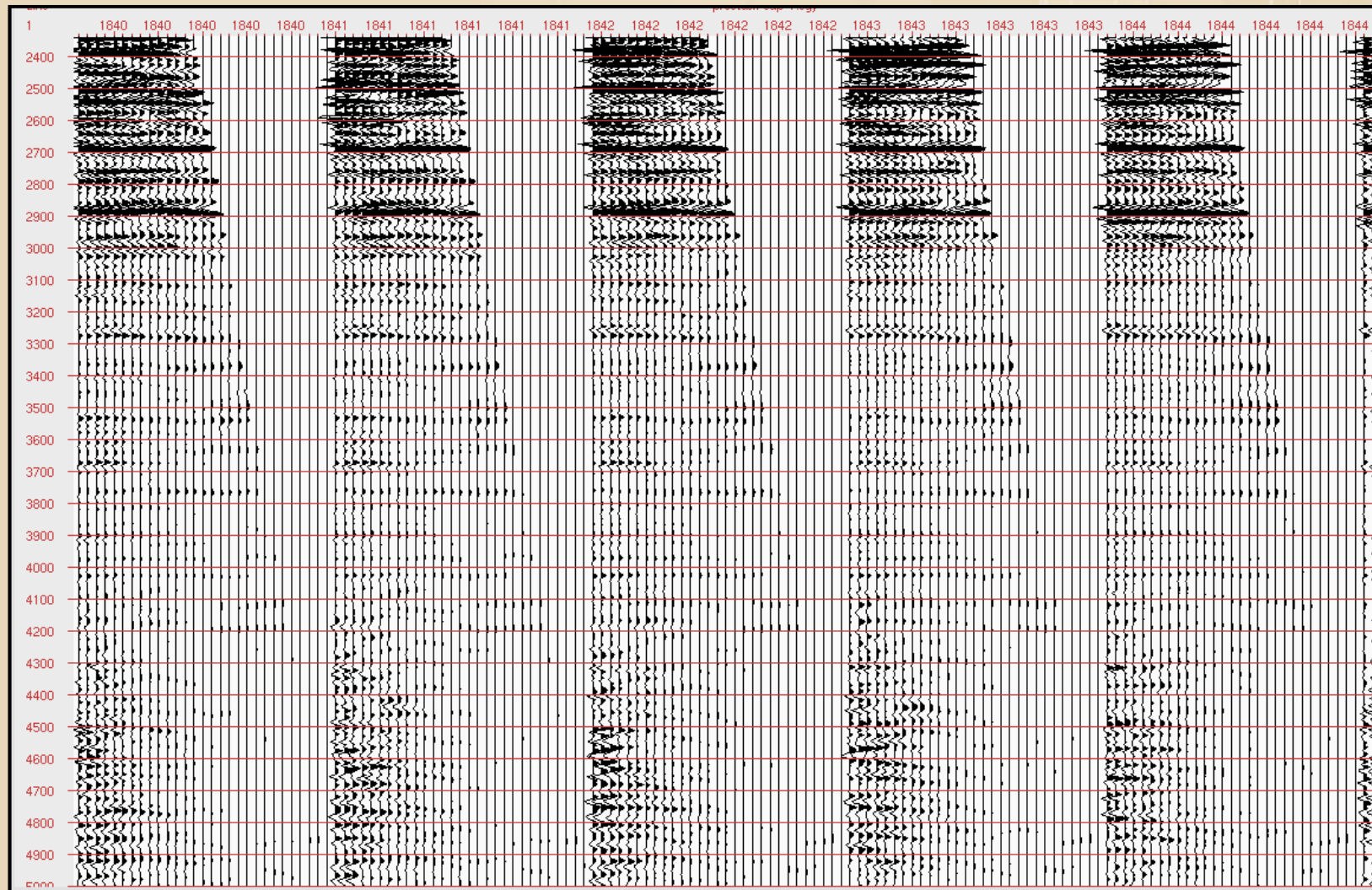


## Seismic Data Preparation





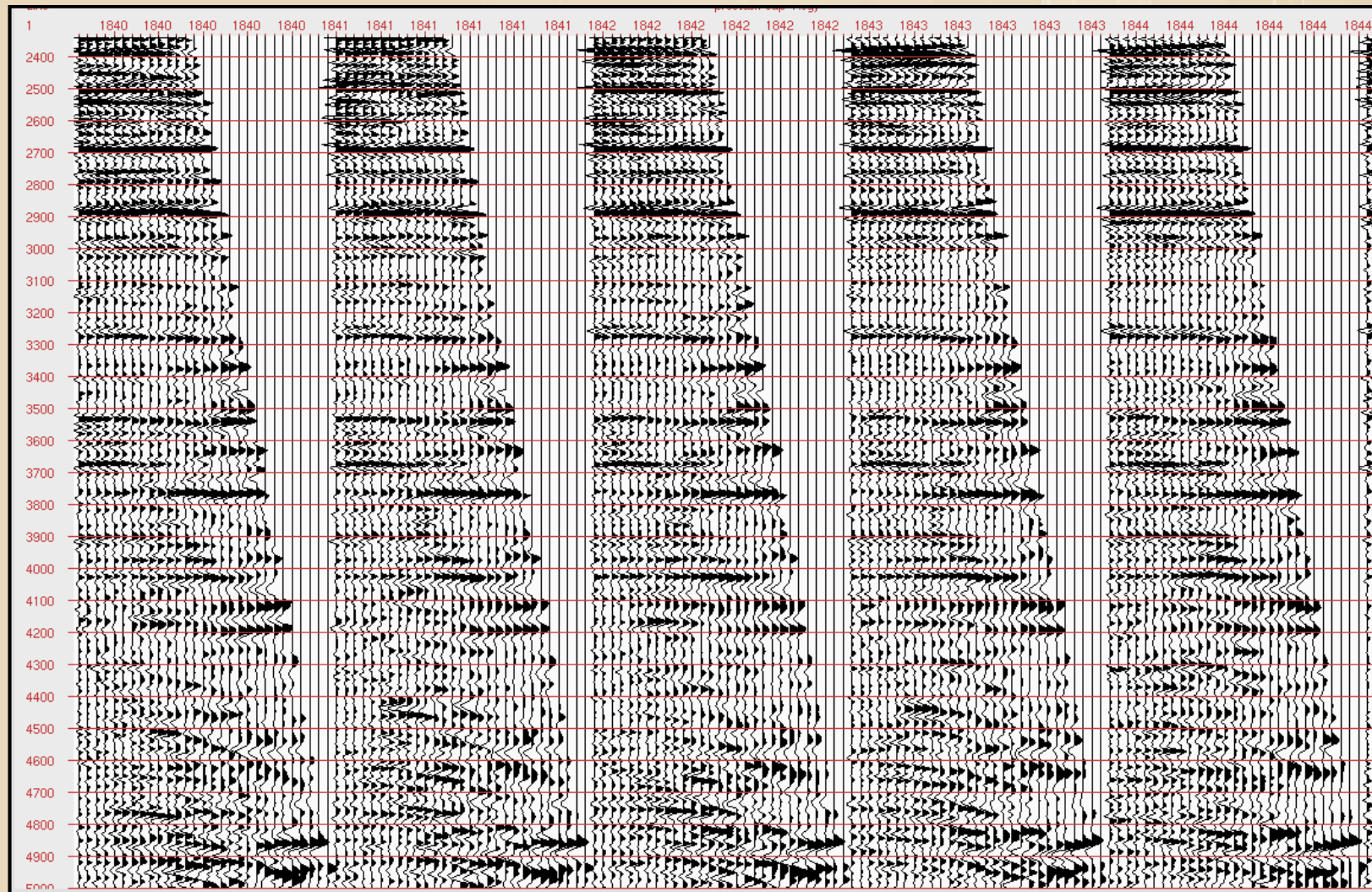
## Before Scaling







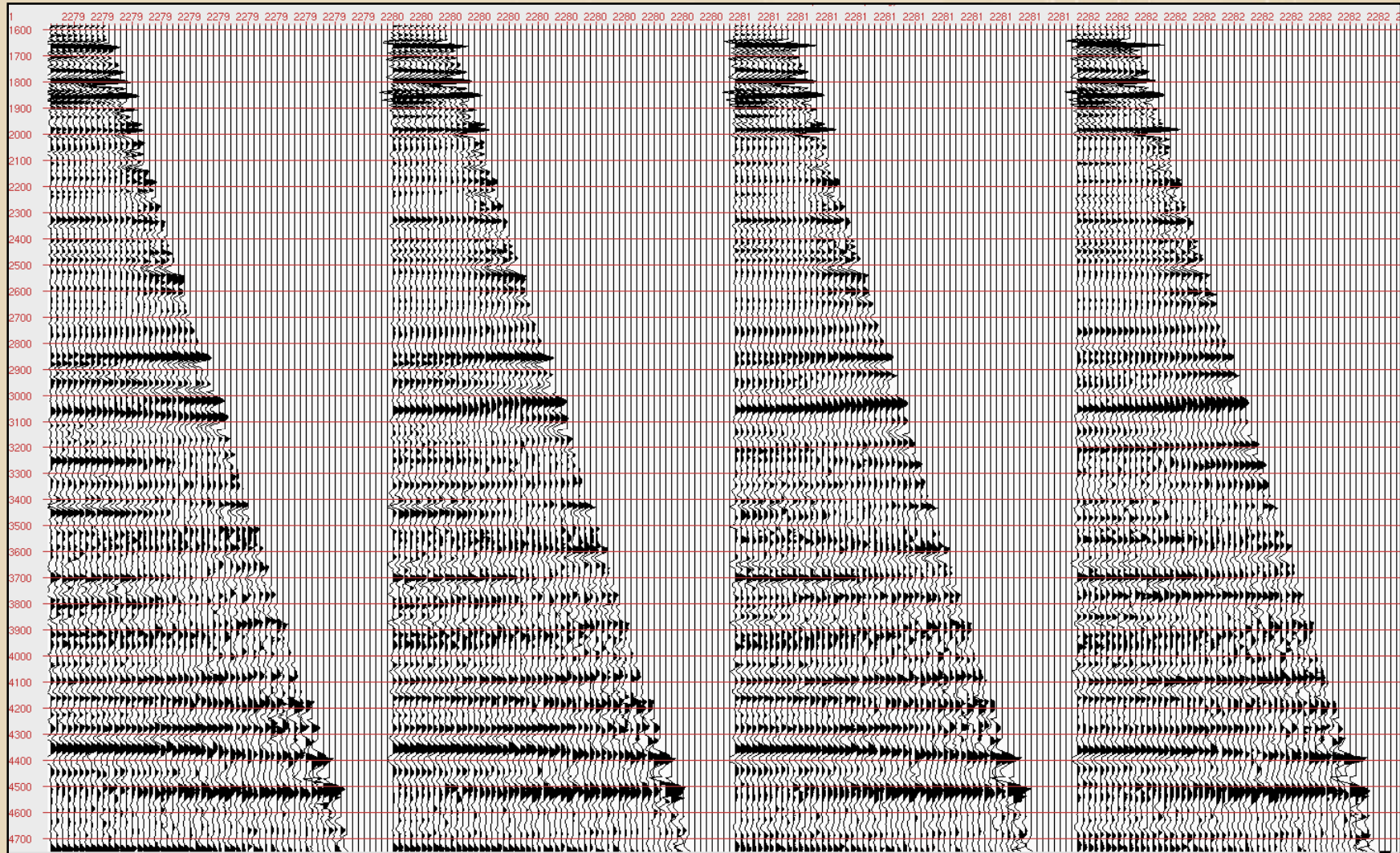
## After Scaling





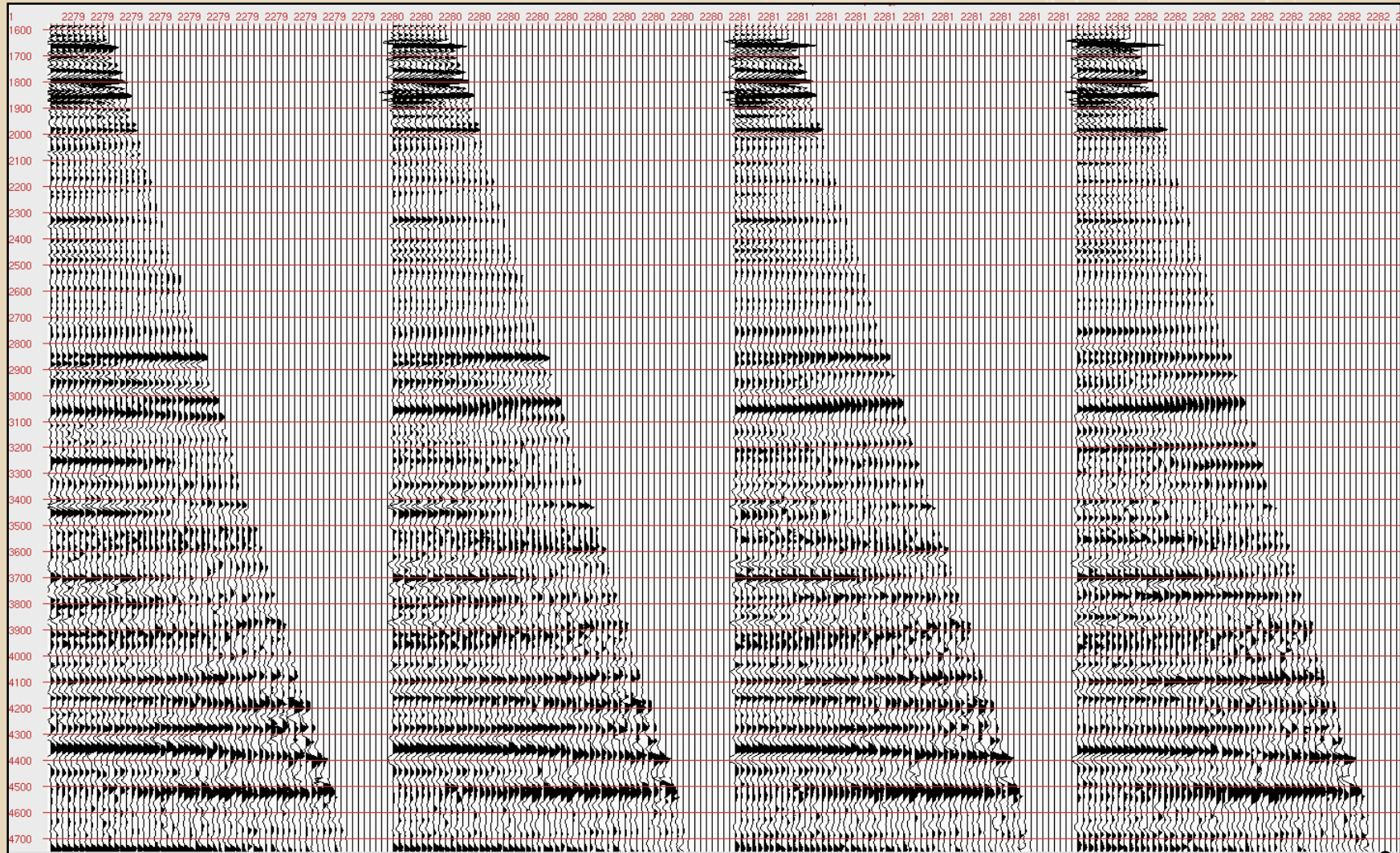


## 2000 ms AGC





## 2000 ms TVS



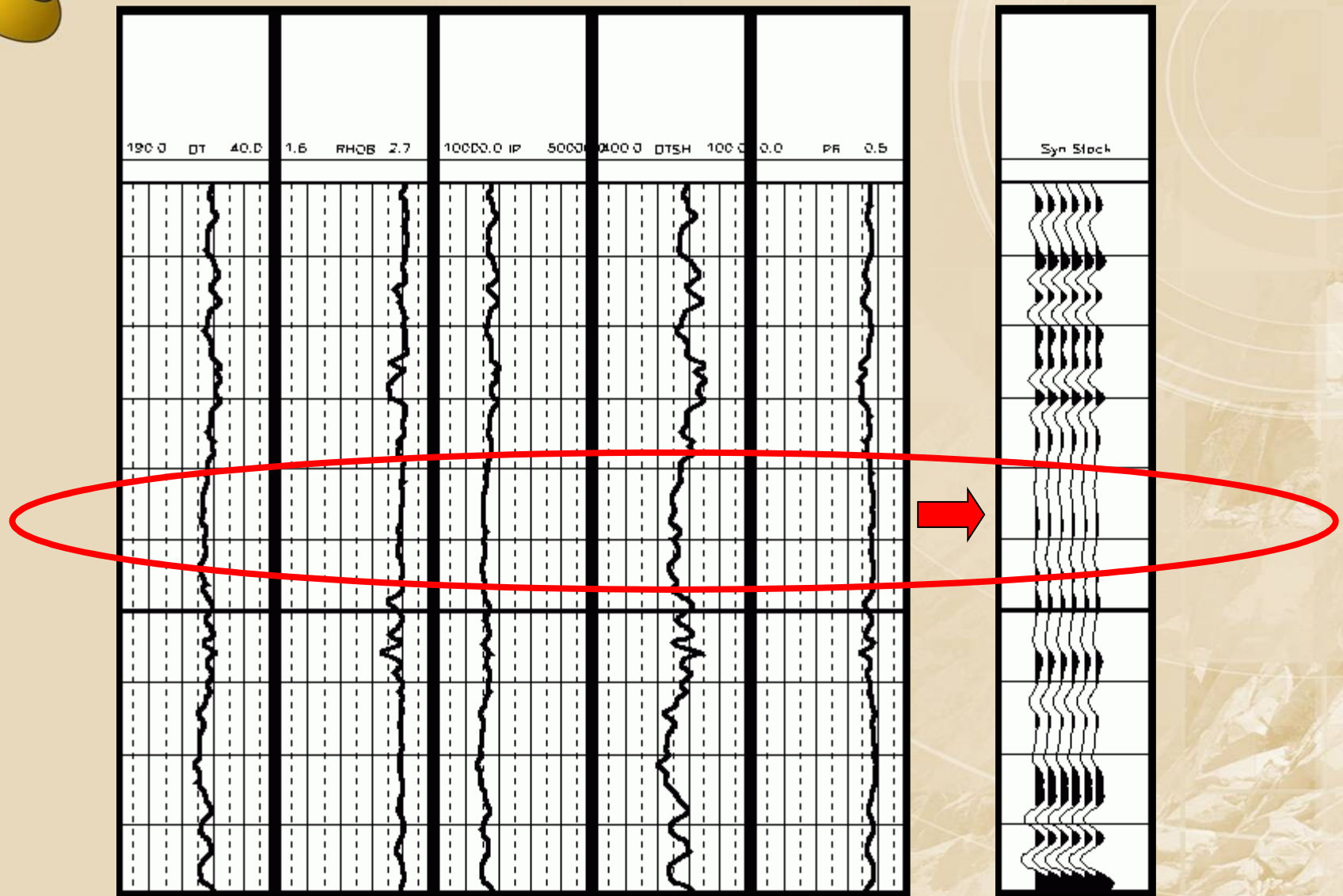


# Modeling Methodology



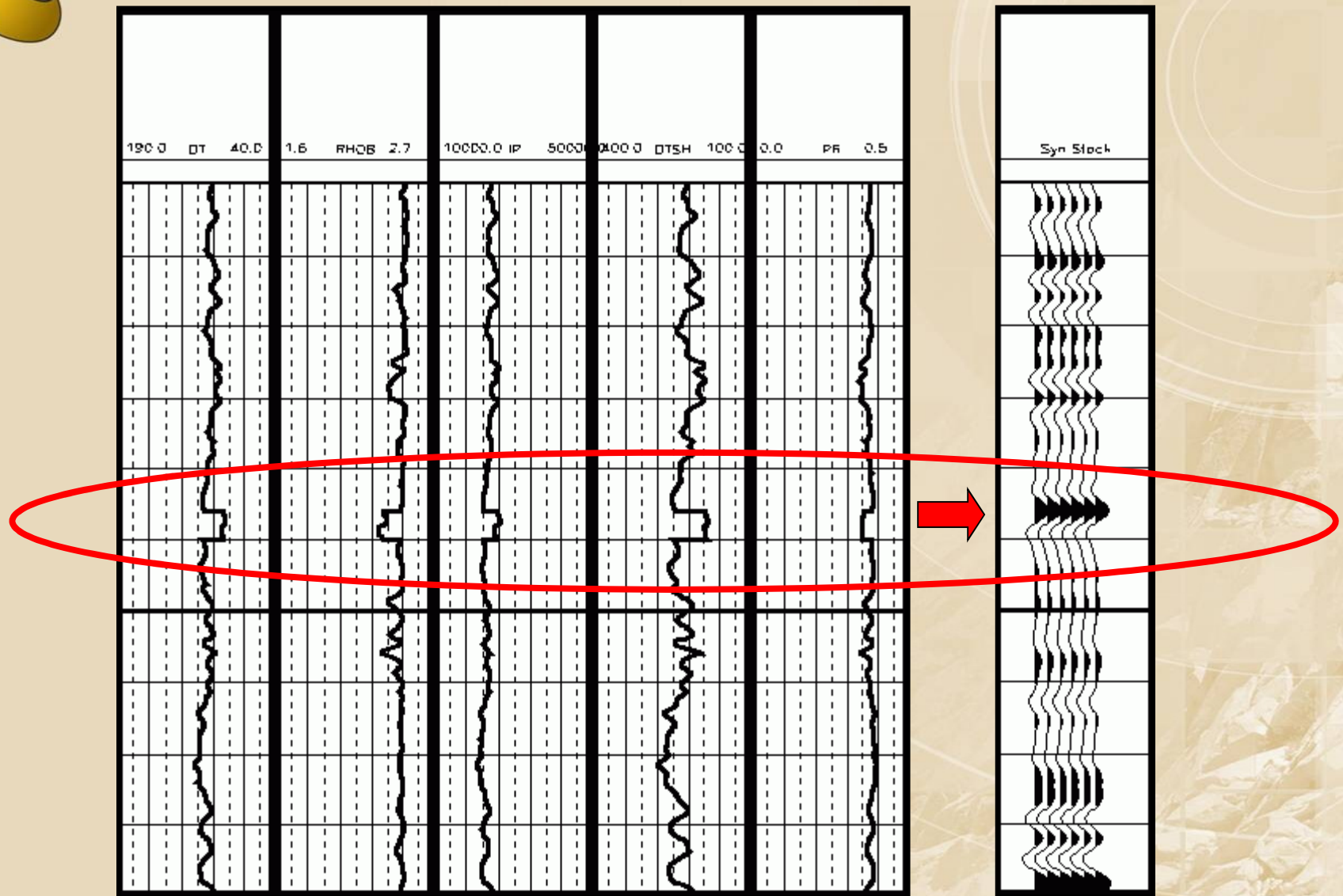


# Conventional Seismic Modeling



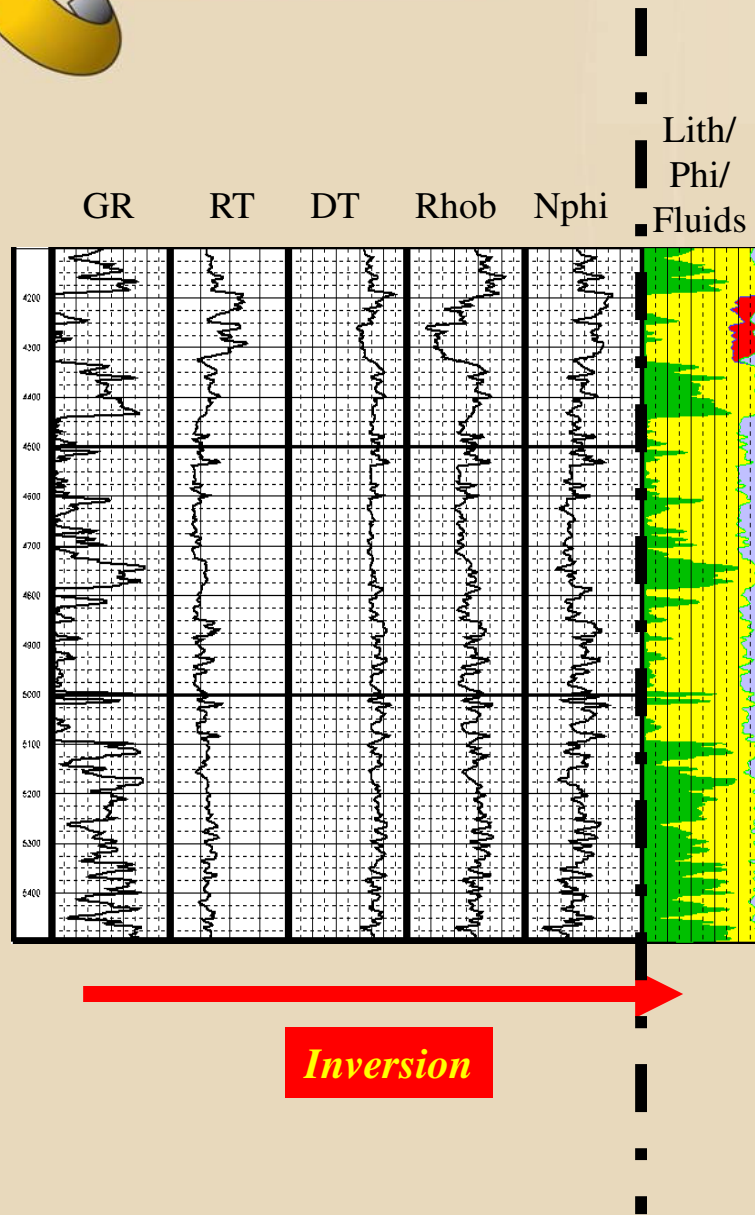


# Conventional Seismic Modeling





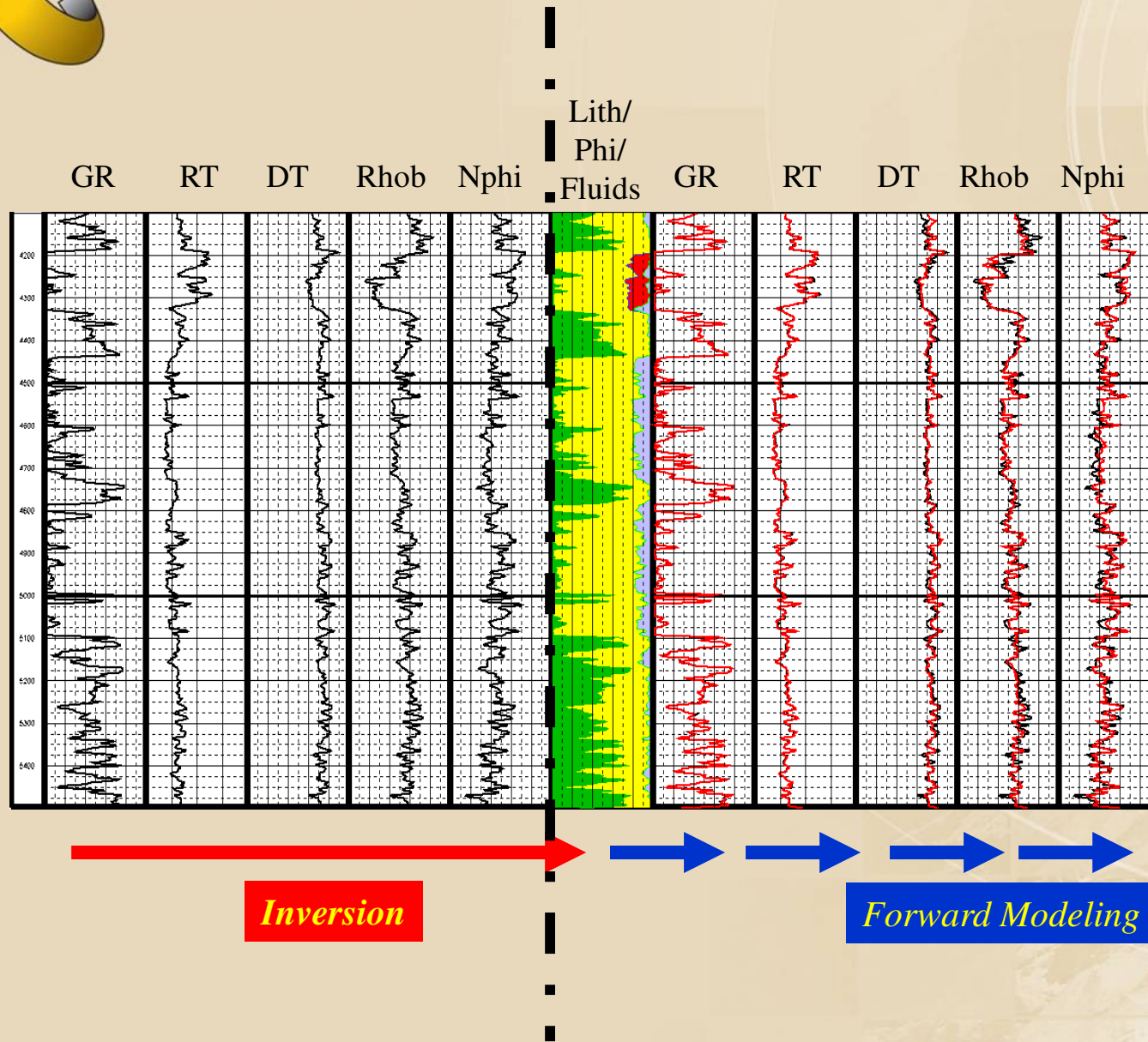
# Seismic Petrophysics





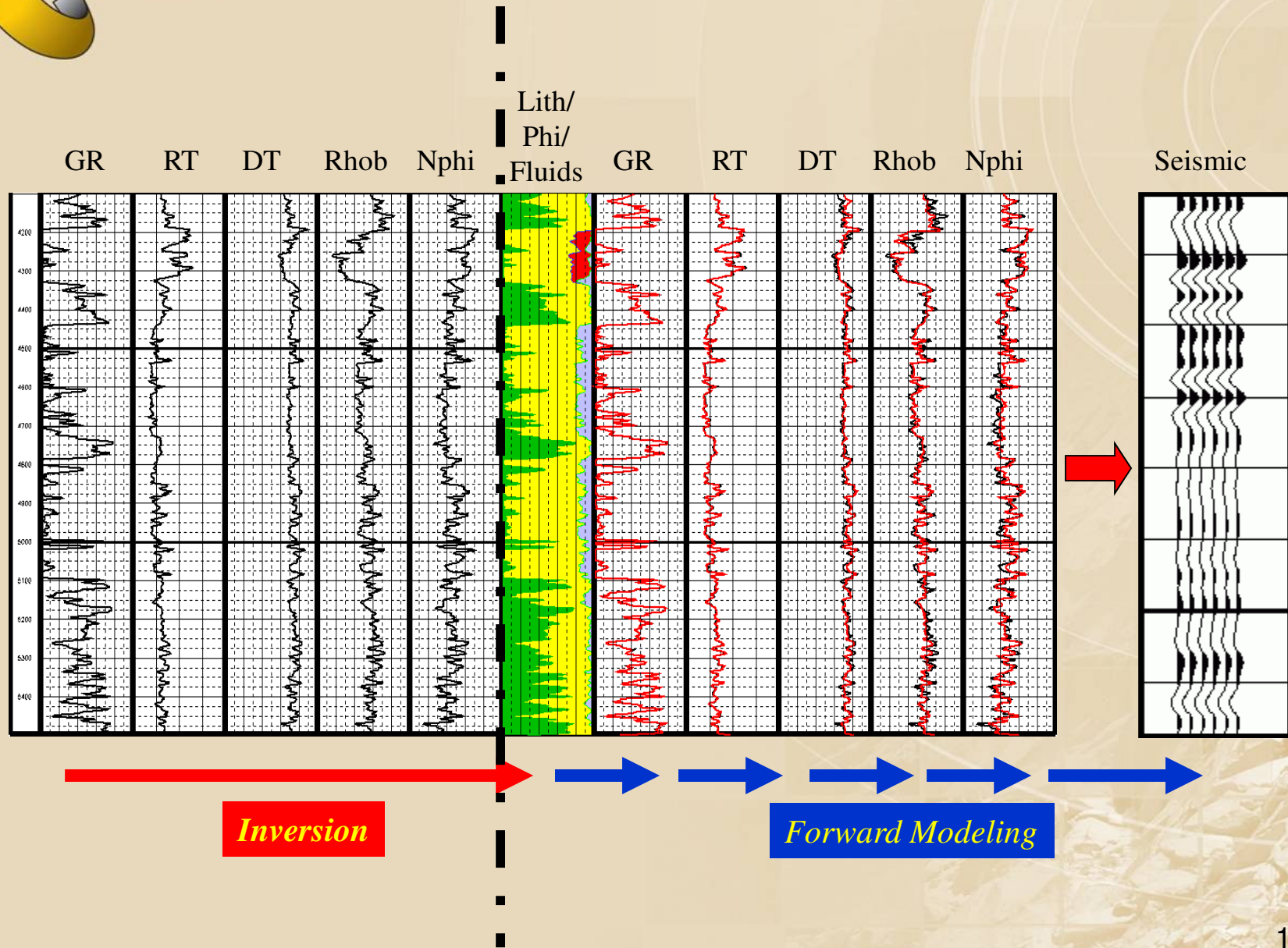


# Seismic Petrophysics



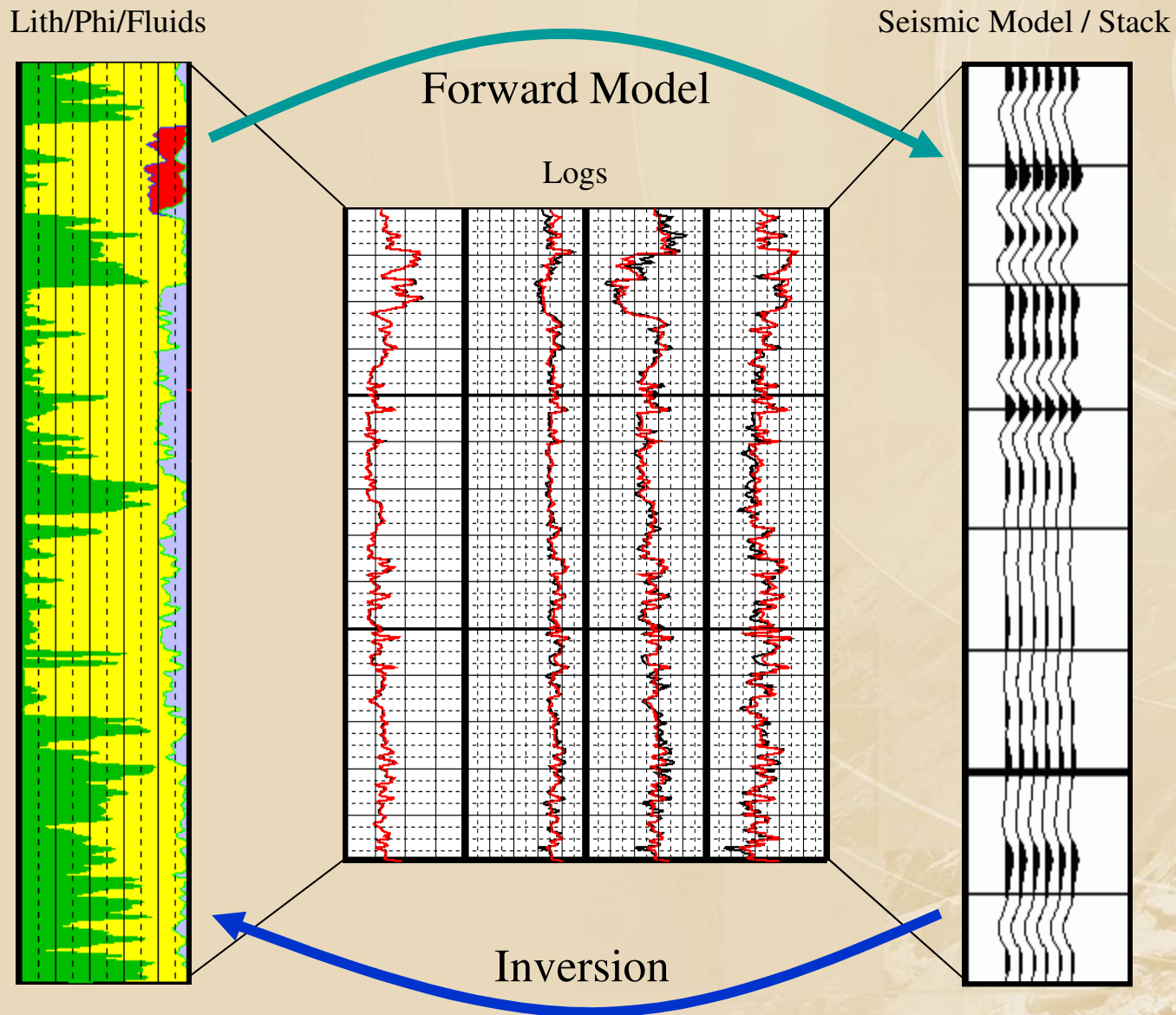


# Seismic Petrophysics





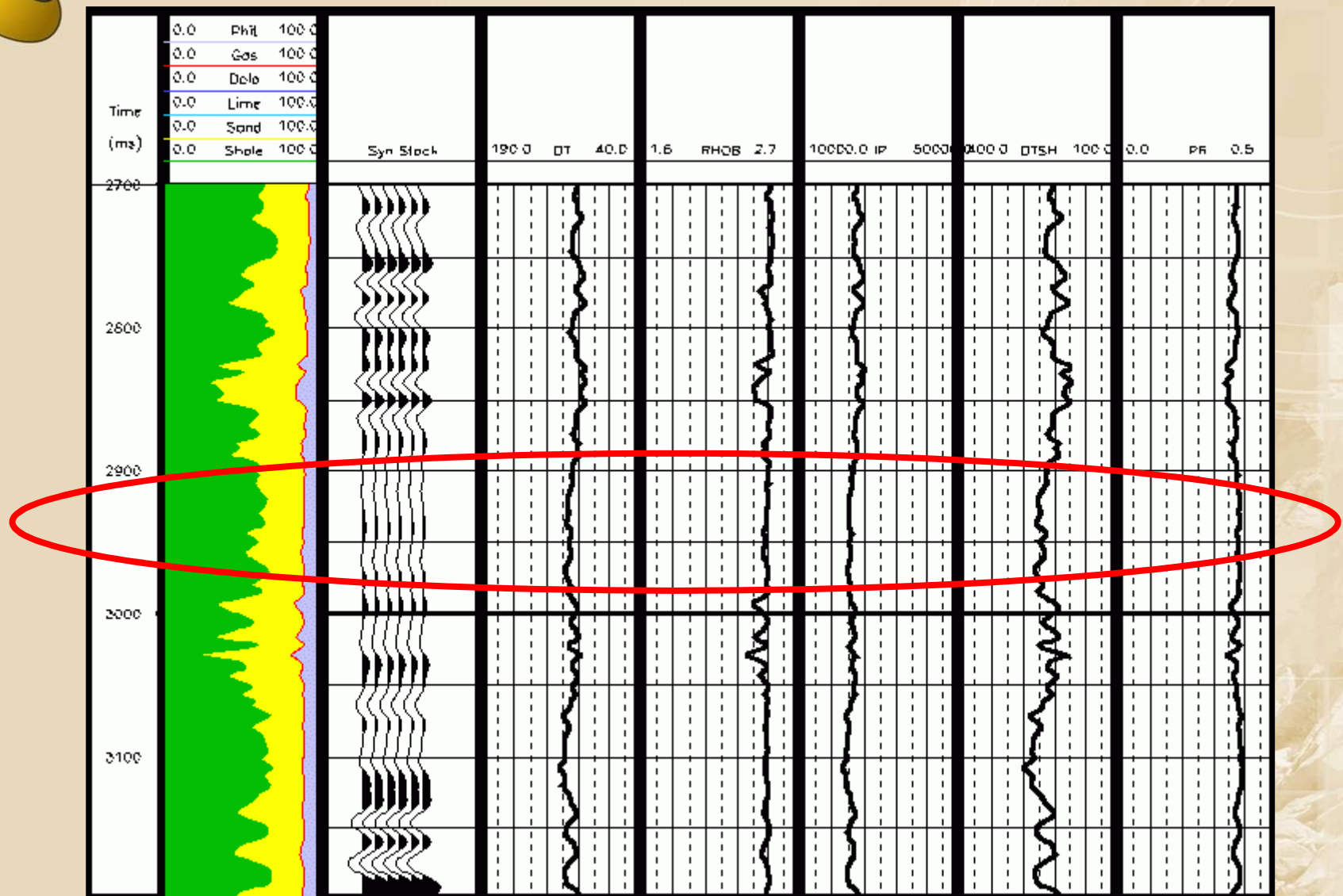
# Seismic Petrophysics





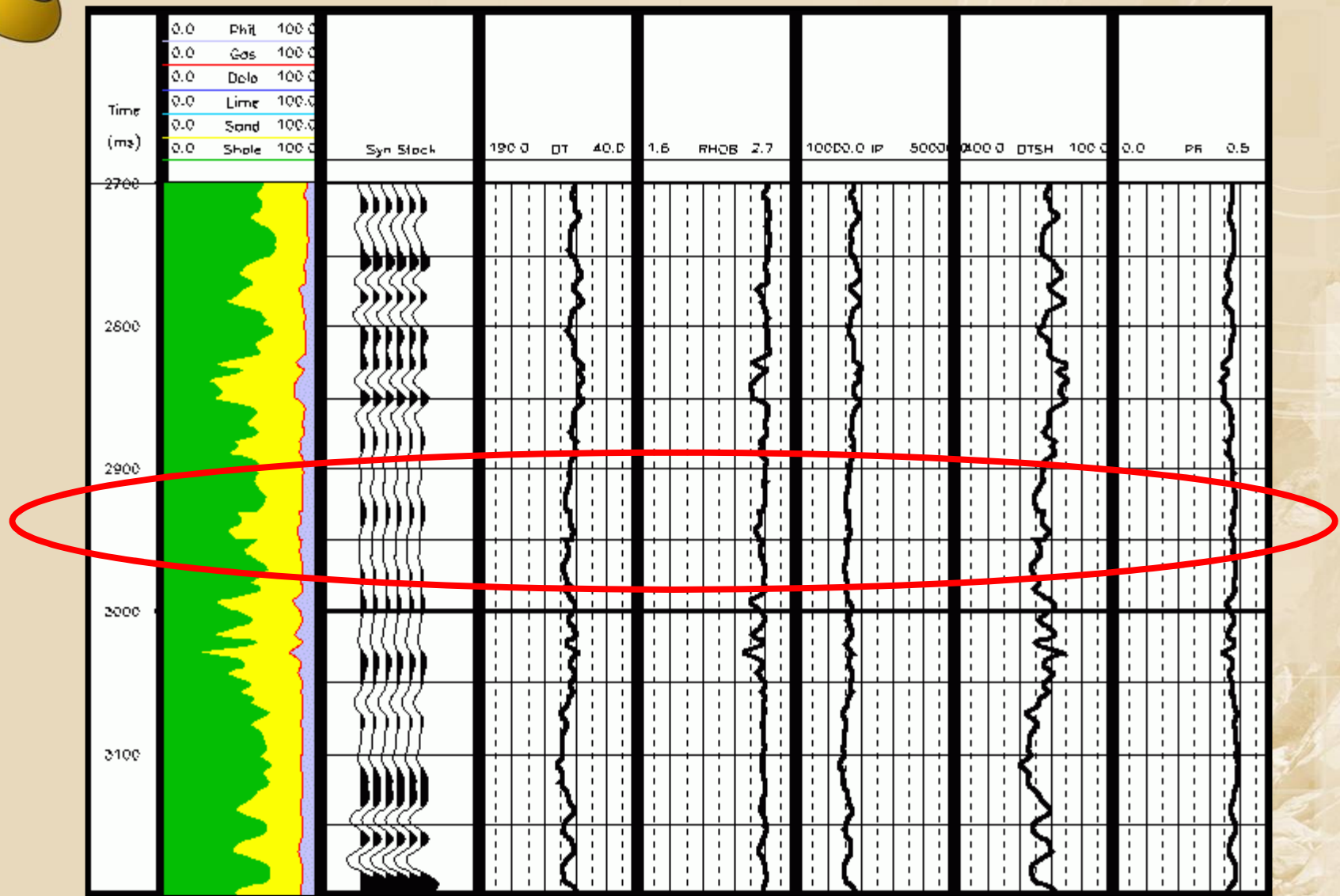


# CDP 1



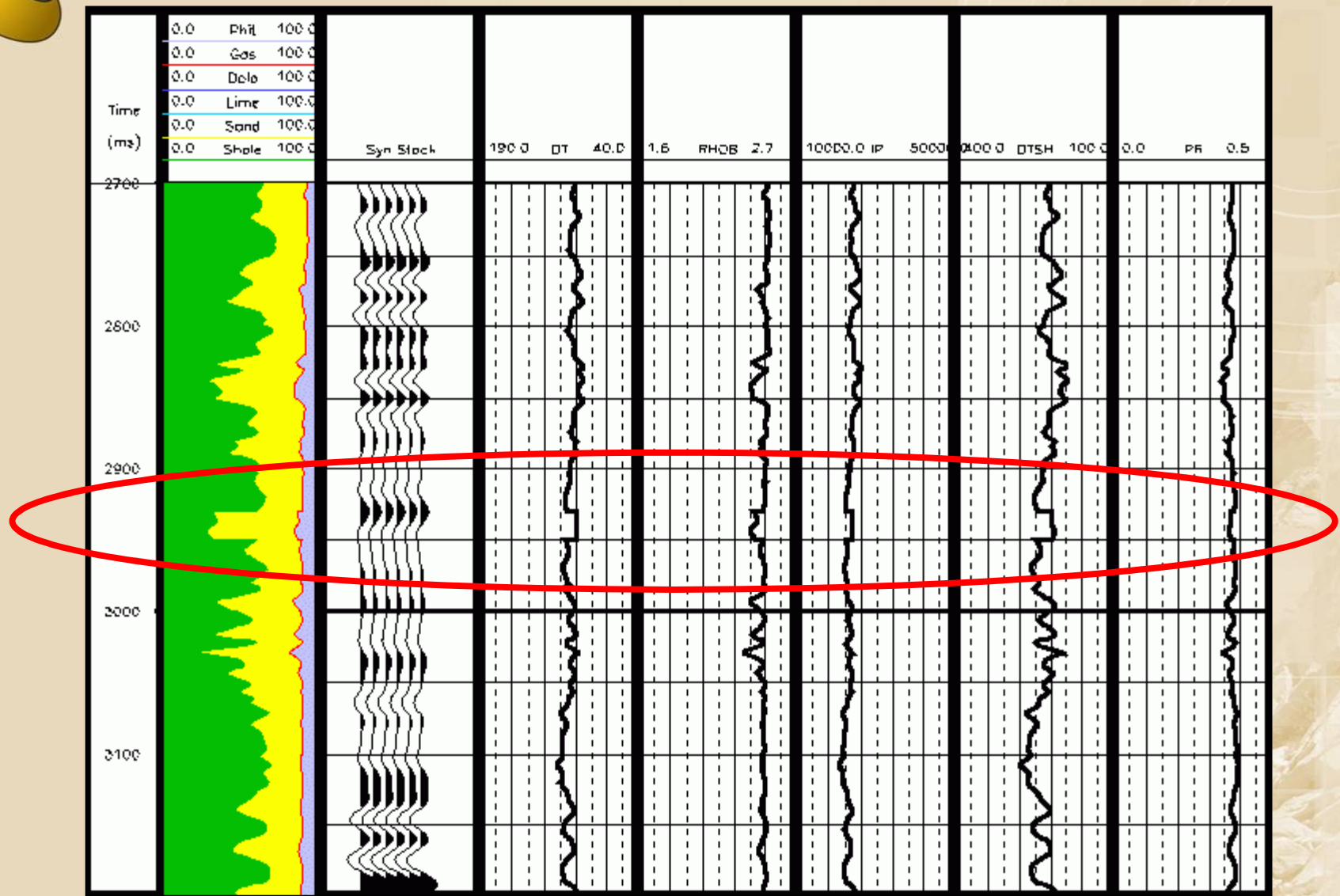


# CDP 11





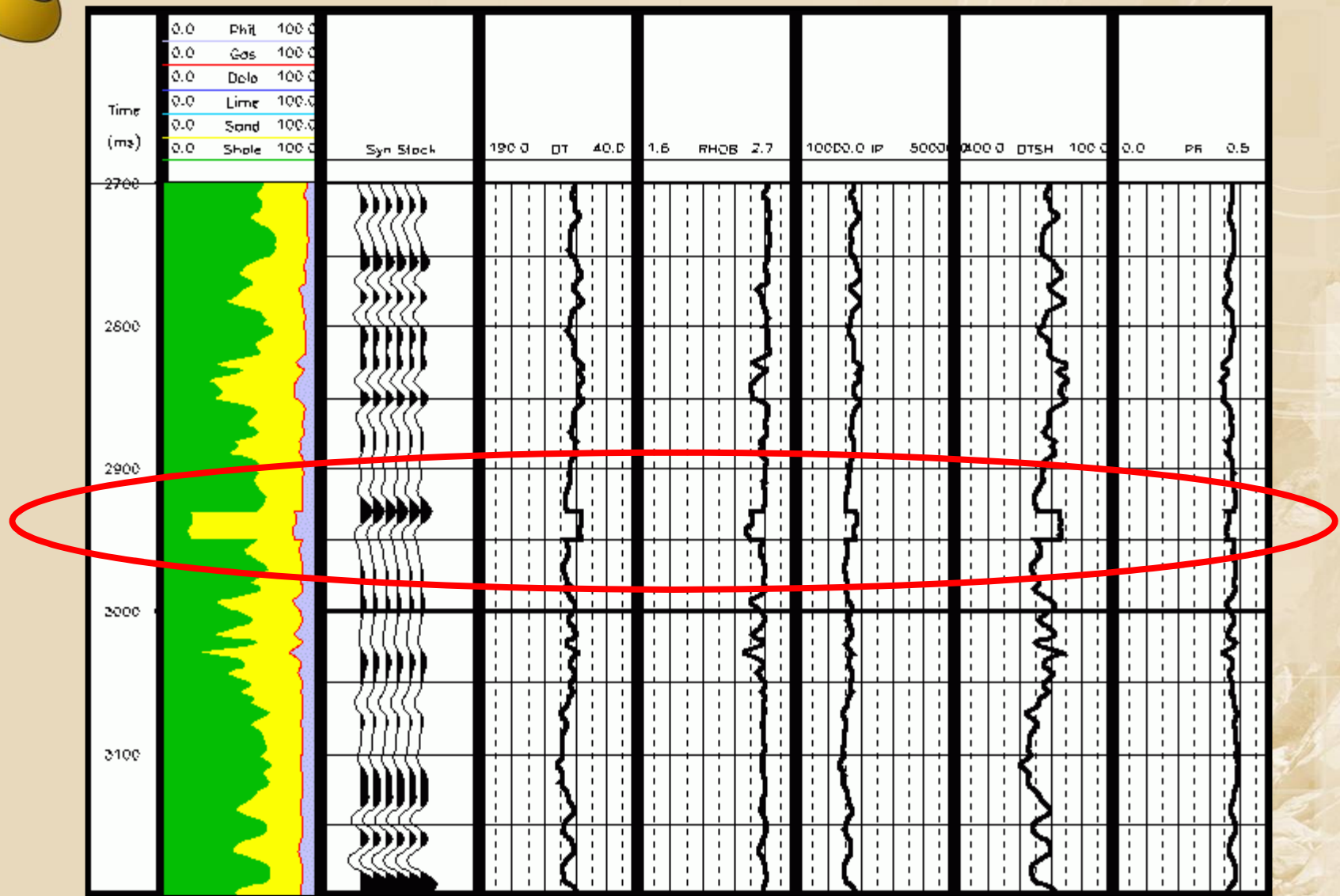
# CDP 22





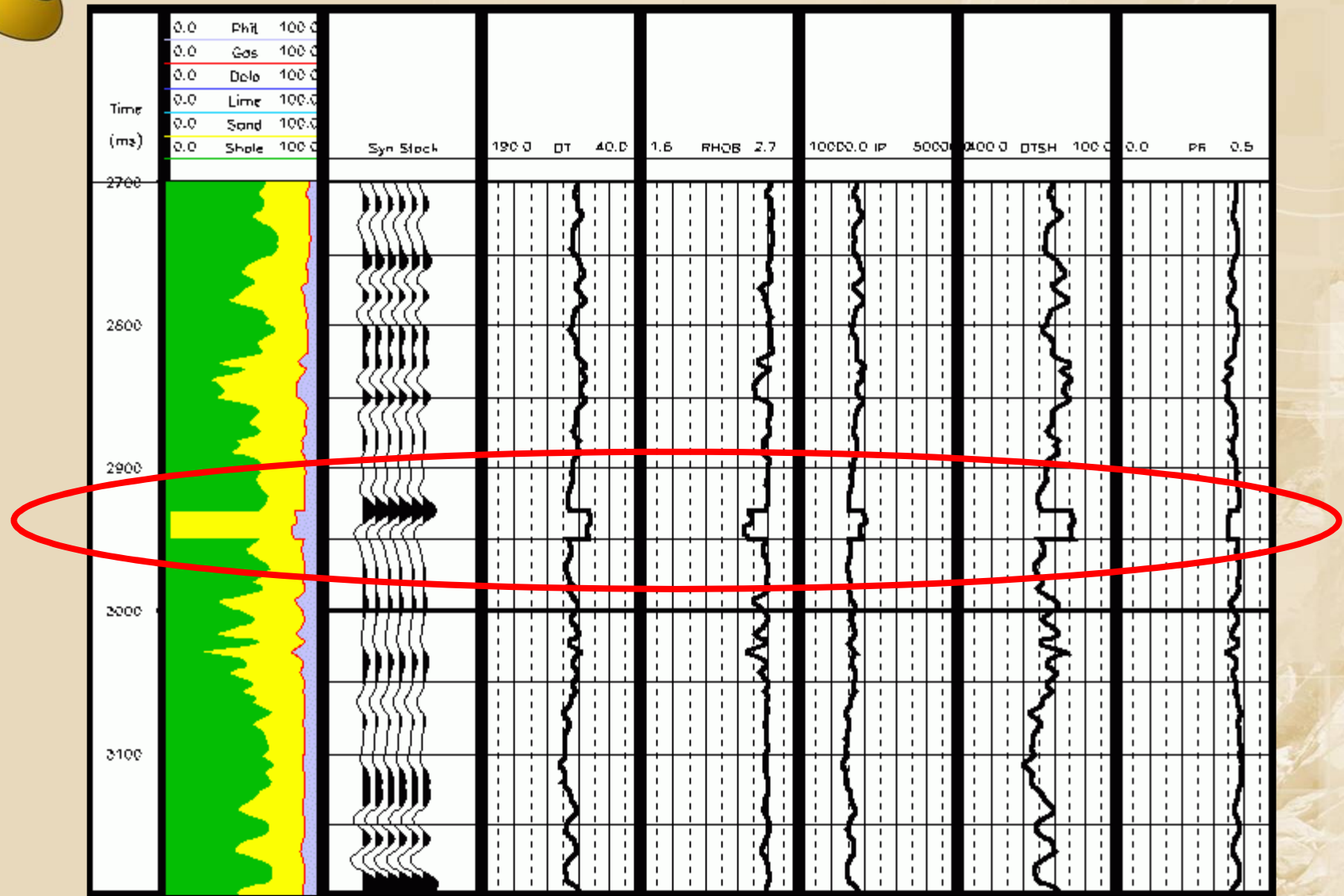


# CDP 33



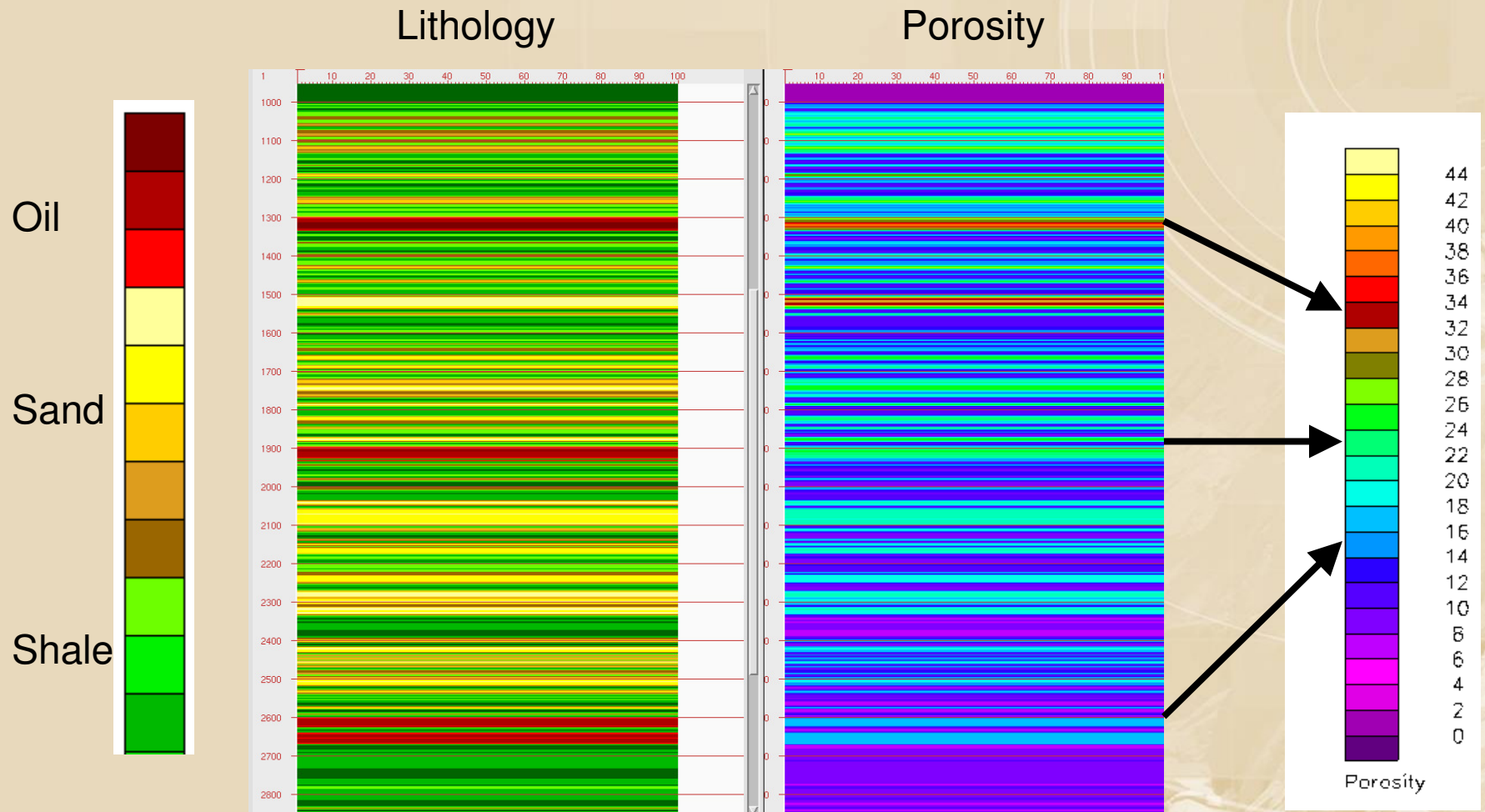


# CDP 44





## Creating the Model

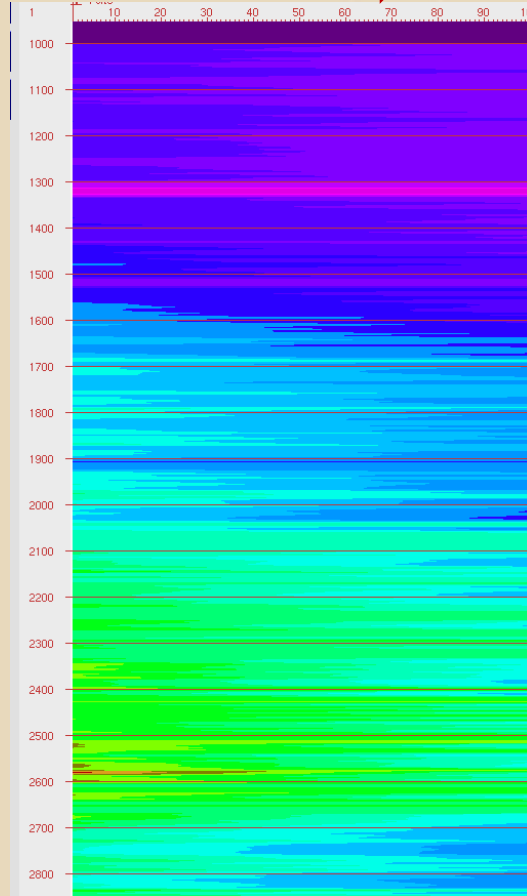
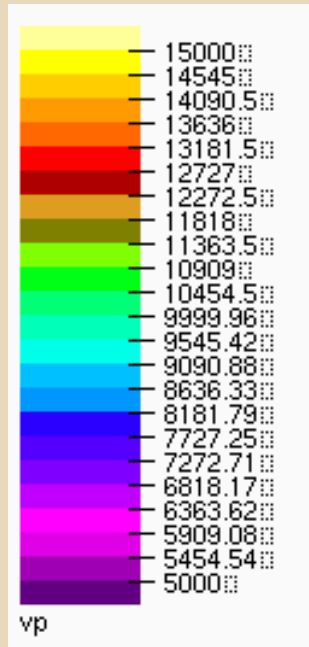
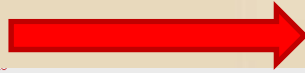






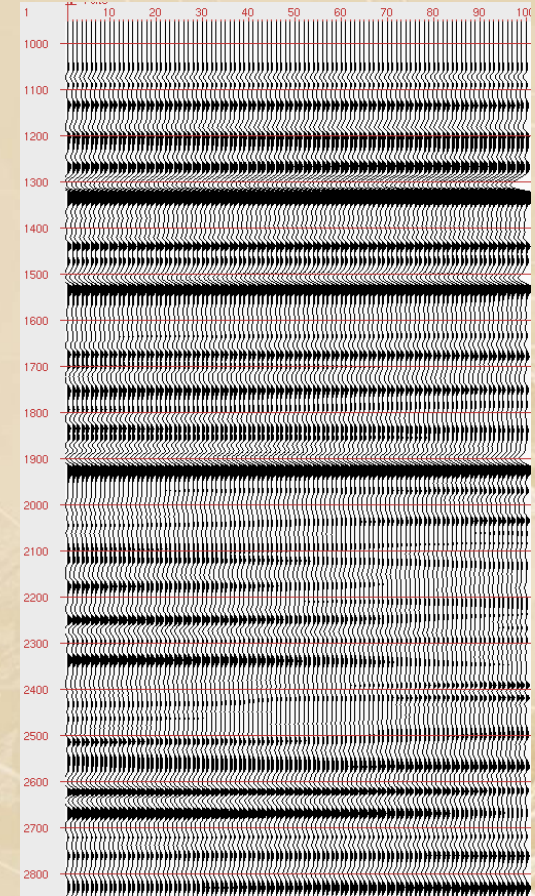
## Creating the Model

Pore Pressure



Velocity

Resulting Full Offset Stack





# The Perfect Model

Gathers

Near and Far Stacks

Intercept (P) Gradient (G)

P vs G cross plots

AVO Types

Lithology Inversion

Velocity Inversion

Density Inversion

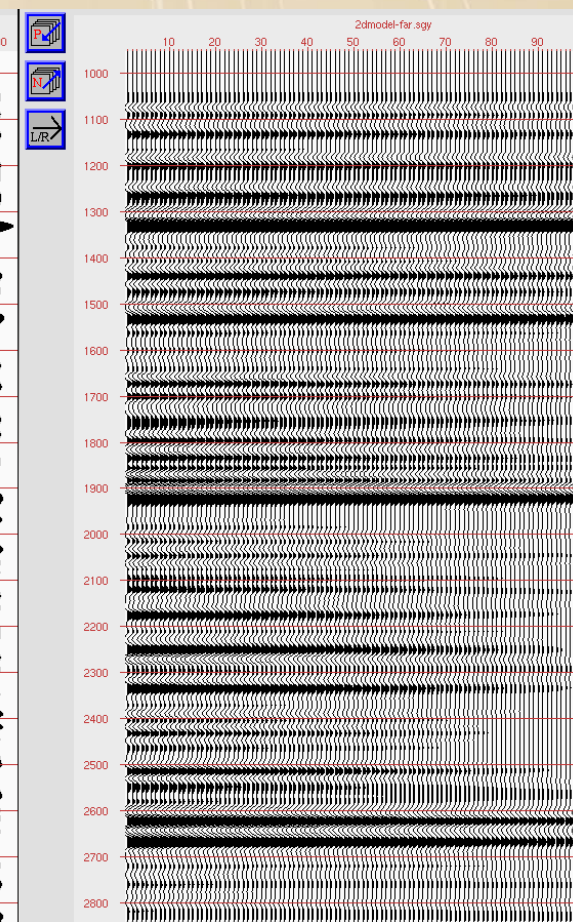
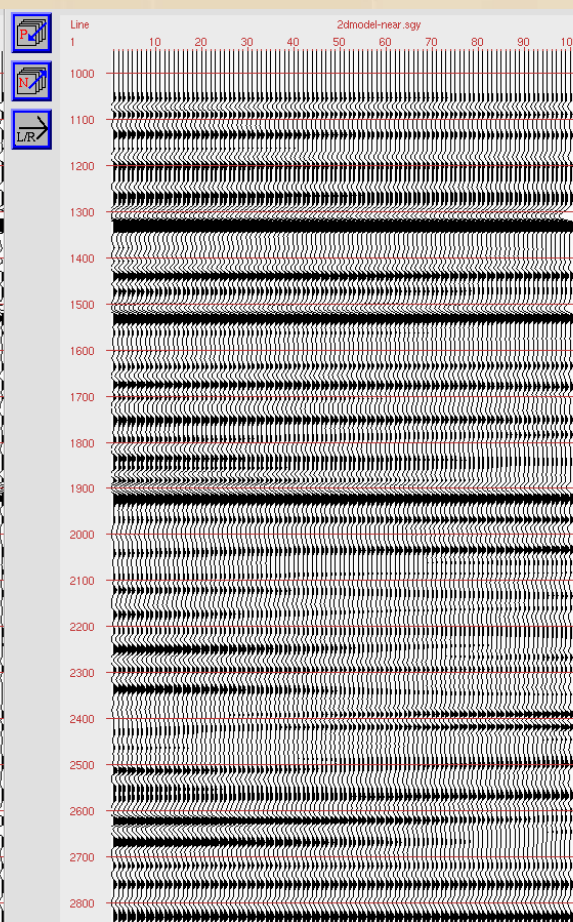
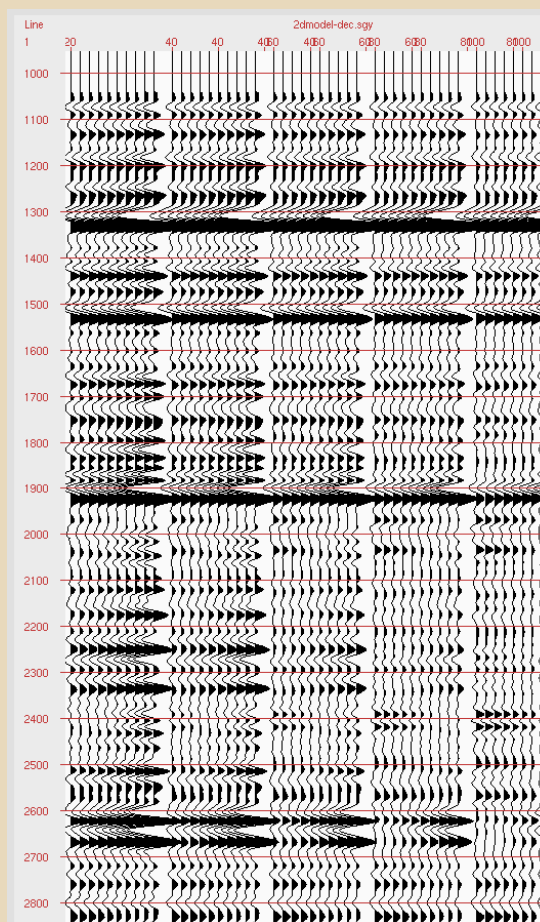


## Perfect Model

Every 20<sup>th</sup> gather

Near Stack

Far Stack





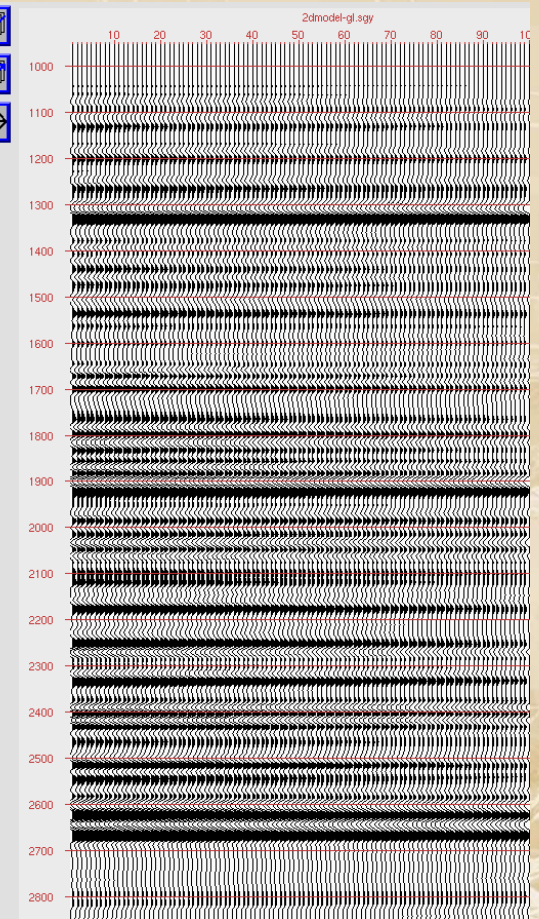
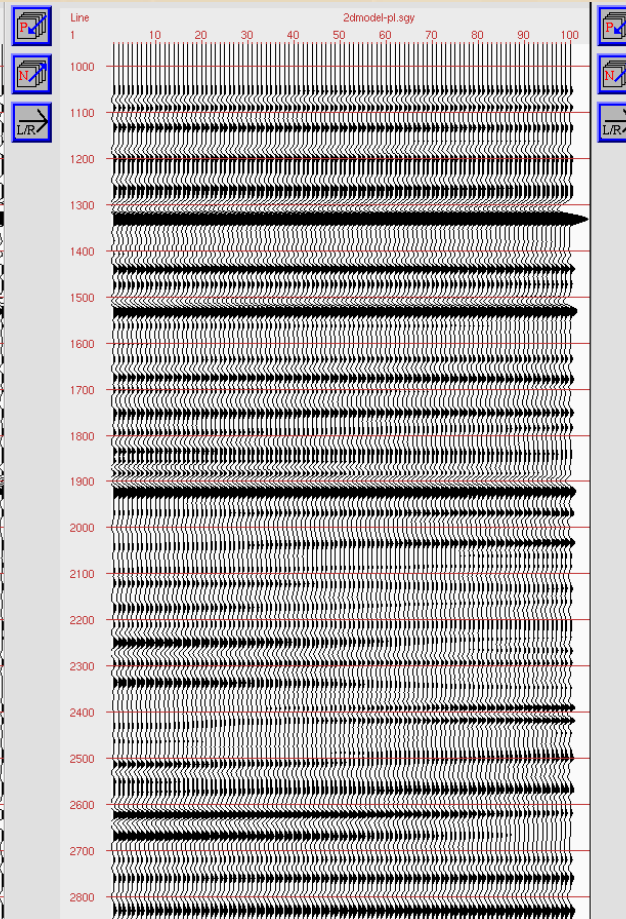
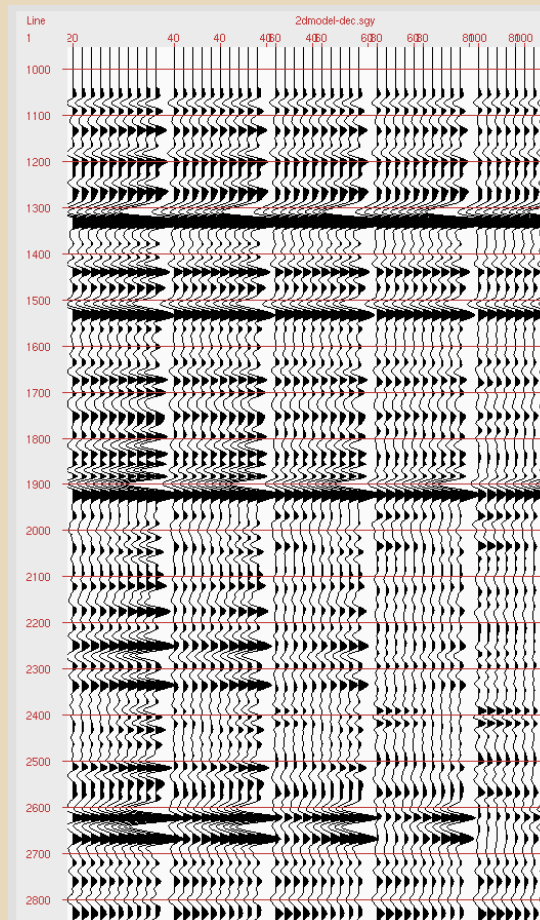


## Perfect Model

Every 20<sup>th</sup> gather

P Stack

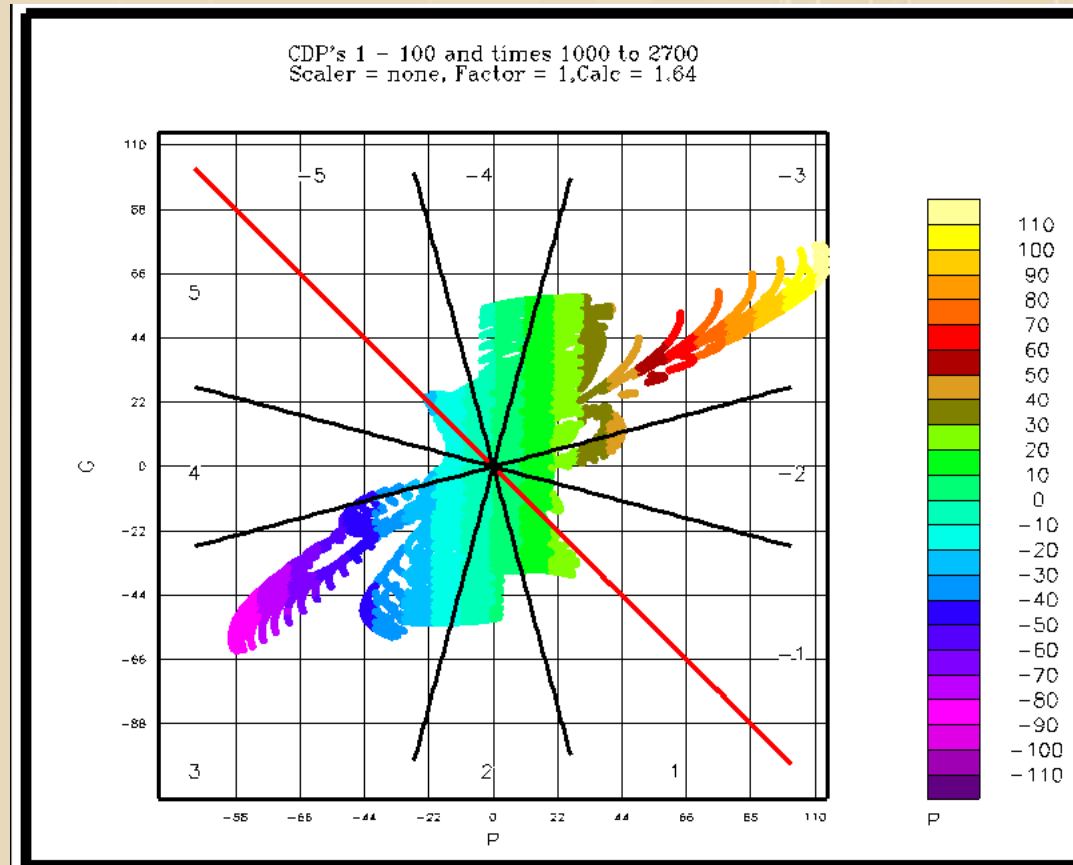
G Stack





## Perfect Model

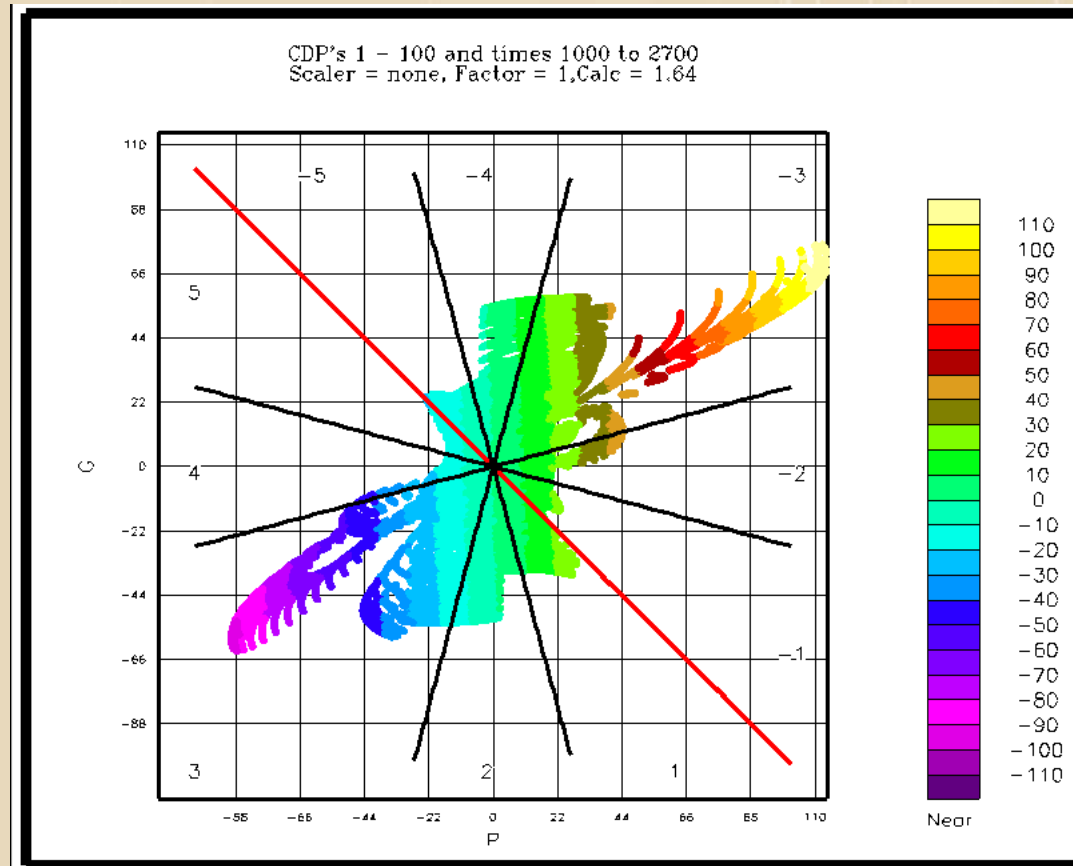
Cross Plot of P vs G  
Color is:  
Normal Incidence (P)





## Perfect Model

Cross Plot of P vs G  
Color is Near Offset

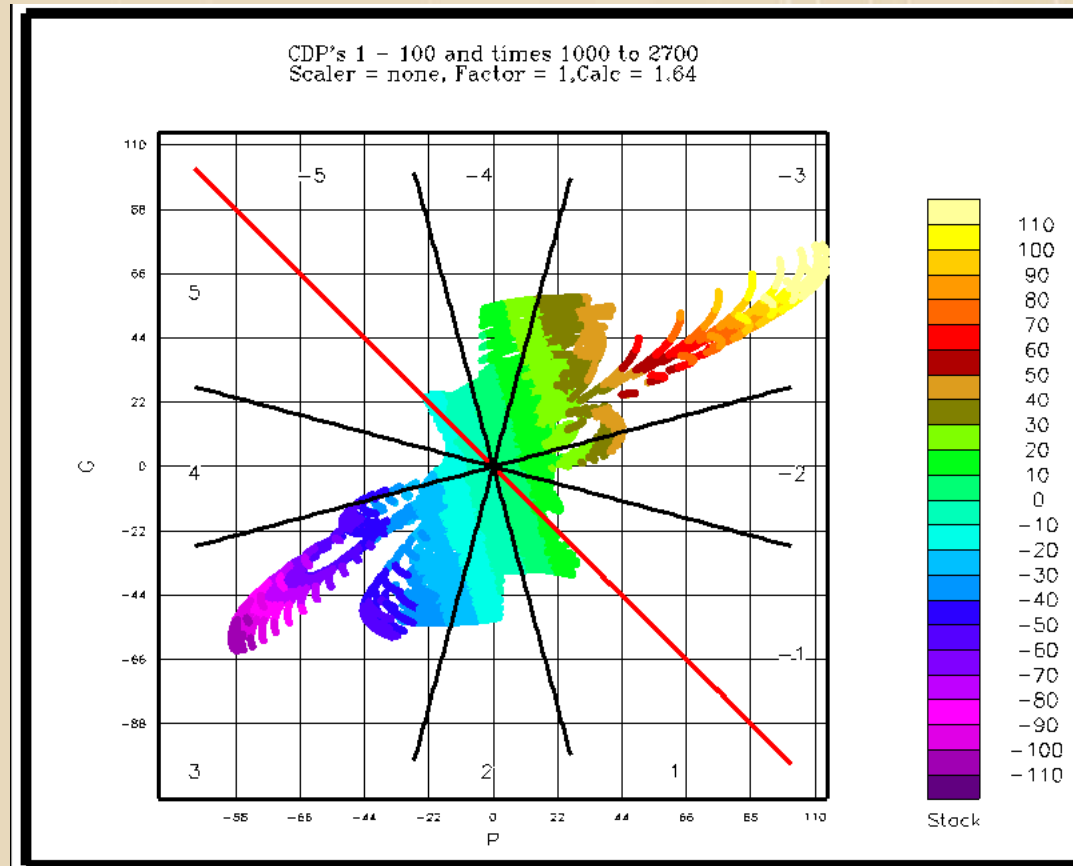






## Perfect Model

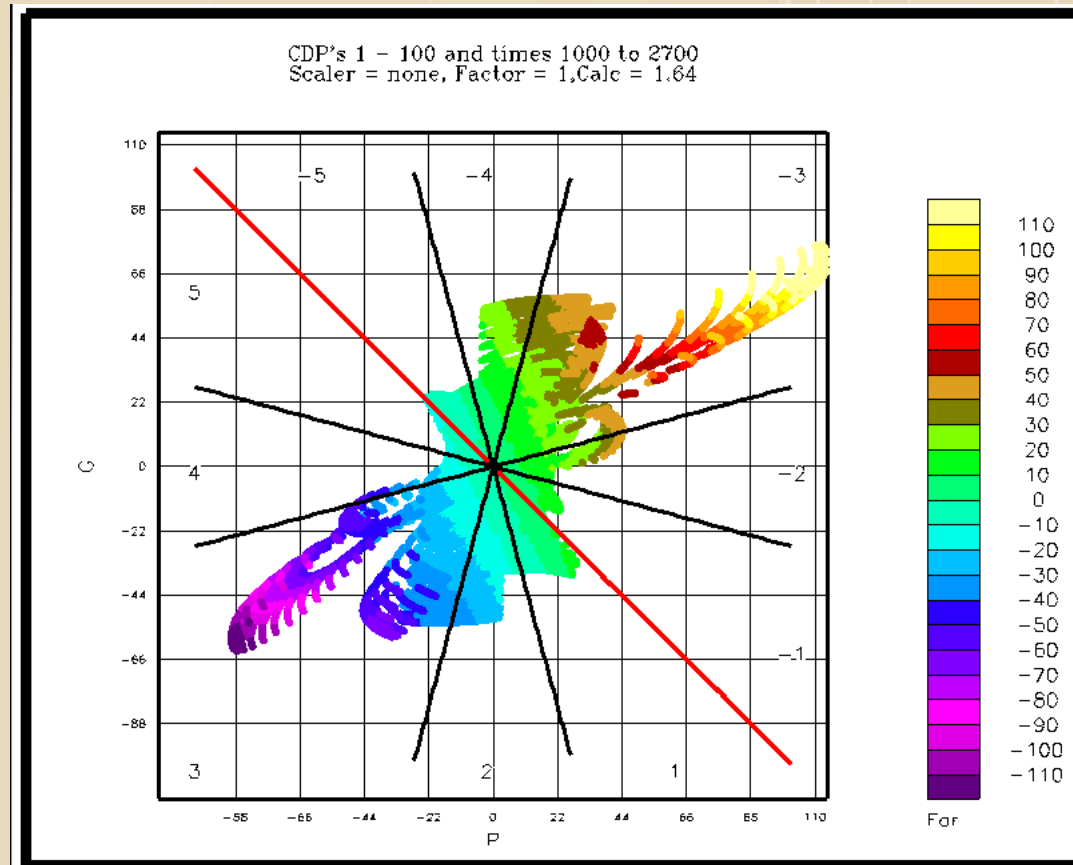
Cross Plot of P vs G  
Color is Full Stack





## Perfect Model

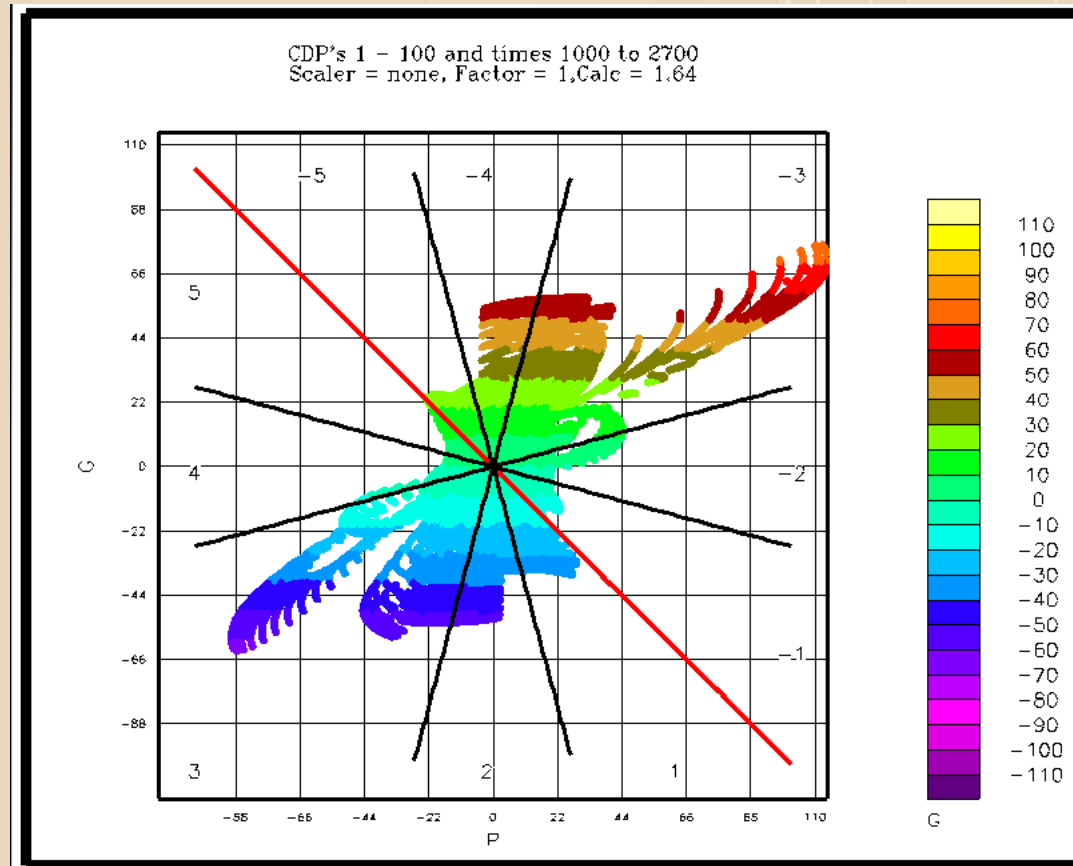
Cross Plot of P vs G  
Color is Far Offset





## Perfect Model

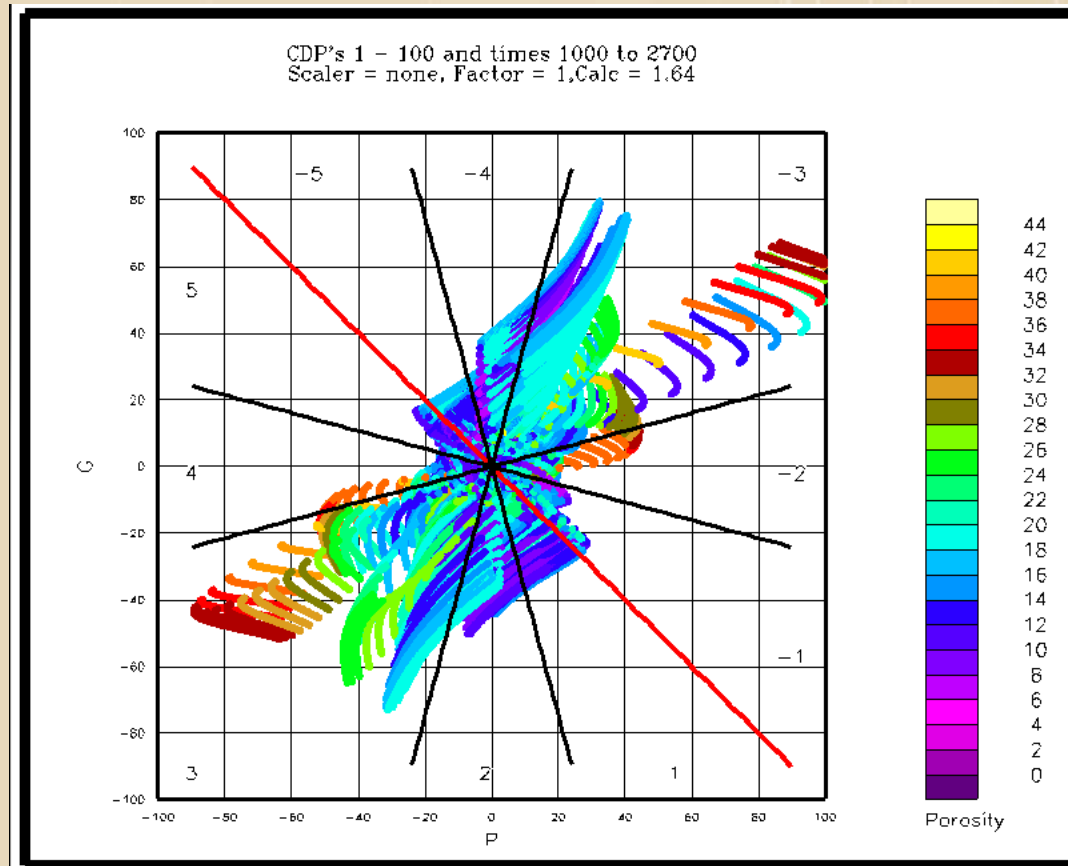
Cross Plot of P vs G  
Color is AVO Gradient





## Perfect Model

Cross Plot of P vs G  
Color is Porosity

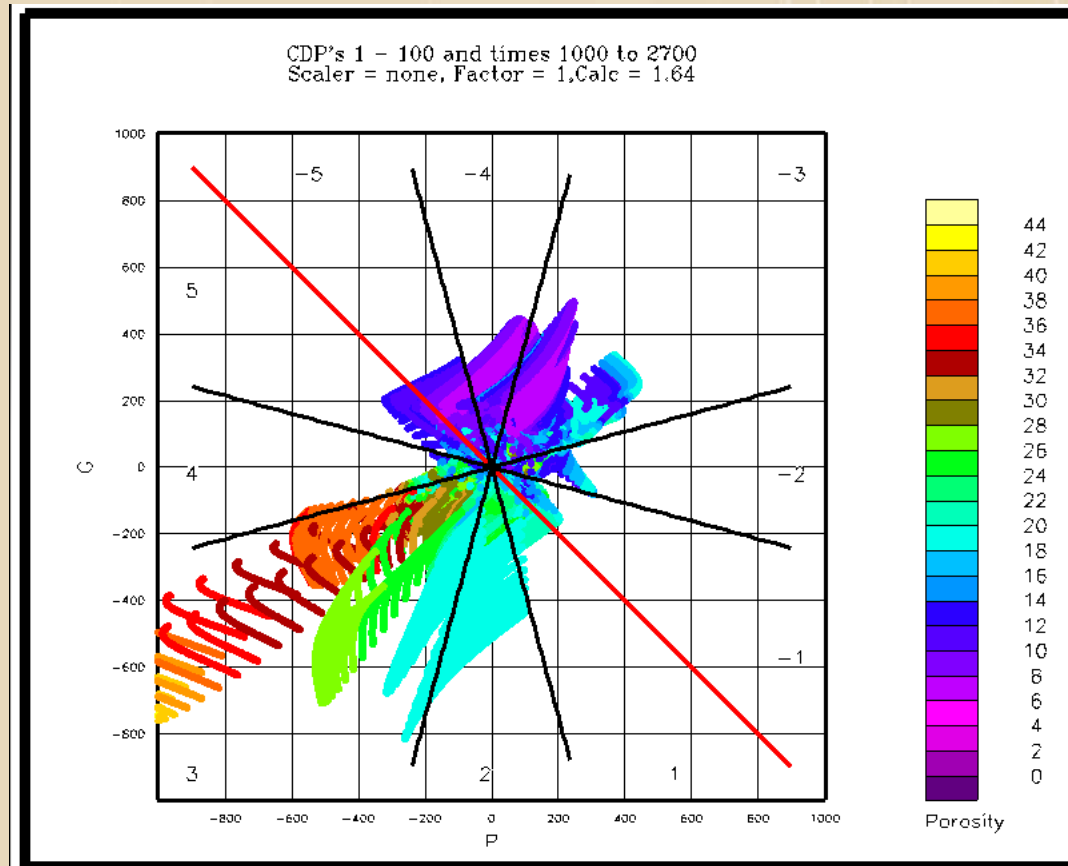






## Perfect Model

Cross Plot of P vs G  
Color is Porosity

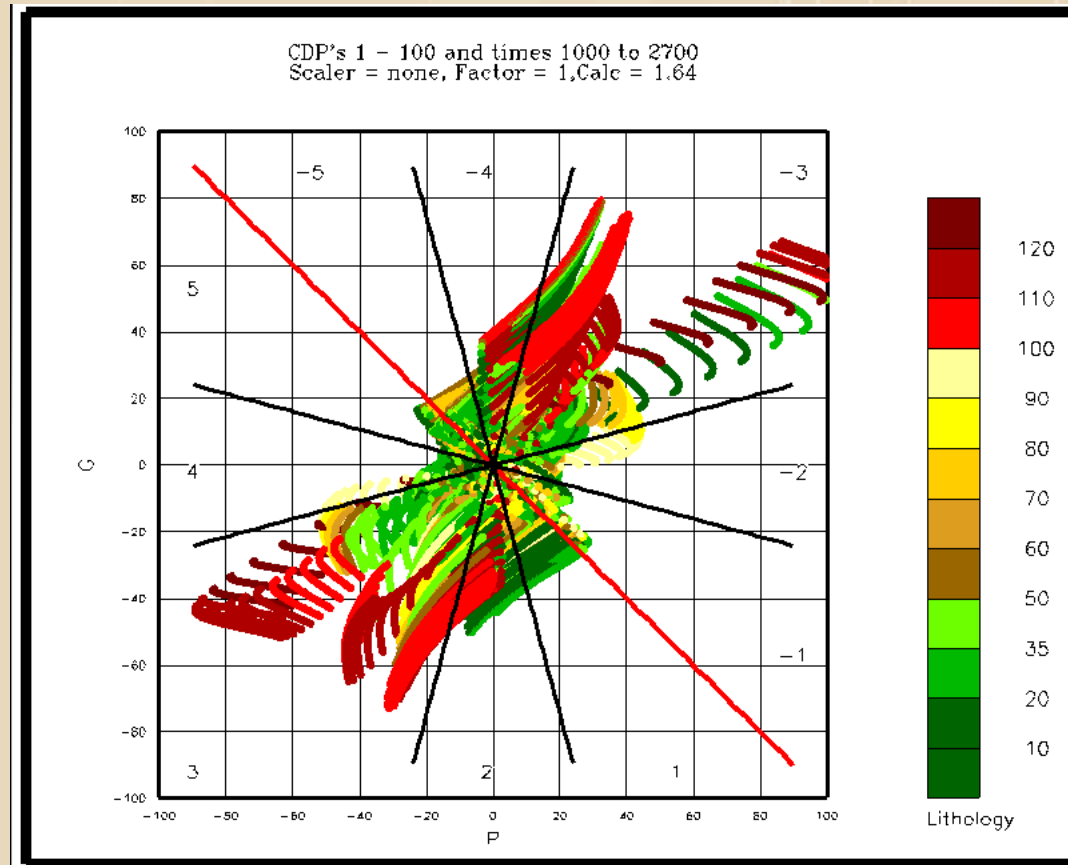


Inverted Space



## Perfect Model

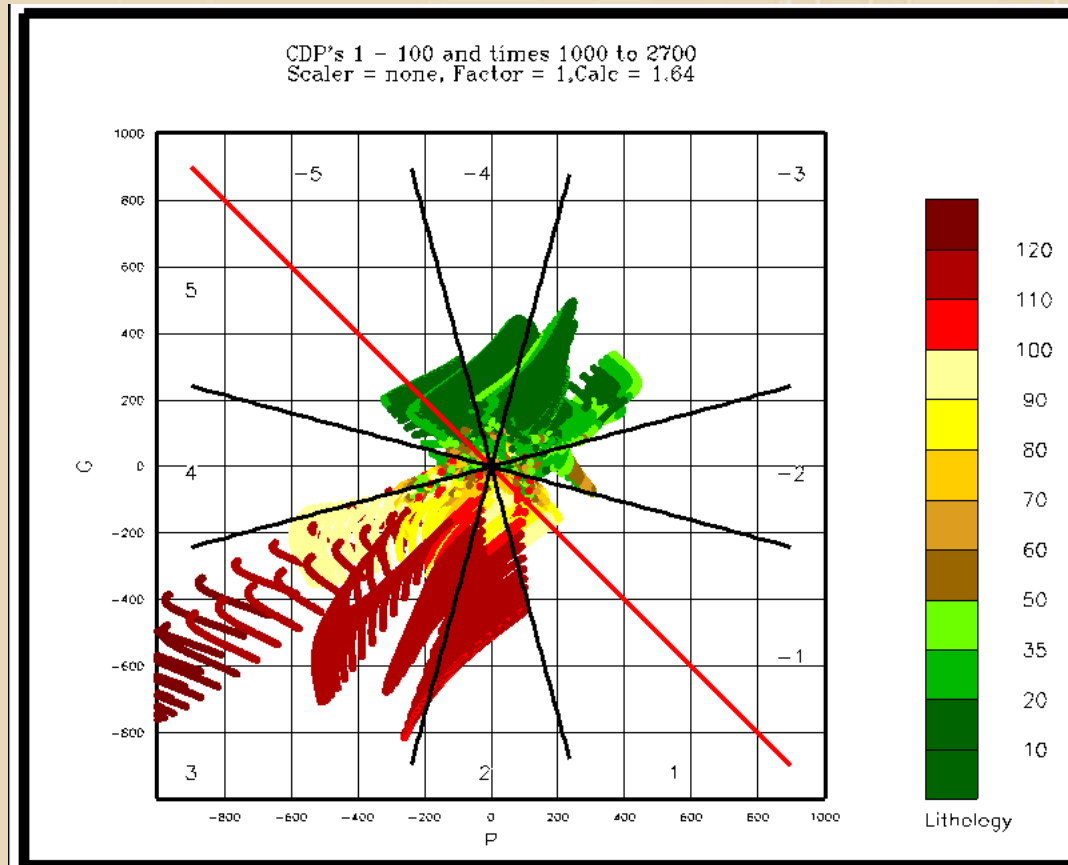
Cross Plot of P vs G  
Color is Lithology  
Shale is Green  
Sand is Yellow  
Oil is Red



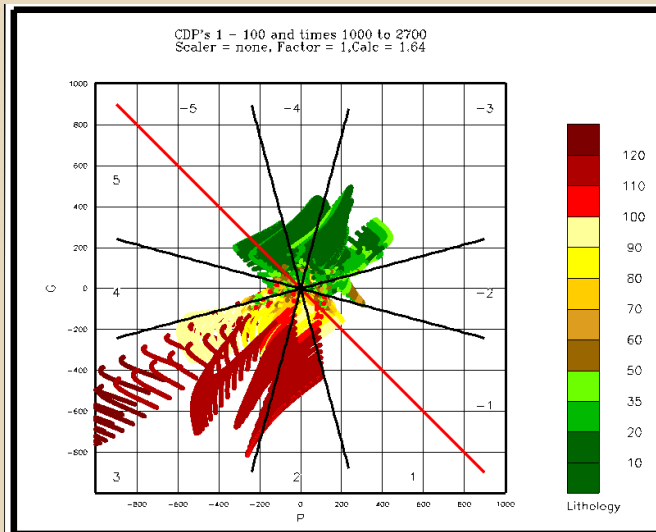


## Perfect Model

Cross Plot of P vs G  
Color is Lithology  
Shale is Green  
Sand is Yellow  
Oil is Red



Inverted Space

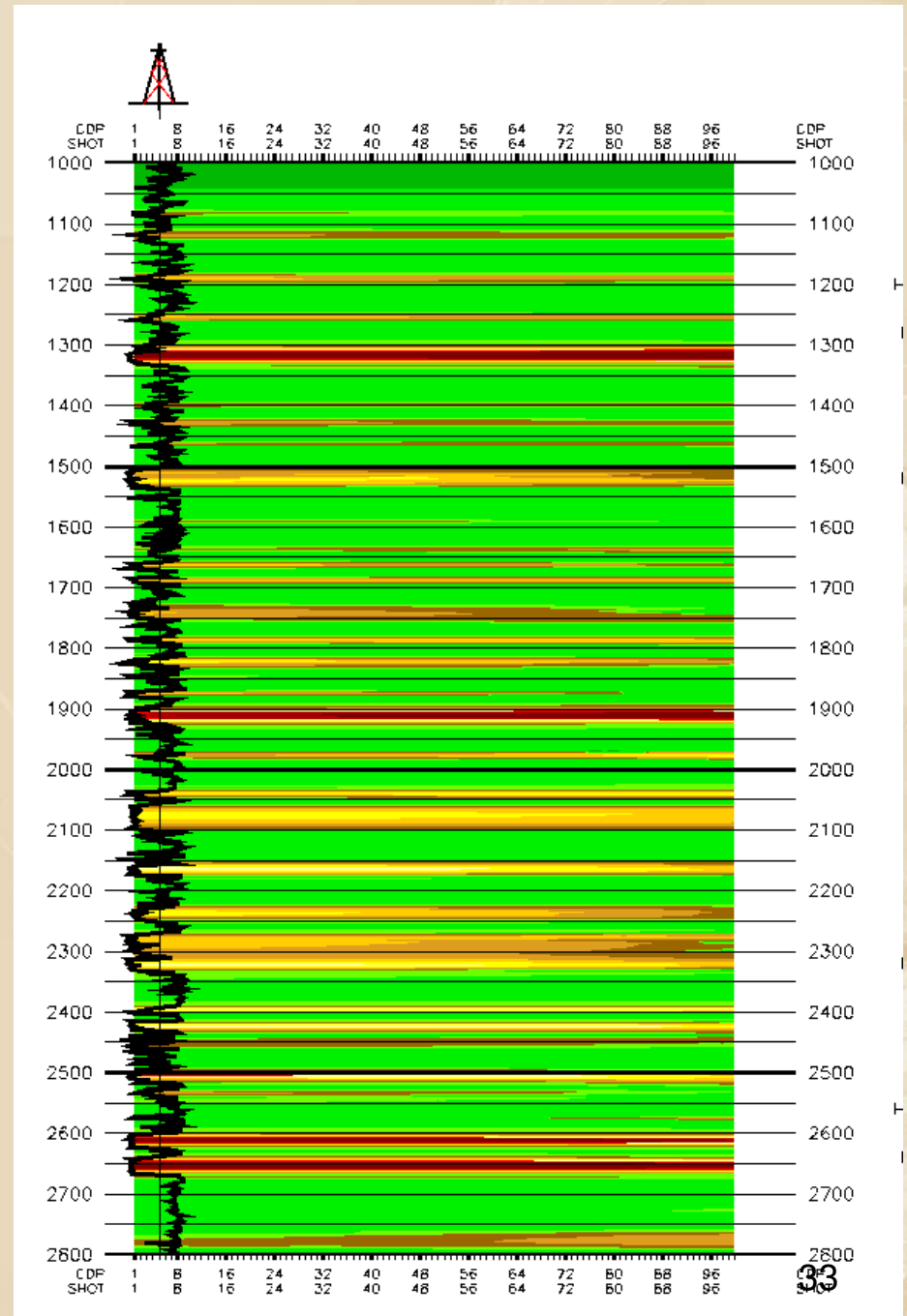


Oil

Sand

Shale

# Perfect Model Lithology Inversion



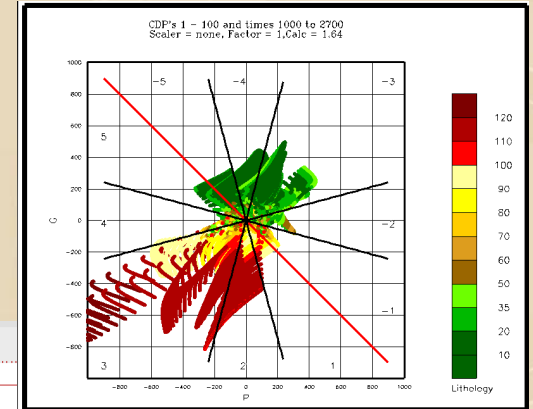




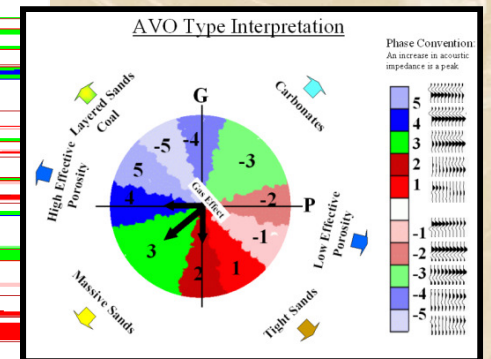
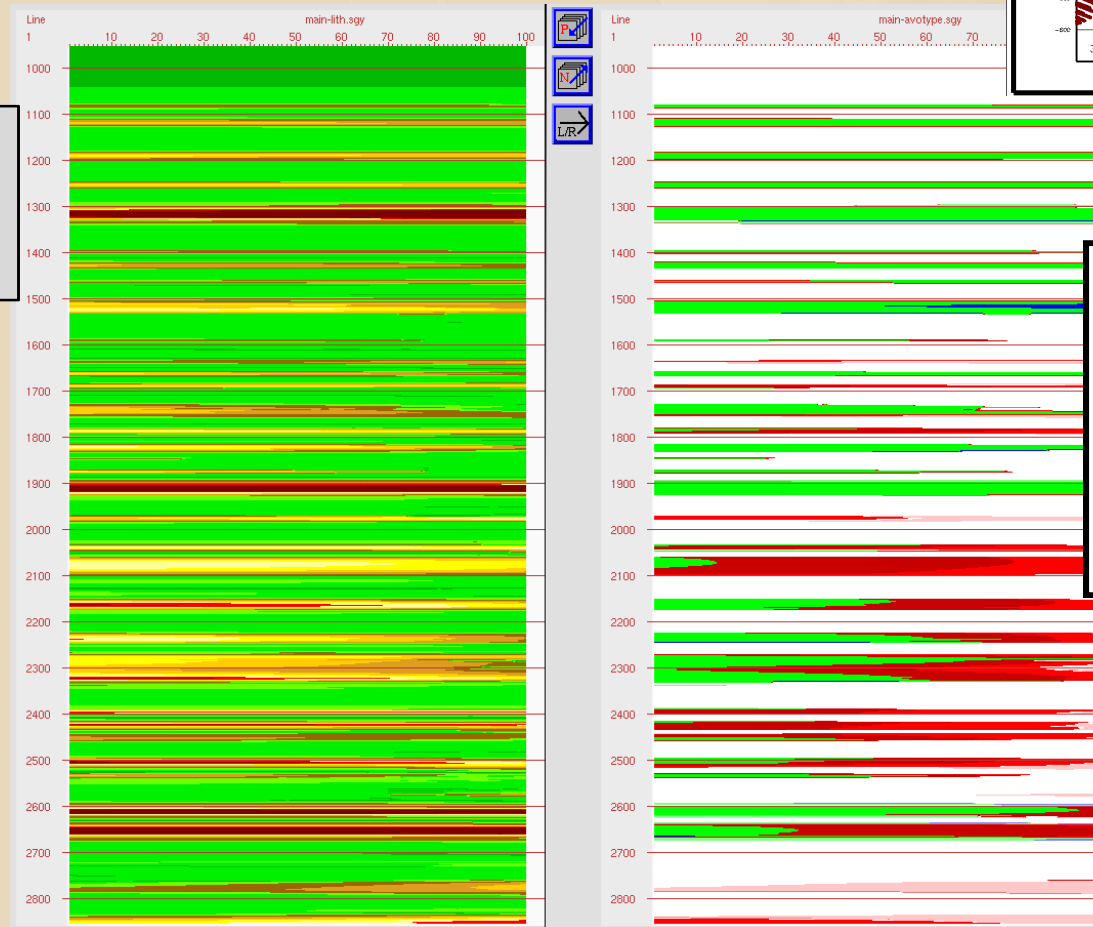
# Perfect Model

Lithology

AVO Type



Shale is Green  
Sand is Yellow  
Oil is Red



# AVO Type Tendencies

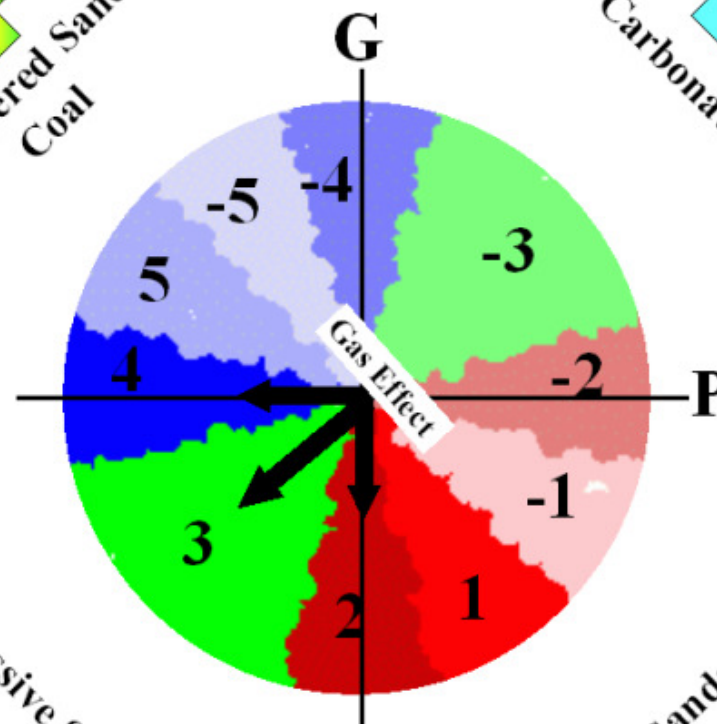
## AVO Type Interpretation

Layered Sands  
Coal

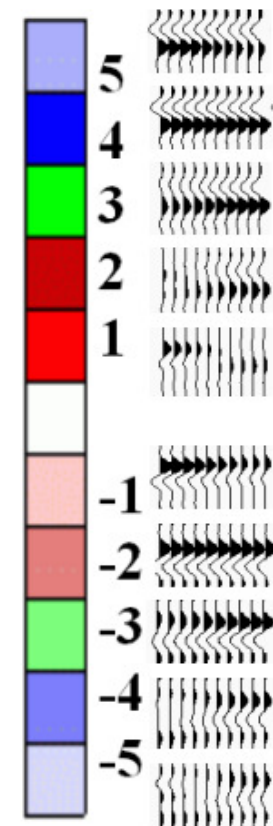
Carbonates

Massive Sands

Tight Sands



Phase Convention:  
An increase in acoustic  
impedance is a peak

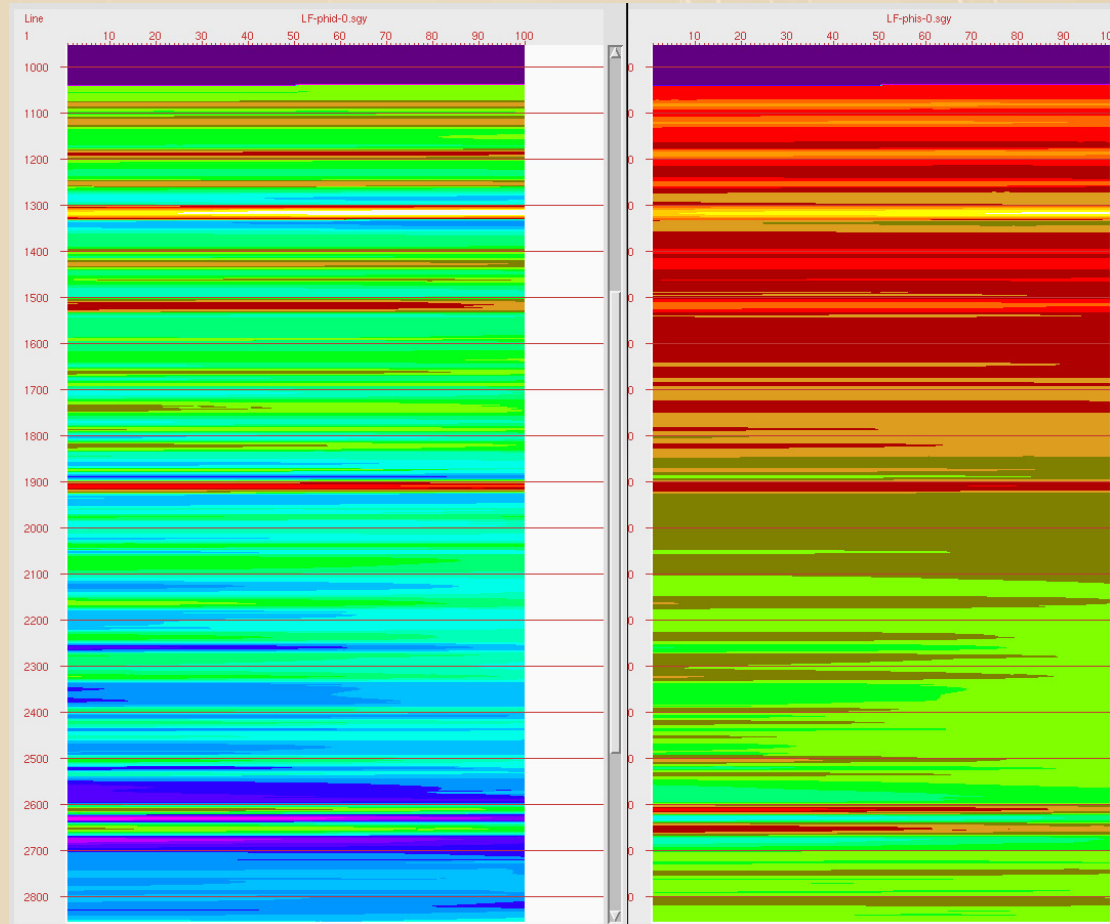
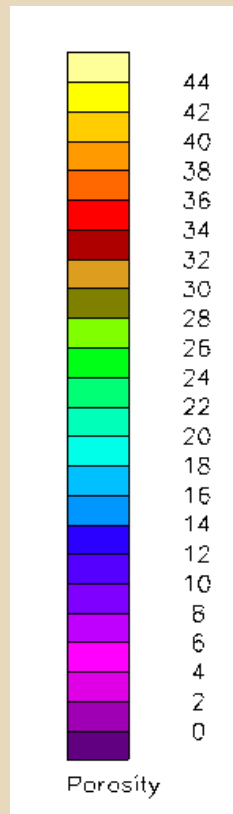




## Perfect Model

### Density Porosity

### Velocity Porosity





# Stack Scaler



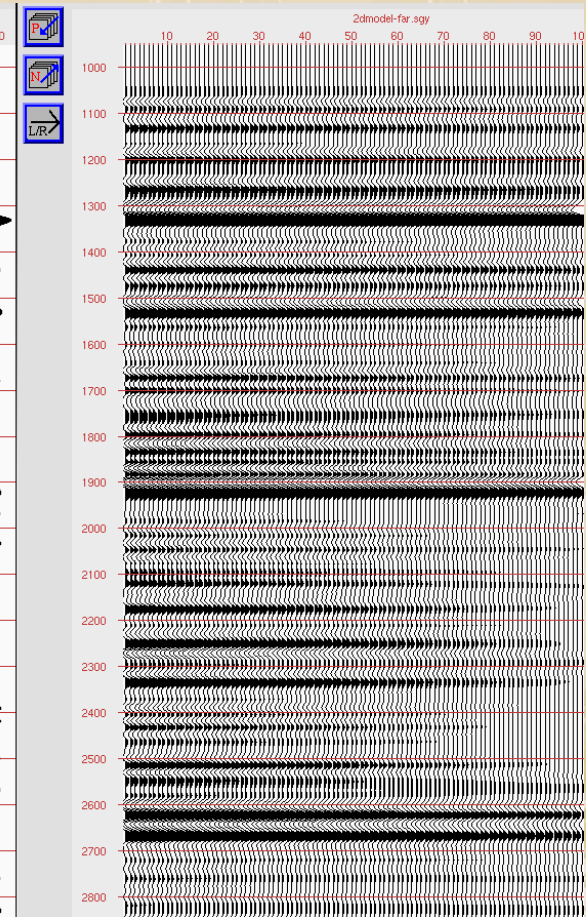
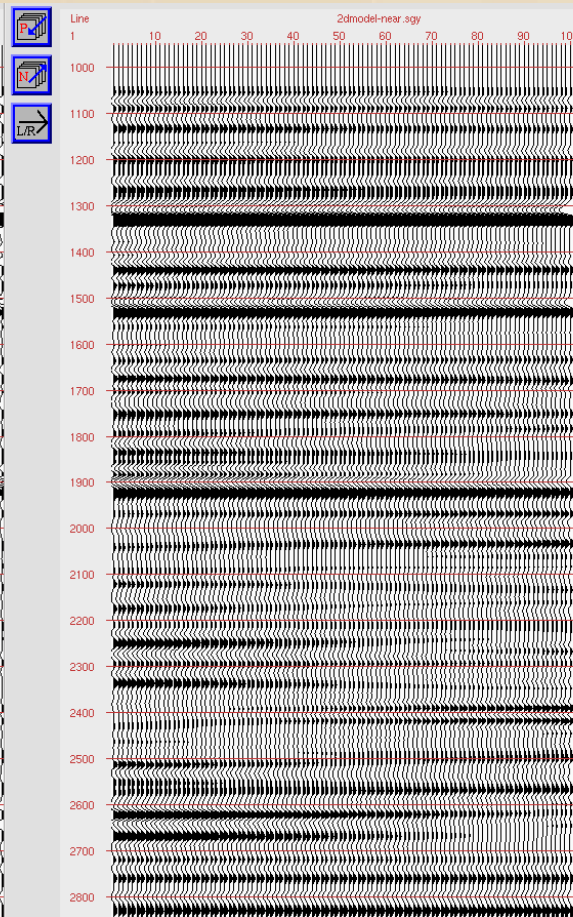
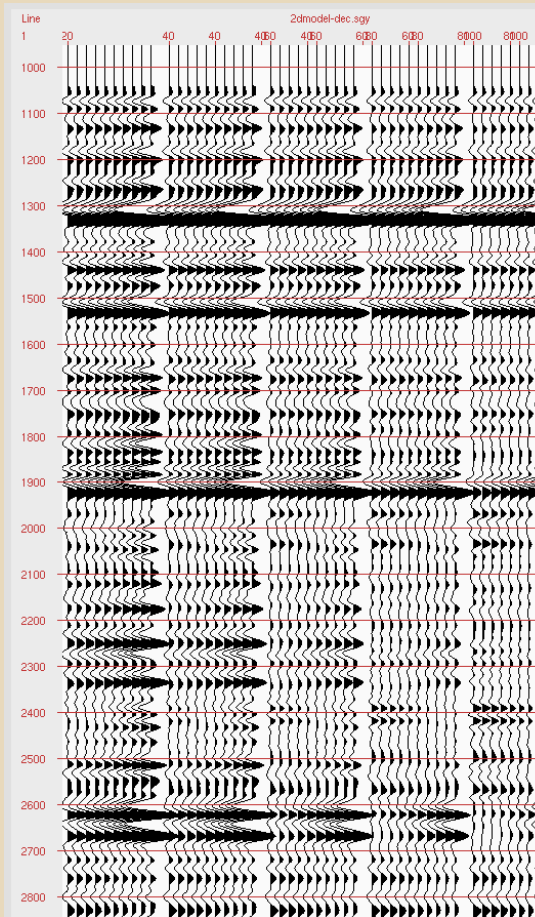


## Perfect Model

Every 20<sup>th</sup> gather

Near Stack

Far Stack



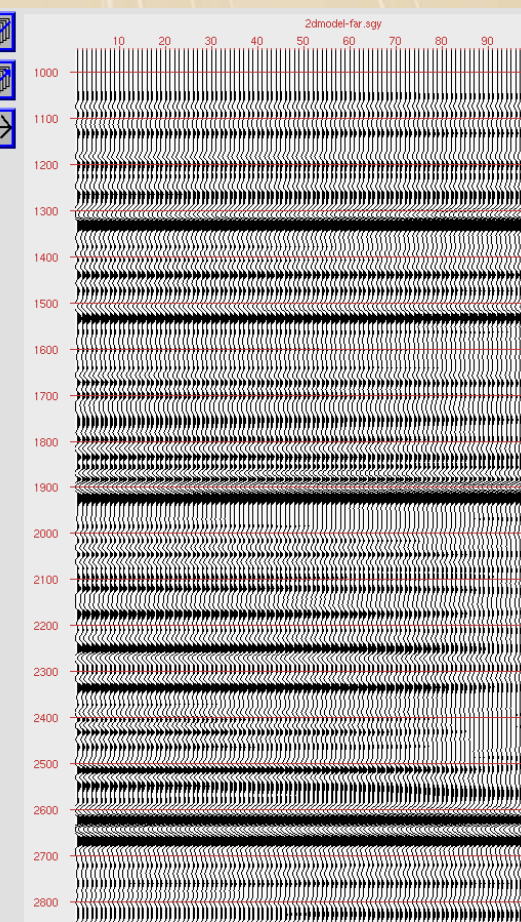
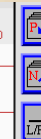
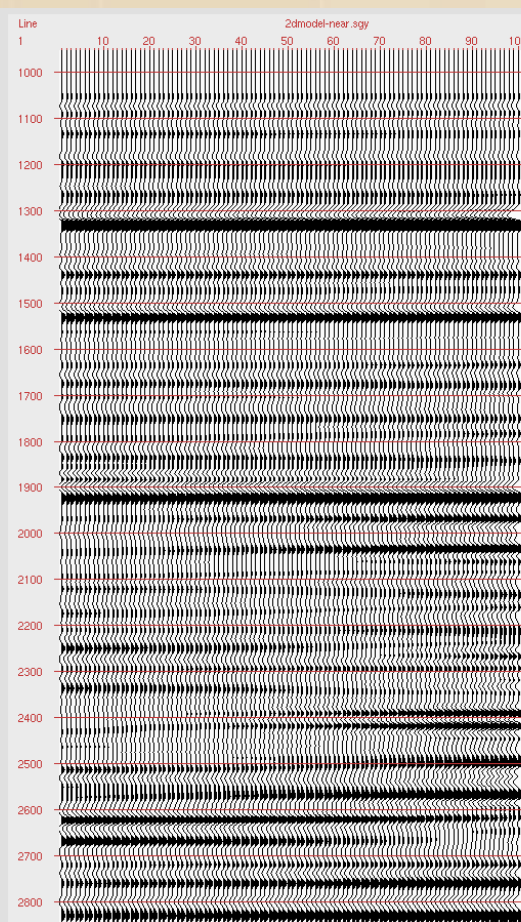
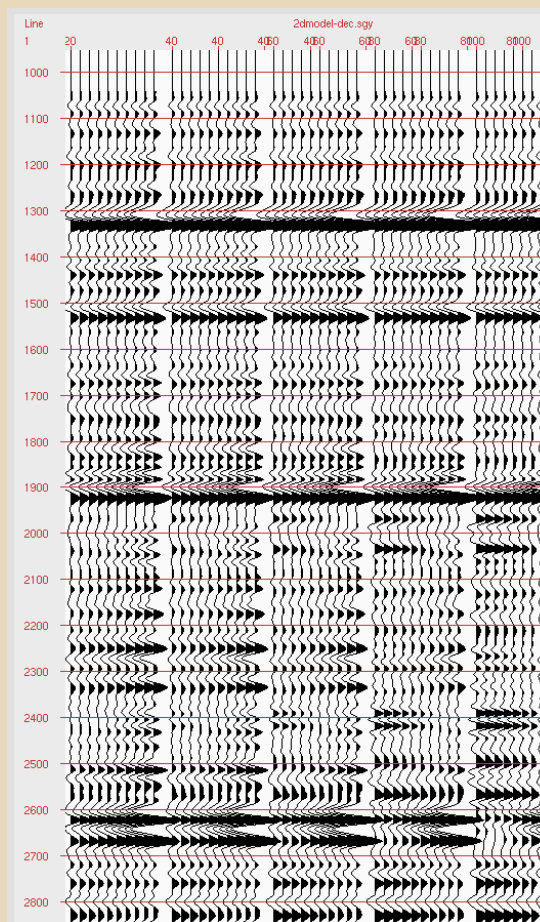


## Stack Scaler

Every 20<sup>th</sup> gather

Near Stack

Far Stack





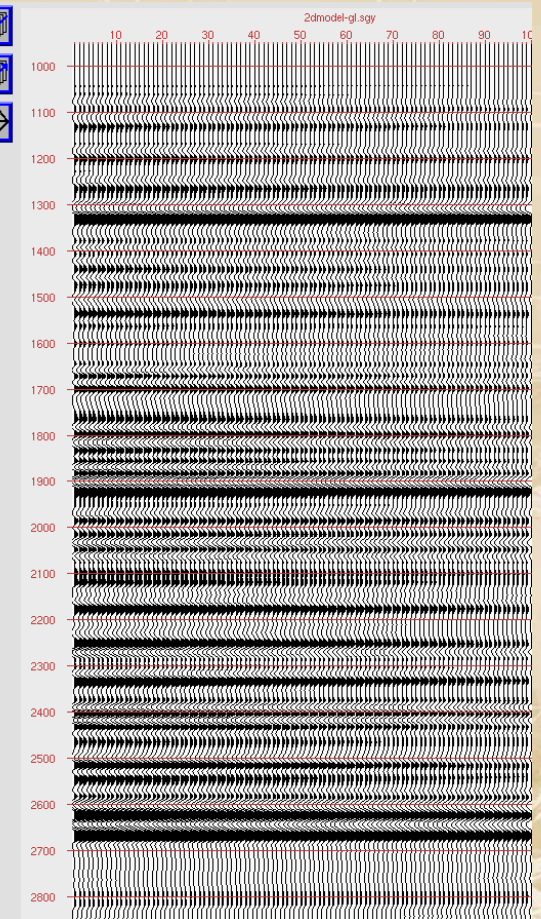
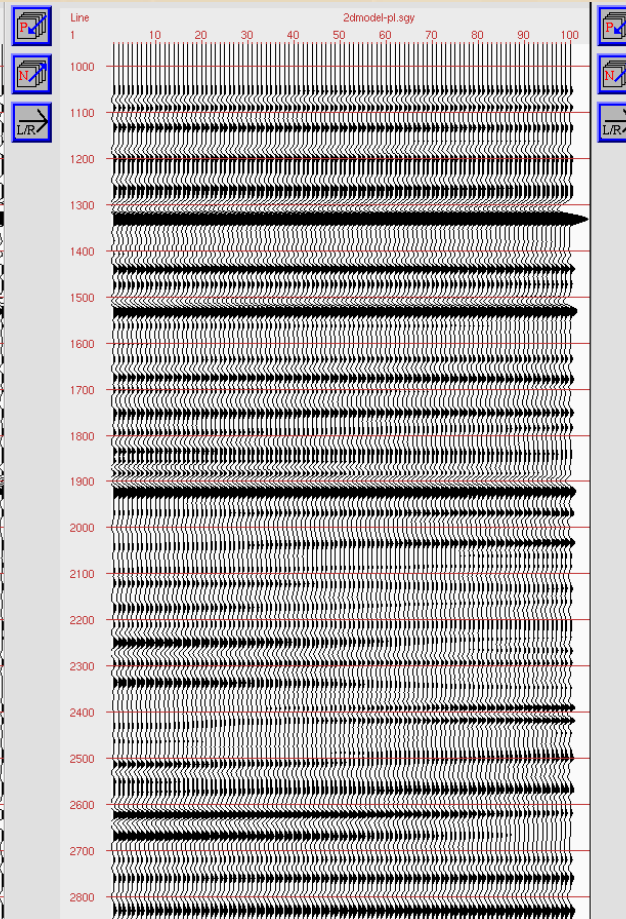
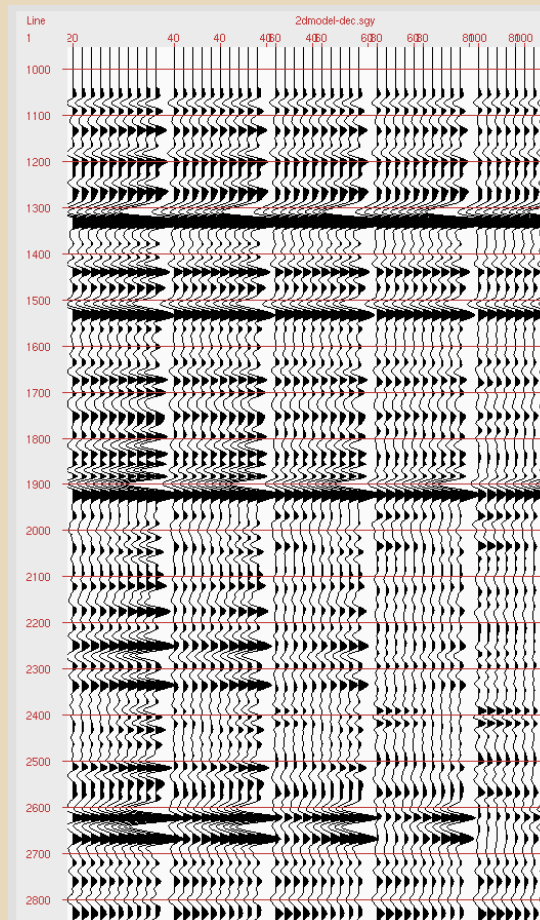


## Perfect Model

Every 20<sup>th</sup> gather

P Stack

G Stack



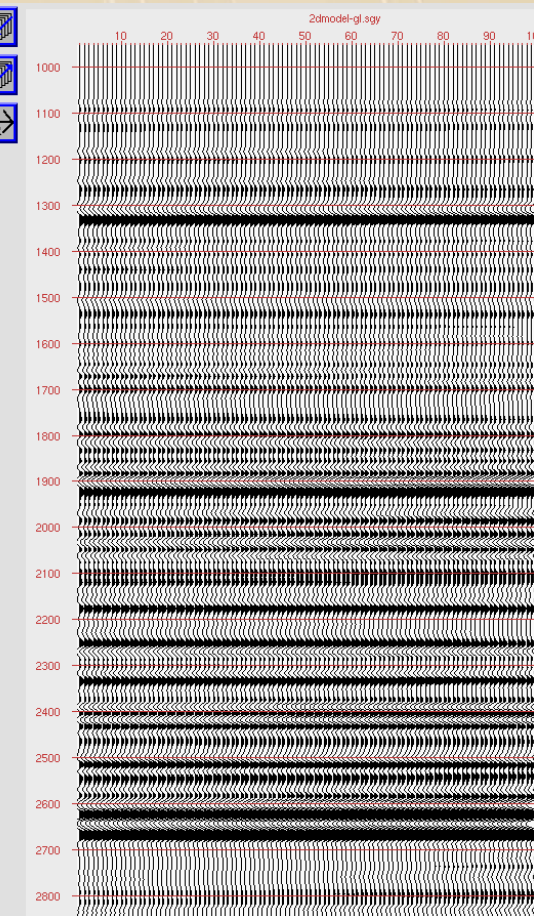
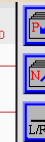
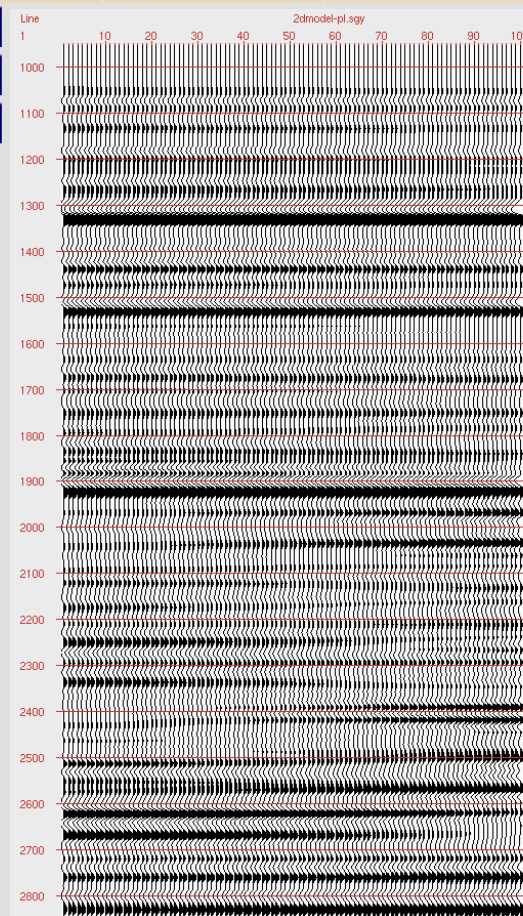
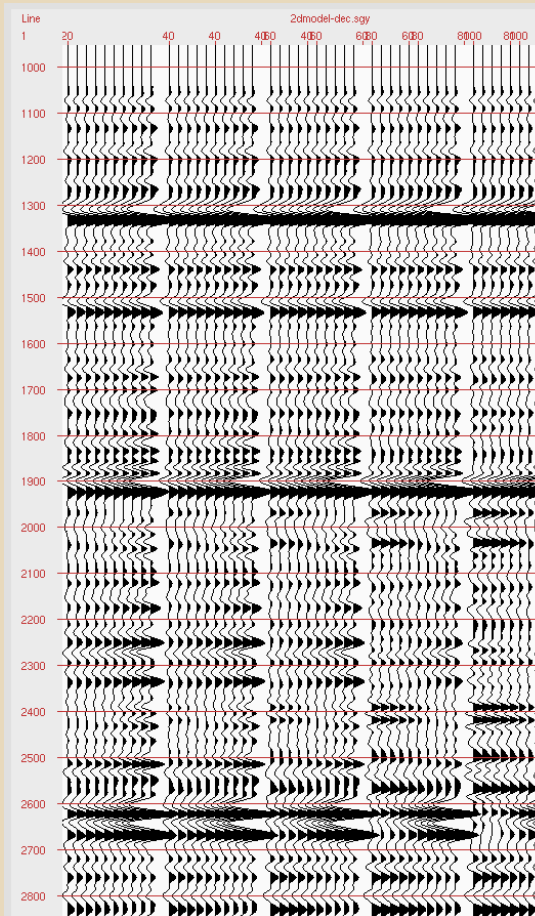


## Stack Scaler

Every 20<sup>th</sup> gather

P Stack

G Stack

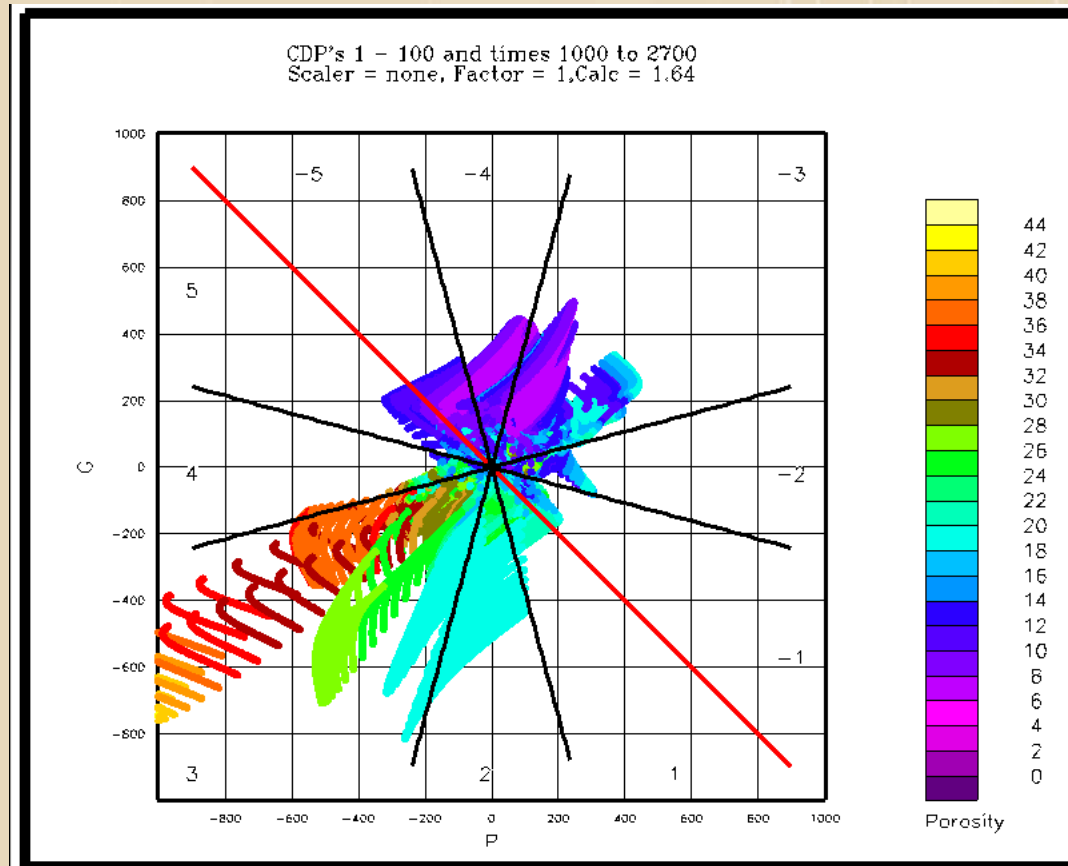






## Perfect Model

Cross Plot of P vs G  
Color is Porosity

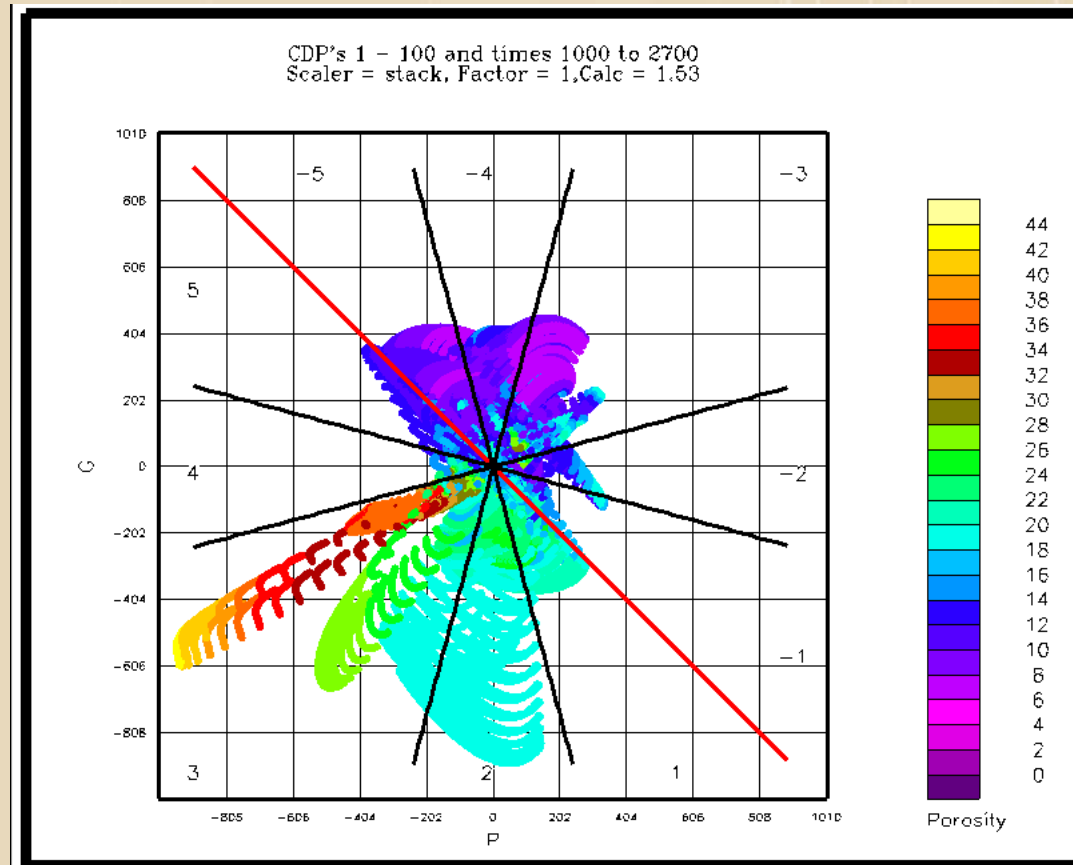


Inverted Space



## Stack Scaler

Cross Plot of P vs G  
Color is Porosity

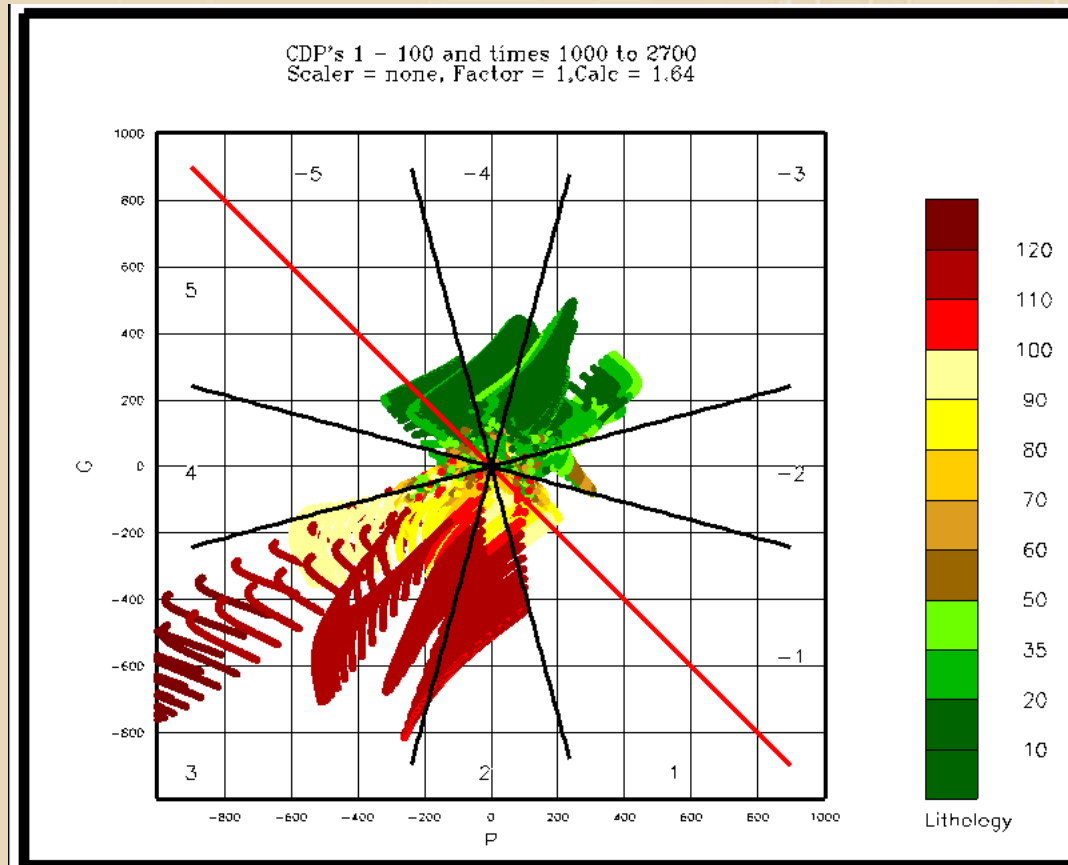


Inverted Space



## Perfect Model

Cross Plot of P vs G  
Color is Lithology  
Shale is Green  
Sand is Yellow  
Oil is Red

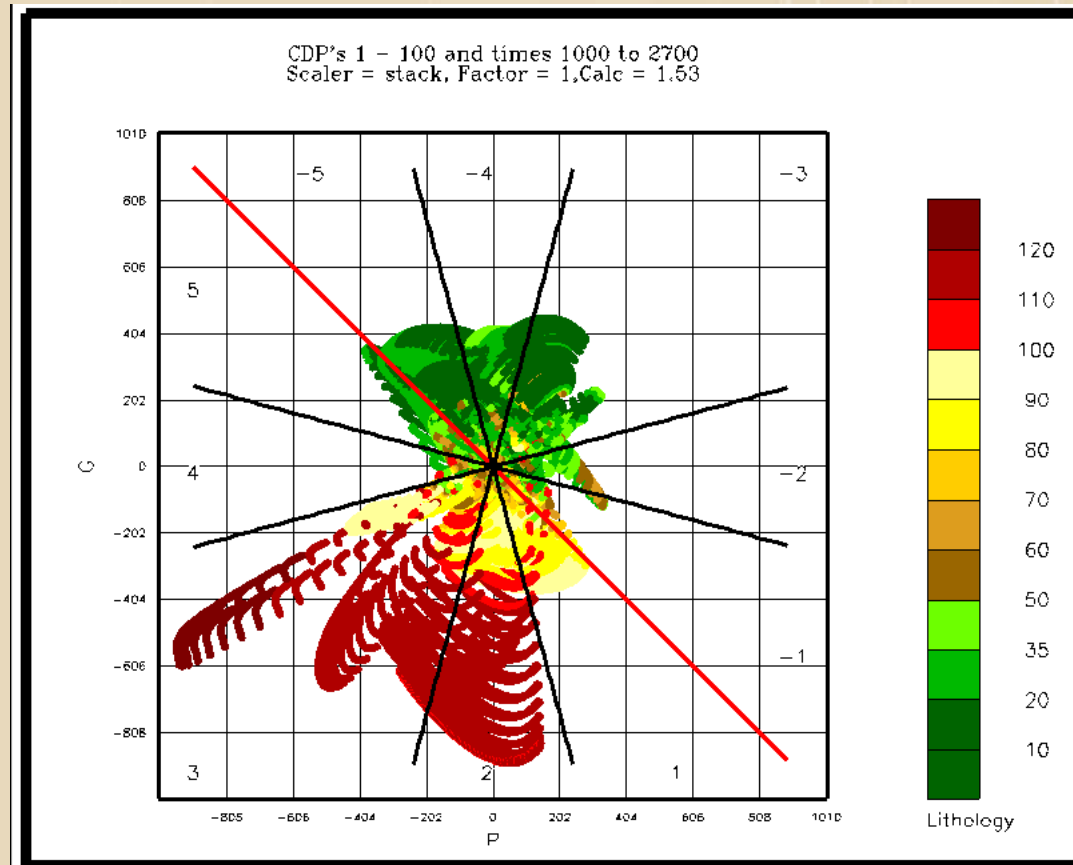


## Inverted Space



## Stack Scaler

Cross Plot of P vs G  
Color is Lithology  
Shale is Green  
Sand is Yellow  
Oil is Red



Inverted Space



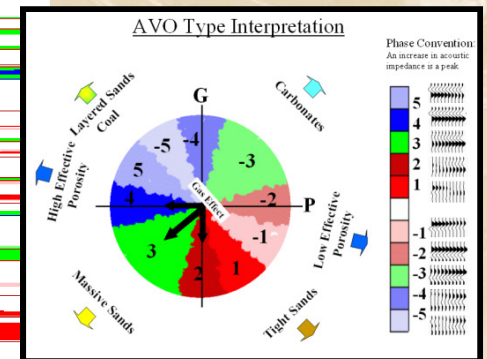
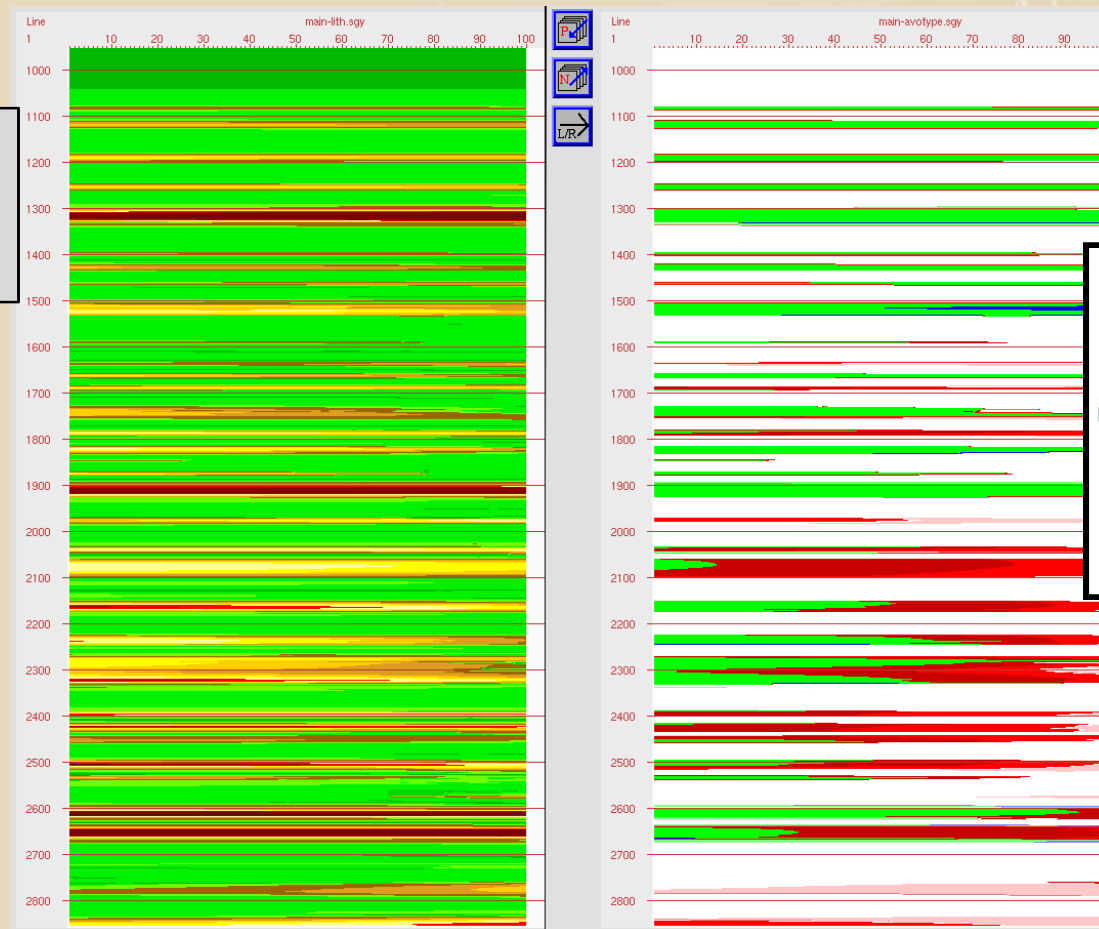


## Perfect Model

### Lithology

### AVO Type

Shale is Green  
Sand is Yellow  
Oil is Red



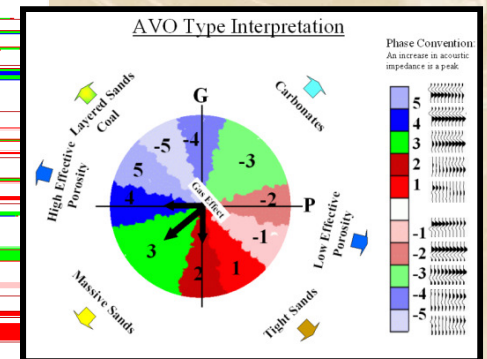
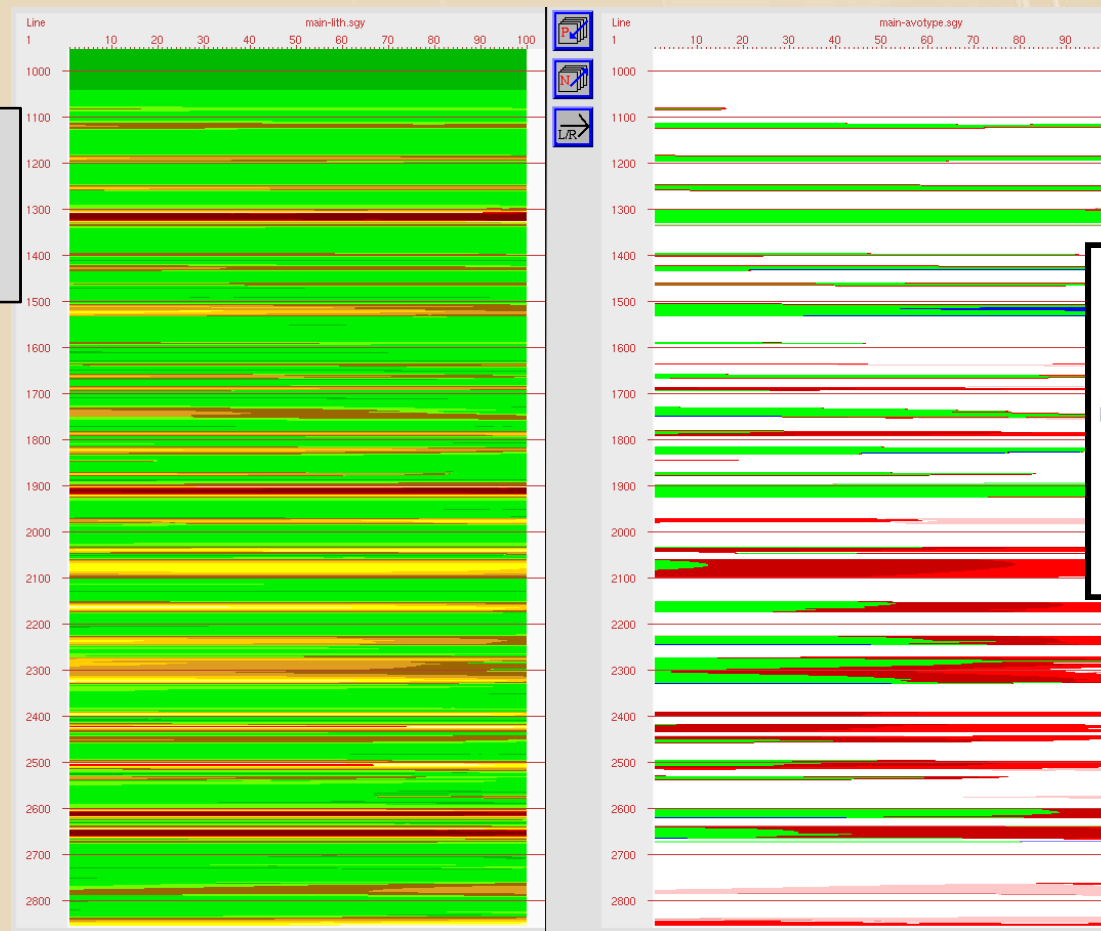


## Stack Scaler

### Lithology

### AVO Type

Shale is Green  
Sand is Yellow  
Oil is Red

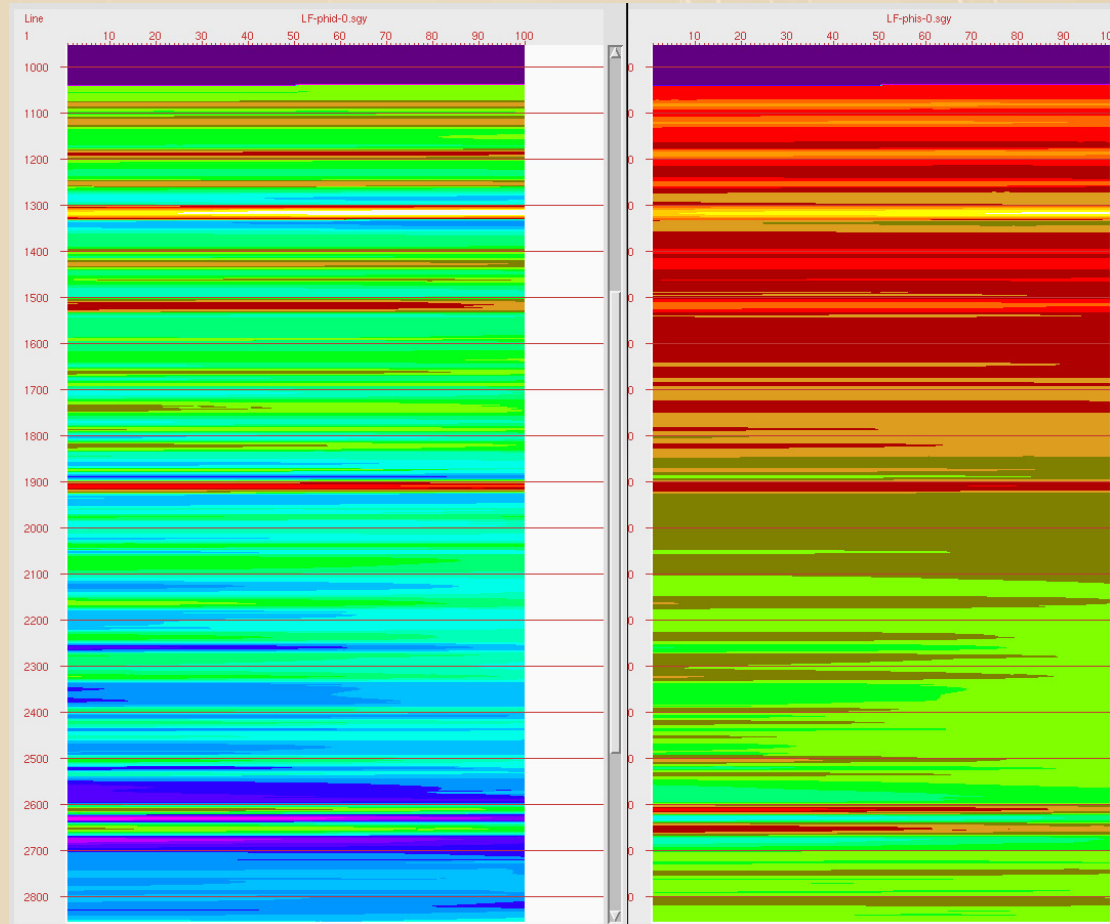
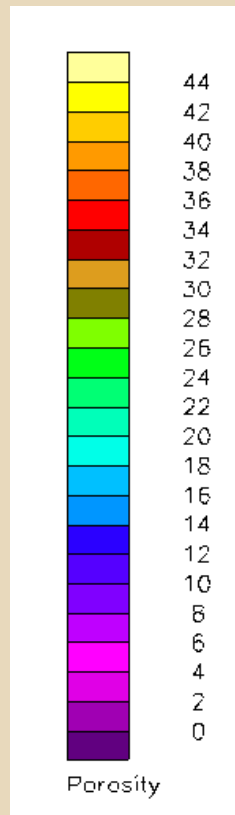




## Perfect Model

### Density Porosity

### Velocity Porosity

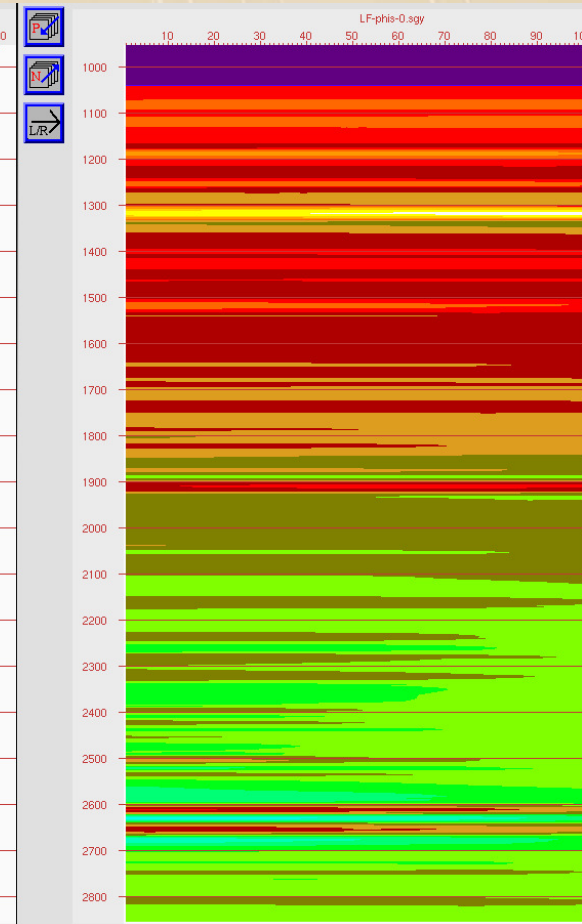
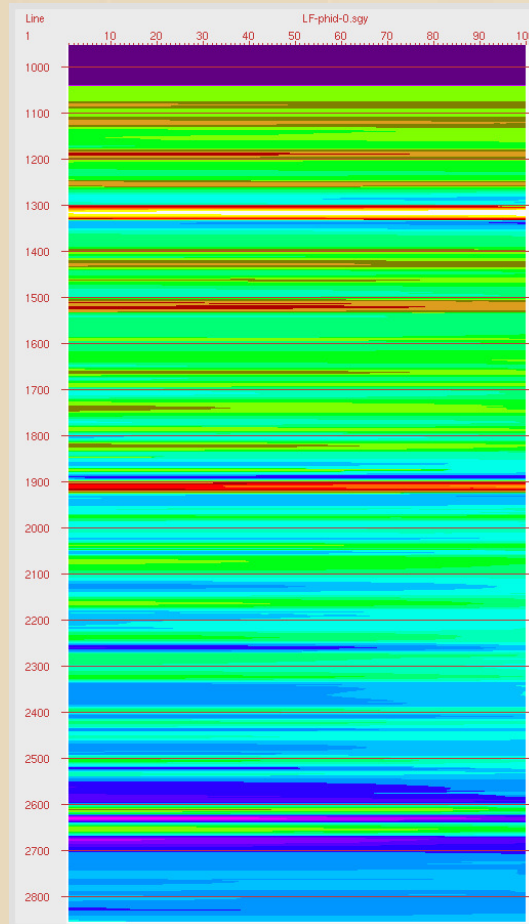
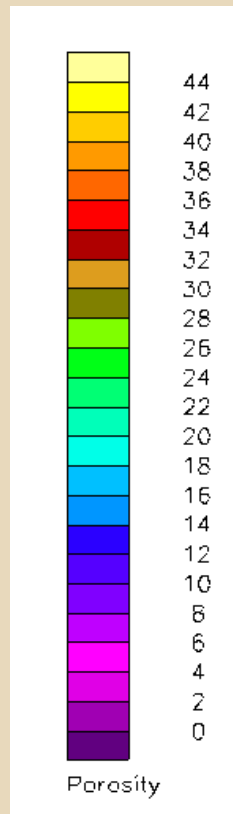




## Stack Scaler

### Density Porosity

### Velocity Porosity







# Single Trace Scaler

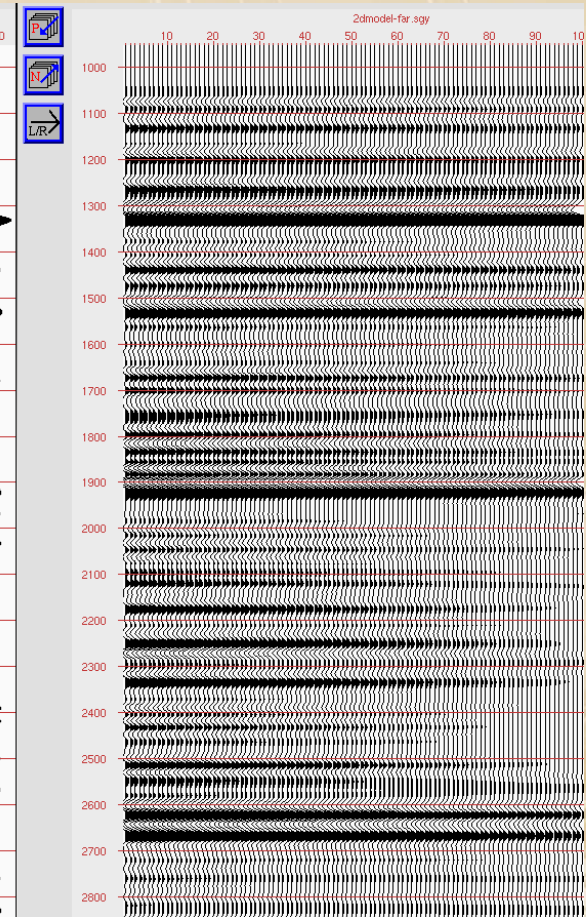
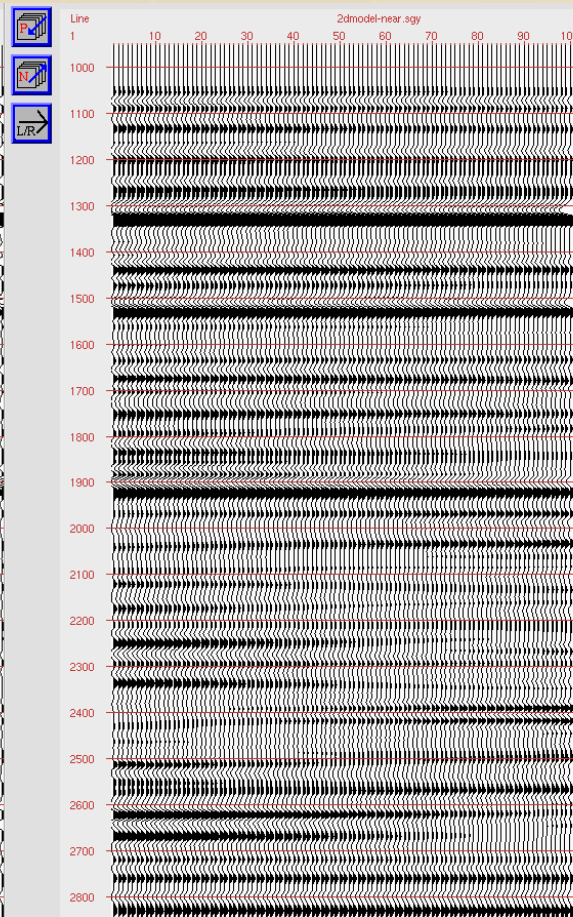
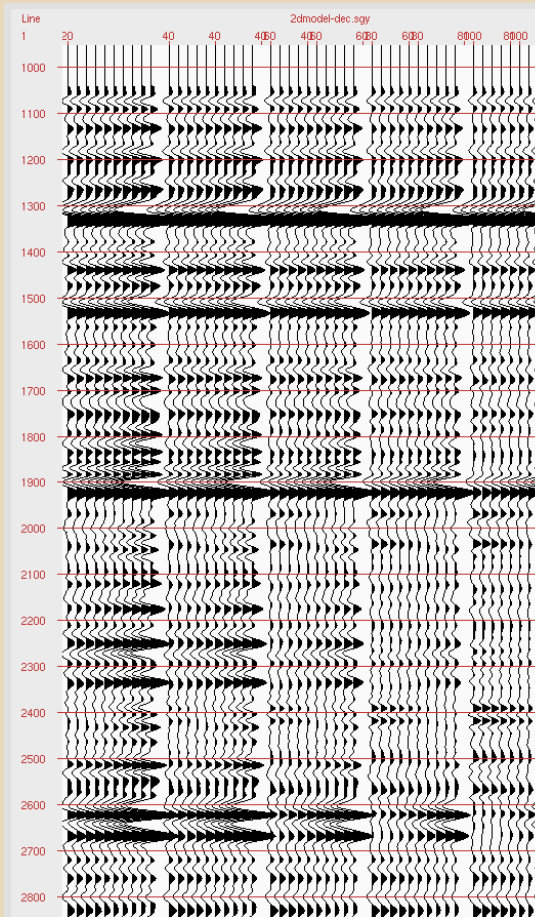


## Perfect Model

Every 20<sup>th</sup> gather

Near Stack

Far Stack



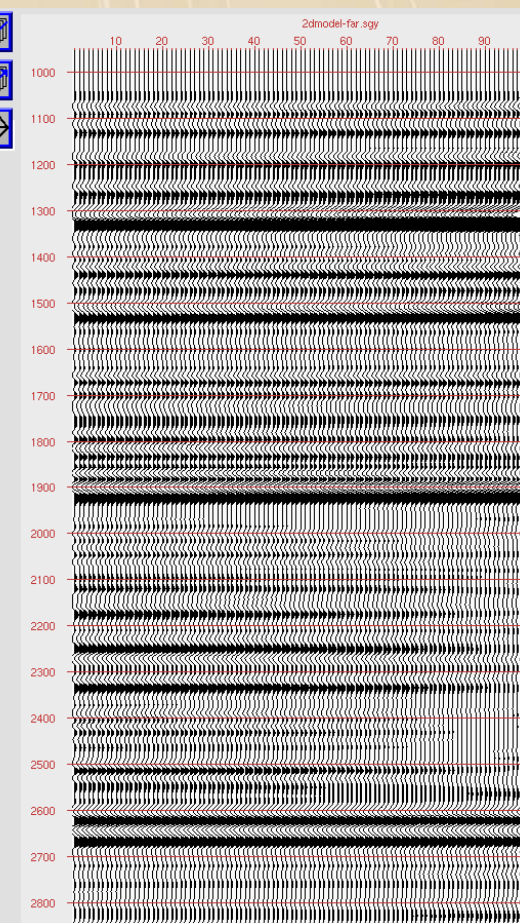
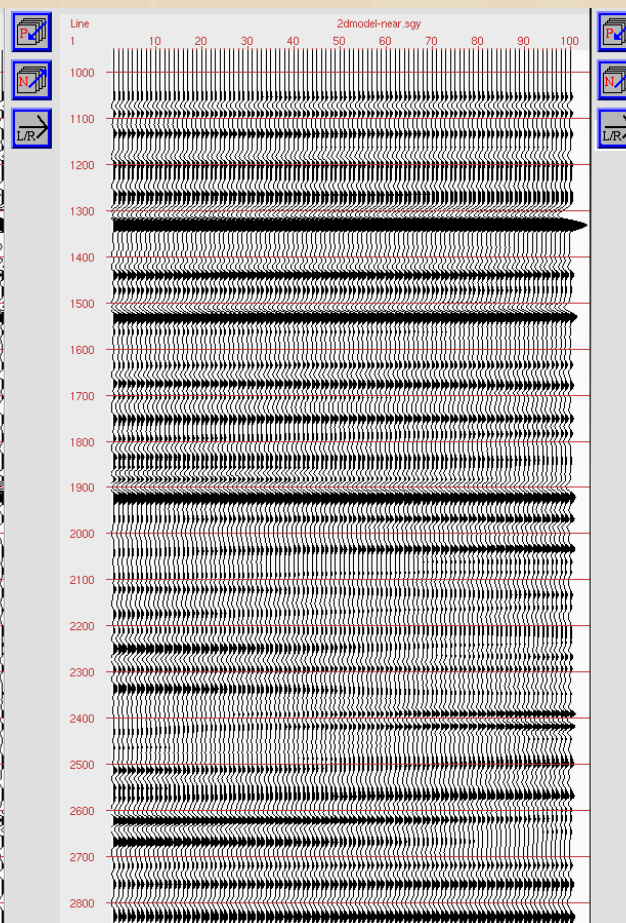
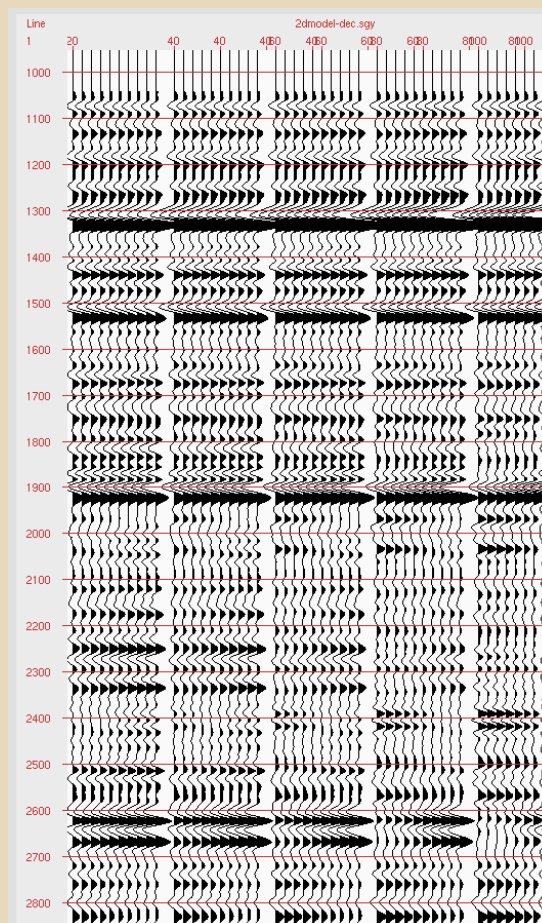


## Single trace scaler

Every 20<sup>th</sup> gather

Near Stack

Far Stack





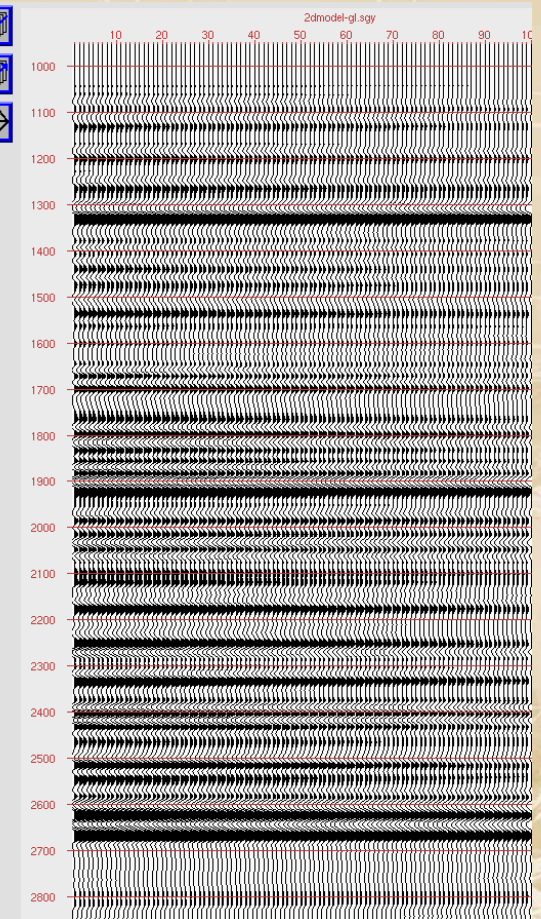
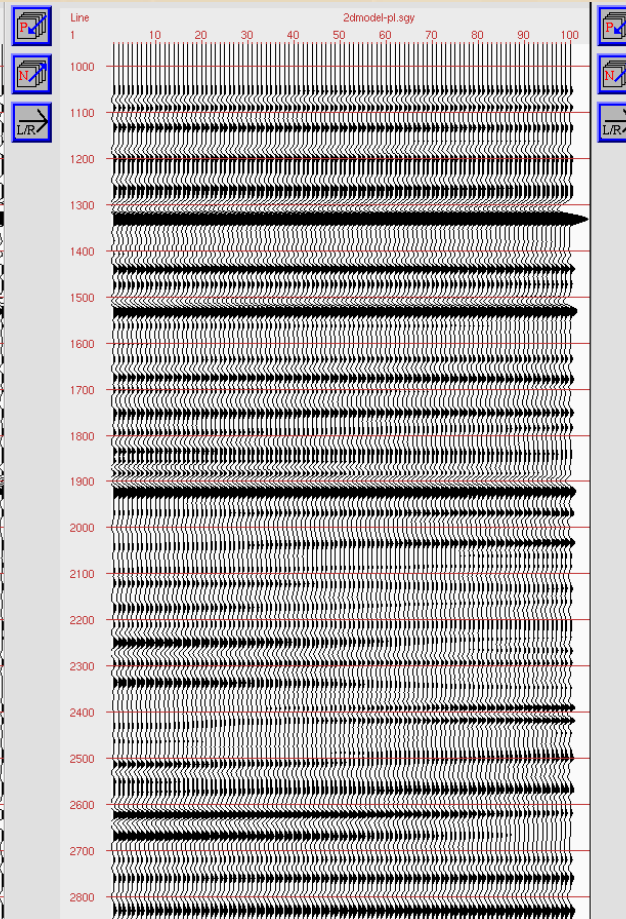
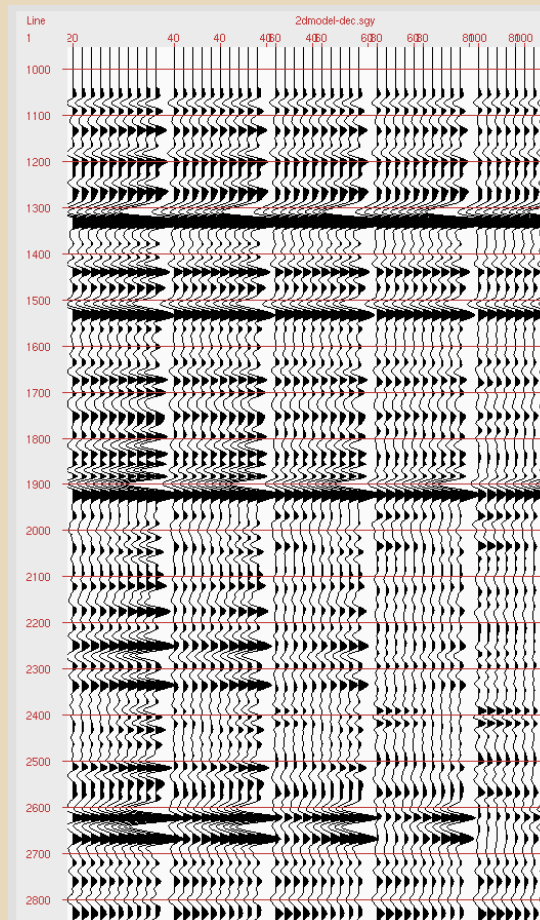


## Perfect Model

Every 20<sup>th</sup> gather

P Stack

G Stack





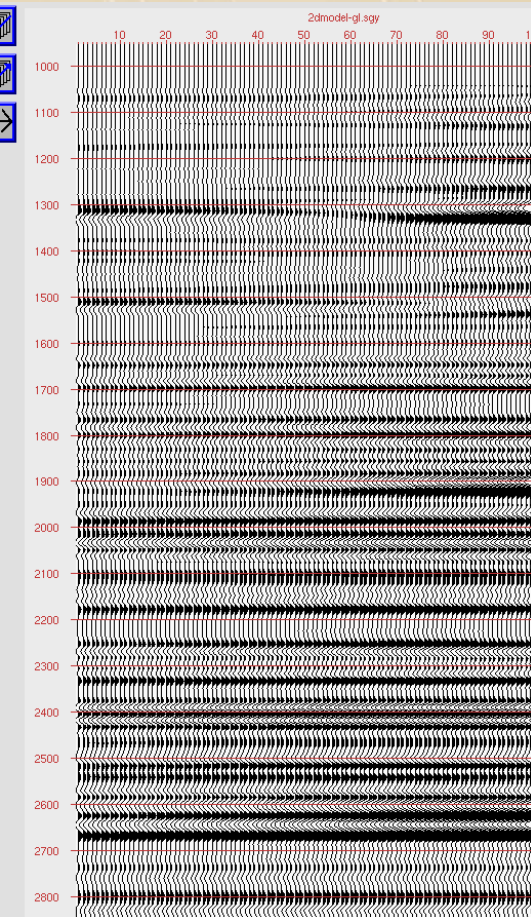
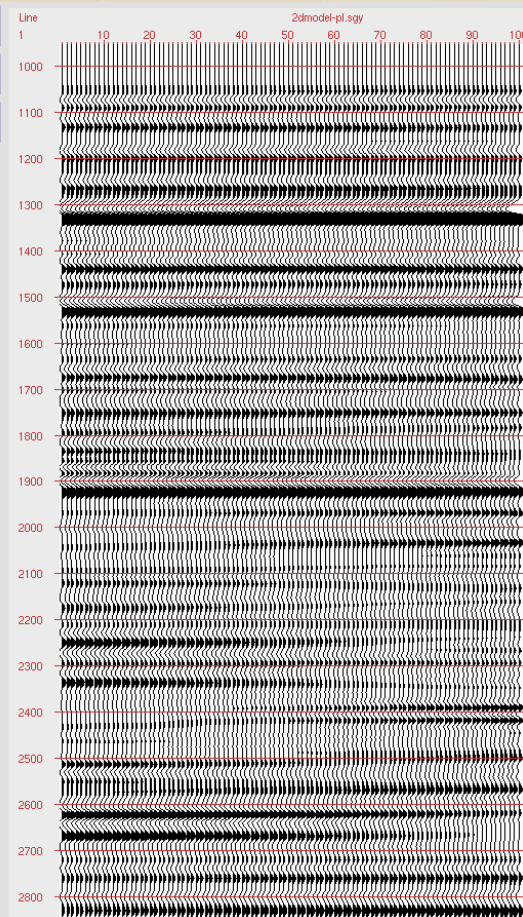
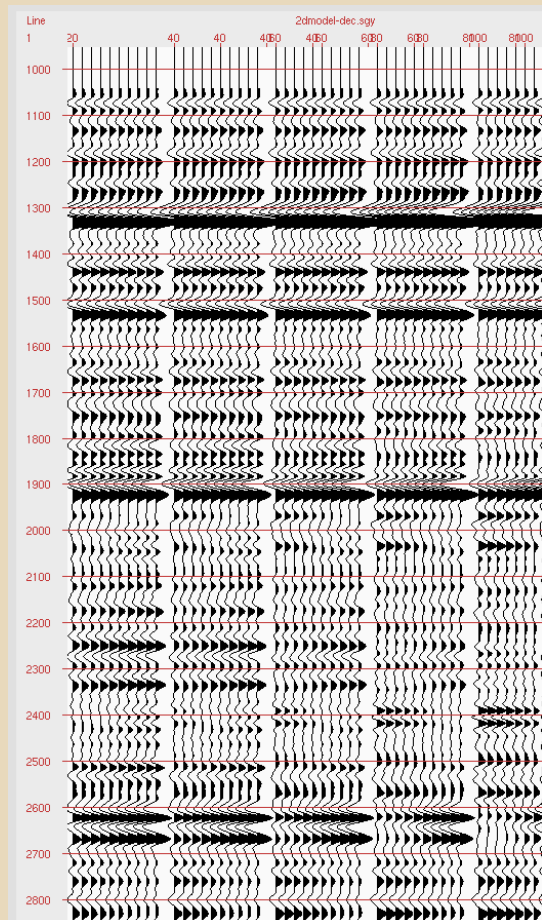


## Single trace scaler

Every 20<sup>th</sup> gather

P Stack

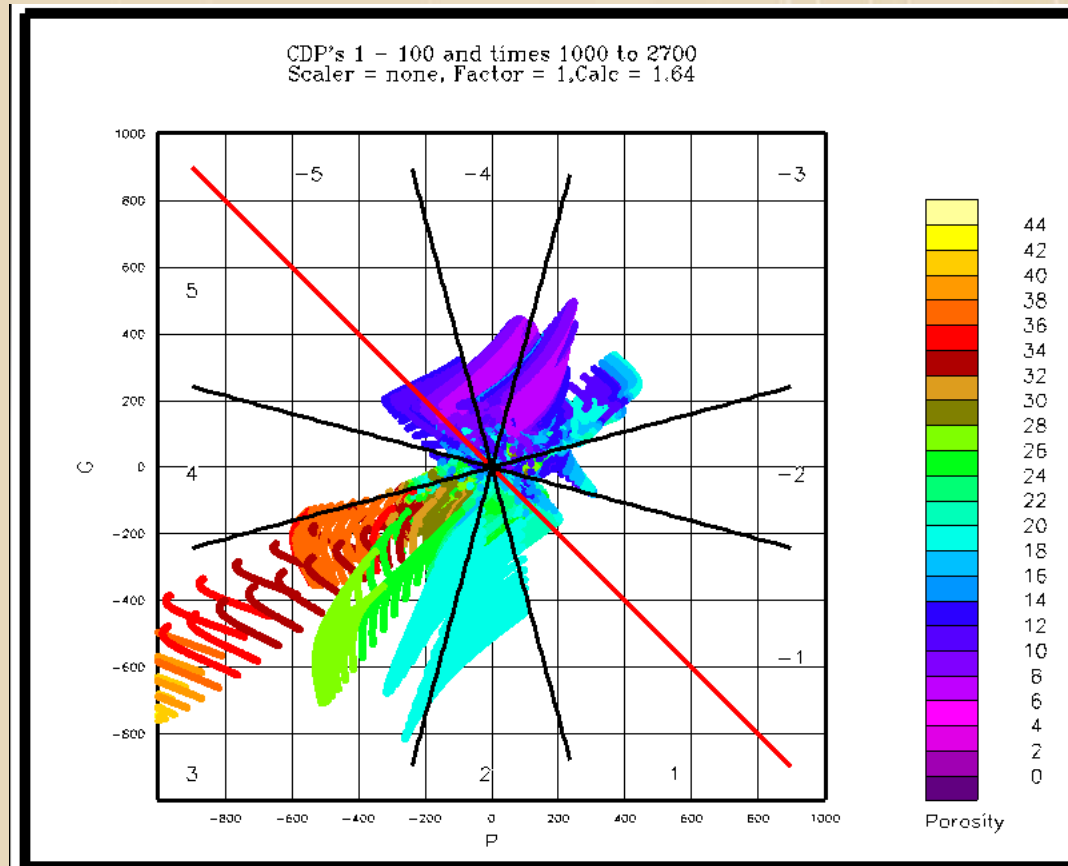
G Stack





## Perfect Model

Cross Plot of P vs G  
Color is Porosity

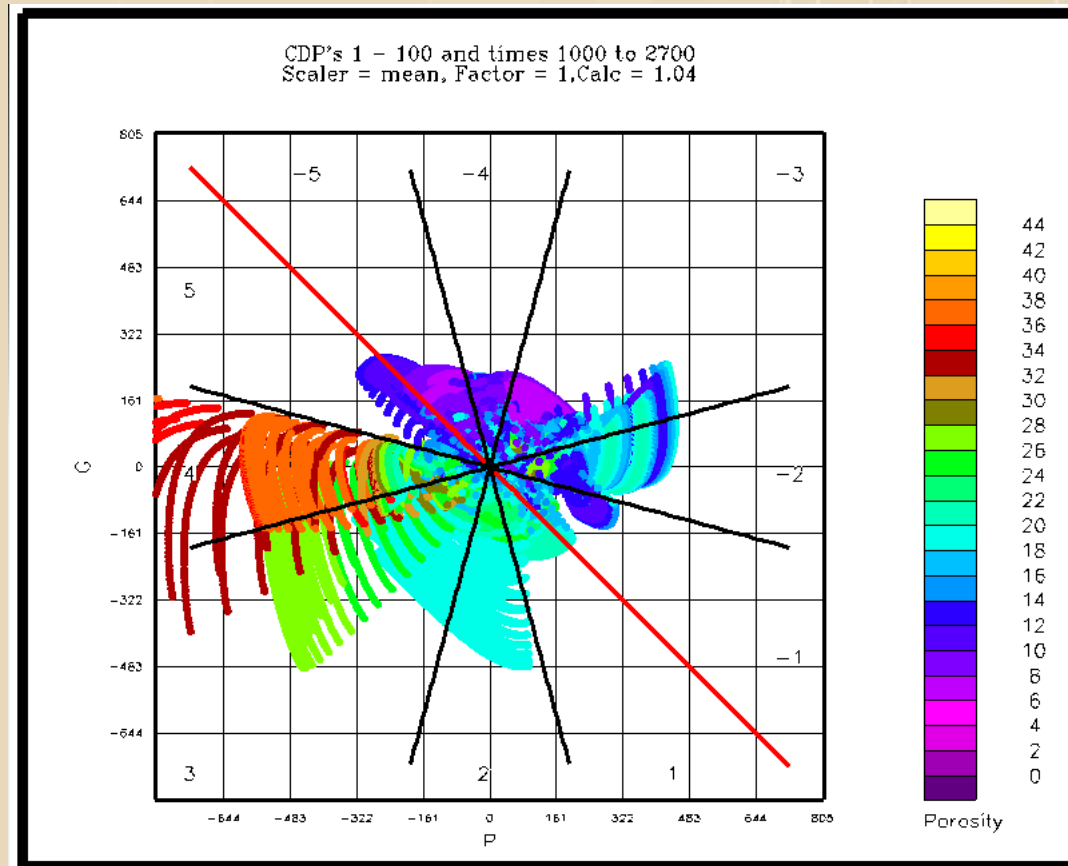


Inverted Space



## Single trace scaler

Cross Plot of P vs G  
Color is Porosity

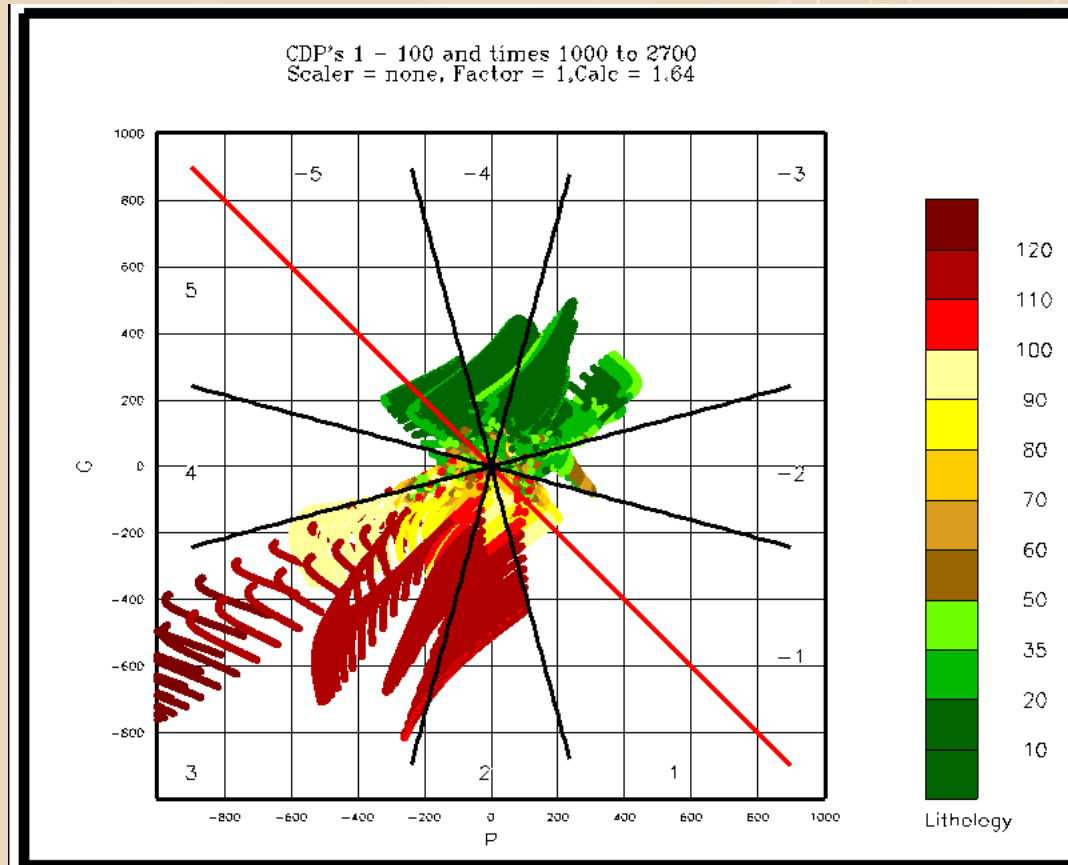


Inverted Space



## Perfect Model

Cross Plot of P vs G  
Color is Lithology  
Shale is Green  
Sand is Yellow  
Oil is Red



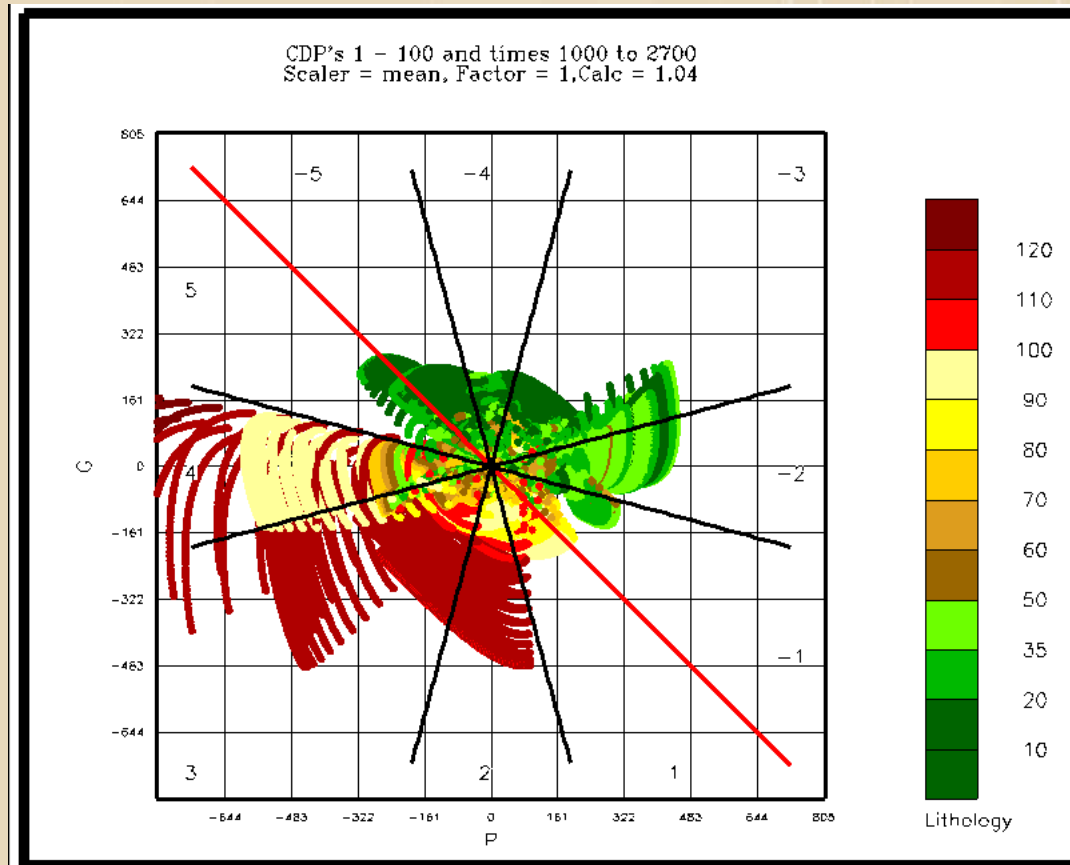
Inverted Space





## Single trace scaler

Cross Plot of P vs G  
Color is Lithology  
Shale is Green  
Sand is Yellow  
Oil is Red



Inverted Space

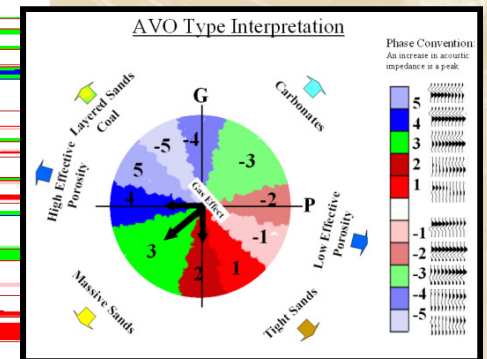
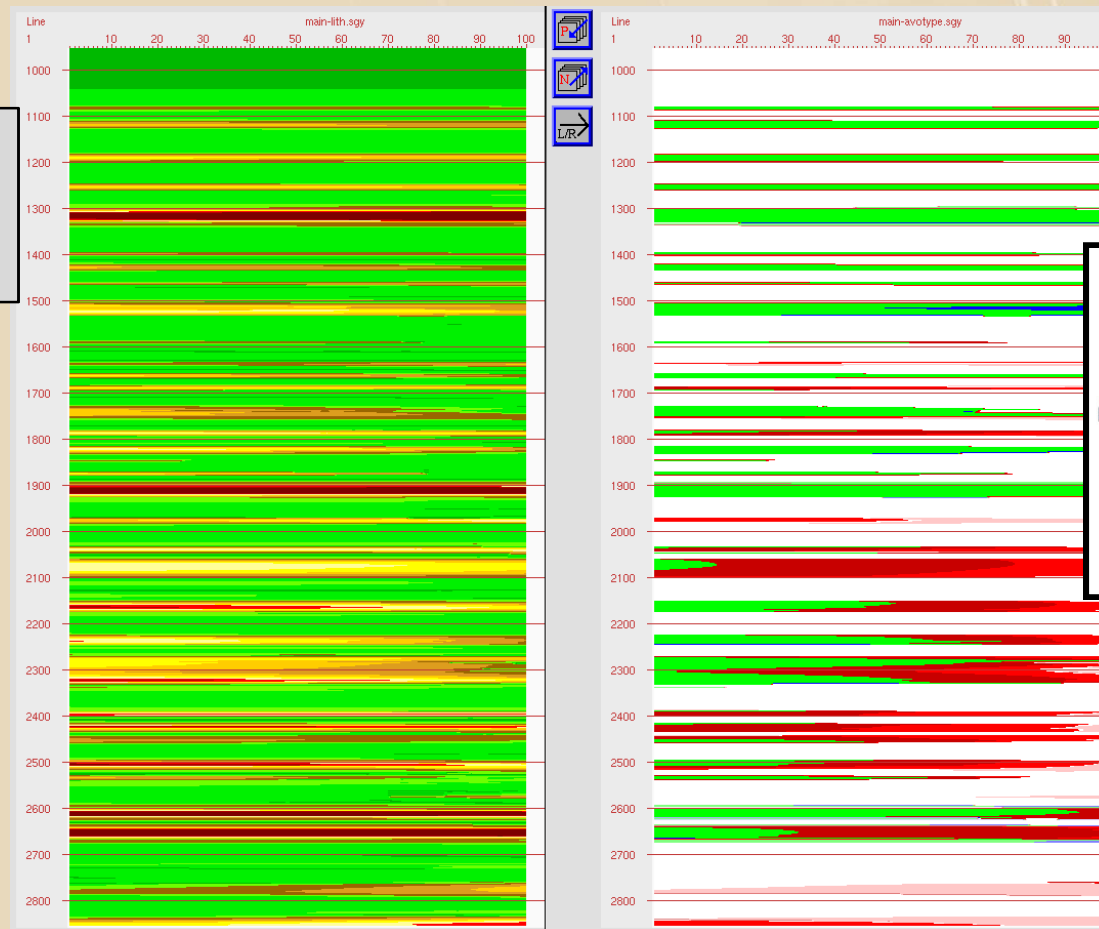


## Perfect Model

### Lithology

### AVO Type

Shale is Green  
Sand is Yellow  
Oil is Red



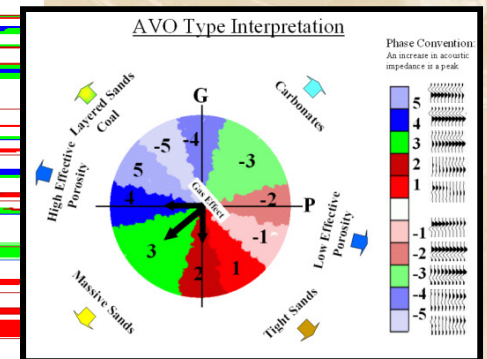
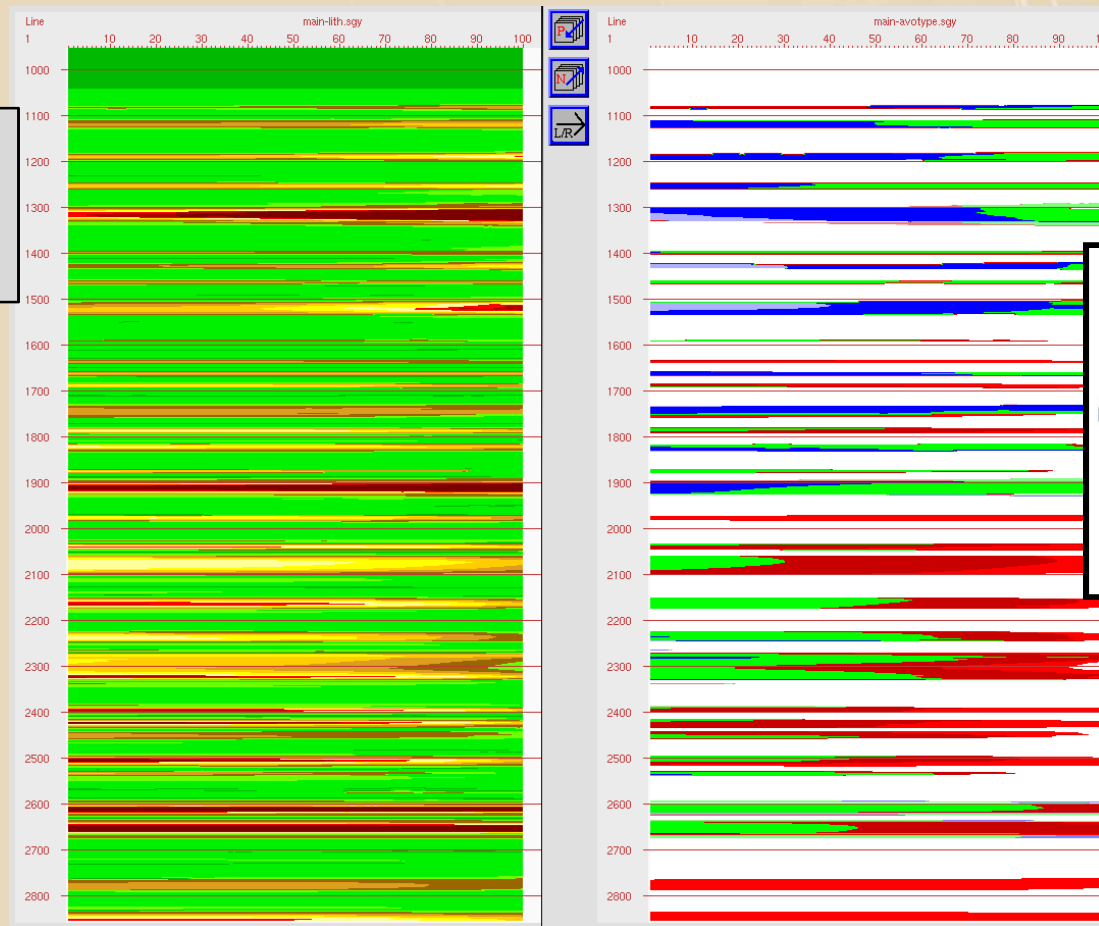


## Single trace scaler

Lithology

AVO Type

Shale is Green  
Sand is Yellow  
Oil is Red

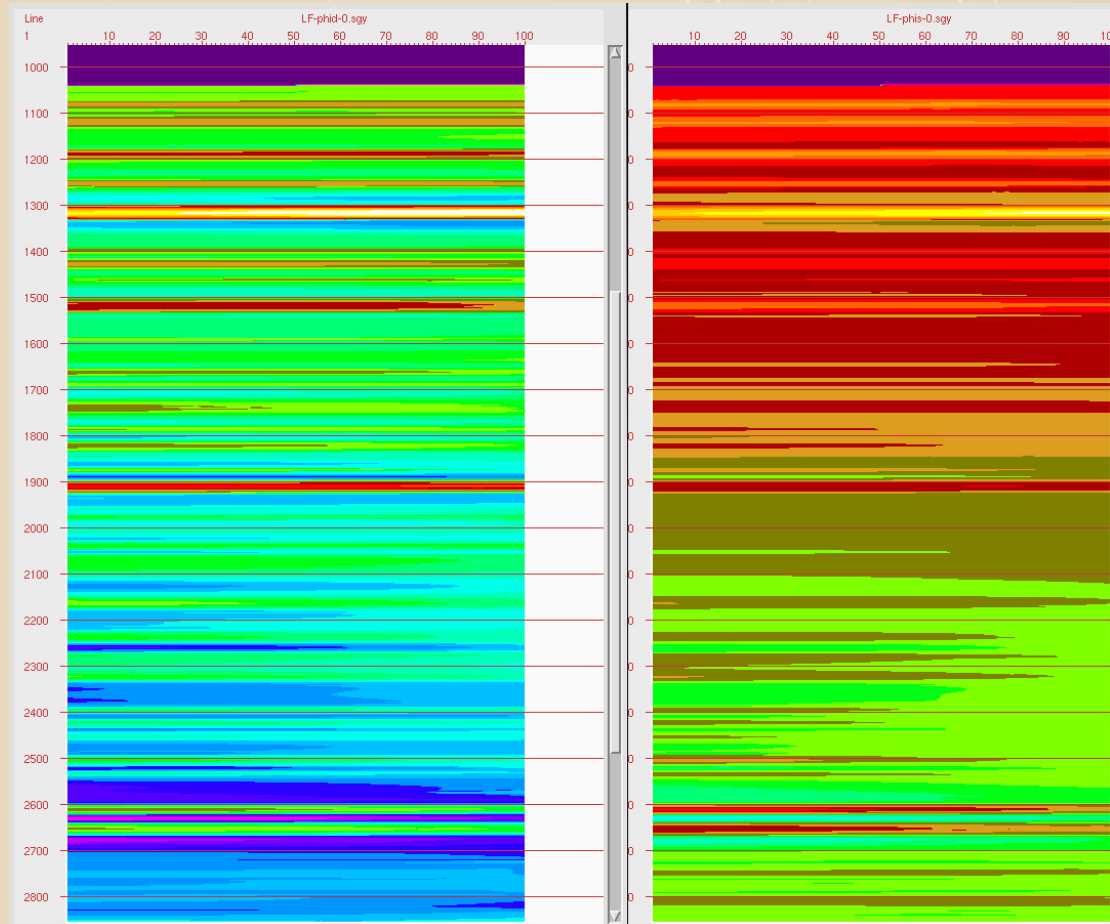
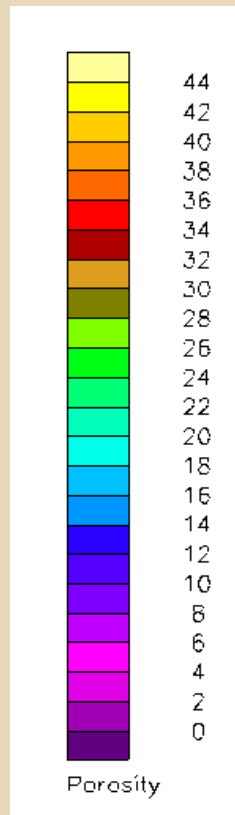




## Perfect Model

### Density Porosity

### Velocity Porosity



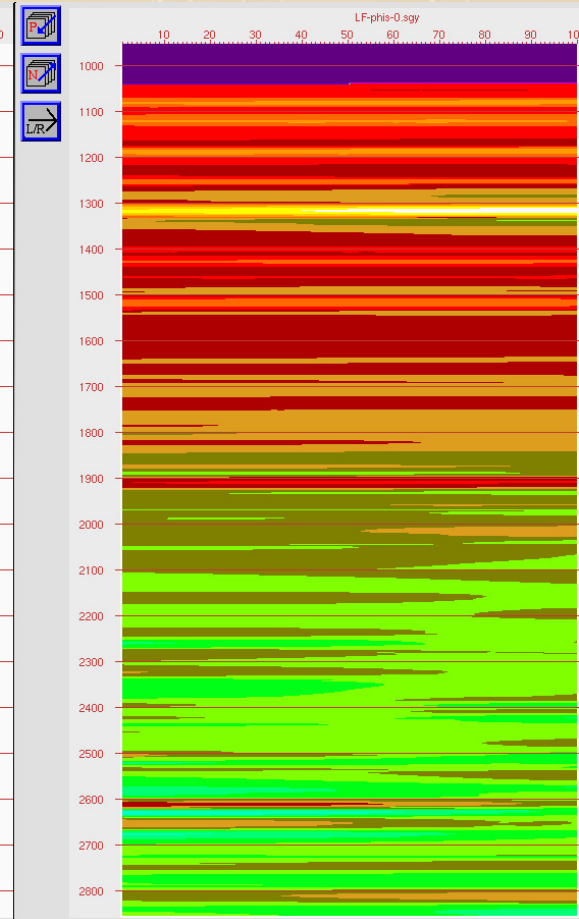
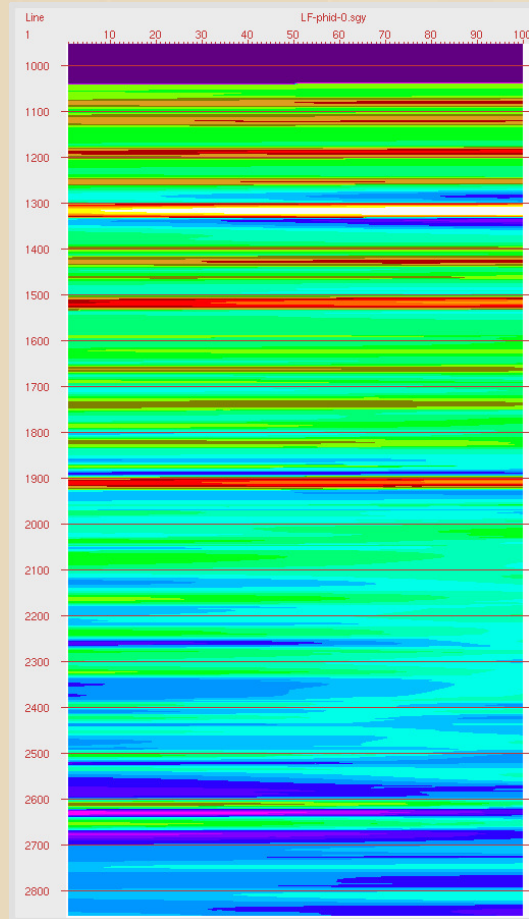
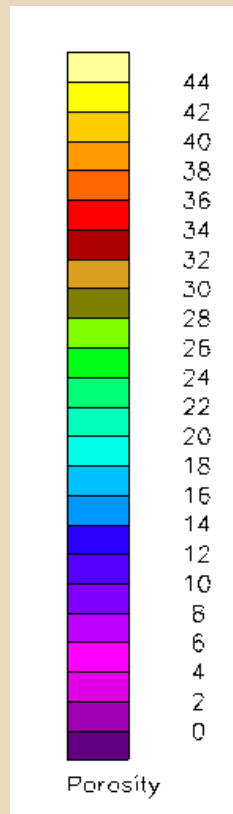




## Single trace scaler

### Density Porosity

### Velocity Porosity





# 1000ms AGC Scaler

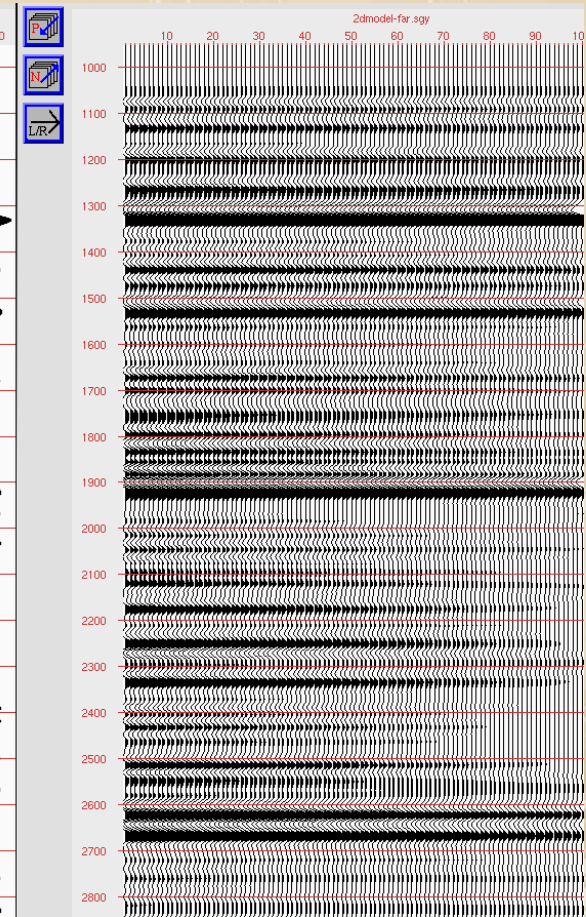
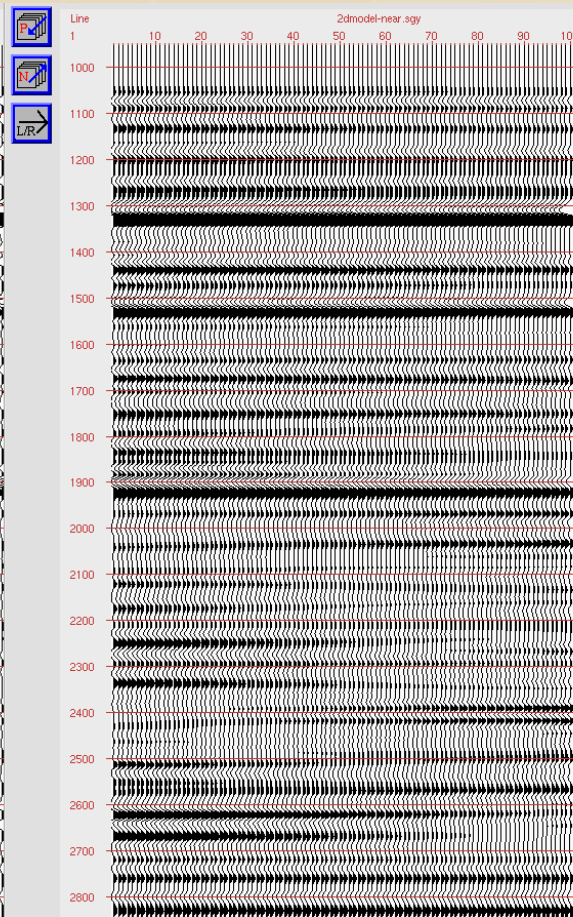
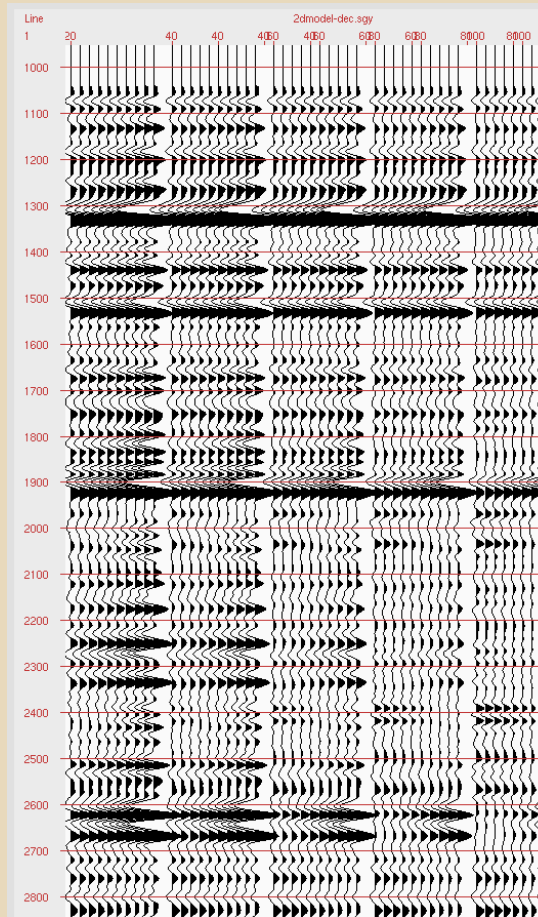


## Perfect Model

Every 20<sup>th</sup> gather

Near Stack

Far Stack





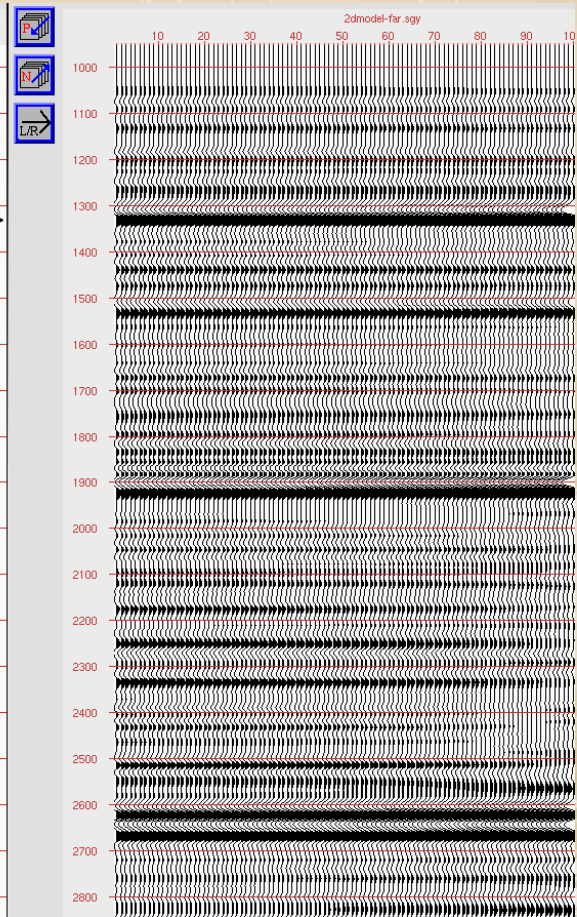
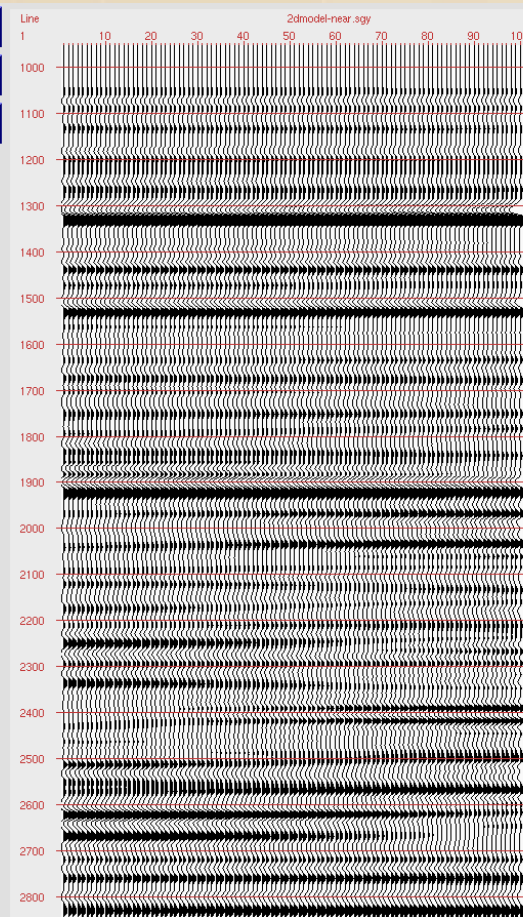
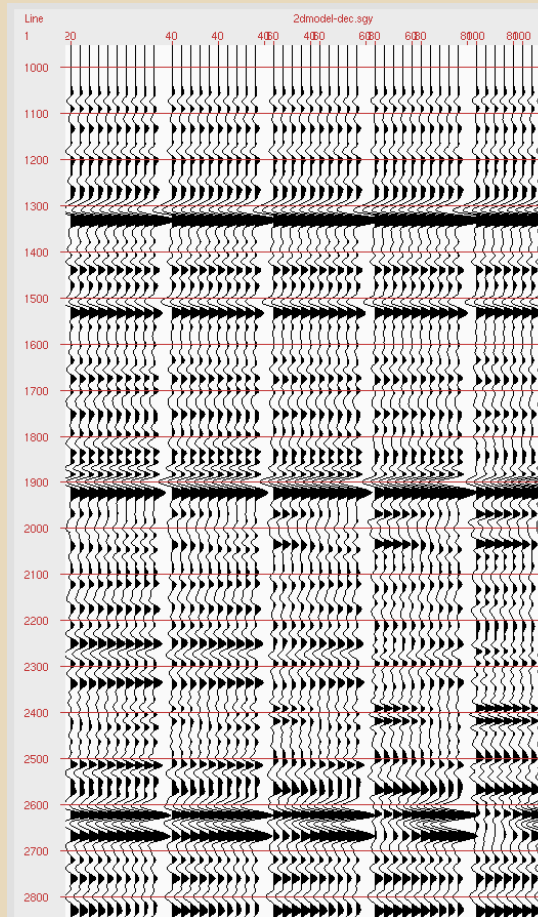


## AGC Scaler

Every 20<sup>th</sup> gather

Near Stack

Far Stack





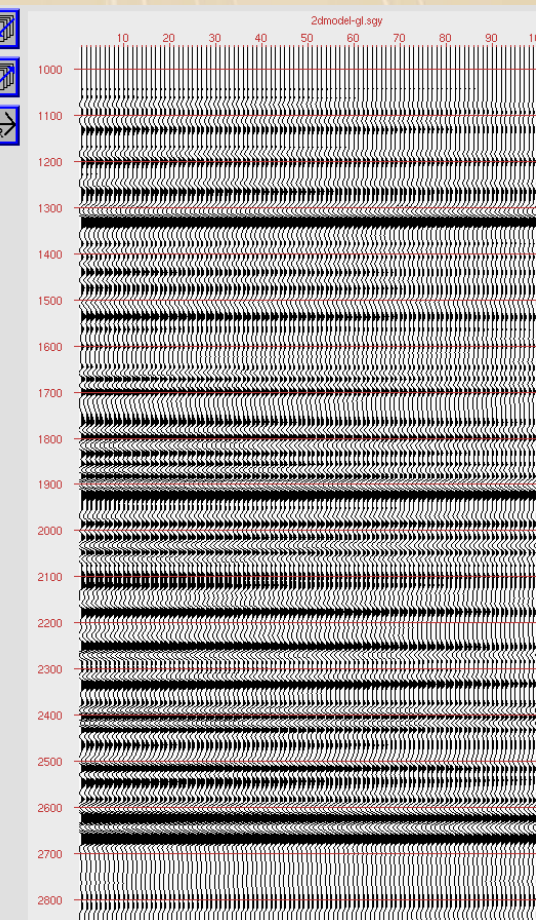
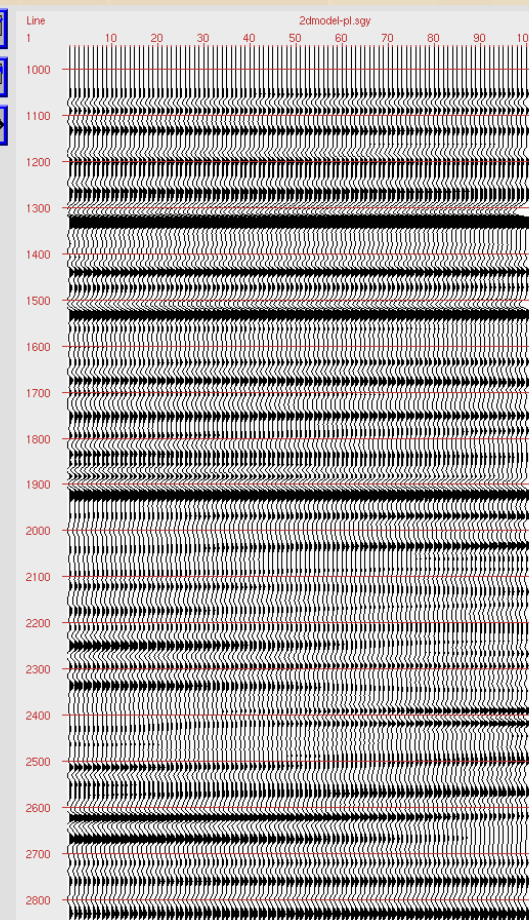
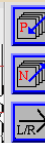
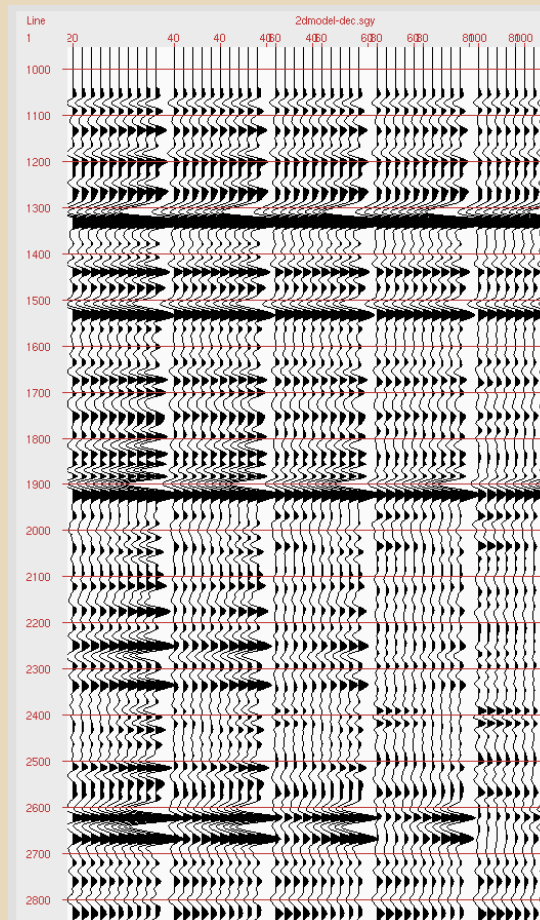


## Perfect Model

Every 20<sup>th</sup> gather

P Stack

G Stack



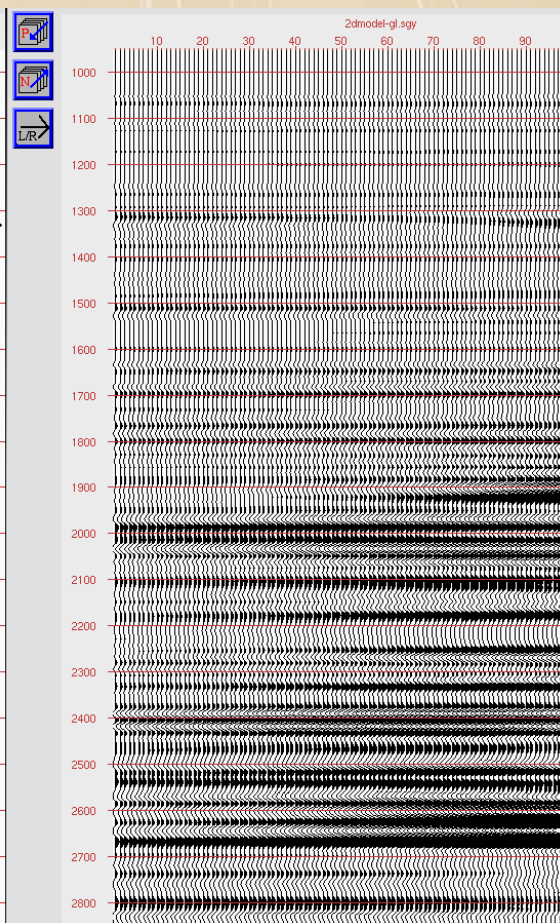
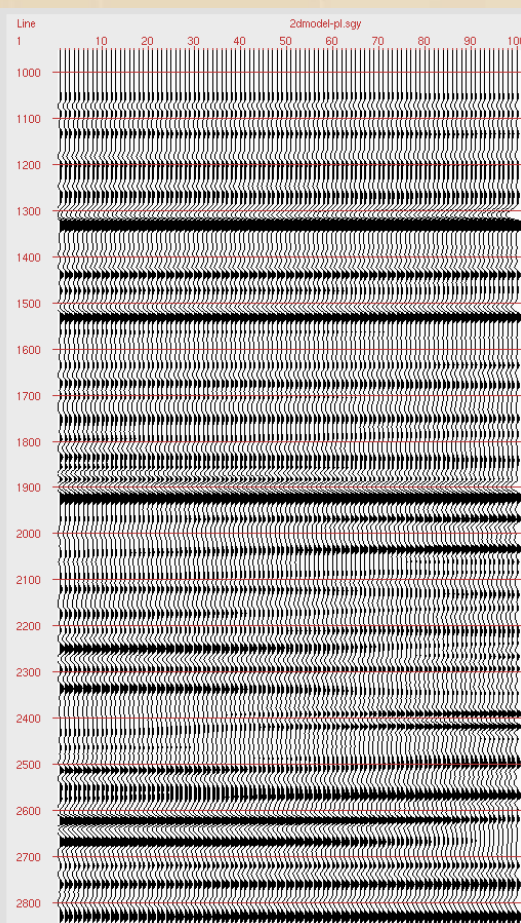
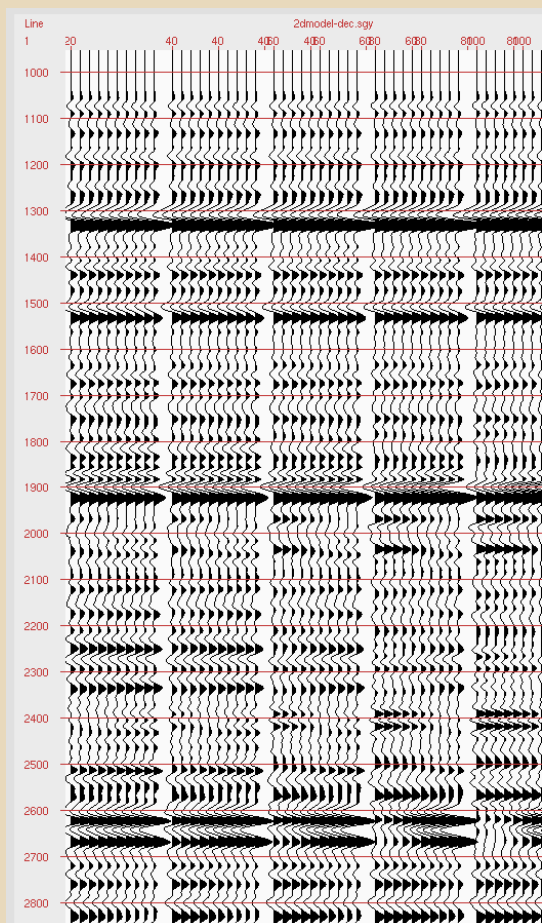


## AGC Scaler

Every 20<sup>th</sup> gather

P Stack

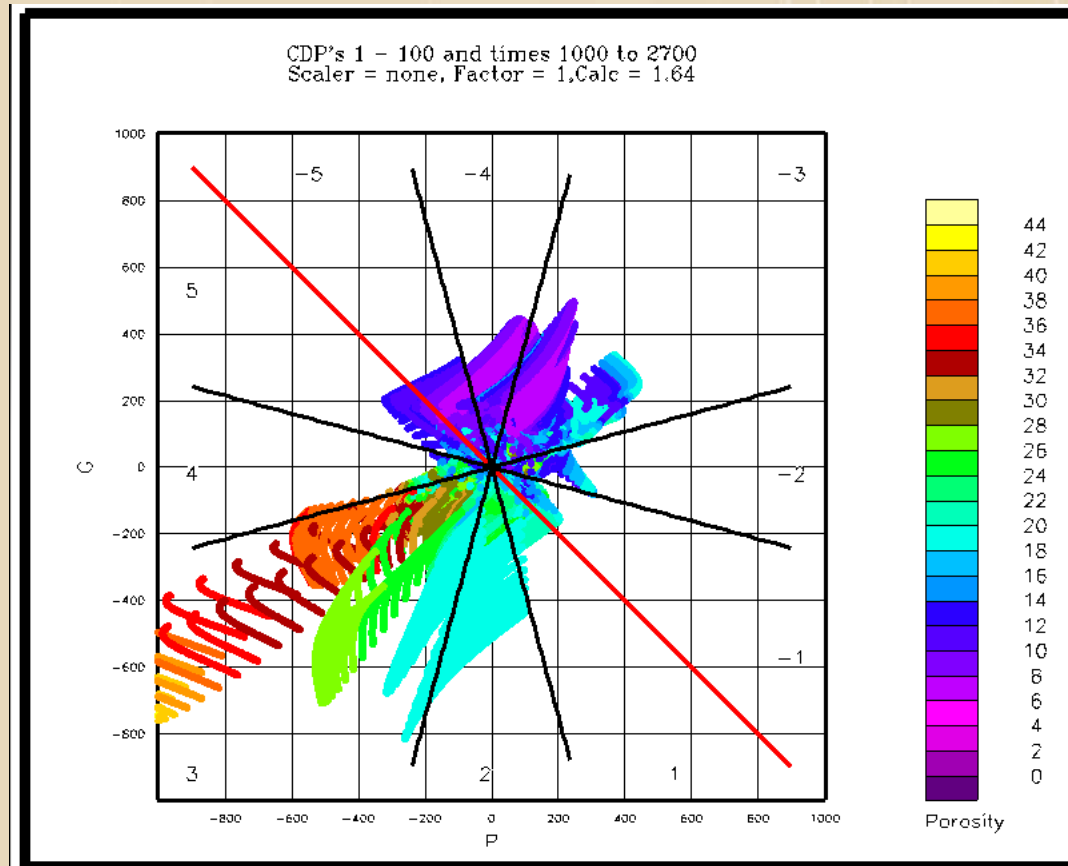
G Stack





## Perfect Model

Cross Plot of P vs G  
Color is Porosity



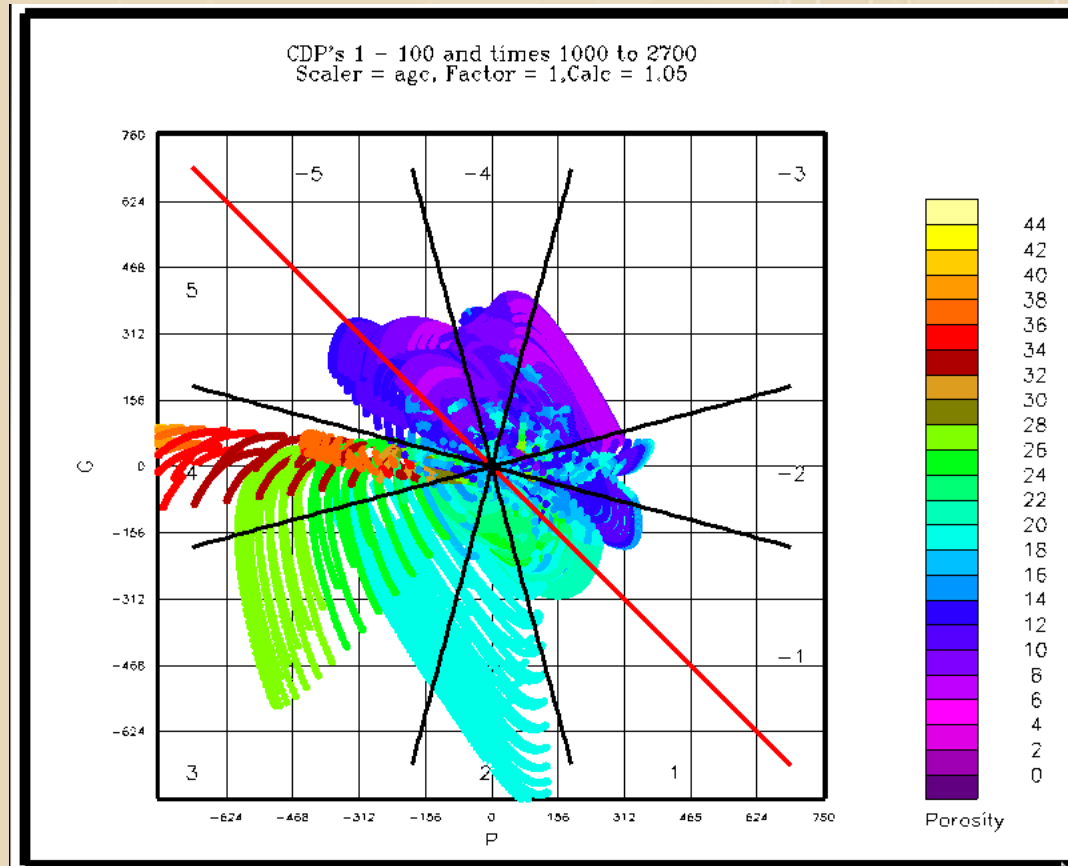
Inverted Space





## AGC Scaler

Cross Plot of P vs G  
Color is Porosity



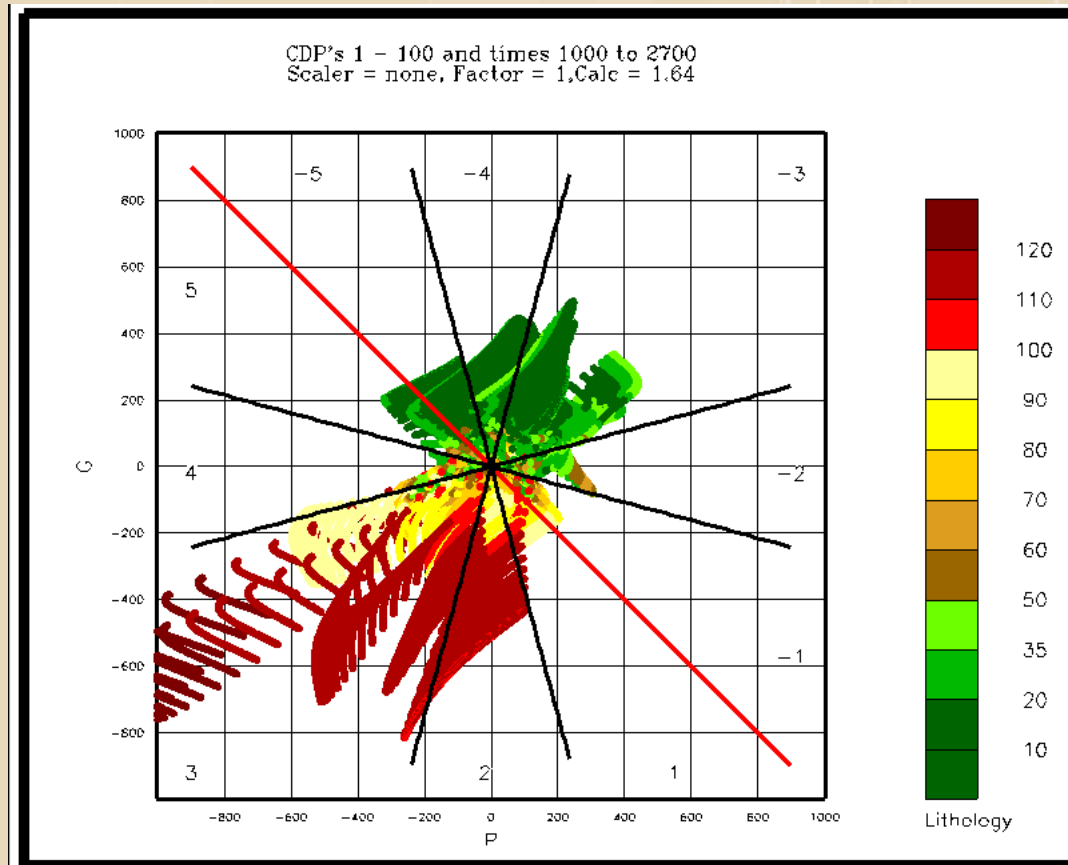
Inverted Space





## Perfect Model

Cross Plot of P vs G  
Color is Lithology  
Shale is Green  
Sand is Yellow  
Oil is Red

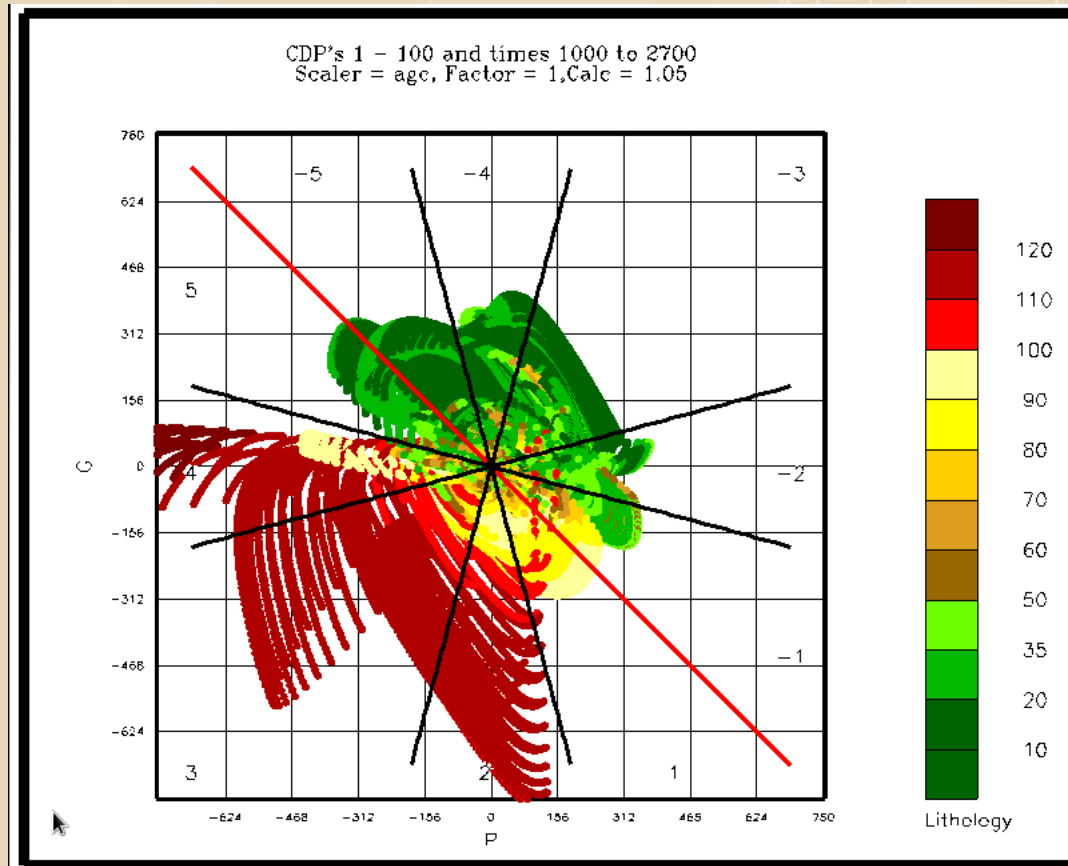


Inverted Space



## AGC Scaler

Cross Plot of P vs G  
Color is Lithology  
Shale is Green  
Sand is Yellow  
Oil is Red



Inverted Space

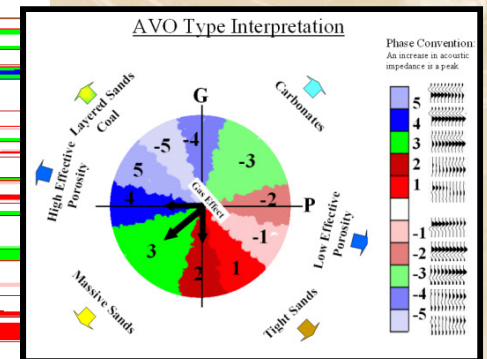
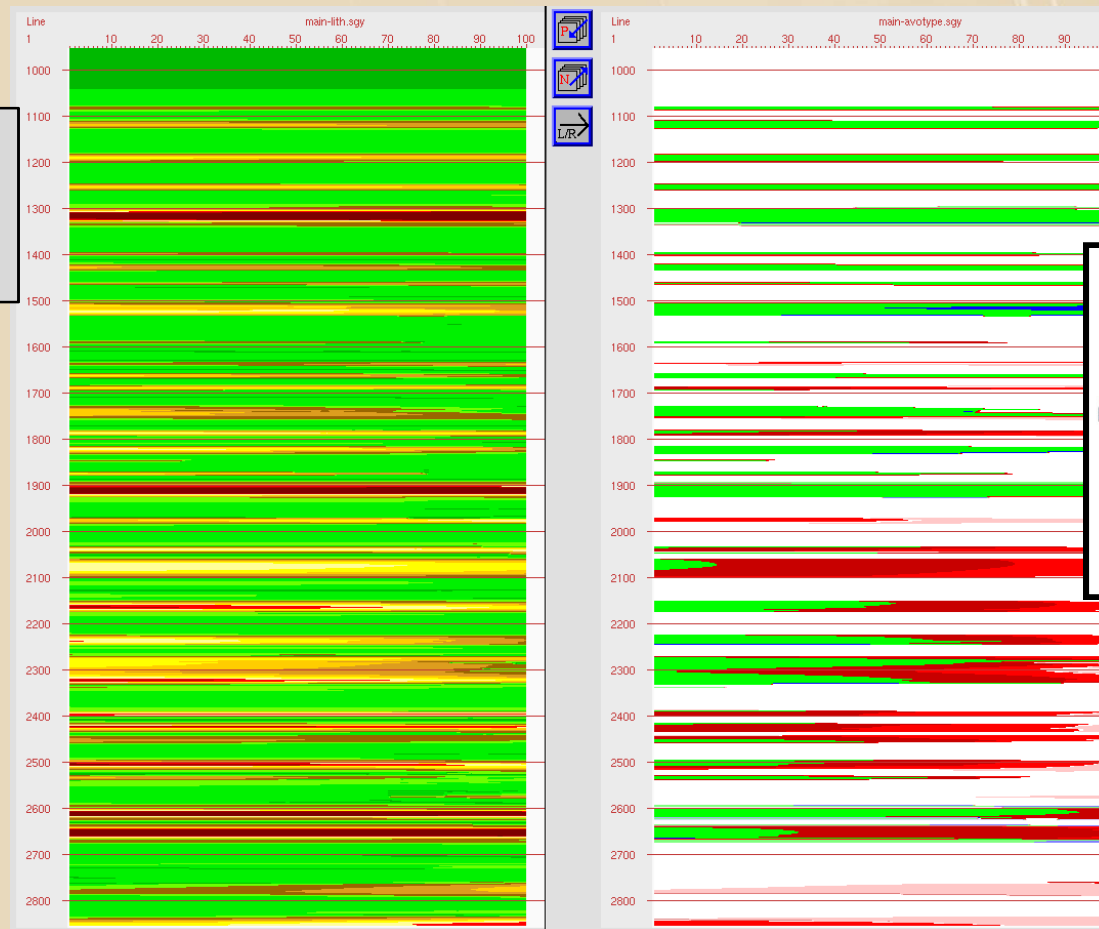


## Perfect Model

### Lithology

### AVO Type

Shale is Green  
Sand is Yellow  
Oil is Red



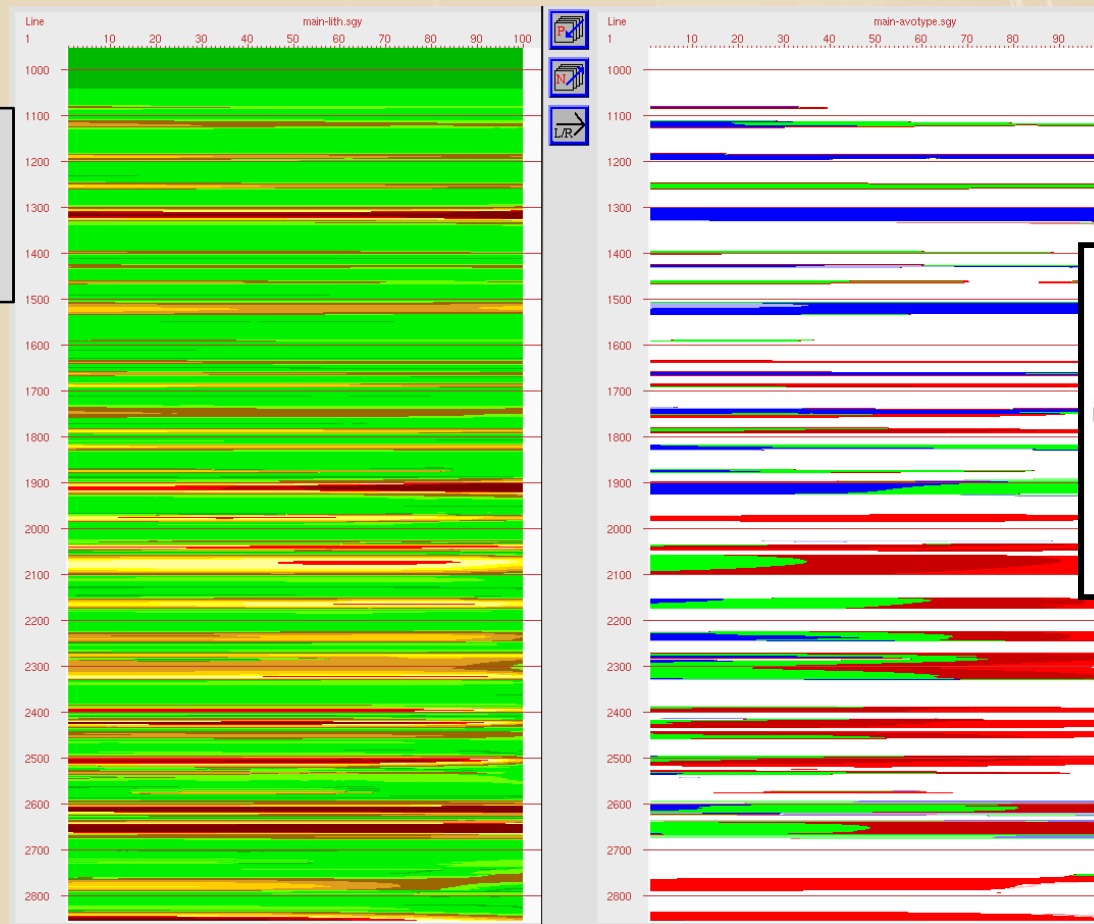


## AGC Scaler

### Lithology

### AVO Type

Shale is Green  
Sand is Yellow  
Oil is Red



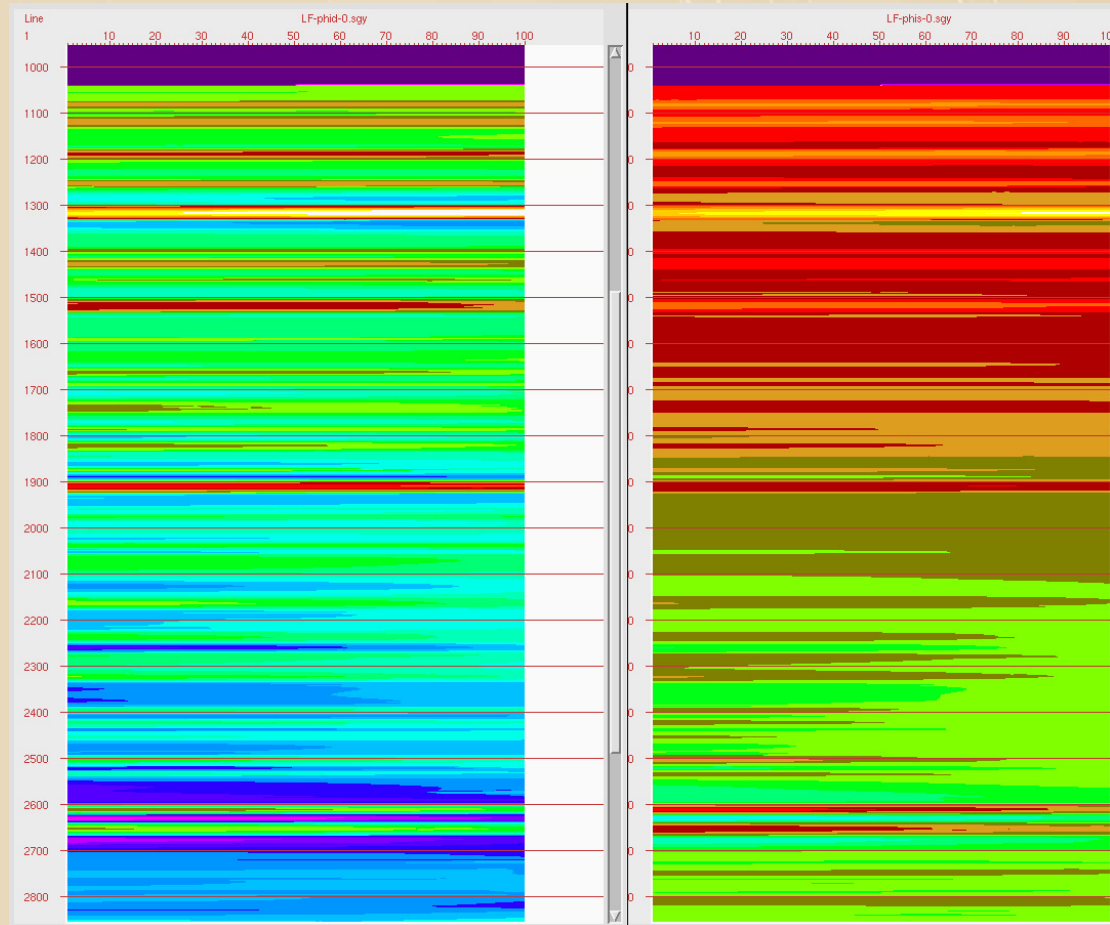
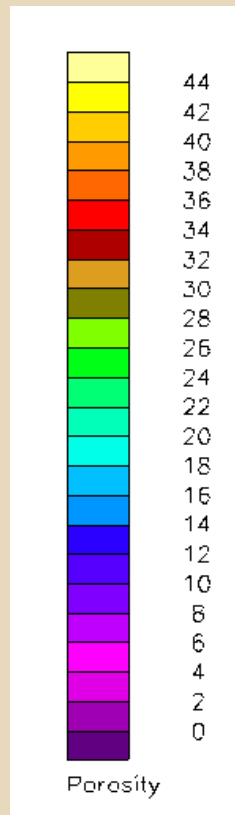




## Perfect Model

### Density Porosity

### Velocity Porosity

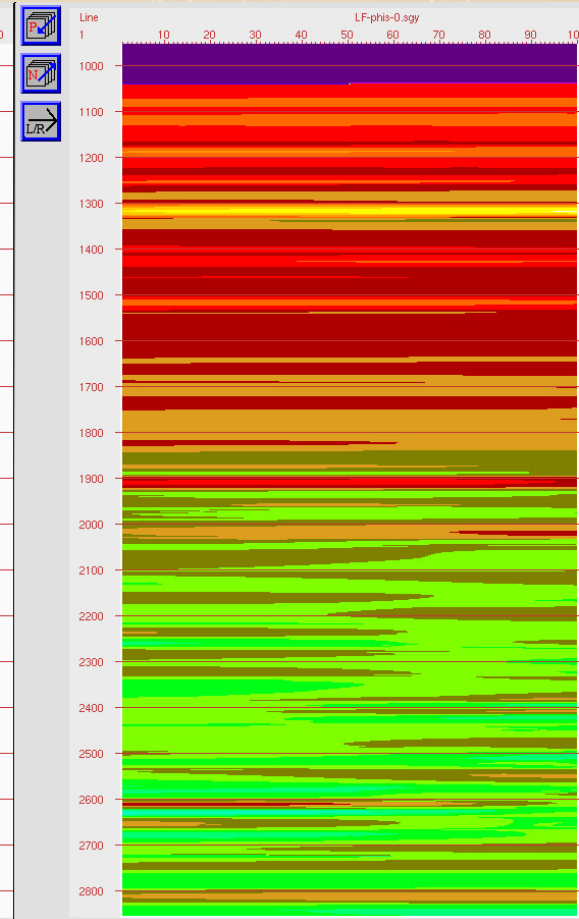
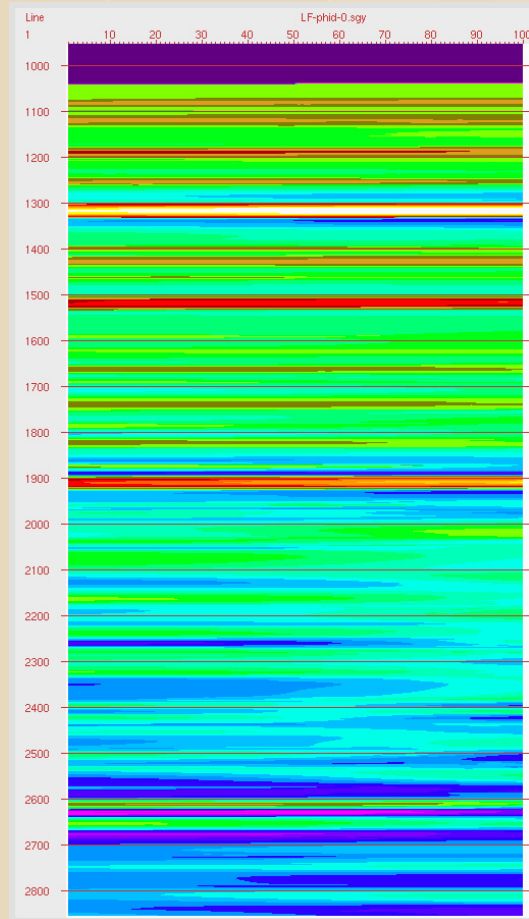
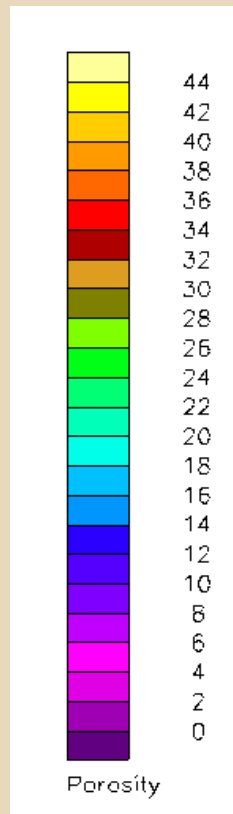




## AGC Scaler

### Density Porosity

### Velocity Porosity





# NMO Stretch

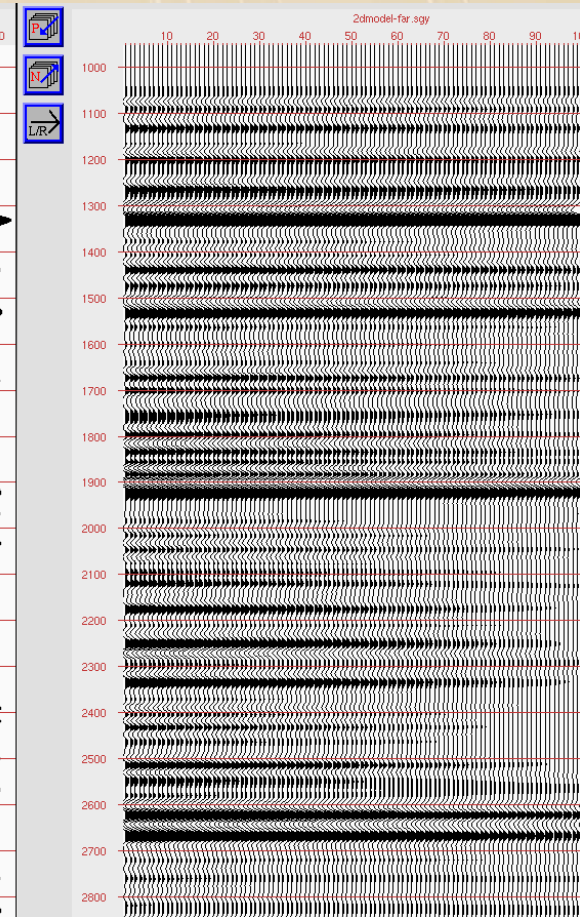
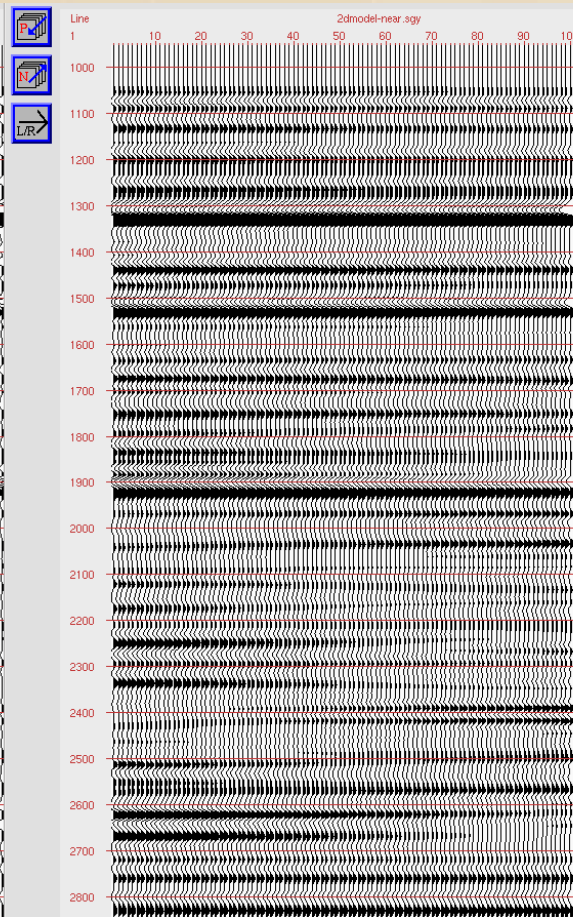
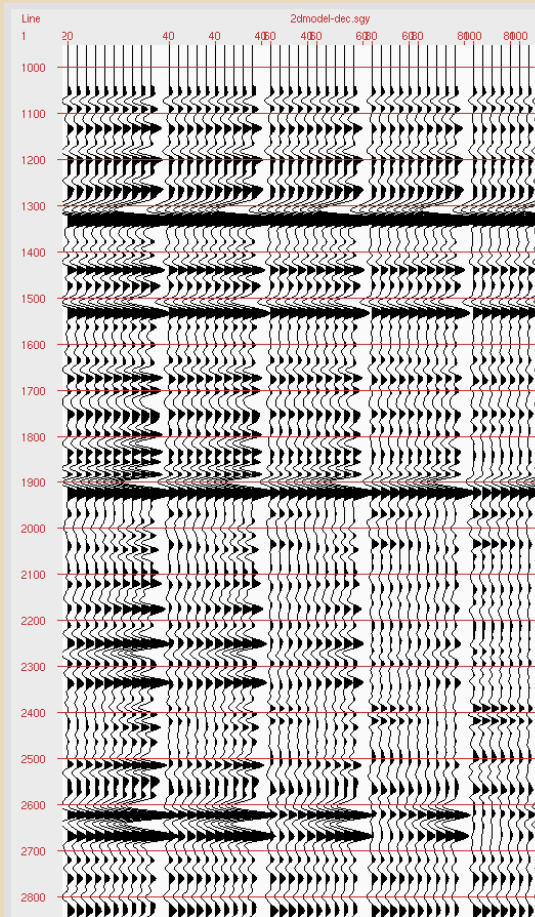


## Perfect Model

Every 20<sup>th</sup> gather

Near Stack

Far Stack





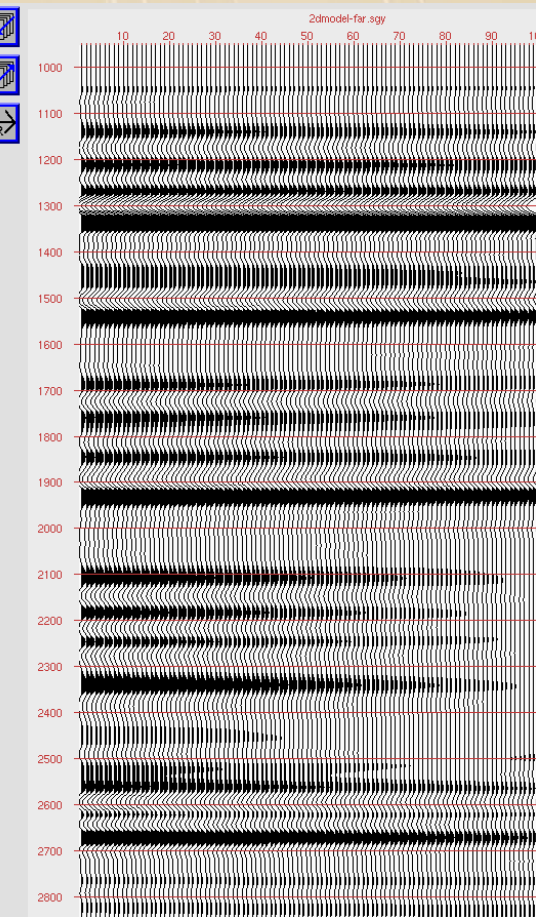
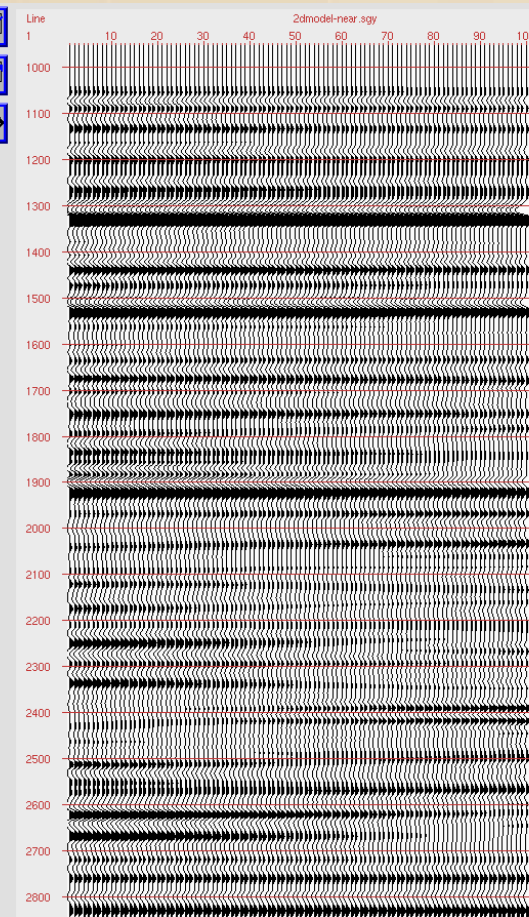
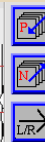
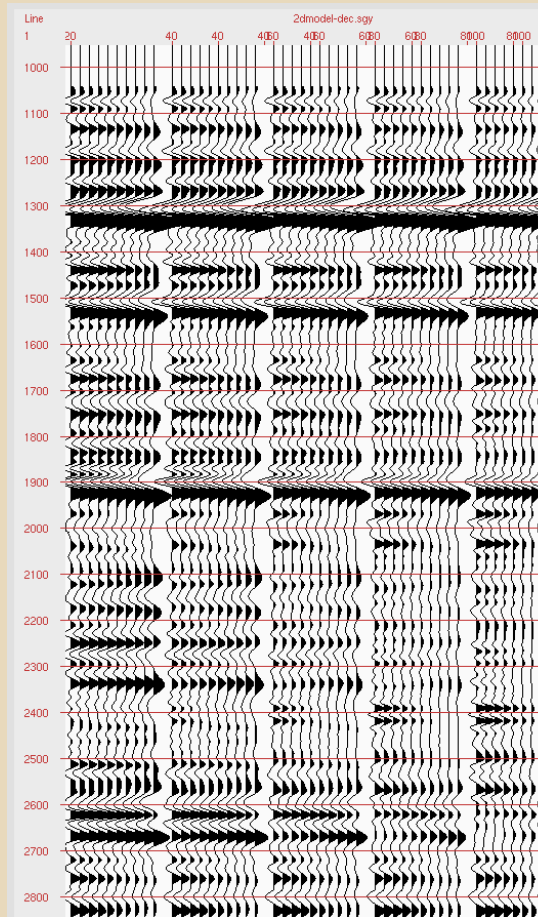


## NMO Stretch

Every 20<sup>th</sup> gather

Near Stack

Far Stack



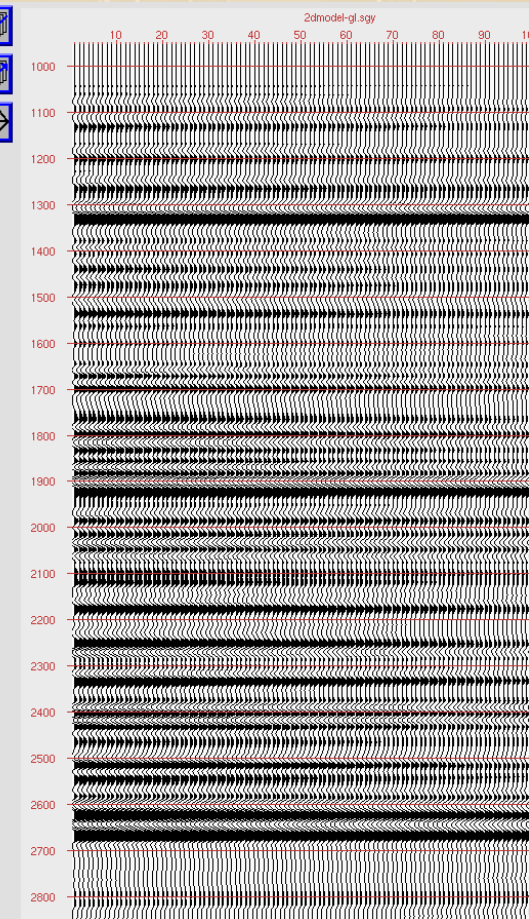
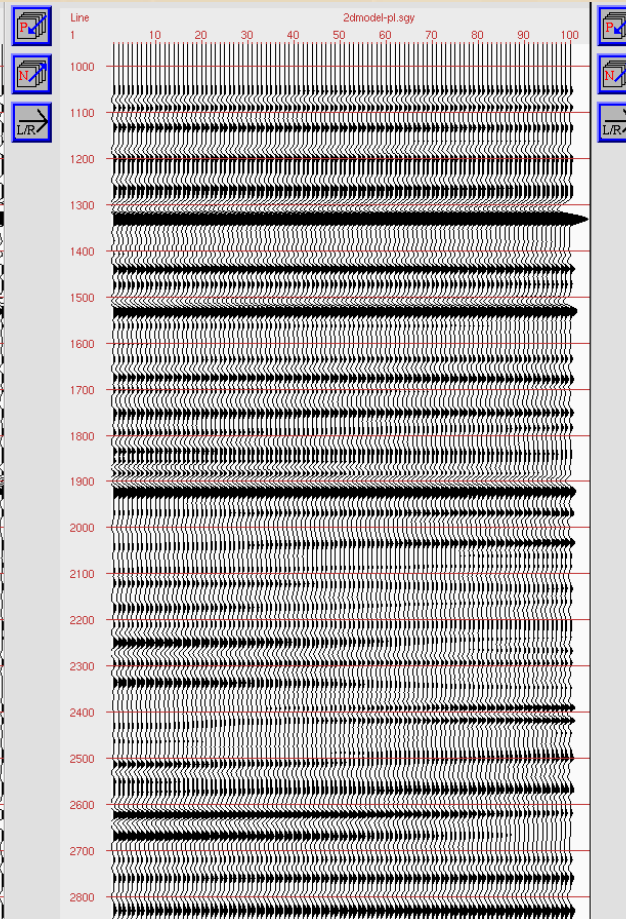
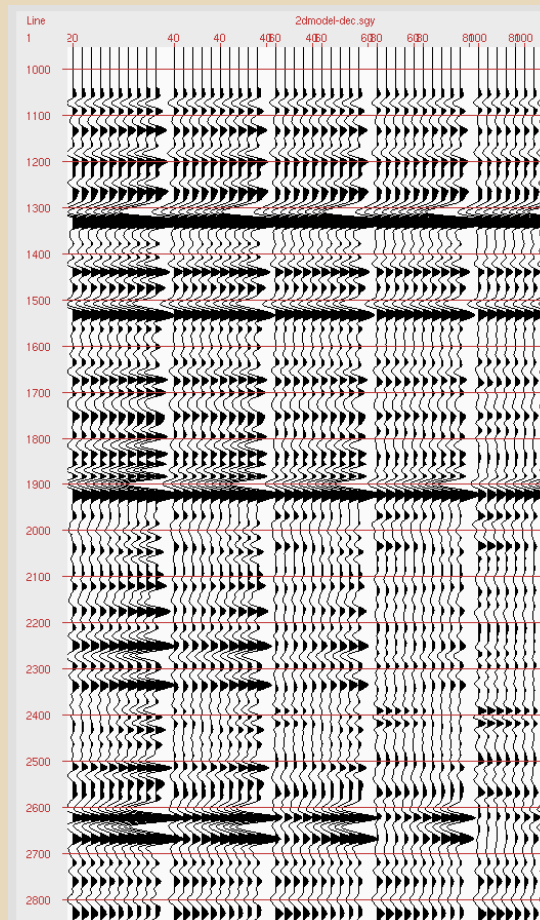


## Perfect Model

Every 20<sup>th</sup> gather

P Stack

G Stack





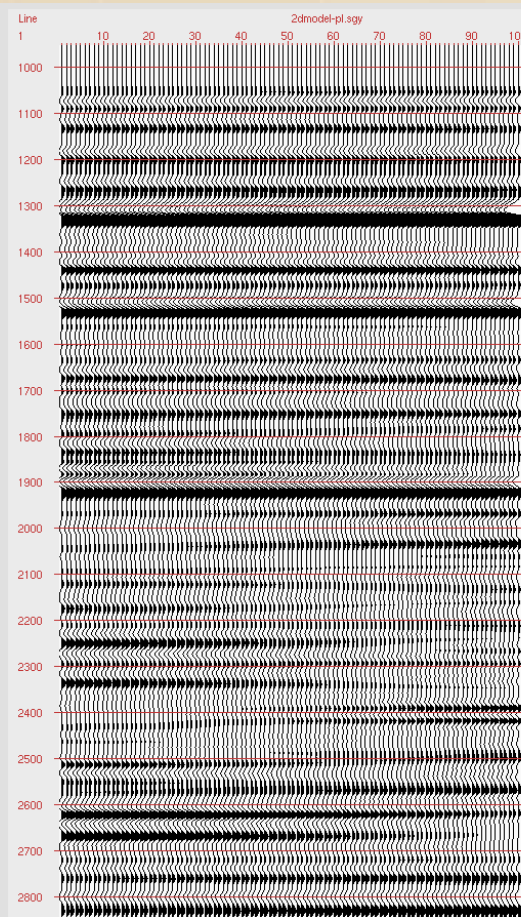


Every 20<sup>th</sup> gather

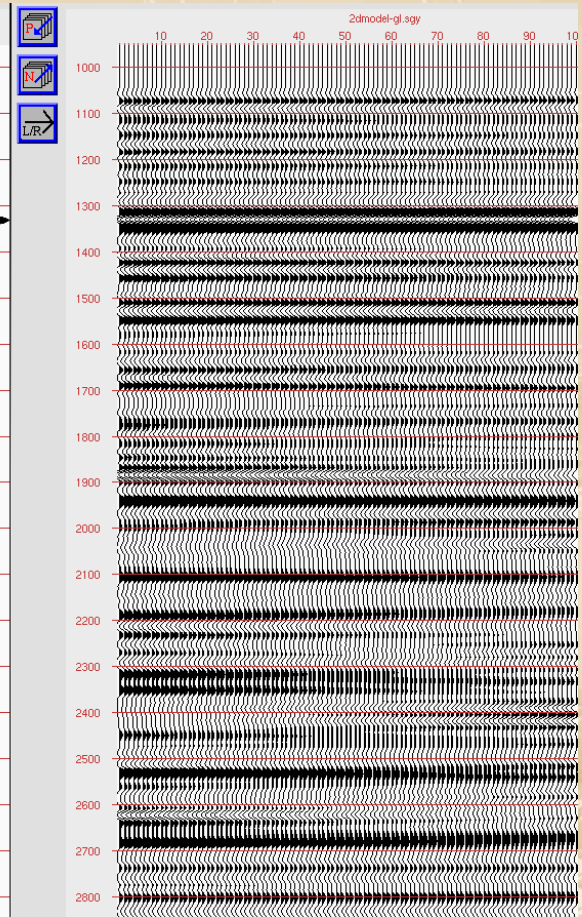


NMO Stretch

P Stack



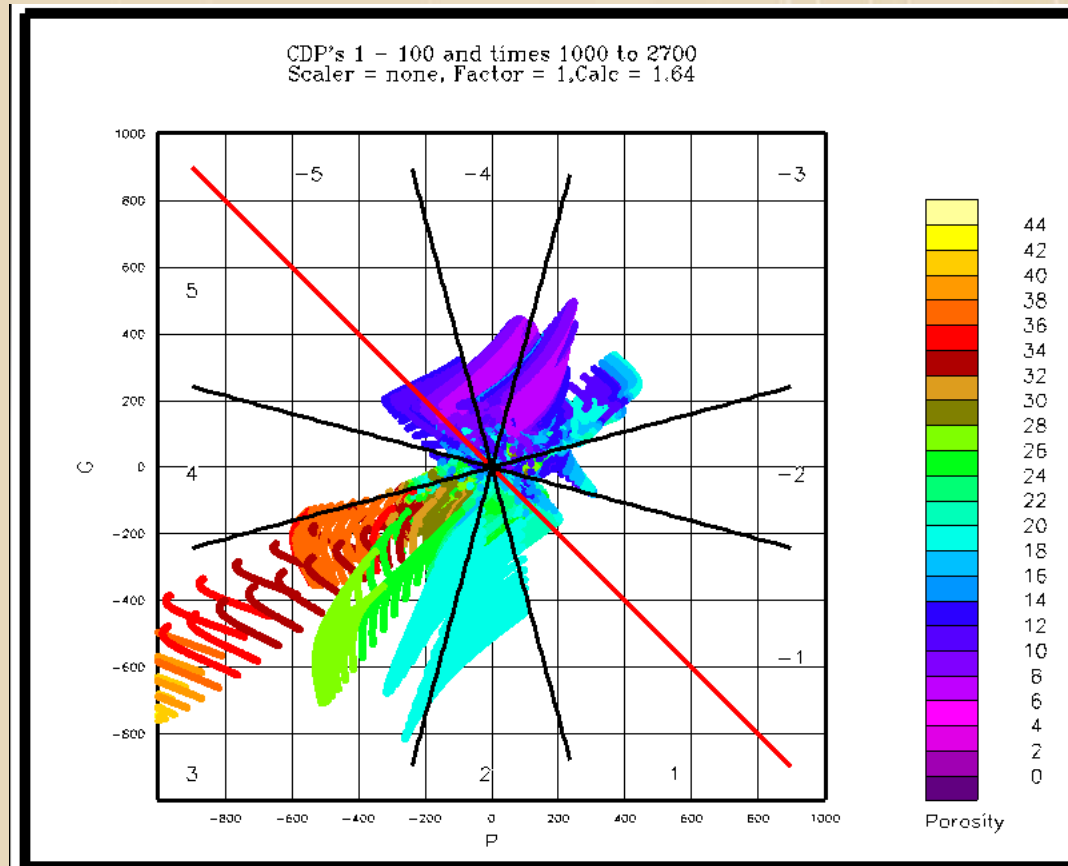
G Stack





## Perfect Model

Cross Plot of P vs G  
Color is Porosity



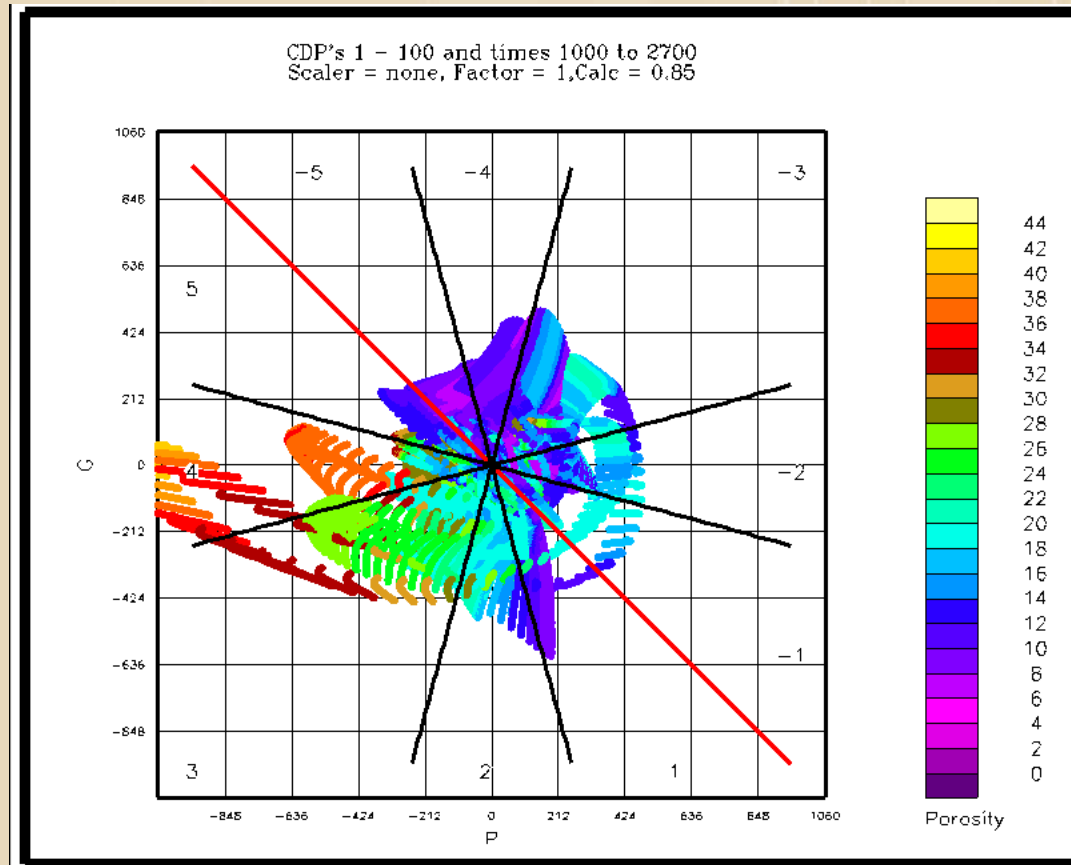
Inverted Space





## NMO Stretch

Cross Plot of P vs G  
Color is Porosity

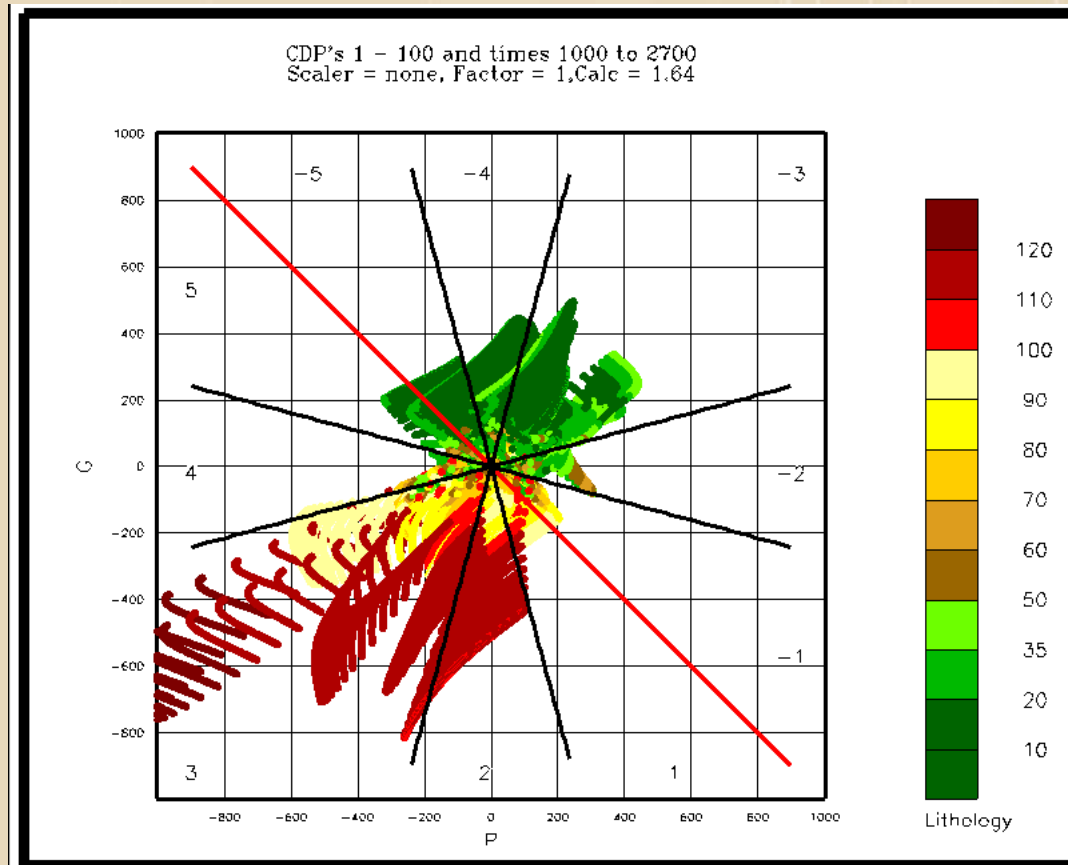


Inverted Space



## Perfect Model

Cross Plot of P vs G  
Color is Lithology  
Shale is Green  
Sand is Yellow  
Oil is Red

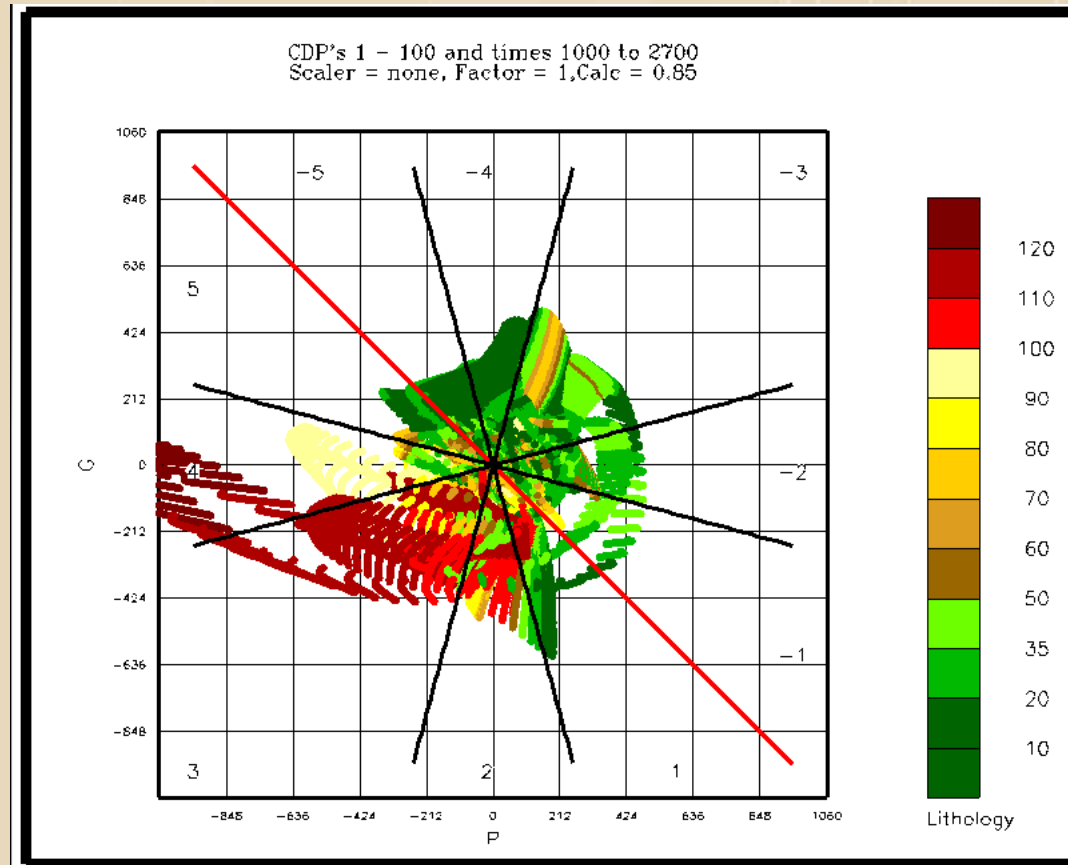


## Inverted Space



## NMO Stretch

Cross Plot of P vs G  
Color is Lithology  
Shale is Green  
Sand is Yellow  
Oil is Red



Inverted Space

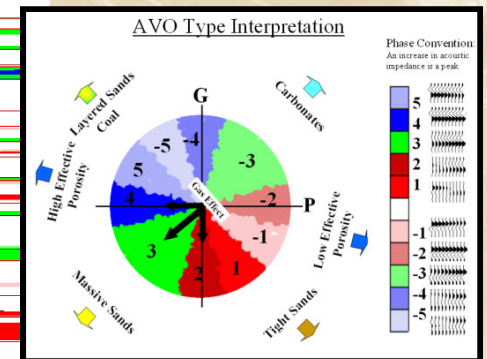
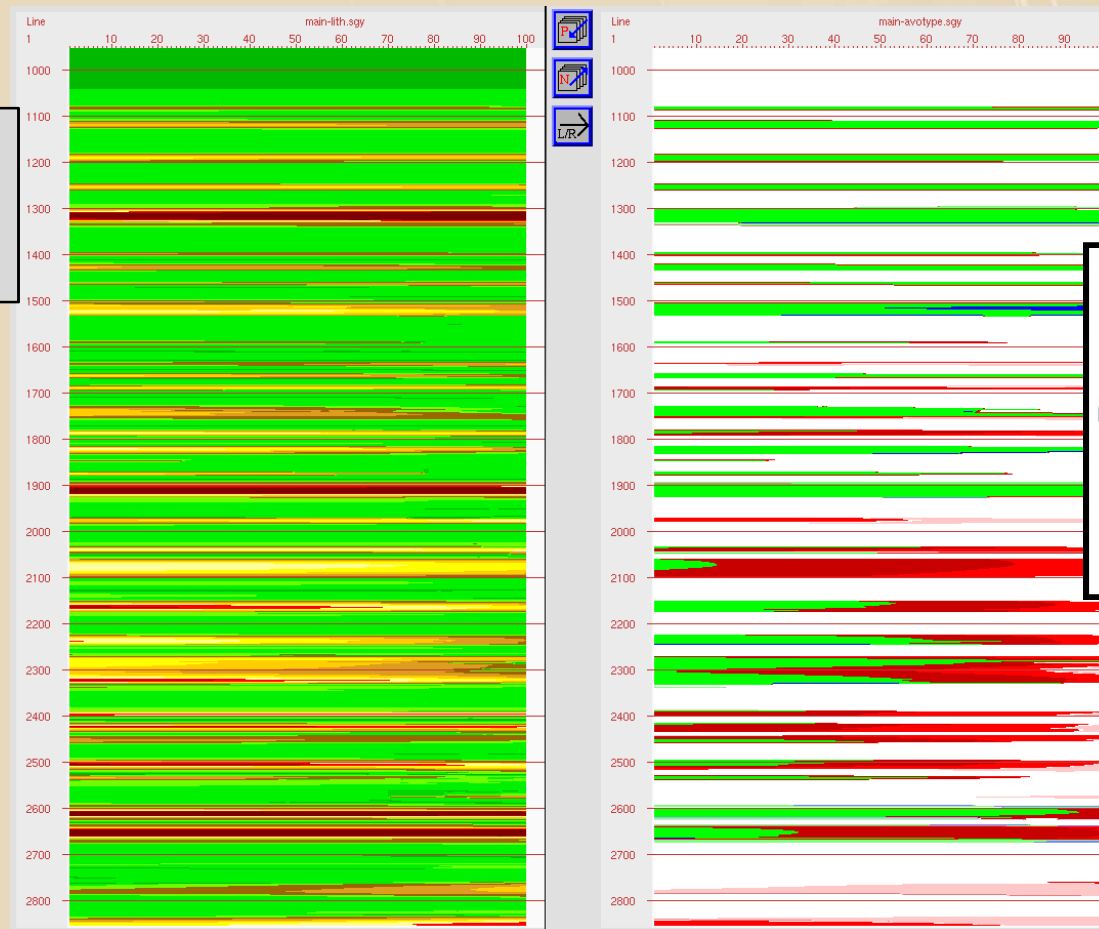


## Perfect Model

### Lithology

### AVO Type

Shale is Green  
Sand is Yellow  
Oil is Red





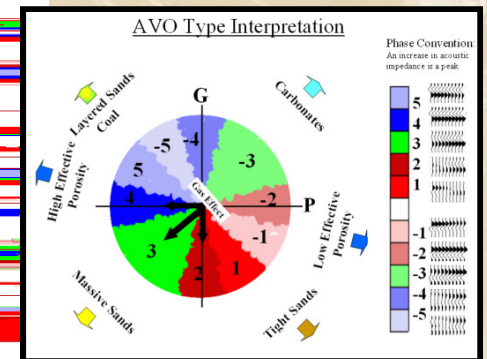
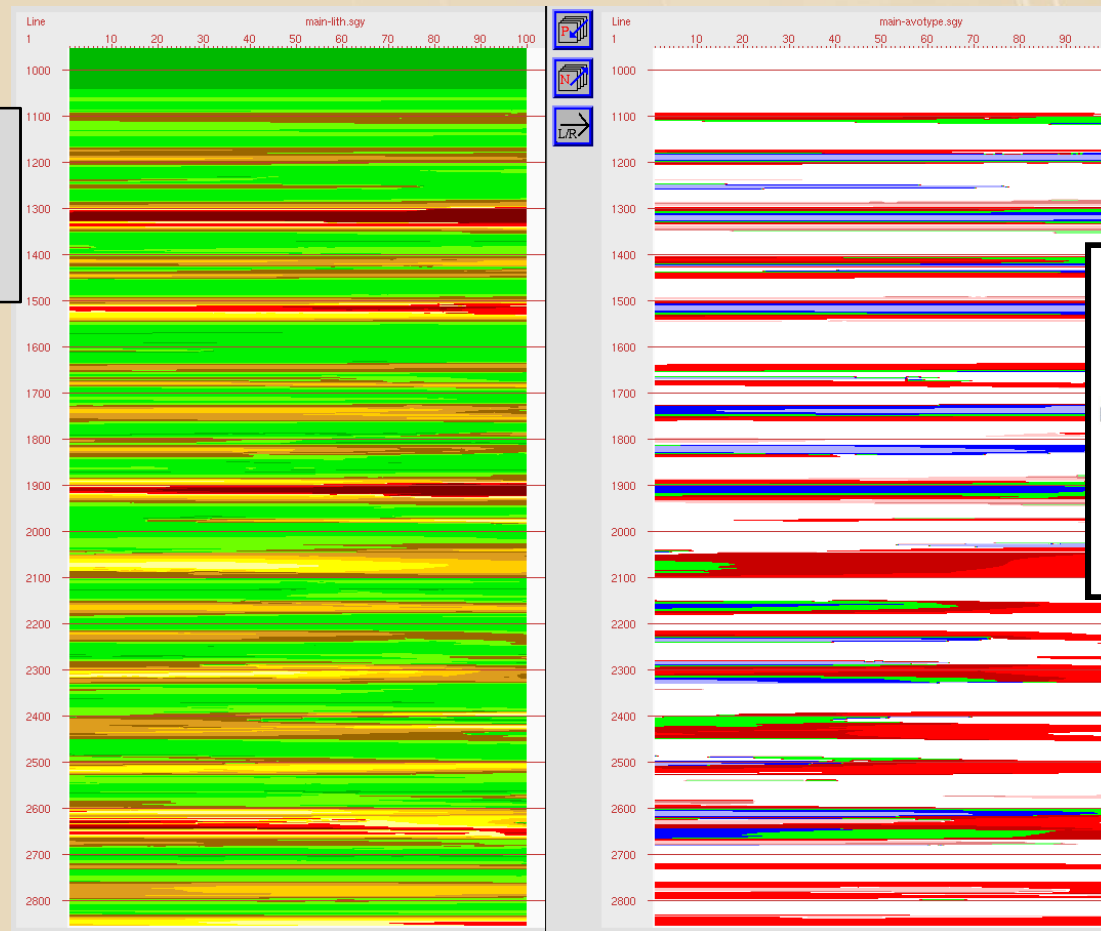


## NMO Stretch

### Lithology

### AVO Type

Shale is Green  
Sand is Yellow  
Oil is Red

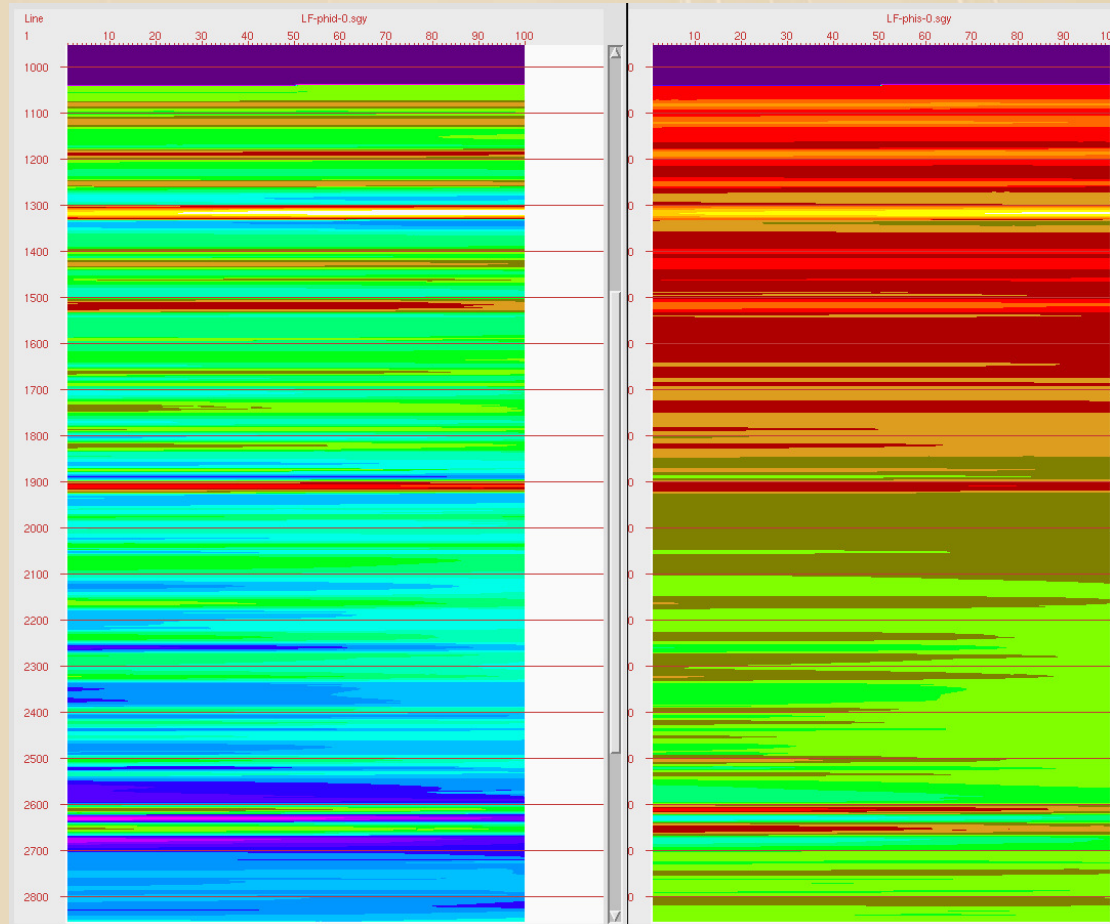
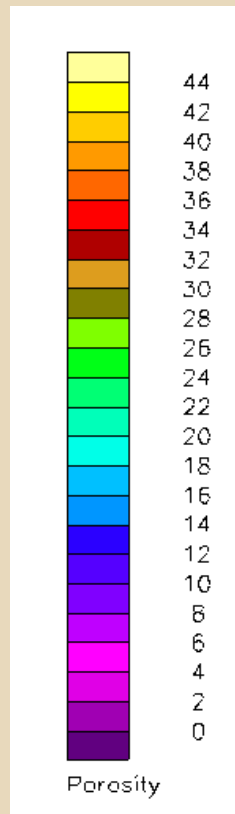




## Perfect Model

### Density Porosity

### Velocity Porosity

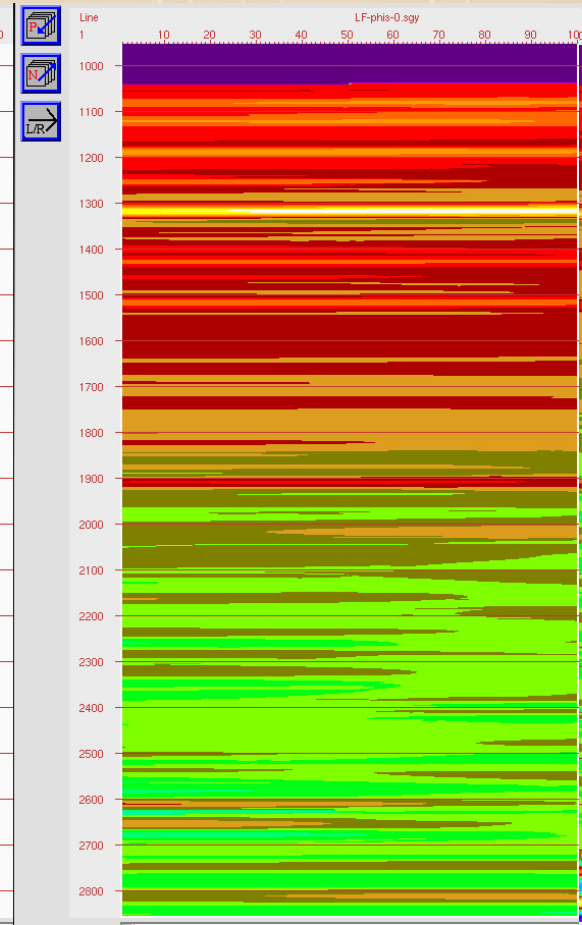
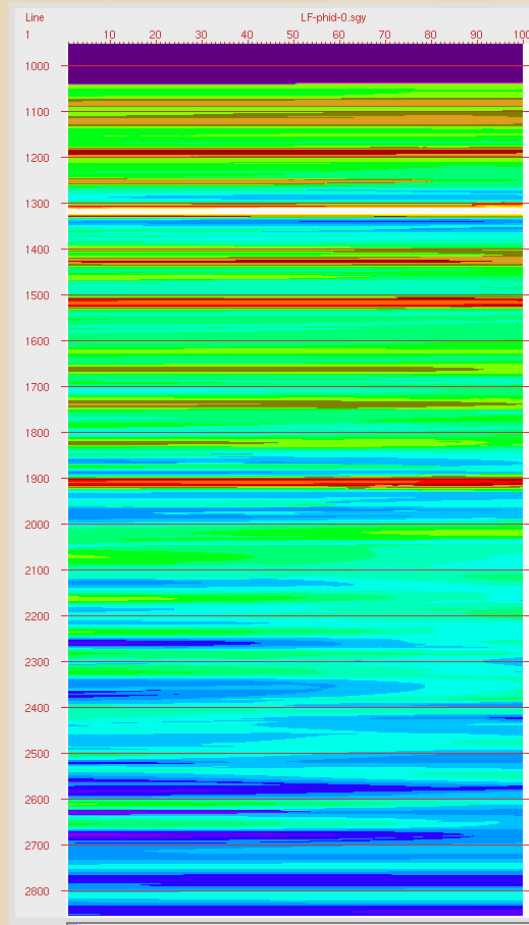
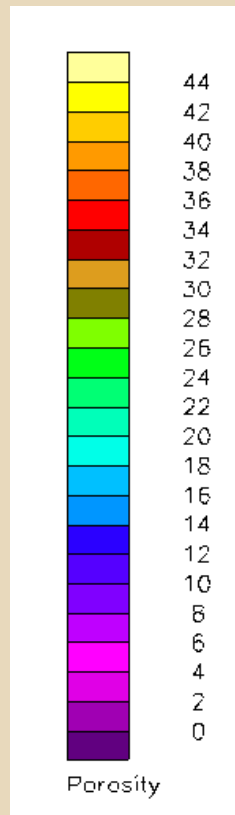




NMO Stretch

Density Porosity

Velocity Porosity





# Trim Statics



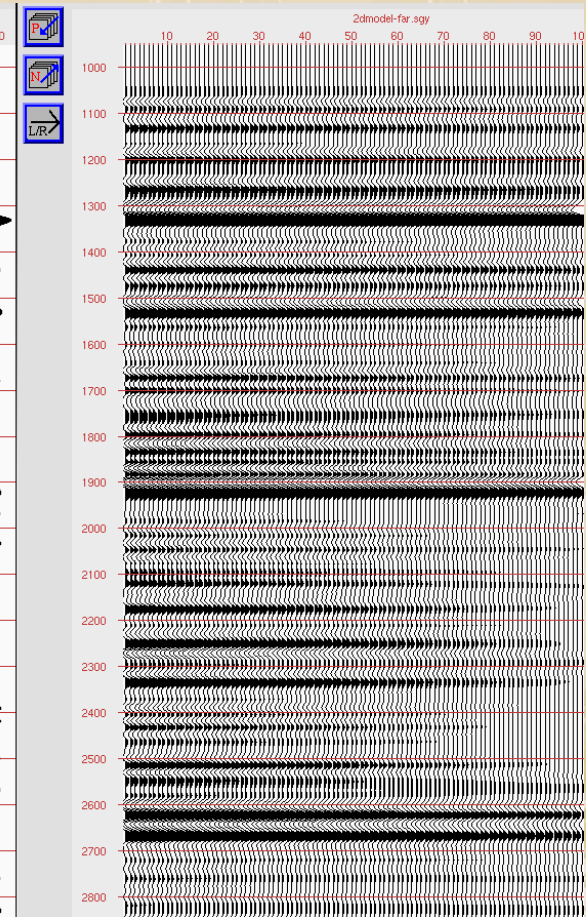
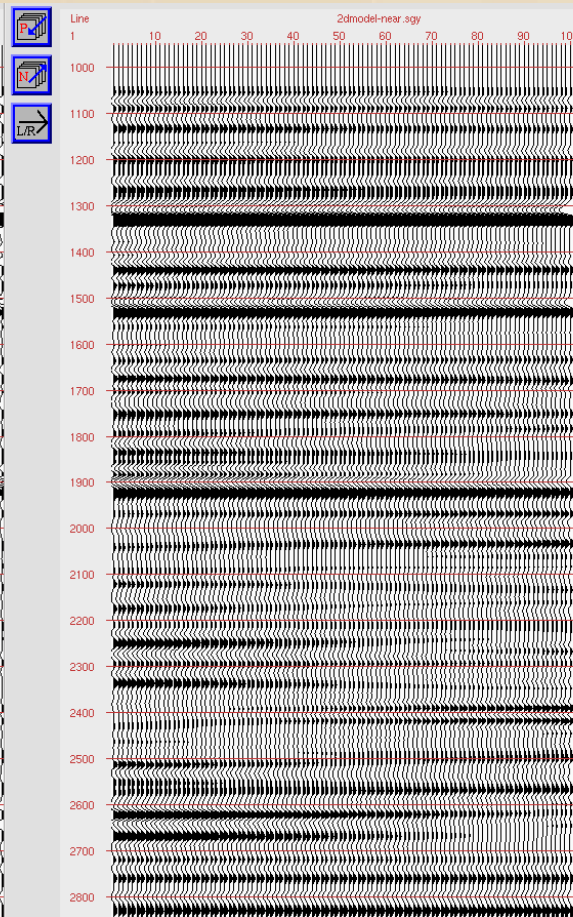
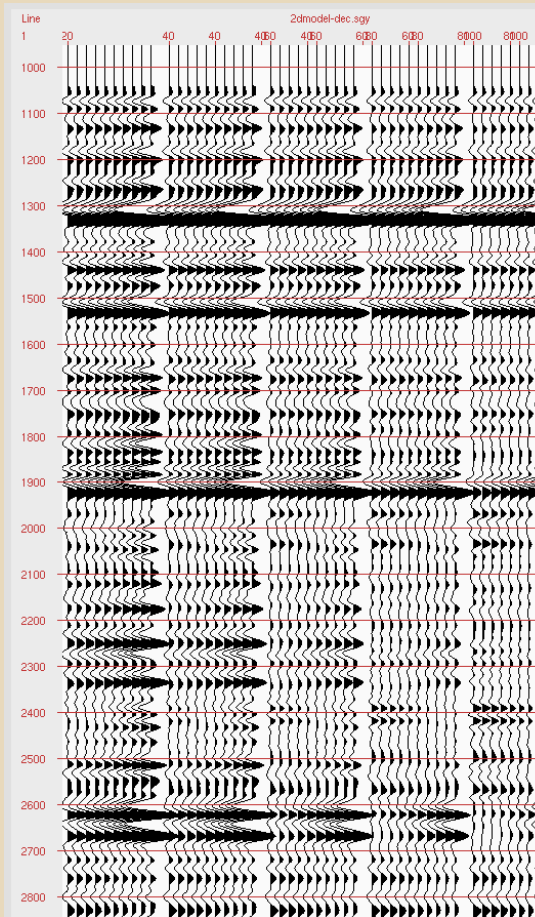


## Perfect Model

Every 20<sup>th</sup> gather

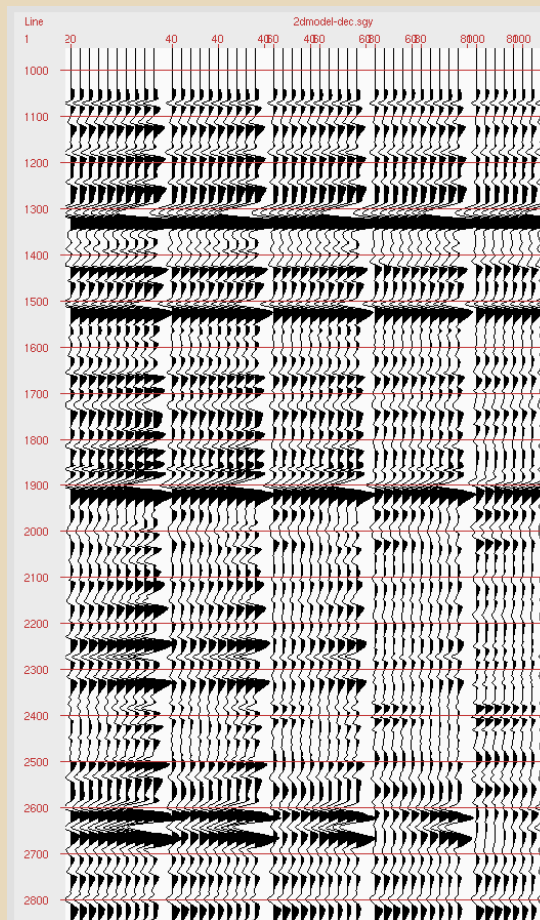
Near Stack

Far Stack



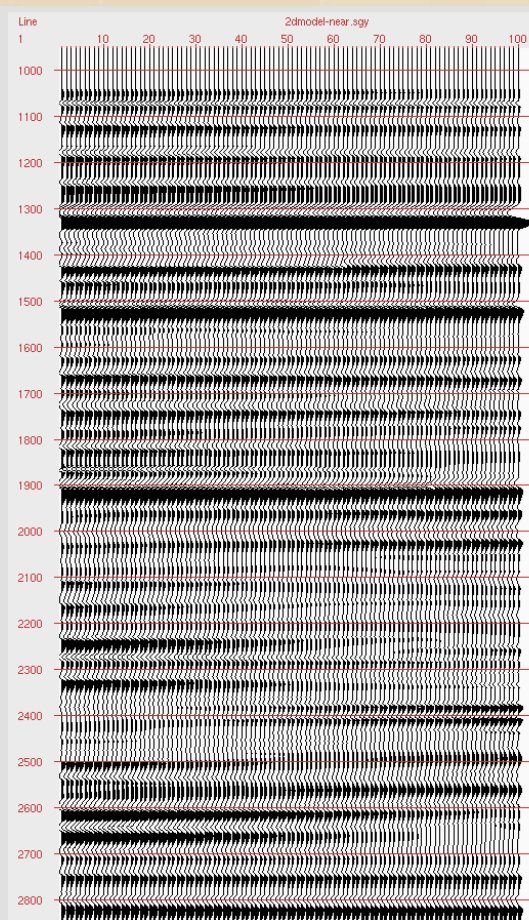


Every 20<sup>th</sup> gather

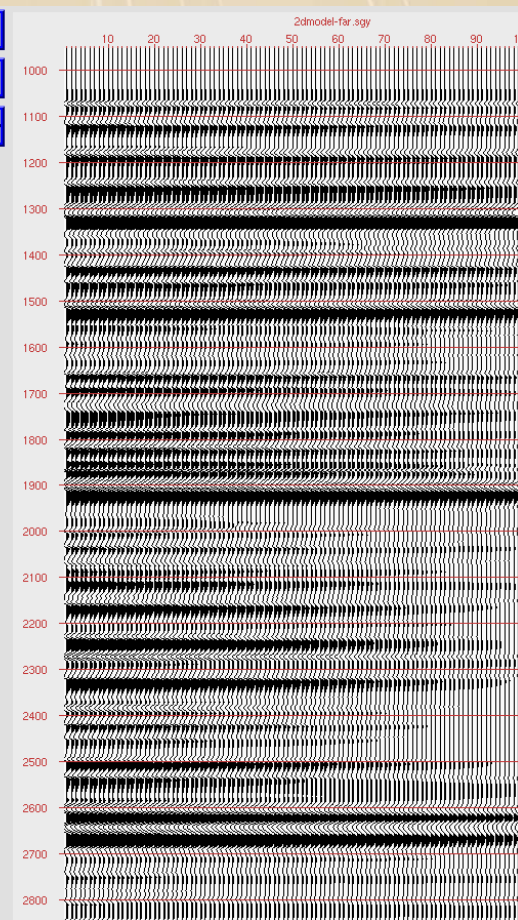


Trim Statics

Near Stack



Far Stack





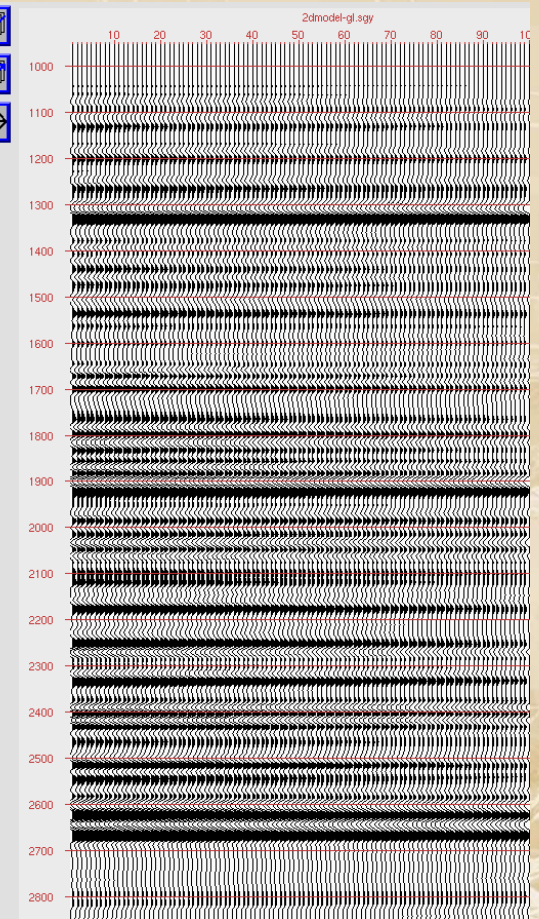
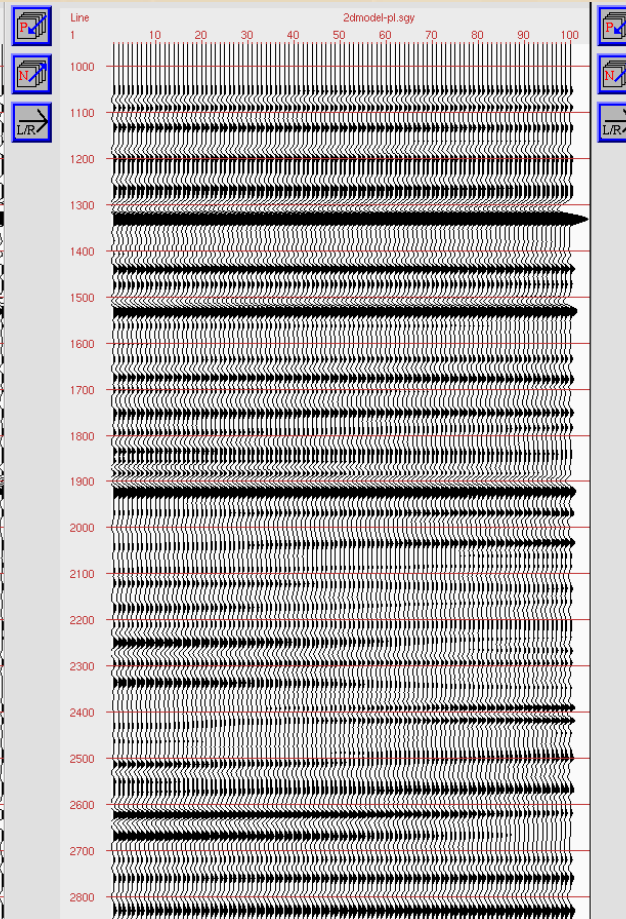
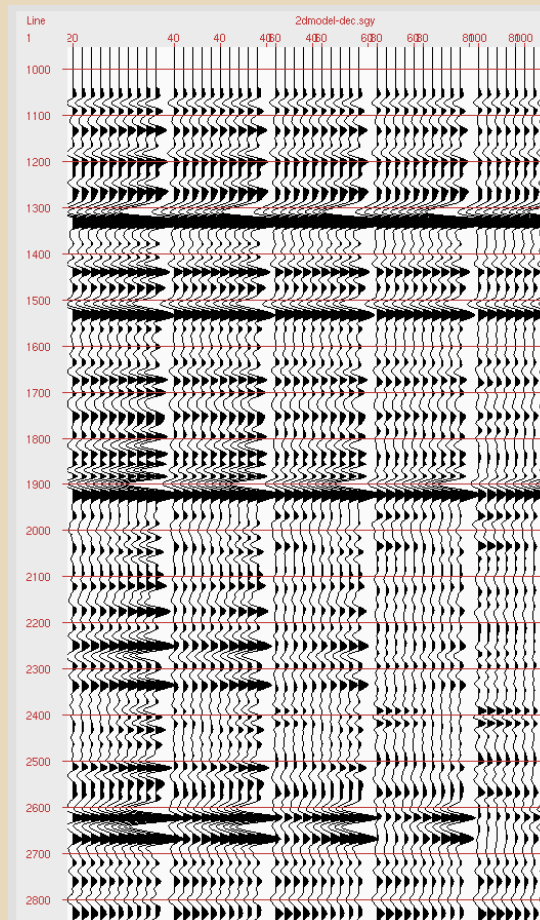


## Perfect Model

Every 20<sup>th</sup> gather

P Stack

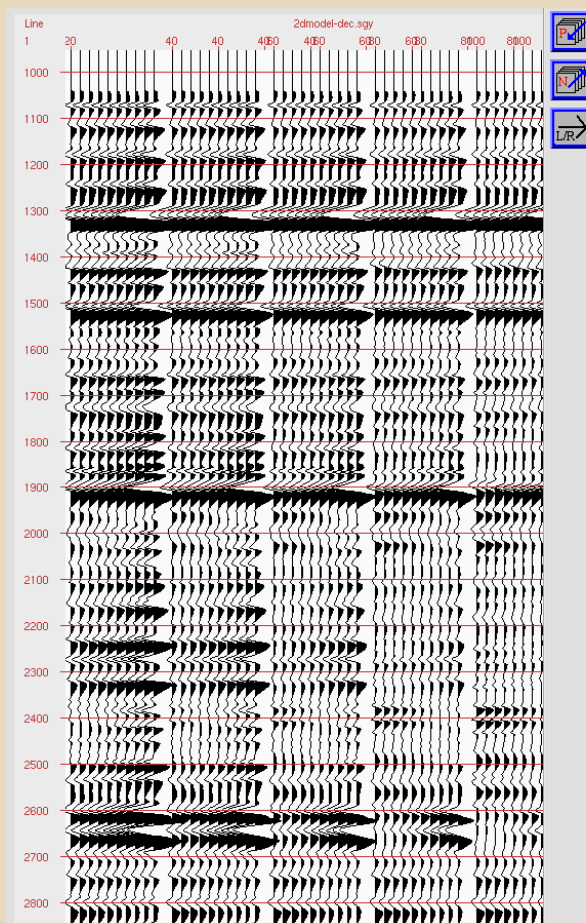
G Stack



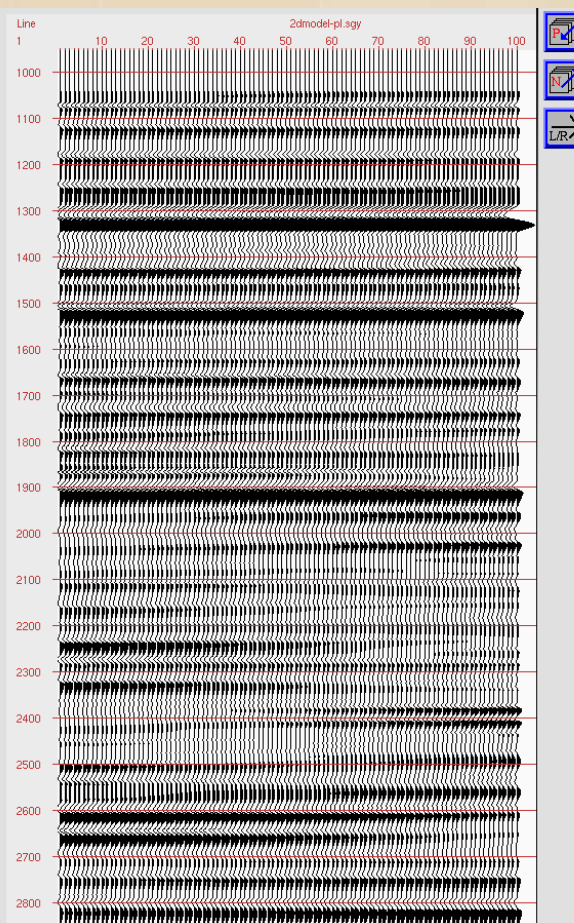


## Trim Statics

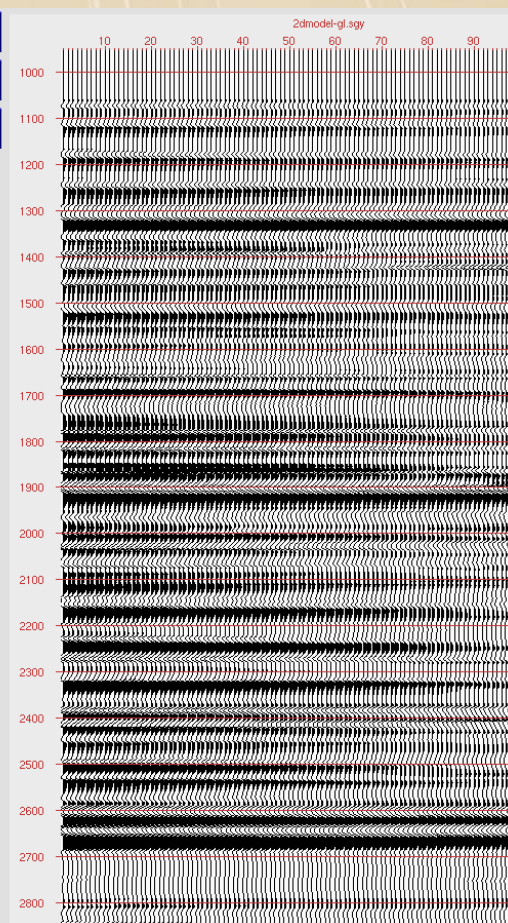
Every 20<sup>th</sup> gather



P Stack



G Stack

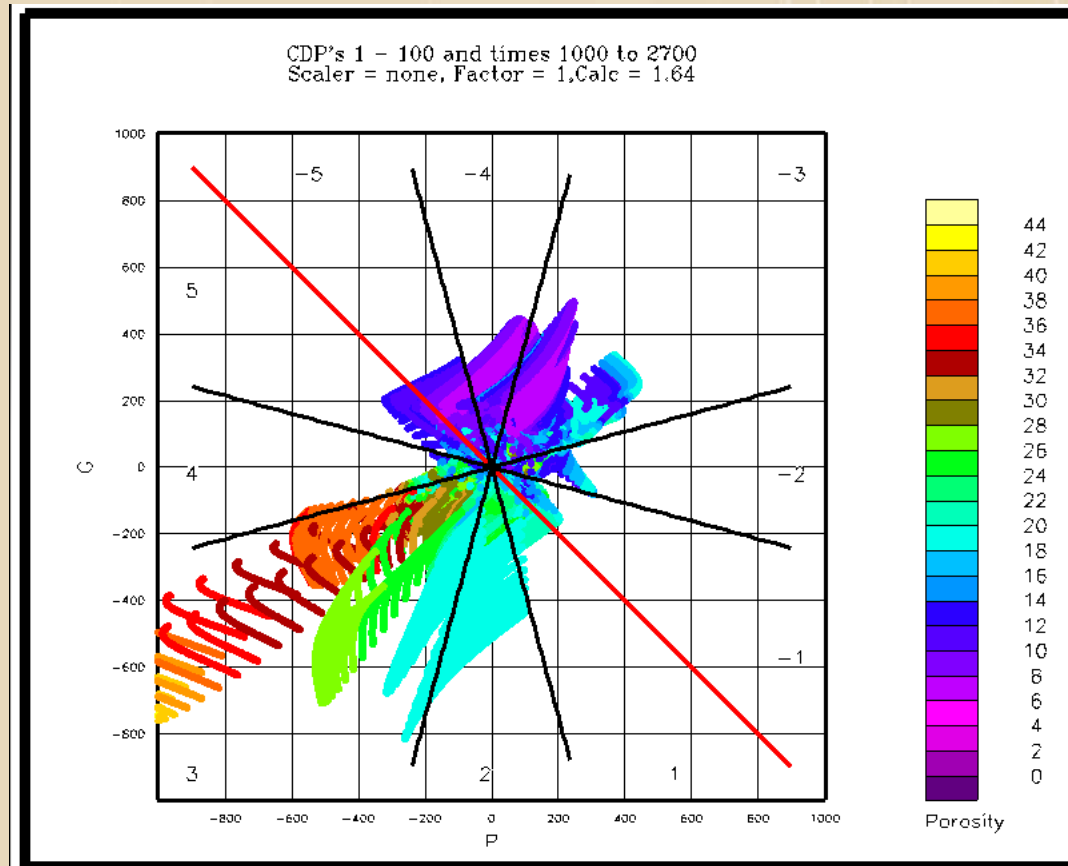






## Perfect Model

Cross Plot of P vs G  
Color is Porosity

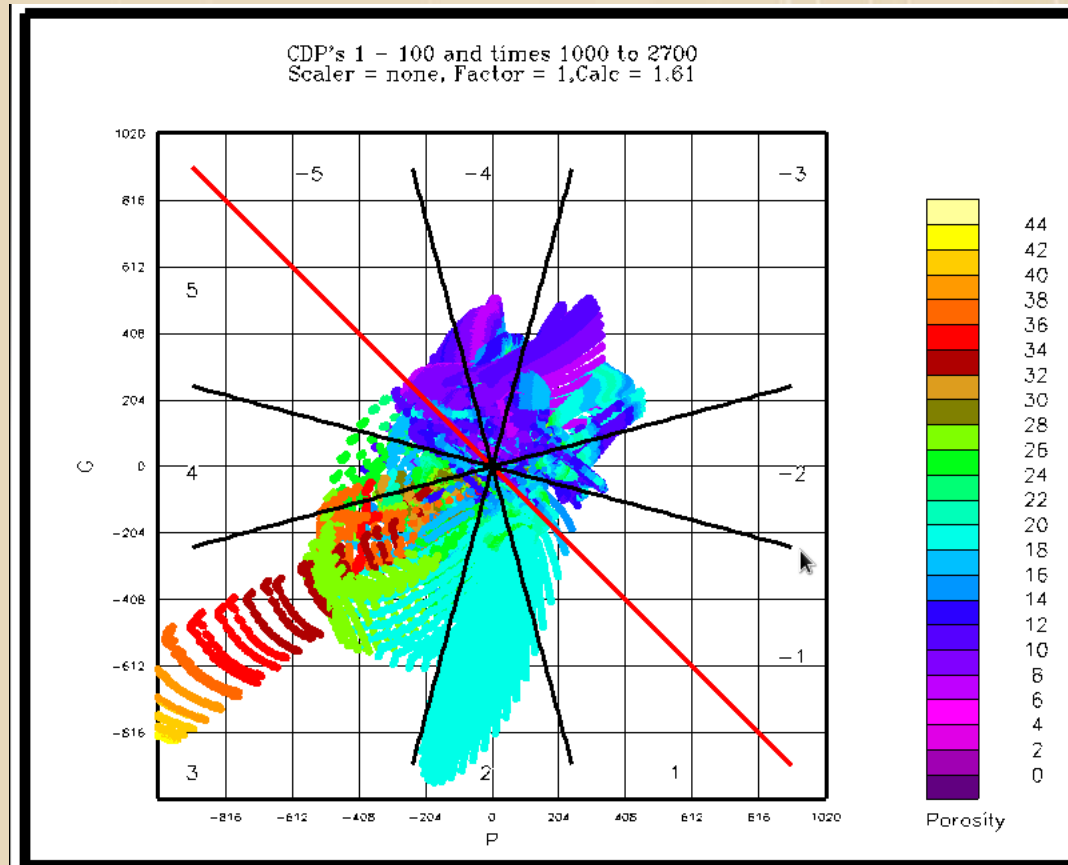


Inverted Space



## Trim Statics

Cross Plot of P vs G  
Color is Porosity

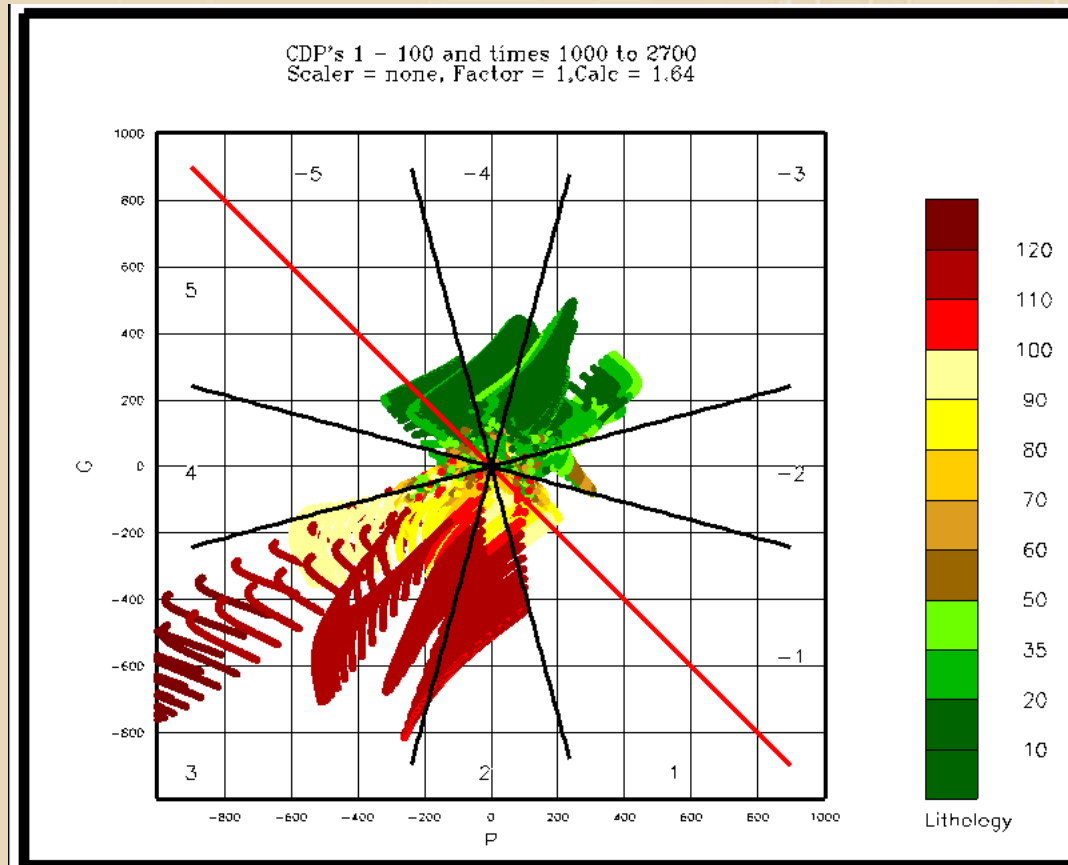


Inverted Space



## Perfect Model

Cross Plot of P vs G  
Color is Lithology  
Shale is Green  
Sand is Yellow  
Oil is Red

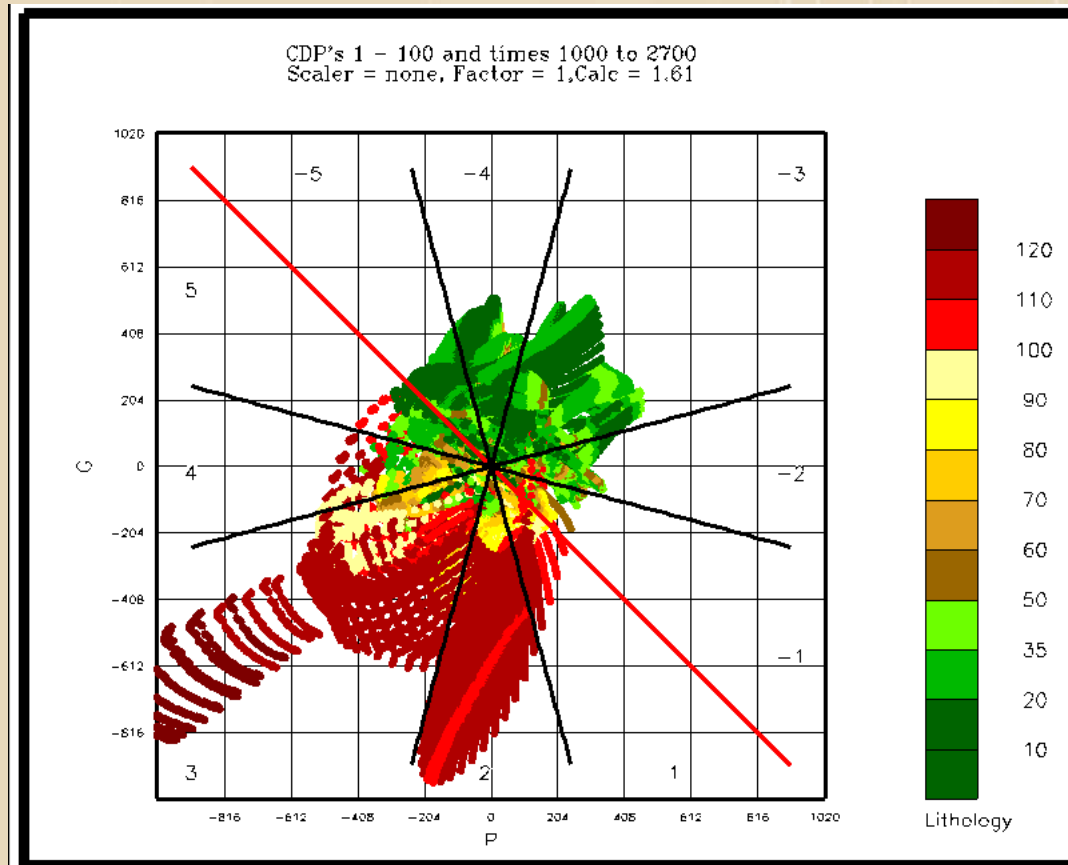


## Inverted Space



## Trim Statics

Cross Plot of P vs G  
Color is Lithology  
Shale is Green  
Sand is Yellow  
Oil is Red



Inverted Space





## AVO Type



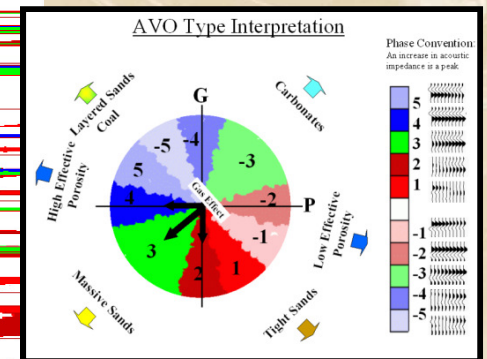
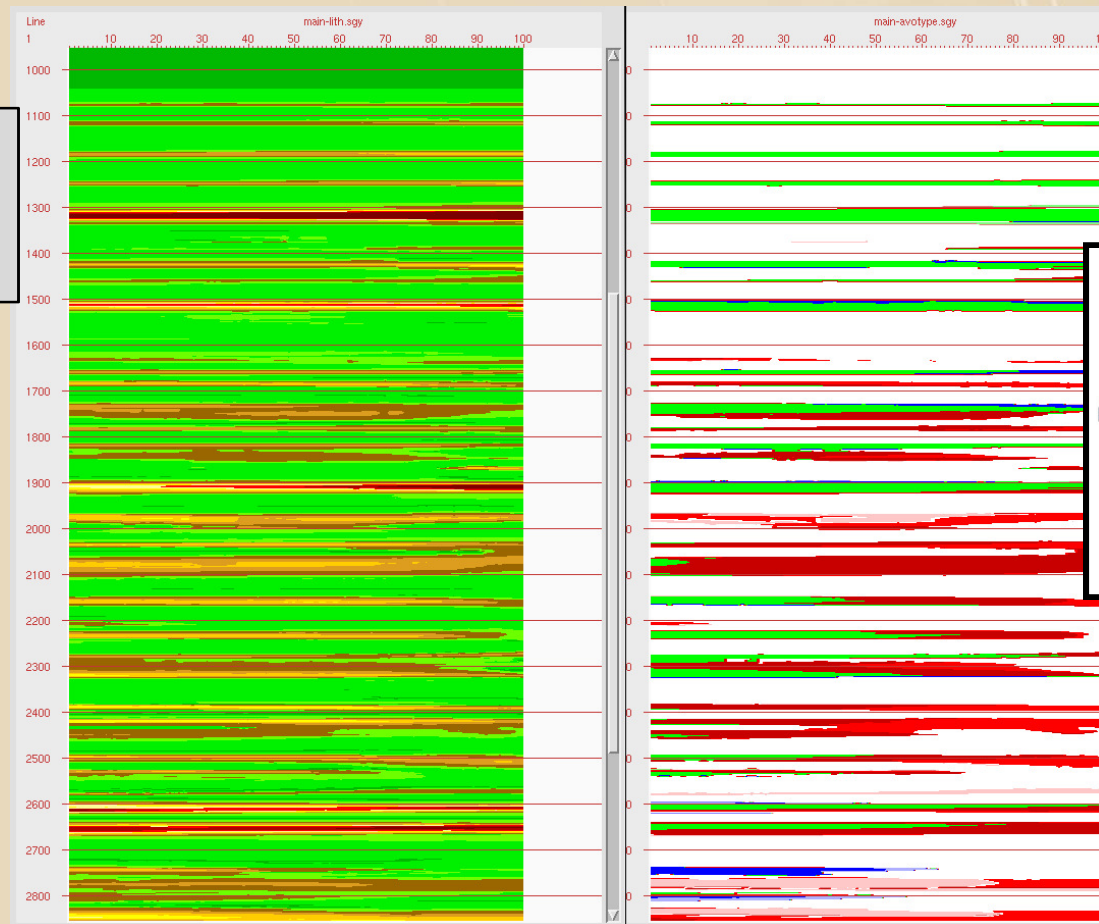


## Trim Statics

### Lithology

### AVO Type

Shale is Green  
Sand is Yellow  
Oil is Red

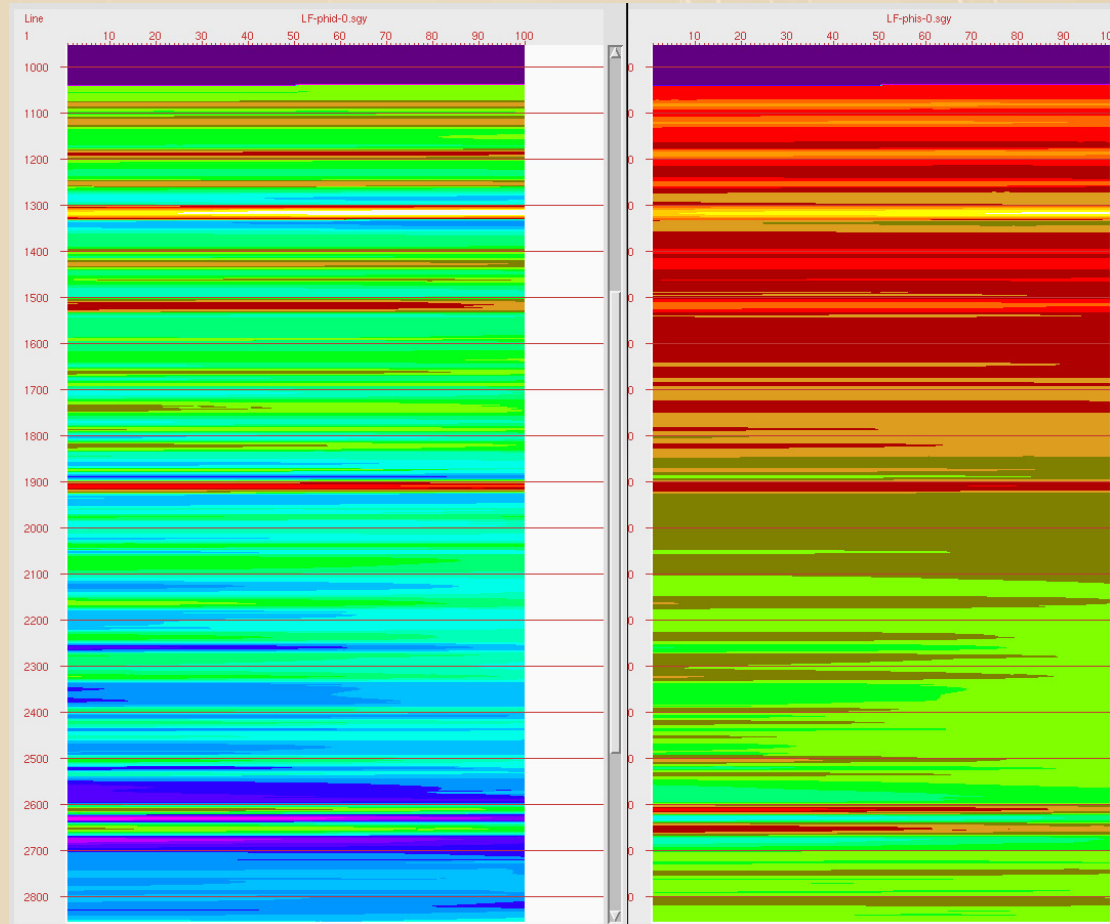
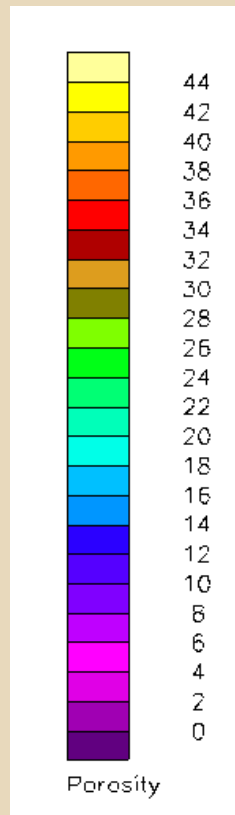




## Perfect Model

### Density Porosity

### Velocity Porosity

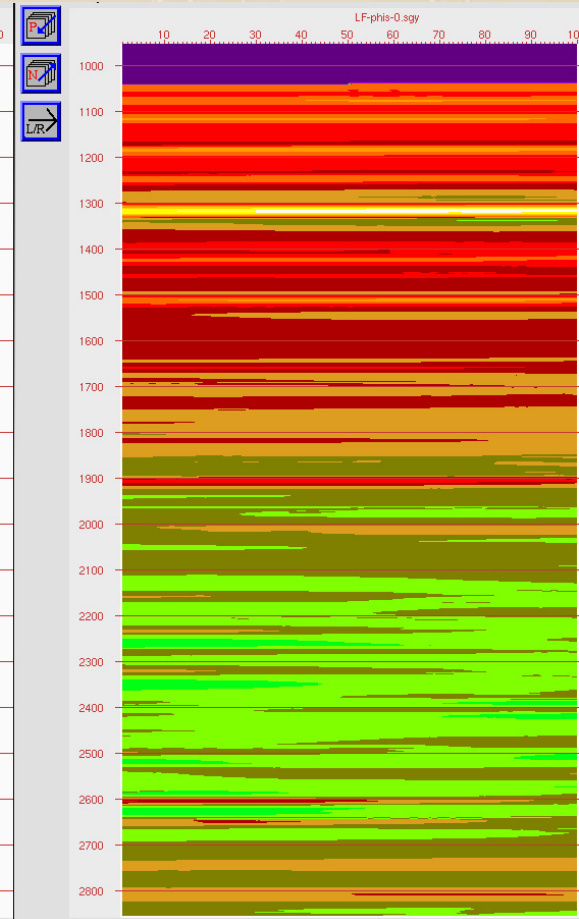
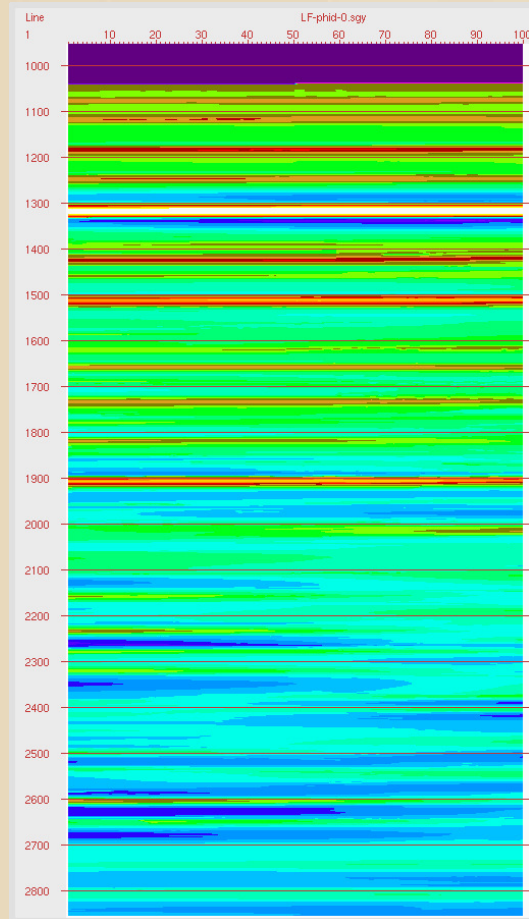
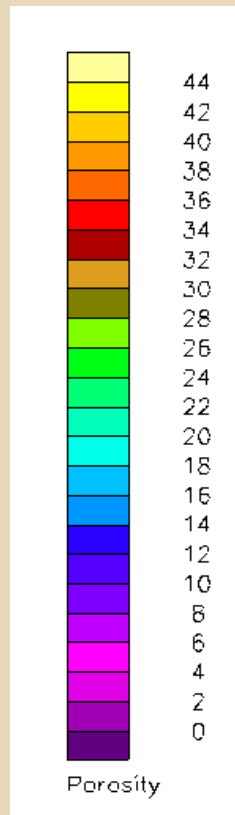




## Trim Statics

### Density Porosity

### Velocity Porosity







# Automatic High Resolution NMO

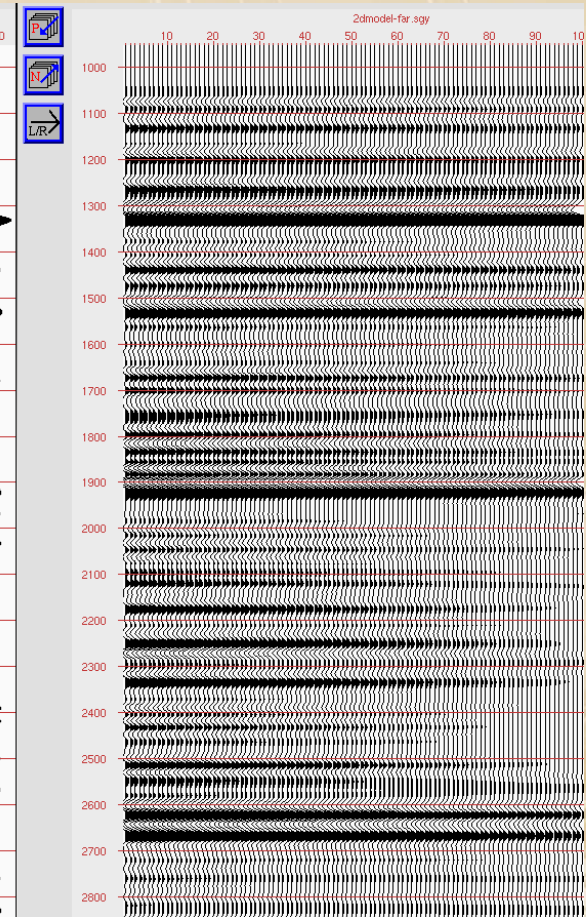
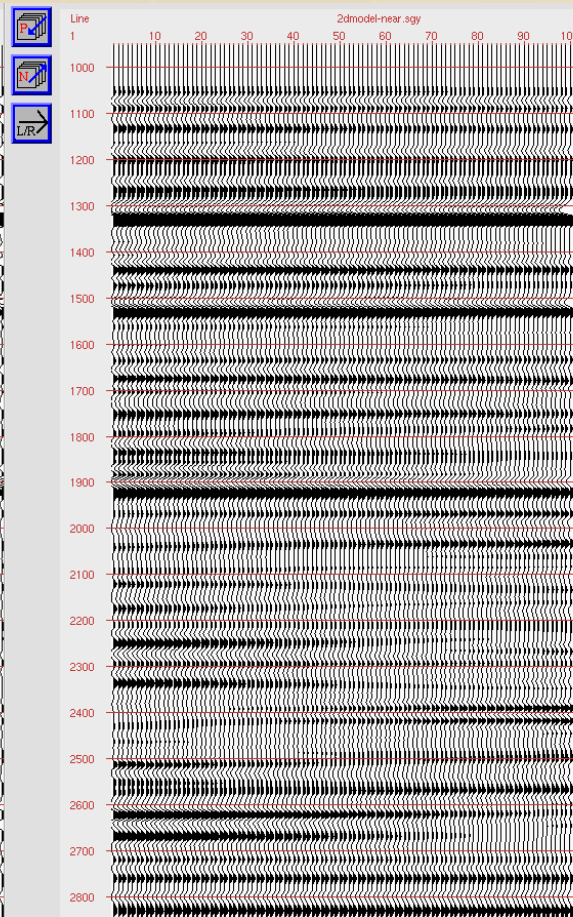
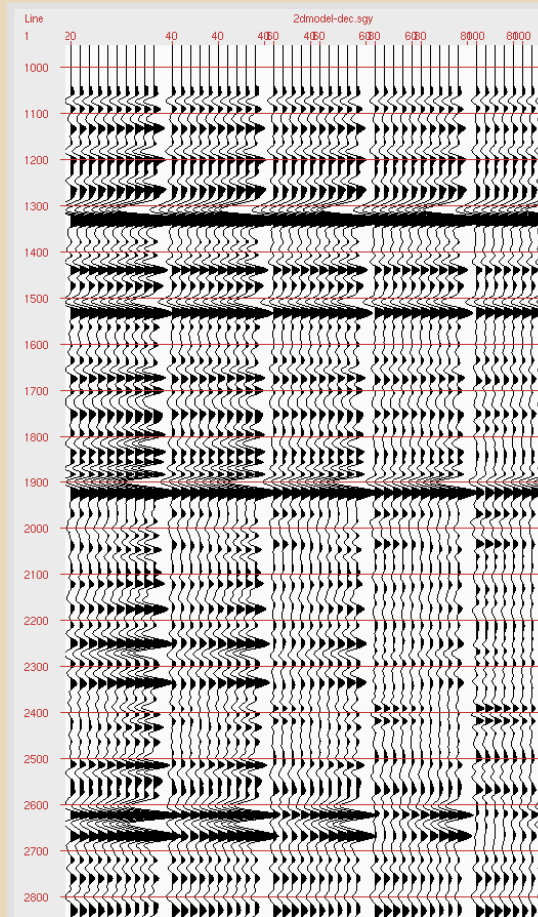


## Perfect Model

Every 20<sup>th</sup> gather

Near Stack

Far Stack



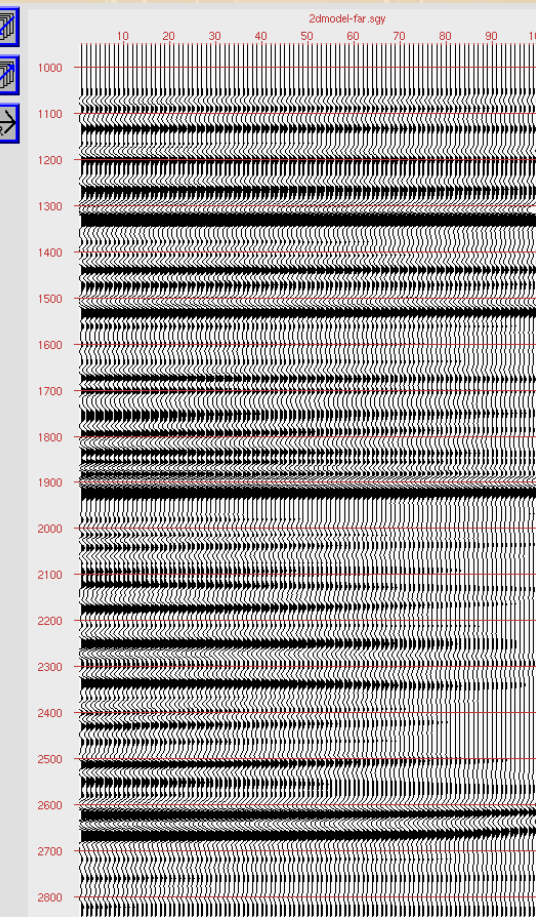
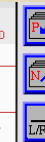
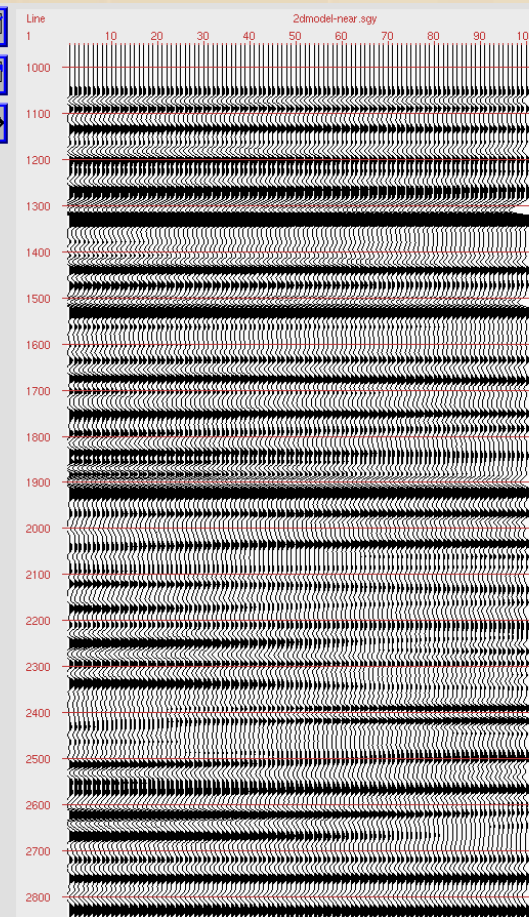
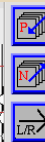
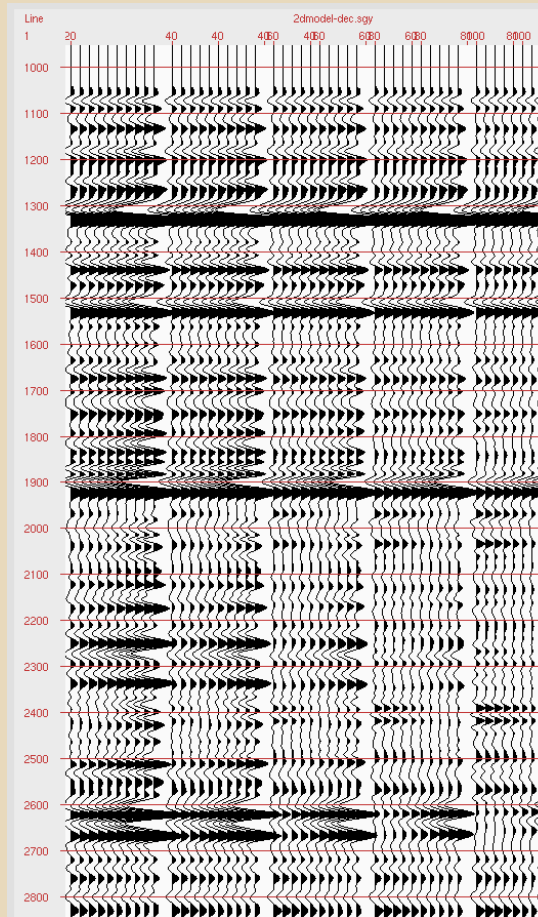


## High Resolution RNMO

Every 20<sup>th</sup> gather

Near Stack

Far Stack





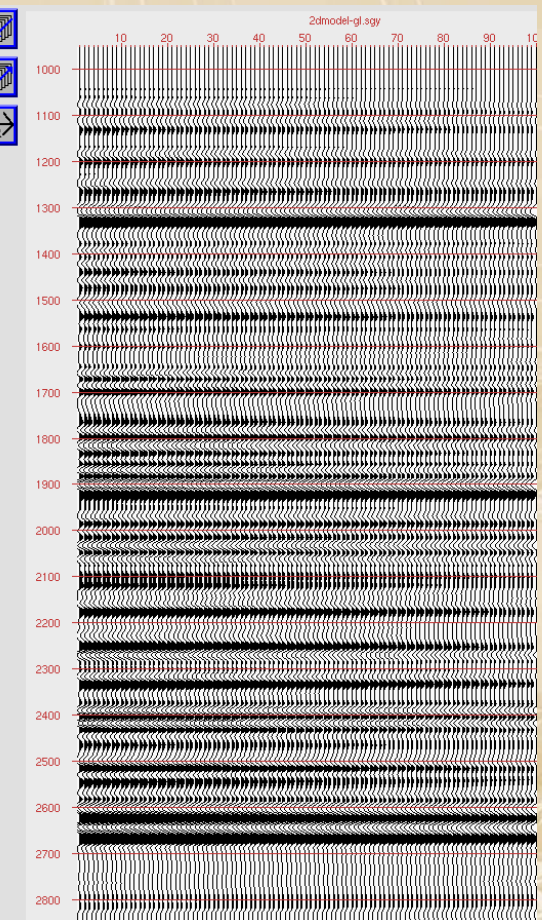
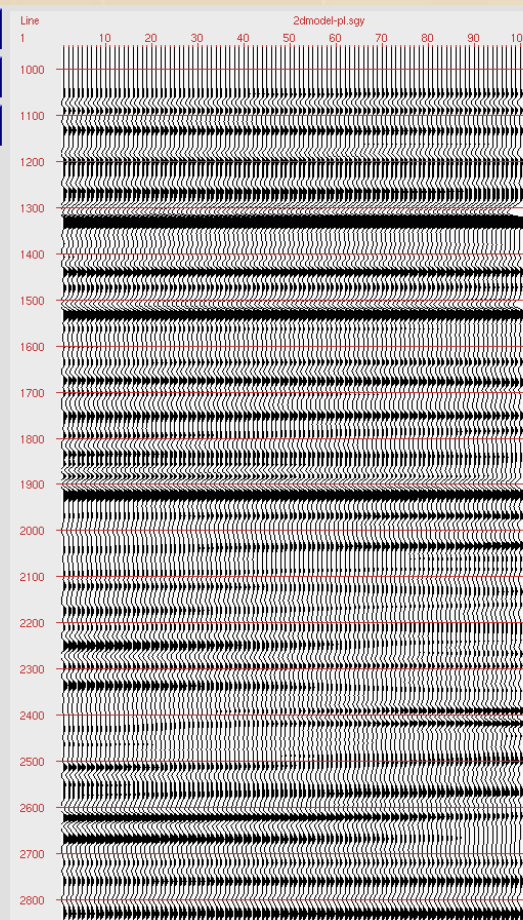
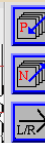
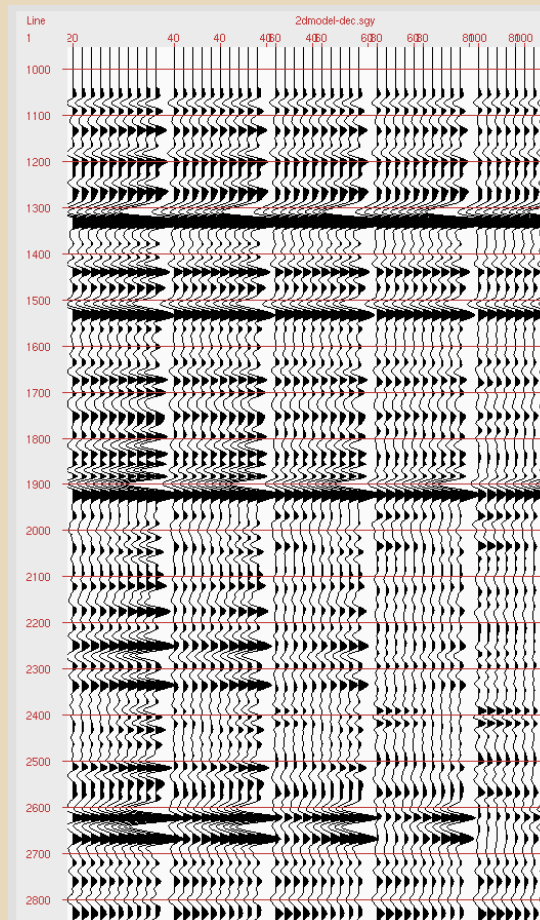


## Perfect Model

Every 20<sup>th</sup> gather

P Stack

G Stack





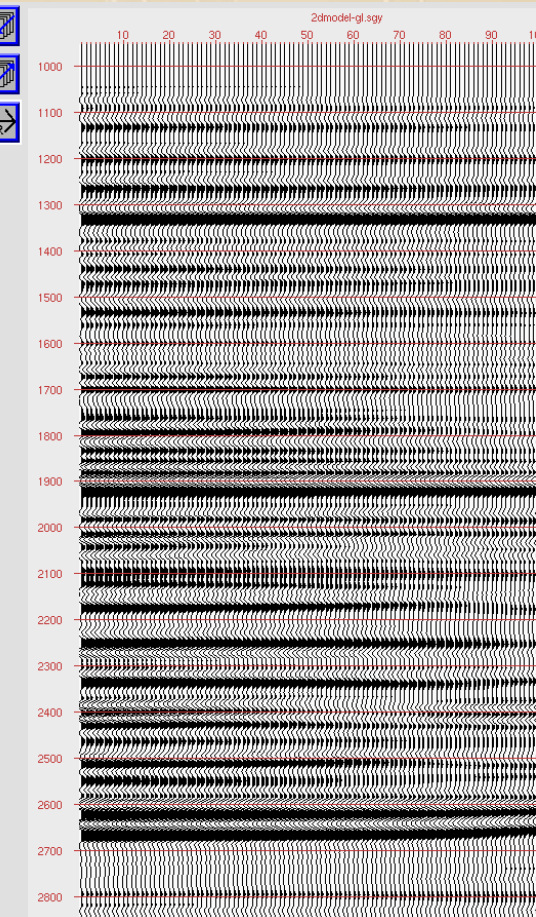
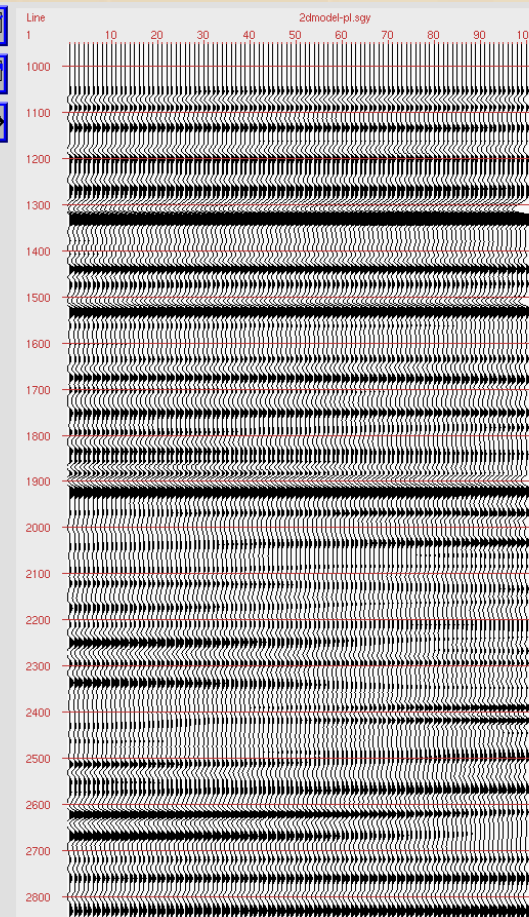
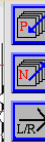
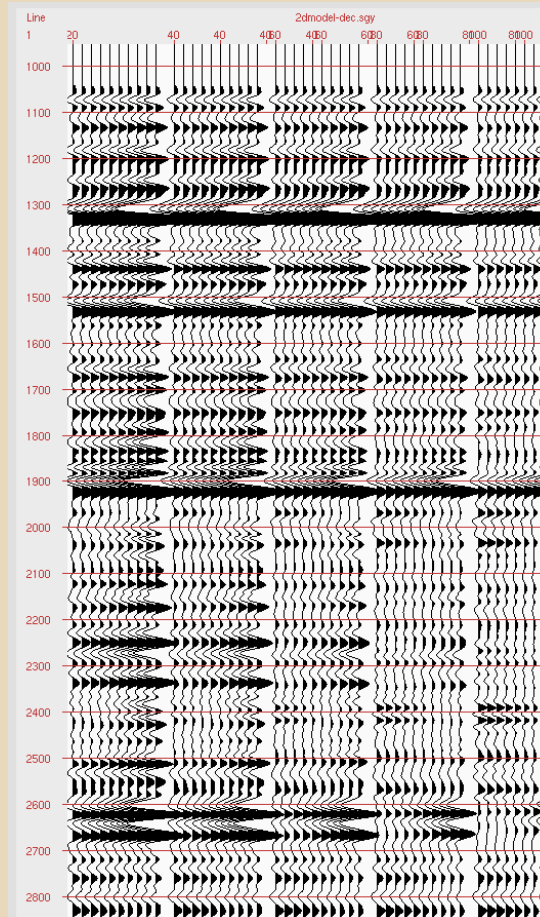


## High Resolution RNMO

Every 20<sup>th</sup> gather

P Stack

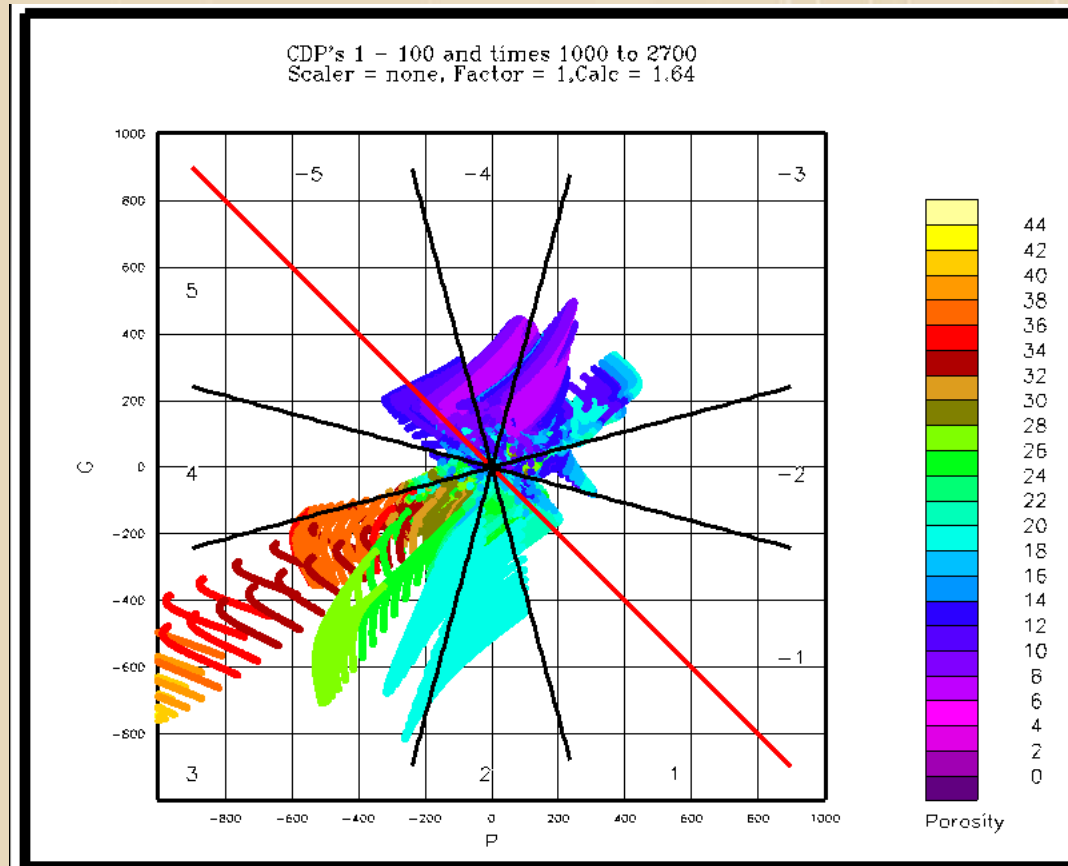
G Stack





## Perfect Model

Cross Plot of P vs G  
Color is Porosity

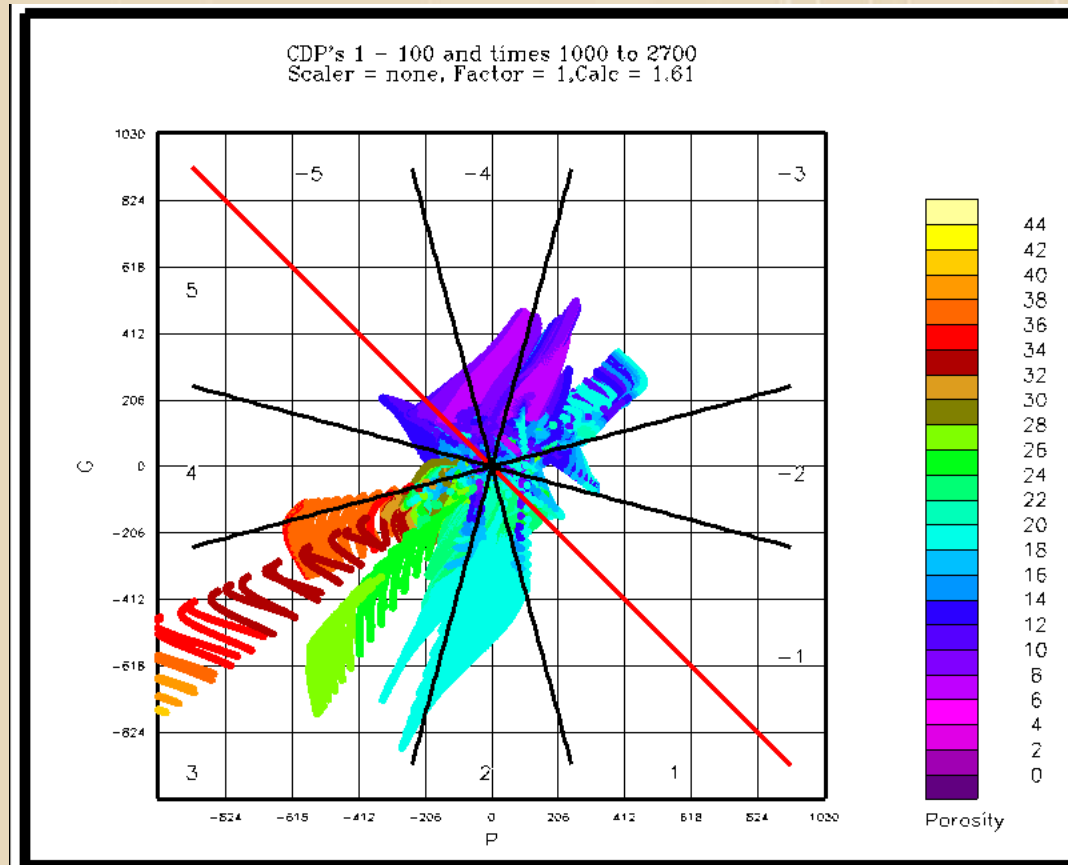


Inverted Space



## High Resolution RNMO

Cross Plot of P vs G  
Color is Porosity

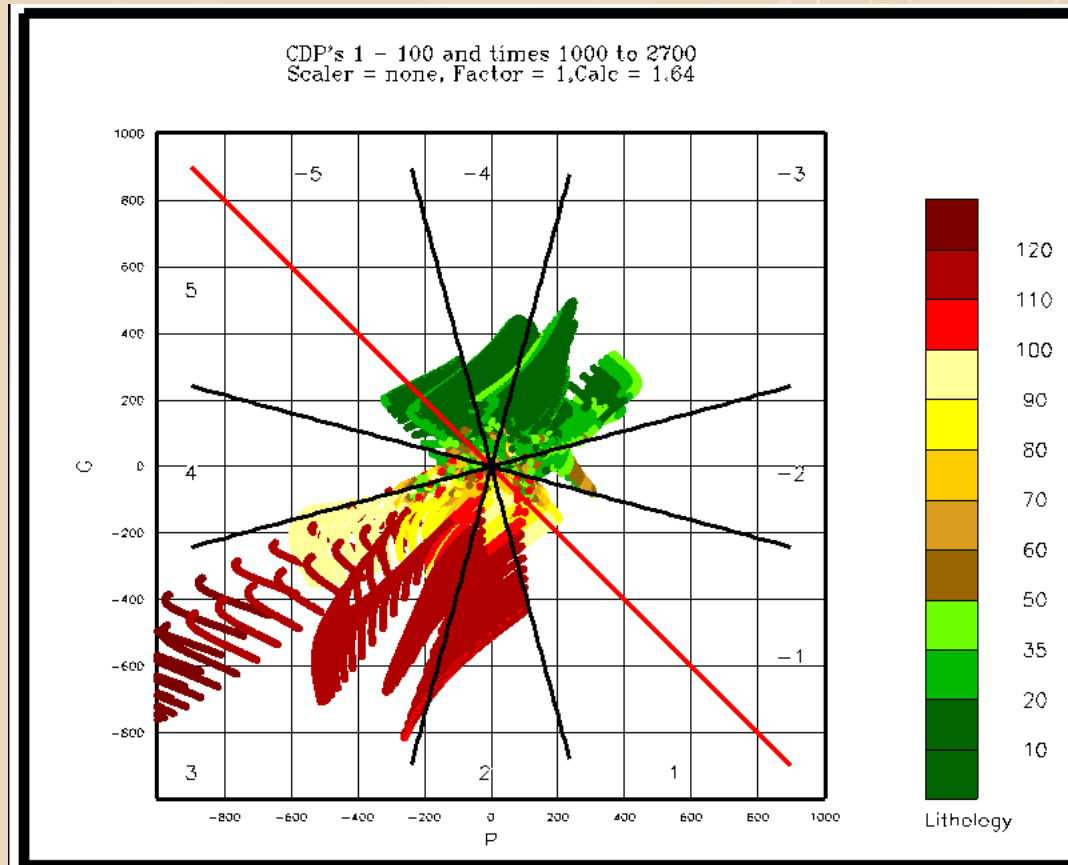


Inverted Space



## Perfect Model

Cross Plot of P vs G  
Color is Lithology  
Shale is Green  
Sand is Yellow  
Oil is Red



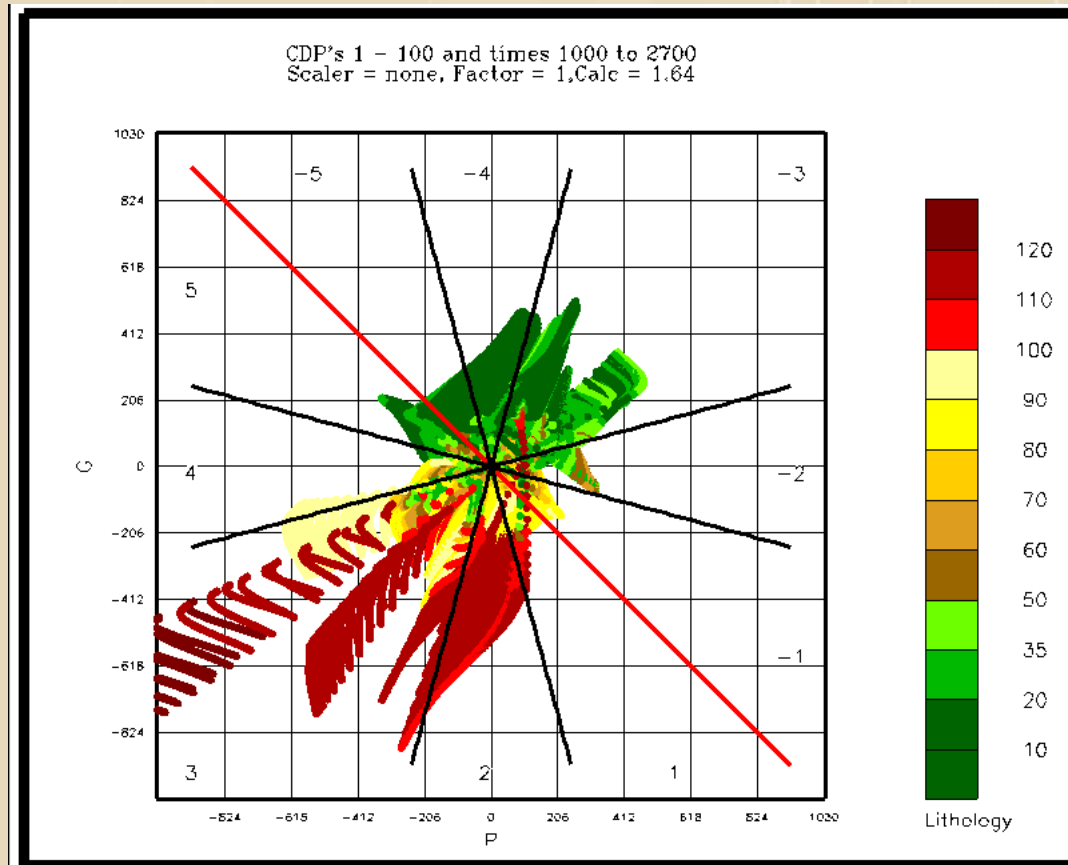
## Inverted Space





## High Resolution RNMO

Cross Plot of P vs G  
Color is Lithology  
Shale is Green  
Sand is Yellow  
Oil is Red



Inverted Space

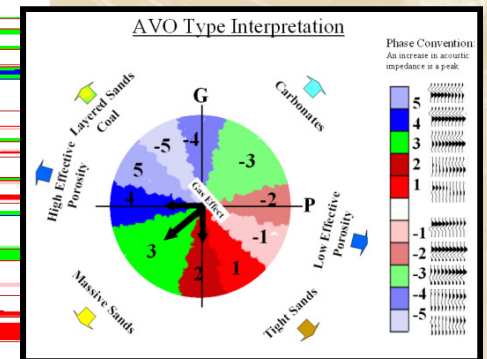
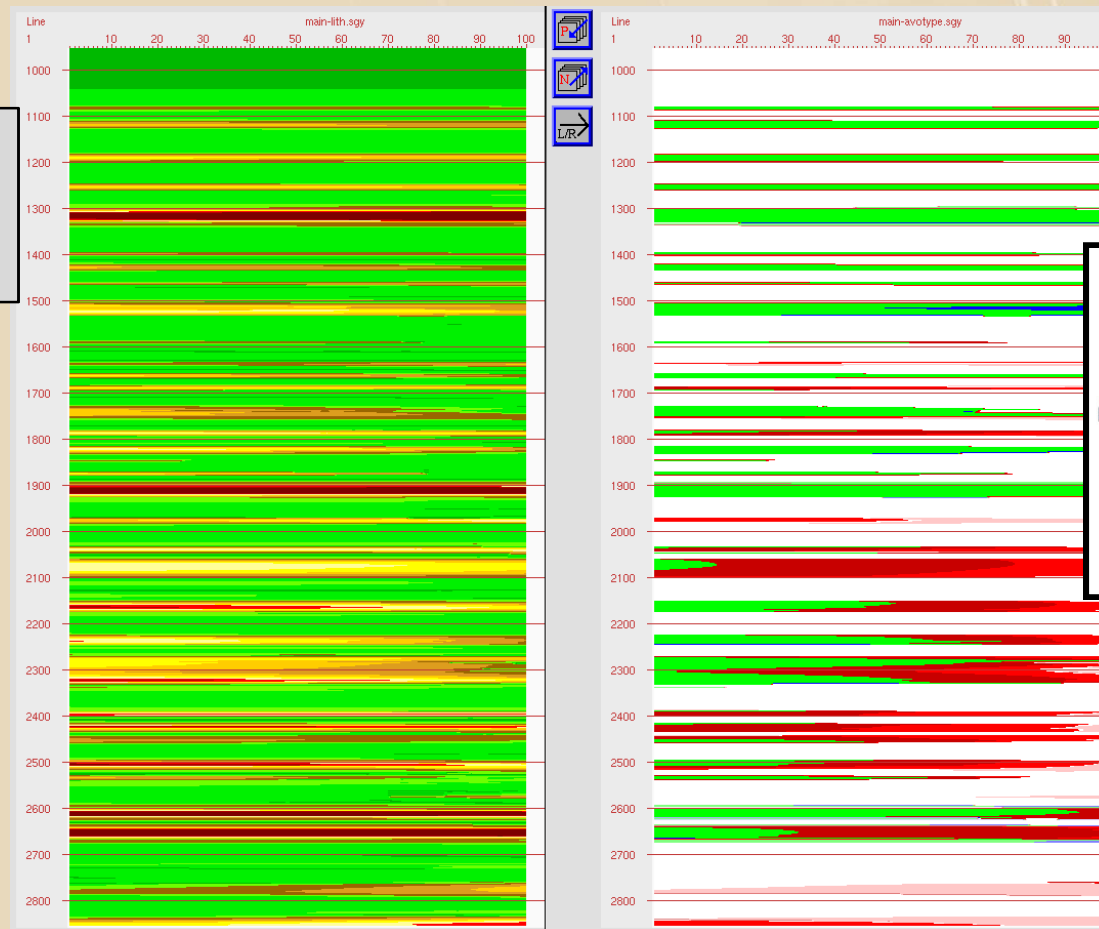


## Perfect Model

### Lithology

### AVO Type

Shale is Green  
Sand is Yellow  
Oil is Red



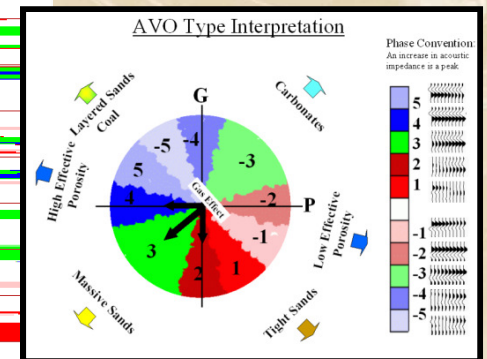
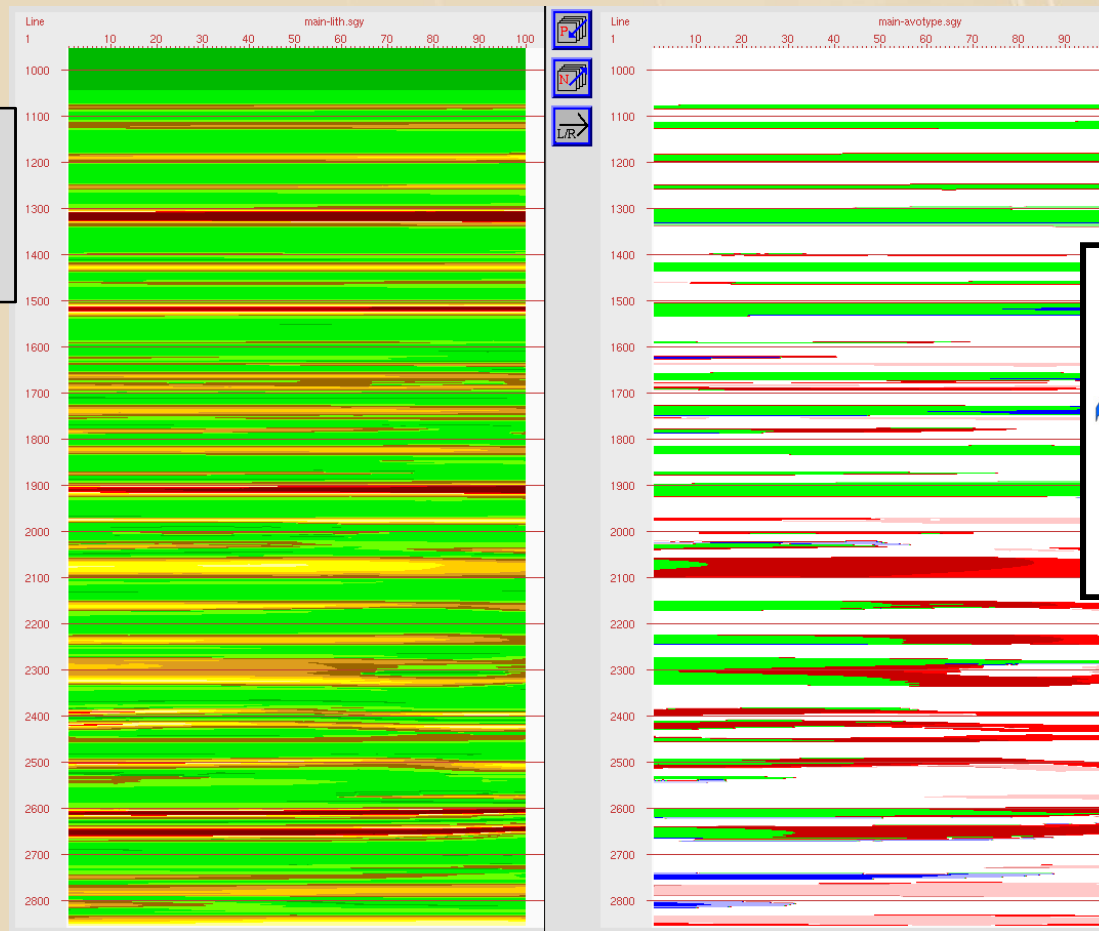


## High Resolution RNMO

### Lithology

### AVO Type

Shale is Green  
Sand is Yellow  
Oil is Red

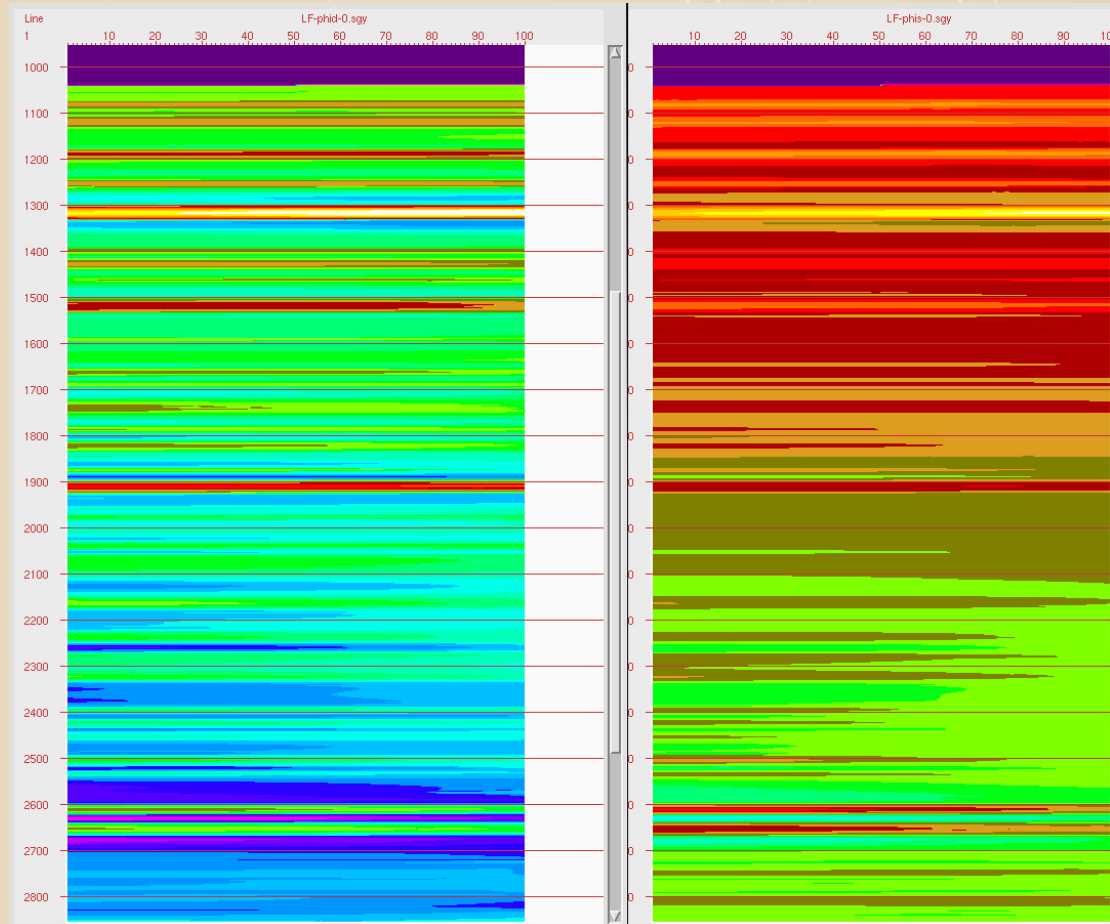
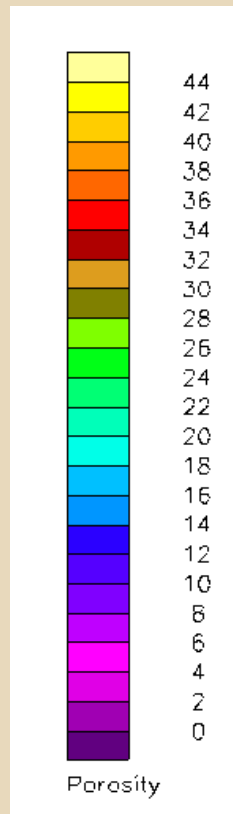




## Perfect Model

### Density Porosity

### Velocity Porosity



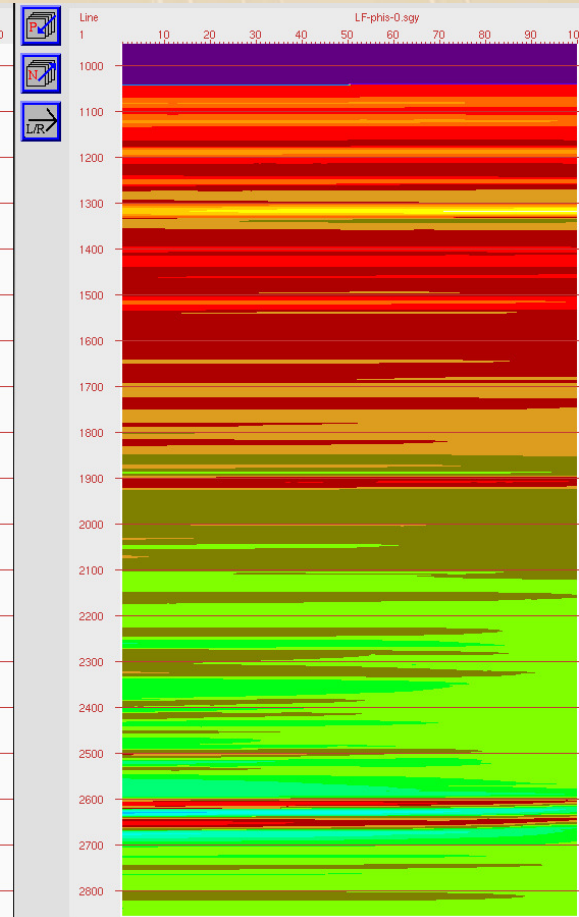
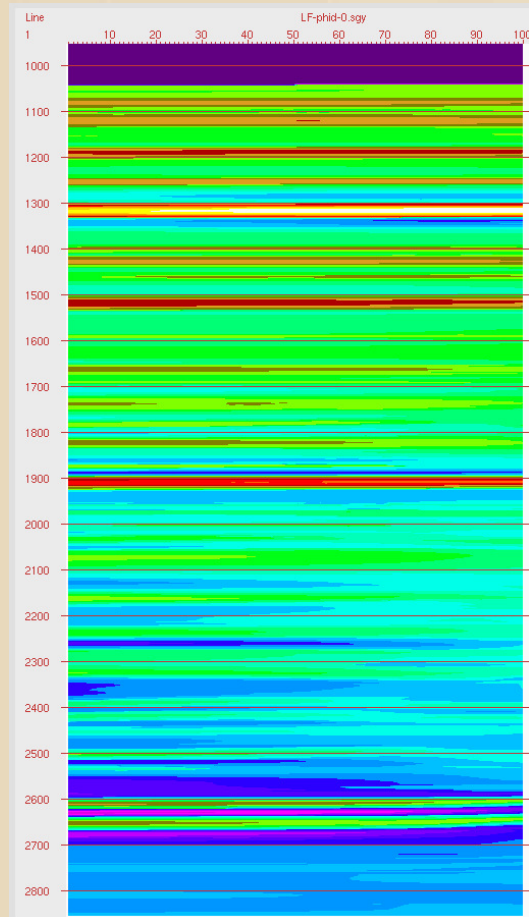
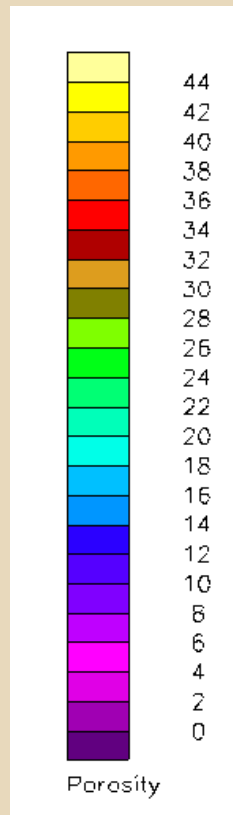




## High Resolution RNMO

### Density Porosity

### Velocity Porosity





# AGC, NMO Stretch

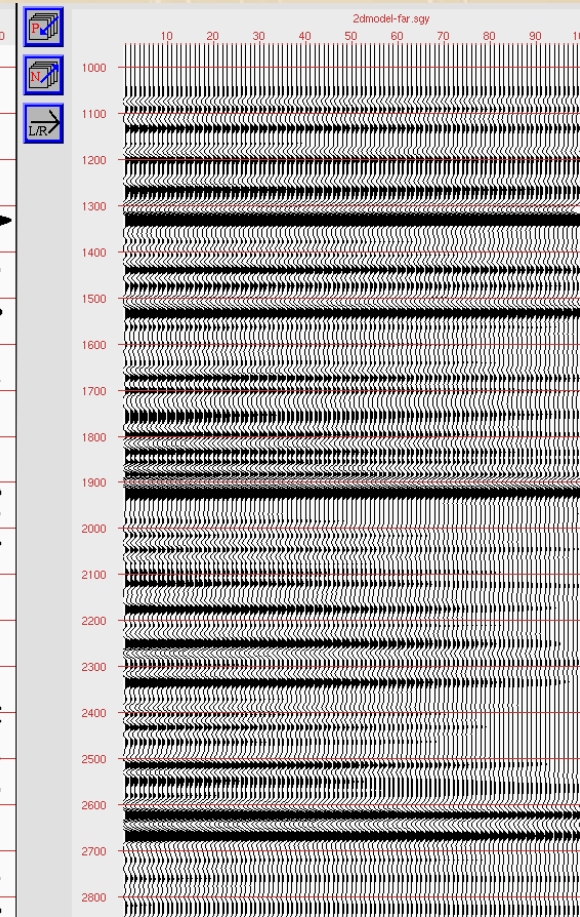
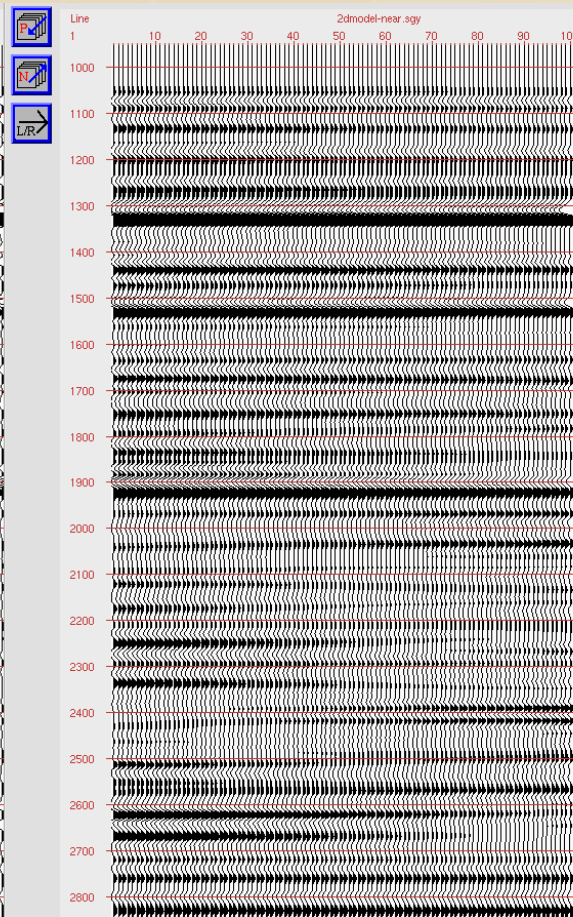
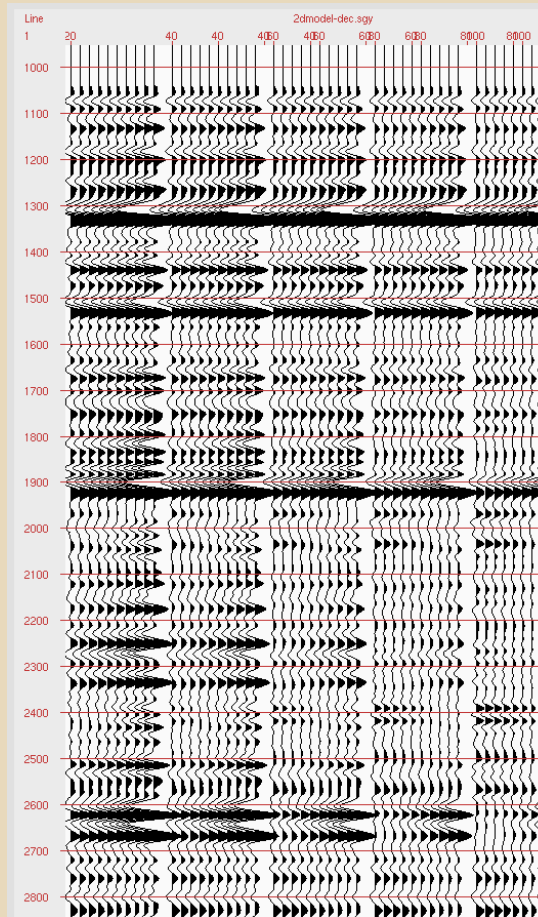


## Perfect Model

Every 20<sup>th</sup> gather

Near Stack

Far Stack





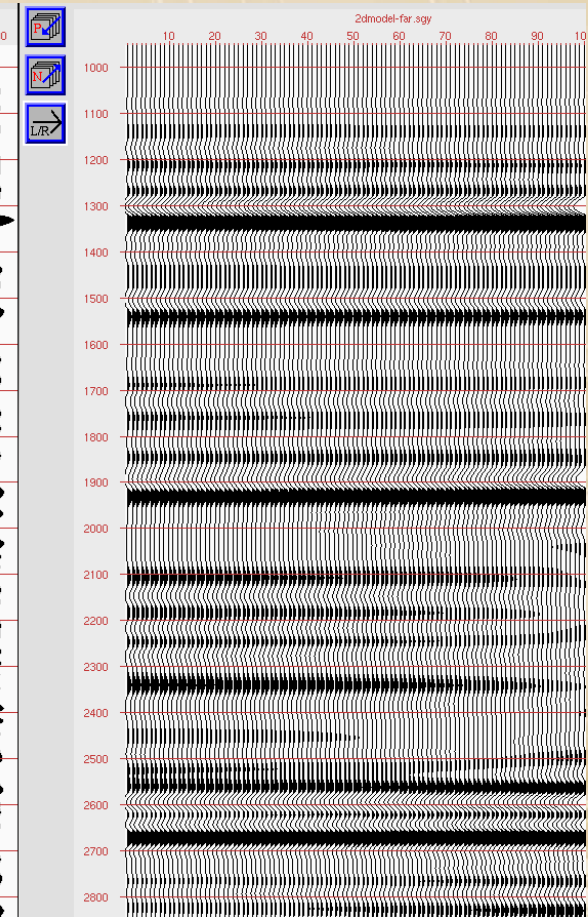
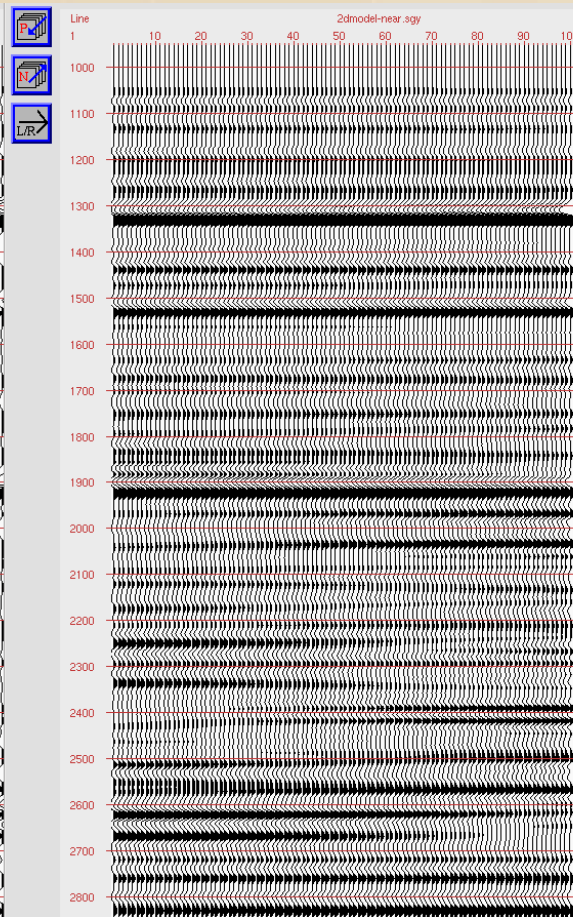
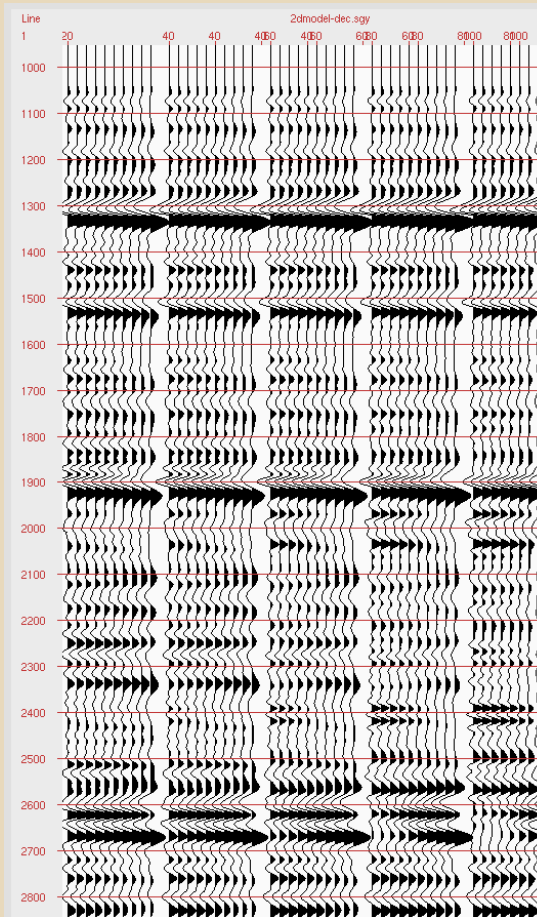


## AGC, NMO Stretch

Every 20<sup>th</sup> gather

Near Stack

Far Stack





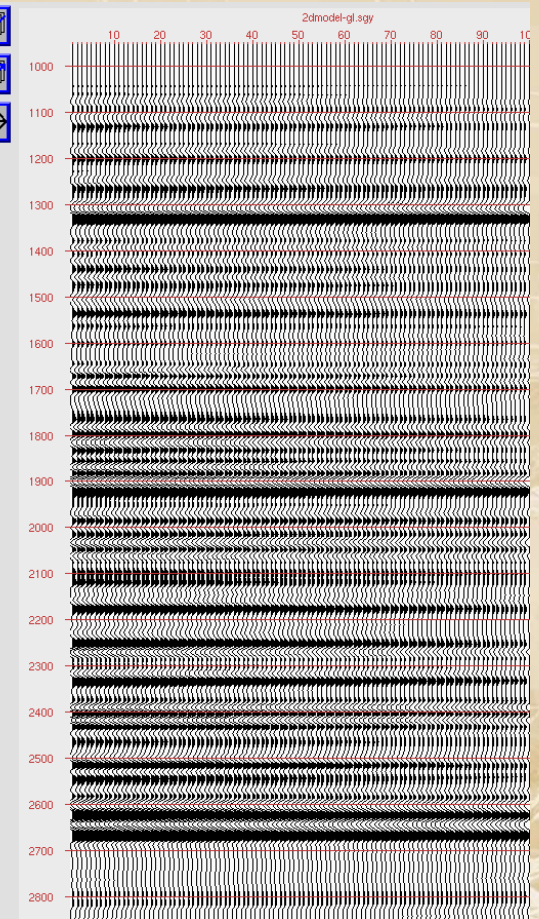
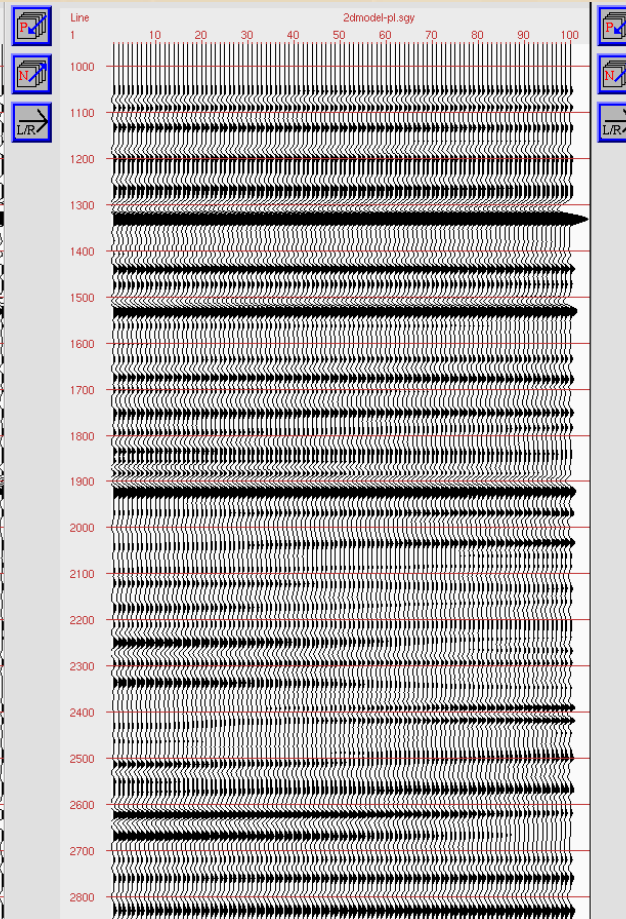
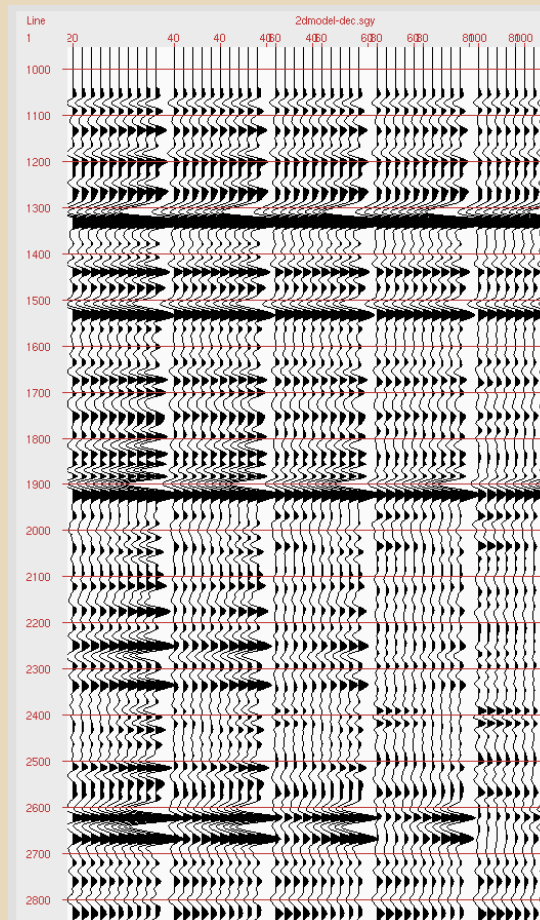


## Perfect Model

Every 20<sup>th</sup> gather

P Stack

G Stack



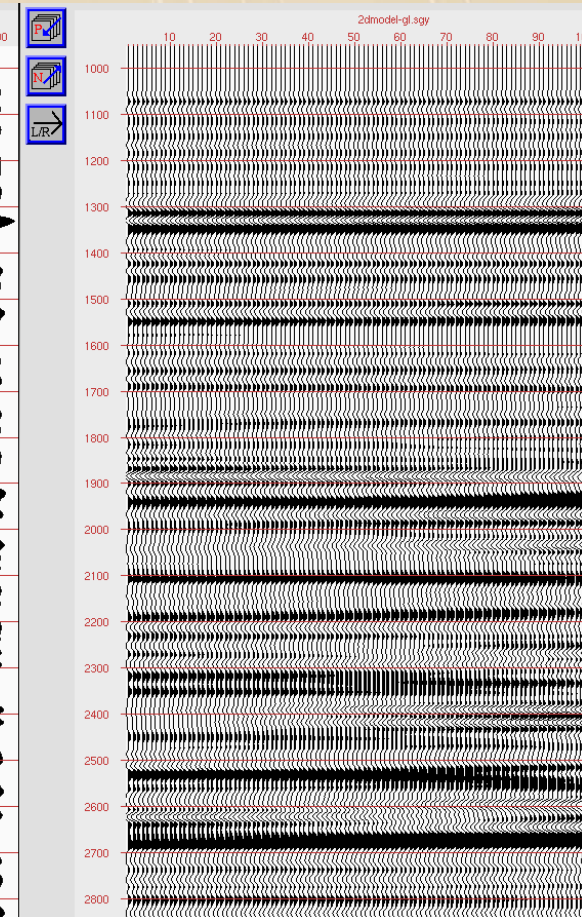
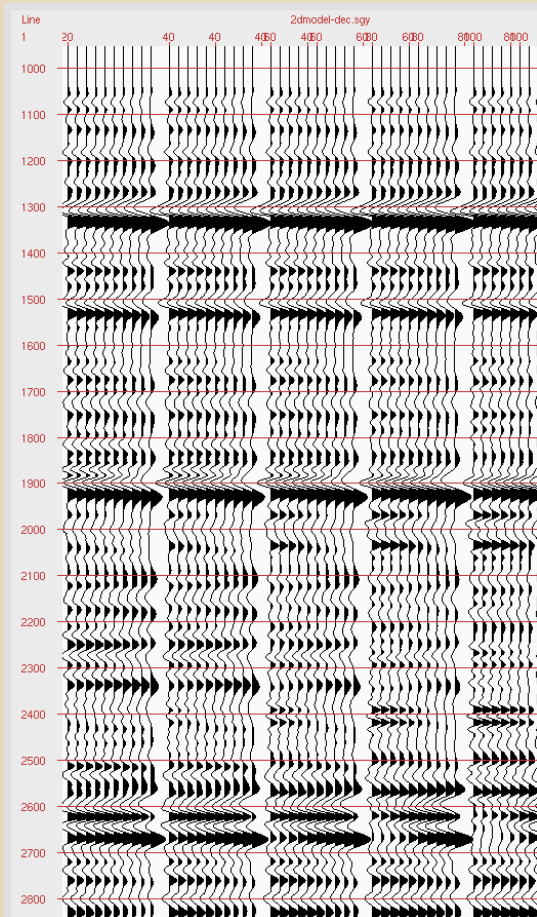


## AGC, NMO Stretch

Every 20<sup>th</sup> gather

P Stack

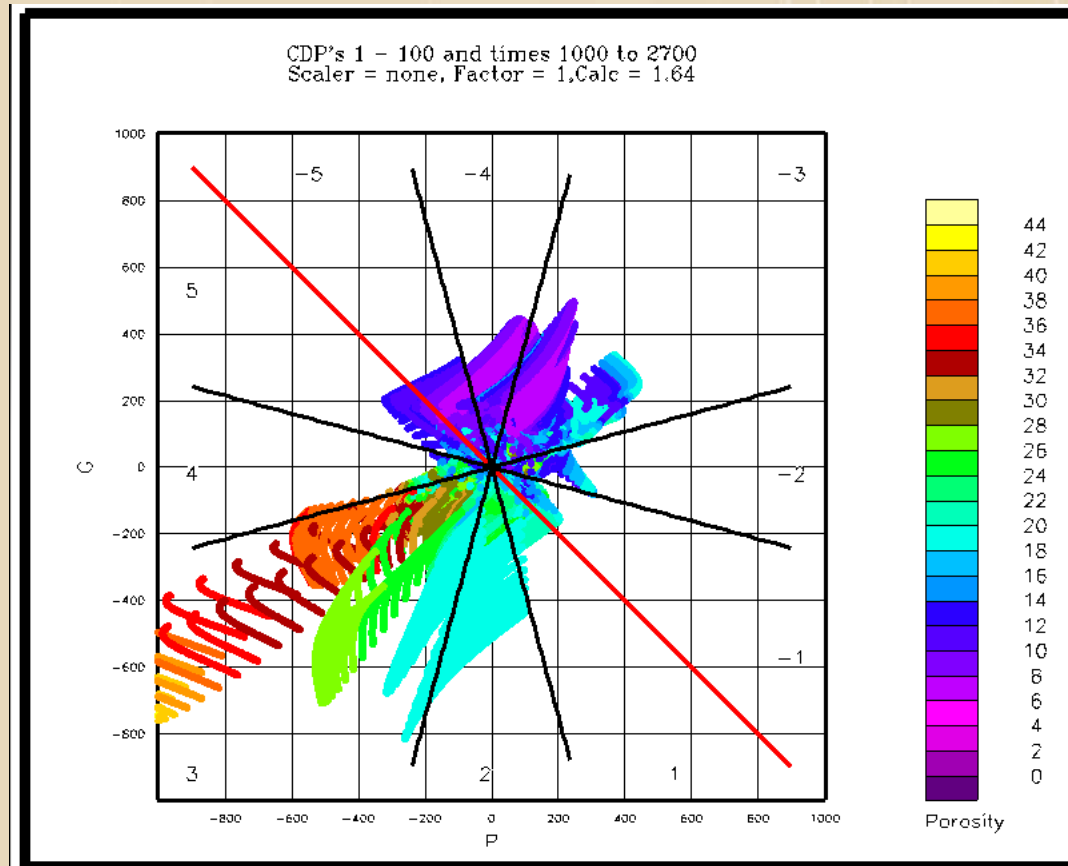
G Stack





## Perfect Model

Cross Plot of P vs G  
Color is Porosity



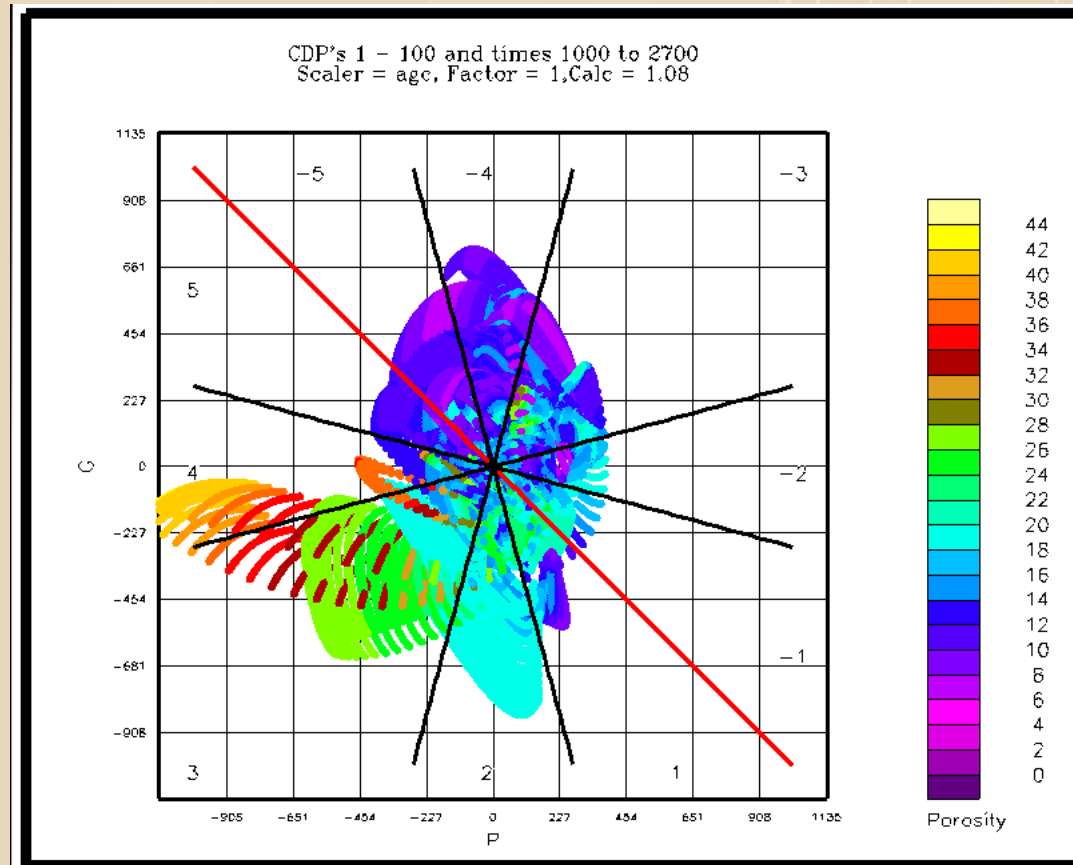
Inverted Space





## AGC, NMO Stretch

Cross Plot of P vs G  
Color is Porosity



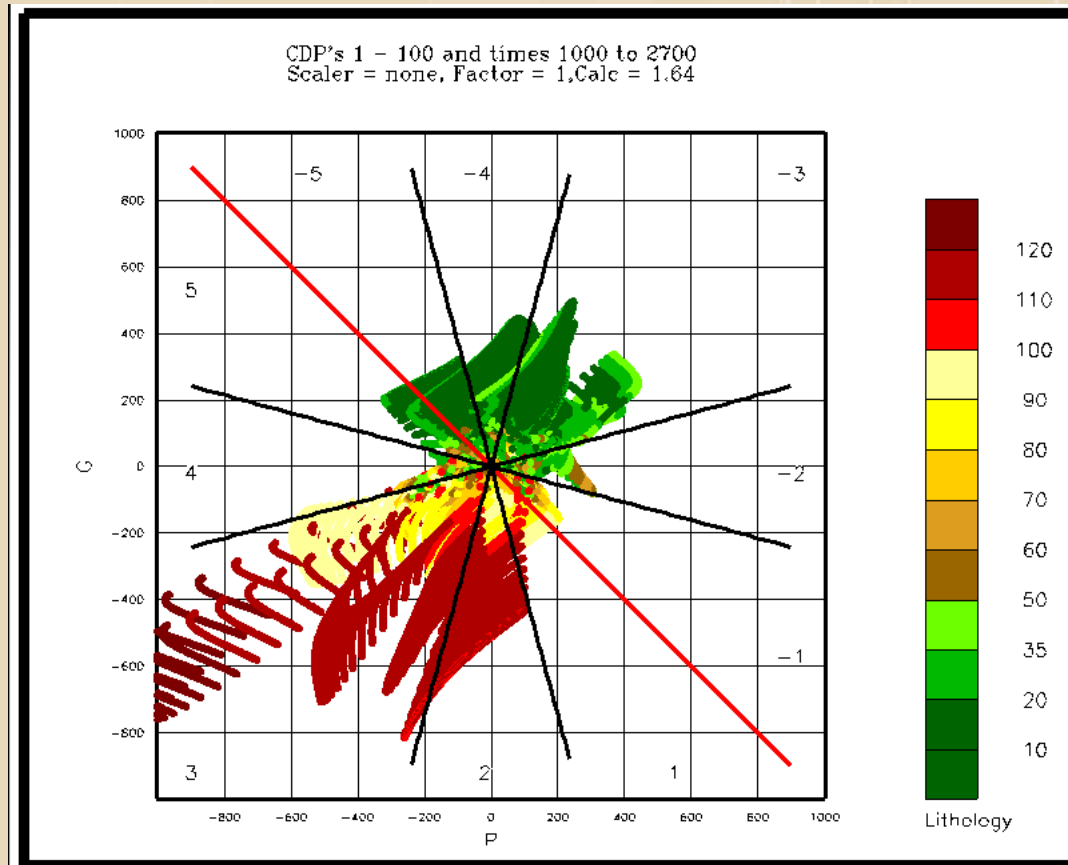
Inverted Space





## Perfect Model

Cross Plot of P vs G  
Color is Lithology  
Shale is Green  
Sand is Yellow  
Oil is Red

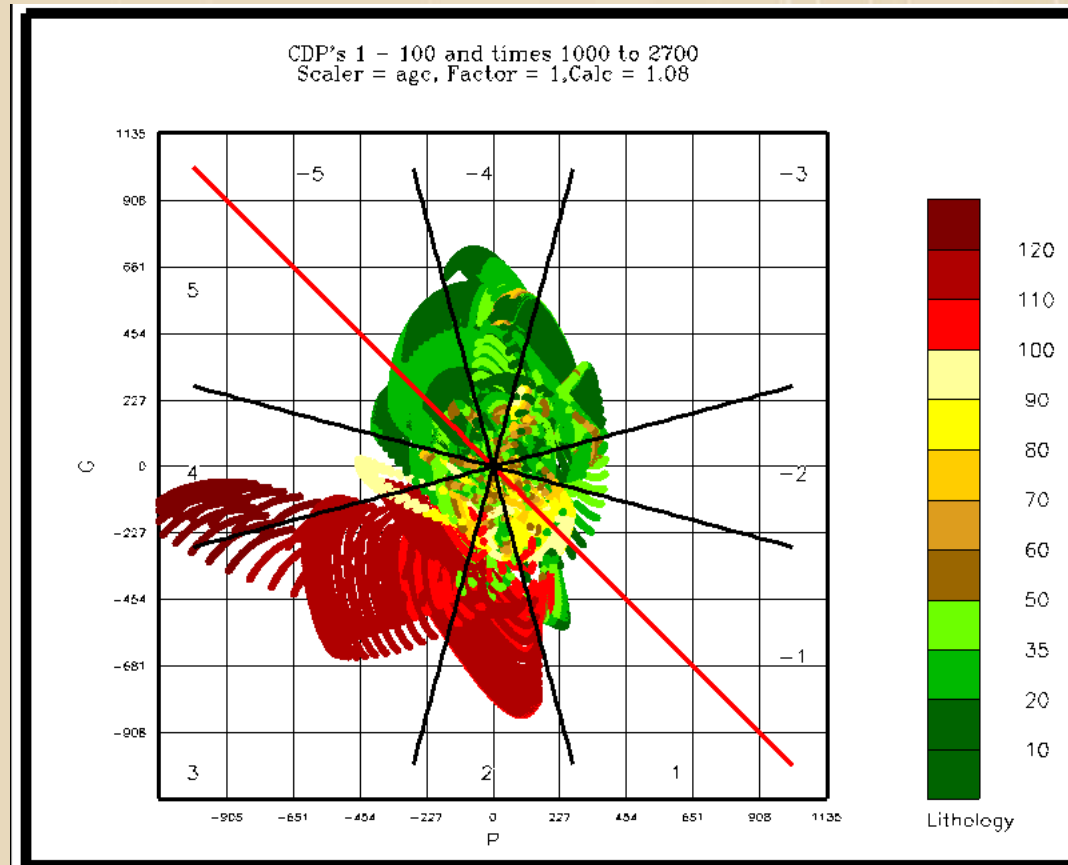


Inverted Space



## AGC, NMO Stretch

Cross Plot of P vs G  
Color is Lithology  
Shale is Green  
Sand is Yellow  
Oil is Red



Inverted Space

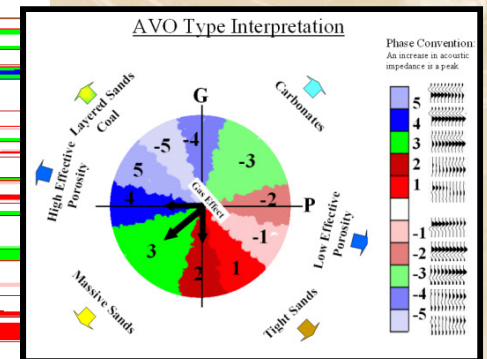
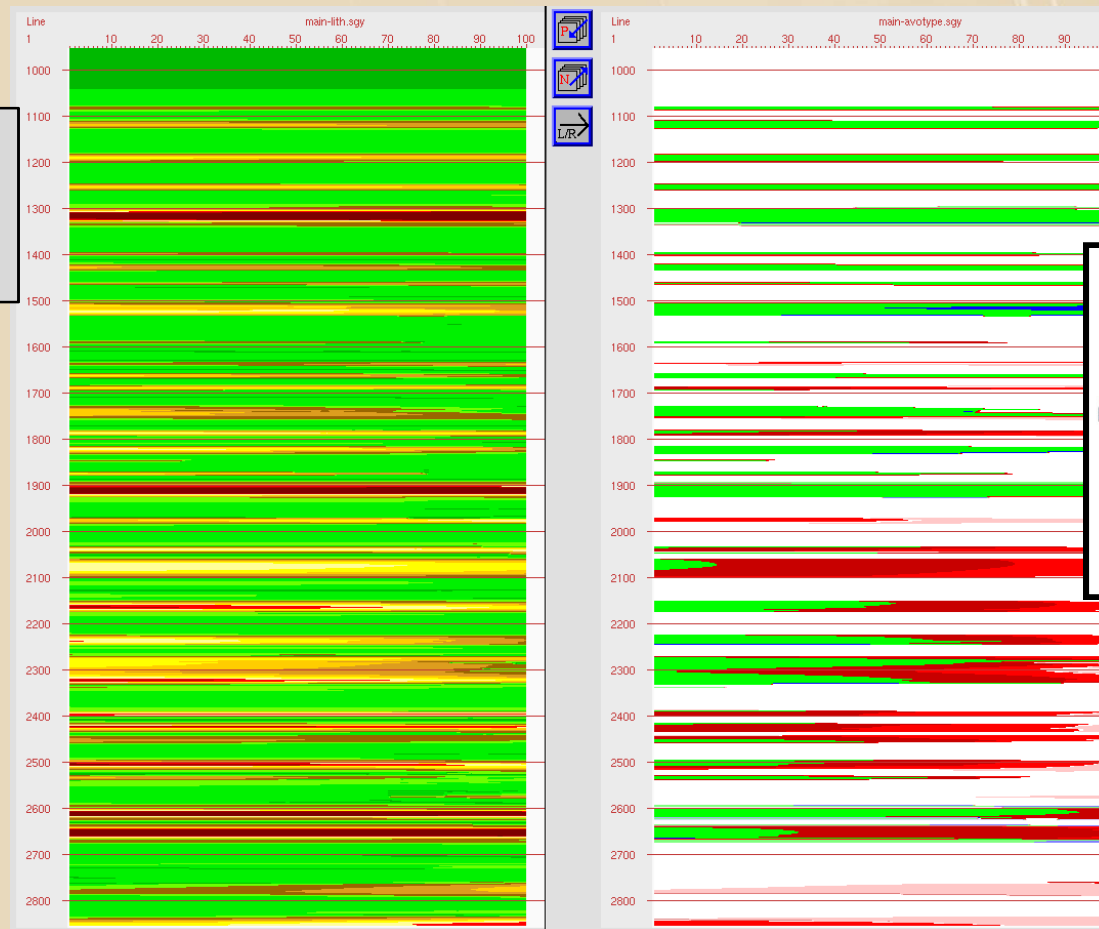


## Perfect Model

### Lithology

### AVO Type

Shale is Green  
Sand is Yellow  
Oil is Red



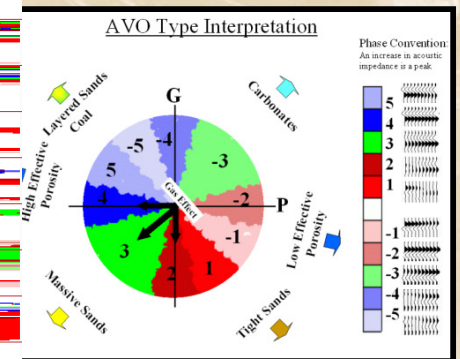
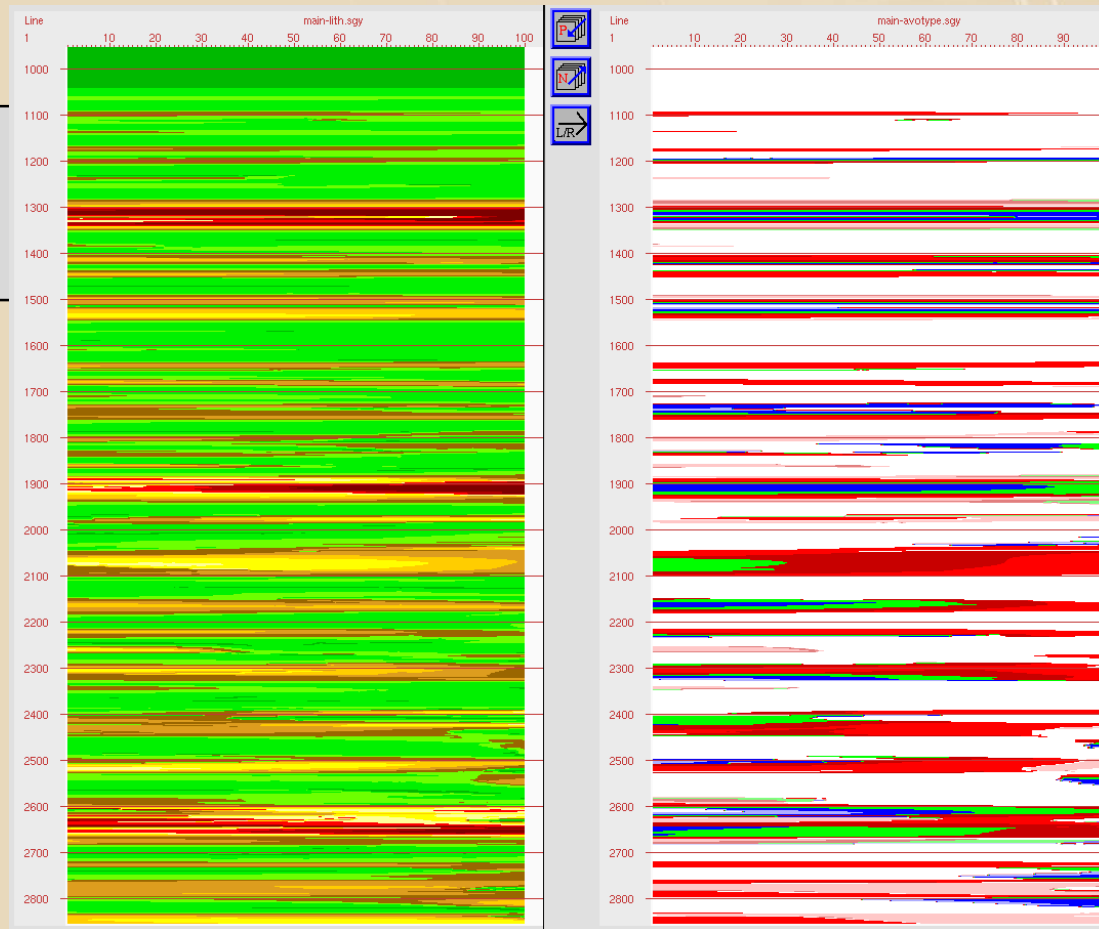


## AGC, NMO Stretch

### Lithology

### AVO Type

Shale is Green  
Sand is Yellow  
Oil is Red



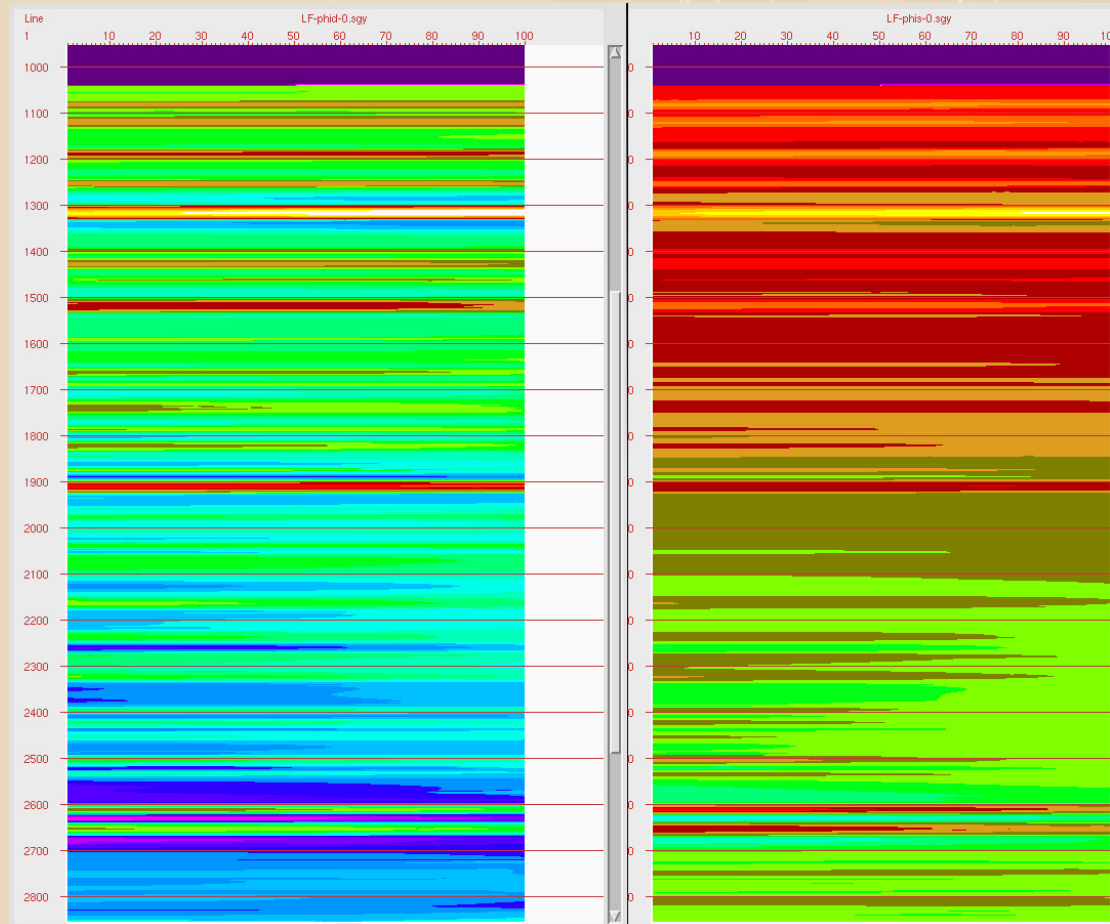
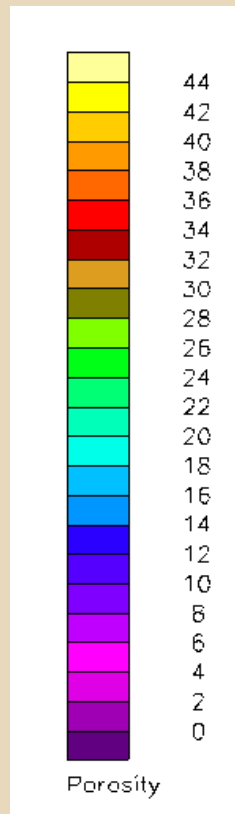




## Perfect Model

### Density Porosity

### Velocity Porosity

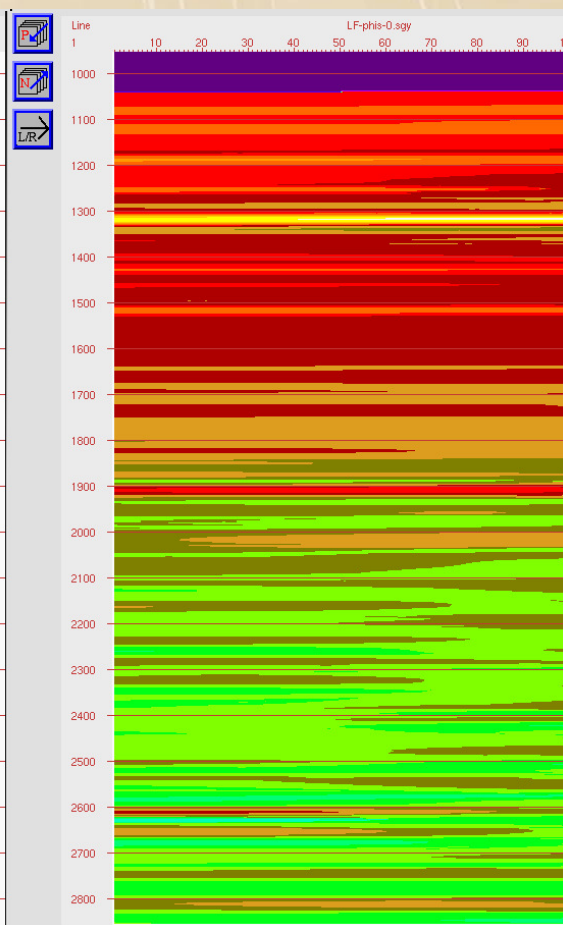
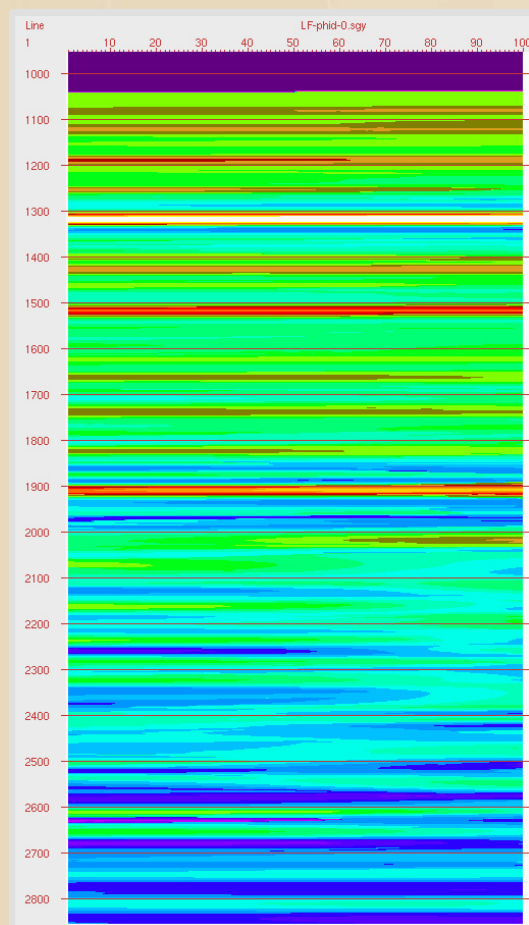
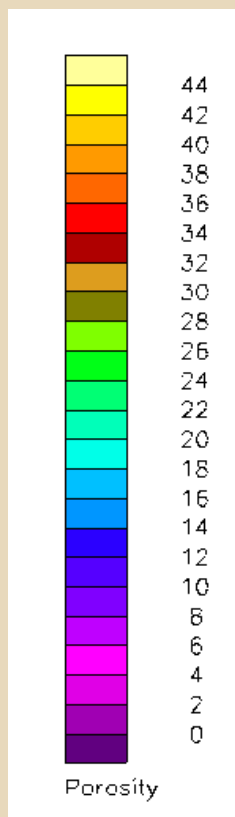




## AGC, NMO Stretch

### Density Porosity

### Velocity Porosity





1000ms AGC Scaler  
Then  
Apply Offset Scaler to Correct

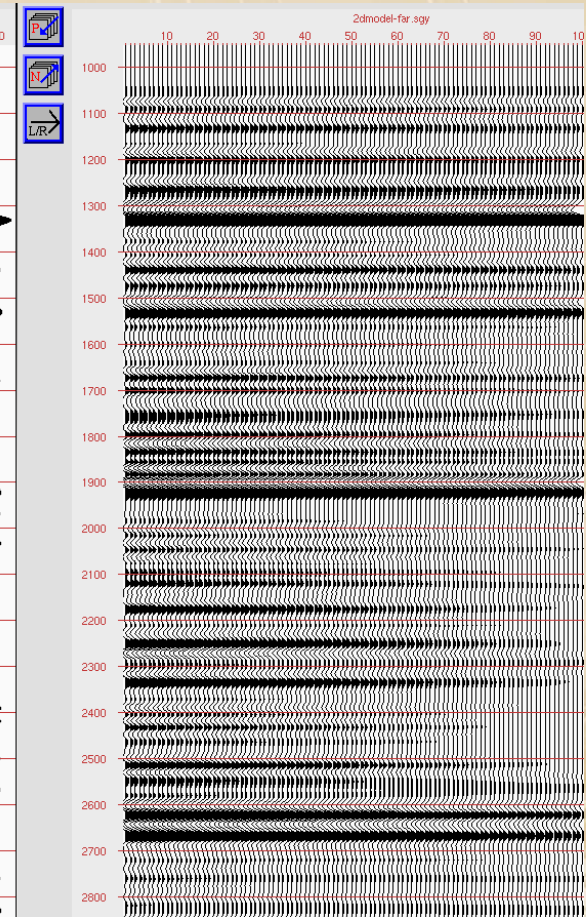
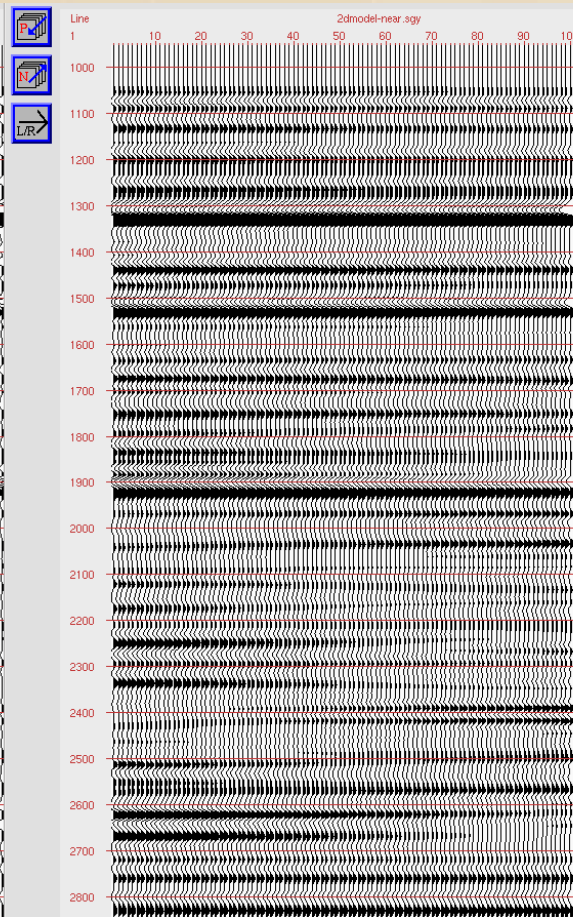
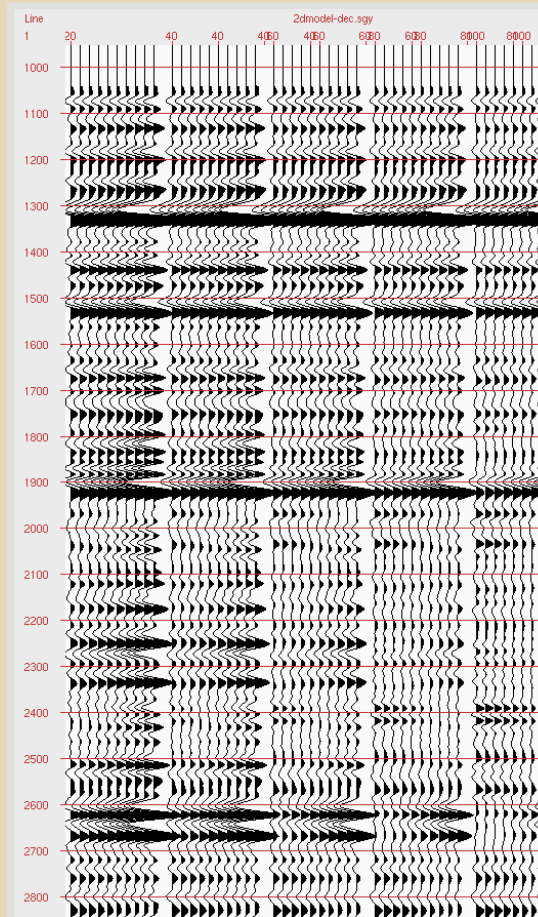


## Perfect Model

Every 20<sup>th</sup> gather

Near Stack

Far Stack





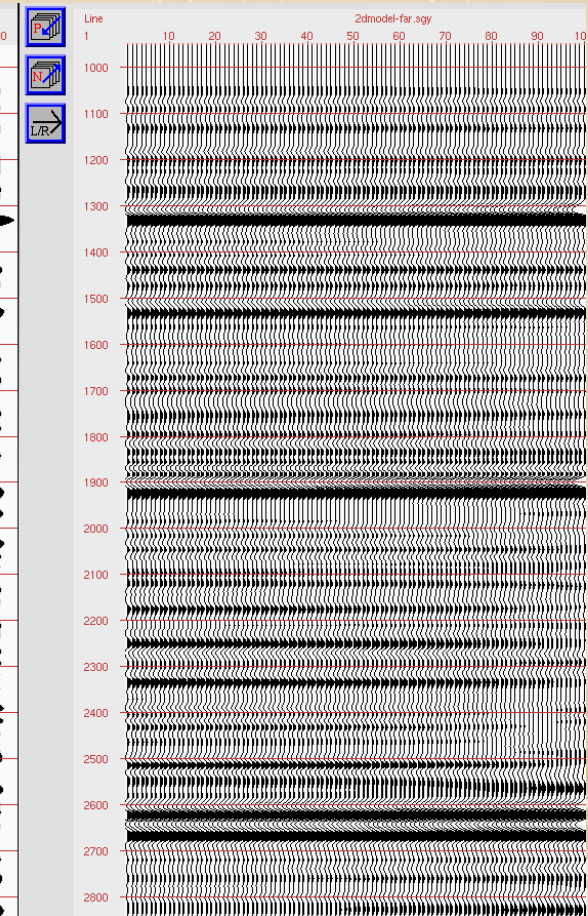
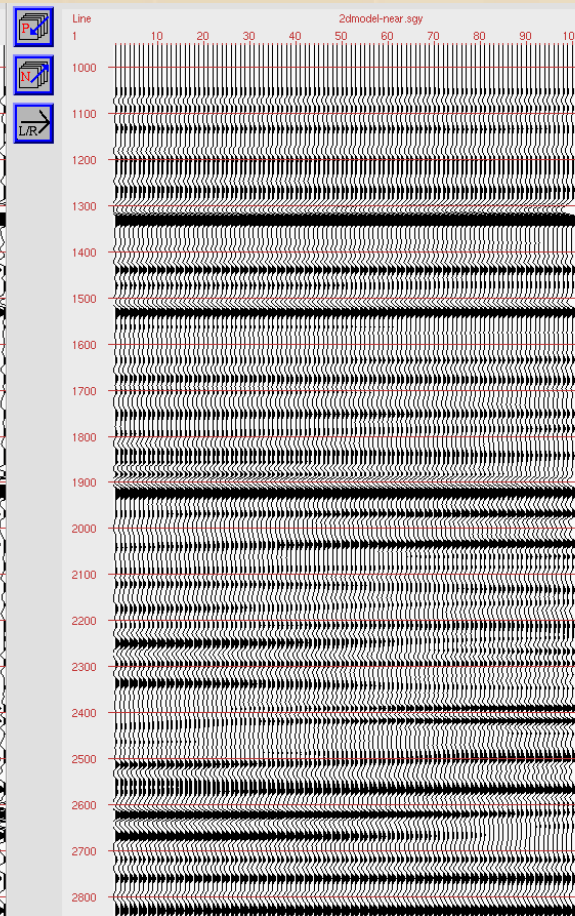
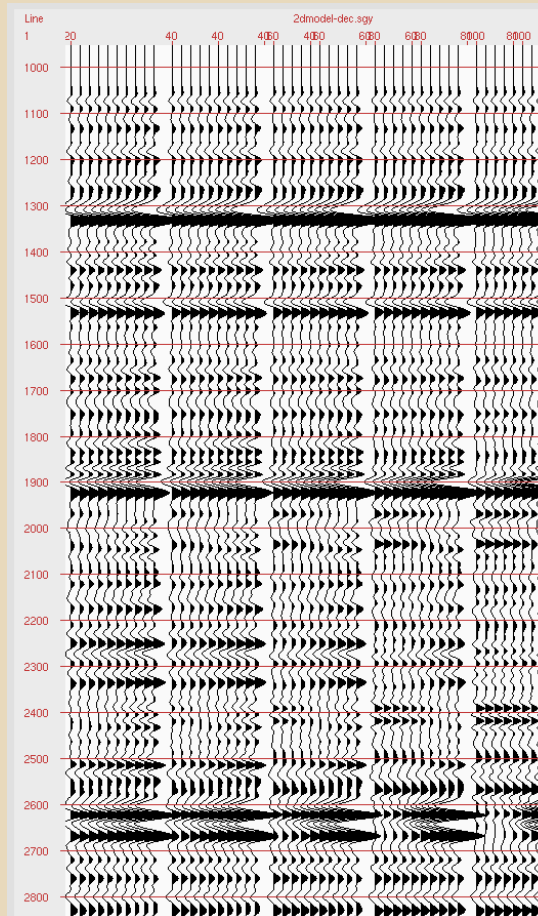


## AGC Scaler + Offset Scaler

Every 20<sup>th</sup> gather

Near Stack

Far Stack



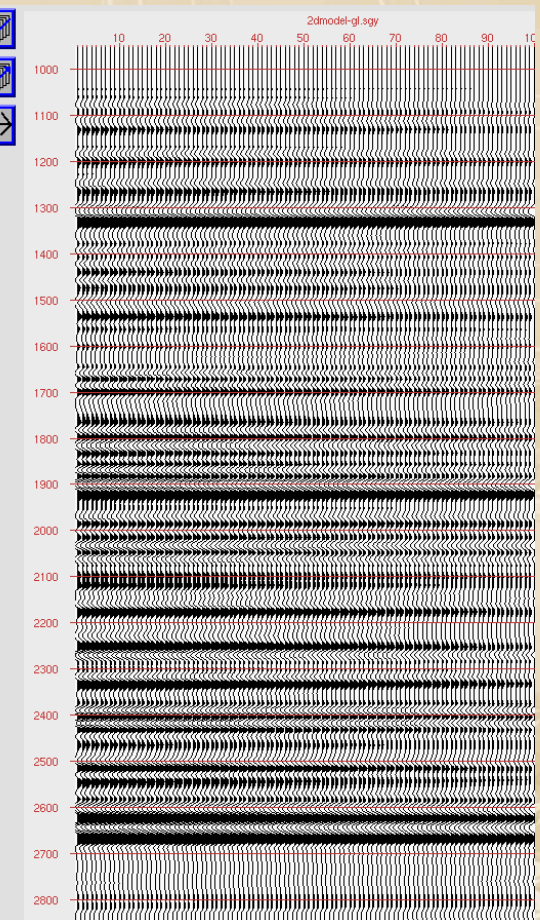
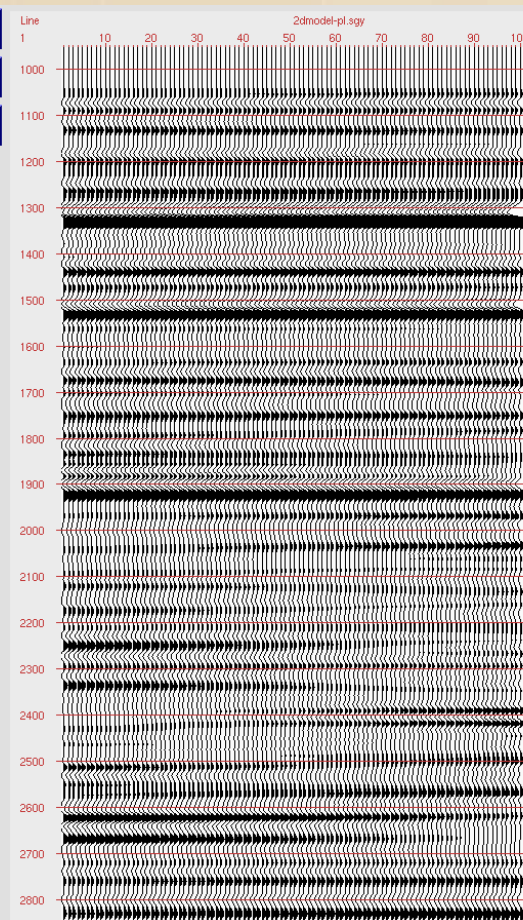
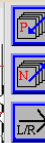
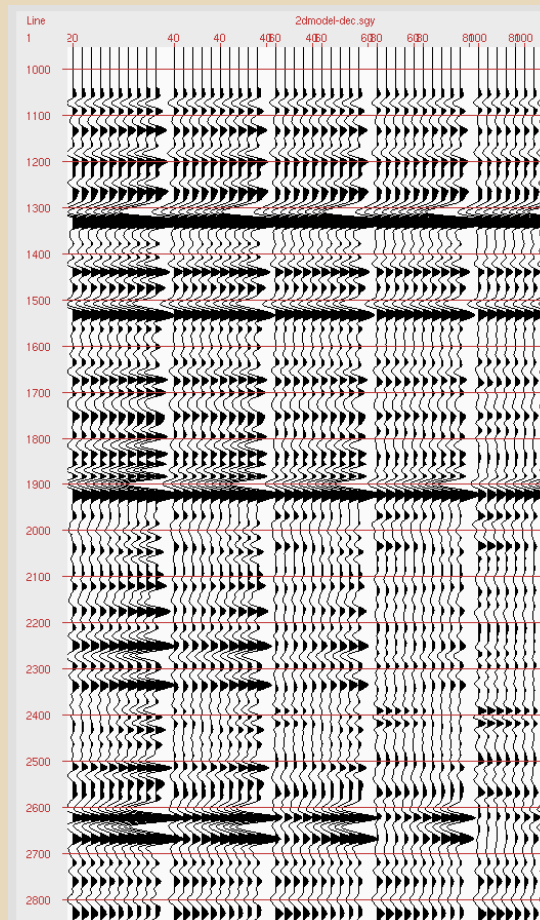


## Perfect Model

Every 20<sup>th</sup> gather

P Stack

G Stack





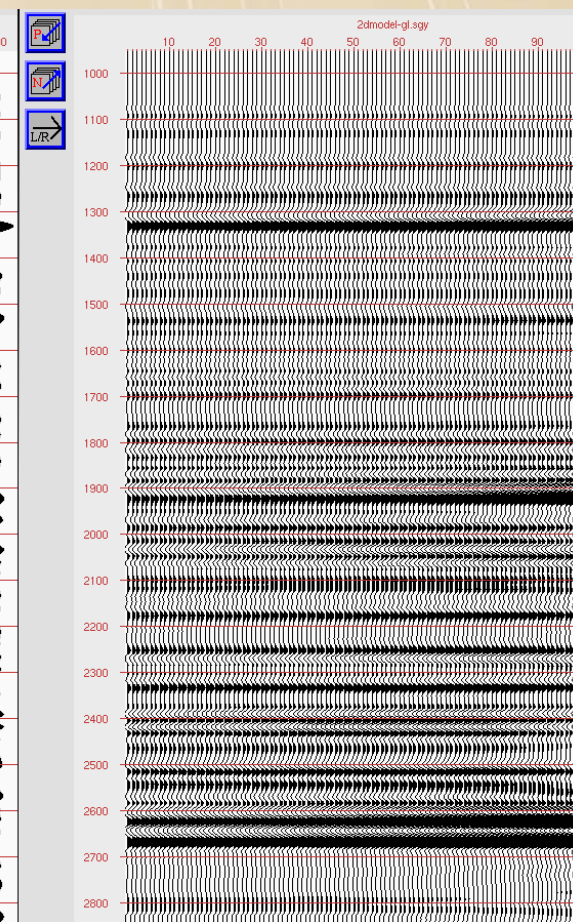
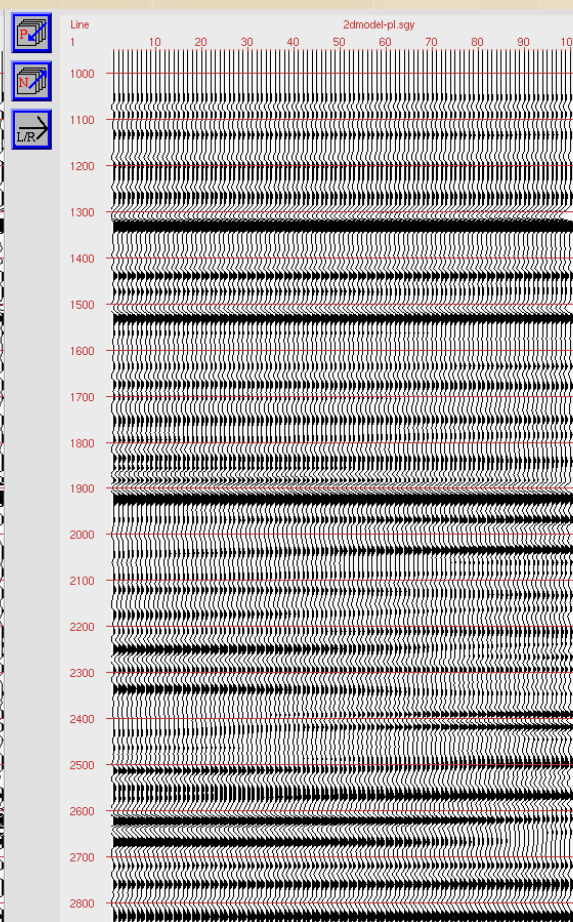
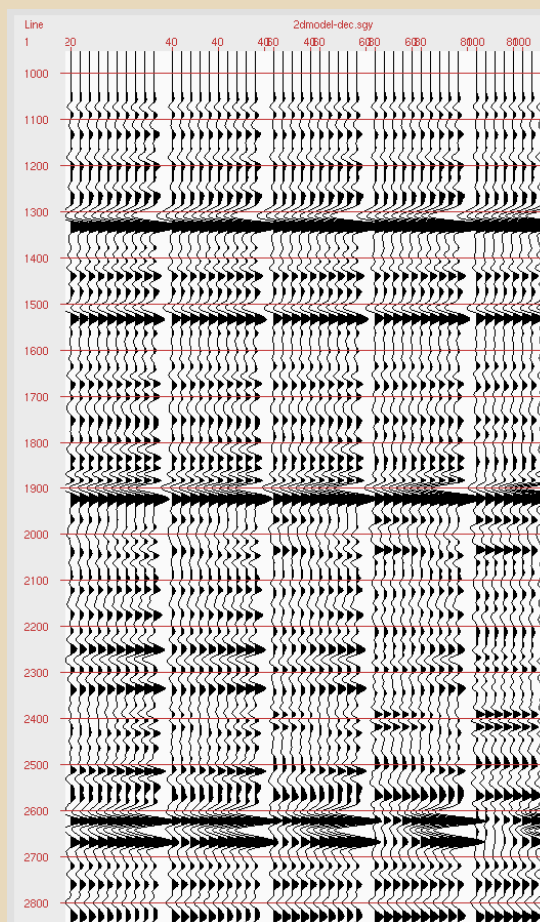


## AGC Scaler + Offset Scaler

Every 20<sup>th</sup> gather

P Stack

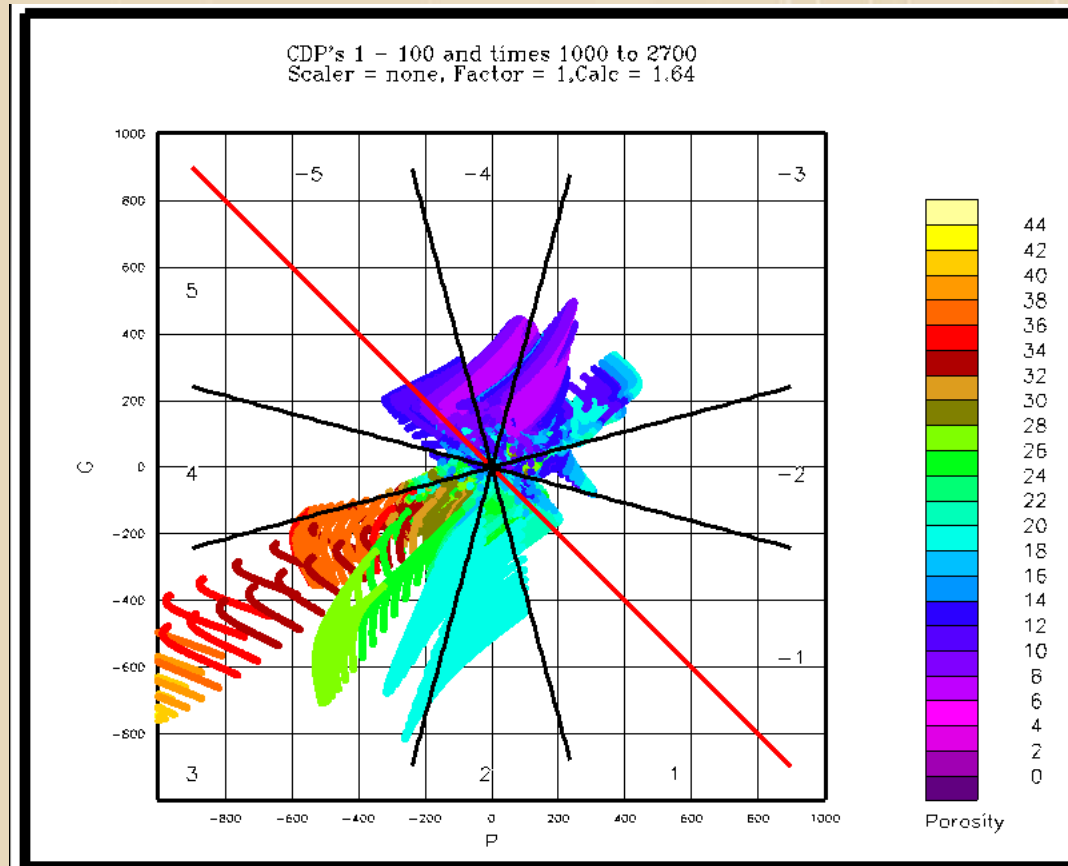
G Stack





## Perfect Model

Cross Plot of P vs G  
Color is Porosity



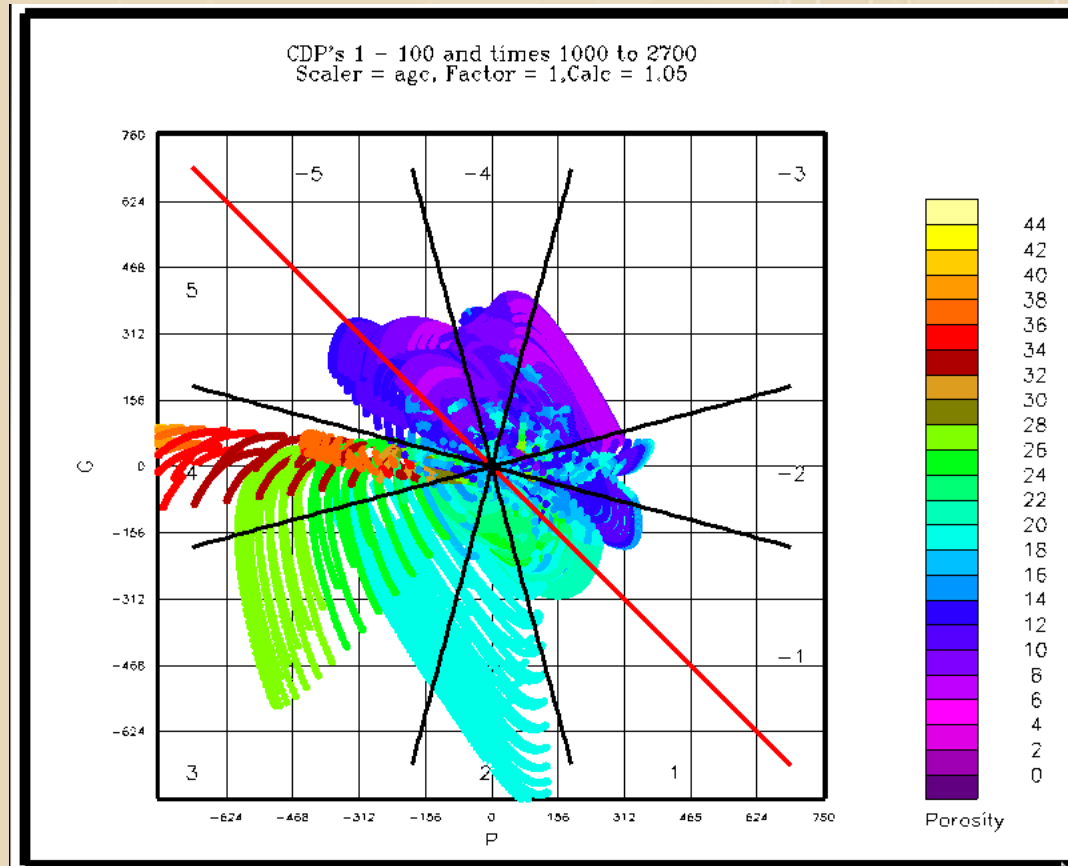
Inverted Space





## AGC Scaler

Cross Plot of P vs G  
Color is Porosity

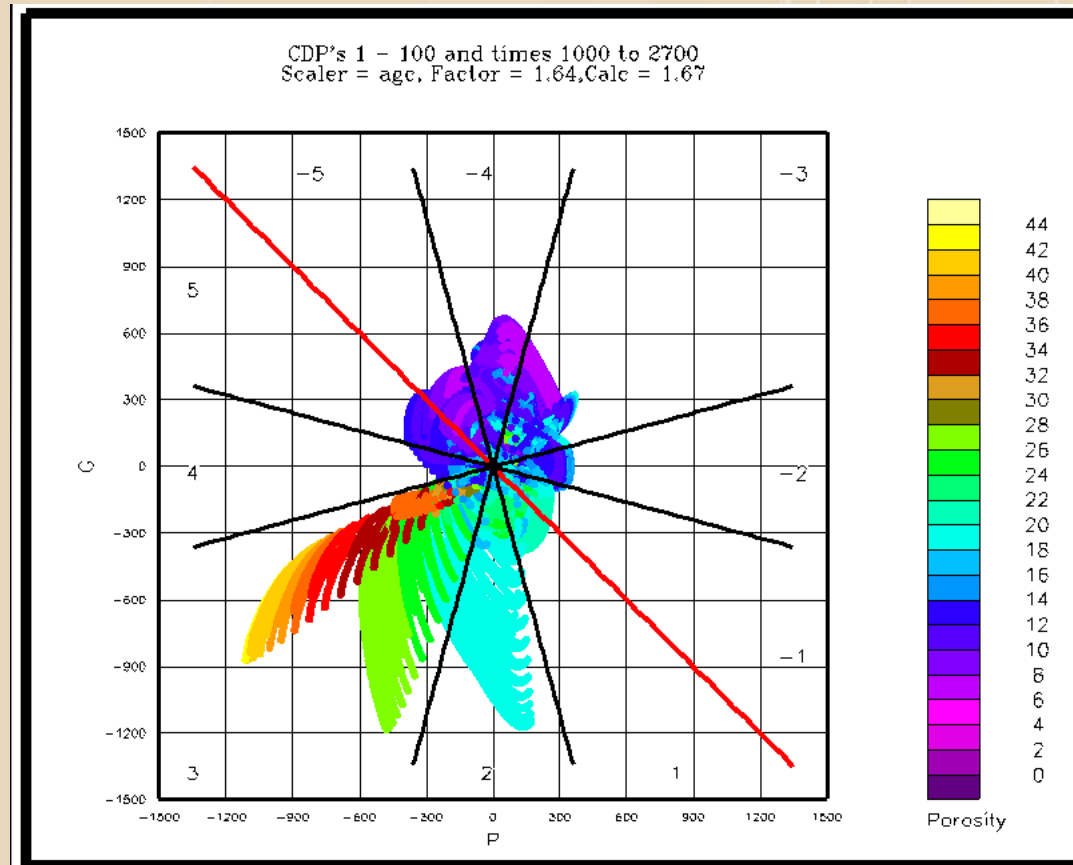


Inverted Space



## AGC Scaler + Offset Scaler

Cross Plot of P vs G  
Color is Porosity

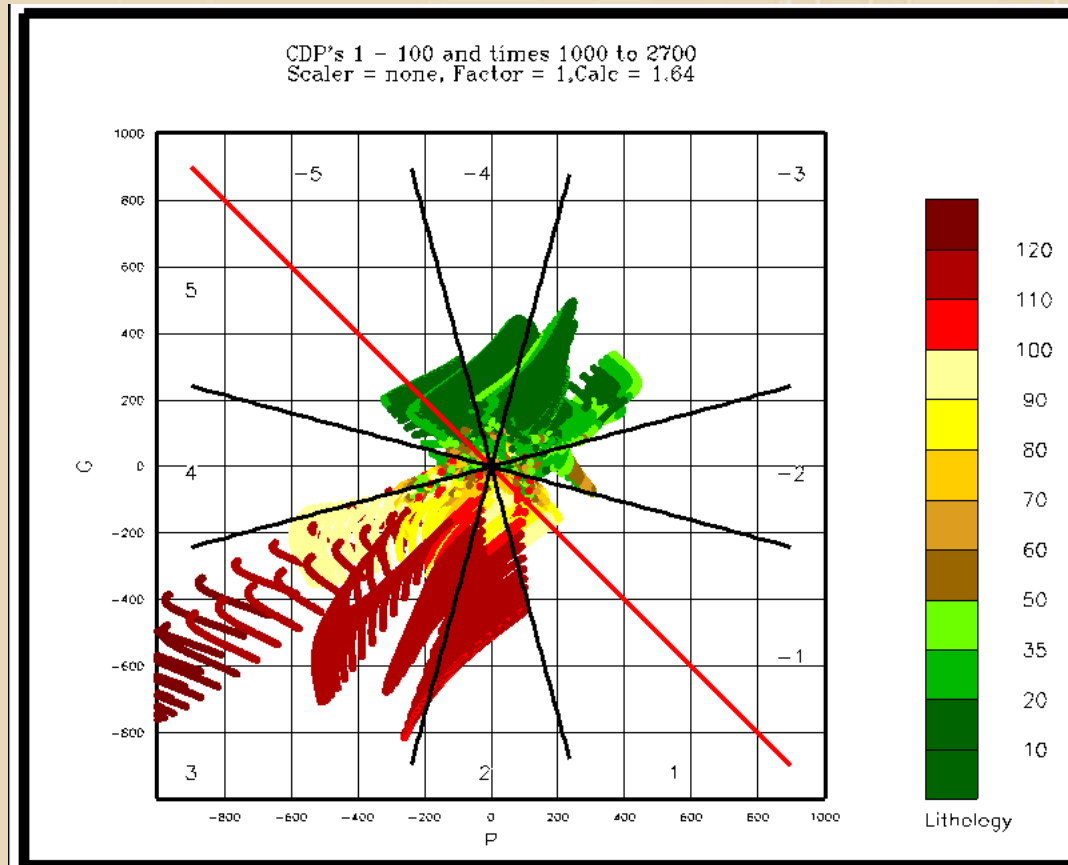


Inverted Space



## Perfect Model

Cross Plot of P vs G  
Color is Lithology  
Shale is Green  
Sand is Yellow  
Oil is Red

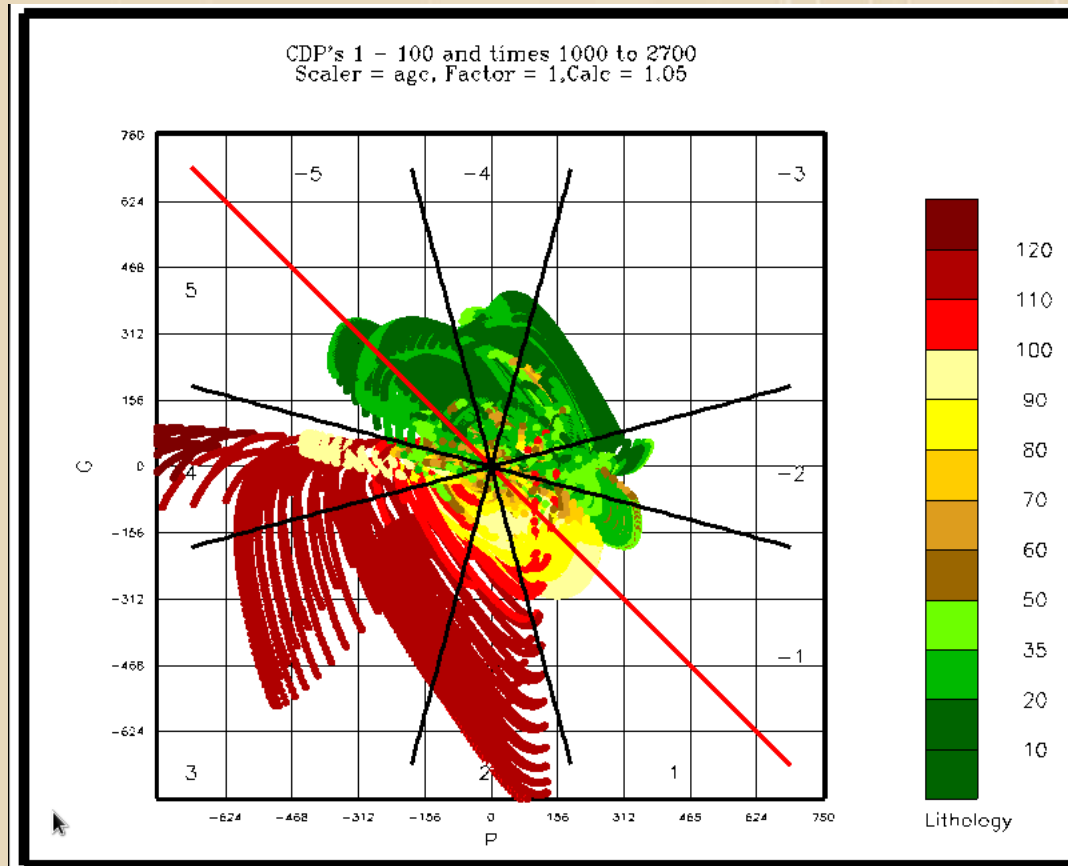


Inverted Space



## AGC Scaler

Cross Plot of P vs G  
Color is Lithology  
Shale is Green  
Sand is Yellow  
Oil is Red



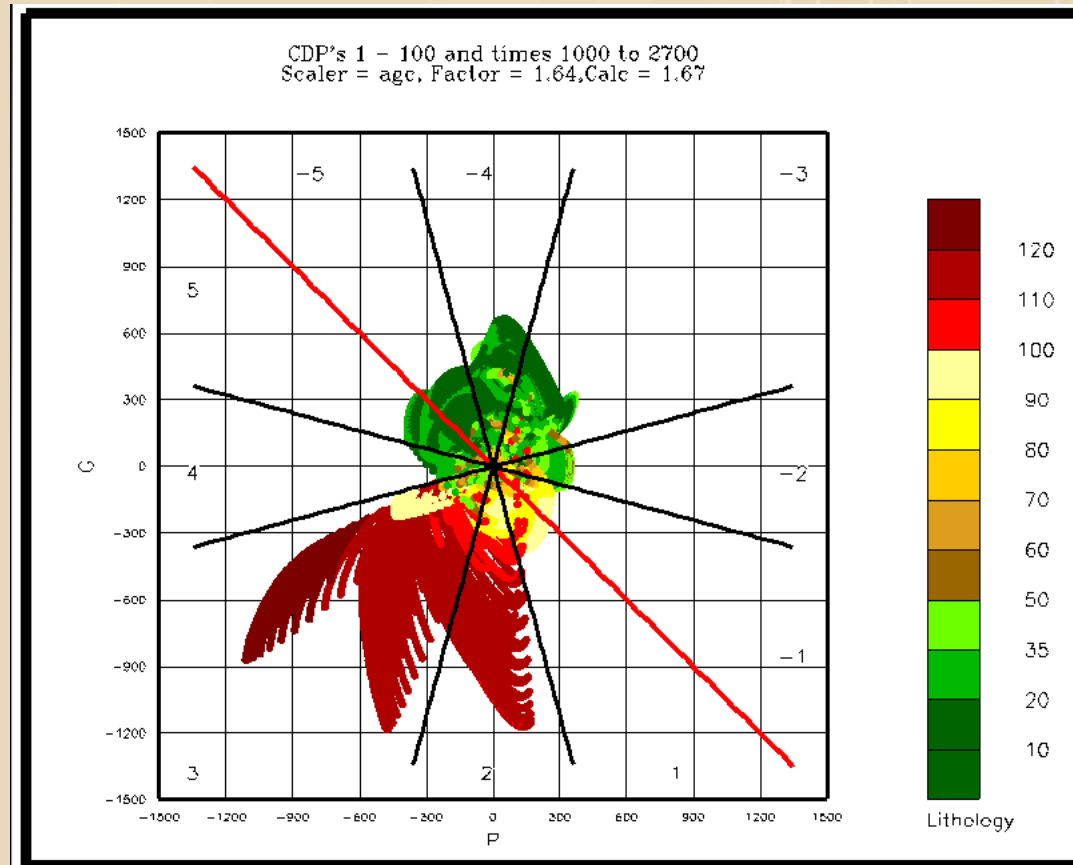
Inverted Space





## AGC Scaler + Offset Scaler

Cross Plot of P vs G  
Color is Lithology  
Shale is Green  
Sand is Yellow  
Oil is Red



Inverted Space

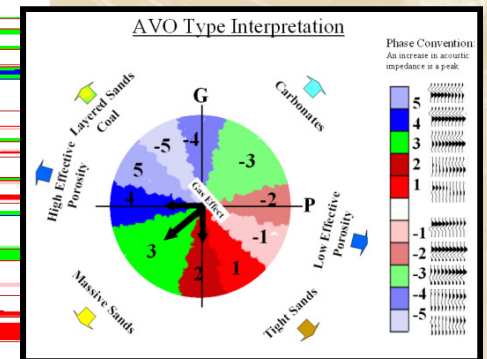
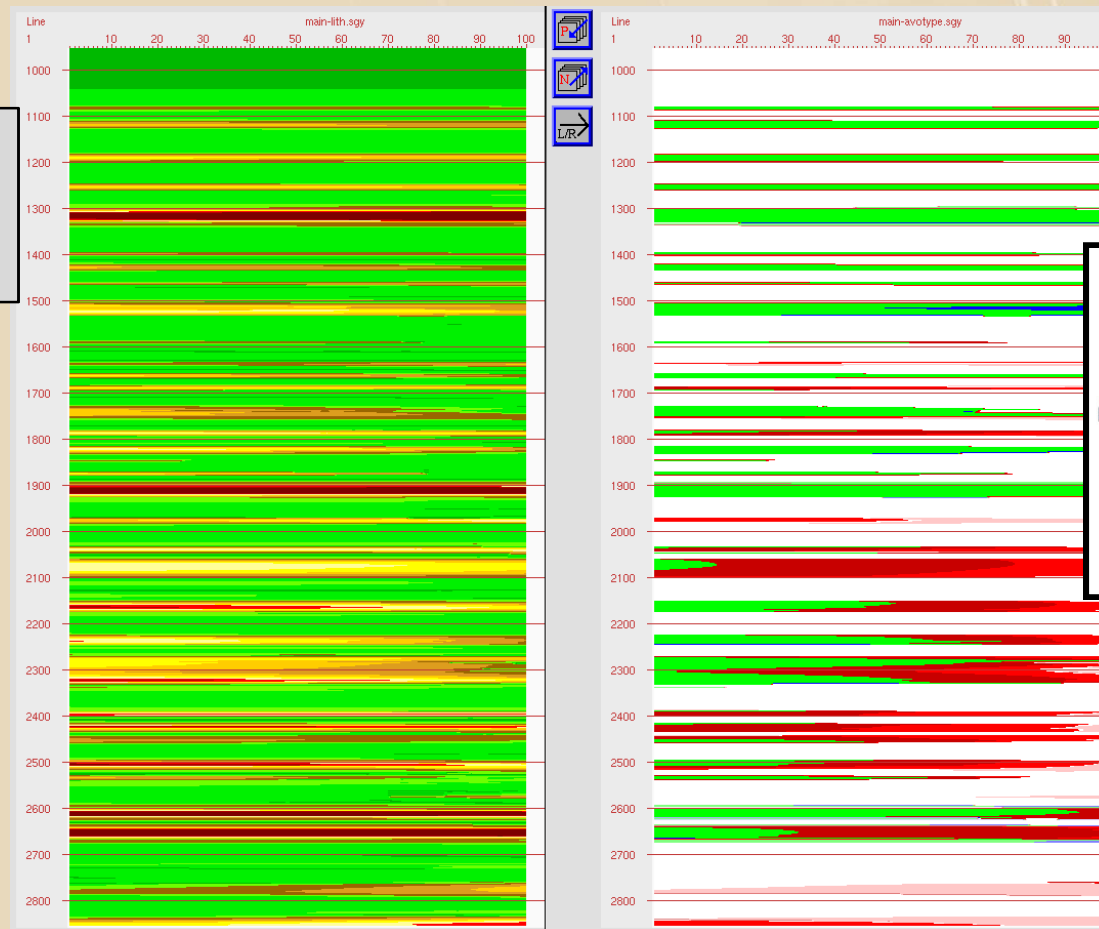


## Perfect Model

### Lithology

### AVO Type

Shale is Green  
Sand is Yellow  
Oil is Red



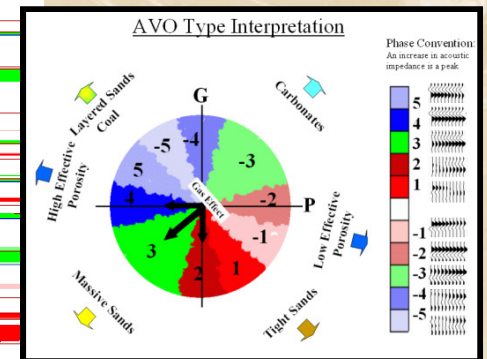


## AGC Scaler + Offset Scaler

### Lithology

### AVO Type

Shale is Green  
Sand is Yellow  
Oil is Red

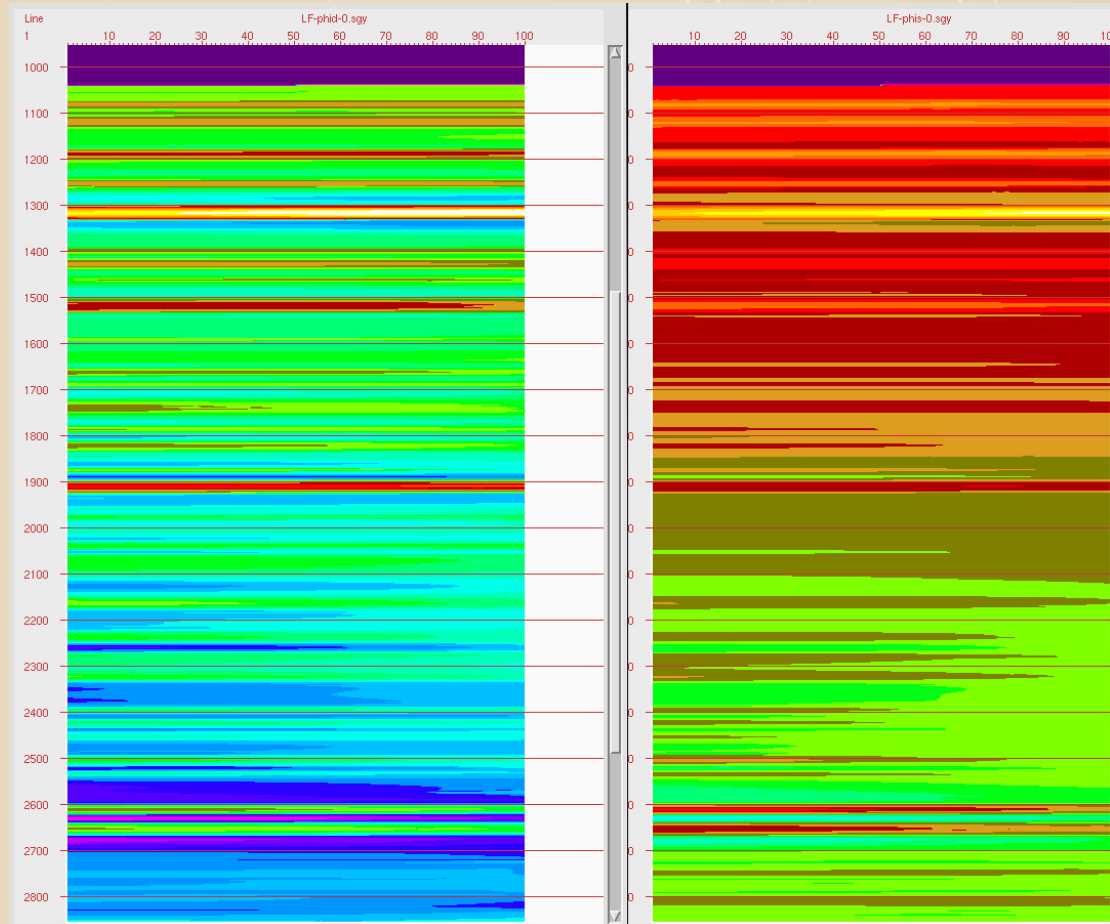
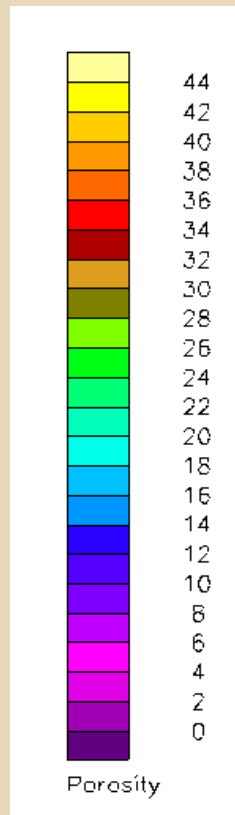




## Perfect Model

### Density Porosity

### Velocity Porosity



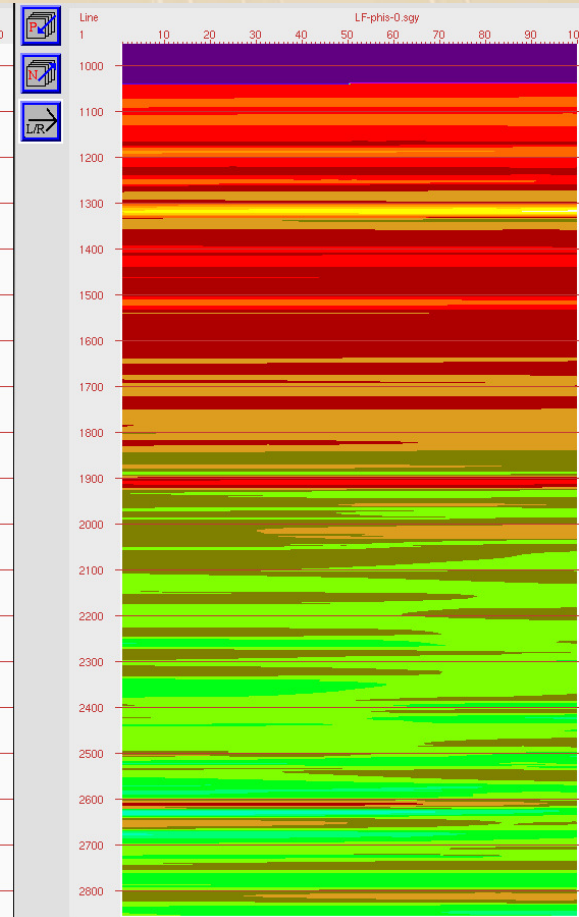
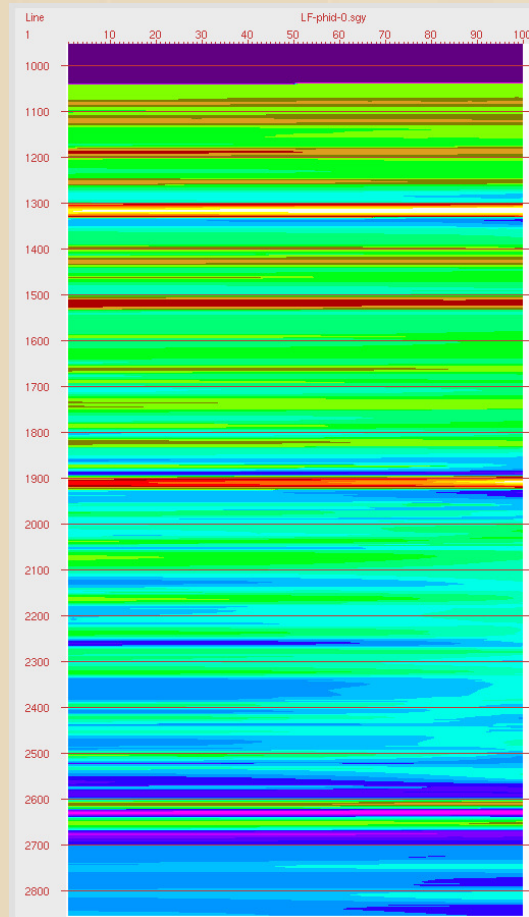
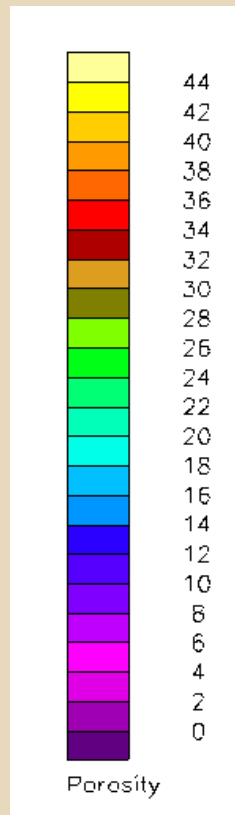




## AGC Scaler + Offset Scaler

Density Porosity

Velocity Porosity





# NMO Stretch Then Filter Back to Far Offset Frequency Content

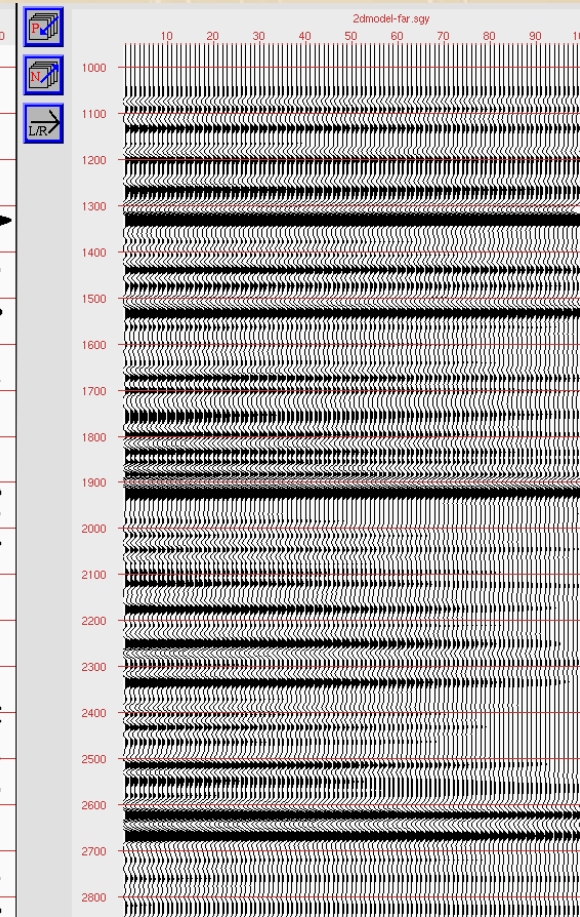
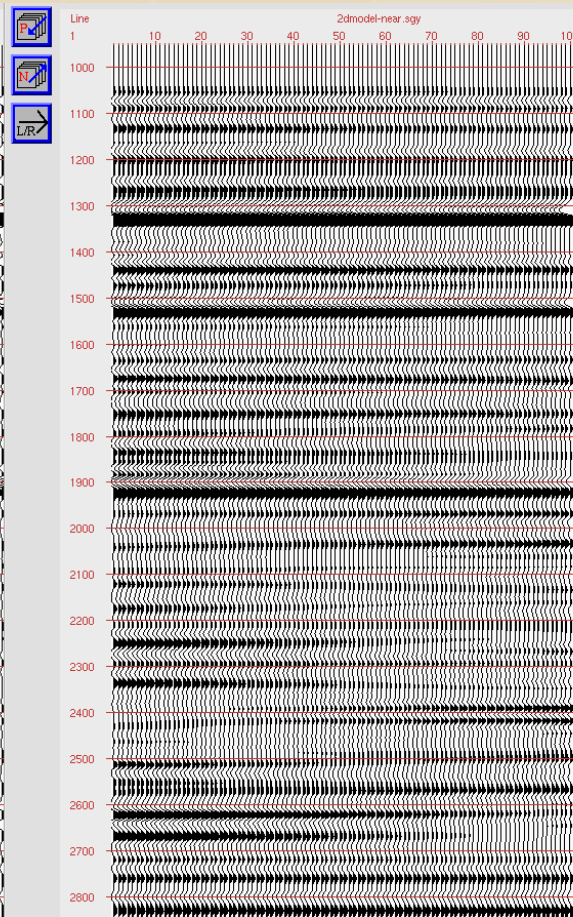
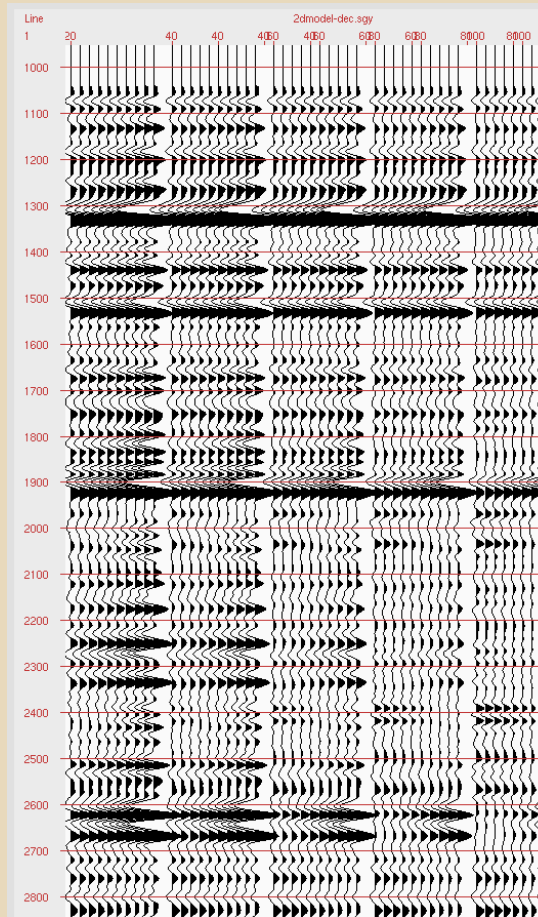


## Perfect Model

Every 20<sup>th</sup> gather

Near Stack

Far Stack





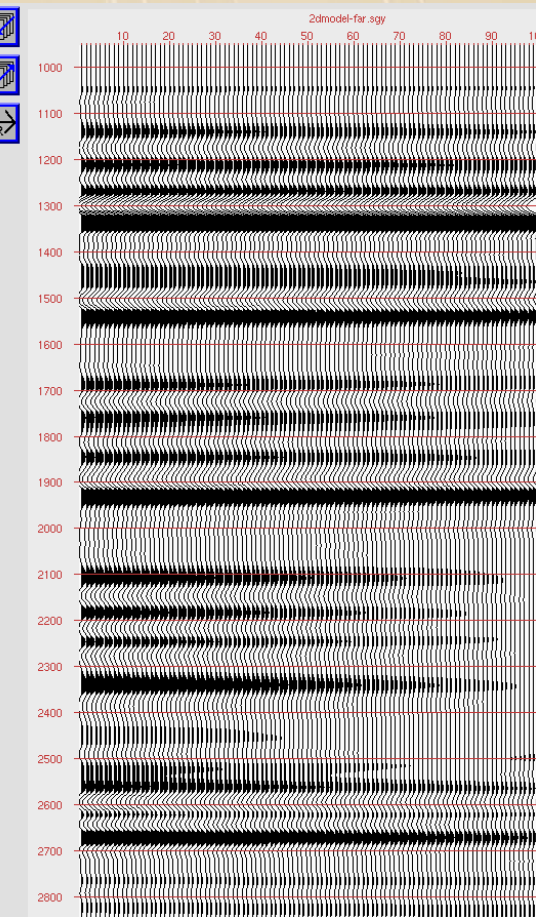
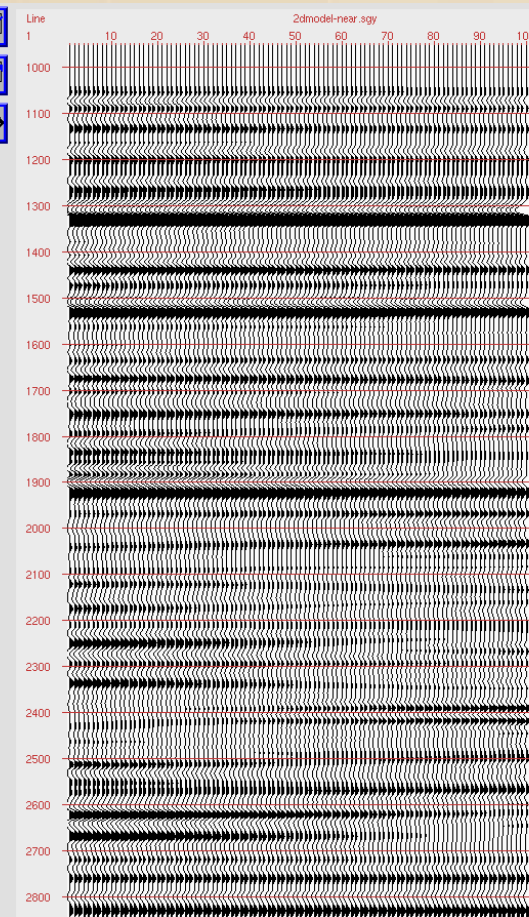
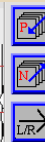
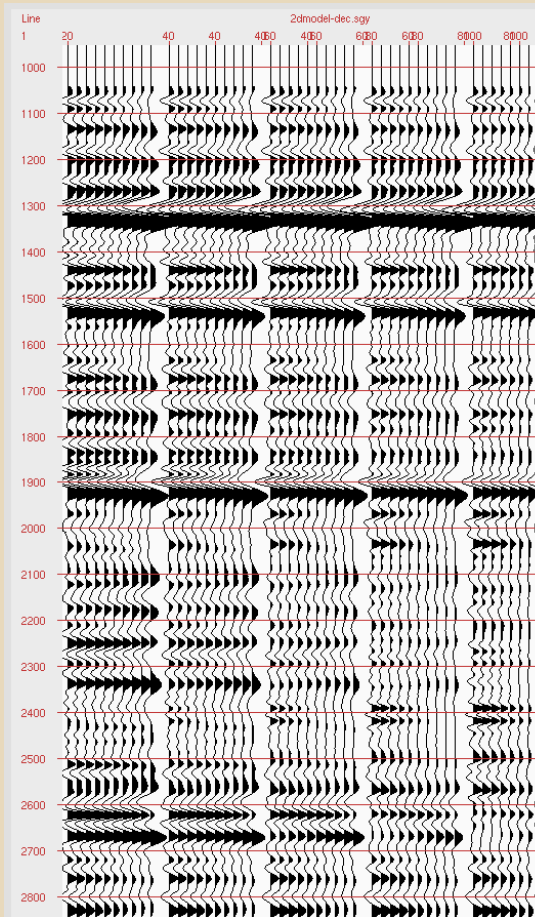


## NMO Stretch

Every 20<sup>th</sup> gather

Near Stack

Far Stack





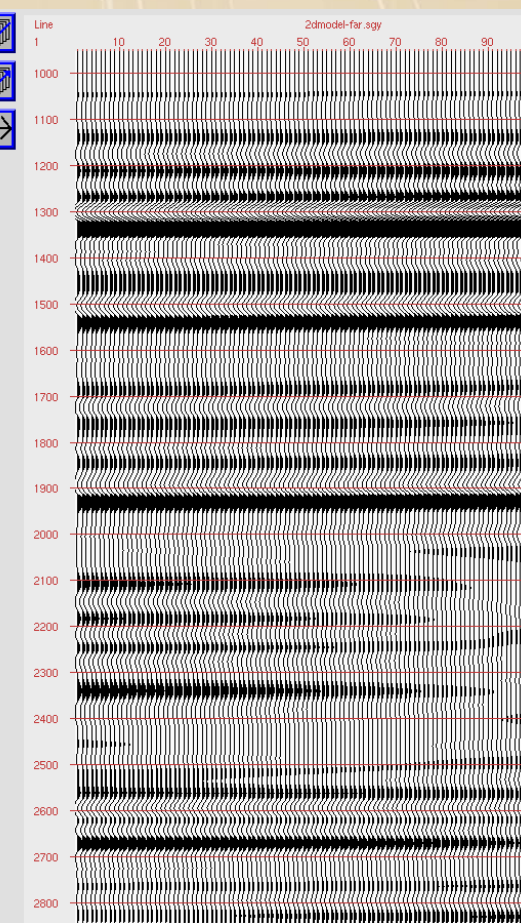
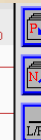
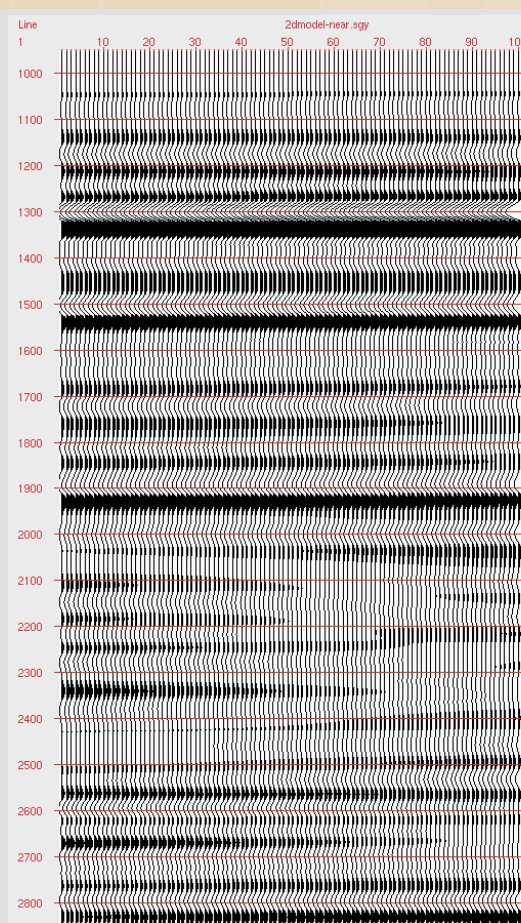
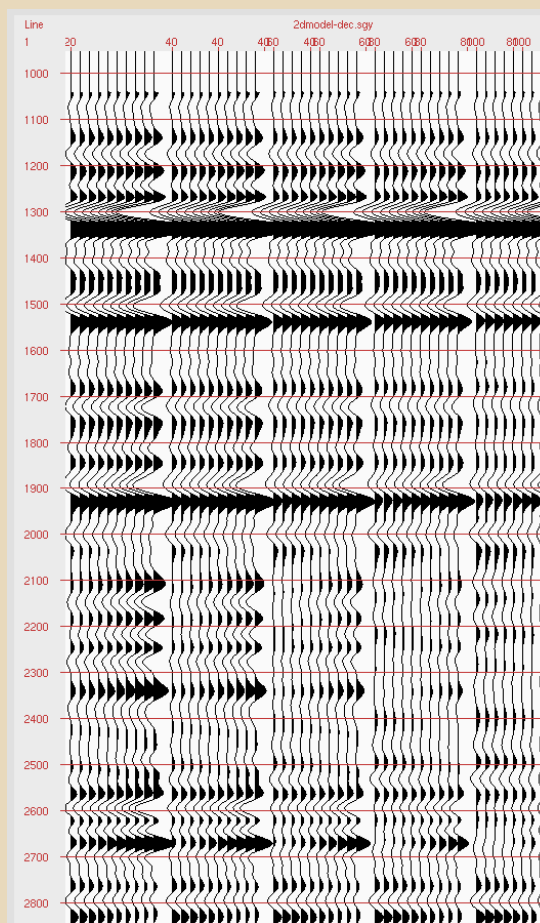


## NMO Stretch then Filter Back

Every 20<sup>th</sup> gather

Near Stack

Far Stack



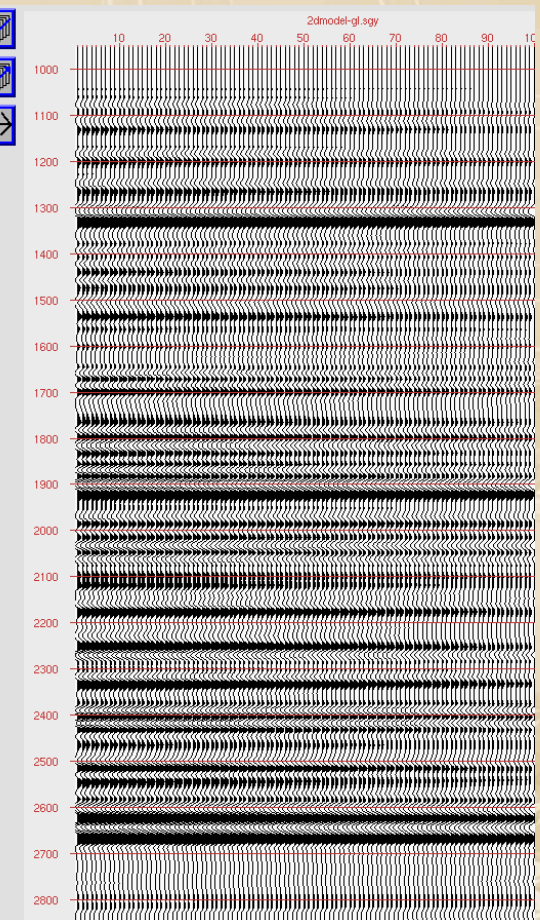
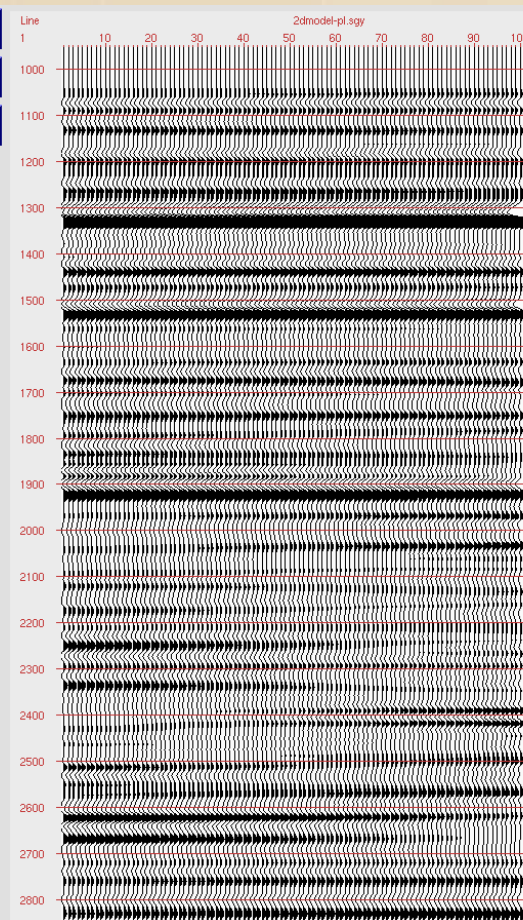
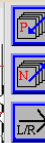
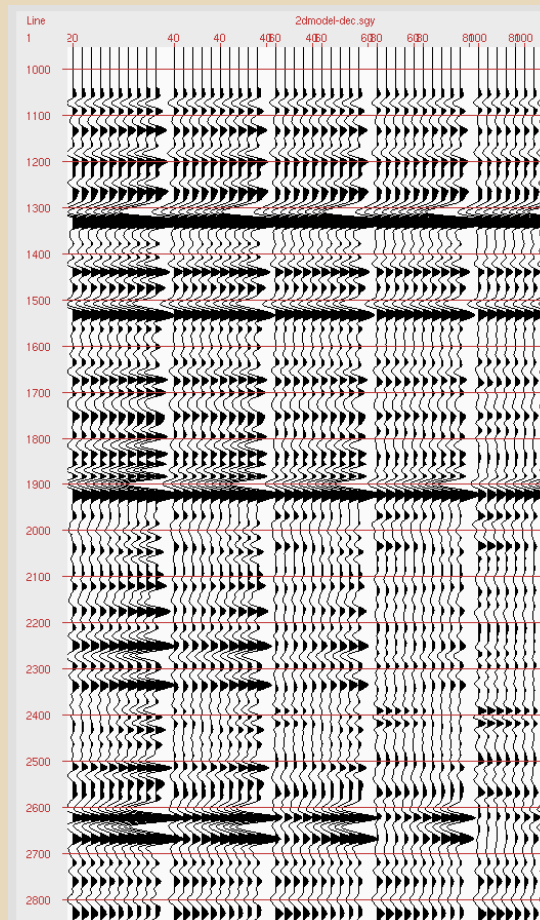


## Perfect Model

Every 20<sup>th</sup> gather

P Stack

G Stack





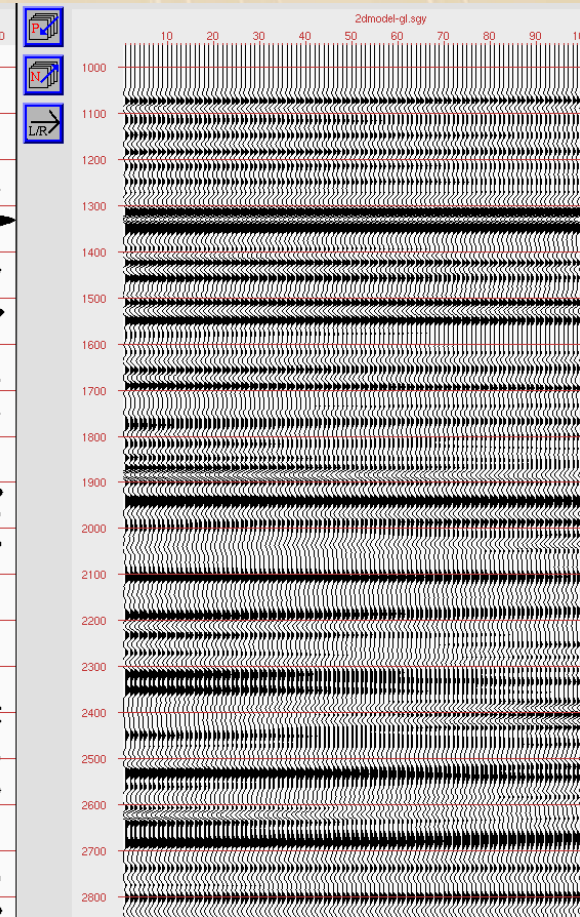
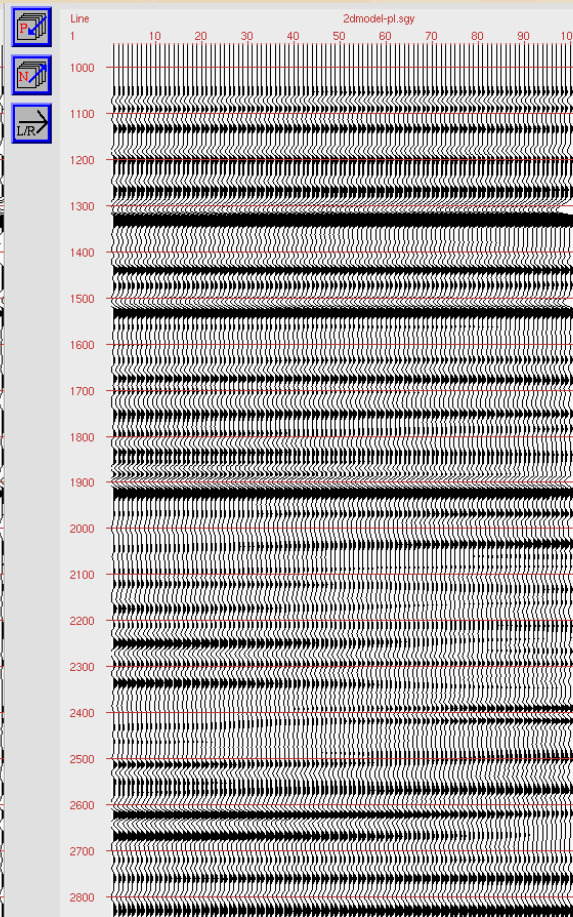
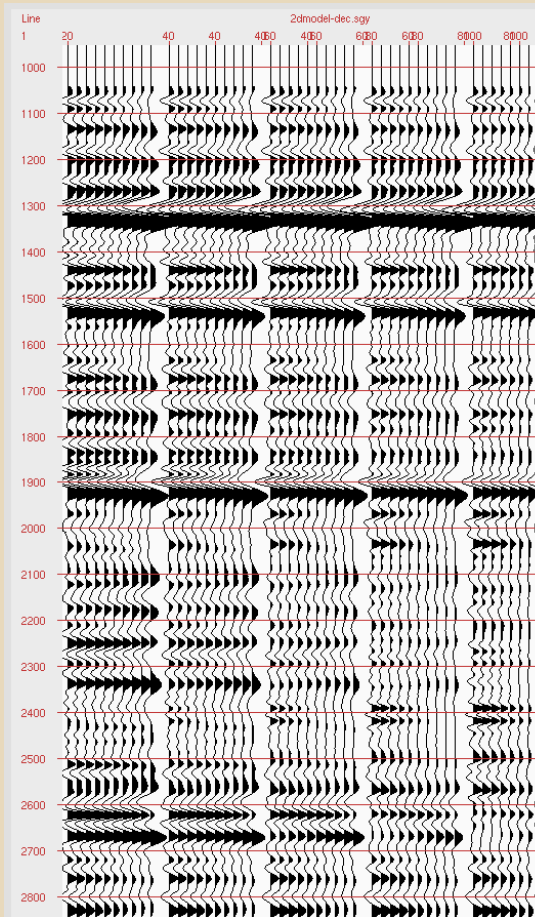


## NMO Stretch

Every 20<sup>th</sup> gather

P Stack

G Stack



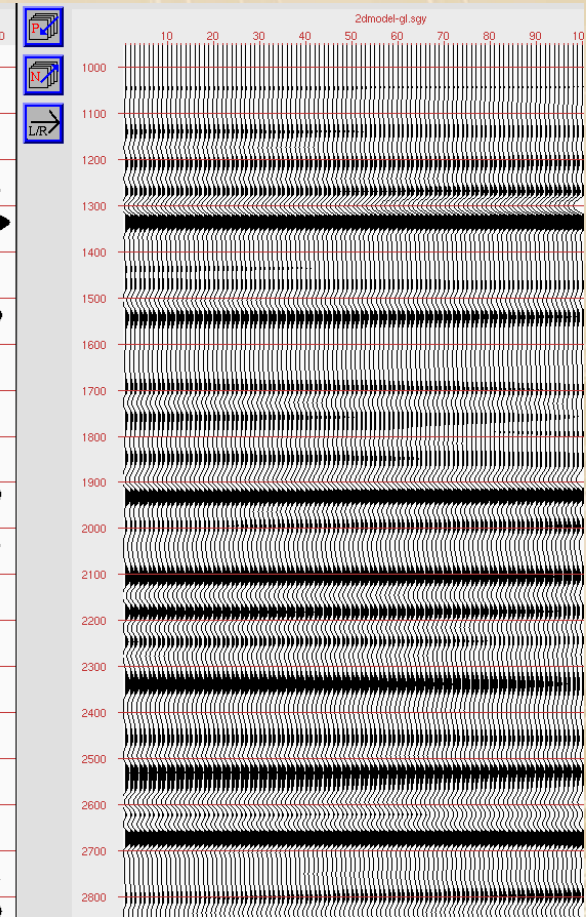
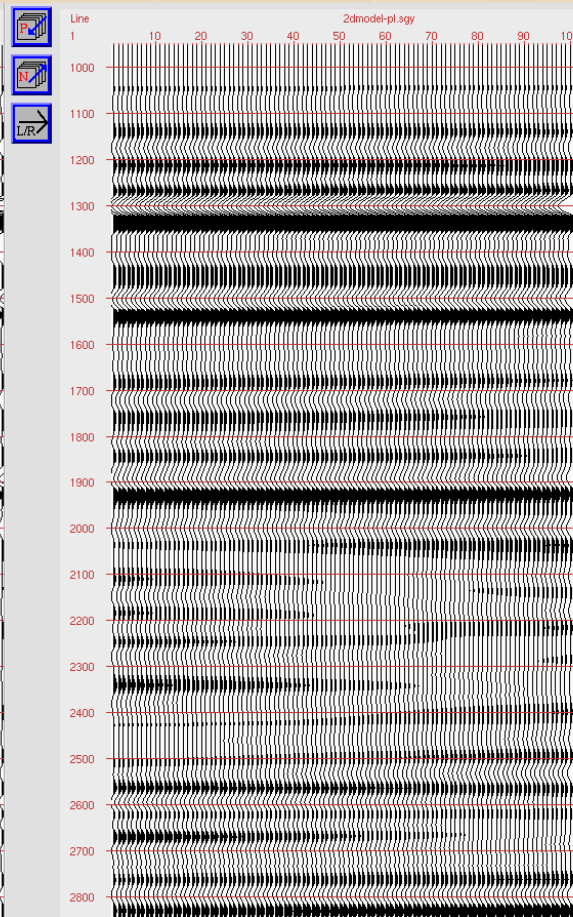
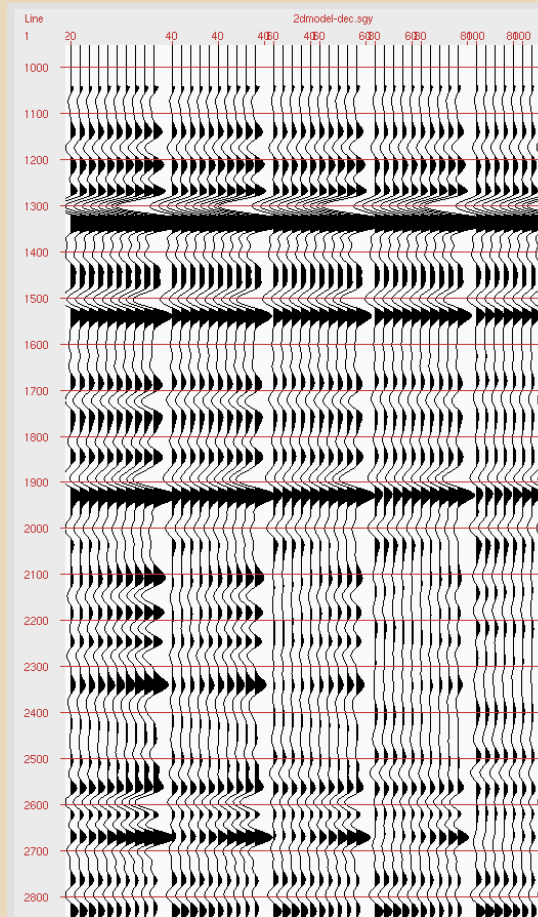


## NMO Stretch then Filter Back

Every 20<sup>th</sup> gather

P Stack

G Stack

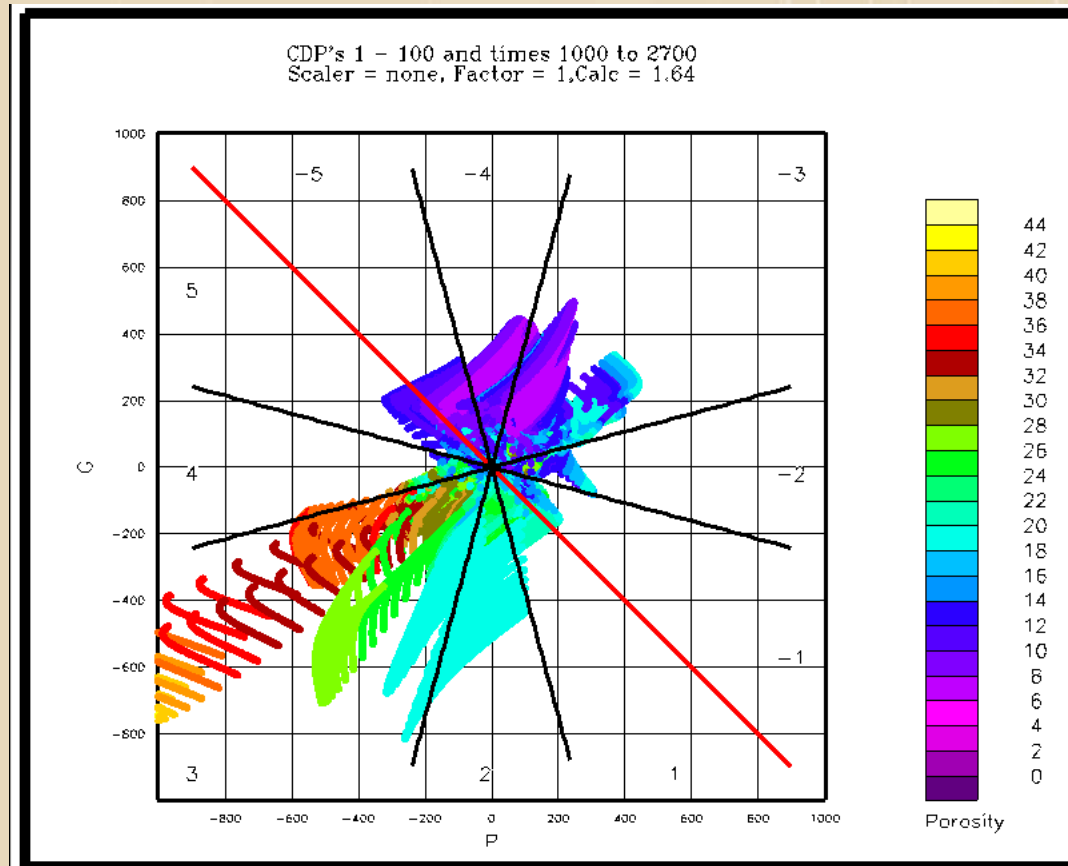






## Perfect Model

Cross Plot of P vs G  
Color is Porosity

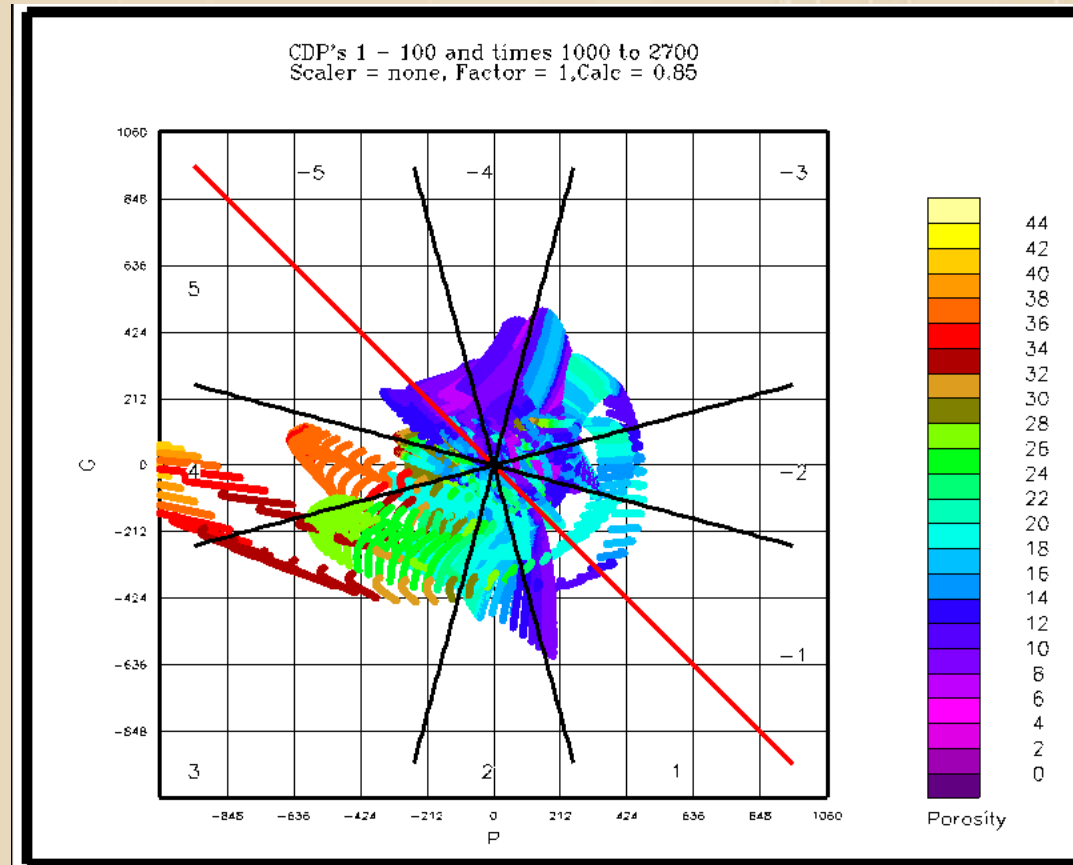


Inverted Space



## NMO Stretch

Cross Plot of P vs G  
Color is Porosity

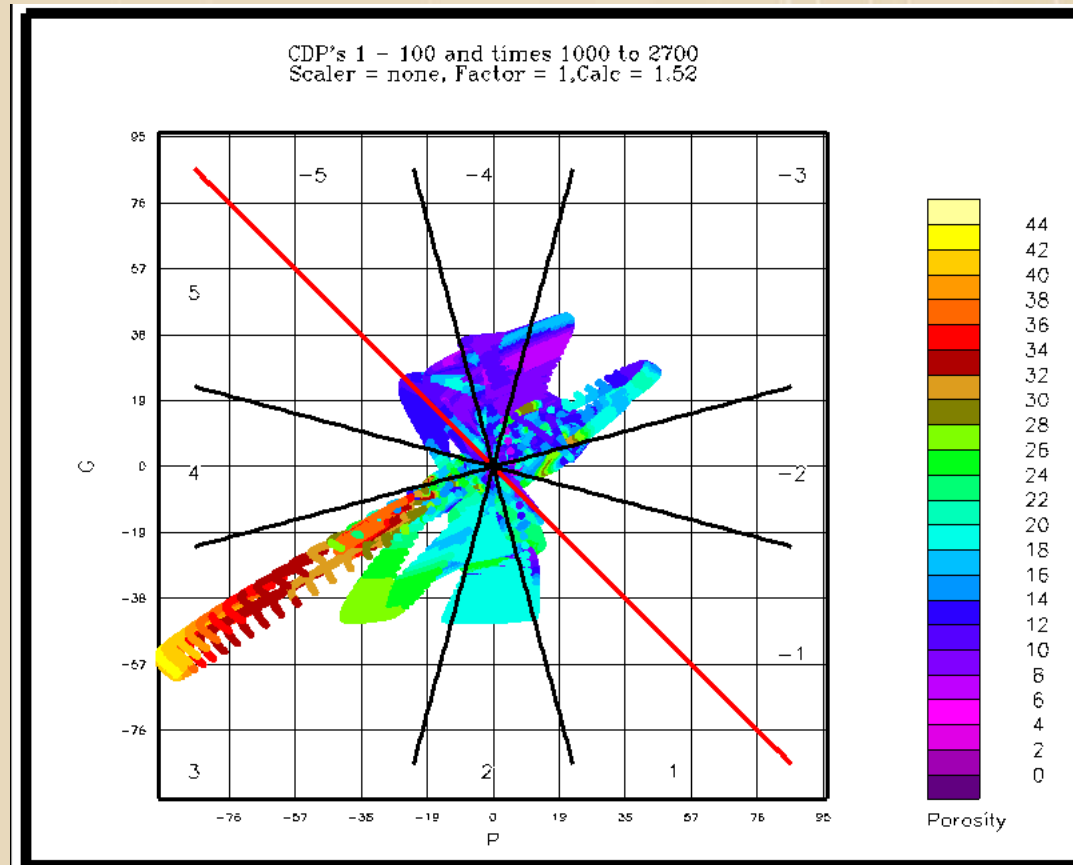


Inverted Space



## NMO Stretch then Filter Back

Cross Plot of P vs G  
Color is Porosity

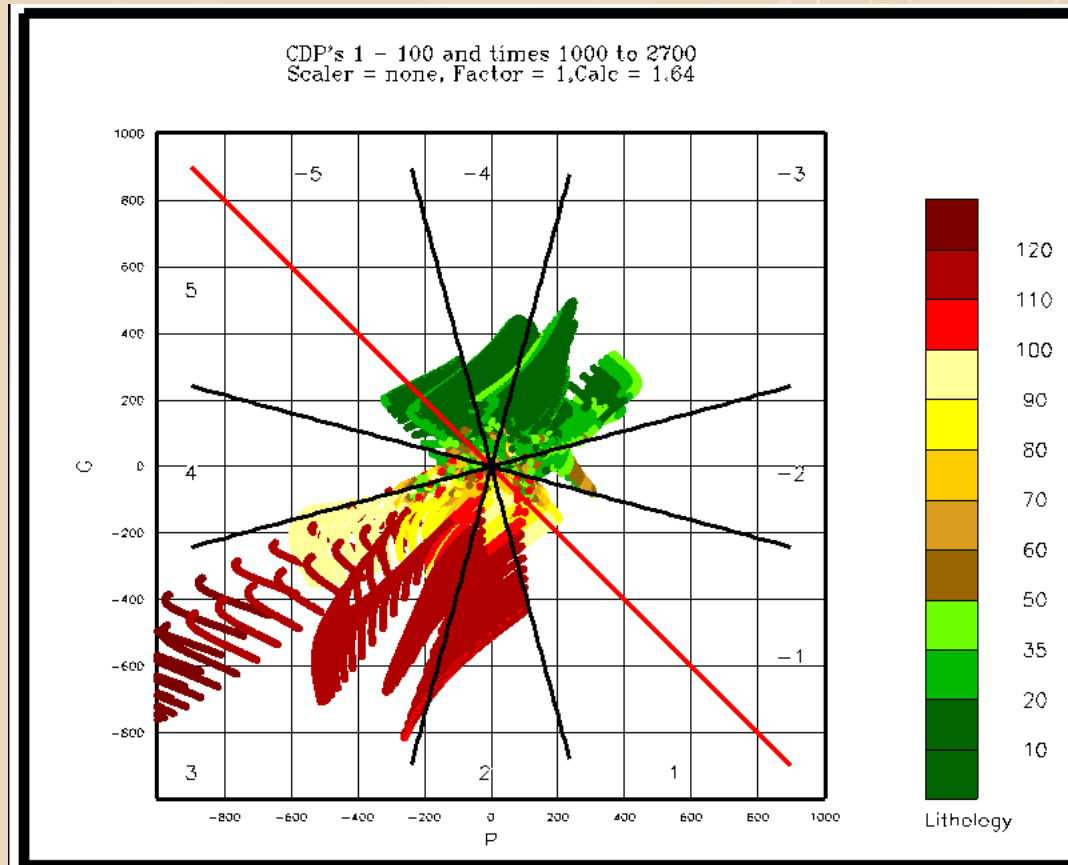


Inverted Space



## Perfect Model

Cross Plot of P vs G  
Color is Lithology  
Shale is Green  
Sand is Yellow  
Oil is Red



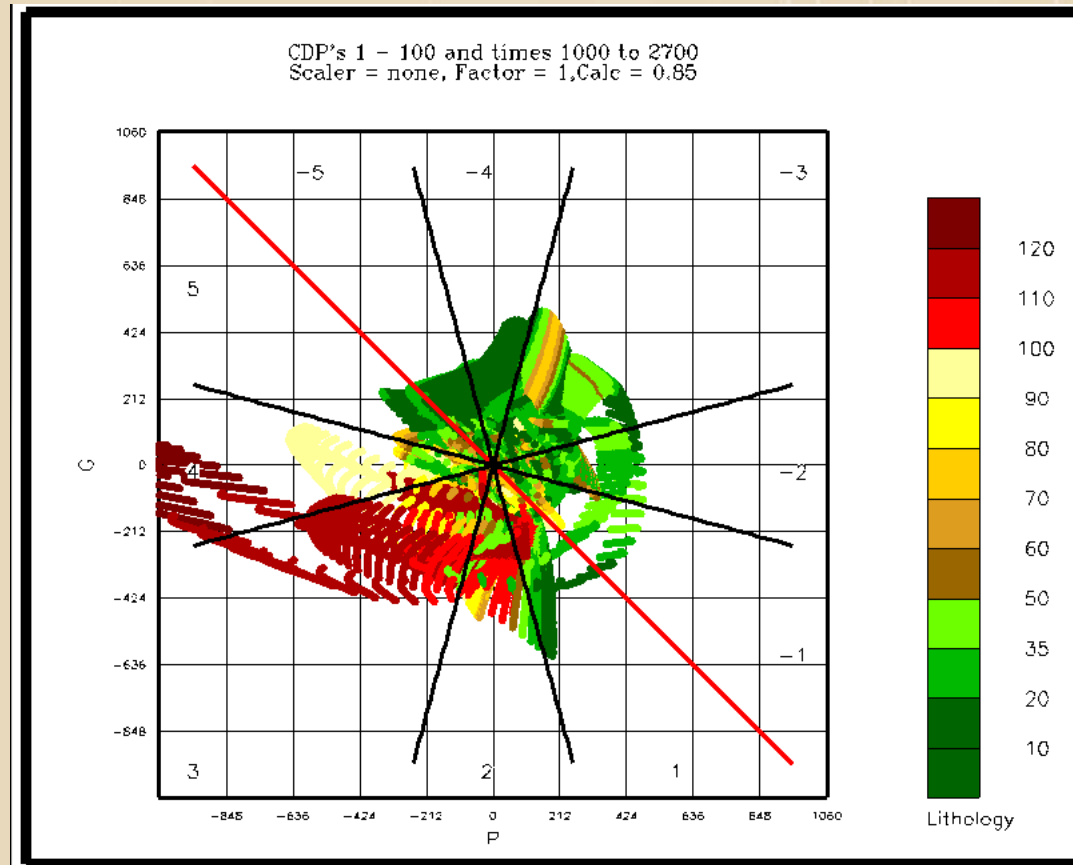
Inverted Space





## NMO Stretch

Cross Plot of P vs G  
Color is Lithology  
Shale is Green  
Sand is Yellow  
Oil is Red

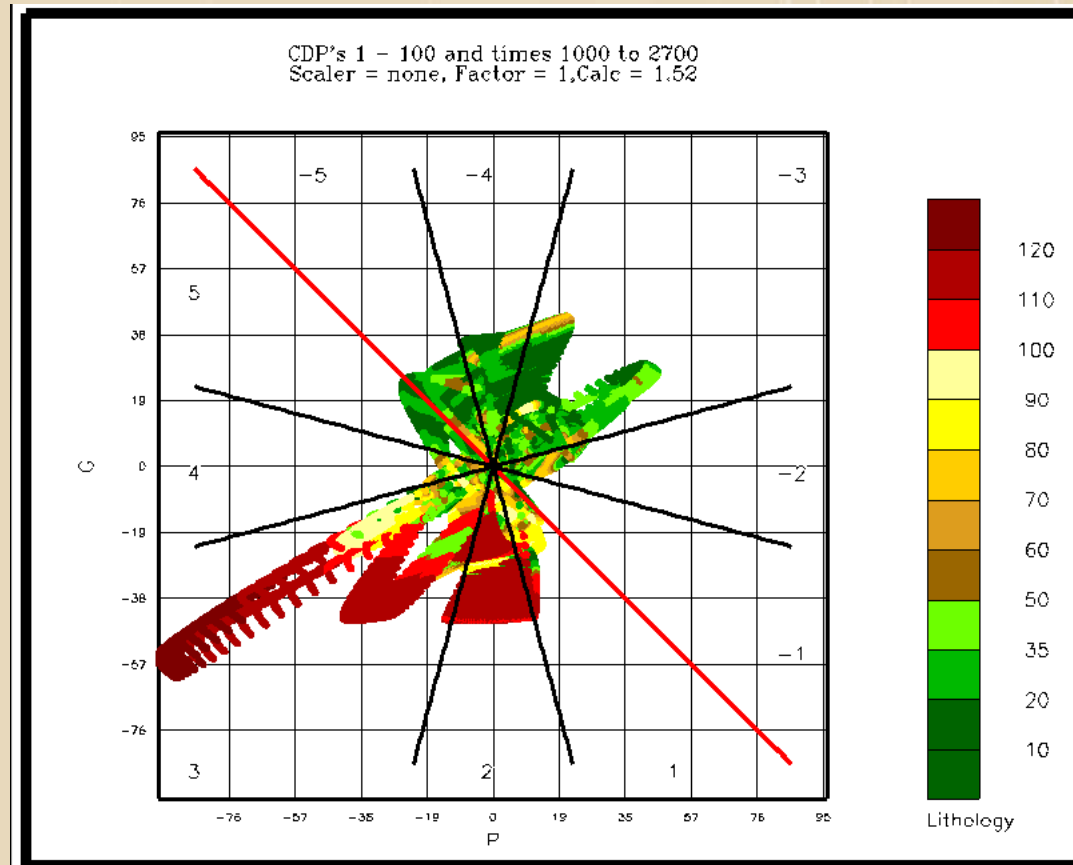


Inverted Space



## NMO Stretch then Filter Back

Cross Plot of P vs G  
Color is Lithology  
Shale is Green  
Sand is Yellow  
Oil is Red



Inverted Space

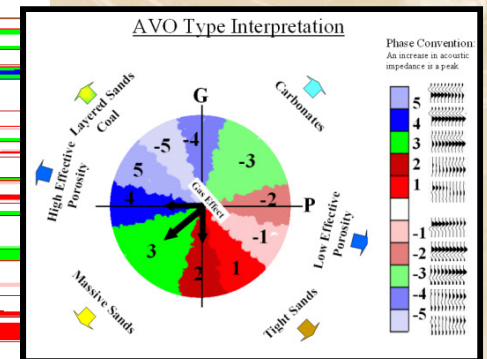
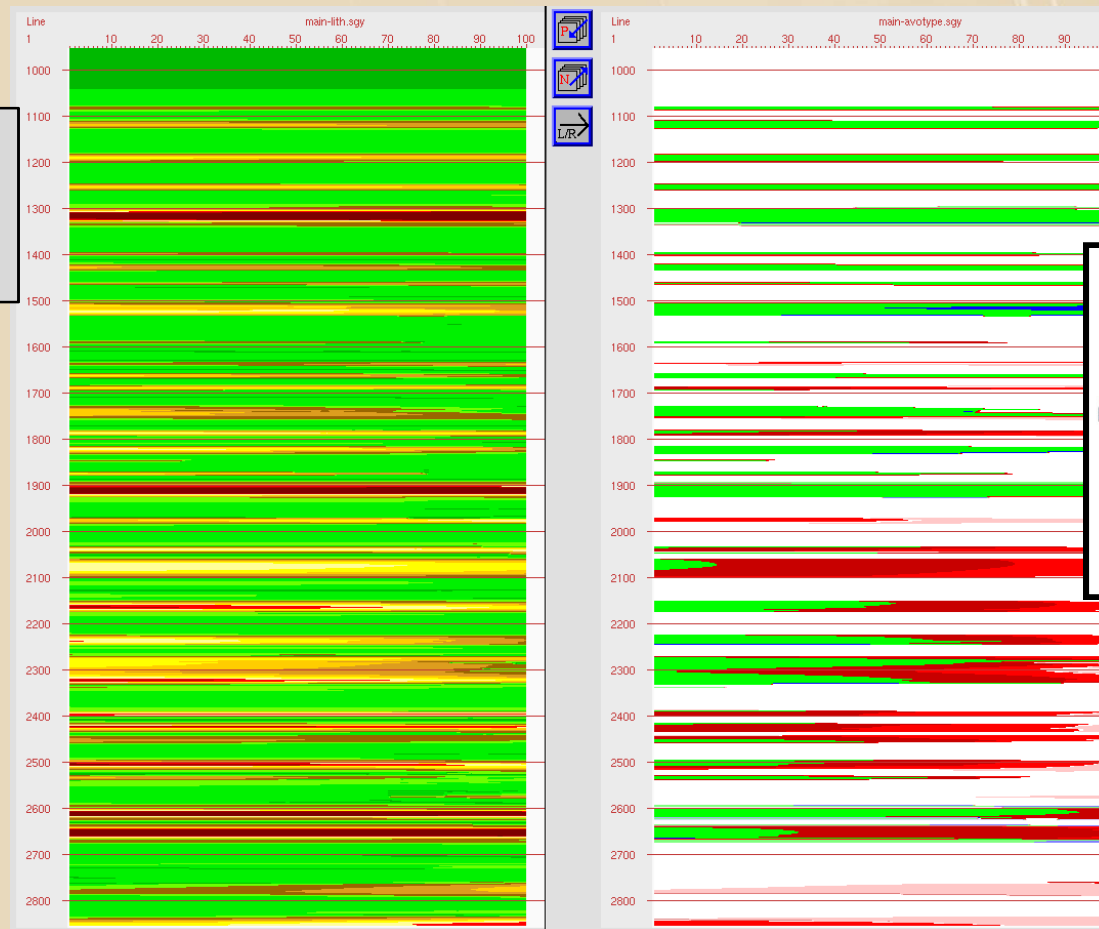


## Perfect Model

### Lithology

### AVO Type

Shale is Green  
Sand is Yellow  
Oil is Red



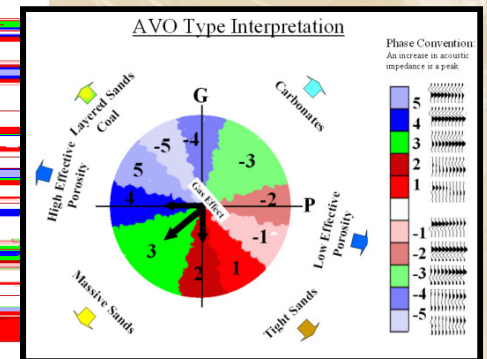
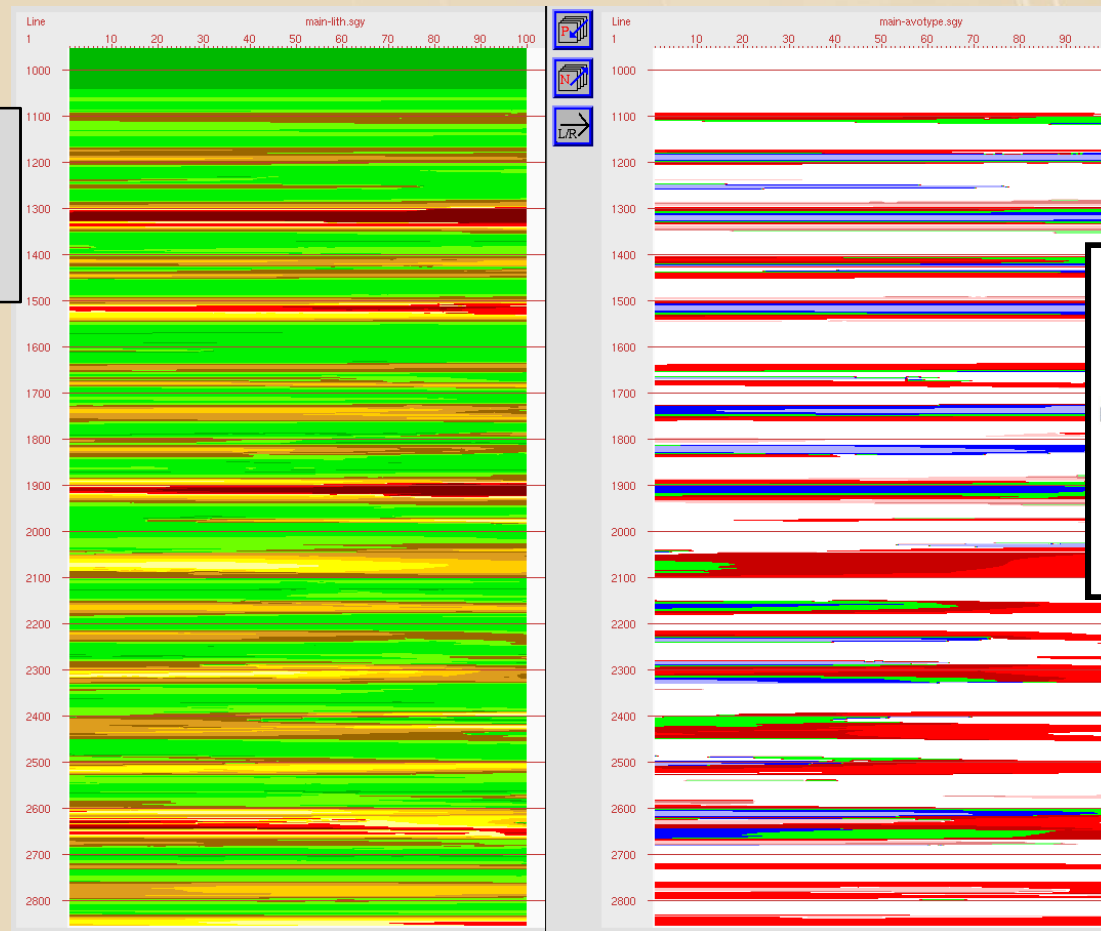


## NMO Stretch

### Lithology

### AVO Type

Shale is Green  
Sand is Yellow  
Oil is Red





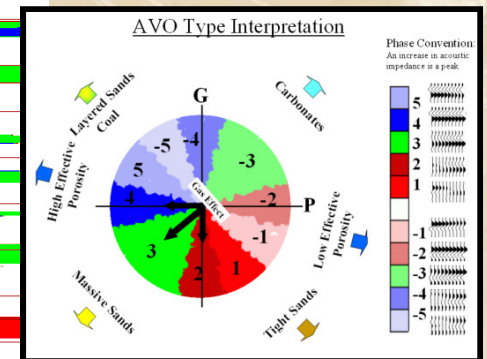
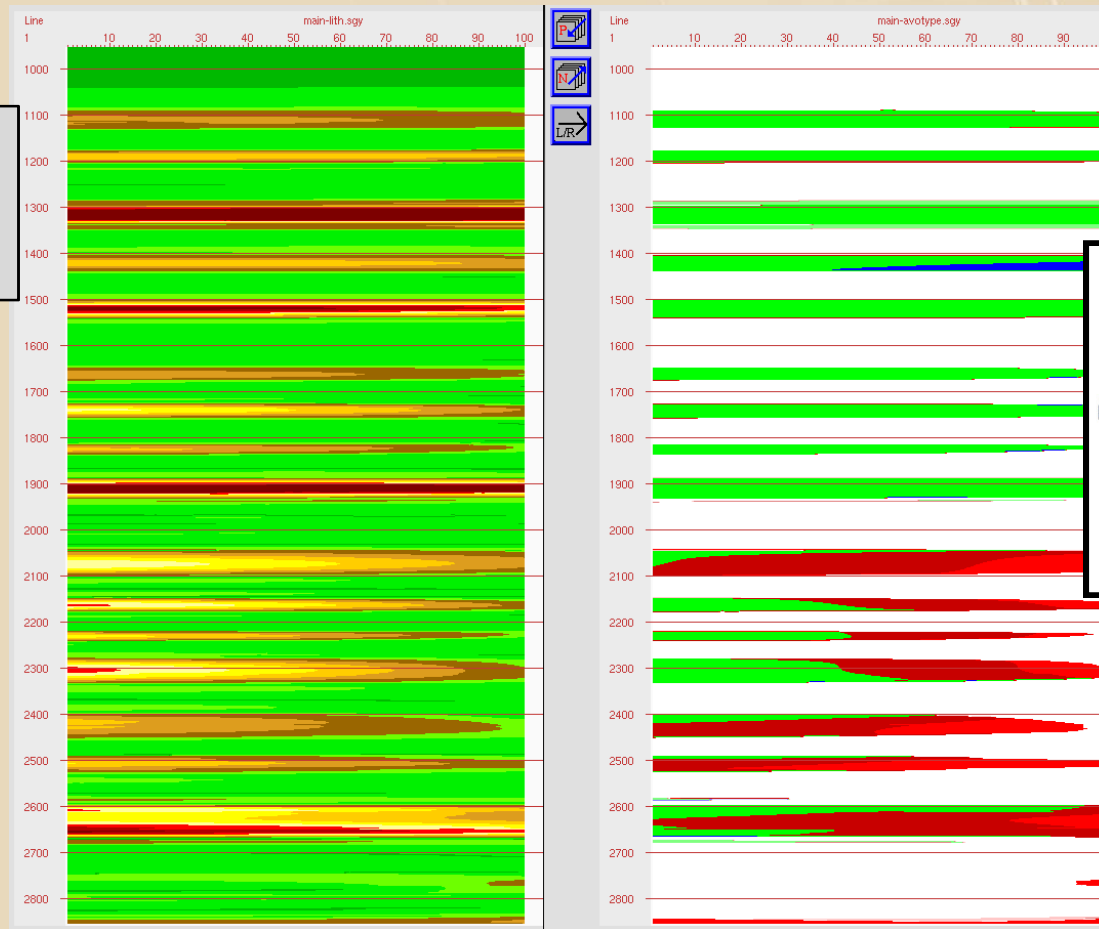


## NMO Stretch then Filter Back

### Lithology

### AVO Type

Shale is Green  
Sand is Yellow  
Oil is Red

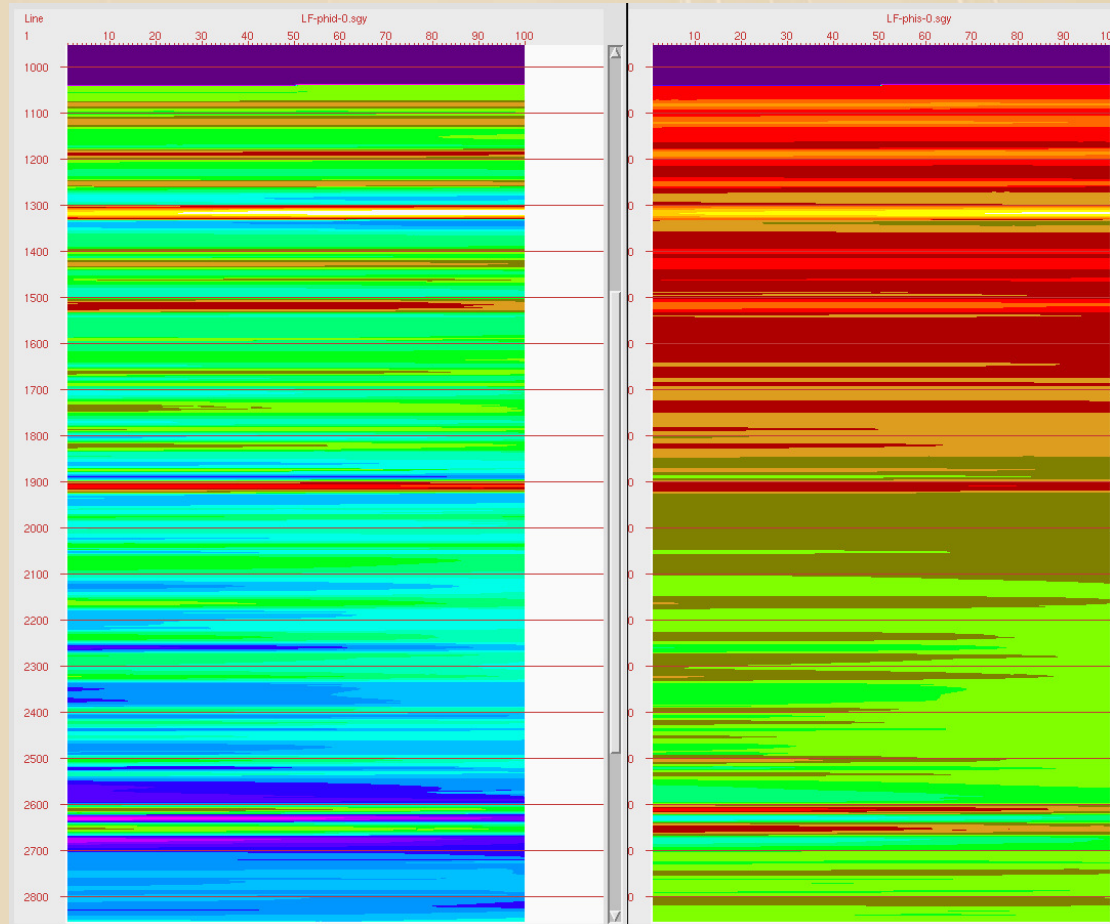
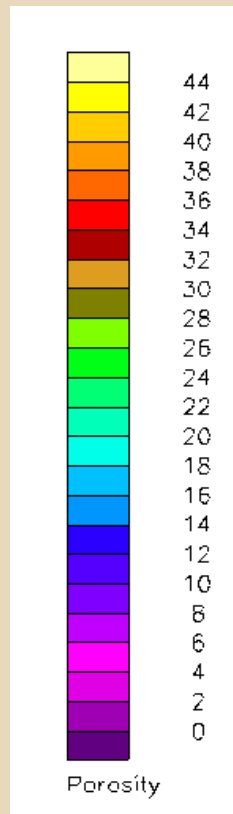




## Perfect Model

### Density Porosity

### Velocity Porosity

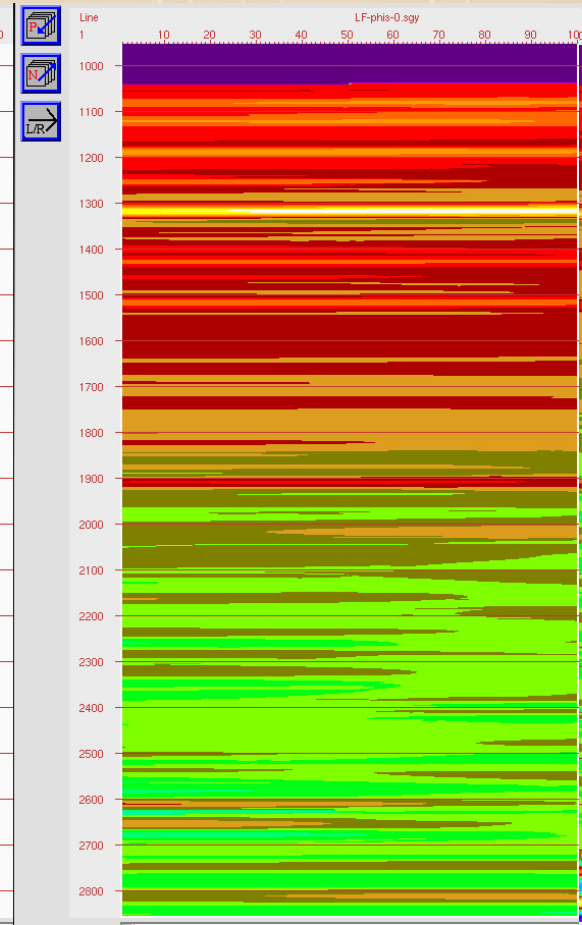
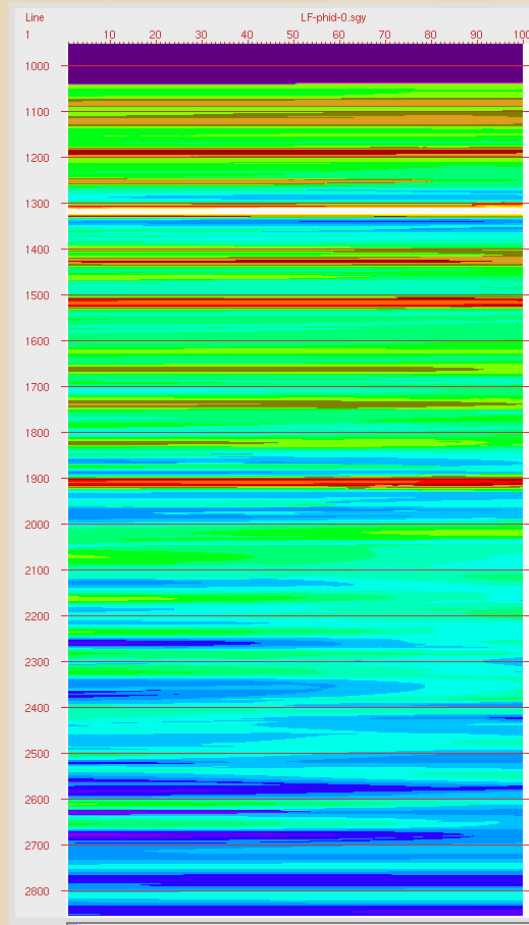
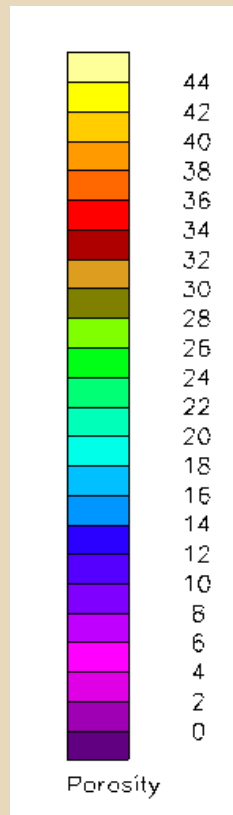




NMO Stretch

Density Porosity

Velocity Porosity

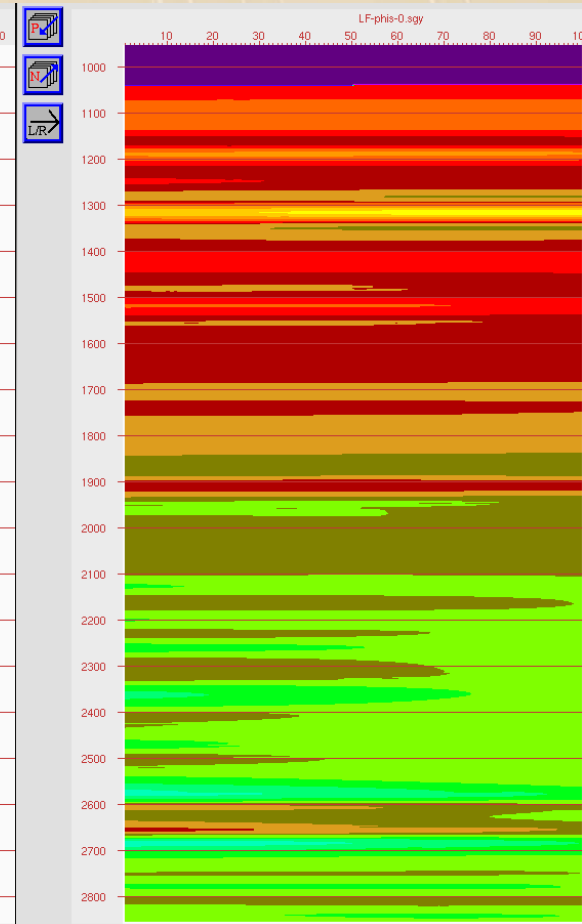
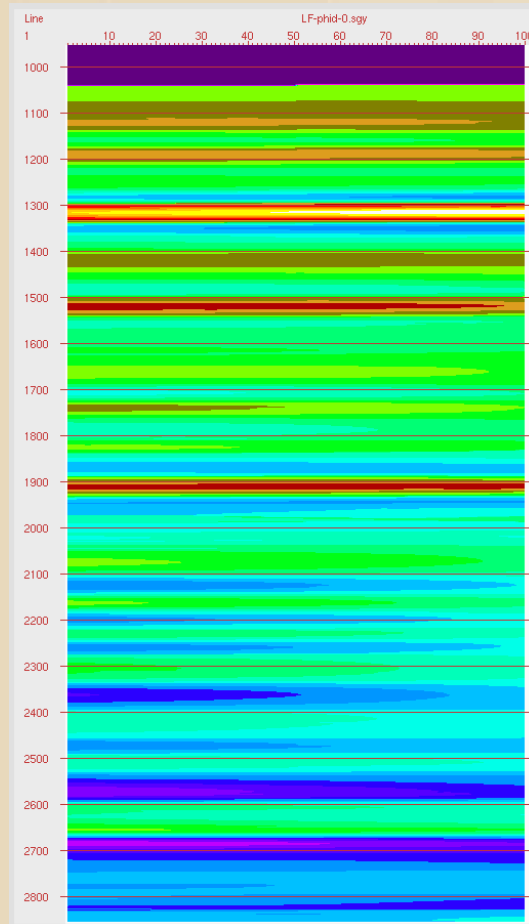
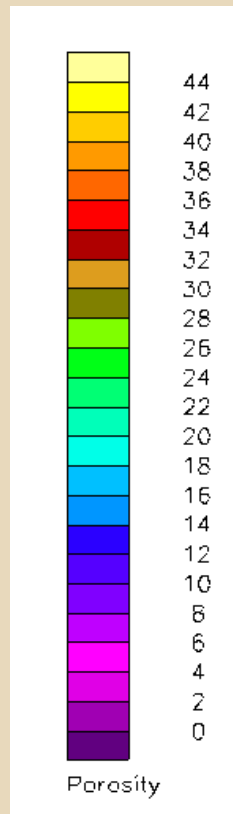




## NMO Stretch then Filter Back

### Density Porosity

### Velocity Porosity





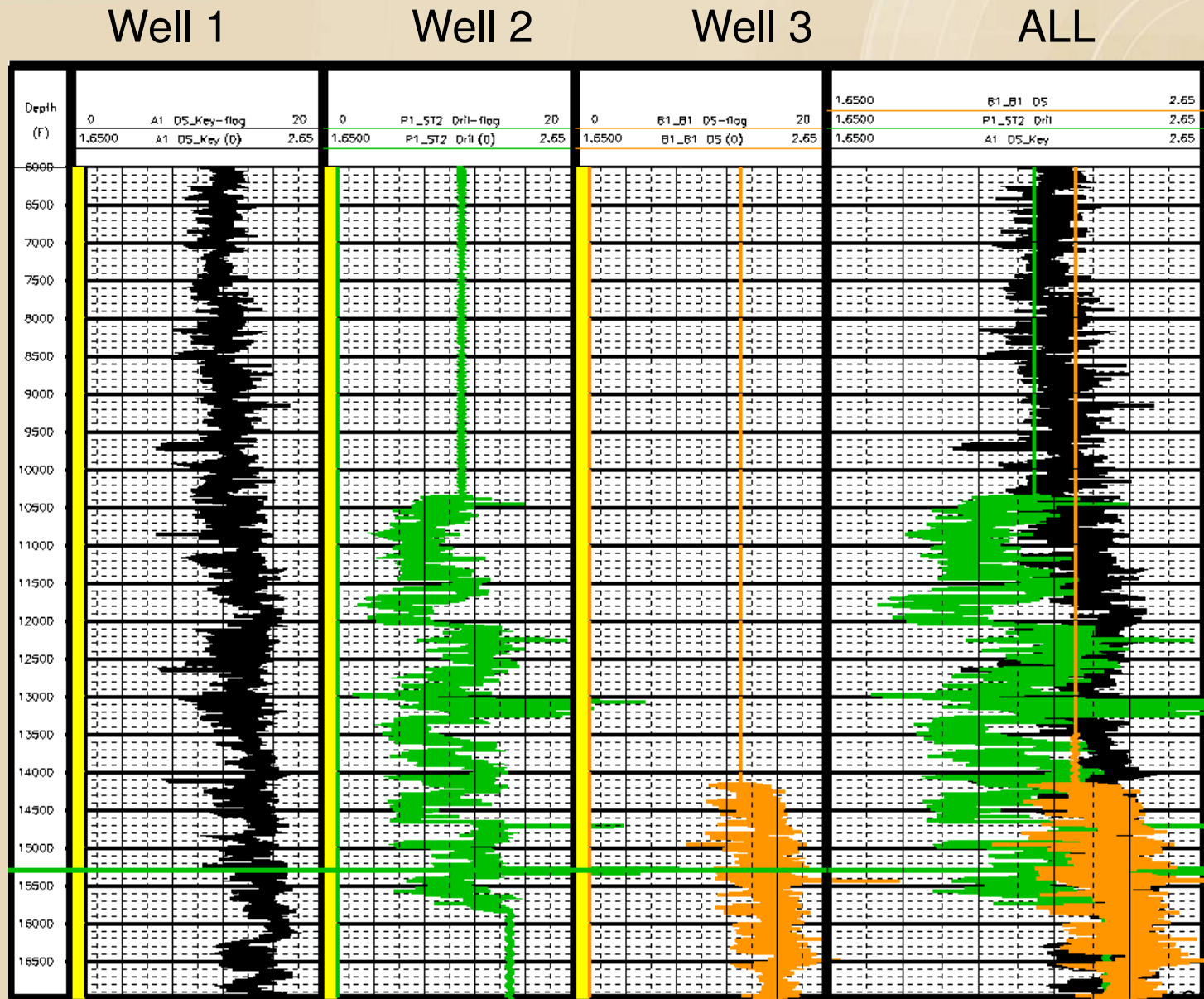


# One Last Point

Logs are *Very* Often Bad



# Density from 3 wells





# Density from 3 wells

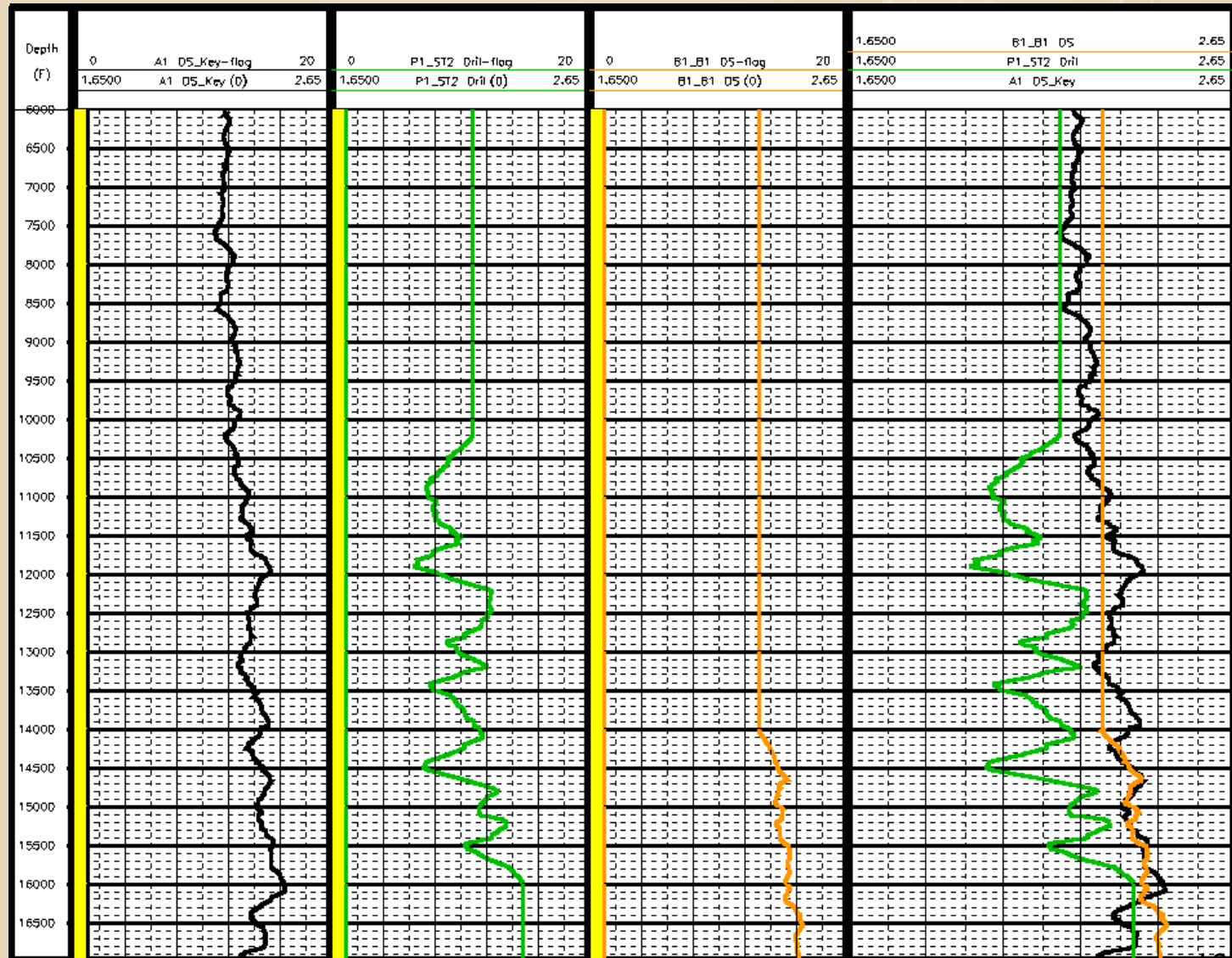
Well 1

Well 2

Well 3

ALL

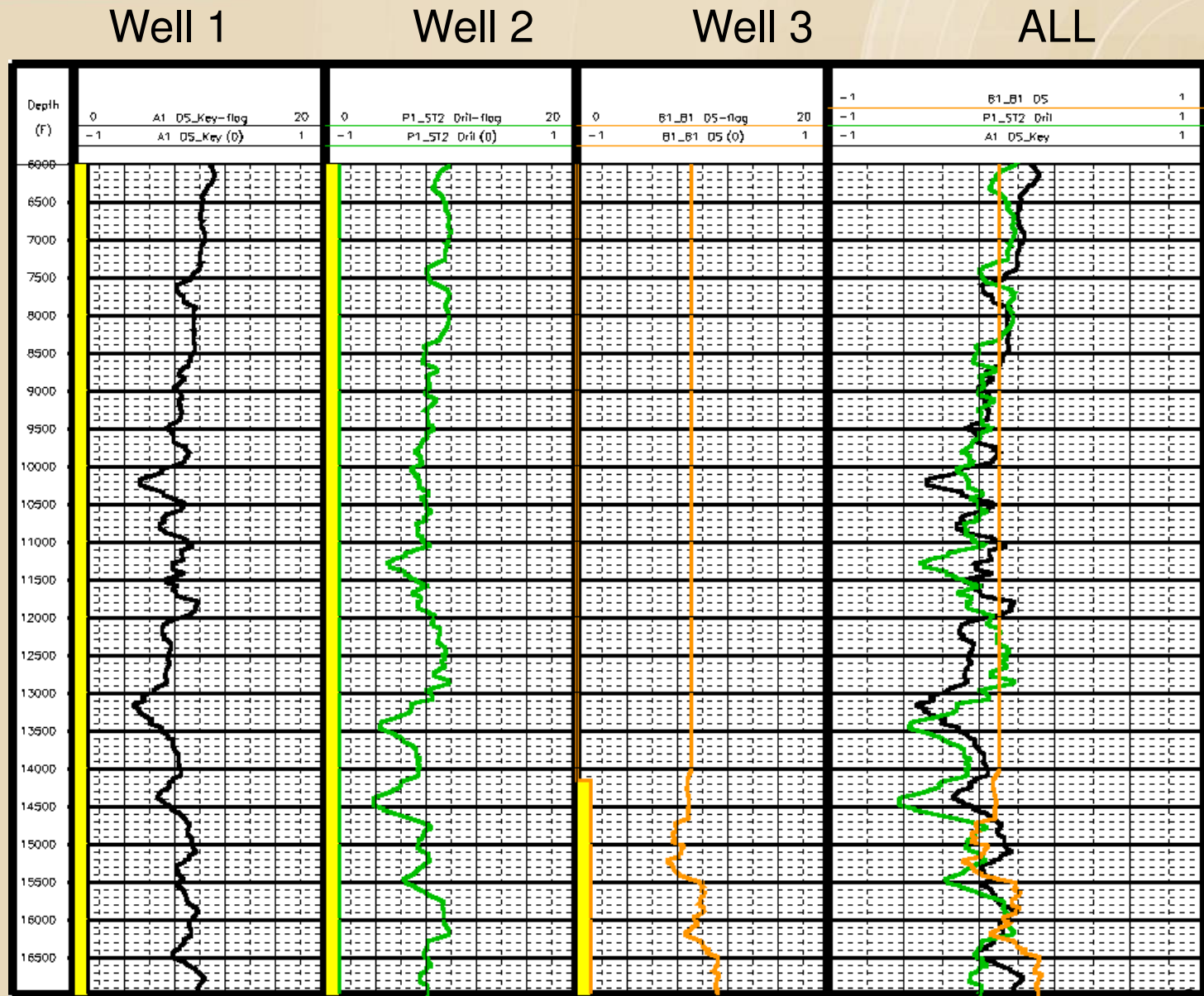
301 ft  
Boxcar  
Filter





# Resistivity from 3 wells

301 ft  
Boxcar  
Filter







# Density from 3 wells

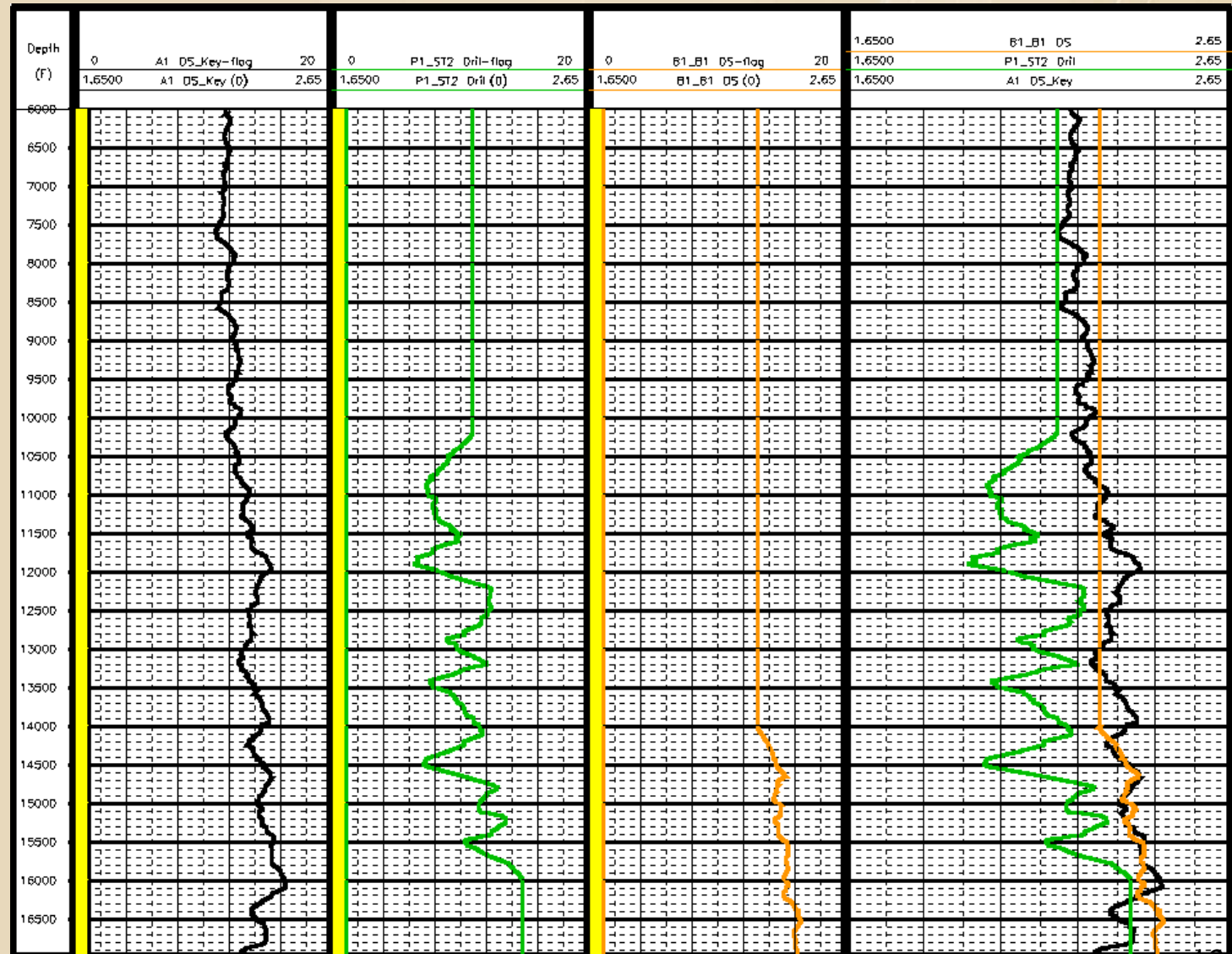
Well 1

Well 2

Well 3

ALL

301 ft  
Boxcar  
Filter





# Density from 3 wells

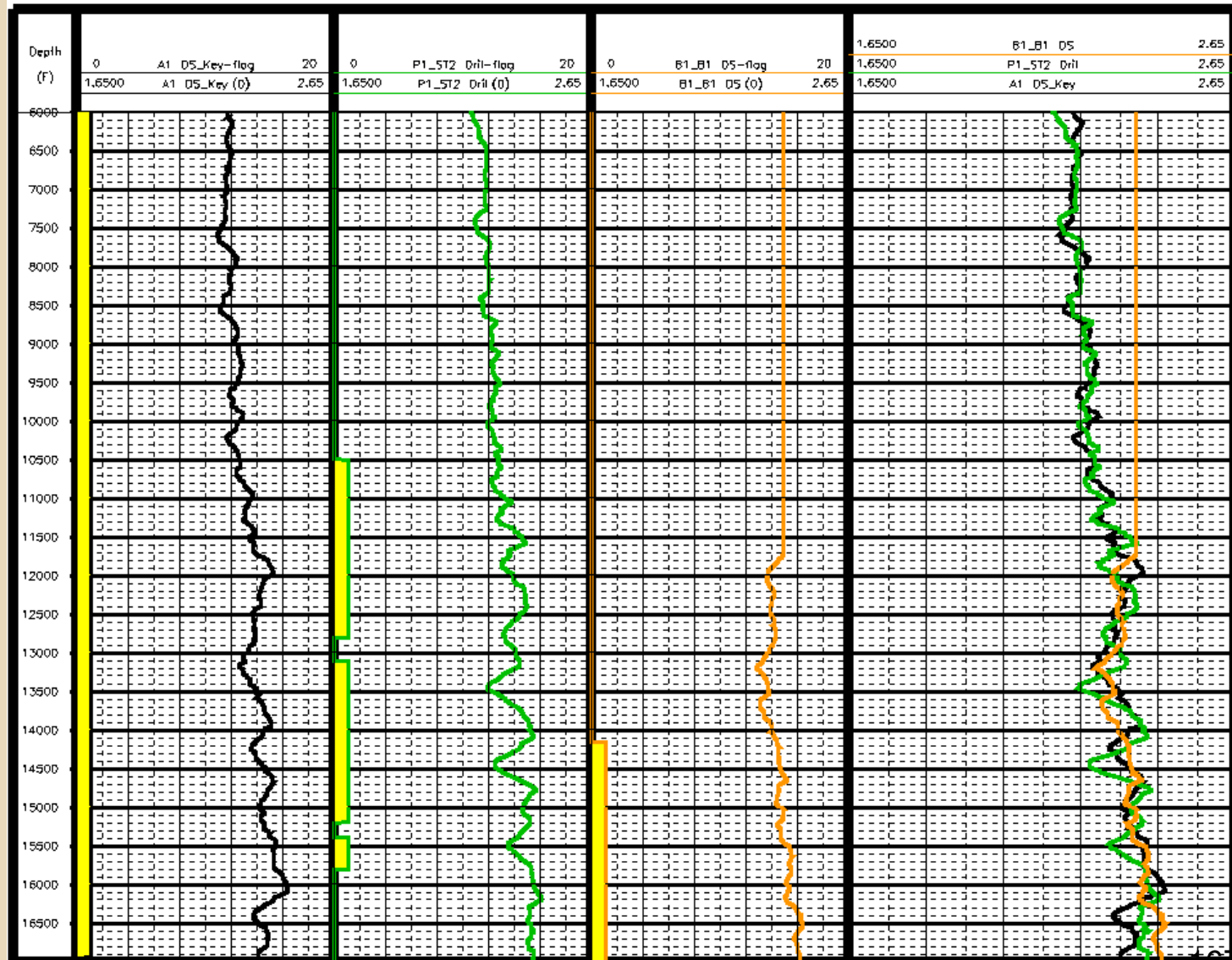
Well 1

Well 2

Well 3

ALL

301 ft  
Boxcar  
Filter





# Example Two



Multi-Well Plot rt

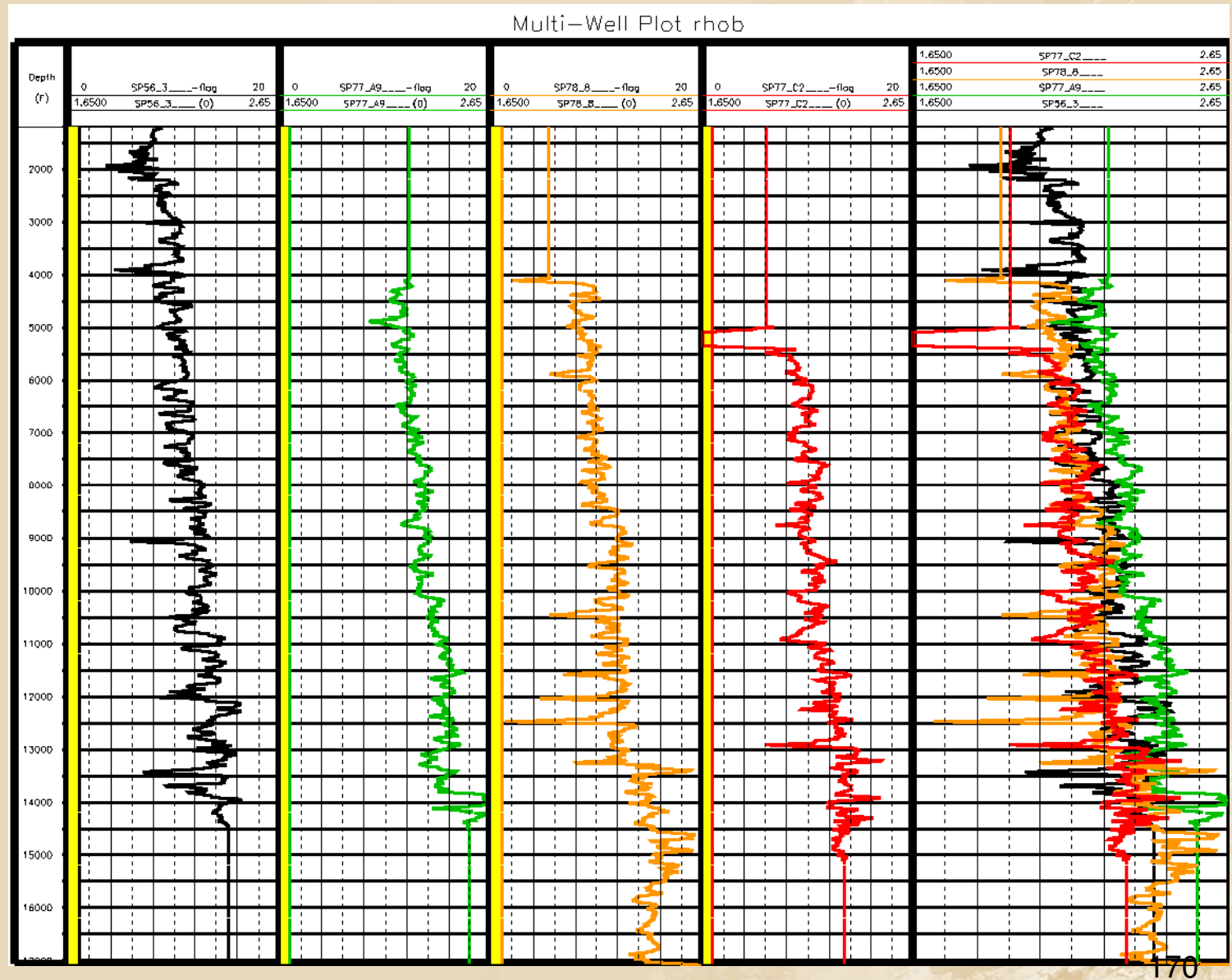






# Density

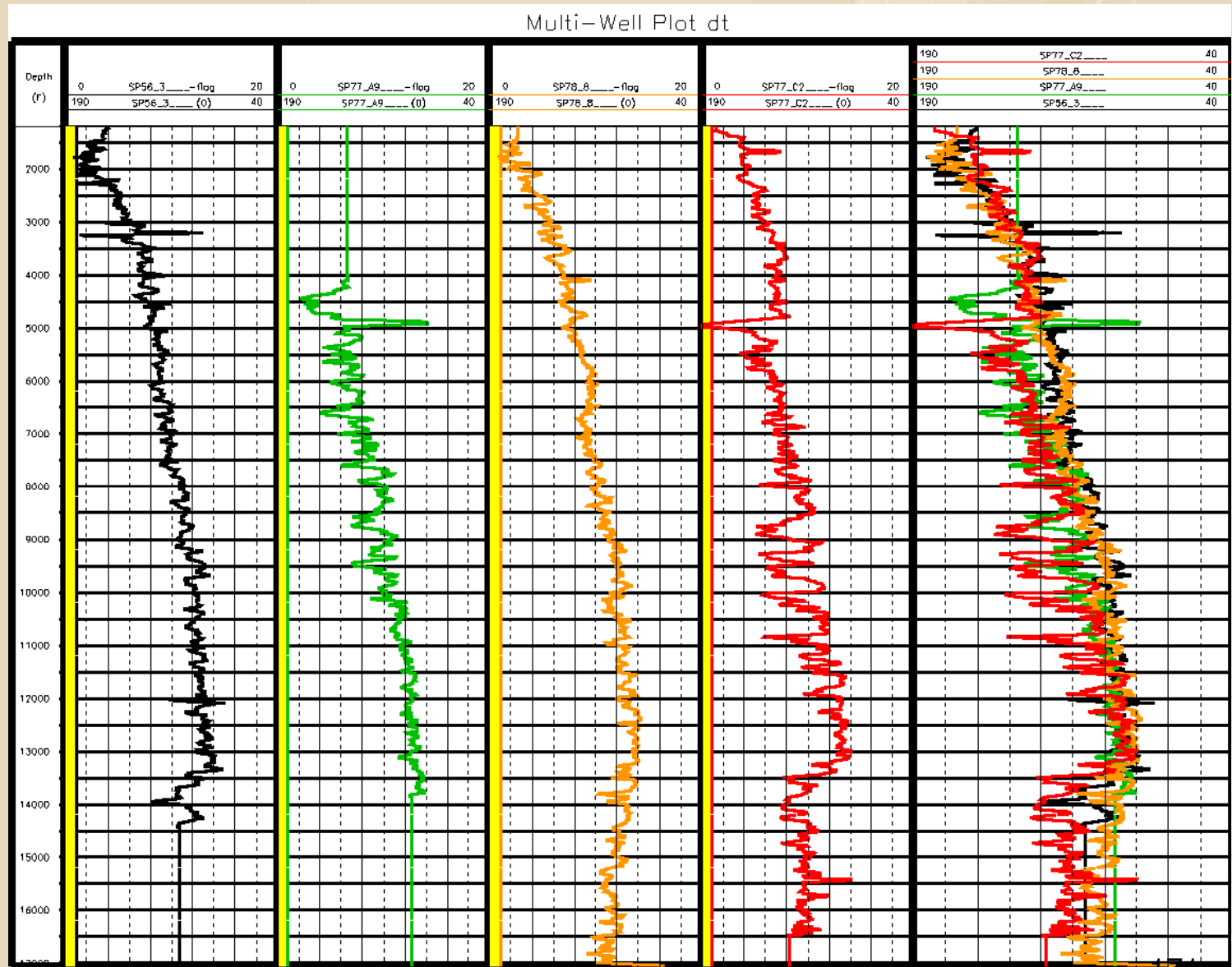
Not the  
case with  
RhoB





# Sonic

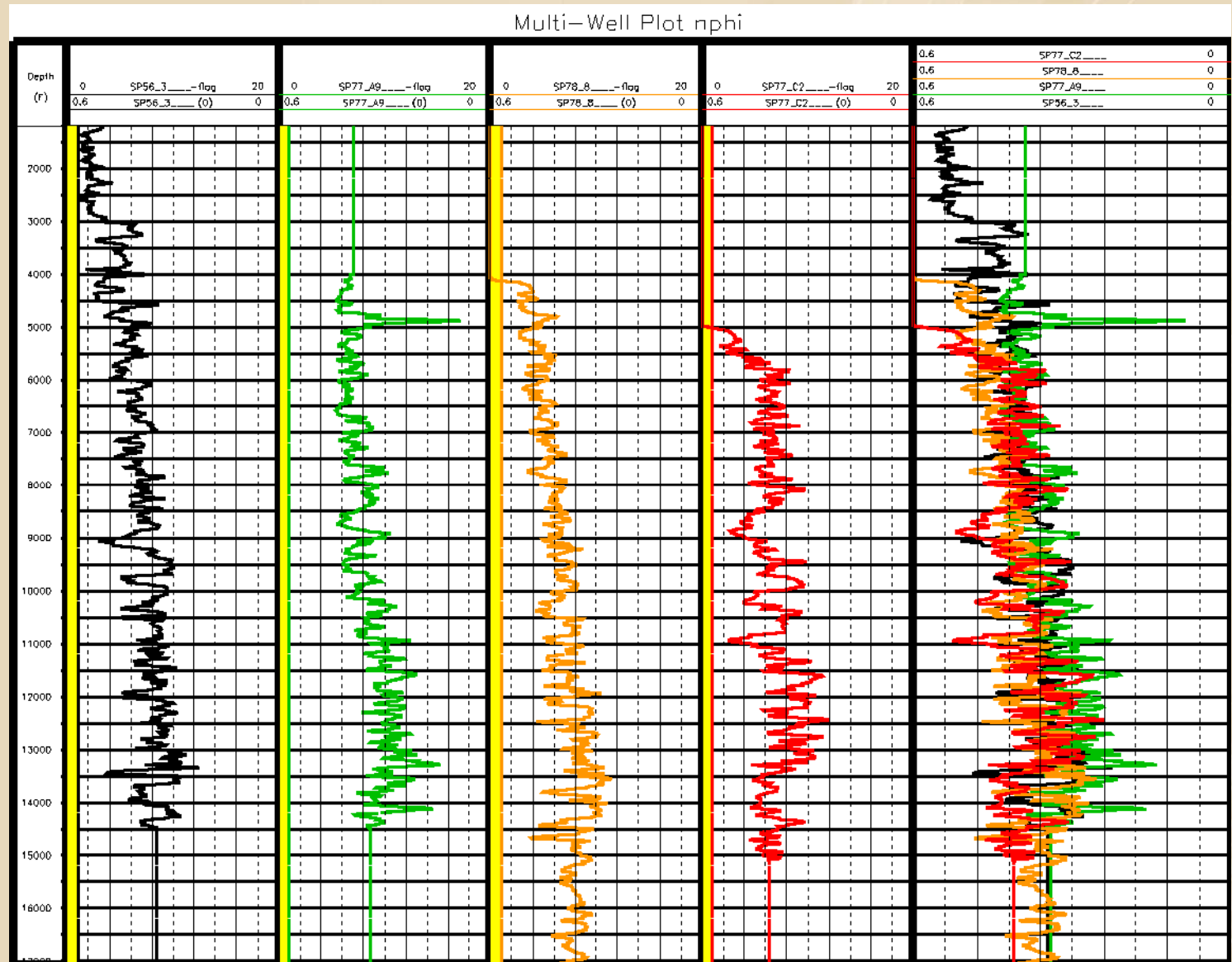
Not the  
case with  
DT





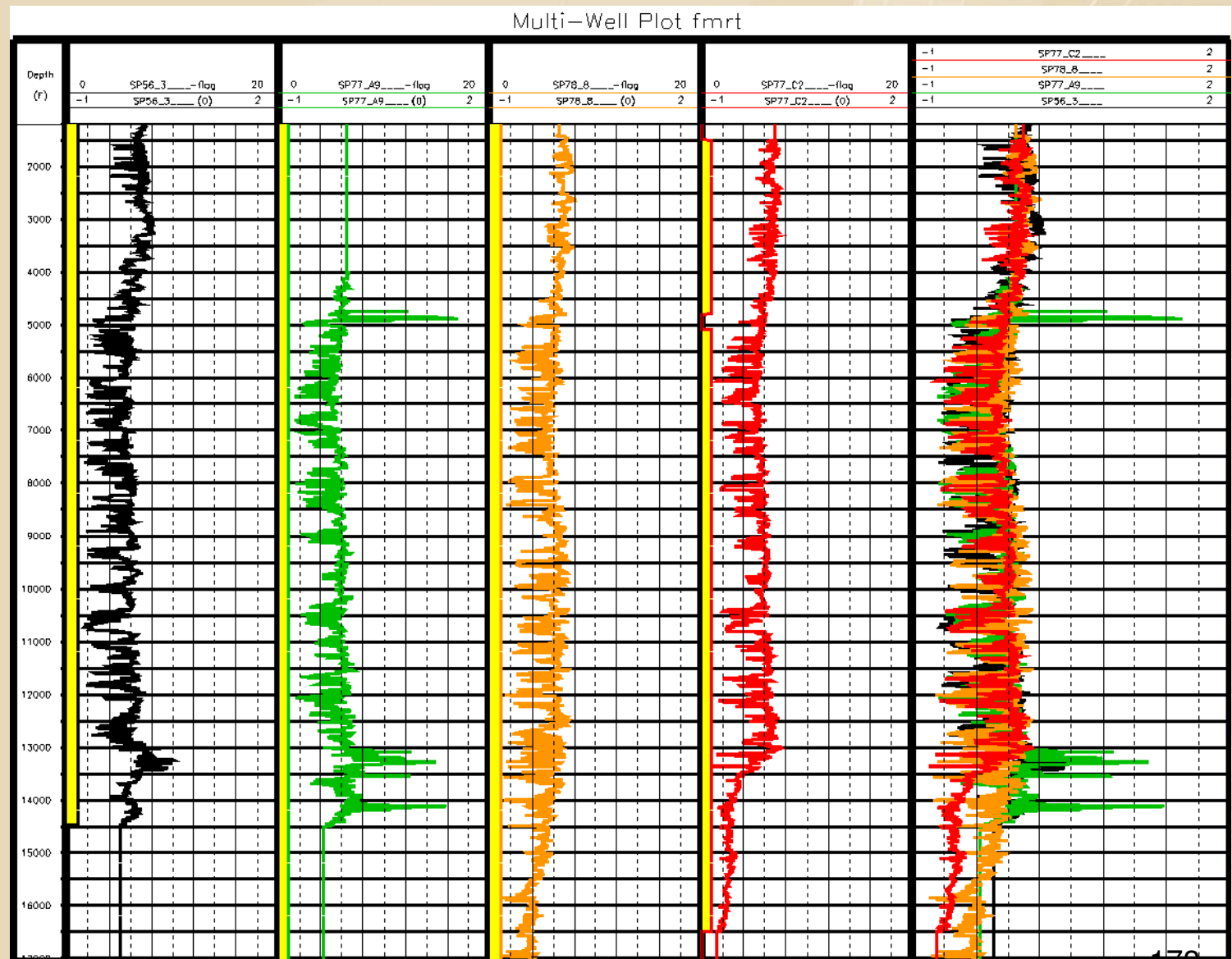
# Neutron

Not the  
case with  
Nphi





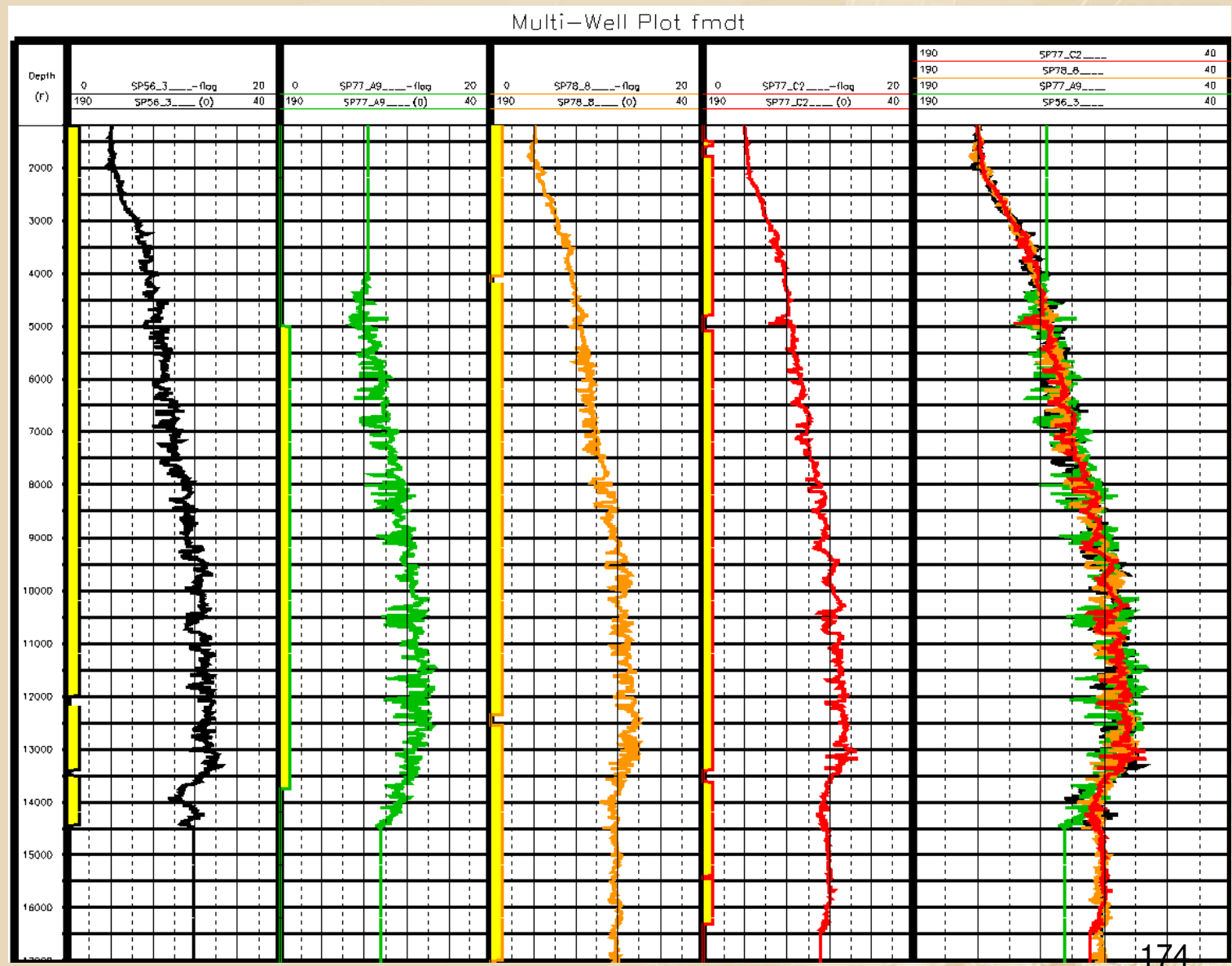
# Deep Resistivity





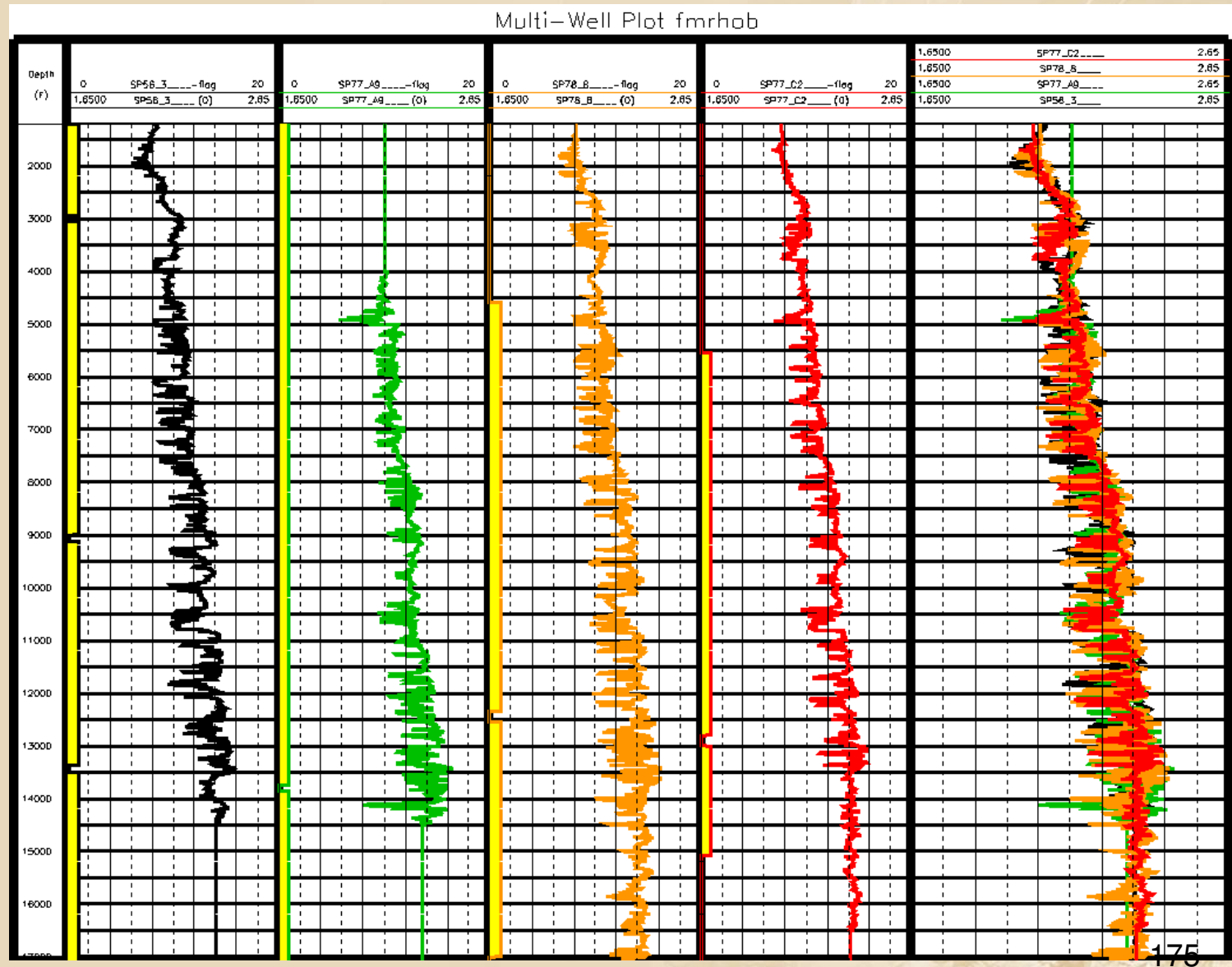


# Sonic



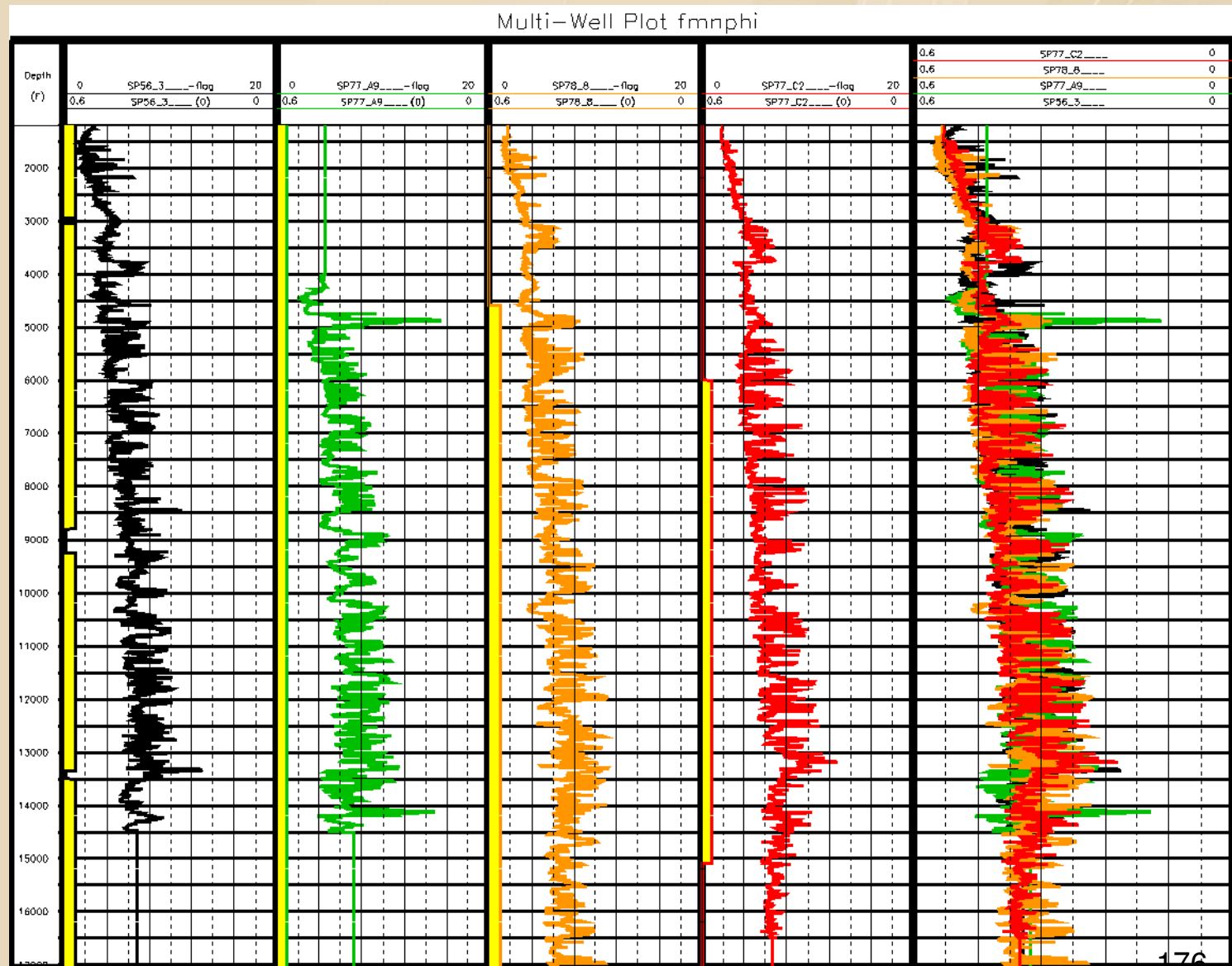


# Density





# Neutron





# Conclusions

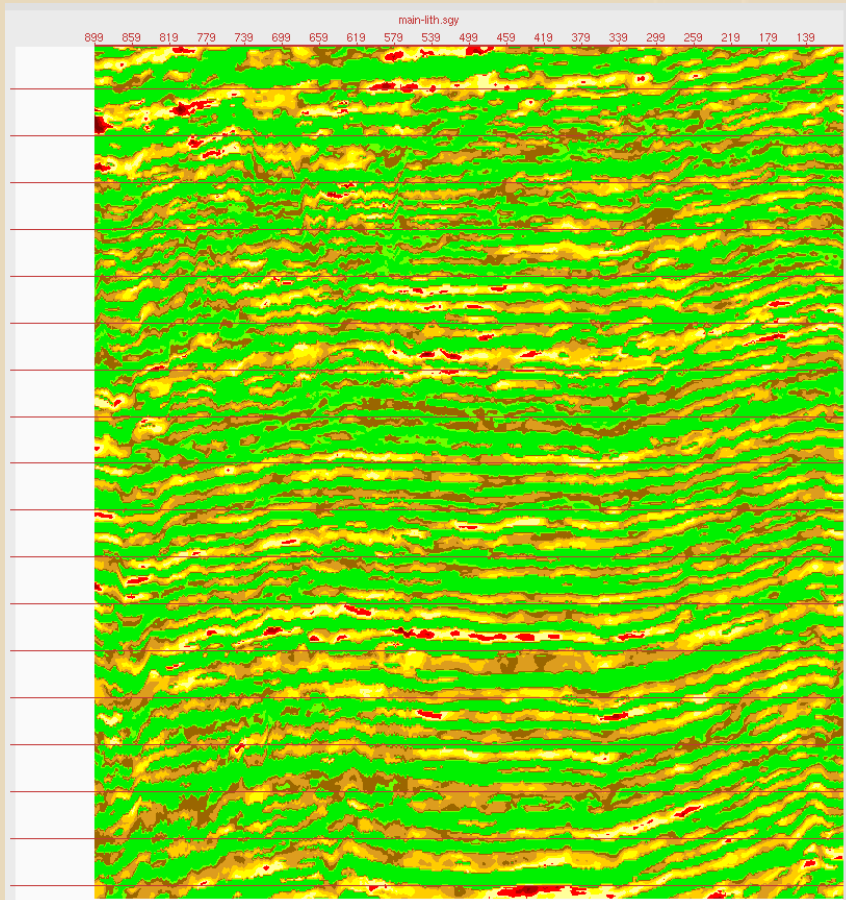
- 1) The necessary evils of processing can make or destroy a prospect
- 2) QCing gathers by looking at the gathers isn't good enough
- 3) Well control provides an understanding of the type of AVO responses expected although be very careful of log data quality
- 4) Cross plots are the best way to examine the offset response
- 5) Inversions to lithology and AVO types are useful QC tools



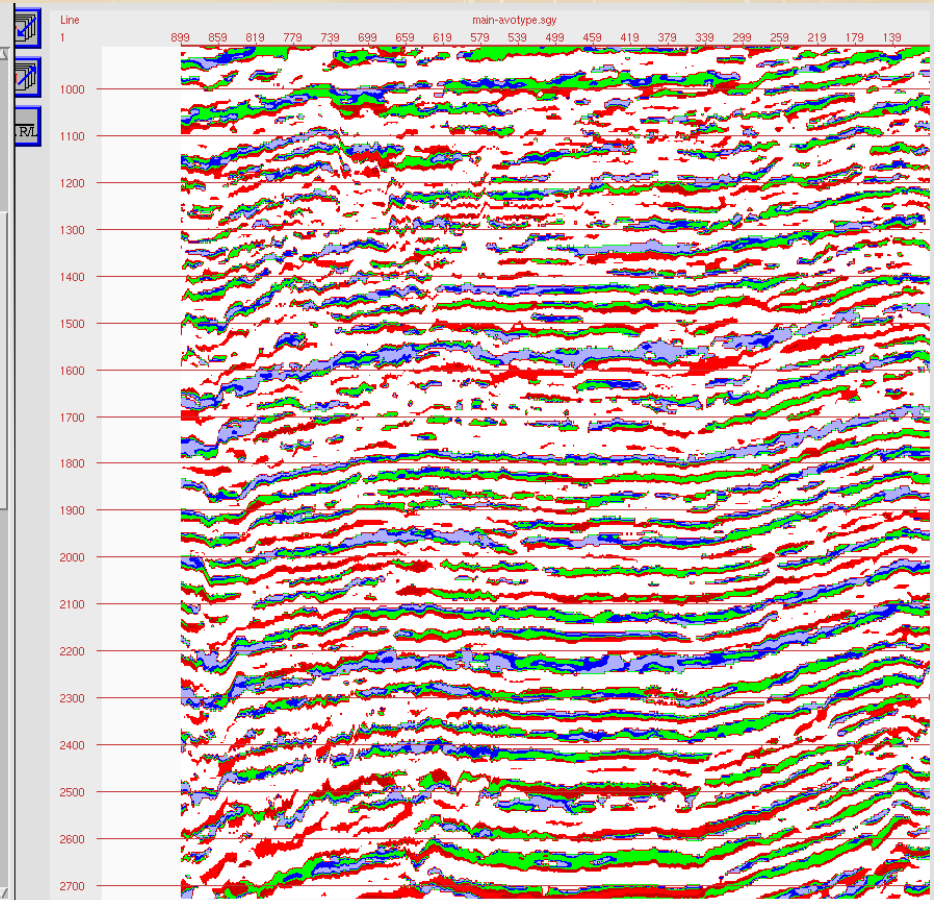


TVS, Offset Scaler = 1

Lithology



AVO Type

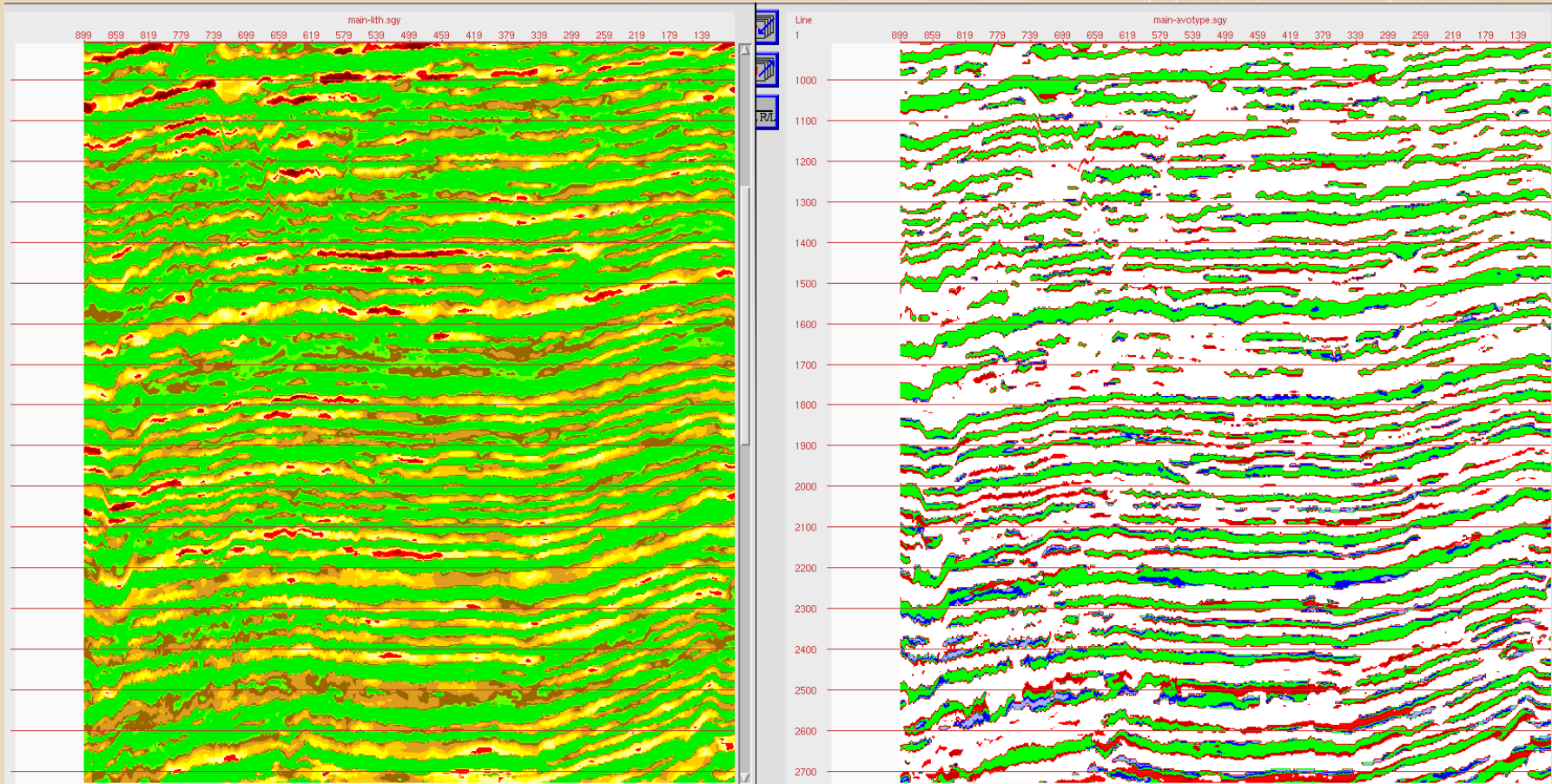




TVS, Offset Scaler = 1.6

Lithology

AVO Type



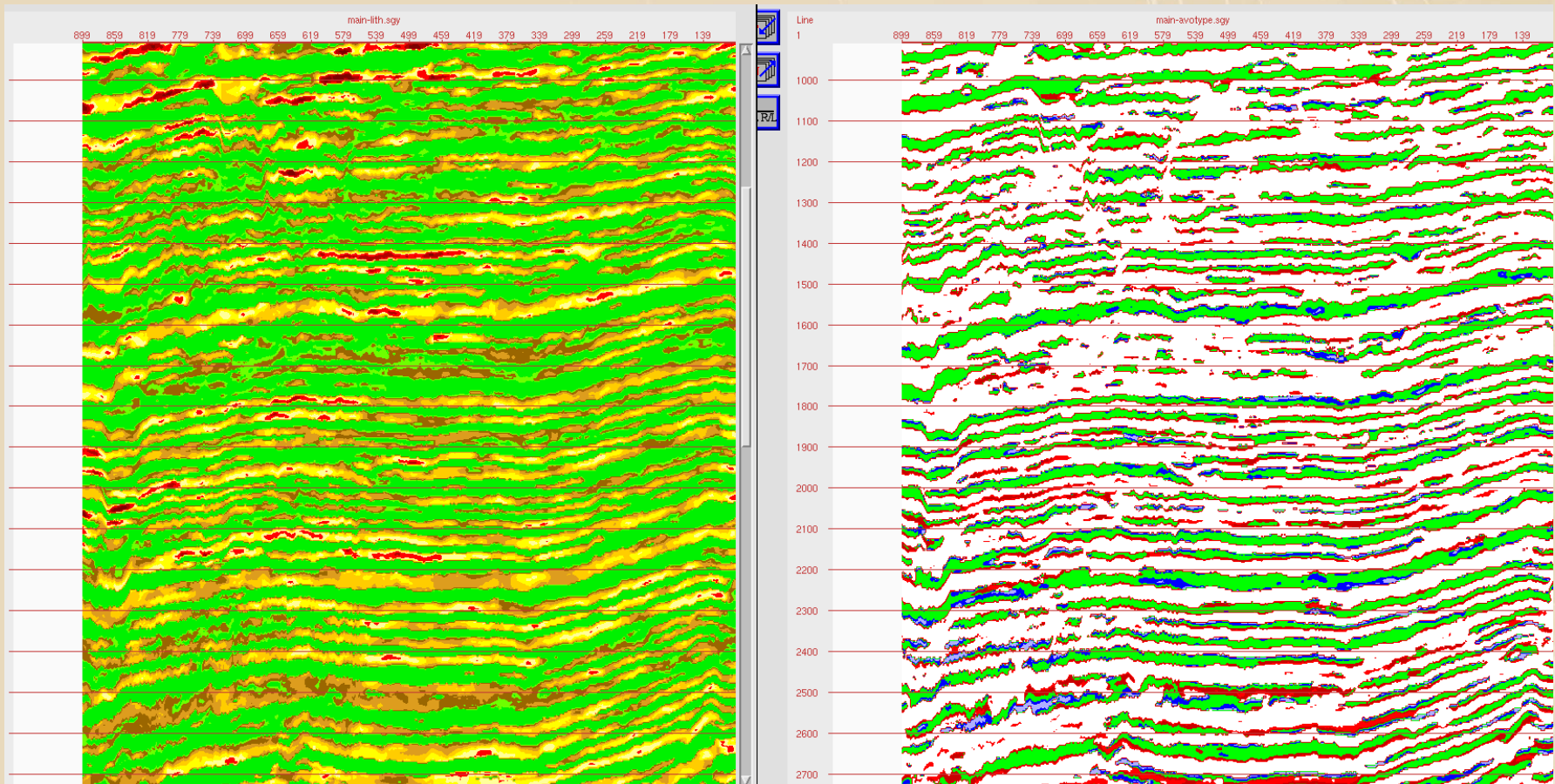




TVS, Offset Scaler = Orth

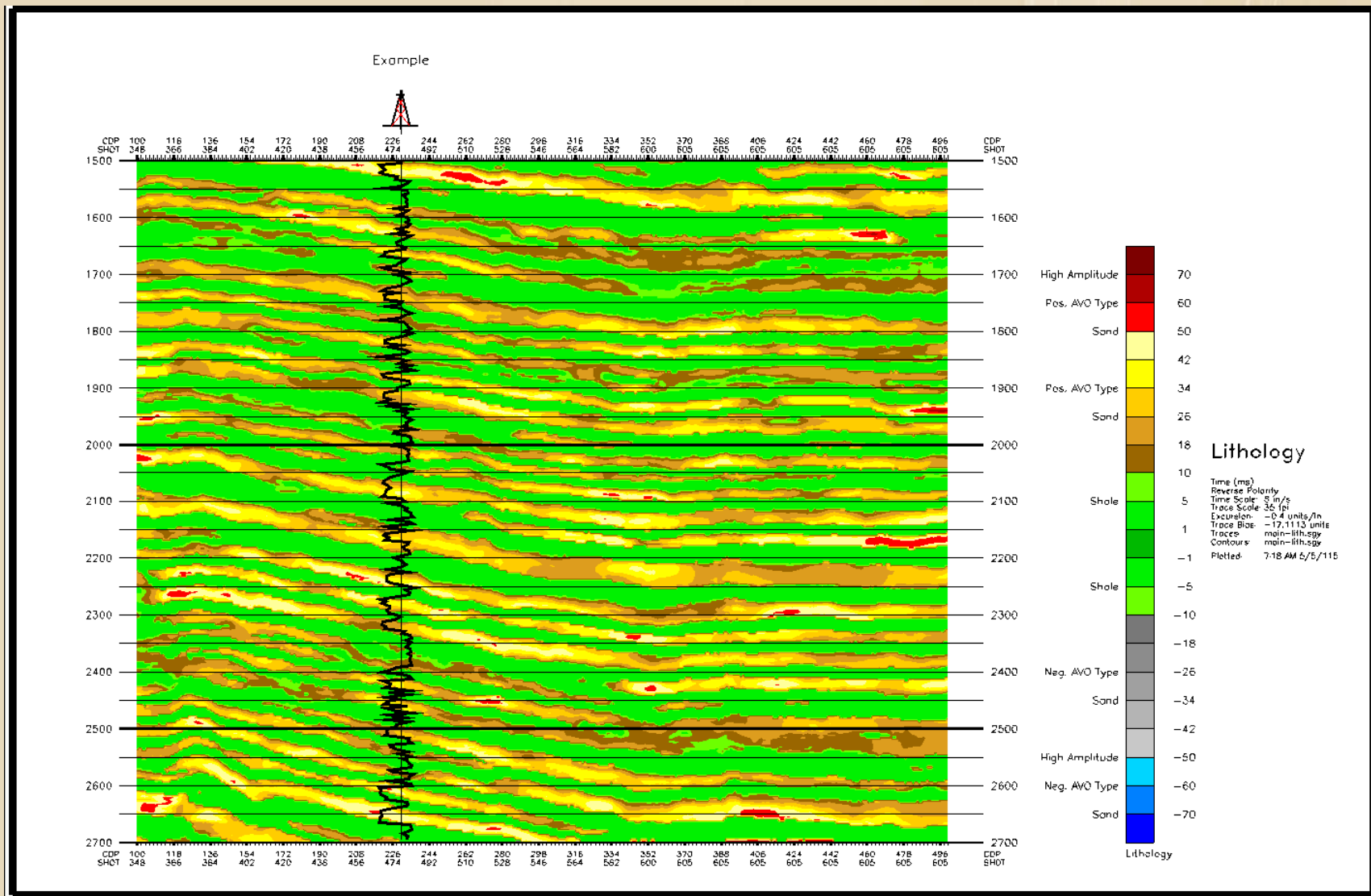
Lithology

AVO Type





# TVS, Offset Scaler = 1







# TVS, Offset Scaler = Orth

