CARBONATE RESERVOIR MAPPING

STRUCTURAL INTERPRETATION

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INTRODUCTION

WHAT IS THE STRUCTURAL INTERPRETATION?

Directed toward the creation of structural maps of the subsurface from the observed three-dimensional configuration of arrival times. *https://wiki.aapg.org/Seismic_interpretation*

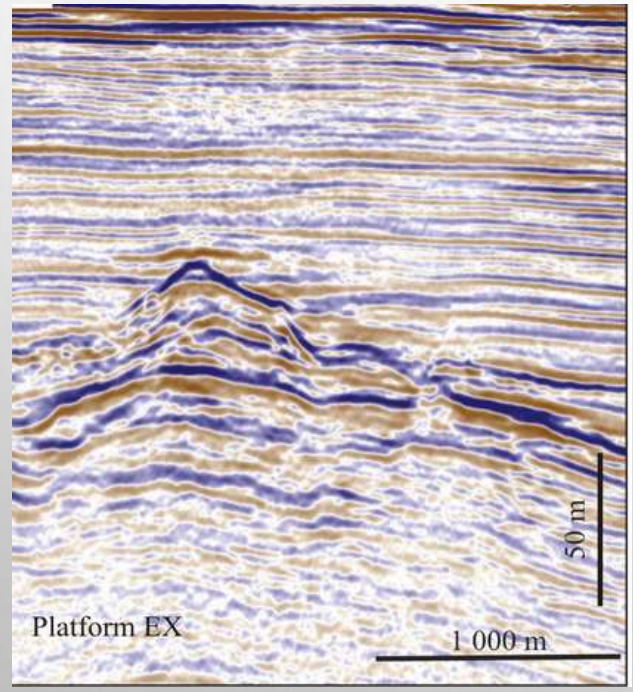
WHAT ARE THE BENEFITS IN THE OIL AND GAS BUSINESS?

To define the petroleum system

Finding new prospect of HC accumulation

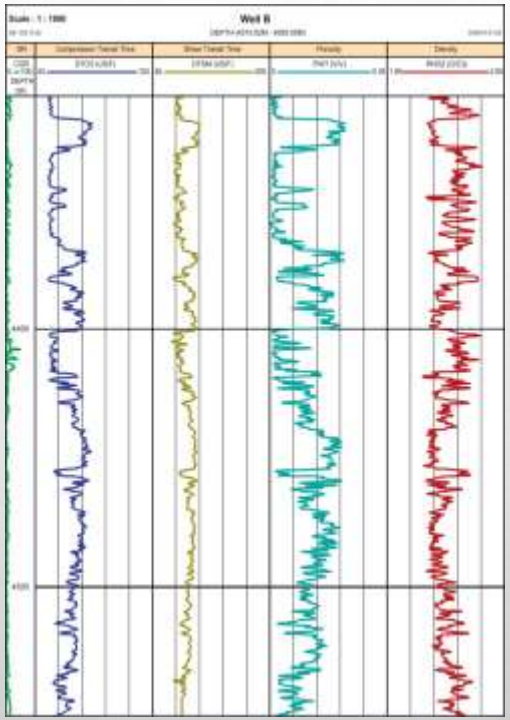
WHAT DATA DO WE NEED TO PREPARE FOR INTERPRETATION?

✓ SEISMIC DATA



Jamaludin, SN F., et al 2017

✓ WELL DATA



Gholami, R. et al 2013

✓ LITERATURE

https://seputarilmu.com/2019/11/literatur.html

SEISMIC DATA

WHAT IS THE SEISMIC DATA?

WHAT IS THE FUNCTION SEISMIC DATA?

Seismic Data Quality Depends On:

HOW TO ACQUIRED THE DATA?

HOW TO PROCESS THE DATA

SEISMIC DATA

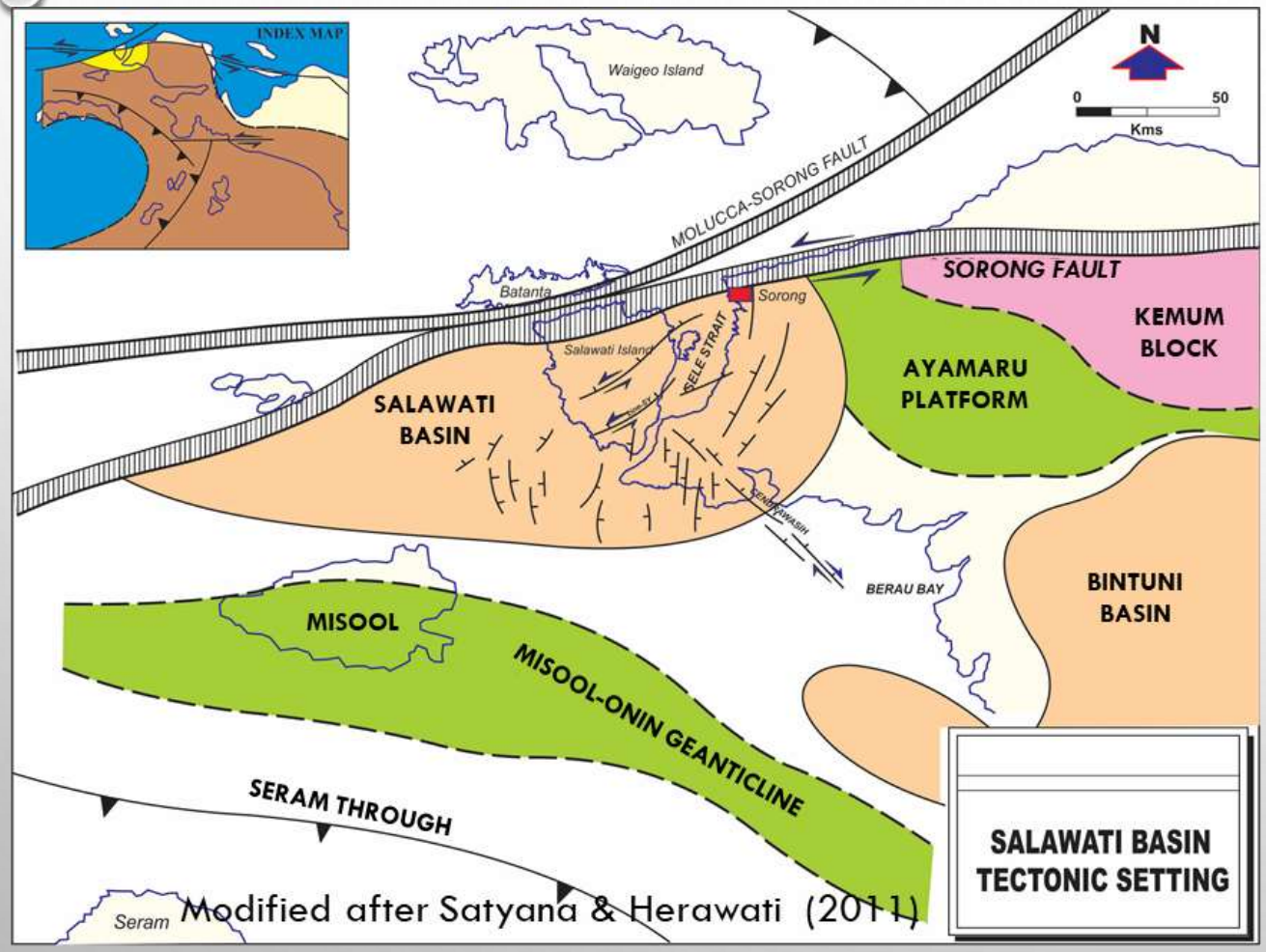
WHA IS THE WELL DATA?

WHAT IS THE FUNCTION OF WELL DATA?

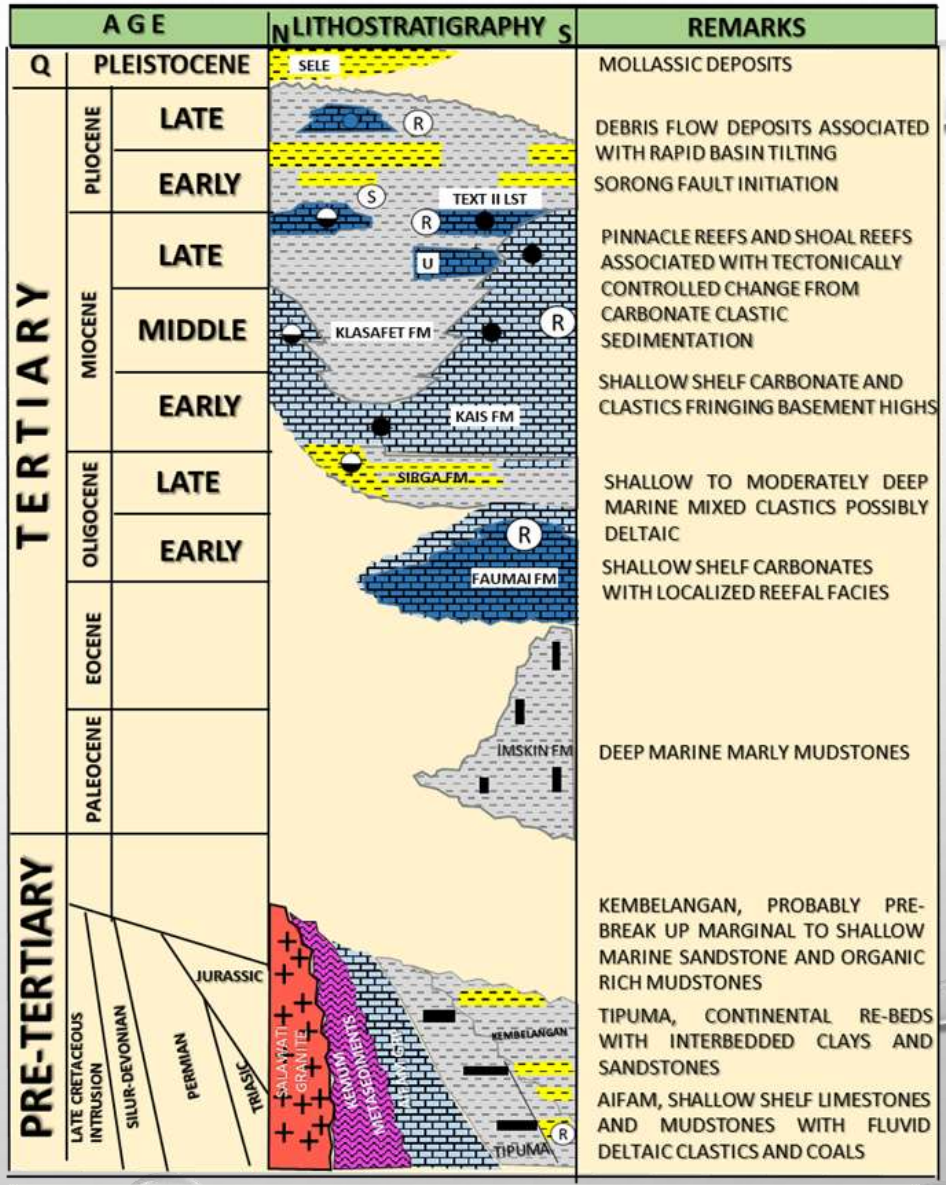
Logs Data

Well Check shot / VSP

Regional Geology



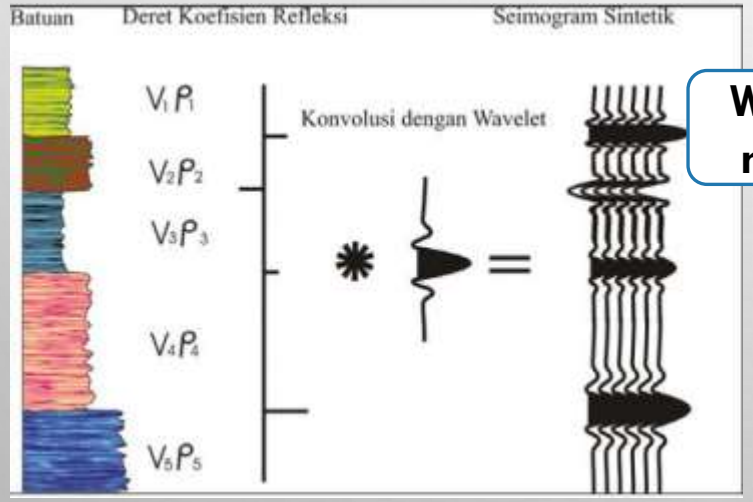
Modified after Satyana & Herawati (2011)



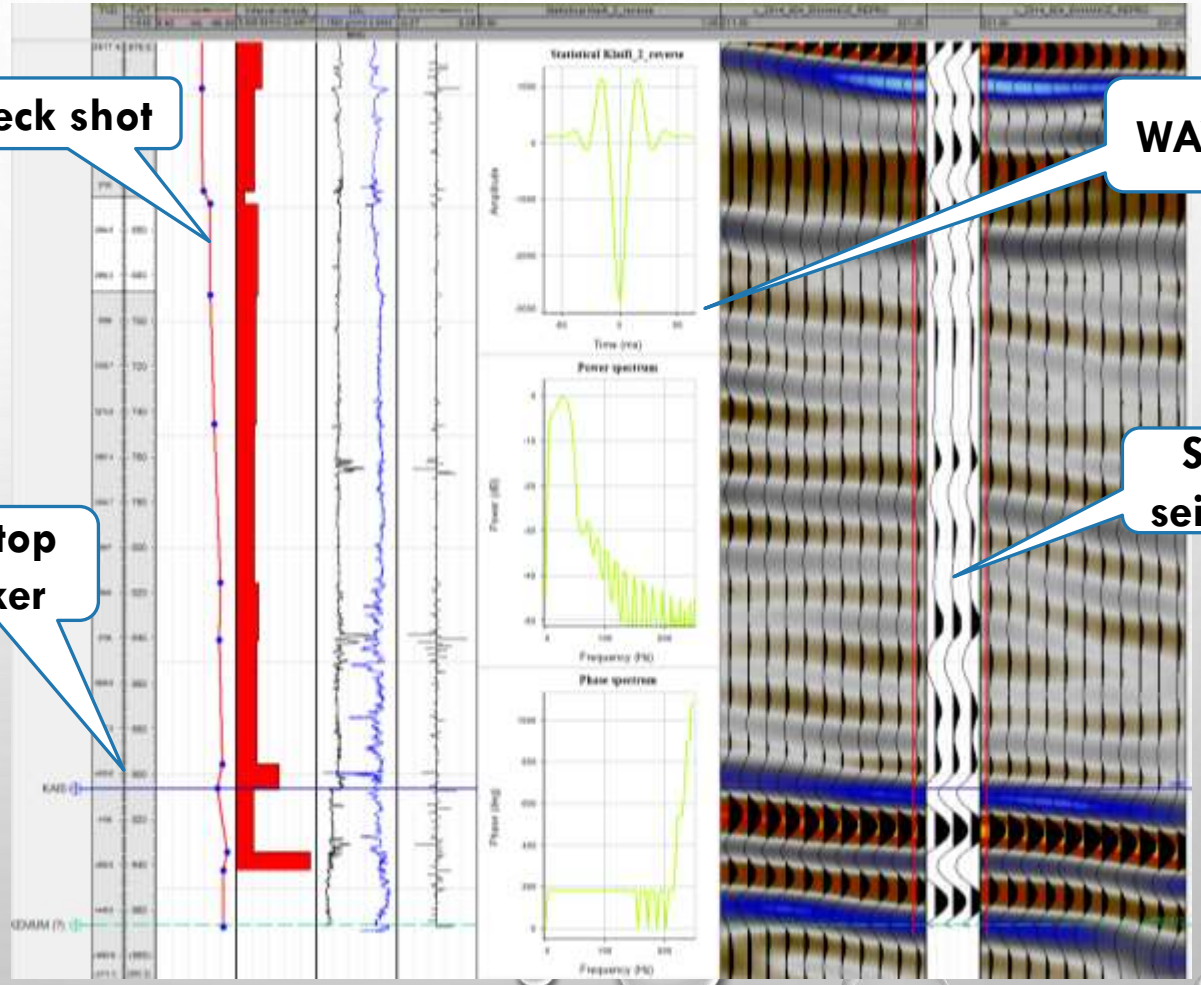
General Stratigraphy
modified after Satyana, et al. (2002)

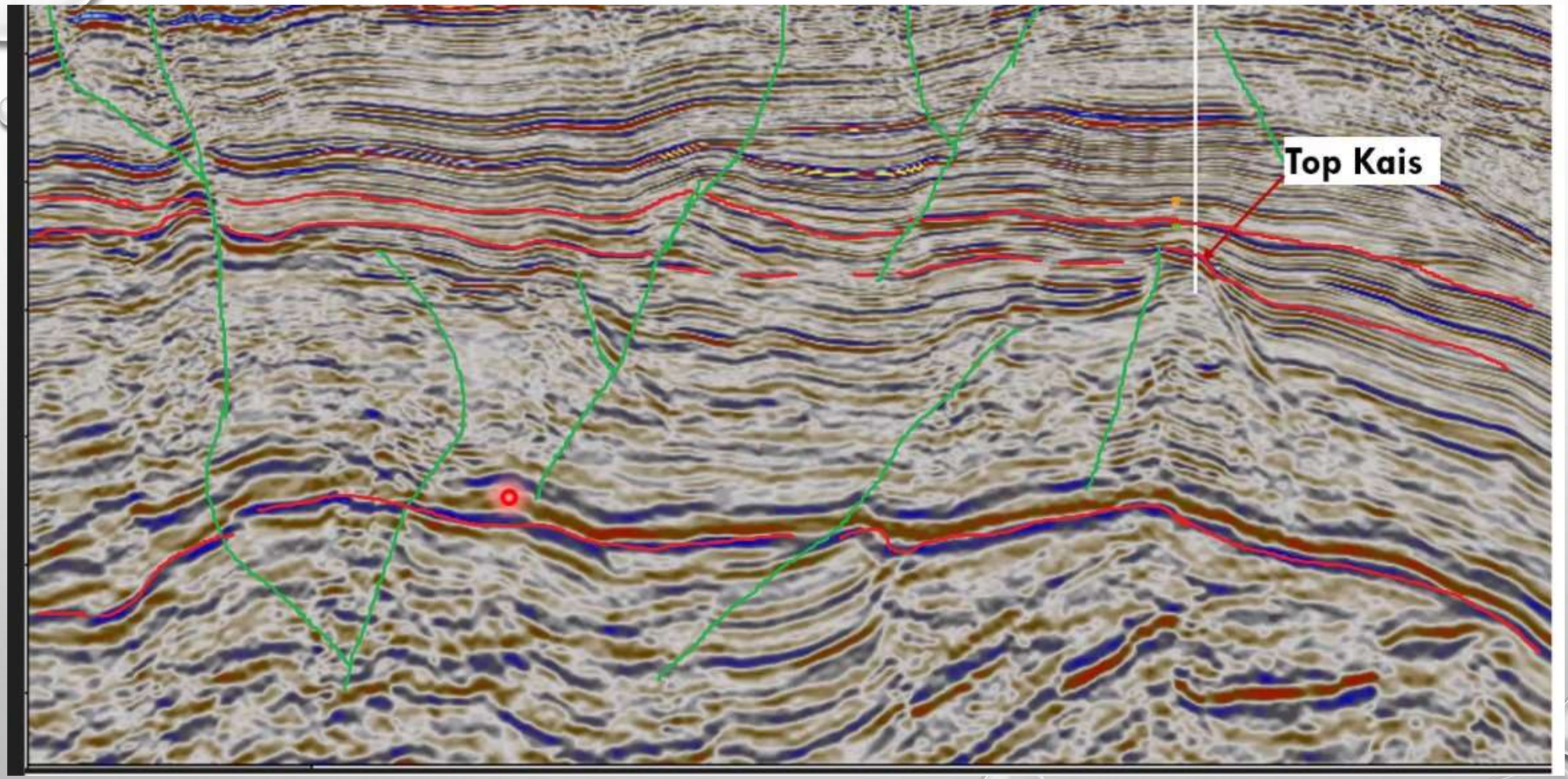
HOW TO DO THE STRUCTURAL INTERPRETATION?

Well to seismic tie

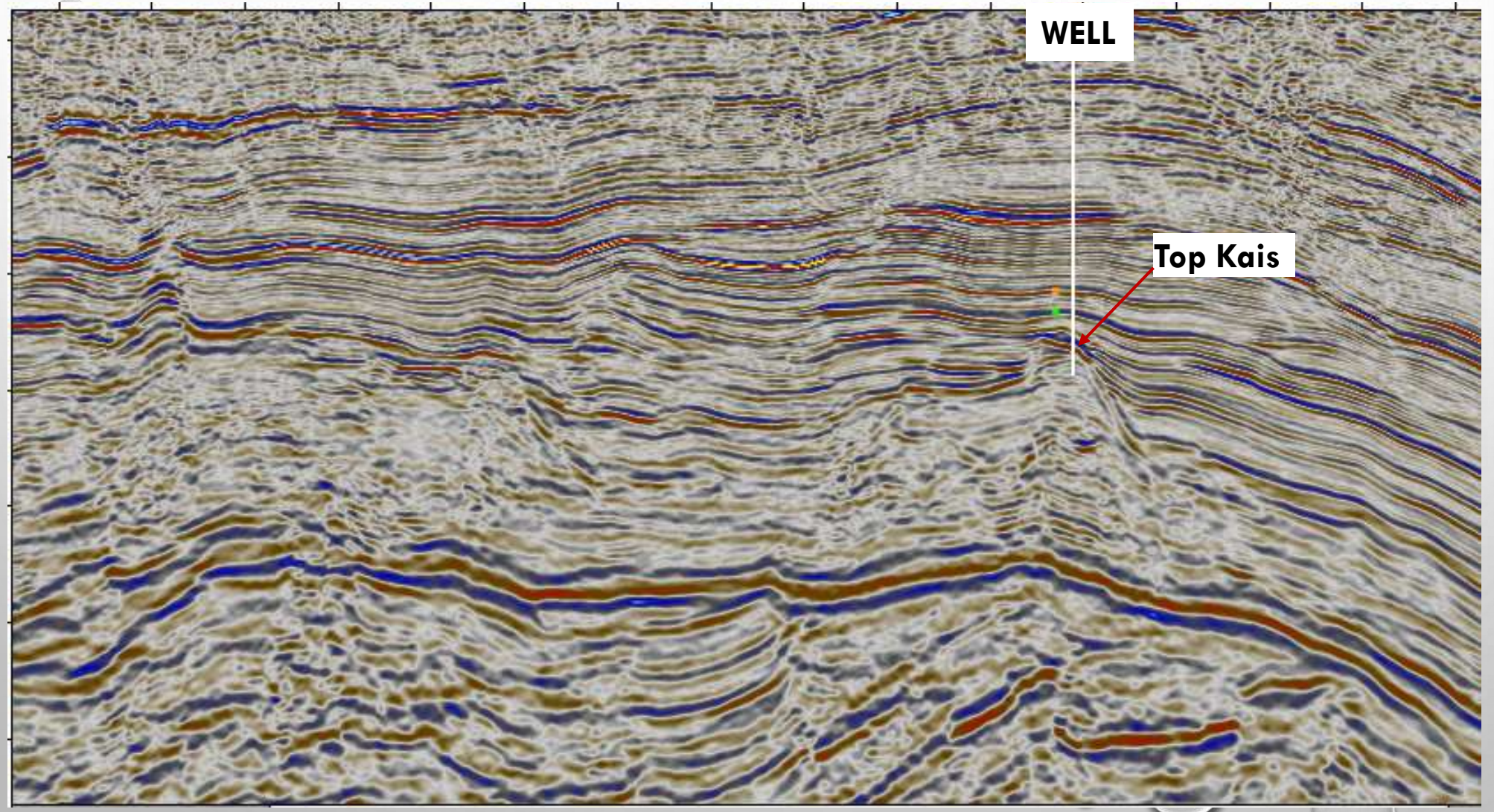


(Sukmono, 1999)



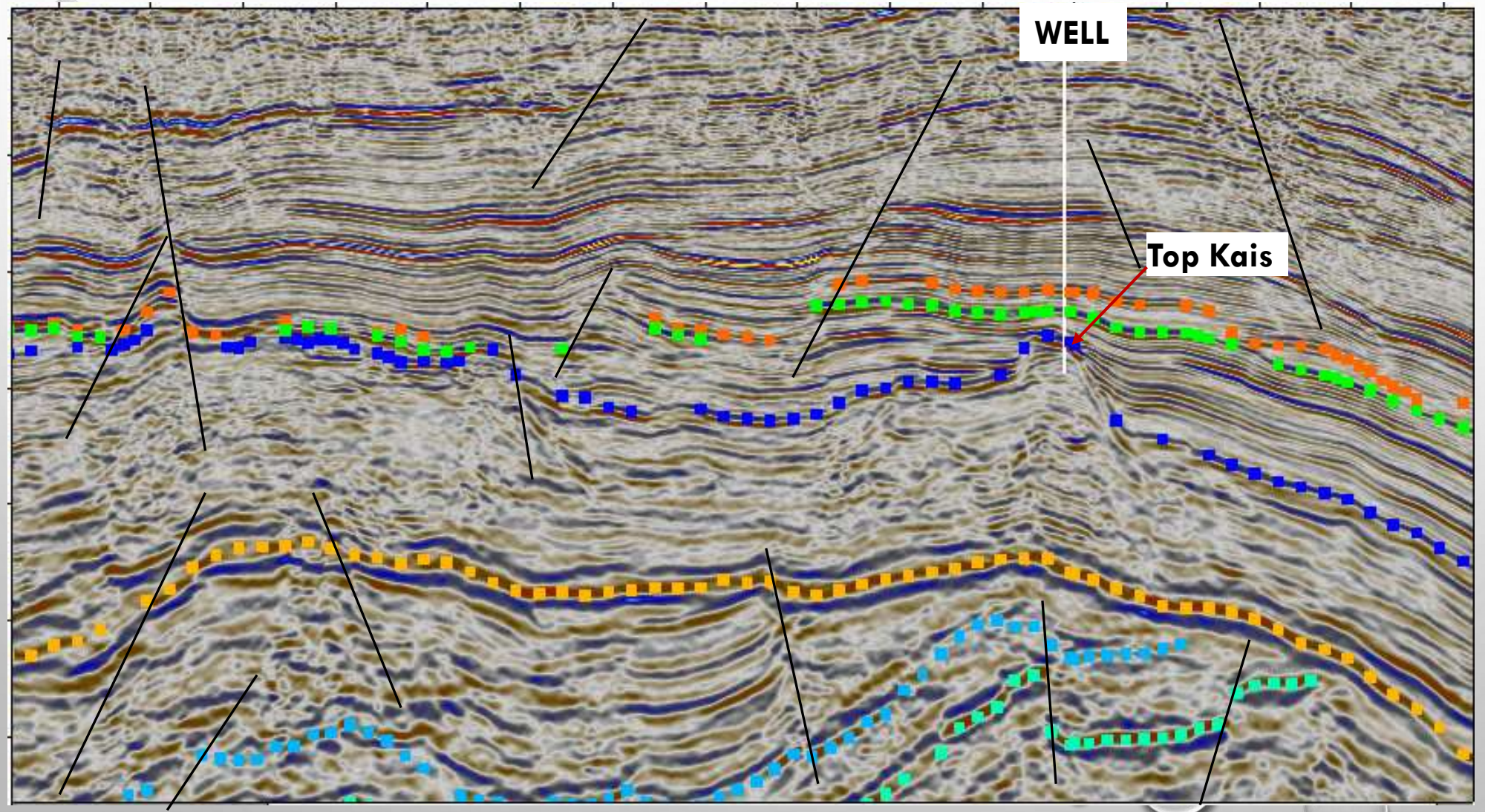

Top Kais

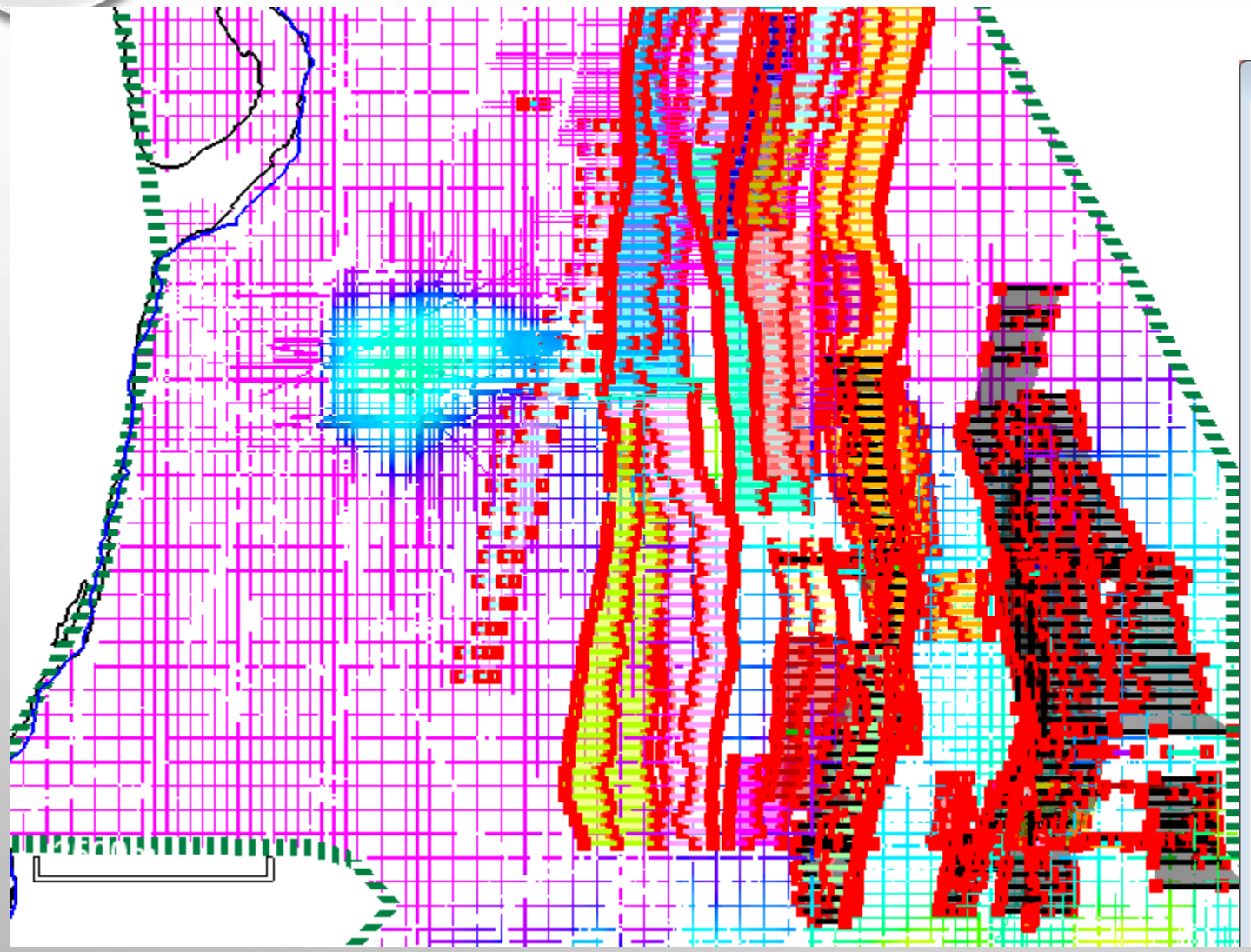
LETS GO !!!



- Pick the top of carbonate
- Pick the base of carbonate
- Pick the faults

RESULT !





Make/edit surface

Make surface | Hints

Input data: | Result surface:

Main input:

Name: Surface

Run for all main input in the same folder

Boundary:

Suggest settings from input

Use data inside boundary only

Fault center lines/polygons:

Geometry | Pre proc | Algorithm | Post proc | Well adjustment | Additional inputs

Grid size and position

Automatic (from input data/boundary)

User defined:

Get all settings from selected | Get limits from selected

X min: 0

Y min: 0

X max: 1000

Y max: 1000

Width: 1000

Height: 1000

Expand | Shrink

Rotation: 0

Grid increment

X inc: 50 Y inc: 50 Nodes: 21 x 21

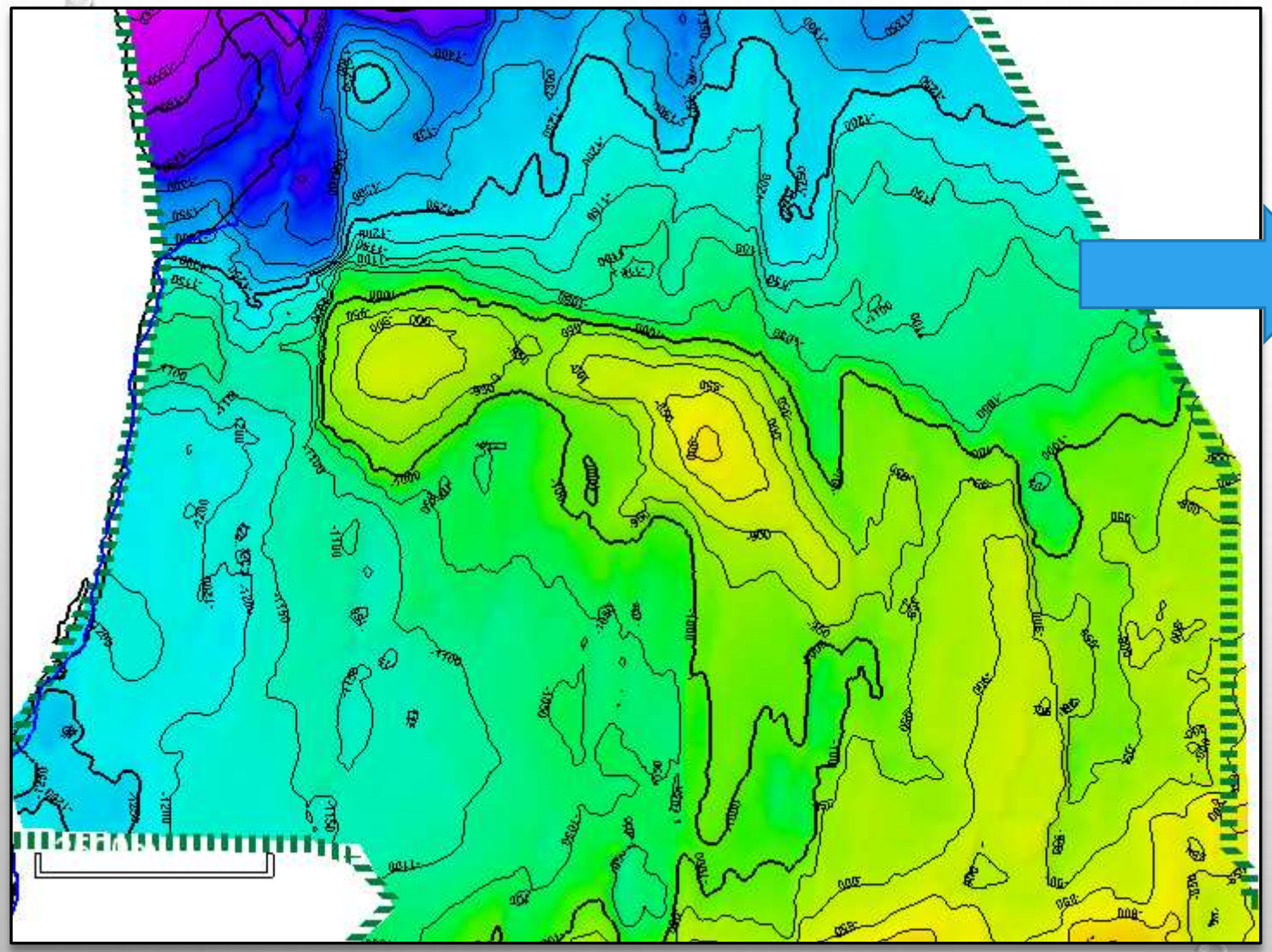
Boundary

Make boundary from input and extend it with 3 nodes.

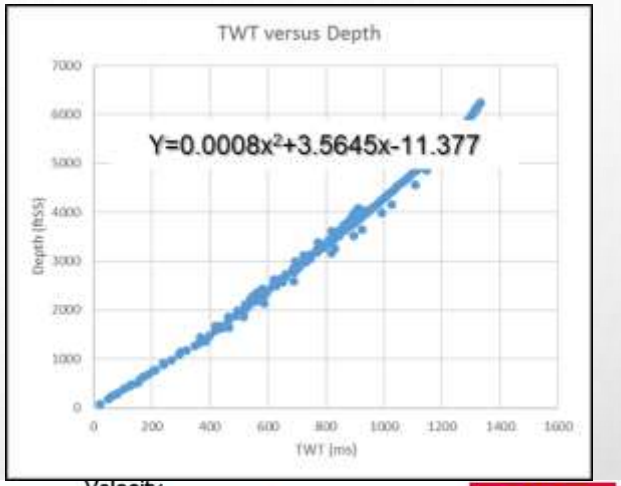
Note: If toggled on, the boundary in the input data will not be used.

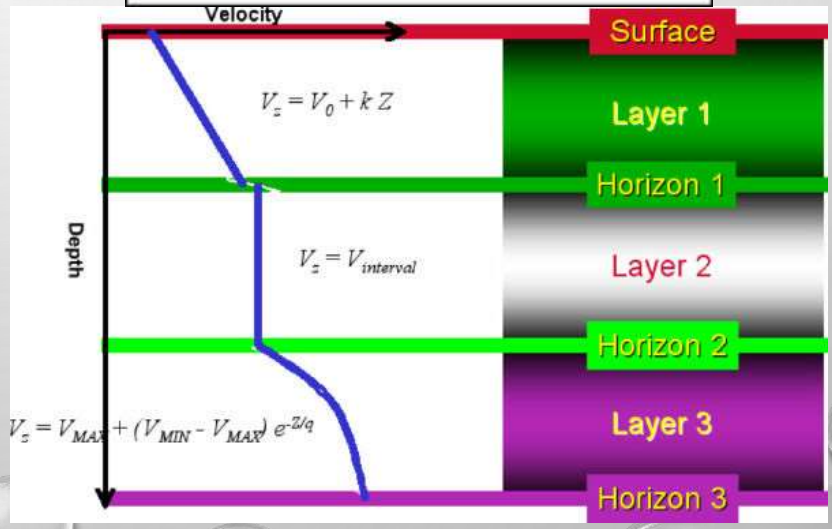
Save computed boundary for: data edge

TIME STRUCTURE MAP



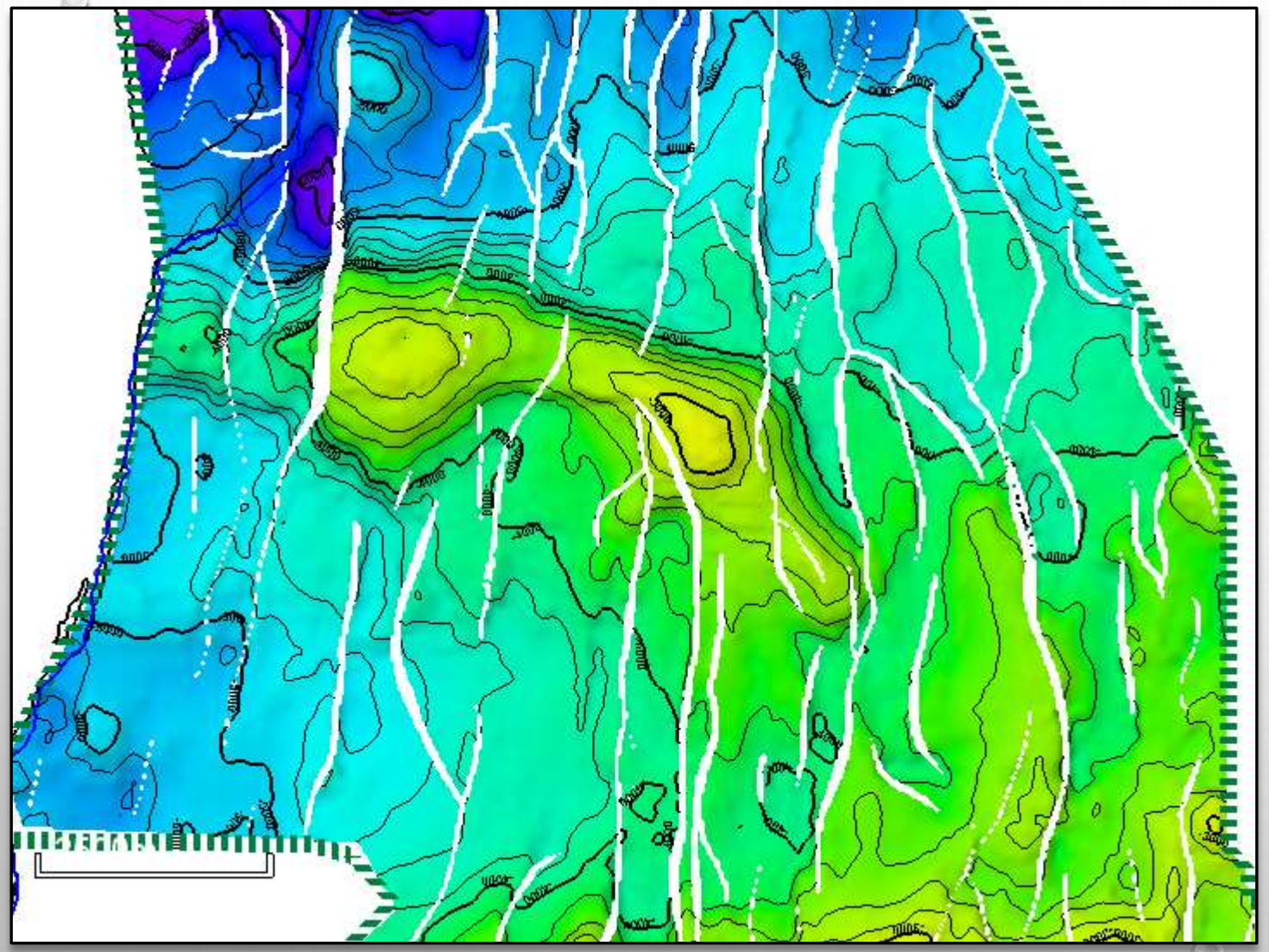
VELOCITY MODEL





http://www.panoramatech.com/papers/book/bookse81.php

DEPTH STRUCTURE MAP



DEPTH MAP→ DIRECTLY FROM T-D CONVERSION

FINAL DEPTH MAP→ AFTER ADJUSTED TO WELL MARKER

THANK YOU

PLEASE VOLUNTEER FOR SUMMARIZE!

Q&A