

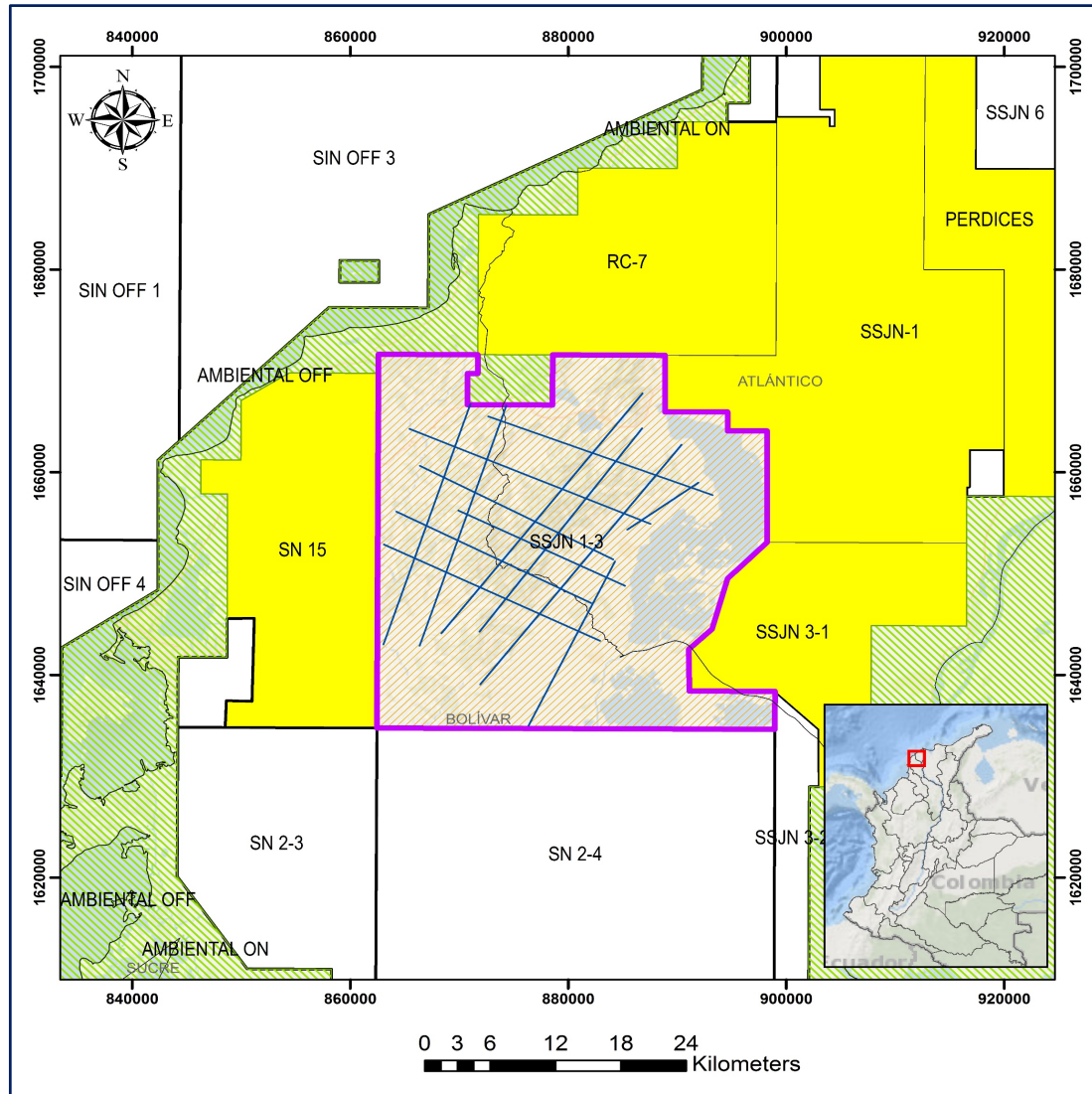


AREAS ADVERTISEMENT 2022

REPELÓN 2D SEISMIC SURVEY

- Location & Data
- Geological Framework
- Repelón 2D
- Conclusions

LOCATION & DATA

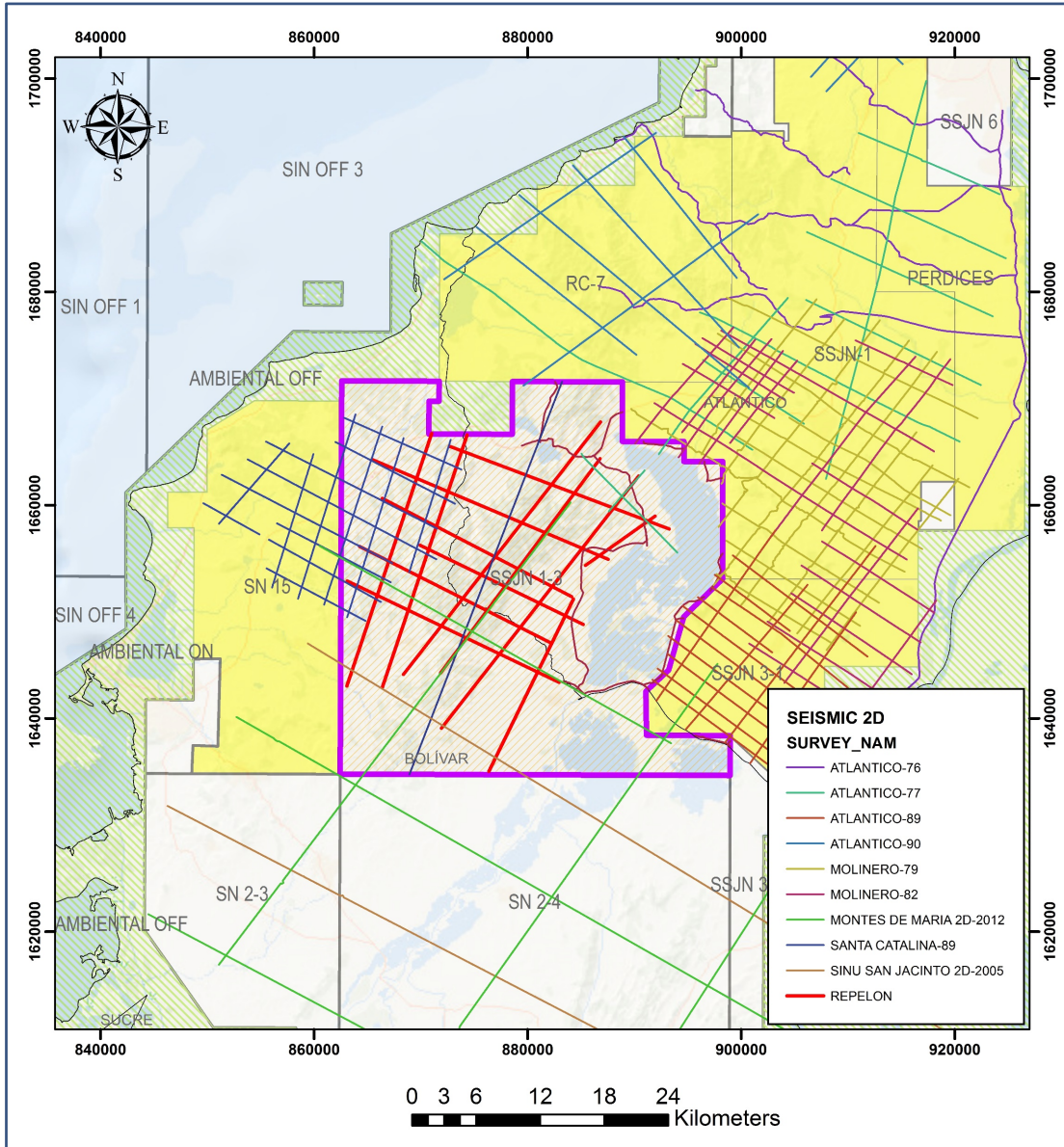


Seismic Survey Areas & Areas Nearby

- **SSNJ 1-3 (115462 Ha)**
- SSJN-1
- SSJN 3-1
- RC-7
- SN 15
- SN 2-4
- SN 2-3

Departments

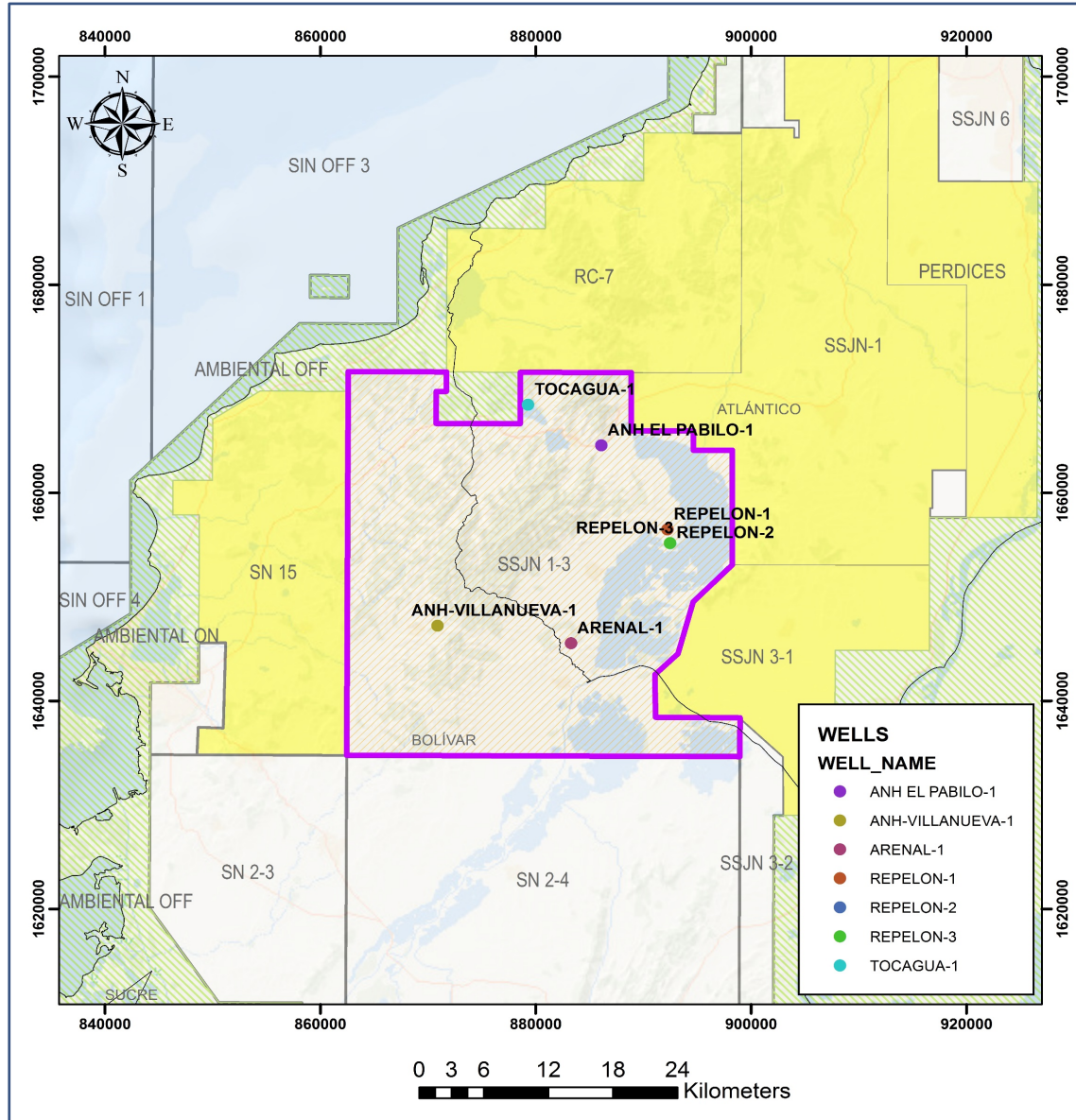
- Atlántico & Bolivar



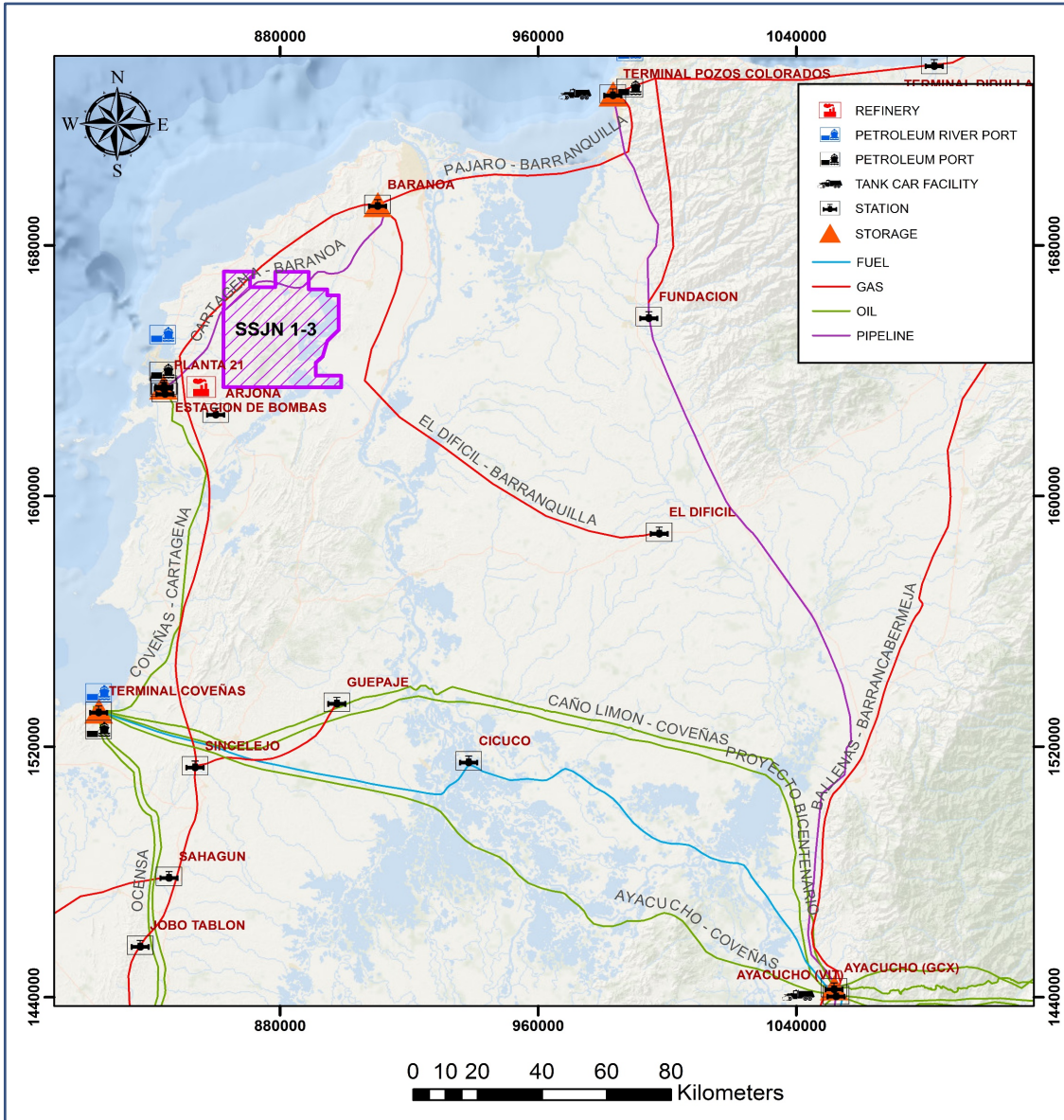
2D Seismic Surveys (10 Surveys)

- Atlantico-76
- Atlantico-77
- Atlantico-89
- Atlantico-90
- Molinero-79
- Molinero-82
- Montes de Maria 2D-2012
- **Repelón 2D - 2021**
- Santa Catalina-89
- Sinú San Jacinto 2D-2005

Repelón: Well Data



NAME	TD (ft)	YEAR
ANH El Pabilo-1	1123	2014
ANH-Villanueva	2100	2014
Arenal-1	Unknown	1928
Repelon-1	Unknown	1928
Repelon-2	3129	1929
Repelon-3	4317	1930
Tocagua-1	695	2001



Main Infrastructure Nearby

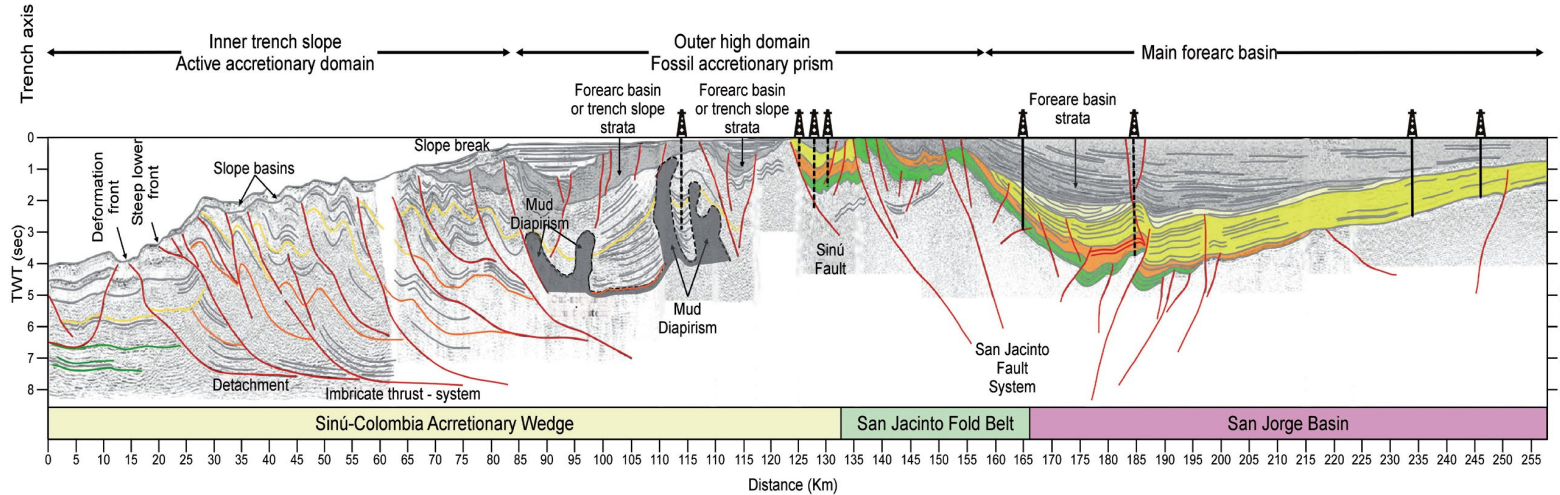
Oil Pipeline

- Mamonal (41 Km)
- Coveñas(134 Km)

Gas Pipeline

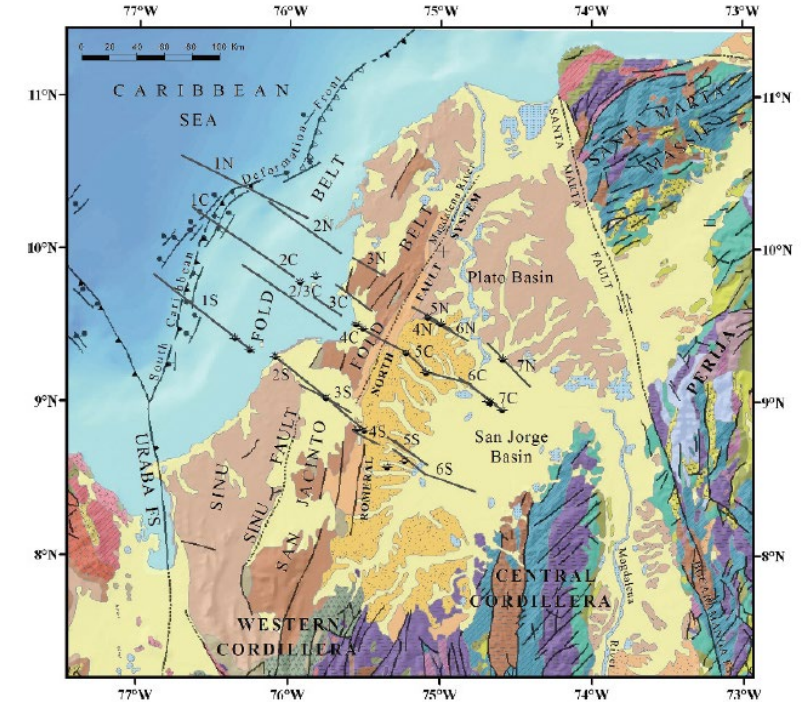
- Baranoa (49 Km)

GEOLOGICAL FRAMEWORK

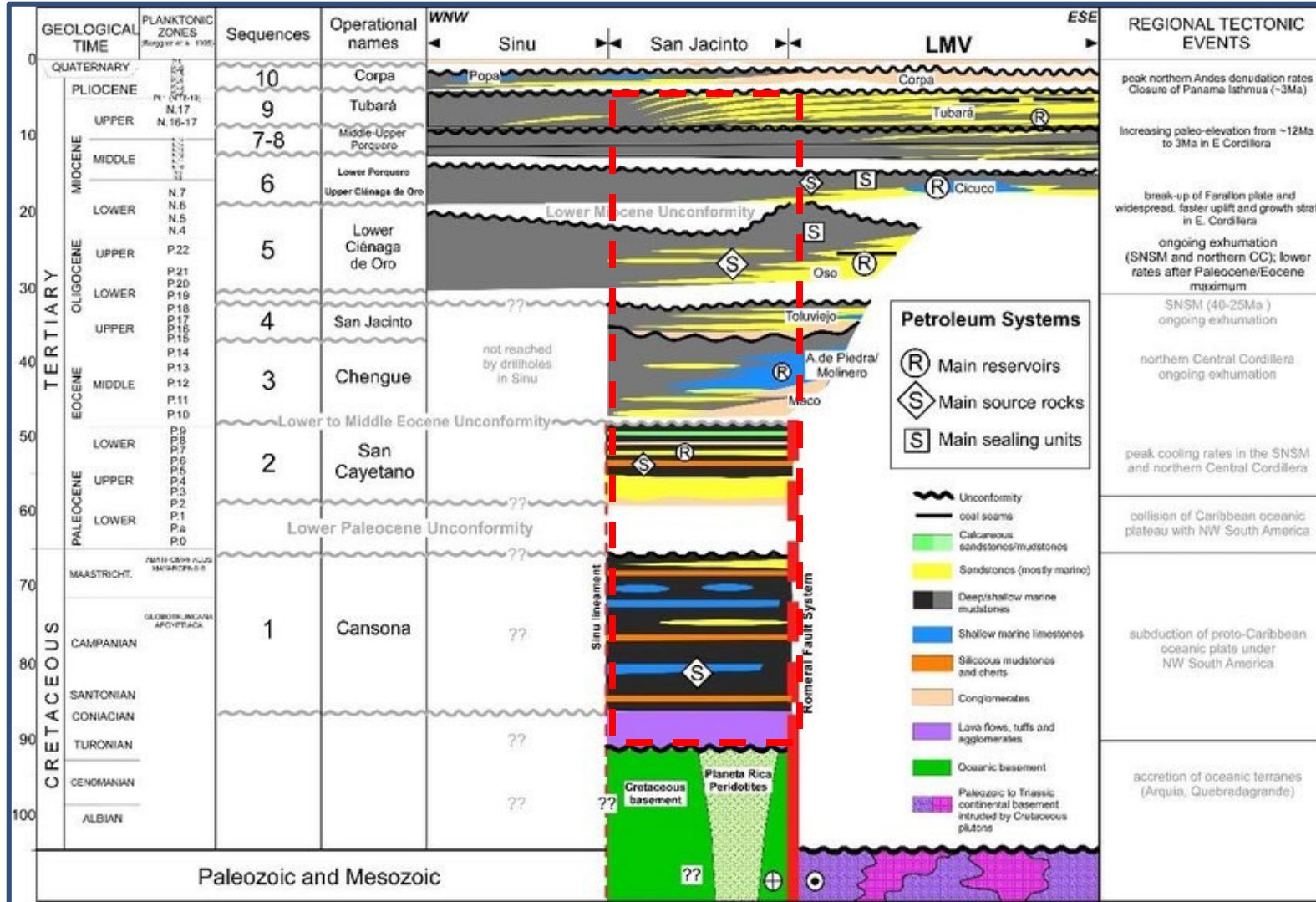


Taken from Mantilla - Pimiento (2009)

- Three major tectonic areas were identified by Mantilla-Pimiento *et al* (2009):
- 1) **An active accretionary prism** with a seaward vergent imbricate thrust system
- 2) **A fossil accretionary prism** including the Sinú Accretionary Wedge and the San Jacinto Fold Belt characterized by growth folding, mud diapirism and normal faulting due to gravitational collapse
- 3) **The San Jorge – Plato Forearc Basin**

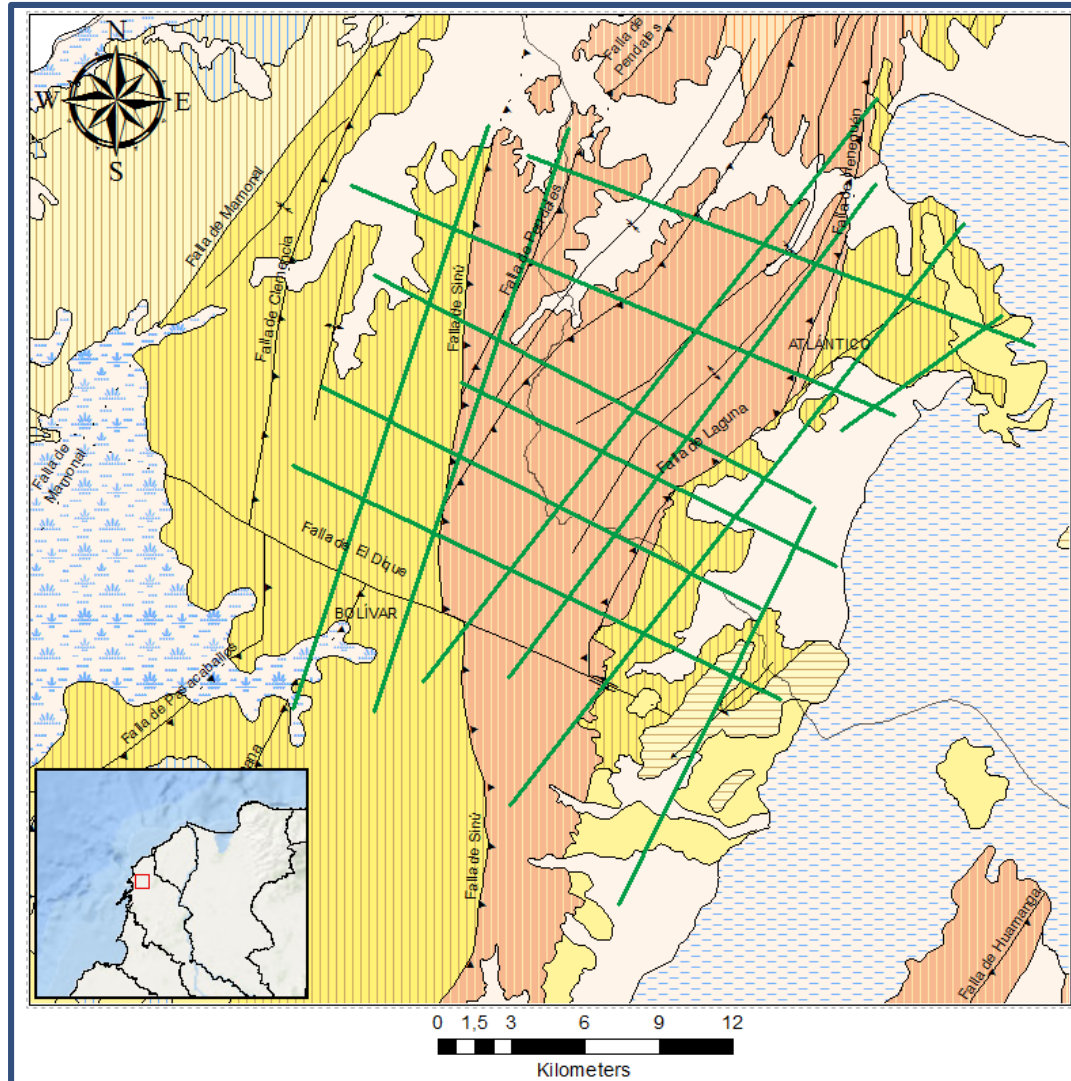


Taken from Mantilla - Pimiento (2009)



- In the area of interest two main units are outcropping: Hibácharo Fm. (Porquero) & San Cayetano Fm (Paleocene)
- The main reservoir in the area considering recent discoveries by operator companies is the Chengue Fm (Limestones & Sst)
- Chengue in the geological map of the SGC is named as Arroyo de Piedras & Pendaless

REPELÓN 2D



- **Layout Description**

- 6 Dip Lines

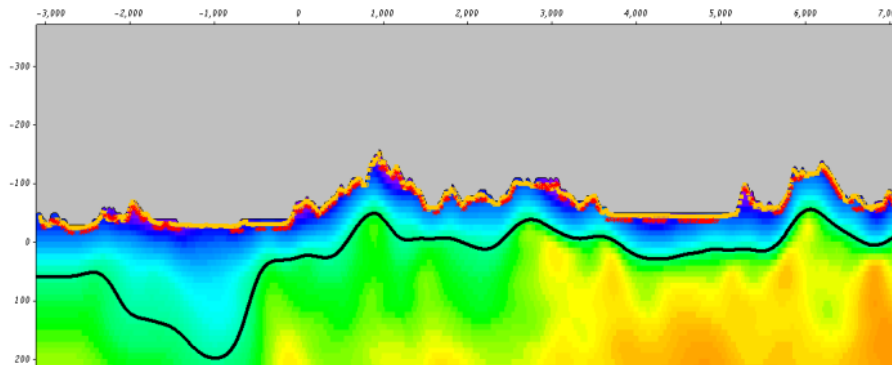
- 7 Strike Lines

- Acquired in a complex geological setting with high angle faults juxtaposing Miocene units with Paleocene units

- **Total survey length: 286 Km**

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C 1 LINEA: ANH-REP2D-2021-14 PROGRAMA: REPELON 2D 2021
C 2 PROCESO: MIGRACION PRE APILADO EN TIEMPO IN-IN
C 3 CONTRATO: 2210402
C 4 CUENCA: SINU SAN JACINTO
C 5 PAIS & AREA: COLOMBIA -(STA.CATALINA, STA.ROSA, VILLANUEVA
C 6 S.STANISLAO DE KOTSKA, CLEMENCIA, LURUACO, REPELON), ATLANTICO-BOLIV
C 7 CLIENTE: ENTERRITORIO
C 8 FECHA DE REGISTRO: NOVIEMBRE 16 A 21 DE 2021
C 9 REGISTRADO POR: PETROSEISMIC SERVICES
C10 PROCESADO POR: INFORPETROL S.A. PROCESADO PARA: ENTERRITORIO
C11 FECHA DE PROCESAMIENTO: DICIEMBRE 2021 - FEBRERO 2022
C12 RANGO DE FUENTES: 927.5 - 2071.5 RANGO DE RECEPTORES: 926 - 2073
C13 NUMERO DE DISPAROS: 573
C14 RANGO DE CDP: 1853 - 4144 CUBRIMIENTO: 100
C15 RATA DE MUESTREO: 2 ms. LONGITUD DE REGISTRO: 7.2 s.
C16 INT. DE FUENTES: 40 m. INT. DE RECEPTORES: 20 m. CANALES: 400
C17 TIPO DE FUENTE: DINAMITA
C18 SEGY HEADERS:
C19 POSICION BYTE CDP NUMBER: 21 4I NUMERO DE CDP
C20 POSICION BYTE CDP_X COORD: 181 4I COORDENADA X DE CDP
C21 POSICION BYTE CDP_Y COORD: 185 4I COORDENADA Y DE CDP
C22 POSICION BYTE CDP_SLOC: 197 4I LOCALION DE CDP
C23 POSICION BYTE CDP_ELEV: 221 4I ELEVACION DE CDP
C24
C25 SECUENCIA DE PROCESAMIENTO:
C26 DATUM: 1100 m.s.n.m VELOCIDAD DE REEMPLAZAMIENTO: 2200 m/s
C27 SISTEMA DE REFERENCIA: BOGOTA - MAGNA.
C28 01.CONVERSION DE DATOS A FORMATO INTERNO SEIS_SPACE. 02.GEOMETRIA.
C29 03.ASIGNACION DE GEOMETRIA. 04.ATENUACION DE RUIDO. 05. PRIMEROS ARR
C30 06.RECUPERACION DE AMPLITUDES (TAR). 07.AMPLITUD CONSISTENTE EN SUPE
C31 08.DECONVOLUCION. 09.ESTATICAS DE REFRACCION.
C32 10.ANALISIS DE VELOCIDAD 1. 11.ESTATICAS RESIDUALES 1.
C33 12.ANALISIS DE VELOCIDAD 2. 13.ESTATICAS RESIDUALES 2.
C34 14.PSTM. KIRCHHOFF (1RA IT.) 15.ANALISIS DE VELOCIDAD 1
C35 16.PSTM. KIRCHHOFF (2DA IT.) 17.APILADO
C36 18.FILTROS Y ESCALARES
C37
C38
C39 DATUM DE ESTE SEGY: 1100 m.s.n.m VELOCIDAD DE REEMPLAZAMIENTO: 2200
C40 END OF EBCDIC
    
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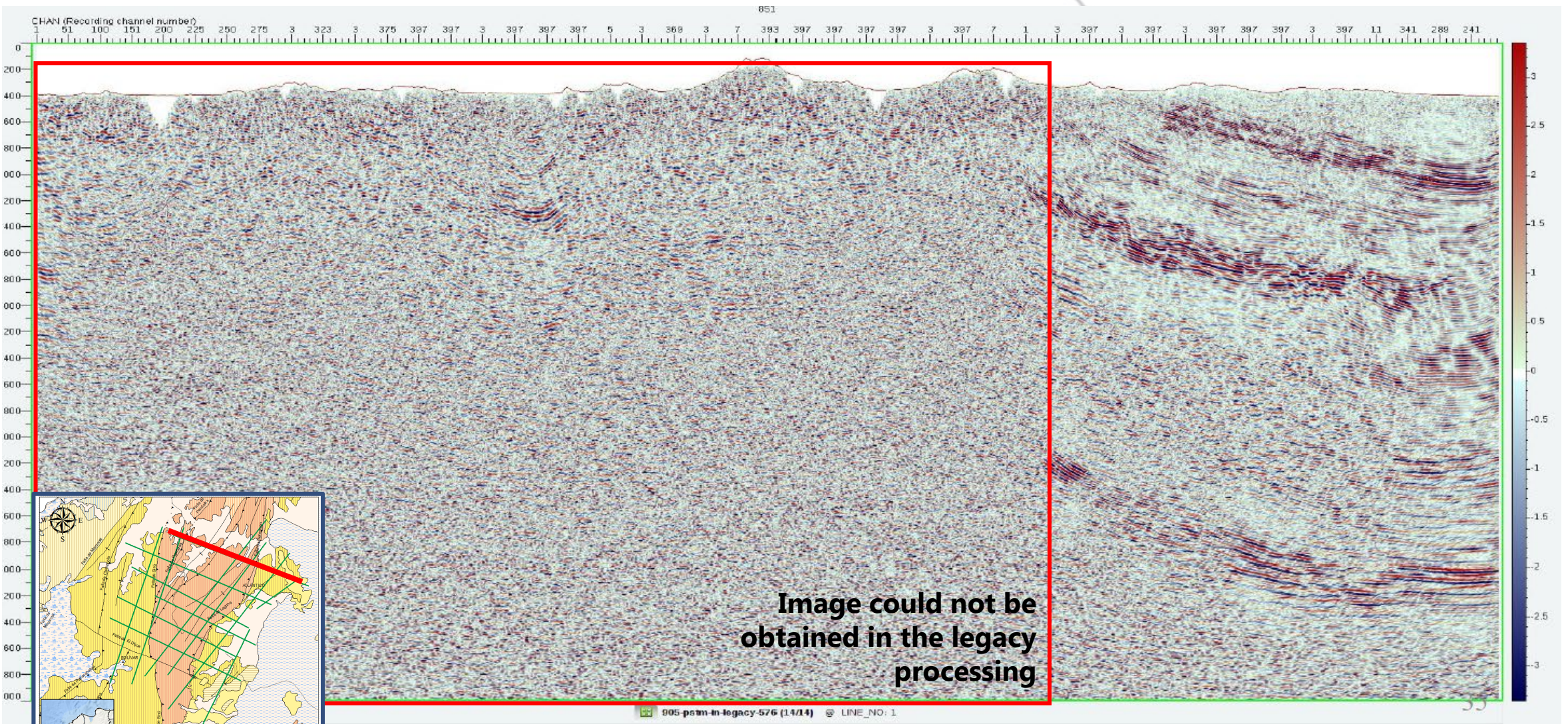
**Thick
Weathering
Layer**

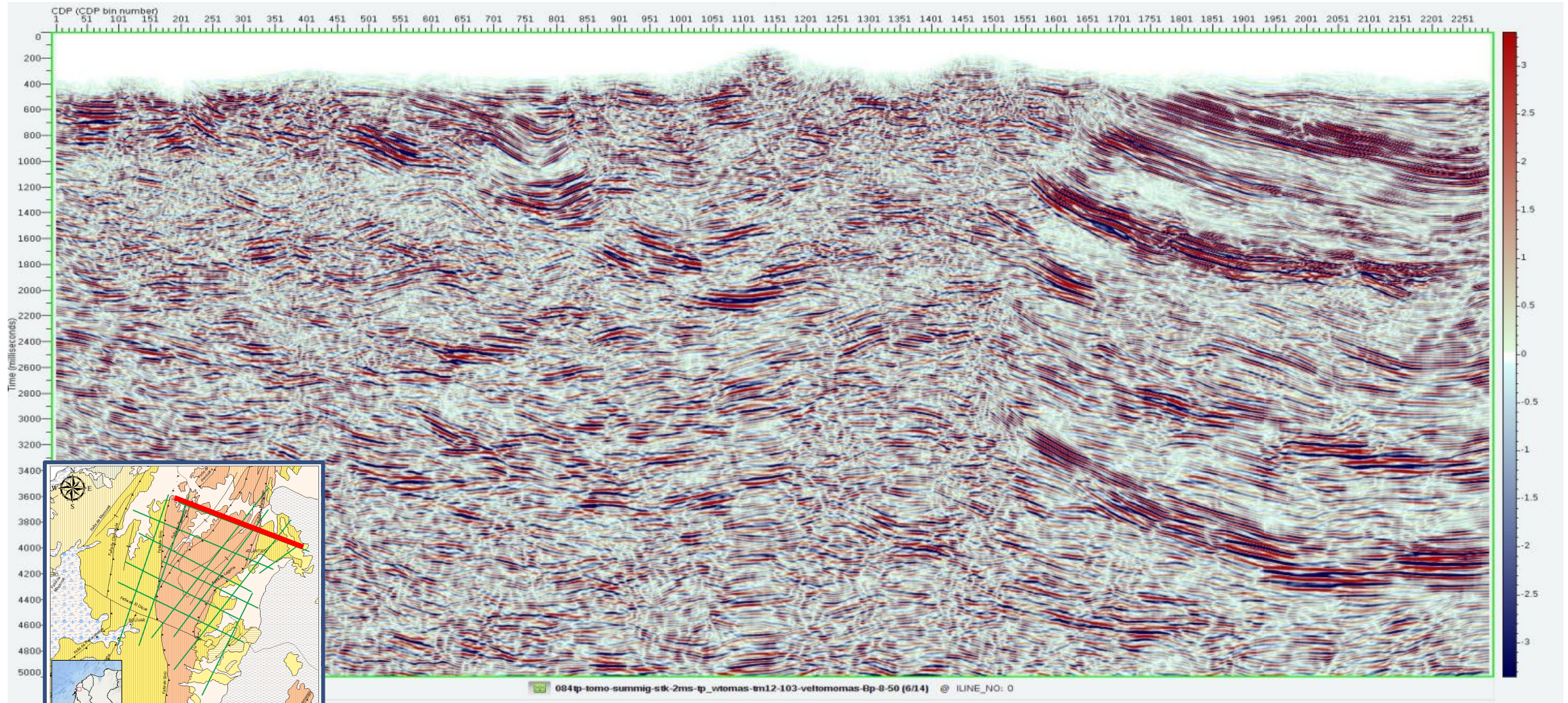
Acquisition Parameters

- Source Intervals: 40m with depths between 20 – 30m
- Receiver Intervals: 20m
- Sample rate: 2ms
- Record Length: 7.2s

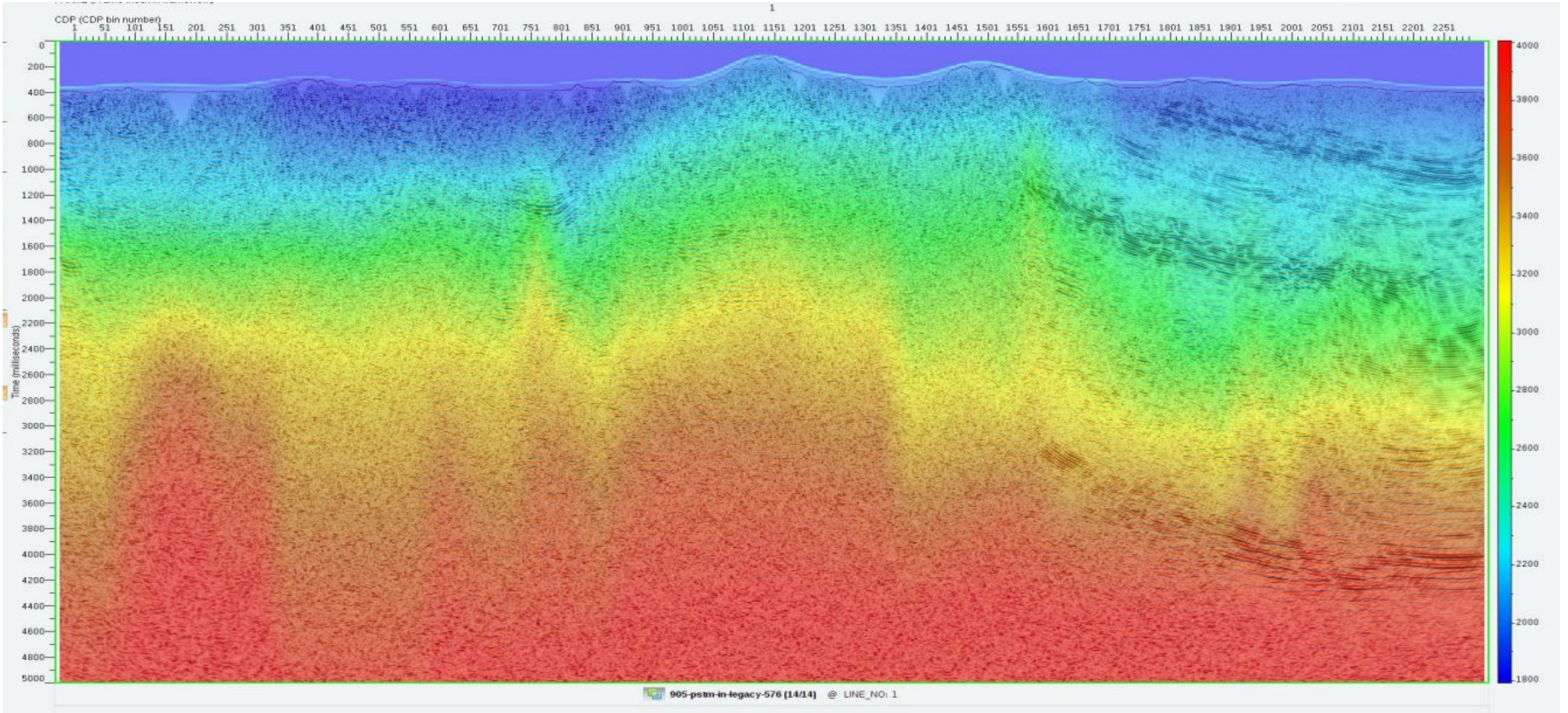
Straightforward sequence

- Geometry
- Noise attenuation
- First break picking
- Decon
- Statics correction
- Velocity Analysis
- Kirchhoff Migration

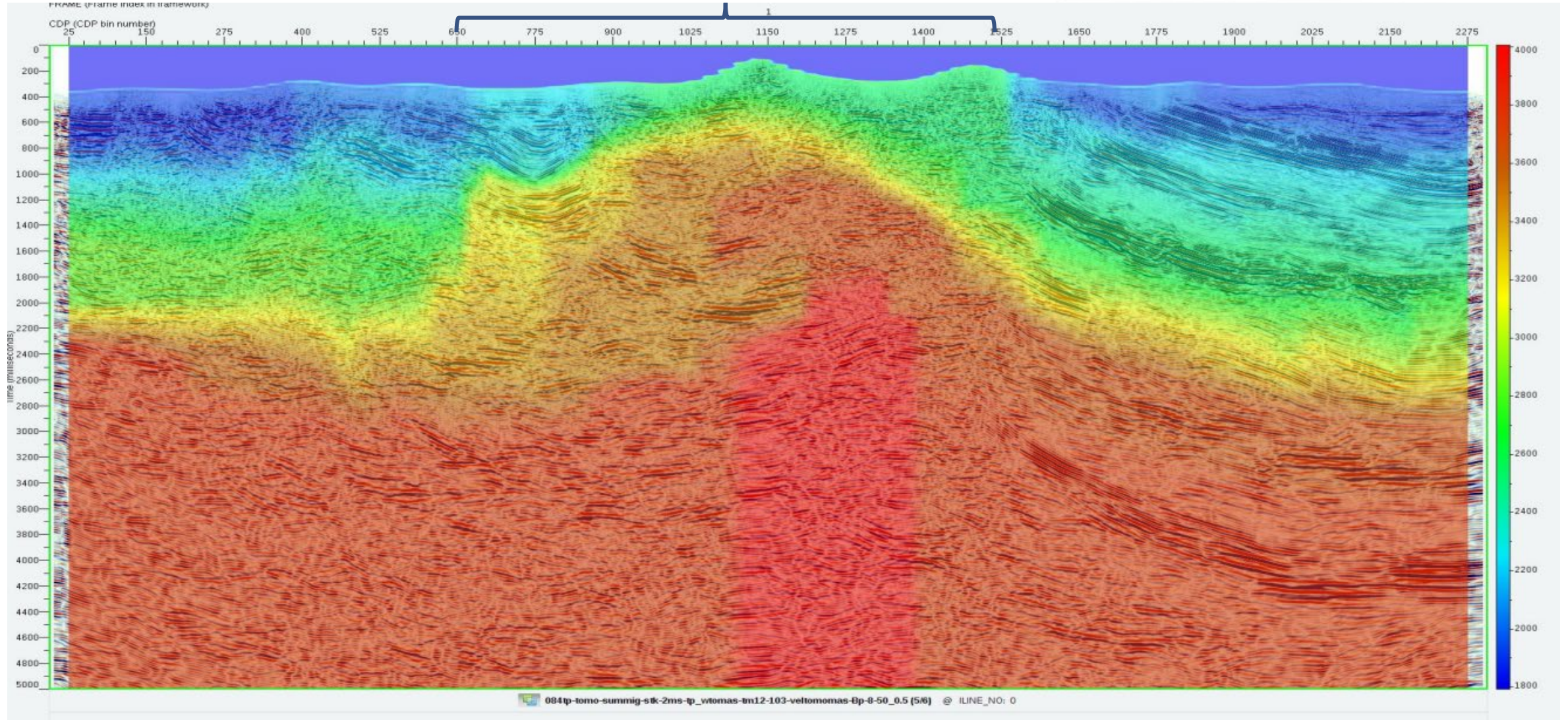


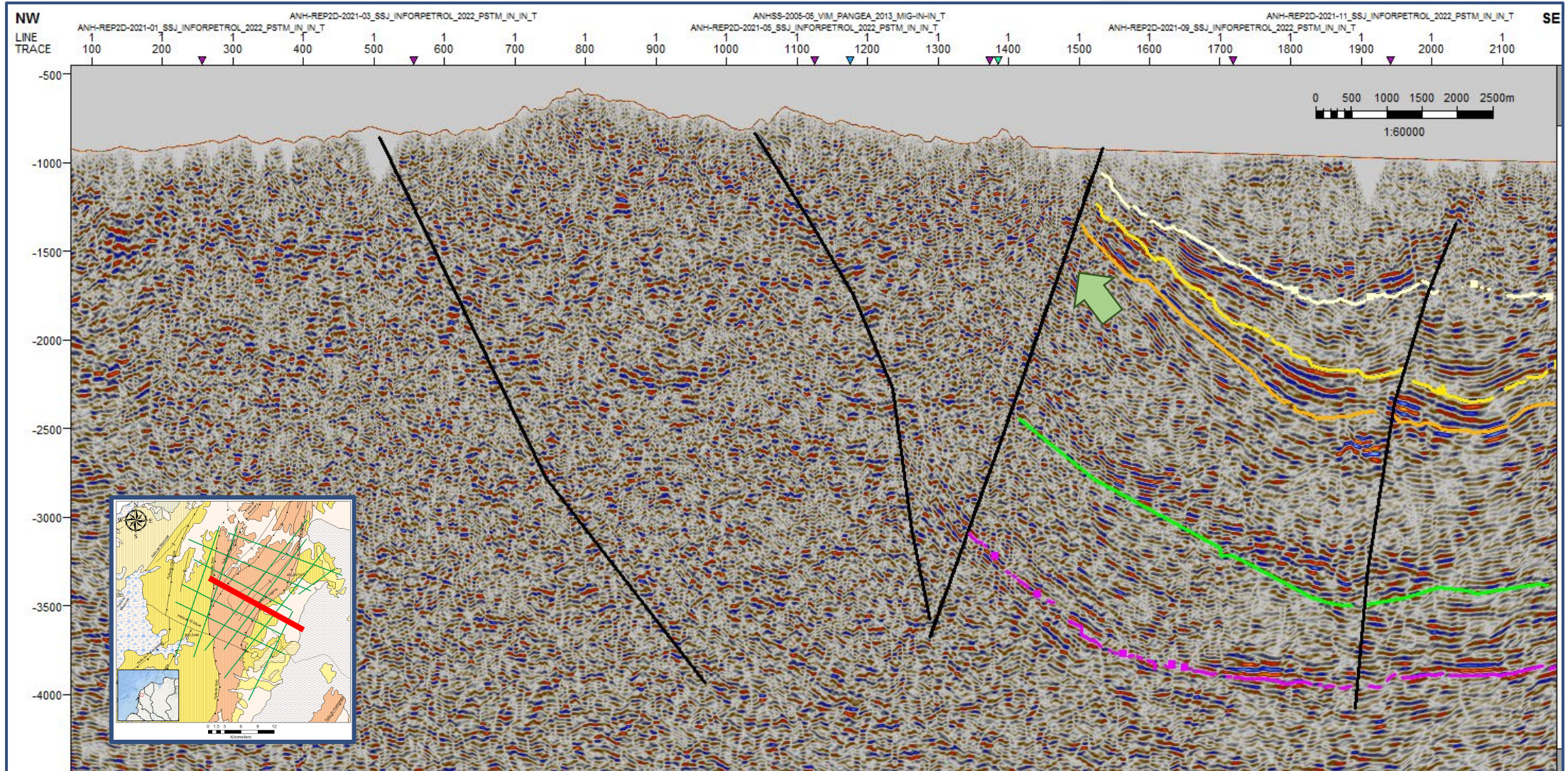


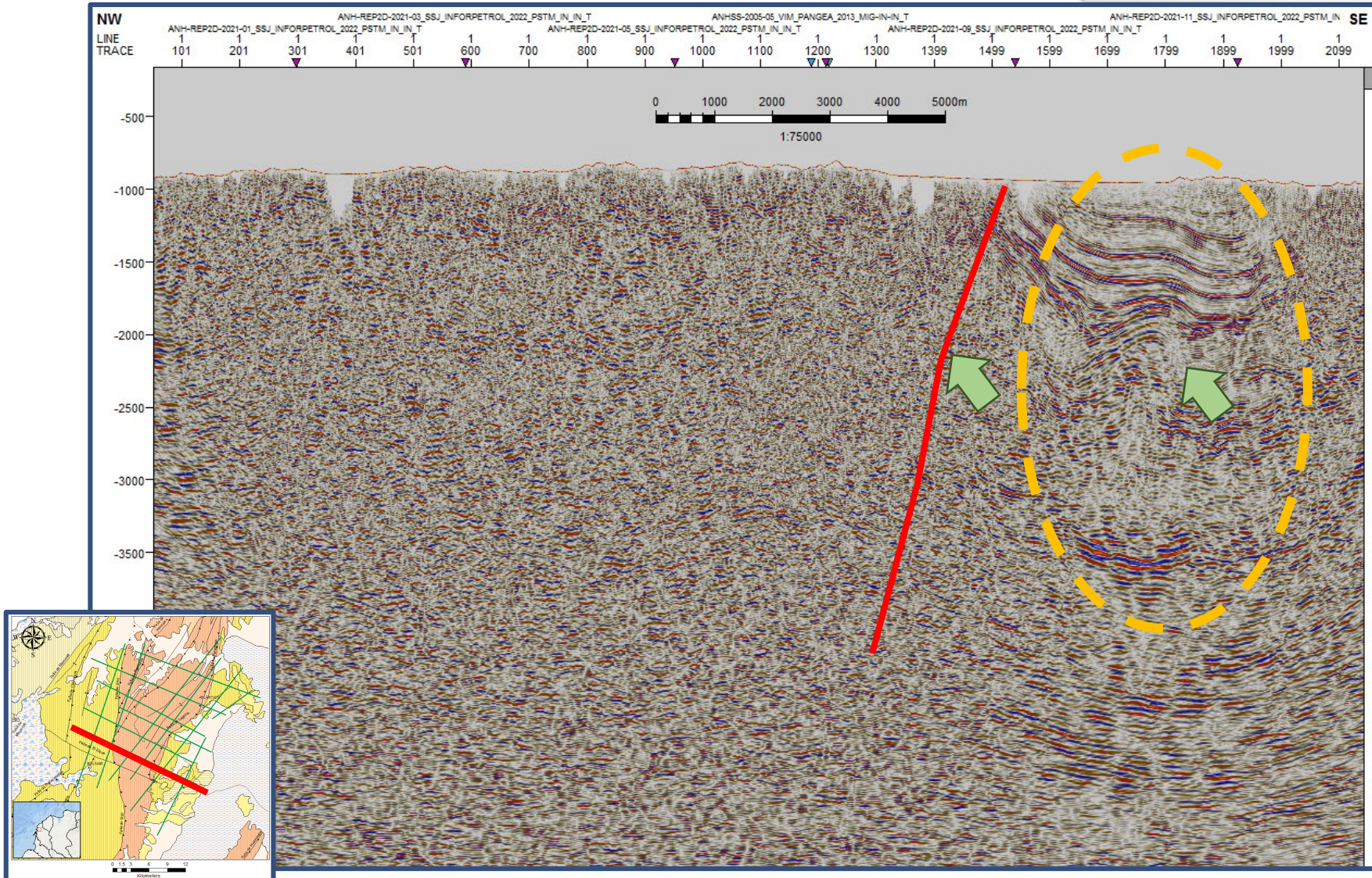
Respect Geology in Velocity Models!: Legacy



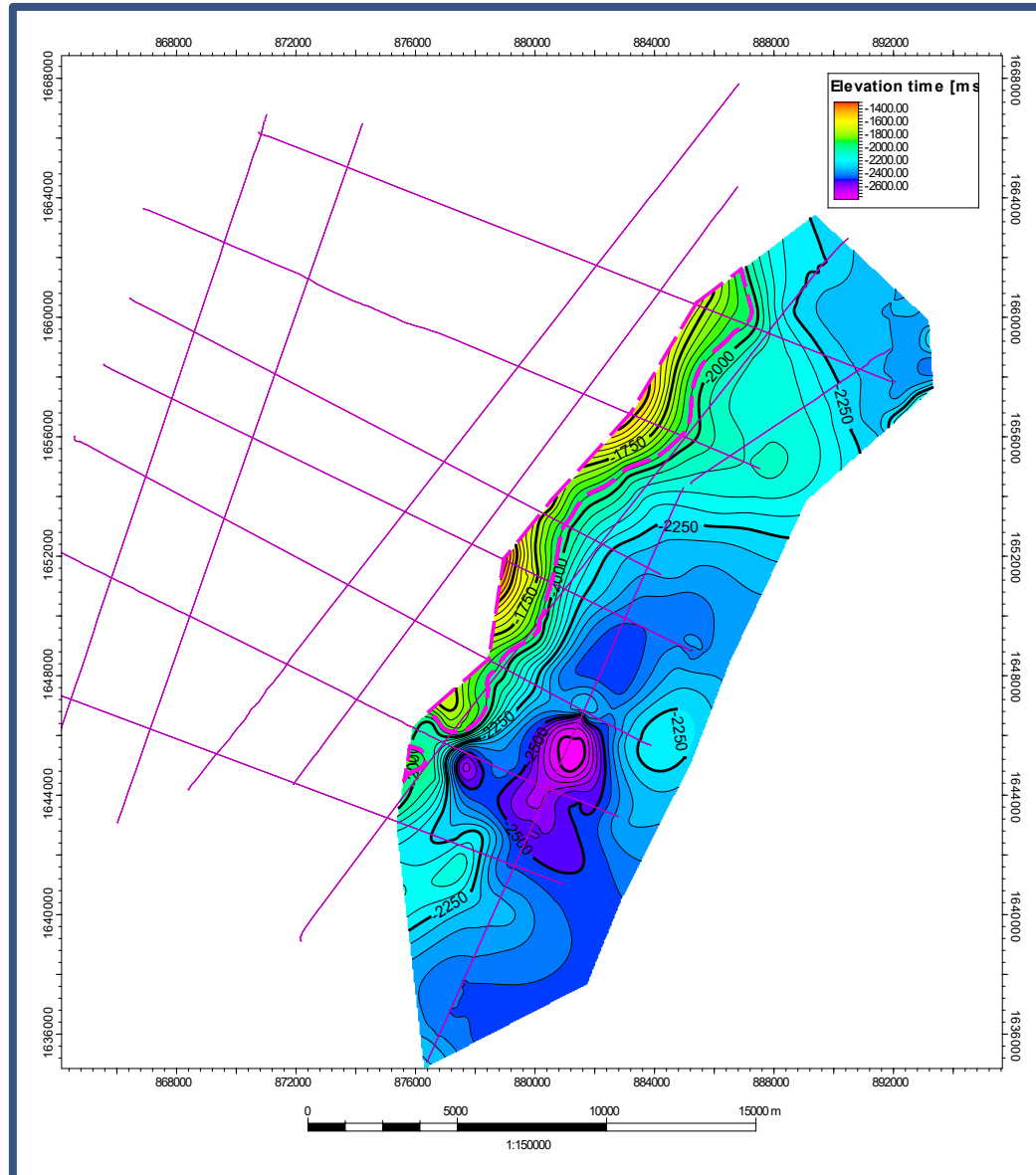
High velocity unit taken into account







Structural Map: Top High Amplitudes



- **Area**
- 22.97 Km² = 5676 Acres
- Quite early to estimate other petrophysical parameters for a volumetric calculation

- The ANH have acquired a 2D seismic program at the north of the San Jacinto basin in the SSJN 1-3 area
- The seismic survey called Repelón after the municipality it was acquired, consists of 6 dip lines & 7 strike lines with a total length of 286 Km
- The seismic survey was acquired in a complex geological setting with high angle faults (strike-slip) that juxtapose Miocene units with Paleocene and Eocene units
- The legacy processing could not get an image in the Paleocene unit zone. It could be because of the lack of geological sense of the legacy velocity model
- A structure with three way dip closure and closure against the fault was identified for possible units related to Chengue Fm (High amplitude reflectors)
- The lead interpreted in the preliminary interpretation has an area of 5676 acres but it is likely to be changed with the new processing in the next months