Shaping the Future
Permanent Offer of Blocks in Brazil [Open Acreage]

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Houston, Texas, USA

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NOTICE

The ANP´s institutional presentation is based on current and reliable information, but no representation or warranty is made as to its accurateness and completeness, and it should not be relied upon as such.

Projections and estimated values are included without any guarantee as to their future realization.

Forward-looking data, information, projections and opinions expressed during the presentation are subject to change without prior notice.

OUTLINE

BRAZIL PRODUCTION & RESERVE DATA

OFFSHORE SEDIMENTARY BASINS

- *EAST MARGIN [SAMPLES]*
- *EQUATORIAL MARGIN*

PERMANENT OFFERING DETAILS [OPEN ACREAGE]

FINAL REMARKS

Q&A

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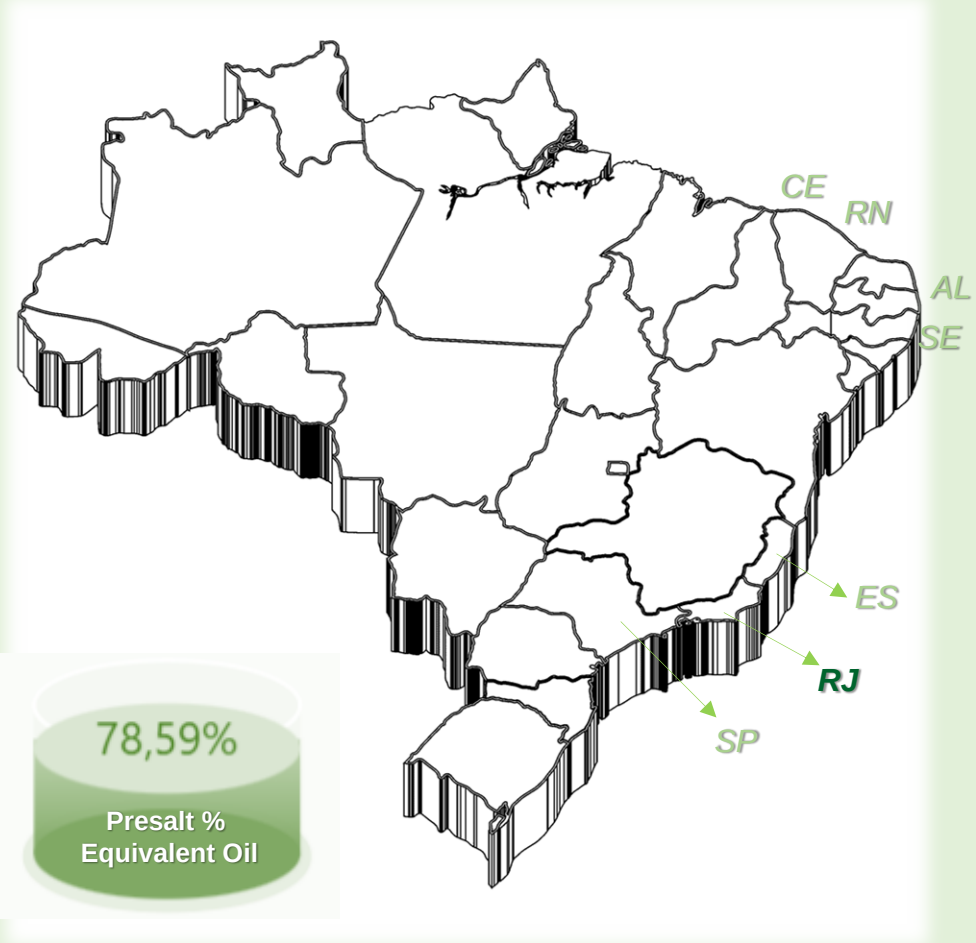
Oil and Gas Production in Brazil by State

State	Oil (bbl/d)	GAS (Mm^3/d)	Total (boe/d)	Nº of Fields
Rio de Janeiro - RJ	3,019,581	126,620	3,815,996	49
São Paulo - SP	215,669	11,789	289,822	7
Espírito Santo - ES	158,190	3,460	179,951	25
Rio Grande do Norte - RN	31,445	1,198	38,981	64
Bahia - BA	19,491	3,045	38,646	74
Amazonas - AM	11,561	14,568	103,189	6
Sergipe - SE	10,662	56	11,012	18
Alagoas - AL	2,734	1,397	11,523	11
Ceará - CE	765	1	771	2
Maranhão - MA	151	7,758	48,946	8
Paraná - PN	0	28	177	1
Total	**3,470,249**	**169,920**	**4,539,015**	**265**

- bbl: barrel ($1m^3 \approx 6,28981$ bbl)
- bbl/d – Thousand of barrels per day
- boe: barrels of oil equivalent



Oil and Gas Production in Brazil by Sedimentary Basin

Sedimentary Basin	OIL (bbl/d)	GAS (Mm^3/d)	Total (boe/d)	Nº of Fields
Santos	2,809,653	130,726	3,631,892	29
Campos	571,259	10,617	638,037	31
Potiguar	32,210	1,199	39,752	66
Recôncavo	19,487	2,994	38,317	69
Espírito Santo	12,528	526	15,840	21
Solimões	11,361	13,983	99,312	5
Sergipe	10,662	56	11,012	18
Alagoas	2,734	1,397	11,523	11
Amazonas	200	585	3,877	1
Parnaíba	117	7,754	48,891	7
Barreirinhas	34	3	55	1
Tucano Sul	5	52	329	5
Paraná	0	28	177	1
Total	**3,470,249**	**169,920**	**4,539,015**	**265**

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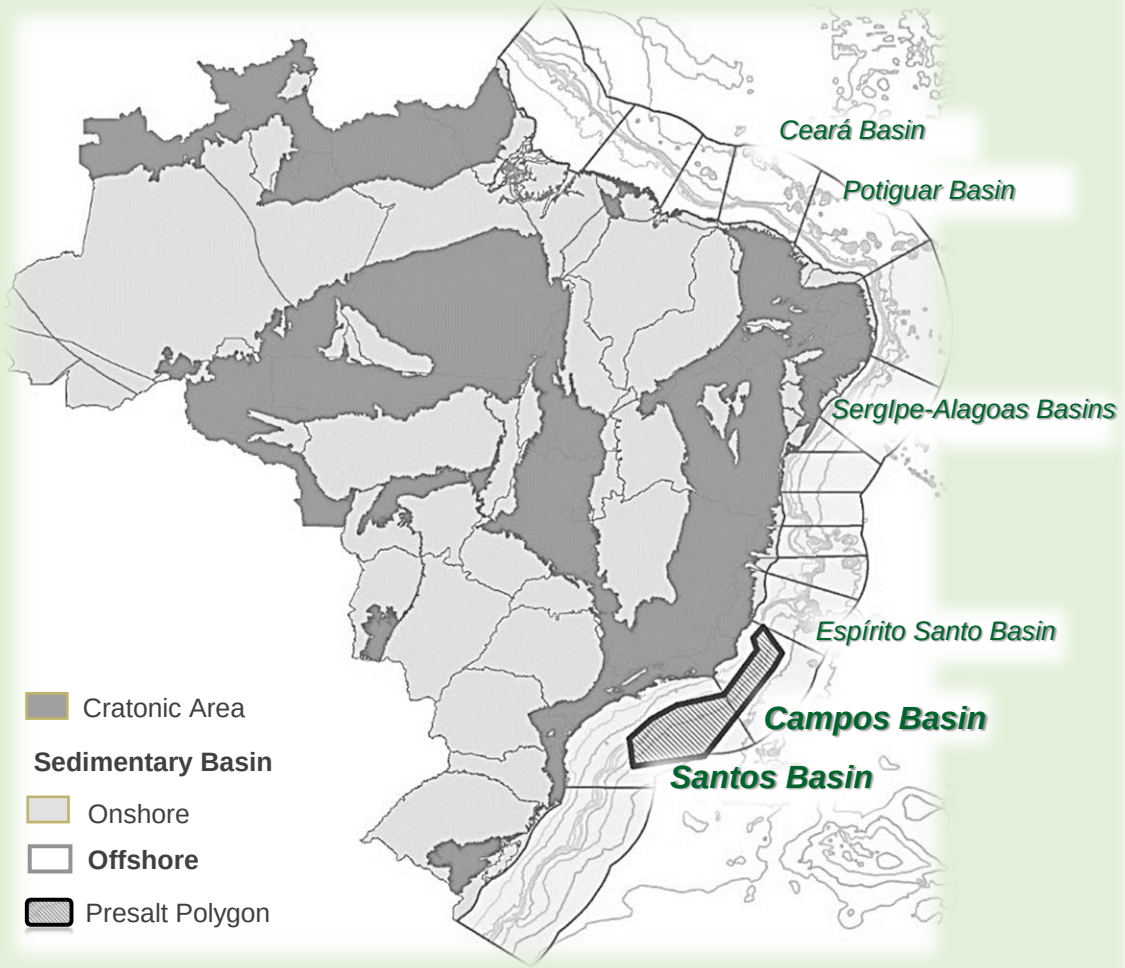
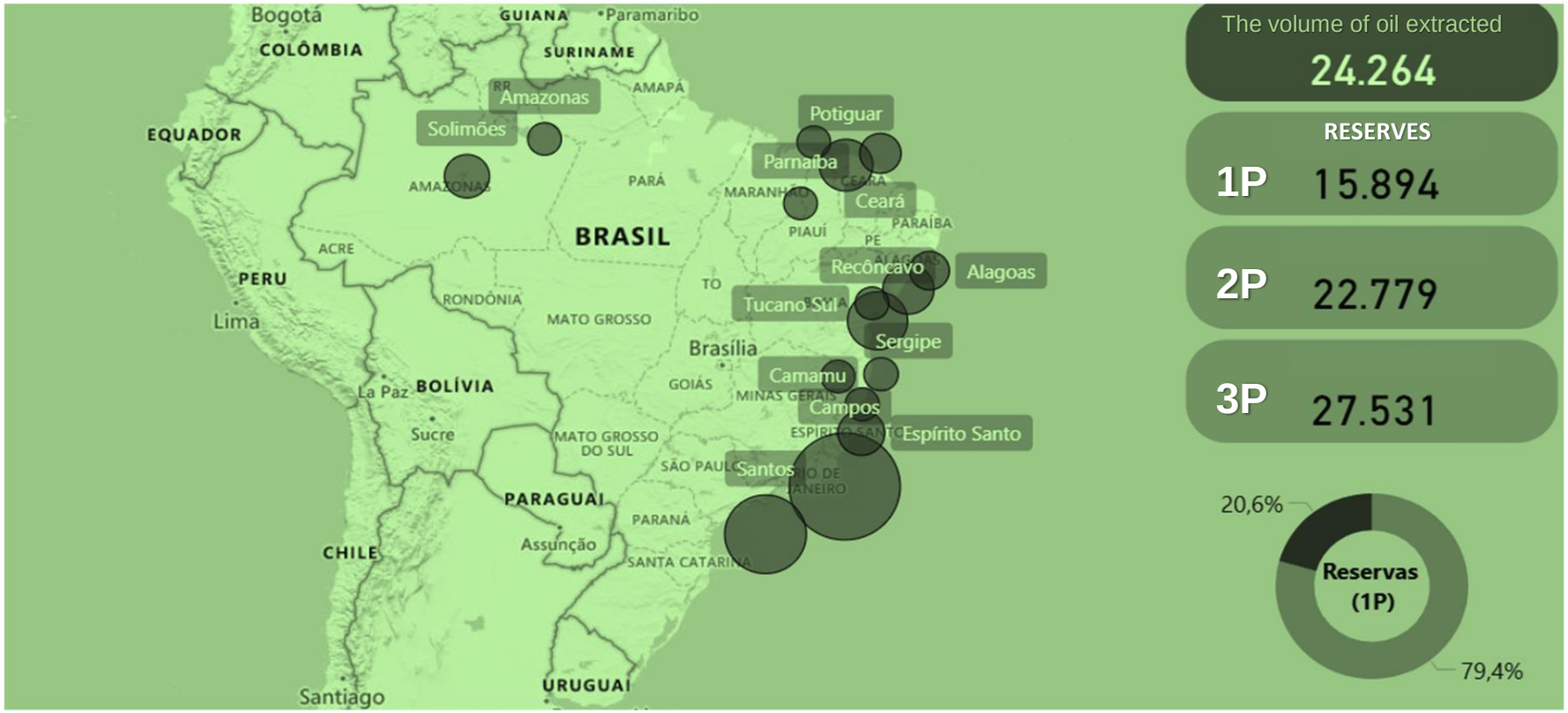


Brazil Proven Reserves (1P)

Oil

15.9

Billion bbl

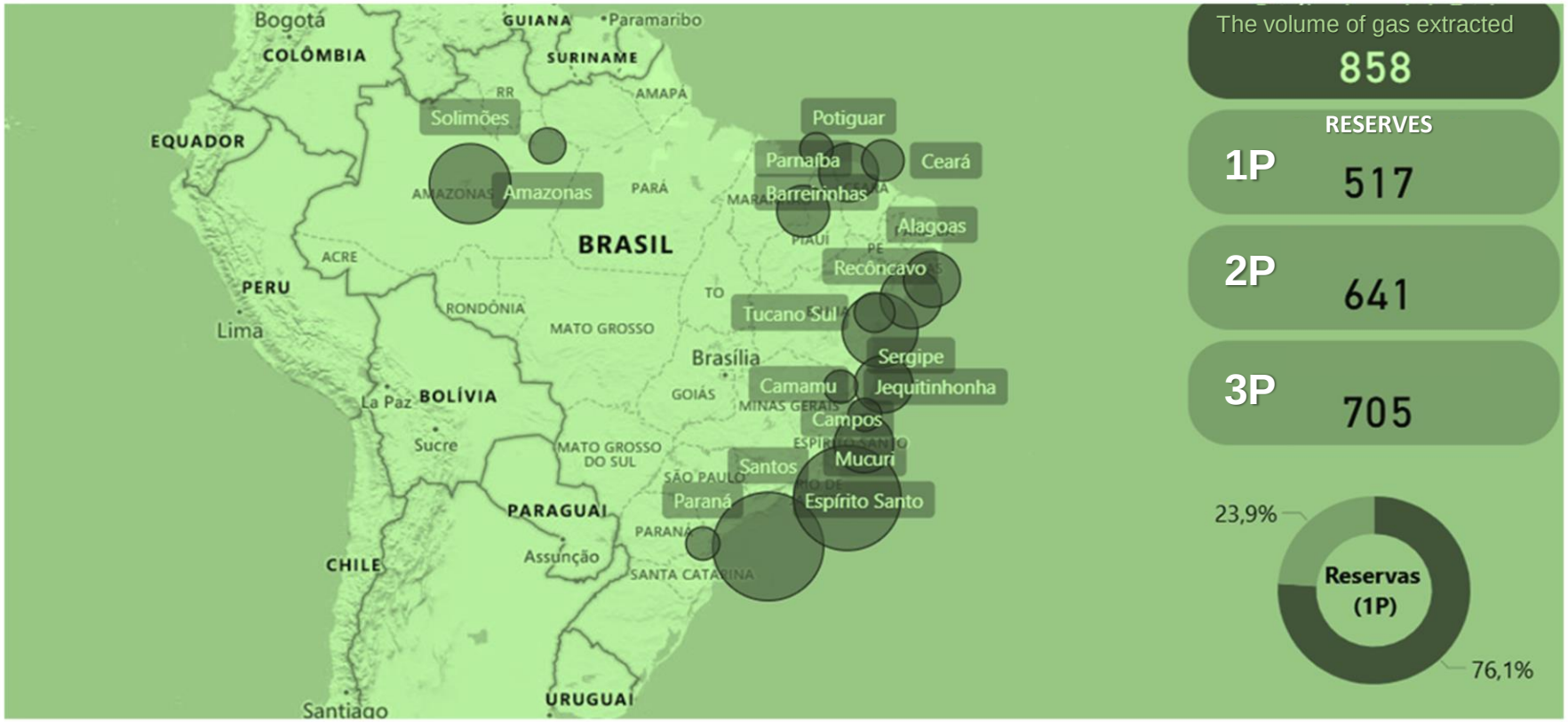


Brazil Proven Reserves (1P)

Gas

517

Billion m³



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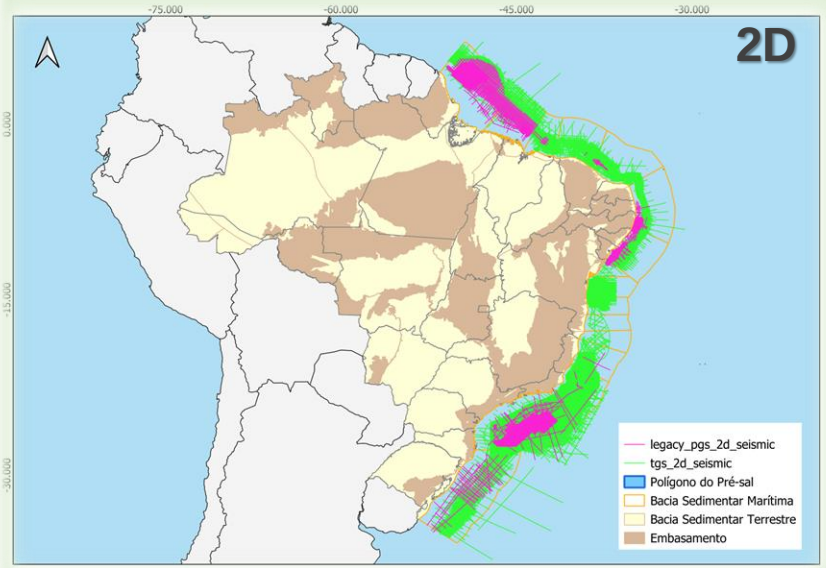
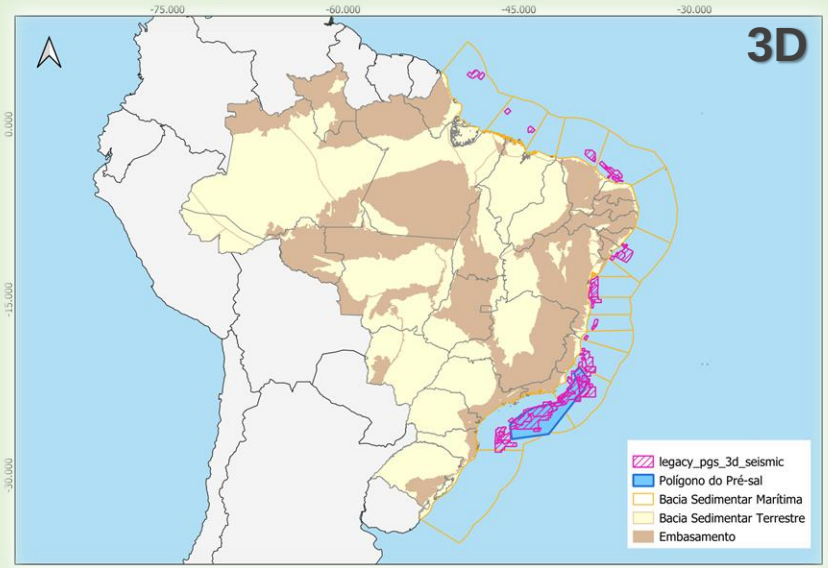
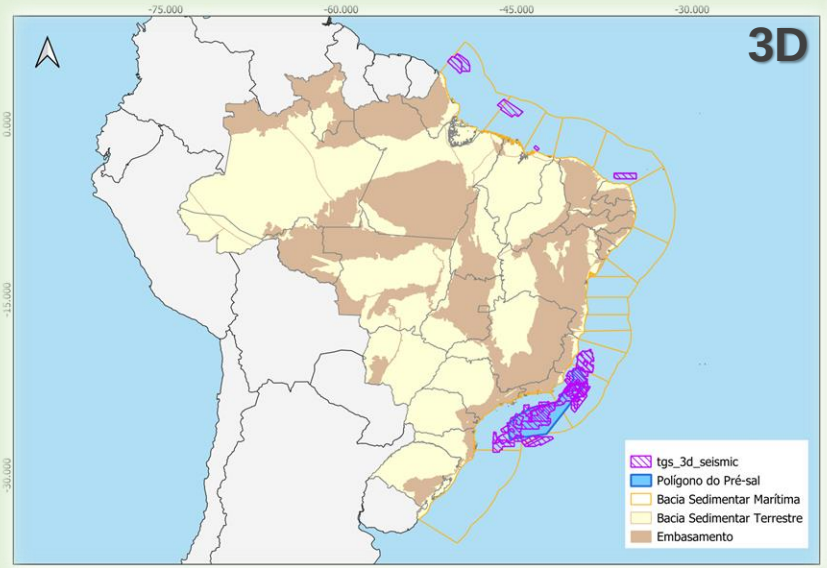
TGS BRAZIL SEISMIC DATA







OPEN ACREAGE

OPC (Concession)

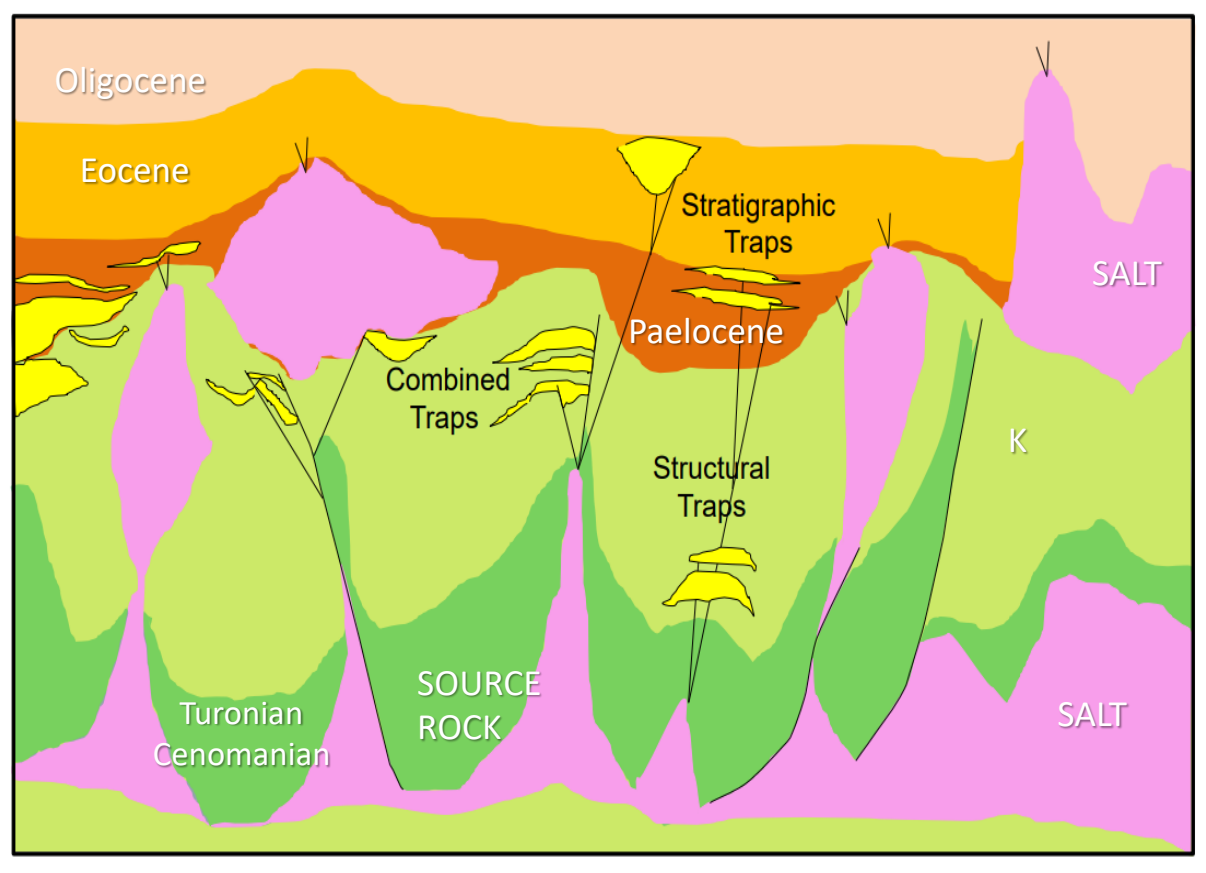
OPP (Production Share)

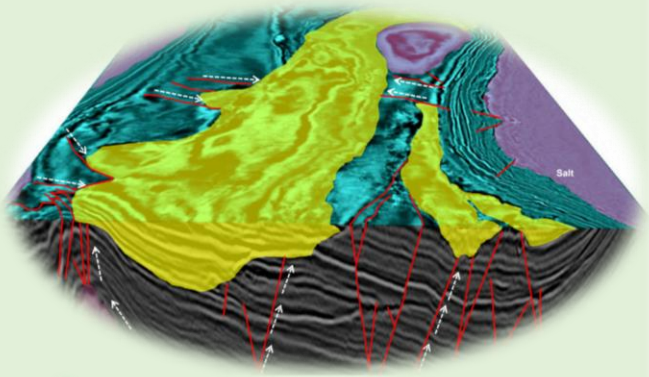
Blocks

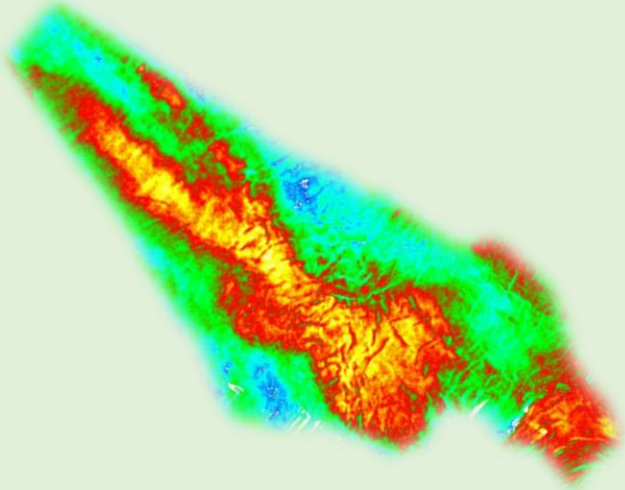
- **ESPIRITO SANTO** SEDIMENTARY BASIN
- **CAMPOS** SEDIMENTARY BASIN

Espírito Santo Basin

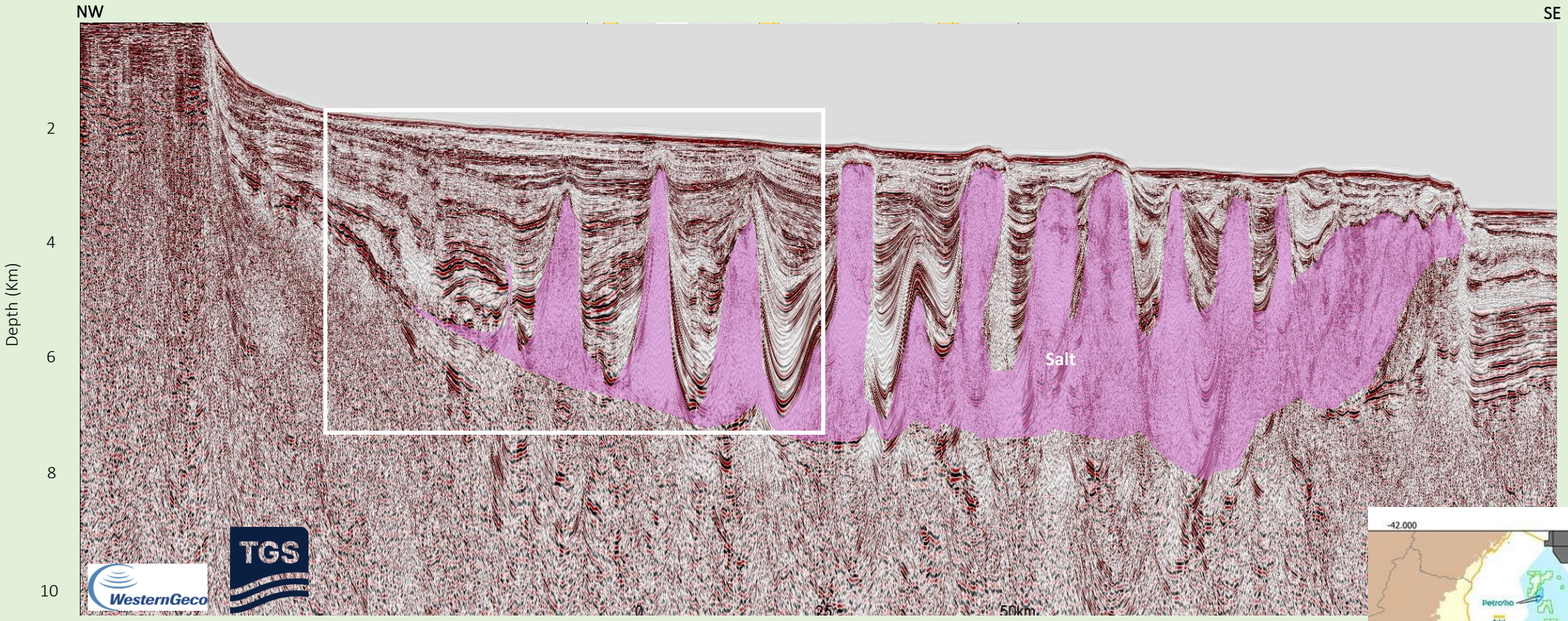
Block	Nome do Setor	Área
ES-M-789	SES-AP2	718,863
ES-M-791	SES-AP2	717,437
ES-M-745	SES-AUP3	540,034
ES-M-793	SES-AUP3	539,149
ES-M-530	SES-AP1	284,124
ES-M-531A	SES-AP1	658,704
ES-M-470	SES-AP1	301,806
ES-M-661	SES-AP1	229,646
ES-M-588	SES-AP1	825,191
ES-M-523	SES-AP1	274,168
ES-M-737	SES-AP2	720,042
ES-M-663	SES-AP1	721,205
ES-M-528	SES-AP1	403,476
ES-M-472	SES-AP1	633,979
ES-M-526	SES-AP1	152,605

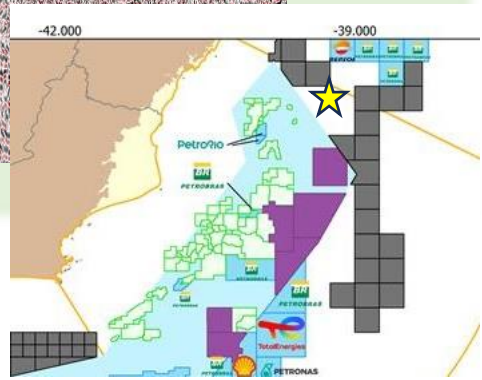






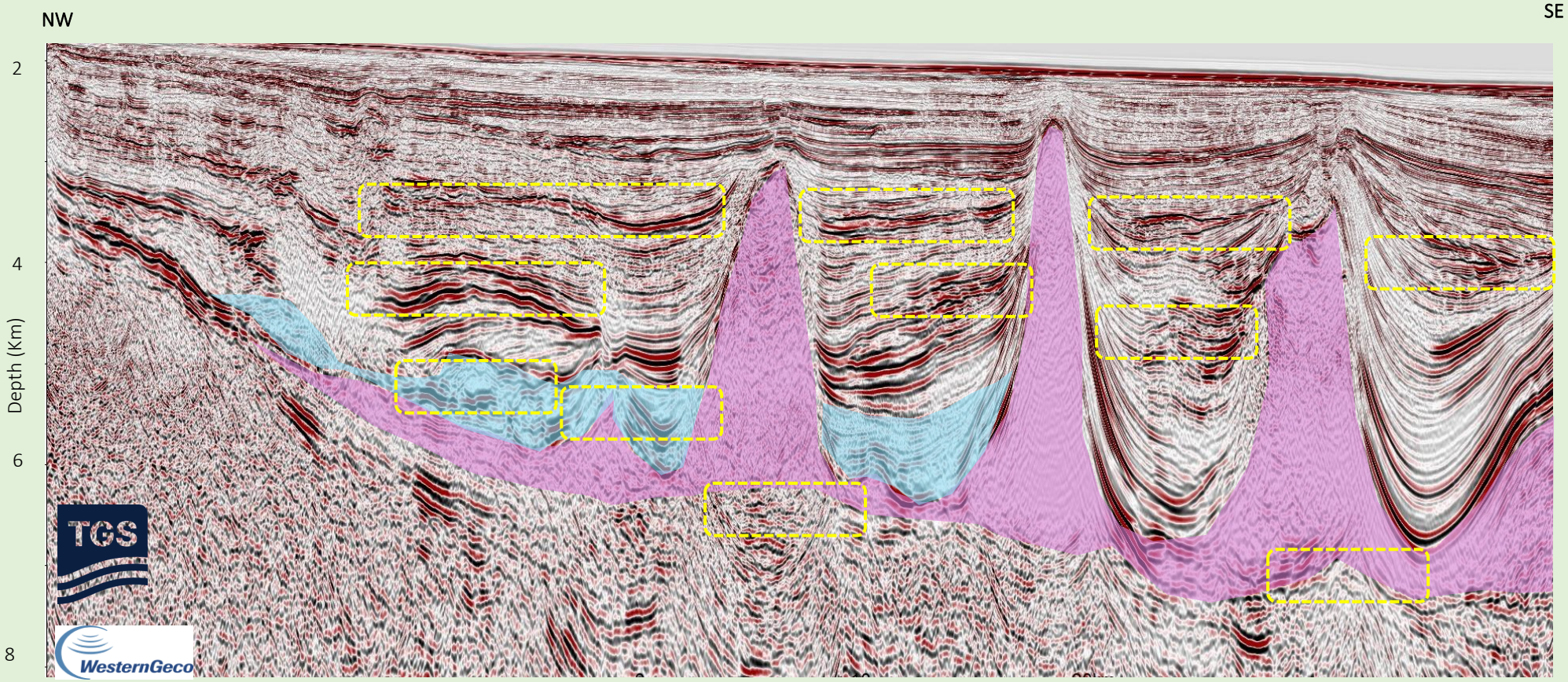
Campos Basin – DIP (2D) - NORTH





R0258_2D_SPEC_PSDM_NTTI (L3377) – Courtesy of WesternGeco and TGS

OPC - Campos Basin – ZOOM – DIP (2D)



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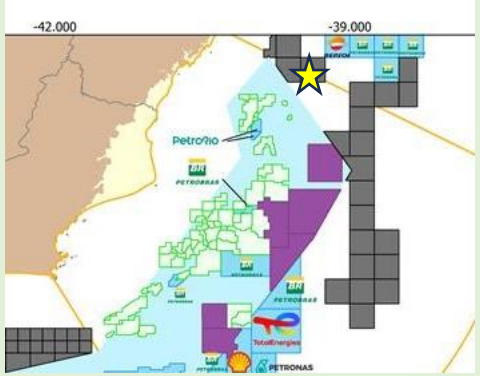
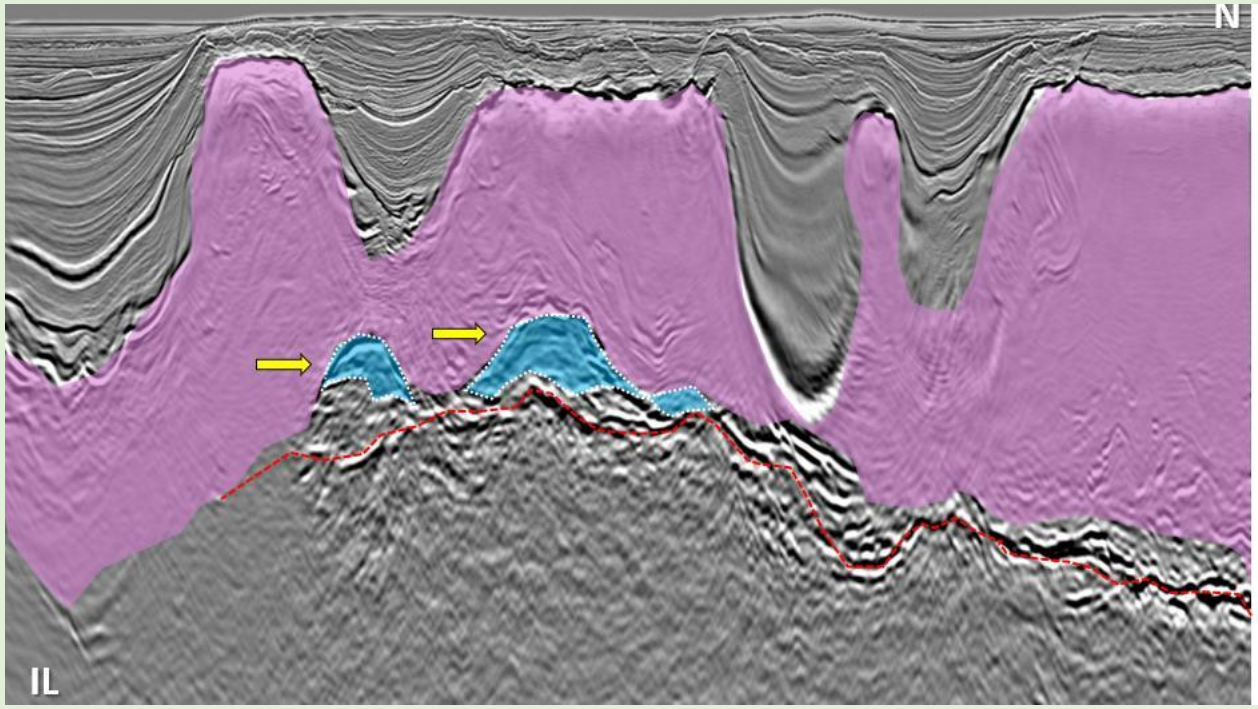
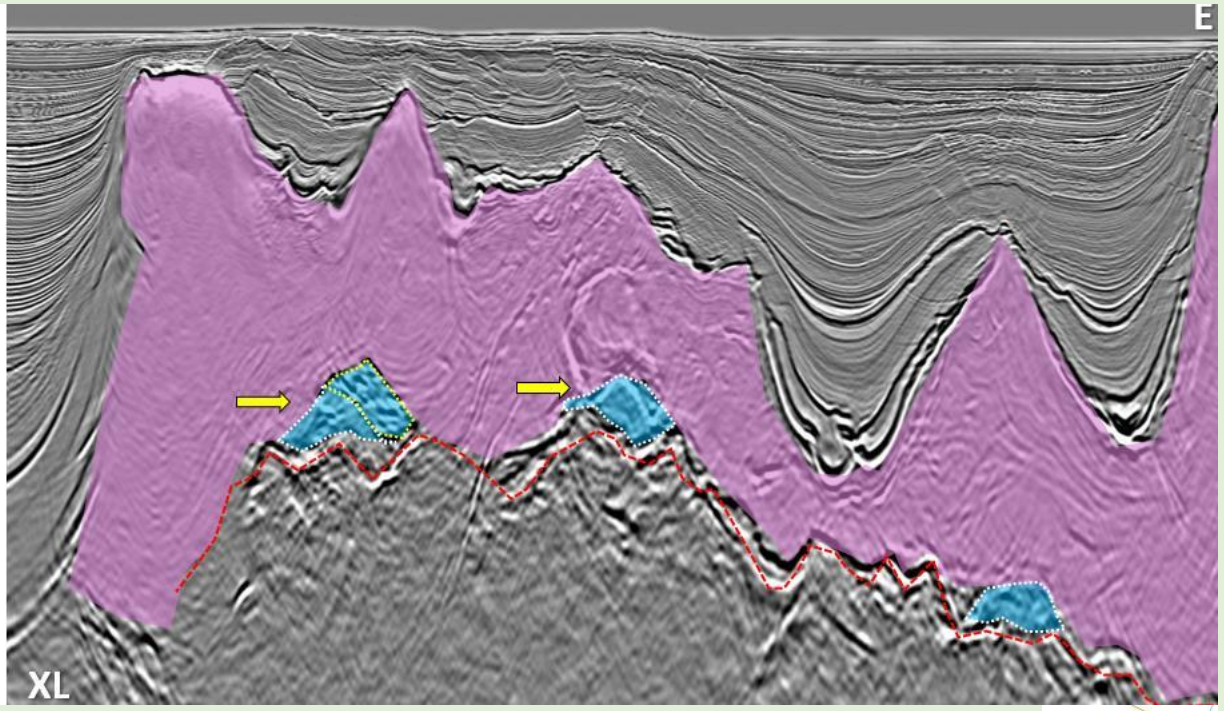
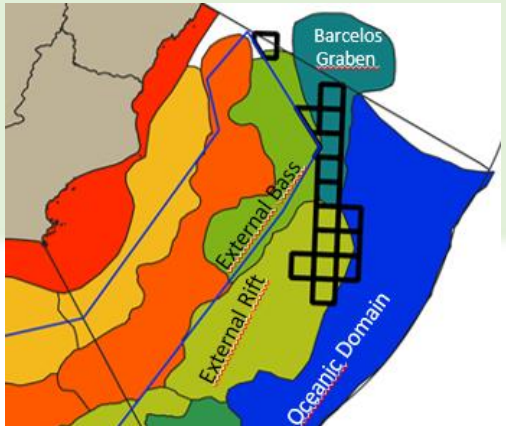


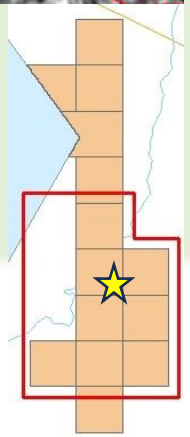
OPC - Campos Basin – 3D (IL e XL)



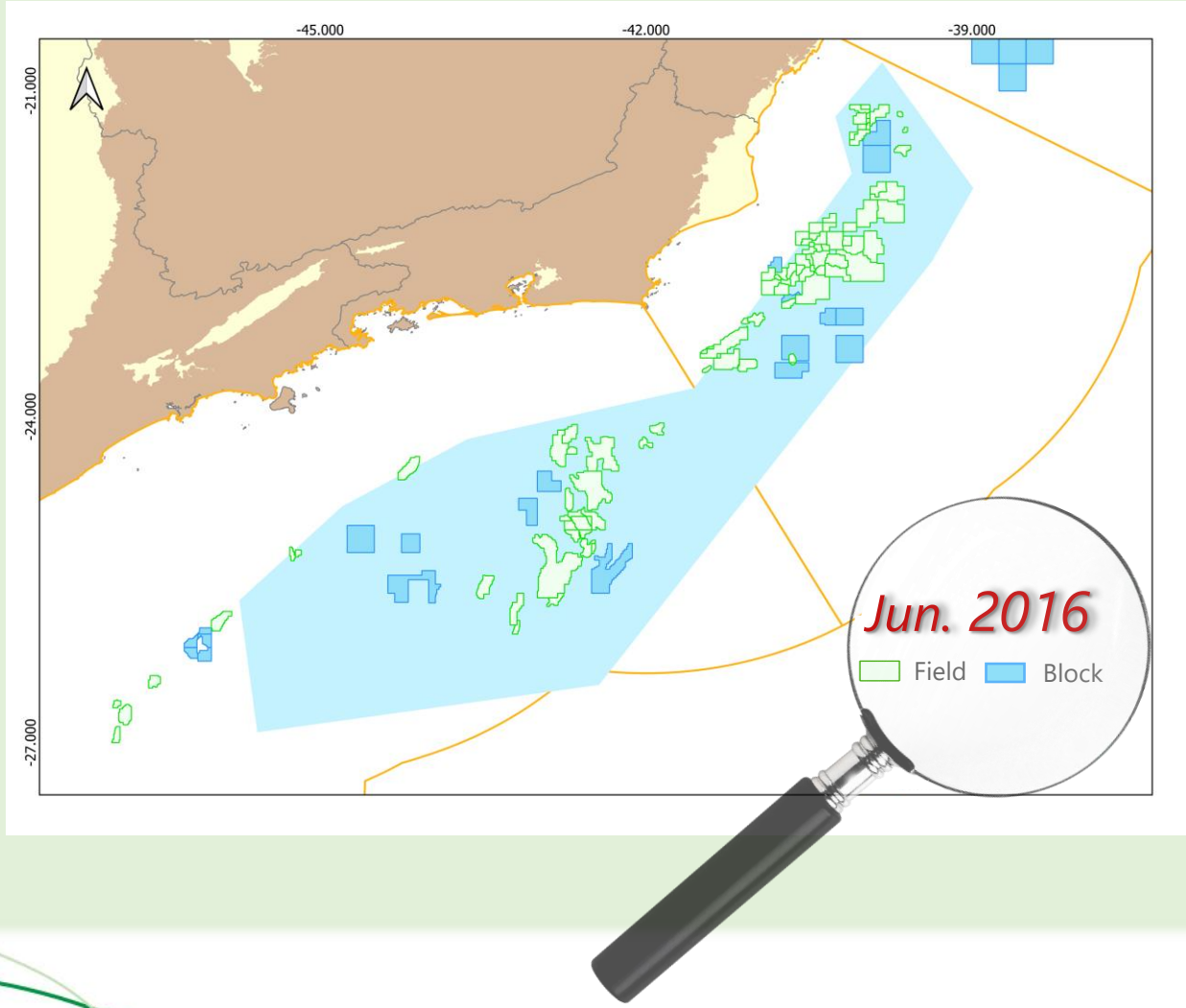


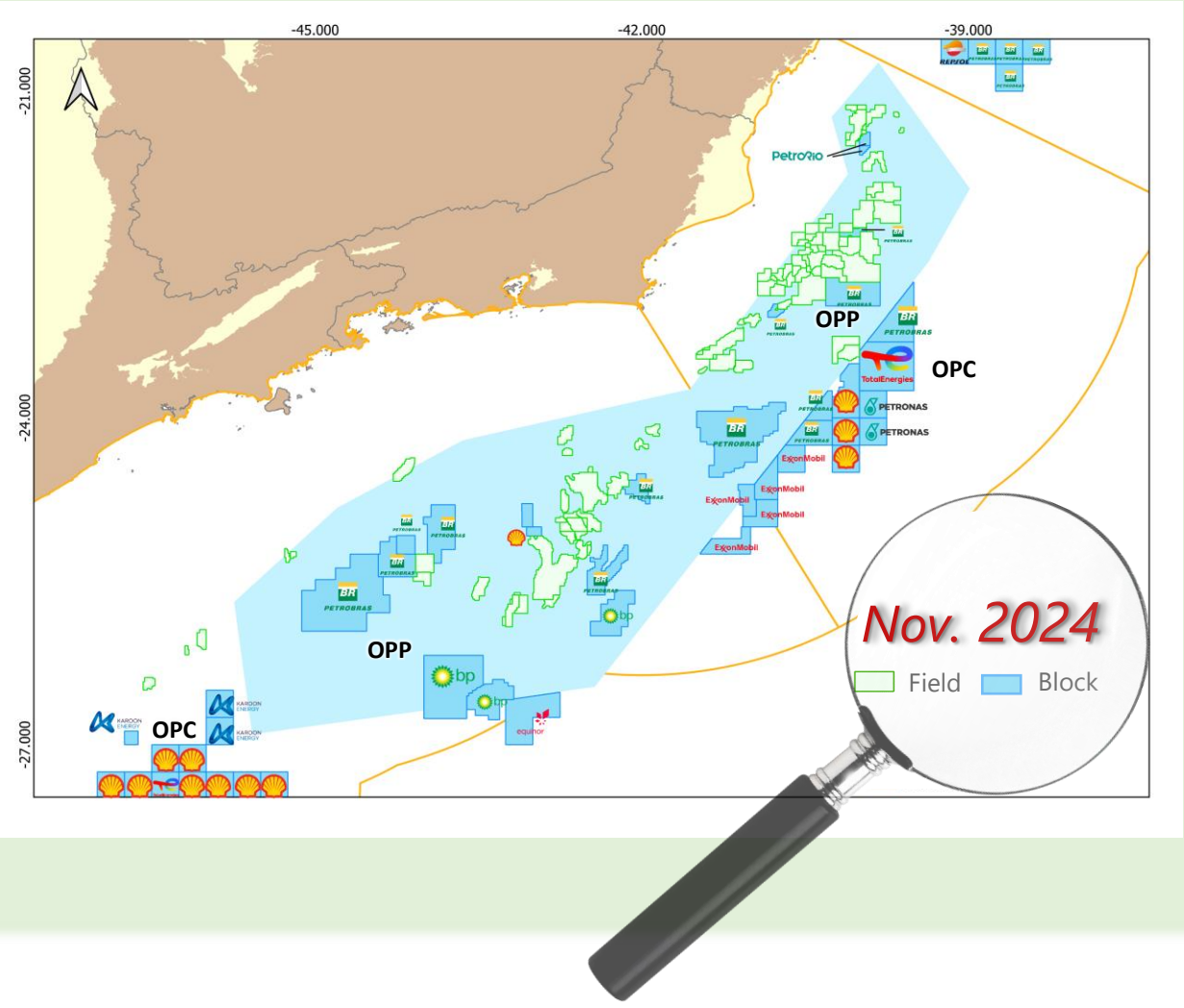
Used Fast Track TTI KPSDM" – Data Courtesy of TGS





Contracts for the Campos and Santos Basins





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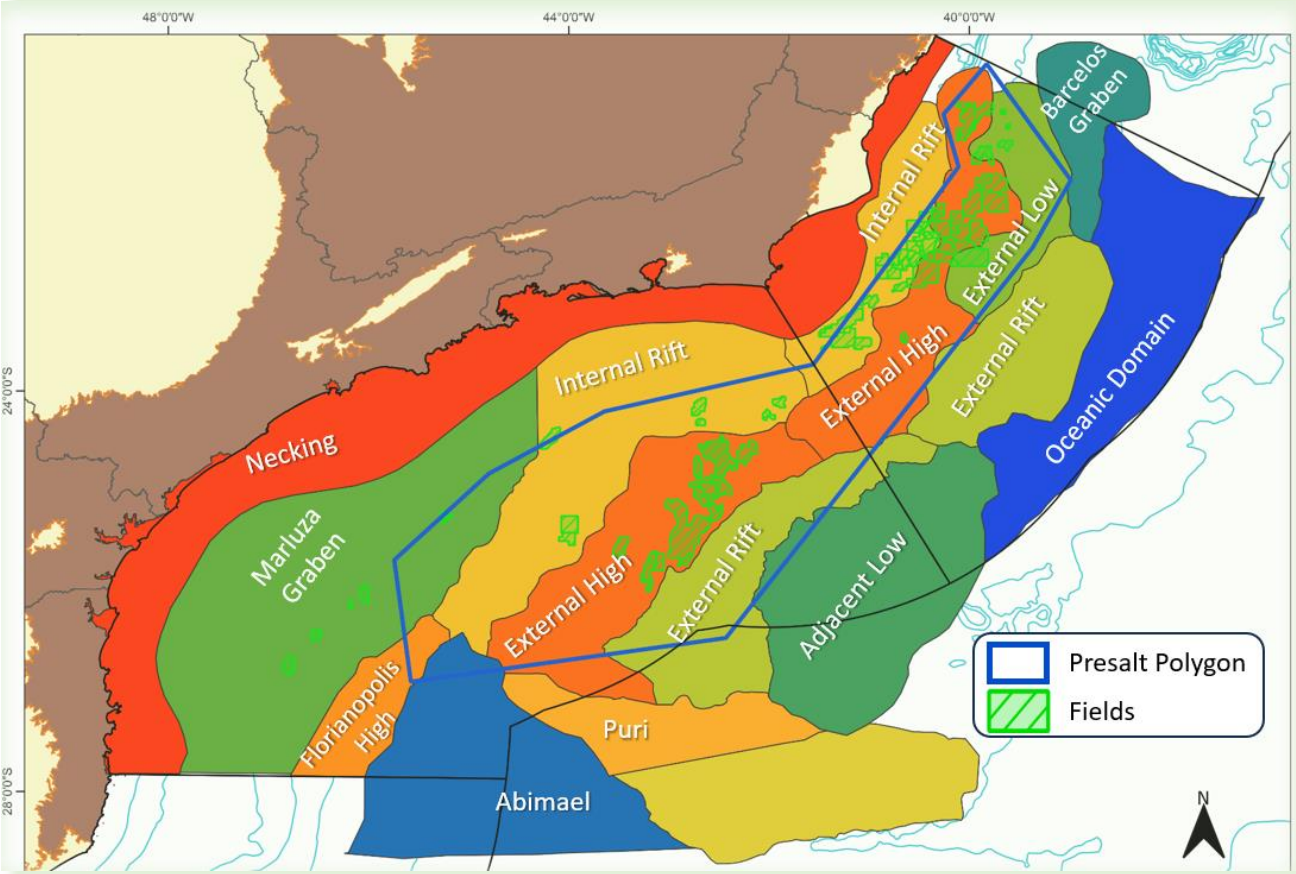
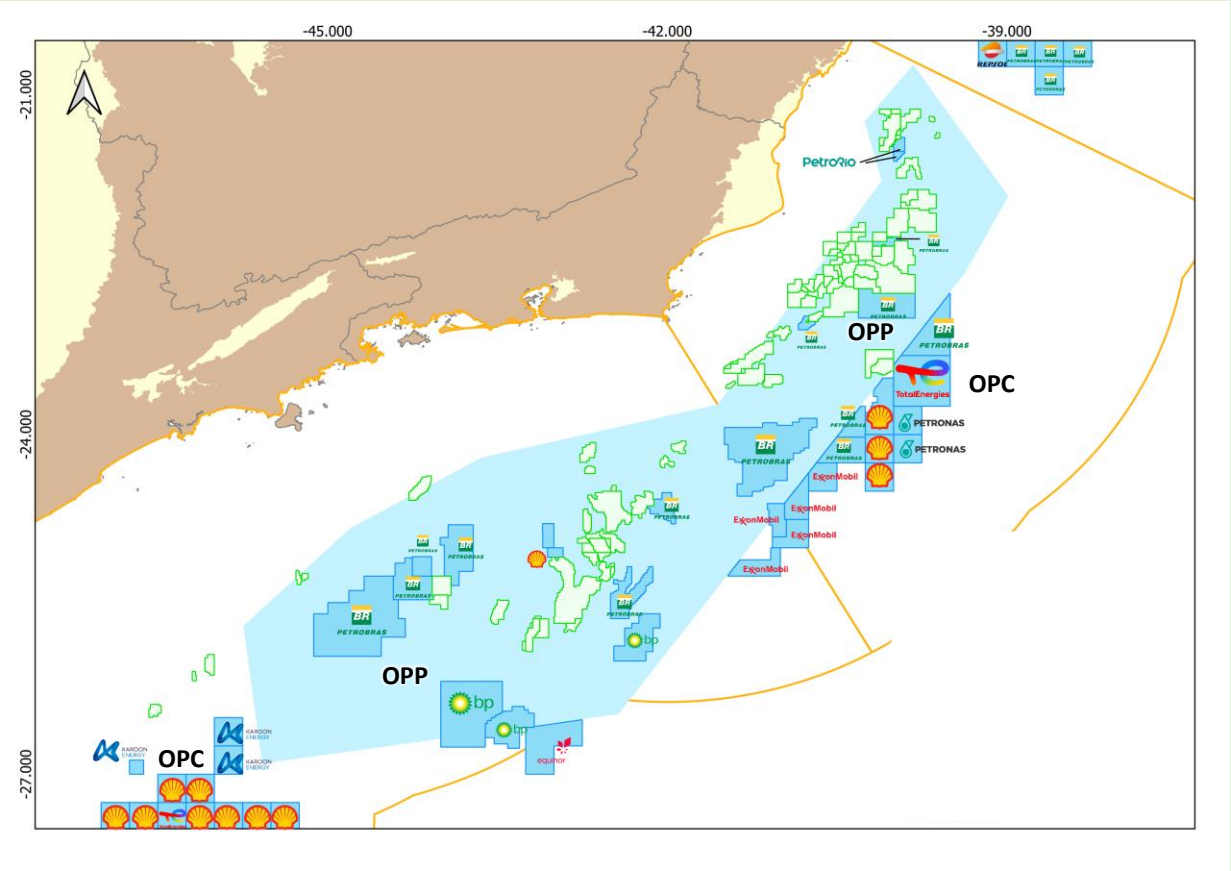
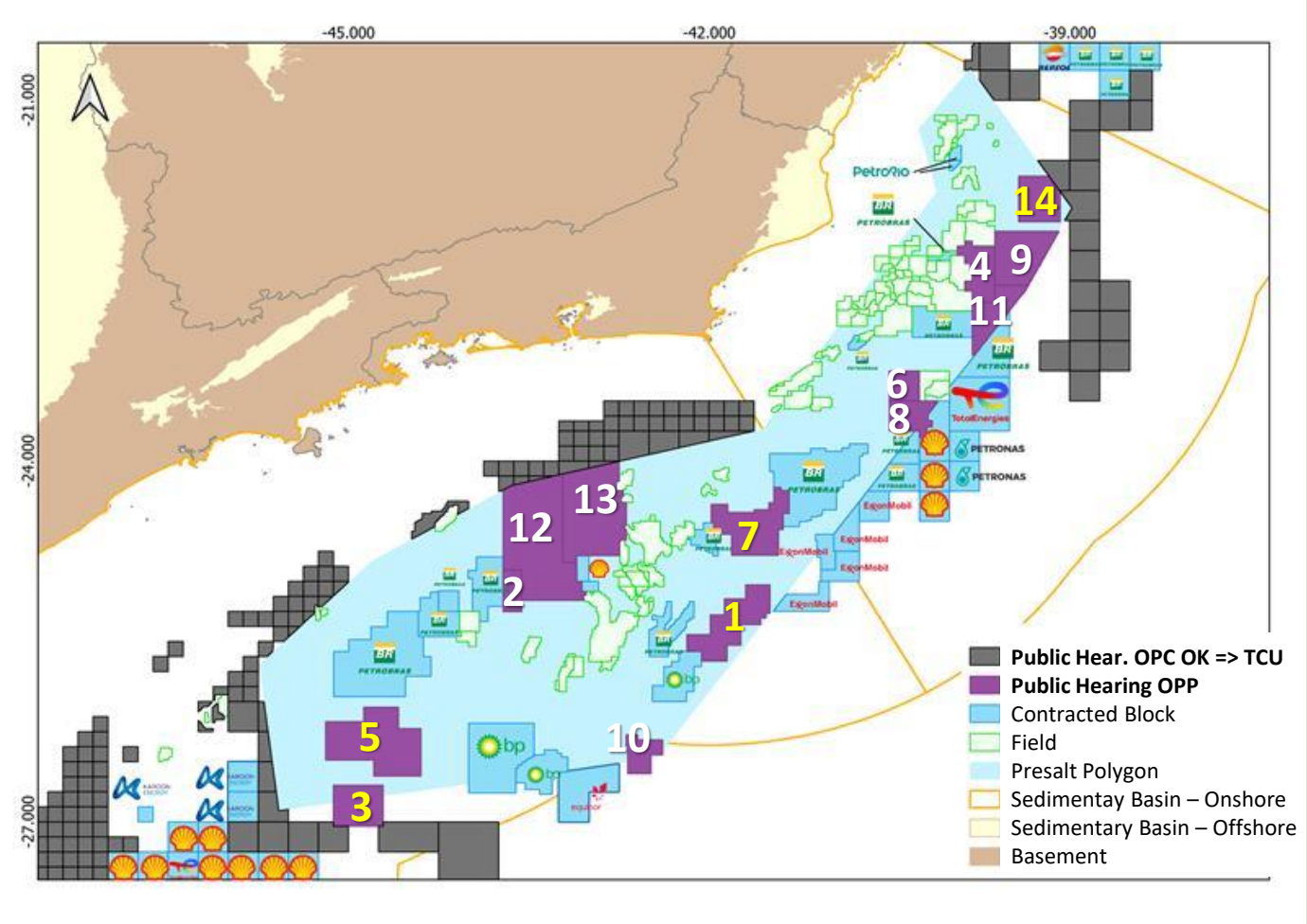




OPP - Campos and Santos Basins

ID	Basin	Sector	Block	Area (Km²)
4	Campos	SC-AP3	Citrino	1251.27
6	Campos	SC-AP4	Itaimbezinho	710.54
8*	Campos	SC-AP4	Jaspe	1008.97
9	Campos	SC-AP3	Larimar	2093.02
11	Campos	SC-AP3	Ônix	1327.56
14	**Campos**	**SC-AP1**	**Turmalina**	**1437.8**
1	Santos	SS-AUP1	Ágata	2283.17
2	Santos	SS-AUP2	Amazonita	604.79
3	**Santos**	**SS-AUP3**	**Ametista**	**1555.31**
5	Santos	SS-AUP3	Esmeralda	3655.56
7	**Santos**	**SS-AUP1**	**Jade**	**2408.34**
10	Santos	SS-AUP5	Mogno	792.41
12	Santos	SS-AP2	Safira Leste	4172.06
13	Santos	SS-AP1	Safira Oeste	5588.71

8* - CNPE nº 06/2024



OPP – ONIX, LARIMAR & CITRINO BLOCKS

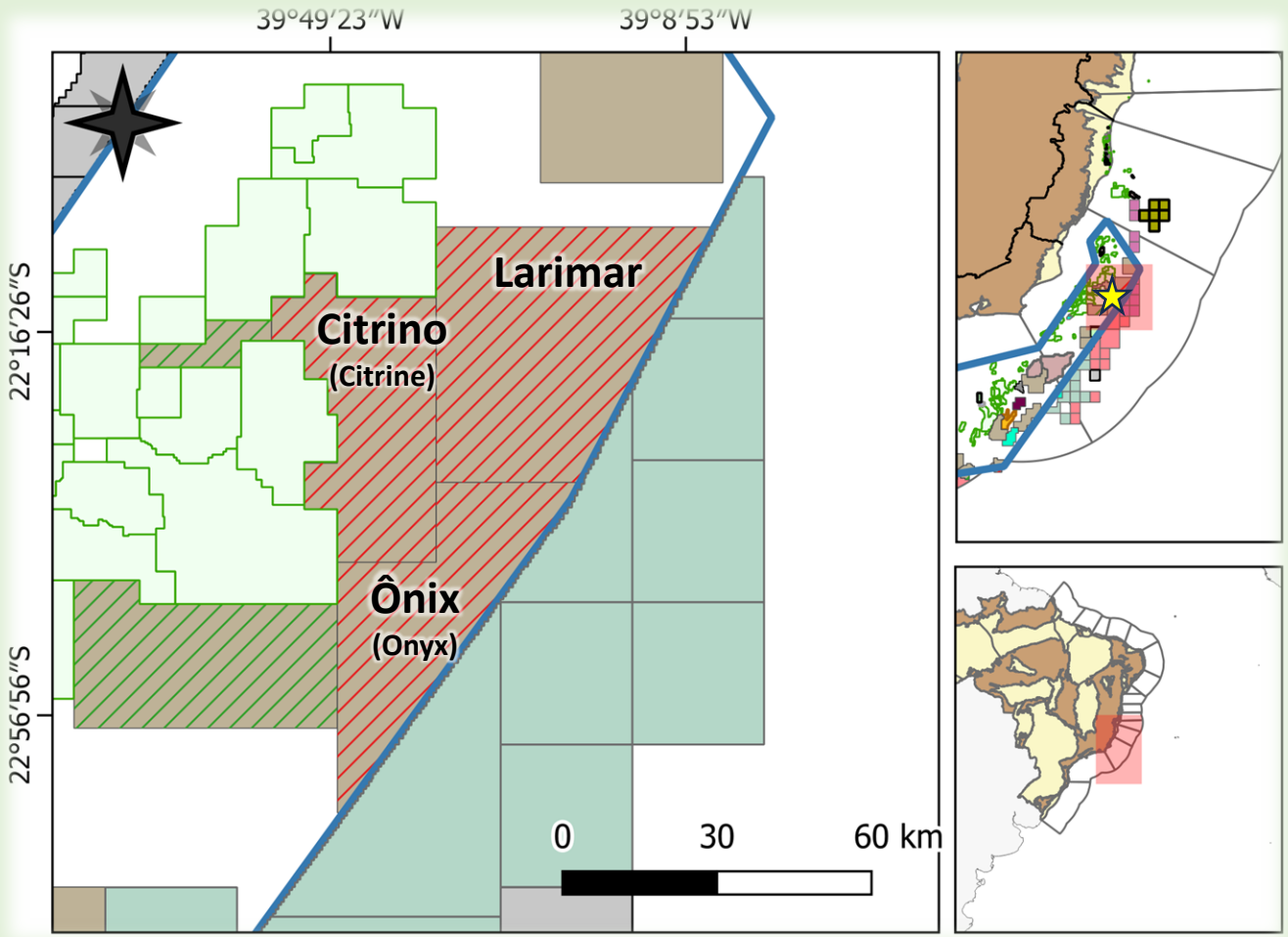
Citrine

- Larger main prospect in combination trap
- Higher volume but higher geological risk

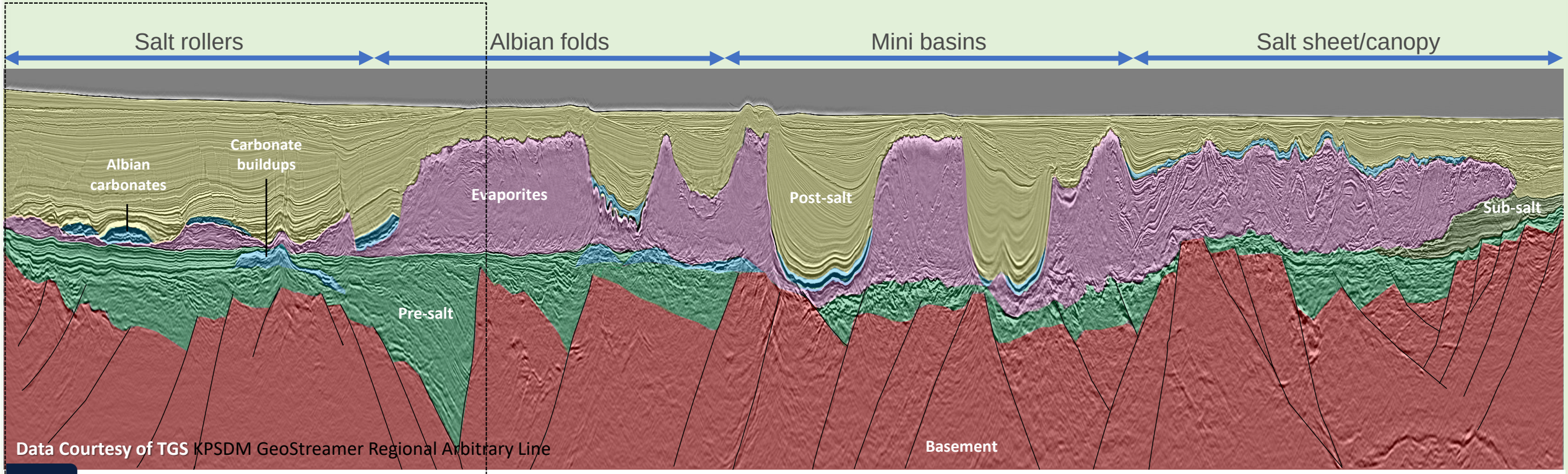
Ônix and Larimar

- Main prospects in traditional four-way closure
- Smaller OOIP than Citrine but lower trap risk

Block	Prospect	Modelled fluid in place	Estimated unrisked volume
Citrino	1 larger (presalt) + 6 upsides	Oil	3.54 bbo
Ônix	1 main + several upsides (presalt)	Gas condensate	1.79 bboe
Larimar	1 main + several upsides (presalt)	Gas condensate	1.46 bboe



OPP - Campos Basin



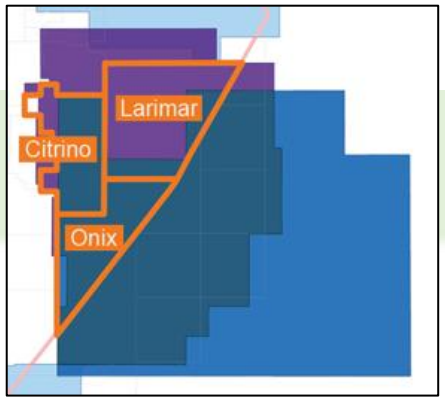
Data Courtesy of TGS KPSDM GeoStreamer Regional Arbitrary Line

Study Area

Exterior Rift

Edge of
Pre-Salt Plateau

Outer
Basement step



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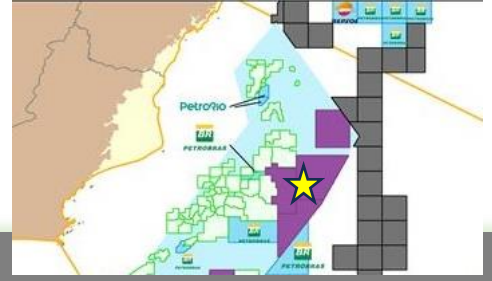

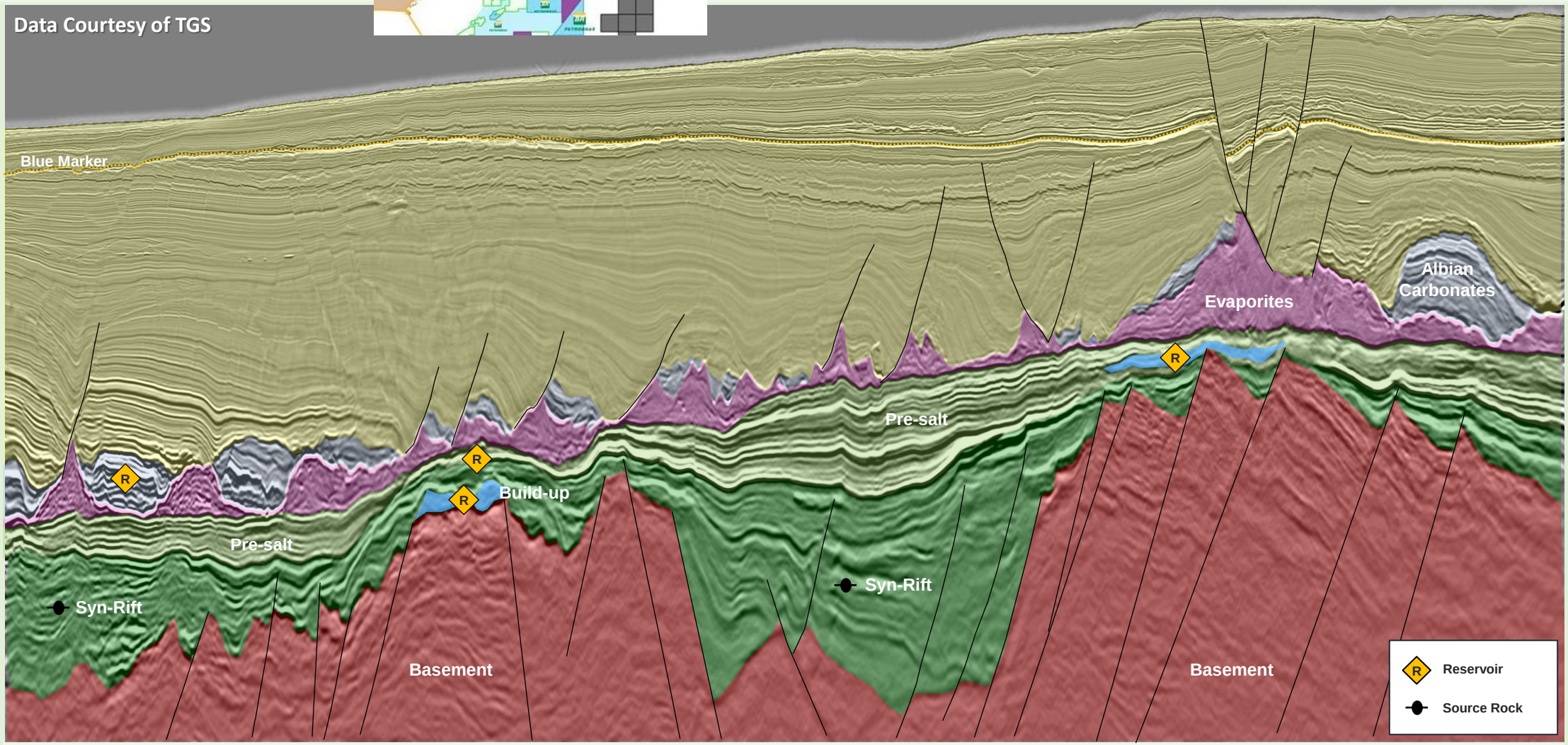

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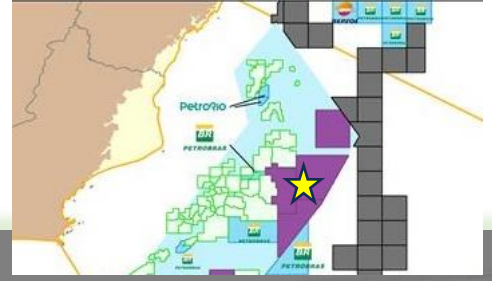

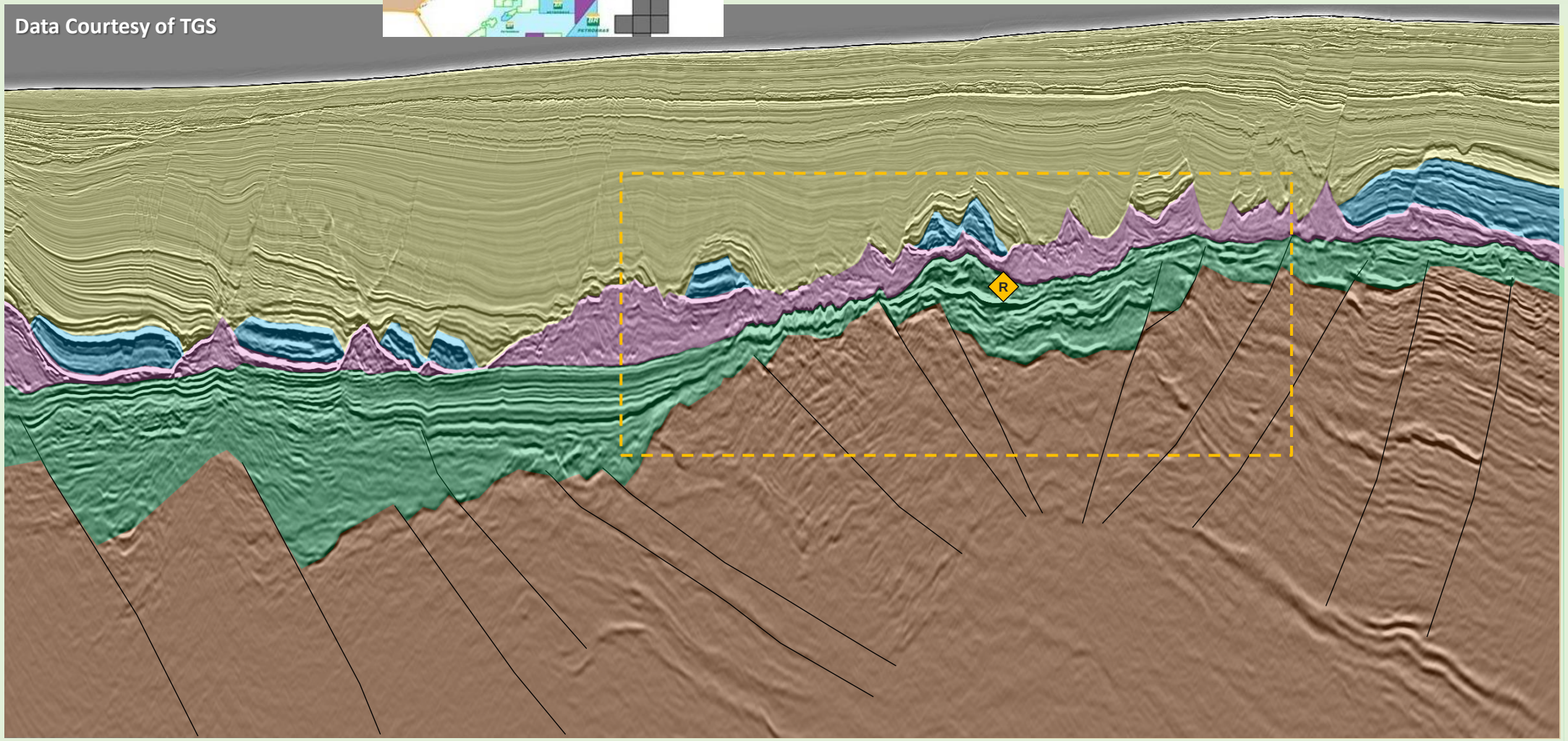

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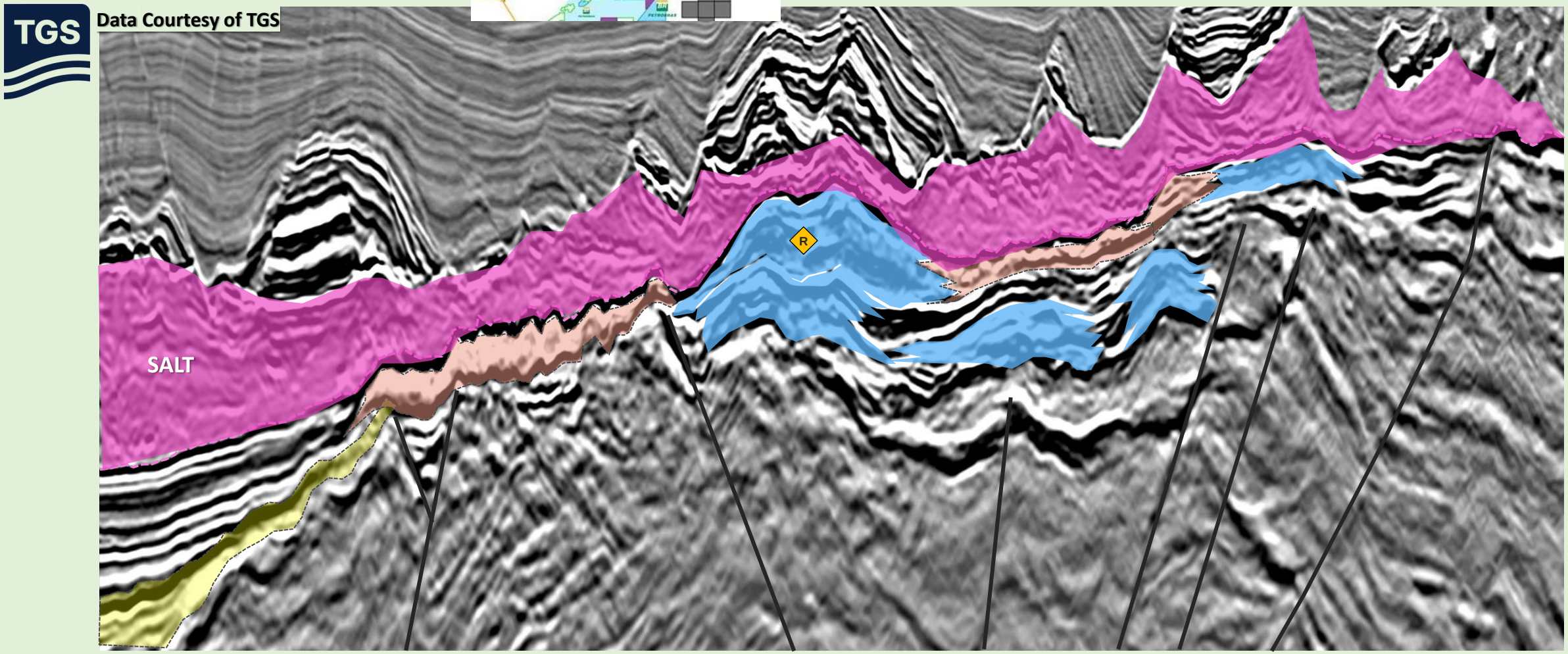


OPP - Campos Basin

Folding and deformation within layered evaporites

Faulted Albian carbonates

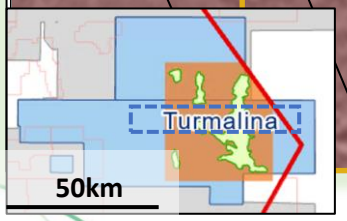
Thrusted Anhydrite structures along BOS

Structural highs focus carbonate development

R

Stacked reflectors/truncations indicate carbonate formations

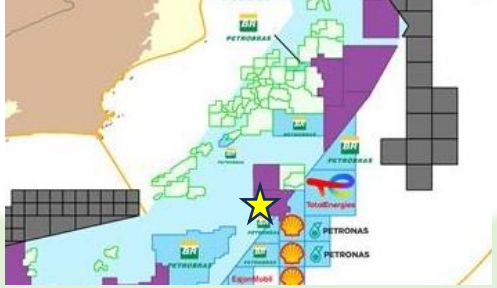
5km

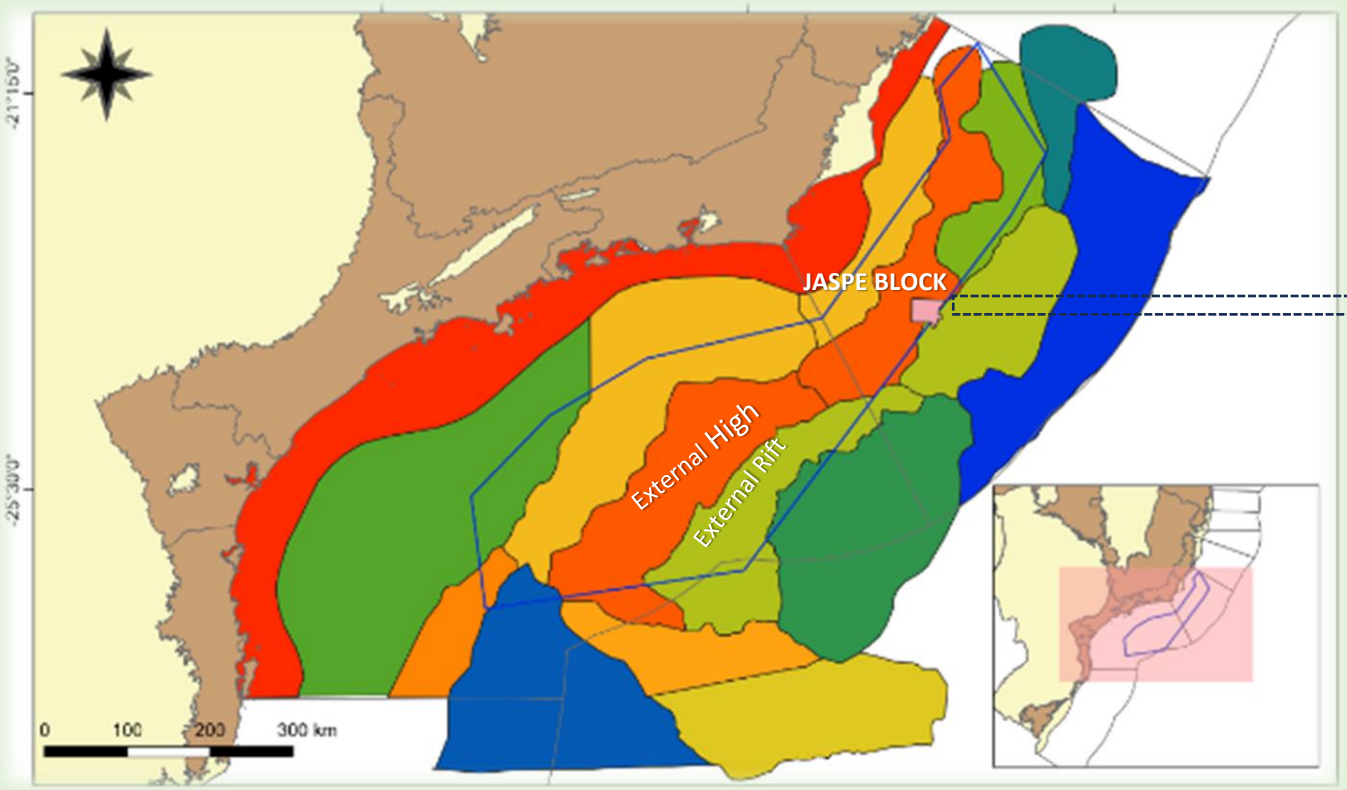


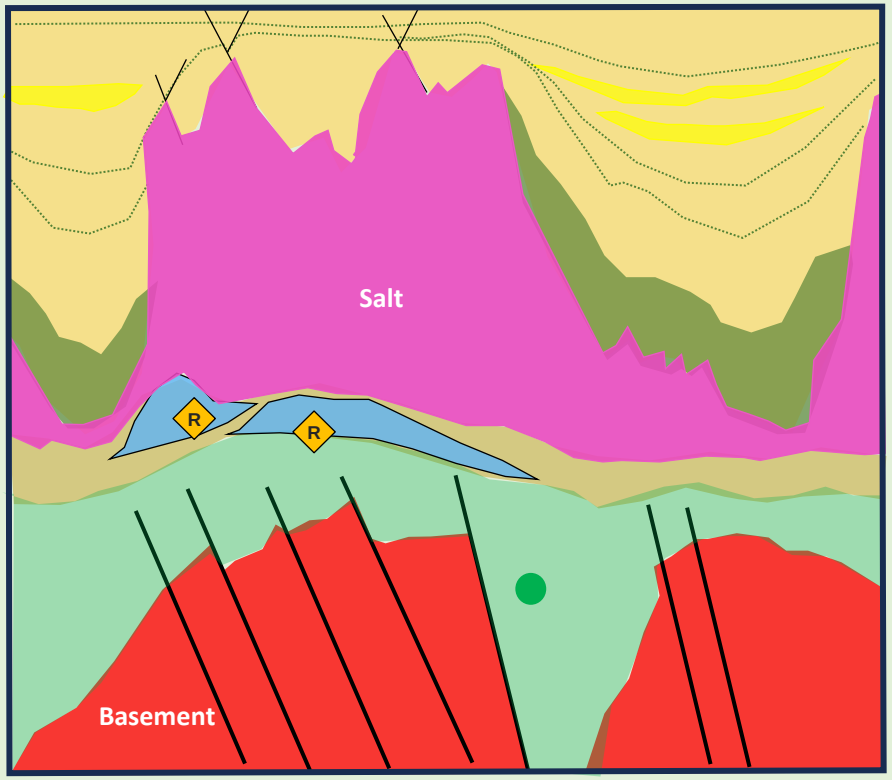
Data Courtesy of TGS

Campos_PH4_KPSDM

OPP - Campos Basin







Petrobras exercised the right of preference in relation to the **Jaspe** block, with a 40% percentage, considering the parameters disclosed in CNPE Resolution Nº. 06/2024, published on 8/28/2024.

OPEN ACREAGE

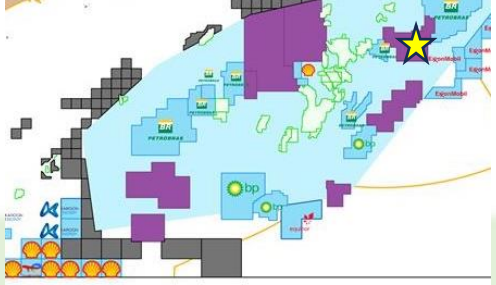
OPC (Concession)

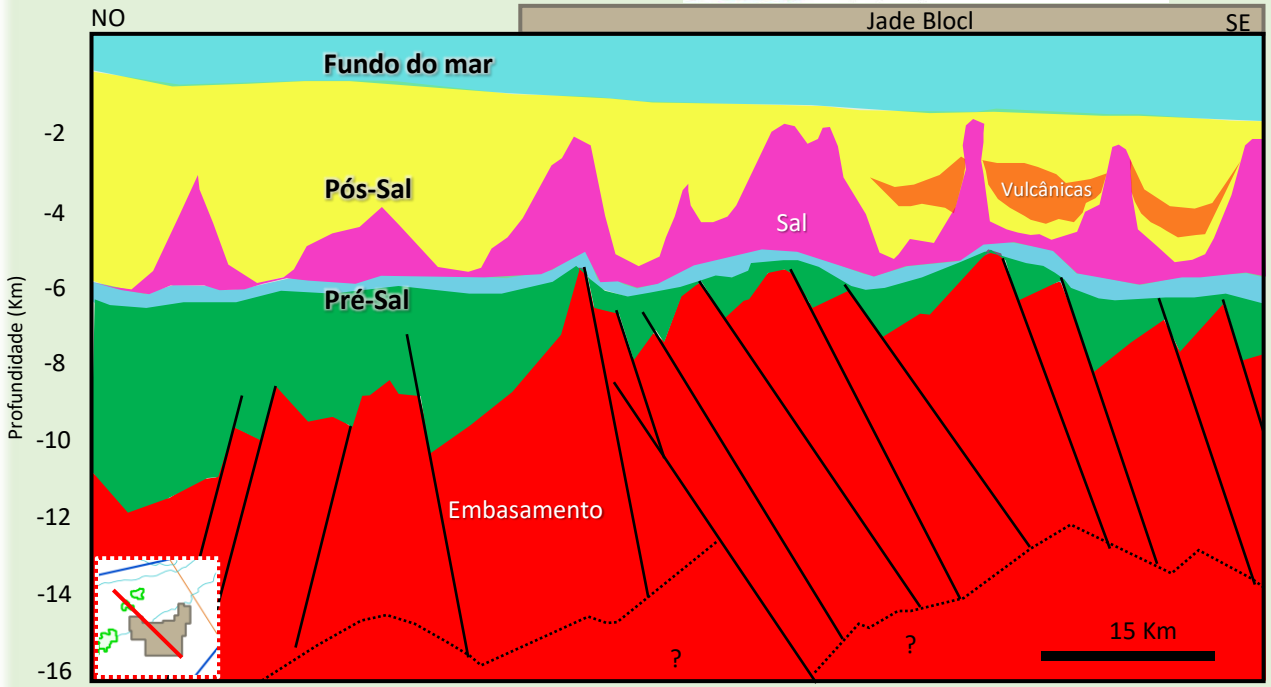
OPP (Production Share)

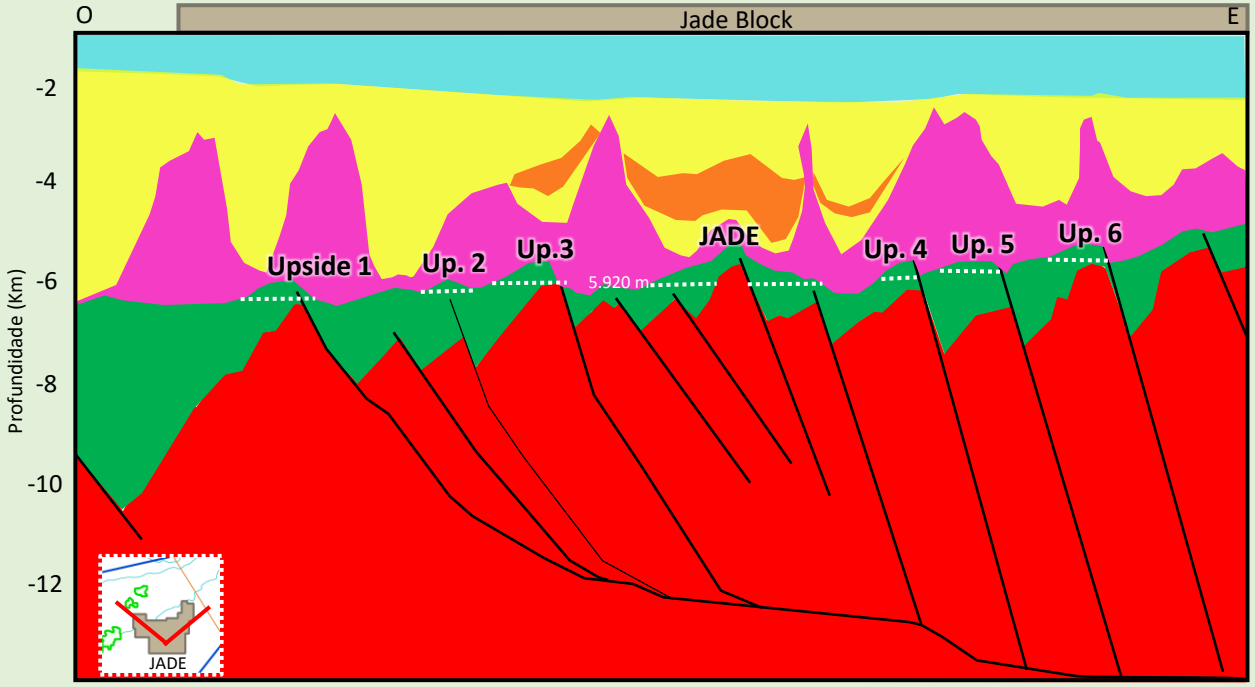
Blocks

- **SANTOS** SEDIMENTARY BASIN
- **PELOTAS** SEDIMENTARY BASIN

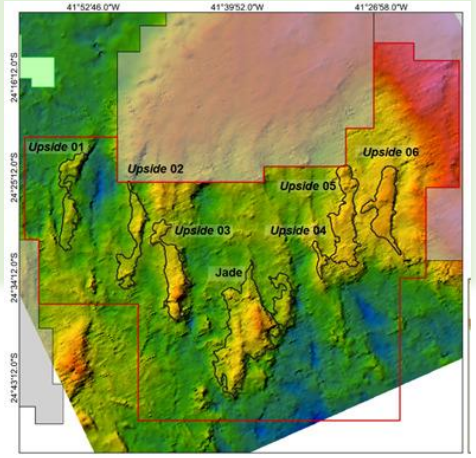
OPP – Santos Basin

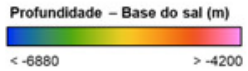




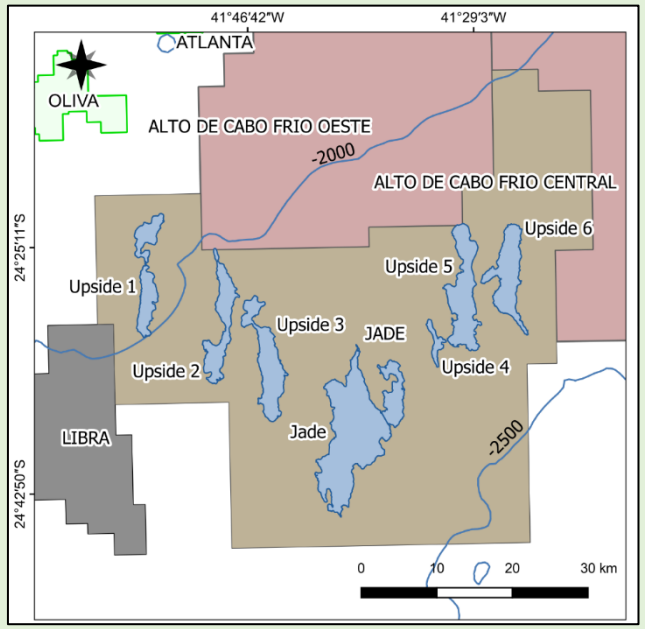


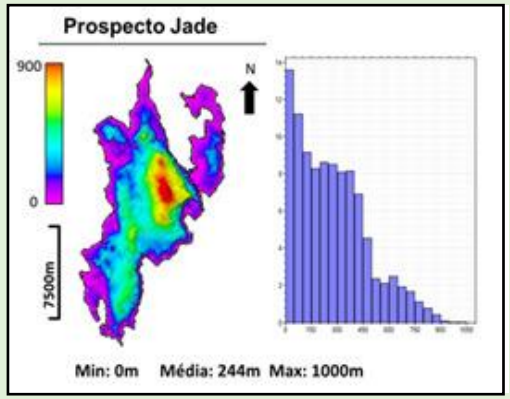
The Jade Block contains seven identified prospects. The largest of these is called the Jade Prospect, after which the block is named.

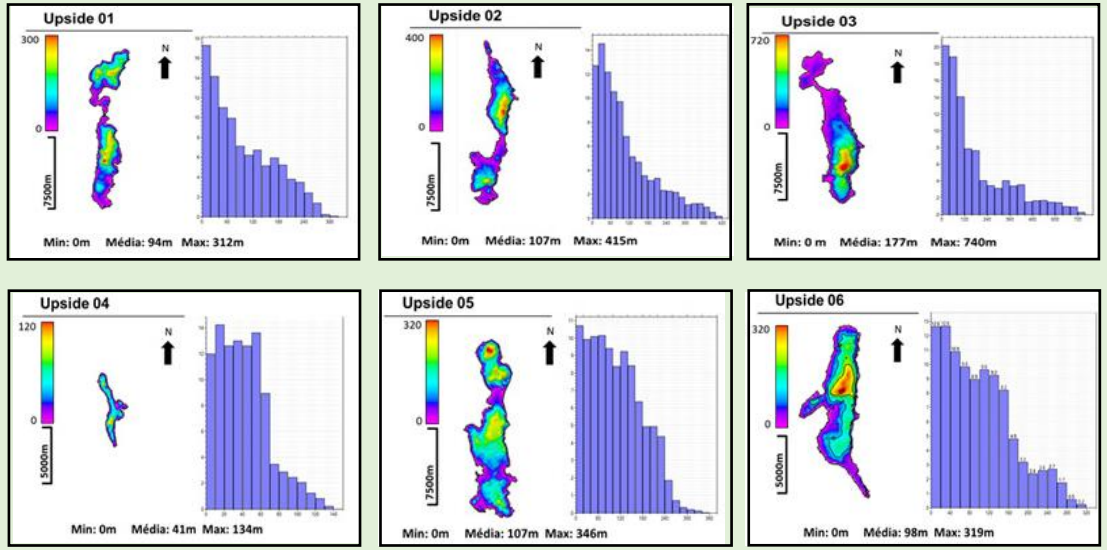




Jade Block - OPP

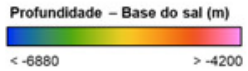






Map and distribution of estimated structural reliefs for the prospects identified in the Jade Block

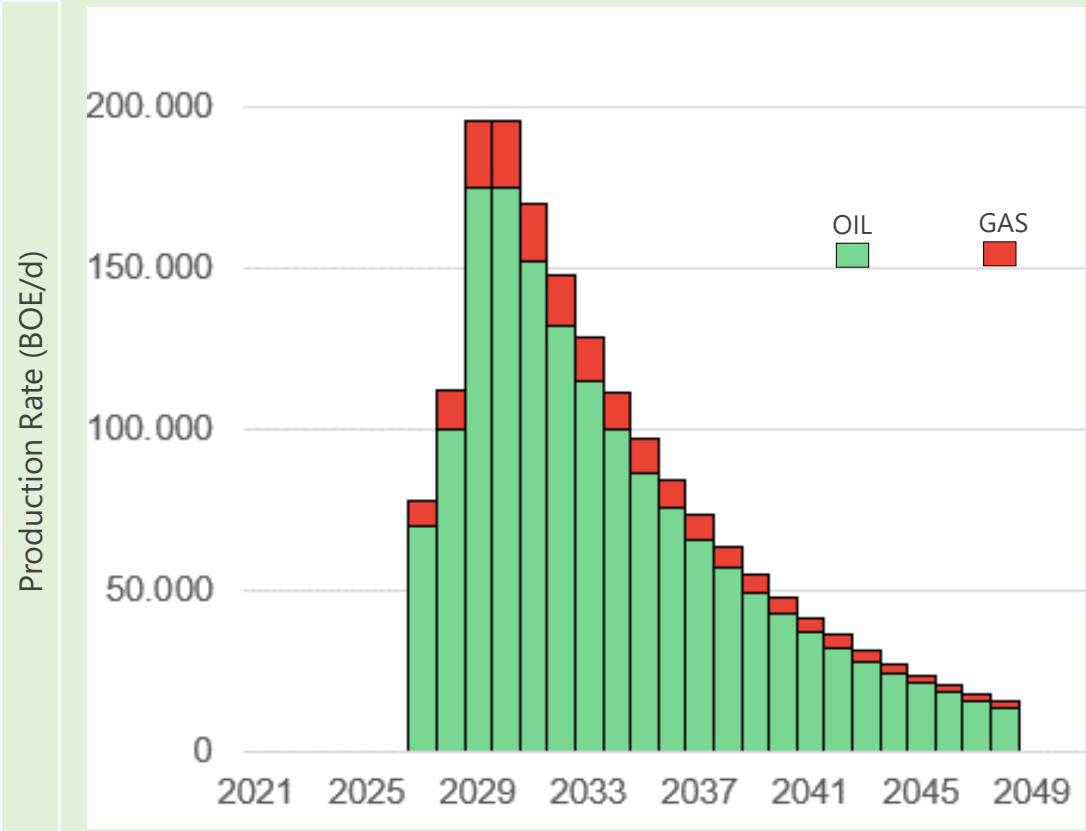
Block	Prospect	Source	Migration	Reservoir	Seal	Trap	Sincronism	Geological Chance
Jade	Jade	90%	80%	70%	70%	90%	80%	25,40%
Jade	Upside 01	90%	90%	80%	80%	80%	80%	33,18%
Jade	Upside 02	90%	90%	70%	80%	80%	80%	29,03%
Jade	Upside 03	90%	80%	70%	70%	90%	80%	25,40%
Jade	Upside 04	90%	70%	70%	90%	70%	100%	27,78%
Jade	Upside 05	90%	70%	70%	90%	70%	100%	27,78%
Jade	Upside 06	90%	70%	70%	90%	80%	100%	31,75%

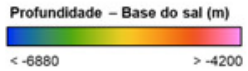


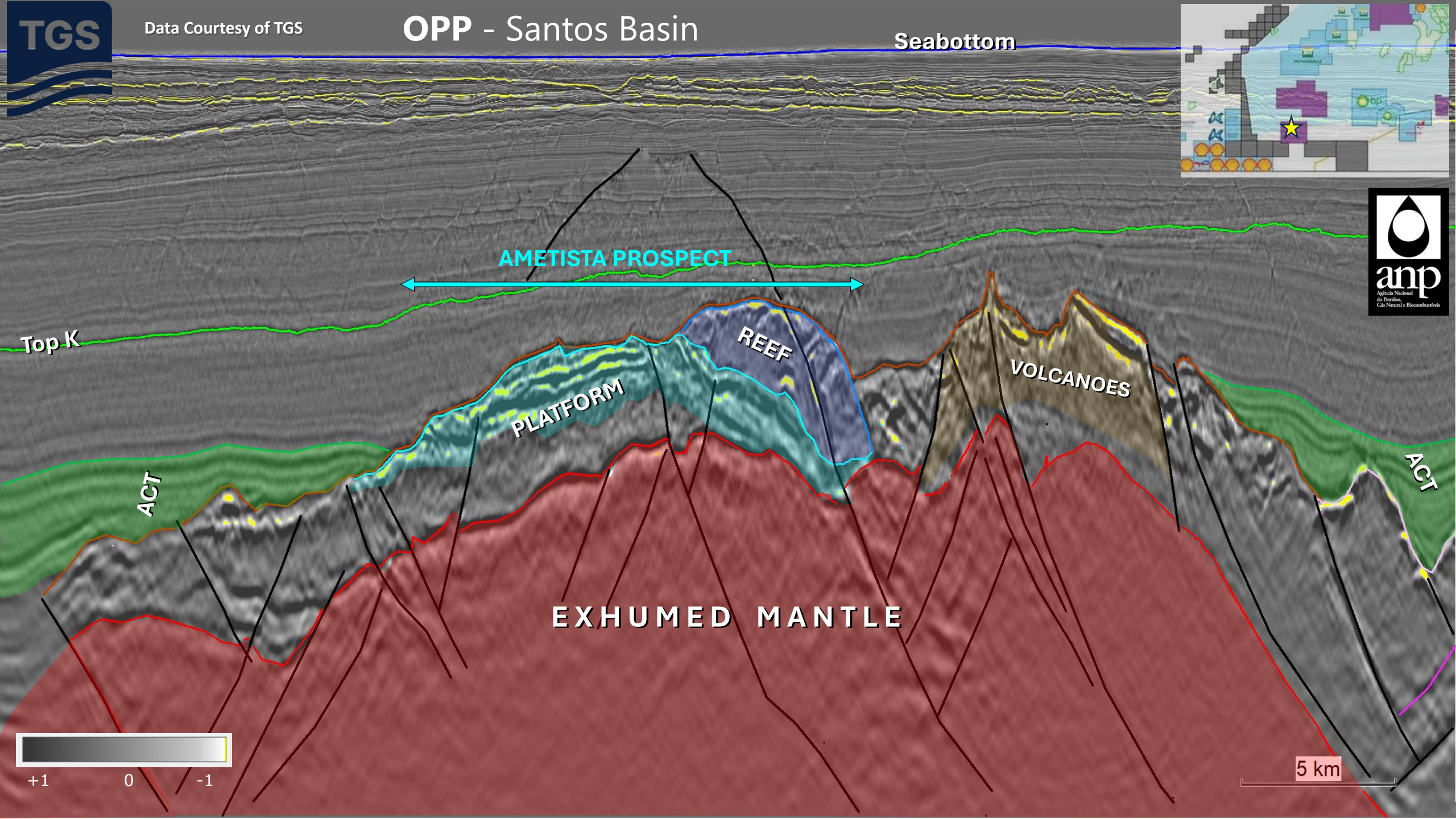
Jade Block - OPP

Project: Hypothetical

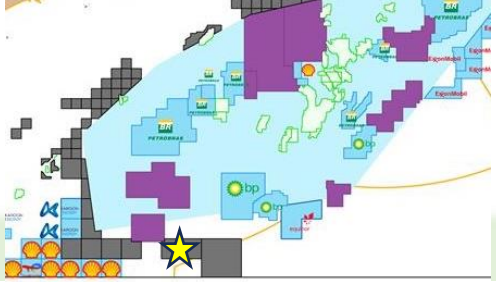
- **Prospect Jade 2.909 MSTB**
- Recovery Factor ~ 20%
- OIL - 1 FPSO (180,000 bbl/d)
- 7 producing wells
- 7 injection wells

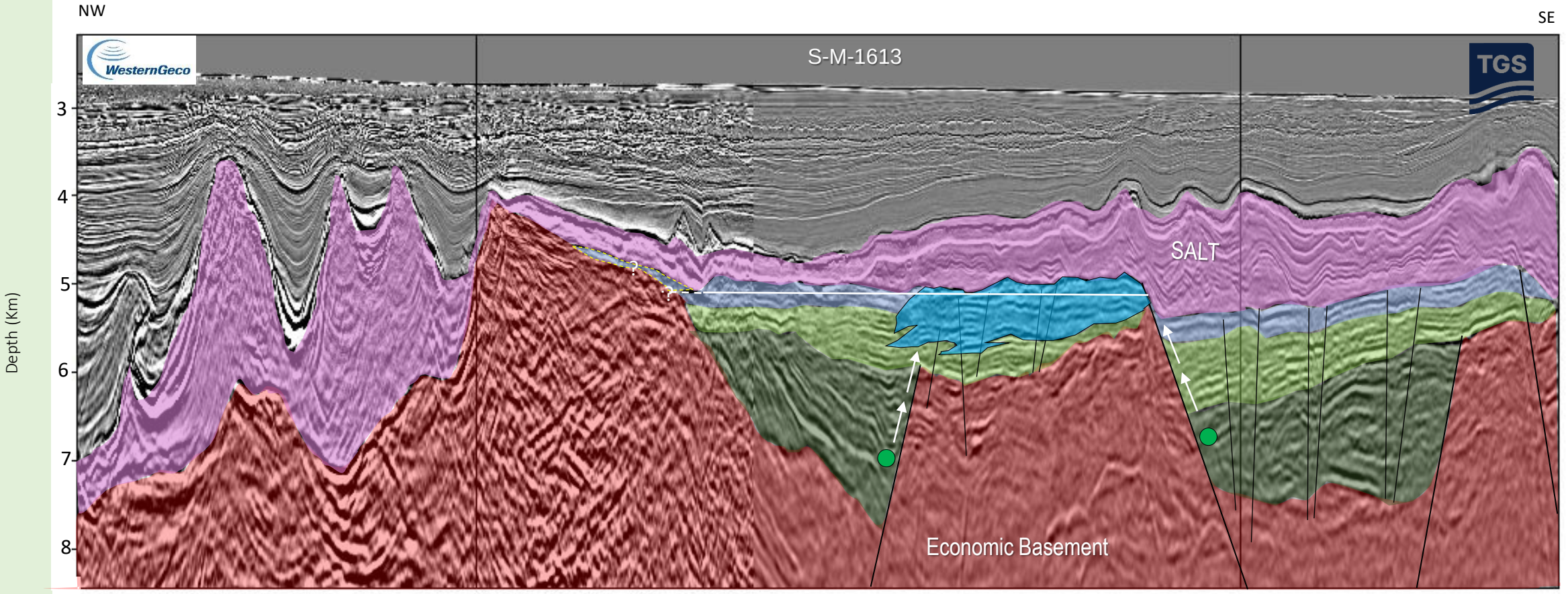





TGS
Data Courtesy of TGS
OPP - Santos Basin
Seabottom
AMETISTA PROSPECT
Top K
REEF
PLATFORM
VOLCANOES
ACT
ACT
EXHUMED MANTLE
+1
0
-1
5 km
anp
Agência Nacional do Petróleo, Gás Natural e Biocombustíveis

OPC – Santos Basin

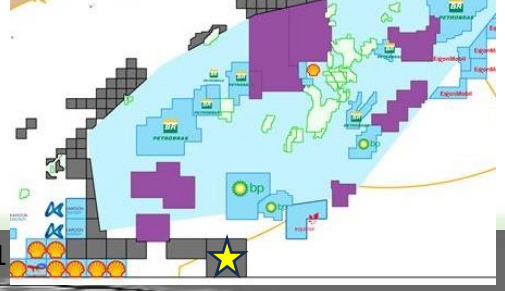


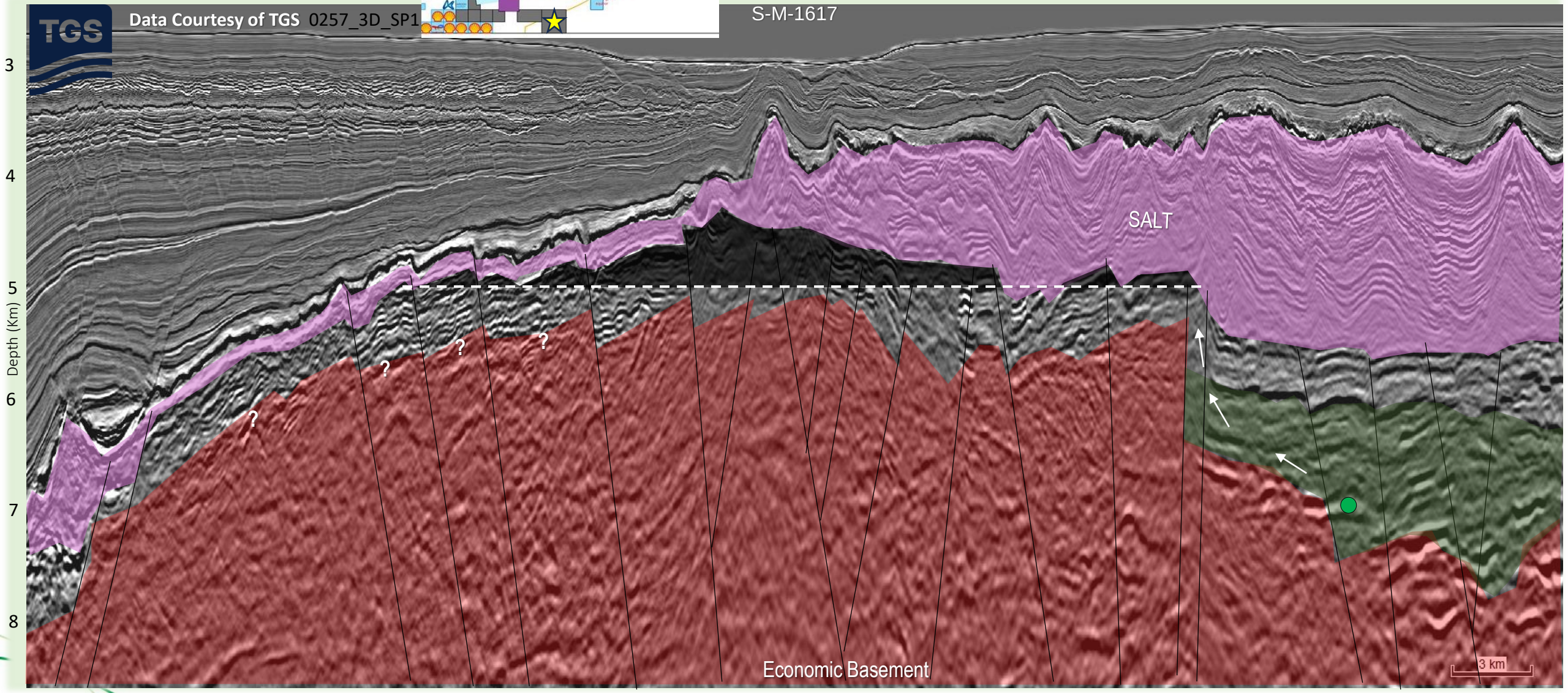


R0258_2D_SPEC_PSDM_NTTI_BM_S – Courtesy of WesternGeco and TGS | 0257_3D_SP1 e SP2 (Fast Track) – Data Courtesy of TGS

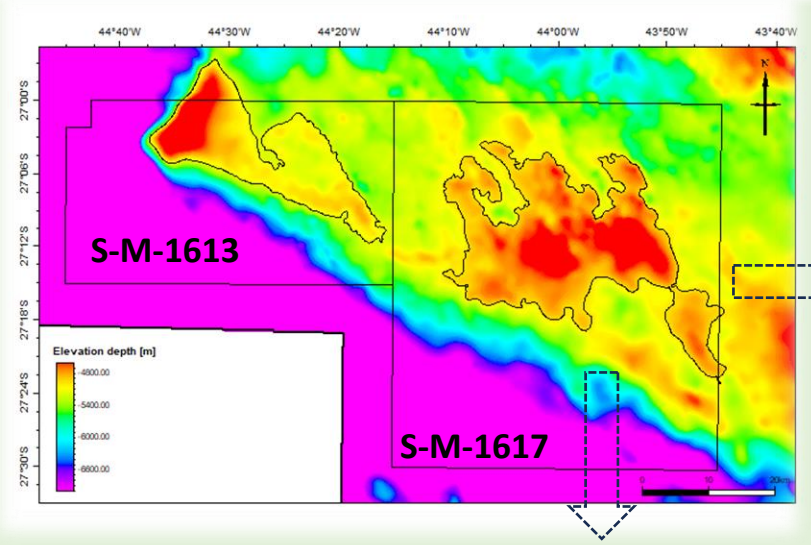
0 2.5 5 7.5km

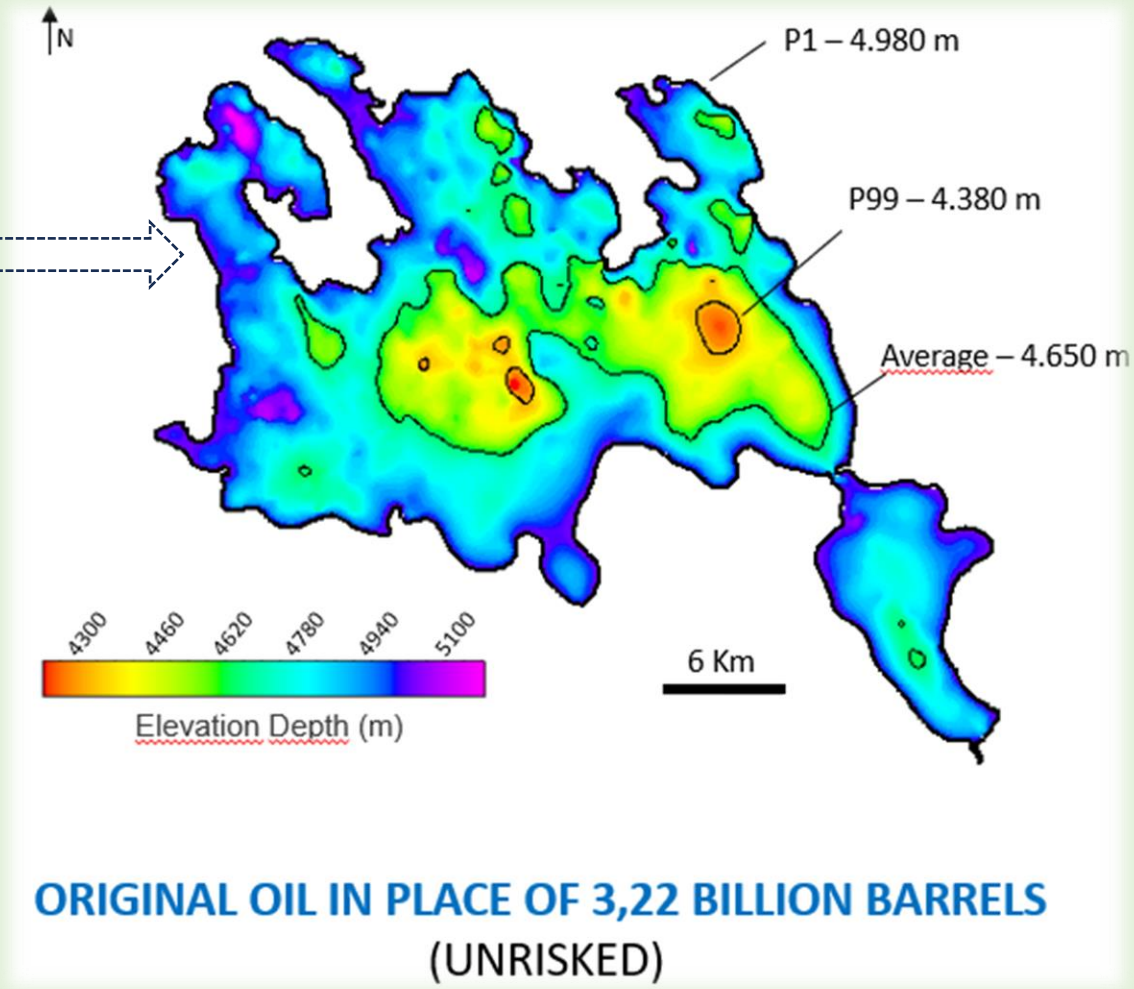
OPC – Santos Basin





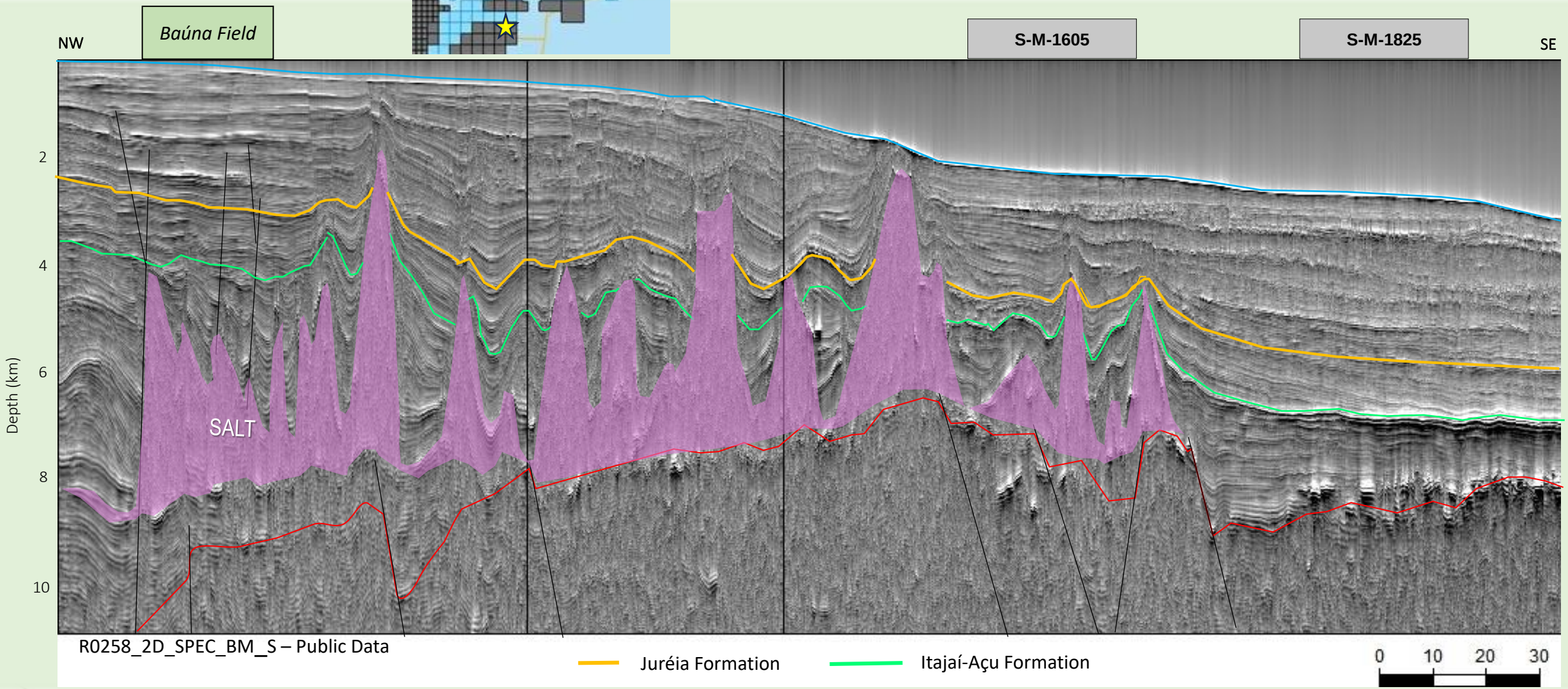
OPC - Santos Basin



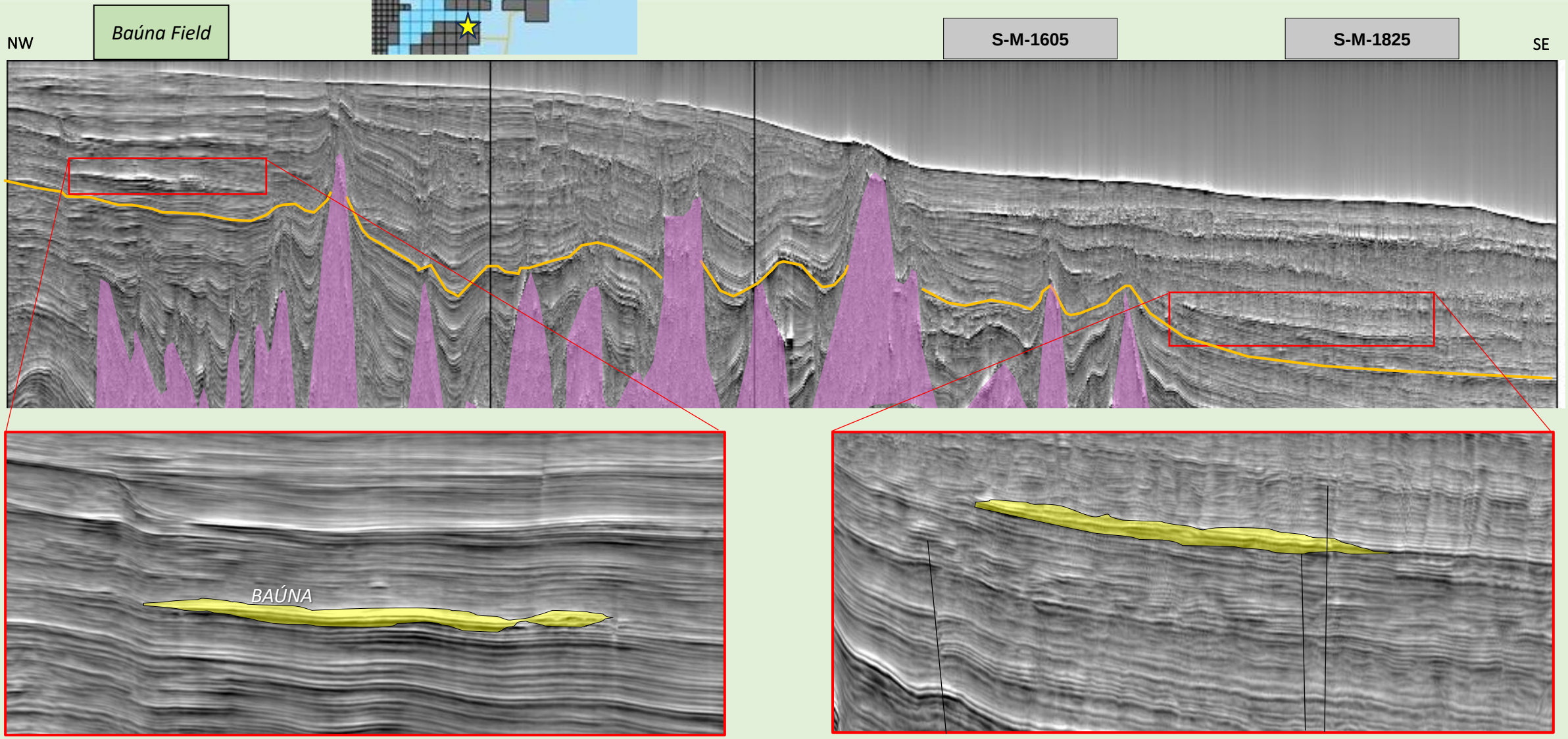


Parameter	P99	P90	P50	P10	P1
Net Pay (m)	9,2	50	100	150	190,8
Porosity (%)	4	7	11	15	18
Oil Saturation (%)	38	50	65	80	92
Bo (m^3/m^3)	1,01	1,15	1,33	1,50	1,64
Area (Km^2)	5,7	16	57,3	205	579,8

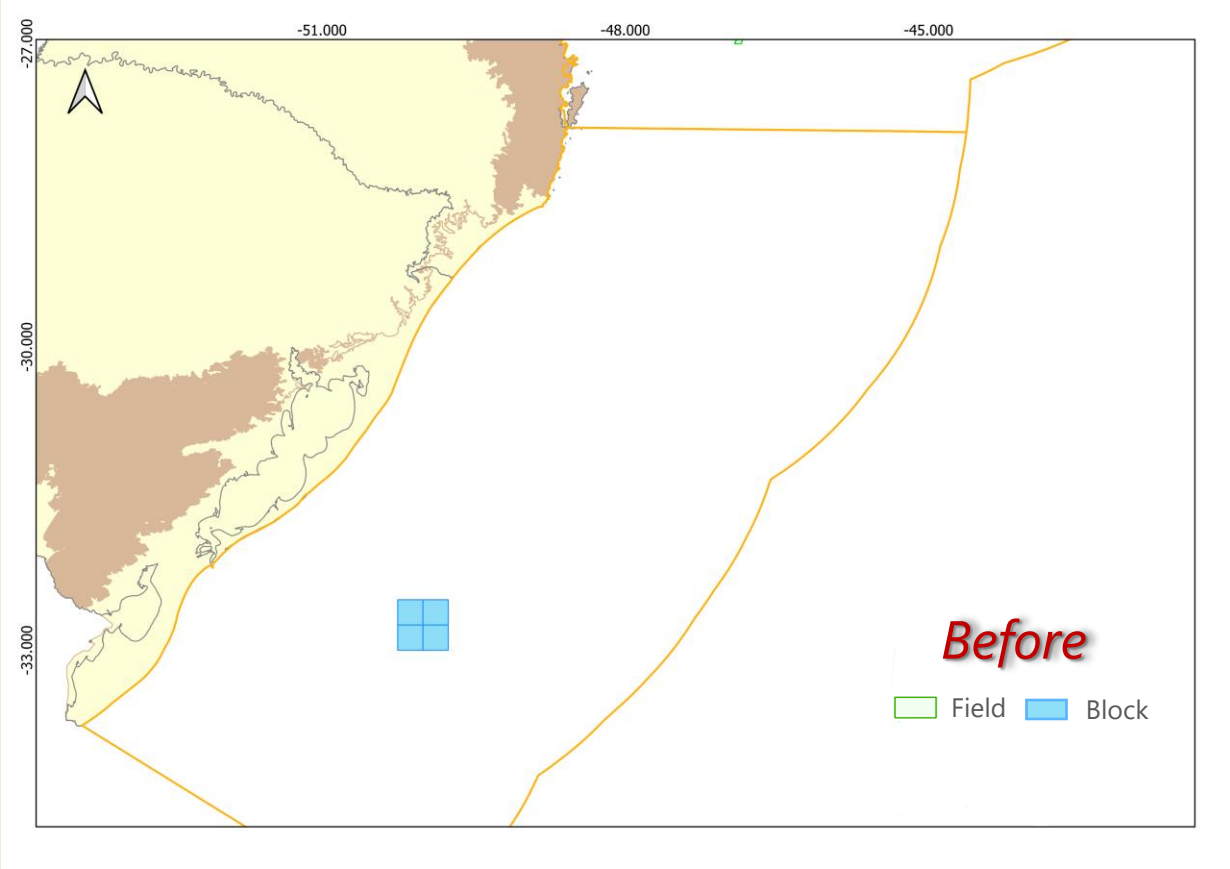
OPC – Santos Basin

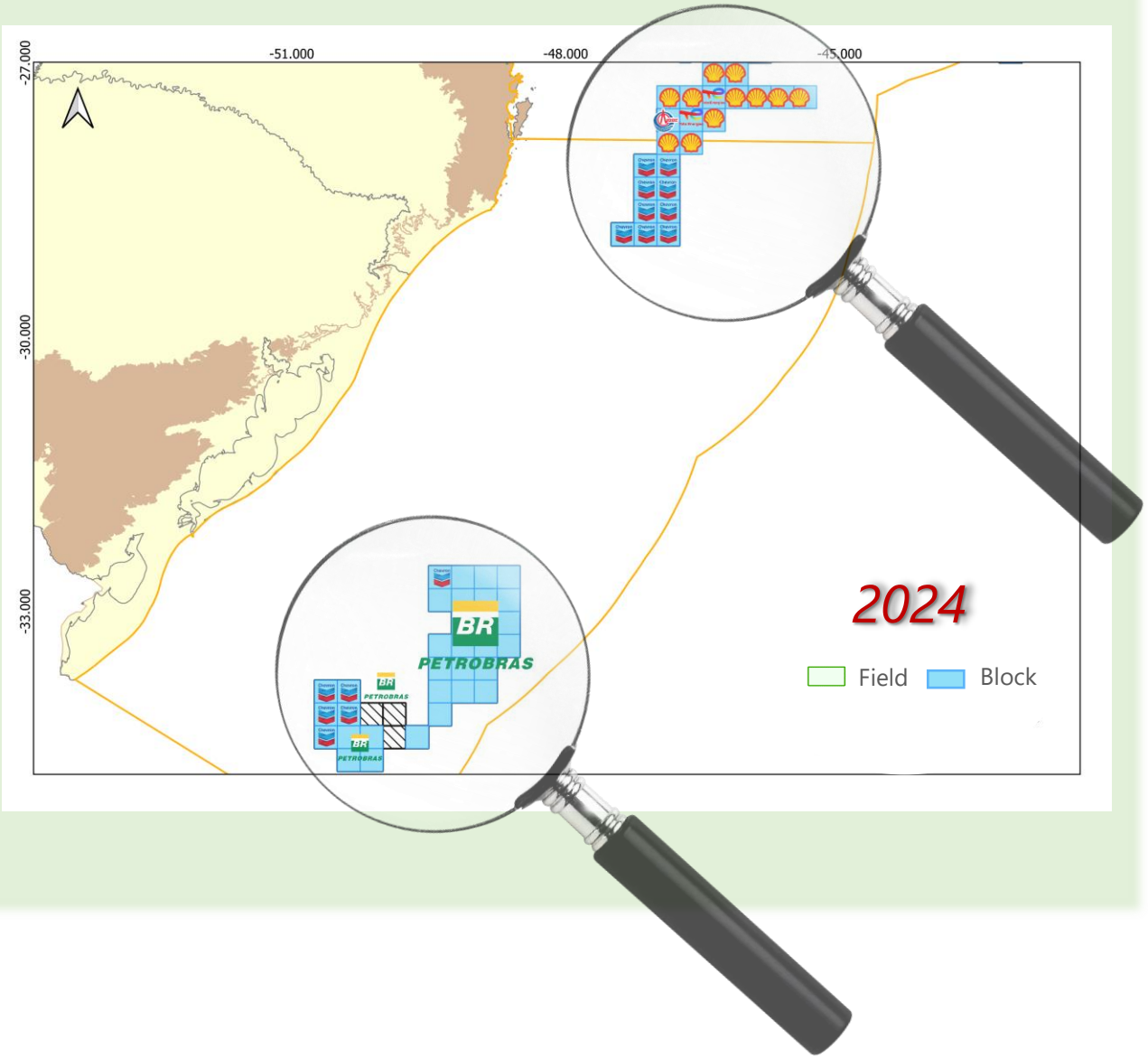


OPC – Santos Basin

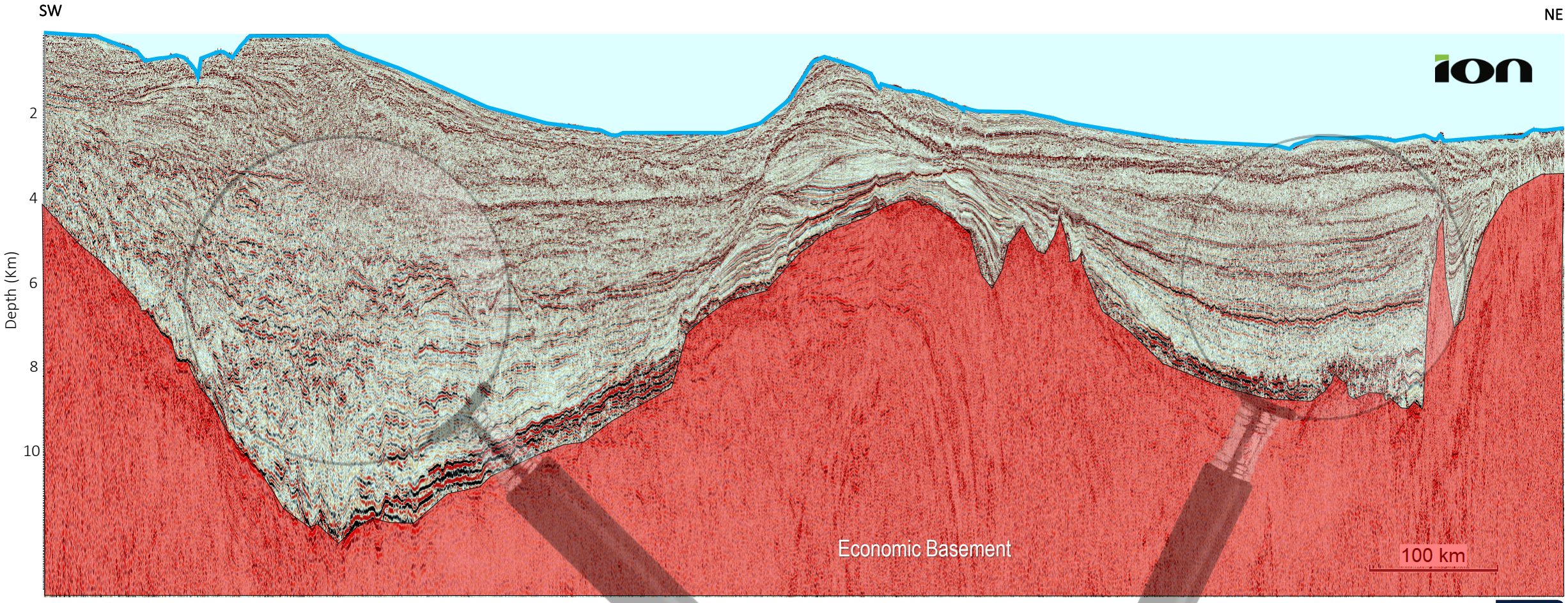


Contracts for the Pelotas Basin



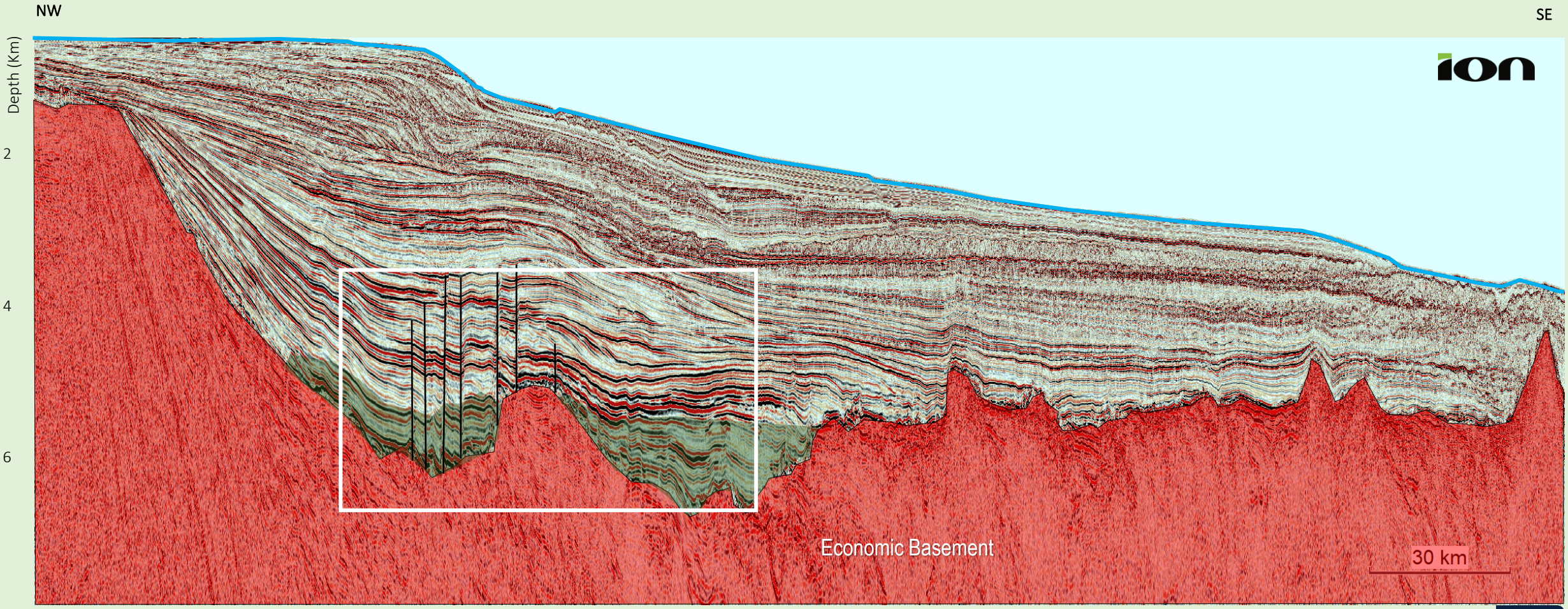


Pelotas Basin – Regional Strike 2D Line



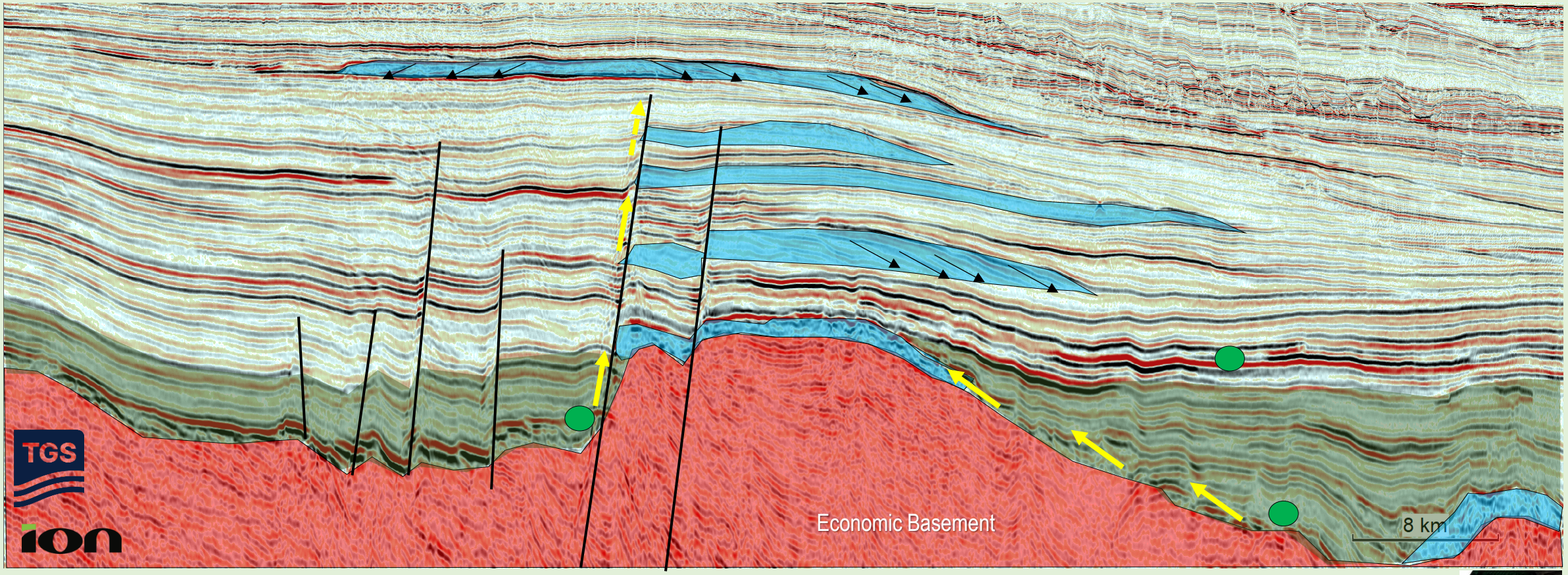
0022_GREATERBRASILSPAN – Courtesy of ION

Pelotas Basin – Regional Dip 2D Line



0022_GREATERBRASILSPAN – Courtesy of ION

Pelotas Basin – Regional Dip 2D Line

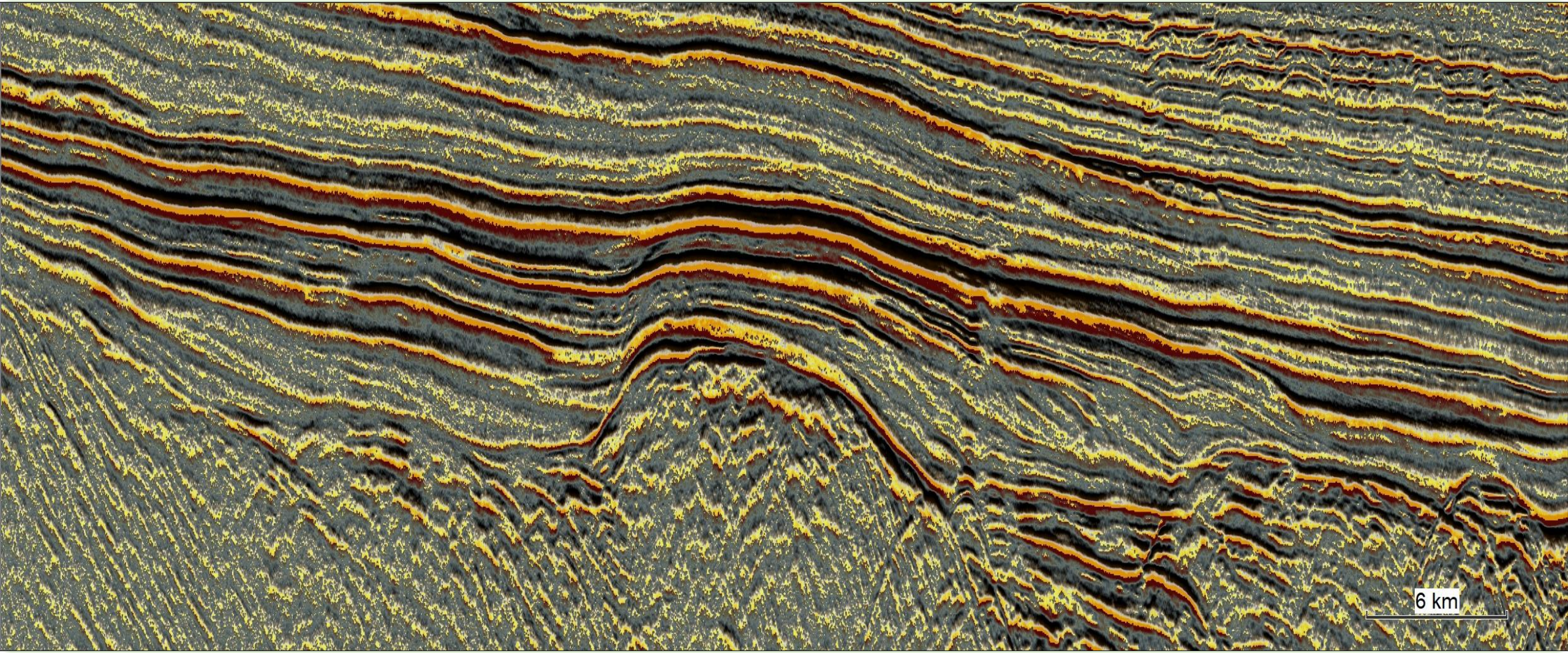


0022_GREATERBRASILSPAN (Zoom) – Courtesy of ION

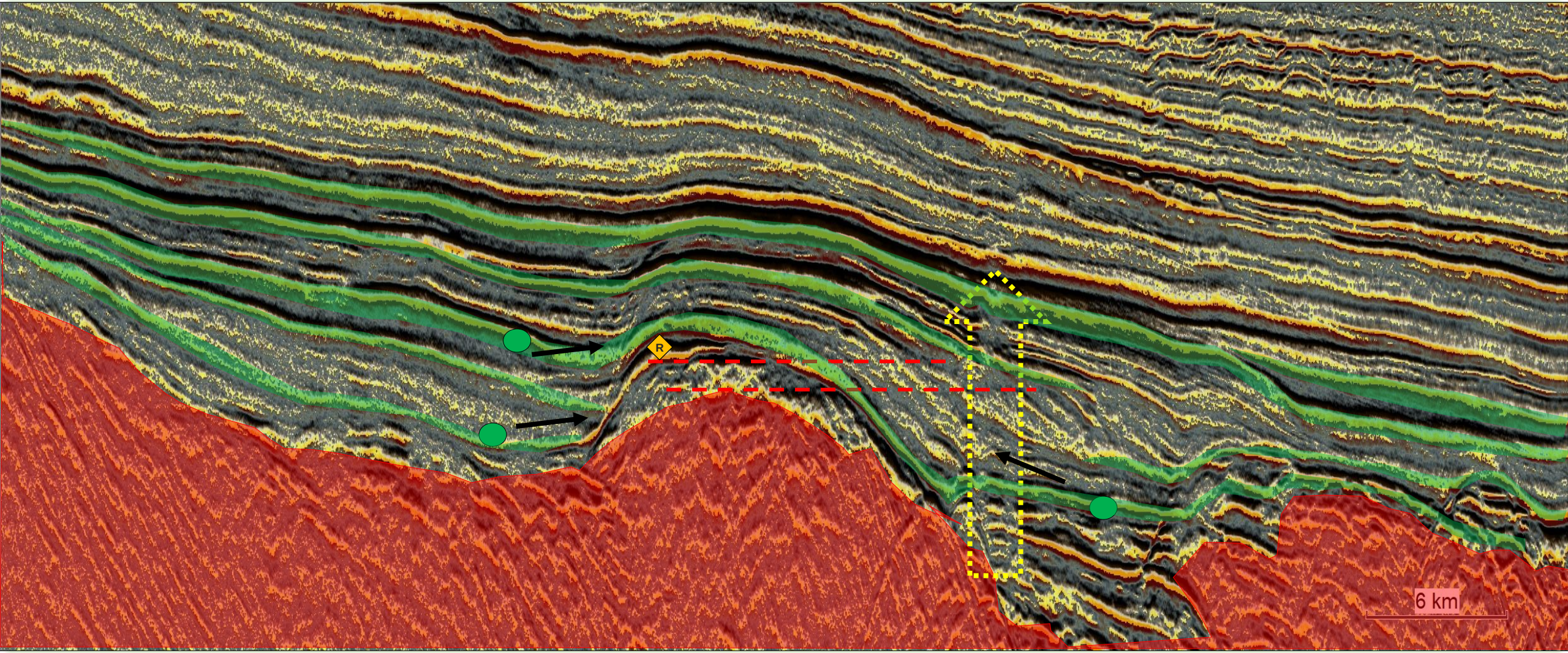
Petroleum System

Generation + Migration + Reservoir + Seal + Trap + Timing

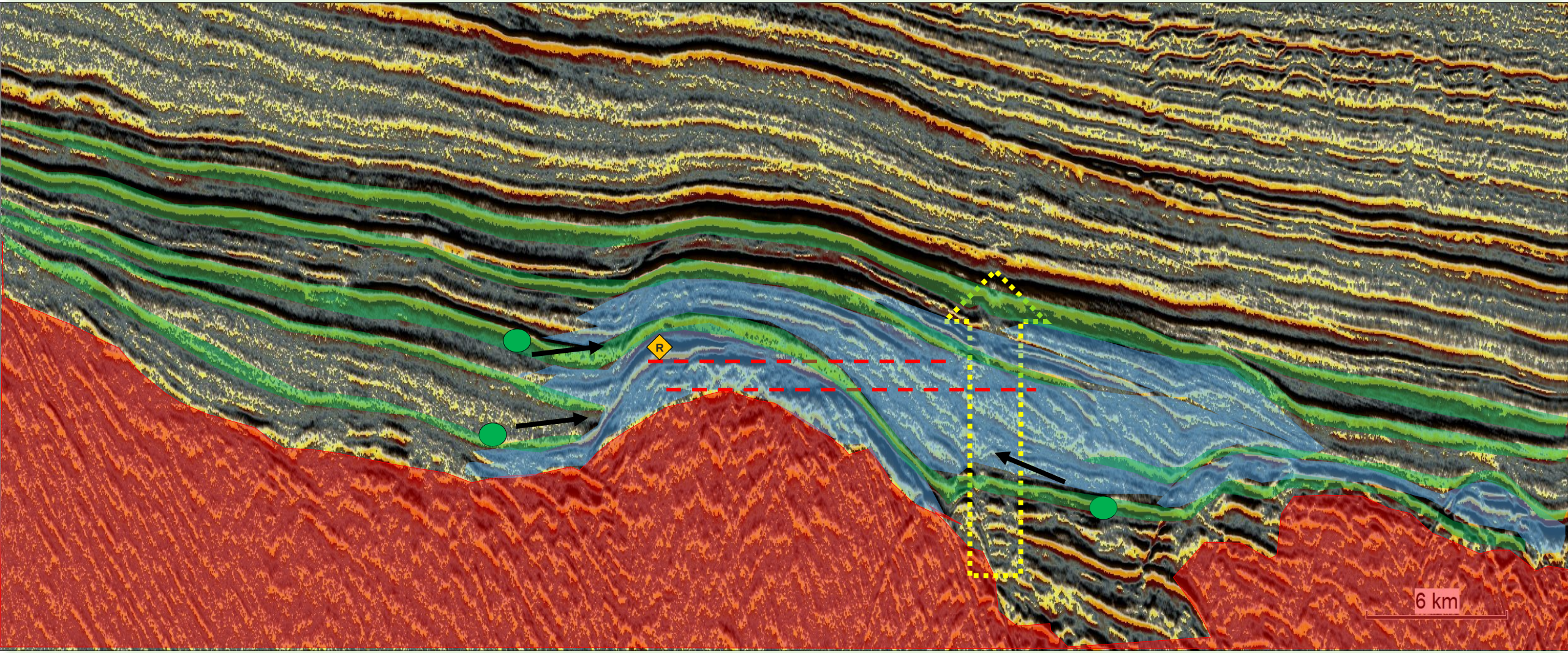
Pelotas Basin – Regional Dip 2D Line



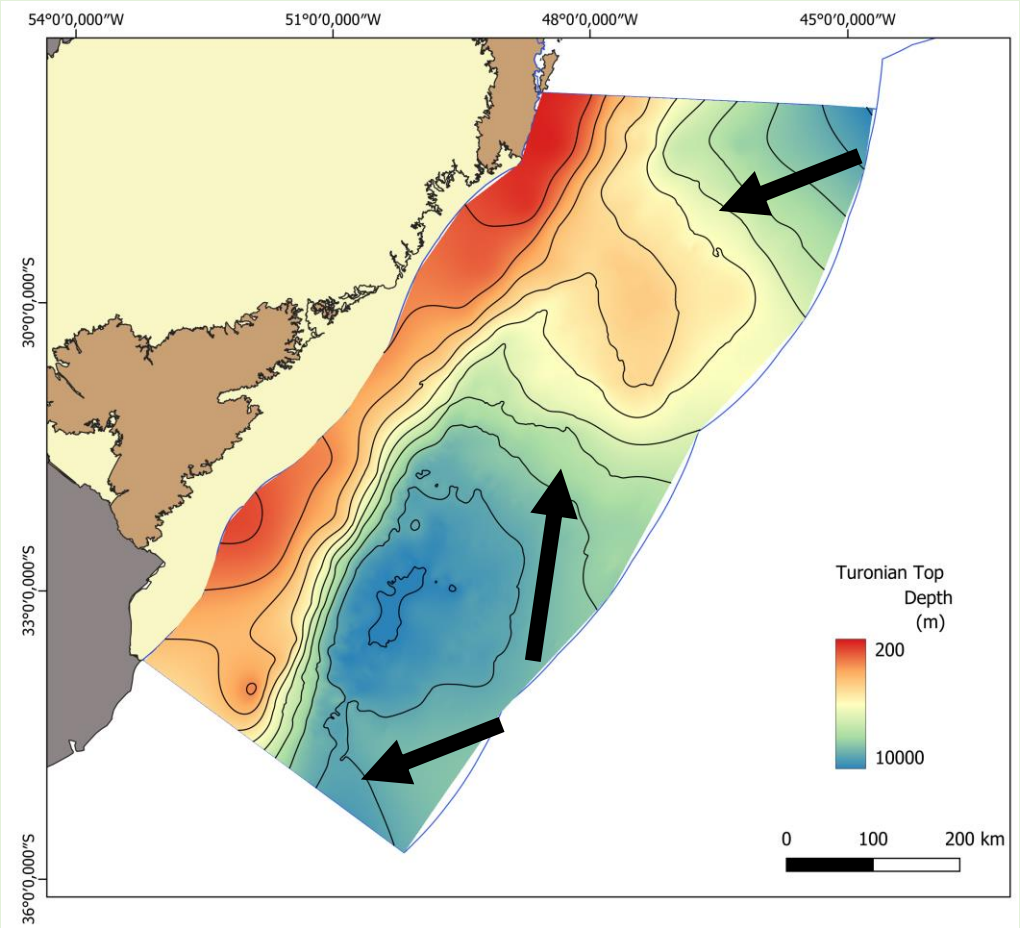
Pelotas Basin – Regional Dip 2D Line

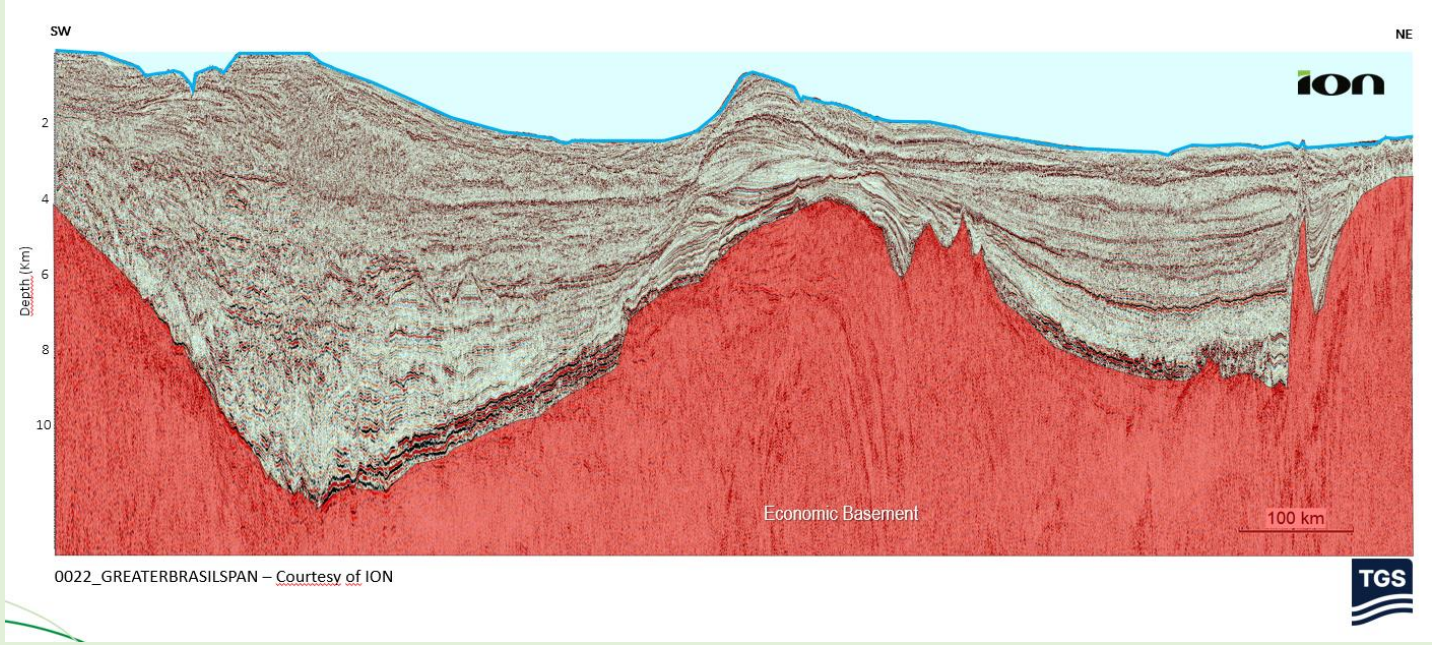


Pelotas Basin – Regional Dip 2D Line

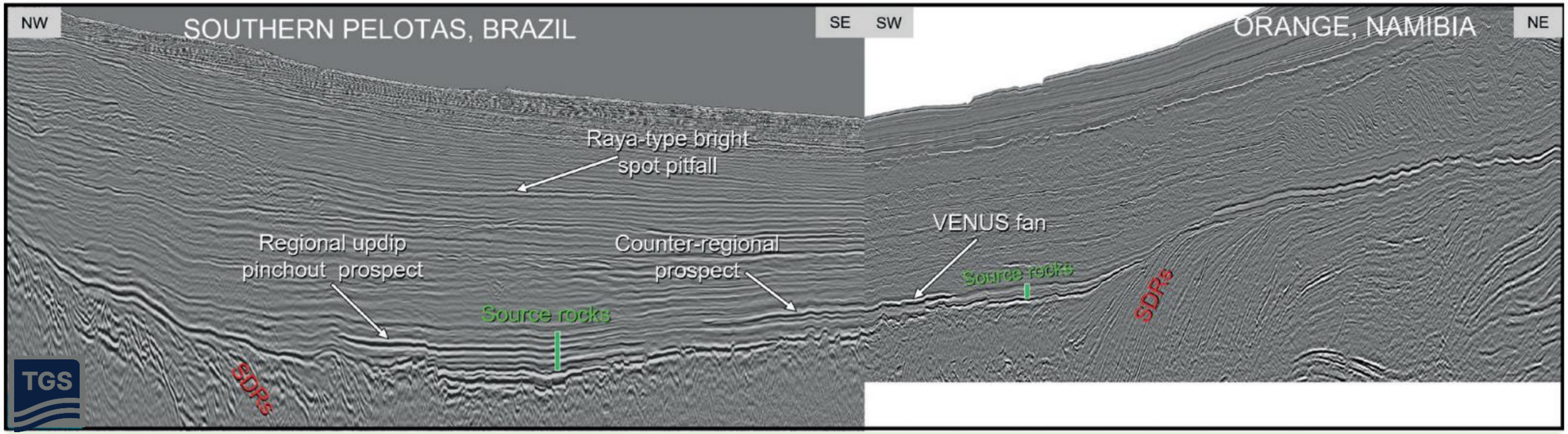


Pelotas Basin





Pelotas Basin



Zalan, 2022

OUTLINE

BRAZIL PRODUCTION & RESERVE DATA

OFFSHORE SEDIMENTARY BASINS

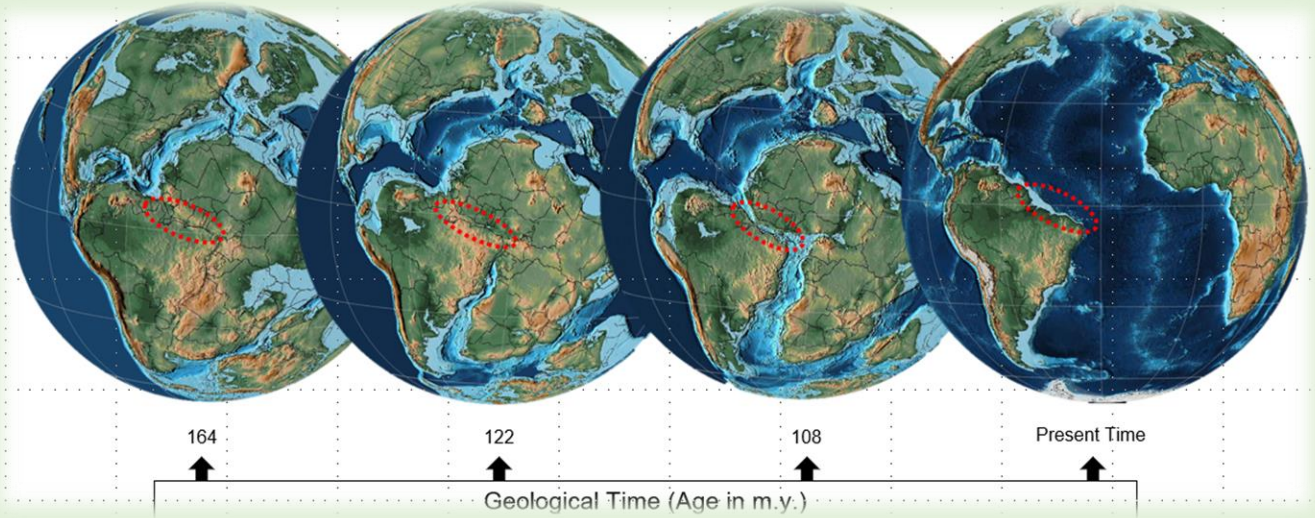
- *EAST MARGIN [SAMPLES]*
- *EQUATORIAL MARGIN*

PERMANENT OFFERING DETAILS [OPEN ACREAGE]

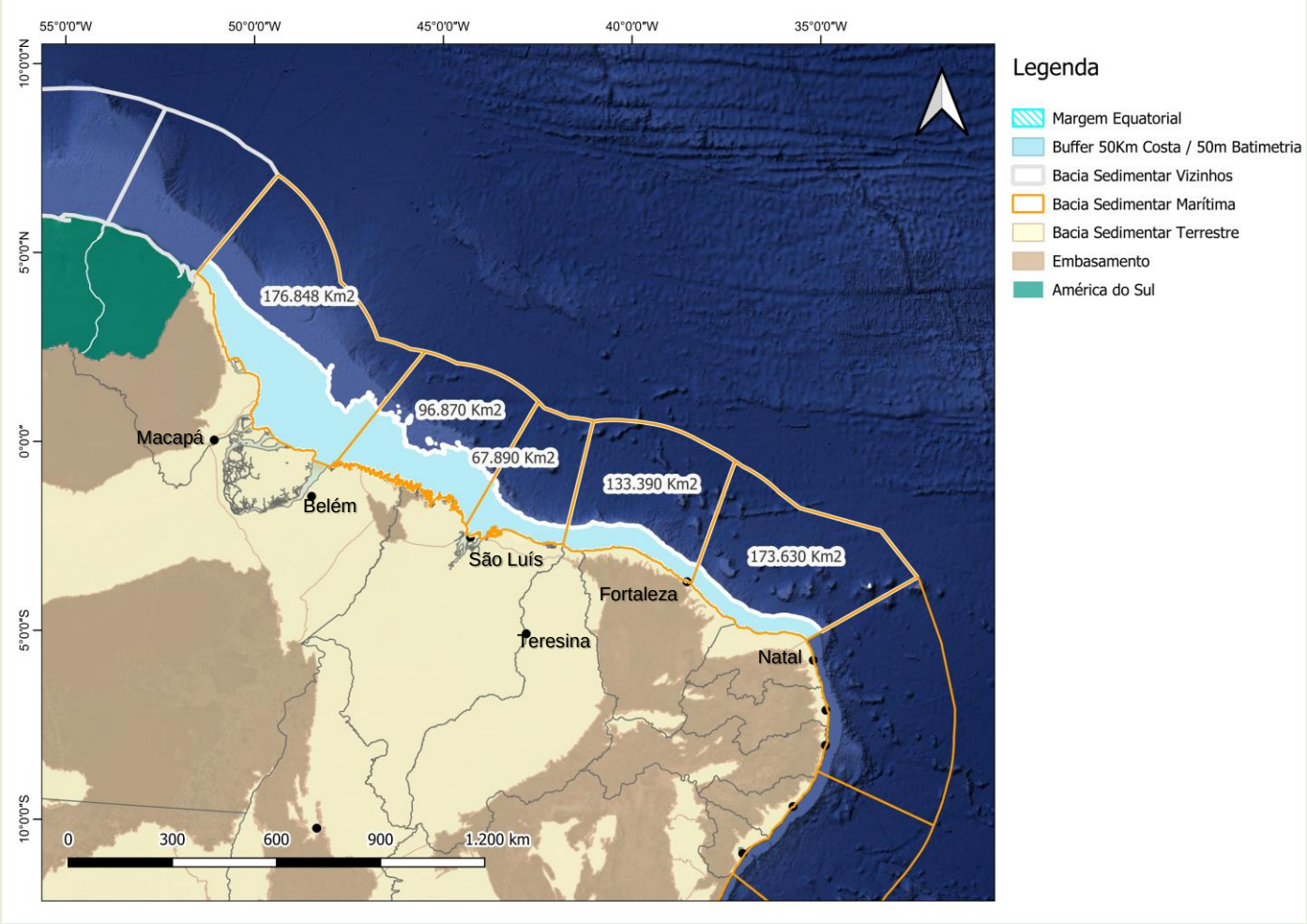
FINAL REMARKS

Q&A

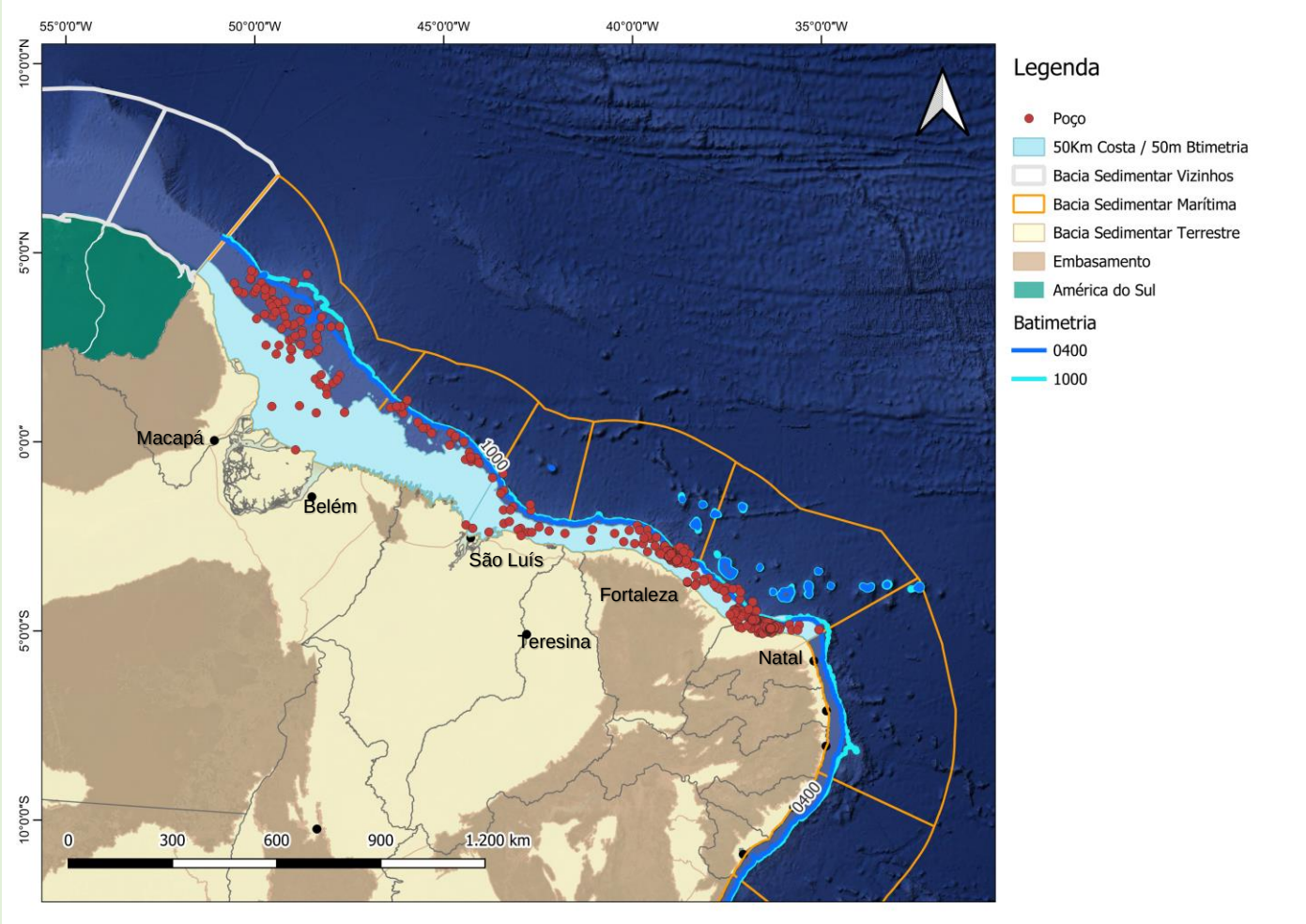
TECTONO-STRATIGRAPHIC EVOLUTION



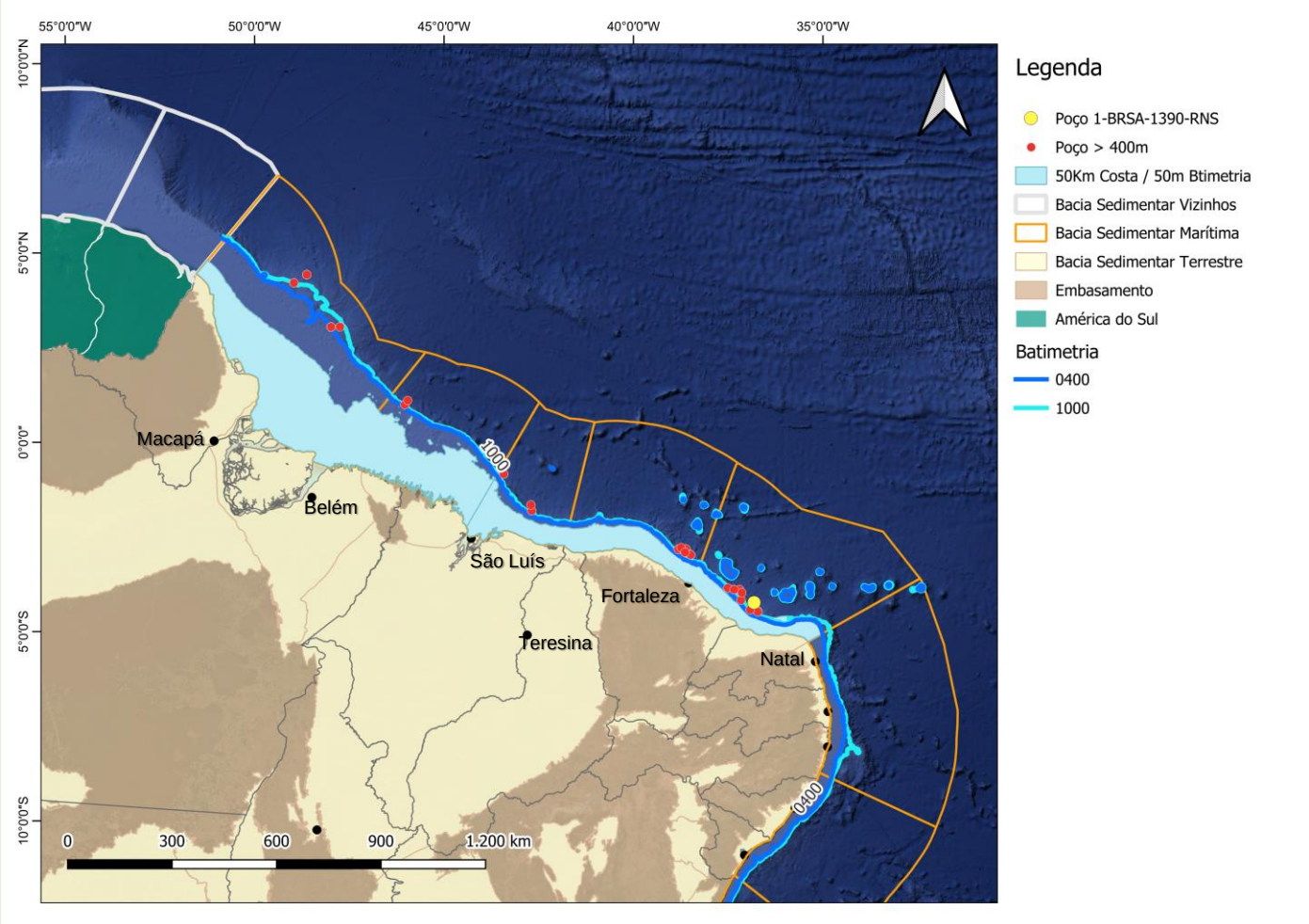
Brazilian Equatorial Margin [MEQ]



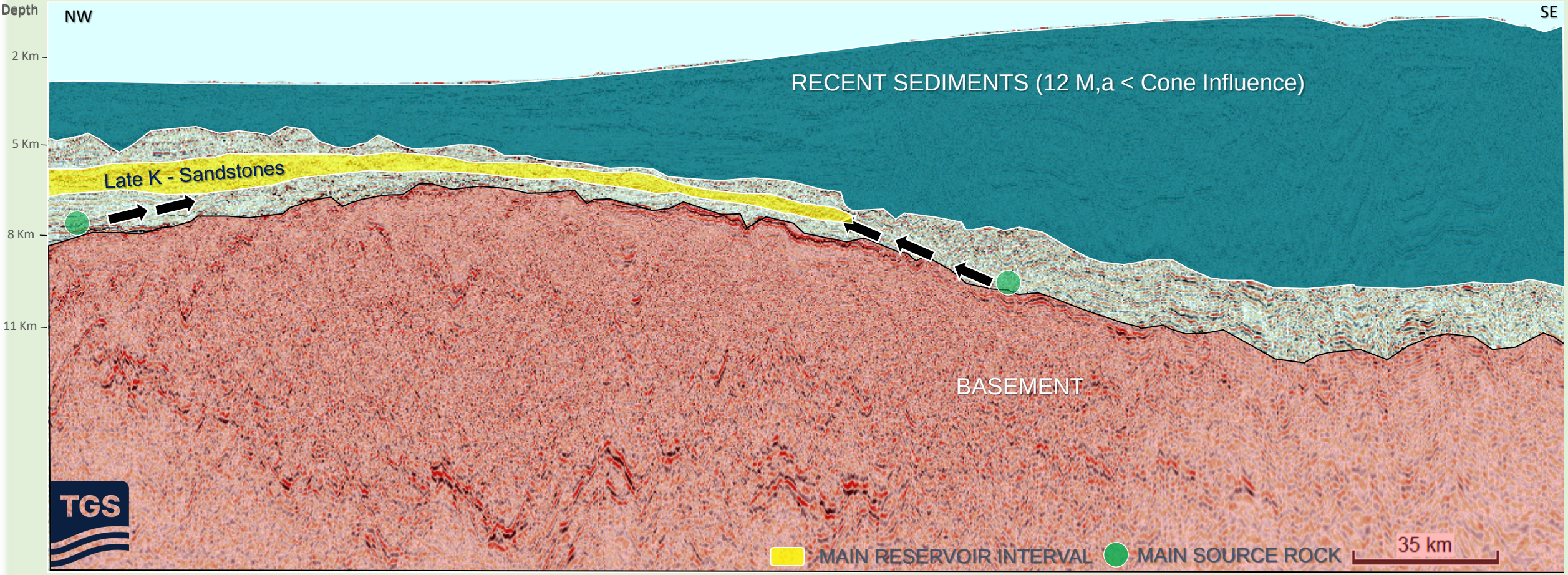
Brazilian Equatorial Margin [MEQ]



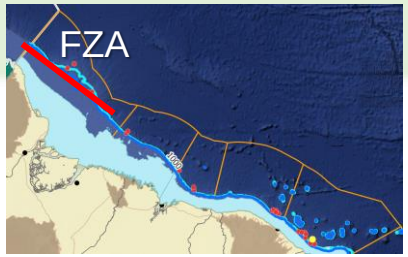
Brazilian Equatorial Margin [MEQ]



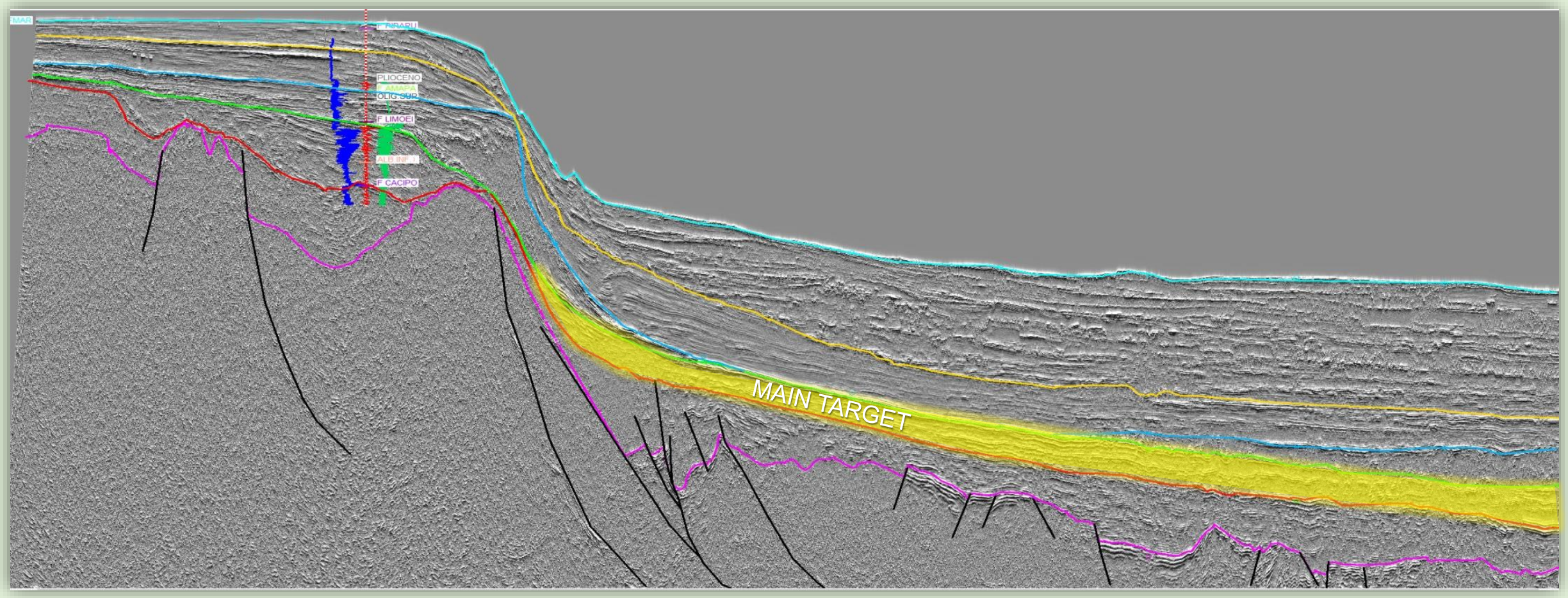
Brazilian Equatorial Margin [MEQ]

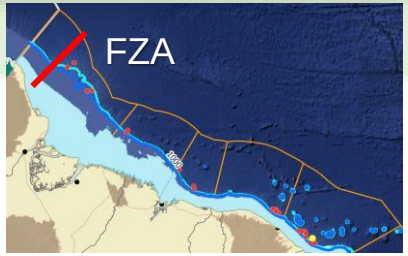


Data Courtesy of TGS



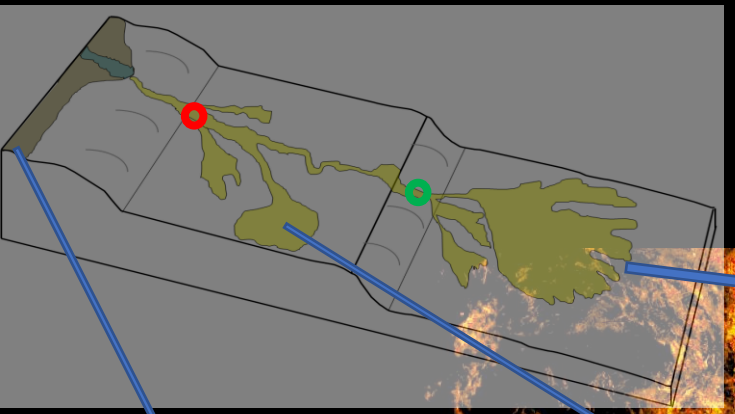
Brazilian Equatorial Margin [MEQ]

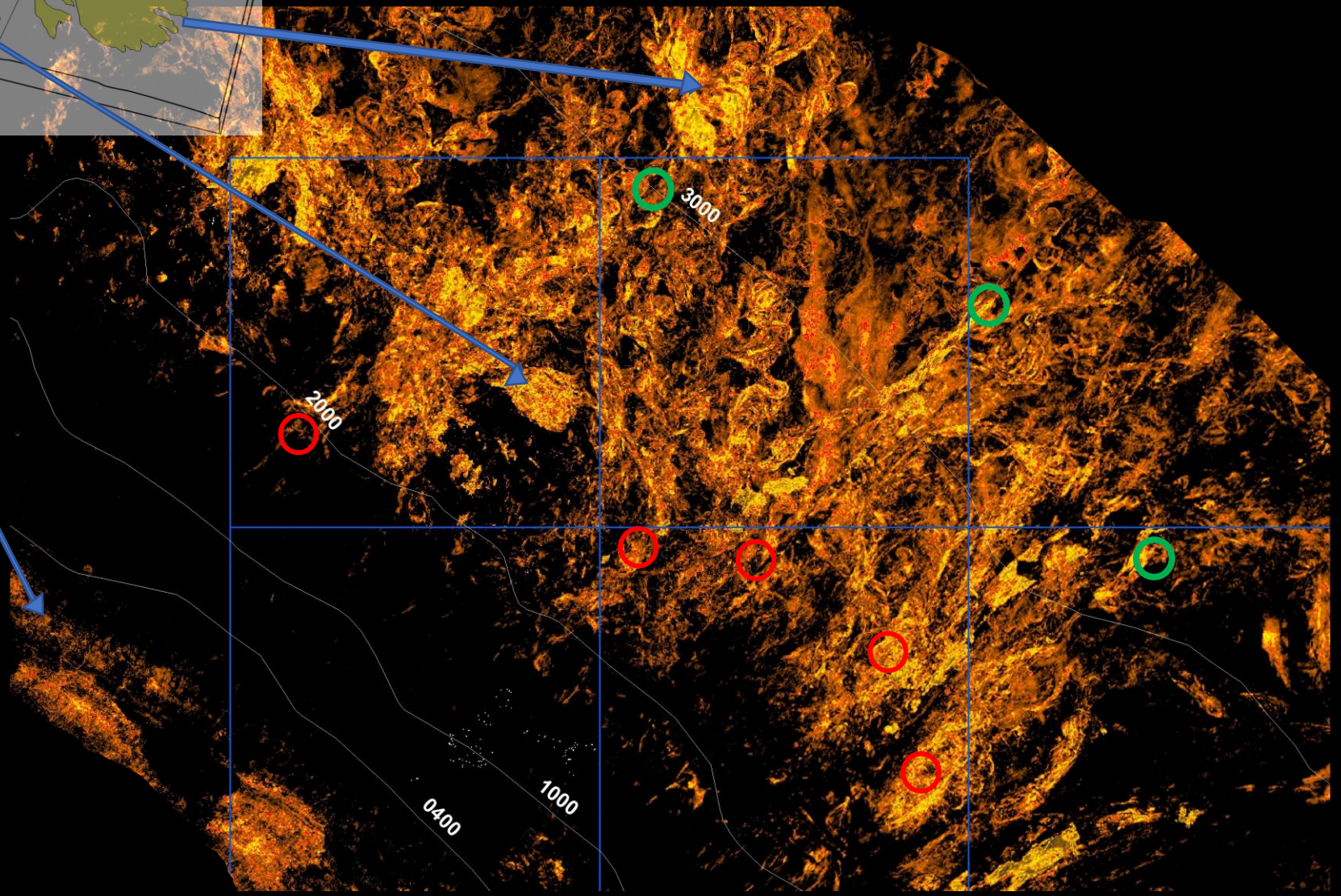




(ALBIAN ⇔ MAASTR, INTERVAL)
MARINE TURBIDITES (VAT MIN ATTRIBUTE)

MAIN RESERVOIR INTERVAL

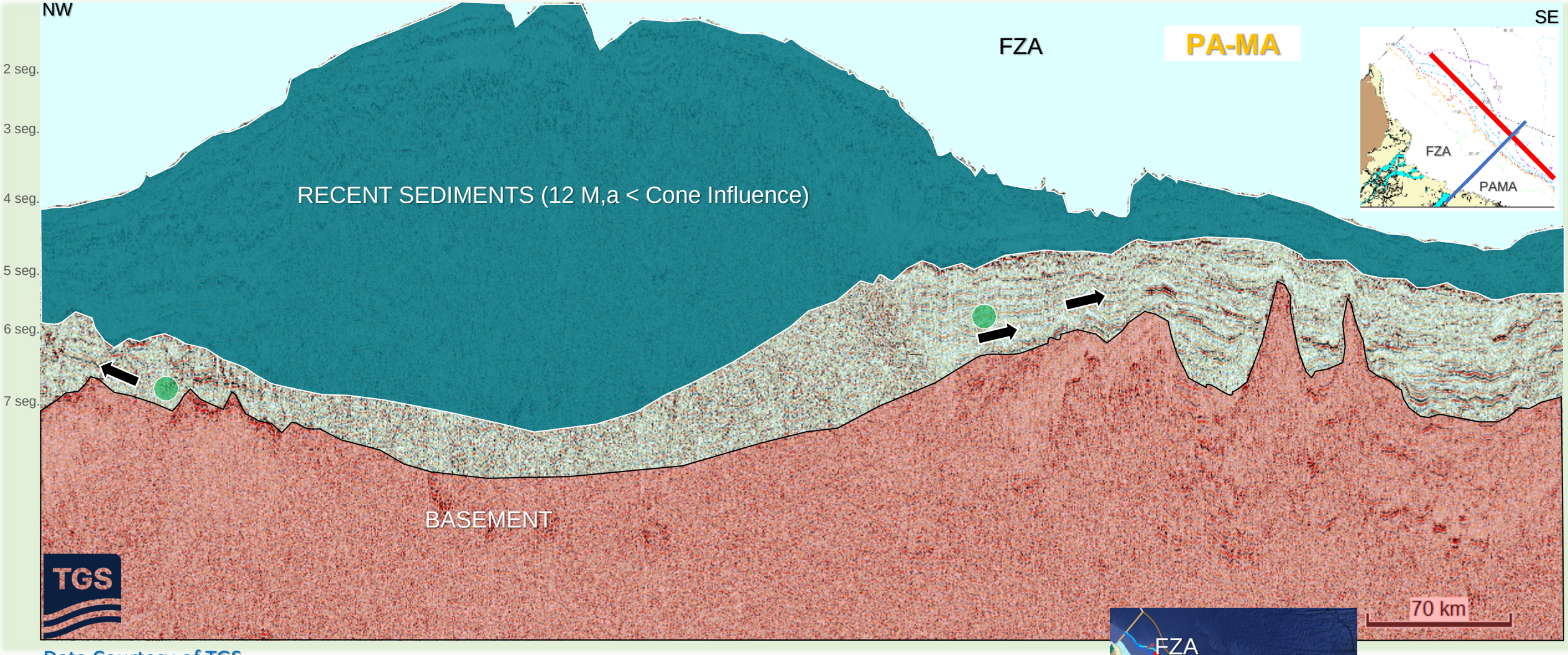


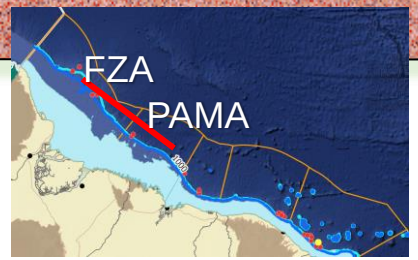


SANDSTONES

FZA BASIN

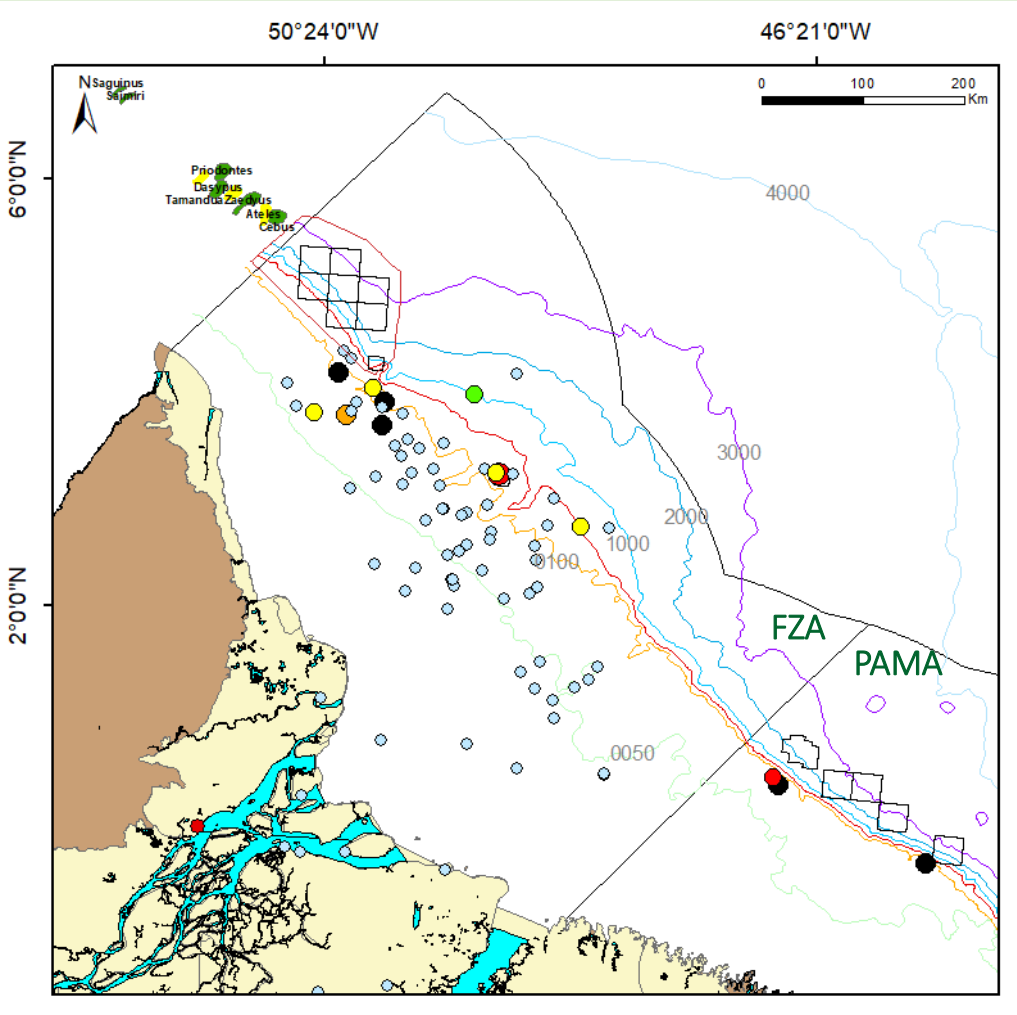
Brazilian Equatorial Margin [MEQ]





Data Courtesy of TGS

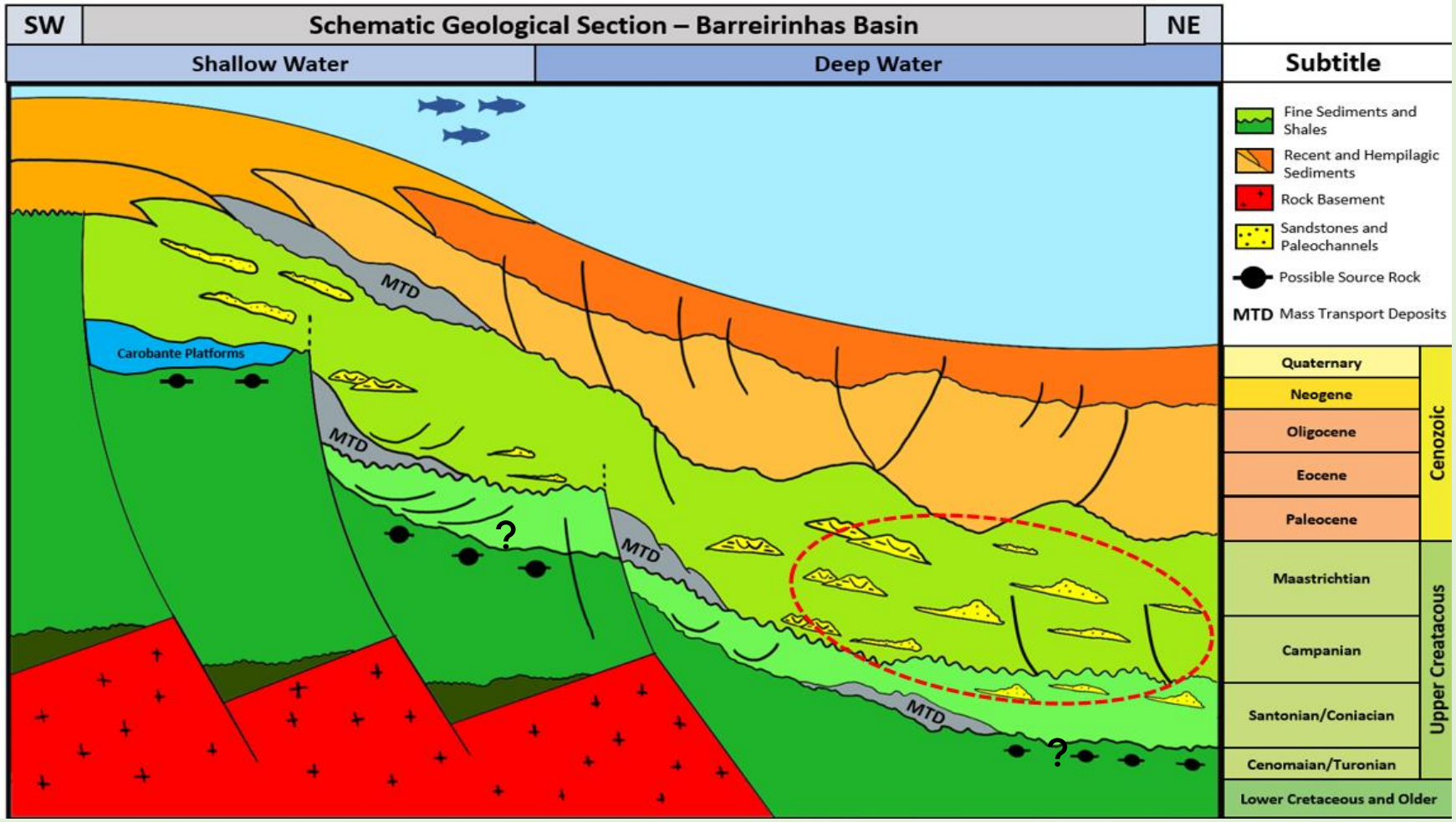
Foz do Amazonas and Para-Maranhão Basins – Deep Water

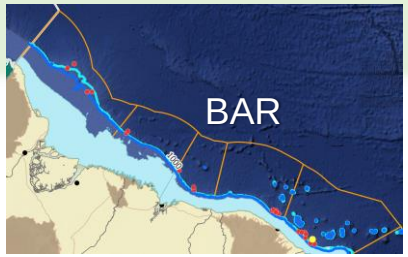


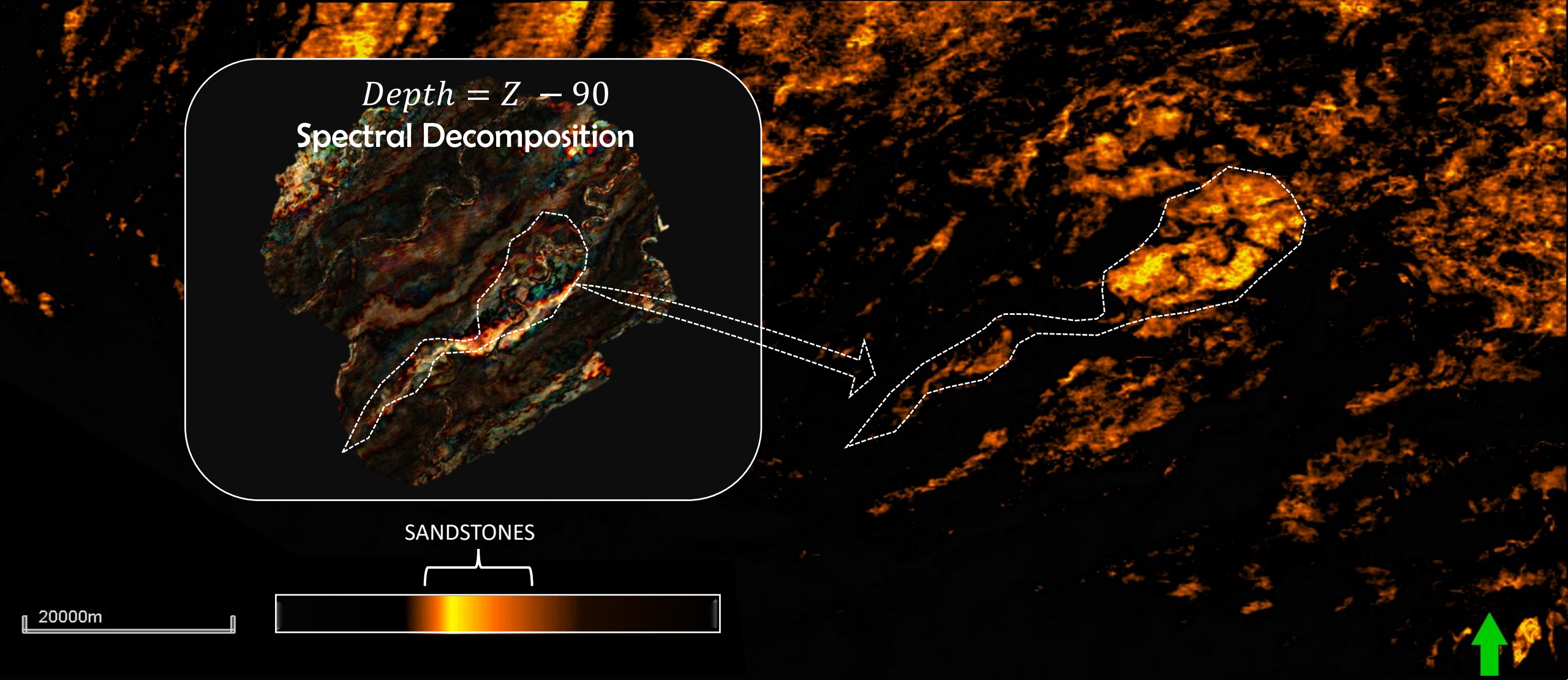
OLD WELLS DRILLED IN SHALLOW WATER AND/OR RECENT SEDIMENTS

- "DISCOVERY"
- NON COMERCIAL PRODUCER (GAS)
- NON COMERCIAL PRODUCER (OIL)
- NON COMERCIAL PRODUCER (OIL & GAS)
- DRY WITH SIGNS OF OIL & GAS

Barreirinhas Basin (BAR)







Minimum Amplitude Attribute Enhanced by Spectral Decomposition:
[Maximum Negative]

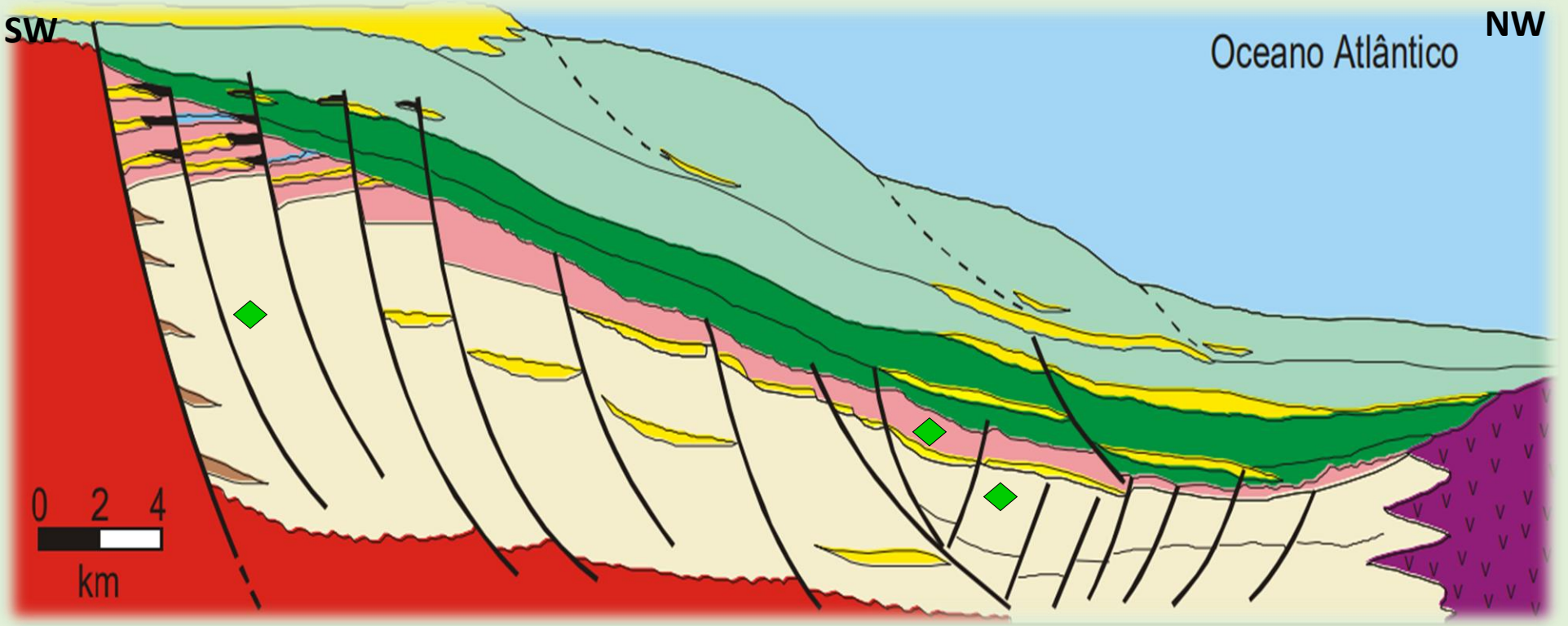
BARREIRINHAS BASIN

anp
Agência Nacional do Petróleo, Gás Natural e Biocombustíveis

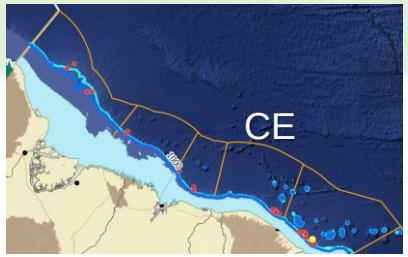
FIRST EAGE CONFERENCE ON DEEPWATER EQUATORIAL MARGIN

Ceará Basin (CE)

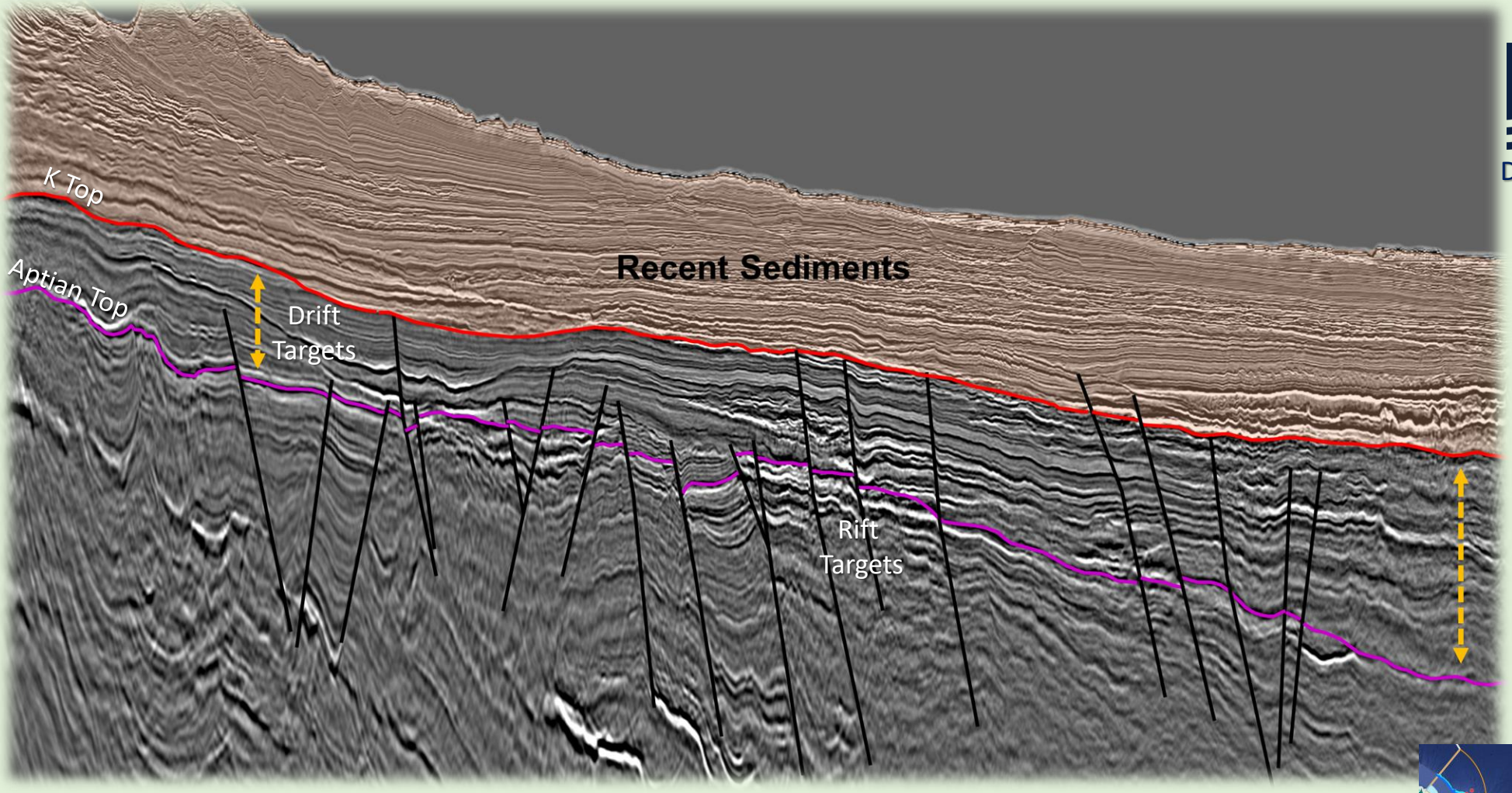
Wellington Filho, 2004; adapted from Costa et al, 1990 and ANP, 2002



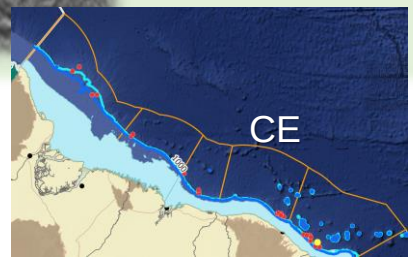
Tibau Formation
Mundaú Formation
Basement
Source Rock
Ubarana Formation
Paracurú Formation
Volcanic



Ceará Basin – Deep Water



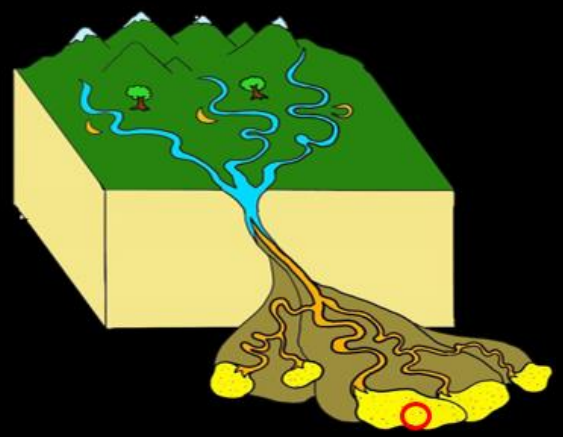
Data Courtesy of TGS



CEARÁ BASIN

Minimum Amplitude Attribute: [Maximum Negative Value
ALBIAN ⟺ MAASTR, INTERVAL]

MAIN RESERVOIR INTERVAL

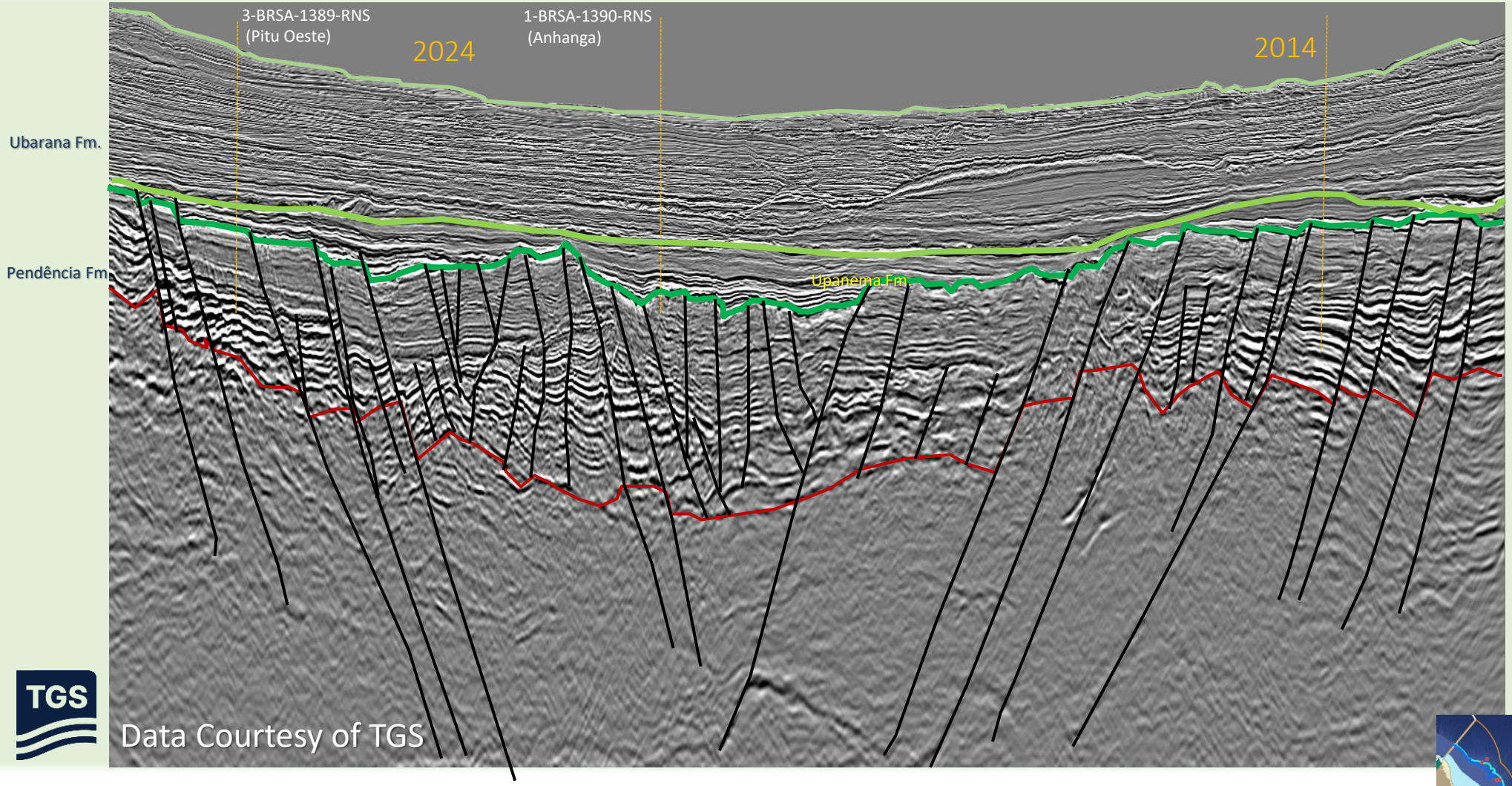


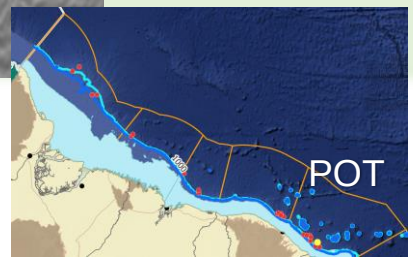
SANDSTONES

Volcanic

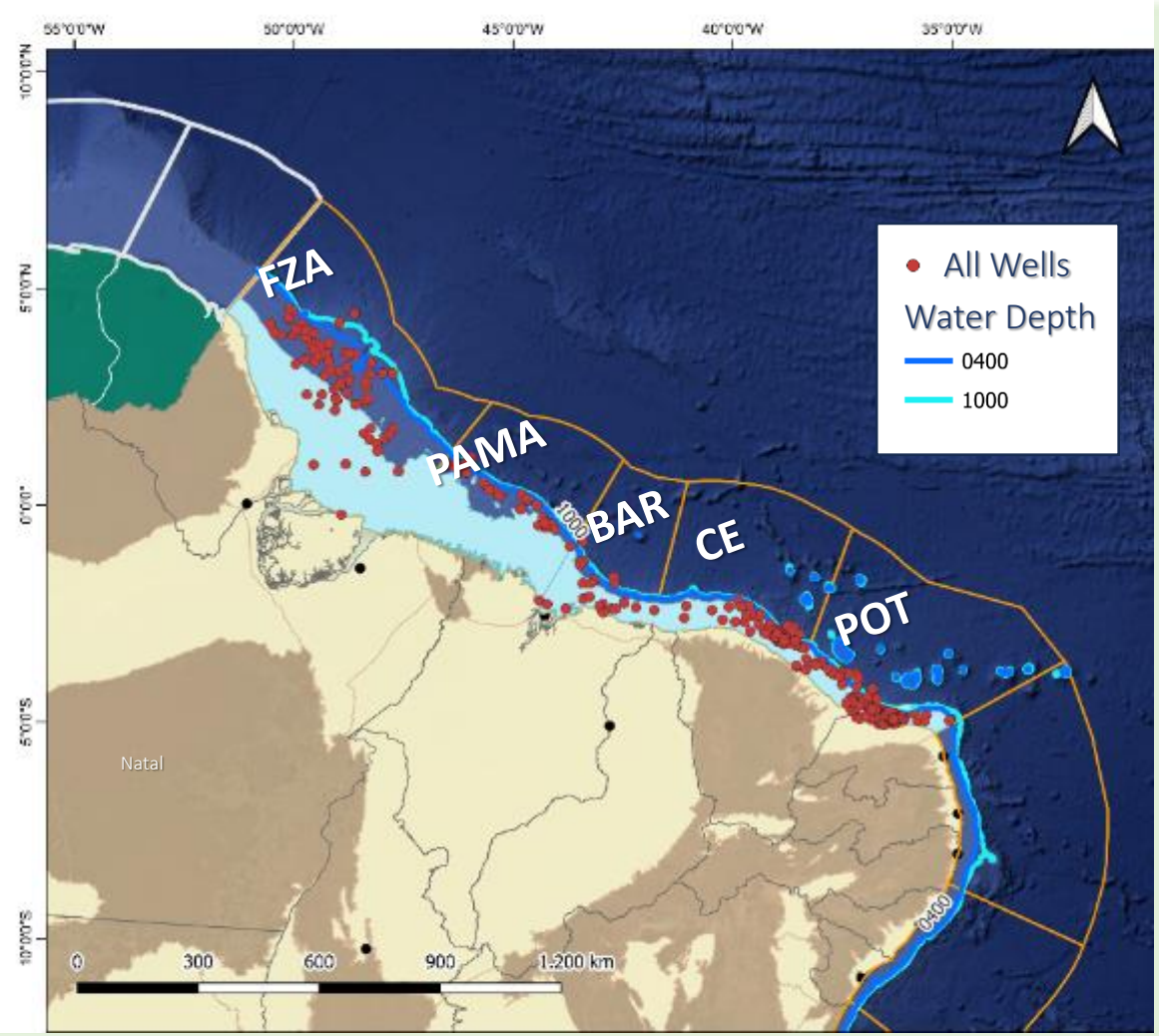
anp
Agência Nacional do Petróleo, Gás Natural e Biocombustíveis

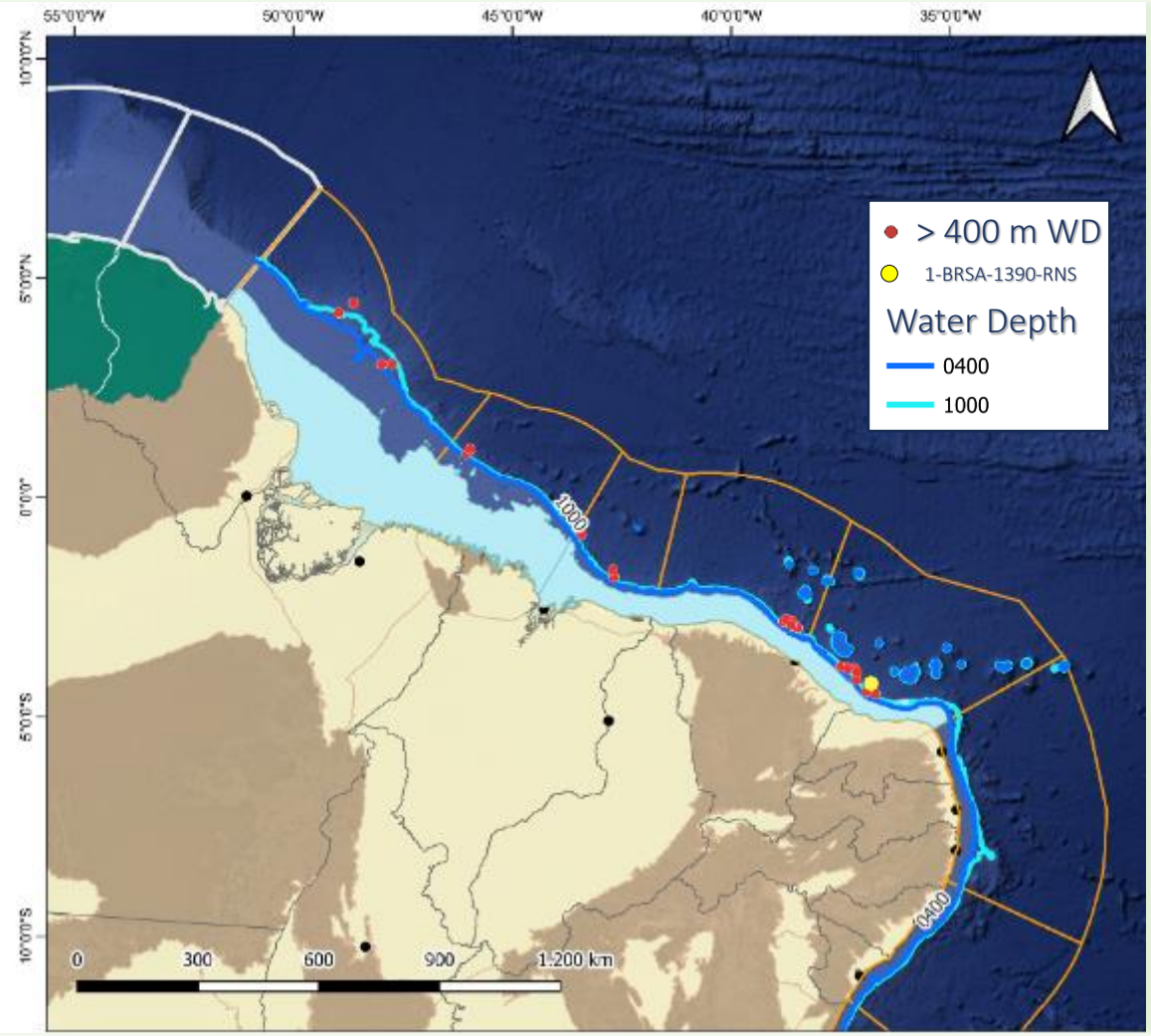
Potiguar Basin





MEQ


55°0'0"W
50°0'0"W
45°0'0"W
40°0'0"W
35°0'0"W
10°0'0"N
5°0'0"N
0°0'0"
5°0'0"S
10°0'0"S
FZA
PAMA
BAR
CE
POT
1000
0400
Natal
All Wells
Water Depth
0400
1000
0
300
600
900
1.200 km


55°0'0"W
50°0'0"W
45°0'0"W
40°0'0"W
35°0'0"W
10°0'0"N
5°0'0"N
0°0'0"
5°0'0"S
10°0'0"S
1000
0400
> 400 m WD
1-BRSA-1390-RNS
Water Depth
0400
1000
0
300
600
900
1.200 km

OUTLINE

BRAZIL PRODUCTION & RESERVE DATA

OFFSHORE SEDIMENTARY BASINS

- *EAST MARGIN [SAMPLES]*
- *EQUATORIAL MARGIN*

PERMANENT OFFERING DETAILS [OPEN ACREAGE]

FINAL REMARKS

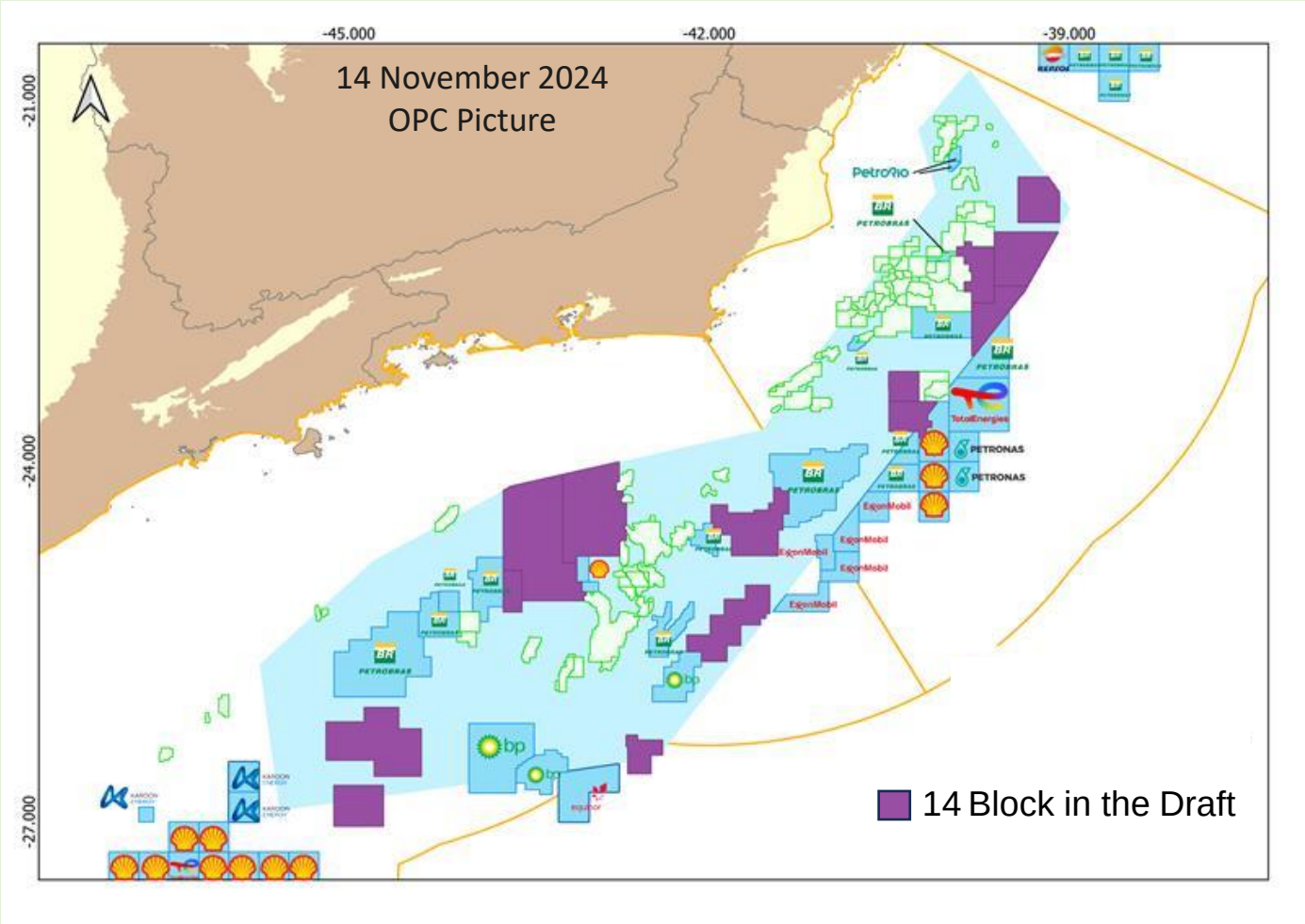
Q&A

Permanent Offer – OPP – Production Share

ANP published on October 18, notice about a 45-day public consultation regarding the new versions of the notice and contract for the Permanent Production Sharing Offer (OPP).

There are 14 blocks available in the draft notice: Ágata, Esmeralda, Jade, and Turmalina, which were authorized by CNPE Resolution Nº. 26/2021; Ametista, authorized by CNPE Resolution Nº. 04/2022; and Amazonita, Citrino, Itaimbezinho, Jaspe, Larimar, Mogno, Ônix, Safira Leste, and Safira Oeste, authorized by CNPE Resolution Nº. 11/2023).

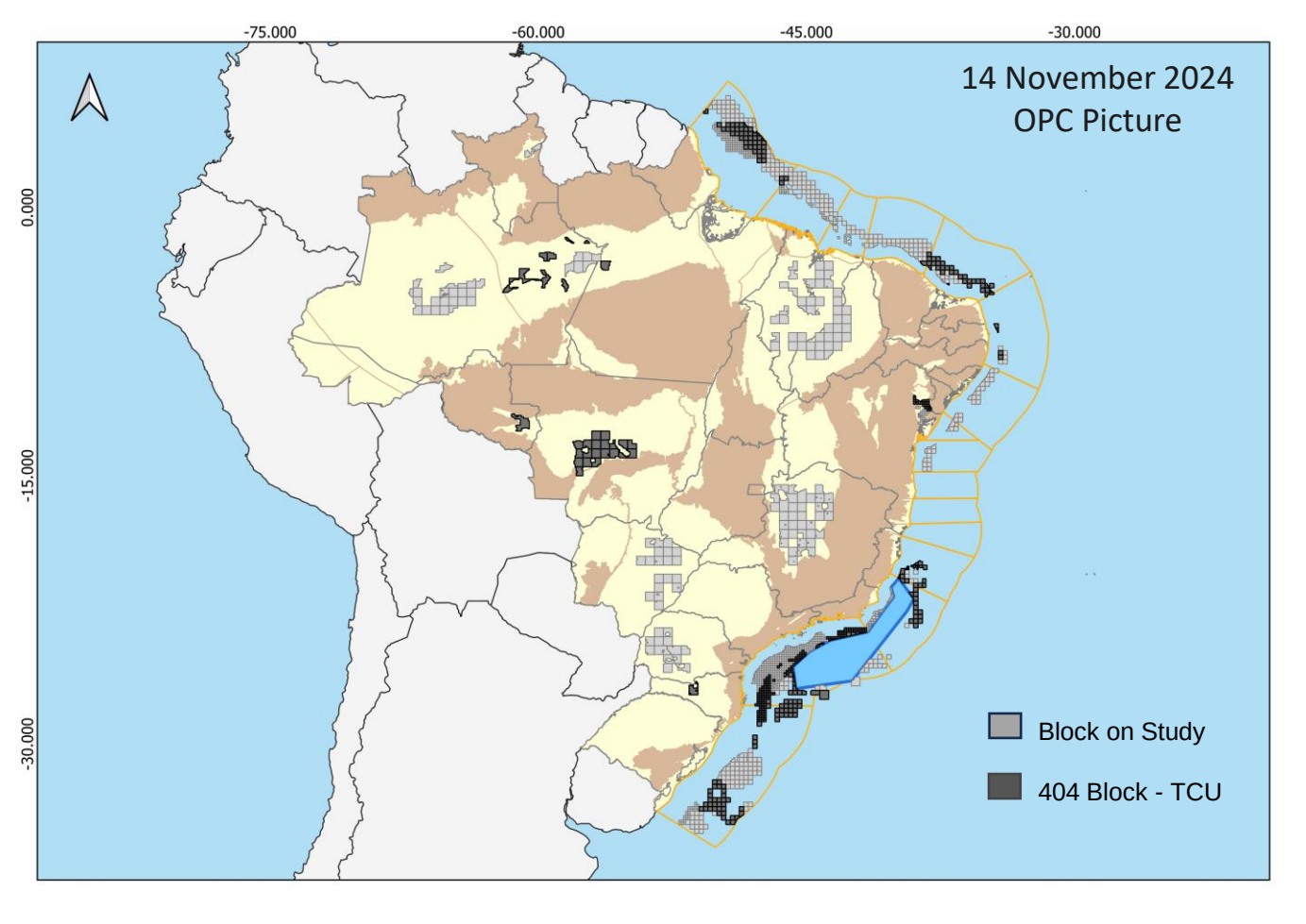
Petrobras exercised the right of preference about the Jaspe block, with a percentage of 40%, considering the parameters disclosed in CNPE Resolution No· 06/2024, published on 8/28/2024.



https://www.gov.br/anp/pt-br/assuntos/consultas-e-audiencias-publicas/consulta-audiencia-publica/2024/consulta-e-audiencia-publicas-no-06-2024

Permanent Offer – OPC - Concession

Approval of the new version of the notice and draft OPC contracts and submission to the TCU On October 17, 2024, through Board Resolution Nº. 715/2024, the ANP Collegiate Board approved the new version of the bidding notice and the drafts of the Permanent Offer concession contracts, subject of Public Consultation and Hearing Nº. 02 /2024, and authorized the sending to the Federal Audit Court, in accordance with TCU Normative Instruction nº. 81/2018; which has up to 90 days for evaluation. **The publication of the OPC instruments is scheduled to take place in January 2025.**



https://www.gov.br/anp/pt-br/rodadas-anp/oferta-permanente/opc/blocos-exploratorios

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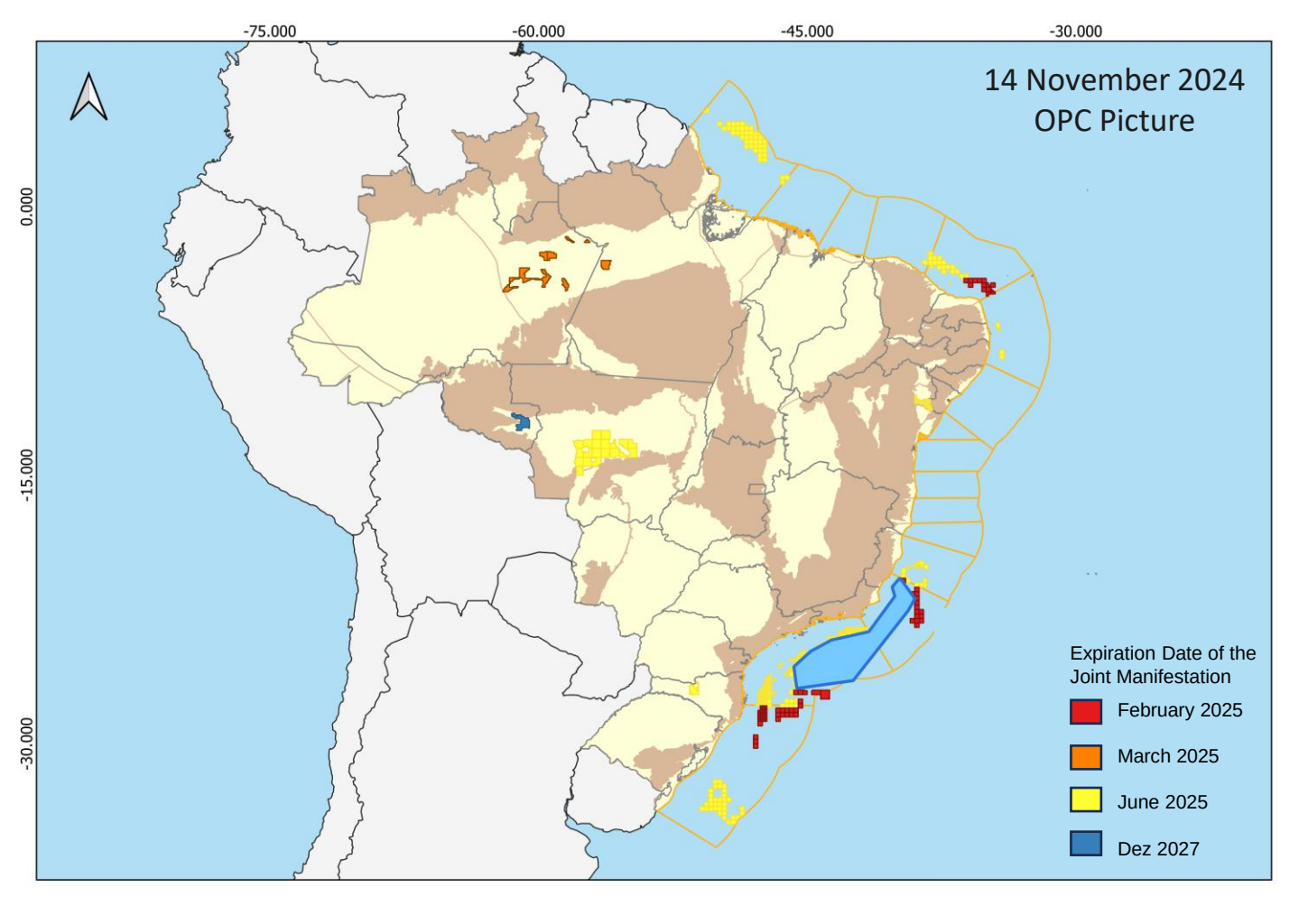
Permanent Offer – OPC - Concession



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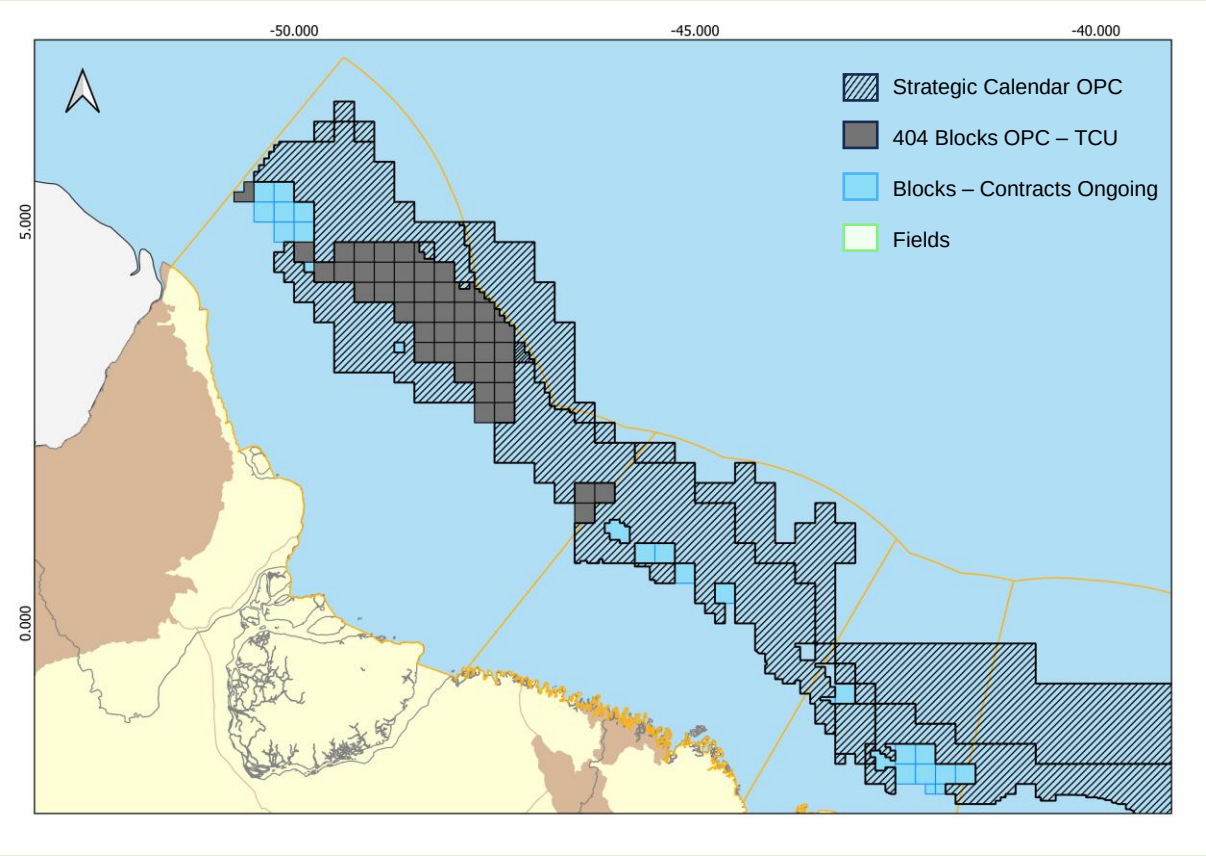
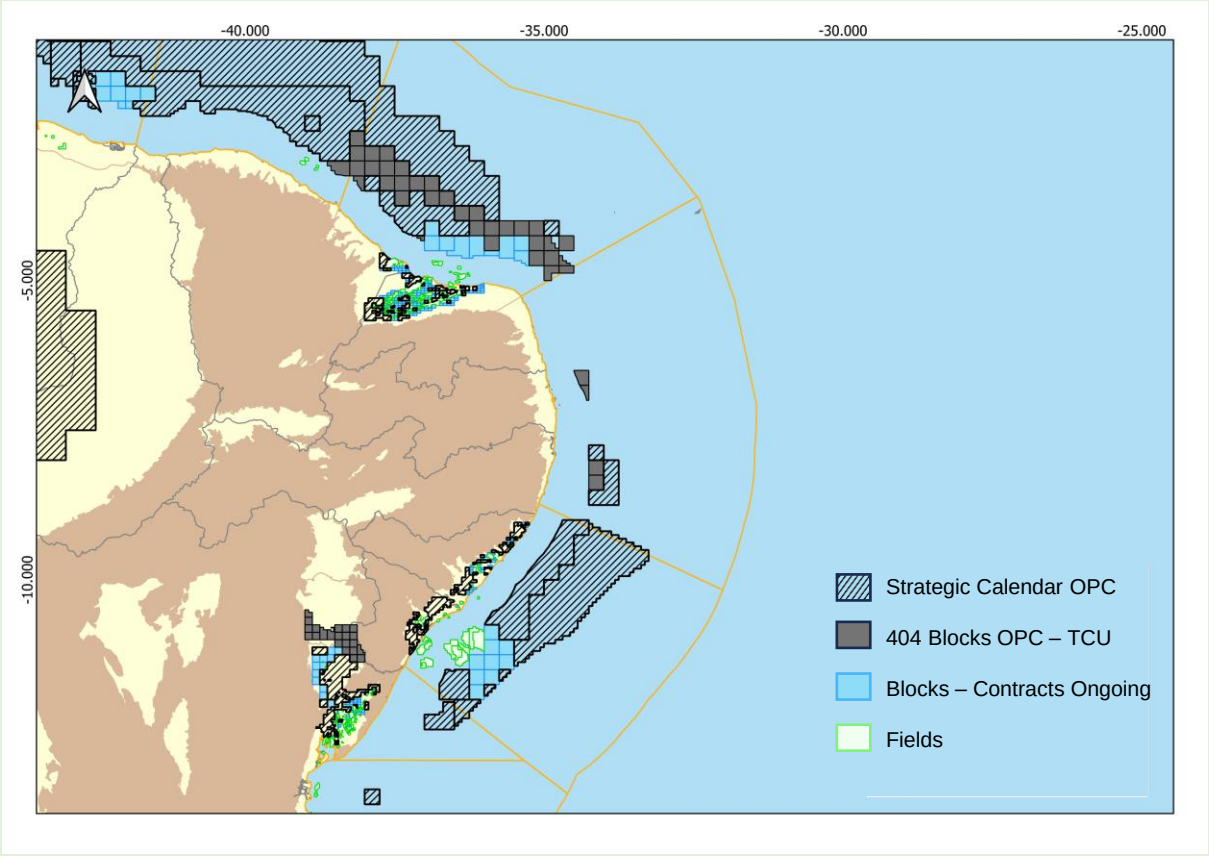
G&G **Strategic Calendar of Studies** [2024-2025]
Conducted by the Superintendency of Geological and Economic Assessment





G&G **Strategic Calendar of Studies** [2024-2025]
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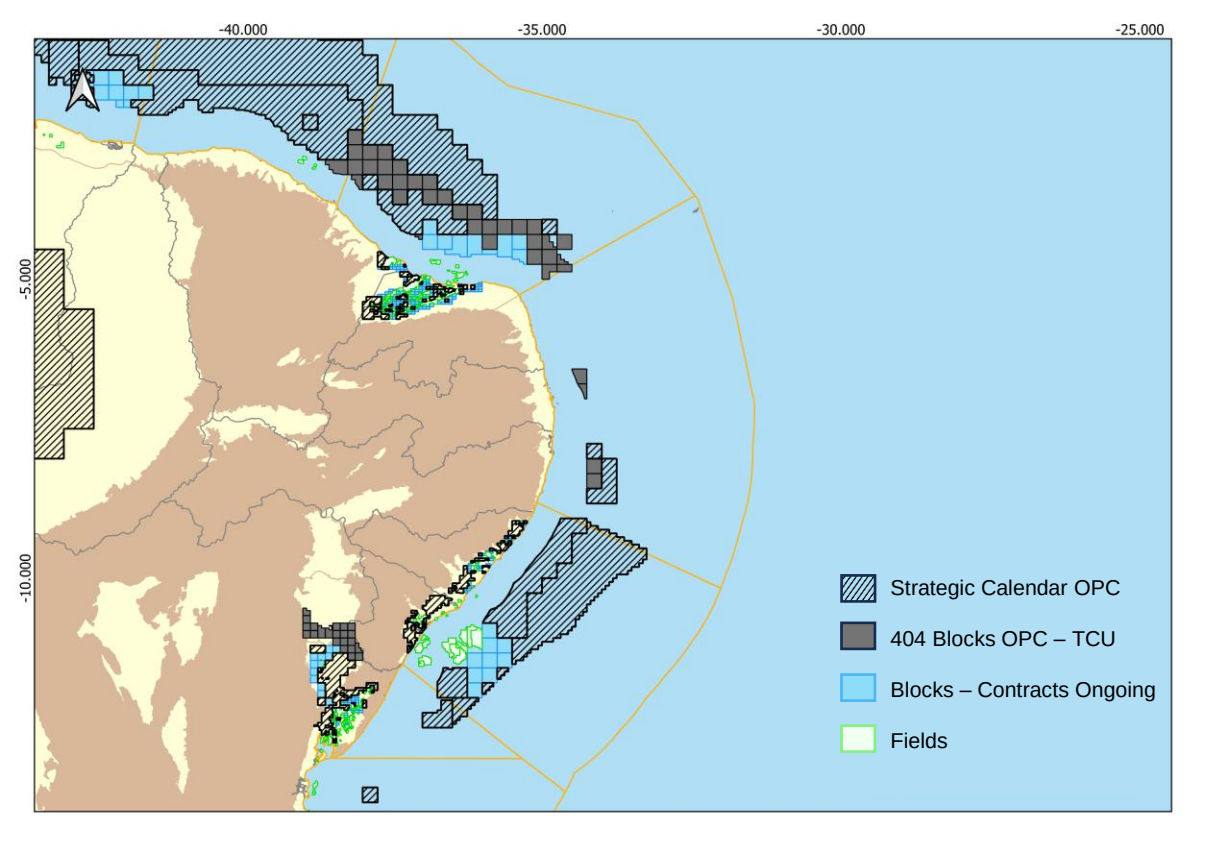
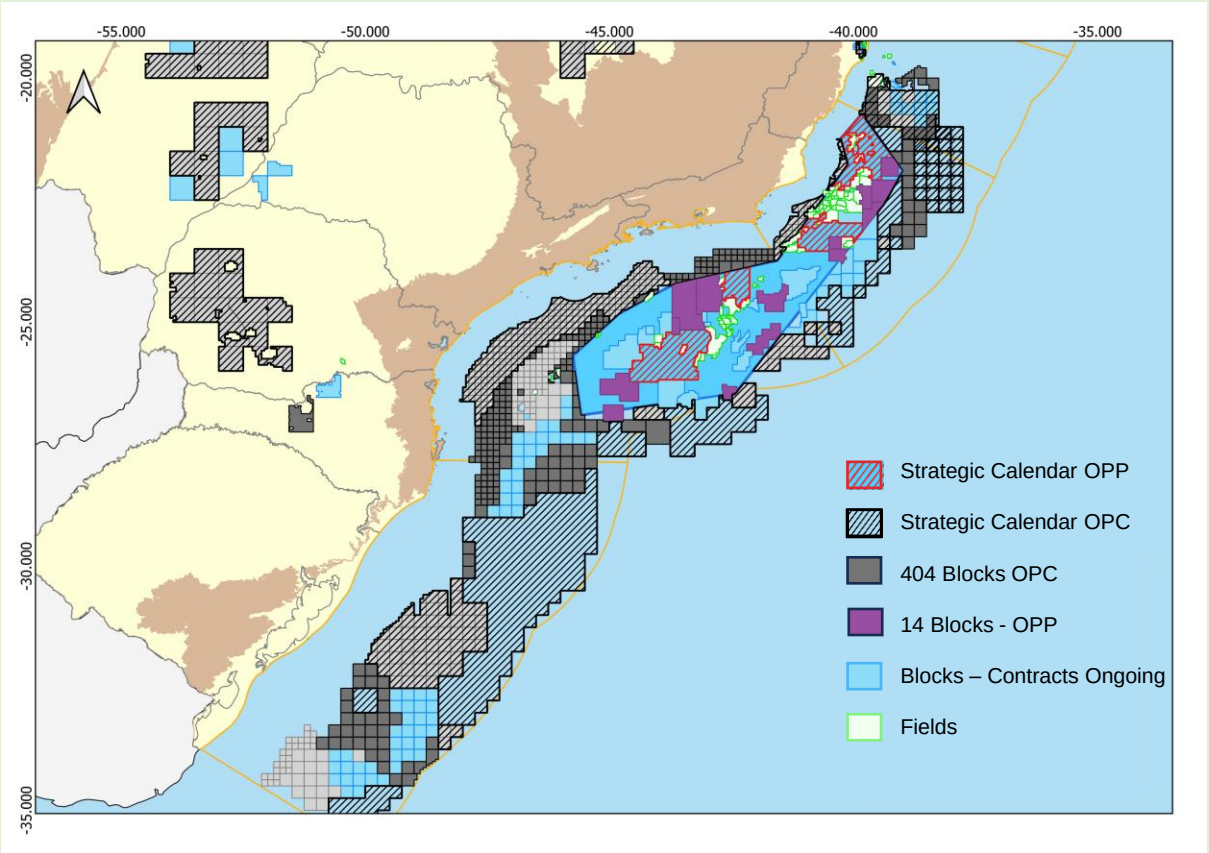
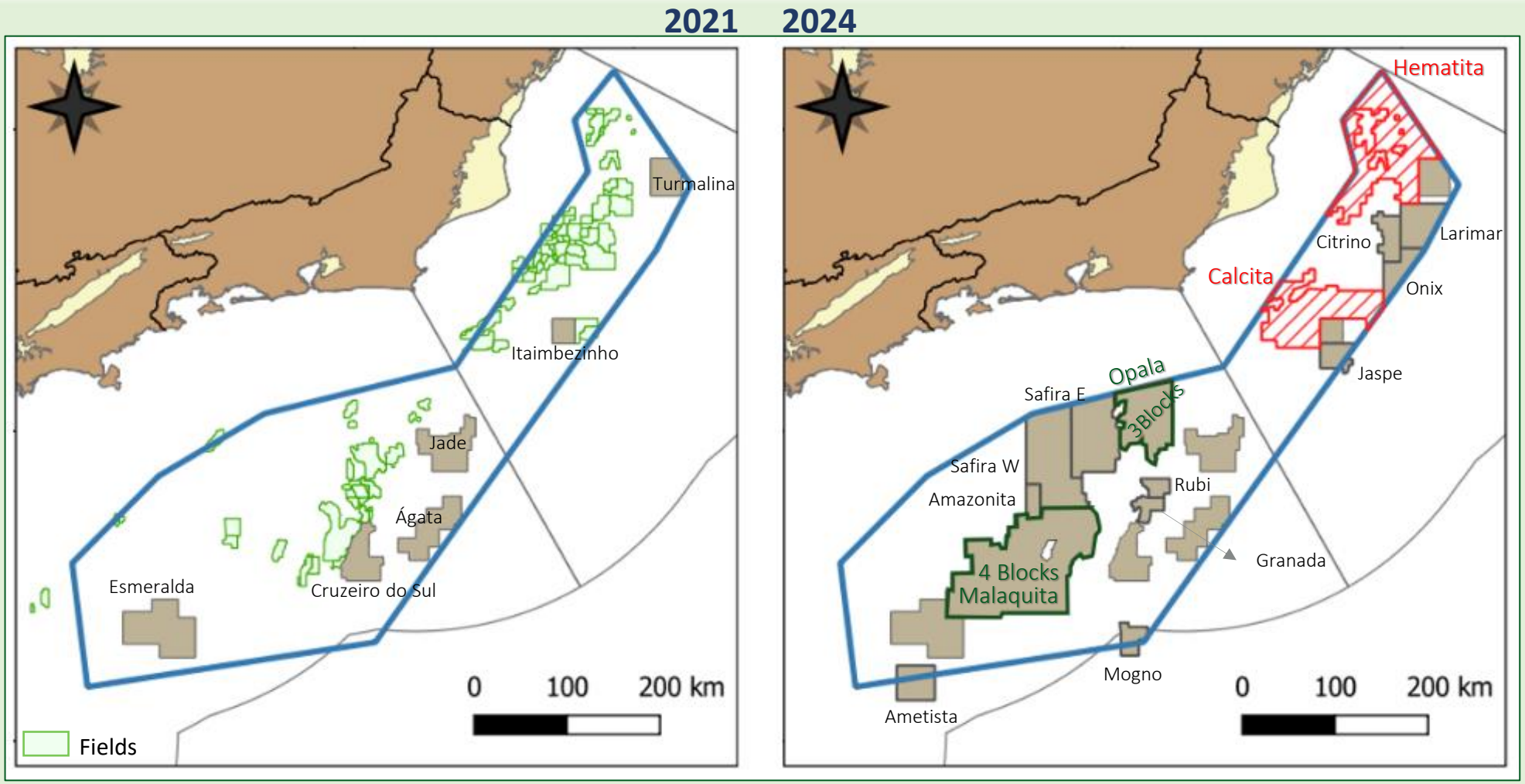




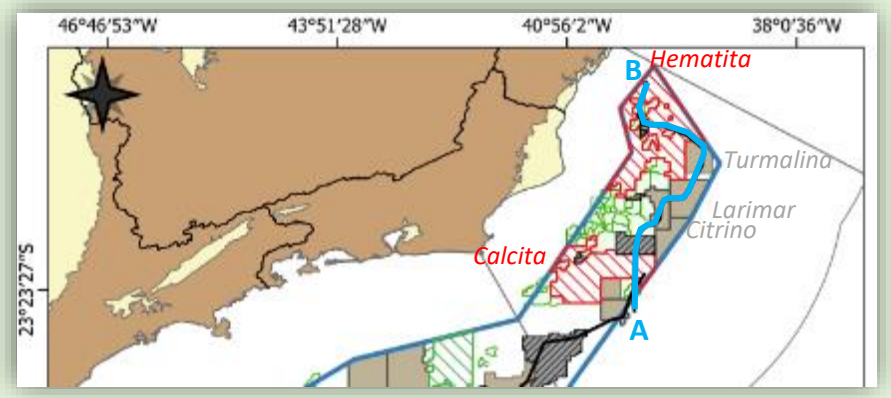
Opportunities: New Areas for the Campos and Santos Basins OPP Overview



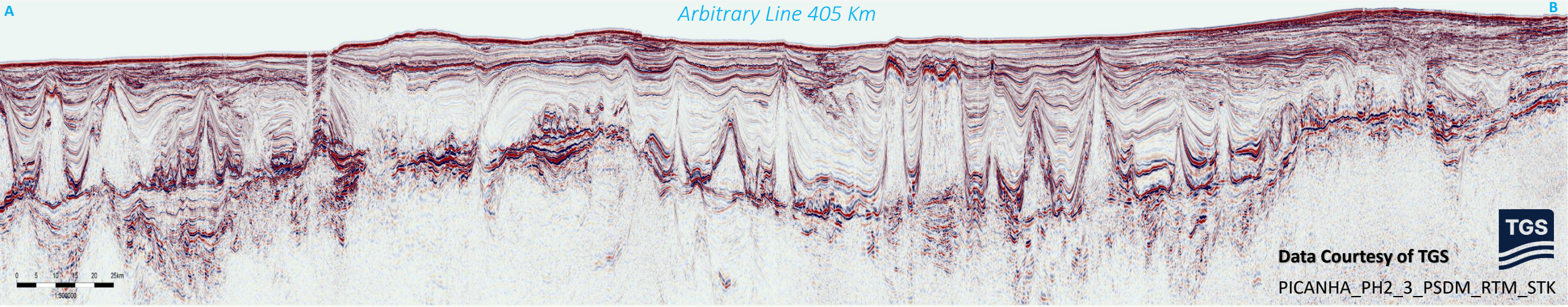
+ 18 Blocks

+ 02 Areas Ongoing

Blocks and Areas for the Campos Basin



ANP [SAG] is currently evaluating two important areas for internal geological and economic assessments: Calcite and Hematite in the Campos Basin. This is the best time to move forward with the nomination for Res ANP nº. 837/2021 through a fully confidential process.



OUTLINE

BRAZIL PRODUCTION & RESERVE DATA

OFFSHORE SEDIMENTARY BASINS

- *EAST MARGIN [SAMPLES]*
- *EQUATORIAL MARGIN*

PERMANENT OFFERING DETAILS [OPEN ACREAGE]

FINAL REMARKS

Q&A

Final Remarks

RES ANP 837 / 2021 - NOMINATION

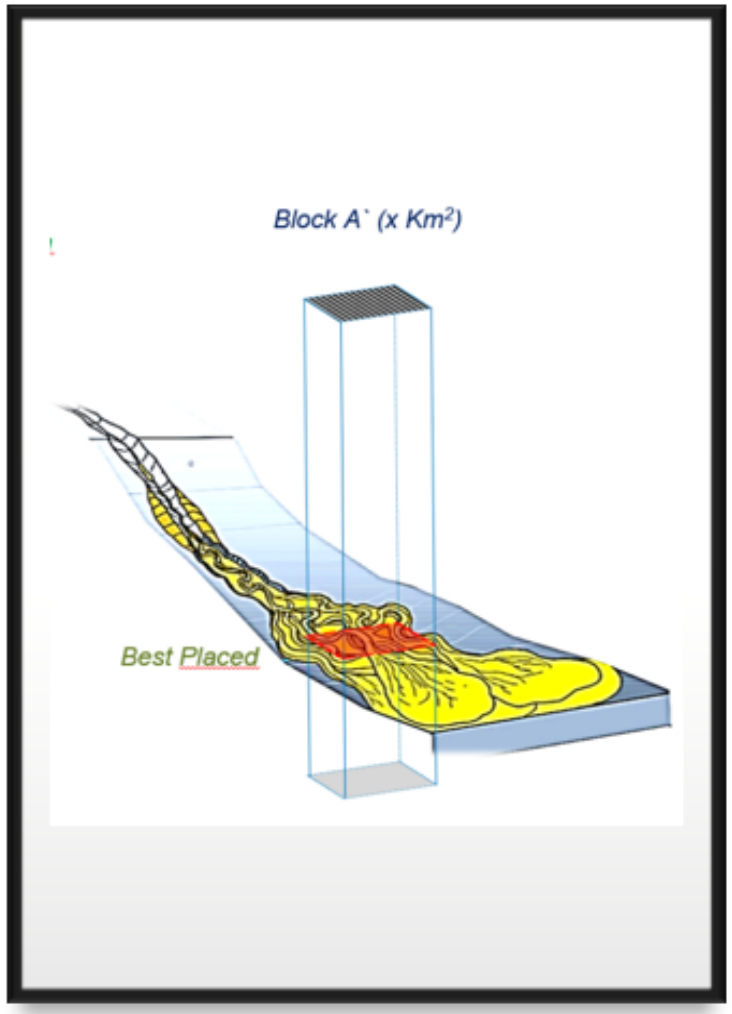
A powerful tool for effectively engaging with the market

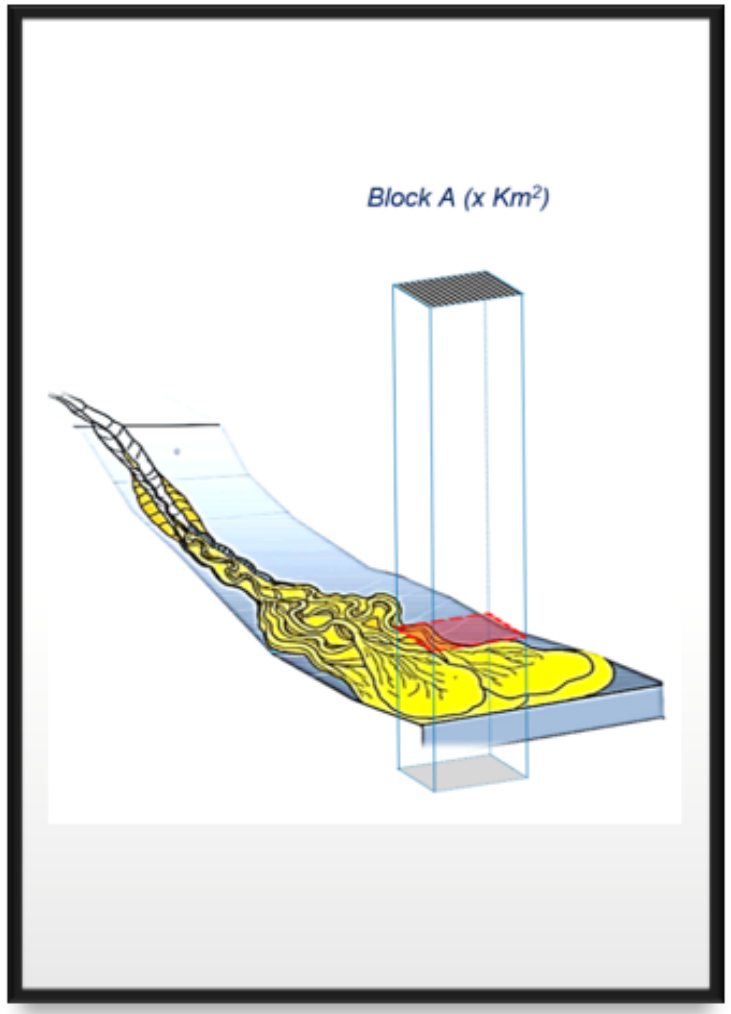
The nomination is the designation of an area by any legal entity in the oil and natural gas industry so that the ANP can study the possibility of offering it in a future bidding round

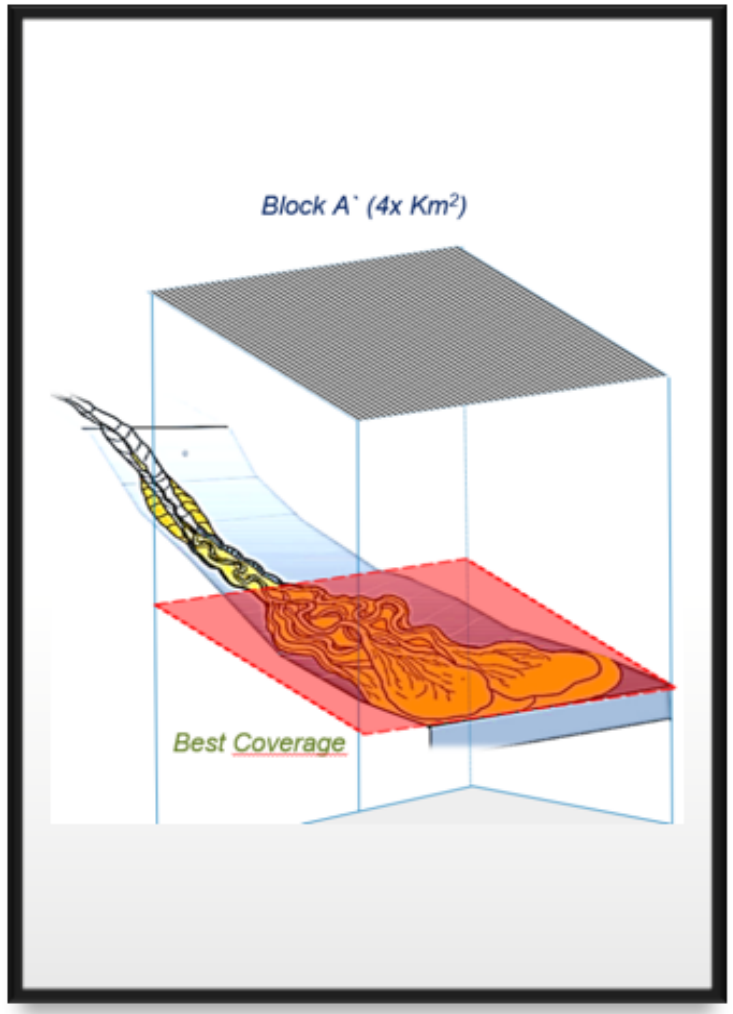
The exploratory block nomination must be forwarded to the Geological and Economic Assessment Superintendence (SAG) with the Process Type Area Nomination - Exploratory Block, and the area nomination with marginal accumulations to the Development and Production Superintendency (SDP) with the Process Type Area Nomination - Marginal Accumulations

"Nominations are a fully confidential process"

Final Remarks







RES ANP 837 / 2021 - NOMINATION

A powerful tool for effectively engaging with the market

Final Remarks

The bidding instruments are constantly evaluated by the ANP for improvements. The ANP discloses the blocks and areas under study and, after obtaining environmental guidelines, starts to include them in the list of objects of the Permanent Offer, through a Public Hearing. The blocks and areas that have recently undergone a Public Hearing and have no changes in their technical-economic parameters may be included directly in the Permanent Offer, and wide publicity will be given on this website.

OPC - Public Consultation and Public Hearing nº 02/2024 – OK => **(TCU)**

https://www.gov.br/anp/pt-br/rodadas-anp/oferta-permanente/opc/blocos-exploratorios
https://www.gov.br/anp/pt-br/rodadas-anp/oferta-permanente/opc/arquivos/mapas/blocos-em-consulta-e-audiencia-publica-no-02-2024/mapa_geral_opc5_em_oferta_404_blocos.pdf

OPP - Public Consultation and Public Hearing nº 06/2024 (in progress)

https://www.gov.br/anp/pt-br/rodadas-anp/oferta-permanente/opp/cap

Q&A

THANK YOU!

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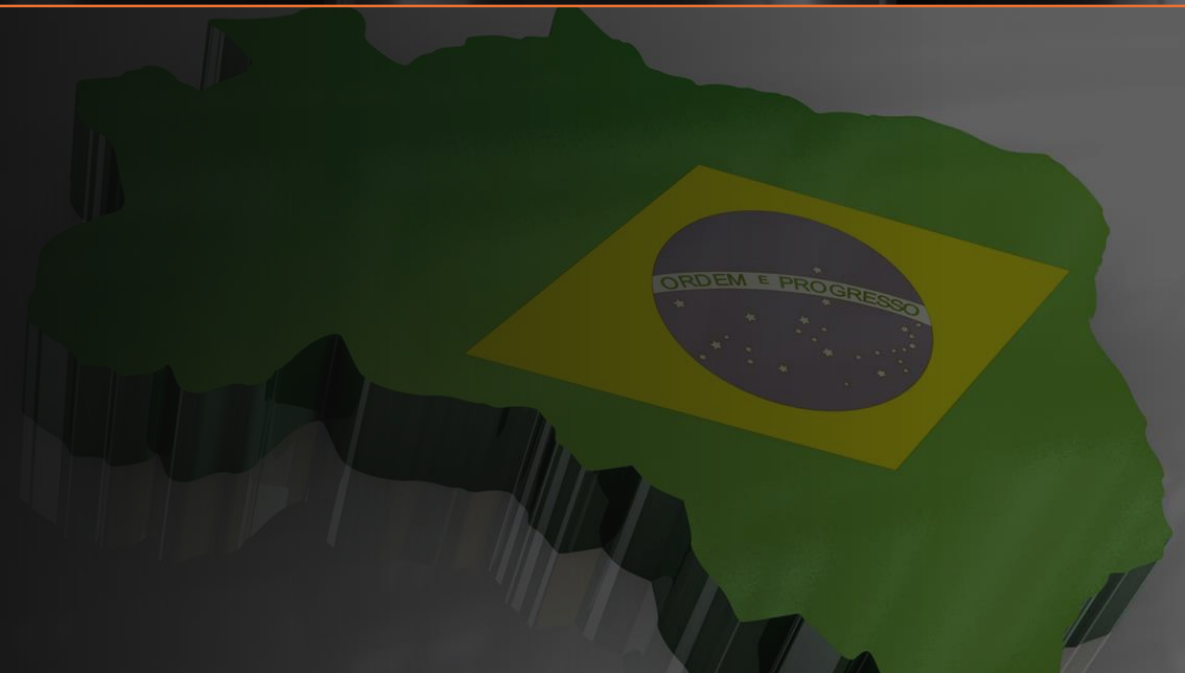
linkedin.com/in/ronanmagalhaesavila



anp
Agência Nacional do Petróleo, Gás Natural e Biocombustíveis