

# OIL & GAS

## Exploration and Exploitation

### CURRENT SITUATION





PERUPETRO S.A. is the Peruvian state company whose role is to promote, negotiate and supervise contracts for the exploration and exploitation of hydrocarbons in Peru.

## MISSION



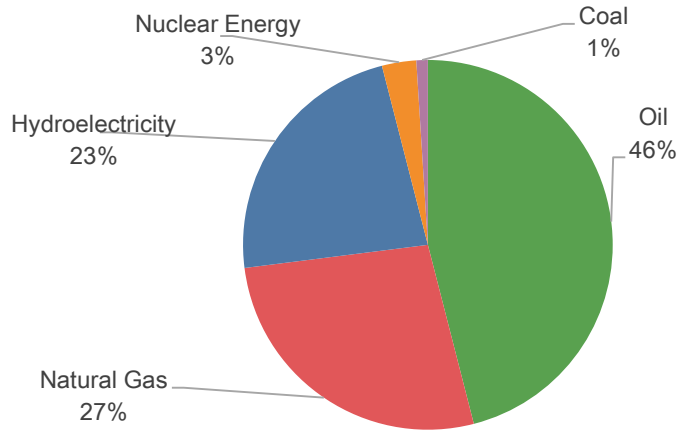
To manage efficiently hydrocarbon resources in an environmental and socially responsible way, providing energy security to Peru.



# Energy: Importance of Hydrocarbons









**In Peru, OIL & GAS contribute with more than 70% of the energy consumption of the country.**



**PERU is an oil importer, even though there is great potential to produce our own oil.**



# Benefits of the Hydrocarbons activity

 <p>The oil and gas industry makes an important contribution to the Peruvian economy</p>	 <p>Contribution in ROYALTIES US \$ 21,000 million</p>
 <p>OIL FEES US \$ 10,000 million</p>	 <p>CAPEX between 2014-2019 US \$ 4,000 million</p>
 <p>INVESTMENT expenditure US \$ 17,000 million</p>	 <p>OPEX between 2014-2019 US \$ 11,000 million</p>

## Catalytic agent of ...



Source of **DIRECT AND INDIRECT** employment for thousands of families



Growth engines of the **NATIONAL ECONOMY**



Source of **ENERGY ASSURANCE**



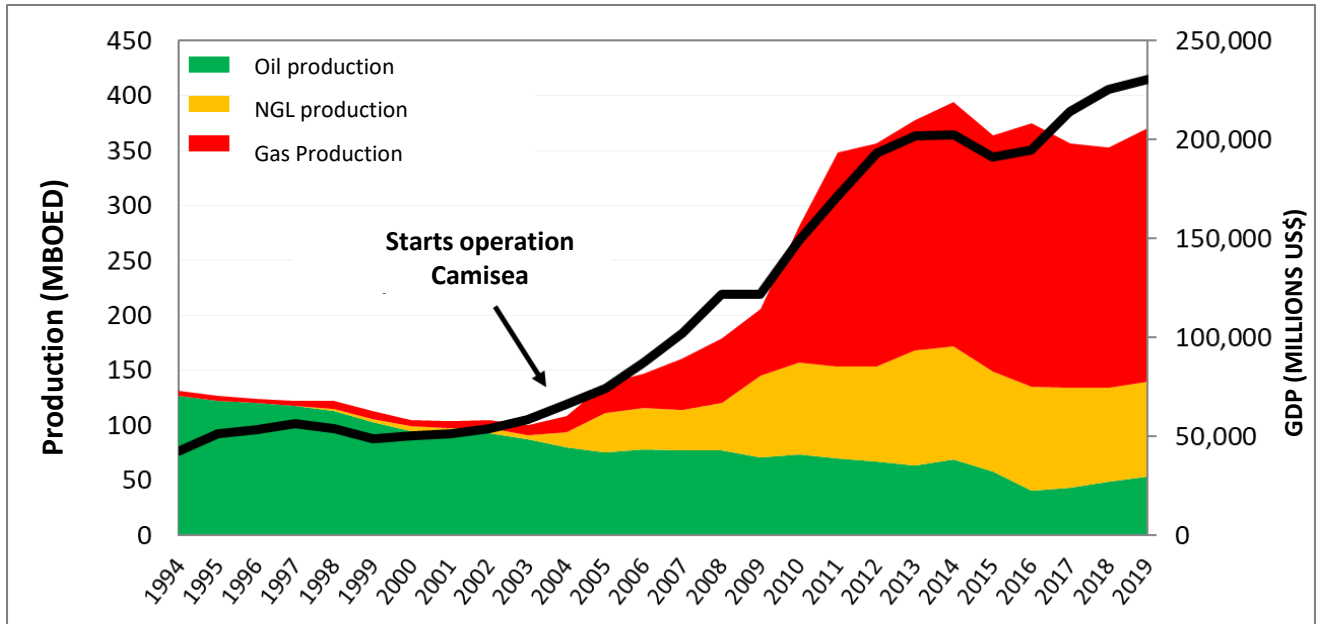
Direct contributor to the improvement of **NATIONAL COMPETITIVENESS**



Invigorating and Decentralizing **INVESTMENT**



# Gas and oil in Peru's development

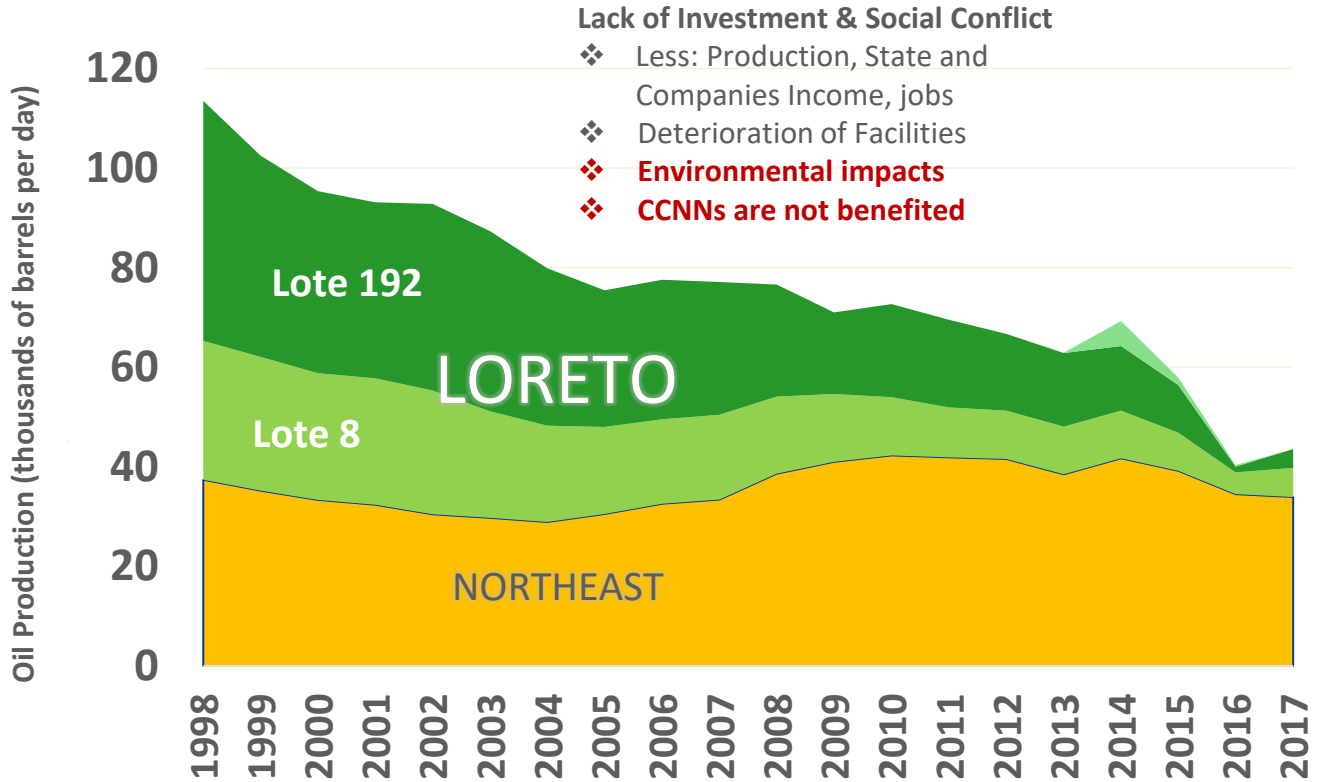


**The entry of Camisea generated energy availability at competitive prices and has been the engine of development for the last 15 years**



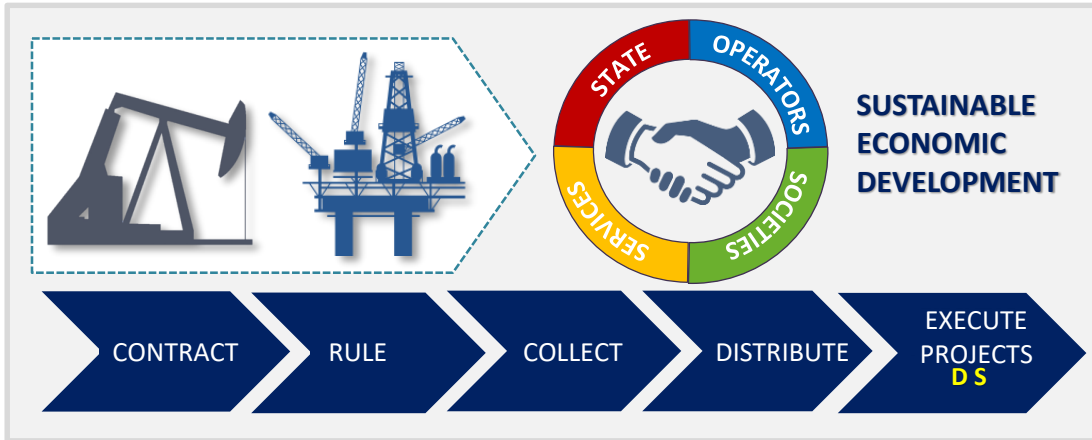
# Oil Production History

20 years





# Value chain Sustainable development



Transparent and Efficient Management of the Oil & Gas Industry

Modern, Clear and Complete  
Regulatory Framework

Institutions with Capabilities



**“To manage efficiently hydrocarbon resources in an environmental and socially responsible way, providing energy security to Peru.”**

**2023 : 100 mil BOPD -- 1,500 MMSCFD**

## STRATEGIC AXES

**RESERVES**  
Maximize Recovery

**CONTINGENT RESOURCES**  
Solve Contingencies

**PROSPECTIVE RESOURCES**  
Reserves Replacement

## CRITICAL ATTRIBUTES

Prospectivity

Predictability

Celerity

Multi-institutional  
multi-sector  
coordination

Quality, timely  
and complete  
information

Tailored  
support

## CRITICAL PROCESSES

Individualized, transparent  
and with good socio-  
environmental  
management of  
information and  
communication

Prepare Conditions  
**SOCIALIZATION**

Promotion

Contracting

Supervision

## CRITICAL RESOURCES

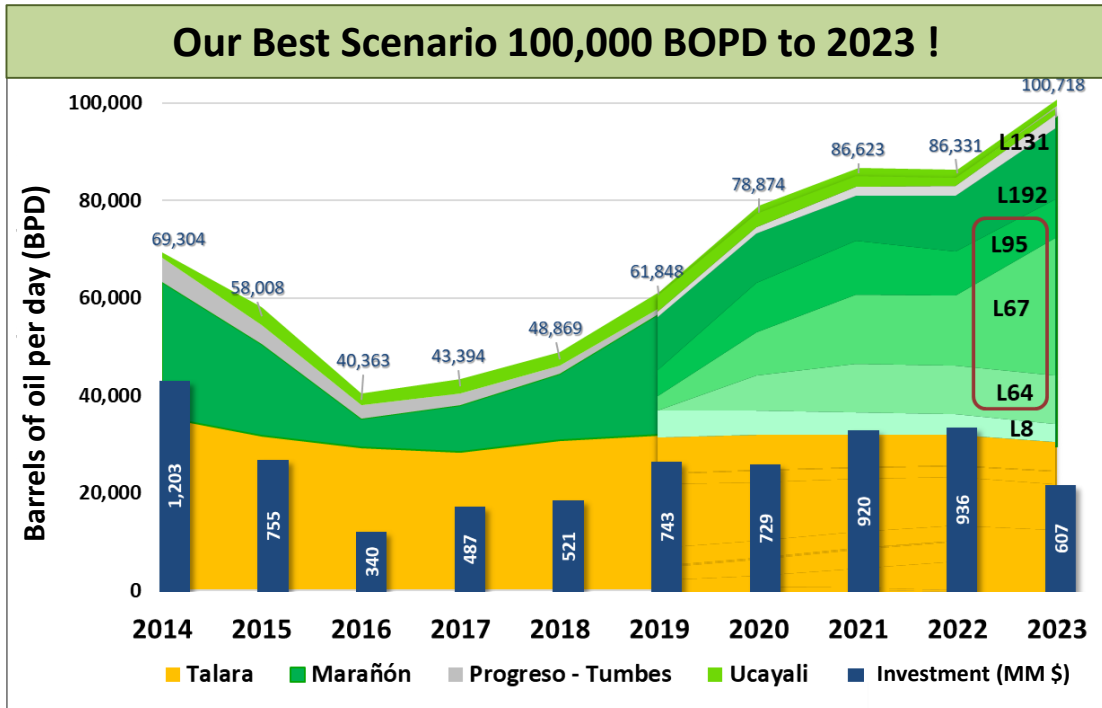
**HUMAN TALENT**

**TECHNOLOGY**

**DATA AND  
INFORMATION**

**BUDGET**



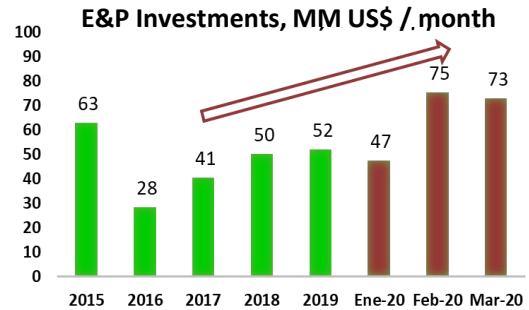
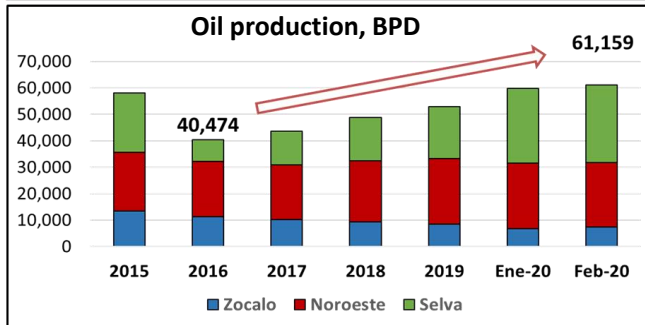




**100,000 BOPD**

LOH, aligning sectors, intense promotion, approvals

**Qualification of companies, royalty framework, contracts to be terminated**



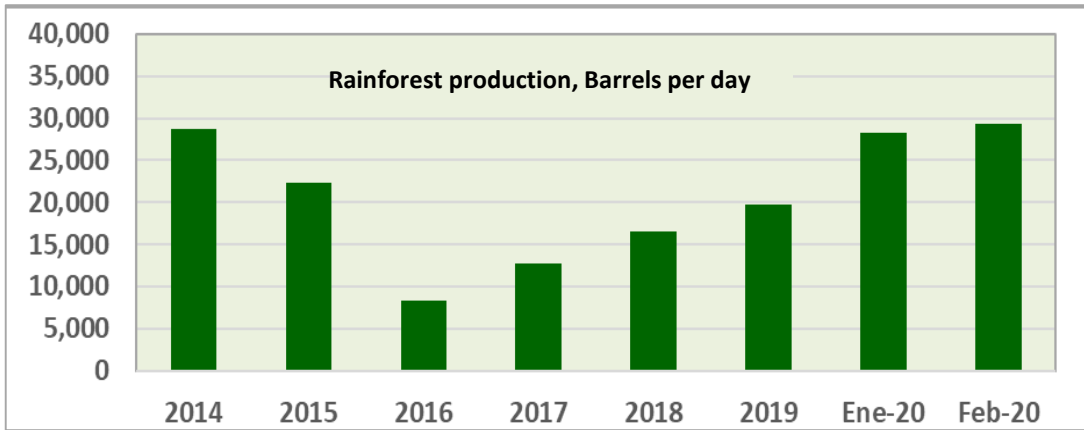
**Block Z38, 108: Exploratory wells in border areas  
TULLOW, OCCIDENTAL, BP.**



# Oil in the Amazonian Region - PRE COVID



Petro Tal es la titular del contrato de licencia del Lote 95 en la región Loreto, el cual produciendo poco más de 11,000 barriles diarios antes de la pandemia. (Foto: Petro Tal)





# Economy Impact in Loreto Region

## Loreto recorded a 6.2% GDP growth

Region | enero 2, 2020 | ACTUALIDAD, NOTICIAS

- Conforme a información del INEI.
- El avance del sector Minería e Hidrocarburos estuvo asociado a la mayor explotación de petróleo crudo.

De acuerdo a información proporcionada por el Instituto Nacional de Estadística e Informática (INEI), la Región Loreto con 6,2% registró un crecimiento superior al Producto Bruto Interno del tercer trimestre de 2019.



BANCO CENTRAL DE RESERVA DEL PERÚ

4

## The raw oil production fiscalized in February was 3.1 times more than the registered in the same month of previous year

Mining

**LORETO: Sub-sector Hidrocarburos <sup>1/</sup>**  
(Var. % real respecto al mismo periodo del año anterior)

Hidrocarburos	Estructura		Febrero				Enero-Febrero			
	Porcentual									
	2018 <sup>2/</sup>	2019	2020	Var. %	Contribución <sup>3/</sup>	2019	2020	Var. %	Contribución <sup>3/</sup>	
Petróleo crudo	100.0	254	777	205.9	205.9	353	1.569	344.5	344.5	
<b>SECTOR MINERÍA 2/</b>	<b>100.0</b>			<b>205.9</b>	<b>205.9</b>			<b>344.5</b>	<b>344.5</b>	

<sup>1/</sup> Cifras preliminares.

<sup>2/</sup> Estimado a precios de 2007.

<sup>3/</sup> En base a la estructura porcentual de similar periodo de 2019.

Fuente: Perúpetro S.A.

Elaboración: BCRP, Sucursal Iquitos. Departamento de Estudios Económicos.

- Por su base de comparación muy baja, explicada en ese entonces por los derrames de petróleo en el oleoducto norperuano y la paralización de labores productivas en algunos lotes como el 192. A fines de febrero de 2020, ese mismo lote enfrentó conflictos sociales, explícitamente, a partir del día 27 paralizó sus labores productivas por corte de energía por parte de una comunidad que le presta servicio; el resto de lotes estuvo en un estado normal.



# International Promotion - NAPE 2020

- ❑ Date: February 03-07, 2020. Houston, Texas.
- ❑ PERUPETRO participated in NAPE 2020, one of the most important oil events worldwide, to present the areas available for investment in hydrocarbon E&P.
- ❑ PERUPETRO again present.
- ❑ Exhibition and Presentation at Int. Theater
- ❑ Promotion of Available Areas - Interest in Offshore
- ❑ Contact with exploration / reservoir geologists
- ❑ Geo-portal diffusion





# APPEX LONDON 2020

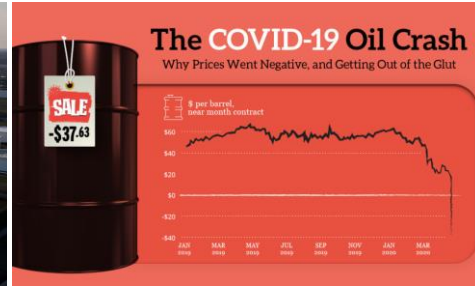
- Date: March 03 - 05, 2020. London, United Kingdom
- PERUPETRO presented the investment opportunities that Peru offers for the exploration and exploitation of hydrocarbons as well as the hydrocarbon potential of its semi-explored basins.
- Available Areas - Geoportal.
- Meetings with interested companies.



# COVID 19 IMPACTS



# But COVID 19 arrived.... Isolation, Uncertainty, Suffering



## Informality



## Health



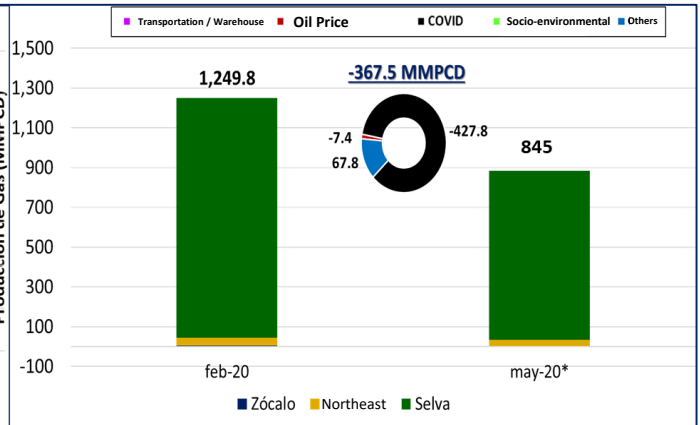
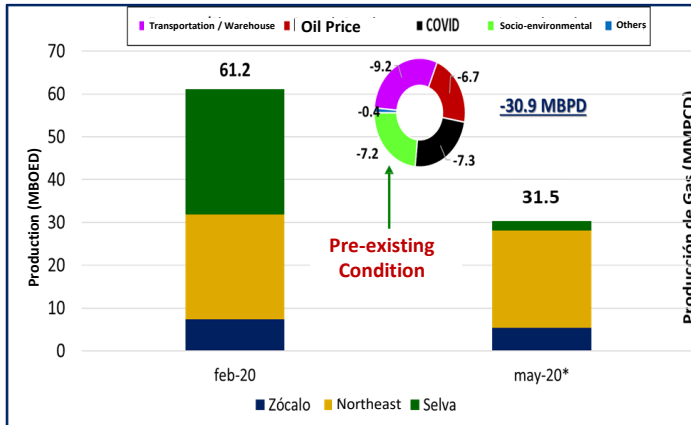
## Education





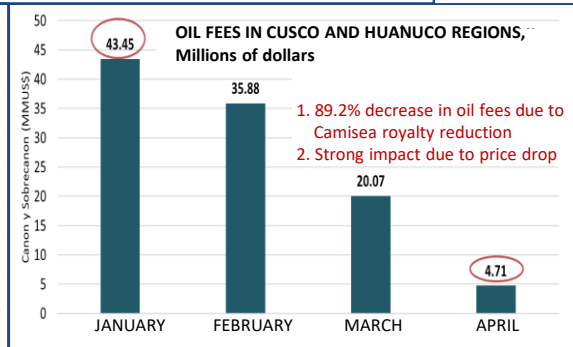
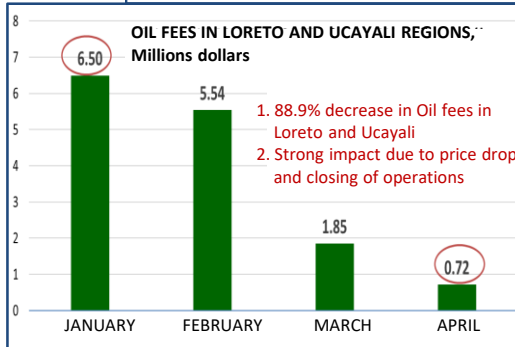
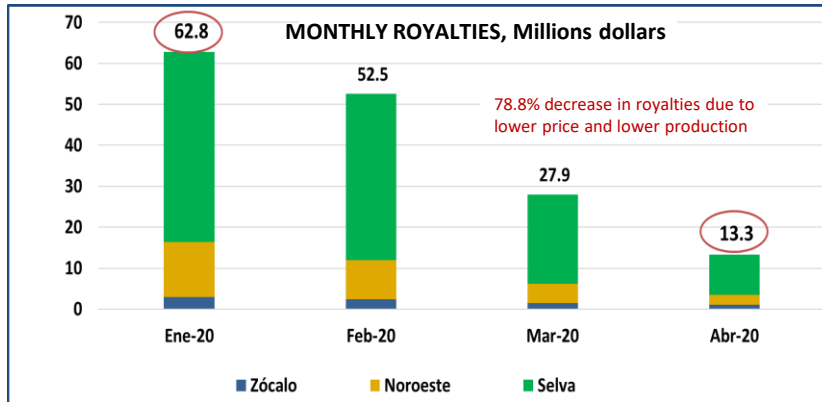


# COVID 19 - Impact on Production





# Impact on Royalties and Canon

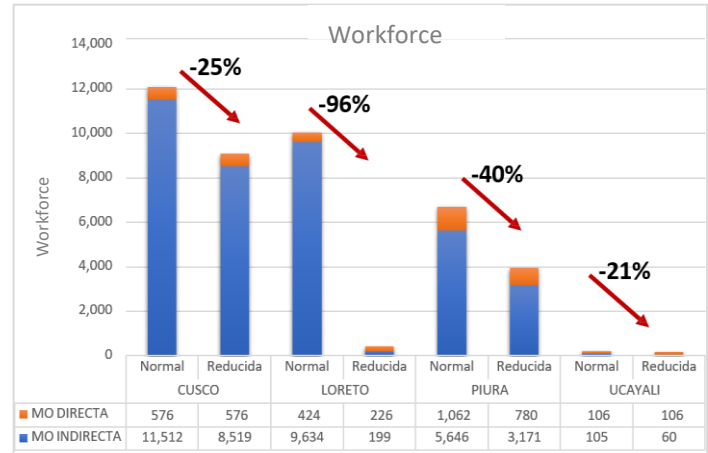




# Impact on companies and jobs

## OPERATORS AND SUBCONTRACTORS

- Running at a loss
- Loss of Liquidity
- Payment chain in trouble
- 10,000 Layoffs
- Increased Costs for preventive measures



**Oil and Gas Production Capacity is being lost  
IT IS REQUIRED TO COMPLETELY RECONFIGURE THE SECTOR**



# Participation in international webinars

- La Jolla Energy Virtual Conference
- Global E&P Summit





# Participation in national webinars

CONFERENCIA ONLINE

## PETRÓLEO & GAS: DESPÚES DEL COVID 19 UNA OPORTUNIDAD PARA RECONFIGURAR EL SECTOR

PERÚ ENERGÍA

MARTES, 23 DE JUNIO  
19:00 - 20:30

“Preparando a la industria de petróleo y gas de América Latina y el Caribe para la «nueva normalidad»”

ARPEL 2020

Seferino Yesquen Leon  
PRESIDENTE

Perú petro

15 JULIO 2020



**Seferino Yesquén**

Presidente  
Perupetro

EXPOSITOR



**Gonzalo Tamayo**

Representante  
de la  
Academia



**Francisco Pezo**

Gobernador  
Regional  
Ucayali



**Juan Carlos del Águila**

Ex Congresista  
Fuerza Popular



**Luis Alburquerque**

Gerente de  
Responsabilidad  
Social

Aguytia Energy (Kallpa)



**Alejandra Acosta**

Periodista

MODERADORA

## Impactos Mundiales del COVID 19

Inmediato en la Salud

Fuerte en la Economía

Fuerte en la Energía

Disminución de emisiones del CO2



# Challenges and Proposals Facing the New Normal



## REDUCE THE UNCERTAINTY GENERATED BY COVID 19

- **Guarantee that the Productive Capacity of oil and gas is not destroyed.**
- **Guarantee profitability and efficiency of companies.**
- **Ensure that industry income generates sustainable development.**
- **Reopen jungle production**
- **Define the role of PETROPERU in the solution.**

## COMPETITIVENESS AND GAPS CLOSURE



**Oil & Gas needed to reactivate the economy.**

**GDP 2%, 98% doesn't work without fuel, without gas.**

1. Stop being an oil importer, increase the use of gas. **Macroeconomic objective of the state**
2. Relief measures for companies
3. Structural measures for:
  - Guarantee the continuity of productive capacity.
  - Guarantee that the funds generated by the industry produce substantial improvements in the CCNN, Society.

**STATE**

**COMPANIES - CCNN - ASSOCIATIONS - ACADEMY**





# Prepare the Industry - Post Pandemic

## State Intervention - Relief Measures

1. Deferred payment of royalties for 90 days.
2. Change of the Royalty Bylaws.
3. Postponement of Investments, Exploration & Exploitation commitments.
4. Change of the Companies Qualification Bylaws.
5. Contracts next to expire.

**Structural measures to configure the sector in an integrated way**

**UPSTREAM & DOWNSTREAM  
PERUPETRO - VMH - PETROPERU**



## Modern Public Policy

### **COMPETITIVENESS AND GAPS CLOSURE**

- Reform of the Organic Law of Hydrocarbons.
- Law declaring the oil industry of national interest
- Oil fees homologation law and new distribution in regions. Oil Fees Accountability.
- Law declaring the ONP as an strategic asset of the State
- Execution of the Gap Closure Plan
- Execution of Remediation.



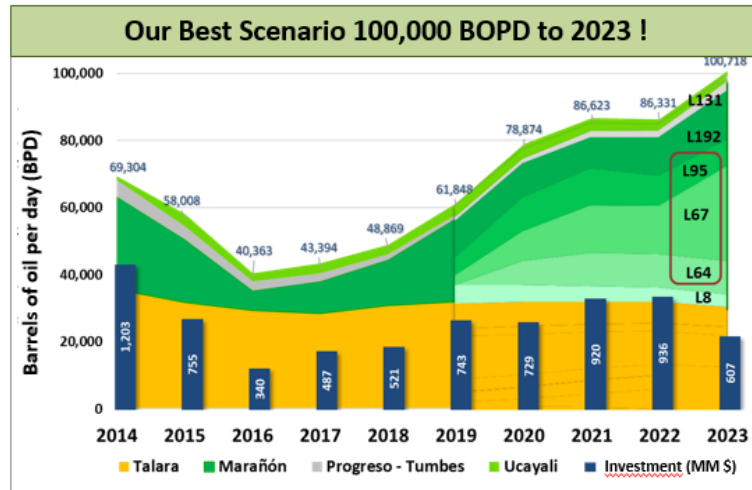
### The best scenario to build:

PERU a developing country at 2050, investment hub.

Civil society building transversal consensus based on greater respect and trust.

Stop being an oil importer.

Oil revenues support sustainable development





[www.perupetro.com.pe](http://www.perupetro.com.pe)



# ACTION PLAN FOR CONTRACTING AREAS CLOSE TO EXPIRE



**EL PERÚ PRIMERO**

June, 2020



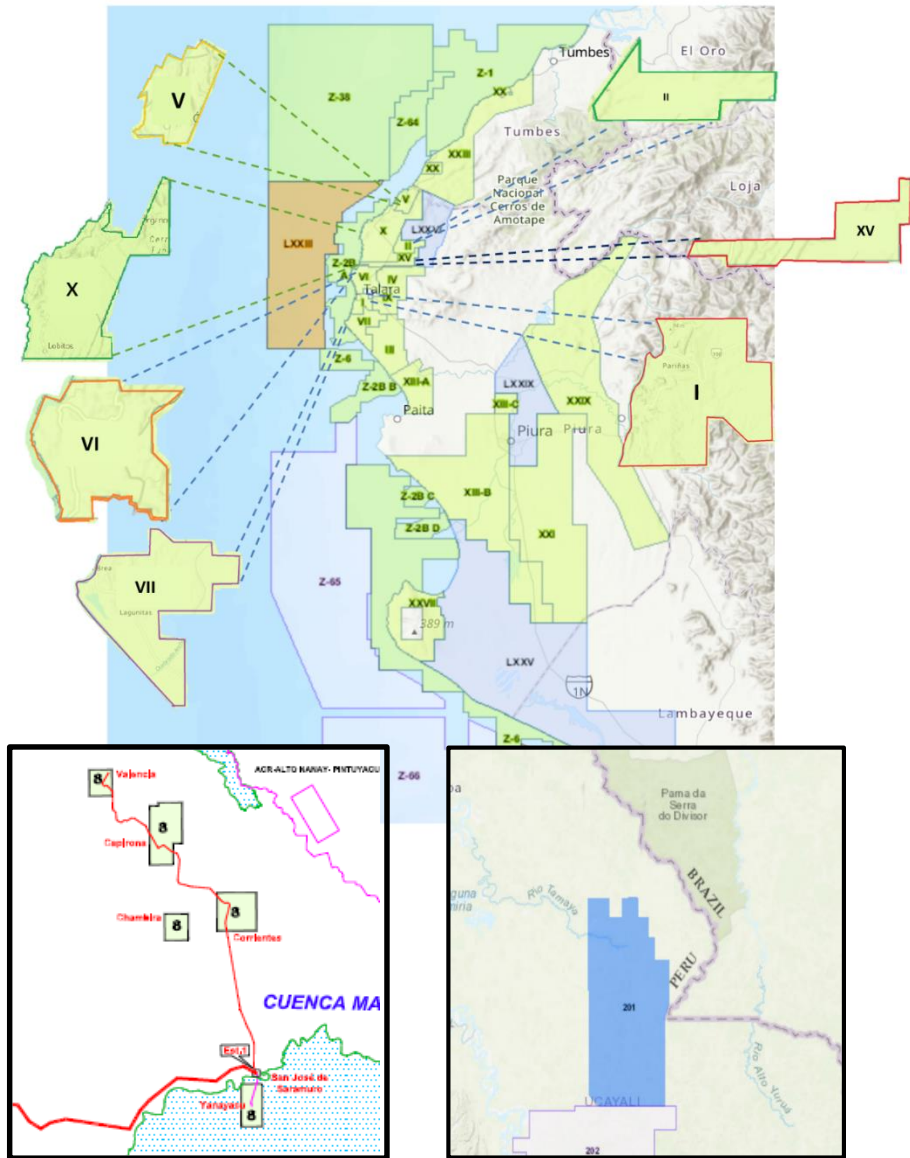
# BACKGROUND

- At the end of 1994, PERUPETRO managed 21 contracts (10 for exploitation and 11 for exploration), 56 wells were drilled (52 development wells and 4 exploratory wells). 12,665 wells nationwide (3,609 active wells and average production of 127.4 MBPD) (35.3 Bls / well).
- At the end of 2019, PERUPETRO has been managing 39 contracts (13 for exploitation and 26 for exploration), 193 wells were drilled (187 development wells and 6 exploratory and confirmatory wells). total wells 15,712 wells nationwide (6184 active wells and average production: 52.98 MBPD) (8.5Bls / well).





# Upcoming Blocks to Expire (Northwest-Selva)



- Seven (7) Contracts will expire within **2021 and 2028**.
- PERUPETRO S.A. is preparing a bidding process to award thirty (30) years period License Contracts, in an **Ordinary Selection Process** (Process with greater transparency).
- The proposed areas will be tendered in two (02) packages, considering as priority order the expiration date of the Contracts

N°	COMPANY	BLOCK	DATE FINISHED	Time (1) Remaining (years)	AREA (ha)
1.	GMP	I	24.12.2021	1.60	6,943.250
2.	GMP	V	05.10.2023	3.41	9,026.032
3.	SAPET	VI_VII	21.10.2023	3.45	32,434.113
4.	SAVIA	Z-2B	15.11.2023	3.52	130,315.659
5.	CNPC	X	19.05.2024	4.04	46,952.342
6.	PETROMONT	II	04.01.2026	5.69	7,691.420
7.	OLYMPIC	XIII	A: 03.11.2026	6.53	32,573.720
		XIII	B y C: 03.11.2036	16.48	230,784.125
8.	PETROMONT	XV	25.05.2028	8.03	9,498.904
9.	BPZ	Z-1	28.01.2032	11.71	224,375.850
10.	SAVIA	Z-6	19.03.2032	11.85	528,116.614
11.	PETROMONT	XX	18.01.2036	15.69	6,124.207
12.	GMP	III	04.04.2045	24.9	35,799.305
13.	GMP	IV	04.04.2045	24.9	29,521.990
14.	UNIPETRO	IX	16.06.2045	25.1	2,754.133

@ 27.05.20

**Block 8 (19.05.24)**

**Block 201**



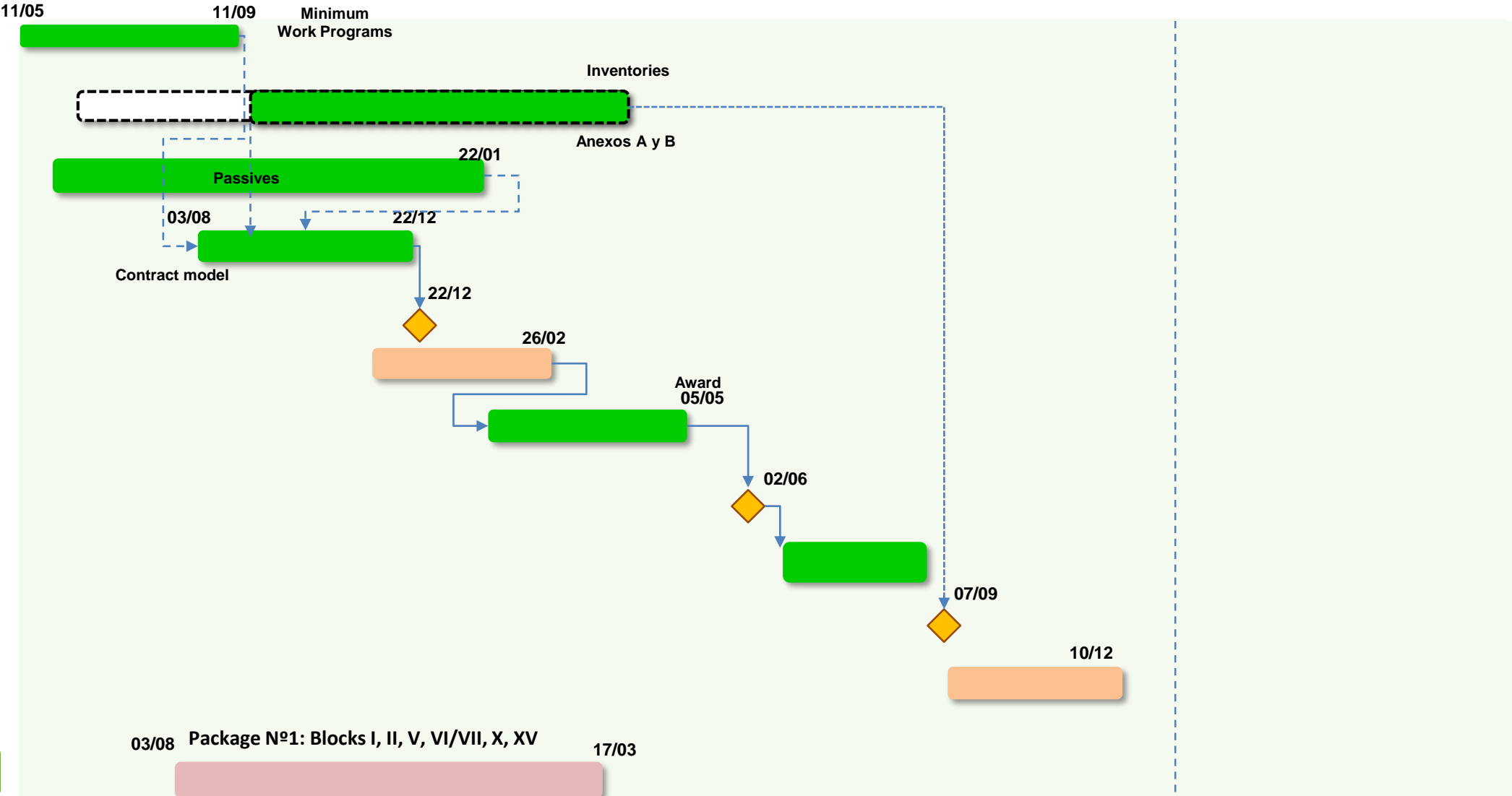
# Contracting Action Plan Schedule

(Blocks close to expire)



PACKAGE N° 1

- Visualization Project
- Verification of Equipment, Facilities, Delimitation of Areas
- Social and Environmental Aspects
- Formulation of the Biding Conditions
- Approval of the Bidding Conditions
- Citizen participation
- Announcement
- Board approval
- MINEM/MEF
- DS Publication and Contract Signature
- Citizen Participation- Stage 3
- Advertising







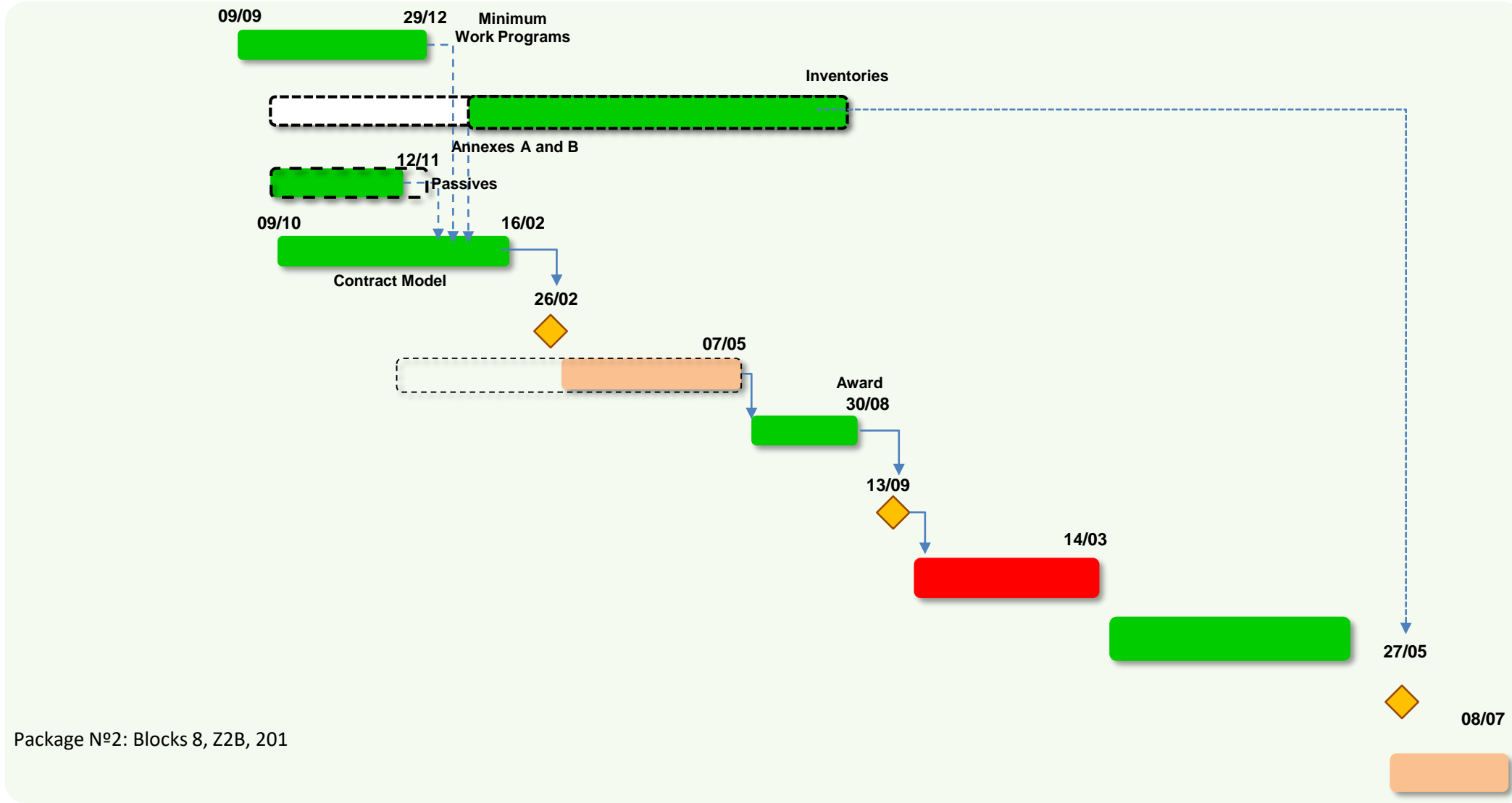
# Contracting Action Plan Schedule

(Blocks close to expire)



PACKAGE N° 2

- Visualization Project
- Verification of Equipment, Facilities, Delimitation of Areas
- Social and Environmental Aspects
- Formulation of the Bidding Conditions
- Approval of the Bidding Conditions
- Citizen Participation- Stage 1
- Announcement
- Board approval
- Prior Consultation
- MINEM/MEF
- DS Publication and Contract Signature
- Citizen Participation- Stage 3



BLOCK I  
Technical Sheet

**RESERVES EVALUATION GROUP**



*Lima, March 2019*



# GENERAL INFORMATION – BLOCK I

## General Information

Location	Prov. Talara Dpto. Piura
Fields	18
Start Exploitation	24-april-1992
Max. Production(Mbopd)	21.144 (August - 1936 )
Area (ha)	6,943.250
Drilled Wells	775
Producing Wells	218

## Development Costs

Development W.	1.23 MMUS\$ (150.2 US\$/ft)
Exploratory	2.41 MMUS\$ (247.4 US\$/ft)
Opex	15.61 \$/bl
Royalty	- \$/bl
Transp. tariff	0.01 \$/bl

## Reservoir Characteristics

Formation	Pariñas, Ancha, Basal Salina, Mogollón and Mesa
Push type	Gas in Solution

## N ° of Workers to 31.12.2018

62

## Contractual Situation

Current Operator	GMP S.A.
Type of Contract	Oil services
Subscription date	27.12.1991
Termination date	24.12.2021

## Production

Oil (Mbpd)	0.642
Current – April 2019 Gas (MMpcd)	5.545
Accumulated Oil (MMbbls)	112.62
30.04.2019 Gas (MMMpc)	167.05
Recovery Factor Oil (%)	13.70

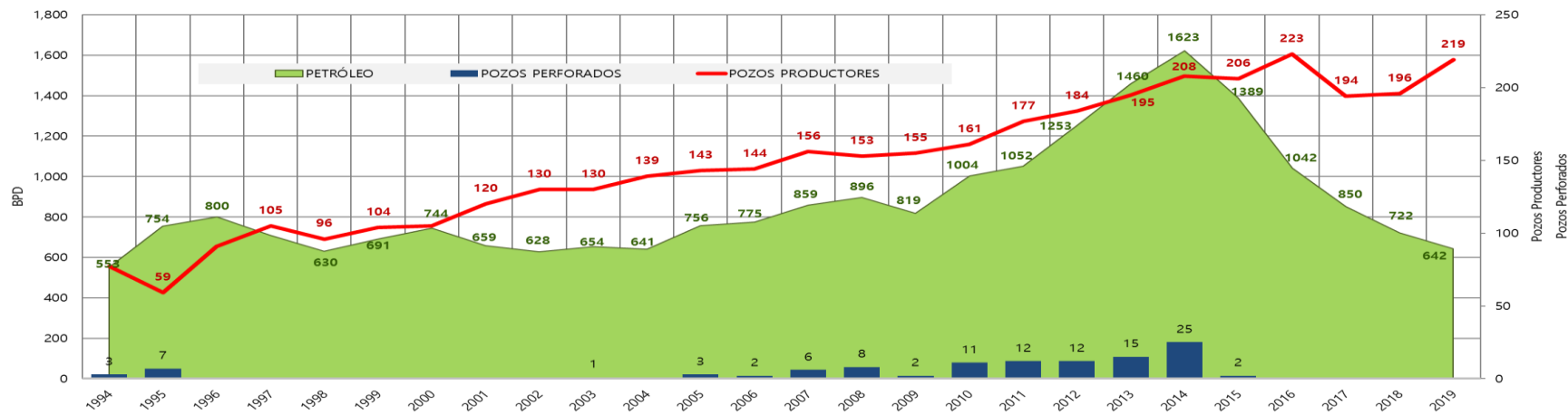
## Fluids

Type	Oil
Dens. (°API)	35.79°
GOR (scf/stb)	880
Boi (bl/stb)	1.25
Salt (PTB)	8.34

## Rock

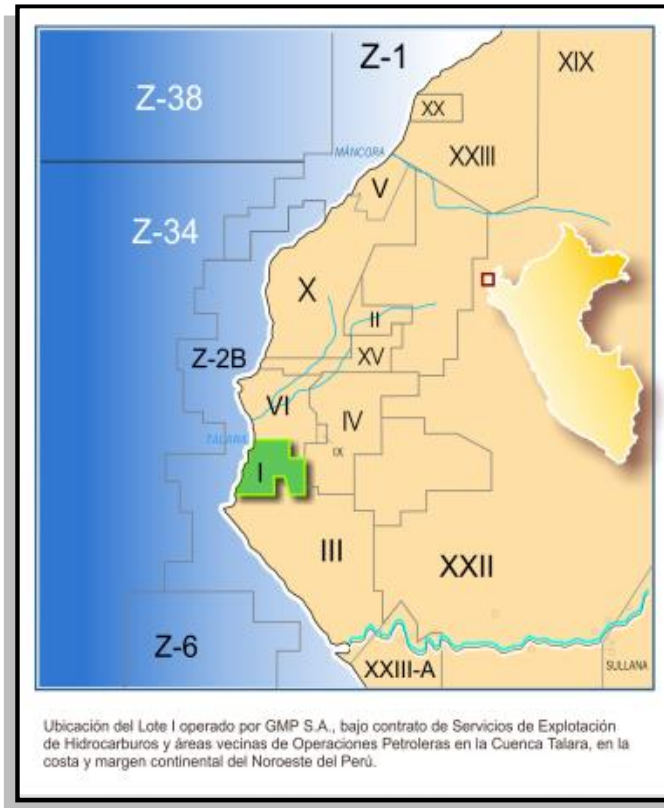
Type	Sandstones
Net thickness(ft)	305
Porosity (%)	7– 19

Producción Promedio Fiscalizada de Petróleo (BPD) - Lote I

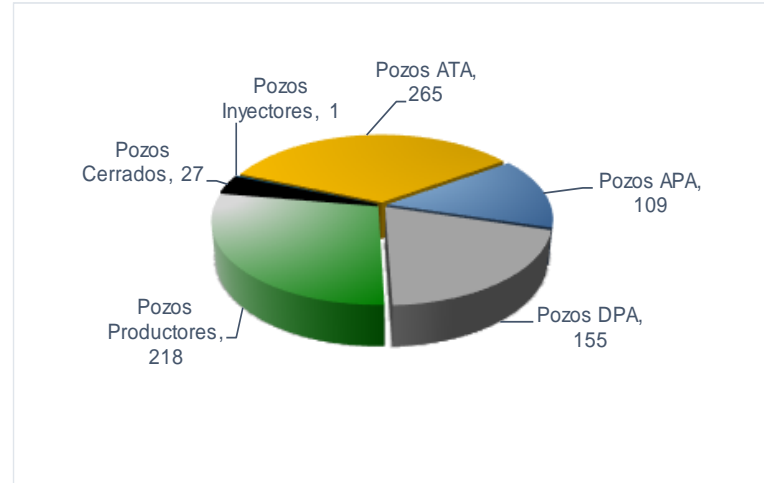




# WELLS AND FACILITIES INVENTORY - BLOCK I



## Well inventory:



## Facilities:



Close to Talara refinery



Normal navigability



Interconnected pipelines



Direct access to roads



Nearby Electrical Network



Direct access to airport



Nearby communities: Talara



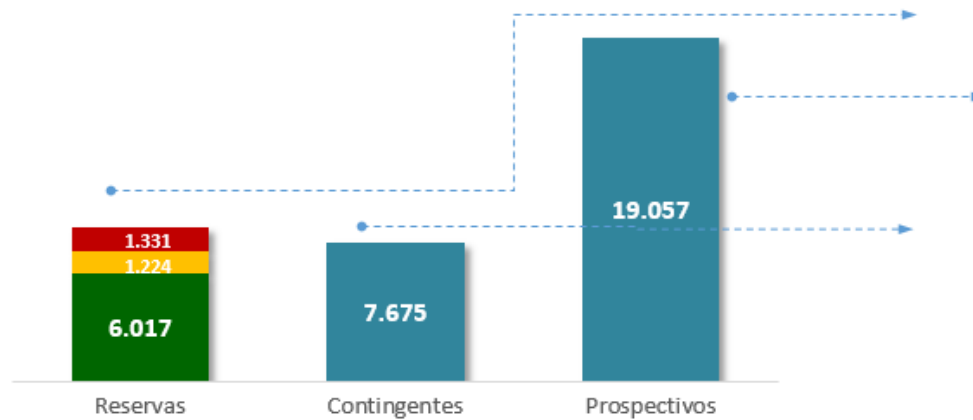
Neighboring blocks: VI, IV, III and X



# BLOCKS I RESERVES AND RESERVES MANAGEMENT INDICATORS

## Reserves (MMSTB):

■ Probadas ■ Probables ■ Posibles ■ Contingentes 2C ■ Prospectivos 2U



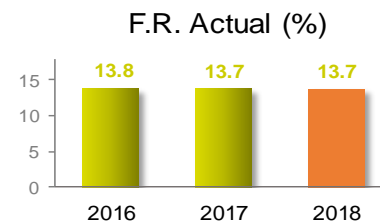
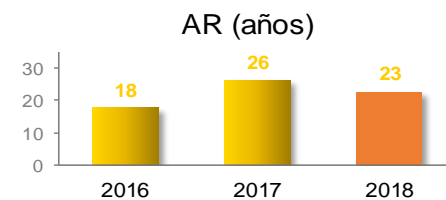
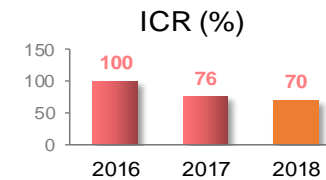
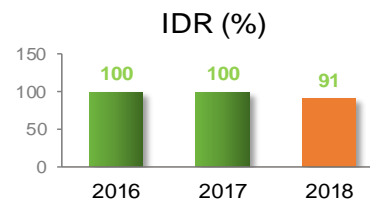
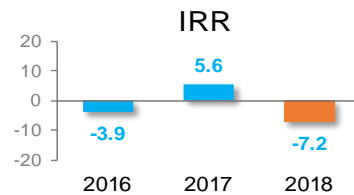
- Rehabilitation, reconditioning projects.

Mesa prospects, in the southern area of the Block, close to Block VI.

It has 30 well locations for contingent resources to be developed

## Reserve Management Indicators

Notice: Excepting 2018, the values of the Reserves for years 2016 and 2017 correspond to the Contractor's annual resource book.



BLOCK VII / VI  
Technical Sheet

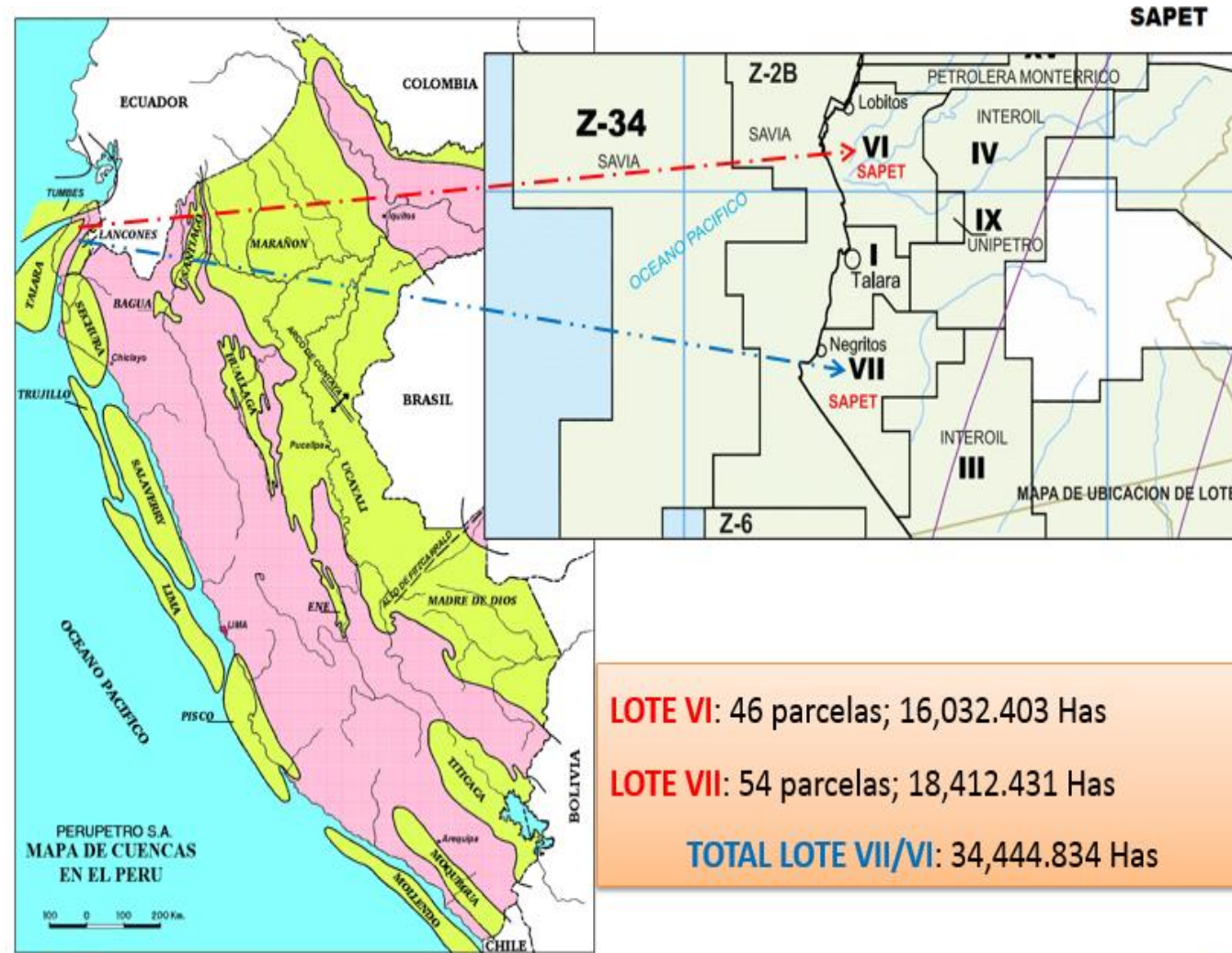
**RESERVES EVALUATION GROUP**



*Lima, March 2019*



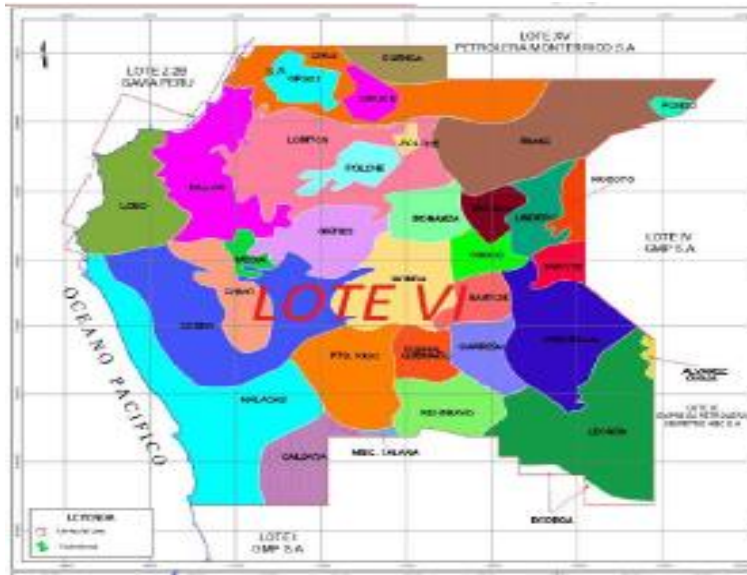
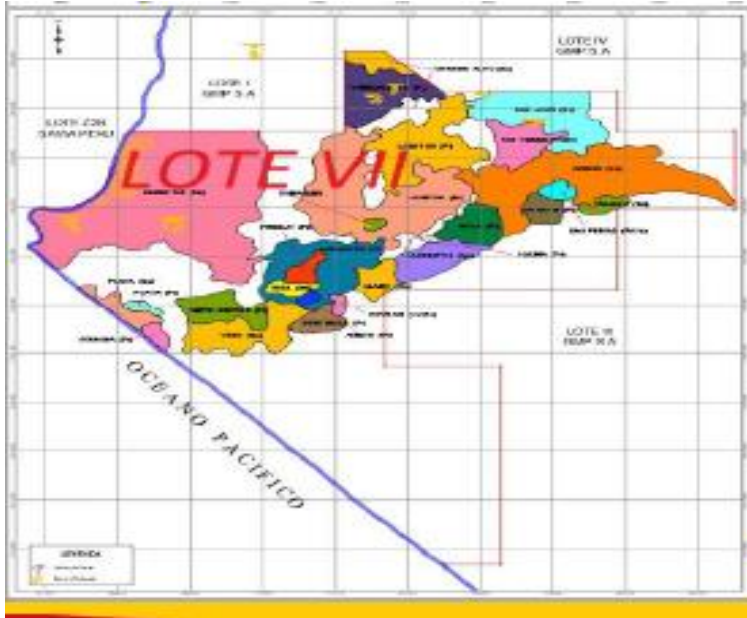
# Location Map – Block VII / VI



**PERU: 156 YEARS OF  
PRODUCTIVE HISTORY**



# Location – Block VII / VI

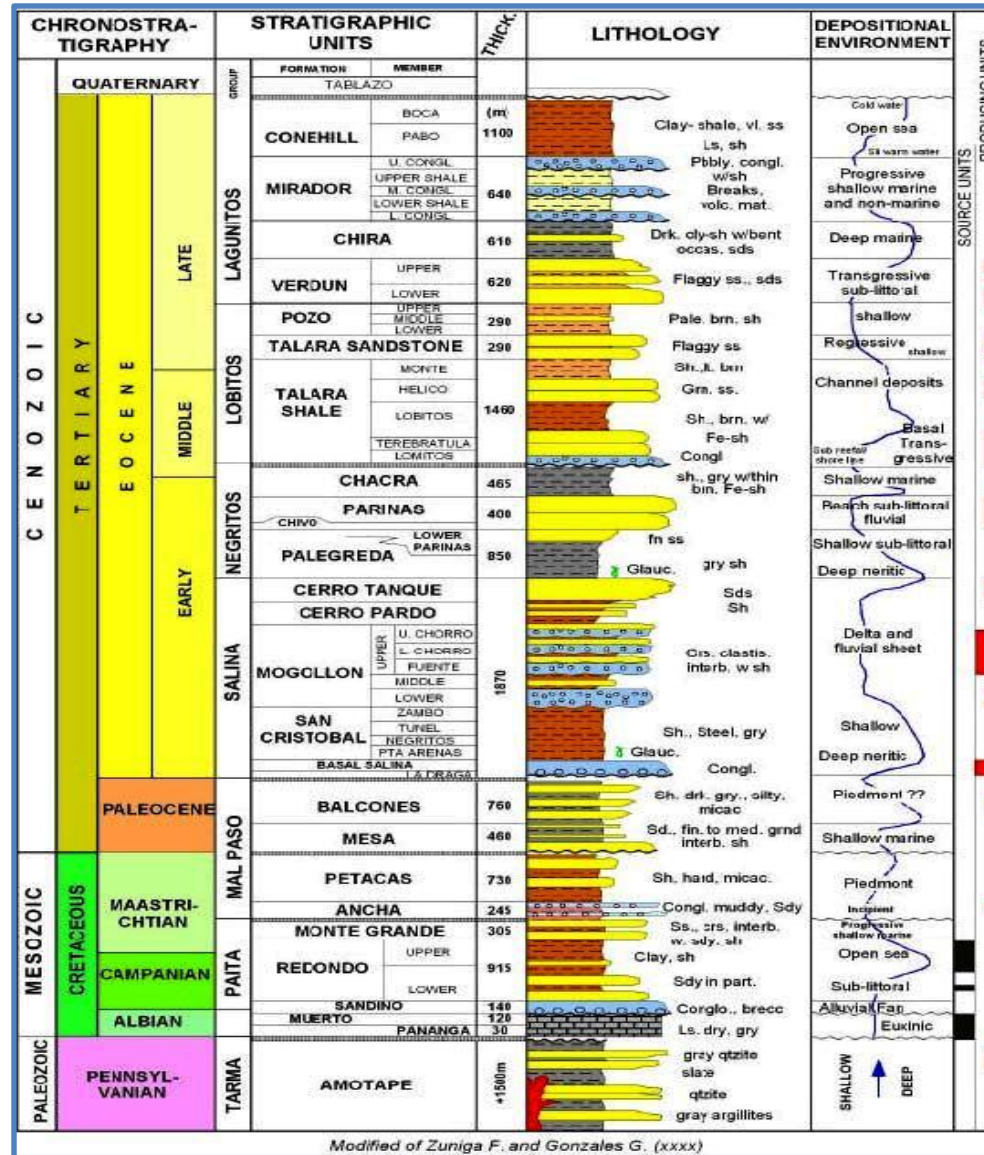


<b>CONTRACTOR</b>	<b>SAPET DEVELOPMENT PERU INC</b>
<b>BLOCK</b>	<b>VII/ VI</b>
<b>LOCATION</b>	<b>TALARA, PIURA-PERU</b>
<b>AREA</b>	<b>32,434.113 ha</b>
-Block VI	14,021.682 ha
-Block VII	18,412.431 ha
<b>PARTICIPATION</b>	<b>100%</b>
<b>COUNTRY OF ORIGIN</b>	<b>CHINA</b>
<b>TYPE OF CONTRACT</b>	<b>LICENSE</b>
<b>SUBSCRIPTION DATE</b>	<b>22-Oct-93</b>
<b>3rd MODIFICATION DATE</b>	<b>24/07/2015</b>
<b>CONTRACT TERMINATION DATE</b>	<b>21/10/2023</b>





# Talara Basin - Stratigraphic Column - Block VII / VI

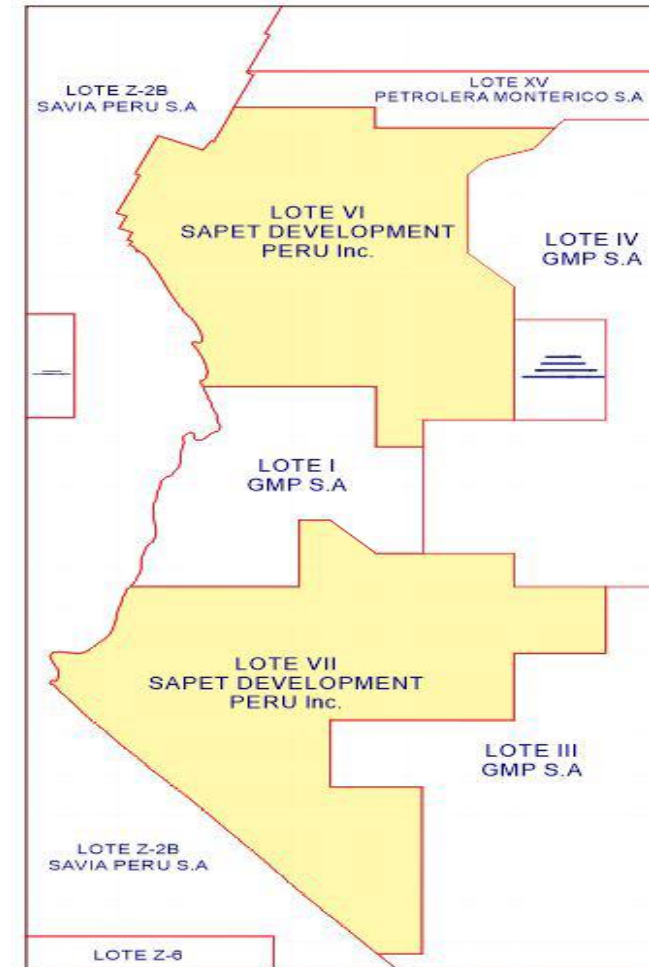


Stratigraphic Column - Talara Basin



# General Information - Block VII / VI

GENERAL INFORMATION	
Operator	SAPET DEVELOPMENT PERU INC. SUCURSAL DEL PERÚ
Type of contract	License
Location	12 km north of the city of Talara
Fields	55
Area (ha)	34,444.834 ha
Drilled Wells	3,427
Main Reservoirs	Talara, Terebratula, Hélico, Pariñas, Mogollon, Basal Salina, Arenas La Draga.
% API Gas Condensate	36 °API
Producing Wells	1,173
Acquired seismic	PPGSI7476L31L35 – 520.44 KM – PETROPERU
Accumulated Oil Production	385.7 MMSTB
Accumulated Gas Production	379.33 10 <sup>9</sup> SCF
OOIP	1,757 MMSTB
% Current Water	63.7 %
Current Recovery Factor	9.4 %
Monthly decline (%)	0.8%



BLOCK II  
Technical Sheet

**RESERVES EVALUATION GROUP**



*Lima, March 2019*



# Block II

## General Information

Location	Prov. Talara Region Piura
Fields	3
Discovery	1953 / Helico y Ostrea
Start Exploitation	-
Max. Production (bopd)	-
Area (ha)	7707
Drilled Wells	271
Producing Wells	218
Acquired seismic	-
Average depth (ft)	-
Monthly decline (%)	5
OOIP (MMBBL)	-

## Contract Status

Current Operator	Petrolera Monterrico S.A.
Type of contract	License
Effective Date	05.01.1996
Termination Date(*)	04.01.2026

## Mogollón R. Rock

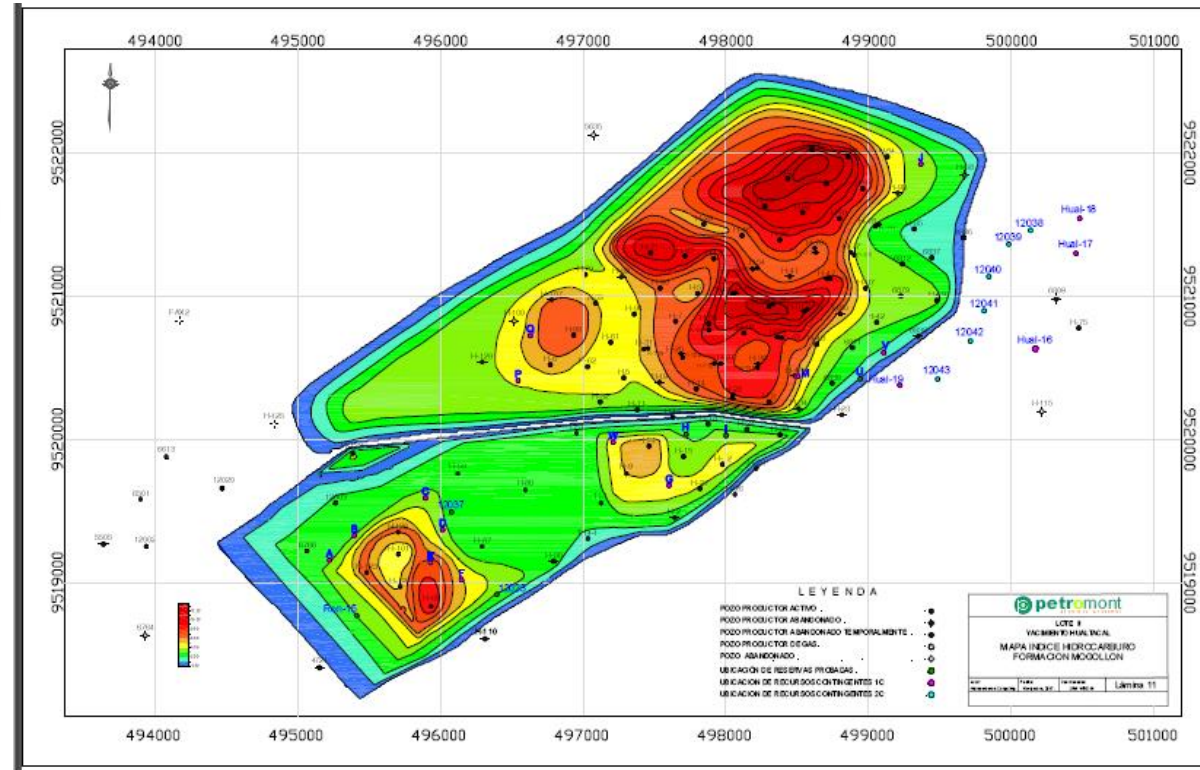
Type	Sandstones, conglomerates
Net Thickness (ft)	250
Porosity (%)	0.05
Permeability	0.10mD

## Reservoir Characteristics

Formation	Mogollón, Ostrea, Helico, Talara, Verdun.
Push type	Gas in Solution and Gravitational Segregation
Initial pressure (psi)	-
Current pressure (psi)	-

## Production

Oil (Bpd)	219
Current - December 2018	Gas (Mpcd) 1,711
	Water (bpd) -
Accumulated 31.12.18	Oil (Mbls) 27,206
	Gas (MMpc) 42,402
Recovery Factor	Oil (%) 6.5
	Gas (%) -



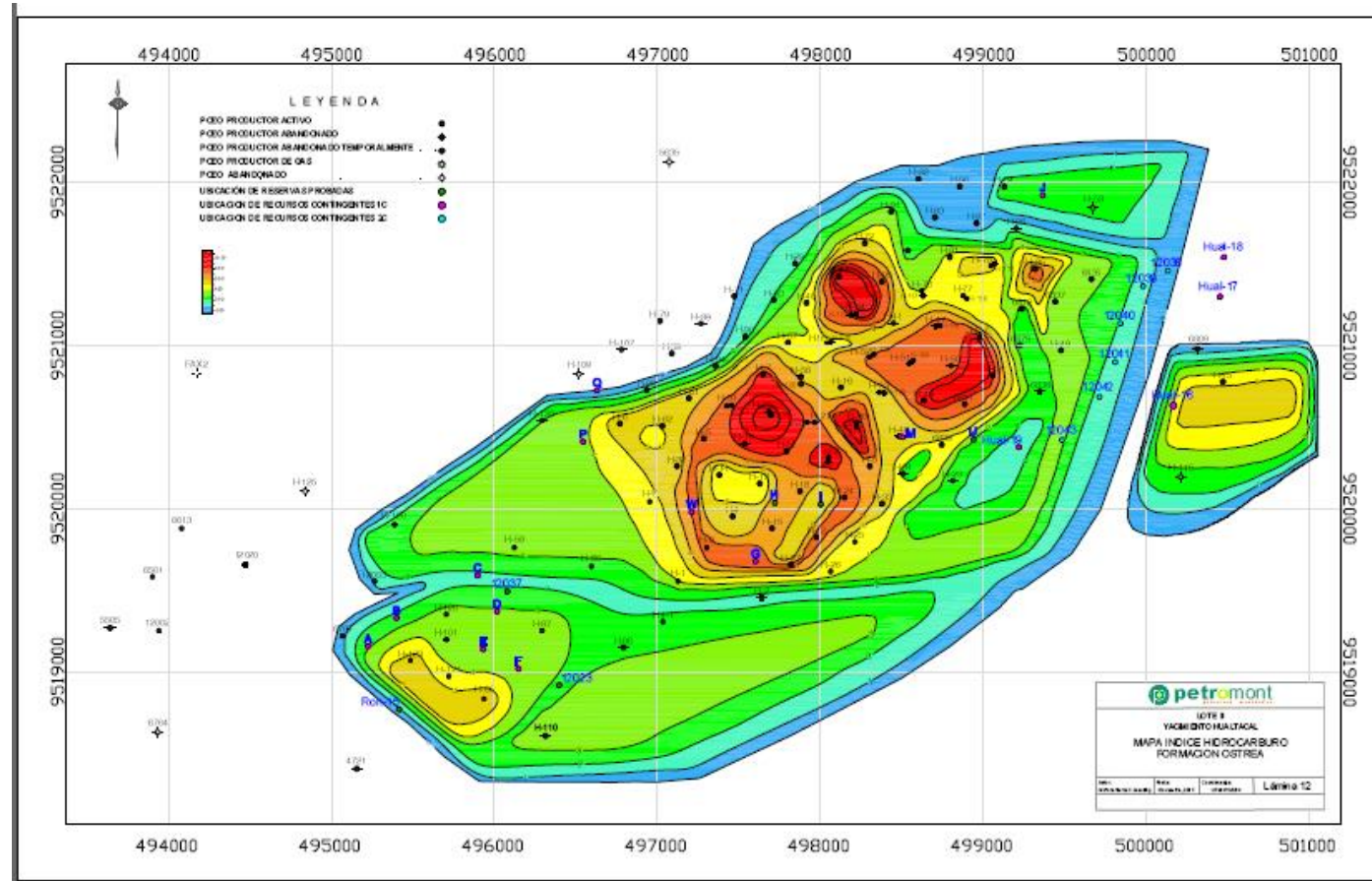


## Rock R. Ostrea

Type	Sandstones
Net Thickness (ft)	100
Porosity (%)	0.12
Permeability	3mD

## Fluids

Type	Oil
Dens. (°API)	36°
Visc. (Cp)	-
GOR (scf/stb)	2610
WOR (stb/stb)	-
Boi (bl/stb)	1.28
Salinity (ppm)	-



## Verdun R. Rock

Type	Conglomerates
Net Thickness (ft)	80
Porosity (%)	0.14
Permeability	3mD

## Development costs

Development wells	-
Exploratory Well	-
Opex	23 \$/bl

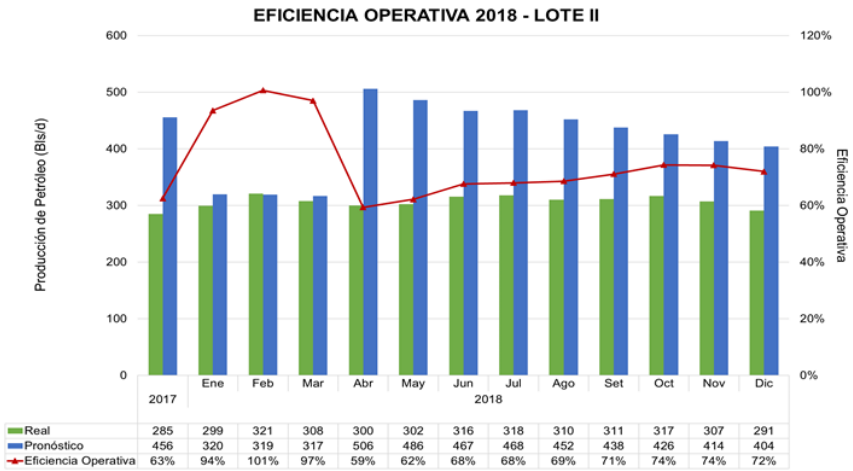
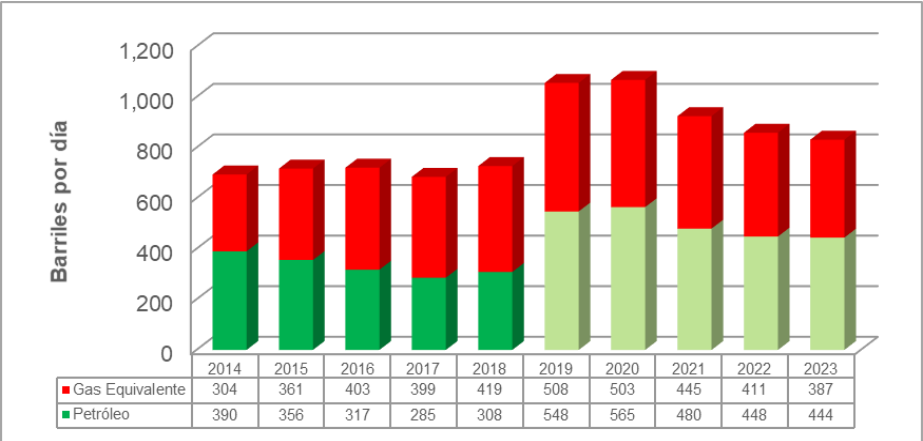
## Helico R. Rock

Type	Sandstones, conglomerates
Net Thickness (ft)	175
Porosity (%)	0.10
Permeability	0.4mD



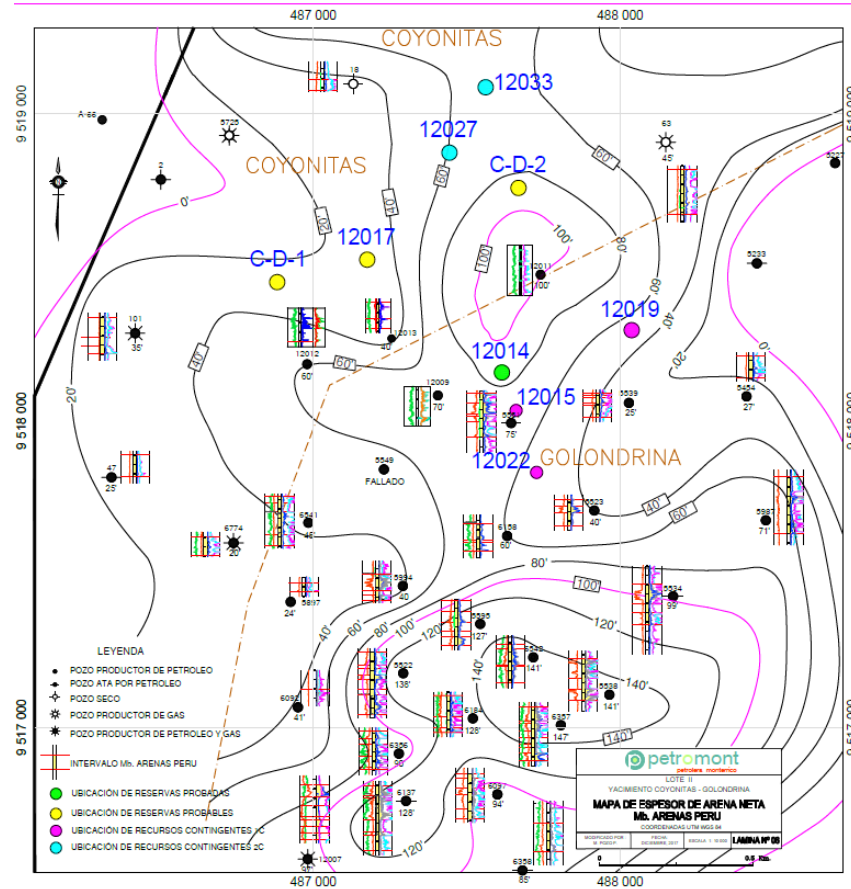
# Block II

## Production - Oil (Barrels per Day)



## Talara R. Rock

Type	Sandstones
Net Thickness (ft)	50
Porosity (%)	0.08
Permeability	1mD

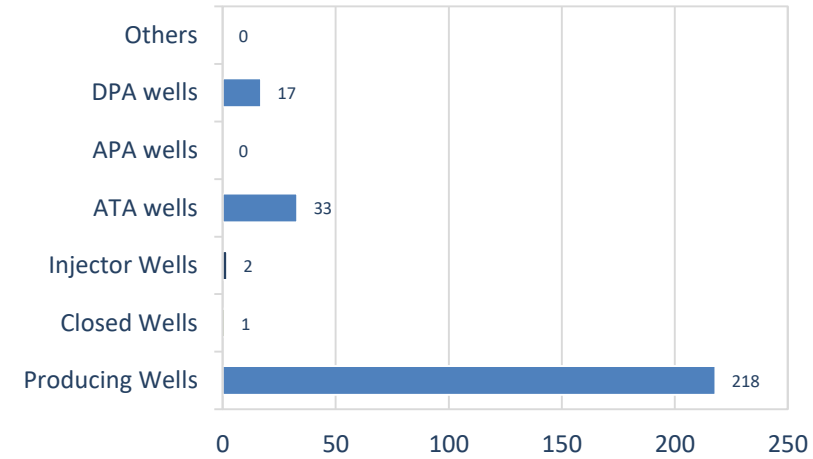




# Block II

## Location Map

## Wells Inventory



## Facilities

- ✓  Close to the Talara refinery.
- ✓  Access to nearby port
- ✓  Nearby Pipeline
- ✓  Direct access To roads
- ✓  Nearby Electrical Network
- ✓  Direct access To the airport
- ✓  Nearby peasant communities
- ✓  Surrounding blocks: IV, VI

BLOCK V  
Technical Sheet

**RESERVATIONS EVALUATION GROUP**



*Lima , March 2019*





# Block V

General Information	
Location	Prov. Talara Region Piura
Fields	5
Discovery	1953 / Verdun-Talara
Start Exploitation	1953
Max. Production (bopd)	1,000 (60's)
Area (ha)	9,000
Drilled Wells	95
Producing Wells	30
Acquired seismic	<b>PETROPERU / MAPLE</b> <b>( 2D – 77 Km )</b>
Average depth (ft)	-
Monthly decline (%)	5
OOIP (MMBBL)	-

Reservoir Characteristics	
Formation	Mogollón, Ostrea, Echino, Verdún, Talara
Push type	Gas in solution
Initial pressure (psi)	3152 Mogollon
Actual pressure (psi)	2505

Production		
	Oil (Mbpd)	100
Current - December 2018	Gas (Mpcd)	266
	Water (Mbpd)	-
Accumulated 31.12.17	Oil (MMbbls)	5,593
	Gas (MMMpc)	9287
	Oil (%)	8.7
Recovery Factor	Gas (%)	0.00

### Mogollon R. Rock

Type	Sands / Conglome rates
Net Thickness (ft)	95
Porosity (%)	7
Permeability	0.509 mD

### Fluids

Type	Oil
Dens. (°API)	36.4 °
Visc. (Cp)	-
GOR (scf/stb)	517
WOR (stb/stb)	-
Boi (bl/stb)	1.2
Salinity (ppm)	-
	-

### Development Costs

Development wells	-
Exploratory Well	-
Opex	18.8 \$/bl

### Verdun r. Rock

Type	Sands / Conglome rates
Net Thickness (ft)	30
Porosity (%)	8
Permeability	0.214mD

### Ostrea R. Rock

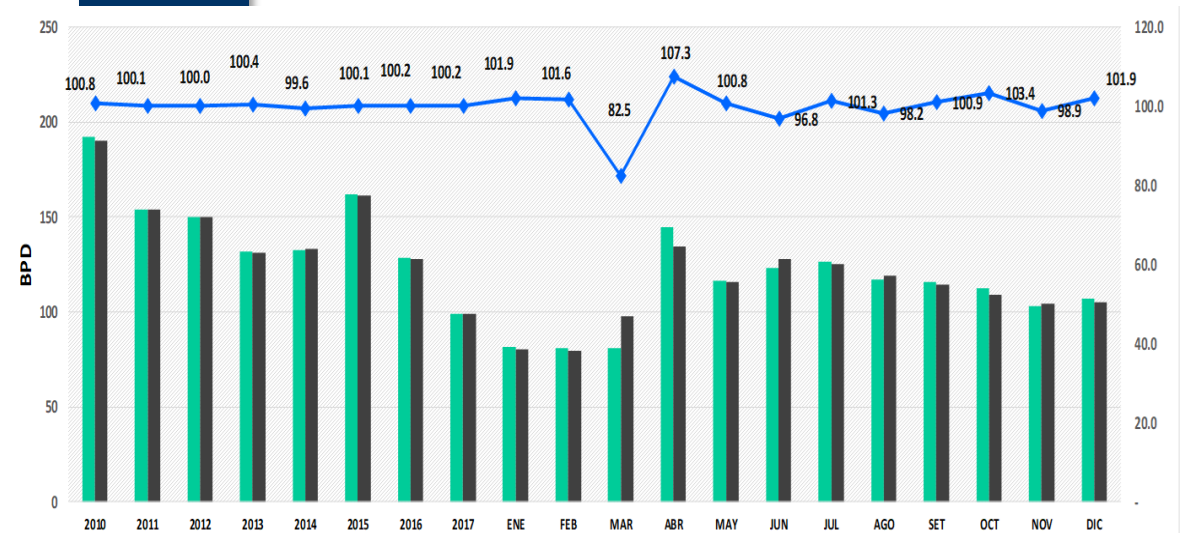
Type	Sands / Sandstones / Shales
Net Thickness (ft)	85
Porosity (%)	10
Permeability	0.488 mD

### Contract Status

Current Operator	Graña y Montero Petrolera S.A.
Type of Contract	Oil Service
Subscription Date	08 Oct 1993
Termination date(*)	05 Oct 2023

### Controlled Production - Oil (Barrels per Day)

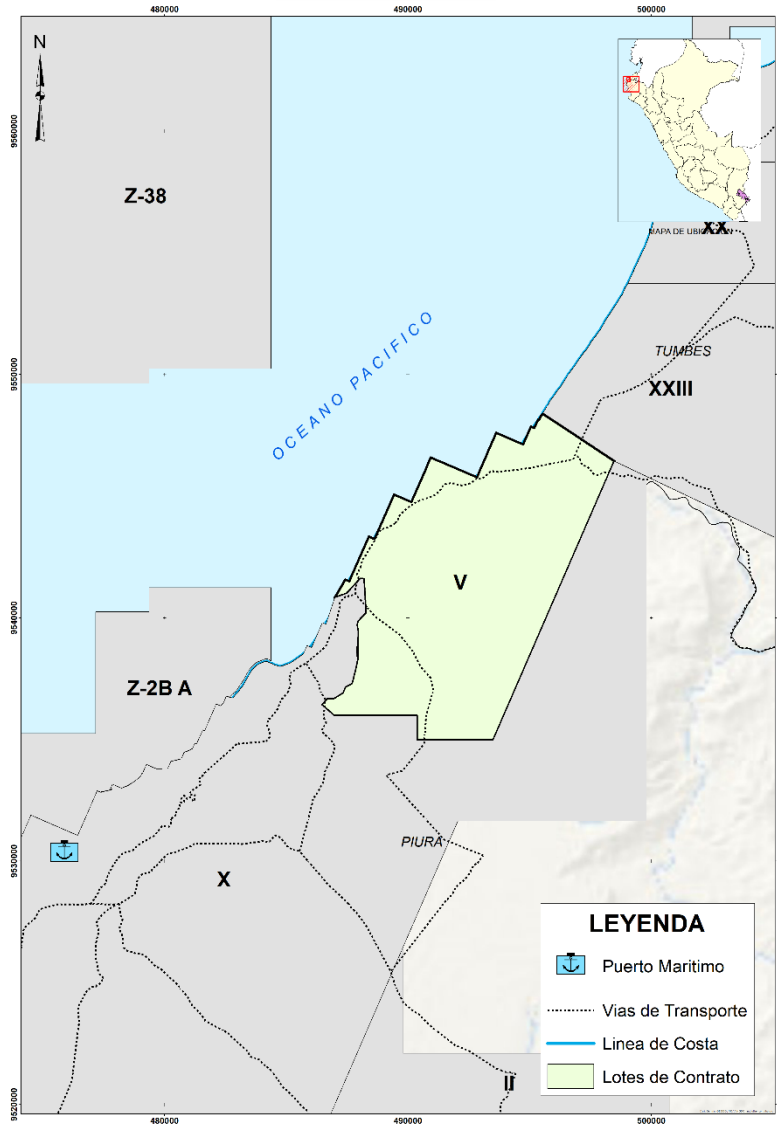
2010 - 2018



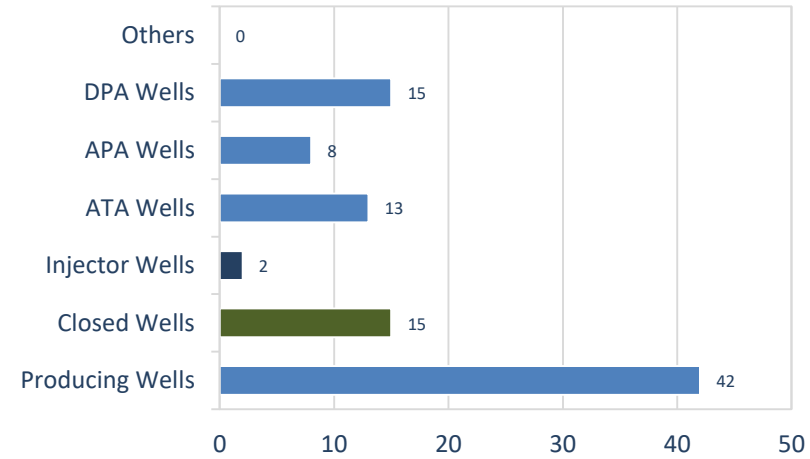


# Block V

## Location Map



## Well Inventory



## Facilities

- Close to the Talara refinery.
- Access to nearby port
- Nearby Pipeline
- Direct access To roads
- Nearby Electrical Network
- Direct access To the airport
- Nearby peasant communities
- Surrounding lots: X, XX and XIII.



Perú  petro

Block X  
Technical Sheet

## FUNCTIONAL GROUP EVALUATION OF RESERVATIONS



*Lima, March 2019*



# Block X

## General Information

Location	Prov. Talara – El Alto / Los Órganos Dpto. Piura
Fields	17
Discovery	December 1910 / EA1 - Reventones
Start Exploitation	December - 1910
Max. Production (bopd)	3236.9 (August - 1965)
Area (ha)	46,952.342
Drilled Wells	5593
Producing Wells	3152
Acquired seismic	PEREZ COMPANC 99'-00' 176 km2
Average depth (ft)	4843
Monthly decline (%)	2.41
Production per Well	4 STB/Pozo

## Contractual Situation

Current Operator	CNPC PERÚ S.A.
Type of Contract	License
Subscription Date	20.05.1994
End date(*)	19.05.2024

## Development Costs

Development wells	0.6 MMUS\$ (125 US\$/ft)
Exploratory Well	4.5 MMUS\$
Opex	24 \$/bl

## Reservoir Characteristics

Formation	San Cristobal, Basal Salina, Amotape, Mogollón, Ostrea, Echino, Lutitas Talara, Verdún
Push type	Gas in Solution
Initial pressure (psi)	1563
Actual pressure (psi)	852

## Fluids

Type	Black Oil
Dens. (°API)	36°
Visc. (Cp)	1.2
GOR (scf/stb)	1600.2
WOR (stb/stb)	1.17
Boi (bl/stb)	1.16
Salinity (ppm)	35,000

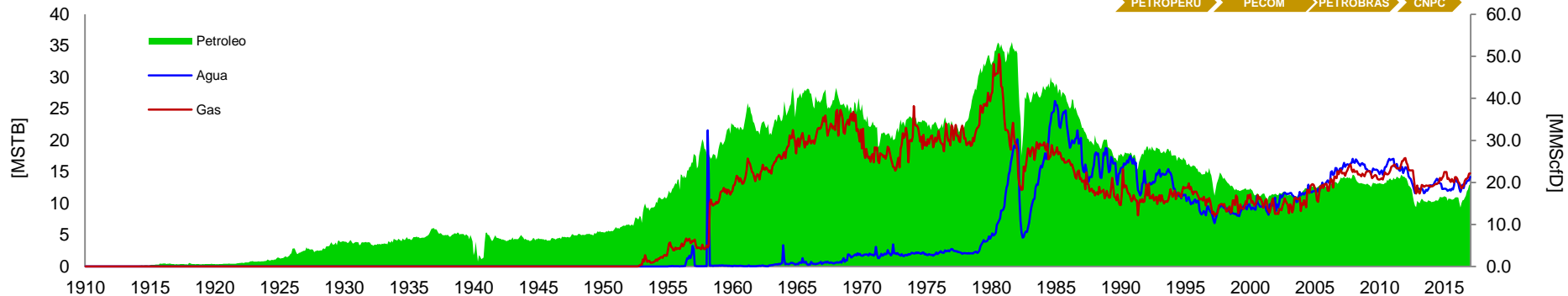
## Rock

Type	Areniscas
Net Thickness (ft)	130-600
Porosity (%)	9
Permeability	0.1-1 md

## Production

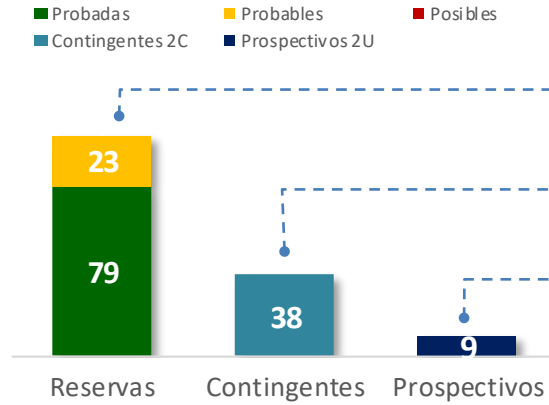
Current - December 2018	Oil (MSTBD)	13.2
	Gas (MMScfD)	15.73
Acumulated 31.12.18	Oil (MMSTBD)	494.72
	Gas (BCF)	510.75
Recovery Factor	Oil (%)	8.22

## Historical production



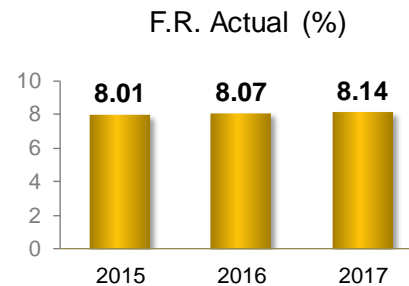
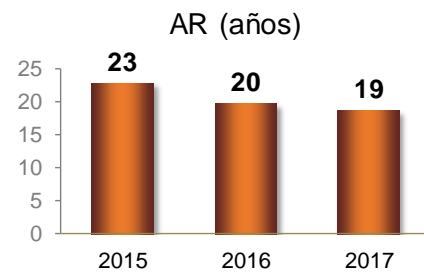
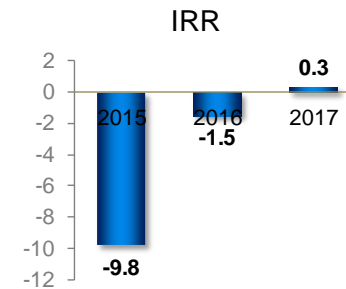
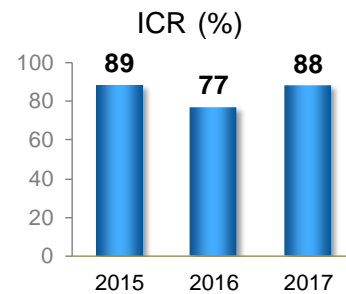
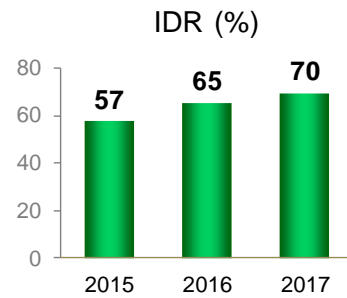


## Reserves (MMSTB):



- Infill Drilling Projects - Intermediate Reservoirs
- Infill Drilling Projects - Mogollón Reservoir
- Secondary Recovery Project
- Deep horizons exploration

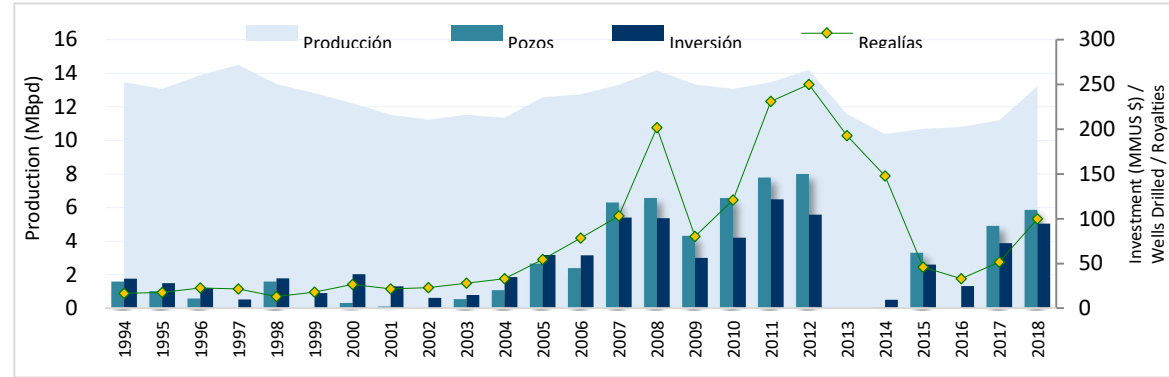
## Indicators:





# Block X

Period	Capex (MM\$)	Opex (MM\$)	Royalties (MM\$)
2018	94	145	103
1994-2018	1,188	641 <small>(2014-2018)</small>	2,001



## Plans and Programs 2019-2023:



**0**  
Exploratory Well



**60**  
Development Wells



**160**  
Workover



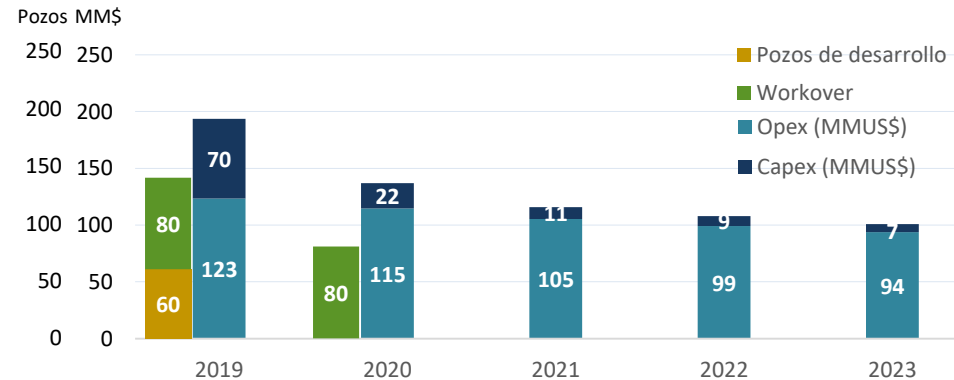
**1.7**  
Millions of barrels to develop



**119**  
Millions of dollars CAPEX



**536**  
Millions of dollars OPEX





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