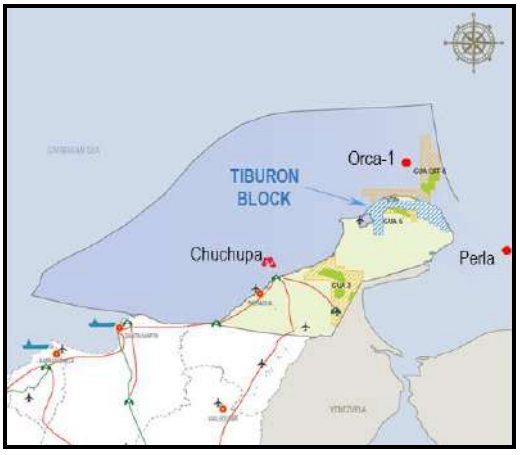
Tiburon Block

Chimare-Chichibacoa sub-basin / Upper Guajira – COLOMBIA

3 Prospects in the eastern area, with resources potential up to 3.0 Tcf's of dry gas, another 2 leads in the western area with resources potential of an additional 4.0 Tcf's, which will complete a total of estimated resources of 7.0 Tcf's.
Near to gas production in Chuchupa/Ballena/Riohacha fields (120 kms). Peak of production 900 mmscfd. Cumulative production: more than 5 Tcf
Near to giant gas discovery in Perla gas field In Venezuela (70 Kms).
Initial estimates of Perla prospective resources go to 17 Tcf.
Near to Orca-1 well (43 kms) the most recent discovery in the Colombian offshore.
Gas shows in all wells drilled in the block: Uashir-1, Puerto Estrella-1 and Flamenco-1
Extract of rock in Puerto Estrella-1 from Oligocene sequence suggests than trace of crude oil founded in the samples would correspond to migrated hydrocarbon from older source rock.
Detail analysis of chromatograms suggest its marine origin, very similar to those encountered in crude oil coming from La Luna Fm, a world class of Cretaceous source rock in Venezuela and Colombia.
According to seismic and geochemical info Tiburon block would be in the fair pathway from the same kitchen which sourced Perla and Orca discoveries.
Exploration Commitments: Phase 3: 70 Km^2 of 3D Seismic
Phases 4-6: Two exploratory wells per phase
NPV 10: US$ 3,4 Bn. (3 TCF Case type) IRR = 184 %.
Financial results are indicative Before Taxes, and any investor can perform its own financial analysis



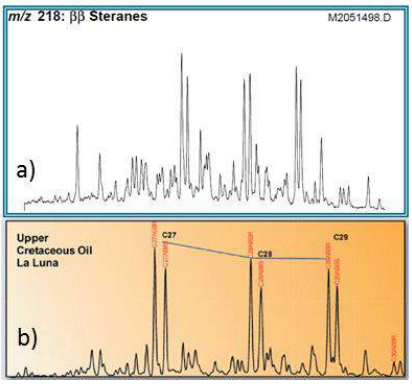


Figure 1. m/z 218 (Steranes) mass chromatograms of: a) extract of rock from Puerto Estrella -1 sample M2051498 at 7,150ft, Siamana Fm. b) a typical Cretaceous Oil derived from Upper Cretaceous La Luna Formation (Source: Vargas et al, 2012 in Ramirez et al, 2015).

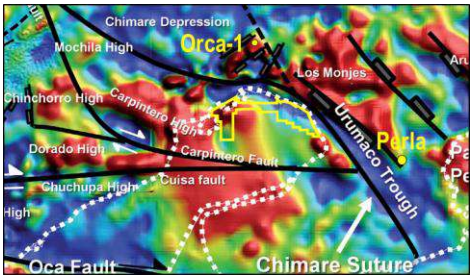


Figure 2. Detail of Bouger-Free Air airbone map showing the location of the Tiburon Block in reference to the main structural features and wells/ fields of interest. (Modified of Londono et al, 2015)

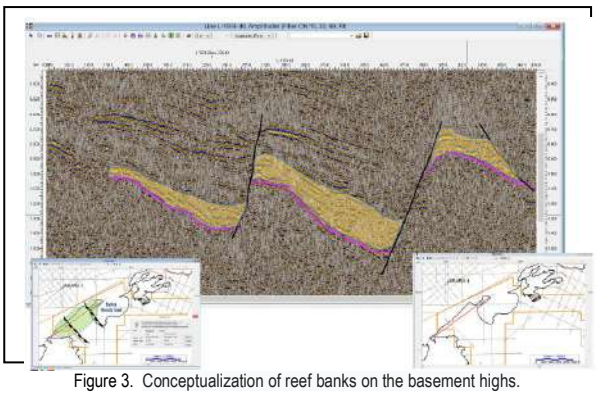


Figure 3. Conceptualization of reef banks on the basement highs.

SUMMARY

The Tiburon Block is an Exploration and Production Contract signed with the National Hydrocarbons Agency -ANH- on 15th of June, 2006.

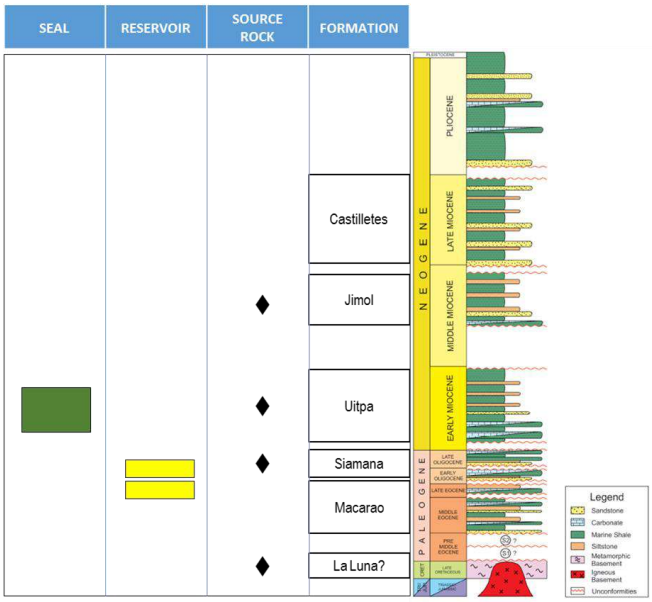
The block covers an area of 994 Km^2 and is located in the north of Colombia on the Caribbean coast. Tiburon is the most northern block on shore of the country.

Recent studies carried out in the Caribbean basin in Colombia and Venezuela have highlighted the thermogenic origin of the hydrocarbons encountered in the basin. The studies suggest that sequences older than Eocene existing in the Chimare/Chichibacoa depression and Urumaco Trough would have the potential to generate and expel important amount of hydrocarbons to charge the traps around them. Based on it, Tiburon block would be located in ideal position in the fair pathway of migration from the Urumaco Trough, sharing the same kitchen than possibly sourced Perla and Orca discoveries (Figure 2). Aligned with the regional analysis, geochemical studies performed in the Block encountered conclusive evidences regarding the presence of source rock of marine origin and Cretaceous age to generate liquids. Extract of rock from Oligocene sequence in Puerto Estrella-1, drilled in the block in 1979, correspond to oil migrated from older rock. The fingerprints of the chromatograms from 7,150 ft are very similar to those encountered in crude oil coming from La Luna Fm, the world class Cretaceous source rock, responsible to source thousands of millions of barrels of oil and gas in Colombia and Venezuela (Figure 1). The presence of migrated hydrocarbons in the stratigraphic column encourage the search of effective traps.

In spite of Uahir-1 drilled in 1976, was stated dry hole, the well encountered a thick sequence of more than 400 ft of amalgamated sandstone in the base of the Siamana Fm (Oligocene) with good porosity ranging between 15% – 21%. A small interval of the section (8,880 ft – 8,886 ft) tested water and gas. An important fact encountered with the recent seismic interpretation is that part of this thick sequence is trapped up-dip from Uashir-1, since an evident bright spot of the pinched out section would be outlining the trap. Based on anomalies of amplitude (bright spots) and seismic attributes, two more prospects have been identified now. The identified prospects allow estimating a potential of about 3 Tcf of gas in the eastern area as shown at in the Stratigraphic Traps section and additional 4 Tcf of gas in the western area (Figure 3).

Due to geographic location of the block, on the Caribbean Coast of Colombia, an interesting possibility of export of the gas production can be take into account, specially to the Caribbean and Central America Market.

PETROLEUM SYSTEM



Source Rock: Uashir-1 and Puerto Estrella-1 show good a very good TOC to generate gas from Oligocene (Siamana Fm) and Early Miocene (Uitpa) shales and mudstones TOC values ranging 0.3% – 2.6%. Data of thermal maturity indicate that kerogen type III is between immature to early mature. However is possible to consider that in Urumaco Trough these sequences reach the pressure and temperature to generate and expel important amount of gas toward proximal traps.

Reservoir rocks: Two types of sequences are considered as good reservoirs in the block: The amalgamated sandstone packages of the base of the Oligocene sequence (Siamana Fm) which is the responsible for the production in Orca-1 with porosity between 15% and 21%. The second one correspond to clastic sequence to the top of the Eocene (Macarao Fm). Porosity 14%-18%.

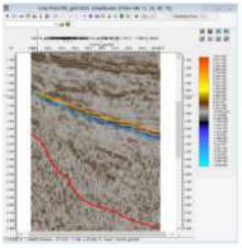
Seal Rocks: Uitpa Fm. is considered a regional seal in the basin. Also, intraformational shales and siltstones area considered good seals in the block as well.

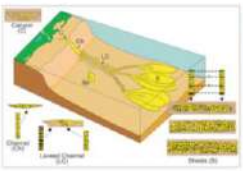
TYPES OF STRUCTURES AND PLAYS

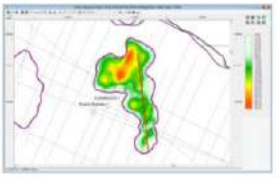
Stratigraphic traps

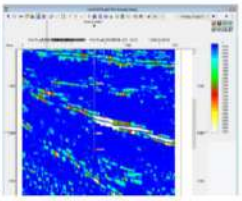
Sandstone bodies in external shelf and slope environment

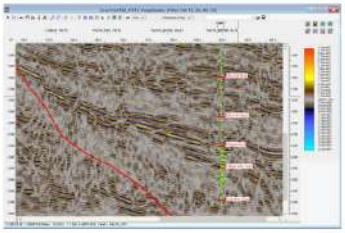
Sands sheets and channel - levees associations are considered as reservoirs for gas in Tiburon Block





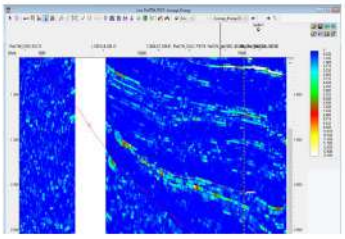


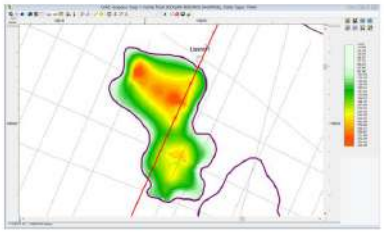




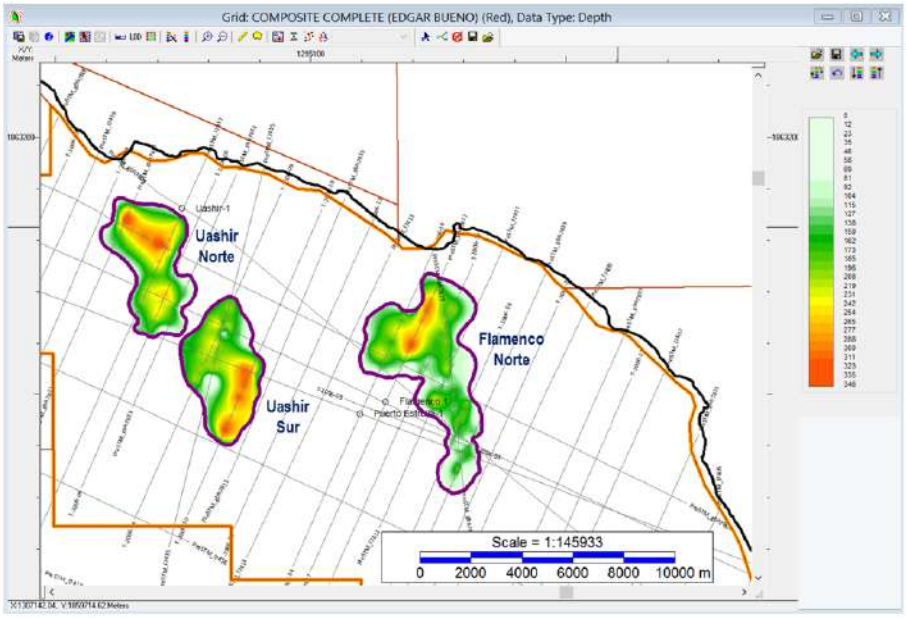
Pinch out of Prograding wedge of sandstone

Shallow-marine sandstone in lower shore face environment



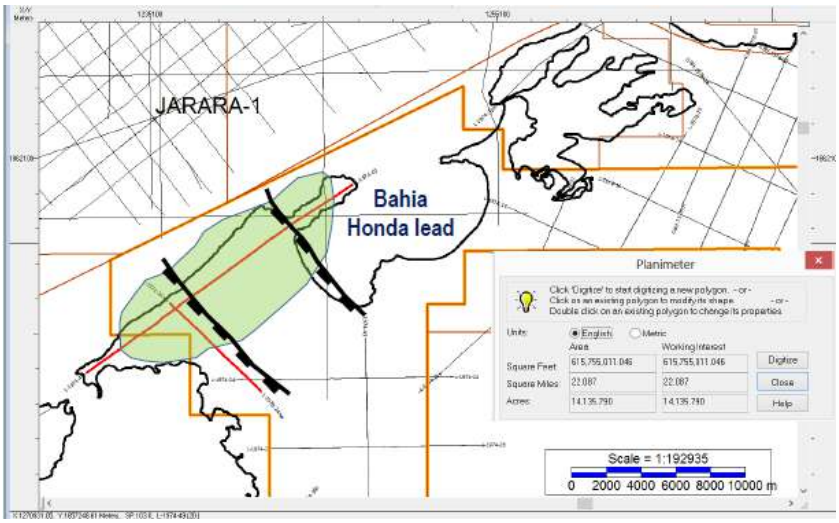


MAP OF PROSPECTS AND LEADS



PROSPECTS

Type of traps: stratigraphic
Three prospects have been identified
Prospects Uashir Norte, Uashir Sur and Flamenco Norte defined based on seismic interpretation (2D).
The bright spots and seismic attribute outline the traps
Main Objective: Gas.
Units of interest: Base of Siamana and Top of Macarao.
Depth Targets: 7.000 ft – 10.000 ft.
Key wells: Puerto Estrella-1, Uashir-1.



LEADS

Type of trap: Reefal Build up
One lead was identified since the seismic interpretation (2D).
The bright, flat spots and seismic attribute outline the traps.
Main objective: Gas.
Age of interest: Miocene

Year	Company	Seismic km´s
1974 - 1978	Ecopetrol	1.150
2006	ColPan Oil & Gas	200
Note: 1350 km of seismic were reprocessed in 2006 by ColPan Oil&Gas.		

PROSPECTIVE RESOURCES

RECOVERABLE RESOURCES (Bscf)

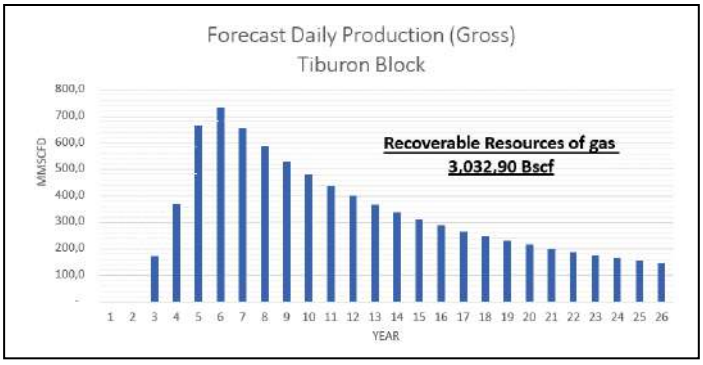
PROSPECT	HIGH ESTIMATE	BEST ESTIMATE	LOW ESTIMATE
UASHIR NORTE	985.6	683.9	435.8
UASHIR SUR	973.5	675.5	430.5
FLAMENCO NORTE	1,021.9	700.7	486.6
BAHIA HONDA	6,797.5	4,070.7	1,960.2
TOTAL	9,778.7	6,131.0	3,313.3

Prospective resources were estimated for three prospects based on the seismic interpretation of 2D seismic and considering a volumetric method. High, Best and Low estimates were carried out according to the range of the net pay to be encountered in this type of stratigraphic trap (pinch out).

Component	Guajira Gas (%)
Methane	97.69
Ethane	0.42
Propane	0.12
Butanes	0.07
Pentanes and heavier	0.00
Nitrogen	1.64
Carbon Dioxide	0.06
Total	**100**
Specific Gravity	0.57
Calorific Power (BTU/SCF)	1,003.4

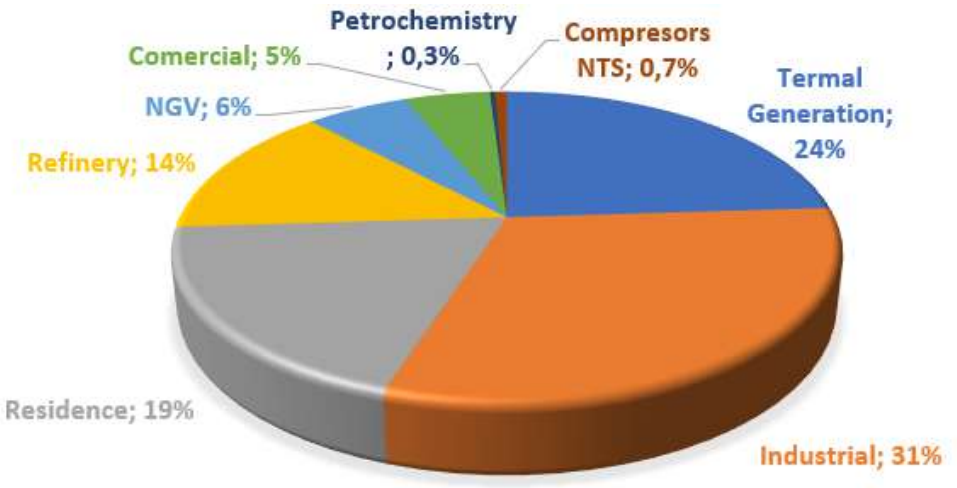
ECONOMIC ANALYSIS

The economics of the project are favorable, mainly due to great potential of resources, low exploration and development costs and attractive market to trade the production of gas in Colombia and abroad. The targets range from 7,000 ft to 10,000ft for dry gas. Tiburon block has an incomparable location to export the gas production. However, an increasing need of natural gas to cover domestic market in Colombia is progressively more important. Gas price in Colombia is at least 3,5x in comparison with Gulf Coast. A 200 km of gas pipeline is required to be installed to connect Tiburon gas with Ballenas-Barranca pipeline system, which goes to center of the country, where demand is larger, investment will be assumed by the gas transporter.



MAIN USES OF NATURAL GAS BY PRODUCTIVE SECTOR

Sector	Application/Process
Industrial	Metal melting, Melting Furnaces, Drying, Cement industry, Food industry, Steam generation, Heat treatments,Tempering and annealing of metals, Cogeneration, Combustion chambers, Petrochemical Production (see diagram below), Heating system
Power Generation	Thermal Power Stations, Power Cogeneration
Commercial	Air conditioner, Cooking / food preparation, Hot water, Central heating
Residential	Kitchen, Heating, Hot water, Air conditioner
Transportation (as CNG/LNG)	(as CNG, Compressed Natural Gas) packed in high pressure vessels Taxis (GNV), Buses (GNV), Ships (GNV) LNG (Liquified Natural Gas), the best way to transport natural gas to remote zones without gas lines, the liquefaction is achieved at temp. Of -162°C to be transported under atmospheric pressure and then regasified. For all the above usages once it is regasified again and to be used as a liquid fuel for ships, boats, trains and heavy-duty vehicles.



Fuente: UPME

COLOMBIA
A Reliable Partner for Your Investment.

Promising business environment

- Colombia is one of the countries with the greatest economic stability in the region. Between 2010 and 2019, the Colombian economy grew, on average, 3.72%.
- During the last decades, Colombia has changed due to its political stability and firm respect for property and private initiative.
- The middle class of the given country, spending approximately 30% of the Colombian population in 2016. It is expected to represent 37% in 2020 and 46% in 2025.
- An investment grade country, awarded by Standard & Poor's, Moody's and Fitch on Colombia's sovereign debt. In 2014, Moody's raised the country's rating from Baa3 to Baa2. Improving in March 2017, Colombia's rating outlook by considering it as stable.
- Colombia is a member of the OCDE, positioned itself as the fourth friendliest destination in Latin America to do business according to Doing Business 2018.

First in the Latin American region in the index of investor protection and strength of legal rights. World competitiveness index, 2017-2018.

Attractive fiscal terms

- Sliding scale for royalties starting from 8% (discounted for heavy oil and for gas). Old contracts remain on original royalty schemes with royalties around 20%.
- Gas royalties are 80% of oil with 5,700 mmscf boe conversion
- Additional X factor paid to government as bid differentiator during license rounds
- Supplemental government take related to oil price after 5Mbbls produced
- Effective tax rate 40%, dropping to 33% in 2 years
- 10% withholding tax. VAT is 19%, but now recoverable
- Investment credits available to offset against tax. Terms are becoming more flexible
- Government commitment to offer investment incentives and stability for investors.

CONTRACT TYPE

Standard E&P ANH Contract
Royalty: 8% for oil. 6,4% for gas (80% of the oil royalty)
X Factor: No applicable
No State Back In
Effective date: June, 15th, 2006
Current phase: 3
Status: Suspended while indigenous consultancy is performed.

Carried out Activities/Sunk Cost
Phase 1 (1y): Acquisition, processing and interpretation of 200 km od 2D seismic + Reprocessing of 900 km of 2D existing seismic. Sunk cost: **US$ 4.38 MM**
Phase 2 (1y): Drilling One exploration well (Flamenco-1). Sunk cost: **US$ 9.46 MM**
Phase 3 (1y): Indigenous consultancy to acquire seismic program. Sunk cost: **US$ 0.81 MM**

Exploration Activities
Phase 3 (1y): 70 km^2 3D seismic (3,5 MM USD)
Phase 4 (1y): Drilling two exploration wells (11 MM USD)
Phase 5 (1y): Drilling two exploration wells. (11 MM USD)
Phase 6 (1y): Drilling two exploration wells. (11 MM USD)
There is no commitment of working capital, just activities.

Exploitation Period,
24 years + Extension to final depletion (Economic Limit)

CURRENT STATUS:

The E&P contract is in good standing before the ANH and currently suspended, this was a figure found by the ANH for those contracts whose phases had a duration of 12 months, then suspended while conducting prior consultation processes with indigenous, in the specific case of Tiburon Block, once the suspension be lifted, you have 4 months approx. to acquire 70 kms^2 of 3D seismic, processing and interpretation and make delivery to the ANH of that information.

Guarantees (Stand by Letter of Credit):
10% of the budget capital for each phase. Minimum Guarantee US$100.000. Maximum Guarantee US$ 3.000.000

Existing economic rights
ORRI: 4.8% for Original holders

CONTRACT ECONOMIC TERMS

Basic Royalty,
For oil: 8% up to 5 KBOPD, 8% to 20% sliding scale, up to 125 KBOPD
For gas: 80% of the oil royalties

High Price Royalty,
For gas, High Price applies, just in case of the gas sale price to be higher than ANH Price Base ($ 8.15/MMBTU), for gas, High Price applies, just in case of export.

Evaluation and Exploitation Period,
US¢10.36 per oil barrel paid to the ANH after production start up. US¢1.036 per 1000 gas cubic feet.

FARM IN PROCESS

Detailed information package could be obtained and accessed to a data room, either at our offices in Bogotá or web-based.

FARM IN TERMS

The Operator is offering flexible farm-in terms, with the opportunity to acquire a working interest in any of the prospects or leads, or even entire block.

A direct negotiation can be developed in case of being interested.

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