




# REPUBLIC OF SOMALILAND

## MINISTRY OF ENERGY AND MINERALS


# OVERVIEW OF **SOMALILAND OIL** & GAS SECTOR

# 2023

## Ministry of Energy and Minerals

 Road # 1, Presidential Street, Opposite Presidential  
Palace, 26 June District

**Hargeisa-Somaliland**

 [www. moem-sl.com](http://www.moem-sl.com)





## MINISTER NOTE



The Ministry of Energy and Minerals is responsible for energy (both renewable and non-renewable) and extractives including minerals and hydrocarbons.

Somaliland is one of the most potential countries to be an oil producing country. East African countries such as Uganda, Kenya, Tanzania, Madagascar and Ethiopia have experienced great successes in making major oil and gas discoveries. Somaliland hopes to be part of this growing East African oil patch. For the past decade, the ministry invested great deal of effort in marketing its petroleum potential.

Currently, a number of international oil companies are operating in Somaliland. Two of those companies took part in a major multi-client seismic project, managed by the ministry and conducted by BGP Inc, A Chinese national company which is the leading company of onshore seismic. These companies acquired a total of 4,300km of 2D seismic.

In December of 2021, CPC of Taiwan purchased 49% of Genel Energy's interest in block SL10 B13. The joint-venture is planning to drill first well in 2023. In addition to the most recent seismic, good quality 5,300km of marine 2D seismic and 34,000km of high resolution onshore aeromagnetic acquired by TGS-NOPEC in 2008 is currently in the market.

Somaliland is part of the highly productive Mozambique belt and has even greater potentiality in minerals. The known minerals in Somaliland include; precious metals, base metals, coal, rear earth elements and a wide range of gemstones, as well as industrial minerals such as cement material, gypsum, feldspar, quartz, mica, marble and others. Recent gold discovery in Sanaag region is a good example of the economic significance of Somaliland mineral resources. There are also a number of good quality gemstones which are currently exploited by local small-scale artisanal miners using primitive and simple tools. There are also huge quantities of mineral-rich black sand along much of the Red Sea Coast as well as huge deposits of pure gypsum and anhydrites. Somaliland also has some of the best decorative stones in the world. Current activities include gemstones, metallic minerals, jade and feldspar licenses & operations by international investors.

It is the aspiration of Somaliland as a nation and the priority of the government to enhance our meager economy and increase production by exploiting our natural resources for the benefit of our people. This will to a large extent require investment of foreign companies as well as the support of the international development partners. Hence, Somaliland has established transparent and conducive arrangements to attract such investors and development partners. It is imperative that we appreciate the importance of this journey and understand the transformative affect in which finding vast deposits of minerals and getting cheap, reliable and sufficient energy (through the exploration and exploitation of hydrocarbons) can have on our economy.





## Vision

To realize Somaliland's social and economic development through the sustainable utilization of the country's energy, minerals and petroleum resources by 2030.



## Mission

To establish, direct and promote the utilization of Somaliland's energy, minerals and petroleum resources through the development and implementation of policies and strategies that guide, regulate and coordinate the work of government and all other stakeholders sustainably.



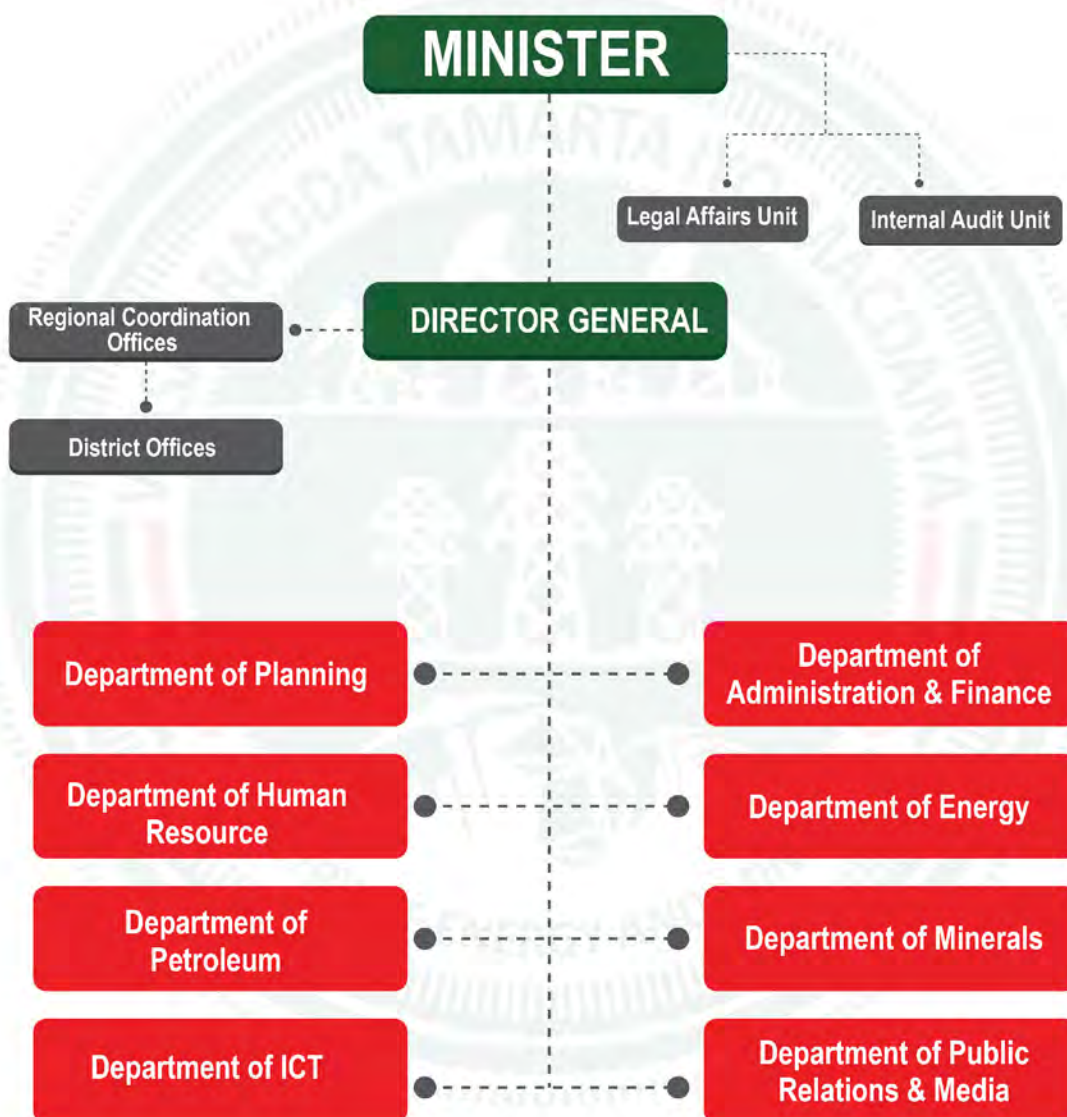
## Core Values

- Accountability
- Transparency
- Integrity
- Research and Innovation
- Environmental Sustainability
- Professionalism
- Service Oriented

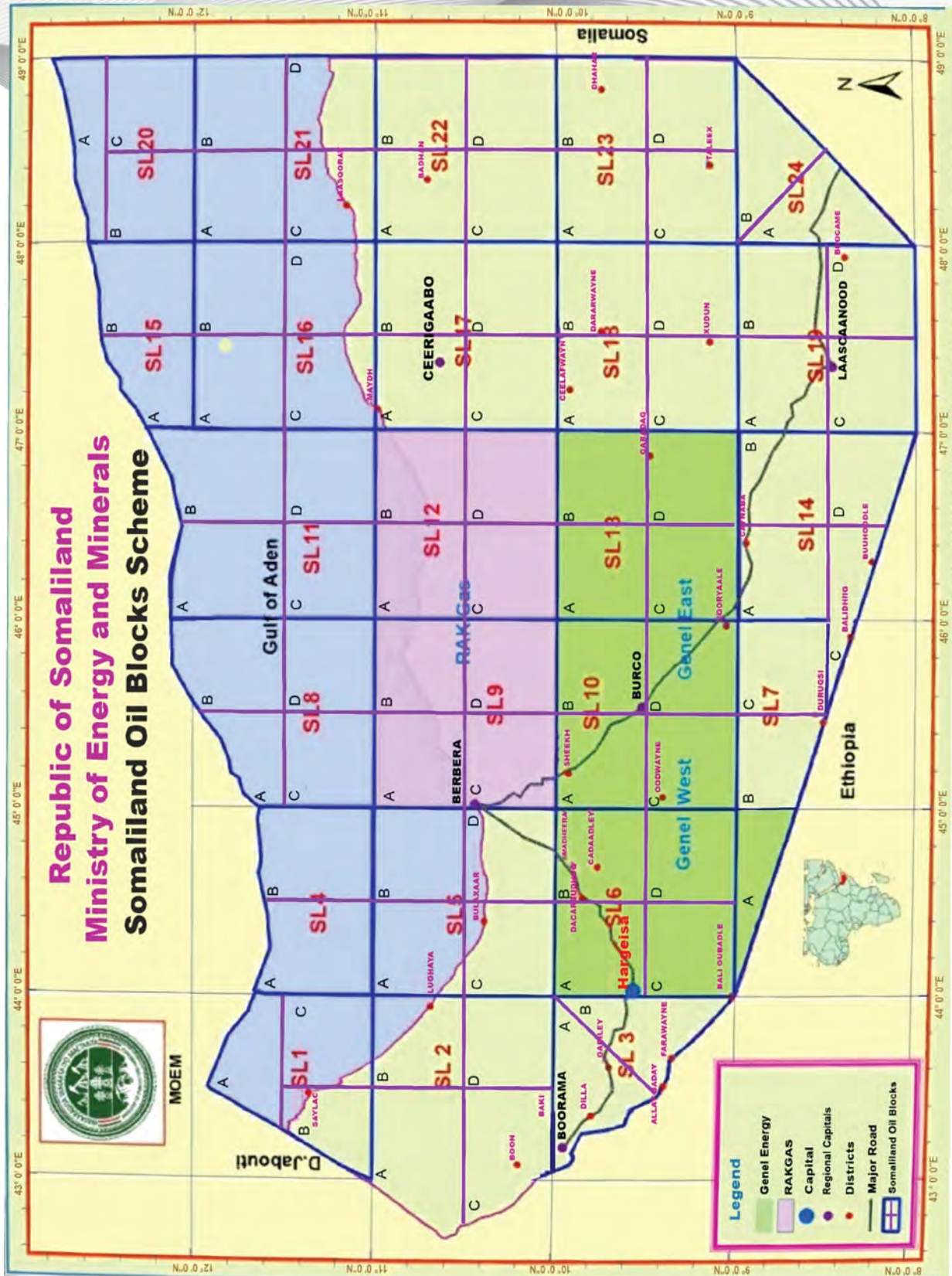


# REPUBLIC OF SOMALILAND

## MINISTRY OF ENERGY AND MINERALS ORGANOGRAM









## SOMALILAND HYDROCARBON POTENTIAL



Fig. 1: Oil seepage in Odweyne area (Block SL10)

When it comes to hydrocarbons, Somaliland is one of the few highly potential yet underexplored areas in the globe. The existence of oil and gas in Somaliland was known since 1920s, through oil seepages in several parts of the country (fig 1), confirming working petroleum system. It is only the finding of the big structures and the discovery of commercial accumulations that has so far eluded the limited and intermitted exploration and the small number drilling over that length of time.



Fig. 2: Rotated Fault Block at Berbera Area (Block SL9)

The petroleum system of Somaliland consists of high quality source rocks of various ages, reservoir units of both clastic and carbonates as well as excellent sealing rocks. The trapping mechanism is dominated by extensional tectonic structures of rotated fault blocks and related ductile deformations (fig 2).

The geology of Somaliland is very similar to that of Yemen as the two sides of the Gulf of Aden were only separated during Miocene (around 30million years).

Reconstruction of the Arabian Plate to the position before the opening of the Gulf of Aden shows that the southern Yemen productive basins extend to

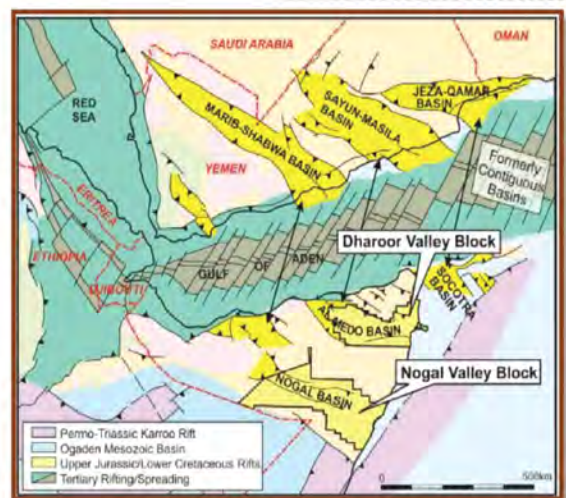


Fig. 3: Extension of Yemen basins to Somaliland

The stratigraphy of the two countries are comparable and Somaliland has numerous basins with the potentiality of containing commercial hydrocarbons.

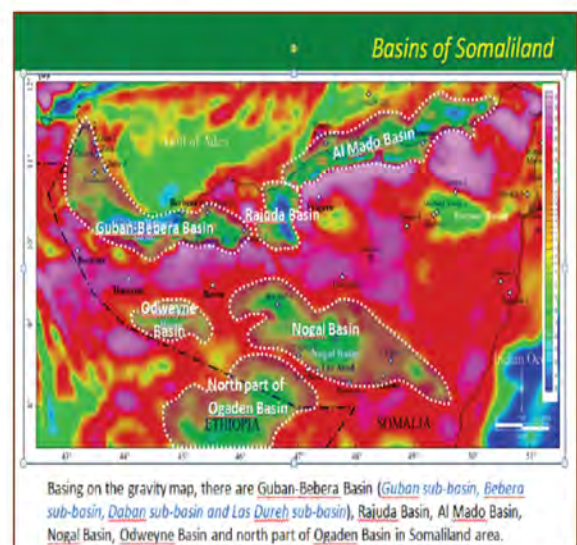
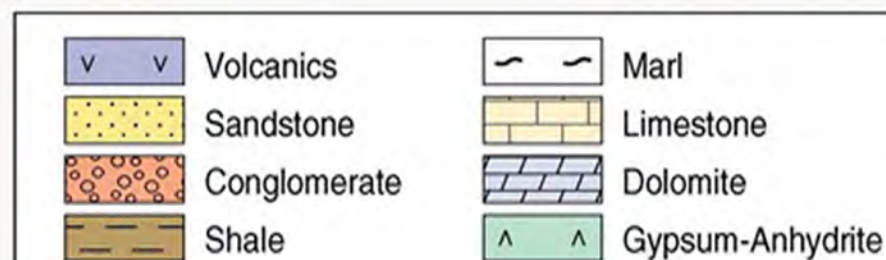
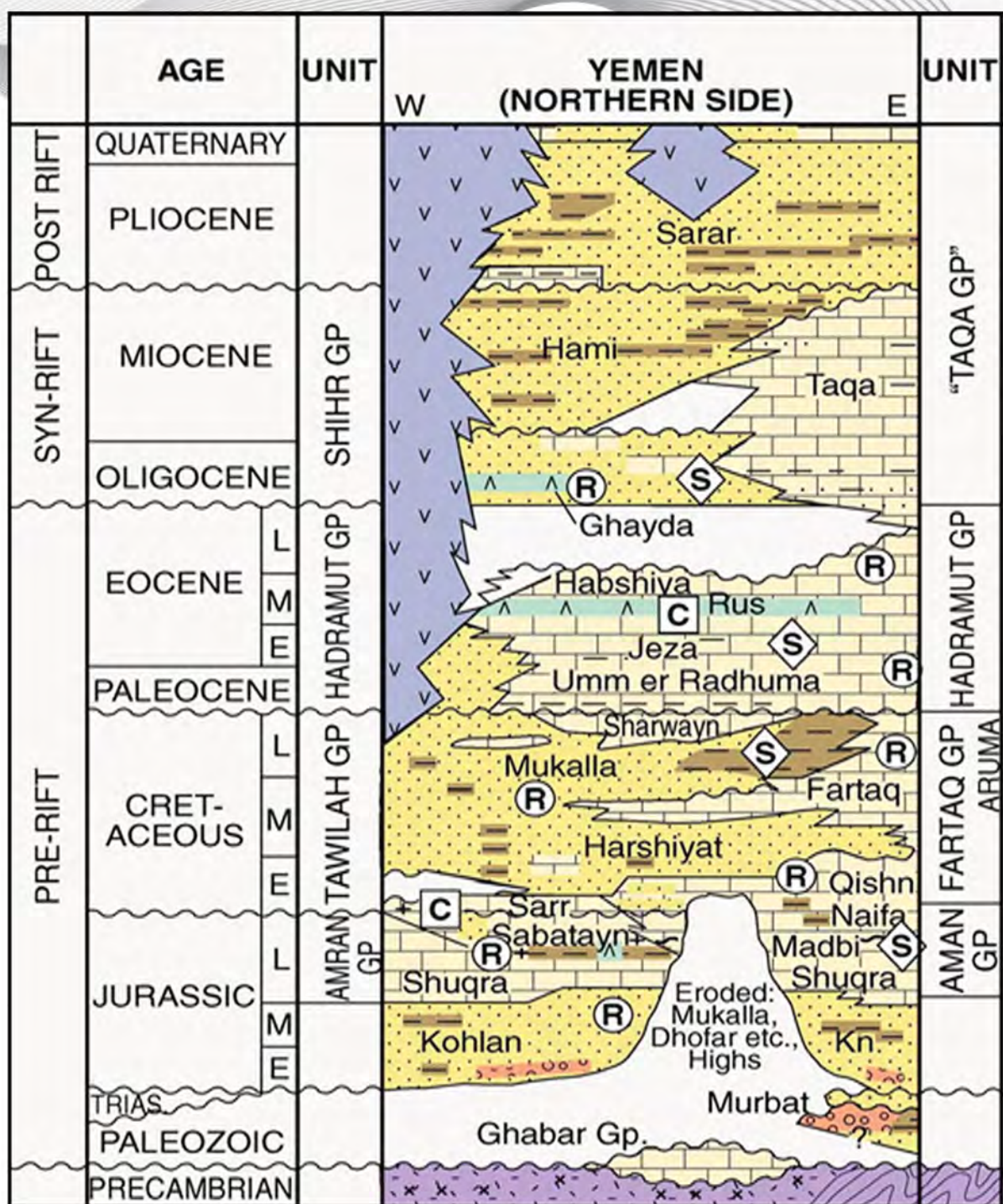
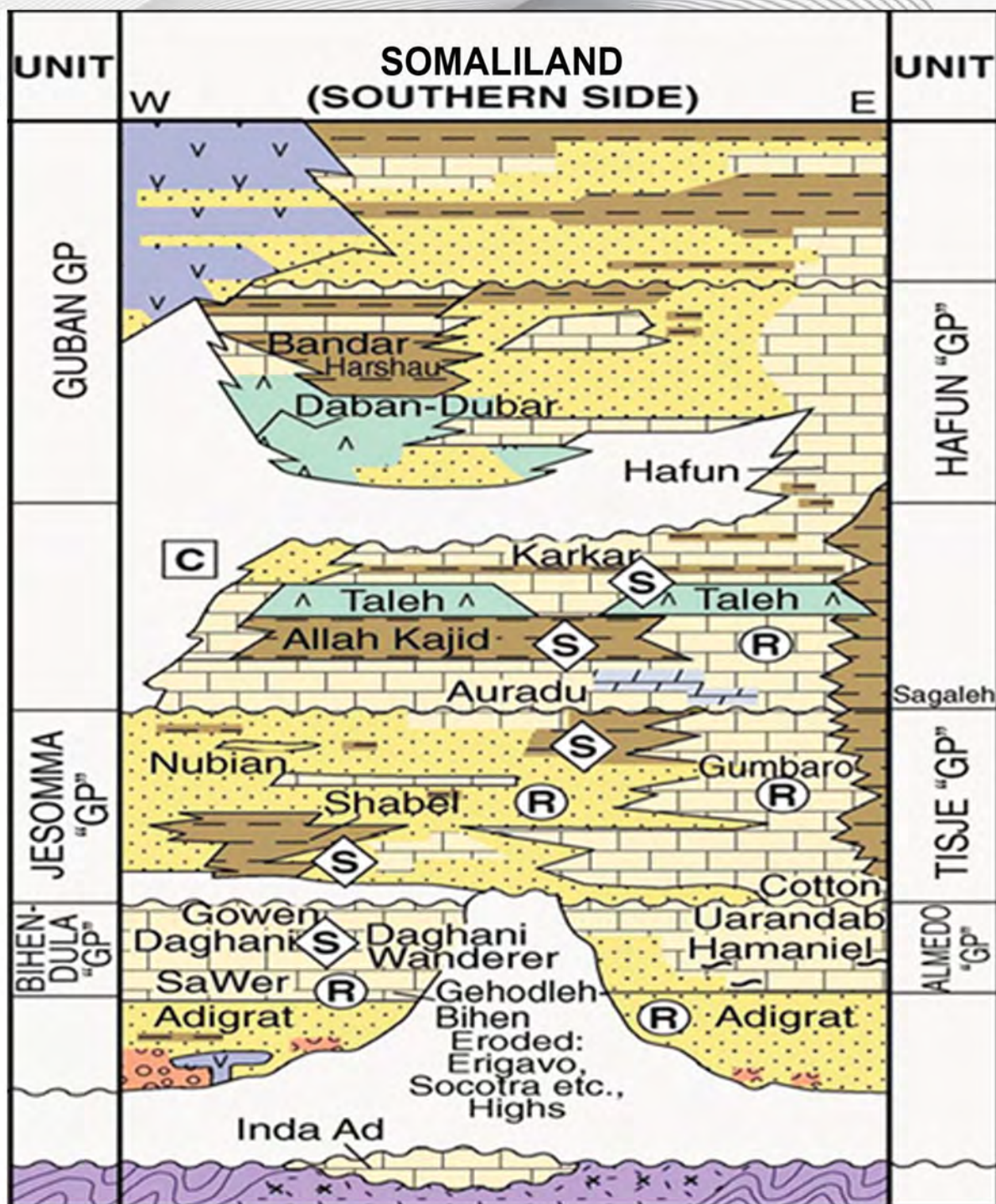


Fig. 4: Gravity map showing main Somaliland basins









Salt



Metamorphic and  
Crystalline



Source rock



Reservoir



Cover (Seal)



## HISTORY OF OIL EXPLORATION IN SOMALILAND

The petroleum exploration interest of the country started in 1912 when an oil seep at Dhagah-Shabel, 38 km south-east of Berbera, was reported.

In 1959 Standard Vacuum (Mobil and Essa) drilled three wells (Dhagah Shabel-1, -2, and -3) near the Dhagah-Shabel oil seep, without the aid of subsurface control.

Two of the wells recovered small amount of free oil ( 33.6 API) from the Wanderer limestone (Upper Jurassic) and Nubian sandstone (Upper Cretaceous).

This is believed to be sourced by the high quality Upper Jurassic Dhaghani shale.

Interest in oil exploration recommenced in the late 1970s and, in 1980s, Somaliland witnessed a huge boom in oil exploration activities triggered by Yemen Oil discovery; where Conoco, Chevron and GECO entered the country and won oil concessions (Fig 5), In those same years Quintana Oil Company and Hunt Oil Company conducted a detail exploration programme which included an aeromagnetic survey and a seismic programme over onshore blocks 32 and 35.

From 1986 to 1990 Conoco Oil Company carried over 4000km of 2D seismic survey in area within their old blocks which covered almost 98,700km<sup>2</sup>, in Nugal basin of Sool and Togdheer regions of Somaliland.

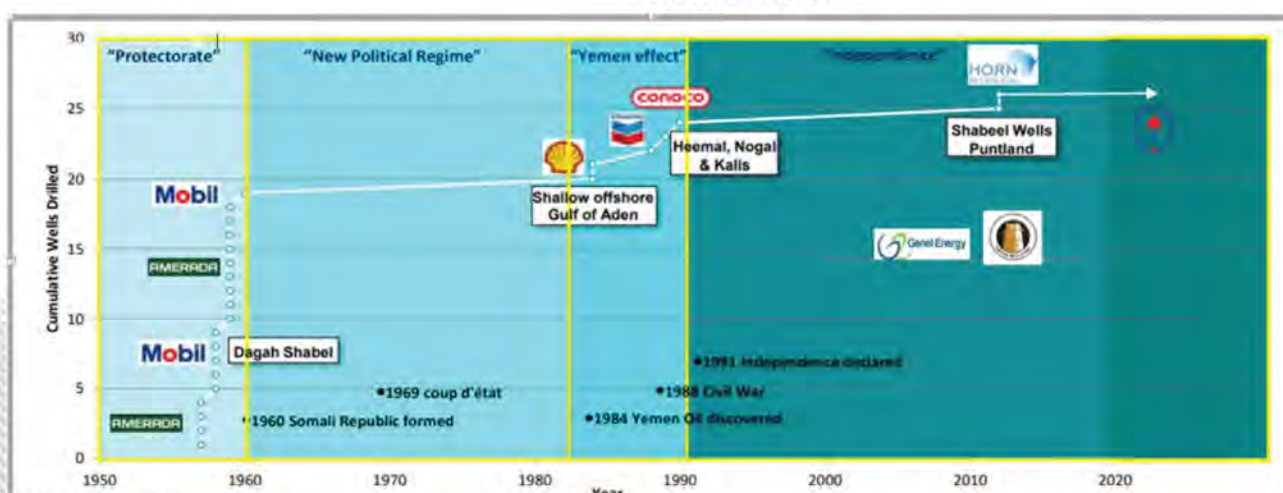


Fig. 5: History of Oil exploration in Somali/and

In March 2009, TGS-NOPEC Geophysical Company (TGS) completed processing and interpretation of speculative survey in Somaliland, acquired in partnership with the Somaliland Ministry of Water and Mineral Resources (currently named as The Ministry of Energy and Minerals). The programs included 5,300km of marine 2D seismic and approximately 34,000km of high resolution aeromagnetic data covering onshore areas (fig 6 and 7).

Based on the data acquired, processed and interpreted Conoco sanctioned the drilling of two wells; Nugaal-1 & Kelis-1. Fig. 7: Typical offshore seismic section TGS data

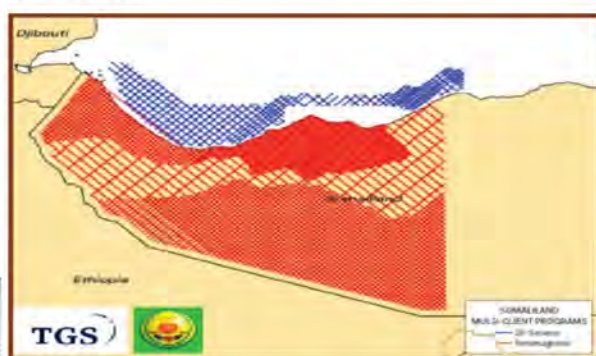


Fig. 6: TGS survey



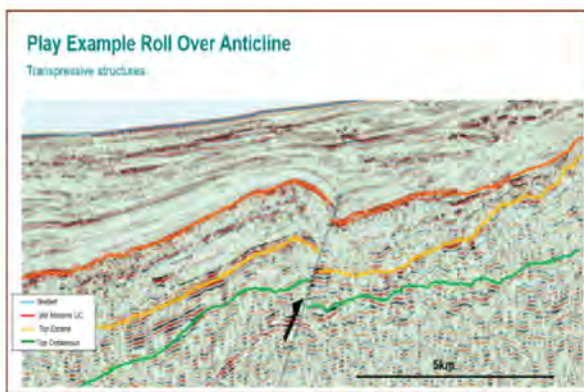


Fig. 7: Typical offshore seismic section TGS data

### RECENT MULTI-CLIENT 2D SEISMIC PROJECT

The Ministry of Energy and Minerals formulated and facilitated a multi-client 2D seismic project in which it presented to all the international oil companies which have production sharing agreements with the government. This was an effort by the ministry to enable the IOC's to fulfil their exploration obligation on a slimmer budget than having to get into separate contracts with seismic contractors.

BGP Inc. (a Chinese national seismic contractor and the leading company in onshore seismic) won the international tender held by the Ministry (fig 8). The first project of the multi-client arrangement was concluded in January 2018, acquiring of 3,500km of 2D seismic for Genel Energy on blocks SL6, SL7a, SL10 & SL13.



Fig. 8: Typical offshore seismic section TGS data

The second project of the multi-client has been concluded six months later, July 2018, acquiring nearly 800km of 2D seismic for RAK Gas on block SL9 (fig 9). The recent oil and gas activities and indeed the other major international investment in Somaliland is fair reflection of the peace and stability this country had for a long time. In addition, it is the at most priority of the current government to increase production. It is particularly giving great deal of attention on hydrocarbons and minerals.

This is not surprising since all most all the regional countries have now made discoveries of oil and gas and since the focus of the oil and gas sector is currently on Eastern Africa.

The above mentioned priority is not only government driven campaign but rather a national ambition embraced by the whole community.

The success of recent exploration projects were made possible by the support and effort of the public particularly the local communities.



Fig. 9: RAKgas 2D seismic layout (Block SL9)

With regard to safety and security, it is a point of noteworthy that during the two major seismic projects, covering 5 regions there has not been any major security incidents and on the safety side there has been a great achievement of 2 million man hours without LTI (fig.10).





Fig. 10 : BGP receiving safety award (2 million man hours with L TI award) from the Ministry

The oil and gas potential of Somaliland is well known in the sector. The procedure for investing in the oil and gas sector in Somaliland is straight forward and transparent. Somaliland public is equality welcoming and open-minded towards international investment.

The current scheme of Somaliland oil and gas blocks consist of 85 blocks of both onshore and offshore. Only a quarter of that is presently held by IOC's

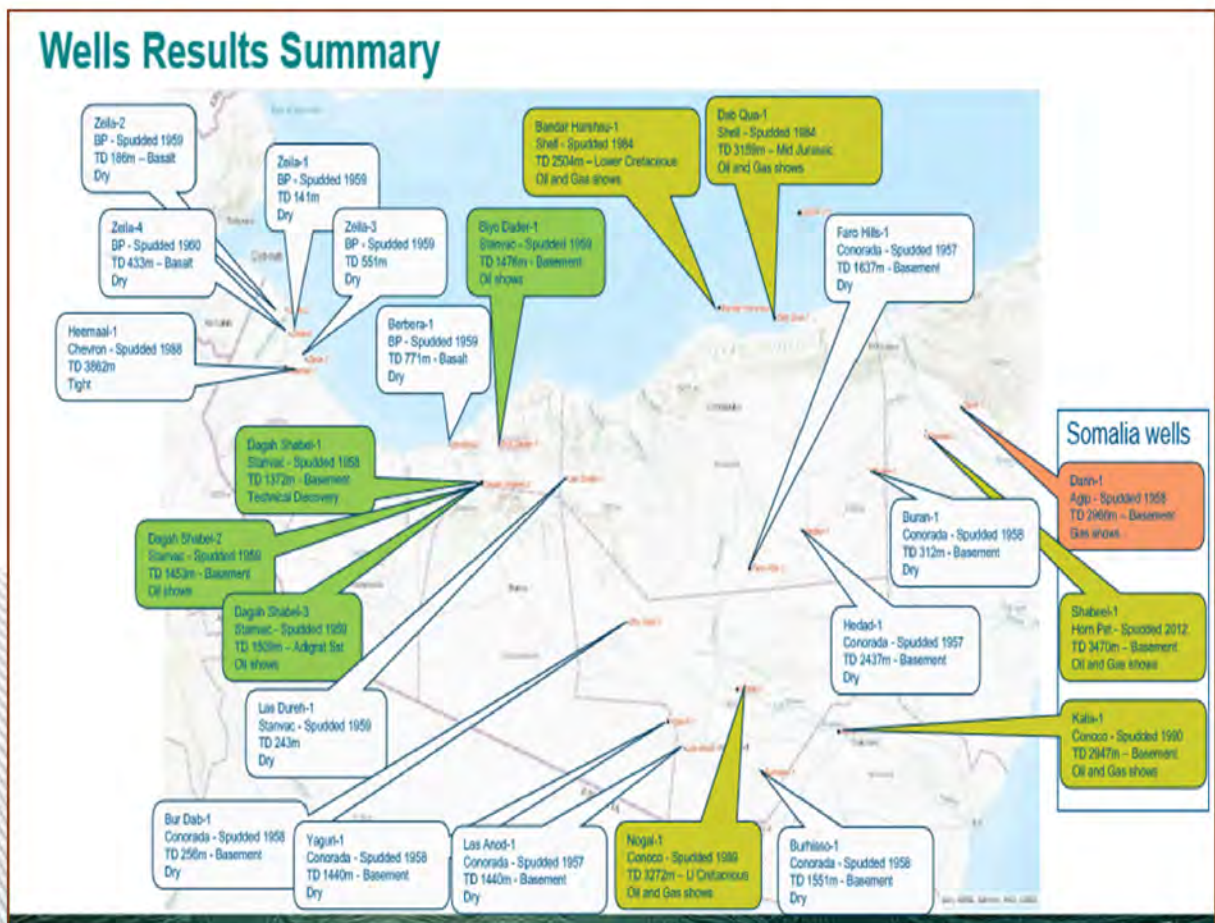


Fig. 11: Somaliland oil and gas wells result summary

that have exploration and production sharing agreement with the government. Many of these blocks have great deal of potentiality and open for investors. Somaliland is elongated east-west along the Gulf of Aden

and hence all the blocks are not far from the coast furthest being about 300km away.



## POST SEISMIC PROJECTS

After the results of the interpretation of seismic data were obtained, it became necessary to perform further and detailed studies to increase the probability of finding commercial accumulation and decrease risks of unsuccessful drilling which is the last remaining stage of the exploration stages.

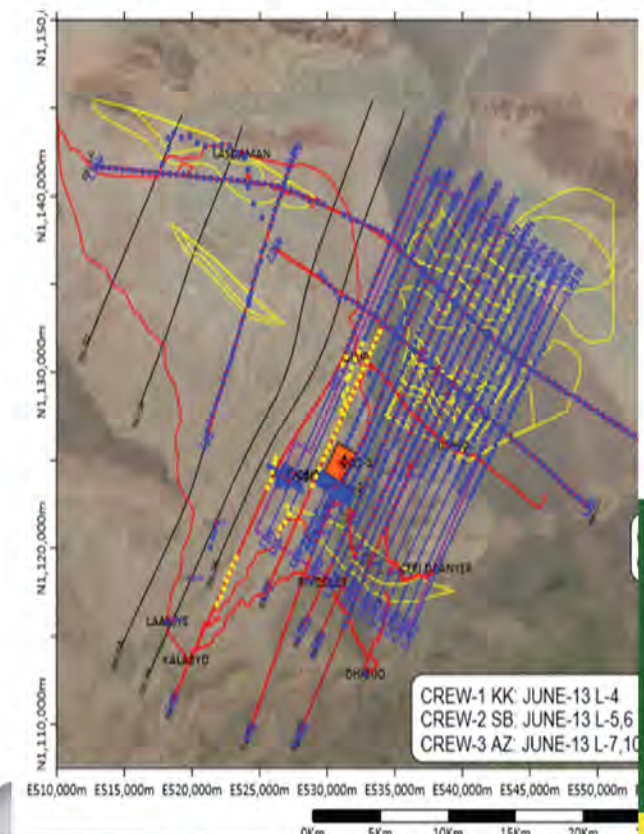
In mid 2019; RAK Gas carried out a microseepage survey in the western parts of Block SL9; in order to enhance the chance of successful drilling in that block, while Genel energy implemented survey macroseepage in late 2019; also to de-risk drilling wells and better understand the seismic data results.

Macroseepage is about detecting and analyzing visible oil and gas seeps on the surface such as soil stains and tar. Oil and gas are buried in deep surfaces and due to the reservoir pressure it may migrate through faults and rock fractures to the surface, and once it is at the surface it can be seen and collected for further studies. Hence macroseepage can decisively mean the existence of working petroleum system and can indicate the migration routes and direction usually along the faults and towards edges of the basin.



On the other hand microseepage analysis is used for detecting changes in near-surface environment caused by hydrocarbons accumulated deep under the surface, lighter hydrocarbon molecules (methane, ethane, propane and so on) tend to escape from reservoirs and move vertically to the surface as migration of hydrocarbons depends on two factors: pressure and buoyancy. These changes or alterations caused by buried hydrocarbons can be observed and analyzed from shallow soils, water and sediments and can to extent reveal the existence and productivity of reservoirs which in turn adds to minimizing risks of drilling.

The seepage data was integrated with the seismic and other geophysical data to better understand the prospect of the defined structures and to confirm change into those structures. The result of the two data matched well.



(Fig. 12 ) Map of the microseepage survey (a) field activities of the microseepage survey (b)





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