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MapStand Monthly Mashup

APRIL 2020

A monthly round up of key developments and insight

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*Permalinks within each article will take you straight to our app to help you access the data related to each story.

Welcome to the second edition of the MapStand monthly Mashup and firstly thanks to everyone who read our first newsletter last month (if you didnt you can find it here) and gave some valuable feedback as we look to provide our community the latest E&P news as well as some hints and tips on how to maximize the value you can get from the MapStand app.

It was another crazy month for the oil and gas industry. Despite an OPEC+ agreement to cut production, which comes into effect on May 1st, storage capacity continues to come at a premium and led to WTI crashing at one point to $-36 as the May futures contracts came to an end and, despite a pick up, once June contracts began it is again looking like another tough month ahead as the reduction in demand for hydrocarbons due to Covid-19 continues.

However, you'll be glad to hear, it was not all doom and gloom and we will look to focus on some of the positives. This month we'll be bringing you information on the latest discoveries announced throughout the month, primarily across Latin America and NW Europe as well as the conclusion of the historic Byblos-1 well in Lebanon. We also have some feature pieces on Ethiopia, Turkey and also an example of how you can turn MapStand data into interactive E&P dashboards to keep up-to-date with the latest planned exploration wells, discoveries and licence changes globally.

Following feedback, we also feature contributions from some of our community members. Want to find out more about the power of the MapStand community to promote yourself or your company, you can read our recent blog post here and if you would like to feature your or your company of product in future editions, please get in touch with us on info@mapstand.com

Francis Cram
CEO - MapStand

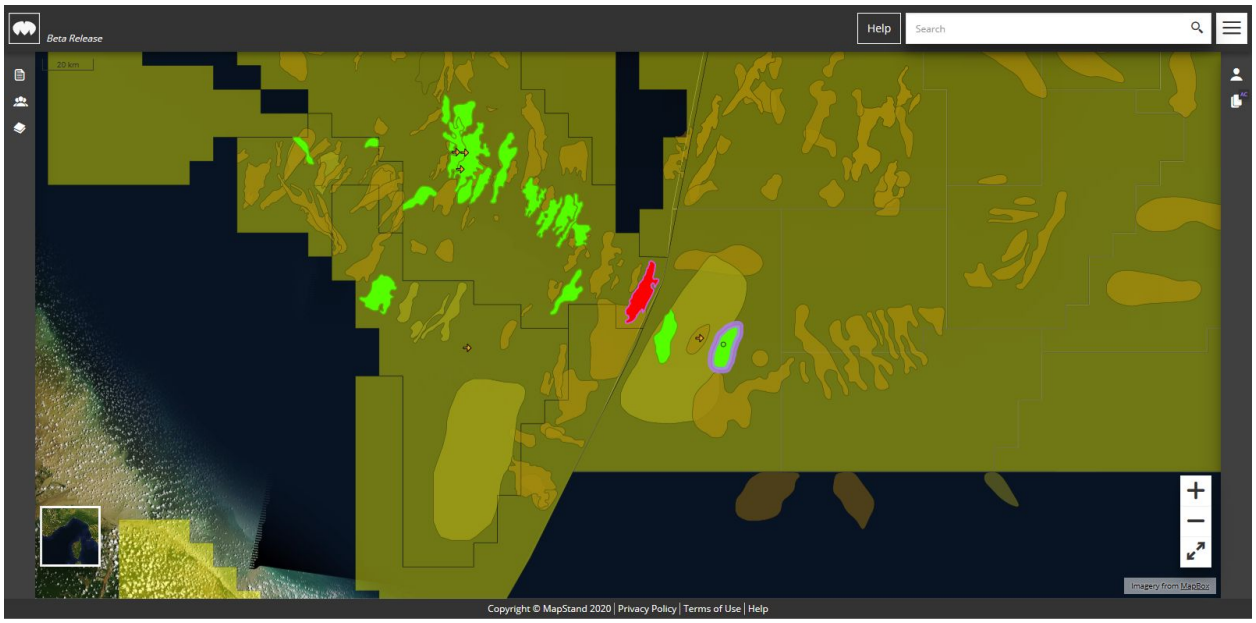
A selection of recent discoveries:

Sapakara West - Suriname, Apache (2nd of April)

Apache Corporation and partner Total announced their second significant discovery on Block 58 offshore Suriname using the Noble Sam Croft drillship.

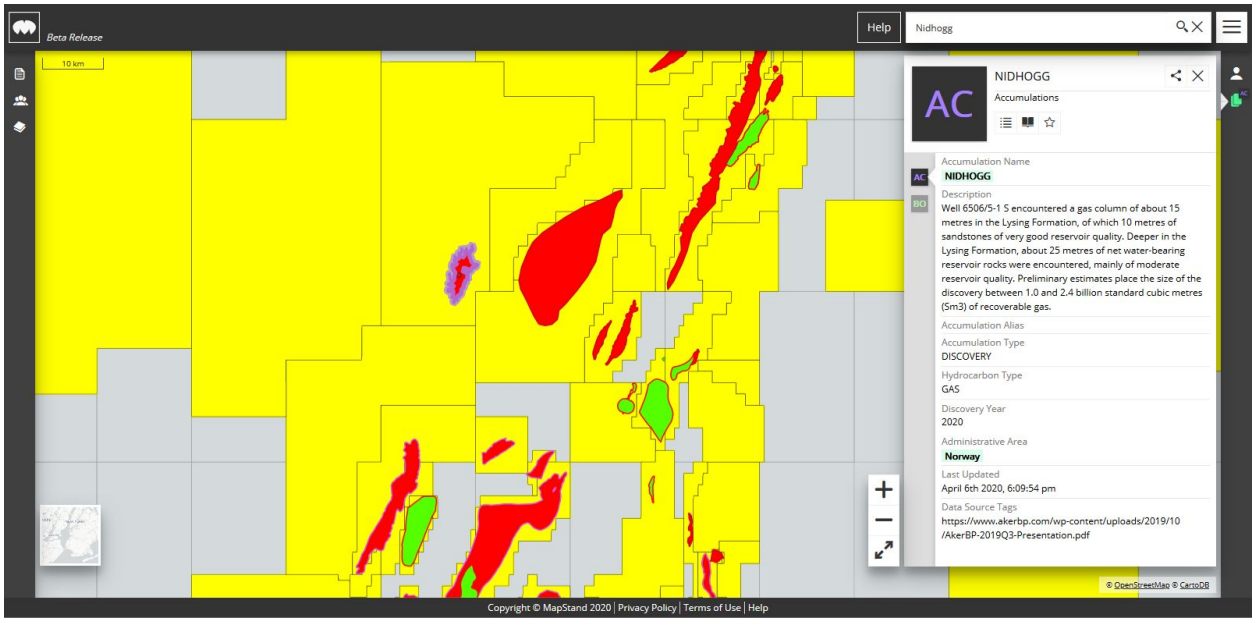
The Sapakara West-1 well was drilled to a total depth of 6,300 metres and encountered hydrocarbons in multiple stacked targets. Initial tests show at least 79 metres of net oil and gas condensate over two intervals.

Apache has moved on to its next two prospects Kwaskwasi and Keskesi.



Nidhogg - Norway, Aker BP (6th April)

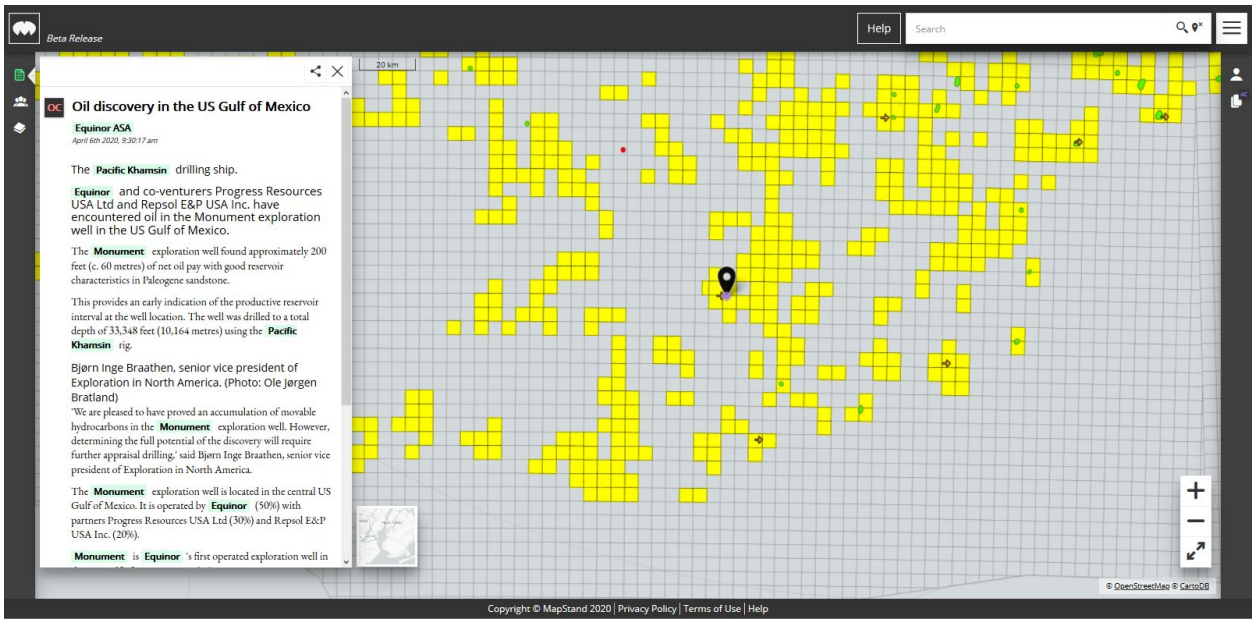
In early April, Aker BP announced a small gas discovery in the Vøring Basin at the Nidhogg prospect. The prospect was drilled by wildcat well 6506/5-1 S using the Deepsea Nordkapp drilling facility owned by Odfjell Drilling. The well encountered a gas column of ~15m within the Lysing Formation with initial estimates putting the discovery size between 6 and 15 MMboe. Aker BP ASA is the operator with 60% working interest in production licence 1008 alongside partner Wellesley Petroleum AS who owns the remaining 40% working interest.



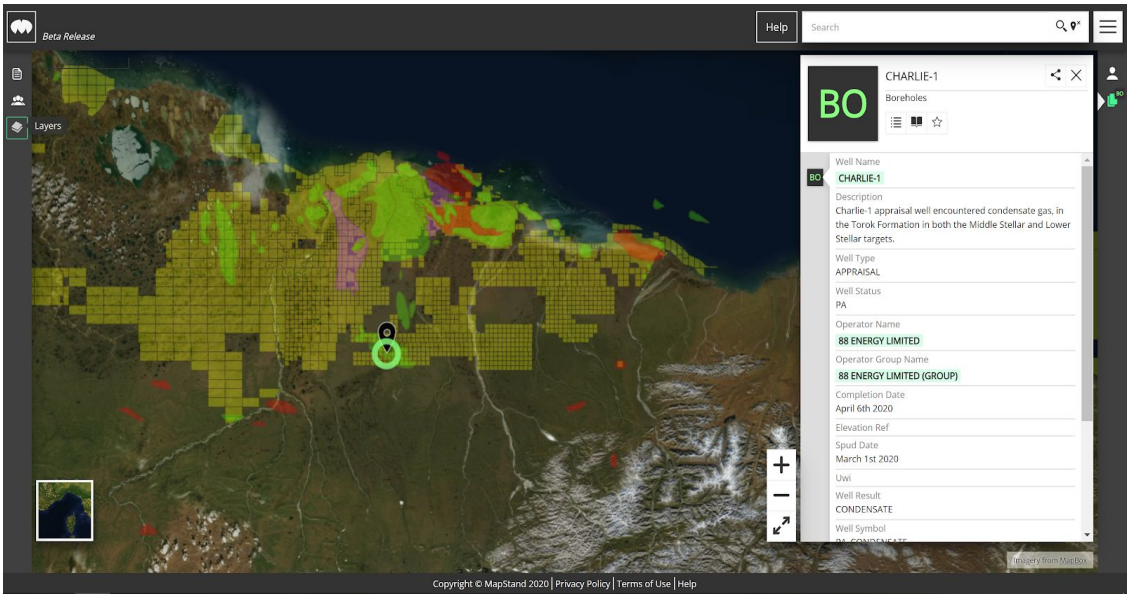
Monument - US GOM, Equinor (6th of April)

Equinor encountered 200 ft (60 m) of net oil pay at a total depth of 10,164m with the Monument exploration well in the US Gulf of Mexico, using the Pacific Khamsin drillship. The Monument exploration well is located in the central Gulf of Mexico. It is operated by Equinor (50%) with partners Progress Resources USA Ltd (30%) and Repsol E&P USA Inc. (20%).

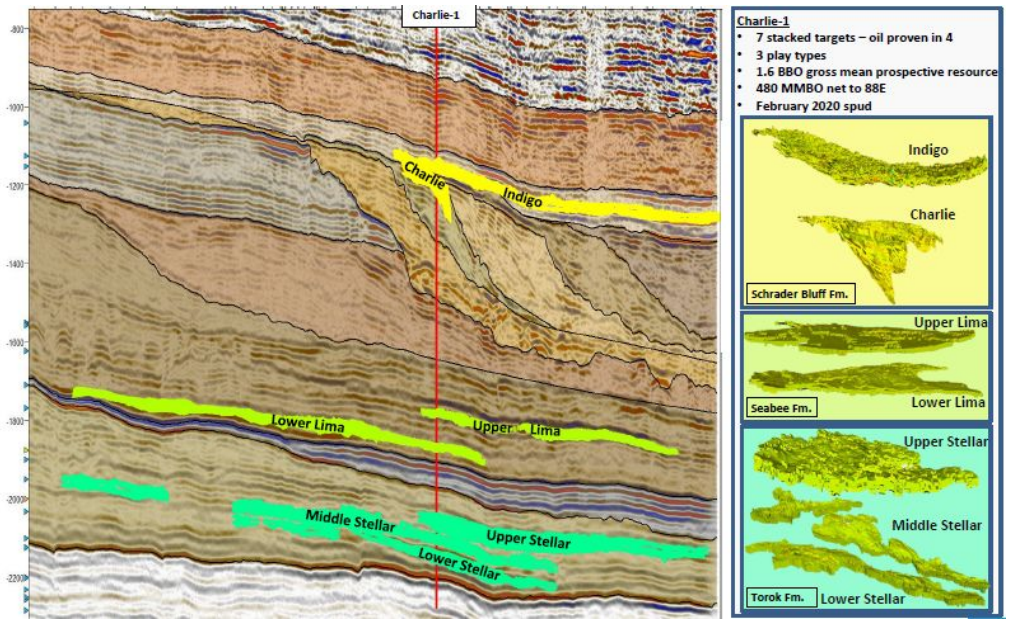
Based on the total depth, many are suggesting the discovery could be under very high-pressures, requiring a rig outfitted with a 20k psi blow-out preventer for commercial development. Currently there are no capable vessels in the market, however Transocean has ordered one new build designed around NOV's 20K BOP, the Deepwater Titan. The Titan, due to be launched in 2022, has already been contracted to Chevron on a five year fixture at $830m for its Anchor deepwater project in US GOM.



[Charlie-1 - Alaska, 88 Energy](7th of April)



The [Charlie-1](#) well, drilled by Premier Oil (60%) and 88 Energy (40%), a step-out from the 1991 Malguk-1 discovery, was targeting light oil on the North Alaskan slope.



88 Energy Investor Presentation Feb 2020

The well encountered gas condensate, but being “challenging to commercialise” and not in line with its pre-drill expectations, Premier Oil has now elected to withdraw from the licence.

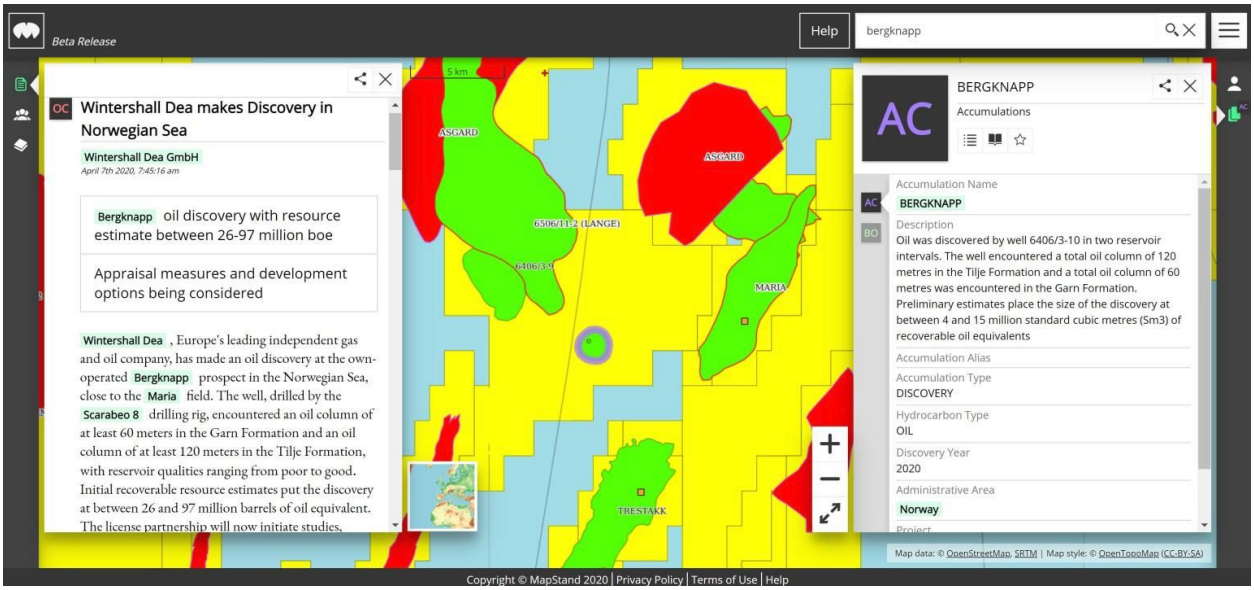
Disappointing results for 88 Energy on what many were stating as a potential company making well. The company is now seeking to acquire further near term exploration opportunities on Alaska’s North Slope, and has started with an all-paper takeover bid for XCD Energy.

Bergknapp - Norway, Wintershall (7th of April)

Wintershall Dea and partner Spirit Energy encountered 120 meters of oil at its Bergknapp prospect, offshore Norway. The oil columns were found in the Early Jurassic Tilje and Middle Jurassic Garn formations. Reservoir quality is said to be ranging from poor to good, with initial recoverable resource estimates put between 26 and 97 mmboe. Further evaluation of the discovery will be necessary, the partners believe the find has development potential.

Bergknapp was drilled by well 6406/3-10 by the Scarabeo 8 in a water depth of 313 meters, completing on 05/04/2020.

Bergknapp is located ~10 km from the Maria field in production licence PL836 S where Spirit Energy has 20% interest alongside Wintershall Dea (40%) and DNO (30%).

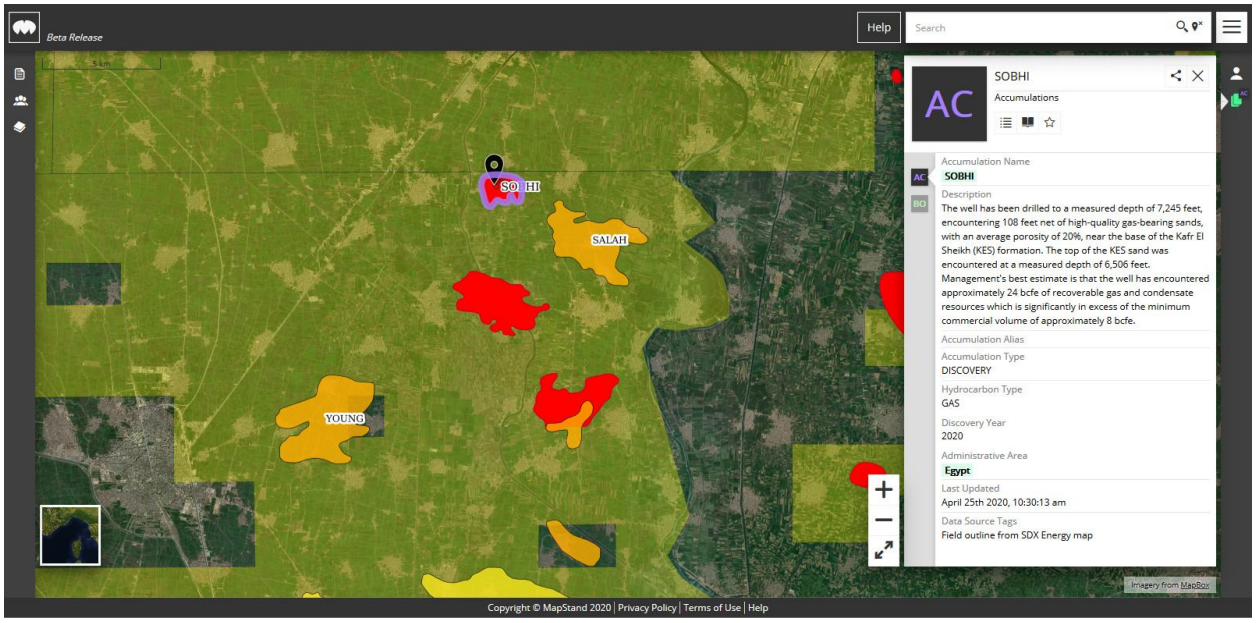


Sobhi - Egypt, SDX (8th of April)

SDX Energy Inc. announced, 8th April 2020, that it has discovered gas onshore Egypt on its 'flagship' asset, the South Disouq block of which it is operator with a 55% working interest, alongside IPR Energy Group (45%).

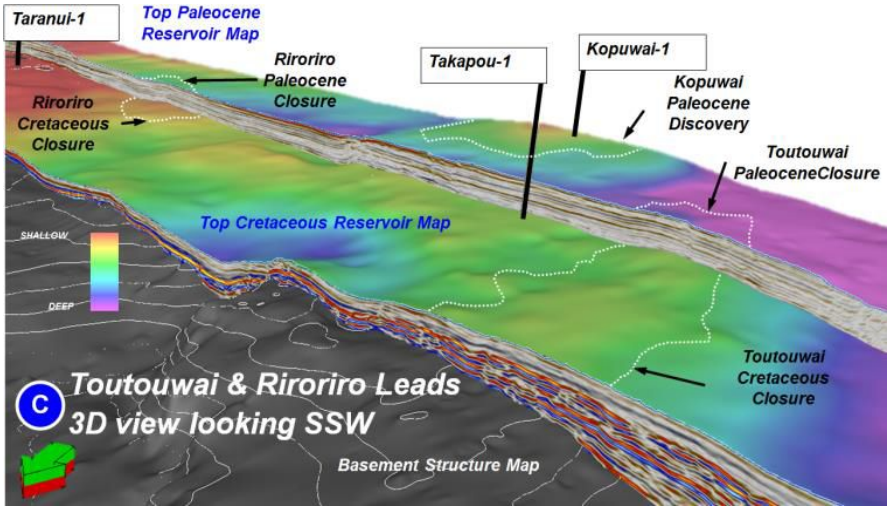
The Sobhi-1 (SD-12X) well encountered 108 feet of gas-bearing sands, with a current estimate of 24 bcfe recoverable gas and condensate resources. The well will be tied in to the IBN Yunus discovery, bringing the company's total number of fields feeding gas into the Disouq Central Processing Facility up to three.

According to their latest presentation, SDX currently sells gas into the local market at ~US$2.85/mcf.



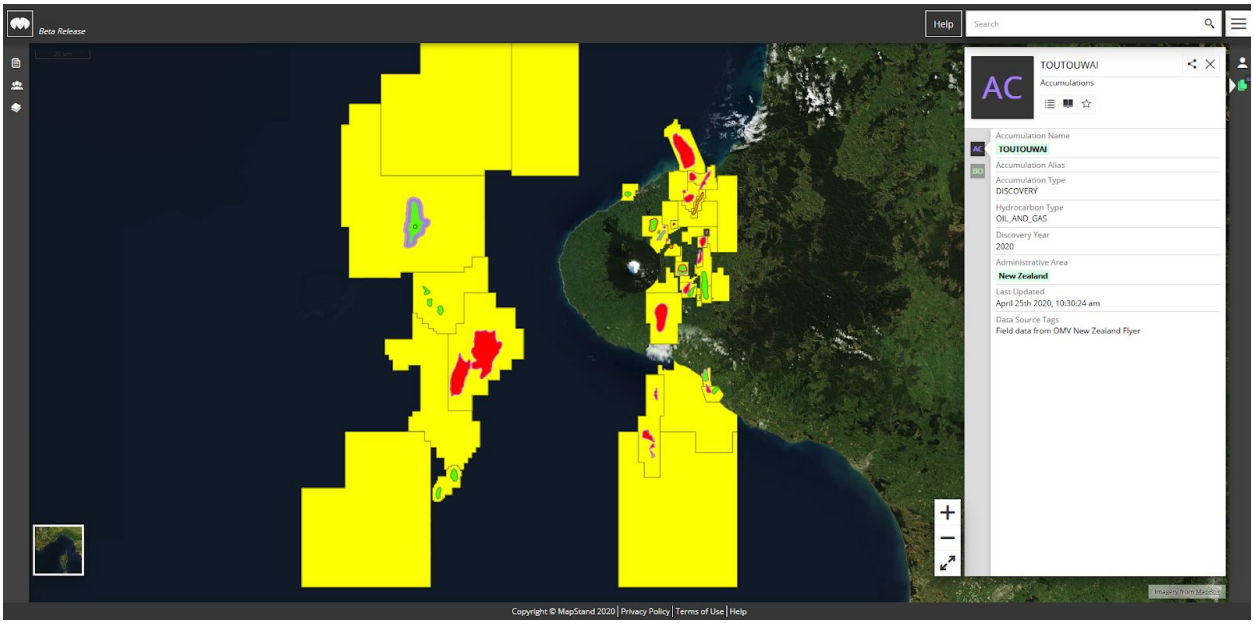
Toutouwai - New Zealand, OMV (14th of April)

OMV announced a 'significant' oil and gas discovery offshore New Zealand in the Taranaki basin. The Toutouwai-1 well, which was drilled by the COSL Prospector semi-submersible in water depths of 130m, encountered several hydrocarbon charged layers. OMV cut short testing of the well over Covid-19 concerns.



PEP60093 leads including Toutouwai & Ririoriro (OMV Farmout brochure 2017)

Back in 2018, the government of New Zealand decided it would no longer grant new offshore exploration permits as part of its battle against climate change. Exploration and development of existing assets is still permitted.



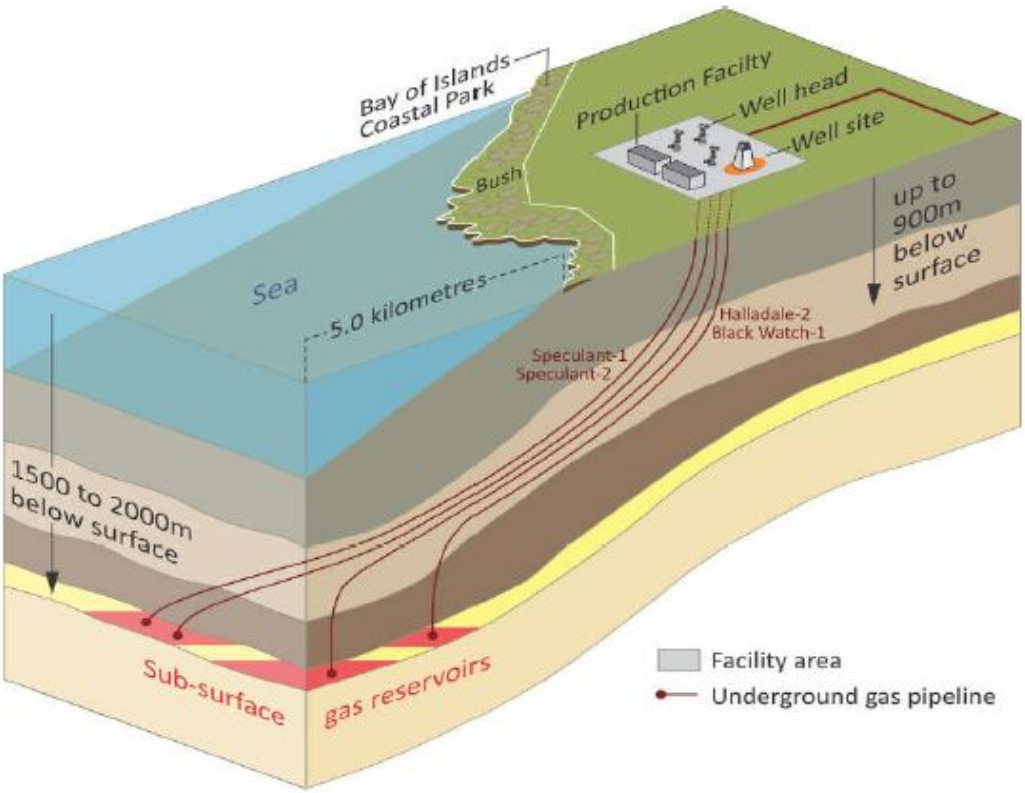
Black Watch-1 - Australia, Beach Energy (20th of April)

Beach Energy Ltd announced earlier this week the successful completion of the Black Watch-1 gas well offshore Australia in the Victorian Otway Basin.

Black Watch-1 was an extended reach drilling (ERD) well, drilled onshore to reach the Black Watch field approximately 5km offshore and 1.7km deep.

Further offshore, Beach had intended to start an additional nine well program, inclusive of one exploration well on the Artisan prospect and development work on the Geographe and Thylacine gas fields using Diamond Offshore's moored semi-submersible, the Ocean Onyx.

The contract was scheduled to start in mid-April, but citing the rig's late arrival from Singapore (20th of April), Beach exercised it's 'right' to terminate the agreement. Diamond, which recently entered into chapter 11 bankruptcy, has since launched legal proceedings against the company.



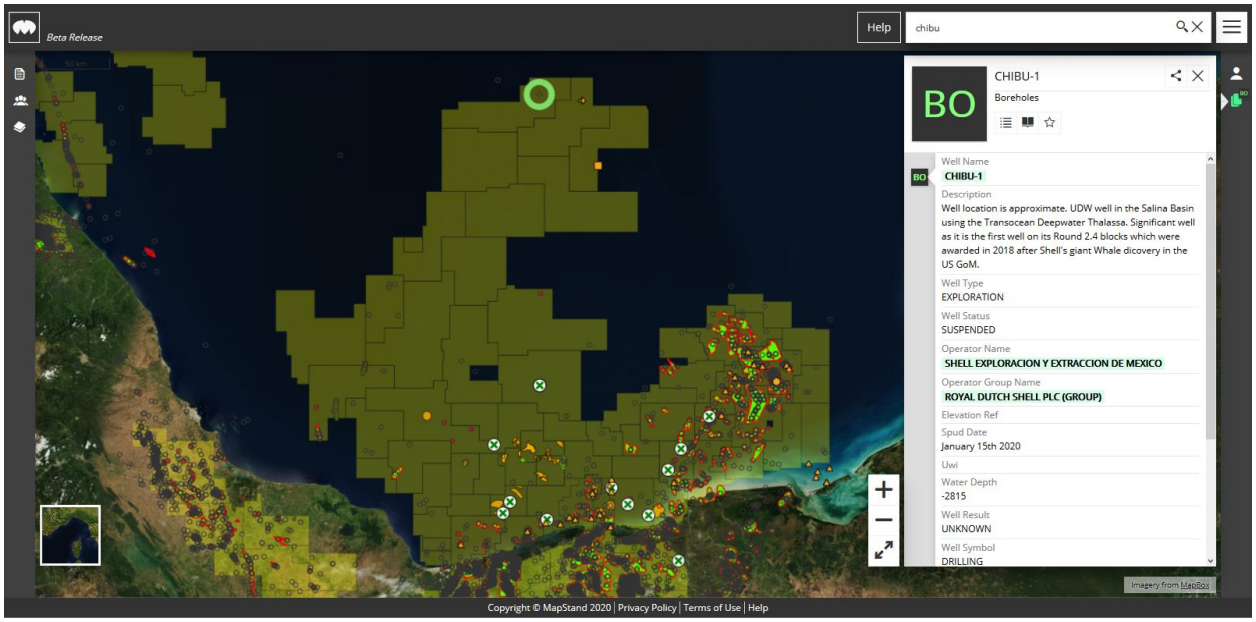
Extended reach drilling at Black Watch (Source: Beach Energy drilling environmental plan)

Other major announcements

Chibu-1

In Mexico, we are still awaiting news of the result of Shells Chibu-1 exploration well which began drilling in late January. Investing around $93mn, Chibu-1 is expected to be the most expensive and deepest oil well drilled in Mexico with a geological target 6000m below the water surface.

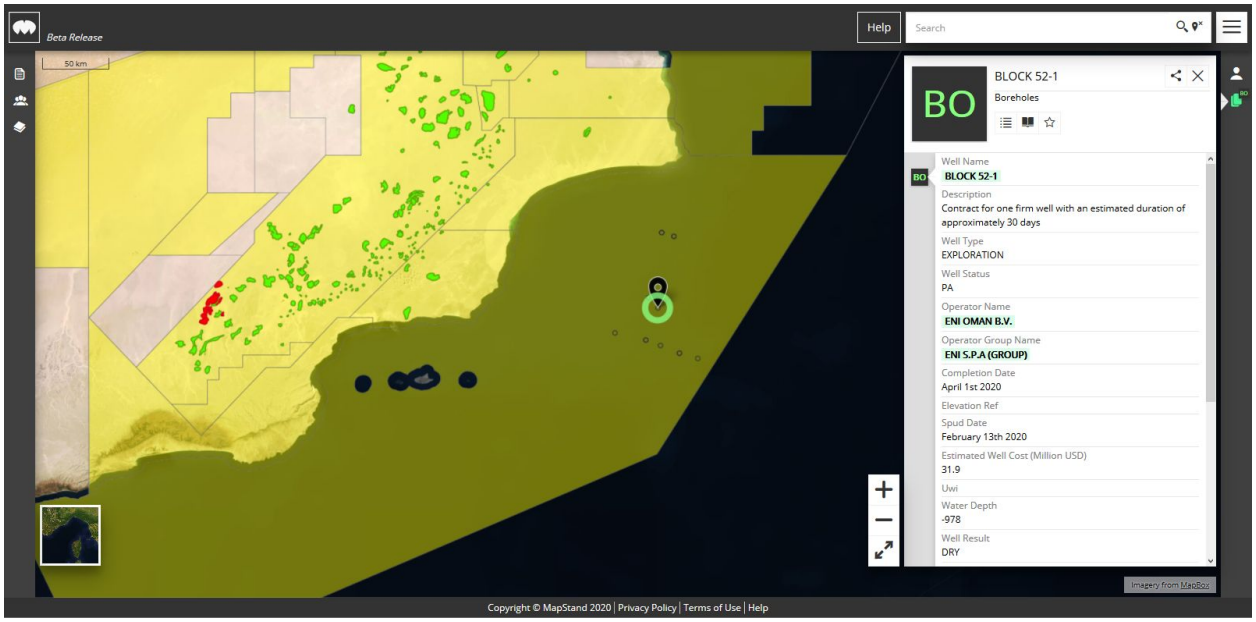
Shell has become an early leader in deepwater drilling in Mexico and at a meeting at the end of April, the regulator CNH approved Shells exploration plan for licence CNH-R02-L04-AP-PG03/2018, which included bringing forward a planned exploration well to this year.



Eni - Offshore Oman

Eni started drilling Omans first offshore deep-water exploration well in its giant Block 52 acreage in early February however we are yet to hear of a result but it is assumed dry. Late last year, the Pacific Bora was contracted for one firm well in Oman with a drilling duration estimated at 30 days. The contract was scheduled to start in February and end in March 2020 with a day rate of $190,000.

Block 52, which is an underexplored offshore area in the southern region of Omann has an area of approximately 90,000 km2, with water depths ranging from 10 to over 3,000 meters. Eni (55%) is the operator of the licence alongside Qatar Petroleum (30%) and OOCEP (15%).

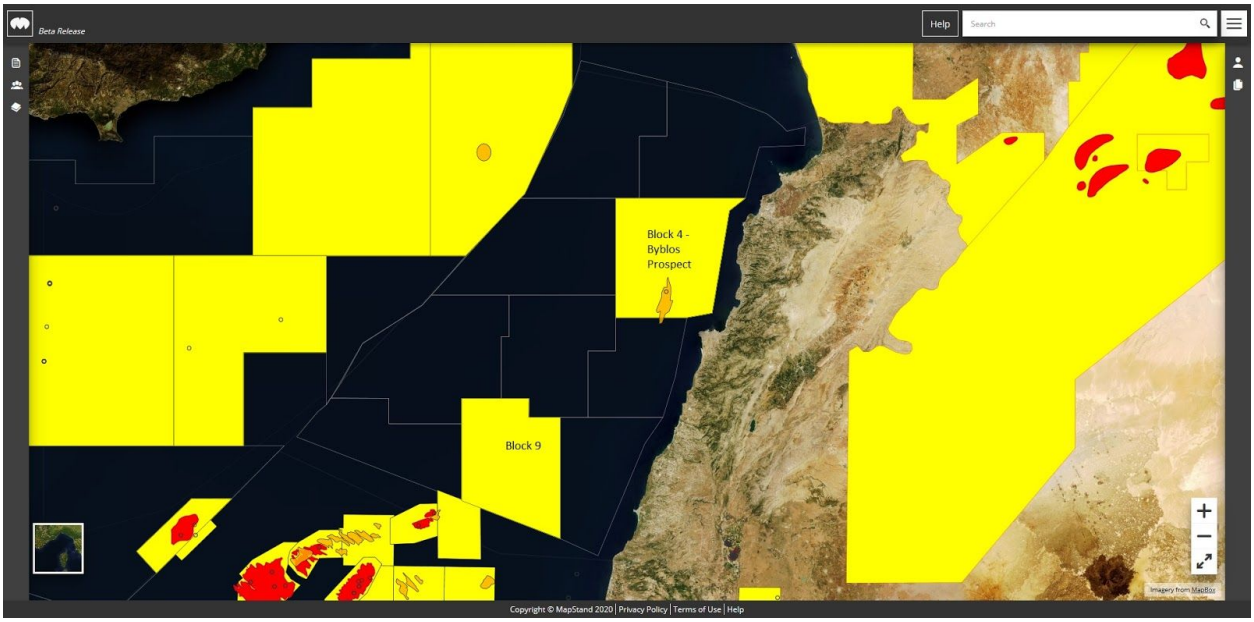


Byblos-1 -Lebanon

The much anticipated Byblos-1 well, offshore Lebanon, was announced as encountering minor gas shows by operator Total E&P Liban but failed to encounter any of its target reservoir, the Oligo-Miocene Tamar Sands.

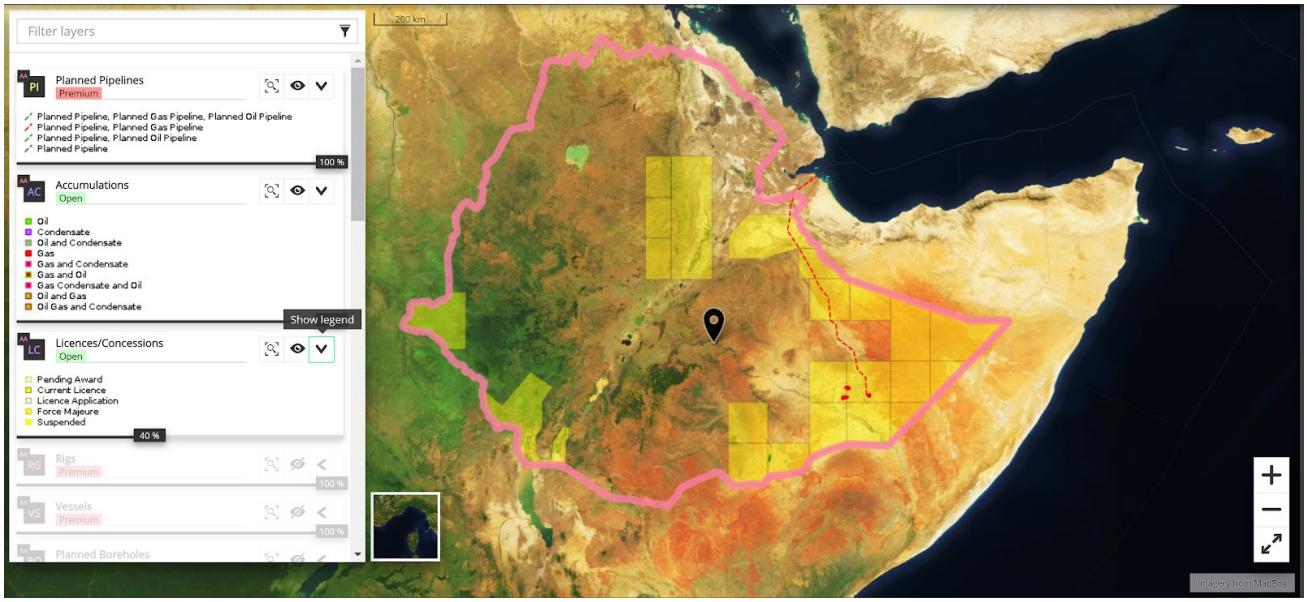
The well was completed on the 27th April at a total depth of 4076m, drilled by the Tungsten Explorer at a water depth of 1586m. The well was the first to be drilled in Block 4, operated by Total E&P Liban (40%) with partners ENI (40%) and Novatek (20%).

The consortium had initially aimed to begin drilling in December but the well was delayed due to a blowout preventer/riser issue with the Tungsten Explorer. These delays, combined with Covid-19 and results of the first well are likely to lead to delays for the second well in Block 9 pushing it back to Q3/Q4 2020.



What do you know about Ethiopia?

Widely regarded as having huge potential, Ethiopia remains under-explored with only a few discoveries to its name.



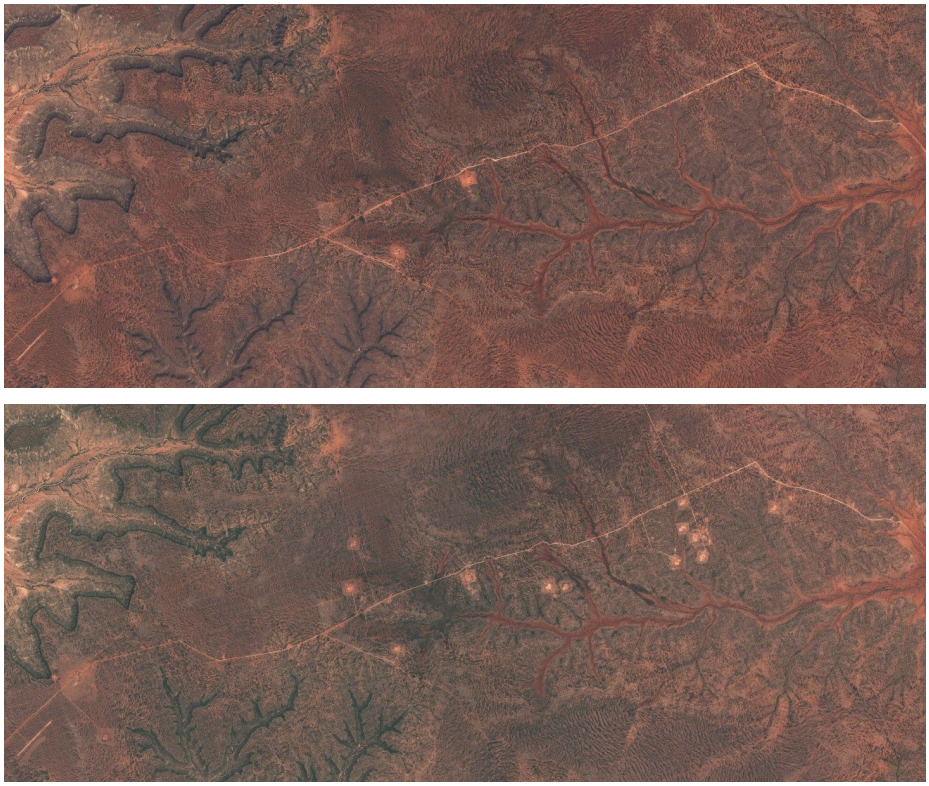
Fields, licences and planned pipelines in Ethiopia. MapStand platform

In the 1970's, two gas fields, Hilala and Calub, were discovered by Teneco. Shortly after, the long serving emperor was forced out in a revolution and the government aligned with the Soviet Union. Naturally, American oil company Teneco was booted out too and the discoveries were transferred to the Soviet Petroleum Exploration Expedition.

Until their demise, the Soviet's conducted a significant amount of appraisal and development activity on the two fields between 1986 and 1991. Ever since, the assets have yo-yo'd between private companies which failed to do anything with them.

Fast forward to 2012, China's state-owned Poly GCL picked these assets up and got straight to work, further appraising the fields and making an additional discovery at Dohar, even encountering oil too. Plans are now in motion to construct a 765km pipeline through to Djibouti and build an LNG export terminal in the country.

But how much gas is there?



Hilala 2015 vs 2020. Can you spot the seismic lines?

Published figures from 1993 between the two fields put initial gas in place at 4 TCF and 128 million barrels of condensate. Figures floating around on the internet today somewhat vary, but the general consensus puts it closer to 7-8 TCF now. Even so, not massive numbers in the context of all the other global LNG projects jostling for FID.

If you asked what most industry analysts thought 5 years ago, they would probably have wagered against the project going ahead. But they likely ignored two very important elements. Chinese state-owned company and the geopolitical significance of Djibouti.

Djibouti has found it-self in a crossfire of geopolitical competition between the East and the West. Strategically positioned in the Horn of Africa and at the entrance of one of the world's busiest maritime trade routes, both superpowers have set up Military bases in the country, and both are seeking to win influence where they can.

Construction has yet to begin, but dialogue from all involved in the project remains positive.

Turkey's expanding fleet of Drillships

Trying to take advantage of the downturn, Turkey has slowly been buying up distressed sixth generation drillships in various states of condition. The state owned Turkish Petroleum Corporation (TPAO) now operates a fleet of three such vessels.

Fatih and Yavuz escorted by the turkish navy - Sourced from the Daily Sabah

TPAO started their shopping spree with the Deepsea Metro II (now Fatih). Constructed at a cost of $652 million in 2011, it was purchased from Odfjell drilling for $262.5mm in 2017.

The company's second acquisition was the Deepsea Metro I (now Yavuz), purchased for ~$150mm in 2018, again from Odfjell.

Sertao, (now Kanuni) was the company's latest purchase. Built for the Brazilian company Schahin in 2012, the company went bankrupt in 2015 and the vessel has sat cold stacked for five years before being picked up for $37.5mm in 2020. Presumably reflective of its condition.

But why?

The most obvious reason is the apparent bargain these assets presented by timing the market right, future proofing against any potential rise in day rates.

The assets will aid the development of Turkey's domestic offshore petroleum industry in the Black Sea and the Mediterranean (the latter being an area they may struggle to contract assets from private companies in the future).

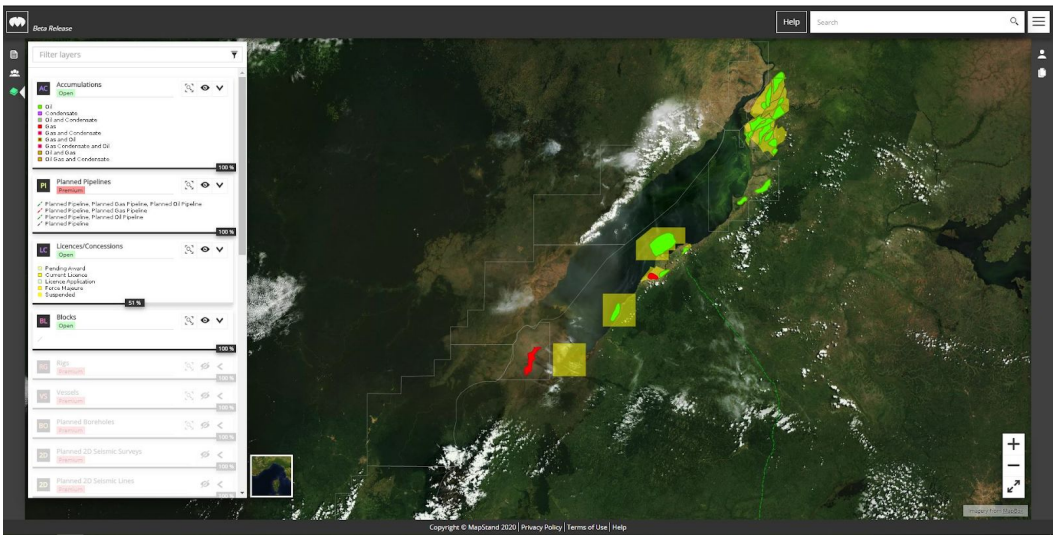
TPAO already has several international operations and is seeking to expand further. Turkey has plans to drill offshore Libya and has even expressed interest in the upcoming Somalia licensing round.

Lately, any pulse of recovery in the drillship market has been brutally exchanged with a heart attack, sending day rates and asset values tumbling.

If TPAO waited a little bit longer, they could have acquired even more capable assets at very attractive prices. Who knows, it still could.

Tullow exits Uganda

Tullow announced this month that it sold their entire 33.3% interest in its Ugandan portfolio to Total for $575m, in a move that could help revive the East African Pipeline Project (EAPP).



Uganda's oil dreams began in 2006 with oil discoveries made in the Albertine Graben. Successive exploration found 1.5 billion barrels of recoverable oil that project partners Total, CNOOC and Tullow Oil were keen to develop. But this soon transitioned into a pipe dream.

A pipeline to shore was needed and a dispute over the route pushed back the project. In 2016, it was agreed to route through Tanzania. This put Tullow in a difficult position, having to fund an additional pipeline for Kenya's Lockichar development, something it would struggle to finance.

The company decided to farmout 21.57% of its 33.3% interest to it's partners for ~$900m, but this deal was delayed due to a capital gains tax dispute with the Ugandan government, eventually causing the deal to collapse in 2019.

Previous deal: ~323mmbbl for ~$900m. Avg 2017 closing oil price - $50.84

April's deal: ~495mmbbl for $575m. Oil price on day of the deal - $14.23

Total clearly drove a hard bargain and given recent events Tullow wasn't in any position to refuse. But macro economic trends aside, the EAPP now has one less barrier to completion.

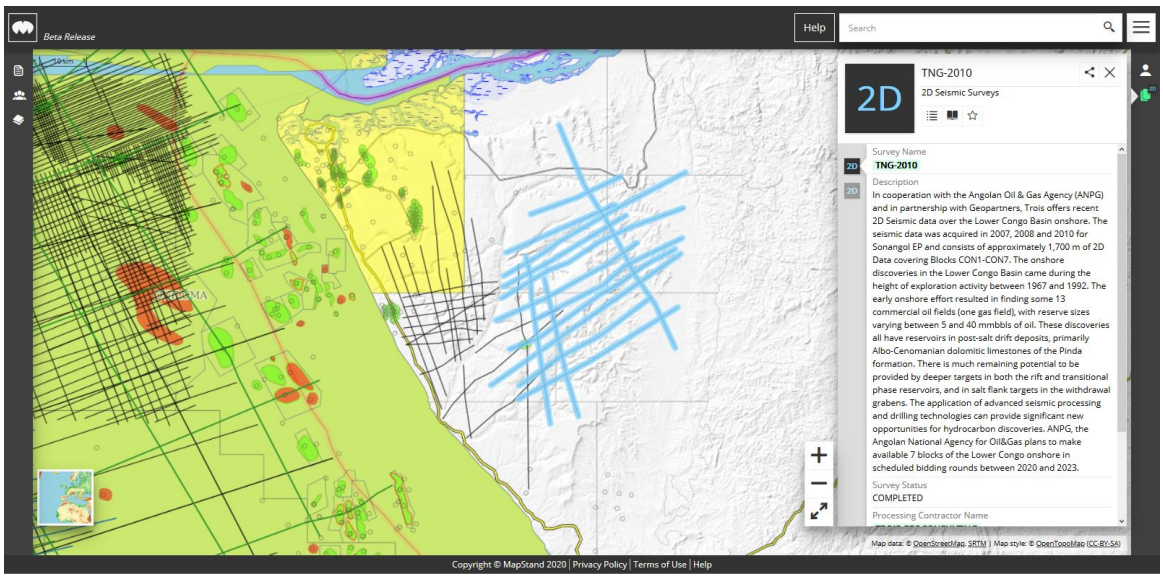
The hidden potential of onshore Angola

Guest post by Alessandro Colla - Trois Geoconsulting

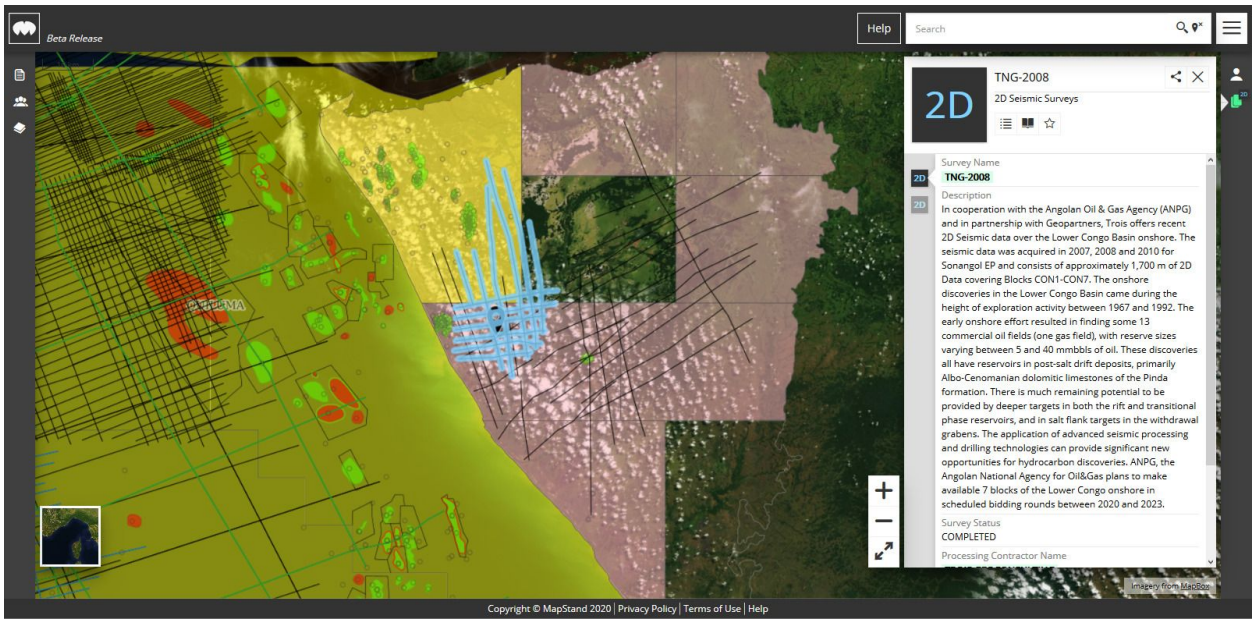
The Angolan basins, from north to south, and in order of their petroleum significance, are the Lower Congo Basin, the Kwanza Basin (with the Benguela Basin) and the Namibe Basin. These form a substantial part of the Aptian Salt Basin that extends from south Cameroon almost to the Namibian border. In recent decades, the sedimentary basins of Angola have been the location of massive oil finds and prolific production in the offshore and these basins and their petroleum systems also extend onshore.

These basins are characterised by 3 primary tectonic phases; a lacustrine latest Jurassic to mid Cretaceous Rift Phase, an episodic marine mid Cretaceous Transitional Phase (during which the mainly Aptian salts were deposited), and a marginal marine to full marine Drift Phase that saw major delta building episodes, deposited under the influence of widespread salt tectonism.

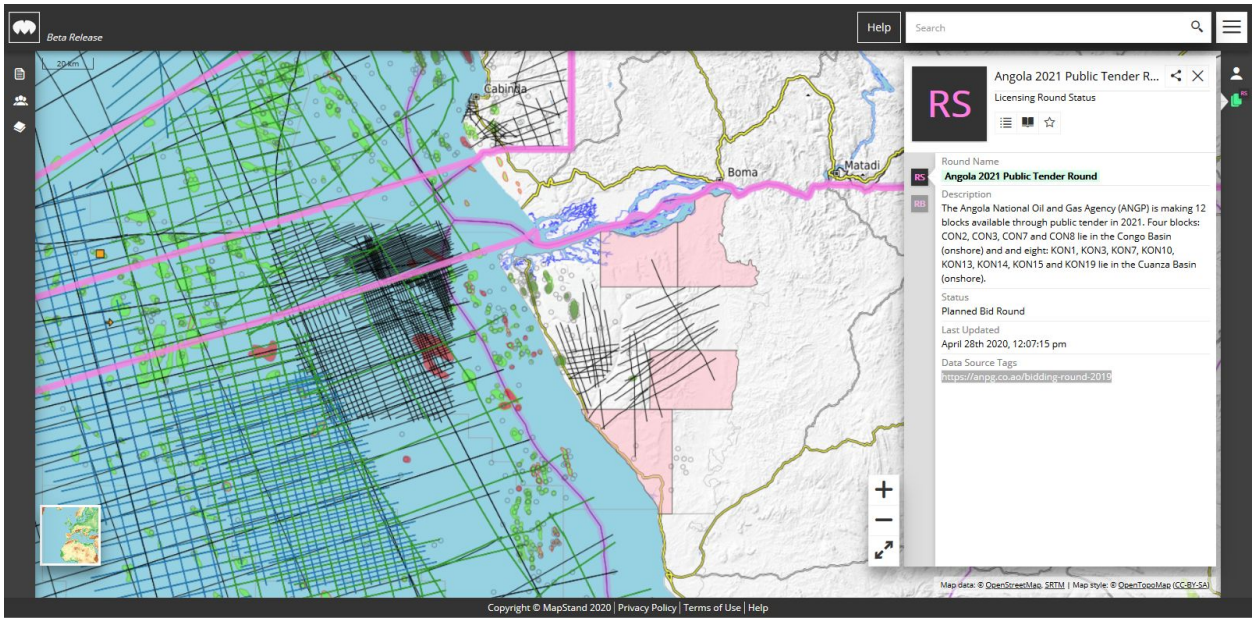
The Lower Congo Basin is bifurcated by the Congo River and extends from the Casa Maria Arch in Southern Gabondown to the Ambriz Spur in northern Angola. It has oil production in Angola (mainland and Cabinda enclave) and in both of the Congo republics, whilst in southern Gabon, oil and gas have been discovered but not yet in commercial volumes. The Lower Congo Basin is characterised by world class source sequences in the rift section (lacustrine in both early and late episodes) and in the marine drift phase, significant structural and stratigraphic traps (generated or influenced by rift and salt tectonics), quality reservoirs, both clastic and carbonate, and abundant sealing intervals.



The onshore discoveries in the Lower Congo Basin came during the height of exploration activity between 1967 and 1992. The early onshore effort resulted in finding some 13 commercial oil fields (one gas field), with reserve sizes varying between 5 and 40 mmbbls of oil. These discoveries all have reservoirs in post-salt drift deposits, primarily Albo-Cenomanian dolomitic limestones of the Pinda formation.



There is much remaining potential to be provided by deeper targets in both the rift and transitional phase reservoirs, and in salt flank targets in the withdrawal grabens. The application of advanced seismic and drilling technologies can provide significant new opportunities for hydrocarbon discoveries.



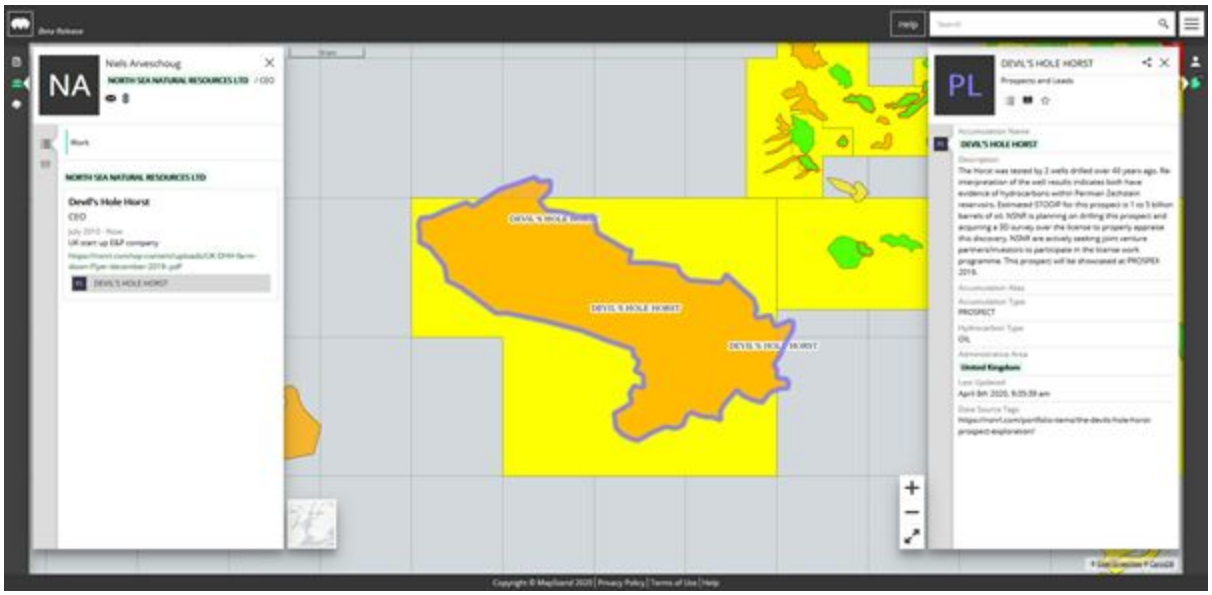
ANPG, the Angolan National Agency for Oil & Gas has plans to make available 7 blocks of the Lower Congo onshore in scheduled bidding rounds between 2020 and 2023. 2D Seismic data are brokered through Geopartners and DDMS Lda.

The Devil's Hole Horst Prospect

North Sea Natural Resources, a private independent oil and gas company, was awarded UK Offshore License P2321 in the 29th UK licensing round. The 6 year licence consists of 7 contiguous blocks covering the giant Devil's Hole Horst prospect, approximately 100 miles east of Aberdeen.

The Devil's Hole Horst Prospect, the largest undeveloped oil discovery in the North Sea, is an overlooked basin margin play concept which is proven to occur in the Norwegian giant Johan Sverdrup oil field (2.7 BBO 2P Reserves) discovered in 2010.

The prospect was initially drilled over 50 years ago by 2 wells (27/03- 1 and 27/10- 1) in 1967 and 1970Re-interpretation of the drill cuttings demonstrates both have Jurassic sourced hydrocarbons within Permian Zechstein reservoirs. Third party verified STOOIP for this prospect is 5.7 billion barrels of oil in four reservoirs.



CEO Niels C Arveschoug has utilised the power of the MapStand platform to market this prospect, providing prospect outlines as well as utilising our geotagged user profiles to link the geospatial data to his profile. Now, members of the community can search for Niels / Devil's Hole Horst and find more technical information on the prospect by visiting Niels profile and following the link to his flyer.

Speaking to Niels earlier this month he informed us that North Sea Natural Resources Ltd is pleased to announce it plans to get listed on the London Aim

market later this year probably in the third or fourth quarter. This is subject to market conditions having recovered enough from the Coronavirus by then.

NSNR plans to raise finance for its seismic and drilling work programme through investment and farming down its 100% licence interest.

The prospect is shallow enough to be within reach of modern high resolution 3D seismic technology survey that could be acquired in 2020 or 2021. This will enable NSNR to bring the Devil's Hole Horst Prospect up to 'Ready To Drill status' in 2021 or 2022.

"I am very impressed with the MapStand product. It is an effective way of marketing hydrocarbon exploration prospects such as our own Devil's Hole Horst Prospect." Niels C Arveschoug – CEO – North Sea Natural Resources

Niels C Arveschoug. - North Sea Natural Resources

Disruptive technology – It's nothing new

Marcus Wiltshire - Spatial Data Analyst

We often think of disruptive technology as a relatively new phenomenon, born from the development and subsequent utilisation of the internet by companies to disrupt traditional industries. Uber, Airbnb, Netflix and Amazon are great examples of how companies have grown rapidly by redefining the industries in which they operate. However, this is not a new phenomenon with examples of disruptive technology throughout history.

Take the car for example, following the first production version from Karl Benz in 1814, it became a method of transportation for the wealthy but failed to replace the traditional horse-drawn cart. However, as the industrial revolution took hold and population growth, particularly in cities, rocketed a requirement came to remove the waste from thousands of horses that were polluting the densely populated environment and causing rapid spread of disease, culminating in 'The Great Horse Manure Crisis of 1894'.

However, the car was still an expensive luxury for the elite and not available to the masses. Along came a key disruptor of the time, Henry Ford. Ford took the car and, utilising the latest technology at the time, redesigned traditional components to cut the cost of manufacturing and took inspiration from other industries (including a visit to a slaughter house) to bring operational efficiency and build the first production lines allowing him to mass produce the first affordable motor vehicle. By 1912, the horse manure crisis was solved.

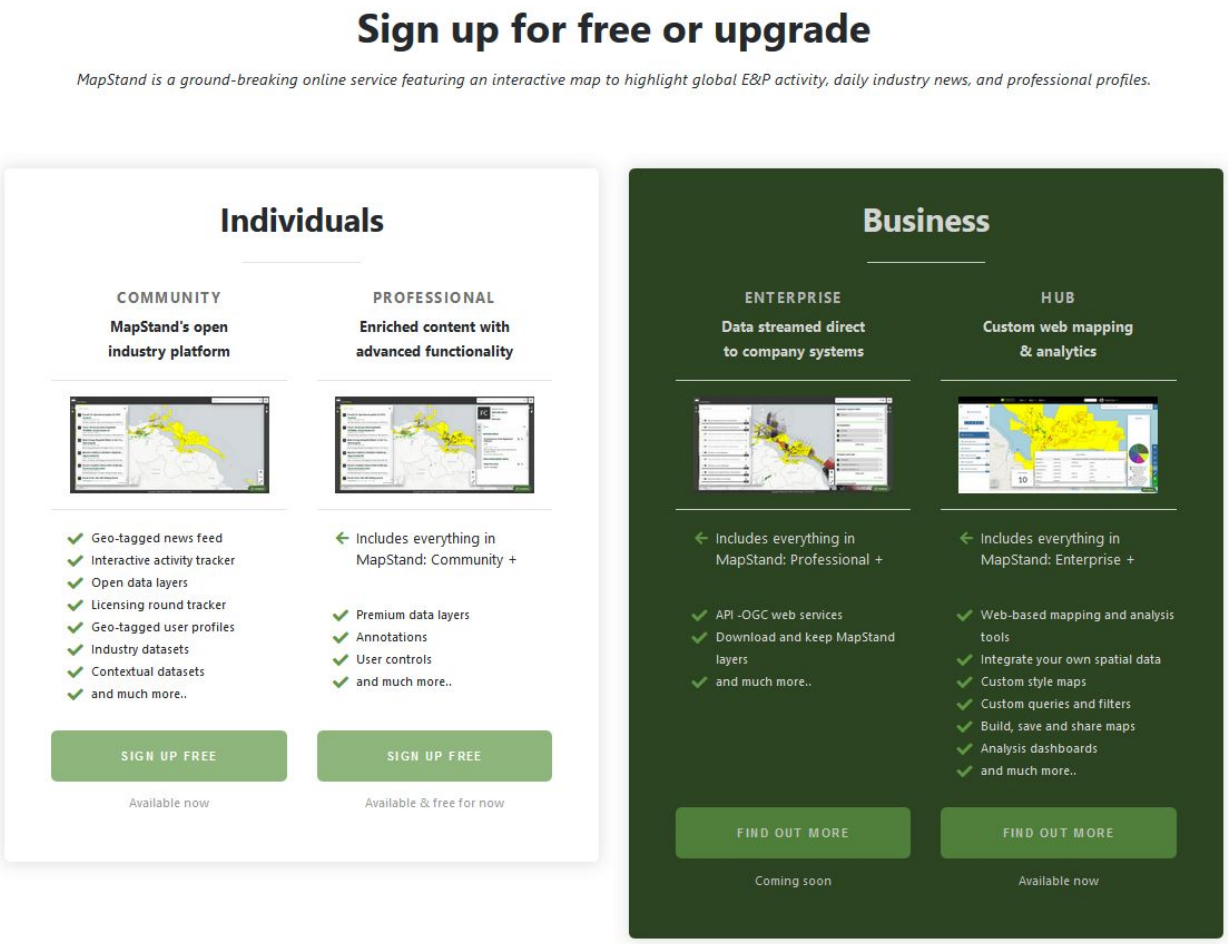
So how does this relate to the Oil and Gas industry?

As history has demonstrated, we are often forced to act fastest in times of crisis and it is no understatement that the industry is in crisis as the history making WTI prices showed last month. Huge cuts to CAPEX across the board will see significant delays and cancellations to projects around the world and the industry may not have hit the bottom yet.

Rapidly adopting new technologies and ways of working in order to survive are essential during these times in order to cut costs but also continue to deliver value to shareholders. It is no surprise that in recent times of crisis we saw the rapid rise of tech start-ups, Uber and Airbnb were founded around the 2007-2009 global financial crisis.

And where do we fit in?MapStand is looking to disrupt the traditional (and costly) E&P data provider market and can help everyone, from individuals to multinationals in maintaining those essential data subscriptions. We pass on the cost savings achieved from using the latest technology and automation, crowd-sourcing and relationships with government agencies to get data to the end user. We offer our web-platform, news and data layers free to individual subscribers and in the current climate have decided to continue allowing users access to premium layers for free!

For businesses, our cloud delivery of data direct to your ecosystem through our Enterprise and Hub offerings allow users to access the latest data and integrate it with their own to perform bespoke analytics and extract real value. To find out how MapStand can help you cut costs whilst keeping that essential data subscription get in contact at info@mapstand.com



What can you do with MapStand?

Deriving industry insight is cost effective and easy with MapStand data. To show you just how simple it is, we're providing a free interactive PowerBi dashboard with this newsletter that our team quickly put together.

MapStand was only launched over a year ago, but we have rapidly become a viable alternative geospatial data provider for the oil and gas industry.

Companies across the spectrum are seeking to reduce their subscription costs and MapStand is stepping up to help them. How can MapStand help you?

Get in touch with us for more information and a demonstration of our enterprise solutions: support@mapstand.com

Follow the link below for your free copy of our dashboard. (it's built in PowerBI which is free so to view and edit it you can just install Microsoft PowerBI and away you go!)

Click here for our dashboard.