

Project and Justification Note for Drilling of ERD wells **Pre-NELP BLOCK: AAP-ON-94/1** **DIROK FIELD**

The Pre-NELP Block AAP-ON-94/1 was offered to JV Consortium in 8th Exploration Round (Pre-NELP) by Government of India and Hindustan Oil Exploration Company (HOEC) is the Operator of the Block with Oil India Limited (OIL) and Indian Oil Corporation Limited (IOCL) as JV Partners.

The presence of hydrocarbon was discovered in Dirok Structure in 2008 and commercial production started in 2017 after the grant of 75.94 Sq. Km area of Petroleum Mining Lease (PML) by the State Government of Assam against 110 Sq Km of PML granted by Ministry of Petroleum & Natural Gas (MoPNG). The initial block area extends towards Dihing Patkai Wild Life Sanctuary (DPWLS) area in the West and Reserve Forest in the Northwest. A location map showing the present PML boundary granted by the State Government along with the DPWLS is shown below in Figure:1 for your ready reference.

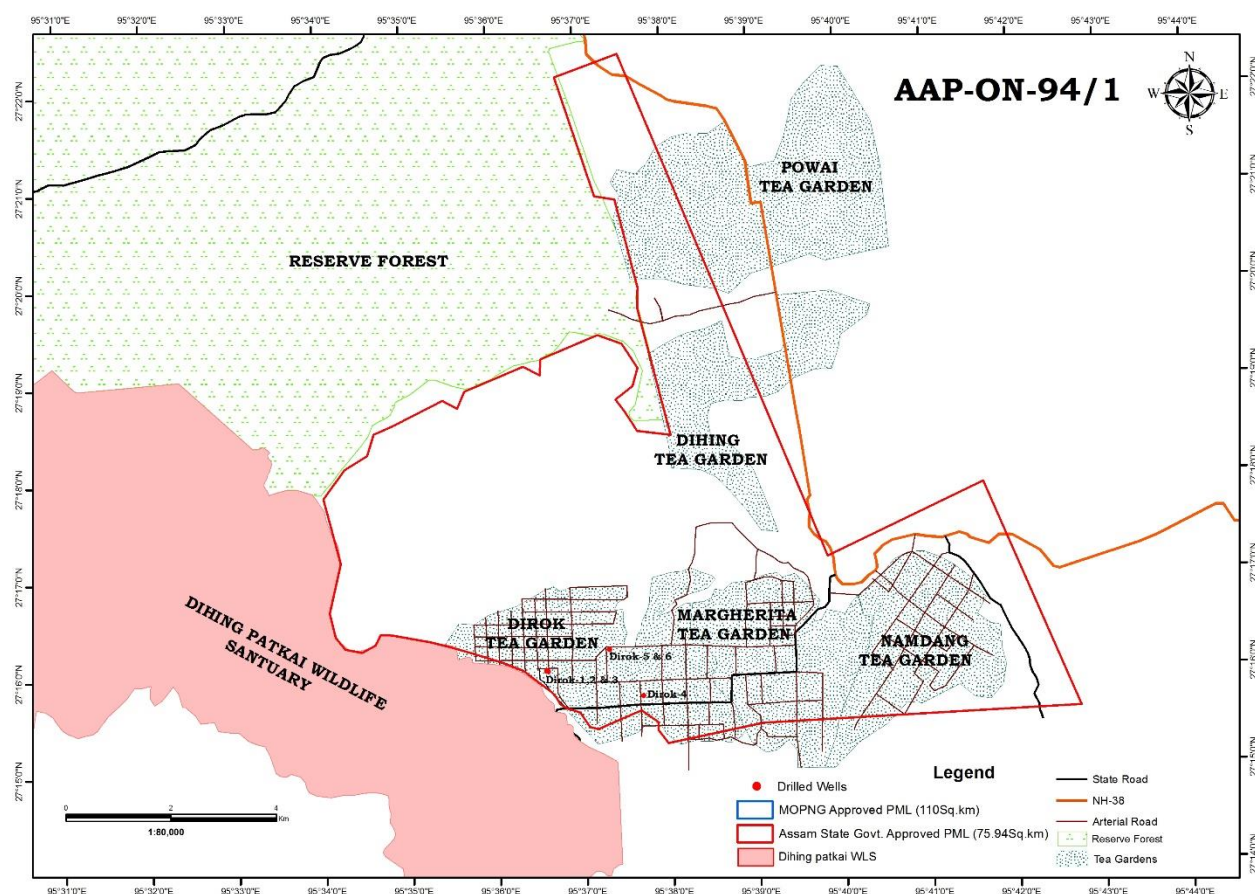


Figure-1: Showing PML Area granted by State Govt. & MoPNG

Subsequent to the discovery of hydrocarbon in Dirok Structure, JV Consortium pursued further to appraise the area to understand the extension of reservoirs in the block area. A 3D seismic data acquisition was planned in the entire block area however, National Board of Wild Life (NBWL) has not allowed JV Consortium to acquire the seismic data in DPWLS area. JV Consortium carried out the 3D seismic in the non-wildlife area and based on the result of 3D seismic data two appraisal wells were drilled which are hydrocarbon bearing.

JV Consortium had completed the Phase-I of the development program in non-wild life area and presently producing approximately 1.0 MMscmd gas from Girujan Formation. Based on the 3D seismic, data available geological data and current production, it is believed that these reservoirs are extending towards West in Dihing Patkai Wild Life Sanctuary (DPWLS) which are approximately upto 3000m deep.

Hindustan Oil Exploration Company Limited along with JV Partners intends to drill six extended reach drilling (ERD) wells from the surface location outside the Dihing Patkai Wild Life Sanctuary (DPWLS), and within the Petroleum Mining Lease (PML) of AAP-ON-94/1. These development wells will be deviated, and the depth would be approximately 3000m. These locations are situated in the fold thrust belt of Assam Arakan basin in the state of Assam near Margherita town in Tinsukia District.

JV Consortium will not carry out any operations inside the Dihing Patkai Wild Life Sanctuary (DPWLS) and no forest land will be diversified for these wells.

All the six locations proposed to drill from the PML area of the Block AAP-ON-94/1 are approx. 340m – 570m from the proposed Eco-Sensitive Zone (ESZ) boundary of Dihing Patkai Wild Life Sanctuary (DPWLS).

The proposed Extended Reach Deviated (ERD) wells are in the proven petroliferous basin of Assam-Arakan. The Fold Thrust Belt, Schuppen Belt and Assam Shelf of Assam-Arakan basin are the prime geological features of the Assam-Arakan Shelf-Slope basinal System. The Prolific Digboi field, Jorajan field, Nagajan field of Oil India Limited, lies towards the North and West of Dirok field.

A map showing the proposed wells and plinths in PML area outside the DPWLS is depicted in Figure-2. The KMZ files are attached for reference.

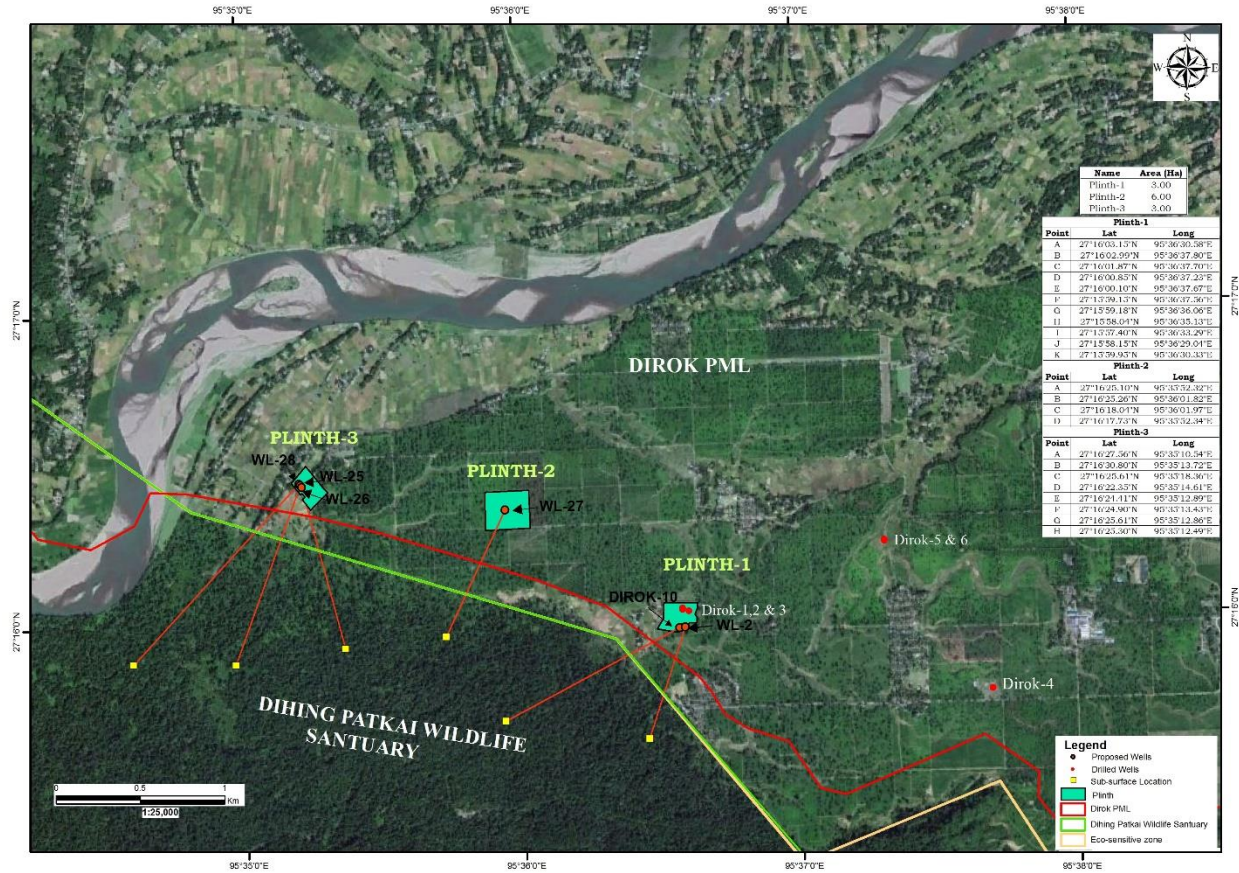


Figure-2: Showing surface and subsurface along with well Locations

Details of the proposed ERD well plinth area, coordinates and distance from ESZ boundary is given below:

Sl. No.	Plinth No	Area (Sq.km / Hectare)	Latitude WGS-84	Longitude WGS-84	Distance from the Proposed ESZ / DPWLS
1	Plinth-1	0.03 / 3.0	27° 15' 58.72" N	95° 36' 33.23" E	340 m
2	Plinth-2	0.06 / 6.0	27° 16' 21.64" N	95° 35' 57.22" E	570 m
3	Plinth-3	0.03 / 3.0	27° 16' 26.69" N	95° 35' 14.30" E	350 m
Total Area		0.12 / 12.0			

Two ERD wells will be drilled from Plinth-1, one well from Plinth-2 and three wells from Plinth-3. The coordinates of the surface well location of the ERD wells are given in the table below:

Details of the proposed well surface coordinates in the PML area are given below:

Sl. No.	Location*	Latitude	Longitude	Remark
1	Dirok-10	27° 15' 58.24" N	95° 36' 33.87" E	To be drilled from Plinth-1
2	WL-2	27° 15' 58.41" N	95° 36' 35.08" E	
3	WL-25	27° 16' 27.10" N	95° 35' 12.45" E	To be drilled from Plinth-3
4	WL-26	27° 16' 26.76" N	95° 35' 12.80" E	
5	WL-27	27° 16' 21.61" N	95° 35' 56.67" E	To be drilled from Plinth-2
6	WL-28	27° 16' 27.43" N	95° 35' 12.20" E	To be drilled from Plinth-3

**Well Name will be given at the time of drilling.*

The Extended Reach Drilling (ERD) is the best way of tapping the hydrocarbon from beneath the wild life area without disturbing the surface area. This technology is suitable for areas like wildlife area, Eco-Sensitive Zone, Forest area and other inaccessible zones without disturbing the lives and ecosystem.

The Petroleum Mining Lease (PML) for the block was obtained and it is valid till 2036. The major portion of the Dirok Structure is lying towards the West of the PML boundary and beneath the DPWLS area. It is prudent to use the latest available technology to drill ERD wells to extract the hydrocarbon without disturbing the ecosystems of the DPWLS. Hence drilling is required to commence production and monetize as early as possible. JV Consortium will obtain all the statutory clearances like EIA & EMP, EC, NBWL and any other clearances if any, prior to drilling these wells. JV Consortium will also carry out the Flora and Fauna study, if required to find the effect of drilling operation on the biotic environment & wildlife of Dihing Patkai Wild Life Sanctuary.

The extended reach techniques are used worldwide for areas which are difficult to access and areas which are protected. They are used to intersect hydrocarbon bearing reservoir targets far from the surface drilling area. This technology can drill wells up to a depth of 5000m plus and horizontal distance of 2000m from the well plinth without entering the protected areas. ***JV Consortium will not use any surface area from the protected area of DPWLS.***

The field operated by the JV Consortium is in the Fold Thrust Belt of Assam-Arakan basin and hydrocarbons are produced from the depth range of approx. 1500m to 3000m. The discovered field is new with average reservoir pressure of 3500 psi at 1500 m and increases to approximately 4200 psi with depth. As the field is new, subsidence will not occur. However, with time reservoir pressure will deplete and pressure maintenance will be carried out by injecting water into the reservoir. As the field operated by JV Consortium is in close vicinity to the operational area of Oil India Limited, studies carried out by similar industries observed that no incidence of subsidence was found in the operational area.

The total estimated in-place reserve under the wild life area is approximately 125 BCF and the recoverable reserve is around 63 BCF. Drilling of these extended reach wells will add good amount of exchequer to State and Central Governments by paying cess and royalty and profit petroleum.

The drilling sites for these proposed ERD wells will completely avoid displacement of homes, settlements, human and existing workforce. For the development of the area, JV Consortium will use the state-of-the-art technology to drill ERD wells from the existing PML area as shown in Figure-2. The JV Consortium will abide by all the rules and regulations as laid down by the authorities.

The estimated expenditure for completing each well is around 5.0 MMUSD (₹ 32.5 Crore). Total project cost is estimated around 30.0 MMUSD (₹ 195 Crore) | 1USD = ₹ 65 |.

Based on the preliminary technical study with available geoscientific data, it is envisaged that the reserves beneath the DPWLS will offer a tenable benefit to all the stakeholders. It will also cater to the demands from the gas grid of North Eastern region and meet the energy needs of the country along with socio-economic development of the area in the vicinity.

Recently, Oil India Limited (OIL) has got an approval of drilling ERD wells to extract the hydrocarbons from beneath the Dibru-Saikhowa National Park (DSNP).

In view of the above, we request your good office to consider the proposal of ERD wells in line with the Oil India Limited's proposal of Dibru-Saikhowa National Park (DSNP); so that the underlying resources beneath the Dihing Patkai Wild Life Sanctuary (DPWLS) can be tapped without disturbing the wild lives and eco-systems in DPWLS, and the hydrocarbon produced from the area would benefit to all the stakeholders.