



**NUMALIGARH
REFINERY
LIMITED**

A GOVERNMENT OF INDIA UNDERTAKING



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Justification for routing of the pipeline along the Main line (Final Route) and details of Alternatives Examined

Considering various environmental parameters, avoidance of Wildlife sanctuaries /Protected Forests /Reversed Forests/Daman-i-koh, construction methodologies to be adopted for different terrain, design and engineering factors, availability of logistic support during construction, operation and maintenance of pipeline, three feasible routes were identified based on the desktop study of relevant topographic maps of survey of India.

The study was subsequently supplemented with field reconnaissance and data collection along the feasible routes. Finally, the optimum route was arrived at after analyzing the various data and conducting in depth study of maps and field data.

To minimize the pipeline corridor through the forest lands, a 10 m wide corridor is being considered for laying the Paradip – Numaligarh Crude Oil Pipeline in forest lands against 18 m wide Right of Use corridor being acquired in private lands.

Methodology of selection of pipeline route

Initially relevant topographic maps along the alternative routes were identified and route maps generated.

A detailed desktop studies of the alternative routes were done on the base map generated and feasible routes identified.

This was subsequently supplemented with route reconnaissance data collected along the alternative routes for arriving at the optimum route.

Factors considered

While identify the various alternatives for selection of the optimum route, the following were considered:

- Avoidance of Wildlife Sanctuaries, Protected Forest/ Reserved Forest/Daman-i-koh and Mining protected
- Compliance with environmental regulations
- Safety of people and property
- Shortest possible pipeline length
- Minimum number of bends
- Favorable ground profile for pipeline hydraulics
- Easy accessibility to pipeline routes during construction maintenance and operation
- Location of pipeline facilities and access thereto
- Avoidance of Archaeological, Defense establishment and other sensitive areas
- Avoidance of unstable ground
- Minimizing road, rail, river crossings and flood prone areas.
- Avoidance of rocky stretches.
- Avoidance of areas reserved for planned further development.


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Route Comparison

Main Route (Final Route):

The proposed pipeline is routed cross-country away from major habitation. There is no Wildlife sanctuary / Reserved Forest along the route.

Jungle Jhari/ Public Protected Forest (PPF)/ Waste Land with area totaling to 6.176 hect. & Protected Forest (PF) area 0.03 hect. of land with minimum vegetation is noticed along the main route (Final route).

Though the length of the Main route (Final route) is longer than alternate 1 route by 16.5 Km, the main route (Final route) is considered, as it avoids sensitive areas like Wildlife sanctuary /Reserved Forest and mining areas.

Alternate-1:

The alternate 1 route is passing through a large area of Daman-i-koh (skirts of the hills) / Reserved Forest/ Protected Forest. The alternate 1 route runs in rocky stretches. The forest land involved in this alternate route is 46.90 hect., which is more than the Main route (Final route) area of 6.206 hect. In spite of the alternate 1 route being 16.5 Km shorter than main route (Final route) the main route (Final route) is considered as it avoided Daman-i-koh (skirts of the hills).

Alternate -2:

The length of alternate 2 route is longer than the main route (Final route) by 7.1km. The alternate route 2 runs in close proximity to areas with a large number of habitations. The alternate 2 route passes through a large area of Daman-i-koh (skirts of the hills) / Reserved Forest/ Protected Forest and in close proximity to Ganga River South Bank. The forest land involved in this route is 39.5 hect., which is more than the Main route(Final route) area of 6.206 hect.

Conclusion:

Taking into consideration factors like sensitive areas which include Wildlife sanctuaries / Minimum area of Protected Forest / Reserved Forest / Daman-i-koh (skirts of the hills) & mining areas, length of the route, ease of construction etc main route is identified and finalized.

Date:

Place: Guwahati



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