

**Executive Summary
Of
Environmental Impact Assessment Report
For
Development Drilling of 14 wells in KG Basin
in Krishna district, A.P.**



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Project Details in Brief

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Project Title: “Development Drilling of 14 wells in KG Basin in Krishna district, A.P.”

Location Details:

S.No	Field / No. of wells (Anticipated Locations)/Target Depth(m)	PML Block	Coordinates	Village	Mandal
1	Malleswaram / 12 /3750	Godavari Onland	Lat 16° 20' 53.65" Long 81° 17' 34.09"	China Pandraka	Kruthivenu
2	Vanudurru South / 2 /3800	Godavari Onland	Lat 16° 24' 21.25" Long 81° 12' 22.67"	Utukuru	Mudinepalle
Total	14 wells				

Project Cost: Approx. Rs. 154 Crores for drilling of 14 wells.

Water requirement: About 10 m³/day for domestic and 15 m³/day for operations.

Water Availability: Supply through water tanks.

Site details: Agricultural land, no habitation & no other activity

Land requirement: Approx. 5-6 acres for each location.

Time Period: Development drilling is a temporary activity. Each location takes around 3 to 4 months in normal conditions.

1. Executive Summary

1. Introduction

India ranks as the world's 7th largest primary energy producer and the 5th largest energy consumer. The per capita consumption of energy in India is one of the lowest in the world (around 0.3 tonnes of O+OEG compared to world average of 1.8). With a population of 1.21 billion, the country's energy needs are expected to grow about four fold from 493 Million Tonnes of Oil Equivalent (MTOE) to 1856 MTOE by 2032. Hydrocarbon sector plays pivotal role in India's energy sector with a 52% share in the commercial energy basket.

Today, ONGC has been the largest producer of the oil and gas in the country, contributing 72.4% of the crude oil and 48.5% of the natural gas production. At present, over 75% of India's oil requirements are being met by imports even though India's known oil and gas reserves form mere 0.8% of the world reserves of petroleum. Given the limited reserves and growing demand, India is heavily dependent on import of crude oil and petroleum products. Current demand and supply projections indicate that the level of self-sufficiency is likely to decline below 25% over the next few years. Substantial efforts are therefore necessary to boost the development activity in the country. This will enable to discover new hydrocarbon fields and the level of crude oil and gas production can then be significantly increased in the years to come. The development drilling is a one-time activity and the operations last a very short period of 3-4 months under normal conditions.

The present report is being submitted for grant of Environmental Clearance to ONGC's West Godavari and Godavari Onland PML Blocks in the Krishna Godavari basin of Andhra Pradesh, for development drilling wells. The plan for development of these highly prospective projects of Rajahmundry Asset is essentially driven by the need for greater energy security of India.

This report comprises of baseline data on air quality status including VOCs, ambient noise levels, surface and ground water quality status, soil quality studies, brief on

demography etc. In addition, methodology followed for preparation of this report and process descriptions of development drilling have also been discussed.

The report also documents anticipated environmental impacts, evaluation and mitigation measures based on baseline data collected during study period. The environmental management plan of development drilling activities has also been delineated in the report based on impact evaluation and regulatory requirements.

2. Project Profile

ONGC's Development activities are confined to two on land PML blocks, viz., West Godavari and Godavari Onland, in the Krishna Godavari Basin, Andhra Pradesh. These two PML blocks spread over in 3 districts viz., East Godavari, West Godavari and Krishna Districts of Andhra Pradesh. Under the present proposal EC is sought in respect of 72 locations out of which 16 locations are of West Godavari PML Block and 56 locations are of Godavari Onland PML Block. Out of these 16 locations of West Godavari PML Block, 14 locations are falling in Krishna District and 2 locations are falling in West Godavari District respectively and out of 56 locations of Godavari Onland PML Block out of which 8 locations are falling in West Godavari District and 48 locations are falling in East Godavari District of A.P. respectively

The present EIA/EMP report is being submitted for conducting Public Hearing for 14 locations in West Godavari PML Block falling in Krishna District, Andhra Pradesh.

The total cost implications for the proposed activities are Rs 792 Cr for Development Drilling of 72 Wells in West Godavari and Godavari Onland PML Block KG Basin, A.P.

3. Baseline Environmental Quality Status

The baseline data provide the foundation for assessment studies since they help to identify site-specific impacts on various components of environment. The baseline status also helps relate the effects of the project activities on the environmental components and allows the identification of the parameters that need to be monitored. The information concerning these parameters for the present study has been collected directly through field measurements and from secondary data sources. The meteorological data is obtained from the IMD Centre, Machilipatnam, who continuously

monitors weather parameters from different established weather data collecting stations along the east coast.

3.1. Ambient Air Quality (AAQ)

AAQ including the VOCs are monitored in respect of the fields/areas comprising the proposed locations so that the data shall be representative of the prevailing base line air quality of the operational areas of the basin. The monitoring/sampling stations were established so as to capture locations in upwind and downwind directions for SO₂, NO_x, PM₁₀ and PM_{2.5}, CO, Methyl and Non Methyl Hydrocarbon, Ozone, Lead, Ammonia, Benzene and Benzopyrene etc. The 24hr average value of ambient air quality in respect of all the parameters is observed to be well within the prescribed CPCB limits in KG Basin. Range of values of parameters is as mentioned against each parameter SO₂ (7.3-15.4 µg/m³), NO_x (13.4-22.4 µg/m³), CO (303-677 µg/m³), PM 2.5 (21.2-38.3 µg/m³), PM 10 (48.7-58.7 µg/m³), Ammonia (12.9-23.3 µg/m³), Ozone (8.9-17.1 µg/m³), Benzene (0.11-0.47 µg/m³).

3.2. Noise Levels

Baseline noise levels were also monitored at proposed locations and are in the range of 52.6-54.3 dB in the day time and 41.7-43.8 dB in the night time.

3.3. Water Quality

Water consumption at the drilling sites is expected to be about 25 m³/d of which 15 m³/d will be used for mud preparation and about 10 m³/d used for drinking and domestic purposes. Waste water generation would be about 10-15 m³/d. Most of the generated wastewater is recycled for the preparation of drilling fluid.

During the study, ground water monitoring stations were selected for water quality assessment. The parameters tested included pH, TDS, Chlorides, TSS, EC, Heavy metals and other parameters in line with the requirement of regulatory agencies.

Samples of ground water and surface water were analysed for base line studies at proposed new locations. Parameters range for Surface Water is: pH: (6.7– 7.8), TDS (174-699 mg/L), TSS (10-18 mg/L), Pb <0.01 ppm, Cu (0.05-0.31 ppm), Ni <0.001 ppm,

Zn <1 ppm Cr (0.001-0.003 ppm), sulphide and phenolic compounds were in negligible amounts. Oil & grease were not detected in the samples.

Parameters range for Ground Water is: pH: (7.0– 8.1), TDS (252-5424 mg/L), Pb <0.01 ppm, Cd <0.003 ppm, Cu <0.05 ppm, Ni <0.02 ppm, Zn < 1 ppm, Cr <0.05 ppm, sulphide and phenolic compounds were in negligible amounts.

3.4. Other Environments

ONGC carried out a project in collaboration with Central Road Research Institute, Delhi on testing of drill cuttings for their toxicity if any due to the potential presence of any toxic metals. The studies revealed the non-hazardous nature of the drill cuttings and based on the results of these studies it is recommended that the drill cuttings may be used in road making. The results are very encouraging as the cuttings show very good bonding characteristics.

In addition, this report also presents information collected from secondary data resources on biological environment, socio-economic status etc.

3.5. Socio-economic

This report examines environmental and socio-economic impacts of the proposed activity from site clearance, preparation of the site, testing, completion/abandonment, rig dismantling and restoration. On evaluation of environmental impact it is observed that the real benefits of proposed activity can be accomplished through implementation of adequate preventive and control measures

The impact on community health due to the proposed drilling activities will be negligible but at the same time social status will improve due to increase in employment opportunities etc. There will be positive impact on transportation, communication in the region.

ONGC is operating in the study area for more than 25 years and the baseline studies carried out reflected practically no impact of ONGC operations on the environmental quality over these years. **It was found that the quality of air and water is within the regulatory norms, implying that drilling activities have no significant impact on the prevailing environmental conditions.**