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## INTRODUCTION

### 1. Introduction

#### 1.1 Background

The Production sharing contract (PSC) was signed on 2<sup>nd</sup> March 2007, between the Government of India, acting through the Joint Secretary, Ministry of Petroleum and Natural Gas and the Consortium of

- i. Naftogaz India Pvt. Ltd.
- ii. Adani Port Infrastructure Pvt. Ltd.
- iii. Adani Enterprises Ltd.
- iv. JAYCEE Plastics Industries Pvt. Ltd.

As per this Contract the Consortium will be carrying out exploration, development and production of petroleum in a petroleum exploration licensed (PEL) area.

Naftogaz along with its joint venture partners have committed that they have, or will acquire and make available the necessary financial and technical resources and the technical and industrial competence and experience necessary for proper discharge and / or performance of all obligations required to be performed under this Contract in accordance with modern oilfield and petroleum industry practices.

As a result of discussions between the representatives of the Government and Naftogaz, Adani and JAYCEE on the proposal, the Government has agreed to enter into this Contract and the Contract Area identified as Block AA-ONN-2004/4.

On behalf of the joint venture partners, Naftogaz is planning to drill 6 exploratory well in the block as per committed work program.

#### 1.2 The Applicant

NAFTOGAZ India Private Limited, the wholly owned Indian subsidiary of National Joint Stock Company “NaftoGaz of Ukraine” has been formed exclusively for undertaking Oil & Gas Sector projects representing the parent company in the territory Republic of India.

The parent company National Joint Stock Company “NaftoGaz of Ukraine” is the National Oil Company of Ukraine. NAFTOGAZ was established as a National Joint Stock Company from the year 1991. Currently with an annual turnover exceeding USD 10 Billion and employees over 1,72,000. Naftogaz is vertically integrated Oil & Gas Company wholly owned by the Government of Ukraine. NaftoGaz is involved in wide spectrum of Oil & Gas activities in the upstream, mid stream and down stream sectors.

NAFTOGAZ also promotes retailing and market-oriented activities to ensure oil / gas supplies to industrial and household consumers, as well as provides reliable crude oil & natural gas transit to Central and West European Countries.

Its area of operation include:

- Gas & oil fields exploration & development
- Production & exploration drilling of gas & oil
- Gas & oil transportation
- Supply of gas to industrial and domestic consumers
- Refineries
- R & D

### 1.3 Exploratory Block AA – ONN-2004/4 in Assam

#### 1.3.1 General Information

The exploratory block AA-ONN-2004/4 spreads over an area of 95 sq. km. Major River Buridihing flows through the block area with tributaries Penari Jan, Manmau Jan and Mugan Pani. The main towns near the block are Marghrita, Digboi, Linkhapani and Ledo well connected with National Highway 38. The block is surrounded by tea estate gardens like Powai and Upper Dihing forest in north, Margherita, Lekhajan, Namdang and Ledo in south. The area is undulating with height upto 4000 ft. above mean sea level. Naftogaz will be the operator for carrying oil and gas explorations for this block. The location of the block is shown in Fig. 1.1 and block map detail is shown in Fig. 1.2.



Fig 1.1 Location of Exploratory Block AA – ONN-2004/4

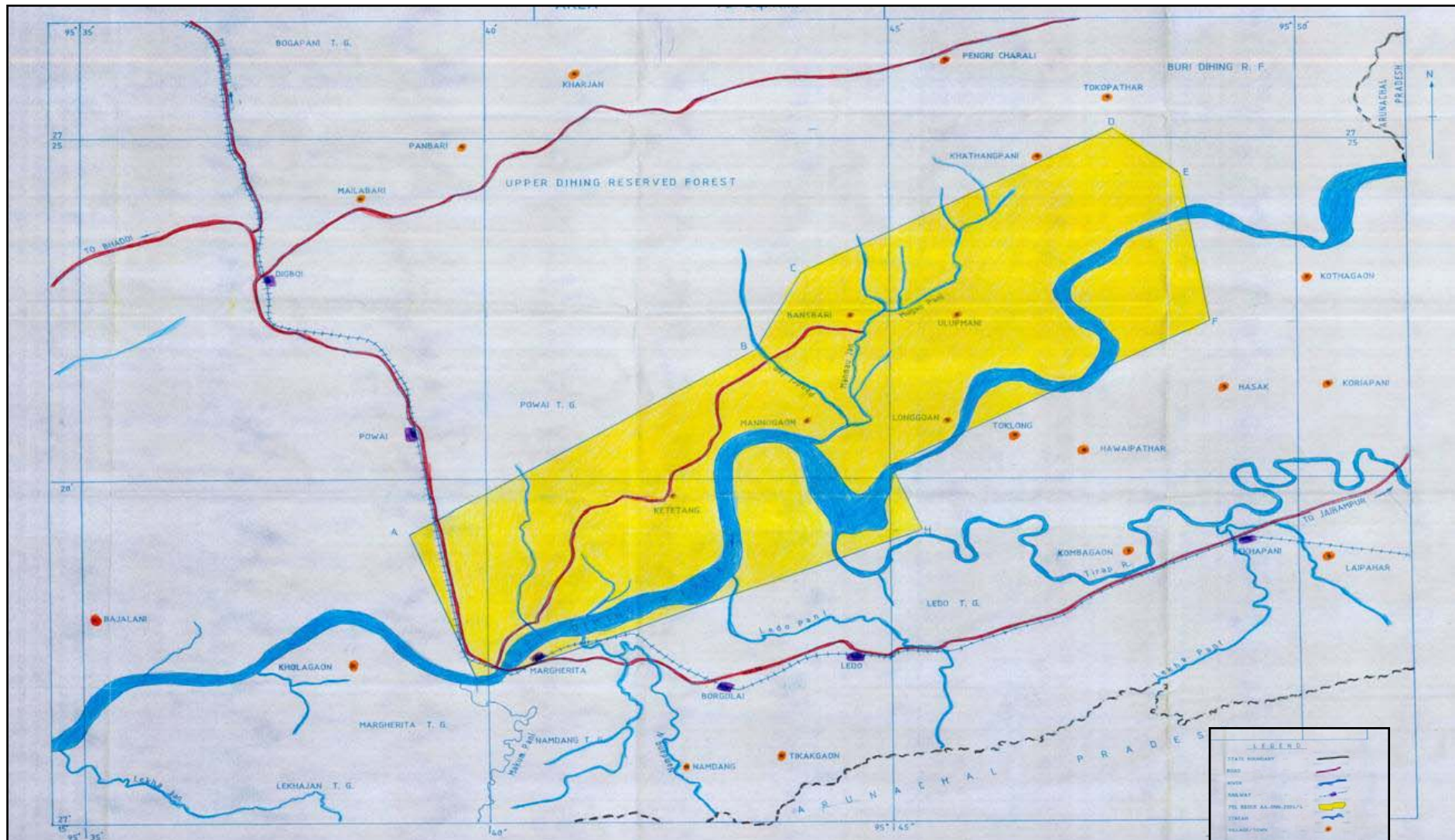


Fig. 1.2 Block Map Details

### 1.3.2 Location and Geographical Information of the Block

Location and Geographical Information of the Block are given in **Table 1.1**.

**Table 1.1: Location and Geographical Information of the Block**

Points	Latitudes (N)			Longitude (E)		
	Deg.	Min.	Sec.	Deg.	Min.	Sec.
A	95	38	55.00	27	19	10.00
B	95	43	15.00	27	21	55.50
C	95	43	48.00	27	22	58.50
D	95	47	39.00	27	25	7.50
E	95	48	30.00	27	24	30.00
F	95	48	49.50	27	22	18.80
G	95	44	58.00	27	20	12.80
H	95	45	20.00	27	19	21.00
I	95	39	50.00	27	17	5.00
A	95	38	55.00	27	19	10.00

### 1.4 Legal and Other Requirements

NaftoGaz activities will conform to all National and International legislations, regulations, conventions, etc., relating to aspects of hydrocarbon operations in India.

A list of applicable Acts and Rules are described in **Table 1.2**.

**Table 1.2: Applicable Acts and Guidelines**

Issues	Applicable Legislation
Hazardous Substances & Wastes	1) The Environment (Protection) Act, 1986, and Rules framed there under <ul style="list-style-type: none"> <li>a) Hazardous Wastes (Management and Handling) Rules, 1989 and amendment Rules 2000 and 2003;</li> <li>b) Guidelines for disposal of solid wastes by Oil Drilling and Gas Extraction industry as notified, vide notification dated GSR 176 (E) April 1996;</li> <li>c) Manufacture Storage and Import of Hazardous Chemicals 1989 and amendment Rules 2000</li> </ul>
	2) The Public Liability Insurance Act, 1991 and Rules 1991
	3) Central Motor Vehicles Act, 1988 and Rules, 1989
	4) The Petroleum Act, 1934
Water	5) The Water (Prevention and Control of Pollution) Act, 1974, amended in 1988
	6) The Environment Protection Act, 1986 - Standards for liquid discharge by Oil Drilling and Gas Extraction industry as notified vide notification dated GSR 176 (E) April 1996
Air	7) The Air (Prevention and Control of Pollution) Act, 1981, amended in 1987

Issues	Applicable Legislation
	8) The Environment Protection Act, 1986 – Guidelines for discharge for gaseous emissions by Oil Drilling and Gas Extraction industry as notified vide notification dated GSR 176 (E) April 1996
	9) The Environment (Protection) Second Amendment Rules, 2002 – Emission Standards for New Generator Sets
	10) The Factories Act, 1948, amended in 1987
	11) The Motor Vehicles Act, 1938, amended in 1988 and Rules, 1989
Noise	12) The Environment (Protection) Second Amendment Rules, 2002 (Noise Limits for New Generator Sets)
	13) The Noise (Regulation & Control) Rules, 2000
Safety and Protection against Pollution of Environment	14) Oil Mines Regulations, 1984

The project is also designed so as to abide by the guidelines set out by The Central Pollution Control Board (CPCB) and Ministry of Environment & Forests (MoEF) on various environmental management issues.

The EIA process has been undertaken to meet the requirements of Ministry of Environment and Forests Government of India.

## 1.5 Scope of EIA Study

This report is based on the TOR approved by Ministry of Environment and Forests, government of India vide letter- No.J-11011/885/2007-IA II (I). The Scope of EIA study includes:

- (i) Project Description and Project Benefits
- (ii) Site details including satellite imagery for 10 KM area.
- (iii) Land Use along with maps & cropping pattern, vegetation Ecology, Flora & Fauna
- (iv) Demography & Socio-economics of the area
- (v) Process details for survey and drilling
- (vi) Baseline data collection for air, water and soil for 5 weeks leaving the monsoon season in an area of 10 km radius with centre of oil field as its centre covering the area of all 10 purposed well.
  - Ambient Air Quality Monitoring locations for SPM, RPM, SO<sub>2</sub>, NO<sub>x</sub>
  - Background levels of hydrocarbons (HC) and VOCs (5 samples)
  - Soil samples analysis at 10 locations
  - Baseline underground and surface water quality
  - Climatology & Meteorology including wind speed, wind direction, temperature, rainfall etc.
  - Measurement of noise level
- (vii) Detailed water balance, waste water generation and discharge
- (viii) Treatment and utilization of produced water.
- (ix) Detailed solid waste generation, collection, segregation, its recycling and reuse, treatment and disposal
- (x) Estimation and computation of air emissions resulting out of drilling operations

- (xi) Assessment of impact on air, water, soil, solid/hazardous waste and noise levels
- (xii) Evaluation of the adequacy of the proposed pollution control measures to meet the air quality emission standards, water discharge norms, solid/hazardous waste generation and disposal
- (xiii) Estimation of noise level due to operation of drilling, its associated equipments and vehicular movement. Prediction and evaluation of impacts due to increase in noise levels arising out of the proposed activities on the surrounding environment. Proposed mitigation measures for noise pollution
- (xiv) Storage of chemicals at the site, proposed prevention measures for spillage and accidents
- (xv) Environmental Management Plan
- (xvi) Risk Assessment & Disaster Management Plan
  - a. identification of hazards.
  - b. Consequence Analysis
  - c. Risk Presentation & purposed measures for risk reduction.
  - d. Disaster management Plan.
  - e. Oil spill Contingency Plan & Emergency Response plan
- (xvii) Measure for decommissioning of the rigs and projects
- (xviii) Post project closure and monitoring programme for minimum 10 years.
- (xix) Documentary proofs for the memberships of common disposal facilities, if any.
- (xx) Details of proposed occupational Health Surveillance program for the employees and other labour.
- (xxi) Environmental monitoring program while survey & drilling is undertaken.
- (xxii) Forest clearance for diversion of forestland under the forest (Conservation) Act 1980.

## 1.6 Approach & Methodology of EIA Study

### 1.6.1 Approach of the EIA Study

The EIA study basically includes establishment of the present environmental scenario within the block area. EIA report consists of study of the specific activities related to the project and evaluation of the probable environmental impacts, thus, leading to the recommendations of necessary environmental control measures. The entire EIA study has been carried out on the basis of the applicable environmental legislation, regulations and guidelines of MoEF.

### 1.6.2 Establishment of Baseline Environmental Status

A comprehensive database on the baseline environmental status/conditions of the study area has been established through review, compilation & analysis of:

- Existing published secondary data/ literature/ information collected, and
- Primary data generated/ collected through field study, survey and monitoring

### 1.6.3 Field Study/Monitoring for Generation of Primary Data

The collected secondary data has been appropriately supplemented by conducting the necessary primary data generation/ collection through field study/monitoring in **one season** study period (winter season). The field monitoring has been carried out as per the guidelines of CPCB & BIS and requirement of the MoEF. Field study/monitoring has been conducted on:

**i) Soil Monitoring:** To study the soil characteristics in the study area, soil samples from representative locations in the study area have been collected and analysed for important relevant physical & chemical parameters.

**ii) Water Quality Monitoring:** For drawing up the baseline data on water quality, water quality monitoring has been conducted at representative locations in the study area. Ground and surface water samples have been collected and analyzed for important relevant physical and chemical parameters.

**iii) Ambient Air Quality Monitoring:** For drawing up the baseline status of ambient air quality in the study area, ambient air quality monitoring in respect of SPM, RPM, SO<sub>2</sub>, NO<sub>x</sub>, and CO has been conducted at representative locations in the study area adopting a 24-hours schedule.

**iv) Noise Monitoring:** To establish the ambient noise scenario in the study area, monitoring of ambient noise level has been carried out at the representative locations in the study area using a suitable portable sound level meter over a period of twenty-four hours.

#### **1.6.4 Environmental Impact Assessment**

The environmental assessment has been conducted in accordance with the norms and guidelines of the Govt. of India. The project data/activities has been analysed & linked with the existing baseline environmental conditions in order to list out the affected environmental parameters and assess the likely impacts on such parameters. Wherever practicable, a quantitative analysis has been performed. Suitable computer models, wherever applicable, have been used. Compliance of the project with national standards has been duly checked.

#### **1.6.5 Preparation of Environmental Management Plan**

Environmental Management Plan (EMP) is the key to ensure a safe and clean environment. The desired results from the environmental mitigation measures proposed in the project may not be obtained without a management plan in order to assure its proper implementation & function. The EMP envisages the plans for the proper implementation of mitigation measures to reduce the adverse impacts arising out of the project activities. EMP has been prepared addressing the issues like:

- Pollution control/mitigation measures for abatement of the undesirable impacts caused during drilling and other exploration allied activities
- Details of management plans (Ground water management plan, Solid waste management plan, Hazardous waste management and handling plan, Management plan for handling hazardous substances like oil etc.)
- Institutional set up identified/recommended for implementation of the EMP
- Post project environmental monitoring programme to be undertaken

#### **1.6.6 Preparation of Risk Assessment and Disaster Management Plan**

- Minimize the effects of the disaster on people and property
- To plan on-site and off site emergency procedure
- To lay out implementation procedure of the emergency preparedness plans

## 1.7 Structure of the Report

**Chapter 1: *Introduction*** - provides a background to the project, the company, and the process of environmental impact assessment.

**Chapter 2: *The Project Description*** - describes the operations associated with the drilling of the 6 wells in block AA – ONN-2004/4.

**Chapter 3: *The Existing Environment*** - describes the background environmental characteristics and the other economic activities in the area.

**Chapter 4: *Prediction and Mitigation of Impacts*** - defines the potential impacts from the drilling programme and the control measures which operator should implement to mitigate the impacts.

**Chapter 5: *Environmental Monitoring Program*** - describes the mechanism to address the adverse environmental impacts during different phases of the project (prior to drilling, during drilling and post drilling).

**Chapter 6: *Risk Assessment and Disaster Management Plan*** - This chapter will give types of risks associated with exploratory drilling operations, their assessment and emergency preparedness and disaster management plan

**Chapter 7: *Environmental Management Plan*** - the environmental management plan provides a framework on how project proponent will manage the project to ensure protection of the environment. The EMP will consist of Mitigation Plan, Environmental Monitoring, Environmental Training, Waste Management Plan and Restoration and Rehabilitation of the well sites.

**Chapter 8: *Summary & Conclusion*** - defines overall justification for the implementation of the project and briefly explains how adverse effects have been mitigated.

**Chapter 9: *EIA Team***- provides name of the consultants engaged with their brief resume and nature of the consultancy rendered.