



सत्यमेव जयते

Yogendra Pal Singh
Scientist 'D'

F. No. J-11011/130/2013-IA-II (I)

Government of India
Ministry of Environment, Forest and Climate Change
(IA Division)

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Dated: 11th April, 2017

To,

M/s Oil and Natural Gas Corporation Ltd.
Corporate HSE, 8th Floor, Core IV
Scope Minar, Delhi – 110 092

**Sub: Development of Jharia CBM Block, Jharkhand by M/s ONGC –
Environmental Clearance - reg.**

Ref.: Your online proposal no. IA/JH/IND/57123/2013; dated 13th July, 2016.

Sir,

This has reference to your online proposal no. IA/JH/IND/57123/2013; dated 13th July, 2016 along with project documents including Form I, Terms of References, Pre-feasibility Report, EIA/EMP Report along with Public Hearing Report regarding above mentioned project.

2.0 The Ministry of Environment, Forests and Climate Change has examined the application. It is noted that proposal is for Development of Jharia CBM Block, Jharkhand by M/s ONGC. The Jharia CBM Block of Oil and Natural Gas Corporation Limited (ONGC) Block covers 84.55 sq. km area is located in Bokaro and Dhanbad district of Jharkhand. This particular block was awarded for exploration by the Ministry of Petroleum & Natural Gas (MoP& NG) to ONGC on nomination basis in January 2002. ONGC is the operator of the Block, while CIL has a participative interest of 26%. ONGC has completed Phase I (Exploration Phase) & initiated Phase II activities (Pilot Assessment, Market Survey & Commitment Phase).

Environmental clearance (EC) for this Phase II projects was obtained from MoEF&CC vide letter no. J- 11011/287/2006-IA II (I) dated July11, 2007. Presently ONGC as part of its Phase III development program plans to drill an additional 77 nos. development and production wells, installation of 5 Gas Collecting Stations (GCS) and laying of inter-connecting and transportation pipeline network for CBM gas production, collection & transportation and sale. Approximately 209 acre of land would be required for 77 development well and 5 GCS facilities in the Block. Presently 33 acre and 9148.95 sq. ft. of land is available with ONGC. For remaining land required for the project purpose, identification is in the process. Total project cost will be 1136 Crores. Cost for implementation of EMP will be 3.63 Crore. The drilling of wells is expected to be up to a depth of 1200 meters. It is reported that no national park/wildlife sanctuary/biosphere reserves are located within 10 km radius of the Block. It is

also reported that all the proposed activities will be undertaken outside the forest area, primarily in agricultural lands. Water based mud to be used in drilling.

3.0 DG Sets of 350 KVA capacity will be used for drilling purposes. It is estimated that per month 36 KL of diesel will be required during drilling phase.

Approximately 800 m³ of water per well (approximately 1200m depth) will be used for drilling of a well. Water requirement will be met from ground water source. Average 3-5 m³ of water will be consumed per day for operational purpose. 5m³/day/well of CBM produced water will be generated during dewatering operation. Approximately 4.8 m³/day of domestic waste water will be generated from onsite sanitation facility.

Standard Land Rig or Mobile Land Rig with standard water based drilling fluid treatment system will be used for drilling. Drill cuttings generated will be collected and separated using a solid control system and temporarily stored on-site in HDPE lined pits. These cuttings will be disposed onsite in an impervious pit (10m X 10m X 1.25m) provided with HDPE liners in conformance to the CPCB guidelines. Drilling and wash wastewater generated will also be stored at an onsite HDPE lined pit.

The total quantity of Produced Water (385 m³/day) will be treated through Pre-treatment system which will remove Suspended Solids (SS) to less than 10 mg/l. The treatment system will consist of Pressure Sand Filters, Activated Carbon Filters, Micron Cartridge Filters to remove sediment and Suspended Solids at various stages. After Pre-treatment, the water will be passed through Multi-stage RO system (Low Pressure and High Pressure) to bring the TDS level of the treated water below 2100 mg/l. High pressure pumps will boost the pressure of the water and then fed to the RO System. RO permeate shall be collected in permeate storage pits from where it can be transferred to end use or for discharge. Total quantity of 308 m³ will be treated water with TDS levels below 2100 mg/. The RO reject of 77 m³ (20% of 385 m³) having TDS of about 29,000 mg/l will be generated after Multi-stage RO Treatment. ONGC will consider following two options for disposal of RO rejects:

Option-I: Option shall be explored to use the Reject water for dust sprinkling in the nearby Opencast Coal Mines.

Option-II: In case, Coal Mines are not available in the vicinity of the operational area, this reject amount will be brought in to evaporation tank and evaporated. In that case the evaporation will be fitted with HDPE liner.

4.0 Public Hearing/Public Consultation meeting conducted by the Jharkhand Pollution Control Board on 31st August 2015 and 4th September 2015.

5.0 All the projects related to offshore and onshore Oil and Gas exploration, development and production are listed in para 1(b) of schedule of EIA Notification, 2006 covered under category 'A' and appraised at central level.

6.0 The proposal was considered by the Expert Appraisal Committee (Industry) in its 13th and 19th EAC meeting held during 26-27th September, 2016 and 6-7th February, 2017. Project Proponent and the EIA Consultant namely M/s Senes Consultants India Pvt. Ltd., have presented EIA/EMP report as per the TOR. EAC has found the EIA/EMP Report is satisfactory and in full consonance with the presented TORs. The Committee recommended the proposal for environmental clearance.

7.0 Based on the information submitted by the project proponent, the Ministry of Environment and Forests hereby accords environmental clearance to above project under the provisions of EIA Notification dated 14th September 2006, subject to the compliance of the following Specific and General Conditions:

A. SPECIFIC CONDITIONS:

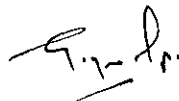
- i. Ambient air quality shall be monitored at the nearest human settlements as per the National Ambient Air Quality Emission Standards issued by the Ministry vide G.S.R. No. 826(E) dated 16th November, 2009 for PM₁₀, PM_{2.5}, SO₂, NO_x, CO, CH₄, HC, Non-methane HC etc.
- ii. Mercury shall also be analyzed in air, water and drill cuttings twice during drilling period.
- iii. Approach road shall be made pucca to minimize generation of suspended dust.
- iv. The company shall make the arrangement for control of noise from the drilling activity. Acoustic enclosure shall be provided to DG sets and proper stack height shall be provided as per CPCB guidelines.
- v. Total water requirement from tankers from nearby testing well/or bore well at site shall not exceed 800 m³/well and prior permission shall be obtained from the Concerned authority.
- vi. The company shall construct the garland drain all around the drilling site to prevent runoff of any oil containing waste into the nearby water bodies. Separate drainage system shall be created for oil contaminated and non-oil contaminated. Effluent shall be properly treated and treated wastewater shall conform to CPCB standards.
- vii. Water based mud shall be used in drilling.
- viii. Disposal of drill cuttings and drilling mud will be in specially designed pit with HDPE lining and is topped with native soil. Other hazardous waste like empty bags, cotton waste, gloves etc are transported to TSDF site. Whereas, POL/chemical containers and spent oil are recycled through authorized vendors.
- ix. No effluent/drilling mud/drill cutting shall be discharged/disposed off into nearby surface water bodies.
- x. The total quantity of Produced Water (385 m³/day) shall be treated through Pre-treatment system which will remove Suspended Solids (SS) to less than 10 mg/l. The treatment system shall consist of Pressure Sand Filters, Activated Carbon Filters, Micron Cartridge Filters to remove sediment and Suspended Solids at various stages. After Pre-treatment, the water shall be passed through Multi-stage RO system (Low Pressure and High Pressure) to bring the TDS level of the treated water below 2100 mg/l. High pressure pumps will boost the pressure of the water and then fed to the RO System. RO permeate shall be collected in permeate storage pits from where it can be transferred to end use or for discharge. Total quantity of 308 m³ will be treated water with TDS levels below 2100 mg/. The RO reject of 77 m³ (20% of 385 m³) having TDS of about 29,000 mg/l will be generated after Multi-stage RO Treatment. ONGC will consider following two options for disposal of RO rejects.
- xi. Drill cuttings generated shall be collected and separated using a solid control system and temporarily stored on-site in HDPE lined pits. These cuttings will be disposed onsite in an impervious pit (10m X 10m X 1.25m) provided with HDPE liners in conformance to the CPCB guidelines. Drilling

- and wash wastewater generated will also be stored at an onsite HDPE lined pit.
- xii. Good sanitation facility shall be provided at the drilling site. Domestic sewage shall be disposed off through septic tank/ soak pit.
 - xiii. Oil spillage prevention and mitigation scheme shall be prepared. In case of oil spillage/contamination, action plan shall be prepared to clean the site by adopting proven technology. The recyclable waste (oily sludge) and spent oil shall be disposed of to the authorized recyclers.
 - xiv. The project proponent shall take due care and adopt the best practices to ensure that there is no oil spill. However, to meet with any unforeseen situation and combat the oil spill, the PP shall prepare the Oil Spill Disaster Contingency Plan in line with the provisions of the National Oil Spill Disaster Contingency Plan. Regular Mock Drills shall also be conducted.
 - xv. The Company shall take necessary measures to prevent fire hazards, containing oil spill and soil remediation as needed. Possibility of using ground flare shall be explored. At the place of ground flaring, the overhead flaring stack with knockout drums shall be installed to minimize gaseous emissions during operation.
 - xvi. The company shall develop a contingency plan for H₂S release including all necessary aspects from evacuation to resumption of normal operations. The workers shall be provided with personal H₂S detectors in locations of high risk of exposure along with self containing breathing apparatus.
 - xvii. Emergency Response Plan (ERP) shall be based on the guidelines prepared by OISD, DGMS and Govt. of India.
 - xviii. All the commitments made to the public during public hearing/public consultation meeting held on 31st August 2015 and 4th September 2015 shall be satisfactorily implemented and adequate budget provision shall be made accordingly.
 - xix. At least 5 % of the total cost of the project shall be earmarked towards the Enterprise Social Commitment based on Public Hearing Issues, locals need and item-wise details along with time bound action plan shall be prepared and submitted to the Ministry's Regional Office. Implementation of such program shall be ensured accordingly in a time bound manner.
 - xx. Occupational health surveillance of the workers shall be carried out as per the prevailing Acts and Rules.
 - xxi. Company shall have own Environment Management Cell having qualified persons with proper background (at least one Environmental Manager having post graduate qualification in Environmental Sciences/Environmental Engineering).

B. GENERAL CONDITIONS:

- i. The project authorities must strictly adhere to the stipulations made by the State Pollution Control Board (SPCB), State Government and any other statutory authority.
- ii. No further expansion or modifications in the plant shall be carried out without prior approval of the Ministry of Environment and Forests. In case of deviations or alterations in the project proposal from those submitted to this Ministry for clearance, a fresh reference shall be made to the Ministry to assess the adequacy of conditions imposed and to add additional environmental protection measures required, if any.

- iii. The locations of ambient air quality monitoring stations shall be decided in consultation with the State Pollution Control Board (SPCB) and it shall be ensured that at least one station is installed in the upwind and downwind direction as well as where maximum ground level concentrations are anticipated.
- iv. The National Ambient Air Quality Emission Standards issued by the Ministry vide G.S.R. No. 826(E) dated 16th November, 2009 shall be followed.
- v. The overall noise levels in and around the plant area shall be kept well within the standards by providing noise control measures including acoustic hoods, silencers, enclosures etc. on all sources of noise generation. The ambient noise levels shall conform to the standards prescribed under Environment (Protection) Act, 1986 Rules, 1989 viz. 75 dBA (day time) and 70 dBA (night time).
- vi. The Company shall harvest rainwater from the roof tops of the buildings and storm water drains to recharge the ground water and use the same water for the process activities of the project to conserve fresh water.
- vii. Training shall be imparted to all employees on safety and health aspects of chemicals handling. Pre-employment and routine periodical medical examinations for all employees shall be undertaken on regular basis. Training to all employees on handling of chemicals shall be imparted.
- viii. The company shall also comply with all the environmental protection measures and safeguards proposed in the documents submitted to the Ministry. All the recommendations made in the EIA/EMP in respect of environmental management, risk mitigation measures and public hearing relating to the project shall be implemented.
- ix. The company shall undertake all relevant measures for improving the socio-economic conditions of the surrounding area. CSR activities shall be undertaken by involving local villages and administration.
- x. The company shall undertake eco-developmental measures including community welfare measures in the project area for the overall improvement of the environment.
- xi. A separate Environmental Management Cell equipped with full fledged laboratory facilities shall be set up to carry out the Environmental Management and Monitoring functions.
- xii. The company shall earmark sufficient funds towards capital cost and recurring cost per annum to implement the conditions stipulated by the Ministry of Environment and Forests as well as the State Government along with the implementation schedule for all the conditions stipulated herein. The funds so earmarked for environment management/pollution control measures shall not be diverted for any other purpose.
- xiii. A copy of the clearance letter shall be sent by the project proponent to concerned Panchayat, ZilaParisad/Municipal Corporation, Urban local body and the local NGO, if any, from whom suggestions/representations, if any, were received while processing the proposal.
- xiv. The project proponent shall also submit six monthly reports on the status of compliance of the stipulated Environmental Clearance conditions including results of monitored data (both in hard copies as well as by e-mail) to the respective Regional Office of MoEF, the respective Zonal Office of CPCB and concerned SPCB. A copy of Environmental Clearance and six monthly compliance status report shall be posted on the website of the company.

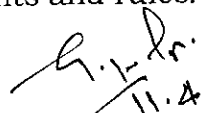


- xv. The environmental statement for each financial year ending 31st March in Form-V as is mandated shall be submitted to the concerned State Pollution Control Board as prescribed under the Environment (Protection) Rules, 1986, as amended subsequently, shall also be put on the website of the company along with the status of compliance of environmental clearance conditions and shall also be sent to the respective Regional Offices of MoEF by e-mail.
- xvi. The project proponent shall inform the public that the project has been accorded environmental clearance by the Ministry and copies of the clearance letter are available with the SPCB/Committee and may also be seen at Website of the Ministry at <http://moef.nic.in>. This shall be advertised within seven days from the date of issue of the clearance letter, at least in two local newspapers that are widely circulated in the region of which one shall be in the vernacular language of the locality concerned and a copy of the same shall be forwarded to the concerned Regional Office of the Ministry.
- xvii. The project authorities shall inform the Regional Office as well as the Ministry, the date of financial closure and final approval of the project by the concerned authorities and the date of start of the project.

8.0 The Ministry may revoke or suspend the clearance, if implementation of any of the above conditions is not satisfactory.


9.0 The Ministry reserves the right to stipulate additional conditions, if found necessary. The company in a time bound manner will implement these conditions.

10.0 The above conditions will be enforced, inter-alia under the provisions of the Water (Prevention & Control of Pollution) Act, 1974, Air (Prevention & Control of Pollution) Act, 1981, the Environment (Protection) Act, 1986, the Hazardous and Other Wastes (Management and Trans-boundary Movement) Rules, 2016 and the Public Liability Insurance Act, 1991 along with their amendments and rules.


11.4.2017
(Yogendra Pal Singh)
Scientist 'D'

Copy to:-

1. The Secretary, Department of Environment, Govt. of Jharkhand, Jharkhand.
2. The Chief Conservator of Forests, Regional Office (EZ), A/3, Chandrashekharpur, Bhubaneswar - 751 023. Orissa.
3. The Chairman, Central Pollution Control Board, Parivesh Bhawan, CBD-cum-Office Complex, East Arjun Nagar, New Delhi - 110 032.
4. The Chairman, Jharkhand Pollution Control Board, Town Administrative Building, HEC, Dhurwa, Ranchi - 824 004.
5. Monitoring Cell, Environment, Forests & Climate Change, Indira Paryavaran Bhawan, Jor Bagh, New Delhi.
6. Guard File/Monitoring File/Record File.


11.4.2017
(Yogendra Pal Singh)
Scientist 'D'