

No. J-11111/21/2001-1A II
Government of India
Ministry of Environment & Forests
L.A. Division

Paryavaran Bhavan, CGO Complex,
Lodi Road, New Delhi-110003

Tele No 4363964

Dated 6th July, 2001.

To, ✓
The Chairman & Managing Director,
Cairn Energy India Pvt. Ltd.
Wellington Plaza, 2nd Floor,
90 Anna Salai,
Chennai-600002.

CB/OS-2
done
permit

Subject:- Integrated Development of CB-OS/2 Block (Phase 1) in the Gulf of Khamhat by M/s Cairn Energy India Pvt. Ltd. - Environmental Clearance reg.

Sir,

This has reference to your letter No. HSE03RSP1.20 dated 26th March 2001 and along with project documents including EIA/EM, Public Hearing Report, NOC from Gujarat, SPCB and subsequent clarifications furnished vide your letter dated 18th April, 2001 and 15th May, 2001 on the above project.

Ministry of Environment and Forests has carefully examined your application. It is noted that the company now proposes an integrated development plan for production of natural gas from CB-OS/2. The development of 4 wells renamed Lakshmi, Ambe, Gauri and Parvati. Field development will take place in a phased manner. The project includes drilling of several development wells in the identified prospects, erection of offshore unmanned platforms and the laying of hydrocarbon carrying pipelines from the offshore wells to a land fall point where onshore terminal with gas processing and associated facilities is envisaged. In the 1st Phase (2000-2002), Lakshmi gas bearing field will be taken up for development wherein about 16 wells, 5 platforms and 38-km length pipeline will be constructed. In the 2nd Phase Gauri and Ambe gas bearing fields will be taken up for development wherein 28 wells, 5 platforms and 65-km length pipeline will be constructed. The scope of the present project is for development of 44 wells in all. There will be one rig for 10-12 wells and all the rigs will remain unmanned. The offshore pipeline will pass through Coastal Regulatory Zone upto a distance of approx 1 Km. followed by approx. 2.2 Km onshore pipeline reaching upto the Onshore terminal. Approx 40 hectares of land will be developed to accommodate the gas handling facilities on land. It is also noted that the Gujarat SPCB has issued NOC for the project on 17th April, 2001 and the Public Hearing Panel has recommended the case in the meeting held on 15th March, 2001. The State Department of Environment, Government of Gujarat has approved the proposal from CRZ angle for laying the pipelines and onshore gas terminal facility in the inter-tidal region on 30th May, 2001.

The Ministry of Environment and Forests hereby accords environmental clearance under EIA Notification dated 27th January, 1994 subject to strict compliance of the following conditions:-

SPECIFIC CONDITIONS:

1. The Schedule for commencement by the drilling operations should be intimated at least one month in advance to the Wildlife Warden having jurisdiction over the nearest coastal area so as to enable him to monitor its impact, if any, on the wild life.
2. Approval from DG Shipping under the Merchant Shipping Act prior to commencement of the drilling operations should be obtained. At least 30 days prior to the commencement of drilling, the exact location should be intimated to the Director General of Shipping, Mumbai and the Company should abide by any direction he may issue regarding ensuring the safety of navigation in the area.
3. Only water based drilling fluids/mud should be used for the drilling operation. Ministry hereby grants provisional permission for one-year for disposal of the residual water based drilling fluids and drill cuttings after proper washing subject to following conditions:
 - The water based muds must have low toxicity (i.e. 96 Hr LC-50 value > 30,000 ppm). The project authority should ensure that only low toxicity chemical additives shall be used for preparation of drilling fluids.
 - The disposal point should be located at least 5 KM away from the shoreline and ecologically sensitive areas.
 - At the disposal point, the sea bed currents should have a minimum velocity of 60cm/sec and sea depth of 50 meter minimum must be available for proper dilution and dispersion.
 - The drill cuttings should be discharged intermittently to avoid turbidity and reduction in transmittance.
 - Company should submit well-wise data on the quantity of water based muds / cuttings used/generated along with slurry volume and properties (particle size distribution etc.).
 - Company should monitor the sea surface water quality in terms of oil content around the well and submit reports to the Ministry on a monthly basis during the period of drilling operations.
4. The company should monitor the heavy metal concentration in the marine fish species before taking up the exploratory drilling activities.
5. Even though the proposed site is not part of any National Park or wild life sanctuary, it is seen that degraded mangrove forests exists in the region. The company should submit a plan/scheme for mangrove regeneration/compensatory development in consultation with the local Forest/Wildlife office.
6. Adequate infrastructure facilities should be provided near the offshore installations so that booms, skimmers, chemical dispersant could be deployed immediately in case of oil leakage from the installations. Efforts should be made to curtail the oil slick within

(M) //
Drilling

M - monitoring regime

500 meters of the installation and accordingly, action plan and facilities to check the oil slick beyond 500 meters should be provided.

7. The project proponent shall also comply with the environmental protection measures and safeguards recommended in the EIA EMP/Risk Analysis report as well as the recommendations of the Public Hearing Panel. PPM?

GENERAL CONDITIONS:

- i. The project authority must strictly adhere to the stipulations made by the Central Government as part of any International Convention(s) or Merchant Shipping Act.
- ii. The project authorities must strictly adhere to the stipulations made by the Gujarat State Pollution Control Board and the State Government.
- iii. No further expansion or modifications in the plant should 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 should be made to the Ministry to assess the adequacy of conditions imposed and to add additional environmental protection measures required, if any.
- iv. The project must strictly adhere to the regulations made by MARPOL convention 1973/1978 for setting limits, for discharges from offshore oil/gas exploration and production activities.
- v. The project authorities must strictly comply with the rules and regulations under Manufacture, Storage and Import of Hazardous chemicals Rules, 1989 as amended on 3rd October, 1994. Prior approvals from Chief Inspectorate of Factories, Chief Controller of Explosives, Fire Safety Inspectorate etc. must be obtained wherever applicable.
- vi. The project authorities must strictly comply with the rules and regulations with regard to handling and disposal of hazardous wastes in accordance with the Hazardous Wastes (Management & Handling) Rules, 1989 wherever applicable. Authorization from the State Pollution Control Board must be obtained for collections/treatment/storage/disposal of hazardous wastes.
- vii. The overall noise levels in and around the rig area should be kept well within the standards (85 dBA) by providing noise control measures including acoustic hoods, silencers, enclosures etc. on all sources of noise generation. The ambient noise levels should conform to the standards prescribed under EPA Rules, 1989 viz. 75 dBA (day time) and 70 dBA (night time).
- viii. A separate environmental management cell equipped with full fledged laboratory facilities must be set up to carry out the environmental management and monitoring functions.
- ix. The project authorities will provide adequate funds both recurring and non recurring 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 provided should not be diverted for any other purpose.

- x. The implementation of the project vis-à-vis environmental action plans will be monitored by Ministry's Regional Office at Bhopal State Pollution Control Board/Central Pollution Control Board. A six monthly compliance status report should be submitted to the monitoring agencies.
- xi. The Project Proponent should inform the public that the project has been accorded environmental clearance by the Ministry and copies of the clearance letter are available with the State Pollution Control Board/ Committee and may also be seen at Website of the Ministry and Forests at <http://WWW.cmvfor.nic.in>. This should be advertised in at least two local newspapers that are widely circulated in the region of which one shall be in the vernacular language of the locality concerned.

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

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

The above conditions will be enforced, inter-alia under the provisions of the Water (Prevention & Control of Pollution) Act, 1974, the Air (Prevention & Control of Pollution) Act, 1981, the Environment (Protection) Act, 1986 and the Public (Insurance) Liability Act, 1991 along with their amendments and rules.

(Dr. R. Warriar)

Additional Director

Copy to:-

1. Chairman, Central Pollution Control Board, Parivesh Bhavan, CBD-cum-Office Complex, East Arjun Nagar, Delhi-110032.
2. The Chairman, Gujarat State Pollution Control Board, Old Assembly Building, 2nd Floor, Sector No. 10-A, Gandhi Nagar-382043.
3. The Secretary, Environment & Forests Department, Govt. of Gujarat, Sachivalaya, 8th Floor, Gandhinagar-382010.
4. The Chief Conservator of Forests (Central), Regional Office (WZ), E-3/240, Arera Colony, Bhopal-462016.
5. Adviser (EI division), Ministry of Environment and Forests, Paryavaran Bhavan, CGO Complex, New Delhi.
6. Additional Director (Monitoring Cell), Ministry of Environment and Forests, Paryavaran Bhavan, CGO Complex, New Delhi.
7. Guard File.
8. Monitoring File.
9. Record File.

(Dr. R. Warriar)

Additional Director

No. J-11011/21/2001-IA.II.
Government of India
Ministry of Environment & Forests
(IA Division)

Paryavaran Bhawan
CGO Complex, Lodi Road,
New Delhi - 110 003.

Dated 7th August 2001

To

The Chairman & Managing Director
Cairn Energy India Pty. Ltd.
Wellington Plaza, 2nd Floor,
90 Anna Salai
Chennai - 600 002

Subject: **Integrated Development of CB-OS/2 Block (Phase I) in the Gulf of Khambhat by M/s Cairn Energy India Pty.Ltd. - Environmental Clearance reg.**

Sir,

This has reference to your letter No. Nil dated 18th July, 2001 with regard to the Environmental Clearance letter of even number dated 6th July, 2001.

The matter has been examined in the Ministry. It may be noted that the words "Phase I" in the subject was included to reflect that present approval is only for exploitation of natural gas as the company proposes to develop the oil fields at a later stage. It is clarified that environmental clearance accorded for Phase I include planned development of 3 hydrocarbon prospects namely Lakshmi, Gauri and Ambe as follows:

- Development of Lakshmi gas bearing field wherein about 16 wells, 5 platforms and 38 km length pipeline will be constructed.
- Development of Gauri and Ambe gas bearing fields wherein 28 wells, 5 platforms and 55 km length pipeline will be constructed.

In view of the above, Para 2 (lines 1 - 13) of the Ministry's clearance letter dated 6th July, 2001 may be read as follows:

"Ministry of Environment and Forests has carefully examined your application. It is noted that the company now proposes an integrated development plan for production of natural gas from CB-OS/2. This includes development of 4 hydrocarbon bearing prospects renamed Lakshmi, Ambe, Gauri and Parvati. Field development will

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ambe
- 44 wells - 10 platforms - 93 kms.
- Ambe - 6 wells? 2 platform -

take place in a phased manner. The project includes drilling of several development wells in the identified prospects, erection of offshore unmanned platforms and the laying of hydrocarbon carrying pipelines from the offshore wells to a landfall point where onshore terminal with gas processing and associated facilities is envisaged. Lakshmi gas bearing field will be first taken up for development wherein about 16 wells, 5 platforms and 38 km length pipeline will be constructed. This will be followed by development of Gauri and Ambe gas bearing fields wherein 28 wells, 5 platforms and 55 km length pipeline will be constructed. The scope of the present clearance is for development of Lakshmi, Ambe and Gauri fields with drilling of 44 wells, erection of 10 unmanned platforms and laying of approx. 93 km of pipeline in all."

Yours faithfully,

J. N. Hosabettu
(Dr. N.H. Hosabettu)
Director

Copy to:

1. Chairman, Central Pollution Control Board, Parivesh Bhawan, CBD-cum Office Complex, East Arjun Nagar, Delhi - 110 032.
2. The Chairman, Gujarat State Pollution Control Board, Old Assembly Building, 2nd Floor, Sector No. 10-A, Gandhi Nagar - 382 043.
3. The Chief Conservator of Forests (Central), Regional Office (WZ), E-3/240, Arera Colony, Bhopal - 462 016.
4. Director (Monitoring Cell), Ministry of Environment & Forests, New Delhi.
5. Guard File.
6. Monitoring File.
7. Record File.

J. N. Hosabettu
(Dr. N.H. Hosabettu)
Director

KIND ATTN :
VJAYA BHASKER
REDDY

No. J-11011/55/2000 - IA II (I)
Government of India
Ministry of Environment & Forests

E mail plajulara@yahoo.com
24363973.

Paryavaran Bhawan, C.G.O. Complex,
Lodi Road, New Delhi - 110 003

Dated the January 15, 2003

To
The Chairman and Managing Director
M/s Cairn Energy India Limited,
Wellington Plaza, 2nd Floor,
90, Anna Salai, Chennai- 600 002

Sub: Disposal of drill cuttings and waste residual muds in off shore
Exploratory /development drilling projects - Extension of permission
granted reg.

Sir,

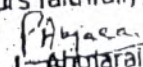
This has reference to your letter no. HSE10ALL01 dated 8th October, 2002 on the above mentioned subject. Company's request for extending permission granted for disposal to drill cuttings and waste residual mud in the CB-OS/2 in the Gulf of Kambhat off shore region has been examined along with LC 50 bio assay report, sea water quality data and Barite analysis reports. Ministry hereby accords provisional permission for one year for disposal of residual water based drill fluids and drill cuttings after proper washing subject to following conditions:

- (i) The toxicity of chemical additives used in drilling fluids (DF) should be biodegradable (mainly organic constituents) and should have toxicity of 96 hr LC 50 value >30,000 mg/l as per mysid toxicity or toxicity test conducted on locally available sensitive sea species. WBM should be recycled to a maximum extent.
- (ii) Thoroughly washed drill cuttings (DC) separated from WBM and unusable portion of WBM having toxicity of 96 hr LC 50 > 30,000 mg/l shall be discharged off-shore into sea intermittently at an average rate of 50 bbl/hr/well from a platform so as to have proper dilution and dispersion without any adverse impact on marine environment.
- (iii) Hexavalent chromium compound should not be used in drilling fluid (DF). Alternate chemical in place of chrome lignosulfonate should be used in DF. In case, chrome compound is used, the DF/LC should not be disposed off-shore.
- (iv) Drill cuttings (DC) of any composition should not be discharged in sensitive areas notified by Ministry of Environment and Forests.

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- (v) In case, DC is associated with high oil content from hydrocarbon bearing formation, then disposal of DC should not have oil content > 10gm/kg.
- (vi) Well-wise data on quantity of WBM used/ wastes including cuttings generated and discharged on a daily basis must be maintained and report submitted to Ministry of Environment and Forests & CPCB..
- (vii) The DC wash water should be treated to conform the limits notified under the Environment (Protection) Act, 1986, before disposal into sea. The treated effluent should be monitored regularly.
- (viii) Discharge of DC from the installation located within 5 km away from shore should have no adverse impact on marine eco-system and on the shore. If, adverse impact is observed, the company should bring the DC on-shore for disposal in an impervious waste disposal pit.
- (ix) Barite used in preparation of DF shall not contain Hg > 1 mg/kg & Cd > 3 mg/kg.
- (x) Company is required to record daily discharge of DC/DF to off shore and also to monitor daily the effluent quality, and submit the compliance report in every six months to MoEF.

Yours faithfully,

 (Dr. P. L. Ahujarai)
 Additional Director

Copy to:

1. The Secretary, Ministry of Petroleum and Natural Gas, Shastri Bhavan, New Delhi-110001.
2. Chairman, Central Pollution Control Board, Parivesh Bhavan, CBD-cum-Office Complex, East Arjun Nagar, Delhi-110032.
3. Chief Conservator of Forests, Regional Office (WZ), E-3/240, Arera colony, Bhopal-462010
4. The Director, Directorate General of Hydrocarbons, Ministry of Petroleum and Natural gas, Shastri Bhavan, New Delhi-110003

(Dr. P. L. Ahujarai)
 Additional Director