

**No. J-11015/211/2008-IA.II(M)**

Government of India

Ministry of Environment &amp; Forests

MD IFCAL

FOR KIND INFORMATION

Sidhartha Pattnaik05/04/10Paryavaran Bhavan,  
C.G.O. Complex, Lodi Road,  
New Delhi-110 003.Dated the 1<sup>st</sup> April, 2010

To

M/s IDCOL Ferro Chrome and Alloys Limited  
P.O. Jajpur Road,  
District Jajpur,  
Orissa-758 036  
E-mail: fcp@sify.com**Subject: Talangi-A Chromite Mining Project of M/s IDCOL Ferro Chrome and Alloys Limited located in Villages Talangi and Ostapal, Tehsil Sukinda, District Jajpur, Orissa- environmental clearance regarding.**

Sir,

This has reference to your letter No. IFCAL/TCM/3888 dated 24.10.2009 and subsequent letters dated 23.12.2009, 17.11.2009 and 25.01.2010 on the subject mentioned above. The Ministry of Environment and Forests had earlier prescribed Terms of Reference (TORs) to the project on 19.05.2008 for undertaking detailed EIA study for the purpose of obtaining environmental clearance. The proposal is for enhancement of production of chromite ore to 0.14 million tones per annum (million TPA) and there will be a chrome ore beneficiation plant (COB) with a capacity of 0.115 million TPA throughput. The total mine lease area of the project is 65.683ha, out of which 21.043ha is an agricultural land, 20.881ha is forestland, 17.7588ha is wasteland, 5.0402ha is grazing land and 0.96ha is surface water bodies. The Ministry of Environment and Forests had accorded forestry clearance for diversion of 17.483ha forestland on 08.06.2001. Area proposed for mining is 23.75ha, an area of 12.495ha is kept for OB dumps, 16.85ha for mineral storage, 1.23ha for infrastructure, 2.61ha for roads, 1.902ha for green belt, 0.06ha for effluent treatment plant, 0.65ha for mineral separation plant, 1.5ha for township area and 4.636ha is others (undisturbed). The Damsal Nallah and the Talangi Nallah are flowing through the mine lease area. No national park/wildlife sanctuary/biosphere reserve/tiger reserve/elephant reserve etc. are reported to be located in the core and buffer zone of the mine. In support of this a letter dated 24.10.2009 from the DFO cum Wildlife Warden, Cuttack Forest Division has been provided along with a duly authenticated map. Subsequently, the DFO cum Wildlife Warden, Cuttack vide letter Memo No.5746 dated 22.12.2009 clarified that the elephant movement area is about 6.1km away from the project area and there is no likelihood of mining activities coming on the way of elephant movement. The mine working will be opencast by semi-mechanized method involving drilling and blasting. The targetted production capacity of the mine is 1,40,000TPA of chrome ore and

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the life of mine is seven years. The capacity of the Chrome Ore Beneficiation (COB) will be 0.115 million TPA throughput. Approximately 470TPD of mineral will be transported through the road. The topography of the area is more or less flat ranging from 140m RL to 160m RL sloping from the North to South. The mine lease is located in the foot of the Daitari Hill range. There are two quarries namely the Quarry-1 and the Quarry-2. The mining operation in the Quarry-1 has been closed and the Quarry is being concurrently backfilled, whereas in the Quarry-2, the present working depth is reported as 120m AMSL(38m bgl). The ultimate working depth in the Quarry-2 will be 69m AMSL(89m bgl). The groundwater table is reported to vary between 135m-155m AMSL. The mine working will intersect the groundwater table. Based on the hydro-geological study, it has been shown that the stage of groundwater development for all the mines in watershed is 31% and as such the area is reported in the safe zone. The peak water requirement of the project is estimated as 239m<sup>3</sup> per day, out of which 26m<sup>3</sup> per day will be obtained from the Talangi Nallah, 186m<sup>3</sup> per day from the mine sump water and remaining 27m<sup>3</sup> per day from the recycled water. It has been reported that a part of Talangi and Ostapai villages fall within the core zone of the mine, however, it is devoid of any habitation; therefore, displacement of population and R&R has not been envisaged. Approximately 38,665m<sup>3</sup> per month of solid waste comprising of 335m<sup>3</sup> per month of top soil, 34,770 m<sup>3</sup> per month of over burden, 3425 m<sup>3</sup> per month of tailings and 525m<sup>3</sup> per month of sludge will be generated. It was stated by the proponent that there are five external OB dumps, out of which three have merged into a single dump and thus, there are three OB dumps. Out of these, one has already been stabilized and the remaining two are being stabilized. Backfilling commenced from the year 2009-10 and there will be no external dumping thereafter. The maximum height of the dumps shall not exceed 35m. Out of the 23.75ha excavated area, an area of 10.22ha will be backfilled. It was stated by the proponent that the tailing slurry is discharged into two settling tanks and the supernatant water is re-circulated in the COB plant. The tailings are stacked on a cemented platform surrounded by garland drain leading to ETP. The tailings will be disposed into a private tailing disposal facility which has been accorded environmental clearance vide letter No.10-10/2007-IA.III dated 2<sup>nd</sup> June, 2009. Plantation will be raised in an area 33.585ha at the end of the mine life and an area of 14.49ha will be developed as water body during the post mining stage. The public hearing of the project was held on 10.06.2009 as per the EIA Notification, 2006 for enhancement of chrome ore from 0.6LTPA to 1.4LTPA over an area of 65.683ha and Beneficiation plant capacity of 1.5LTPA. The Indian Bureau of Mines had approved the scheme of mining including PMCP of the project on 18.11.2008 for lease area of 65.683ha. The capital cost of the project is Rs.3000Lakhs. The capital cost for environmental protection measures is proposed as Rs.129.47Lakhs and the annual recurring cost towards the environmental protection measures is proposed as Rs.26.5Lakhs. It was categorically stated by the proponent that there is no court case pending against this project and no directions have been passed by any Regulatory Authority.



2. The Ministry of Environment and Forests has examined the application in accordance with the EIA Notification, 2006 and hereby accords environmental clearance under the provisions thereof to the above mentioned Talangi-A Chromite Mining Project of M/s IDCOL Ferro Chrome and Alloys Limited for an annual production capacity of 1,40,000 tonnes (0.14 million tonnes) of chromite ore by the opencast semi-mechanized method involving total mine lease area of 65.683ha and with an annual capacity of 0.115 million tonnes throughput of chrome ore beneficiation plant (COB) subject to implementation of the following conditions and environmental safeguards.

**A. Specific Conditions**

- (i) The project proponent shall obtain Consent to Establish and Consent to Operate from the State Pollution Control Board, Orissa and effectively implement all the conditions stipulated therein.
- (ii) The environmental clearance is subject to grant of approval of the State Land use Department, Government of Orissa for diversion of agricultural land for non agricultural use.
- (iii) Necessary forestry clearance under the Forest (Conservation) Act, 1980 for an area of 20.881ha forestland involved in the project shall be obtained. Environmental clearance is subject to grant of forestry clearance.
- (iv) Environmental clearance is subject to final order of the Hon'ble Supreme Court of India in the matter of Goa Foundation Vs. Union of India in Writ Petition (Civil) No. 460 of 2004, as may be applicable to this project.
- (v) Environmental clearance is subject to obtaining clearance under the Wildlife (Protection) Act, 1972 from the competent authority, as may be applicable to this project.
- (vi) The project proponent shall obtain prior clearance from the Competent Authority for working within 10km of the elephant corridor.
- (vii) The project proponent shall develop fodder plots in the non-mineralised area in lieu of use of grazing land.
- (viii) The project proponent shall ensure that no natural watercourse and/or water resources shall be obstructed due to any mining operations. Adequate measures shall be taken for conservation and protection of the Damisal Nallah, Telangi Nallah, first order and the second order streams, if any passing through the mine lease area during the course of mining operation.

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- (ix) The top soil shall temporarily be stored at earmarked site(s) only and it should not be kept unutilized for long. The topsoil shall be used for land reclamation and plantation.
- (x) The over burden (OB) generated during the mining operations shall be stacked at earmarked dump sites only and it should not be kept active for a long period of time and their phase-wise stabilization shall be carried out. Concurrent backfilling shall be carried out. There shall be three external OB dumps. The maximum height of the dumps shall not exceed 35m. Proper terracing of the OB dumps shall be carried out and the overall slope of the dump shall be maintained to 28°. The OB dumps shall be scientifically vegetated with suitable native species to prevent erosion and surface run off. In critical areas, use of geo textiles shall be undertaken for stabilization of the dumps. Out of the 23.75ha excavated area, an area of 10.22ha shall be backfilled and afforested. Monitoring and management of rehabilitated areas shall continue until the vegetation becomes self-sustaining. Compliance status shall be submitted to the Ministry of Environment & Forests and its Regional Office located at Bhubaneswar on six monthly basis.
- (xi) The void left unfilled in an area of 14.49ha shall be converted into water body. The higher benches of excavated void/mining pit shall be terraced and plantation done to stabilize the slopes. The slope of higher benches shall be made gentler for easy accessibility by local people to use the water body. Peripheral fencing shall be carried out all along the excavated area.
- (xii) Catch drains and siltation ponds of appropriate size shall be constructed around the mine working, soil, mineral and OB dump(s) to prevent run off of water and flow of sediments directly into the first order and the second order streams, the Damsal Nallah, the Telangi Nallah and other water bodies. The water so collected should be utilized for watering the mine area, roads, green belt development etc. The drains shall be regularly desilted particularly after the monsoon and maintained properly.

Garland drains, settling tanks and check dams of appropriate size, gradient and length shall be constructed both around the mine pit and over burden dumps to prevent run off of water and flow of sediments directly into the first order and the second order streams, the Damsal Nallah, the Telangi Nallah and other water bodies and sump capacity should be designed keeping 50% safety margin over and above peak sudden rainfall (based on 50 years data) and maximum discharge in the area adjoining the mine site. Sump capacity should also provide adequate retention period to allow proper settling of silt material. Sedimentation pits shall be constructed at the corners of the garland drains and desilted at regular intervals.

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Storm water return system should be provided. Storm water should not be allowed to go to the effluent treatment plant during high rainfall / super cyclone period. A separate storm water sump for this purpose should be created.

- (xiii) Dimension of the retaining wall at the toe of the over burden dumps and the OB benches within the mine to check run-off and siltation shall be based on the rain fall data.
- (xiv) Mine water discharge and/or any waste water shall be properly treated to meet the prescribed standards before reuse/discharge. The run off from OB dumps and other surface run off should be analyzed for  $\text{Cr}^{+6}$  and in case its concentration is found higher than the permissible limit, the waste water should be treated before discharge/reuse.
- (xv) Effluents containing  $\text{Cr}^{+6}$  shall be treated to meet the prescribed standards before reuse/discharge. Effluent Treatment Plant shall be provided for treatment of mine water discharge and wastewater generated from the workshop and mineral separation plant.
- (xvi) Separate impervious concrete pits for disposal of sludge shall be provided for the safe disposal of sludge generated from the mining operations.
- (xvii) Regular monitoring of water quality upstream and downstream of Damsal Nallah and the Telangi Nallah shall be carried out and record of monitoring data should be maintained and submitted to Ministry of Environment and Forests, its Regional Office, Bhubneswar, Central Groundwater Authority, Regional Director, Central Ground Water Board, State Pollution Control Board and Central Pollution Control Board.
- (xviii) The project proponent shall ensure that the quality of decanted effluents, if any, from the cemented platform conform to the prescribed standards before discharge. The decanted water from the cemented platform shall be re-circulated within the mine and there shall be zero discharge from the mine.
- (xix) Plantation shall be raised in an area of 33.585ha including a 7.5m wide green belt in the safety zone around the mining lease by planting native species around ML area, backfilled and reclaimed area, around COB plant, roads etc. in consultation with the local DFO/Agriculture Department. The density of plantation should be around 2500 plants per hectare. Greenbelt shall be developed all along the mine lease area in a phased manner and shall be completed within first five years.
- (xx) Effective safeguard measures such as regular water sprinkling shall be carried out in critical areas prone to air pollution and having high levels

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of particulate matter such as around crushing and screening plant, loading and unloading point and all transfer points. Extensive water sprinkling shall be carried out on haul roads. It should be ensured that the Ambient Air Quality parameters conform to the norms prescribed by the Central Pollution Control Board in this regard.

- (xxi) The project authority should implement suitable conservation measures to augment ground water resources in the area in consultation with the Regional Director, Central Ground Water Board.
- (xxii) Regular monitoring of ground water level and quality shall be carried out in and around the mine lease and COB plant by establishing a network of existing wells and installing new piezometers during the mining and beneficiation operation. The periodic monitoring [(at least four times in a year-pre-monsoon (April-May), monsoon (August), post-monsoon (November) and winter (January); once in each season)] shall be carried out in consultation with the State Ground Water Board/Central Ground Water Authority and the data thus collected may be sent regularly to the Ministry of Environment and Forests and its Regional Office Bhubneswar, the Central Ground Water Authority and the Regional Director, Central Ground Water Board. If at any stage, it is observed that the groundwater table is getting depleted due to the mining activity, necessary corrective measures shall be carried out.
- (xxiii) Regular monitoring of the flow rate of the springs and perennial nallahs flowing in and around the mine lease shall be carried out and records maintained.
- (xxiv) The project proponent shall obtain necessary prior permission of the competent authorities for drawl of requisite quantity of water (surface water and ground water) required for the project.
- (xxv) Suitable rainwater harvesting measures on long term basis shall be planned and implemented in consultation with the Regional Director, Central Ground Water Board.
- (xxvi) Vehicular emissions shall be kept under control and regularly monitored. Measures shall be taken for maintenance of vehicles used in mining operations and in transportation of mineral from mine face to the beneficiation plant. The vehicles shall be covered with a tarpaulin and shall not be overloaded. No transportation of ore outside the mine lease area shall be carried out after the sunset.
- (xxvii) No blasting shall be carried out after the sunset. Blasting operation shall be carried out only during the daytime. Controlled blasting shall be practiced. The mitigative measures for control of ground vibrations and to arrest fly rocks and boulders should be implemented.

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- (xxviii) Drills shall either be operated with dust extractors or equipped with water injection system.
- (xxix) Mineral handling area shall be provided with adequate number of high efficiency dust extraction system. Loading and unloading areas including all the transfer points should also have efficient dust control arrangements. These should be properly maintained and operated.
- (xxx) Sewage treatment plant shall be installed for the colony. ETP shall also be provided for the workshop and wastewater generated during the mining operation.
- (xxxi) Pre-placement medical examination and periodical medical examination of the workers engaged in the project shall be carried out and records maintained. For the purpose, schedule of health examination of the workers should be drawn and followed accordingly.
- (xxxii) The project proponent shall take all precautionary measures during mining operation for conservation and protection of endangered fauna namely elephant, sloth bear, python etc. spotted in the study area. Action plan for conservation of flora and fauna shall be prepared and implemented in consultation with the State Forest and Wildlife Department. Necessary allocation of funds for implementation of the conservation plan shall be made and the funds so allocated shall be included in the project cost. All the safeguard measures brought out in the Wildlife Conservation Plan so prepared specific to the project site shall be effectively implemented. A copy of action plan shall be submitted to the Ministry of Environment and Forests and its Regional Office, Bhubaneswar.
- (xxxiii) Provision shall be made for the housing of construction labour within the site with all necessary infrastructure and facilities such as fuel for cooking, mobile toilets, mobile STP, safe drinking water, medical health care, crèche etc. The housing may be in the form of temporary structures to be removed after the completion of the project.
- (xxxiv) The critical parameters such as RSPM (Particulate matter with size less than 10micron i.e., PM<sub>10</sub>), NO<sub>x</sub> in the ambient air within the impact zone, peak particle velocity at 300m distance or within the nearest habitation, whichever is closer shall be monitored periodically. Further, quality of discharged water shall also be monitored [(TDS, DO, PH and Total Suspended Solids (TSS)]. The monitored data shall be uploaded on the website of the company as well as displayed on a display board at the project site at a suitable location near the main gate of the Company in public domain. The Circular No. J-20012/1/2006-IA.II(M) dated 27.05.2009 issued by Ministry of Environment and Forests, which is available on the website of the Ministry [www.envfor.nic.in](http://www.envfor.nic.in) shall also be referred in this regard for its compliance.

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- (xxxv) A Final Mine Closure Plan along with details of Corpus Fund should be submitted to the Ministry of Environment & Forests 5 years in advance of final mine closure for approval.

**B. General conditions**

- (i) No change in mining technology and scope of working should be made without prior approval of the Ministry of Environment & Forests.
- (ii) No change in the calendar plan including excavation, quantum of mineral chromite ore and waste should be made.
- (iii) Atleast four ambient air quality-monitoring stations should be established in the core zone as well as in the buffer zone for RSPM (Particulate matter with size less than 10micron i.e., PM<sub>10</sub>), SO<sub>2</sub> and NO<sub>x</sub> monitoring. Location of the stations should be decided based on the meteorological data, topographical features and environmentally and ecologically sensitive targets and frequency of monitoring should be undertaken in consultation with the State Pollution Control Board.
- (iv) Data on ambient air quality [(RSPM(Particulate matter with size less than 10micron i.e., PM<sub>10</sub>), SO<sub>2</sub> and NO<sub>x</sub>) should be regularly submitted to the Ministry including its Regional office located at Bhubaneswar and the State Pollution Control Board / Central Pollution Control Board once in six months.
- (v) Fugitive dust emissions from all the sources should be controlled regularly. Water spraying arrangement on haul roads, loading and unloading and at transfer points should be provided and properly maintained.
- (vi) Measures should be taken for control of noise levels below 85 dBA in the work environment. Workers engaged in operations of HEMM, etc. should be provided with ear plugs / muffs.
- (vii) Industrial waste water (workshop and waste water from the mine) should be properly collected, treated so as to conform to the standards prescribed under GSR 422 (E) dated 19<sup>th</sup> May, 1993 and 31<sup>st</sup> December, 1993 or as amended from time to time. Oil and grease trap should be installed before discharge of workshop effluents.
- (viii) Personnel working in dusty areas should wear protective respiratory devices and they should also be provided with adequate training and information on safety and health aspects.

Occupational health surveillance program of the workers should be undertaken periodically to observe any contractions due to exposure to dust and take corrective measures, if needed.



- (ix) A separate environmental management cell with suitable qualified personnel should be set-up under the control of a Senior Executive, who will report directly to the Head of the Organization.
- (x) The funds earmarked for environmental protection measures should be kept in separate account and should not be diverted for other purpose. Year wise expenditure should be reported to the Ministry and its Regional Office located at Bhubaneswar.
- (xi) The project authorities should inform to the Regional Office located at Bhubaneswar regarding date of financial closures and final approval of the project by the concerned authorities and the date of start of land development work.
- (xii) The Regional Office of this Ministry located at Bhubaneswar shall monitor compliance of the stipulated conditions. The project authorities should extend full cooperation to the officer (s) of the Regional Office by furnishing the requisite data / information / monitoring reports.
- (xiii) The project proponent shall 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 Ministry of Environment and Forests, its Regional Office Bhubaneswar, the respective Zonal Office of Central Pollution Control Board and the State Pollution Control Board. The proponent shall upload the status of compliance of the environmental clearance conditions, including results of monitored data on their website and shall update the same periodically. It shall simultaneously be sent to the Regional Office of the Ministry of Environment and Forests, Bhubaneswar, the respective Zonal Officer of Central Pollution Control Board and the State Pollution Control Board.
- (xiv) A copy of the clearance letter shall be sent by the proponent to concerned Panchayat, Zila Parishad/ Municipal Corporation, Urban Local Body and the Local NGO, if any, from whom suggestions/ representations, if any, were received while processing the proposal. The clearance letter shall also be put on the website of the Company by the proponent.
- (xv) The State Pollution Control Board should display a copy of the clearance letter at the Regional office, District Industry Centre and the Collector's office/ Tehsildar's Office for 30 days.
- (xvi) The environmental statement for each financial year ending 31<sup>st</sup> March in Form-V as is mandated to be submitted by the project proponent 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

Rs. 10/-



compliance of environmental clearance conditions and shall also be sent to the respective Regional Office of the Ministry of Environment and Forests, Bhubaneswar by e-mail.

- (xvii) The project authorities should advertise at least in two local newspapers widely circulated, one of which shall be in the vernacular language of the locality concerned, within 7 days of the issue of the clearance letter informing that the project has been accorded environmental clearance and a copy of the clearance letter is available with the State Pollution Control Board and also at web site of the Ministry of Environment and Forests at <http://envfor.nic.in> and a copy of the same should be forwarded to the Regional Office of this Ministry located at Bhubaneswar.

3. The Ministry or any other competent authority may alter/modify the above conditions or stipulate any further condition in the interest of environment protection.

4. Failure to comply with any of the conditions mentioned above may result in withdrawal of this clearance and attract action under the provisions of the Environment (Protection) Act, 1986.

5. 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 Liability Insurance Act, 1991 along with their amendments and rules made thereunder and also any other orders passed by the Hon'ble Supreme Court of India/ High Court of Orissa and any other Court of Law relating to the subject matter.

7. Any appeal against this environmental clearance shall lie with the National Environment Appellate Authority, if preferred within a period of 30 days as prescribed under Section 11 of the National Environment Appellate Authority Act, 1997.

**(SATISH C. GARKOTI)**  
Additional Director (S)


**Copy to:**

- (i) The Secretary, Ministry of Mines, Government of India, Shastri Bhawan, New Delhi.
- (ii) The Secretary, Department of Environment, Government of Orissa, Secretariat, Bhubaneswar.
- (iii) The Secretary, Department of Mines and Geology, Government of Orissa, Secretariat, Bhubaneswar.

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- (iv) The Secretary, Department of Forests, Government of Orissa, Secretariat, Bhubaneswar.
- (v) The Chief Wildlife Warden, Government of Orissa, Bhubaneswar.
- (vi) The Chairman, Central Pollution Control Board, Parivesh Bhawan, CBD-cum-Office Complex, East Arjun Nagar, Delhi-110032.
- (vii) The Chief Conservator of Forests, Regional Office (EZ), Ministry of Environment and Forests, A-3 Chandrashekharpur, Bhubaneswar-751023.
- (viii) The Chairman, Orissa State Pollution Control Board, Parivesh Bhawan, A/118 Nilakantha Nagar, Unit-VIII, Bhubaneswar-751012.
- (ix) The Member Secretary, Central Ground Water Authority, A2, W3 Curzon Road Barracks, K.G. Marg, New Delhi-110001.
- (x) The District Collector, Jajpur District, Government of Orissa.
- (xi) EI Division, Ministry of Environment & Forests, EI Division, New Delhi.
- (xii) Monitoring File.
- (xiii) Guard File.
- (xiv) Record File.

  
01.04.2010  
**(SATISH C. GARKOTI)**  
**Additional Director (5)**