BY REGD POST

OFFICE OF THE
STATE POLLUTION CONTROL BOARD, ORISSA

Parivesh Bhawan, A/118, Nilakantha Nagar, Unit-VIII,
Bhubaneswar - 751 012

No. 294 /Ind-II-NOC- 4700 Date 5.1.08

OFFICE MEMORANDUM

In consideration of the application for obtaining Consent to Establish **for M/s. Sukrangi Chromite Mine of the Orissa Mining Corporation Ltd** the State Pollution Control Board has been pleased to convey its Consent to Establish under section 25 of Water (Prevention & Control of Pollution) Act 1974 and section 21 of Air (Prevention & Control of Pollution) Act, 1981 for increase in **production of Chromite ore of quantity 36000 Ton/Annum to 127,000 Ton/Annum (over mine lease hold area of 382.709 Ha.) At – Sukrangi, PO - Kalarangitta** in the district of **Jajpur** with the following conditions.

GENERAL CONDITIONS.

1. This Consent to establish is valid for the product, quantity manufacturing process and raw materials as mentioned above & for a period of five years from the date of issue of this letter, provided commencement of production of the proposed project has not taken place in the meantime.
2. If the proponent fails to start operation of the project but substantial physical progress has been made then a renewal of this consent shall be sought by the proponent.
3. Adequate effluent treatment facilities are to be provided such that the quality of sewage and trade effluent satisfies the standards as prescribed under EP Rule or as prescribed by the Central Pollution Control Board and/or State Pollution Control Board or otherwise stipulated in the special conditions.
4. All emission from the industry as well as the ambient air quality and noise are to conform to the standards as laid down under EP Rule/Central Pollution Control Board/State Pollution Control Board of otherwise stipulated in the special conditions.
5. Adequate method of disposal of solid waste is to be adopted to avoid environmental pollution.
6. The industry is to comply to the provisions of EP Act, 1986 and the rules made thereunder with their amendments from time to time such as the Hazardous Chemical/Manufacture, Storage and Import Rule, 1989 etc. The industry is also to comply to the provisions of Public Liability Insurance Act, 1991, if applicable.
7. The industry is to apply for grant of Consent to operate under section 25/26 of Water(Prevention & Control of Pollution)Act, 1974 & Air (Prevention & Control of

Pollution)Act, 1981 (If coming under air pollution control area) at least 3 (three) months before the commercial production and obtain Consent to Operate

8. **This consent to establish is subject to statutory and other clearances from Govt. of Orissa and / or Govt. of India as and when applicable.**

SPECIAL CONDITIONS

1. **The mine has to seek environmental clearance as per the EIA notification 2006 or as recommended by EAC/SEAC. However, commencement of mining activity for proposed expansion shall be done after obtaining environmental clearance or as recommended by EIAA/SEIAA**

2. The increase in production will be achieved through following equipment & machineries.

Sl. No.	Type of machinery	Capacity	Numbers	HP
1.	Tractor	8 kg/sq.m.	2	55 & 100
2.	Jackhammer	7 kg	5	-
3.	Hydraulic shovel	0.9 m3		
4.	Water tanker (1210SE)	10 t	1	55
5.	Explosive van (FC 16)	-	1	100
6.	Truck (1210 SE)	10 t	1	40
7.	Ambulance jeep	-	1	3.5
8.	Submersible pump (Electric)	-	2	7.5 & 15
9.	Electric pump (Electric)	-	2	7.5 & 15
10	Tulu pump (Electric)	-	1	5
11.	Diesel pump (Non-electric)	-	4	14

3. No change in mining technology and scope of working shall be made without prior approval of the Board.

4. Top soil should be stacked properly with proper slope at earmarked site(s) with adequate measures and shall be used for reclamation and rehabilitation of mined out areas.

5. Concurrent back-filling should be started from the fourth year of operation Monitoring and management of rehabilitated areas should continue until the vegetation becomes self-sustaining. Compliance status should be submitted to the Ministry of Environment & Forests with a copy to the Board on yearly basis.

6. Dimension of the retaining wall at the toe of dumps and OB benches within the mine to check run-off and siltation shall be based on the rainfall data. The detail specification shall be worked out and submitted to the Board.

7. A green belt of adequate width shall be raised for suppression of dust by planting the native species around to ML area, roads, OB dump sites, etc., in consultation with the local DFO/Agriculture Department.

8. Reclamation programme along with the post closure plan is to be submitted within 06 months from the date of issue of this order.

9. Catch drains, and siltation ponds of appropriate size should be constructed to arrest silt and sediment flows from soil, OB and mineral dumps. The drains

should be regularly de-silted and maintained properly. The garland drains (size, gradient and length) and sump capacity should be designed keeping 50% safety margin over and above the peak sudden rainfall 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.

10. Regular monitoring of ground water level and quality should be carried out by establishing a net work of existing wells. The monitoring should be done four times a year in pre-monsoon (April/May), Monsoon (August), Post-monsoon(November) and winter (January) seasons. Data thus collected should be submitted to the Board quarterly. Following heavy metals need to be monitored at least once during post monsoon period whose values shall not exceed as per following standard.

i)	Cd	-	2.0 mg/l
ii)	Cr+6	-	0.10 mg/l
iii)	Copper	-	3.0 mg/l
iv)	Lead	-	0.10 mg/l
v)	Mercury	-	0.01 mg/l
vi)	Nickel	-	0.50 mg/l
vii)	Zinc	-	5.0 mg/l

11. Domestic effluent shall be discharged to soak pit via septic tank constructed as per BIS specification.

12. Wastewater (workshop, wastewater from the mine i.e. pit water, check dams or any other discharge leaving lease boundary of the mine) should be properly collected, treated so as to conform the prescribed standard i.e pH = 6 – 9.0, SS = 50 mg/l, & O & G = 5 mg/l Cr^{+6} = 0.1 mg/l as amended from time to time. Oil and grease trap should be installed before discharge of effluents from workshop. Domestic effluent shall be discharged to soak pit via septic tank.

13. Mine drainage water, if any has to be treated in a full fledged effluent treatment plant and disposed of after conforming to the standard prescribed by the Board i.e pH – 6 – 9.0. Total SS = 50 mg/l & O & G = 5 mg/l and Cr^{+6} = 0.1 mg/l.

14. Drill should be wet operated or with dust extractors and controlled blasting should be practices.

15. Six ambient air quality monitoring stations for 24 hours operation should be established in the core zone as well as in the buffer zone for RPM, SPM, SO_2, NOx and CO monitoring. Location of the stations should be decided based on the meteorological data, topographical features and environmentally and ecologically sensitive targets in consultation with the State Pollution Control Board (i) Data on ambient air quality (RPM, SPM, SO_2, NOx and CO) should be regularly submitted to the State Pollution Control Board once in six months.

16. Adequate measures to control fugitive emission shall be taken during loading and transportation of minerals, haul roads, drilling, excavation, ore stack pile and truck loading areas.

17. The haulage roads and arterial roads shall be made black topped / concrete with avenue plantation. Appropriate plan to this effect shall be submitted to the board within a month. Initially 50% of haul road shall be black topped/concrete surfaced. The speed of dumpers / trucks on haul roads shall be controlled as

increased speed increases dust emission. Overloading of transport vehicles shall be avoided.

18. Drilling operation need to be conducted as per the recommendations of the manufacturer using sharp drill bits. Applying sufficient thrust on the drill bit and providing dust hood at the mouth of drill hole collar to prevent the generation of dust to be air-borne.

19. The operator's cabin in the drills shall be provided with dust proof enclosure and the persons working at high dust prone areas shall be provided with dust mask.

20. Air blast level resulting from blasting on any premises or public place must not exceed 90 dB linear, peak at any other premises outside the period between 7 AM and 6 PM on any day.

21. Pre-wetting of Blasting site shall be practiced.

22. Avoid Blasting when temperature inversion is likely to occur and strong wind blows towards the residential areas.

23. Use site specific scientific blast design using modern software.

24. Optimized blasting methods shall be practiced i.e matching the explosive to the drilling pattern, rock characteristics and proper stemming of the holes.

25. Site specific drilling pattern, optimum charging of explosives, adequate stemming and introduction of delays shall be practiced.

26. During transportation of ore by trucks through public roads, the truck shall be properly covered with tarpaulin sheets / leak proof coverings and shall ply at safe speed.

27. Dust suppression on mine haul roads, active OB dumps and mine working benches shall be done by spraying water through water sprinklers along with chemical binders/wetting agents at frequent interval in order to reduce water consumption and to improve retention and re-absorption capacity of water. The additive chemicals should not have any adverse impact on the environment. Water sprinklers of fixed type shall also be provided at the mine HEMM maintenance shop, other service centers and approach roads from mines to raw material handling & product handling area to prevent the generation of dust to be air borne.

28. Regular collection of spilled over raw material from haul roads shall be practiced to prevent the generation of dust due to movement of dumpers /truck.

29. At stockpile and loading plant area, a net work of drains with concrete bottom shall be constructed at a depth of 1.5 meter below the lowest level on the sites parallel to the stockpile area with interconnected box culverts. The sloping of surface shall be given inward to the stockpiles so that surface water will only infiltrate in to the drain.

30. To arrest the slimes/suspended solid fine particles flowing through the streams a no. of check dams shall be constructed across the original course of the stream along with wire mesh and boulders. De-silting of check dams shall be done at regular interval during non-monsoon period.

31. Sedimentation ponds shall be constructed at strategic points in order to guide all surface run-off water containing sediments for settlement of suspended solids before discharge of water in to natural stream/water courses during monsoon

32. Riverine afforestation shall be practiced to prevent soil erosion during monsoon

33. Noise is best abated at source by selecting right machinery and equipment by proper mounting of equipment by providing noise insulating enclosures or padding as far as possible

34. Noise barriers shall be constructed between sources and affected areas (thick belt of trees around mine boundaries, waste dumps, hills and mountainous land forms can act as such barrier).

35. Safety fuse shall be covered with sand layer of 15 cm thick in order to reduce noise level during blasting operation.

36. Occupational exposure limit of noise limit for ground vibration at the foundation level and permissible peak particle velocity (PPV) at the foundation level of structures in the mining areas as specified by DGMS shall be complied with by the chromite mines.

37. Adequate measures shall be taken for control of noise levels in the work environment of mine area so that noise levels at the boundary line of M.L area shall not exceed 75 dB(A) during day time (6 AM to 10 AM) and 70 dB(A) during night time (10. PM to 6 AM).

38. The top soil (20-30 cm) shall be removed separately utilize for restoration or rehabilitation of land or store it in a separate heap for future use duly covered with gross and vegetal cover to preserve its fertility / biomass.

39. Overburden/waste rock should be back filled into main excavations to the maximum extent possible in order to restore the land.

40. The waste dumps shall be located away from the natural nalls, rivers in the area and on an impervious & non-mineralised area to minimize the water pollution.

41. The OB/waste dumps shall be properly dressed benched stopped at low angle with terracing and bamboo barricades in the slopes making retaining walls stone barriers at the toe of the dumps gully plugging etc to prevent the solid erosion during monsoon, besides establishing vegetation on dump top as well as its slope surface. In difficult cases, hydro-seedling technique or use of geo-tiles mat embedded with seeds shall be adopted.

42. The completed out slope of the waste dumps should not exceed 20 degrees from horizontal to avoid excessive erosion and easy vegetation.

43. Consent to operate shall be obtained from this Board before commencing the mining activities of proposed expansion project.

44. Environmental laboratory should be established with adequate number and type of pollution monitoring and analysis equipment in consultation with the State Pollution Control Board.

45. 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.

46. The above conditions will be enforced, inter-allia, under the provisions of the water (Prevention & Control of pollution)Act, 1974 and Air(Prevention & Control of Prevention)Act 1981 and Environment(Protection)Act, 1986 and the Public Liability Insurance Act, 1991 along with their amendments and rule

47. All efforts shall be taken to protect the existing water bodies in the surrounding A definite plan in this regard shall be submitted to the Board within 06 month from the date of issue of this order

48. This consent to establish is granted subject to grant of Explosive License from competent Authority The valid Explosive License must be submitted to this Board while applying for consent to operate to this Board

49. The Board may impose further conditions or modify the conditions stipulated in this order during installation and/or at the time of obtaining consent to operate and may revoke this clearance in case the stipulated conditions are not implemented

50. The mine shall abide by all the provisions of Environment (Protection) Act 1986 and rules framed thereunder.

51. The mine shall obtain forest clearance under Forest (Conservation) Act, 1980 if there is involvement of forest land in the mining lease area

MEMBER SECRETARY

To,

Sri Janardan Misra, Deputy General Manager (Geo),
M/s Sukrangi Chromite Mine of the Orissa Mining Corporation Ltd
OMC House, PO Box No. 34, Bhubaneswar – 751001

Memo No._____/Dt.

Copy forwarded to

1. Secretary Steels & Mines , Govt of Orissa, Bhubaneswar
2. Collector, Jajpur
3. District Industries Centre, Jajpur
4. Sr. Env Engineer (C),
5. Director, Factories & Boiler, Bhubaneswar
6. Regional Officer, O.S.P.C.Board, Cuttack
7. DFO, Jajpur
8. Copy to Guard file

SR. ENV. ENGINEER (N)