

**MINUTES OF THE MEETING OF STATE LEVEL EXPERT APPRAISAL
COMMITTEE, ORISSA HELD ON 26th MARCH 2010**

The meeting of State Level Expert Appraisal Committee, Orissa was held on 26th March 2010 in the Meeting Hall of Orissa State Pollution Control Board, Bhubaneswar at 11.00 AM. Prof. Gagan Bihari Nityananda Chainy, Chairman, SEAC Orissa chaired the meeting. The following members were present in the meeting.

- | | | | |
|----|---|---|----------|
| 1. | Prof. Gagan Bihari Nityananda Chainy, Ph.D. | - | Chairman |
| 2. | Prof. Swoyam Prakash Rout, Ph.D. | - | Member |
| 3. | Dr. Harekrishna Nayak, Ph.D. | - | Member |
| 4. | Dr. Moheshwar Patra, Ph.D. | - | Member |
| 5. | Prof. R. C. Mohanty, Ph.D. | - | Member |
| 6. | Prof. Kumar Das, Ph.D. | - | Member |
| 7. | Dr. Surendra Nath Das, Ph.D. | - | Member |

A total of 5 project proponents were invited for presentation of TOR followed by discussion. The agenda-wise proceedings and recommendations of the committee are detailed below :

ITEM NO. 1

PROPOSAL OF BHALIADIHI AND AMBADHARA PYROPHYLLITE AND QUARTZITE MINE OF M/S KEONJHAR MINERALS PVT LTD OVER AN MINE LEASE AREA 44.4871 HA AT BHALIADIHI AND AMBADHARA IN THE DISTRICT OF KEONJHAR

The proposal was considered by the SEAC to determine the Terms of Reference (TOR) for taking detailed EIA study for the purpose of obtaining environmental clearance in accordance with the provisions of the EIA notification, 2006 project. Proponent had submitted information in the prescribed format (Form-I) along with feasibility report. According to the Form-I and presentations made by the proponent, the proposal is for production of Pyrophyllite 3000 TPA and quartzite 2200 TPA. The mining lease area is **44.4871** ha, Out of the total lease area, 26.3234 is forest land. The mining lease was granted in favour of Sri M.H.Rahaman for a period of 20 years from 1979 over an area 94.29 ha . Lease was transferred to M/s Keonjhar Minerals Pvt. Ltd on 23.3.98 and

renewal of mining lease granted on dt.20.7.09 over an area **44.4871** ha for a period of 20 years. The mining plan was approved by Director of Mines on 17.9.08. The mine has not applied for forest diversion proposal. The mine working will be opencast manual. The water requirement is 2.5 KLD and source of water is ground water.

Considering the information furnished and presentation made by the consultant M/s. Kalyani Laboratories Pvt. Ltd, Bomikhal, Bhubaneswar of the project proponent, the SEAC suggested the following TORs for undertaking detailed EIA study:

1. Profile of the project proponent and background to establish the financial and entrepreneurial competency to undertake the project may be included.
2. Duly attested & certified Mining Plan approved by concerned authority may be submitted along with the copy of the current lease deed in the name of the proponent. Present status of mining lease may be given.
3. The present lessee has been operating the mine since 1989-90 and barring a few years has been in production till 2009. The mining operation is without EC violating EIA notification 2006 and the proponent is a defaulter the proponent shall clarify the same.
4. The production projected contains only the annual product profile without any detail on the OB produced, their condition of dumping and management practices followed.
5. The record of the current state of environment including air, water, soil quality, state of the existing OB dumps and plantation status in the existing mine should be included in the report.
6. River Machakund flows in the ML area and crosses the northern boundary. The present drainage pattern along with future projection should be included based on ground truthing rather than satellite imageries. The proponent should clarify on the special protective measures they have adopted to prevent run-offs from the ML area not to contaminate the water source.
7. With 08 numbers of reserve forests in the close proximity, care should be taken to place the sampling stations evenly in the buffer zone to cover all the directions uniformly.
8. The mineral reserve table at plate 10 shows no possible reserve of quartzite while in the production schedule has been shown as more than 1100 TPA during 2008 and 2009. The proponent should clarify why they do not foresee any production during rest of the ML period.
9. The ground water table of the ML area is not identified by authentic sources and it has been presumed that the mine will not even touch the ground zero level assuming the highest peak height to be the level zero for mining. This should be clarified.
10. A huge amount of OB is likely to be generated and the lessee should make special arrangements under expert advice to stack those safely as per latest guidelines.

11. The leachability of OB material and cut-off grade ores should be carried out, especially in case of pyrophyllite since some of the soluble ingredients are likely to get washed off calling for treatment of wash off water before recharge.
12. The survival rate of seedlings planted is shown as 61% arbitrarily since it is not clear as to what kind of plants were existing before they took over, how many they have planted so far and what is the present state of plantation. This should be clarified.
13. The EIA study area shall encompass 10 km radius from the mine lease boundary as buffer zone.
14. Collection of one season (non-monsoon) primary baseline data on ambient air quality, water quality, noise level, soil and flora and fauna and site-specific meteorological data should also be collected. The location of the monitoring stations should be justified.
15. Air quality modeling should be carried out for prediction of impact of the project and the existing mines in the vicinity on the air quality of the area focusing more in the villages within 3 kms from the mine. It should also take into account the impact of movement of vehicles for transportation and handling of minerals, OB including mining activity through volume source modeling. The details of the model used and input parameters used for modeling should be provided. The air quality contours may be shown on a location map clearly indicating the location of the site, location of sensitive receptors, if any, and the habitation. The wind roses showing pre-dominant wind direction and speed may also be indicated on the map. The modeling should take into consideration the existing mines in the study area as regards their polluting potential rather the existing level. Since the consultant is already working in the area for other proponents, the baseline data and air sampling stations proposed in the buffer zone are likely to overlap. This would make the EIA estimation erratic. The present core zone may have additional air sampling stations at different heights since the wind speed/direction is likely to be different and thus prediction modeling would be erratic.
16. Availability of requisite quantity of surface, sub-surface and ground water and their source to be furnished along with water balance. Necessary clearance from the Competent Authority for drawl of requisite quantity of water for the project should be provided.
17. The mine is going to divert 26.3234 ha of forest land for mining purpose. The mine shall apply forest diversion proposal and intimate the status.
18. Details of water bodies and drainage pattern of the ML area may be specified.
19. Progressive reclamation plan, post-mining land use, progressive mine closure and greenbelt development plan should be prepared in tabular form and be submitted. Milestones for the above activities may be specified in the table.
20. Location of National Parks, Sanctuaries, Biosphere Reserves, Wildlife corridors, Tiger/Elephant reserves (existing as well as proposed), and existence of rare and endangered flora and fauna if any, within 10 km of the mine lease should be clearly indicated. Necessary clearance, if any, as may be applicable to such projects due to proximity of the ecologically sensitive areas as mentioned above under the Wildlife (Protection) Act, 1972 and copy thereof, may be furnished.

21. A detailed biological study of the core zone and buffer zone (10 km radius of the mining lease area) should be carried out. Details of flora and fauna duly authenticated separately for core and buffer zones should be furnished based on field survey indicating the schedule of the fauna present. In case of any schedule-I fauna found in the study area, necessary plan for their conservation should be prepared in consultation with the State Forest & Wildlife Department and details may be furnished. Necessary cost details for executing the conservation measures should be furnished and incorporated as part of the project cost.
22. Occupational health impact and remedial measures thereof for the project may be studied.
23. Baseline data for health status survey for all the employees including labourers and the residents of the nearby villages within 5 km distance may be carried out. Welfare of mine workers is the prime responsibility of the project proponent. Various activities such as regular health checkups, first-aid, shelter for rest and meals, drinking water etc. are to be taken up at the project cost. Nearby mine owners may form a society and a common fund for the welfare of mineworkers may be created. Besides various Govt. schemes and other sources may be explored. This aspect has to be covered in the EMP.
24. Socio-economic impact due to project activity may be assessed and based on the study, developmental activity proposed to be undertaken by the project proponent to be specified and as far as possible, quantitative dimension to be given. Study should include Corporate Social Responsibility (CSR) and it should be carried out as the entry point activity as trust building measures.
25. Points raised/likely to be raised during public hearing and commitment of the project proponent on the same may be included.
26. The depth of the ground water table in the area vis-a-vis minable depth of the bodies may be clarified with either primary or authentic secondary data in the EIA report. Rainwater harvesting and treatment system for pumped out quarry water if any may be submitted.
27. Management of OB dumps and other solid wastes generated during mining may be addressed through incorporation of a concrete plan for the same. Proper care should be taken for treating the effluents along with rainwater harvesting and wash offs from OB dumps to adequately recharge the ground water resources.
28. Coloured maps depicting land use/change of the region showing sensitive / fragile features and detailed lay-out of the site clearly showing green-belt (existing & planned) should be furnished.
29. Satellite imagery of the location of mine should be submitted with demarcation of other proposed/in-operation mines in nearby area. Location is also to be shown in Tehsil map procured from the Revenue Department. This should be used as baseline information to compare the impact of mining in the area in future.
30. Risk assessment and disaster management plan should be given.
31. EMP taking into account the pre- and post-project environment impacts may be included.

32. Any litigation/ court case pending against the proposal should also be included.
33. The EIA report should include the methodology to be adopted for collection and analysis of PM10 particles as per the latest MoEF guidelines. They should make sure that the methodology followed is as specified by the Ministry/CPCB and meet BIS standards. Specified methodology may also be adopted for CO estimation.
34. **This Terms of References (TORs) is valid for a period of two years from the date of issue of TORs for submission of the EIA/EMP report after public consultation.(This is in confirmatory to the MoEF, Govt. of India office memorandum No. J-11013/41/2006-IAI(I) dt. 22.3.10).**

ITEM NO. 2 :

PROPOSAL OF ANJORE PYROPHYLLITE AND QUARTZITE MINE OF M/S KEONJHAR MINERALS PVT LTD OVER AN MINE LEASE AREA 29.7245 HA AT ANJORE IN THE DISTRICT OF KEONJHAR

The proposal was considered by the SEAC to determine the Terms of Reference (TOR) for taking detailed EIA study for the purpose of obtaining environmental clearance in accordance with the provisions of the EIA notification, 2006 project. Proponent had submitted information in the prescribed format (Form-I) along with feasibility report. According to the Form-I and presentations made by the proponent, the proposal is for production of Pyrophyllite 9726 TPA and quartzite 9094 TPA. The mining lease area is 29.7245 ha, and out of the total lease area, 29.421 is forest land. The mining lease was granted in favour of Sri M.H.Rahaman for a period of 20 years from 1979 over an area 72.51 ha . Lease was transferred to M/s Keonjhar Minerals Pvt. Ltd on 23.3.98 and renewal of mining lease granted on dt.20.7.09 over an area 29.7245 ha for a period of 20 years.The mining plan was approved by Director of Mines on 22.5.09 .The mine has not applied for forest diversion proposal. The mine working will be opencast manual. The water requirement is 2.2 KLD and source of water is ground water.

Considering the information furnished and presentation made by the consultant M/s. Kalyani Laboratories Pvt. Ltd, Bomikhal, Bhubaneswar of the project proponent, the SEAC suggested the following TORs for undertaking detailed EIA study:

1. Profile of the project proponent and background to establish the financial and entrepreneurial competency to undertake the project may be included.

2. Duly attested & certified Mining Plan approved by concerned authority may be submitted along with the copy of the current lease deed in the name of the proponent. Present status of mining lease may be given.
3. The mines were in operation without any statutory clearances till 2007 and closed thereafter. The record of the current state of environment including air, water, soil quality, state of the OB dumps and plantation status in the existing mine should be included in the EC application to prove their credibility.
4. It is declared that the ultimate pit depth at 556 AMSL is not going to touch ground water table at 548 AMSL, which is to be justified. The proponent shall enclose an authenticated latest certificate from the competent authority to prove it.
5. The OB dump proposed is to spread over 1.625 ha area at a height of 2.3 m, which is unacceptable. It will spoil the land over which OB dumps will be located. The justification given during presentation is not convincing and the proponent should go for normal height with good management practices. Even if it is on the existing dump, it should be rescheduled to protect the premiere land area.
6. The leachability of OB material and cut-off grade ores should be carried out, especially in case of pyrophyllite since some of the soluble ingredients are likely to get washed off calling for treatment of wash off water before recharge.
7. The dumping of sub-grade ores of both categories need also closer look since the cut off grade mentioned is <18% Al_2O_3 for pyrophyllite and <98% SiO_2 for quartzite amounting to 10% of the entire production. It should be stacked and marketed after value addition rather than go on dumping creating more environmental hazards since these are lighter materials.
8. The survival rate of seedlings planted is shown as 61% arbitrarily since they are not clear as to what kind of plants were existing before they took over, how many they have planted so far and what is the present state of plantation.
9. The EIA study area shall encompass 10 km radius from the mine lease boundary as buffer zone.
10. Collection of one season (non-monsoon) primary baseline data on ambient air quality, water quality, noise level, soil and flora and fauna and site-specific meteorological data should also be collected. The location of the monitoring stations should be justified.
11. Air quality modeling should be carried out for prediction of impact of the project and the existing mines in the vicinity on the air quality of the area focusing more in the villages within 3 kms from the mine. It should also take into account the impact of movement of vehicles for transportation and handling of minerals, OB including mining activity through volume source modeling. The details of the model used and input parameters used for modeling should be provided. The air quality contours may be shown on a location map clearly indicating the location of the site, location of sensitive receptors, if any, and the habitation. The wind roses showing pre-dominant wind direction and speed may also be indicated on the map. The modeling should take into consideration the existing mines in the study area as regards their polluting potential rather the existing level. Since the consultant is already working in the area for other proponents, the baseline data and air sampling stations proposed in the buffer zone are likely to overlap. This

- would make the EIA estimation erratic. The present core zone may have additional air sampling stations at different heights since the wind speed/direction is likely to be different and thus prediction modeling would be erratic.
12. Availability of requisite quantity of surface, sub-surface and ground water and their source to be furnished along with water balance. Necessary clearance from the Competent Authority for drawl of requisite quantity of water for the project should be provided.
 13. The mine is going to divert 29.421 ha of forest land for mining purpose. The mine shall apply forest diversion proposal and intimate the status.
 14. Details of water bodies and drainage pattern of the ML area may be specified.
 15. Progressive reclamation plan, post-mining land use, progressive mine closure and greenbelt development plan should be prepared in tabular form and be submitted. Milestones for the above activities may be specified in the table.
 16. Location of National Parks, Sanctuaries, Biosphere Reserves, Wildlife corridors, Tiger/Elephant reserves (existing as well as proposed), and existence of rare and endangered flora and fauna if any, within 10 km of the mine lease should be clearly indicated. Necessary clearance, if any, as may be applicable to such projects due to proximity of the ecologically sensitive areas as mentioned above under the Wildlife (Protection) Act, 1972 and copy thereof, may be furnished.
 17. A detailed biological study of the core zone and buffer zone (10 km radius of the mining lease area) should be carried out. Details of flora and fauna duly authenticated separately for core and buffer zones should be furnished based on field survey indicating the schedule of the fauna present. In case of any schedule-I fauna found in the study area, necessary plan for their conservation should be prepared in consultation with the State Forest & Wildlife Department and details may be furnished. Necessary cost details for executing the conservation measures should be furnished and incorporated as part of the project cost.
 18. Occupational health impact and remedial measures thereof for the project may be studied.
 19. Baseline data for health status survey for all the employees including labourers and the residents of the nearby villages within 5 km distance may be carried out. Welfare of mine workers is the prime responsibility of the project proponent. Various activities such as regular health checkups, first-aid, shelter for rest and meals, drinking water etc. are to be taken up at the project cost. Nearby mine owners may form a society and a common fund for the welfare of mineworkers may be created. Besides various Govt. schemes and other sources may be explored. This aspect has to be covered in the EMP.
 20. Socio-economic impact due to project activity may be assessed and based on the study, developmental activity proposed to be undertaken by the project proponent to be specified and as far as possible, quantitative dimension to be given. Study should include Corporate Social Responsibility (CSR) and it should be carried out as the entry point activity as trust building measures.
 21. Points raised/likely to be raised during public hearing and commitment of the project proponent on the same may be included.

22. The depth of the ground water table in the area vis-a-vis minable depth of the bodies may be clarified with either primary or authentic secondary data in the EIA report. Rainwater harvesting and treatment system for pumped out quarry water if any may be submitted.
23. Management of OB dumps and other solid wastes generated during mining may be addressed through incorporation of a concrete plan for the same. Proper care should be taken for treating the effluents along with rainwater harvesting and wash offs from OB dumps to adequately recharge the ground water resources.
24. Colored maps depicting land use/change of the region showing sensitive / fragile features and detailed lay-out of the site clearly showing green-belt (existing & planned) should be furnished.
25. Satellite imagery of the location of mine should be submitted with demarcation of other proposed/in-operation mines in nearby area. Location is also to be shown in Tehsil map procured from the Revenue Department. This should be used as baseline information to compare the impact of mining in the area in future.
26. Risk assessment and disaster management plan should be given.
27. EMP taking into account the pre- and post-project environment impacts may be included.
28. Any litigation/ court case pending against the proposal should also be included.
29. The EIA report should include the methodology to be adopted for collection and analysis of PM10 particles as per the latest MoEF guidelines. They should make sure that the methodology followed is as specified by the Ministry/CPCB and meet BIS standards. Specified methodology may also be adopted for CO estimation.
30. **This Terms of References (TORs) is valid for a period of two years from the date of issue of TORs for submission of the EIA/EMP report after public consultation.(This is in confirmatory to the MoEF, Govt. of India office memorandum No. J-11013/41/2006-IAI(I) dt. 22.3.10).**

ITEM NO. 3 :

M/S SOVAN MINERALS OVER AN MINE LEASE AREA 26.006 HA AT AMBADHARA IN THE DISTRICT OF KEONJHAR

The proposal was considered by the SEAC to determine the Terms of Reference (TOR) for taking detailed EIA study for the purpose of obtaining environmental clearance in accordance with the provisions of the EIA notification, 2006 project. Proponent had submitted information in the prescribed format (Form-I) along with feasibility report. According to the Form-I and presentations made by the proponent, the proposal is for production of Pyrophyllite 26,400 TPA and quartzite 15,444 TPA. The mining lease area is 26.006 ha, and total lease area is non forest land. The mining lease was granted in favour of Sri Gajendra Prasad Behera on 29.7.1998 for a period of 20 years and transferred to Sri Snjay Pratap and then subsequently it is transferred to Pratik Goutam 15.9.01 further Pratik Goutam to

Shivan Minerals Pvt Ltd 16.7.04 and lease is valid upto 29.7.2018 over an area 26.006 ha .The mining plan was approved by IBM on 18.3.98. Approved mining scheme is expired on 27.4.08 and the mine has applied for renewal of mining scheme. The mine working will be opencast manual. The water requirement is 25 KLD and source of water is ground water and Machakund river .

Considering the information furnished and presentation made by the consultant M/s. Envomin Consultant (P) Ltd, Bhubaneswar of the project proponent, the SEAC suggested the following TORs for undertaking detailed EIA study:

1. Profile of the project proponent and background to establish the financial and entrepreneurial competency to undertake the project may be included.
2. Duly attested & certified Mining Plan approved by concerned authority may be submitted along with the copy of the current lease deed in the name of the proponent. Present status of mining lease may be given.
3. The mines were in operation without any statutory clearances during 2001 to 2006. The record of the current state of environment including air, water, soil quality, state of the OB dumps and plantation status in the existing mine should be included in the EC application to prove their credibility.
4. The proponent should furnish copy of approval of mining scheme as it has applied for renewal and awaiting clearance from the State Mines Dept.
5. They should produce authorization to draw 25 m³ of water per day for plantation/ dust suppression and drinking and no other use. They proponent should explore the possibility of drawing the entire quantity of water from Machakund river with due permission from the competent authorities rather than partly from the bore wells.
6. The mineable reserve of 1,46,644 Mt of pyrophyllite is almost half of the geological reserve, which should be authenticated. It will be exhausted in 06 years of production at the projected rate of 26,400 MTPA. The life of mine is also shown as 06 years. The area has only a small quantity of quartzite on the top as projected by other mine operators in the region. Then how the life of mine just for quartzite can be extended to 45 years which is to be justified The exploration and estimation of reserves may be authenticated by competent authority.
7. During the projected operation, two quarries are proposed to be opened up and later joined. That will expose twice the area to natural elements. It may be justified as to why one quarry can not be exhausted completely before the second one is opened up. At the end both can be joined if the ore body is as good for profitable mining.

8. The OB dump proposed is to spread over 17,100 m² area at a height of 20 m, which is unacceptable. OB dumps will be quite unstable because of the nature of the wastes. The justification given during presentation is not convincing and they should go for normal height with good management practices. Even if it is on the existing dump, it should be rescheduled keeping the risk in managing such high dumps of loose wastes.
9. The leachability of OB material and cut-off grade ores should be carried out, especially in case of pyrophyllite since some of the soluble ingredients are likely to get washed off calling for treatment of wash off water before recharge.
10. The dumping of sub-grade ores of both categories need also closer look since the cut off grade mentioned is <18% Al₂O₃ for pyrophyllite and <98% SiO₂ for quartzite amounting to 10% of the entire production. It should be stacked and marketed after value addition rather than go on dumping creating more environmental hazards since these are lighter materials.
11. The survival rate of seedlings planted is shown as 61% arbitrarily since they are not clear as to what kind of plants were existing before they took over, how many they have planted so far and what is the present state of plantation.
12. The mine closure plan through back filling and reclamation is simply put off till exhaustion of present mineral reserves. The figure may go up with further exploration leading to no such step in the interest of environment. This is unacceptable and should be rescheduled with due permission from the competent authority.
13. The EIA study area shall encompass 10 km radius from the mine lease boundary as buffer zone.
14. Collection of one season (non-monsoon) primary baseline data on ambient air quality, water quality, noise level, soil and flora and fauna and site-specific meteorological data should also be collected. The location of the monitoring stations should be justified.
15. Air quality modeling should be carried out for prediction of impact of the project and the existing mines in the vicinity on the air quality of the area focusing more in the villages within 3 kms from the mine. It should also take into account the impact of movement of vehicles for transportation and handling of minerals, OB including mining activity through volume source modeling. The details of the model used and input parameters used for modeling should be provided. The air quality contours may be shown on a location map clearly indicating the location of the site, location of sensitive receptors, if any, and the habitation. The wind roses showing pre-dominant wind direction and speed may also be indicated on the map. The modeling should take into consideration the existing mines in the study area as regards their polluting potential rather the existing level. Since the consultant is already working in the area for other proponents, the baseline data and air sampling stations proposed in the buffer zone are likely to overlap. This would make the EIA estimation erratic. The present core zone may have additional air sampling stations at different heights since the wind speed/direction is likely to be different and thus prediction modeling would be erratic.

16. Availability of requisite quantity of surface, sub-surface and ground water and their source to be furnished along with water balance. Necessary clearance from the Competent Authority for drawl of requisite quantity of water for the project should be provided.
17. Details of water bodies and drainage pattern of the ML area may be specified.
18. Progressive reclamation plan, post-mining land use, progressive mine closure and greenbelt development plan should be prepared in tabular form and be submitted. Milestones for the above activities may be specified in the table.
19. 9. Location of National Parks, Sanctuaries, Biosphere Reserves, Wildlife corridors, Tiger/Elephant reserves (existing as well as proposed), and existence of rare and endangered flora and fauna if any, within 10 km of the mine lease should be clearly indicated. Necessary clearance, if any, as may be applicable to such projects due to proximity of the ecologically sensitive areas as mentioned above under the Wildlife (Protection) Act, 1972 and copy thereof, may be furnished.
20. A detailed biological study of the core zone and buffer zone (10 km radius of the mining lease area) should be carried out. Details of flora and fauna duly authenticated separately for core and buffer zones should be furnished based on field survey indicating the schedule of the fauna present. In case of any schedule-I fauna found in the study area, necessary plan for their conservation should be prepared in consultation with the State Forest & Wildlife Department and details may be furnished. Necessary cost details for executing the conservation measures should be furnished and incorporated as part of the project cost.
21. Occupational health impact and remedial measures thereof for the project may be studied.
22. Baseline data for health status survey for all the employees including labourers and the residents of the nearby villages within 5 km distance may be carried out. Welfare of mine workers is the prime responsibility of the project proponent. Various activities such as regular health checkups, first-aid, shelter for rest and meals, drinking water etc. are to be taken up at the project cost. Nearby mine owners may form a society and a common fund for the welfare of mineworkers may be created. Besides various Govt. schemes and other sources may be explored. This aspect has to be covered in the EMP.
23. Socio-economic impact due to project activity may be assessed and based on the study, developmental activity proposed to be undertaken by the project proponent to be specified and as far as possible, quantitative dimension to be given. Study should include Corporate Social Responsibility (CSR) and it should be carried out as the entry point activity as trust building measures.
24. Points raised/likely to be raised during public hearing and commitment of the project proponent on the same may be included.
25. The depth of the ground water table in the area vis-a-vis minable depth of the bodies may be clarified with either primary or authentic secondary data in the EIA report. Rainwater harvesting and treatment system for pumped out quarry water if any may be submitted.

26. Management of OB dumps and other solid wastes generated during mining may be addressed through incorporation of a concrete plan for the same. Proper care should be taken for treating the effluents along with rainwater harvesting and wash offs from OB dumps to adequately recharge the ground water resources.
27. Colored maps depicting land use/change of the region showing sensitive / fragile features and detailed lay-out of the site clearly showing green-belt (existing & planned) should be furnished.
28. Satellite imagery of the location of mine should be submitted with demarcation of other proposed/in-operation mines in nearby area. Location is also to be shown in Tehsil map procured from the Revenue Department. This should be used as baseline information to compare the impact of mining in the area in future.
29. Risk assessment and disaster management plan should be given.
30. EMP taking into account the pre- and post-project environment impacts may be included.
31. Any litigation/ court case pending against the proposal should also be included.
32. The EIA report should include the methodology to be adopted for collection and analysis of PM10 particles as per the latest MoEF guidelines. They should make sure that the methodology followed is as specified by the Ministry/CPCB and meet BIS standards. Specified methodology may also be adopted for CO estimation.
33. **This Terms of References (TORs) is valid for a period of two years from the date of issue of TORs for submission of the EIA/EMP report after public consultation.(This is in confirmatory to the MoEF, Govt. of India office memorandum No. J-11013/41/2006-IAII(I) dt. 22.3.10).**

ITEM NO. 4 :

M/S H.N. MISHRA OVER AN MINE LEASE AREA 20.707 HA AT ASANABALASUR IN THE DISTRICT OF RAYAGADA

The proposal was considered by the SEAC to determine the Terms of Reference (TOR) for taking detailed EIA study for the purpose of obtaining environmental clearance in accordance with the provisions of the EIA notification, 2006 project. Proponent had submitted information in the prescribed format (Form-I) along with feasibility report. According to the Form-I and presentations made by the proponent, the proposal is for production of Graphite ore 2655 TPA. The mining lease area is 20.707 and total lease area is non forest land. The mining lease was granted in favour of Sri H.N. Mishra for a period of 20 years from 31.3.2005 over an area 26.006 ha .The mining plan was under process of approval. The mine working will be manual opencast and semi mechanized.. The makeup water requirement for graphite beneficiation is 15 KLD and source of water is ground water.

Considering the information furnished and presentation made by the consultant M/s. Kalyani Laboratories Pvt. Ltd, Bomikhal, Bhubaneswar of the project proponent, the SEAC suggested the following TORs for undertaking detailed EIA study:

1. Profile of the project proponent and background to establish the financial and entrepreneurial competency to undertake the project may be included.
2. Duly attested & certified Mining Plan approved by concerned authority may be submitted along with the copy of the current lease deed in the name of the proponent. Present status of mining lease may be given.
3. The location shown is improper with only one set of latitude and longitudes rather than the range.
4. The mine started operating in February 2006 (on trial basis) and there is no record to prove that the mine was not in operation till they served temporary mine closure notice to the district authorities in January 2010, i.e., after 04 years which is to be clarified
5. The record of the current state of environment including air, water, soil quality, state of the OB dumps and plantation status in the existing mine should be included in the EIA report.
6. The ground water is stated to be below 8-10 m below the existing ground level, which is doubtful and should be authenticated..
7. The present proven mineable reserve is likely to be exhausted in slightly over 6 years of operation though the lease is applied for a much longer period. Unless new reserves are found, which is unlikely due to the very nature of graphite occurrence, the mine will not be sustained. Authenticated exploration records by competent authority may be produced to this effect.
8. The mine has proposed to put up a beneficiation plant to upgrade +5% fixed carbon ROM ores to produce 75-95% FC. This involves several steps of floatation, wet grinding and re-floatation as shown in the flow diagram. It should be clarified as to who is providing the technical know-how and back-up to run the plant. The water requirement is high and projected as only 300 KLD with make up water requirement 15 KLD . The proponent shall submit detail water balance. There is no process detail, which should be included in the EIA report with detail analysis of impurities including carbon. C, being light and insoluble, is likely to produce serious environmental hazards in the area.
9. The OB is proposed to be back filled and so dumping is not detailed. They should produce an authenticated mine closure and plantation schedule to match their claims.
10. The EIA study area shall encompass 10 km radius from the mine lease boundary as buffer zone.
11. Collection of one season (non-monsoon) primary baseline data on ambient air quality, water quality, noise level, soil and flora and fauna and site-specific meteorological data should also be collected. The location of the monitoring stations should be justified.

12. Air quality modeling should be carried out for prediction of impact of the project and the existing mines in the vicinity on the air quality of the area focusing more in the villages within 3 kms from the mine. It should also take into account the impact of movement of vehicles for transportation and handling of minerals, OB including mining activity through volume source modeling. The details of the model used and input parameters used for modeling should be provided. The air quality contours may be shown on a location map clearly indicating the location of the site, location of sensitive receptors, if any, and the habitation. The wind roses showing pre-dominant wind direction and speed may also be indicated on the map. The modeling should take into consideration the existing mines in the study area as regards their polluting potential rather the existing level. Since the consultant is already working in the area for other proponents, the baseline data and air sampling stations proposed in the buffer zone are likely to overlap. This would make the EIA estimation erratic. The present core zone may have additional air sampling stations at different heights since the wind speed/direction is likely to be different and thus prediction modeling would be erratic.
13. Availability of requisite quantity of surface, sub-surface and ground water and their source to be furnished along with water balance. Necessary clearance from the Competent Authority for drawl of requisite quantity of water for the project should be provided.
14. Details of water bodies and drainage pattern of the ML area may be specified.
15. Progressive reclamation plan, post-mining land use, progressive mine closure and greenbelt development plan should be prepared in tabular form and be submitted. Milestones for the above activities may be specified in the table.
16. Location of National Parks, Sanctuaries, Biosphere Reserves, Wildlife corridors, Tiger/Elephant reserves (existing as well as proposed), and existence of rare and endangered flora and fauna if any, within 10 km of the mine lease should be clearly indicated. Necessary clearance, if any, as may be applicable to such projects due to proximity of the ecologically sensitive areas as mentioned above under the Wildlife (Protection) Act, 1972 and copy thereof, may be furnished.
17. A detailed biological study of the core zone and buffer zone (10 km radius of the mining lease area) should be carried out. Details of flora and fauna duly authenticated separately for core and buffer zones should be furnished based on field survey indicating the schedule of the fauna present. In case of any schedule-I fauna found in the study area, necessary plan for their conservation should be prepared in consultation with the State Forest & Wildlife Department and details may be furnished. Necessary cost details for executing the conservation measures should be furnished and incorporated as part of the project cost.
18. Occupational health impact and remedial measures thereof for the project may be studied.
19. Baseline data for health status survey for all the employees including labourers and the residents of the nearby villages within 5 km distance may be carried out. Welfare of mine workers is the prime responsibility of the project proponent. Various activities such as regular health checkups, first-aid, shelter for rest and meals, drinking water etc. are to be taken up at the project cost. Nearby mine owners may form a society and a common fund for the welfare of mineworkers

may be created. Besides various Govt. schemes and other sources may be explored. This aspect has to be covered in the EMP.

20. Socio-economic impact due to project activity may be assessed and based on the study, developmental activity proposed to be undertaken by the project proponent to be specified and as far as possible, quantitative dimension to be given. Study should include Corporate Social Responsibility (CSR) and it should be carried out as the entry point activity as trust building measures.
21. Points raised/likely to be raised during public hearing and commitment of the project proponent on the same may be included.
22. The depth of the ground water table in the area vis-a-vis minable depth of the bodies may be clarified with either primary or authentic secondary data in the EIA report. Rainwater harvesting and treatment system for pumped out quarry water if any may be submitted.
23. Management of OB dumps and other solid wastes generated during mining may be addressed through incorporation of a concrete plan for the same. Proper care should be taken for treating the effluents along with rainwater harvesting and wash offs from OB dumps to adequately recharge the ground water resources.
24. Colored maps depicting land use/change of the region showing sensitive / fragile features and detailed lay-out of the site clearly showing green-belt (existing & planned) should be furnished.
25. Satellite imagery of the location of mine should be submitted with demarcation of other proposed/in-operation mines in nearby area. Location is also to be shown in Tehsil map procured from the Revenue Department. This should be used as baseline information to compare the impact of mining in the area in future.
26. Risk assessment and disaster management plan should be given.
27. EMP taking into account the pre- and post-project environment impacts may be included.
28. Any litigation/ court case pending against the proposal should also be included.
29. The EIA report should include the methodology to be adopted for collection and analysis of PM10 particles as per the latest MoEF guidelines. They should make sure that the methodology followed is as specified by the Ministry/CPCB and meet BIS standards. Specified methodology may also be adopted for CO estimation.
30. **This Terms of References (TORs) is valid for a period of two years from the date of issue of TORs for submission of the EIA/EMP report after public consultation.(This is in confirmatory to the MoEF, Govt. of India office memorandum No. J-11013/41/2006-IAII(I) dt. 22.3.10).**

ITEM NO. 5

EXPANSION PROPOSAL OF PATHAPUR FIRE CLAY MINE OF M/S PATHAPUR FIRE CLAY MINES UNDER TEHSIL BANKI OF DISTRICT CUTTACK

The mining projects of <50 ha or > 5 ha of mining lease area are listed at S.N. 1(a) of the schedule under 'B' Category of EIA Notification, 2006 and are to be appraised by SEAC.

The project proponent submitted prescribed Form -1 and pre-feasibility report along with the draft TORs. It's a proposed project for **Fire Clay Mine over 23.925 ha. to produce fire clay of 14,000 Ton/Annum at Pathapur under Tehsil Banki of Cuttack district.** Applicant, aided by the consultant M/s Sun Consultancy and Services, 16/C, Engineers' Colony, Budheswari, Bhubaneswar gave a presentation on the salient features of the project and the draft Terms of Reference for undertaking detailed EIA study. The SEAC observed that the location of the mine **is adjacent to the boundary (within 10 km.) of Chandaka – Dampara Elephant Sanctuary** which has been notified as protected areas under the WILD LIFE (PROTECTION) ACT, 1972. The EIA notification, 2006 stipulates that any project or activity specified in category 'B' will be treated as category 'A' if located in whole or in part within 10 km from the boundary of protected areas notified under the Wild Life (protection) Act, 1972. After detailed deliberation the SEAC recommended to treat the proposal as category 'A' for above reasons and to ask the proponent to appraise the proposal before EAC of MoEF, Govt. of India.

**(PROF. GAGAN BIHARI NITYANANDA CHAINY)
CHAIRMAN, SEAC**

**(PROF. SWOYAM PRAKASH ROUT)
MEMBER, SEAC**

**(PROF. KUMAR DAS)
MEMBER, SEAC**

**(DR. MOHESHWAR PATRA)
MEMBER, SEAC**

**(DR. HAREKRISHNA NAYAK)
MEMBER, SEAC**

**(PROF. R. C. MOHANTY)
MEMBER, SEAC**

**(DR. SURENDRA NATH DAS)
MEMBER, SEAC**

**(SRI S. DAS)
SECRETARY, SEAC**

CHAIRMAN, SEAC

16

SECRETARY, SEAC

