

impact on Air pollution especially Fugitive emission needs to be carried out considering all the mining areas.

6. The proponent shall furnish the detailed CER plan with budget allocation incorporating the needs of the nearby public and also points raised in the public hearing as per the Office Memorandum of MoEF & CC dated 01.05.2018.

Agenda No. 127-03:

(File No. 6508/2018)

Proposed Garnet Sand Mine over an extent of 4.80.0 ha by M/s. Riverways Mines and Minerals Ltd, for Garnet sand production of 3552 Tonnes for a period of 5 years at S.F.No. 390 (Part) in Kottathur Village, Musiri Taluk, Trichy District - Activity 1(a) – Mining of major mineral – ToR to be issued - Regarding

(SIA/TN/MIN/ 21944/2018)

The project proposal was placed in the 105th meeting of the SEAC held on 22.03.2018. In this regard, the SEAC learnt that the Government of Tamil Nadu has issued ban orders relating to the mining operations of Garnet, Illuminite, Rutile, etc in various parts of the state of Tamil Nadu including Tiruchirapalli vide G.O. (Ms) No.173, Industries (MMD.1) Department dated: 17.09.2013. Hence, SEAC decided that the proposal cannot be considered for appraisal.

The above minutes was communicated to the proponent vide SEIAA letter dated: 23.03.2018. The proponent requested to re-appraise the proposal vide letter dated 02.04.2018. In content of the letter the proponent has not indicated any new grounds based on which the SEAC might re-appraise the project proposal. Hence, the SEAC decided to stick to its original decision - not to consider the proposal for appraisal.

In this Connection, the SEIAA was requested to the Additional Chief Secretary to Government, Industrial Department to furnish present stage of Ban Orders on the mining of major mineral vide this office letter.No.SEIAA-TN/F.No.6509/2018 dated: 21.05.2018. A reply was received from the Additional Chief Secretary to Government, Industrial


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Department vide letter No.6751/MMD.1/2018-2 dated: 20.07.2018, it is informed that the cases which are related to illegal mining of Beach sand Minerals in the state of Tamil Nadu from the existing mining lease and stoppage of mining operations, are still pending before the Hon'ble High Court of Madras. They are not connected to fresh grant of mining lease by the Government. In G.O.(Ms).No.112, Industries (MMD.1) Department dated: 22.09.2017 orders were issued for granting of mining leases to M/S. S.S. Minerals and Riverways Mines and Minerals based on the Court order dated: 15.03.2017.

The proposal was placed in the 123rd SEAC Meeting held on 22.12.2018. The project proponent gave a detailed presentation on the salient features of the project details as follow.

The Government of Tamil Nadu sanctioned the grant of fresh mining lease for Garnet sand over an extent of 4.80.0 Ha in S.F.Nos 390 (part) of Kottathur village, Musiri Taluk, Trichy district, Tamil Nadu G.O. 3(D). No. 71 dated: 29.12.2010 to Tvl.Riverways mines and minerals Ltd.

Since Garnet is a major mineral and the lease area is less than 100 Ha, this project falls under category B1 as per MOEF & CC notification.

Form1, Feasibility Report and ToR is prepared in line with the guidelines issued by MoEF&CC, vide their letter dated 30 December 2010 towards obtaining environmental clearance for GO (3D) No.71 with lease area of 4.80.0 Ha for a peak production capacity of 3552 tonnes of Garnet ROM for obtaining TOR from SEIAA, Tamil Nadu.

The mining plan was submitted and approved by IBM vide letter No.TN/TCR/MP/GNT1854-MDS dated 28.05.2013.

The applied mining lease area (G.O.(3D).71 of extent - 4.80.0 Ha) is located in Kottathur village, Musiri taluk, Trichy District, Tamil Nadu. The entire mine lease is Government Eri Poramboke land with an average elevation of 121m-124m from MSL. This area falls in Survey of India Toposheet No. 58 I/12 between latitude N 11°05.907' to N 11°06.020' N and longitude E 78°39.796' to E 78°39.930' E. The area is accessible from


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Kottattur to Puttanampatti road which is connected to SH-142. The nearest railway station is Trichy RS located at 33 km in S.

The mining lease area and the 10 km buffer zone is devoid of declared ecologically sensitive features like national parks, biospheres, sanctuaries, etc. No forest land is involved in the lease area.

The area also does not come under CRZ category.

Further, there is no perennial river or streams passing through the lease area. In the buffer area, Uppar river – 1.4 km – SE, Gundar – 9.1 km – W of the lease area. Area has an average elevation of 121m – 124m from MSL. Sattanur RF – 450 m – SW, Ragalavadi RF – 3.8 km – SW, Kottatur RF – 2.0 km – NE, Pulivalam RF – 7.0 km – SW, Omandur RF – 5.1 km – S, Vellakkalpat RF – 5.2 km – SE, Edumalai RF – 7.2 km – SE, Kurichi malai RF – 5.1 km – NW, Palamalai RF – 9.3 km – N and Nakkasalem RF – 7.9 km – NE are located from the lease area.

The geological reserve is estimated has 61191 Tonnes and the mineable reserve is estimated to be 42048 Tonnes. The quantity of top soil expected is around 21410 Tonnes for the entire life of the mine. Top soil will be dumped all along the boundary barriers for afforestation purpose.

On commencement of mining activity detailed exploration will be carried out which may further enhance the mineable reserves quantity. The proposed peak production from this lease is 3552 Tonnes of garnet ROM per annum. The life of the mine is anticipated to be 12 years. However, the life of the mine may increase in case of increased reserves availability, subsequent to future exploration.

The mining is proposed to carry out by open cast method. No deep hole drilling, excavation, blasting or bore holing will be carried out. The depth of mining proposed is up to 2m. The mined garnet ROM will be directly loaded on to trucks /tippers manually or occasionally by front end loaders for transportation to the mineral pre-concentration plant.


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The mined garnet rich stream sediments will be transported to the pre-concentration plant for separation of garnet sand. The waste generated from the pre-concentration plant will be backfilled in the mined out void.

The proposed lease area is 4.80.0 Ha. At the end of the plan period, 1.50.0 Ha will be under quarry area, 0.02Ha will be under mine roads and 3.28.0 Ha will be left undisturbed. Ultimately, after leaving the necessary 7.5m safety distance all around the mine periphery the remaining 4.16.10 Ha will be covered with quarry area. The waste from the processing plant will be back filled in the mined out pits. 0.63.90Ha will be left unutilized.

This is a proposed project. Common site services (for all 5 leases) like mine office, first aid room, rest shelters, toilets etc. will be provided as semi-permanent structures.

The total water requirement for all the ML operation in the 5 leases is 6cu.m including 1.0cu.m for domestic purposes, 5.0 cu.m for dust suppression and afforestation. All the equipment will be diesel operated. No electricity is needed for mining operation. The minimum power requirement for office, etc will be met from state grid.

The capital cost for this project is estimated to be Rs. 18.0 lakhs which includes combined departmental mining machineries, utility, infrastructure etc.

The proponent will implement good CSR activities based on the needs of the people in the locality. As per company's act, 2% of the net profit will be spent for CSR activities every year.

Based on the presentation made by the project proponent and the documents furnished for the project of Garnet Sand deposits (GO (3D) No 71) by Tvl. Riverways mines and minerals ltd over an Extent of 4.80.0 Ha at S.F.No 390(P) of Kottathur village, Musiri Taluk, Trichy District, Tamil Nadu under Schedule S.No. 1(a) of Category "B1" – the committee decided to defer the proposal for want of following details:

1. The proponent shall come with the presentation for conducting Cumulative EIA Study. Considering the other 4 quarries are adjacent to this quarry namely, M/S. S.S. Minerals & other 3 Riverways Mines and Minerals which are adjacent to


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each other in the same survey Number of S.F.No 390(P) of Kottathur village, Musiri Taluk, Trichy District, Tamil Nadu.

2. The Executive Engineer, PWD, Tiruchirapalli in his letter.No.RC V3/Ko 35/ 2002 dated 15.04.2002 has recommended to grant mining lease for a period of three years and further he stated that the same may be renewed periodically once in three years . Hence, the committee has directed the proponent to obtain a fresh No Objection Certificate and Technical feasibility for mining of Garnets in this tank area (i.e. water body) from the competent authority.
3. The proponent shall furnish the scientific proof to ensure the non hazardous nature of the waste generated from the mineral pre- concentrated plant since the said waste proposed to dump into the mined out void.

The proponent has furnished the details on 27.02.2019 to SEIAA.

The proposal was placed in the 127th SEAC Meeting held on 15.03.2019. The project proponent gave detailed presentation on the above points. The SEAC decided to recommend that the proposal be granted standard Terms of Reference (Annexure-I) with the combined Public hearing shall be conducted with other three adjacent proposed mining quarries namely M/s. Riverways Mines and Minerals Ltd and in additional specific following terms of reference.

1. The analysis of the minerals of Garnet to be mined out from the mining lease area shall be carried out by the competent authority before conducting EIA study and the proponent shall ensure that the threshold value 0.00% monazite in heavy minerals, irrespective of monazite grade as per the Atomic minerals concession rules 2016 issued by ministry of mines notification dated 20.02.2019.
2. The proponent shall furnish the scientific proof to ensure the non hazardous nature of the waste generated from the mineral pre- concentrated plant since the said waste proposed to dump into the mined out void. In this connection proponent has to detailed plan bring back the non hazardous nature of the


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waste generated from the mineral pre- concentrated plant to the mined out area.

3. The detailed mine closure plan shall be furnished.
4. The proponent has to conduct cumulative EIA report considering the other four adjacent proposed mining quarries with Separate EMP plan for the proposed individual mining.
5. The transportation methodology for the transportation of Garnet from the mining lease to the process area shall be furnished in detail and cumulative impact on Air pollution especially Fugitive emission needs to be carried out considering all the mining areas.
6. The proponent shall furnish the detailed CER plan with budget allocation incorporating the needs of the nearby public and also points raised in the public hearing as per the Office Memorandum of MoEF & CC dated 01.05.2018.

Agenda No. 127-04:

(File No. 6509/2018)

Proposed Garnet Sand Mine over an extent of 4.75.0 ha by M/s. S.S. Minerals Ltd, for Garnet sand production of 2450 Tonnes for a period of 5 years at S.F.No. 390 (Part) in Kottathur Village, Musiri Taluk, Trichy District - Activity 1(a) – Mining of major mineral – ToR to be issued - Regarding

(SIA/TN/MIN/ 21943/2018)

The project proposal was placed in the 105th meeting of the SEAC held on 22.03.2018. In this regard, the SEAC learnt that the Government of Tamil Nadu has issued ban orders relating to the mining operations of Garnet, Illuminite, Rutile, etc in various parts of the state of Tamil Nadu including Tiruchirapalli vide G.O. (Ms) No.173, Industries (MMD.1) Department dated: 17.09.2013. Hence, SEAC decided that the proposal cannot be considered for appraisal.


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Annexure-I

1(a) STANDARD TERMS OF REFERENCE FOR CONDUCTING ENVIRONMENT IMPACT ASSESSMENT STUDY FOR NON-COAL MINING PROJECTS AND INFORMATION TO BE INCLUDED IN EIA/EMP REPORT

- 1) Year-wise production details since 1994 should be given, clearly stating the highest production achieved in any one year prior to 1994. It may also be categorically informed whether there had been any increase in production after the EIA Notification 1994 came into force, w.r.t. the highest production achieved prior to 1994.
- 2) A copy of the document in support of the fact that the Proponent is the rightful lessee of the mine should be given.
- 3) All documents including approved mine plan, EIA and Public Hearing should be compatible with one another in terms of the mine lease area, production levels, waste generation and its management, mining technology etc. and should be in the name of the lessee.
- 4) All corner coordinates of the mine lease area, superimposed on a High Resolution Imagery/ topo sheet, topographic sheet, geomorphology and geology of the area should be provided. Such an Imagery of the proposed area should clearly show the land use and other ecological features of the study area (core and buffer zone).
- 5) Information should be provided in Survey of India Topo sheet in 1:50,000 scale indicating geological map of the area, geomorphology of land forms of the area, existing minerals and mining history of the area, important water bodies, streams and rivers and soil characteristics.
- 6) Details about the land proposed for mining activities should be given with information as to whether mining conforms to the land use policy of the State; land diversion for mining should have approval from State land use board or the concerned authority.
- 7) It should be clearly stated whether the proponent Company has a well laid down Environment Policy approved by its Board of Directors? If so, it may be spelt out in

the EIA Report with description of the prescribed operating process/procedures to bring into focus any infringement/deviation/ violation of the environmental or forest norms/ conditions? The hierarchical system or administrative order of the Company to deal with the environmental issues and for ensuring compliance with the EC conditions may also be given. The system of reporting of non-compliances / violations of environmental norms to the Board of Directors of the Company and/or shareholders or stakeholders at large, may also be detailed in the EIA Report.

- 8) Issues relating to Mine Safety, including subsidence study in case of underground mining and slope study in case of open cast mining, blasting study etc. should be detailed. The proposed safeguard measures in each case should also be provided.
- 9) The study area will comprise of 10 km zone around the mine lease from lease periphery and the data contained in the EIA such as waste generation etc. should be for the life of the mine / lease period.
- 10) Land use of the study area delineating forest area, agricultural land, grazing land, wildlife sanctuary, national park, migratory routes of fauna, water bodies, human settlements and other ecological features should be indicated. Land use plan of the mine lease area should be prepared to encompass preoperational, operational and post operational phases and submitted. Impact, if any, of change of land use should be given.
- 11) Details of the land for any Over Burden Dumps outside the mine lease, such as extent of land area, distance from mine lease, its land use, R&R issues, if any, should be given.
- 12) A Certificate from the Competent Authority in the State Forest Department should be provided, confirming the involvement of forest land, if any, in the project area. In the event of any contrary claim by the Project Proponent regarding the status of forests, the site may be inspected by the State Forest Department along with the Regional Office of the Ministry to ascertain the status of forests, based on which, the Certificate in this regard as mentioned above be issued. In all such cases, it would be

desirable for representative of the State Forest Department to assist the Expert Appraisal Committees.

- 13) Status of forestry clearance for the broken up area and virgin forestland involved in the Project including deposition of net present value (NPV) and compensatory afforestation (CA) should be indicated. A copy of the forestry clearance should also be furnished.
- 14) Implementation status of recognition of forest rights under the Scheduled Tribes and other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006 should be indicated.
- 15) The vegetation in the RF / PF areas in the study area, with necessary details, should be given.
- 16) A study shall be got done to ascertain the impact of the Mining Project on wildlife of the study area and details furnished. Impact of the project on the wildlife in the surrounding and any other protected area and accordingly, detailed mitigative measures required, should be worked out with cost implications and submitted.
- 17) Location of National Parks, Sanctuaries, Biosphere Reserves, Wildlife Corridors, Ramsar site Tiger/ Elephant Reserves/(existing as well as proposed), if any, within 10 km of the mine lease should be clearly indicated, supported by a location map duly authenticated by Chief Wildlife Warden. Necessary clearance, as may be applicable to such projects due to proximity of the ecologically sensitive areas as mentioned above, should be obtained from the Standing Committee of National Board of Wildlife and copy furnished.
- 18) A detailed biological study of the study area [core zone and buffer zone (10 km radius of the periphery of the mine lease)] shall be carried out. Details of flora and fauna, endangered, endemic and RET Species duly authenticated, separately for core and buffer zone should be furnished based on such primary field survey, clearly indicating the Schedule of the fauna present. In case of any scheduled-I fauna found in the study area, the necessary plan along with budgetary provisions for their

conservation should be prepared in consultation with State Forest and Wildlife Department and details furnished. Necessary allocation of funds for implementing the same should be made as part of the project cost.

- 19) Proximity to Areas declared as 'Critically Polluted' or the Project areas likely to come under the 'Aravali Range', (attracting court restrictions for mining operations), should also be indicated and where so required, clearance certifications from the prescribed Authorities, such as the SPCB or State Mining Department should be secured and furnished to the effect that the proposed mining activities could be considered.
- 20) Similarly, for coastal Projects, A CRZ map duly authenticated by one of the authorized agencies demarcating LTL, HTL, CRZ area, location of the mine lease w.r.t CRZ, coastal features such as mangroves, if any, should be furnished. (Note: The Mining Projects falling under CRZ would also need to obtain approval of the concerned Coastal Zone Management Authority).
- 21) R&R Plan/compensation details for the Project Affected People (PAP) should be furnished. While preparing the R&R Plan, the relevant State/National Rehabilitation & Resettlement Policy should be kept in view. In respect of SCs /STs and other weaker sections of the society in the study area, a need based sample survey, family-wise, should be undertaken to assess their requirements, and action programmes prepared and submitted accordingly, integrating the sectoral programmes of line departments of the State Government. It may be clearly brought out whether the village(s) located in the mine lease area will be shifted or not. The issues relating to shifting of village(s) including their R&R and socio-economic aspects should be discussed in the Report.
- 22) One season (non-monsoon) [i.e. March-May (Summer Season); October-December (post monsoon season) ; December-February (winter season)] primary baseline data on ambient air quality as per CPCB Notification of 2009, water quality, noise level, soil and flora and fauna shall be collected and the AAQ and other data so compiled presented date-wise in the EIA and EMP Report. Site-specific meteorological data

should also be collected. The location of the monitoring stations should be such as to represent whole of the study area and justified keeping in view the pre-dominant downwind direction and location of sensitive receptors. There should be at least one monitoring station within 500 m of the mine lease in the pre-dominant downwind direction. The mineralogical composition of PM10, particularly for free silica, should be given.

- 23) Air quality modelling should be carried out for prediction of impact of the project on the air quality of the area. It should also take into account the impact of movement of vehicles for transportation of mineral. The details of the model used and input parameters used for modelling 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 may also be indicated on the map.
- 24) The water requirement for the Project, its availability and source should be furnished. A detailed water balance should also be provided. Fresh water requirement for the Project should be indicated.
- 25) Necessary clearance from the Competent Authority for drawl of requisite quantity of water for the Project should be provided.
- 26) Description of water conservation measures proposed to be adopted in the Project should be given. Details of rainwater harvesting proposed in the Project, if any, should be provided.
- 27) Impact of the Project on the water quality, both surface and groundwater, should be assessed and necessary safeguard measures, if any required, should be provided.
- 28) Based on actual monitored data, it may clearly be shown whether working will intersect groundwater. Necessary data and documentation in this regard may be provided. In case the working will intersect groundwater table, a detailed Hydro Geological Study should be undertaken and Report furnished. The Report inter-alia, shall include details of the aquifers present and impact of mining activities on these

aquifers. Necessary permission from Central Ground Water Authority for working below ground water and for pumping of ground water should also be obtained and copy furnished.

- 29) Details of any stream, seasonal or otherwise, passing through the lease area and modification / diversion proposed, if any, and the impact of the same on the hydrology should be brought out.
- 30) Information on site elevation, working depth, groundwater table etc. Should be provided both in AMSL and bgl. A schematic diagram may also be provided for the same.
- 31) A time bound Progressive Greenbelt Development Plan shall be prepared in a tabular form (indicating the linear and quantitative coverage, plant species and time frame) and submitted, keeping in mind, the same will have to be executed up front on commencement of the Project. Phase-wise plan of plantation and compensatory afforestation should be charted clearly indicating the area to be covered under plantation and the species to be planted. The details of plantation already done should be given. The plant species selected for green belt should have greater ecological value and should be of good utility value to the local population with emphasis on local and native species and the species which are tolerant to pollution.
- 32) Impact on local transport infrastructure due to the Project should be indicated. Projected increase in truck traffic as a result of the Project in the present road network (including those outside the Project area) should be worked out, indicating whether it is capable of handling the incremental load. Arrangement for improving the infrastructure, if contemplated (including action to be taken by other agencies such as State Government) should be covered. Project Proponent shall conduct Impact of Transportation study as per Indian Road Congress Guidelines.
- 33) Details of the onsite shelter and facilities to be provided to the mine workers should be included in the EIA Report.
- 34) Conceptual post mining land use and Reclamation and Restoration of mined out

areas (with plans and with adequate number of sections) should be given in the EIA report.

- 35) Occupational Health impacts of the Project should be anticipated and the proposed preventive measures spelt out in detail. Details of pre-placement medical examination and periodical medical examination schedules should be incorporated in the EMP. The project specific occupational health mitigation measures with required facilities proposed in the mining area may be detailed.
- 36) Public health implications of the Project and related activities for the population in the impact zone should be systematically evaluated and the proposed remedial measures should be detailed along with budgetary allocations.
- 37) Measures of socio economic significance and influence to the local community proposed to be provided by the Project Proponent should be indicated. As far as possible, quantitative dimensions may be given with time frames for implementation.
- 38) Detailed environmental management plan (EMP) to mitigate the environmental impacts which, should inter-alia include the impacts of change of land use, loss of agricultural and grazing land, if any, occupational health impacts besides other impacts specific to the proposed Project.
- 39) Public Hearing points raised and commitment of the Project Proponent on the same along with time bound Action Plan with budgetary provisions to implement the same should be provided and also incorporated in the final EIA/EMP Report of the Project.
- 40) Details of litigation pending against the project, if any, with direction /order passed by any Court of Law against the Project should be given.
- 41) The cost of the Project (capital cost and recurring cost) as well as the cost towards implementation of EMP should be clearly spelt out.
- 42) A Disaster management Plan shall be prepared and included in the EIA/EMP Report.
- 43) Benefits of the Project if the Project is implemented should be spelt out. The benefits

of the Project shall clearly indicate environmental, social, economic, employment potential, etc.

44) Besides the above, the below mentioned general points are also to be followed:-

- a) Executive Summary of the EIA/EMP Report
- b) All documents to be properly referenced with index and continuous page numbering.
- c) Where data are presented in the Report especially in Tables, the period in which the data were collected and the sources should be indicated.
- d) Project Proponent shall enclose all the analysis/testing reports of water, air, soil, noise etc. using the MoEF&CC/NABL accredited laboratories. All the original analysis/testing reports should be available during appraisal of the Project.
- e) Where the documents provided are in a language other than English, an English translation should be provided.
- f) The Questionnaire for environmental appraisal of mining projects as devised earlier by the Ministry shall also be filled and submitted.
- g) While preparing the EIA report, the instructions for the Proponents and instructions for the Consultants issued by MoEF&CC vide O.M. No. J-11013/41/2006-IA.II(I) dated 4th August, 2009, which are available on the website of this Ministry, should be followed.
- h) Changes, if any made in the basic scope and project parameters (as submitted in Form-I and the PFR for securing the TOR) should be brought to the attention of MoEF&CC with reasons for such changes and permission should be sought, as the TOR may also have to be altered. Post Public Hearing changes in structure and content of the draft EIA/EMP (other than modifications arising out of the P.H. process) will entail conducting the PH again with the revised documentation.
- i) As per the circular no. J-11011/618/2010-IA.II(I) dated 30.5.2012, certified report of the status of compliance of the conditions stipulated in the

environment clearance for the existing operations of the project, should be obtained from the Regional Office of Ministry of Environment, Forest and Climate Change, as may be applicable.

- i) The EIA report should also include (i) surface plan of the area indicating contours of main topographic features, drainage and mining area, (ii) geological maps and sections and (iii) sections of the mine pit and external dumps, if any, clearly showing the land features of the adjoining area.
