**MINUTES OF THE 13th MEETING OF TECHNICAL CUM COST COMMITTEE (TCC) OF NATIONAL MINERAL EXPLORATION TRUST (NMET)**

***Fermor Hall, Geological Survey of India, Nagpur; 7-8 March, 2018***

The 13th meeting of Technical Cum-Cost Committee (TCC) of National Mineral Exploration Trust (NMET) was held at GSI, Nagpur on 07-03-2018 & 08-03-2018 under the chairmanship of Shri. D. Mohan Raj, Addl. Director General & Head, Mission-II, GSI, Nagpur. The list of participants is at Annexure-1.

Shri D. Mohan Raj, Additional Director General, GSI, Nagpur & Chairman, TCC welcomed all the members of the committee. He appraised the committee regarding the agenda items of the meeting and made the following observations:

- All proposals should be submitted in both soft and hard copies to the members of TCC at least a fortnight ago.
- A copy of the proposals may be sent to concerned State DGMs and the concerned State DGM should be present in the TCC meeting.

  **(Action: State DGMs/NEAs)**
- The agencies to submit a copy of the proposal to the concerned State unit of GSI to avoid duplication of work and to receive comments of the State unit of GSI before next TCC meeting.
- The State DGMs, NEAs and other exploration agencies need to submit quality proposals and come prepared to the TCC meeting with presentation and cost estimates.

  **(Action: State DGMs/NEAs)**
- The executing exploration agencies will have to submit the progress report for every 6 months and there will be review of half yearly progress of the projects.

  **(Action: State DGMs/NEAs)**

  NMET Secretariat to submit a list of projects that have completed 6 months.

  **(Action: NMET Secretariat)**
- The TCC will meet once in two months.
- For each proposal, the concerned State DGM to confirm the freehold status of the block.

  **(Action: Proposing agencies/State DGMs)**

The committee recommendations in respect of various proposals are as under:

**1. G-2 level exploration for assessment of cement grade limestone in Uchimedu block, Dist.:Cuddalore, Tamil Nadu.**

i. Area should be increased to at least 4-5 sq.km.

ii. G3 stage exploration for this block has been carried out by GSI during FS 2016-17. This report may be consulted before taking up of the project.
iii. Information on the overburden ratio should be considered before carving out the area for exploration.
iv. Proposal should be made in proper format.
v. Modified proposal to be submitted by DGM, Tamil Nadu.

**(Action: DGM, Tamil Nadu)**

**2. G-3 level exploration for graphite in Kiranur block in the western part of Sivaganga graphite belt, Madurai and Sivaganga Districts, Tamil Nadu.**

i. Previous works of GSI and geological maps should be properly consulted in detail before taking up of the project.
ii. Proposal should be made in proper format.
iii. Modified proposal to be submitted by DGM, Tamil Nadu.

**(Action: DGM, Tamil Nadu)**

**3. G-3 level exploration for low grade iron ore in Tattayyangarpettai, Valasiramani and Mahadevi areas, Namakkal & Trichirapalli Districts, Tamil Nadu**

i. Geological map with 1:12,500 scale is to be submitted for project evaluation.
ii. Minimum 4-5 sq. km area with 1:4,000 scale can be approved for bulk minerals.
iii. Minimum 25 MT (million tonnes) of resource with the threshold value of Fe is required to carry out the exploration further.
iv. Revised proposal to be submitted in proper format.

**(Action: DGM, Tamil Nadu)**

**4. G-3 level exploration for low grade iron ore in Valaiyapatti-Rajampalayam area, Namakkal District, Tamil Nadu.**

i. Previous works of GSI and geological maps should be consulted in detail before taking up the project.
ii. Initially 5 scout boreholes (1 borehole in the northern limb, 1 borehole in the southern limb, 1 borehole at the hinge of the westerly plunging synform and, 2 boreholes at 800m interval in the eastern band may be drilled at 50 m vertical depth for a cumulative meterage not exceeding 500 m.
iii. Based on the result next level of exploration will be decided.
iv. The first report to be submitted in 8 months.
v. Analysis of few samples from key zones to be submitted for Au analysis by fire assay.

**5. G-3 level exploration for Dunite in Jamunadai-Urkkarai Sector, Namakkal & Trichirappalli Districts, Tamil Nadu.**

i. Proposal not approved. Scientifically acceptable proposal in proper format to be submitted.
ii. Based on the result of the exploration in the adjoining block being carried out by MECL, this proposal may be considered in future.

**6. Approval of Geophysical work & Drilling works in SR-TN-08 (Regional Exploration (G-4) in Namakkal Block, District: Namakkal, Perambalur for Ni, Cr & Magnesite (Block approved in 4th EC Meeting).**

**Block-A**

i. No geophysical study (gravity/magnetic) is advised.
ii. 3 scout boreholes to be drilled along the section lines S2-S2', S4-S4' and S6-S6' with inclination of 45° to 50°. Along the section line S4-S4' the location of the borehole may be shifted to further east.
iii. Analysis for Ni-Co (for at least five samples) may be carried out through GSI.
iv. The eastern part of the Block A may be taken up for exploration.
v. Proposal is resubmitted after attending to above suggestions.

**(Action: MECL)**

**Block-B**

i. The lithology is to be checked at the hill slope/ cliff face of the hill.
ii. Drilling is not required in this area.
iii. Analysis to be carried out for Ni, Co, PGE and REE. REE analysis from key area within 1 sq. km area to be carried out in the laterite rich area only.
iv. Proposal approved with the above modifications.

**(Action: MECL)**

**7. Proposal for Reconnaissance Survey (G-4) for Manganese Ore in Risala Block, Saoner Tehsil, District-Nagpur, Maharashtra.**

i. DGM, Maharashtra conveyed that the block falls under the buffer zone of wild life sanctuary and will have problem for requisite permission for exploration.
ii. Proposal not approved by TCC.

**8. Proposal for Reconnaissance Survey (G-4) for Manganese Ore in Tekadi Block, Saoner Tehsil, District-Nagpur, Maharashtra.**

i. DGM, Maharashtra conveyed that the block falls under the buffer zone of wild life sanctuary and will have problem for requisite permission for exploration.
ii. Proposal not approved by TCC.

**9. Exploration Proposal (G-2) for cement Grade Limestone in Naubasta-Kolard Block, in Nagod Tehsil, District-Satna, Madhya Pradesh.**

i. Drilling to be carried out at 400x400 m grid intervals as per MEMC Rule 2015.
ii. Drilling to be stopped after encountering the shale layer below the limestone body.
iii. Boreholes to be restricted 100 m inside the block boundary.
iv. Proposal approved with the above modifications.

**(Action: MECL)**

**10. Proposal for General Exploration (G-2) for Bauxite in the Saraipani-Dadar Block, Tehsil-Pandaria, District-Kabirdham, Chhattisgarh.**

i. Core samples of selective boreholes previously drilled by MECL should be reanalysed at GSI Labs where DGM, Chhattisgarh feels the grade is not reproductive.
ii. Representative cores should be submitted to the core repository of GSI.
iii. Boreholes to be planned at 200 x 200 m grid intervals.
iv. Ga, V, Ti and REE should also be analysed along with regular elements analysed for bauxite.
v. Analysis for reactive silica to be carried out.

**(Action: MECL)**

**11. G2 level exploration for limestone in Jamodi-Mehanna area of Madhya Pradesh**.

i. Justification was submitted for not achieving the target under drilling. Out of 107 boreholes proposed 24 boreholes could not be done as 15 boreholes fall in the leasehold area, 3 boreholes within forest area, 4 boreholes in agricultural land and 2 boreholes in non-development area.
ii. The committee noted the justifications, it was decided that MECL to estimate the resource for the block with the results of the positive boreholes.

**(Action: MECL)**

**12. Justification of non-achievement of limestone investigation of Proposed Quantum of Work in Gothra-Parasrampura, Rajasthan,**

i. MECL is executing the limestone exploration in the block.

ii. MECL completed 33 boreholes out of 40 approved boreholes in the block. In the remaining 7 boreholes, 6 boreholes could not be drilled because of non-development of limestone and 1 borehole could not be drilled due to local problem.
iii. The committee noted the details.

**13. Approval for changing the radicals in analysis of associated elements & carrying out analysis of REE (additional) & reimbursement of expenses towards Forest Department for Ubduru Gold Block (Block Id-SR_KAR_07), Dist.: Karnataka.**

i. KIOCL submitted the progress of work.
ii. Approval for inclusion of additional radicals likes Bi, As and REE was proposed by KIOCL.
iii. Committee approved the proposal and suggested not to analyse REE unless there is a sufficient amount of zoned pegmatites in the area.
iv. Analysis of Ag to be included along with Bi & As.
v. In the ultramafic terrain, entire PGE group of elements (Pt, Pd, Ir, Rh, Ru & Os) should be analysed instead of only Pt& Pd.
vi. KIOCL has submitted expenditure incurred towards engaging guards from Forest Department.
vii. TCC considered the proposal for the additional expenditure amounting to Rs. 100866/- (Rs. One Lakh eight hundred sixty six only including GST) for additional analysis and engaging labourers from Forest department after due deliberation and recommended it for approval.

**14. Iron Ore Exploration in Tirumankadu Block, Namakkal District, Tamil Nadu.**

i. KIOCL proposed to provide additional areas for exploration as the present block alone may not provide adequate resources of iron ore.
ii. DGM, Tamil Nadu was advised to identify the area if available and communicate to the TCC, NMET for approval.

**(Action: DGM, Tamil Nadu, KIOCL)**

**15. Reconnaissance Survey for multi-metal in Matmari Block, Raichur District, Karnataka.**

TCC advised NMDC to carry out the reconnaitary traverses in the entire 500 sq.km to identify the potential area of 100 sq.km and report to TCC.

**(Action: NMDC)**

**16. Reconnaissance survey for multi-metal in Bukkapatna area, Tumkur and Chitradurga Districts, Karnataka.**

i. NMDC proposed that the area assigned is having nearly 68% overlapping with area under the leasehold of HZL.
ii. TCC advised NMDC to concentrate in rest of the area (i.e about 75 sq.km) and submit the report of findings.

**(Action: NMDC)**

**17. G-4 level Nandgaon-Gora-Mahewa block, Chhattarpur district, Madhya Pradesh.**

i. NMDC informed that clarification has been sought from the DGM, Madhya Pradesh regarding the possible overlapping of area with the lease hold area of any PSU, but yet to receive reply.
ii. Committee suggested expediting the matter with DGM, Madhya Pradesh and IBM.

**(Action: NMDC; DGM, Madhya Pradesh; IBM)**

**18. G-4 level regional exploration of Degve-Kalna-Arania block, Sindhudurg district, Maharashtra.**

NMDC informed that during geological mapping, they have experienced resistance from the local people as the entire area falls under cultivated land with cash crops. TCC advised NMDC to complete the geological mapping to the maximum possible extent.

**19. Total 19 proposals (four G-3 level bauxite, three G-3 level limestone and twelve G-4 level Iron ore investigations) submitted by DGM Chhattisgarh.**

TCC discussed the 19 proposals submitted by DGM, Chhattisgarh. It was observed that the proposals need to be prepared with more details and resubmitted. Additionally, TCC made the following observations:

i. Project areas should be freehold areas free from litigation and outside forest boundary.
ii. The proposed blocks should be demarcated properly.
iii. Geological map with proper scale along with proposed borehole locations with justification to be submitted.
iv. The proposal to be prepared in proper format and resubmited.
v. DGM, Chhattisgarh was advised to utilise the services of the three nominated agencies (MECL/NMDC/KIOCL) for preparing project proposals, if felt necessary.

**20. Presentation on Nine (09) G-3 level exploration blocks already been handed over to Ministry of Mines.**

Shri D. Mohan Raj, Additional Director General, GSI, Nagpur & Chairman TCC made a presentation. TCC made the following observations-

1. Report of G-3 level block (Pastalaimal) has to be submitted after receiving analytical results.
2. Terrain maps related to each proposal may be incorporated in the proposals.
3. Blocks have to be marked over NGPM and NGCM maps of the study area.
4. The block area should be free from litigation and forest boundary.
5. Area must not be explored earlier.
6. Iron and Manganese investigation Baralata, Chaibasa district, Jharkhand block should be replaced by another block as the block is not ready for exploration.

**21. Scrutiny and finalisation of cost estimates of 3 blocks in respect of Andhra Pradesh, discussed in the 6th Executive Committee of NMET**

6th EC had accorded in-principle approval for following three projects to be executed by TSMDC subject to verification of cost estimates of the projects by the TCC in its next meeting:

1. G- 4 level regional exploration in Mailaram Copper block, Bhadradri, Kothagudam District, Telangana.
2. G-4 level regional level exploration for Limestone Block at Jeteya, Buruborta&Dumurjowa in West Singhbhum District, Jharkhand.
3. G-4 level Regional Exploration for limestone Block at Gupteswar, Koraput District, Odisha.

TCC examined these proposals and suggested following modifications in the quantum of work:

i. Number of days towards procurement, processing, interpretation of ASTER data and Remote Sensing studies should be reduced to Ten (10) days.
ii. Under Geological Survey the target should be completed in 130 days.
iii. Number of days for sampling parties should be reduced proportionate to the geological component.
iv. Cost of resistivity survey should be excluded as resistivity survey forms part of IP survey.
v. SP survey to be dropped as it is ideal for massive deposits which are not the case here.
vi. Costs towards camp setting and winding is permitted only for geologist party and not approved for outsourced drilling party.
vii. TCC recommended these three projects with a total estimated cost of Rs.320 lakhs approx.(Annexures- 2A, 2B and 2C)

Item No. 1 in Mailaram Copper Block is recommended and the cost of the exploration is Rs.207 lakhs approx.
Item No. 2 Jeteya, Buruborta &Dumurjowa is recommended and the cost of the exploration is Rs. 61 lakhs approx.

Item No. 3 in Gupteswar is recommended and the cost of the exploration is Rs. 52 lakhs approx.

**22. Scrutiny and finalisation of cost estimates of 7 blocks in respect of Andhra Pradesh, discussed in the 6th Executive Committee of NMET.**

TCC examined the following three proposals of DGM AP for the work components and cost estimates:

1. G-2 level exploration for Bhimagundam Limestone Block, in Peddamidium (M), YSR Kadapa District, Andhra Pradesh.
2. G-2 level exploration for Gundlakunta Limestone Block, in Peddamidium (M), YSR Kadapa District, Andhra Pradesh.
3. G-2 level exploration for Dammar Nandyal-Veparala Limestone Block, in Mylavaram (M), YSR Kadapa District, Andhra Pradesh.
4. G-2 level exploration for Mandipadu Limestone Block, in Dachepalli (M), Guntur District, Andhra Pradesh.
5. G-2 level exploration for Mutyalampadu-Tangeda Limestone Block, in Dachepalli (M), Guntur District, Andhra Pradesh.
6. G-2 level exploration for Tangeda Limestone Block, in Dachepalli (M), Guntur District, Andhra Pradesh.
7. G-2 level exploration for Ramapuram Limestone Block, in Dachepalli (M), Guntur District, Andhra Pradesh.

TCC made the following observations;

i. In all the three projects, rates for GI core boxes should be properly estimated.
ii. Costs of accommodation are not admissible for drilling as it is an outsourced component.
iii. Core sampling should be judiciously decided keeping the overburden/rock ratio.
iv. Number of days for topographic survey, geological survey and sampling parties should be distributed proportionally.
v. TCC recommended these seven projects with a total estimated cost of Rs. 19.68 Crores. (Annexures – 3A, 3B, 3C,3D,3E,3F,3G and 3H)

Item No. 1 in Bhimagundam is recommended and the cost of the exploration is Rs.220 lakhs approx. (Annexure – 3A).
Item No. 2 in Gundlakunta is recommended and the cost of the exploration is Rs. 433 lakhs approx. (Annexure – 3B).

Item No. 3 in Dommaranandyala is recommended and the cost of the exploration is Rs. 578 lakhs approx. (Annexure – 3C).

Item No. 4 in Madinapadu is recommended and the cost of the exploration is Rs.209 lakhs approx. (Annexure – 3D).

Item No. 5 in Tangeda is recommended and the cost of the exploration is Rs. 225 lakhs approx. (Annexure – 3E).

Item No. 6 in Mutyalampadu is recommended and the cost of the exploration is Rs. 161 lakhs approx. (Annexure – 3F).

Item No. 7 in Ramapuram is recommended and the cost of the exploration is Rs. 140 lakhs approx. (Annexure – 3G).

**23. Scrutiny and finalisation of cost estimates of G-4 level exploration for limestone/Manganese Block at Khargon, Madhya Pradesh by NTPC.**

TCC examined the proposals and major changes have been suggested in the NQT as shown in the Annexure-4.

The Item is recommended and the cost of the exploration is Rs.99 lakhs approx.

**24. Scrutiny and finalisation of cost estimate of Exploration (G-2) of limestone, Naubasta-Kolad Block; Tehsil: Nagod; District: Satna; Madhya Pradesh by MECL.**

The Item is recommended and the cost of the exploration is Rs.365.43 lakhs. (Annexure-5).

**25. Scrutiny and finalisation of cost estimate of detailed Exploration Proposal for Iron Ore in Rajampalayam Block, Namakkal District, Tamil Nadu by MECL.**

The Item is recommended and the cost of the exploration is Rs.169.30 lakhs.(Annexure-6).

**26. General Exploration (G-2) for Bauxite in the Saraipani-Dadar Block, Tehsil-Pandaria, District - Kabirdham, Chhattisgarh by MECL.**

The Item is recommended and the cost of the exploration is Rs.74.595 lakhs. (Annexure-7).

**27.** The TCC observed that the work of appraising, revising the projects and suggesting modifications and subsequent changes in the cost estimates is not feasible to be carried out in TCC meetings. The committee also felt that the NMET needs to have a financial wing which would evaluate the cost estimates of the final proposals. The TCC would concentrate on technical evaluation and review of the projects.

**28.** The cost of organising TCC meetings, TA, DA and sitting fees of non-official members of TCC and miscellaneous expenditure needs to be borne by NMET.

The meeting ended with vote of thanks to the Chair.

(Shri D. Mohan Raj)
Addl. Director General GSI
& Head M-II &
Chairman, Technical cum-Cost
Committee (TCC), NMET

(Shri P. Tarafdar)
DDG-PSS, GSI & Member,
Technical cum-Cost
Committee(TCC), NMET

(Shri B. P. Raturi)
DGM, MECL &
For Member Secretary Technical
cum-Cost Committee (TCC),
NMET

(Dr. Joyesh Bagchi)
Director (Technical) MoM &
Member, Technical cum-Cost
Committee (TCC), NMET

(Shri. O. P. Yadav)
Additional Director,
Operation-II AMD &
Member, Technical cum-Cost
Committee (TCC), NMET

( Shri. S. K. Thakur)
GM (Expl) (Retd.), MECL,
Member, Technical cum-Cost
Committee (TCC), NMET

(Shri. Mriganka Ghatak)
Director, NMET Secretariat
Member, Technical cum-Cost
Committee (TCC), NMET

(Shri J. V. Rama Rao)
Director (Geophysics) GSI &
Member, Technical cum-Cost
Committee (TCC), NMET

(Shri H.K. Verma)
DGM (Finance), HCL & Member
Technical cum-Cost Committee
(TCC), NMET

(Shri. S.K. Adhikari)
Chief Mining Geologist, IBM &
Member
Technical cum-Cost Committee
(TCC), NMET

(Shri Prashant Kumar
Maharana)
Asst. General Manager
(Finance), NALCO, &
Member, Technical cum-Cost
Committee (TCC), NMET

(Shri. P Habibulla Khan)
Joint GM (Geology), NMDC,
Member
Technical cum-Cost Committee
(TCC), NMET

Annexure – 1

**List of participant's present in 13th Meeting of Technical cum-Cost Committee(TCC) of NMET held on 7th & 8th March, 2018 at GSI, Central Region, Nagpur**

| SL.No | Name of Participant's | Designation & Organisation | Participation | Mobile No | Email-Id | Signature (7th March) | Signature (8th March) |
|---|---|---|---|---|---|---|---|
| 1 | Shri D. Mohan Raj | Add. Director General, GSI, Nagpur | In Chair | | | | |
| 2 | Dr. Joyesh Bagchi | Director (Technical), Ministry of Mines, N. Delhi | Member | 9868918687 | [illegible] | | |
| 3 | Shri B. P. Raturi | HOD-Exploration, MECL, Nagpur | Member Secretary, TCC | 9422806417 | [illegible] | | |
| 4 | Shri P. Tarafdar | Deputy Director General, GSI, Kolkata | Member | 9503088847 | [illegible] | | |
| 5 | Shri Mriganka Ghatak | Director, GSI | NMET Representative | 9650267682 | nmet-mines@gov.in | | |
| 6 | Shri S. K. Adhikari | Chief Mining Geologist, IBM, Nagpur | Member | 7588690545 | [illegible] | | |
| 7 | Shri K. C. Sahoo | DDG & RMH-II | Member | | | | |
| 8 | Shri Prasant Kumar Maharana | Asst. GM (Finance), NALCO, Bhubaneswar | Member | 8500669500 | [illegible] | | |
| 9 | Shri H. K. Verma | Dy.G.M (Finance), HCL, Kolkata | Member | 9732660983 | [illegible] | | |
| 10 | Shri J. V. Rama Rao | Director- Geophysics | Member | 9440691284 | [illegible] | | |
| 11 | Dr. P. R. Golani | DG (Retd.) GSI | Member | [illegible] | | | |
| 12 | Shri S. K. Thakur | GM (Exp) (Retd.) MECL | Member | 9405973443 | [illegible] | | |
| 13 | O.P Yadav | Additional Director AMD Hyderabad | Member | 9885019477 | [illegible] | | |
| 14 | C. Parthasarathi | Director (G) | Invitee | 9483186522 | [illegible] | | |
| 15 | VIDYANANDA. N | Director (P&D) KIOCL LTD | Invitee | 9448823984 | [illegible] | | |

Annexure - 1

| SL.No | Name of Participant's | Designation & Organisation | Participation | Mobile No | Email-id | Signature (7th March) | Signature (8th March) |
|---|---|---|---|---|---|---|---|
| 16 | P. Sharma | JGM (MED) KIOCL | LD Invitee | 9449620105 | [illegible] | | |
| 17 | Shivakumar. | GM (MED) KIOCL LTD | | | | | |
| 18 | KrishnaMoorthy | Geologist, KIOCL LTD | Invitee | 9164770745 | priyalk05@yahoo.co.in | | |
| 19 | Dr. P. Habibulla Khan | Jt. GM (Geology) NMDC Ltd. Hyd | Invitee Member | 9490759640 | Phkhan@nmdc.co.in Khanphl640@yahoo.co.in | | |
| 20 | Md. Nasim Anwar | Sr Manager (Geology) NMDL Ltd. Hyd. | Invitee | 9963917045 | mdnanwar@nmdc.co.in | | |
| 21 | Shailesh Verma | DY Director (Geo) D.G.M. Chhattisgarh | Invitee | 9826093781 | dgm.cg@nic.in shaileshverma040@gmail.com | | |
| 22 | Nishikant Hans | Supdt. Gr. I Geologist Dy.M, Dy.P | Invited | 9893262797 | geology-dgm@mp.gov.in | | |
| 23 | Mohammad Dastageer | Asst. Manager (Geology) MECL | Invited | 9560739350 | dastagerzaidi@gmail.com mdastageer@mecl.gov.in | | |
| 24 | M. W. WADASKAR | SR. MANAGER (Geo) | Invitee | 9921870446 | manojwadaskarmecl@gmail.com | | |
| 25 | SAURABH VIVEK | AM- Geology MECL | Invitee | 9545425923 | [illegible] | | |
| 26 | Dr S. Kamalakaran | Sr Manager (Cy) | — | 9370621725 | drskumpatth@gmail.com | | |
| 27 | Mr. M. KANDAN | Additional Director, DGM, Tamilnadu | Invitee | 7558164754 | geomine@nic.in | | |
| 28 | Tmt. V. ARUNA | Deputy Director DGM, Tamilnadu | Invitee | 9176610967 | Geomine@nic.in | V. Aruna | |
| 29 | Laxman Mamit | Consultant - TSMDC | Invitee | 77=2749111 | [illegible] | | |
| 30 | E. HANUMANTHA RAO | CEO, MERIT, DMG, A.P | | 7093273094 | ceo.merit@gmail.com | | |

Annexure-1

| SL.No | Name of Participant's | Designation & Organisation | Participation | Mobile No | Email-Id | Signature (7th March) | Signature (8th March) |
|---|---|---|---|---|---|---|---|
| 31 | OVVS. Ravi Kumar | Geologist, MER:T (DMG, AP) | | 7506776914 | merit.ravikumar@gmail.com | | |
| 32 | Shiva Kumar M | Sr Mgr(ME), KIOCL | | 9481447666 | bmed@kioclltd.co.in | | |
| 33 | Indrani Sarkar | Sr. Accounts officer, MECL | | 7028442992 | indrani705@rediffmail.com | Indrani Sarkar | Indrani Sarkar |
| 34 | K Lakshmana Rao | Addl manager (Geol) MECL. | Invitee | 9000779192 | lakshmanb25@gmail.com | | K Lrao |
| 35 | R.S. Kalamkar | Director DAM Maharashtra | Invitee | 9822560273 | [illegible]@gmail.com | | 8/3/18 |
| 36 | D.K Mishra. | AGM (NTPC) | — in | 9650991064 | director@mahedgm.gov.in | | |
| 37 | | | | | DKMISHRA@NTPC.CO.IN | — X | DKMishra |
| 38 | PRAVEEN AKHOURI | DGM (NTPC) | " | 9650998327 | praveenakhouri@ntpc.co.in | X | Praveen Akh |
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Annexure - 2 A

Table.. 6.2 B - COST ESTIMATE FOR G-4 LEVEL OF EXPLORATION FOR BASEMETAL ASSOCIATED ELEMENTS,GOLD & REE etc. IN MAILRAM BLOCK COPPER DEPOSIT AREA (BLOCK ID SR-TL-06 ) IN AN AREA OF 140 sq. kms. IN KOTHAGUDEM DIST. OF TELANGANA STATE.(For fixing base rate considered from the GSI and MECL NMET fund reports)

| Sl. No. | ITEM OF WORK | UNIT | BASE RATE ( Rs.) 01-04-1900 | RATES (Rs.) 2016-17 | QUANTITY | AMOUNT Rs. |
|---|---|---|---|---|---|---|
| A | GEOLOGICAL WORK | | | | | |
| 1 | Remote Sensing Studies area 140 sq.km. | | | | | |
| | a) Satellite data interpretation ASTER data will be used | Nos. | Free download data | | | |
| 2 | Survey Party days | | | | | |
| | a) Survey Party day (1 party) for Sampling etc. | days | 1,180 | 5,840 | 98 | 5,25,600 |
| | b) Survey Party days (1 party) for Geophysical surveys etc. | days | 1,180 | 5,840 | 120 | 7,00,800 |
| | c) Survey party days (2 party) for Drilling | days | 1,180 | 5,840 | 135 | 7,88,400 |
| 3 | Geologist Party days | | | | | |
| | a) Geological Party days (2 party) for geological mapping on 1:12,500 scale | days | 1,541 | 7,802 | 135 | 10,53,270 |
| 4 | Sampling party days | | | | | |
| | a) Samples preparation for bed rock sampling | days | 575 | 2,809 | 50 | 1,40,450 |
| | b) Soil sampling and Stream Sediment sampling | days | 925 | 2,809 | 30 | 84,270 |
| | c) Sample Preparation Drill cores (1 party) | days | 525 | 2,809 | 40 | 1,12,360 |
| 5 | Transportation (Light vehicles, 2 ops.) | days | (umpsum | | | 0 |
| | Sub - Total A | | | | | 34,05,150 |
| B | GEOPHYSICAL SURVEY & REPORT | | | | | |
| 1 | Induced Polarization Survey(The Base rate of Rs7860/- is for traverse interval of 2KMs at a 100X20m interval) | L. km. | 7,860 | 2,17,505 | 20 | 43,50,100 |
| 2 | Magnetic Station | Nos. | 107 | 467 | 1,020 | 4,76,340 |
| | Sub - Total B | | | | | 48,26,440 |
| C | PITTING & TRENCHING | | | | | |
| | Excavation (Pitting & Trenching) | Cu. m. | 305 | 1,673 | 100 | 1,67,300 |
| | Trench/Pit Sampling party days (1 party) | days | 994 | 5,227 | 30 | 1,56,810 |
| | Sub - Total C | | | | | 3,24,110 |
| D | CORE DRILLING (5 BH) | | | | | |
| 1 | Surface Drilling (2 rigs) | m. | 2,551 | 9,947 | 600 | 59,68,200 |
| 4 | Camp Setting / Winding (Geologist/Geophysicist party) | Nos. | 68,606 | 2,44,910 | 2 | 4,89,820 |
| 5 | Road making (flat Terrain ) * actuals if required | km. | 5,200 | 18,563 | 10 | 1,85,630 |
| 6 | ISI Core boxes | Nos. | Lumpsum | 2,000 | 120 | 2,40,000 |
| 7 | Transportation charges of core boxes | km. | 9 | 31 | 300 | 9,300 |
| | Sub - Total D | | | | | 68,92,950 |

| | | | | | | |
|---|---|---|---|---|---|---|
| E | LABORATORY STUDIES | | | | | |
| 1 | Chemical Analysis | | OXIDES & ALL TRACE ELEMENTS MAY BE ANALYSED BY XRF | | | |
| | *i) Surface Sampling (Bed Rock Samples)* | | | | | |
| | a) Cu, Pb, Zn, Co, Ni (For five radicals) | Nos. | 110+(76*4)= 414 | 2,378 | 150 | 3,56,700 |
| | b) Au & Ag (Fire assay) | Nos. | 268 | 1,390 | 15 | 20,850 |
| | c) PGE assay by ICP MS (For ICPMS studies GST rate (2014) has been considered) | Nos. | 6,100 | 2,381 | 20 | 1,47,620 |
| | *ii) Soil samples (number will be decided based on NGCMaster of GSI)* | | | | | |
| | a) (For five radicals) Cu, Pb, Zn, Co & Ni | Nos. | 110+(76*4)= 414 | 2,378 | 100 | 2,37,800 |
| | ii) Stream Sediment samples | | | | | |
| | c) For five radicals Cu, Pb, Zn, Co & Ni | Nos. | 110+(76*4)= 414 | 2,378 | 100 | 2,37,800 |
| | iv) Check Samples (Bed rock/soil/stream) (Cu, Pb, Zn, Co & Ni) | Nos. | 110+(76*4)= 414 | 2,378 | 30 | 71,340 |
| | *v) Trench & Pit samples* | | | | | |
| | a) For five radicals Cu, Pb, Zn, Co & Ni | Nos. | 110+(76*4)= 414 | 2,378 | 100 | 2,37,800 |
| | b) For Au & Ag (Fire assay) | Nos. | 268 | 1,390 | 20 | 27,800 |
| | *vi) Bit Core Sampling, Primary & Check samples* | | | | | |
| | a) Cu, Pb, Zn | Nos. | 110+(76*2)= 262 | 1,374 | 200 | 2,74,800 |
| | b) For Au & Ag (Fire assay) | Nos. | 268 | 1,390 | 15 | 20,850 |
| | *vii) Composite Samples* | | | | | |
| | a) For five radicals Cu, Pb, Zn, Co & Mo | Nos. | 110+(76*4)= 414 | 2,378 | 15 | 35,670 |
| | b) For 2 radicals Sn & Ni | Nos. | 110+76= 186 | 972 | 15 | 14,580 |
| | c) For Au & Ag (Fire assay) | Nos. | 268 | 1,390 | 15 | 20,850 |
| 2 | Physical Analysis | | | | | |
| | *i) Petrographic Studies (Bit core + Surface Samples)* | | | | | |
| | a) Preparation of thin sections | Nos. | 100 | 538 | 30 | 16,140 |
| | b) Study of thin sections | Nos. | 726 | 1,436 | 30 | 43,080 |
| | *ii) Mineragraphic Studies (Bit core + Surface Samples)* | | | | | |
| | a) Preparation of Polished Sections | Nos. | 100 | 538 | 20 | 10,760 |
| | b) Study of Polished Sections | Nos. | 364 | 2,023 | 20 | 40,460 |
| | *iii) Whole Rock Analysis (SiO2, Al2O3, Fe2O3, TiO2, MnO, CaO, Na2O, K2O + H2O, MgO, P2O5, CO2, & S)* | Nos. | 1,316 | 6,486 | 10 | 64,860 |
| | *iv) XRD & Spectroscopic Studies* | | | | | |
| | a) XRD Studies on Composite | Nos. | 1,117 | 5,605 | 10 | 56,050 |
| | Sub - Total E | | | | | 19,35,810 |
| | TOTAL (A + B + C + D+ E) | | | | | 175,84,460 |
| F | EXPLORATION REPORT - 1% OF A+B+C+D+E | | | | | 1,78,845 |
| | TOTAL (A+B+C+D+E+F) | | | | | 175,58,305 |
| | GST 18% | | | | | 31,60,495 |
| | GRAND TOTAL | | | | Say | 207,18,799 |
| Note: | Revised rate of promotional work by MECL on behalf of Govt. of India vide letter No. 37(1)2006-MI dated 02.07.2014 and based on actual escalation as per WPI indices as on 31.03.2016 and provisional escalation of @ 15% points for drilling and 25% points for Geological & Laboratory Studies for subsequent year. | | | | | |

Annexure - 2B

| DETAILS OF LIMESTONE EXPLORATION TO BE TAKEN UP IN THE STATE OF JHARKHAND UNDER NATIONAL MINERAL EXPLORATION TRUST(NMET) FUNDS PROPOSED BY THE TELANGANA MINERAL DEVELOPMENT CORPORATION LTD(M/s.TSMDC Ltd). | | | | |
|---|---|---|---|---|
| 1 | OBJECTIVE: | Exploration of Prospective Lime Stone blocks to be alloted by a way of auction as per MMDR (Amendment) Act, 2015. | | |
| 2 | BLOCK NAME: | JETEYA, BURUBORTA & DUMURJOWA AREA (ER_JH_02) | | |
| 3 | LOCATION: | 14 Km from Jagannathpur | | |
| 4 | DISTRICT: | WEST SINGHBHUM DISTRICT, JHARKHAND | | |
| 5 | TOPO SHEET | 73F/11 | | |
| 6 | AREA IN SQ.KM: | 100 | | |
| 7 | CORNER GEO-COORDINATES OF THE BLOCK MARKED ON THE TOPOSHEET: | Point | Longitude | Longitude |
| | | A | 22°15'00.00" N | 85° 32' 30.00" E |
| | | B | 22°15'00.00" N | 85° 38' 20.00" E |
| | | C | 22° 20' 25.00" N | 85° 32' 30.00" E |
| | | D | 22° 20' 25.00" N | 85° 38' 20.00" E |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| 8 | MAIN COMMODITY AND ASSOCIATED MINERALS: | LIMESTONE | | |
| 9 | MINERAL CONCESSION STATUS(LEASES): | NA | | |
| 10 | GEOLOGICAL MAP: | Enclosed | | |
| 11 | GEOLOGICAL REPORT OF PREVIOS WORK IF ANY: | With plans & Sections in original : Not Available | | |
| 12 | FOREST BOUNDARY MARKED ON BLOCK MAP: | NA | | |
| 13 | FOREST CLEARANCE FOR EXPLORATION IF ANY: | NA | | |
| 14 | REQUIRED LEVEL OF EXPLORATION IN THE BLOCK: | G4 | | |

| 15 | Details of work proposed in the area | | Unit | Base Rate | Rate Rs. | Quantity | Estimated Cost |
|---|---|---|---|---|---|---|---|
| I | Geological Component | | | | | | |
| 1 | Geological party days for Geological mapping (i) 1:12500 | | days | 1,541.00 | 7802 | 120 | 936240 |
| 2 | Camp setting & winding | | Nos | | 244910 | 1 | 244910 |
| 3 | Sampling Party | | Days | 527 | 2,809 | 120 | 337080 |
| 4 | Rod rock Sampling | | Nos | 533.00 | 2,809 | 40 | 112360 |
| 5 | Pitting & Trenching | | Cu.M | 295.00 | 1,673 | 50 | 83650 |
| II | Drilling | | | | | | |
| 8 | A Core drilling | | Running meter | 2551 | 9843 | 250 | 2486750 |
| III | Lab Analysis/Studies | | | | | | |
| 10 | Chemical analyses of 6 radicals (CaO, MgO,SiO2, Al2O3, Fe2O3 & LOI) | | Nos | 490 | 2580 | 300 | 774000 |
| 11 | Petrographic/Mineragraphic studies (i) PS Grain size and mineral parameter PCS. (Whole) Rock | | | | | | |
| | i) Thin Section | | Per sample | 100 | 538 | 50 | 26900 |
| | ii) Petrographic studies | | Per sample | 228 | 1436 | 50 | 71800 |
| | | Sub-total | | | | | 5073690 |
| 12 | Report Writing, 1% Sub total | | | | | | 50800 |
| | TOTAL | | | | | | 5167690 |
| | GST 18% | | | | | | 929384 |
| | GRAND TOTAL WITH GST | | | | | | 6097794 |
| | | | | | | | 61 Lacs |

Annexure - 2c

| DETAILS OF LIMESTONE EXPLORATION TAKEN UP IN ODISHA UNDER NMET FUND PROPOSED BY TSMDC, GOVT. OF TELANGANA | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 1 | OBJECTIVE: | Exploration of limestone block to be alloted by a way of action under MMDR (amendment) act | | | | | | |
| 2 | BLOCK NAME: | TSMDA - ODLST-1 | | | | | | |
| 3 | LOCATION: | GUPTESWAR, KORAPUT, ODISHA | | | | | | |
| 4 | DISTRICT: | KORAPUT | | | | | | |
| 5 | TOPO SHEET | 65/1 & 65/2/5 | | | | | | |
| 6 | AREA IN SQ.KM: | 100 | | | | | | |
| 7 | CORNER GEO-COORDINATES OF THE BLOCK MARKED ON THE TOPOSHEET: | Point | Longitude | Latitude | | | | |
| | | A | 18°51'00.00" N | 82° 16' 24.00" E | | | | |
| | | B | 18°50'00.00" N | 82° 15'00" E | | | | |
| | | C | 18°51'00.00" N | 82° 16' 24.00" E | | | | |
| | | D | 18°55'00.00" N | 82° 15' .00" E | | | | |
| | | E | 18°51' 57" N | 82° 15' .00" E | | | | |
| | | F | 18°51' 57" N | 82° 18' 20.00" E | | | | |
| | | G | 18°57' 24" N | 82° 15' .00" E | | | | |
| | | H | 18°57' 24" N | 82° 18' 24.00" E | | | | |
| 8 | MAIN COMMODITY AND ASSOCIATED MINERALS: | LIMESTONE | | | | | | |
| 9 | MINERAL CONCESSION STATUS(LEASED): | NA | | | | | | |
| 10 | GEOLOGICAL MAP: | Enclosed | | | | | | |
| 11 | GEOLOGICAL REPORT OF PREVIOS WORK IF ANY: | With plans & Sections in original : Not Available | | | | | | |
| 12 | FOREST BOUNDARY MARKED ON BLOCK MAP: | NA | | | | | | |
| 13 | FOREST CLEARANCE FOR EXPLORATION IF ANY: | NA | | | | | | |
| 14 | REQUIRED LEVEL OF EXPLORATION IN THE BLOCK: | G4 | | | | | | |
| 15 | Details of work proposed in the area | | Unit | Base Rate | Rate Rs. | Quantity | Estimated Cost | |
| I | Geological Component | | | | | | | |
| 1 | Geological party data for Geological mapping (i) 1:12500 | | days | 1,543.00 | 7802 | 120 | 936240 | |
| 2 | Core sawing & wrooing | | Nos | | 244950 | 1 | 244950 | |
| 3 | Sampling Party | | Days | 833 | 2,800 | 120 | 337680 | |
| 4 | Bed rock Sampling | | Nos | 525.00 | 2,800 | 40 | 112360 | |
| 5 | Pitting & Trenching | | Cu.M | 395.00 | 1,673 | 50 | 83650 | |
| II | Drilling | | | | | | | |
| 6 | A Core drilling | | Running meter | 2551 | 9647 | 250 | 2486750 | |
| III | Lab Analysis/Studies | | | | | | | |
| 10 | Chemical analysis of 6 radicals (CaO, MgO, SiO2, Al2O3, Fe2O3 & LOI) | | Nos | 490 | 2580 | 300 | 774000 | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 9 | XRF ANALYSIS FOR TIN | Nos. | | 32 | 379 | 50 | 18950 |
| 10 | Petrographic/Mineographic studies on XRF Analysis and Ionized | | | | | | |
| | i) Thin Section | | Per sample | 1000 | 333 | 50 | 26600 |
| | ii) Petrographic studies | | Per sample | 2200 | 1436 | 50 | 71800 |
| | **Sub total** | | | | | | **5392040** |
| 12 | Report Writing 1% Sub total | | | | | | **80000** |
| | TOTAL | | | | | | **5390640** |
| | GST 18% | | | | | | **832315** |
| | GRAND TOTAL WITH GST | | | | | | **6113155** |
| | | | | | | | **61 Lacs** |
| IV | **Timeline of various activities proposed** | | | | | | |
| 12 | Field studies | | **Expected number of days** | **Expected period of field work** | | | |
| | | | | **From** | **To** | **Remarks** | |
| | i) Geological mapping/Studies | | 90 | May | July | | |
| | ii. Core drilling | | 60 | June | July | | |
| b | **Laboratory studies** | | | | | | |
| 12 | Pre-field and reconnaissance for the assignment under consideration | | 10 | 2nd week of the May | 3rd week of May | | |
| | Geological study /field work and collection processing of samples and their submission) | | | | | This work will be carried out simultaneously with geological studies | |
| | Chemical study (last date of sample submission) | | | June | September | | |
| | Chemical study (acquisition of analytical data) | | August | June | September | | |
| V | **Submission of report** | | | | | | |
| 13 | Date of submission of interim report | | | August | October | Last week of October | |
| VI | **Total estimated cost of the Project in Rupees in lakhs** | | | | | | |
| 14 | **Heads** | | **Amount** | | | | |
| | Geological Component | | | | | | |
| | i. ii Shipping | | | | 15,20,590 | | |
| | Surveying | | | | 83,650 | | |
| 15 | Drilling | | | | 24,46,750 | | |
| 16 | **Lab Analysis** | | | | | | |
| | i) Chemical Analysis of samples | | | | 7,67,950 | | |
| | ii)Petrographic/Mineographic studies | | | | 98,700 | | |
| 17 | Report Writing | | | | 88,000 | | |
| | Total estimated cost of the Project in Rupees in lakhs | | | | **51,80,640** | **52Lakhs** | |
| 18 | ANTICIPATED LOCAL PROBLEMS IF ANY | | i) Compensation for damage to standing crops while drilling<br>ii) Non Co-operation of farmers for surveying and drilling | | | | |
| 19 | REMARKS | | i) Outsourcing of core as well as DTH drilling and analysis of samples may be thought over as GSI may be having/engaged in regular FSP.<br>ii) The costing taken as per the schedule of charges of GSI, it may varies about +-20% for accounting.<br>iii) The timeline taken for completion of investigation thinking that the fieldseason starts April and ends March of next year | | | | |

Annexure - 3A

| | Table:6.2 COST ESTIMATE FOR G2- EXPLORATION OF LIMESTONE IN BHIMAGUNDAM (8.979 sq.km), Kadapa Dist, Andhra Pradesh | | | | | |
|---|---|---|---|---|---|---|
| Sl.No. | Item of Work | Unit | Base | Financial Year (2017-18) | | |
| | | | Rate | Exc.Rate | Qty. | Amount |
| | | | 1.4.98 | | | |
| A | DRILLING | | | | | |
| 1 | Surface Drilling (1 Rig) | m | 1214 | 8200 | 1020 | 10220000 |
| 2 | Transportation (at actuals) | KM | 8.8 | 31 | 2000 | 62000 |
| 3 | Gl Core Box * | each | 2000 | | 364 | 6968000 |
| 4 | Camp Setting | Per month | 88508 | 244310 | 1 | 244310 |
| | Sub Total A | | | | | 11220810 |
| B | GEOLOGICAL WORK | | | | | |
| 1 | Survey Party Days (1 party) | day | 1150 | 5840 | 40 | 233600 |
| 2 | Geological Party days (1 party) | day | 1941 | 7902 | 80 | 632160 |
| 3 | Core Sampling Party days(1 party) | day | 525 | 2959 | 60 | 185340 |
| | Sub-Total B | | | | | 1164330 |
| C | LABORATORY STUDIES | | | | | |
| a | Chemical Analysis | | | | | |
| 1 | Primary + Check Samples | | | | | |
| | i) for 6 radicals (CaO,MgO,$Al_2O_3$,$SiO_2$,$Fe_2O_3$ & LOI) | Nos | 493 (Rs50+113) | 2580 | 1672 | 4313760 |
| | ii) For additional 2 Radicals SO3 & P2O5 | Nos | 169 (110 +178) | 372 | 1672 | 1625184 |
| b | Physical Analysis | | | | | |
| 2 | Preparation of thin section | Nos | 100 | 339 | 10 | 3390 |
| 3 | Petrography Studies | Nos | 228 | 1439 | 10 | 14390 |
| | Sub-Total C | | | | | 5956884 |
| | Total A+B+C | | | | | 18283514 |
| D | EXPLORATION REPORT (Rs.60000 or 2% of Value which ever is more) | | | | | 365670 |
| | GRAND TOTAL A to D | | | | | 18649184 |
| | GST 18% | | | | | 3356853 |
| | Grand Total : with GST 18% | | | | | 22006037 |
| | | | | | | SAY 220 Lakhs |
| Note: | | | | | | |
| i | Revised Rates of Promotional Work done by MECL on behalf of Govt. of India Vide letter No. 37(i) /2006-M.I. dated- 02_07_2014 and based on actual escalation as per RBI indices as on 31-03-2017 and the same has been considered for subsequent year. | | | | | |
| ii | Phosphorite rates have been considered as there is no rates for Limestone in Revised Rates of Promotional Work of MoM Schedule of Rates. | | | | | |
| iii | * An Amount of Rs.2000/- has been considered as per MECL rates approved by Ministry. | | | | | |

Annexure - 3B

| | Table:6.2 COST ESTIMATE FOR G3 EXPLORATION OF LIMESTONE IN GUNDLAKUNTA (12.58 sq.km), Kadapa Dist., Andhra Pradesh | | | | | |
|---|---|---|---|---|---|---|
| SL.No. | Item of Work | Unit | Base | Financial Year (2017-18) | | |
| | | | Rate | Esc.Rate | Qty | Amount |
| | | | 1.4.90 | | | |
| A | DRILLING | | | | | |
| 1 | Surface Drilling ( 1 Rig) | m | 1715 | 9780 | 3080 | 30662400 |
| 2 | Transportation (at actuals) | km | 8.5 | 51 | 2000 | 102000 |
| 3 | GI Core Box * | each | 2000 | | 616 | 1232000 |
| 4 | Camp Setting | Unit month | 68000 | 344910 | 1 | 344910 |
| | Sub Total A | | | | | 32421310 |
| B | GEOLOGICAL WORK | | | | | |
| 1 | Survey Party Days ( 1 party) | day | 1180 | 6842 | 60 | 350400 |
| 2 | Geologist Party days (1 party) | day | 1841 | 7602 | 120 | 936240 |
| 3 | Core Samples Party days(1 party) | day | 525 | 2909 | 100 | 290900 |
| | Sub-Total B | | | | | 1567540 |
| C | LABORATORY STUDIES | | | | | |
| a | Chemical Analysis | | | | | |
| 1 | Primary + Check Samples | | | | | |
| | i) for 8 radicals (CaO,MgO,$Al_2O_3$, SiO$_2$,$Fe_2O_3$ & LOI) | Nos | 480 (Rs5170) | 2680 | 3388 | 8741040 |
| | ii) For additional 2 Radicals (SO3 & P2O5 | Nos | 190 (110 +28) | 672 | 3388 | 2268336 |
| b | Physical Analysis | | | | | |
| 2 | Preparation of thin section | Nos | 100 | 638 | 10 | 6380 |
| 3 | Petrographic Studies | Nos | 228 | 1439 | 15 | 21540 |
| | Sub-Total C | | | | | 12063736 |
| | Total A+B+C | | | | | 38852836 |
| D | EXPLORATION REPORT (Rs.60000 or 2% of Value which ever is more) | | | | | 721053 |
| | GRAND TOTAL A to D | | | | | 38773889 |
| | GST 18% | | | | | 6619254 |
| | Grand Total : with GST 18% | | | | | 43393143 |
| | | | | | | SAY 433 Lakhs |
| Note | | | | | | |
| 1 | Revised Rates of Promotional Work done by MECL on behalf of Govt. of India Vide letter No. 37(i) /2006-M.I. dated- 02_07_2014 and based on actual escalation as per RBI indices as on 31-03-2017 and the same has been considered for subsequent year. | | | | | |
| 2 | Prorata rate have been considered as there is no rates for Limestone in Revised Rates of Promotional Work of MoM Schedule of Rates. | | | | | |
| 3 | * An amount of Rs.2000/- has been considered as per MECL rates approved by Ministry. | | | | | |

Annexure - 3C

| | Table 9.2 COST ESTIMATE FOR G2- EXPLORATION OF LIMESTONE IN DOMMARANANDIYALA-VEPARALA (20.1 sq.km), Kadapa Dist, Andhra Pradesh | | | | | |
|---|---|---|---|---|---|---|
| SL.No. | Item of Work | Unit | Base | Financial Year (2017-18) | | |
| | | | Rate | Esc.Rate | Qty. | Amount |
| | | | 14.98 | | | |
| A | DRILLING | | | | | |
| 1 | Surface Drilling (1 Rig) | m | 1714 | 5780 | 4142 | 23934760 |
| 2 | Transportation (all actuals) | Km | 9.8 | 21 | 2000 | 82000 |
| 3 | DI Core Box * | each | 2000 | | 932 | 1864000 |
| 4 | Camp Setting | Drill month | 86808 | 248410 | 1 | 248410 |
| | Sub Total A | | | | | 30175710 |
| B | GEOLOGICAL WORK | | | | | |
| 1 | Survey Party Days ( 1 party) | day | 1180 | 5840 | 69 | 403450 |
| 2 | Geologist Party days (1 party) | day | 1541 | 5802 | 122 | 638360 |
| 3 | Core Sampling Party days(1 party) | day | 523 | 2826 | 180 | 269930 |
| | Sub-Total B | | | | | 1567940 |
| C | LABORATORY STUDIES | | | | | |
| a | Chemical Analysis | | | | | |
| 1 | Primary + Check Samples | | | | | |
| | i) for 9 radicals ($CaO, MgO, Al_2O_3, SiO_2, Fe_2O_3$ & LOI) | Nos | 450 (18x5+112) | 2583 | 4670 | 11806080 |
| | ii) For additional 2 Radicals SO3 & P2O5 | Nos | 188 (110 +78) | 972 | 4670 | 4447872 |
| b | Physical Analysis | | | | | |
| 2 | Preparation of thin section | Nos | 150 | 839 | 15 | 30270 |
| 3 | Petrographic Studies | Nos | 228 | 1438 | 15 | 21540 |
| | Sub-Total C | | | | | 16328362 |
| | Total A+B+C | | | | | 48026812 |
| D | EXPLORATION REPORT (Rs.80000 or 2% of Value which ever is more) | | | | | 960536 |
| | GRAND TOTAL A to D | | | | | 48987348 |
| | GST 18% | | | | | 8817723 |
| | Grand Total i with GST 18% | | | | | 57805071 |
| | | | | | | SAY 578 Lakhs |
| Note | | | | | | |
| 1 | Revised Rates of Promotional Work done by MECL on behalf of Govt. of India Vide letter No. 37(i) /2005-M.I. dated- 02_07_2014 and based on actual escalation as per RBI indices as on 31-03-2017 and the same has been considered for subsequent year. | | | | | |
| 2 | Phosphorite rates have been considered as there is no rates for Limestone in Revised Rates of Promotional Work of MoM Schedule of Rates. | | | | | |
| 3 | * An amount of Rs.2000/- has been considered as per MECL rates approved by Ministry. | | | | | |

Annexure - 3D

| | Table:6.2 COST ESTIMATE FOR G2-EXPLORATION OF LIMESTONE IN MADINAPADU (6.6 sq.km), Guntur Dist, Andhra Pradesh | | | | | |
|---|---|---|---|---|---|---|
| Sl. No. | Item of Work | Unit | Base | Financial Year (2017-18) | | |
| | | | Rate | Esc.Rate | Qty. | Amount |
| | | | 1.4.95 | | | |
| A | DRILLING | | | | | |
| 1 | Surface Drilling ( 1 Rig) | m | 1714 | 6780 | 1440 | 8763200 |
| 2 | Traversing(at actuals) | Km | 8.8 | 27 | 2300 | 62000 |
| 3 | Id Core Box * | each | 2000.0 | | 288 | 576000 |
| 4 | Camp Setting | Drill/ month | 68609 | 244813 | 1 | 244810 |
| | Sub Total A | | | | | 10646110 |
| B | GEOLOGICAL WORK | | | | | |
| 1 | Survey Party Days ( 1 party) | day | 1180 | 6840 | 40 | 205600 |
| 2 | Geologist Party days (1 party) | day | 1341 | 7802 | 90 | 702180 |
| 3 | Core Sampling Party days(1 party) | day | 525 | 3808 | 50 | 188940 |
| | Sub-Total B | | | | | 1104320 |
| C | LABORATORY STUDIES | | | | | |
| a | Chemical Analysis | | | | | |
| 1 | Primary = Check Samples | | | | | |
| | i) for 6 radicals (CaO,MgO,$Al_2O_3$,$SiO_2$,$Fe_2O_3$ & LOI) | Nos | 600 7(as)+110) | 3986 | 1084 | 4086720 |
| | ii) For additional 2 Radicals SO3 & $P_2O_5$ | Nos | 186 (110 +76) | 973 | 1084 | 1055964 |
| b | Physical Analysis | | | | | |
| 2 | Preparation of thin section | Nos | 100 | 536 | 10 | 5360 |
| 3 | Petrographic Studies | Nos | 239 | 1436 | 10 | 14360 |
| | Sub-Total C | | | | | 5846100 |
| | Total A+B+C | | | | | 17396530 |
| D | EXPLORATION REPORT (Rs.50000 or 2% of Value which ever is more) | | | | | 347931 |
| | GRAND TOTAL A to D | | | | | 17744469 |
| | GST 18% | | | | | 3194004 |
| | Grand Total : with GST 18% | | | | | 20938473 |
| | | | | | | SAY 209 Lakhs |

Note:

1. Revised Rates of Promotional Work done by MECL on behalf of Govt. of India Vide letter No. 37(i)/2005-M.I dated- 02_07_2014 and based on actual escalation as per RBI indices as on 31-03-2017 and the same has been considered for subsequent year.
2. Proshphorite rates have been considered as there is no rates for Limestone in Revised Rates of Promotional Work of MoM Schedule of Rates.
3. * An amount of Rs.2000/- has been considered as per MECL rates approved by Ministry.

Annexure - 3 E

| | Table:6.2 COST ESTIMATE FOR G2-EXPLORATION OF LIMESTONE IN TANGEDA (7.18 sq.Km), Guntur Dist, Andhra Pradesh | | | | | |
|---|---|---|---|---|---|---|
| Sl. No. | Item of Work | Unit | Base | Financial Year (2017-18) | | |
| | | | Rate | Esc.Rate | Qty. | Amount |
| | | | 1.430 | | | |
| A | DRILLING | | | | | |
| 1 | Surface Drilling ( 1 Rig) | m | 1714 | 5785 | 1550 | 10378830 |
| 2 | Transportation (at actuals) | Km | 6.9 | 31 | 2000 | 62000 |
| 3 | 01 Core Box * | each | 2000.0 | 2000 | 312 | 624000 |
| 4 | Camp Setting | Drill month | 69500 | 344818 | 1 | 344818 |
| | Sub Total A | | | | | 11507710 |
| B | GEOLOGICAL WORK | | | | | |
| 1 | Survey Party Days ( 1 party) | day | 1193 | 5840 | 40 | 233600 |
| 2 | Geologist Party days (1 party) | day | 1643 | 7800 | 90 | 702180 |
| 3 | Core Sampling Party days(1 party) | day | 625 | 2908 | 65 | 188940 |
| | Sub-Total B | | | | | 1104320 |
| C | LABORATORY STUDIES | | | | | |
| a | Chemical Analysis | | | | | |
| 1 | Primary + Check Samples | | | | | |
| | i) for 8 radicals (CaO,MgO,Al2O3,SiO2,Fe2O3 & LOI) | Nos | 493 (8x5+1=10) | 3580 | 1718 | 4827280 |
| | iii) For additional 2 Radicals SO3 & P2O5 | Nos | 188 (113 +75) | 872 | 1718 | 1667296 |
| b | Physical Analysis | | | | | |
| 2 | Preparation of thin section | Nos | 100 | 558 | 8 | 4304 |
| 3 | Petrographic Studies | Nos | 229 | 1430 | 8 | 11488 |
| | Sub-Total C | | | | | 6111024 |
| | Total A+B+C | | | | | 18723054 |
| D | EXPLORATION REPORT (Rs.60000 or 2% of Value which ever is more) | | | | | 374461 |
| | GRAND TOTAL A to D | | | | | 19097515 |
| | GST 18% | | | | | 3437553 |
| | Grand Total : with GST 18% | | | | | 22535069 |
| | | | | | | SAY 225 Lakhs |

Note:

1. Revised Rates of Promotional Work done by MECL on behalf of Govt. of India Vide letter No. 37(1) /2005-M.I dated- 02_07_2014 and based on actual escalation as per RBI indices as on 31-03-2017 and the same has been considered for subsequent year.
2. Phosphorite rates have been considered as there is no rates for Limestone in Revised Rates of Promotional Work of MoM Schedule of Rates.
3. * An amount of Rs.2000/- has been considered as per MECL rates approved by Ministry

Annexure - 3F

| | Table:6.2 : COST ESTIMATE FOR G2-EXPLORATION OF LIMESTONE IN MUTYALAMPADU-YANGEDA (4.0 sq.km), Guntur Dist, Andhra Pradesh | | | | | |
|---|---|---|---|---|---|---|
| Sl. No | Item of Work | Unit | Base | Financial Year (2017-18) | | |
| | | | Rate | Esc.Rate | Qty | Amount |
| | | | 1.4.10 | | | |
| A | DRILLING | | | | | |
| 1 | Surface Drilling ( 1 Rig) | m | 1214 | 6750 | 1120 | 7560000 |
| 2 | Transportation (at actuals) | Km | 6.8 | 31 | 2000 | 62000 |
| 3 | SI Core Box * | each | 2000 | | 224 | 448000 |
| 4 | Camp Setting | Drill depth | 68806 | 284810 | 1 | 284810 |
| | Sub Total A | | | | | 8348810 |
| B | GEOLOGICAL WORK | | | | | |
| 1 | Survey Party Days ( 1 party) | day | 1180 | 3843 | 20 | 76860 |
| 2 | Geologist Party days (1 party) | day | 1541 | 7892 | 50 | 395100 |
| 3 | Core Sampling Party days( 1 party) | day | 525 | 3900 | 40 | 132300 |
| | Sub-Total B | | | | | 677860 |
| C | LABORATORY STUDIES | | | | | |
| | a Chemical Analysis | | | | | |
| 1 | Primary + Check Samples | | | | | |
| | i) for 8 radicals (CaO,MgO,Al2O3,SiO2, Fe2O3 & LOI) | Nos | 480 (560+10%) | 2593 | 1233 | 3178560 |
| | ii) For additional 2 Radicals SO3 & P2O5 | Nos | 186 (110 +75) | 872 | 1232 | 1107904 |
| | b Physical Analysis | | | | | |
| 2 | Preparation of Thin section | Nos | 100 | 638 | 8 | 4304 |
| 3 | Petrographic Studies | Nos | 225 | 1436 | 8 | 11488 |
| | Sub-Total C | | | | | 4391856 |
| | Total A+B+C | | | | | 13418526 |
| D | EXPLORATION REPORT (Rs.60000 or 3% of Value which ever is more) | | | | | 268371 |
| | GRAND TOTAL A to D | | | | | 13686587 |
| | GST 18% | | | | | 2463586 |
| | Grand Total : with GST 18% | | | | | 16149858 |
| | | | | | | SAY 161 Lakhs |
| Note | | | | | | |
| 1 | Revised Rates of Promotional Work done by MECL on behalf of Govt. of India Vide letter No. 37(i) /2006-M.I. dated- 02_07_2014 and based on actual escalation as per RBI indices as on 31-03-2017 and the same has been considered for subsequent year. | | | | | |
| 2 | Phosphorite rates have been considered as there is no rates for Limestone in Revised Rates of Promotional Work of MoM Schedule of Rates. | | | | | |
| 3 | * An amount of Rs.2000/- has been considered as per MECL rates approved by Ministry. | | | | | |

Annexure - 39

Table-8.2 COST ESTIMATE FOR G2-EXPLORATION OF LIMESTONE IN RAMAPURAM (4.07 sq.km), Guntur Dist, Andhra Pradesh

| Sl.No. | Item of Work | Unit | Base | Financial Year (2017-18) | | |
|---|---|---|---|---|---|---|
| | | | Rate | Esc.Rate | Qty. | Amount |
| | | | 1.4.80 | | | |
| A | DRILLING | | | | | |
| 1 | Surface Drilling ( 1 Rig) | m | 1714 | 6288 | 900 | 5659920 |
| 2 | Transportation (at actuals) | Km | 8.8 | 31 | 2000 | 62000 |
| 3 | Cr Core Box * | each | 2000 | | 192 | 384000 |
| 4 | Camp Setting | Unit month | 59500 | 244918 | 1 | 244918 |
| | Sub Total A | | | | | 7198710 |
| B | GEOLOGICAL WORK | | | | | |
| 1 | Survey Party Days ( 1 party) | day | 1150 | 3840 | 30 | 126200 |
| 2 | Geologist Party days (1 party) | day | 1841 | 7963 | 10 | 390130 |
| 3 | Core Sampling Party days(1 party) | day | 575 | 2908 | 40 | 112388 |
| | Sub-Total B | | | | | 677680 |
| C | LABORATORY STUDIES | | | | | |
| a | Chemical Analysis | | | | | |
| 1 | Primary + Check Samples | | | | | |
| | ii for 6 radicals (CaO MgO $Al_2O_3$ $SiO_2$ $Fe_2O_3$ & LOI) | Nos | 693 (Rate+110) | 2580 | 1338 | 2724480 |
| | iii For additional 2 Radicals SO3 & P2O5 | Nos | 190 (110 +176) | 972 | 1056 | 1026432 |
| b | Physical Analysis | | | | | |
| 2 | Preparation of thin section | Nos | 100 | 536 | 6 | 3228 |
| 3 | Petrographic Studies | Nos | 220 | 1430 | 6 | 8610 |
| | Sub-Total C | | | | | 3762750 |
| | Total A+B+C | | | | | 11640126 |
| D | EXPLORATION REPORT (Rs.60000 or 2% of Value which ever is more) | | | | | 232803 |
| | GRAND TOTAL A to D | | | | | 11872929 |
| | GST 18% | | | | | 2137127 |
| | Grand Total i with GST 18% | | | | | 14010056 |
| | | | | | | SAY 140 Lakhs |

Note:

1. Revised Rates of Promotional Work done by MECL on behalf of Govt. of India Vide letter No. 37(i) /2006-M.I. dated- 02_07_2014 and based on actual escalation as per RBI indices as on 31-03-2017 and the same has been considered for subsequent year.
2. Phosphorite rates have been considered as there is no rates for Limestone in Revised Rates of Promotional Work of MoM Schedule of Rates.
3. * An amount of Rs.2000/- has been considered as per MECL rates approved by Ministry.

Annexure - 3 H

Details of Exploration (G2) Proposals for Limestone submitted to NMET TCC for funding_08.03.2018

| S.No | Block | Area Extent (Sq.Km) | District | TCC approved on 08.03.2018 Rs. | Rs.in Lakhs | *Rates finalised by Cost Committee on 07.03.2018* | *Rs.in Lakhs* | MERIT (DMG,AP) Submitted on 19.01.2018 Rs. | GST @18% | Grand Total Rs. | Rs.in Lakhs |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Bhimagundam | 6.979 | Kadapa | 22006037 | 220.06 | *21885054* | *218.85* | 16016760 | 2883016.8 | 18899776.80 | 189.00 |
| 2 | Gundlakunta | 12.68 | | 43392953 | 433.93 | *43080250* | *430.80* | 32368439 | 5826319 | 38194758.02 | 381.95 |
| 3 | Dommaranandyala | 20.1 | | 57805071 | 578.05 | *57860374* | *578.60* | 43789271 | 7882068.8 | 51671339.78 | 516.71 |
| 4 | Madinapadu | 6.6 | Guntur | 20938473 | 209.38 | *20800318* | *208.00* | 15166954 | 2730051.7 | 17897005.72 | 178.97 |
| 5 | Tangeda | 7.16 | | 22535068 | 225.35 | *22426856* | *224.27* | 16430916 | 2957564.9 | 19388480.88 | 193.88 |
| 6 | Mutyalampadu-Tangeda | 4.8 | | 16149936 | 161.50 | *16422441* | *164.22* | 11796111 | 2123300 | 13919410.98 | 139.19 |
| 7 | Ramapuram | 4.07 | | 14010056 | 140.10 | *14265656* | *142.66* | 10106255 | 1819125.9 | 11925380.90 | 119.25 |
| Grand Total (Rs.) (Including GST@18%) | | | | 196837594 | 1968.38 | *196740949* | *1967.41* | 145674706 | 26221447 | 171896153.08 | 1718.96 |
| | | | | SAY-19.68 Crores | | *SAY-19.67 Crores* | | SAY-17.18 Crores | | | |

Annexure - 4

| Cost Estimates for G-4 Level of exploration for Limestone/Manganese Block at Khargone (M.P.) of NTPC (Block ID- CR_MP_07) | | | | | | |
|---|---|---|---|---|---|---|
| Sl. No. | Item of work | Unit | Base rate as on 1990 | Escalated Rates | Quantity | Amount (Rs) |
| 1 | Geological Mapping on 1:12,500 Scale | days | 1541 | 7802 | 140 | 1092280 |
| 2 | Geochemical Sampling: | | | | | |
| | a) Bedrock sampling | days | 1541 | 7802 | 30 | 234060 |
| | b) Channel sampling | days | 1541 | 7802 | 45 | 351090 |
| | c) Trench/ Pit Sampling | days | 579 | 3080 | 15 | 46200 |
| | d) Core Sampling | days | 525 | 2809 | 75 | 210675 |
| 3 | Geophysical Survey: Semi Regional Magnetic Survey(randomly spaced station to be fixed at about 200 m spacing) | Stations | 507 | 2036 | 850 | 1730600 |
| 4 | Exploratory Mining: Excavation (Pitting/ Trenching) | Cu m | 395 | 1673 | 100 | 167300 |
| 5 | Drilling (Coring & logging): (in 5 bore holes) | M | 1714 | 6780 | 500 | 3390000 |
| | Laboratory Studies: | | | | | |
| 6 | Sampling | | | | | |
| | a) Primary samples for Dolomite/ Limestone (Cao, MgO, LOI, Al & R2O3) | Nos. | 414 (76*5+110) | 2179 | 120 | 261480 |
| | b) Primary samples for Manganese (MnO, FeO, P2O5, S) | Nos. | 338 (76*3+110) | 1777 | 120 | 213240 |
| | c) Trench/ Pit samples for manganese(MnO, FeO, P2O5, S) | Nos. | 338 (76*3+110) | 1777 | 50 | 88850 |
| | d)Drill Core primary samples | | | | | |
| | i) Dolomite/ Limestone((Cao, MgO, LOI, Al & R2O3) | Nos. | 414 (76*5+110) | 2179 | 200 | 435800 |
| | ii) Manganese (MnO, FeO, P2O5, S) | Nos. | 338 (76*3+110) | 1777 | 50 | 88850 |
| 7 | Petrological Samples (Surface & BH samples) | | | | | |
| | a) Preparation and study of thin section | Nos. | 100 | 538 | 20 | 10760 |
| 8 | Specific Gravity determination: | | | | | |
| | a) For Dolomite & Limestone | Nos. | 32 | 188.5 | 5 | 943 |
| | b) For Manganese | Nos. | 32 | 188.5 | 5 | 943 |
| | | | | | Sub Total (Rs) | 8323070 |
| 9 | Report preparation (As per Mineral Evidence of Mineral content) Rule-2015 1.5% of Gross value or 120000/- whichever is more | Nos. | | | 1 | 120000 |
| | | | | | Total (Rs) | 8443070 |
| | ADD:GST @18% | | | | | 1519753 |
| | GRAND TOTAL (Rs) | | | | | 9962823 |

Annexure-5

Table 6.2 COST ESTIMATE FOR EXPLORATION (G-2) OF LIMESTONE, NAUBASTA-KOLAD BLOCK, TEHSIL: NAGOD; DISTRICT: SATNA; MADHYA PRADESH

| Sl. No. | Item of Work | Unit | Base | Financial Year (2017-18) | | | Financial Year (2018-19) | | | Total | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Rate | Exc.Rate | Qty. | Amount | Exc. Rate | Qty. | Amount | Qty | Amount |
| | | | 1.4.15 | (Rs) | | (Rs) | | | (Rs) | | (Rs) |
| A | DRILLING | | | | | | | | | | |
| 1 | Surface Drilling ( 2 Rigs) | m | 1714 | 6780 | 0 | 0 | 6780 | 2140 | 14509200 | 2140 | 14509200 |
| 2 | Transportation | m/L | 0.9 | 31 | 0 | 0 | 31 | 2000 | 62000 | 2000 | 62000 |
| 3 | Accomodation | One time / Drill | 160629 | 663715 | 0 | 0 | 663715 | 2 | 1327430 | 2 | 1327430 |
| 4 | Camp Setting / Winding | One month | 99809 | 244910 | 0 | 0 | 244910 | 4 | 979640 | 4 | 979640 |
| 5 | Road Making (Flat Terrain) | Km | 7800 | 19500 | 0 | 0 | 19500 | 5 | 97510 | 5 | 97510 |
| | Sub Total A | | | | | 0 | | | 16971080 | | 16971080 |
| B | GEOLOGICAL WORK | | | | | | | | | | |
| 1 | Survey Party Days ( 1 party) | day | 1190 | 5940 | 0 | 0 | 5940 | 120 | 712800 | 120 | 712800 |
| 2 | Geologist Party days (1 party) | day | 1541 | 7900 | 0 | 0 | 7900 | 150 | 1170300 | 150 | 1170300 |
| 3 | Core Sampling Party days(1 party) | day | 525 | 2500 | 0 | 0 | 2810 | 150 | 421350 | 150 | 421350 |
| | Sub-Total B | | | | | 0 | | | 2304450 | | 2304450 |
| C | LABORATORY STUDIES | | | | | | | | | | |
| a | Chemical Analysis | | | | | | | | | | |
| 1 | Primary / Check Samples | | | | | | | | | | |
| | i) for 6 radicals (CaO, MgO, $SiO_2$ , $Al_2O_3$, $Fe_2O_3$ & LOI) | Nos | 490 (75x5=110) | 2580 | 0 | 0 | 2580 | 3200 | 8076000 | 3200 | 8076000 |
| | ii) for 2 radicals $SO_3$ & $P_2O_5$ | Nos | 186 (76+110) | 972 | 0 | 0 | 972 | 200 | 194400 | 200 | 194400 |
| | iii) External Check Samples for 6 radicals(CaO, MgO ,$SiO_2$ , $Al_2O_3$ , $Fe_2O_3$ & LOI) | Nos | 490 (75x5=110) | 2580 | 0 | 0 | 2580 | 100 | 258000 | 100 | 258000 |
| 2 | Composite Samples | | | | | | | | | | |
| | i) for 10 radicals (CaO, MgO, $SiO_2$ , $Al_2O_3$ , $Fe_2O_3$ ,LOI, $SO_3$ , $P_2O_5$ ,MnO, $K_2O$, $Na_2O$) | Nos | 346 (76x11+110) | 4982 | 0 | 0 | 4982 | 250 | 1246050 | 250 | 1246050 |
| b | Physical Analysis | | | | | | | | | | |
| 1 | X-RD Studies on composite | Nos | 1137 | 5935 | 0 | 0 | 5935 | 33 | 196155 | 33 | 196155 |
| 2 | Trace element Studies**** (14 Element) (ICP-MS | Nos | | 4290 | 0 | 0 | 4820 | 33 | 161700 | 33 | 161700 |
| 3 | Preparation of thin section | Nos | 110 | 574 | 0 | 0 | 539 | 36 | 19830 | 36 | 19830 |
| 4 | Petrographic Studies | Nos | 228 | 1430 | 0 | 0 | 1430 | 36 | 50280 | 36 | 50280 |
| 5 | Specific Gravity determination | Nos | 22 | 168.5 | 0 | 0 | 168.5 | 36 | 6067.5 | 36 | 6067.5 |
| 6 | Transportation of bulk sample to IBM, Nagpur | Km | 8.8 | 31 | 0 | 0 | 31 | 1000 | 31000 | 1000 | 31000 |
| 7 | *Beneficiation Studies (IBM Lab ) | Nos | | 280900 | 0 | 0 | 280900 | 1 | 280900 | 1 | 280900 |
| | Sub Total C | | | | | 0 | | | 7927463.5 | | 8121063 |
| D | Preservation of Core | | | | | | | | | | |
| i | Oil Core boxes | Nos | | | | | 2000 | 535 | 1070000 | 535 | 1070000 |
| ii | Transportation of Core Boxes | Km | 8.8 | 31.0 | | 0 | 31 | 1000 | 31000 | 1000 | 31000 |
| | Sub-Total D | | | | | 0 | | | | | 1101000 |
| | Total A+B+C+D | | | | | 0 | | | 27180997.5 | | 28496196 |
| E | EXPLORATION REPORT - 1% of (A+B+C+D) or 175000 whichever is more | | | | | 0 | | 0 | 0 | 1 | 284964 |
| F | PEER REVIEW OF DGR (Lump Sum) | Nos | | | | 0 | 10000 | 1 | 10000 | 1 | 10000 |
| G | Environmental Studies | | | | | | | | | | |
| 1 | Satellite Imagery Study | Scene | 59697 | 467948.2 | 1 | 0 | 467948.2 | 1 | 467948.1999 | 1 | 467948 |
| 2 | Base line Data Collection | (10 km radius area) | 181273 | 694857.4 | 1 | 0 | 694857.4 | 1 | 694857.3992 | 1 | 694857 |
| 3 | Chemical Analysis | Nos | 237405** | 604478 | 1 | 0 | 604478 | 1 | 604478 | 1 | 604478 |
| 4 | Report Writing | Nos | 50000 | 50000 | 1 | 0 | 50000 | 1 | 50000 | 1 | 50000 |
| | Sub Total G | | | | | 0 | | | 1907283.599 | | 1907284 |
| H | ***Preparation of Proposal (Lump Sum) | | | | | | | | | | 280000 |
| | GRAND TOTAL A to H | | | | | 0 | | | 29804.081 | | 30083345 |
| | GST 18% | | | | | | | | | | 5874338 |
| | Grand Total ( with GST 18% | | | | | | | | | | 35943283 |
| | | | | | | Total | | | | | Says 359.429 Lakhs |

Note

1. Revised Rates of Promotional Work done by MECL on behalf of Govt. of India vide letter No. 37(1)/2006-M(I) dated 03/07/2014 and based on actual escalation as per RBI indices as on 31-03-2017 and the same has been considered for subsequent year.
2. Private/private rates have been considered as there is no rates for Limestone in Revised Rates of Promotional Work of MoM Schedule of Rates.
3. * IBM rates has been followed for beneficiation studies.
4. **Hiriyanaji Committee Rates with actual escalation as per RBI index as on 31.3.2017 and the same for subsequent year.
5. *** As approved in the 12th meeting of Technical Committee & in meeting of Executive Committe of NMET.
6. **** Rate has taken from Schedule of Charges of different activities of GSI as on 2014-15 and 40% escalation on the same has been considered for FY 2018-19.

Mineral Exploration and evaluation 18%(SAC Code 998342)

Annexure - 6

TABLE–7.2 Cost Estimate for detailed Exploration Proposal for Iron Ore in Rajampalayam Block, Namakkal

| SL. NO. | Item of Work | Unit | Base Rate 1.4.90 | Escalated rates (2018-19) (PHASE | | |
|---|---|---|---|---|---|---|
| | | | | Esc. Rate (Rs) | Qty. | Amount (Rs) |
| A | **DRILLING** | | | | | |
| 1 | Surface Drilling | | | | | |
| | a) Core Drilling (2 Drill)* | m | | 20,702 | 466 | 9,626,430 |
| 2 | Transportation | Km | 8.80 | 31 | 3,000 | 93,000 |
| 3 | Accomodation (One time/ Drill) | Nos | 185,925 | 663,715 | 1 | 663,715 |
| 4 | Camp Setting / Winding | - do- | 68,606 | 244,910 | 2 | 489,820 |
| 5 | Road Making (Hilly Terrain) | Km | 7,800 | 27,844 | 5 | 139,220 |
| | **Sub Total A** | | | | | **11,012,185** |
| B | **GEOLOGICAL WORK** | | | | | |
| 1 | Survey Party Days (1 party) | day | 1,180 | 5,840 | 90 | 525,600 |
| 2 | Geologist Party Days (1 party) | day | 1,541 | 7,802 | 120 | 936,240 |
| 3 | Core Sampling Party days (1 party) | day | 925 | 2,809 | 120 | 337,080 |
| 4 | Bulk Sampling Party Days | days | 2,566 | 13,439 | 30 | 403,170 |
| | **Sub-Total C** | | | | | **2,202,090** |
| C | **LABORATORY STUDIES** | | | | | |
| 1 | **Chemical Analysis** | | | | | |
| | i) Primary & Check samples | | | | | |
| | a. For 3 radical (Fe%, SiO2% & Al2O3%.) | Nos | 282 (110+76x2) | 1,374 | 250 | 343,500 |
| | b) Check Samples for 3 radical (Fe%, SiO2% & Al2O3% ) | Nos | 282 (110 +76x2) | 1,374 | 25 | 34,350 |
| | d) External Check Samples from NABL Labs for 3radical (Fe%, SiO2% & Al2O3% ) | Nos | 282 (110 +76x2) | 1,374 | 15 | 20,610 |
| | **ii) Composite Samples** | | | | | |
| | a) Composite Samples for 7 Radicals (Fe%, SiO2%, Al2O3%, P%, Mn%, S% & LOI%) | Nos | 566 (110 +76x6) | 2,982 | 45 | 134,190 |
| 2 | **Physical Analysis** | | | | | - |
| i) | a) X-RD Studies on composite | Nos | 1,137 | 5,605 | 10 | 56,050 |
| ii) | b) Specbroscopic studies (15 elements-Cd,Sn,W,Sb,Mi,Ce,Nb,Ba,La,Bi,Co & Ni | Nos | 1,173 | 5,388 | 10 | 53,880 |
| iii) | Preparation of thin section | Nos | 100 | 538 | 5 | 2,690 |
| iv) | Petrographic Studies | Nos | 228 | 1,436 | 5 | 7,180 |
| v) | Preparation of polished section | Nos | 100 | 538 | 5 | 2,690 |
| vi) | Mineragraphic Studies | Nos | 384 | 2,023 | 5 | 10,115 |
| vii) | Specific Gravity determination | Nos | 32 | 189 | 5 | 943 |
| | **Sub-Total C** | | | | | **666,198** |
| D | a) Core Preservation Charges in GI Sheets Core Boxes (@ RS 2000 Core Box GI 22 gauge) | Nos | 2,000 | 2,000 | 135 | 270,000 |
| | b) Transportation Charges of Core Boxes | Km | 9 | 31 | 400 | 12,400 |
| | **Sub-Total D** | | | | | **282,400** |
| | **Total A+B+C+D** | | | | | **14,162,873** |
| E | **GEOLOGICAL REPORT-1% of (A+B+C+D) or 175000 whichever is more** | | | | | **175,000** |
| F | **Peer Review Cost**** | **Nos** | | | | **10,000** |
| | **Grand Total : A to F** | | | | | **14,347,873** |
| | **GST 18%** | | | | | **2,582,617** |
| | **Grand Total : with GST 18%** | | | | | **16,930,490** |
| | | | | **Say Rs 169.30Lakhs** | | |

Note:

1. * DMG Karnataka Rates has been considered for drilling as rate for iron is not available in the schedule rate of MECL approved by MoM.
2. ** As per approval of 36th SCPP Technical and 8th Executive committee of NMET meeting.

Mineral Exploration and evaluation 18%(SAC Code: 998343)

Annexure-7

**Table-8.2 COST ESTIMATION FOR GENERAL EXPLORATION (G-2)**
**FOR BAUXITE IN THE SARAIPANI-DADAR BLOCK,**
**TEHSIL-PANDARIA, DISTRICT - KABIRDHAM, CHHATTISGARH**

| Sl. No. | Item of Work | Unit | Base | Financial Year (2017-18) | | | Financial Year (2018-19) | | | Total | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Rate | Esc.Rate | Qty. | Amount | Esc. Rate | Qty. | Amount | Qty | Amount |
| | | | 1.4.90 | (Rs) | | (Rs) | | | (Rs) | | (Rs) |
| A | DRILLING | | | | | | | | | | |
| | 1 Coring Drilling ( 1 Rigs) | m | 1714 | 6780 | 0 | 0 | 6780 | 280 | 1898400 | 280 | 1898400 |
| | 2 Transportation | Km | 8.5 | 31 | 0 | 0 | 31 | 750 | 23250 | 750 | 23250 |
| | 3 Accomodation | One time / Drill | 150829 | 663716 | 0 | 0 | 663716 | 1 | 663716 | 1 | 663716 |
| | 4 Camp Setting / Winding | Drill month | 68608 | 244910 | 0 | 0 | 244910 | 2 | 489820 | 2 | 489820 |
| | 5 Road Making (Hilly Terrain) | Km | 7800 | 27844 | | 0 | 27844 | 5 | 139220 | 5 | 139220 |
| | Sub Total A | | | | | | | | | 1038 | 3214406 |
| B | GEOLOGICAL WORK | | | | | | | | | | |
| | 1 Survey Party Days ( 1 party) | day | 1180 | 3940 | 0 | 0 | 3940 | 80 | 350400 | 90 | 350400 |
| | 2 Geologist Party days (1 parties) | day | 1541 | 7832 | 0 | 0 | 7832 | 80 | 702160 | 90 | 702160 |
| | 3 Core Sampling Party days(1 parties) | day | 535 | 2836 | 0 | 0 | 2836 | 80 | 252810 | 90 | 252810 |
| | Sub-Total B | | | | | | | | | 248 | 1305370 |
| C | LABORATORY STUDIES | | | | | | | | | | |
| a | Chemical Analysis | | | | | | | | | | |
| | 1 Primary + Check Samples | | | | | | | | | | |
| | i) for 5 radicals ($Al_2O_3$, $SiO_2$, $Fe_2O_3$, $TiO_2$, LOI ) | Nos | 490 (70x5+110) | 2580 | | 0 | 2580 | 200 | 516000 | 200 | 516000 |
| | ii) Internal Check Samples for 5 radicals ($Al_2O_3$, $SiO_2$, $Fe_2O_3$, $TiO_2$, LOI ) | Nos | 490 (70x5+110) | 2580 | | 0 | 2580 | 20 | 51600 | 20 | 51600 |
| | iii) External Check Samples for 5 radicals ($Al_2O_3$, $SiO_2$, $Fe_2O_3$, $TiO_2$, LOI ) | Nos | 490 (70x5+110) | 2580 | | 0 | 2580 | 10 | 25800 | 10 | 25800 |
| | ** iv) BEE assay by ICP MS (For ICP/MS Studies SEI rate (2014) has been considered ( 14 Elements) | Nos | 3380 | 4250 | | 0 | 4620 | 30 | 138600 | 30 | 138600 |
| | | | | | | | | | | | |
| | 2 Composite Samples | | | | | | | | | | |
| | 7 radicals ( $Al_2O_3$, $SiO_2$, $Fe_2O_3$, $TiO_2$, $V_2O_5$, $P_2O_5$, LOI ) | Nos | 555 (70x5+110) | 3962 | | 0 | 2962 | 40 | 118280 | 40 | 118280 |
| | i) for 14 radicals ( $Al_2O_3$, $SiO_2$, $Fe_2O_3$, $TiO_2$, $V_2O_5$, $P_2O_5$, LOI, MnO, MgO, CaO, $Na_2O$, $K_2O$, $SO_3$ and organic carbon) | Nos | 1098 (70x13+110) | 5798 | | 0 | 5798 | 10 | 57980 | 10 | 57980 |
| | * ii) Total Available Alumina & Reactive Silica | | | 6907 | | 0 | 6907 | 10 | 69070 | 10 | 69070 |
| b | Physical Analysis | | | | | | | | | | |
| | 1 X-RD Studies on composite | Nos | 1137 | 6605 | | 0 | 3805 | 10 | 38050 | 10 | 38050 |
| | 2 Trace element Study by ICP/MS** | Nos | | 4210 | | 0 | 4200 | 10 | 42000 | 10 | 42000 |
| | 3 Preparation of thin section | Nos | 100 | 538 | | 0 | 538 | 10 | 5380 | 10 | 5380 |
| | 4 Petrographic Studies | Nos | 228 | 1436 | | 0 | 1436 | 10 | 14360 | 10 | 14360 |
| | 5 Preparation of polished section | Nos | 100 | 538 | | 0 | 538 | 10 | 5380 | 10 | 5380 |
| | 6 Mineragraphic Studies | Nos | 364 | 2023 | | 0 | 2023 | 10 | 20230 | 10 | 20230 |
| | 7 Specific Gravity & Porosity determination | Nos | 54 | 377 | | 0 | 377 | 15 | 5655 | 15 | 5655 |
| | Sub-Total C | | | | | | | | | 365 | 1128880 |
| D | Preservation of Core | | | | | | | | | | |
| | i) Core boxes | | | | | | 2000 | 70 | 140000 | 70 | 140000 |
| | ii) Transportation of Core Boxes | Km | 8.5 | 31.0 | | 0 | 31 | 750 | 23250 | 750 | 23250 |
| | Sub-Total D | | | | | | | | | | 163250 |
| | Total A+B+C+D | | | | | | | | | | 6811630 |
| E | EXPLORATION REPORT - 1.5% of (A+B+C+D) or 120000 whichever is more | | | | | | | | | | 120000 |
| F | PREPARATION OF PROPOSAL*** | | | | | | | | | | 200000 |
| G | PEER REVIEW OF DGR (Lump Sum) | Nos | - | - | | | | | | | 10000 |
| | GRAND TOTAL A to F | | | | | | | | | | 6321630 |
| H | GST @ 18 % OF COST | | | | | | | | | | 1137893 |
| | | | | | | | Total | | | | 7459523 |
| | | | | | | | | | | Say 74.595 Lakhs | |

Note:

1. Revised Rates of Promulgated Work done by MECL on behalf of Govt. of India vide letter No. 37(1)/2006-M ( dated- 02/07/2014 and based on actual escalation as per RBI indices as on 31-03-2017 and same has been considered for subsequent year.
2. ** Rate has taken from Schedule of Charges of different activities of GSI as on 2014-15 and 40% escalation on the same has been considered for FY 2018-19.
3. *The actual rate charged by concerned laboratory for analysis of Total Alumina & Reactive Silica will be claimed.
4. *** As approved in the 12th meeting of Technical Committee & in meeting of Executive Committe of NMET.