

Proposal for Procurement of Sample Processing Units for Establishment of Rock Laboratory in the State Units and Regional offices of Geological Survey of India, through NMET fund

Intending division:- Chemical Division, CHQ.

1. Introduction:-

The Geological Survey of India (GSI), being the premier geoscientific organisation of the nation, has been engaged in mineral exploration and geoscientific investigations for over 175 years. In the present context, with the growing national focus on the **Critical Mineral Mission, energy transition, and the time-bound generation of auctionable mineral blocks**, there is an urgent need to strengthen the infrastructure for sample processing across all State Units and Regional Offices of GSI.

With the ever-increasing demand for critical and other important minerals and the concurrent rise in the number of exploration programmes, there is a pressing requirement for **basic sample processing facilities to fast-track laboratory work** and enable quick analysis. Each year, several M-I, M-II, and M-IV programmes are executed by various State Units, generating a very large volume of samples from each FSP item. This has become a significant challenge for officers and the establishment in making appropriate arrangements to prepare samples under controlled conditions for geochemical analyses of major oxides, trace elements, and rare earth elements.

The Chemical Division of GSI is presently equipped with state-of-the-art instruments such as WD-XRF, ICP-MS, AAS, DMA, etc., which are fully engaged in meeting the analytical demands of projects across India. These instruments are already functioning at their optimum capacity to cope with the increasing number of samples generated from a growing coverage of toposheets, with the constant pressure of delivering analytical results within targeted timeframes for project reports. For chemical analysis reviewing these instrument pulverisation **of geological samples upto -200 mesh size is a mandatory prerequisite** for homogenisation and analytical uniformity. The rising scarcity of labour for manual pulverisation in field areas has further necessitated mechanisation, as manual methods not only prolong the process but also increase the risk of contamination and human error.

In this context, Procurement of Sample Processing Units for establishment of new mechanised Rock Processing Laboratories in State Units and Regional Offices of GSI in addition to existing ones is proposed as a critical step towards ensuring faster and more reliable sample processing. These facilities will reduce sample backlog, shorten report timelines, and enhance efficiency in field-lab integration, thereby ensuring that exploration projects are completed on schedule and auctionable blocks are generated in a timely manner for the States.

2. Objective: - Proposal for Procurement of Sample Processing Units for Establishment of mechanized Rock processing labs throughout GSI's State Unit and Region offices.

3. Rationale for submitting the proposal for procurement:-

GSI has taken up 600 projects in India in the present Field Season 2025-26. This include more than 500 project of M-I baseline Data Generation & M-II projects of India has also initiated the critical mission programme & GSI is poised to take up more than 600 project which is likely to generate around 10 Lakh samples.

The following table shows the approximate samples analyzed by various regions of GSI on an average in a year.

Region	CR	ER	NR	NER	SR	WR	CCL
Capacity of analyzing samples	1.75Lakhs	1.20 Lakhs	80,000	60,000	2.25 Lakhs	1 Lakh	60,000

The initial preparation of samples involves physical processing of rock samples involving cleaning and drying of relatively fresh samples (5-10 Kg) after removing weathered / altered portions. These samples are hammered to fist size (10-15cm) under clean environment followed by crushing where the samples will be reduced to < 10mm size fractions by Jaw Crusher. The sample thus crushed are allowed to pass through a disc mill where the sample are further reduced to 100-120 mesh size. This fraction of sample is thoroughly homogenised by coning and quartering technique.

The sample thus obtained is put to further homogenization by reducing it to -200 mesh (< 0.075mm) size in steps by Planetary Ball mill or Vibratory disc mill to make it a true representative sample and finally collected in pre cleaned sample bottles with proper labelling for chemical analyses by wet classical and different instrumental methods.

The pulverisation and sieving of samples to -200 mesh size includes steps involving cleaning of bowls, balls & sieves after completion to avoid any contamination, and the entire process takes around 2 hours on an average for a batch of four samples. In totality approximately around 16-20 samples are possible to pulverise in a day.

Thus, the time taken for preparation of each of the sample is quite large owing to paucity of crushing/ pulverizing equipment. If the number is augmented, GSI will be able to analyses more samples than it is presently analyzing. With this objective, it is proposed to enhance the facilities of chemical analysis of GSI. The addition of new equipment's in state units across India will take the load of sample preparation off the regional head offices. With the sharing of load of preparation of samples by state units, the regional labs will be in a suitable position to produce more analysis in less time. This will also improve machine efficiency of various machines available in different labs.

i) List of Existing Labs across India:-

Serial No.	Laboratory	Serial No.	Laboratory
1	CCL, CHQ, Kolkata	11	SU Gujrat, Gandhinagar
2	ERO, Kolkata	12	CRO, Nagpur
3	SU Odisha, Bhubaneswar	13	SU M P & Chhattisgarh, Bhopal
4	SU Bihar & Jharkhand, Patna	14	SU Maharashtra, Pune
5	M & CSD, Kolkata	15	SRO, Hyderabad
6	NER, Shillong	16	SU T N & Puducherry, Chennai
7	NRO, Lucknow	17	SU Kerala, Thiruvananthapuram
8	SU .P,H & H.P., Chandigarh	18	SU Karnataka and Goa, Bengaluru
9	NCEGR, Faridabad	19	M & CSD, Visakhapatnam
10	WRO, Jaipur	20	M & CSD, Mangaluru

ii) List of Instruments available in these labs:-

Sl. No	Name of The Laboratory	XRF (24 elements)	ICPMS (23+9 elements)	AAS (Base metals & other elements)	DMA (1 elements)
1	CCL, CHQ, Kolkata	1	1	2	1
2	ERO, Kolkata	2	2	3	1
3	SU Odisha, Bhubaneswar	1	1	0	0
4	NER, Shillong	1	0	1	1
5	NCEGR, Faridabad	1	0	1	0
6	WRO, Jaipur	2	1	3	1
7	CRO, Nagpur	1	2	3	1
8	SU Maharashtra, Pune	1	0	1	0
9	SRO, Hyderabad	1	2	4	2
10	SU T N & Po'cherry, Chennai	1	0	2	0
11	M & CSD, Mangalore	1	0	1	0
12	NR, Lucknow	1	1	1	1
13	SU: Karnataka, Bengaluru	0	1	3	0
14	M & CSD, Visakhapatnam	0	1	0	0
15	SU: Chandigarh	0	0	1	0
16	SU: Gandhinagar	0	0	1	0
17	SU: Bhopal	0	0	1	0

18	M & CSD Kolkata	0	0	0	0
19	SU: Thiruvanthapuram	0	0	2	0
20	SU: Patna	0	1	1	1
	Total	14	13	31	9

iii) Sample analyzed by GSI in last four years: -

Time Period	Sample generated (including 10% CRM and duplicate samples)
January 2024 to December 2024	8,89,837
January 2023 to December 2023	10,62,798
January 2022 to December 2022	8,87,055
January 2021 to December 2021	5,65,554

iv) Workload of samples for this year:-

Sl. No.	Type of Samples	No. of Samples
1	NGCM Other Packages	41605
2	Non NGCM Samples	161792
3	NGCM A& H samples	79253
4	Other Packages (B, D, E, F, G, J)	215420
5	Fast Track Non NGCM	399000
	Approximate no. of samples to be generated	897070

4) Existing machinery position in Chemical Labs and State Unit/ Regional offices of GSI:-

A) Chemical Labs

At present, the Chemical Division, GSI, including its central chemical lab, CHQ and Regional and State Unit laboratories, possesses 36 pulverisers for processing geological samples to -200 mesh size. The details of availability are given in **Table 1**. However, given the sharp rise in exploration programmes under FSP, NMET, and other national initiatives, the present inventory is inadequate to match the annual workload. The requirement of additional instrument as projected by the Chemical Laboratories is presented in **Table 2**.

Table 1: Existing Machine position:

Sl.No	Name of Region	No. of Pulverize
1	Eastern Region	7
2	NER, Shillong	4
3	Northern Region	3
4	Western Region	5
5	Central Region	9
6	Southern Region	8
8	Total	36

Table 2: Requirement as submitted by different Chemical Laboratories with state wise distribution

Sl. No.	Region (including State Units)	Planetary Ball Mill (PBM) with 4 agate & 4 tungsten carbide bowls of capacity 500 ml	Vibratory Disk Mill with 4 tungsten carbide line bowls of capacity 100 ml	Sieve Shaker	Jaw Crusher
1	NR, Chandigarh	0	0	0	01
2	NCEGR, Faridabad	0	0	01	0
3	WR, Jaipur	0	0	02	0
4	SU: Karnataka & Goa	02	01	02	0
5	SU: Chennai	01	0	0	0
6	SR, Hyderabad	02	0	0	0
7	ER, BBSR, Odisha	01	0	01	0
8	CR, Nagpur	03	03	04	01
9	SU: MH Pune	0	0	0	01
10	NER, Shillong	0	0	01	0
	Total	Nine (09)	Four (4)	Eleven (11)	Three (03)

B) State Units/ Regional Headquarters and NCEGR

Across the various State Units, Regional Headquarters, and the three NCEGR laboratories, GSI currently operates 10 Jaw Crushers, 2 Disk Mills, 4 Vibratory Disk Mills, 11 Planetary Ball Mills, 11 Sieve Shakers, 12 Electric Ovens, 2 Riffle Splitters/Polygonal Blenders, 30 Rock Cutters/Rock Saws, and 4 Hydraulic Core Splitters. The distribution of this machinery is detailed in **Table 3**. Despite this, many State Units do not have the complete set of instruments required to establish a fully mechanized pulverisation unit. The available inventory is enclosed in **Annexure I**, while the projected region-wise requirement is provided in **Table 4**.

Table 3:- Region wise distribution instruments of GSI

Region wise distribution of Sample Preparation Units	Type of Sample Preparation instruments	NR 4- SU 1- RHQ 1 NCEGR	SR 5- SU 1- RHQ 1- NCEGR	CR 5- SU 1- RHQ	ER 4- SU 1- RHQ 1-CPL 1- NCEGR	WR 2- SU 1-RHQ	NER 6-SU 1-RHQ	Total
	Jaw Crusher	2	5	0	2	0	1	10
	Disk Mill	0	1	1	0	0	0	2
	VDM	1	1	0	2	0	0	4
	PBM	1	7	1	0	0	2	11
	SS	1	5	0	3	0	2	11
	EHO	2	4	3	0	1	1	11
	PB/ RS	0	1	0	0	0	0	1
	RC	4	3	13	4	2	4	30
	HyCS	0	3	0	0	0	1	4

The Geological Survey of India, has been tasked with accelerating the pace of mineral exploration to meet the national requirements and time-bound auctioning of mineral blocks, from the mineral rich provinces of India.

India's mineral endowment is concentrated within several established metallogenic provinces:

- Western India – The Proterozoic Aravalli–Delhi Fold Belt and adjoining regions host world-class deposits of lead-zinc (Zawar, Rampura-Agucha, Rajpura-Dariba), copper, gold, and associated critical minerals. Rajasthan also remains a stronghold for industrial minerals like limestone and phosphorite.
- Central India – The Bastar, Singhbhum–Orissa, and adjoining cratonic regions form a premier metallogenic province enriched in iron ore, manganese, bauxite, copper, uranium, PGE, and rare earth elements. These terrains have consistently provided bulk commodities and are increasingly significant for critical mineral exploration.
- Southern India – The Dharwar Craton, Cuddapah and Kaladgi basins, and granulite belts of Tamil Nadu and Kerala are globally recognised for their gold (Kolar, Hutti), base metals, PGE, rare earths, and beach placer deposits of titanium, zircon, and monazite.

Additional requirement is there for the mineral rich states viz. Odhisa, Jharkhand, Rajasthan, Chhattisgarh, Karnataka etc and the less explored Vindhyan regions. Coupled with the Shillong Plateau and North-Eastern Region (strategic for base metals, and REEs), these metallogenic provinces represent the backbone of India's mineral wealth.

The rising tempo of exploration in these regions has resulted in sharp escalation of sample generation, and the absence of complete mechanised pulverisation setups in many State Units is becoming a major bottleneck. Inadequate equipment slows down sample preparation, adds to analytical backlogs, and delays the submission of exploration reports—directly impacting the timely generation of auctionable blocks.

Strengthening Sample Preparation Unit infrastructure is, therefore, not merely a logistical need but a strategic requirement to deliver quality analytical results within strict timelines. Establishment of complete pulverisation units will bridge critical infrastructure gaps, distribute workload evenly, and ensure that the geoscientific data generated by GSI continues to meet the growing demands of national mineral development

Table 4:- Region wise requirement of GSI

Pulverisation instrument	NR 4- SU 1- RHQ 1 NCEGR	SR 5- SU 1- RHQ 1- NCEGR	CR 5- SU 1- RHQ	ER 4- SU 1- RHQ 1-CPL 1- NCEGR	WR 2- SU 1- RHQ	NER 6-SU 1- RHQ	Total
Jaw Crusher	4	2	4	5	3	3	21
Disk Mill	3	5	3	3	2	2	18
VCM	3	1	1	3	1	1	10
PBM	5	3	4	5	3	3	23
SS	5	2	4	4	2	1	18
EHO	5	3	3	5	2	3	21
PB	6	5	4	5	3	3	26
RS	6	5	8	5	3	3	30
RC	3	4	3	2	2	1	15
HyCS manual	4	7	4	7	5	4	31
HyCS automated	1	1	1	1	1	1	6

Total requirement for GSI is projected as Jaw crushers- 24 No, Disk Mill- 18 No, Vibratory Cup mill- 14 No, Planetary Ball Mill- 32 No, Seive Shaker- 29 No, Electric oven- 21, Polygonal blender/ riffle splitter- 52 No, Rock cutter/Rock saw-45 No and Hydraulic Core splitter manual- 31 No., Hydraulic core splitter automated- 7 No.

Table 5:-The total requirement of the Sample Preparation Units including Chemical laboratories.

Region wise requirement of Sample Preparation Units	Pulverisation instrument	NR 4- SU 1- RHQ 1 NCEGR	SR 5- SU 1- RHQ 1- NCEGR	CR 5- SU 1- RHQ	ER 4- SU 1- RHQ 1-CPL 1- NCEGR	WR 2- SU 1- RHQ	NE R 6- SU 1- RH Q	Chemical Division requirement	Total
	Jaw Crusher	4	2	4	5	3	3	3	24
	Disk Mill	3	5	3	3	2	2	0	18
	VCM	3	1	1	3	1	1	4	14
	PBM	5	3	4	5	3	3	9	32
	SS	5	2	4	4	2	1	11	29
	EHO	5	3	3	5	2	3	0	21
	PB	6	5	4	5	3	3	0	26
	Riffle splitter	6	5	4	5	3	3	0	26

RS	6	5	8	5	3	3	0	30
RC	3	4	3	2	2	1	0	15
HyCS manual	4	7	4	7	5	4	0	31
HyCS automated	1	1	1	1	1	1	1	7

5) Structure of the Pulverization/ Sample Preparation unit:-

With GSI looking forward to expand its mineral prospecting activities, modernisation of its sample processing units become essential to cater to the growing demand for chemical analysis of geological samples for various minerals. A well-equipped and fully mechanised rock lab for generation of geological samples is a necessity to ensure a more efficient setup in terms of time, money and reduction of human error in a controlled environment. All of the instruments mentioned in this proposal will in a workflow combination ensure the fundamental basic framework for an efficient sample processing unit. This will in turn strengthen the Petrological and Chemical labs for which this procurement is being made.

The major types of geological samples being submitted for analysis are specimens of hard rock samples collected as Bed rock samples, Pit and trench samples and rock chips from channel and groove samples. Other than this there is hard rock core samples that are generated through borehole drilling. Sediments like soil, stream sediment and regolith also needs some pulverization before chemical analysis. The requirements for instruments for the processing of these samples can be generally categorized into three heads

- a) Prepping instrument requirements
- b) Mechanized pulverization instrument requirements
- c) Pulverized sample processing instrument requirement

The details of requirements in each of these categories are discussed below.

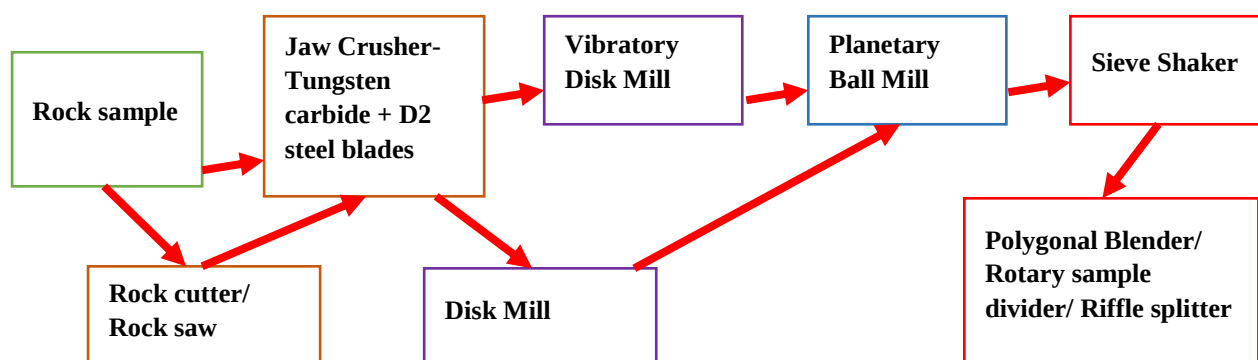
i) Description of Equipment & its utility: -

A- Prepping instrument- 1) A rock cutter/ rock saw is a useful device for trimming the specimen to desirable size or weight before being fed into a pulverizer. The cutter has diamond blades which helps to cut through rocks. 2) Hydraulic splitters- for the processing of core samples, the mineralized zone is demarcated and the core is split to half and quarter fragments as per the requirement. Employing hydraulic splitters ensure less core loss and even cutting of the cores. Hydraulic splitters also require less time for splitting in comparison to the conventional manual core splitters.

B- Mechanized pulverization instrument- 3) Jaw Crusher- The rock samples are further reduced to <10 mm size fractions by the Jaw crusher. D2 hardened steel crushing blades and Tungsten Carbide blades ensure the effective pulverisation of the rock samples and considerably reducing the processing time. 4) Disk mill- Disk mill is a versatile pulverisation device, which can give a fine or coarse output as per requirement. In case of normal pulverisation the diskmill functions to further reduce the sample size of the sample from the jaw crusher before being fed into the Planetary ball mill. The Disk mill can also be utilised

for providing coarser output as required for zircon separation used for Geochronological studies. The Disk mill is also more efficient than the Jaw crusher for pulverisation of soft rocks (schists, phyllites etc.) 5) Vibratory Disk mill- Uses high-frequency vibrations to crush samples between a grinding puck and a ring/cup. It is the primary instrument used to further pulverise the sample from the Jaw crusher. The VDM can reduce the sample size upto -100 um and ensure homogenous grinding of hard and soft components of a rock. 6) Planetary Ball mill- The planetary ball mill does the final pulverisation of the sample reducing it to very fine fraction less than -200 mesh (<0.075mm) which is used for chemical analysis.

C) Pulverized sample processing instrument- 7) Sieve shakers- A mechanical device used to separate particles by size through a stack of sieves with progressively smaller mesh openings. Used in quality control for the pulverization process- ensuring proper pulverization. 8) Polygonal blenders/ Desktop Rotary sample divider/ Riffle splitters- a polygonal blender is a customized devise used to blend a powdered sample, ensuring the proper homogenization of the sample. This is more efficient than the conventional coning and quartering methods and reduces the human error. A rotary sample divider ensures the homogenous splitting of samples while taking less time in comparison to the conventional coning and quartering method. A riffle splitter though not as precise as a rotary sample divider is effective for splitting of bulk samples.



6) Requirement and justification:-

The present inventory of these instruments across GSI's Chemical Laboratories, State Units, and Regional Offices is inadequate to meet the escalating workload. During the last five years, the number of FSP items and associated sample generation has increased significantly due to enhanced **Field Season Programme (FSP) mandates, NMET-funded projects, and Operational Business Targets (OBT)**. This trend is expected to intensify further under the upcoming Five-Year Plan, with added emphasis on the **Critical Mineral Mission and energy transition-related exploration programmes**. Mineral-rich belts in Rajasthan, Odisha, Chhattisgarh, Jharkhand, Karnataka, Andhra Pradesh, Tamil Nadu, and the North-Eastern Region are already generating very large sample volumes from deposits of base metals, iron, manganese, bauxite, gold, REE, uranium, and PGE. Existing pulverisation infrastructure is functioning at peak capacity, resulting in backlogs and delays in submission of analytical results.

The additional equipment projected in **Tables 4 and 5** has thus been determined after factoring in:

- The steady increase in **sample generation trends** during the past five years,
- The anticipated workload from ongoing and forthcoming **FSP, OBT, and NMET projects**, and
- The necessity of **region-specific strengthening** based on mineral endowment and geological significance.

The establishment of complete pulverisation units will directly support measurable outcomes: minimisation of backlogs, assurance of uniform sample quality, and reduction in project report timelines. Further, in-built provisions for preventive maintenance, calibration, and operator training will ensure sustainable operation of these facilities with reduced downtime.

In conclusion, the procurement of pulverisers and allied instruments as detailed in **Tables 4 and 5** is both justified and urgently required. It will enable timely and high-quality sample processing, strengthen field–lab integration, and ensure the delivery of exploration reports within stipulated schedules, thereby facilitating the **time-bound generation of auctionable mineral blocks** in line with national priorities.

The proposed procurement represents a decisive step towards creating a uniform standard of sample processing across State Units and Regional Offices. A mechanised system ensures reproducibility and accuracy, which are fundamental to maintaining the credibility of analytical results forming the basis of mineral resource assessment. By minimising dependence on manual methods, it also safeguards data integrity and provides a consistent quality benchmark for all laboratories under GSI.

In addition, the envisaged Rock Laboratories will support capacity building by providing an improved training platform for officers and technical staff. Exposure to modern mechanised systems will enable them to acquire advanced skills in sample preparation and handling, which in turn will contribute to better utilisation of downstream analytical facilities. The proposed infrastructure will thus have a multiplier effect—strengthening both manpower development and scientific delivery.

Finally, the justification rests on the long-term sustainability of GSI’s exploration mandate. As exploration programmes expand into new mineral provinces and increasingly complex geological terrains, the demand for high-quality, contamination-free, and timely processed samples will grow exponentially. Establishing well-equipped Rock Laboratories across the organisation will secure this capability, ensuring that GSI remains fully prepared to deliver on national exploration targets in a manner that is efficient, dependable, and future-ready.

7. Timeline of requirement:

The instruments may be procured within 18 months from the time of approval of the project

8. Quotation & Expenditure:

Based on budgetary estimate/ last procurement price /market survey the estimated cost of instruments/ equipment has been estimated to be approximately Rs. 14.25 Cr including GST with standard warranty.

Table 6: Unit price of instruments and fund requirement

Instrument	Unit cost in Rs	Requirement	Total cost with 18% GST
Jaw Crusher	15,00,000.00	24	3,60,00,000
Disk Mill	3,78,780.00	18	68,18,040
VCM	9,45,180.00	14	1,32,32,520
PBM	14,09,620.00	32	4,51,07,840
SS	2,70,220.00	29	78,36,380
EHO	240000.00	21	50,40,000
PB	1,50,000.00	26	39,00,000
Riffle splitter	50,000.00	26	13,00,000
RS	2,67,860.00	30	80,35,800
RC	1,40,420.00	15	21,06,300
HyCS manual	3,18,600.00	31	98,76,600
HyCS automated	4,70,000.00	7	32,90,000
Total Cost inclusive of 18% GST with standard warranty			14,25,43,480

9) Reasonability of price:

As per the quotes received from various vendors and procurements made recently by the department the following price projection is made. GSI, SR has procured one PBM & Sieve Shaker for Rs. 43,35,261/- (Rupees Forty-three lakh thirty-five thousand two hundred sixty-one only) through GeM in May-2022. Similarly, GSI, CR, Nagpur has procured one VCM for Rs.16, 75,769/- in Mar-2020. From these previous procurements/ quotes from vendors / market survey, the estimated cost of the present procurement cost has been established.

10) Technical Specifications:

The technical specification of various pulverisation/sample preparation instruments are given in Annexure-I.

11). Reason for submitting the proposal to Ministry:

The estimated cost for procurement of instruments as mentioned above in Table-6 is **Rs. 14,25,43,480 (Rupees fourteen crore twenty five lakhs forty three thousand and four hundred and eighty) including GST with standard warranty**. The sanctioning power for this procurement lies well within the delegated financial power of Director General, GSI as per the delegation of financial power of Director General vide Ministry of Mines office order no. F. No.18/1/2016-M.II dated 22.11.2016. However, considering the shortage of funds under ME head it would be reasonable to procure the instruments with the NMET fund. Hence the consolidated proposal is being submitted to NMET, Ministry of Mines for consideration in TCC and EC for administrative approval and financial sanction.

General Specifications of pulverisation devices:**1. Vibratory Cup Mill****Purpose:**

To pulverize approximately 100 grams of geological samples like Rock, Bauxite, Iron Ores, Granite, Coal, Limestone, Dolomite, Corundum, Graphite etc., 4 (Four) samples at a time.

Brief Description:

The 4 Tungsten Carbide/ D2 hardened steel/ Augate lined bowls are placed on a vibrating table and are clamped together with a common clamping system. A rotating unbalance load creates the necessary vibrations to affect the rapid grinding.

The 100 ml Tungsten Carbide lined bowl set consists of

- a. Tungsten Carbide Lined Bowl
- b. Hardened Steel lined Bowl
- c. Hammer and
- d. Lid

Technical Specification:

Name of the Equipment:	4 Bowl Vibratory Cup Mill
Use full Capacity of each bowl:	100gm of Geological samples per bowl 4 geological sample can be pulverized at a time
No of Grinding station:	4
Overall capacity of each bowl:	100 ml
Feed size :	- 3mm
Output size:	-75 microns (200 mesh)
Grinding elements :	Bowl + Hammer + Lid + Seal 'O' Ring
Grinding time :	The grinding can be set between 5 sec to 10 minutes digitally according to the nature of the sample
Power:	3 Phase 415V AC, 50HZ with Neutral + Earthing.
Power Supply Pre-Requisites:	4 pole, 10 amps MCB with for installation industrial plug and socket
Motor:	2 HP (1.5 KW) with 3 Phase, 50 Hz.
<u>Other Features</u>	) The unit is floor mounted and free from Vibration & noise. The container when clamped with lid becomes 100 % leak proof.) operators need to feed approximately 50 to 60 grams of sample in each bowl and load all the 4 bowls with lid and O ring at a time on the machine. After loading the bowls operator needs to clamp all

	the 4 bowls by a common clamping system provided.
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2) General Specification of Sieve Shaker:

Parameters	GSI requirements
Type	Combined sieving function of horizontal shaking and vertical vibration
Type of mounting	Floor mounting
Sieve	SS Sieve with Brass frame of 200 mm diameter NB: Sieve of Different mesh size (-120 & -200) as per ASTM
Sieving set(1 sieve+ 1 collector)	8 set
Compatibility	With 200 mm dia. Sieves
Capacity/ Sample mass	200-250 grams per batch
Sieving particle size	-200 mesh size
Timer facility	Suitable timer facility should be provided
Safety features	Adequate safety features for the Operator and the instrument with respect to electrical and other possible hazards.
Dust Free	Dust tight design
Motor	Compatible motor
Power Supply Requirement	230 VAC/ 1 phase +/- 15%, 50/60 Hz
Cleaning accessory	Cleaning kit/accessory should be provided for fast and effective cleaning of sieves.

3) General specifications of Planetary Ball Mill

1	Description: Planetary ball mill should be useful for mixing, fine grinding and small sample preparation (through impact/friction action) for geological samples. The equipment should meet with highest degree of fineness, extremely high centrifugal forces resulting in very high pulverization energy & short grinding times, high efficiency and low noise.
2	TYPE: It should be is a robust Floor Mounted type model or suitable to stand on floor with workable height having 04 grinding station with maximum capacity of 500 ml each

3	APPLICATION FOR: Suitable to pulverizing, mixing, homogenizing & colloidal milling of Rocks, Soil, Sediments, Ores, Minerals, Metal Oxides, quartz, semi-precious stones, and all types of geological materials.
4	FEED MATERIAL SIZE & TYPES: Suitable for soft, hard, brittle, fibrous& rocky material either dry or wet with feed particle size less than 10 mm.
5	FINAL FINENESS: (-)200 mesh or better.
6	WHEEL/ ROTATIONAL SPEED: Having Rotational speed of main disk 50-400 rpm or more
7	TYPE OF GRINDING JARS: Clamping devise to tight the Agate Type Jar (Bowl) with safety mechanism with optional aeration covers. Each Jar (Bowl should be provided with Agate having high quality thick stainless-steel casing/ jacket with provision of ‘O’ rings. Jars should have embedded distinct identification marks for each.
8	SETTING OF GRINDING TIME: Digital Type, 01 Seconds to 99:59:59 Hrs with interval and pause facility.
9	AGATE&TUNGSTENBALL & BOWL: Para a) 04 Nos. of Bowls/ Jars with lid of the capacity 500 ml each and 500 Nos. of Agate Balls (100 Nos. of 10-mm, 100 Nos. of 16/15 mm and 300 Nos. of 20 mm dia) will be supplied with each PBM. The Agate purity should be of the best quality having minimum 99.9% of SiO ₂ with free from all the trace metals/contaminations (with provision of proper material of constitution certificate at the time of supply Para b) Similarlaly 04 Nos of Tungsten carbide Bowls/Jars with lid of the capacity 500 ml each and 500 Nos. of Tungsten carbide Balls (100 Nos. of 10-mm, 100 Nos. of 16/15 mm and 300 Nos. of 20 mm dia) will be supplied with each PBM. The Tungeten purity should be 94/06 or 88/12 % ratio of Tungsten carbide / Cobalt with with free from all the trace metals/contaminations (with provision of proper material of constitution certificate at the time of supply.
10	CONTROL PANEL: It should contain the feature of (a) MCB Power Isolation, (b) Start/ OFF Switch, (c) Provision for forward and reverse control, (d) Digital Display to show the speed (e)Overload, Heat, emergency & short circuit protection.
11	CONSUMABLES: Additional 10 sets of all the consumables including ‘O’ Rings (except Bowl & Ball) will be supplied free of cost with each PBM.
12	SYSTEM POWER REQUIREMENTS: (i)1.5 KW or above motor power (+/- 10%), 50/60 Hz (+/- 1%), Single phase AC operating. (ii)A suitable stabilizer should also be provided with each PBM to avoid the fluctuation in power, if any

13	CERTIFICATIONS: Designed and tested to be in compliance with the safety requirements for laboratory instruments. The instrument is developed and produced in accordance with requisite protection code which is a suitable safety provision as per Indian safety norms.
14	OVERALL SIZE: Compact in size.
General Terms and Conditions	
15	WARRANTY: There will be mandatorily Three (03) years standard onsite warranty (i.e inclusive in rates) from the date of installation & commissioning certificate issued by the GSI. The supplier must enter into CAMC just after expiration of three years warranty on further annual payment basis. The terms & conditions of the mandatory warrantee will be as under: a) During warrantee of the instrument, the firm will provide 02 preventive maintenance & unlimited corrective maintenance (as per the requirements) on yearly basis. b) The scope of warranty must include main instrument with all the associated & attached systems supplied with the PBM. It shall be sole responsibility of the firm to execute one point solution scheme under the warrantee along with main instrument. c) Firm will respond within 24 hours during the breakdown calls & total breakdown time should not exceed more than 03 working days at single instance. d) Total breakdown time/days will also be compensated by the firm by enhancing the time limit of warranty accordingly. e) If the breakdown time is more than the specified limit, GSI may impose the loss & damages (L/D) as per the extent of rules subject to rejection of the submitted justification.
16	CAMC OF THE INSTRUMENT: (i)After the successful completion of warranty, the firm will be abided by entering in to comprehensive annual maintenance contract for at least next 07 years after expiry of warranty and the supplier shall be responsible for supply of all sorts of spares including the consumables during the period to ensure the smooth functioning of PBM & all the associated systems. (ii)Rates of the CAMC for next three years will be disclosed & computed for calculation purpose only to determine the reasonability of rates at the time of tender evaluation.
17	INSTALLATION & COMMISSIONING: Installation & commissioning at site with all the requisite pre-installation requirements/expenditures will be borne by the supplier and must be inclusive in quoted rates.
18	TRAINING: (a)03 working days on site training (application-based training with routine maintenance schedule) should also be arranged after the successful installation &

	commissioning of the instrument. b) All expenditures related to the training will be borne by supplier.
19	IMPORTANT NOTE: a) Vendors must state in unequivocal terms in a comparative statement whether their tender specifications satisfy the GSI specification in each term or the deviations should be indicated failing which their offer may be ignored. b) The vendor should be fully responsible for the manufacturer's warranty in respect of proper design, quality and workmanship of all the equipment accessories etc. covered by the tender. d) Company should be willing to support for minimum period of 10 years with guaranteed supply of spares and adequate servicing of the instrument. e) All specifications set by the bidder should be supported by the printed literature from the original manufacturer. The name, make, model, part no. etc. of the store should be mentioned. g) Installation, calibration, standardization and in house training should be organized at free of cost. h) The bidder must have their own office setup & well-trained operation/application experts/ maintenance engineers located in nearby locations to give prompt service & maintenance support.

4. Technical Specifications for Jaw Crusher

1. Crushing materials Hardness of rock up to 8 Mohs (Corundum) and Medium, Hard, Brittle, Tough.
2. Mounting Type Floor Mounting without any vibration during the crushing process. Ant vibration mat is compulsory.
3. Grinding Chamber Grinding chamber should be equipped with an anti-splashing hopper.
4. Dust control Provisions provided to flush with air and also dust extraction system to consume flying dust.
5. Collector capacity 5 kg or more
6. Feed size 150 mm
7. Fineness up to 5 mm in the second pass.
8. MOC of Jaws D2 (Hardened steel)
9. Jaw Plate width Minimum 18 cm
10. MOC of cheek plates Hardened steel
11. Gap of Jaws Adjustable.

12. Maximum Jaw Gap 60 mm
13. Minimum Jaw Gap 3 mm or less
14. Main motor 7 HP (ISO-product) RPM more than 1400
15. Power supply 3-Phase; 415-440V
16. Suction Motor 1 HP (ISO-product) RPM more than 2800
17. Crushing capacity 5 Kg or more per hour
18. Safety features
 - i) Hopper baffles to prevent the rebound of samples.
 - ii) Safety switch/emergency switch should be provided.
 - iii) Overload protection devices for motor etc. and should shut off power immediately.
19. Warranty 3 years, including 7 HP motor and 1 HP motor.
20. Warranty for Jaws Plate 3 years
21. CAMC 3 years after the completion of warranty period

5. Technical Specifications of Disc Mill

SL No.	Description	Requirement
1	Applications	Preliminary and fine grinding
2	Field of application in the Department	Geological sample pulverisation
3	Material	Hard, medium hard, brittle, soft and fibrous rock material
4	Size reduction principal	Pressure, fraction
5	Material feed size (Max)	<20 mm
6	Desired fineness (min)	<100µm
7	Rotational Speed at 50 Hz	>300/min
8	Material of grinding tools	Hardened steel and Tungsten Carbide (2 pairs each)
9	Gap width setting	Adjustable, continuous 0.1 to 5 mm
10	Collector capacity	>2 L to 150 kgs/ hr
11	Drive power	Instrument should have frequency controlled 3 phase motor drive of nominal motor performance
12	Motor	(1.1 Kw to 2 Kw) 2 HP with single or three phase, 50-60 Hz, 230-240/420-440 V. Pole synchronising motor to give two operating speeds, allowing the

		use of both steel and tungsten carbide grinding discs.
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6. Polygonal Blender

DESCRIPTION: The bench top model the design allows for controlled, uniform mixing of material especially homogenisation. The machine consists of a sealed vessel, usually a polygon like a V-shape or a double cone, mounted on a rotating stand. As the blender rotates, the internal walls of the vessel continuously lift and tumble the materials. This motion creates a three-dimensional mixing action, causing the particles to repeatedly separate and recombine, ensuring a highly homogeneous blend.

Technical specifications

1. Base Frame:

- Material: Made of mild steel material
- Design: Features a low-profile design to ensure stability and minimize vibrations during operation.

2. Milling Chamber (Drum):

- Shape: A polygonal drum that is horizontally oriented.
- Lining: The interior is lined with materials like rubber to reduce wear and prevent contamination.

3. Capacity: Designed to hold a specific volume of 1 to 5 kg,

4. Drive Mechanism:

- Motor: A 0.5 HP motor with gear box is provided to supply the rotational motion. Along with a VFD connected to control the speed of the roller shaft.
- Belt Drive: A set of v-belt pulley and v-belt is provide to transmit the torque.

5. Control Panel:

- Features: Includes controls for starting/stopping the mill, speed adjustments, and timers to monitor grinding duration.
- Safety Features: Equipped with emergency shut-off switches and safety covers to prevent accidental exposure.

6. Feed and Discharge Ports:

- Access Points: Designed for easy loading and unloading of materials, often featuring secure lids to contain the sample during operation

7. Body and inner cover:

- The outer body is completely covered using 8 mm SS sheet while the inner body is covered with 1.2 mm MS sheet.

7. Technical specifications of the Hydraulic core splitter

The core of a hydraulic core splitter is its hydraulic system, which uses a high-pressure pump to generate immense force. The basic working principle is based on the **wedge principle**:

1. **Placement:** A core sample, which has been drilled from a rock or other material, is placed securely in the splitter.
2. **Hydraulic Force:** The operator activates the hydraulic system, which pushes a hardened steel blade or wedge into the core.
3. **Splitting:** The powerful, controlled force from the hydraulic piston drives the blade into the core, splitting it cleanly and precisely along its length. The force is exerted from the inside out, leveraging the low tensile strength of rock and concrete to break them apart. This method is highly effective because it applies force directly to the material's weakest point, resulting in a clean and controlled split.

Core Mounting	V -Block Type
Core Diameter	AQ, BQ, PQ, NQ (0.75" to 2.8 ")
Core Length	Up to max 100 mm
Cutting Type .	Lowering the knife by Manual Hydraulic Jack
Core Diameter	AQ, BQ, PQ, NQ (0.75" to 2.8 ")
Core Length	Up to max 100 mm
Core Mounting	V -Block Type
Cutting Type	Lowering the knife by Manual Hydraulic Jack.

8. Technical Specifications of Riffle sample divider

Riffle Sample Divider is a highly efficient tool designed for Sample Separation and precise handling of Bulk Materials. This Bulk Material Divider ensures Uniform Sample Splitting, which is specifically structured to divide bulk samples evenly into smaller, representative portions.

Custom made as per specification. Body made of Mild steel with powder coated finish, it consists of a hopper or feed pan, the "riffles" or chutes, and a stand or base it has 8 to 16 riffles the sample is divided and collected in 2 to 4 collector trays attached to the body of the riffle divider as per the requirement of the Lab.

9. Technical specifications of rock cutter/ rock saw

The Rock core bench saw is suitable for cutting a wide variety of small to medium sized rocks and also very useful in cutting rock cores. There is a rotating diamond saw blade which rotates at a fixed position mounted on a bench and the samples can be cut holding it with the hand or in case of a core it can be mounted on a V block clamping fixture. The v block is movable in a forward and reverse direction with the aid of hand wheels.

The device is custom made as per requirement.

10. Technical specifications of Electric Heat Oven:

This lab equipment is used to perform precise drying, heating, annealing, and sterilizing of samples/agents from 7.5°C above ambient to 300°C in case of wet samples or fine grained samples for the ease of pulverisation.

Specifications:

Temperature range	5 to 300C
Chamber volume	60L
Temperature uniformity	+_1 to +_2 C
Temperature Stability	0.5 C to 1 C
Shelves	2 or more
Interior	Stainless Steel
Air circulation	Forced convention via motorized fan
Safety	Independent over- temperature protector, with ISO safety certification
Controller	Microprocessor PID, Digital/ touch screen
Ventilator	Adjustable exhaust/ flap
Power supply	2000 W to 2500W

Annexure I

Table showing the current availability of pulverisation instruments in GSI's State Units/ Regional offices and NCEGR labs

Region	State Unit	Laboratory Jaw crusher (give available No.)	Disk Mill (give available No.)	Vibratory Disk Mill (give available No.)	Planetary Ball Mill (give available No.)	Seive Shaker (give available No.)	Electronic Hot air Oven with fan ((give available No.)	Polygonal blender/ Riffle splitter ((give available No.)	Rock saw/ Rock cutter (give available No.)	Hydraulic Core splitter (give available No.)	Is ~300 sq.ft area available for establishment of Rock Lab (Y/N)	Remarks
Northern Region	1 SU:UP Lucknow	0	0	0	0	0	0	0	0	0	Y	As the SUUP is situated in the same premise with NR headquarter, having a complete setup
	2 SU:UK Dehradun	0	0	0	0	0	0	0	1	0	0	Due to technical problem the rock cutter is not operational
	3 SU:P,H & HP Chandigarh	0	0	0	0	0	0	0	1	0	Y	1 Sieve Shaker & 1 PBM with Chemical Lab; 1 Rock saw/ cutter (with Thin Section Lab),
	4 UT: JK & Ladakh	0	0	0	0	0	0	0	0	0	Y	
	5 Regional office:Lucknow	1	0	0	0	1	2	0	1	0	Y	
	6 NCEGR Faridabad	1		1	1				1		Y	
Southern Region	7 SU: AP Vijayawada	0	0	0	0	0	0	0	0	0	Y	
	8 SU:K&G Bengaluru	1	0	0	2	2	1	0	1	3	Y	Jaw crusher, PBM, Seive shaker, hot air oven are attached to Chemical lab of SU: K&G
	9 SU:K&L Trivandrum	0	0	0	0	0	0	0	0	0	Y	Sample processing unit is not available.

	10	SU:TN&P Chennai	1	0	0	3	1	1	0	1	0	Y	Thin Section Preparation Unit is already available in SU: TN & P.
	11	SU:TLG Hyderabad	0	0	0	0	0	0	0	0	0	N	
	12	Regional office: Hyderabad	1	1	0	0	1	0	0	1	0	Y	
	13	NCEGR Bengaluru	2	0	1	2	1	2	1	0	0	Y	NCEGR Bangalore has dedicated mineral separation laboratory for physical processing of rock samples and separation of heavy minerals.
Central Region	14	SU:Raipur	0	0	0	0	0	0	0	12	0	Y	
	15	SU:MP Bhopal	0	1	0	1	0	2	0	1	0	N	
	16	SU:MP Jabalpur	0	0	0	0	0	0	0	0	0	Y	
	17	SU: MH Nagpur	0	0	0	0	0	0	0	0	0	N	
	18	SU:MH Pune	0	0	0	0	0	0	0	0	0	Y	Semi Automatic Thin Section Preparation Unit is already available in SU: MH, Pune.
	19	Regional Office: Nagpur	0	0				1					
Eastern Region	20	SU: Bihar	0	0	0	0	0	0	0	2	0	Y	
	21	SU: Jharkand	0	0	0	0	0	0	0	1	0	Y	We have pulveriser make: Mechmin. Rock lab may be established in the under construction office building
	22	SU: Odisha	0	0	0	0	0	0	0	0	0	Y	
	23	SU: WB & AN	0	0	0	0	0	0	0	0	0	Y	06 Nos. of mechanical core splitter is available at filed in the drilling projects.

	24	Regional office: Kolkata	1	0	1	0	1	0	0	0	0	0	N	
	25	CPL, NCEGR	0	0	0	0	1	0	0	1	0	Y		
	26	NCEGR,CHQ	1	0	1	0	1	0	0	0	0	N		Rock Processing Laboratory of G & IG Division
Western Region	27	SU: Rajasthan	0	0	0	0	0	0	0	0	0	Y		As the State Unit Rajasthan is situated in the same premise with WR headquarter , it is utilising the facility the available facility at Region however, State Unit Rajasthan is also in the process of procurements of following lab items. The Status of the same is given below: 1. Handheld XRF: Financial sanction accorded. Contract will be placed after availability of funds. 2. Jaw Crusher (2): Bid published on 18.06.2025. Pre-bid meeting held on 03rd July 2025. The suggestions of the firms are under scrutiny. 3. Planetary ball mill (1): Bid published on 18.06.2025. Pre-bid meeting held on 03rd July 2025. The suggestions of the firms are under scrutiny. 4. Polarising trinocular

													microscopes: Proposal under scrutiny by SAC 5. Portable Gamma ray spectrometer: Under process
	28	SU: Gujarat	0	0	0	0	0	0	0	1	0	N	
	29	Regional office: Jaipur	0	0	0	0	0	1	0	1	0	Y	
North Eastern Region	30	SU: Arunachal Pradesh	0	0	0	0	0	0	0	1	0	Y	
	31	SU: Assam	0	0	0	0	0	0	0	1	0	Y	Jaw Crusher-01no & Planetray Ball Mil-01 no, the SAC completed & procuremnet under process. Seive Shaker-01no & Hydrolic Core splitter-01 no, procurement under process.
	32	SU: M&N	0	0	0	1	0	0	0	0	0	N	
	33	SU: Meghalaya	0	0	0	0	0	0	0	0	1	N	State Unit is situated in same premise of NER HQ. Threfore, SU is using the laboratory facilities of RHQ Shillong only.
	34	SU: Sikkim	0	0	0	0	0	0	0	0	0	N	For sample analysis, SU: Sikkim is dependent on RHQ Shillong.
	35	SU: Tripura & Mizoram	0	0	0	0	0	0	0	0	0	Y	

	36	Regional office: Shillong	1	0	0	1	2	1	0	2	0	N	GT LAB.,NER: Sieve Shaker = 1 Nos. Electric oven =1 Nos & Rock cutter = 1 Nos. PETROLOGY LAB.,NER: Laboratory Jaw crusher = 1 Nos., Planetary Ball Mill = 1 Nos.,Seive Shaker = 1 Nos.& Rock cutter = 1 Nos.
Total instruments			10	2	4	11	11	11	1	30	4		

Annexure II

Region wise distribution of pulverisation instruments	Type of Pulverisation Instrument	NR 4- SU 1- RHQ 1 NCEGR	SR 5- SU 1- RHQ 1- NCEGR	CR 5- SU 1- RHQ	ER 4- SU 1- RHQ 1-CPL 1- NCEGR	WR 2- SU 1-RHQ	NER 6-SU 1-RHQ	Total
	Jaw Crusher	2	5	0	2	0	1	10
	Disk Mill	0	1	1	0	0	0	2
	VDM	1	1	0	2	0	0	4
	PBM	1	7	1	0	0	2	11
	SS	1	5	0	3	0	2	11
	EHO	2	4	3	0	1	1	11
	PB/ RS	0	1	0	0	0	0	1
	RC	4	3	13	4	2	4	30
	HyCS	0	3	0	0	0	1	4

Annexure III

Region	State Unit	Laboratory Jaw crusher (give available No.)	Disk Mill (give available No.)	Vibratory Disk Mill (give available No.)	Planetary Ball Mill (give available No.)	Seive Shaker (give available No.)	Electronic Hot air Oven with fan (give available No.)	Polygonal blender/ Riffle splitter (give available No.)	Rock saw/ Rock cutter (give available No.)	Hydraulic Core splitter (give available No.)	Is ~300 sq.ft area available for establishment of Rock Lab (Y/N)	Remarks
Northern Region	1 SU:UP Lucknow	1	1	0	1	1	1	2	1	2	Y	As the SUUP is situated in the same premise with NR headquarter, having a complete setup
	2 SU:UK Deradun	1	0	1	1	1	1	2	1	1	Y	Due to technical problem the rock cutter is not operational
	3 SU:P,H & HP Chandigarh	1	0	1	1	1	1	2	0	1	Y	1 Sieve Shaker & 1 PBM with Chemical Lab; 1 Rock saw/ cutter (with Thin Section Lab),
	4 UT: JK & Ladakh, Jammu	1	1	0	1	1	1	2	1	1	Y	
	5 Regional office:Lucknow	0	0	1	1	0	0	2	0	0	Y	
	6 NCEGR Faridabad	0	1	0	0	1	1	2	0	0	Y	
Southern Region	7 SU: AP Vijayawada	1	1	0	1	1	1	2	1	3	Y	
	8 SU:K&G Bengaluru	0	1	0	0	0	0	2	0	0	Y	Jaw crusher, PBM, Seive shaker, hot air oven are attached to Chemical lab of SU: K&G
	9 SU:K&L Trivandrum	1	1	0	1	1	1	2	1	1	Y	Sample processing unit is not available.

	10	SU:TN&P Chennai	0	1	0	0	0	0	2	1	3	Y	Thin Section Preparation Unit is already available in SU: TN & P.
	11	SU:TLG											
	12	Regional office: Hyderabad	0	0	1	1	0	1	2	1	0	Y	
	13	NCEGR Bengaluru	0	1	0	0	0	0	0	1	0	Y	NCEGR Bangalore has dedicated mineral separation laboratory for physical processing of rock samples and separation of heavy minerals.
Central Region	14	SU:Raipur	1	1	0	1	1	1	2	0	1	Y	
	15	SU:MP Bhopal										N	
	16	SU:MP Jabalpur	1	1	0	1	1	1	2	1	1	Y	
	17	SU: MH Nagpur										N	
	18	SU:MH Pune	1	1	0	1	1	1	2	1	1	Y	Semi Automatic Thin Section Preparation Unit is already available in SU: MH, Pune.
	19	Regional Office: Nagpur	1	0	1	1	1	0	2	1	0	Y	
Eastern Region	20	SU: Bihar Patna	1	1	0	1	1	1	2	0	1	Y	
	21	SU: Jharkand Ranchi	1	0	1	1	1	1	2	0	2	Y	We have pulveriser make: Mechmin. Rock lab may be established in the under construction office building
	22	SU: Odisha Bhuwaneshwar	1	1	0	1	1	1	2	1	3	Y	

	2 3	SU: WB & AN	1	0	1	1	1	1	2	1	1	Y	06 Nos. of mechanical core splitter is available at filed in the drilling projects.
	2 4	Regional office: Kolkata										N	
	2 5	CPL, NCEGR Kolkata	1	1	1	1	0	1	2	0	0	Y	
	2 6	NCEGR,CHQ, Kolkata										N	Rock Processing Laboratory of G &IG Division
Western Region	2 7	SU: Rajasthan Jaipur	1	1	0	1	1	1	2	1	4	Y	As the State Unit Rajasthan is situated in the same premise with WR headquarter , it is utilising the facility the available facility at Region however, State Unit Rajasthan is also in the process of procurements of following lab items. The Status of the same is given below: 1. Handheld XRF: Financial sanction accorded. Contract will be placed after availability of funds. 2. Jaw Crusher (2): Bid published on 18.06.2025. Pre-bid meeting held on 03rd July 2025. The suggestions of the firms are under scrutiny. 3. Planetary ball mill (1): Bid published on 18.06.2025. Pre-bid meeting held on 03rd July 2025. The suggestions of the firms are under scrutiny.

													4.Polarising trinocular microscopes: Proposal under scrutiny by SAC 5. Portable Gamma ray spectrometer: Under process
	28	SU: Gujarat Gandhinagar	1	1	0	1	1	1	2	0	1	Y	
	29	Regional office: Jaipur	1	0	1	1	0	0	2	1	0	Y	
North Eastern Region	30	SU: Arunachal Pradesh Itanagar	1	1	0	1	1	1	2	0	1	Y	
	31	SU: Assam Guwahati	1	0	1	1	0	1	2	0	2	Y	Jaw Crusher-01no & Planetray Ball Mil-01 no, the SAC completed & procuremnet under process. Seive Shaker-01no & Hydrolic Core splitter-01 no, procurement under process.
	32	SU: M&N										N	
	33	SU: Meghalaya										N	State Unit is situated in same premise of NER HQ. Threfore, SU is using the laboratory facilities of RHQ Shillong only.
	34	SU: Sikkim										N	For sample analysis, SU: Sikkim is dependent on RHQ Shillong.
	35	SU: Tripura & Mizoram,	1	1	0	1	0	1	2	1	1	Y	

		Aizwal											
3 6		Regional office: Shillong											GT LAB.,NER: Sieve Shaker = 1 Nos. Electric oven =1 Nos & Rock cutter = 1 Nos. PETROLOGY LAB.,NER: Laboratory Jaw crusher = 1 Nos., Planetary Ball Mill = 1 Nos.,Seive Shaker = 1 Nos.& Rock cutter = 1 Nos.
		Total instruments	21	18	10	23	18	21	52	16	31		