ANNEXURE-VII/1

Details of Petrographic studies of Surface & borehole core samples,
Bargur Block, District: Krishnagiri, Tamil Nadu

PETROGRAPHIC STUDY RESULTS

Sl. No.	Sample Number& Location	Texture	Mineral Composition			Description
			Major >5%	**Minor <5%->1%**	**Accessory <1%**	
1	MBBR/P1	It is a medium to coarse grained rock showing hypidiomorphic granular texture.	Plagioclase Microcline/ Orthoclase Quartz Biotite	Muscovite Sphene	Apatite Chlorite Sericite Calcite	Plagioclase and microcline/ orthoclase occur as medium to coarse subhedral grains. Quartz occurs as medium to moderately coarse anhedral grains and patches. Biotite and muscovite are present as fine to medium flakes, flaky segregations and patches in pockets. Sphene occurs as fine to very fine wedges. Apatite occurs as fine to very fine subhedral and subrounded grains. Chlorite is seen present as fine flakes and patches in association with biotite. Sericite occurs as very fine flakes developing after plagioclase alterations. Calcite is noted as very fine fillings in areas. The specimen is a **granodiorite.**
2	MBBR/P2	It is a medium grained rock showing gneissosity.	Hornblende Plagioclase Actinolite-Tremolite Quartz	Epidote Sphene Chlorite Opaques	Sericite	Hornblende occurs as medium subhedral prismatic, rhombic and patchy grains showing parallel alignment. Plagioclase is present as medium subhedral prismatic grains showing crude alignment and minor saussuritization. Actinolite-tremolite are present as fine to medium platy grains seen replacing hornblende in areas. Quartz occurs as medium to fine anhedral grains and patches in association with plagioclase. Epidote occurs as anhedral patches developing after plagioclase

Sl. No.	Sample Number& Location	Texture	Mineral Composition			Description
			Major >5%	**Minor <5%->1%**	**Accessory <1%**	
						alterations. Sphene is present as fine disseminated wedges.Chlorite occurs as pseudomorphic patches replacing amphiboles. Opaques are seen as fine to very fine anhedral grains and patches. Sericite is seen developing after plagioclase alteration. The specimen is a **quartz-diorite gneiss/ hornblende gneiss.**
3	MBBR/P3	It is a medium grained rock showing hypidiomorphic granular texture.	Plagioclase Quartz Biotite	Opaques	Hornblende Chlorite Sericite	Plagioclase occurs as medium subhedral prismatic grains. Quartz occurs as anhedral grains and patches. Biotite is present as fine disseminated flakes. Opaques occur as fine to medium anhedral to subhedral grains, patches and as very fine specks. Hornblende is seen present as fine subhedral to anhedral grains. Chlorite is noted as fine patches in accessories. Sericite occurs as very fine flaky aggregates developing after plagioclase alterations. The specimen is a **granodiorite.**
4	MBBR/P4	It is a fine grained rock showing alternate light grey and dark grey coloured bands.	Quartz Opaques (Magnetite)	Grunerite	Ferruginous matter	Quartz occurs as fine to medium anhedral to subhedral grains showing compact contacts. Opaques (magnetite) are present as fine to very fine euhedral to subhedral grains, often segregating in thin sub-parallel bands. Grunerite occurs as fine to very fine subhedral prismatic and rhombic grains. Reddish ferruginous patches and fillings are noted in areas. The specimen is showing magnetism. The specimen is a **banded mineralized (magnetite) quartzite.**

ANNEXURE-VII/3

Sl. No.	Sample Number& Location	Texture	Mineral Composition			Description
			Major >5%	**Minor <5%->1%**	**Accessory <1%**	
5	MBBR/P5	It is a greenish grey coloured medium to fine grained rock showing granular texture.	Hornblende/ Uralite Plagioclase Diopside Epidote Tremolite-actinolite Sphene	Opaques Chlorite	Ferruginous matter	Hornblende/ uralite are present as fine to medium subhedral, rhombic and anhedral patchy grains replacing pyroxenes. Plagioclase and diopside are present as medium to fine subhedral prismatic grains. Epidote occurs as fine granular aggregates and as segregated patches developing after plagioclase and amphibole alterations. Tremolite-actinolite occurs as platy/ acicular aggregates replacing pyroxenes. Sphene is seen present as fine to medium wedges and anhedral patches showing relicts of very fine opaques in areas. Opaques are also present as fine to medium euhedral to anhedral grains in dissemination. Chlorite occurs as pseudomorphic patches replacing pyroxenes and amphiboles. Reddish ferruginous patches and fillings are seen present in areas. The specimen is an **amphibolite/ altered pyroxenite.**
6	MBBR/P6	It is a medium grained rock showing granular texture.	Plagioclase Quartz Sericite Opaques	Tremolite Epidote	Biotite	Plagioclase occurs as medium subhedral prismatic grains and turbid patches showing intense sericitization. Quartz occurs as fine to medium anhedral to subhedral grains, often clustering in pockets. Sericite is present as very fine flaky aggregates, developing after plagioclase alterations. Opaques occur as fine to very fine subhedral to anhedral, patchy and streaky grains in dissemination. Tremolite is seen as fine to medium acicular aggregates. Epidote occurs as fine to very fine subhedral grains and anhedral patches, developing after plagioclase alterations. Biotite is noted as fine flakes in accessories. The specimen is an **altered meta-granodiorite.**

Sl. No.	Sample Number& Location	Texture	Mineral Composition			Description
			Major >5%	**Minor <5%->1%**	**Accessory <1%**	
7	MBG/P-01 (MBG-01@30.0-30.10m)	It is a medium grained rock showing gneissosity.	Plagioclase Biotite Hornblende Quartz	Sericite Opaques	Chlorite Zircon Garnet	Plagioclase occurs as medium subhedral to anhedral grains showing crude alignment and moderate sericitisation. Biotite and hornblende are present as fine to medium subhedral prismatic grains showing parallel alignment. Quartz occurs as medium to moderately coarse anhedral patches. Sericite is present as very fine flakes developing after plagioclase alterations. Opaques occur as very fine to fine anhedral grains, patches, fillings and specks. Chlorite occurs as fine patches seen replacing biotite in areas. Zircon is found present as very fine inclusions within biotite around which pleochroic haloes are observed. Garnet is noted as very fine grains in accessories. The specimen is a **quartz-diorite gneiss.**
8	MBG/P-02 (MBG-01@38.9-39m)	It is a dark greenish grey coloured fine to medium grained rock showing schistosity.	Plagioclase Hornblende Epidote	Chlorite Quartz Opaques Augite/ diopside	Tremolite-actinolite Calcite Apatite	Plagioclase and hornblende are the main ingredient minerals of the specimen, occurring as fine to medium subhedral prismatic and anhedral grains showing crude parallel alignment. Epidote occurs as fine granular aggregates and patches, often showing thin corona around plagioclase and hornblende. Chlorite is present as patches in association with epidote. Quartz occurs as patchy lenses in pockets. Opaques are seen present as fine subhedral to anhedral grains and as very fine specks. Augite/ diopside occur as fine to medium subhedral grains, being replaced by flaky aggregates of tremolite-actinolite. Calcite occurs as very fine fillings in areas. Apatite is noted as fine to very fine subrounded grains in

Sl. No.	Sample Number& Location	Texture	Mineral Composition			Description
			Major >5%	**Minor <5%->1%**	**Accessory <1%**	
						accessories. The specimen is an **amphibolite schist.**
9	MBG/P-03 (MBG-02@94.1-94.2m)	It is a coarse to medium grained rock showing hypidiomorphic granular texture.	Microcline Quartz Biotite	Plagioclase Sericite Calcite	Opaques Zircon Apatite	Microcline occurs as coarse to medium subhedral grains showing perthitic exsolutions. Quartz occurs as medium to fine anhedral grains. Biotite is present as fine to medium flakes, often seen segregated in pockets. Plagioclase occurs as fine to medium subhedral to anhedral patchy grains showing myrmekitic intergrowths and sericitisation. Sericite is also seen present as fine fillings in areas. Calcite is noted as patches and patchy fillings, often in association with sericite fillings. Opaques occur as very fine to fine subhedral to anhedral grains, blades and specks. Zircon is noted as very fine inclusions within biotite around which pleochroic haloes are observed. Apatite is found present as very fine subrounded grains in accessories. The specimen is a **granite pegmatite.**