



**AUDIT REPORT
ON
JORC COMPLIANT REPORTS OF DSG & QUARTZ MINES IN INDIA
AND
MAIDEN HEAVY MINERAL SAND RESOURCE IN SRI LANKA.**

For

Midwest Granite Private Limited (MGPL)

July,2024

Table of Contents

1.	INTRODUCTION.....	3
2.0	PROPERTY AUDITS: GRANITE DEPOSITS.....	7
3.0	PROPERTY AUDITS: HIGH GRADE QUARTZ DEPOSITS	33
4.0	PROPERTY AUDITS: HEAVY MINERAL BEACH SAND IN SRI LANKA	42
5.0	AUDIT CONCLUSIONS.....	56

1. INTRODUCTION

Geovale Services Pvt. Ltd. was requested by Midwest Granite Pvt Ltd to conduct a peer review of the Competent Persons Report (CRP), entitled “JORC Compliant Report of 24 (twenty-four) Numbers of DSG Mines”, complied by Dr. G Lakshminarayana, a suitably qualified Competent Person as defined by the 2012 JORC Code.

1.1 SCOPE OF WORK

The Scope of Work and Terms of Reference set by Midwest Granite Pvt Ltd were:

- Vetting of the estimated Granite and Quartz resource and reserve of 24 (twenty-four) numbers of Dimension Stone Granite (DSG) mines, which include Operating mines (10), Developed mines (09), and Dormant properties (05) in different districts of Andhra Pradesh, Telangana, & Karnataka states.
- Vetting of the heavy mineral sand resources in Sri Lanka, seven exploration licenses were issued by the Sri Lankan Government, namely (EL/431, EL/432, EL/434, EL/435, EL/436, EL/449, and EL/450).
- Compilation of the data during the desktop and field visits with process analysis, result analysis, report analysis, and finally deliver the audit report.

The Competent Person Report (CPR) and a full set of exploration and financial data were provided by Midwest Granite Pvt. Ltd. The reviewer (Geovale Services) worked through the data and CPR with particular detail in each section (Geology, Resource, Mining, DSG Business, Economic Evaluation, etc). Apart from the final report an Executive Summary also to be prepared.

1.2 QUALIFICATION OF REVIEWER

To review the CPR, the reviewer must meet the required qualifications in order to be considered properly qualified and competent.

- Geovale Services Pvt. Ltd. (GSPL) is one of India's leading consulting companies, providing services to the global exploration and mining industries. GSPL services range from due diligence studies of mineral assets, mineral block auction advisory, comprehensive mineral exploration project

management, 3D geological resource assessment and preparation of JORC/NI 43-101/UNFC Geological Report, mine planning, and pre-feasibility study services. GSPL is also an ISO 9001 (2015) company a NABET – QCI accredited company and a Ministry of Mines (Government of India) empaneled National Private Exploration Agency (NPEA).

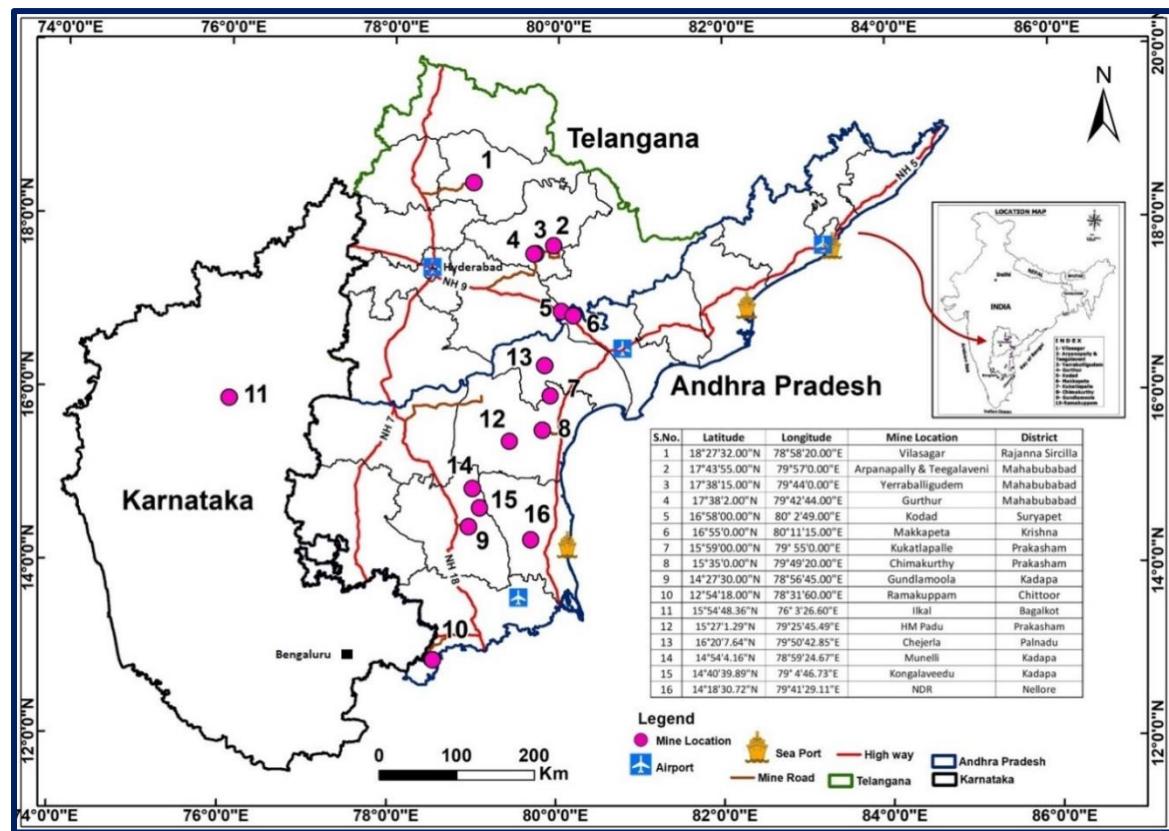
- Biplob Chatterjee is the reviewer of this Competent Person Report and has over 37 years of experience in the exploration and mining industry through careers in Rio Tinto (1995–2009), the Geological Survey of India (1986–1995), and ONGC (1985–1986).
- He was recognised for the discovery of multiple diamond deposits in India, including Bunder and Chhattisgarh kimberlites, for which he was awarded the National Geoscience Award (then the National Mineral Award).
- He has led mining and geological services teams for numerous projects for exploration and resource evaluation, including diamonds, iron ore (India, Oman, Malaysia), and coal (Indonesia, India), industrial minerals (India, Oman, different regions in Africa).
- Biplob Chatterjee is also a suitable qualified competent person (CP) as defined by the 2012 JORC Code.

1.3 OBJECTIVES

The purpose of this report is to review the geological, exploration, and mining databases on the dimension stone, granite, marble, quartzite, quartz and heavy mineral sand properties of the MGPL with a view to estimating resource or reserve and conducting mineral valuation studies.

1.4 LOCATION OF PROPERTIES

The DSG mines are located in the states of Andhra Pradesh, Telangana and Karnataka in India and in Sri Lanka.



Outline map of India showing the location of MGPL mines

STATUS QUO OF MIDWEST DIMENSION STONE MINES & CATEGORIES					
S.No.	Dimension Stone	Mine Location	Category		
			Working Mines	Developed	Dormant
1	Galaxy granite (Black)	Chimakurthy	2	1	1
2	Absolute Black granite	Arpanapalli	4	3	-
3		Kodad	2	1	-
4		Gurthur	1	-	-
5		Makkapeta	-	1	-
6		Yerraballigudem	-	-	1
7		Kukatlapalle	-	1	-
8		Chittoor	-	-	2
9	Colour granite	Ilkal(Red)	-	1	-
10		Vilasagar(tan brown)	-	-	1
11	Grey Marble	Kadapa	1	-	-
12	White/variegated Quartzite	Hanumanthunipadu	-	1	-
Total			10	9	5
			10+9+5=24		

List of DSG mines of MGPL and their operational status

Nomenclature: (a) Working mines refer to those that are in actual production;(b) Developed mines are those that are explored but are awaiting permission from the government; (c) Dormant mines are actual production mines, but mining activity has been discontinued either on operational or economic considerations.

1.5 GEOVALE AUDIT METHODOLOGY ADOPTED

Geovale carried out a four stage review of the JORC Reports of MGPL Assets.

Stage 1: The JORC Reports and the exploration datasets were subjected to a pre-field desk top review to develop an understanding of the reported geology, mineralisation, exploration strategy adopted, Geological Resource modelling process, the relevant quality data, upside potential and the project risks. A gap analysis was carried out and audit data points were identified for each of the asset. This gap analysis was carried out by Biplob Chatterjee, CEO and Director (Consulting), Mr. Ram Sourav Adhikary, Senior Project Manager (Exploration) and Ms Disha Mullick, Resource Geologist of Geovale Services.

Stage 2: Two of Geovale Exploration and Resource Geologists with relevant experience in industrial minerals carried out the site due diligence. Mr. Ram Sourav Adhikary, Senior Project Manager (Exploration) and Ms Disha Mullick, Resource Geologist of Geovale Services carried out the site visits and collected and collated all the relevant information for the audit. MGPL Exploration Geologists, who accompanied the Geovale site team were interviewed and queried in detail regarding the geology, exploration methodology and data acquired. Data points like asset boundary, geology, mineralisation, drill core data, quality data, regional geology, structural information, neighbouring mines, infrastructure, neighbouring community, environmental issues if any, etc. were acquired and analysed for each property. Properties not visited have been identified and mentioned in this report.

Stage 3: Biplob Chatterjee joined Ram Sourav Adhikary and Disha Mullick at Hyderabad to have a detailed discussion on the methodology and the data acquired for each of the assets with Dr. G. Lakshminarayana, the Competent Person for the JORC Report.

Stage 4: All the audit data points were collated, analysed and compiled into the present Audit Report.

2.0 PROPERTY AUDITS: GRANITE DEPOSITS

Exploration Methodology Adopted by MGPL

- The exploration strategy of MGPL is to prepare geological maps, and core drilling was executed to comply with the JORC guidelines. Geological maps were prepared on a scale of 1:1000 with a total geological mapping of 330 ha area.
- 2 boreholes are drilled in each mine area for the purpose of studying the depth persistence of the DSG for resource upgradation and reserve definition. A total of 103 boreholes are drilled, with a total meterage of 5289.38 m.
- Core logging and laboratory studies like lithological study, petrography, and textural study, study of the geotechnical properties and aesthetic value of polished samples, joint density and determination of joint spacing index, weathering index, broken zones, and minor secondary intrusives were also carried out. These observations have served as the basis for assessing the modifying factors specific to Dimension Stone and for converting measured resources into reserves.

2.1 Chimakurthy Black Galaxy Deposit:

(a) Geology: According to the client report, the Black Galaxy Granite deposit spans a mine area of 47.1 hectares, encompassing the MW Main Pit, APJV Pit, and Block-4 Pit. It is a significant rock type within the Precambrian basic pluton complex near Chimakurthy. The deposit appears as a spindle-shaped, 'onion peel'-like layered mass, with the core consisting of 'pyroxenite', followed by 'anorthosite' in the middle layer, and 'norite' along the outer rim. The rock is distinguished by the golden-brown orthopyroxene mineral 'bronzite' interwoven in an aphanitic-textured assemblage of medium- to coarse-grained plagioclase, clinopyroxene (augite), and minor iron oxides. **Geovale's team visited and made detailed observations on the regional and site geology and the neighbouring area and collected relevant data. The reported information were found to be in order.**



Discussion with the VP (Mining), Chimakurthy Mines on the deposit geology and mining operation in block

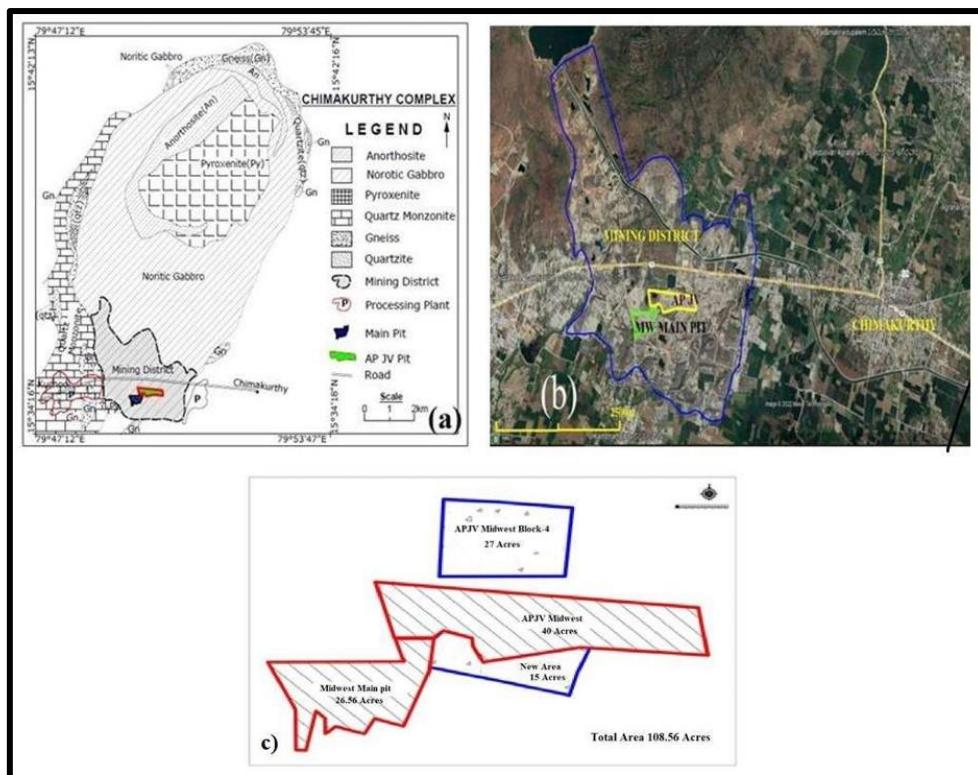
- (b) Exploration: Based on the client report, a total of 8 boreholes were drilled in the area (2 boreholes in the MW Main Pit, 2 boreholes in the APJV Pit, and 4 boreholes in Block-4 Pit) with a total meterage of 548.95 m. **The Geovale Audit team visited all borehole locations and cross-checked borehole cores in the core shed area.**
- (c) Core Logging & Laboratory Studies: Detailed logging was carried and recorded on metre by metre on standard drill site log sheets. The Geovale Audit team randomly cross-checked the log sheets with drill cores. **The Geovale Audit team had cross-checked laboratory reports for chemistry and geotechnical data.**

(d) Deposit modeling & Resource estimation: For the purpose of quick appreciation of the saleable material from the proved reserves, the term "blockable reserves" has been introduced in the JORC report. The blockable reserve represents the theoretical yield of saleable raw blocks from the proved reserves after considering factors like rock textural uniformity, Rock Quality Designation (RQD), Joint Spacing Index (JSI), and relevant mining principles. It refers to the portion of the proved rock mass that can be converted into regular square or rectangular salable blocks through cutting and trimming. The projected theoretical yield for dimension stone is 20% of the proved reserves. MGPL has calculated a total blockable reserve of 10,384,062 CBM of black galaxy granite in Chimakurthy. The geological models have been prepared on AutoCAD. **However, the Geovale Audit team has observed that the DSG Modifying (Deductible) factors like colour factor, textural factor, joints factor, and mining related factors do not follow any standard optimization.**

The standard block size for calculating the blockable reserve in the mines is referred to as the Gangsaw size, with dimensions of 300 x 180 cm above. **The Geovale Audit team has cross-checked the dimensions of the block and found them to be in accordance with the dimensions mentioned in the JORC report.**

(e) Market study: According to MGPL officials and **Geovale Audit team observation**, 90% of the black galaxy granite produced in the MGPL mines is traded in overseas markets, while the remaining produce is sold in the domestic market by auction or linkages. The realised selling price for cubic meter of black galaxy granite ranges from Rs 55000 to Rs 85000, with the average being Rs 65000 /cbm on fob basis. Geovale has verified the pricing information from public domain and found those to be correct.

(f) Economic model: EM leading to the resource valuation of the MGPL mining assets has been undertaken by the DCF method. This was verified and found to be in order



Chimakurthy Black Galaxy Granite Mines

2.2 Arpanapalli-Teegalaveni Absolute Black Granite Deposit:

(a) Geology: According to the client report, the Absolute Black Granite refers to mafic rocks, i.e., gabbro/dolerite emplaced into the PGC and exposed on the surface as well-defined units due to their surface expression. The rock is grey to dark grey in rough blocks, but on polished surfaces, the rock looks absolutely shiny black, thus the term absolute black granite. The rock is phaneric-textured, made of uniform, equigranular medium- to coarse- grained. There are four prominent dykes in the Arpanapalli- Teegalaveni sector, named after nearby villages as Teegalaveni, Arpanapalli, Gurthur, and Yerraballgudem. The dykes are oriented NE-SW and emplaced along the pre-existing weak crustal planes of the craton. The basement rocks exposed along the dyke margins include porphyry granite, garnet biotite gneiss, hornblende, and amphibolite, which constitute the shoulders of the dykes. All four gabbro dykes in this district Dykes maintain an operational width range of 45 to 55 m and lengths of several hundred or thousands of meters. **Geovale's team**

visited the site and made observations on the regional geology, mineralisation, site geology, neighbourhood assets and recorded detailed information to verify wrt those reported.



Geovale Audit Team with the MGPL officers at Arpanapalli mines

(b) Exploration: Based on the Client report, the exploration database in the Arpanapalli-Teegalaveni sector have been tabulated below-

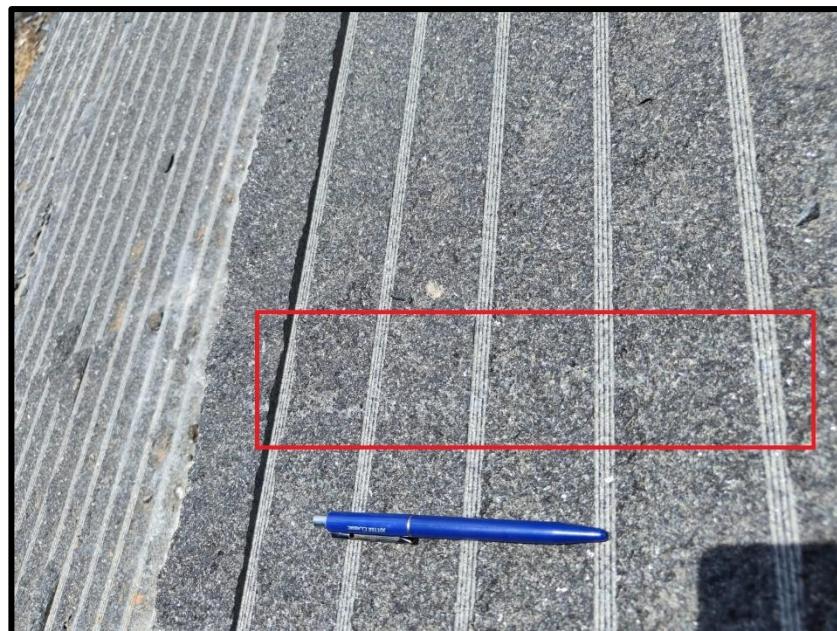
SI No.	Location	No. of boreholes	Total Meterage (m)
1	Arpanapalli	3	195.2
2	Teegalaveni	2	113.4
3	Gurthur	3	152.21
4	Yerraballgudem	2	142.42

A total of 10 boreholes are drilled in this sector with a total meterage of 603.23m. The Geovale Audit team visited all borehole locations and crosschecked borehole cores in the core shed area.

- (c) Core Logging & Laboratory Studies: Logging was recorded at an interval of one meter on standard drill site log sheets. The Geovale Audit team cross-checked all the log sheets with core boxes. **The Geovale Audit team had cross checked all the chemical analysis and geotechnical study data and verified it.**
- (d) Deposit Modeling & Resource Estimation: For the purpose of quick appreciation of the saleable material from the proved reserves, the term “blockable reserves” has been introduced in the JORC report. The blockable reserve represents the theoretical yield of saleable raw blocks from the proved reserves after considering factors like rock textural uniformity, Rock Quality Designation (RQD), Joint Spacing Index (JSI), and relevant mining principles. It refers to the portion of the proved rock mass that can be converted into regular square or rectangular salable blocks through cutting and trimming. The projected theoretical yield for dimension stone is 20% of the proved reserves. MGPL has calculated the total blockable reserve for this sector, which is presented in the table-

SI No.	Location	Volume (CBM)
1	Arpanapalli and Teegalaveni	1,417,892
2	Gurthur	260,008
3	Yerraballgudem	234,203

The geological models have been prepared on AutoCAD. **However, the Geovale Audit team has observed that the DSG modifying (deductible) factors like colour factor, textural factor, joint factor, and mining related factors do not follow any standard optimisation.**

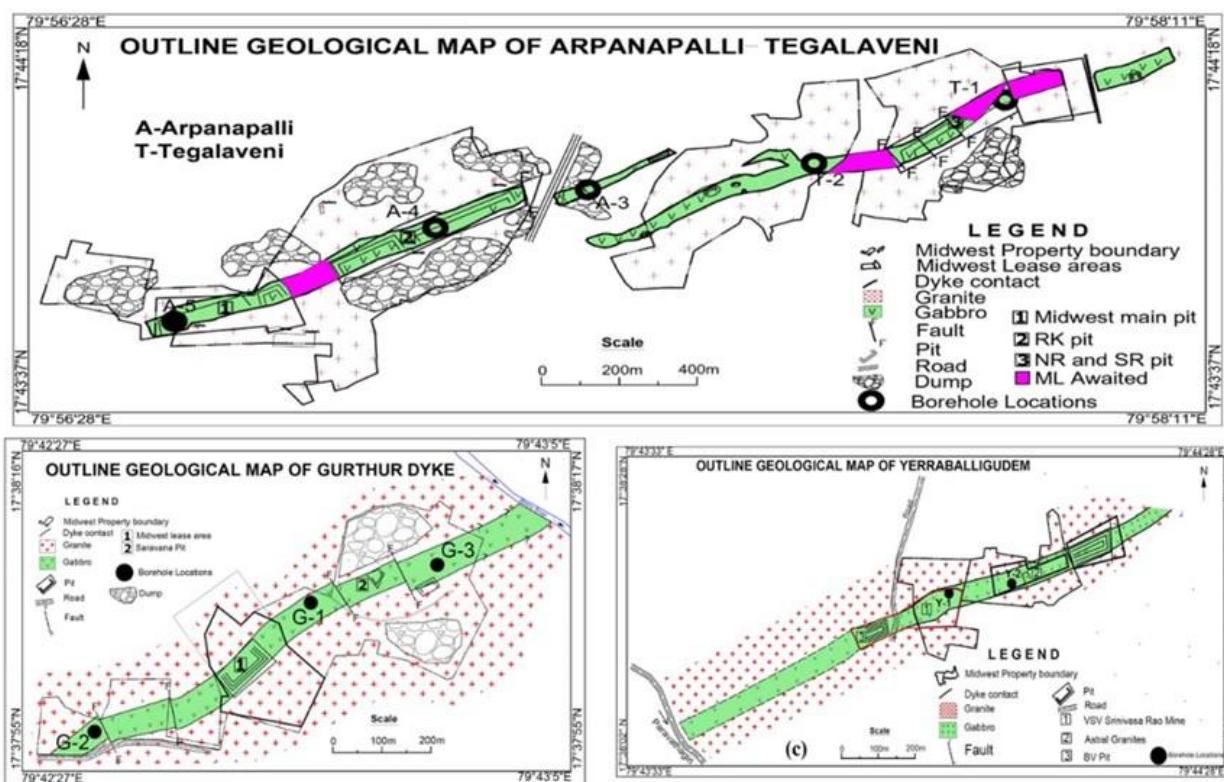


Textural defect in absolute black granite

The standard block size for calculating the blockable reserve in the mines is referred to as the Gangsaw size, with dimensions of 300 x 180 cm above. **The Geovale Audit team has cross-checked the dimensions of the block and found them to be in accordance with the dimensions mentioned in the JORC report.**

(e) Market study: According to MGPL officials and **Geovale Audit team observation**, absolute black granite is traded in local markets to slab-cutting factories and local traders or resellers on cubic-meters basis. The current trading price of absolute black granite ranges from Rs 23,000 to Rs. 55,000 /cbm, at an average of Rs44,000/cbm. When there is no evidence of recrystallization or textural transformation within the absolute black granite blocks, the rock is designated as ‘single color type’ sold at a higher price in the market.

(f) Economic model: EM leading to the resource valuation of the MGPL mining assets has been undertaken by the DCF method.

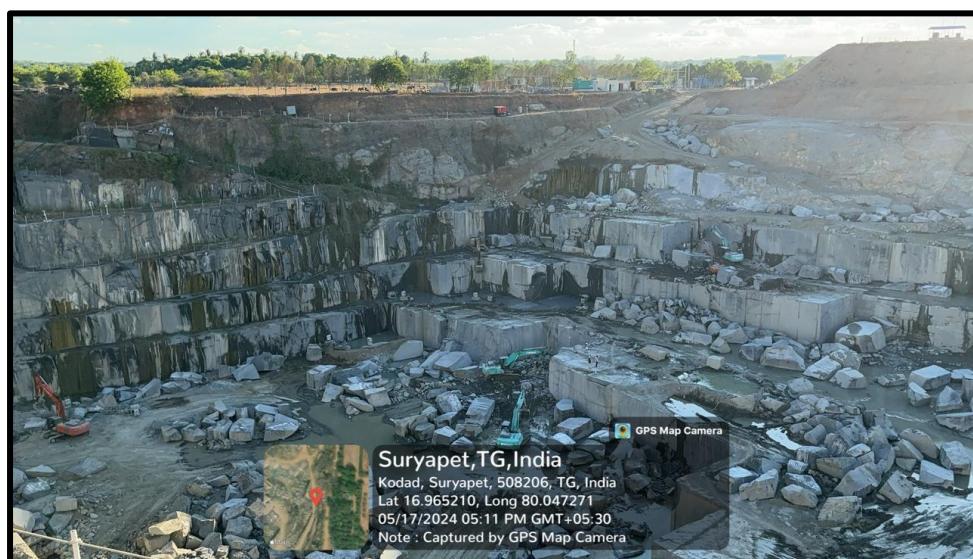


Geological map showing outline of the dykes (a) Arpanapally and Teegalaveni (b) Gurthur and (c) Yerraballigudem.

2.3 Kodad-Makkapeta Absolute Black Granite Deposit:

(a) Geology: According to the client report, the Absolute Black Granite refers to mafic rocks, i.e., gabbro/dolerite emplaced into the PGC and exposed on the surface as well-defined units due to their surface expression. The rock is grey to dark grey in rough blocks, but on polished surfaces, the rock looks absolutely shiny black, thus the term absolute black granite. The rock is phaneric-textured, made of uniform, equigranular, medium- to coarse- grained. There are two prominent gabbro bodies in the Kodad-Makkapeta sector, located one each in Nalgonda (Telangana) and Krishna (AP) districts. They exhibit close geological proximity to the northern closure of the Cuddapah basin, where they are believed to have been formed due to the tectonic forces that operated during the deformation of the Cuddapah basin. The gabbro at Kodad is a sheet aligned in N-S, with a strike length of about 900 m; width of over 600 m, and a true

thickness of the order of 50 to 60 m. The roof and floor of the sheets are represented by biotite granite. This sheet is divided into two blocks, namely the north and south, separated in between by a piece of neighbour's land. In Makkapeta, the gabbro dyke is 400 m long with a WNW-ESE trend that has intruded in to the granitic body located south of Makkapeta village. Dyke width ranges from 55 to 60 m with reasonably well-preserved gabbro occurring in between the faults. **Geovale's team has observed the regional and site geology of this area and the adjacent area.**



Absolute black granite mines, Kodad sector

(b) Exploration: Based on the Client report, the exploration database in the Kodad-Makkapeta sector have been tabulated below-

SI No.	Location		No. of boreholes	Total Meterage (m)
1	Kodad	North pit	25	1424.11
		South pit	8	437.85
2	Makkapeta		8	514.65

A total of 41 boreholes are drilled in this sector, with a total meterage of 2376.61 m. **The Geovale Audit team visited all borehole locations and cross-checked borehole cores in the core shed area.**

(c) Core Logging & Laboratory Studies: Logging was recorded at an interval of one meter on standard drill site log sheets. **The Geovale Audit team cross-checked all the log sheets with core boxes. The Geovale Audit team had cross checked all the chemical assay reports and geotechnical study data and reports.**



Cross-checking of the core with the litho-logs by the Geovale Audit Team

(d) Deposit Modeling & Resource Estimation: For the purpose of quick appreciation of the saleable material from the proved reserves, the term “blockable reserves” has been introduced in the JORC report. The blockable reserve represents the theoretical yield of saleable raw blocks from the proved reserves after considering factors like rock textural uniformity, Rock Quality Designation (RQD), Joint Spacing Index (JSI), and relevant mining principles. It refers to the portion of the proved rock mass that can be converted into regular square or rectangular salable blocks through cutting and trimming. The projected theoretical yield for dimension stone is 20% of the proved reserves. MGPL has calculated the total blockable reserve of this sector, which is presented in the table below-

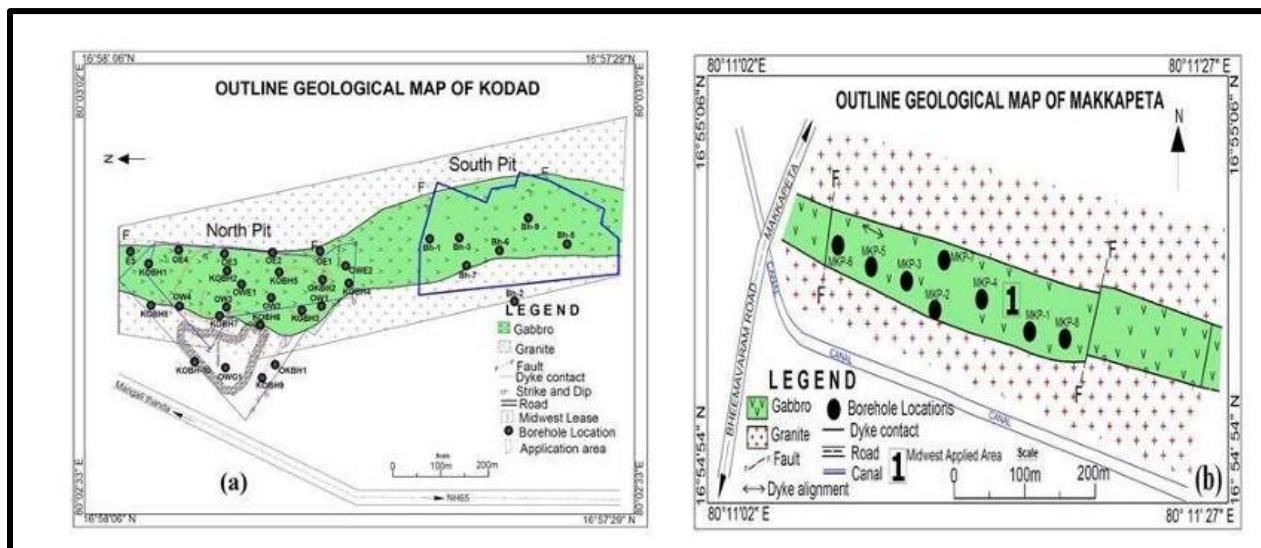
SI No.	Location	Volume (CBM)
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1	Kodad	1,280,437
2	Makkapeta	319,292

The geological models have been prepared on AutoCAD. **However, the GeoVale Audit team has observed that the DSG Modifying (Deductible) factors like colour factor, textural factor, joints factor, and mining related factors do not follow any standard optimisation.**

The standard block size for calculating the blockable reserve in the mines is referred to as the Gangsaw size, with dimensions of 300 x 180 cm above. **The GeoVale Audit team has cross-checked the dimensions of the block and found them to be in accordance with the dimensions mentioned in the JORC report.**

- (e) Market study: According to MGPL officials and **GeoVale Audit team observation**, absolute black granite is traded in local markets to slab-cutting factories and local traders or resellers on cubic-meters basis. The current trading price of absolute black granite ranges from Rs 23,000 to Rs. 55,000/cbm at an average of Rs44,000/cbm. When there is no evidence of recrystallization or textural transformation within the absolute black granite blocks, the rock is designated as 'single color type' sold at higher price in the market.
- (f) Economic model: EM leading to the resource valuation of the MGPL mining assets has been undertaken by the DCF method.



a. Kodad sheet showing borehole locations; b.Makkapeta dyke showing borehole locations

2.4 Chittor (Ramakuppam) Absolute Black Granite Deposit:

(a) Geology: According to the client report, the Absolute Black Granite refers to mafic rocks, i.e., gabbro/dolerite emplaced into the PGC and exposed on the surface as well-defined units due to their surface expression. The rock is grey to dark grey in rough blocks, but on polished surfaces, the rock looks absolutely shiny black, thus the term absolute black granite. The rock is phaneric-textured, made of uniform, equigranular, medium- to coarse- grained. In this sector, the hornblende-biotite gneiss of the PGC is transected by several E-W oriented, close spaced gabbro dykes traceable for several tens of kilometers. The strike length of the dyke is ~900 m, width is 50 to 55 m with some branching nature in the southern part. Major Mineral constituents in Gabbro are pyroxene, plagioclase, and iron oxides. Epidotization is common along fracture planes and slickensides. Sassuratised feldspar is not uncommon. The grain size in the main dyke is medium to coarse grained, whereas it is fine grained in the off shoots. The main dyke shows several parcels of double colour in an otherwise single coloured gabbroic mass. **However, the site could not be visited due to time constraints.**

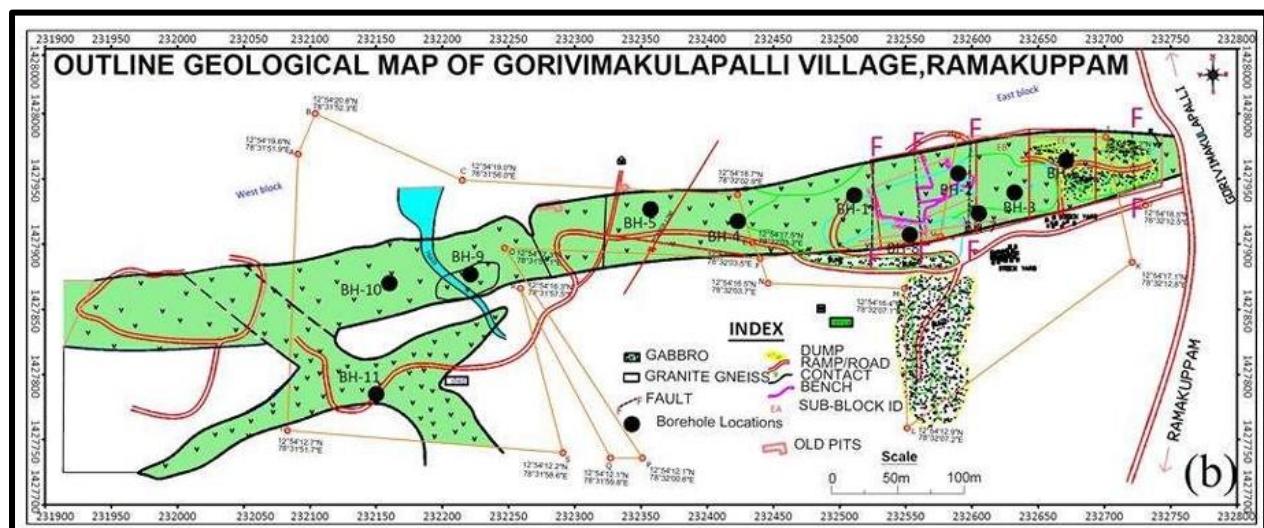
- (b) Exploration: Based on the client report, a total of 11 boreholes have been drilled in this sector, with a total meterage of 446.28 m. **However, the Geovale Audit team could not visit this site due to time constraints.**
- (c) Core Logging & Laboratory Studies: Logging was recorded at an interval of one meter on standard drill site log sheets. **The Geovale Audit team cross-checked all the chemical analysis and geotechnical study data and verified it. However, the core log sheets could not be verified with the core logs as the site was not visited due to time constraints.**
- (d) Deposit Modeling & Resource Estimation: For the purpose of quick appreciation of the saleable material from the proved reserves, the term “blockable reserves” has been introduced in the JORC report. The blockable reserve represents the theoretical yield of saleable raw blocks from the proved reserves after considering factors like rock textural uniformity, Rock Quality Designation (RQD), Joint Spacing Index (JSI), and relevant mining principles. It refers to the portion of the proved rock mass that can be converted into regular square or rectangular salable blocks through cutting and trimming. The projected theoretical yield for dimension stone is 20% of the proved reserves. MGPL has calculated the total blockable reserve of this sector, which is presented in the table below-

SI No.	Location	Volume (CBM)
1	Ramakuppam	198,747

The geological models have been prepared on AutoCAD. **However, the Geovale Audit team has observed that the DSG modifying (Deductible) factors like colour factor, textural factor, joint factor, and mining related factors do not follow any standard optimization.**

The standard block size for calculating the blockable reserve in the mines is referred to as the Gangsaw size, with dimensions of 300 x 180 cm above.

- (e) Market study: According to MGPL officials and **Geovale Audit team observation**, absolute black granite is traded in local markets to slab-cutting factories and local traders or resellers on cubic-meters basis. The current trading price of absolute black granite ranges from Rs 23,000 to Rs. 55,000/cbm at an average of Rs44,000/cbm. When there is no evidence of recrystallization or textural transformation within the absolute black granite blocks, the rock is designated as 'single color type' sold at a higher price in market.
- (f) Economic model: EM leading to the resource valuation of the MGPL mining assets has been undertaken by the DCF method.



Geological map of the dyke and drilled core bores in Ramakuppam sector

2.5 Kukatlapalli Absolute Black Granite Deposit:

- (a) Geology: According to the client report, the Absolute Black Granite refers to mafic rocks, i.e., gabbro/dolerite emplaced into the PGC and exposed on the surface as well-defined units due to their surface expression. The rock is grey to dark grey in rough blocks, but on polished surfaces, the rock looks absolutely shiny black, thus the term absolute black granite. The rock is phaneric-textured, made of uniform, equigranular, medium- to coarse- grained. The Kukatlapalli pluton consists of multiple phases of gabbro emplaced into the schistose tract of the NSB. The older phase of the gabbro is exposed

in the Boggulakonda and Jibirikonda hills (Fig.10a) and distinguished by the presence of epidotization of pyroxene, sassuritization of plagioclase, secondary white lines, and black lines. **However, the site could not be visited due to time constraints.**

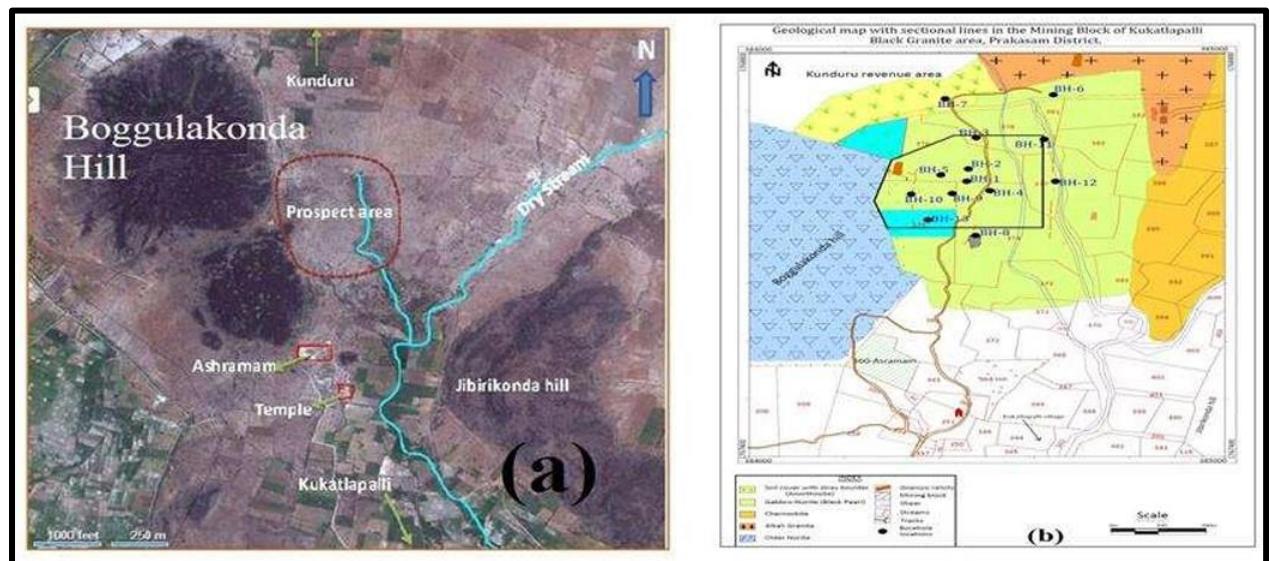
- (b) Exploration: Based on the client report, a total of 13 boreholes have been drilled in this sector, with a total meterage of 458 m. **However, the Geo Vale Audit team could not visit this site due to time constraints.**
- (c) Core Logging & Laboratory Studies: Logging was recorded at an interval of one meter on standard drill site log sheets. **The Geo Vale Audit team cross-checked all the chemical analysis and geotechnical study data and verified it. However, the core log sheets could not be verified with the core logs as the site was not visited due to time constraints.**
- (d) Deposit Modeling & Resource Estimation: For the purpose of quick appreciation of the saleable material from the proved reserves, the term “blockable reserves” has been introduced in the JORC report. The blockable reserve represents the theoretical yield of saleable raw blocks from the proved reserves after considering factors like rock textural uniformity, Rock Quality Designation (RQD), Joint Spacing Index (JSI), and relevant mining principles. It refers to the portion of the proved rock mass that can be converted into regular square or rectangular salable blocks through cutting and trimming. The projected theoretical yield for dimension stone is 20% of the proved reserves. MGPL has calculated a total blockable reserve of this sector, which is presented in the table below-

SI No.	Location	Volume (CBM)
1	Kukatlapalli	816,500

The geological models have been prepared on AutoCAD. **However, the Geo Vale Audit team has observed that the DSG modifying (Deductible) factors like colour factor, textural factor, joint factor, and mining related factors do not follow any standard optimisation.**

The standard block size for calculating the blockable reserve in the mines is referred to as the Gangsaw size, with dimensions of 300 x 180 cm above.

- (e) Market study: According to MGPL officials and **Geovale Audit team observation**, absolute black granite is traded in local markets to slab-cutting factories and local traders or resellers on cubic-meters basis. The current trading price of absolute black granite ranges from Rs 23,000 to Rs. 55,000/cbm at an average of Rs44,000/cbm. When there is no evidence of recrystallization or textural transformation within the absolute black granite blocks, the rock is designated as 'single color type' sold at higher price in the market.
- (f) Economic model: EM leading to the resource valuation of the MGPL mining assets has been undertaken by the DCF method.



- a) Google image showing younger gabbro plains east of Boggulakonda
- b) Outline geological map of the area with borehole locations

2.6 Ilkal Red Granite Deposit:

- (a) Location: The red granite deposit is a plateau-like terrain of close-set granite falls in the Survey of India Toposheet no 57A/1, which is located 81 km towards North from the district headquarters Koppal

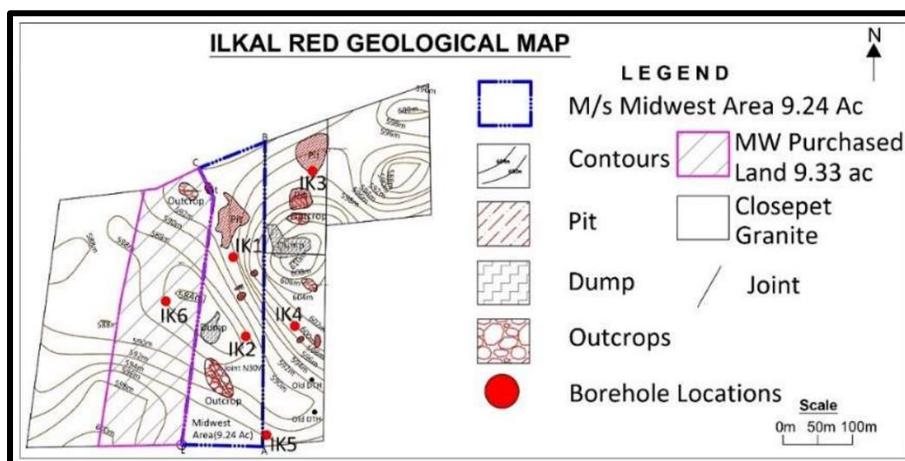
and 416 km from State capital Bangalore. National Highway NH 50–11 km towards Northeast, Vijayapura to Chitradurga Road.

- (b) Geology: According to client report, the granite deposit is a plateau like terrain of closepet granite, which is situated 81 km towards North from the district headquarters Koppal and 416 km from State capital Bangalore. The entire area is a plateau like terrain of closepet granite, represented by scattered boulders of pink granite boulders carpeting the sheet rocks and involving multiphase intrusive activities (three major phases), viz. grey granite, pink granite, and pink porphyritic granite. **However, this site could not be visited due to time constraints.**
- (c) Exploration: Based on the JORC report, in Ilkal, MGPL has conducted exploratory drilling in 6 boreholes with a cumulative meterage of 310 m. **However, this site could not be visited due to time constraints.**
- (d) Core Logging & Laboratory Studies: Logging was recorded at an interval of one meter on standard drill site log sheets. **No data on the chemical analysis of the samples was available. Also, the core log sheets could not be verified with the core logs as the site was not visited due to time constraints.**
- (e) Deposit modeling & resource estimation: For the purpose of quick appreciation of the saleable material from the proved reserves, the term “blockable reserves” has been introduced in the JORC report. The blockable reserve represents the theoretical yield of saleable raw blocks from the proved reserves after considering factors like rock textural uniformity, Rock Quality Designation (RQD), Joint Spacing Index (JSI), and relevant mining principles. It refers to the portion of the proved rock mass that can be converted into regular square or rectangular salable blocks through cutting and trimming. MGPL has calculated a total blockable reserve of 461,200 CBM of Ilkal red granite. The geological models have been prepared on AutoCAD. **However, the Geo Vale Audit team has observed that the DSG Modifying (Deductible) factors like colour factor,**

textural factor, joints factor, and mining related factors do not follow any standard optimisation.

The standard block size for calculating the blockable reserve in the mines is referred to as the Gangsaw size, with dimensions of 300 x 180 cm above.

- (f) Market study: According to MGPL officials and **Geovale Audit team observation**, colour granite has been considered marginal deposits as these have limited market acceptance and fewer profit margins.
- (g) Economic model: EM leading to the resource valuation of the MGPL mining assets has been undertaken by the DCF method.



Geological map of Ilkal red granite property owned by the MGPL

2.7 Vilasagar Tan Brown Granite Deposit:

- (a) Geology: The colour granite is tonalite to granodiorite, hosted in the PGC located in the Vilasagar area of the Karimnagar district. The rock is massive brown porphyry made of large crystals of pink/ brown potash feldspar associated with medium- to fine ground masses of quartz and plagioclase. Preponderance of elevated plagioclase on polished surfaces is known as 'pluck', which is a negative factor in the marketing of granite blocks. The area occupied by the tan brown porphyry spreads over several tens of square kilometers and has supported several mines in the area, thus it is called the 'Tan Brown

granite' mining district in Vilasagar area. **However, this site could not be visited due to time constraints.**

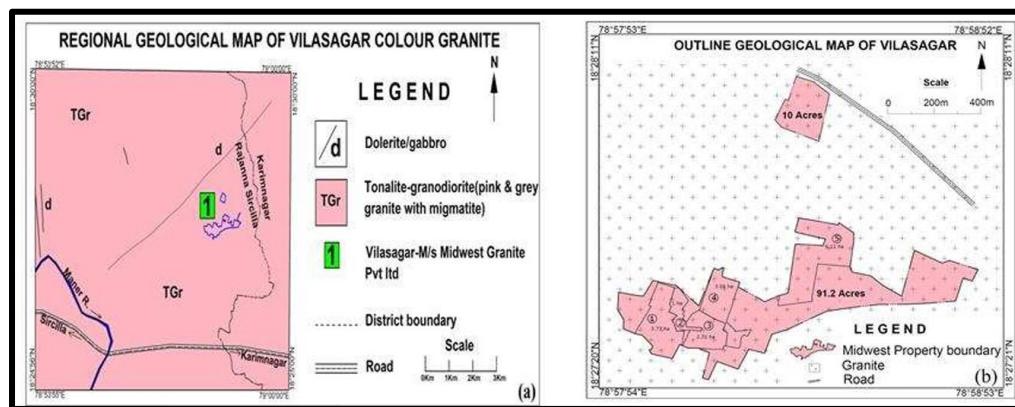
- (b) Exploration: Based on the JORC report, in Ilkal, MGPL has conducted exploratory drilling in 4 boreholes with a cumulative meterage of 122.2 m. **However, this site could not be visited due to time constraints.**
- (c) Core Logging & Laboratory Studies: Logging was recorded at an interval of one meter on standard drill site log sheets. **No data on the chemical analysis of the samples was available. Also, the core log sheets could not be verified with the core logs as the site was not visited due to time constraints.**
- (d) Deposit modeling & Resource estimation: For the purpose of quick appreciation of the saleable material from the proved reserves the term "blockable reserves" has been introduced in the JORC report. The blockable reserve represents the theoretical yield of saleable raw blocks from the proved reserves after considering factors like rock textural uniformity, Rock Quality Designation (RQD), Joint Spacing Index (JSI), and relevant mining principles. It refers to the portion of the proved rock mass that can be converted into regular square or rectangular salable blocks through cutting and trimming. MGPL has calculated a total blockable reserve of 3,871,180 CBM of Vilasagar Tan Brown Granite. The geological models have been prepared on AutoCAD. **However, the Geovale Audit team has observed that the DSG Modifying (Deductible) factors like colour factor, textural factor, joints factor, and mining related factors do not follow any standard optimisation.**

The standard block size for calculating the blockable reserve in the mines is referred to as the Gangsaw size, with dimensions of 300 x 180 cm above.

- (e) Market study: According to MGPL officials and **Geovale Audit team observation**, tan brown had a potential export market mainly to China. This market has its ups and downs, nowadays the export market is weak for various reasons, including business ethics, trade

issues, and local administrative reasons. The domestic market for this granite is weak and sold at lean prices due to its ubiquitous occurrence, and other types of coloured granite are available at competitive prices.

- (f) Economic model: EM leading to the resource valuation of the MGPL mining assets has been undertaken by the DCF method.



- a) Extract of Karimnagar DRM showing the tan brown area
b) Outline of leases held by the MGPL for mining

2.8 Kadapa Grey Marble deposit:

- (a) Location: The marble mining area is located at Siddavattam village, about 10 km east of Cuddapah/Kadapa town.
- (b) Geology: According to client report, the marble mining area is located in Siddavattam village, about 10 km east of Cuddapah town. The rock type for marble is light grey calcitic dolomites sandwiched in between two phyllites outcrops of the Cumbum Formation in the Nallamalai Group of rocks in the Cuddapah basin. Beds in the area show moderate to steep northerly dips along the slope direction in sub-equal amounts. **Geovale's team has observed the regional geology of this area and the adjacent area.**
- (c) Exploration: The Kadapa lease area of the mine is 3 hectares. The thickness of strata amounts to 100 m or more. A total of 5 boreholes were drilled in the area, with a total meterage of 265.5 m. **The Geovale Audit team visited all borehole locations and cross-checked borehole cores in the core shed area.**

(d) Core Logging & Laboratory Studies: Logging was recorded at an interval of one meter on standard drill site log sheets. The micritic dolomite in this region is a massive on hand specimen, in which calcite or dolomitic crystals are not visible to the naked eye, but only in thin sections. The calcite is predominant and can be identified by its rhombic nature and twinkling appearance. Dolomite is trigonal and shows a dull appearance in low relief. **The Geovale Audit team cross-checked all the log sheets with core boxes and the chemical analysis data and verified them.**



Study of the core boxes with the litho-logs by the Geovale Audit Team

(e) Deposit Modeling & Resource Estimation: For the purpose of quick appreciation of the saleable material from the proved reserves, the term “blockable reserves” has been introduced in the JORC report. The blockable reserve represents the theoretical yield of saleable raw blocks from the proved reserves after considering factors like rock textural uniformity, Rock Quality Designation (RQD), Joint Spacing Index (JSI), and relevant mining principles. It refers to the portion of the proved rock mass that can be converted into regular square or rectangular salable blocks through cutting and trimming.

The projected theoretical yield for dimension stone is 20% of the proved reserves. MGPL has calculated a total blockable reserve of 1,036,298 CBM of grey marble in Kadapa. The geological models have been prepared on AutoCAD. **However, the Geovale Audit team has observed that the DSG Modifying (Deductible) factors like colour factor, textural factor, joints factor, and mining related factors do not follow any standard optimization.**

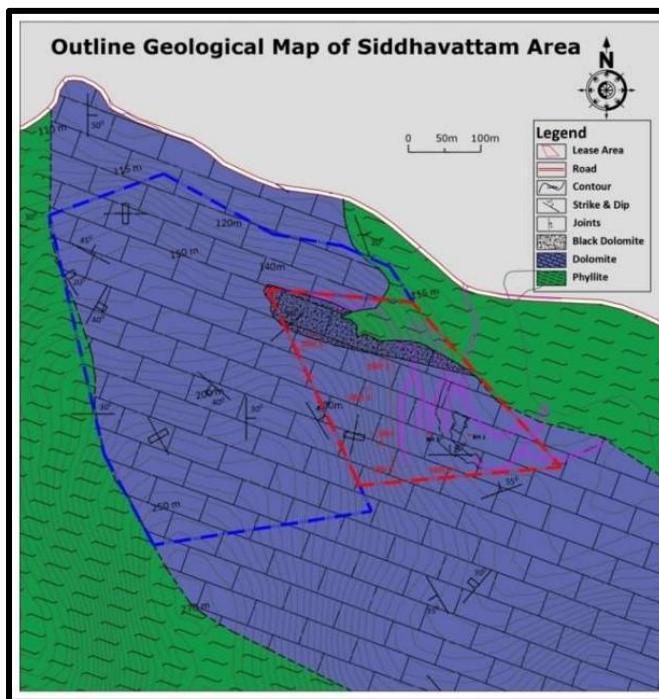
The standard block size for calculating the blockable reserve in the mines is referred to as the Gangsaw size, with dimensions of 300 x 180 cm above. **The Geovale Audit team has cross-checked the dimensions of the block and found them to be in accordance with the dimensions mentioned in the JORC report.**

- (f) Market study: According to MGPL officials and Geovale Audit team observation, grey marble is saleable, but its movement is slow in the market due to the issue of glossy bright polish. Market acceptance of grey marble is picking up.



Stockpile of grey marble blocks in Kadapa

(g) Economic model: EM leading to the resource valuation of the MGPL mining assets has been undertaken by the DCF method.



Outline geological map of marble deposit at Siddavattam, Kadapa district

2.9 Hanumanthunipadu Quartzite deposit:

(a) Geology: According to the client report, the existence of exposed quartzite in the N-S hill, surrounded by lowlands of phyllitic-schist covered in sand dunes, has been shown by geological mapping. With moderate to abrupt dips towards the east, the quartzite generally follows a N-S trend. A fault scarp represents the western face of the quartzite. While the eastern face is indicated by the curved slope of the quartzite beds that drop eastward along the hillside, the eastern side sand dunes make up OB to the objective "quartzite." There are three E-W traverse lines that intersect the quartzite hill's strike. Continuous chipping on a bed-by-bed basis has been used to explore the properties of rocks. Quartzite is varied, white to off-white, and laminated. The Central part of the quartzite hill is chosen for block making. Areal extent of the target area is 39000 Sq.m. The length of

the area is 300 m and its width is 130 m the general dip of the beds is 40 degrees towards east. Thickness of the target beds indicated is 40 m. Hill slope gradients and bed dips are oriented in the same direction at sub equal amounts. **Geovale's team has observed the regional and site geology, structure and mineralisation at this area, as well as the neighbouring area.**



Collection of structural data from field in the Kadapa Quartzite block

- (b) Exploration: Based on the client JORC report, 1 borehole was drilled in the area with a total meterage of 40.5 m. **Geovale Audit team visited all the exploratory drilling locations and cross-checked borehole cores in the core shed area.**
- (c) Core Logging & Laboratory Studies: Logging was recorded at an interval of one meter on standard drill site log sheets, **Geovale Audit team cross-checked all the log-sheets with core boxes.** The quartzite is subjected to major oxide analysis. **They are low in iron but rich in alumina, thus not suitable for ferro silicon manufacturing.** **Geovale Audit team had cross checked the chemical analysis laboratory data and verified it.**



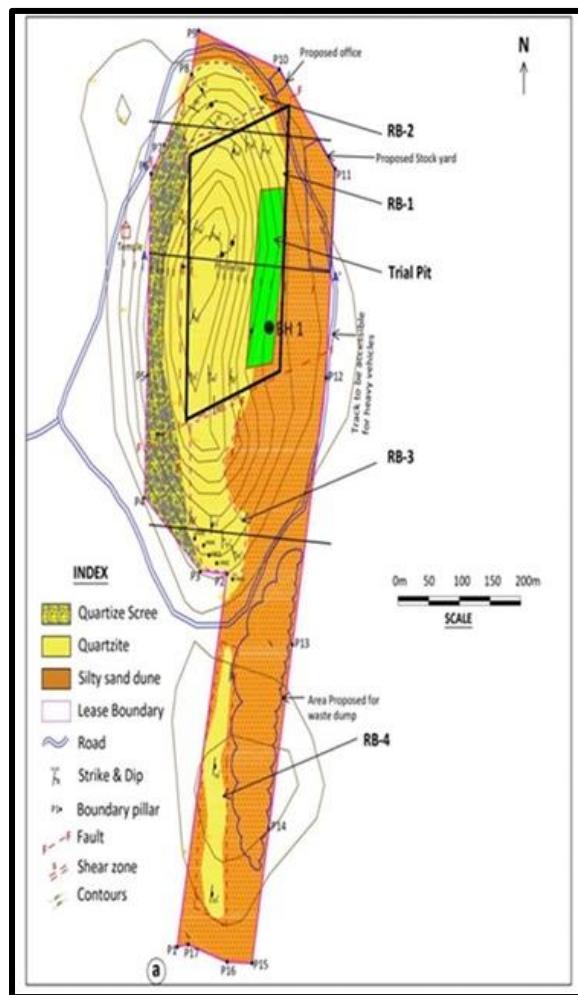
Drill core audit by the Geovale Audit Team

(d) Deposit Modeling & Resource Estimation: For the purpose of quick appreciation of the saleable material from the proved reserves, the term “blockable reserves” has been introduced in the JORC report. The blockable reserve represents the theoretical yield of saleable raw blocks from the proved reserves after considering factors like rock textural uniformity, Rock Quality Designation (RQD), Joint Spacing Index (JSI), and relevant mining principles. It refers to the portion of the proved rock mass that can be converted into regular square or rectangular salable blocks through cutting and trimming. The projected theoretical yield for dimension stone is 20% of the proved reserves. MGPL has calculated a total blockable reserve of 1,294,865 CBM of quartzite in Kadapa. The geological models have been prepared on AutoCAD. **However, the Geovale Audit team has observed that the DSG Modifying (Deductible) factors like colour factor, textural factor, joints factor, and mining related factors do not follow any standard optimisation.**

The standard block size for calculating the blockable reserve in the mines is referred to as the Gangsaw size, with dimensions of 300 x 180 cm above. **The Geovale Audit team has cross-checked the**

dimensions of the block and found it to be in accordance with the dimensions mentioned in the JORC report.

- (e) Market study: According to MGPL officials and **Geovale Audit team observation**, there is no established market for trading quartzite in the Indian scenario. At the same time, there is no well defined processing facility to command raw quartzite pricing based on chemical attributes, and the owners have to strive themselves to do quartzite marketing.
- (f) Economic model: EM leading to the resource valuation of the MGPL mining assets has been undertaken by the DCF method.

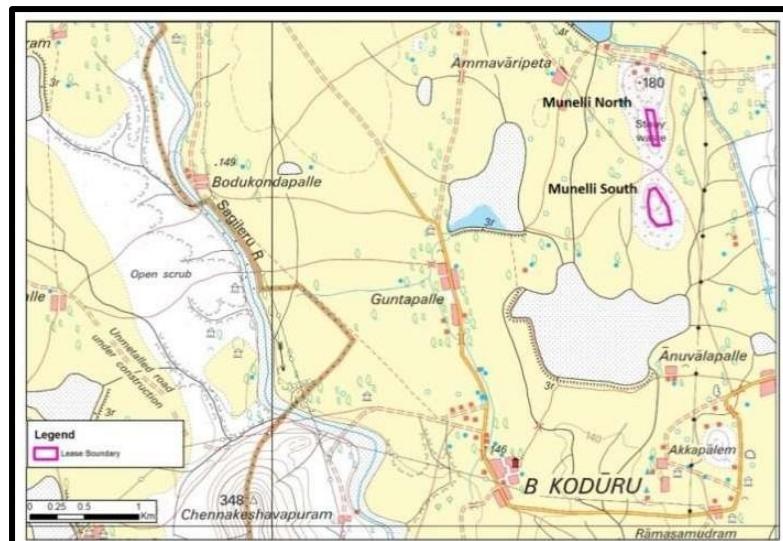


Geological map of Kadap Quartzite deposit

3.0 PROPERTY AUDITS: HIGH GRADE QUARTZ DEPOSITS

3.1 Location of properties:

- Chejerla: The quartz deposit is located adjacent to the eastern margin fault of the Cuddapah basin in parts of Guntur district at Chejerla, which is situated about 30 km west of Narasaraopeta town.
- Munelli: The Munelli area contains two licences, namely the Munelli (North) and Munelli (South). Munelli (South) area falls in the Survey of India Toposheet no. 57J/13. Where as Munelli (North) comes under Munelli & Koduru villages under Y.S.R Kadapa district, Andhra Pradesh.
- Kongalaveedu: Kongalaveedu (4.788 Ha) lease area comes under Kongalaveedu village, Y.S.R Kadapa district, Andhra Pradesh.
- NDR: The NDR- Midwest pegmatite mine is located in the pegmatite mining belt of the Nellore Schist belt of the Pre-Cambrian age.



Survey of India toposheet 57 J/13 showing the location of Quartz lease area

3.2 Exploration Methodology Adopted:

- Exploration strategy of MGPL is designed to conduct geological mapping supported by a Geophysical survey (Resistivity) to decipher sub-surface geometry and followed by test drilling to establish the depth persistence.
- As a first step, Geological mapping is conducted on appropriate Google maps/survey of India toposheets.
- The planning of electricity based Geophysical Surveys is made along the traverse lines across the linear ore bodies in Chejerla, Munelli, and Kongalaveedu blocks made with the objective of defining the 3-D subsurface configuration of quartz intrusive into the country rocks.
- A cumulative 237.5 M open hole drilling was undertaken by two DTH rigs in 08 bore wells to test the downward persistence and lateral extension of the quartz veins.

3.3 Chejerla Quartz deposit:

- (a) Geology: According to the client report, the quartz deposit is located adjacent to the eastern margin fault of the Cuddapah basin in parts

of Guntur district at Chejerla, which is situated about 30 km west of Narasaraopeta town. This geological domain is characterised by the presence of granite plutons emplaced in the Proterozoic metasedimentary rocks, i.e. phyllites and quartzites at Epuru Vellatureu and Chejerla. **Based on the Geovale's team observation, the youngest intrusive phase, i.e. Quartz veins cut across the leucogranite in which quartz veins are segregated along the fringes of the pluton, has been the target for exploration for high grade quartz veins.**



Observation of the regional geology in Chejerla by the Geovale Audit Team

- (b) Exploration: Based on Client JORC report, in Chejerla MGPL conducted total 04 numbers of BHs with 123 M of drilling. **Geovale Audit team visited all four BHs locations and cross-check borehole cores in the core shed area.**



Borehole Location in Cherjala High Grade Quartz Deposit

- (c) Core Logging & Laboratory Studies: Logging was recorded at an interval of one meter on standard drill site log sheets, Geovale Audit team cross-checked all the log-sheets with coreboxes. Garb samples of quartz ore on as received basis have indicated that the ore is of good quality analyzing 99.6% SiO₂ and about 0.2% sesquioxides (Al₂O₃ + Fe₂O₃) and remaining traces of ~100 ppm only. **The Geovale Audit team had cross checked all the chemical analysis reports for its availability.**
- (d) Deposit Modeling & Resource Estimation: MGPL has calculated a total resource for the Chejerla area is 1,368,595 Tonnes (approximately 1.4 MT). **Geovale Audit team reviewed the resource estimation method and found it satisfactory.**
- (e) Market study: According to MGPL officials and **Geovale Audit team observation**, there is no established market for trading high grade quartz in the Indian scenario. At the same time, there is no well defined processing facility to command raw quartz pricing based on chemical attributes, and the owners have to strive themselves to do quartz marketing.

- (f) Economic model: EM leading to the resource valuation of the MGPL mining assets has been undertaken by the DCF method.

3.4 Munelli Quartz deposit:

(a) Geology: The Munelli area contains two licences, namely the Munelli (north) and Munelli (south). The study area is a part of the Nallamalai sub-basin of the Proterozoic Cuddapah basin. Badvel area is mainly phyllitic lowland of typical valley structure flanked on either side by the quartzite ridges. The main country rock in the area is phyllites, which show N-S foliation. The bedding plane and foliation are sub parallel thereby indicating that the area is part of the major fold axis. Several major and minor linear quartz reefs are emplaced parallel to the fold axis and well revealed by the elevated topographic features in an otherwise phyllitic lowland. The present study has revealed that each such elevated feature consists of one or more parallel quartz veins interbedded with phyllite bands. Water leaching along the foliation planes has imparted a ferruginous coating to the quartz veins.



Disposition of the quartz veins in Munelli



- (b) Exploration: Detailed geological mapping was carried out in 1:1000 scale by MGPL to know the surface behaviour of the quartz veins. The field traverses are made across the strike to record the structural and lithological variations. The detailed geological mapping has revealed that the quartz mineralization in the study area occurs as discontinuous parallel lenses that intrude along the foliation of the phyllitic country rock. Based on the client JORC report, Munelli MGPL conducted total 02 numbers of BHs with 51.5 M of drilling. **Geovale Audit team has taken some traverses of the lease area and also visited both BHs locations and cross-check borehole cores in the core shed area.**
- (c) Core Logging & Laboratory Studies: Logging was recorded at an interval of one meter on standard drill site log sheets, **Geovale Audit team cross-checked all the log-sheets with coreboxes.** Garb samples of quartz ore on as received basis have indicated that the ore is of good quality analyzing 99.7% SiO₂ and about 0.2% sesqioxides (Al₂O₃ + Fe₂O₃) and remaining traces of ~100 ppm only. The Geovale Audit team had cross checked all the chemical analysis data and verified it. Based on visual appearance due to impurities, quartz is divided into A, M and B grades, respectively. The A grade is milky white pure quartz without any impurities, whereas M and B grades contains impurities progressively.



Observation and study of the core boxes with the litho-logs by Geovale Audit Team

- (d) Deposit Modeling & Resource Estimation: Resources are calculated for each quartz vein separately using the area method up to a depth of 50 m. MGPL has calculated that the total resource for Munelli (south) area is 1,123,200 Tonnes (1.1 MT) and for Munelli's (North) area is 5,14,800 Tonnes (0.5 MT). **Geovale Audit team reviewed the resource estimation method and found it satisfactory.**
- (e) Market study: According to MGPL officials and **Geovale Audit team observation**, there is no established market for trading High-grade quartz in the Indian scenario. At the same time, there is no well defined processing facility to command raw quartz pricing based on chemical attributes, and the owners have to strive themselves to do quartz marketing.
- (f) Economic model: EM leading to the resource valuation of the MGPL mining assets has been undertaken by the DCF method.

3.5 Kongalaveedu Quartz deposit:

- (a) Geology: Since, the Kongalaveedu area is covered by thick scree cover with bouldery quartz mineralization, it is hard to demarcate the individual quartz veins/lenses. However, by extrapolating quartz

occurrences across the field traverses, it is possible to demarcate about two parallel quartz veins with the dimensions given below from west to east.



Collecting structural data during field visit by Geovale Audit Team

- (b) Exploration: Detailed geological mapping was carried out in 1:1000 scale by MGPL to know the surface behaviour of the quartz veins. The field traverses are made across the strike to record the structural and lithological variations. The detailed geological mapping has revealed that the quartz mineralization in the study area occurs as discontinuous parallel lenses that intrude along the foliation of the phyllitic country rock. Based on the client JORC report, in Kongalaveedu, MGPL conducted total 02 numbers of BHs with 63.0 M of drilling. **Geovale Audit team has taken some traverses of the lease area and also visited both BHs locations and cross-check borehole cores in the core shed area.**
- (c) Core Logging & Laboratory Studies: Logging was recorded at an interval of one meter on standard drill site log sheets, Geovale Audit team cross-checked all the log-sheets with coreboxes. During detailed geological mapping, representative samples have been collected from different grades of quartz to determine the geochemical concentration of the major and trace elements. The samples were analysed in certified laboratories. Samples of quartz

ore on as received basis have indicated that the ore is of good quality analyzing 99.5% SiO₂ and about 0.2% sesquioxides (Al₂O₃ + Fe₂O₃) and remaining traces ~100 ppm only. **Geovale Audit team had cross checked all the chemical analysis data and verified the availability of laboratory reports.**

- (d) Deposit Modeling & Resource Estimation: Resources are calculated for each quartz vein separately using the area method up to a depth of 50 m. MGPL has calculated a total resource for Kongalaveedu area is 5,01,691 Tonnes (0.5 MT). **The Geovale Audit team reviewed the resource estimation method and found it satisfactory.**
- (e) Market study: According to MGPL officials and **Geovale Audit team observation**, there is no established market for trading high grade quartz in the Indian scenario. At the same time, there is no well defined processing facility to command raw quartz pricing based on chemical attributes, and the owners have to strive themselves to do quartz marketing.
- (f) Economic model: EM leading to the resource valuation of the MGPL mining assets has been undertaken by the DCF method.

3.6 NDR-Midwest pegmatite:

- (a) Geology: The NDR- Midwest mine is located in the pegmatite mining belt of the Nellore Schist belt of the Pre Cambrian age. The regional trend of the schist belt is NW-SE and swerves to NE-SW. It is intruded by Ipuru granite. Granitization of the schists and development of pegmatites and quartz veins in N-S to NW-SE are conspicuous. Both of which are well known for the occurrence of mica, feldspar, and quartz. The quartz content in pegmatite ranges from 15 to 45%. There is lithological grading and zoning between these two, which has caused quartzification in the quartzite bands of the schist belt. On the other hand, these two rocks display sharp contact with country rock metaagillites (phyllites & schists). Traditionally these two rocks were mined to extract the mica and feldspar. Quartz is white to milky white, semitransparent, and invariably it analyses 99.5% SiO₂.

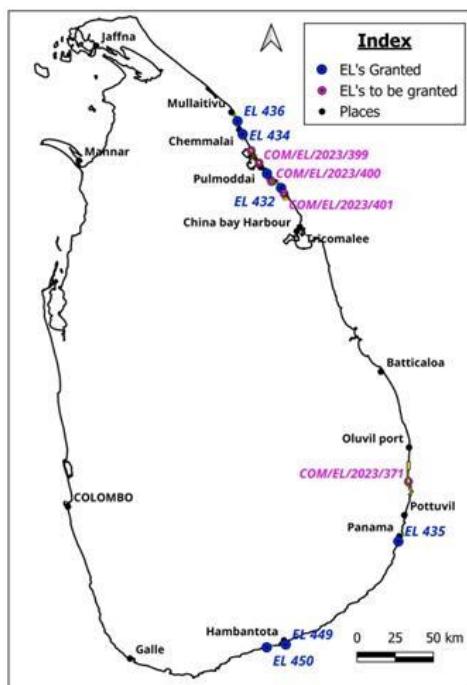
- (b) Exploration: No exploration work done so far at NDR pegmatite area. **Geo Vale Audit Team did not visit the NDR site during their field visit.**
- (c) Core Logging & Laboratory Studies: During detailed geological mapping, representative samples have been collected from different grades of quartz to know the geochemical concentration of the major and trace elements. The samples were analysed in certified laboratories. Samples of quartz ore on as received basis have indicated that the ore is of good quality analyzing 99.8% SiO₂ and about 0.2% sesquioxides (Al₂O₃ + Fe₂O₃) and remaining traces ~100 ppm only. **Geo Vale Audit team had cross-checked all the chemical analysis laboratory reports for their availability.**
- (d) Deposit Modeling & Resource Estimation: Resources are calculated for each quartz vein separately using the area method up to a depth of 50 m. MGPL has calculated a total resource for NDR-Midwest pegmatite area is 2,02,800 Tonnes (0.2 MT). **The Geo Vale Audit team reviewed the Resource estimation method and found it satisfactory.**
- (e) Market study: According to MGPL officials and **Geo Vale Audit team observation**, there is no established market for trading high grade quartz in the Indian scenario. At the same time, there is no well defined processing facility to command raw quartz pricing based on chemical attributes, and the owners have to strive themselves to do quartz marketing.
- (f) Economic model: EM leading to the resource valuation of the MGPL mining assets has been undertaken by the DCF method.

4.0 PROPERTY AUDITS: HEAVY MINERAL BEACH SAND IN SRI LANKA

MGPL holds seven (07) exploration licenses covering 66 sq. km along the eastern and southern coastlines of Sri Lanka. Exploration activities focused on identifying valuable heavy minerals such as ilmenite, rutile, zircon, and garnet.

4.1 Location of properties:

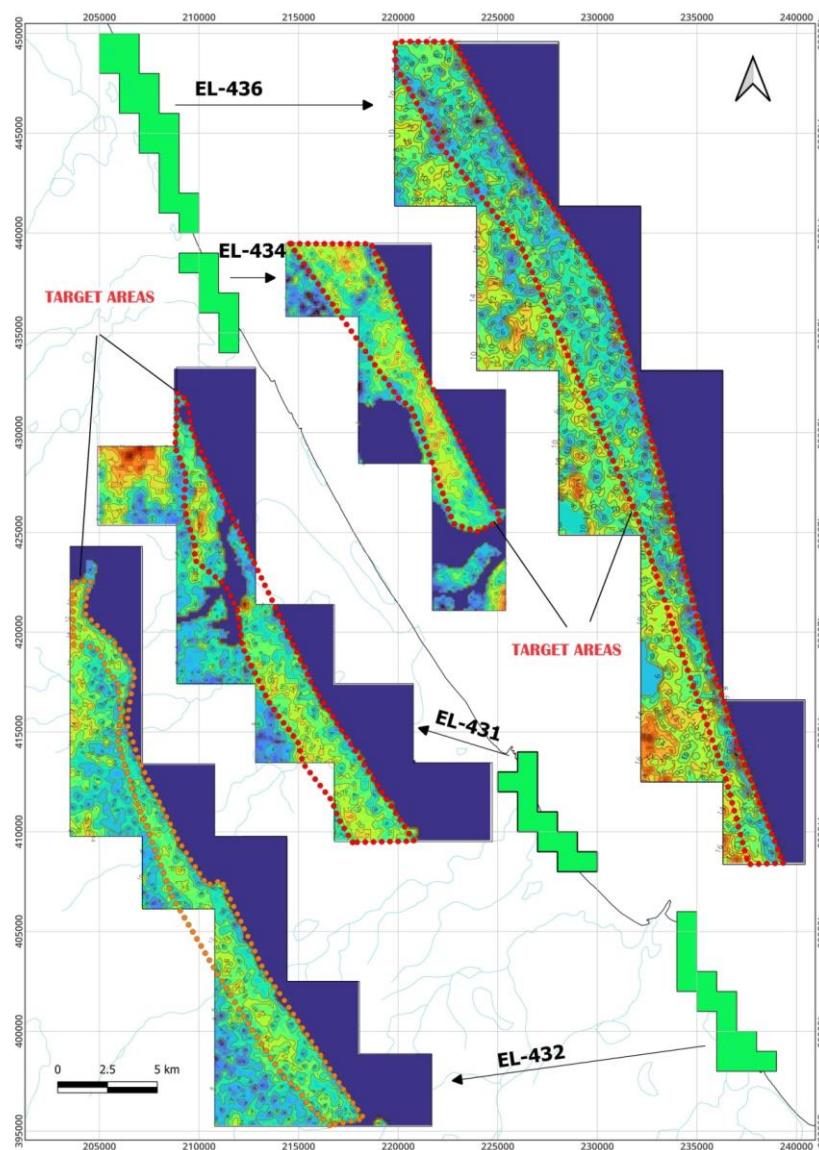
The exploration projects are located in the northeast coast of Sri Lanka between Mullaitivu and Trincomalee (Fig.3). The cumulative area is 47 sq km, and the strike length of the coast is 31 km.



Location map of MGPL assets in Sri Lanka

4.2 Exploration Methodology Adopted:

Target generation studies are the prime requirement for the initiation of field exploration for heavy sand exploration. Onshore areas of each license were studied by using images available in the public domain. It has focused on the delineation of coastal landforms, viz., strandline, shore geometry, shore gradient, HTL, LTL, and intertidal zone. The sand bodies thus delineated have formed the target for exploration. Ahome Consultancy Pvt. Ltd. was commissioned by the MGPL to carry out the RS and GIS studies in their license areas. The study of coastal geomorphic landforms, the creation of topographic maps showing the locations of sand bars and auger boreholes, auger drilling sampling, and litho-logging are all part of the follow-up exploration.



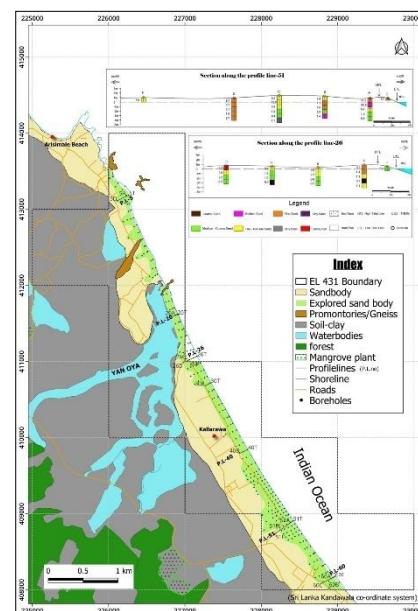
Imageries showing the delineated sand bodies for Exploration

4.3 EL-431 Lease:

The topographic survey has focused on the delineation of sand body outlines and the estimation of surface area for exploration. For the EL-431 lease, the sand body extent is 2.69 sq. km, whereas the investigated extent is 0.896 sq. km. The coastal length for EL-431 is 6.1 km. The drilling was

conducted by auger drilling, which was outsourced to the Geological Survey and Mines Bureau (GSMB). Besides this, Midwest Heavy Sands (MHPL) personnel have participated in and monitored drilling operations. As per the United Nations Framework Classification (UNFC) for Mineral Resources, for detailed exploration (G1) of beach sand minerals, drilling on 200 x 50 m to 100 x 25 m grid intervals is envisaged. Hence, drilling was carried out on a rectangular 100 m x 50 m grid for the measured category of resource. However, the borehole interval of 200 m is also used along the longitudinal lines. Manual Auger and Power Auger of Dormer Soil Samplers (Soil and Sand Sampling and Drilling Equipment) are used for drilling in the above water table (AWT) zone. Whistle-top-type sludgers (sand pumps, bailers) are employed for the collection of samples in the below-water table (BWT) zone. Total 272 number of augerholes drilled with total meterage of 977 M.

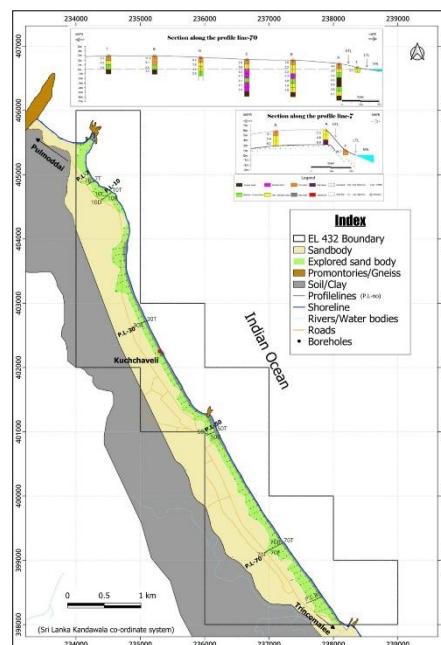
During the drilling process, the detailed drill log sheets were maintained by the MGPL exploration team. Among other things, the log sheets have clearly recorded water table (WT) depth, total drilled depth (DD), and the number of samples (NO's) collected at intervals of 1m. A field description of the sample is made at the drill site. The Geovale Audit team cross-checked all the lithological log sheets with sample numbers and found them to be satisfactory.



*EL-431 Exploration Plan***4.4 EL-432 Lease:**

The topographic survey has focused on the delineation of sand body outlines and the estimation of surface area for exploration. For the EL-432 lease, the sand body extent is 3.76 sq. km, whereas the investigated extent is 1.36 sq. km. The coastal length of EL-432 is 8.5 km. The drilling was conducted by auger drilling, which was outsourced to the Geological Survey and Mines Bureau Technical Services (GSMB TS). Besides this, Midwest Heavy Sands (MHPL) personnel have participated in and monitored drilling operations. As per the United Nations Framework Classification (UNFC) for Mineral Resources, for detailed exploration (G1) of beach sand minerals, drilling on 200 x 50 m to 100 x 25 m grid intervals is envisaged. Hence, drilling was carried out on a rectangular 100 m x 50 m grid for the measured category of resource. However, the borehole interval of 200 m is also used along the longitudinal lines. Manual Auger and Power Auger of Dormer Soil Samplers (Soil and Sand Sampling and Drilling Equipment) are used for drilling in the above water table (AWT) zone. Whistle-top-type sludgers (sand pumps, bailers) are employed for the collection of samples in the below-water table (BWT) zone. Total 317 number of augerholes drilled with total meterage of 1177 M.

During the drilling process, the detailed drill log sheets were maintained by the MGPL exploration team. Among other things, the log sheets have clearly recorded water table (WT) depth, total drilled depth (DD), and the number of samples (NO's) collected at intervals of 1m. A field description of the sample is made at the drill site. The Geovale **Audit team cross-checked the lithological log sheets randomly, with sample numbers and found them to be of reasonable accuracy and in standard reporting template.**

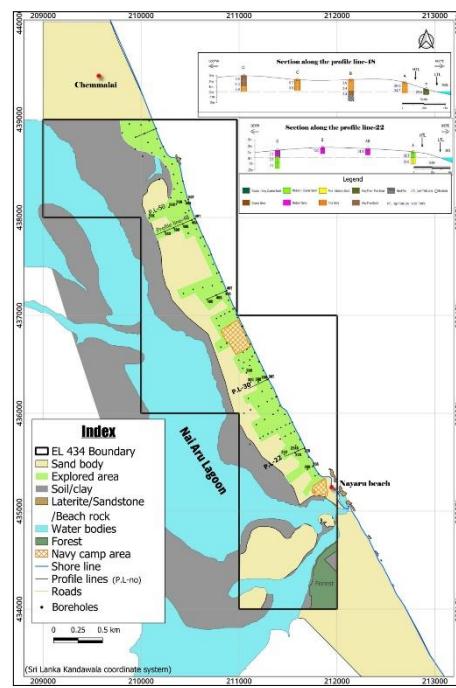


EL-432 Exploration Plan

4.5 EL-434 Lease:

The topographic survey has focused on the delineation of sand body outlines and the estimation of surface area for exploration. For the EL-434 lease, the sand body extent is 2.15 sq. km, whereas the investigated extent is 0.95 sq. km. The coastal length of EL-434 is 4.1 km. The drilling was conducted by auger drilling, which was outsourced to the Geological Survey and Mines Bureau Technical Services (GSMB TS). Besides this, Midwest Heavy Sands (MHPL) personnel have participated in and monitored drilling operations. As per the United Nations Framework Classification (UNFC) for Mineral Resources, for detailed exploration (G1) of beach sand minerals, drilling on 200 x 50 m to 100 x 25 m grid intervals is envisaged. Hence, drilling was carried out on a rectangular 100 m x 50 m grid for the measured category of resource. However, the borehole interval of 200 m is also used along the longitudinal lines. Manual Auger and Power Auger of Dormer Soil Samplers (Soil and Sand Sampling and Drilling Equipment) are used for drilling in the above water table (AWT) zone. Whistle-top-type sludgers (sand pumps, bailers) are employed for the collection of samples in the below-water table (BWT) zone. Total 156 number of augerholes drilled with total meterage of 340 M.

During the drilling process, the detailed drill log sheets were maintained by the MGPL exploration team. Among other things, the log sheets have clearly recorded water table (WT) depth, total drilled depth (DD), and the number of samples (NO's) collected at intervals of 1m. A field description of the sample is made at the drill site. The Geovale Audit team cross-checked all the lithological log sheets with sample numbers and found them to be satisfactory.



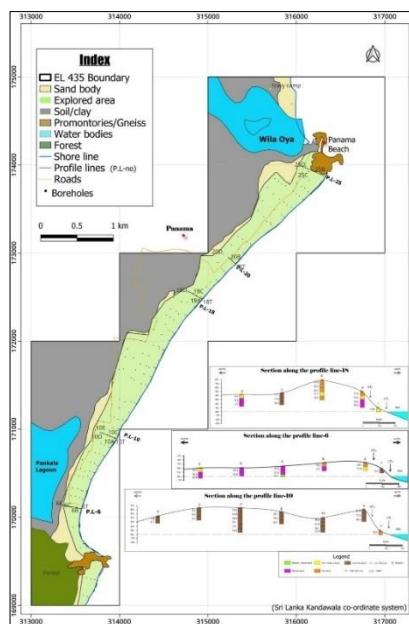
EL-434 Exploration Plan

4.6 EL-435 Lease:

The topographic survey has focused on the delineation of sand body outlines and the estimation of surface area for exploration. For the EL-435 lease, the sand body extent is 2.25 sq. km, whereas the investigated extent is 1.62 sq. km. Coastal length for EL-435 is 6.0 km. The drilling was conducted by auger drilling, which was outsourced to the Geological Survey and Mines Bureau Technical Services (GSMB TS). Besides this, Midwest Heavy Sands (MHPL) personnel have participated in and monitored drilling operations. As per the United Nations Framework Classification (UNFC) for Mineral Resources, for detailed exploration (G1) of beach sand minerals, drilling on 200 x 50 m to 100 x 25 m grid intervals is envisaged. Hence, drilling was carried out on a rectangular 100 m x 50 m grid for the measured category of resource. However, the borehole interval of 200 m

is also used along the longitudinal lines. Manual Auger and Power Auger of Dormer Soil Samplers (Soil and Sand Sampling and Drilling Equipment) are used for drilling in the above water table (AWT) zone. Whistle-top-type sludgers (sand pumps, bailers) are employed for the collection of samples in the below-water table (BWT) zone. Total 196 number of augerholes drilled with total meterage of 326 M.

During the drilling process, the detailed drill log sheets were maintained by the MGPL exploration team. Among other things, the log sheets have clearly recorded water table (WT) depth, total drilled depth (DD), and the number of samples (NO's) collected at intervals of 1m. **The Geovale Audit team cross-checked the lithological log sheets with sample numbers and found them to be satisfactory.**



EL-435 Exploration Plan

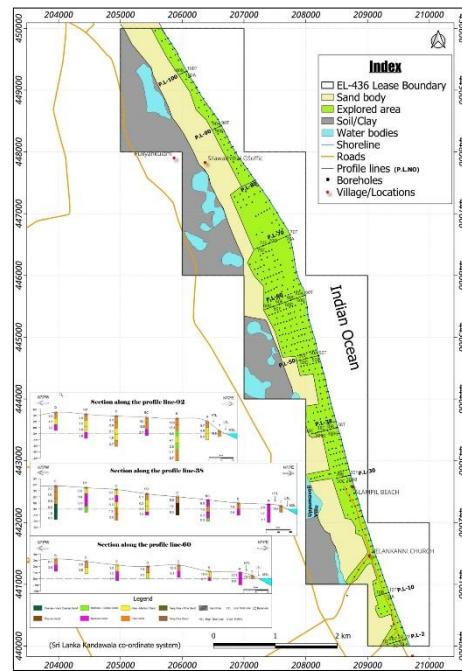
4.7 EL-436 Lease:

The topographic survey has focused on the delineation of sand body outlines and the estimation of surface area for exploration. For the EL-436 lease, the sand body extent is 7.15 sq. km, whereas the investigated extent is 3.68 sq. km. The coastal length for EL-436 is 10.8 km. The drilling was conducted by auger drilling, which was outsourced to the Geological

Survey and Mines Bureau Technical Services (GSMB TS). Besides this, Midwest Heavy Sands (MHPL) personnel have participated in and monitored drilling operations. As per the United Nations Framework Classification (UNFC) for Mineral Resources, for detailed exploration (G1) of beach sand minerals, drilling on 200 x 50 m to 100 x 25 m grid intervals is envisaged. Hence, drilling was carried out on a rectangular 100 m x 50 m grid for the measured category of resource. However, the borehole interval of 200 m is also used along the longitudinal lines. Manual Auger and Power Auger of Dormer Soil Samplers (Soil and Sand Sampling and Drilling Equipment) are used for drilling in the above water table (AWT) zone. Whistle-top-type sludgers (sand pumps, bailers) are employed for the collection of samples in the below-water table (BWT) zone. Total 469 number of augerholes drilled with total meterage of 978 M.

During the drilling process, the detailed drill log sheets were maintained by the MGPL exploration team. Among other things, the log sheets have clearly recorded water table (WT) depth, total drilled depth (DD), and the number of samples (NO's) collected at intervals of 1m. A field description of the sample is made at the drill site. **The Geovale Audit team cross-checked the lithological log sheets randomly with sample numbers and found them to be satisfactory.**





EL-436 Exploration Plan

4.8 Laboratory Studies of Heavy Mineral Sand

All the individual and composite samples were analysed in in-house (MWHS) laboratories situated in Irrakandy, Sri Lanka, and Hyderabad, India. As a QA and QC measure, 194 selected individual samples from all ELs were given to the GSMB laboratory in Colombo for analysis. The data comparison with the MWHS lab is given below.

EL No.	No. of samples	GSMB/ MWHS Lab	THM%	Variation %
EL-431	44	GSMB	17.92	85.1
		MWHS	2.67	
EL-432	72	GSMB	3.62	3.64
		MWHS	3.49	
EL-434	26	GSMB	22.85	0.28
		MWHS	22.79	
EL-435	25	GSMB	14.18	0.94
		MWHS	14.05	
EL-436	57	GSMB	6.81	20.02
		MWHS	5.45	

Total	194			
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Geovale Audit team cross-check all the data which analyzed from GSMB Laboratory in Colombo, and find to be satisfactorily reported.

4.9 Geological Modelling & Resource Estimation:

Mineral resources were estimated using Block Method. The areas of blocks are determined from Composite Plan diagram using AutoCAD. The area of each composite sub-block was multiplied by its average thickness to obtain the volumes. The volumes of the sub-blocks were multiplied by their respective composite sample BD values to arrive at the raw sand tonnages. By totaling the tonnages of all composite sub-blocks, raw sand resources were estimated in the explored area.

EL ID	Area	Coastal Length (km)	Sand body extent (sq.km)	Explored Sand body extent (sq. km)	Explored sand body %	Raw sand Resources (MT)	Avg. THM%	HM Resources (MT)
EL 431	Kallarawa	6.10	2.69	0.90	33.00	8.82	3.08	0.27
EL 432	Kuchchaveli	8.50	3.76	1.36	36.00	12.90	2.86	0.37
EL 434	Chemmalai	4.20	2.15	0.95	44.20	6.40	17.69	1.13
EL 435	Panama	6.00	2.25	1.62	72.00	10.27	11.21	1.15
EL 436	Mullaittivu	10.80	7.15	3.68	51.50	23.46	4.40	1.03
Sub Total		18.00	8.51	-----	61.85	6.39	3.95	
EL 449	Hambantota	2.50	0.7	0.18	25.71	Exploration drilling completed, analysis is underway		
EL 450	Godavaya	5.20	1.38	0.10	7.25	Phase-II drilling is in process		

Geovale Audit team discussed with MGPL Resource Geologist and verify all the Resource estimation method. It looks satisfactory.

MGPL calculated replenishable resource as the following method:

Volume = length of coast in m x width of tidal zone in m x thickness in m

Tonnage = volume X B.D.

HM resource = tonnage X grade in wt%/100

EL No.	HM Resource (Tonnes)
EL-431	14,324
EL-432	19,500
EL-434	27,460
EL-435	18,900
EL-436	32,724
Total	1,12,908

License wise Replenishable Heavy Mineral resources

4.10 Economic Evaluation:

Based on the report, **the Geovale Audit team observed** that the total in-situ raw sand resources, TTIS (Total in-situ tonnes) are estimated to an amount of **51.6 MMT with 5.4% THM** from the EL/431, EL/432, EL/434 and EL/436, licenses in Sri Lanka.

Resources summary			
EL ID	RAW SAND	THM TONNAGES	THM %
EL/431	88,20,246	2,71,737	3.1
EL/432	1,29,38,343	3,69,492	2.9
EL/434	63,95,116	11,31,447	17.7
EL/436	2,34,56,024	10,33,020	4.4
TOTAL	5,16,09,729	28,05,696	5.4

Total In- situ raw sand resources considered for valuation are tabulated as above.

Valuation: The Geovale Audit team perceived that the raw sand resources comprise various valuable heavy minerals (VHM), which will be separated into two levels. Midwest plans to install concentration and separation plants to process the raw sands.

Primary Concentration plant (PCP) is planned at Mine site which will separate Ilmenite and Rutile.

Mineral Separation plant (MSP) is planned near the Port to separate Zircon.
 Valuation of Midwest Heavy Sands.

Description	UO M	Referen ce	Qty in Tonnes	per ton cost in USD	Total Cost in USD	in Million USD
Mining Cost	Ton	ROM	5,16,09,729	6.43	33,20,43,316	332.0
Back Filling Cost	Ton	ROM	4,88,22,804	0.99	4,85,28,690	48.5
Opex - PCP	Ton	ROM	5,16,09,729	0.27	1,36,79,687	13.7
Transportation cost from PCP to MSP	Ton	THM	9,58,868	21.96	2,10,54,655	21.1
Opex - MSP	Ton	THM	9,58,868	0.27	2,54,158	0.3
Transportation cost from MSP to Port	Ton	THM	2,95,398	15.33	45,27,066	4.5
Packaging charges	Ton	THM	21,42,227	5.42	1,16,14,481	11.6
Total Cost					43,17,02,056	431.7
Sales						
Ilmenite	Ton s	THM	1,632,641	370	604,077,175	604.1
Rutile	Ton s	THM	2,14,187	2299	492,416,568	492.4
Zircon	Ton s	THM	295,398	2421	715,159,212	715.2
Total Sales Value			2,142,227			1811.7

CESS						
Ilmenite	Ton s		1,632,641	5.5	8,979,526	9.0
Rutile	Ton s		214,187	7.3	1,563,567	1.6
Zircon	Ton s		295,398	3.7	1,092,974	1.1
Total CESS						11.6
Royalty - 9%						163.05
Profit Before taxes						1,205.3
Income Tax - 30%						361.6
Profit after tax						843.7
Uncertainties Considered						
a. Uncertainty towards Mining estimation (8 - 10%) considered 9%						75.9
b. Uncertainty towards Mining extraction error (8 - 10%) considered 9%						75.9
c. Other unforeseen. Considered 5%						42.2
Total uncertainties						194.0
Profit after uncertainties						649.6

UOM- Unit of Measurement; ROM – Run of Mine; THM – Total Heavy Minerals

5.0 AUDIT CONCLUSIONS

5.1 : Dimension Stone Granite (DSG)

1. Resource & Reserves:

- The report details of 24 DSG mineral assets, including operating, dormant and developed properties across Andhra Pradesh, Telangana and Karnataka.
- Proven reserves are estimated with a weight factor of 1cbm = 03 tonnes.
- Total reserves include:
 - Black Galaxy Granite: 50.5 million cbm.
 - Absolute Black Granite: 22.5 million cbm.
 - Color Granite (Tan Brown): 14.9 million cbm.
 - Ilkal (Ruby Red): 1.7 million cbm.
 - Grey Marble: 3.9 million cbm.
 - Quartzite: 4.2 million cbm.

2. Economic Evaluation

- The fundamental NPV of DSG mineral reserves is estimated at INR 999.2 crores (\$ 121 million USD).
- Fair market value is calculated at INR 1092.5 crores (\$ 133.2 million USD).
- Appraised value, including investment in land, machinery and exploration, totals INR 1350.5 crores (\$ 164 million USD).

3. Mining Operations:

- MGPL employs 1,556 personnel in mining operations.
- Utilizes state-of-art machinery valued at INR 163 crores (\$ 20 million USD).
- Emphasis on environmental safety and compliance with relevant regulations.

4. Market and Trading:

- Major export markets include China and Italy, with ongoing negotiations with Vietnam, Dubai and Turkey.
- Black Galaxy Granite fetches between INR 55,000 and INR 85,000 per cbm.

5.2 High Grade Quartz Deposits

1) Resource Estimates:

- Total high-grade quartz resources estimated at 3.7 MMT across Chejerla, Munelli, Kongalaveedu and NDR.
- Quartz characterized by > 99.5% SiO₂, suitable for high-end applications like semiconductor and solar panels.

2) Economic Valuation:

- Estimated NPV of high-grade quartz deposits at INR 563.6 crores (\$69 million USD).

3) Market Potential:

- Emphasis on setting up a pilot for quartz upgradation to enhance market value.

5.3 Heavy Mineral Sand Resources in Sri Lanka

1. Exploration Licenses:

- MGPL holds seven (07) exploration licenses covering 66 sq.km along the Eastern and Southern coastlines of Sri Lanka.
- Exploration activities focused on identifying valuable heavy minerals such as Ilmenite, Rutile, Zircon and Garnet.

2. Resource Estimates:

- Total heavy mineral resources estimated at 3.95 million tonnes.



3. Economic Valuation:

- Suggested valuation of heavy mineral sands at \$ 140 million USD after considering uncertainties.

5.4 COMPLIANCE AND REVIEW

a. Competent Person's Consent

- The report is prepared by Dr. G Lakshminarayana, a recognized competent person under the JORC 2012 guidelines, ensuring adherence to the principles of transparency, materiality, competence and impartiality.

b. Internal Audits:

- MGPL conducted internal audits on reserve estimation, which were found satisfactory.

c. Statutory Compliance:

- All mining activities comply with relevant statutory regulations, including mining plans, environmental management plans and health safety regulations.

5.5 GENERAL COMMENTS AND OBSERVATIONS

- The report is comprehensive and details of exploration & geology is quite well.
- The Reviewer has reviewed validity of Mining permits and Environmental licenses and other Govt. approvals as provided.
- Total 5290 meters of drilling in 103 BHs conducted across various deposits, with core recovery>95%, except Kongalaveedu, though the core recovery is very poor.
- Comprehensive laboratory tests including chemical analysis and petrographic study has been done in different laboratories in India and abroad. Assay reports have been verified by Reviewer in detail.
- AutoCAD was used to prepare a geological model for each mine, based on contoured survey maps, pit outlines, RL of mining benches, depths and core drilling data. It is noted that MGPL should invest in advance exploration techniques to enhance reserve estimation accuracy.
- DSG Modifying (Deductible) factors: In Annexure-5 (Resource & Reserve), it is noted that colour factor, textural factor, joints factor, mining related factors and

balance rock mass are considered as modifying factor to calculate Blockable Reserve. However, the factor percentage (%) does not follow any standard optimization. It varies marker to marker and asset to asset.

- Most of the operating mines comes under Semi-mechanized open-pit mining category. Optimized mining processes to improve extraction efficiency can take would be a recommendation for operational improvement.
- Detailed mine site infrastructure and environmental management in place.
- During field visit it is observed that in operating mines the slope angle of benches is steep, almost vertical (80°), for that a detailed geo-technical study is required to avoid any mining calamity.
- Majority of the production is exported to countries like China and Italy. Domestic sales conducted through direct linkages.
- Pricing varies based on the type of Granite, ranging from Rs. 30,000 to Rs. 95,000 per cubic meter.
- There is no established market for trading high grade quartz in the Indian scenario. The DSG market is localised, with direct, win-win transactions occurring between suppliers and purchasers. The DSG market does not have any indices. This can make the pricing factors arbitrary.
- Economic Evaluation: Net Present Value (NPV) of DSG and quartz reserves calculated using the Discounted Cash Flow (DCF) method.
- During discussion with the MGPL officials, it was noted that the operation within the pits changes with the market fluctuations (demand). In situations where the operations within a particular pit is kept dormant, the officers, workers and the machineries are transferred to a different location. Therefore, the status of mines changes from time to time depending on the demand and supply.
- For Environmental sustainability, green energy usage has been noted across all mines to reduce carbon footprint, also enhance waste management practices are employed to comply with environmental regulations.
- Risk Assessment: The project rated low-risk based on Project Specific Factors (PSF) with a 10% discount rate applied for Net Asset Value (NAV) estimation.
- The DSG mining is robust, with substantial reserves and a growing market demand. The MGPL should plans to increase its revenue for next couple of years and diversify into high-tech minerals.

- The Audit Report recommends further investment in exploration, new mining areas and processing facilities to enhance profitability and market reach.

5.6 RECOMMENDATIONS

i. Investment in Upgradation

- MGPL should consider investing in upgradation facilities for high-grade quartz to maximize market value.

ii. Diversification

- Explore opportunities to diversify into other high-value mineral sectors to mitigate risks and enhance profitability.

iii. Environmental Compliance:

Continue to prioritize environmental safety and sustainability in all mining operations to ensure long-term operational viability.

This audit report provides an overview and critical evaluation of MGPL's Techno-Economic Assessment report, highlighting key findings, compliance, and strategic recommendations for future growth. Reading the JORC report and seeing Midwest Granite Pvt. Ltd's Dimension Stone Granite (DSG) business success is quite informative. Enormously experienced Dr. Lakshminarayana has guided the organization (MGPL) in carrying out extensive work in Dimension Stone (DS) mining in India and Heavy Mineral Sand mining in Sri Lanka.



Signature:

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Organization: Geovale Services Pvt Ltd.

Place: Kolkata (W.B)

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