Email **Director NMET**

Mineral Exploration Project Proposal of Yediyuru Gold Block.

From : BNG MIN.EXPLORATION <bmed@kioclltd.in> Fri, Dec 22, 2023 12:25 PM

Subject : Mineral Exploration Project Proposal of Yediyuru Gold Block. 1 attachment

To : Director NMET <nmet-mines@gov.in>

Cc : DPP KIOCL <dpp@kioclltd.in>

प्रिय महोदय/महोदया, Dear Sir/ Madam,

In continuation of the discussions held in 56th meeting of TCC- NMET, please find enclosed herewith the Mineral Exploration Project Proposal for undertaking G4 level of Mineral Exploration works in Yediyuru Gold Block.

As per the recommendations of the TCC- NMET and pre EC NMET, Preliminary Field Inspections was conducted with collection Bed rock samples and the Bed rock samples are indicating Au values 0.29 g/t,0.6 g/t,0.2 g/t and 0.6 g/t.

It is requested to consider the Proposal of carrying out G4 level of Mineral exploration work in Yediyuru Gold Block in the ensuing meeting of TCC- NMET.

Stay Safe, Warm Regards,
सादर, धन्यवाद / Thanking You,

शिव कुमार एम / SHIVA KUMAR M

सहायक महा प्रबंधक(खनिज अन्वेषण)/ Assistant General Manager (ME)
खनिज अन्वेषण विभाग / Mineral Exploration Department
केआईओसीएल लिमिटेड, KIOCL Limited
II ब्लॉक, कोरमंगला, II Block, Koramangala
बेंगलूरु 560034, Bangalore 560034
कर्नाटक Karnataka
www.kioclltd.in

Final project proposal of Yadiyur.pdf
14 MB

Mineral Exploration Project Proposal (MEPP)

for

Reconnaissance survey (G4) for Gold and basemetal in Yediyur area,

Yediyur - Karighatta Schist belt, Mandya Disrict, Karnataka
(Block ID: KIOCL_30_KA_YPB)

Date of Submission: 22nd Dec 2023

Submitted by:

KIOCL LIMITED,
(Notified *Exploration Agency*)
BLOCK II, KORAMANGALA,
SARJAPURA ROAD,
BANGALURU 560 034.
(www.kioclltd.in)

To:

The CHAIRMAN,
TCC-NMET,
Geological Survey of India,
GSI Complex,
Bangalore.

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Summary of Reconnaissance Survey (G4) for Gold and basemetal in Yediyur area, district, Karnataka

BLOCK ID	**KIOCL_**
Title of the project	Reconnaissance Survey (G4) for Gold and basemetal in Yediyur area, Yediyur - Karighatta schist belt, Mandya district, Karnataka.
Exploration Agency	**KIOCL LIMITED, BANGALORE** ***Notified Exploration Agency***
Commodity	Gold, basemetal and associated minerals
Mineral Belt	Nagamangala Schist belt
Completion period with entire Time Schedule to complete the project	12 months
Objective	i) To map the area on large scale geological mapping covering an area of 50Sq.Km on 1: 12,500 scale to target potential zones for mineralisation with bed rock sampling. ii) To delineate the targeted mineral potentiality zones based on the surface manifestation for mineralisation or. iii) Based on the Geochemical sampling involving the stream sediment and bed rock sampling and after chemical analysis.
Whether the work will be carried out by the proposed agency or through outsourcing and details thereof. Components to be outsourced and name of the outsource agency	The work will be carried out solely by the Geologists of proposed agency ie., KIOCL, with its HQ at Bangalore.
Name/ Number of Geoscientists	THREE (03) Nos or more from Mineral Exploration Department, KIOCL Limited, Bangalore.
	Large Scale Geological Mapping in 04 months) and Drilling works 3 months **Geologist Party Days** : 180 days (120 Field works + 60 HQ)
1. Location	
Latitude	**Annexure 05**
Longitude	**Annexure 05**
Villages	
Tehsil/ Taluk	
District	
State	Karnataka
2. Area (hectares / Square Kilometres	
Block Area	50sqkm
Forest Area	Nil
Government Land	-
Private Land	50sqkm

3. Accessibility	
Nearest Rail Head	
Road	
Airport	
4. Hydrography	
Local Surface Drainage Pattern Channels / Rivers / Streams	
5. CLIMATE	
Mean Annual Rainfall	
Temperature	
6. Topography	
Toposheet No	
Morphology of the Area	
7. Availability of the Baseline Geoscience Data	
Geological Map (1:50 K)	
Geochemical Map	
Geophysical Map (Aero/ Ground, Regional/ Local Scale)	

8. Justification for taking up Reconnaissance Survey (G4 Stage) Mineral Exploration

a. The proposal is prepared based on the request of the DMG, Govt of Karnataka through the SGPB meeting request to take up G4 exploration work by KIOCL in Yediyur block.

b. In response to the request, the KIOCL has conducted a pre-field studies in the area by the officers of KIOCL during the month of June 2023 revealed that the BIF band shows brecciated, sheared on the surface. The presence of mineralisation evidenced by the occurrence of pyrite, box works, limonitization and silicification are observed in the field. Suspected Gold mineralization in smoky quartz veins is also noticed (photographs).

c. The metabasalt present in the area shows surface manifestation for copper mineralisation in the form of malachite, azurite and covellite encrustations and stains as well as small specks of chalcopyrite and pyrite (photographs).

d. Some minor shear zones were identified within quartz mica schist which shows sinistral shearing and boudinage.

e. 10 number of Bed rock samples collected during the pre-field studies, out of which 4 samples have given Au values 0.29 g/t,0.6 g/t,0.2 g/t and 0.6 g/t. Map indicating PFI studies with BRS values is provided as plate 04

f. The above descriptions form the basis for mounting proposal for reconnaissance survey to map, sample, identify, and delineate the potential zones for gold and copper mineralisation in the area.

Detailed Descriptions

1. Block Summary

1.1 Physiography

Geomorphologically the area is dominated by strike-ridges and valleys occupied by the variants of gneisses. The rock formations are striking N-S direction and in general the strike ridges are occupied by the Banded Iron formations in the area, whereas the valley portions are occupied by the granitoid rocks.

In general, the area forms the higher elevation where from sub-dendritic drainage system originates and flowing down south. Because of the strike ridges and valleys parallel and rectangular drainage systems are observed area. The drainage development in the area is related to lithological and structural controls.

1.2 Background Geology (Regional Geology, Geology of the Block)

The Yediyur - Karighatta belt comprises of a predominantly volcano sedimentary sequence represented by massive and schistose ultramafic rocks, massive and schistose amphibolites, fuchsitic and micaceous quartzites, actinolite schists, quartz-chlorite schists, hornblende schists, garnet bearing mica schists, garnet grunerite schists, thin bands of limestones, and sills of meta- basic rocks, Small linear outcrops of kyanite-muscovite-quartz schists were also noticed at several localities within the Yediyur-Karighatta schist belt.

The Honakere arm, an off-shoot of the Yediyur-Karighatta belt again exposes massive and schistose amphibolites, ultramafics, quartzites which are locally kyanite bearing, banded ferruginous chert, garnetiferous-grunerite schists, and calc-granulites. The amphibolites vary widely in their grain size, texture and composition. Often, they are calcareous in nature and some thin bands are highly rich in garnets.

A zone of highly cherty, black coloured, laminated rock is exposed prominently in the hill ranges of Markonahalli. This zone extends from east of Jaldigere in the north to the south east of Markonahalli and further southwards over a distance of 10 Km. This has been identified for the first time as an acid volcanic rock (Quartz porphyry).

Major portion of the remaining area is constituted of migmatites and granitoid rocks which have been collectively termed as Peninsular Gneisses. The peninsular gneisses have been classified and mapped based on field criteria and mineral composition into seven types. Several narrow and linear enclaves of schistose rocks are observed within the gneisses. They are generally migmatised enclaves of the basic schists occurring as hornblende and actinolite bearing schists, schistose and massive amphibolites, talc-tremolite schists with steatite and other ultramafic rocks. A few bands of quartzites and kyanite schists are also observed to occur as enclaves.

A large number of pegmatite and quartz veins are seen to intrude both the gneisses and schists. A large number of dolerite dykes intrude the formation and often cut across each other

1.3 Mineral Potentiality based on Geology, Geophysics and Ground Geo Chemistry:

Geologically, the area is potential for gold and basemetal especially copper mineralisation in the volcano sedimentary sequence of Yediyur formations. There are a number of old workings, brecciation, alteration zones and surface manifestation of mineralisation are noticed in the basaltic rocks. During the pre-field studies carried out by the geoscientists of the KIOCL, the following are their observations.

i. Gold mineralization indications are noticed only in eastern part of the block.
ii. Silicification is observed in the form of network of quartz veins in the area. Foliation parallel quartz veins are profusely seen in the area.
iii. Some minor shear zones were identified within quartz mica schist which shows sinistral shearing and boudinage.
iv. The Banded iron formation are brecciated, on the surface the presence of mineralization is evidenced by occurrence of pyrite, box works, limonitic and cherry red alterations.
v. Suspected visible gold specks also noticed in the smoky quartz vein

Intrusion of quartz veins with good indications of sulphide mineralization (pyrite, chalcopyrite, sulphide stains) within BIF band, phyllite and amphibolite.

Based on the above surface manifestation for mineralisation in the area, it is planned to carry out ground geochemical survey by bedrock sampling and stream sediment sampling to target the potential of mineralisation. Upon analytical report of both stream and bedrock sampling

the potential zones will be delineated for further intensive exploration by higher level of exploration work plan will be based on the outcome of the geochemical results.

The geophysical surveys will also be linked to both geological and geochemical outcome, the geophysical mapping employing the various methods suitable for the area will be decided upon the demarcation of the potential zones in the area.

2. Scope for proposed Exploration:

The schist belts of Karnataka are known for Gold and Copper for mineralisation specially in the Dharwar craton. Chitradurga schist belt has many prospects and abandoned mines for both gold and basemetal mineralisation. The BIF zones further north in Ajjanahalli and north of Chitradurga are known for gold incidence and several prospects of promise have been explored. In view of the mineral potentially displayed by the BIF bands in Chitradurga schist belt in elsewhere example i). Gunjur BIF Average grade of Au 3.4 g/t, ii) Karajgi avg Au 3.06 g/t. iii) Kudrekonda iv) Pallavanahalli and v) Chinmulgund avg Au 4.5 g/t. and Ajjanahalli Avg grade 2.8 g/t.

One such schist belt is the Nagamangala schist belt, Yediyur-Karighatta schist belt etc., is the southernmost extension of the Chitradurga schist belt. Yediyur is part of the nagamangala schist bet and forms the southernmost part of the Chitradurga schist belt, the BIF bands show brecciation, shearing and emplacement of smoky quartz veins, and alteration zones have been picked up during the pre-field studies carried out in the area by KIOCL geoscientists.

Pronounced silicification in the form of network of quartz veins in the area. Foliation parallel quartz veins are profusely seen in the area. Some minor shear zones were identified within quartz mica schist which shows sinistral shearing and boudinage. The Banded iron formation are brecciated, on the surface the presence of mineralization is evidenced by occurrence of pyrite, box works, limonitic and cherry red alterations.

The metabasalt present in the area shows surface manifestation for copper mineralisation in the form of malachite, azurite and covellite encrustations and stains as well as small specks of chalcopyrite and pyrite.

Hence, the area warrants detailed study to target the potential zones of mineralisation and their nature, style and extent of mineralisation in the area by way for geological mapping, sampling of various media, for delineation of the host rock for mineralisation.

Recommendations of G4 level Mineral Exploration Reports:

The favourable geological milieu in the Yediyur – Karighatta schist belt for gold and copper mineralisation is associated with the banded hematite quartzite and schistose rocks – amphibolites and basic rocks.

A number of old prospecting pits for gold in the quartz veins have been reported in the area around Kalinganahalli, north of Mulakatte, and north of Honna betta Hosur. North of Mulakatte

the old working is in the form of an inclined shaft where as in the north of Honnabetta Hosur it is in the form of pits are reported by GSI 1987.

During the pre-field studies carried out in the area there are old workings, shearing, brecciation, alteration minerals indicating hydrothermal activity in the area, surface indication like malachite, azurite and covellite etc., seen in the area are all pointing towards the mineralisation point of view.

3. Objectives:

i. To map the area on large scale geological mapping on 1 : 12,500 scale.

ii. To delineate the potential zones for mineralisation based on the surface manifestation of mineralisation or

iii. The geochemical survey (both bed rock sampling and stream sediment sampling) will be carried out systematically by selecting the suitable lithological assemblages for sampling and drainage map of the area will be prepared and appropriate sample location are decided by considering on several aspects of terrain conditions, lithological assemblages in the upstream, type of stream etc.,

iv. The network of streams in the area will be prepared by the drainage map of the area and to carry out an orientation stream sediment sampling to locate the source rock or provenance of gold mineralization in the area followed by bedrock sampling.

v. Sampling of bed rock in the possible mineralised locales based on the surface indications and tracing of the source rock or host rock and sampling for chemical analysis.

vi. Wherever, if required the pitting / trenching will be carried out to expose the rock and trench wall mapping and sampling.

vii. The Target zones for both gold and copper mineralisation will be delineated based on the analytical results of the bed rock and stream sediment samples.

viii. If sub-surface exploration is required, we will approach the TCC, NMET for the approval of Geophysical mapping by employing appropriate methods for identifying the causative source, their configuration of the causative body length, width and thickness and also to know depth from the surface.

ix. Finally, exploration by drilling to know the third dimension of the ore body by applying the systematic drilling as per the existing norms.

4. PREVIOUS WORKS

The area attracted the attention of number of workers right from the beginning of 1900. Robert Bruce Foote (1900) was the first to traverse the area. He opined that the Fundamental Gneissic Complex forms the foundation or base for the schistose formations. Jayaram (1904 -

05) who surveyed the area recognised "Upper Dharwar Series" represented by the "Chloritic Schist" to the east of Nagamangala town, extending from north to south. Raghavendra Rao (1910-11), recognised the "Lower Dharwars" represented by the "Hornblendic Series" occurring in the schist belts west of Nagamangala town. Jayaram (1922-23) opined that the area comprises of lower and upper members of the "Dharwar System". Rama Rao (1922-23) surveyed parts of this belt and concluded that the schist belt to the east of Nagamangala town consists of varied rock types of Dharwar age which have been intruded by the granites of three different periods. Raghavendra Rao (1922-23) resurveyed some parts of the schist belts and modified his earlier observations and opined that the area comprised of lower and upper members of the Dharwar system.

After these early geological works of the Mysore Geological Department, the area was systematically mapped by Ram Mohan Rao of Geological Survey of India (1959-60, 1960-61, 1961-62). He recognised various schistose rocks (green schists) belonging to Upper or Middle and Upper Dharwars, and a lower Dharwars comprising of Hornblendic rocks and Hornblende schists and observed that these rocks are intruded by the peninsular gneisses, pegmatite and quartz veins and dolerite dykes. The rocks were recognised to have been folded into steep isoclinal folds, preserving the Dharwar rocks mostly in the synclines exposing them as long narrow belts and thin strips.

Swami Nath et al., (1981) recognised and older "Sargur Group" which are represented in the sub-belts of Nagamangala, Maya-sandra, Neralakere, Honakere and Karighatta etc. and a "Bababudan group" of the "Dharwar Super Group" exposed in the Yediyur - Karighatta belt. The peninsular gneiss comprising of the various gneisses, migmatites and granites was considered to be intrusive into the Sargur group of rocks and in turn formed the 'basement' for the Dharwar Super Group. The association of high grade metamorphic mineral assemblages was considered as one of the criteria in recognition of Sargur in various localities.

Ravidran (1981-82) and Khadse (1981-82) carried out ground evaluation of the airborne electromagnetic and magnetic anomalies, supported by the photogeological mapping of the area. They recognised that rocks of two different grades of metamorphism, one in the upper amphibolites and other in the lower amphibolite to green schist facies co-exist in the area. The ground checking of aero-geophysical anomalies did not show any important mineral occurrences.

5. BLOCK DESCRIPTION:

The boundary coordinates of the proposed block are given in table @ **Annexure 05**.

6. PLANNED METHODOLOGY

i. Study of airborne and ground geophysical maps to draw some information on the sub-surface conductivity in the area, if the maps are available.

ii. Carry out systematic large scale geological mapping on 1: 12,500 scale to trace the lithological assemblages in the area and map them with initially as out crop geological mapping, followed by interpreted geological mapping on the same scales.

iii. Drainage map of the area prepared and plan and collect the stream sediment sampling for targeting the gold mineralisation and to trace the provenance and host rock for mineralisation etc.,

iv. Systematic bedrock / channel / groove sampling in the area based on the favourable lithology for gold and copper mineralisation will be collected. Both petrological and ore microscopic studies will be carried out to understand the nature and style of mineralisation and genetic relationships etc.,

v. Pitting and trenching in the area will be taken up depending on the exposure of the host rocks tracing and sampling.

vi. Geochemical analysis, if the positive zones are the outcome, those profiles the subsurface drilling will be taken up after the geophysical surveys in the area to understand the nature, depth, length and configuration of the causative body, on the recommendations and approval of the TCC, NMET.

vii. Generate the Geological report on the outcome of the explorations activities carried out in the area, by systematic documentation of all the data sets so generated for this project.

6.1. NATURE, QUANTUM, AND TARGET

Quantum of work proposed is provided @ **Annexure No - 02.**
Project is Targeted radicals 11 radicals (Au, Ag, Hg, As, Sb, Te, Cu, Pb, Zn, S, and C)

6.2. TIMELINES

Total period proposed for G4 level Mineral Exploration works is 12 months.
Time Schedule Chart is provided @ **Annexure No – 01.**

6.3. BREAKUP OF EXPENDITURE:

Total estimated cost is **Rs. 1,54,00,511/- (including GST @ 18%). (Say Rs.154Lakhs).**
Cost estimate is provided @ **Annexure No – 03.**

6.4. TERMS OF PAYMENT

- KIOCL shall raise invoice for the quantum of work executed and completed in accordance with the approved MEPP, as per NMET guidelines, for payment.
- Projected cost estimates are based on the SOC of NMET circulated vide Office Memorandum Dtd. 31st Mar 2020. However, cost of execution will be claimed with appropriate escalation as per procedure.

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Annexure – 01

TIME SCHEDULE

Sl	Details of Works	Duration in months	1	2	3	4	5	6	7	8	9	10	11	12
1	**CAMP SETTING**	01	↔					Review						
2	**LARGE SCALE GEOLOGICAL MAPPING** (Includes 50 sq km of LSM + 100 nos of BRS +50 SSS+ 100 cum Trenching)	04		↔										
	2.1 Geologist Party days (02 Party)			200 manday										
	2.2 Laboratory Works	03		↔ 50 days										
3	**Surface Drilling**	5												
	3.1 Preparatory works for drilling (Approach road making)	1							↔					
	3.2 Drilling works (01 rig - 500m)								↔					
	3.3 Geologist Party days (01 Party)								90 days					
	3.4 Laboratory Works	04								↔ 90 days				
4	**Survey Works**													
	4.1 Survey party days for DGPS survey of Boreholes 5 pts) - 01 party	05 days											↔	
5	**Camp Winding**	01												↔
6	**Preparation of Reports and Maps**	01												↔

Note : In case of mineralization zone falls in forest area, subsurface investigations such as Pitting, Trenching and Drilling works will be carried out in 6 working months after receipt of Forest Clearance under FC Act 1980

Annexure – 02

QUANTUM OF WORK

Sl	Stage	Components		Unit	Qty	
1	Large Scale Geological Mapping (1:12,500)	Large Scale Geological Mapping (1:12500 Scale)		sqkm	**50.00**	
2		Bed Rock Samples		nos	**100**	
3		Stream Sediment Samples (SSS)		nos	**30**	
4		Trenching works		cum	**75**	
5	Drilling works	No of Boreholes		nos	**5**	
6		Core Drilling (NQ series)		m	**500**	
7		Detailed core/ sample logging including supply of core/ sample boxes		m	**500**	
8		Drill core preservation		m	**100**	
9		DGPS Survey (Borehole points 5 nos)		nos	**5**	
10	Sample analysis (34 elements by ICPMS) REE-RM- Au - Lithium	Primary Analysis	BRS	nos	**100**	**280**
11			Trench samples	nos	**50**	
12			SSS	nos	**30**	
13			Drill Core	nos	**100**	
14		External Check sample analysis (10%)	BRS	nos	**10**	**28**
15			Trench samples	nos	**5**	
16			SSS		**3**	
17			Drill Core	nos	**10**	
18	Au by fire assay method			nos	**100**	**100**
19	Petro studies	Preparation of Standard Thin section		nos	**10**	
20		Petrographic studies		nos	**10**	
21		SEM		hrs	**10**	
22		EPMA		nos	**10**	
23		Preparation of polished section		nos	**10**	
24		Mineragraphic studies		nos	**10**	
25	Report preparation			nos	**1**	

Annexure – 03

COST ESTIMATES

Sl	Item of Work		Unit	Rates as per NMET SoC 2020-21					Remarks
				SOC Item No	Qty	Rates as per SOC	Amount (Rs)		
(a)	(b)		(c)	(d)	(f)	(e)	(g)=(e)*(f)		
1	**LARGE SCALE GEOLOGICAL MAPPING WORKS (1:12,500 scale :50sq km)**								
1.1	Geologist Party days - Field		days	1.2	100.0	11,000	11,00,000		
1.2	Geologist Party days - HQ			1.2	50.0	9,000	4,50,000		
1.3	Labour charges		days	5.7	200.0	431	86,200		
2	**TRENCHING WORKS**							20,36,400	
2.1	Trenching works		cum	2.1.2	75.0	3,800	2,85,000		
3	**SURVEY WORKS**								
3.1	Fixation of borehole and determination of Co-ordinates and RL by DGPS		days	1.6.2	6.0	19,200	1,15,200		5 bh's and 01 base point
4	**DRILLING**								
4.1	Surface Drilling (Hard rock)		m.	2.2.1.4a	500.0	11,500	57,50,000		
4.2	Core preservation		m	5.3	100.0	1,590	1,59,000	60,09,000	Outsourcing components
4.3	Land/Crop compensation (in case the BH falls in agriculture land)		per borehole	5.6	5.0	20,000	1,00,000		
5	**LABORATORY STUDIES**								
5.1	Sample processing works	Sampler charges	days	1.5.2	55.0	5,100	2,80,500		
5.2		Labour charges	days	5.7	220.0	431	94,820	3,75,320	Amount will be reimbursed for unskilled labour as per the notified rates by the Central Labour Commissioner (Rs.431/- per day) or respective State Govt. whichever is higher

5.3	Sample analysis (34 elements by ICPMS)	Primary	per sample	4.1.14	280.0	7,731	21,64,680	26,78,648	(BRS 100+ 30 SSS+ Trench 50 nos+ Drill Core 100 nos =280)
5.4		External Check (10%)		4.1.14	28.0	7,731	2,16,468		
5.5	Analysis of Au by Fire assay method			4.1.5a	125.0	2,380	2,97,500		
5.6	Petro studies	Preparation of Standard Thin section	nos	4.3.1	10.0	2,353	23,530	3,01,460	
5.7		Complete Petrological Report of rock sample	nos	4.3.4	10.0	4,232	42,320		
5.8		Preparation of Polished Section	nos	4.3.2	10.0	1,549	15,490		
5.9		Study of polished section for mineragraphy	nos	4.3.4	10.0	4,232	42,320		
5.10		SEM	hrs	4.4.2	10	2,940	29,400		
5.11		EPMA	nos	4.4.1	10	8,540	85,400		
5.12		Fluid inclusion studies/analysis	nos	4.3.9	5	12,600	63,000		
6	Peer review of report		lumpsum				30,000	30,000	
7	**Sub Total (1 to 6)**						**1,14,30,828**	**1,14,30,828**	
8	Preparation of Exploration Project Proposal		lumpsum	5.1	5 Hard copies along with Soft copy	2% of approved project or 3.8 lakh which ever is lower	2,28,617	2,28,617	EA has to submit the Hard copies and the soft copy of the final proposal along with maps and Plan as suggested by the TCC- NMET in its meeting while clearing the proposal.

9	Exploration Report (5% of (Sl.no. 1 to 6)		5.2(iii)	5 Hard copies along with Soft copy	For the projects having cost exceeding Rs 50 lakhs but less than Rs 150 lakhs : A Minimum of Rs.2.5 lakhs or 5% of the value of work whichever is more	5,71,541	5,71,541	EA has to submit the final Geological Report in Hard Copies (5 nos) and the soft copy to NMET.
10	**Sub total (7 to 9)**					**1,22,30,986**	**1,22,30,986**	
11	Tendering process cost	One time	2.3		@ 2% of approved project cost or 5 Lakh which ever is lower	2,44,620	8,20,295	
12	Reimbursement of cost incase outsourced components of project		6(ii)			5,75,675		Drilling works valuing to Rs.60,09,000/- is proposed to be outsourced
13	**Total amount in Rs (10 to 12)**					**1,30,51,281**	**1,30,51,281**	
14	GST 18%					23,49,231	23,49,231	GST will be reimbursed as per actual and as per notified prescribed rate
15	**Grand Total (with GST 18%)**					**1,54,00,511**	**1,54,00,511**	**Say Rs.154 Lakhs**

Annexure - 04

Boundary Co-Ordinates of the Block

Sl no	Boundary Points	Latitude	Northing
1	30(A)	13 13 07.299	76 48 49.436
2	30(B)	13 13 07.117	76 50 46.654
3	30(C)	12 53 54.841	76 50 42.138
4	30(D)	12 53 55.500	76 48 45.655
5	30(E)	13 13 07.299	76 48 49.436

Annexure – 05

Consent letter received from Dept of Geology & Mining, GoK

GOVERNMENT OF KARNATAKA

No: DMG -17013/6/2018/2021-22/8353

Office of the Director,
Department of Mines and Geology,
No.49, Khanija Bhavan, R.C. Road,
Bengaluru - 560 001. Dated:03.12.2021.

To:

M/s. KIOCL Limited,
(A Government of India Enterprises),
II Block, Koramangala,
Bengaluru - 560 034.

13 DEC 2021

Sir,

Sub: Permissions for carrying out G4 level exploration works under NMET-reg.

Ref: 1. Your letter No. KIOCL/MED/2021/396 dated: 19.08.2021.
2. Geological Survey of India, Bengaluru, e-Mail: dated:28.09.2021.
3. Your letter No. KIOCL/MED/2021/488 dated: 12.10.2021.

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With reference to the above subject, we had received your request seeking the permission of Department of Mines and Geology to carry out Seamless G4-G3-G2 level Mineral Exploration for polymetals in Yadiyuru and Karighatta blocks under NMET fund vide reference (1). The same was forwarded to the GSI for their opinion on overlap issues, if any. Accordingly, GSI had offered its comments vide e-mail at reference (2), wherein they had noticed slight overlapping of Karighatta Polymetallic block with their earlier exploration and there is no overlap issue with Yadiyuru Polymetallic Block. The same was communicated to your office through e-mail and the revised sketch of Karighatta Polymetallic block submitted by your office vide reference (3) in response to our mail has been examined with respect to overlap issues and found to be free from any overlap.

After reviewing your proposal and as per the opinion of GSI, permission is hereby accorded to prepare and submit the G4 Level exploration proposal of the following blocks before NMET Technical Committee, Government of India on behalf of State Government of Karnataka as per the sketches appended to this letter.

Sl No	Name of the block	Extent In sq.km.	District	Mineral
1	Yadiyuru Polymetallic Block	86.857	Mandya & Tumkur	Polymetals
2	Karighatta Polymetallic Block	77.368	Mandya	Polymetals

Further, as per the discussion held in 55th SGPB meeting held on 29.09.2021, you are requested to include the e-mail copy of GSI in your proposal to NMET.

Yours faithfully,

Director
Department of Mines & Geology

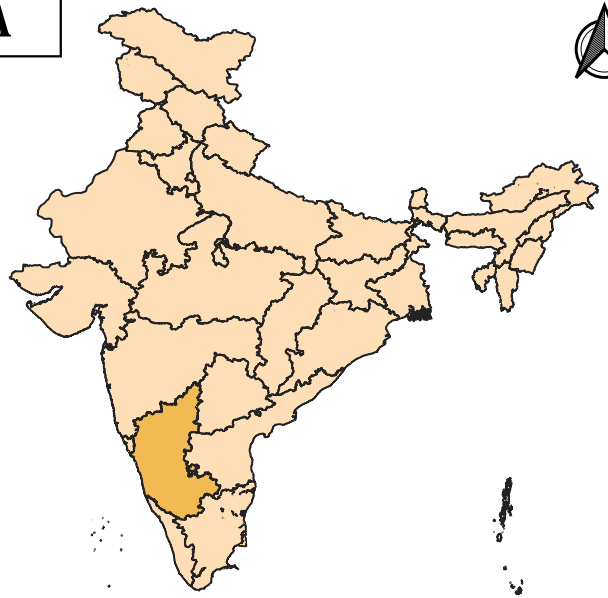
Enclosures:

1. Geological map of 2 blocks.
2. E-mail copy of GSI opinion.

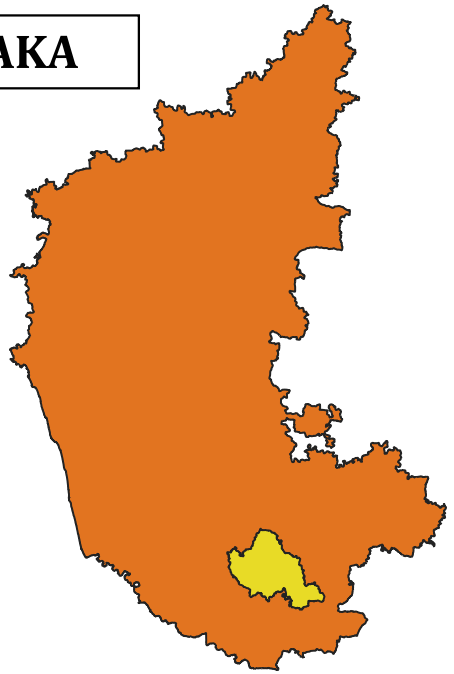
KEY MAP SHOWING AREA OF EXPLORATION

PLATE NO. 01

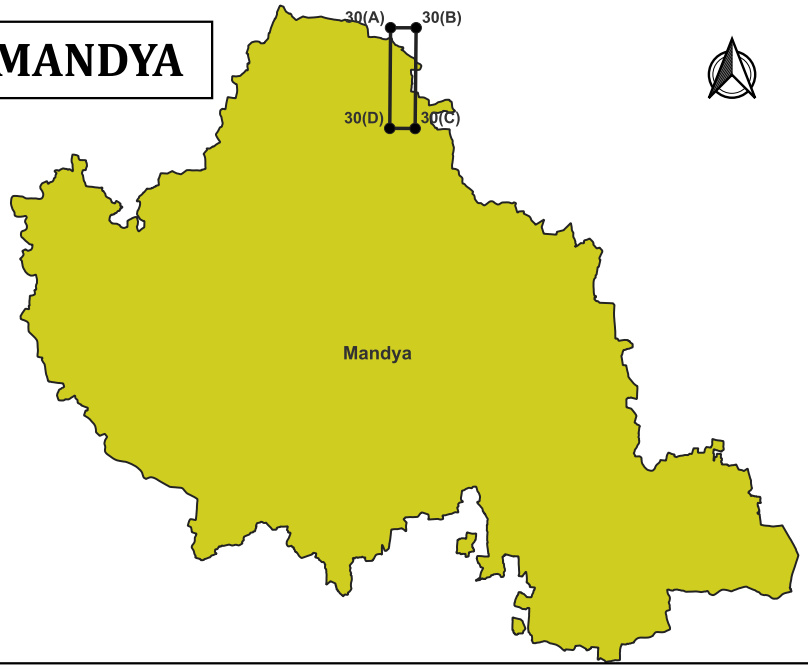
INDIA

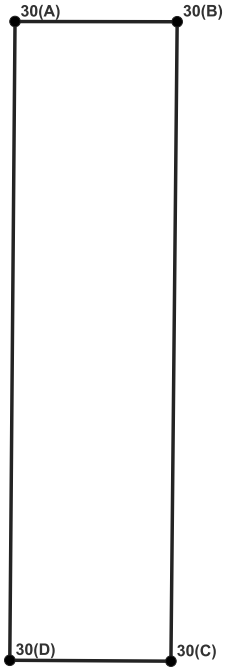


KARNATAKA



MANDYA





BLOCK BOUNDARY

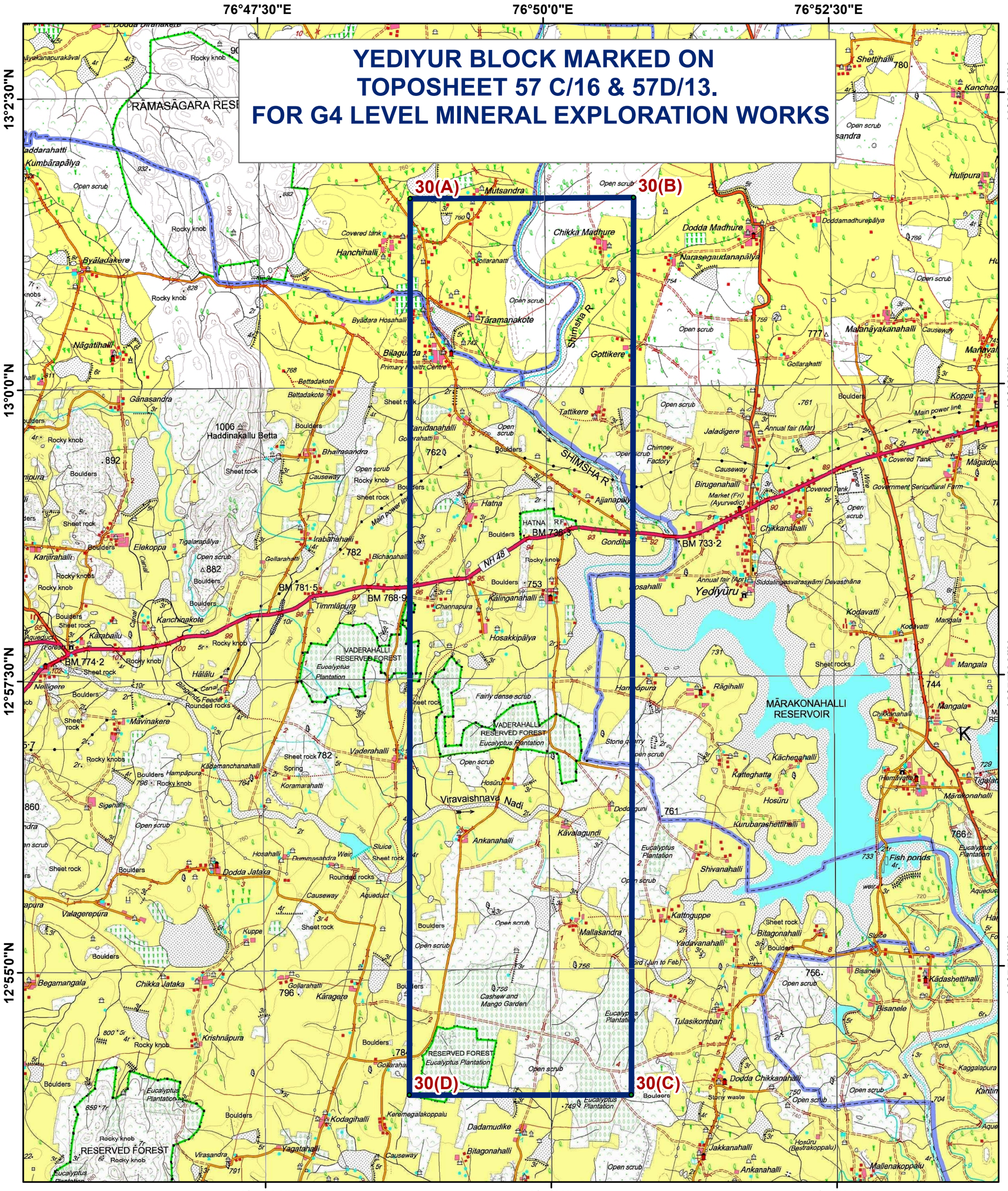
TITLE: KEY MAP
PROJECT: RECONNAISSANCE SURVEY(G4 LEVEL) FOR GOLD AND BASEMETAL YEDIYUR BLOCK.
BLOCK ID : KIOCL_30_KA_YDB
BLOCK AREA: 50 SQ.KM
DISTRICT : MANDYA
STATE : KARNATAKA

PROSPECTOR

KIOCL LIMITED
(Notified Exploration Agency)
Regd.Off : BLOCK II, KORAMANGALA .
BANGALURU 560 034
(www.kioclltd.in)

PLATE NO. 02

YEDIYUR BLOCK MARKED ON TOPOSHEET 57 C/16 & 57D/13. FOR G4 LEVEL MINERAL EXPLORATION WORKS



Legend

YEDIYUR BLOCK

1:50,000

0 0.75 1.5 3 Km

G4 LEVEL MINERAL EXPLORATION WORK FOR YEDIYUR BLOCK (BLOCK ID : KIOCL_30_KA_YGBB)		
TOTAL AREA : 50.00 sqkm		
SOI TOPOSHEET NO : 56 C/16 & 56 D/13.		
Point	**Latitude(dd°mm'ss.s")**	**Longitude(dd°mm'ss.s")**
30(A)	13 13 07.299	76 48 49.436
30(B)	13 13 07.117	76 50 46.654
30(C)	12 53 54.841	76 50 42.138
30(D)	12 53 55.500	76 48 45.655
30(E)	13 13 07.299	76 48 49.436

PROSPECTOR

KIOCL LIMITED
(Notified Exploration Agency)
Regd.Off : BLOCK II, KORAMANGALA . BANGALURU 560 034
(www.kioclltd.in)

PLATE NO.03

YEDIYUR ME BLOCK MARKED ON GSI's 1:50 K.

76°47'30"E 76°50'0"E 76°52'30"E

13°2'30"N 13°0'0"N 12°57'30"N 12°55'0"N

30(A) 30(B) 30(C) 30(D)

N W E S

1:50,000

0 0.75 1.5 3 Km

Legend

YEDIYUR BLOCK

LITHOLOGY

- AMPHIBOLITE
- BANDED FERRUGINOUS QUARTZITE
- BANDED IRON FORMATION
- BANDED MAGNETITE QUARTZITE
- BIOTITE GNEISS
- DOLERITE
- FUCHSITE QUARTZITE
- GREY BIOTITE GRANITE
- KYANITE-STAUROLITE-MICA SCHIST
- LEUCO GRANITE
- META-BASALT
- META-ULTRAMAFITE
- MICA SCHIST / SCHIST
- MIGMATITE GNEISS
- PYROXENE GRANULITE
- QUARTZ VEIN/REEF
- QUARTZITE

PROSPECTOR

KIOCL LIMITED

(Notified Exploration Agency)

Regd.Off : BLOCK II, KORAMANGALA . BANGALURU 560 034

(www.kiocltd.in)

GEOLOGICAL MAP OF YEDIYUR BLOCK WITH BRS VALUE

PLATE NO.04

76°48′0.000″ 76°51′36.000″

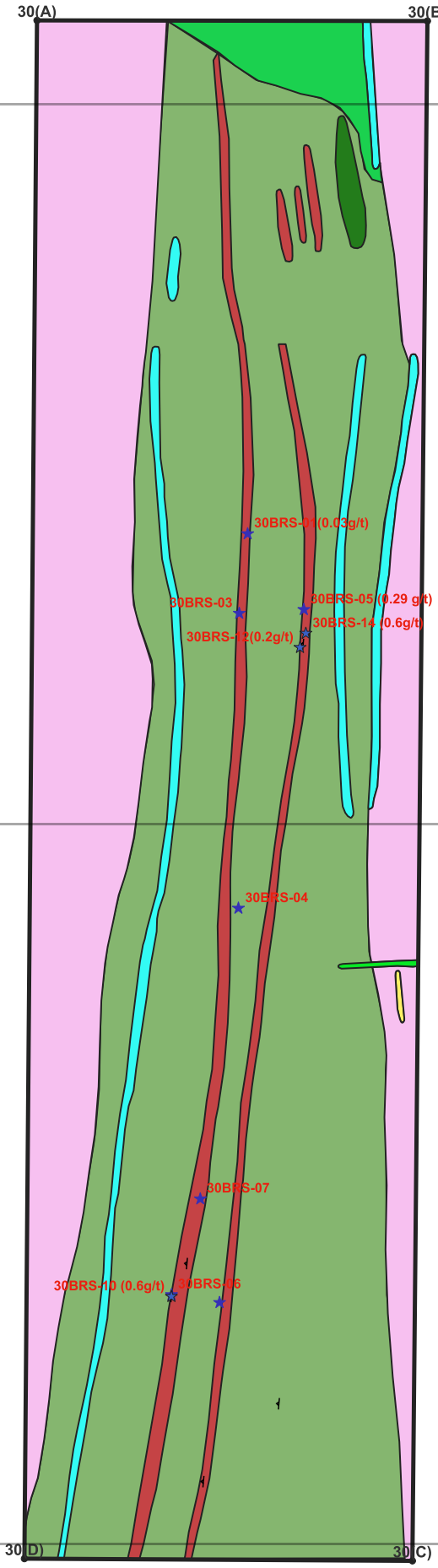
13°1′12.000″

12°57′36.000″

12°54′0.000″

30(A) 30(B) 30(C) 30(D)

0 1 2 km



Yediyur_block

BRS

Yediyur gsi geology

BHQ

DOLERITE

META-BASALT

META-ULTRAMAFITE

MIGMATITE GNEISS

QUARTZ VEIN/REEF

QUARTZITE

AMPHIBOLITE

Strike & Dip