STOPING INSPECTION REPORT<u>Annexure-I</u>
INDIAN BUREAU OF MINES
MINERAL DEVELOPMENT & REGULATION DIVISION
Bangalore Regional Office

Mine Code No. 27KAR 16004

(i)	**Report Prepared by**	:	Shri. Sandeep Kumar Singh & Shri K. Srinivas
(ii)	**Designation**	:	Assistant Controller of Mines & Junior Mining Geologist IBM, Bangalore
(iii)	**ML.No**	:	2578
(iv)	**Accompanying Mine Official**	:	1) Sri. P Suresh 2) Sri. Kumar Mohan Singh 3) Sri. Ramesh. G 4) Sri. Umesh 5) Sri. Johnson.
(v)	**Designation**	:	1) Agent 2) Mine manager 3) Geologist 4) Surveyor 5) Mining Engineer.
(vi)	**Date of Inspection**	:	26/09/2022
(vii)	**Date of submission of the application by lessee**	:	Application no. 180/MIN/NP/HBGM/2022-23 dated 03.08.2022, received in the office on 11/08/2022.

PART – I General Information

1.	**a)**	**Name of the mine**	:	Hira-Buddinni Gold Mine
	b)	**Category of the mine**	:	A-Mechanized U/G mine
	c)	**Address of the mine**		
		State	:	Karnataka
		District	:	Raichur
		Village	:	Buddinni
		Pin	:	584115
		Fax	:	
		E-mail	:	rohgml.@gmail.com, sureshp@gmail.com Prakash.bahadur@ka.gov.in
	d)	**Name of Police Station**	:	Hutti
	e)	**Lease area in Hectare**		22.18 Ha
		(i) Forest	:	-
		(ii) Non-forest	:	Non-Forest
2.	**a)**	**Period of Lease**	:	20 years (29/03/2008 to 28/03/2028)
	b)	**Date of expiry**	:	28/03/2028
3.	**a)**	**Mineral worked**	:	Gold, Scheelite and Associated Minerals
	b)	**Main mineral**	:	Gold
	c)	**Associated minerals**	:	Silver

	d)	**Captive /non-captive use**	:	Captive
4.	**a)**	**Date of approval of mining plan with reference No.**	:	No.279/717/2001/BNG, dtd.: 31/12/2020 Review and Updation of Mining Plan
	b)	**Special conditions stipulated in approval letter**	:	Nil
5.		**Name and address of Lessee and Agent(including Fax/E-mail, if any)**		
	a)	**Lessee**	:	Sri. PrabhulingaKavalikatti The Managing Director The Hutti Gold Mines Co. Ltd. Address:3rd Floor, KHB shopping Complex, National Games Village, Koramangla, Bangalore Phone:05837275022 Email: p.kavalikatti@ka.gov.in Date of Appointment :01/03/2021
	b)	**Agent**	:	Sri. P Suresh Address: The Hutti Gold Mines Co. Ltd. Hutti-584115, Taluk: Lingasugur, Dist.: Raichur, Karnataka Phone:9900470404 Fax: - Email:suresh.pamshsetty@ka.gov.in sureshp@gmail.com Date of Appointment :06/04/2022
	c)	**Status of lessee (Private/ PSU/Joint sector)**	:	PSU
	d)	**Mining Engineer/Geologist under Rule 55 of MCDR, 2016 with date of appointment whether full-time or part time and qualifications.**	:	Mining Engineer Sri. Johnson B.E Mining. Full time Date of Appointment :01/01/2020 Geologist Ramesha.G M. Sc. Geology. Full time Date of Appointment :03/01/2022
	e)	**Mines Manager Qualifications and date of Appointment**	:	Sri. Kumar Mohan Singh B.E Mining, FCC Address: Address: The Hutti Gold Mines Co. Ltd. Hutti-584115, Taluk: Lingasugur, Dist.: Raichur, Karnataka

Phone:91-9481466458
Email: mohansng404@gmail.com
Date of Appointment: 08/07/2019

PART- II: TECHNICAL DETAILS

1. Details of Section/Stope applied for permission:

Sl.No.	Name of applied block.	Stope ID	Level		Region	Proposed period as per approved RMP dated 31/12/2020
			Top Level	Bottom Level		
1	S-7 BLOCK	Mother lode (S-7 block)	3 L	5 L	JN53-55	2021-22 &2022-23

	Co-ordinates		Stope Dimension (LxWxH) (m)
	Latitude (From, to) UTM/Local	Longitude (From, to) UTM/Local	
Top level- 3rdL	**1791044/2188, 1791046/2247**	**692869/2099, 692927/2102**	**(56 x 5.03 x 58)**
Bottom Level- 5thL	**1791037/2191, 1791044/2248**	**692871/2092, 692927/2099**	

Table 1: The details of the proposed stopes.

2. Level and stope wise completed and pending development: The status of the development has been examined during the mine inspection on 26/09/2022. The updated development as on **30/09/2022** as reported by the Lessee is as below.

Sl. No.	*Block*	*Reef*	*Level*	*Development Required (mts)*			*Development Completed (mts)*			*Devel. % Compl.*
				Drive	*X-cuts*	*Total*	*Drive*	*X-cuts*	*Total*	
1	S-7	Mother Lode	3 L	64	25	89	63	25	89	**100%**
2			3 D/L	64	28	90	64	28	92	**100%**
3			4 L	64	35	99	64	35	99	**100%**
4			5 S/L	64	23	87	64	23	87	**100%**
5			5 L	64	20	84	64	20	84	**100%**
6			5 L Draw Level (Off-Lode)	76	78	154	76	78	154	**100%**
			Total	396	209	605	395	209	605	**100%**

Table2: Proposed stope development status

3. Extent of Development in the mine: Details of UG development in Mother Lodeas on 30.09.2022 is as follows:

Number of shafts/inclines/and its width/depth/length

(i) Main Shaft - 189.60m. Vertical Shaft (Circular) & size – 3.65m
(ii) West Shaft – 170.0m. Vertical Shaft (Rectangle) & size – 2.4m x 3.0m
(iii) Propose New Ventilation Shaft – 151.3m Vertical Shaft (Rectangle) & size – 2.9m x 3.7m
(iv) Ventilation Shaft – 34m vertical shaft (Rectangle) & Size - 2.4m x 3.0m
(v) East Shaft - 58.60m m Vertical Shaft (Rectangle) & size – 2.4m x 3.0m

Levels	Mother Lode (M)
1st L	325
2nd L	455
3rd L	567
4th L	511
5th L	585
2nd S/L	230
3rd S/L	480
3rd D/L	385
5th S/L	465
Total	**4003**

Table3: Extent of development in mine

4. Status of IBM Stoping blocks as on 30.09.2022

Sl.No	Stoping Permission No. & date	Reef	Level	Block	Location			Region	Status
					Points	Latitude	Departure		
1	KNT/RCH/G-2-SZ/266 Date:09.02.2010	Mother Lode	1st L-3rd L	Main Block (A-Block) Sub-Blocks (S-1, S-2,S-3 & S-4)	A	2072.6	2041.7	IN 51 - JN 53	Completed
					B	2086.5	2080		
					C	2073	2044		
					D	2185.5	2089		
2	KNT/RCH/G-4-SZ/206 Date:31.03.2016	Mother Lode	2nd L-3rd L(S-5)	Main Block (M2) Sub-Blocks (S-5 & S-6)	A	1911.5	1987.6	HN 48 - IN 51	S-5Completed
					B	2071.5	2041.5		
			1st L-3rd L(S-6)		C	1951.3	1973.5		**S-6 In Progress**
					D	2071.2	2043.2		

Table 4: Status of IBM stoping blocks.

5. **Reserve position of applied stope:**In-situ tonnage is geological resources; Minable tonnage is tons including planned dilution.

S. No.	Reef	Stope Name	Level	In-situ Tonnage	Minable Tonnage	Grade (g/t)
1	Mother lode	S-7	3 L – 5 L	46247	45289	4.76

Note: Mineable tonnage 45,289 tonnes, inclusive of 85% recovery factor & 15% dilution factor

Table 5: The details of reserve position for the stope applied

6. **Balance Reserves:Position of Reserve and Resource as on 01/04/2022is as follows:**

Total Mineral Reserves & Resources			
	UNFC	**Million Tonnes**	**Grade(g/t)**
Proved Mineral Reserve	**111**	0.54	3.54
Probable Mineral Reserve	**121&122**	0.09	4.16
Feasibility Mineral Resource	**211**	0	0
Pre-feasibility Mineral Resource	**221**	0.08	3.64
Measured Mineral Resource	**331**	0	0
Indicated Mineral Resource	**332**	0.18	2.85
Inferred Mineral Resource	**333**	0.07	3.12
Reconnaissance Mineral Resource	**334**	0	0

Table 6: Reserve & Resources position of the mine as on 01.04.2022.

7. Manner of Extraction of Mother Lode3rdL -5thL JN 53-55 'S-7' Block

Reference Plans and Sections:

SEQUENCE OF OPERATION

7.1 STOPE PREPARATION:(Drg.No.MP/SPA/2022/2/S-7 Block_ ML/A-Plate-1.)

A. 3rd Drill Level was developed between 3rd Level and 4th Level. 5thsub level was developed between 4th level and 5th level.
B. One service raise from 3rd Level to 5th Level has been developed at the western side of the proposed block and one ventilation raise from 3rd Level to 5th Level has been developed in the eastern side of the proposed stope block.
C. Both these raises are connected with all the levels and sub levels of the stope block.

7.2 EXTRACTION LEVEL:(Drg.No.MP/SPA/2022/2/S-7 Block_ML/A-Plate-1.)

The bottom level of the proposed Block i.e.,5thlevel shall be used as extraction level. A footwall haulage drive of 3.00 m.(H) x 3.00 m. (W) is developed in the waste rock at interval of10.00 m - 15.00 m away from the Geological limit of the orebody. Draw cross cuts are developed with dimensions of 3.00 m. (H) x 3.00m. (W) at an interval of 06.00 m – 11.00m.

7.3 DRILLING OF BLAST HOLES:(Drg.No.MP/SPA/2022/2/S-7 Block_ML/A-Plate-1.)

57 mm dia. downward holes with burden of 1.5m and toe spacing of 1.8 m have been drilled from 5th sub level to 5th level covering pillar of 13mheight, downward holes of 57 mm have been drilled from 4th level to 5th sub level covering pillar of 16 m. Also 57 mm dia. downward holes have been drilled from 3rd Drill level to 4th level covering pillar of 21 m.

7.4 BLASTING: (Drg.No.MP/SPA/2022/2/S-7 Block_ML/A-Plate-1)

a. Blasting of holes drilled from 5thsub level to 5thlevel will be commenced from slot raise provided at eastern end of the stope block and will progress towards west.

b. Blasting of holes drilled from 4thlevel to5thsub level, shall blast against the slot. The blasting of downward holes from 4thLevel &3rdDrill level shall be carried out maintaining a lead and lag of

minimum 6.00 m between every level of the stope. This sequence of blasting operation shall be maintained for the entire stoping block.

c. Emulsion /Slurry explosives of 40 mm will be used for blasting operations.

Sequence of Blasting:(Drg.No.MP/SPA/2022/2/S-7 Block_ML/A-Plate-1.)

(1) Slot Raise (Slice-1A) between 5thSub-Level (5thSL) and 5thLevel (5thL) shall be blasted from 5thSL by Drop Raising method.
(2) Slot Widening (Slice-1B) between 5thSL and 5thL shall be done by blasting of holes drilled from 5thSL. The already blasted slot raise (Slice-1A) shall act as free face for slot widening.
(3) This will be followed by blasting of Slice-2 from 5thSL against the free face of Slot between 5th L and 5th SL.
(4) Slot Raise (Slice-3A) between 4thLevel (4thL) and 5thSub-Level (5thSL) shall be blasted from 4thL by Drop Raising method.
(5) Slot Widening (Slice-3B) between 4thL and 5thSL shall be done by blasting of holes drilled from 4thL. The already blasted slot raise (Slice-3A) shall act as free face for slot widening.
(6) This will be followed by blasting of Slice-4 between 5th SL and 5thL &Slice-5 between 4thL and 5thSLfrom 5thSL and 4thL respectively.
(7) Slot Raise (Slice-6A) between 3rdDrill Level and 4thL shall be blasted from 3rdDrill Level by Drop Raising method retaining a crown pillar of 8m below 3rdLevel.
(8) Slot Widening (Slice-6B) between 3rdDrill Level and 4thL shall be done by blasting of holes drilled from 3rdDrill Level retaining a crown pillar of 8m below 3rdLevel. The already blasted slot raise (Slice-6A) shall act as free face for slot widening.
(9) This will be followed by blasting of Slice-7, Slice-8 and Slice-9 from 5thSL, 4thL and 3rdDrill Level respectively.
(10) This will be followed by blasting of Slice-10, Slice-11 and Slice-12 from 5thSL, 4thL and 3rdDrill Level respectively.
(11) This will be followed by blasting of Slice-13, Slice-14 and Slice-15 from 5thSL, 4thL and 3rdDrill Level respectively.
(12) This will be followed by blasting of Slice-16, Slice-17 and Slice-18 from 5thSL, 4thL and 3rdDrill Level respectively.
(13) This will be followed by blasting of Slice-19, Slice-20 and Slice-21 from 5thSL, 4thL and 3rdDrill Level respectively.
(14) This will be followed by blasting of Slice-22, Slice-23 and Slice-24 from 5thSL, 4thL and 3rdDrill Level respectively.
(15) This will be followed by blasting slices from Slice-25 to Slice-30 in the sequence and manner shown in the above referred Plans and Sections.

Slice- 25 shall be blasted from 5th S/L

Slice- 26,28 shall be blasted from 4th L

Slice- 27,29&30 shall be blasted from 3rd D/L.

A Crown Pillar of 8 m is retained between 3rd Level & 3rd Drill Level. Main Rib Pillar of 8m is retained towards west of the block.

This will mark **completion of blasting** in Mother Lode 3rdL - 5thL JN53-55 'S-7' Block.

7.5 WITHDRAWAL & TRANSPORTATION OF ORE: (Drg.No.MP/SPA/2022/2/S-7 Block_ML/A-Plate-1.)

The broken ore shall be drawn from stope by Pneumatic Operated 824 Loader and 3T Battery operated Locomotive Combination, transported and will be dumped into Main Shaft bin at 5th Level and will be hoisted to the surface through Main shaft.

PROPOSED RATE OF PRODUCTION FROM STOPE

Block	MONTH	TONNAGE	TOTAL
S-7	OCT'22	1289	**45289**
	NOV'22	4000	
	DEC'22	4000	
	JAN'23	4000	
	FEB'23	4000	
	MAR'23	4000	
	APR'23	4000	
	MAY'23	4000	
	JUN'23	4000	
	JUL'23	4000	
	AUG'23	4000	
	SEP'23	4000	

Table 7: Proposed Rate of production from stope

ESTIMATED TONNAGE & GRADE TO BE RECOVERED FROM 'S-7' BLOCK

Sl. No	Name of Block	Insitu ore reserve			Irrecoverable Reserve(Crown Pillar)			Recoverable ore			Dilution @ 15%			Extraction from the Block		
		Tonnes (MT)	Grade (g/t)	Gold (g)	Tonnes (MT)	Grade (g/t)	Gold (g)	Tonnes (MT)	Grade (g/t)	Gold (g)	Tonnes (MT)	Grade (g/t)	Gold (g)	Tonnes (MT)	Grade (g/t)	Gold (g)
1	S-7	46247	4.76	220136	6865	3.20	21968	39382	5.02	198168	5907	0.00	0.00	45289	4.38	198168

Table 8: Estimated tonnage and grade from proposed block

7.6 SUPPORT OF WORKINGS: (Drg.No.MP/SPA/2022/2/S-7 Block_ ML/G-Plate-7)

The following measures have been implemented for support of workings.

1) All drives and cross cuts developed inside the ore body of 3m X 3m size in the proposed block are supported with 20mm diameter tor steel rock bolts of 1.50m length at 1.20m spacing.

2) All drives and cross cuts developed in waste rock outside the ore body exceeding 3m X 3m size are supported with 20mm diameter tor steel rock bolts of 1.50 m length at 1.20m spacing.

7.7 SAFETY MEASURES: (Drg.No.MP/SPA/2022/2/S-7 Block_ML/H-Plate-8)

As per recommendation of NIRM Report No GC-1504C/01 of June-2017, the following safety measures will be implemented for proposed stoping block.

1) Effect of Mining of the proposed block would be monitored by installing Stress Cells in the Rib Pillars adjacent to the block.

2) Convergence would be monitored by installing Tape Extensometers and Convergence Recorders in the Haulage Drives and in the Draw Cross Cuts in the proposed stoping block as shown in the drawing.

7.8 VENTILATION: (Drg.No.MP/SPA/2022/2/S-7 Block_ML/D.- Plate-4)

The stope will be ventilated with346.84 Cum/min freshintake air from Main Shaft& West Shaft through the connecting cross cut and drives at 5thLevel and the return air would go up through the raises/old stope to the return circuit as shown in Drawing.

EAST WINZE Return Air Shaft Fan details

40HP Fan	**12.5 HP Fan**
Make: General Electrical Company	Make: Crompton & Greaves
Capacity – 1200m3/min	Capacity –600 Cu.m/min
Water Gauge – 40mm	Water Gauge – 30mm

Table 9: Ventilation fan details

7.8 STOWING: Not Applicable (Sub level open Stoping Method)

8. Compliance of Rule 30 under MCDR, 2017: - has been complied with as Stoping application has been applied in prescribed Form –F under rule 30(2) of MCDR, 2017 by Hira-Buddini Underground Gold Mine of M/s. The Hutti Gold Mines Company limited.

9. Comments on the scrutiny of stoping notice: The stoping notice has been examined in light of the field visit on 26/09/2022 and discussion held with mine officials. The scrutiny comments were communicated to the Lessee vide Letter no KNT/RCH/G-4/BNG-Vol-III dated 03/10/22. The Lessee has incorporated corrections and the final copy is submitted vide Lessee letter no. 193/MIN/NP/HBGM/Scrutiny/2022-2023/IBM dated 15.10.2022.

a) Application of stoping was submitted for Mother lode between 3rdlevel to 5th level, S-7 block JN-53-55 region between grids as mentioned in Table 1.

b) As per theapproved Review & updation of Mining Plan approved on 31/12/2020, above mentioned stope in Table-1 is proposed to stope out in the year 2021-22 & 2022-23as mentioned below in Table 11. The proposed stope details have been furnished in the table 1. The proposed rate of production & estimated tonnage and grade has been furnished in Table 7&8.

c) Adequate development has been carried out for the proposed stope w.r.t the off-lode, on-lode & primary development by the Lessee as mentioned above in Table 2& below in Table-10.

d) Accordingly, the proposed stope is recommended for permission as adequate development has been carried out in this stope.

Sl. No.	***Block***	***Reef***	***Level***	***Development Required (mts.)***			***Development Completed (mts.)***			***Devel. % Compl.***
				Drive	***X-cuts***	***Total***	***Drive***	***X-cuts***	***Total***	
1	S-7	Mother Lode	3 L	64	25	89	63	25	89	**100%**
2			3 D/L	64	28	90	64	28	92	**100%**
3			4 L	64	35	99	64	35	99	**100%**
4			5 S/L	64	23	87	64	23	87	**100%**
5			5 L	64	20	84	64	20	84	**100%**

6			5 L Draw Level (Off-Lode)	76	78	154	76	78	154	**100%**
			Total	396	209	605	395	209	605	**100%**

Table 10 showing status of development of stope recommended for permission

(C)Proposed Year wise and Level wise Extent of Development for the Plan Period (2021-22 to 2025-26):

Table No.2.3: Summary of Proposed Primary and Stope Development (On-lode) & Ore Production during the Plan Period (2021-22 to 2025-26)

Year	Primary Development (m)	Stope Development (m)	Total (m)	Incidental ore from Development (Tonnes)	Stope development Production (Tonnes)	Total incidental Ore Production (Tonnes)
2021-22	192	278	470	4890	7081	11971
2022-23	210	383	593	5349	9755	15104
2023-24	286	338	624	7284	8609	15893
2024-25	267	268	535	6800	6826	13626
2025-26	520	-	520	13244	-	13244
Total	1475	1267	2742	37567	32271	69838

Note: (1) Bulk Density of Ore = 2.83 MT/Cu.m

(2) Recovery Factor for Stopes = 85%

Table No.2.4: Summary of Proposed Stope Production during 2021-22 to 25-26

Sl.No	Year	Stope Nomenclature	Stope block size			Level		Co-Ordinates		Reef	Region	Ore tonnage
			L	W	H	From	To	Lat	Long			
1	2021-22	S7	56	12	50	3rd DL to 5th L		2248 2220	2102 2100	MR	KN 54	47544
2	2022-23	S7	56	12	50	3rd DL to 5th L		2220 2186	2100 2098	MR	KN 54	47500
3	2023-24	S8	82	8	50	3rd DL to 5th L		2194 2155	2098 2076	MR	JN 53	46400
4	2024-25	S8	82	8	50	3rd DL to 5thL		2155 2141	2076 2050	MR	JN 53	46000
5	2025-26	S9	90	8	50	3rd DL to 5thL		2147 2102	2050 2060	MR	JN 52	45000

Table 11:Proposed period as per approved RMP dated 31/12/2020 for recommended stope

10. Recommendation: Based on field observations, compliance of scrutiny comments submitted by the Lessee, recommendations in NIRM report and proposals in present Review and updation of mining plan, the present stoping permission for Mother lode 3rd level to 5th level in JN-53-55 region, S-7 Block may be granted.

Sd/-

K. Srinivas
Junior Mining Geologist

Sandeep Kumar Singh
Assistant Controller of Mines