THE HUTTI GOLD MINES COMPANY LIMITED

(A Government of Karnataka Enterprise)

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CIN NO. U85110KA1947SGC001321

No. HGML/MET/ENV/MoEF&CC/SR/2017-18/

Date: 08/04/2017

The Additional Principal Chief Conservator of Forest (Centre)
Ministry of Environment Forest & Climate Chang e,
Regional Office (Southern Zone), Kendriya Sadan,
IV Floor, E & F wings, 17th Main Road,
II Block, Koramangala,
Bangalore -560 034

Sir,

Sub: Compliance for the MoEF conditions for six monthly (October 2016 to March 2017), Hutti Gold Mine of M/s.The Hutti Gold Mines Co Ltd. Raichur (Dist), Karnataka- reg

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With reference to the above sited subject, please find enclosed six monthly compliance report (October 2016 to March 2017) of Hutti Gold Mines, as per the stipulated specific conditions of the Environmental Clearance **(Annex-I)**.

Submitted for your kind perusal.

Thanking You,

Yours faithfully

General Manager (Co-ordination)

Encl: As stated.

Modernization and Expansion in production of gold ore from 0.951 MTPA to 0.6 MTPA and of ore processing capacity of 0.9 MTPA in Hutti Underground Gold Mine of M/s Hutti Gold Mines Co.Ltd, near villageHutti,Tehsil Lingasugur,Dist Raichur,Karnataka

Environment Clearance No. J-11015/13/2003.IA.II (M) dated 17/11/2004.

The total Mining Lease area is 528.35 Ha, of which 222.41 Ha is agricultural land and remaining 305.94 Ha is others. There is no National Parks, Sanctuary and Tiger Reserves within 10 kms of the project site. The project does not involve displacement of people. Of the lease area of 528.35 Ha, 47.50 Ha is for infrastructure, 5.15 Ha for roads, 49.38 Ha for green belt, 61.96 Ha for tailing pond, 1.70 Ha for ETP, 66.80 Ha for various buildings, 0.37 Ha for water pipeline and 295.49 Ha of undisturbed land.

The gold ore processing capacity is 2000 TPD.

COMPLIANCE REPORT
Oct2016-Mar 2017

Project: Modernization & Expansion in production of Gold ore from 0.351 MTPA to 0.6 MTPA and of ore processing capacity to 0.9 MTPA in *Hutti Underground Gold Mine* of M/s Hutti Gold Mines Co Ltd., near village Hutti, Tehsil Lingsugur, District Raichur, Karnataka.

Ref: MoEF cl. Lr.No. J-11015/ 13 / 2003- IA.II (M) dt.17.11.2004.

Sl No.	Specific Conditions Stipulated	Compliance Status
1	No mining operations shall begin in 222.41 ha of the total area which is yet to be acquired	222.41 ha of the total area have been acquired. Mining activity is presently carried out in the total mine lease area 528.35 Ha.
2	The total ore processing capacity shall not exceed 3000 TPD. The ore processing capacity in the existing ore processing plant shall be reduced from the existing capacity of 1950 TPD to 1000 TPD when the new ore processing plant based on modern technology with a capacity of 2000 TPD comes into operation.	The new ore processing plant based on modern technology (SAG and BALL Mill) with a capacity of 2000 TPD has been operation since 2010. Only 2000 TPD has been processed.
3	Annual generation of 45,000 tonnes of OB shall be used for road construction, filling up of low lying areas, building material and in tailing dam.	As it is a underground mine only consider amount of OB is generated on an average 45,000 tonnes which is being used for low lying area, Road construction, Building material and in Tailing dam, etc..
4	OB should be stacked at the two OB dumps of 25ha and 37 ha are at earmarked sites only. Maximum height of the OB dumps shall not exceed 30m.	The present area occupied by these tailings is about 61.96 ha, in which the southern portion (about 25 hectares) is already built up to 28 m height and it is abounded from 2001. Afforestation is carried out on the top of the tailing dump. The slope of the dump is being covered by Geo-Textile matting in which vegetation is grown which helps in suppressing the dust being generated and also stabilized the slope in year 2015-16, the 5 Acres of a slope area is being covered with Geo-Textile Mat which is executed by Karnataka State Coir Development Board. The northern portion (about 25 hectares) which is currently in use (New dump) has been reached 28 m height in 3 benches with each bench having a height of 10 m.

5	Catch drains and siltation ponds of appropriate size should be constructed to arrest silt and sediment flows from OB dumps. The drains should be regularly desilted and maintained properly. Garland drains and sump capacity should be designed keeping 50% safety margin over and above the peak sudden rainfall and Max discharge in the area adjoining the mine site. Sump capacity should also provide adequate retention period to allow proper settling of silt material.	Catch drains, siltation ponds and also Peripheral trench around the tailing dam has been made to arrest the seepage and silt and designed keeping 50% safety margin over and above the peak sudden rainfall and Max discharge in the area adjoining the mine site. The collected seepage water is continuously pumped back to process plant for reuse. The silt is regularly being desilted from the drains and put it back to the dump and also Sump capacity should also provide adequate retention period to allow proper settling of silt material.
6	Dimension of retaining wall at the toe of OB dumps and benches within the mine to check run-off and siltation should be based on the rainfall data	Retaining wall has been built with peripheral benches around the tailing dump area. All around the tailing dump necessary checks have been constructed to avoid the run-off and siltation trenches has constructed right in accordance with the rainfall data.
7	Of the annual generation of 0.9 MTPA of tailings, 0.27 MTPA shall be used for backfilling and the remaining shall be dumped in the two OB dumps.	Presently 0.076 MTPA Tailings backfilling is under progress and remaining 0.49MTPA tailings are being dumped in new tailing dump.
8	Appropriate measures for continuous supply of fresh air into the mine and removal of noxious and other harmful gases from the underground mine shall be adopted.	The ventilation of the mine is being done by accessional boundary system. Four numbers, mechanical ventilators as exhaust fans are installed vertically on shafts to provide continuous supply of fresh air and also regularly monitored and data recorded.
9	Pumps of adequate power and capacity shall be used for dewatering mine water and for prevention of mine inundation. The excess water shall be used in recharge of ground water and suitable measures for recharge of ground water including rain water harvesting Should be taken up.	The generate mine water is very small quantity, due to Hutti is dry area. Whatever the mine water generated is pumped from the underground to the surface tank regularly and used in metallurgical process.
10	Subsidence Prediction model shall be done and subsidence closely monitored and validated using actual data.	A detailed study has been carried out on the ground stability at Hutti gold mines by National Institute of Rock Mechanics (NIRM), KGF and as per its report no instability is expected in the walls of the excavation. Further post filling of the voids is adopted. Stope size is designed based on numerical modeling as suggested by NIRM, KGF.
11	In the ore treatment process, Sodium Cyanide shall be neutralized before pumping the slurry in to the tailing dam.	Slurry is treated with the De-Toxification unit which is passed through serious of tanks 5 No.s using Bleaching Powder reagent as De-Toxificant agent. The concentrate of the cyanide continuously monitored to

		ensure complete De-Toxification. Later the De-Toxified slurry is pumped to the tailing dam.
12	Workshop effluents shall be subject to oil and grease removal before discharge.	Oil and grease is separately collected and the same will be disposed off to the recyclers. The quantity generated is negligible. Oil and Grease recycling unit has been established near workshop before discharging into the drain which is further treated in the Common Sewage Treatment Plant (CSTP).
13	Mine water discharge and/ or any waste water containing heavy metals should be properly treated to meet the prescribed standards before reuse/discharge. Run-off from OB dumps and other surface run-off should be analyzed for heavy metals and in case its concentration is found higher than the permissible limits, the water should be treated before discharge/reuse.	Analysis indicated So far, all heavy metals are found Below Detectable (BDL). Mine water discharge is completely being reused in the process plant. The accumulated surface run-off in the garland completely reprocessed in the plant. Annexure-I
14	In-house pilot studies on the eco toxicological effects of heavy metals found in mine discharge and tailing shall be conducted before their applicability on a large scale.	The detailed study on the eco-toxicological effects of heavy metals from mine discharge water carried out by Agricultural University, Darwad. No heavy metals found in the mine discharge/or tailings.
15	In addition to the existing plantation carried out within the lease area and in the township, plantation should be raised along the road, dump sites, etc. This includes a green belt of sufficient width all around the ML areas and by planting native plant species in consultation with local DFO/Agriculture Department. At least 2000 plant species / ha should be planted.	Phase wise plantation work has already been taken up by planting native species in consultation with Forest Dept. Lingsugur. Within the colony areas and near other official buildings, fully fledged avenue plantations have already been developed by M/s HGML. Gap plantation has been taken up by growing Bio fuel yielding plants, in an area of 10 Acres 5,000 plantations has been carried out in the year 2016.
16	A detailed hydro geological study on the impact of mining on the ground water regime of the area shall be undertaken.	A detailed study has been carried out on hydro geological impact of mining on ground water of Hutti area has been carried out and the report already submitted to the Ministry of Environment Forest.
17	Regular monitoring of ground water level and quality should be carried out by establishing a network of existing wells and constructing new pizeometers. The monitoring should be done for quantity four times a year in pre-monsoon (April/May), monsoon (August), post-monsoon (November) and winter (January) seasons and for	Regular and season wise monitoring of water quality and water level has been carrying out and data base has been maintained. Annexure-I

	quality during May. Data thus collected should be submitted quarterly to the Ministry of Environment & Forests and the Central Ground Water Authority.	
18	The project authorities should meet water requirement of nearby villages, if any, in case the village wells go dry due to mine de-watering.	The drinking water is provided to the Hutti village, Medanapur village, Gurugunta village.
19	Vehicular emissions should be kept under control and regularly monitored.	Regularly maintenance of the vehicles is being carried out & emission is being kept under control and also the regularly emission text is carried out.
20	"Consent to operate" should be obtained from SPCB before further expansion.	Applied for obtaining "Consent for operation" It is under process of approval at KSPCB for 5 years. The proposal is approved The Consent Committee Meeting.
22	The proponent shall earmark a separate fund of 1% of the total project cost for eco development measure including community welfare measures in the project area. The amount shall be deposited by the company in a separate account within three months to be maintained by the KSPCB. The action plan in this regard shall be submitted to the KSPCB as well as to MOEF RO, Bangalore within three months of issue of this letter. After approval of the action plan by the KSPCB, the amount deposited shall be released in two installments to the project authorities based on progress of implementation. The KSPCB shall ensure that implementation of the action plan for eco development measures is completed within two years from its approval by KSPCB. Further, the interest accrued during this period on the amount deposited by the proponent with the KSPCB shall be ploughed back to the same eco development fund.	Since it is a post facto clearance, lot of money has already been spent for Environment Management Plan including community welfare measures.
Sl. No.	General Condition	Compliance Report
1	No change in mining technology and scope of working should be made without prior approval of the Ministry of Environment & Forests.	There is no change in mining technology and scope of the work. Application will be obtained if any changes from Ministry of Environment and Forests.
2	No change in the calendar plan including excavation, quantum of mineral (gold Ore) and waste should be made.	The activity carried out as per the approved mine plan.
3	Four ambient air quality-monitoring stations should be established in the core zone as well as in the	Two No.s of continuous Ambient air quality monitoring stations has been estimated in consultation with

	buffer zone for RPM, SPM, So2, and NOx monitoring. Location of the stations should be decided based on the meteorological data, topographical features, and environmentally and ecologically sensitive targets in consultation with the State Pollution Control Board. Data on ambient air quality (RPM, SPM, SO2, NOx & CO) should be regularly submitted to the Ministry including its Regional office at Bangalore and the State Pollution Control Board/Central Pollution Control Board once in six months.	KSPCB. Ambient air quality monitoring stations in core zone & buffer zone have been established in consultation with SPCB and regular monitoring of SPM. RSPM, SO2, NOx is carried out and HGML has submitted to RPCB, Raichur monthly. Annexure-I
4	Drills should be wet operated or with dust extractors and controlled blasting should be practiced.	Wet drilling and controlled blasting methods are being followed as studied and recommended by NIRM, KGF.
5	Fugitive dust emissions from all the sources should be controlled regularly monitored and data recorded properly. Water spraying arrangements on haul roads, wagon loading, dumpers/trucks, loading & unloading points should be provided and properly maintained.	Cyclonic arrangements have been made to arrest the fugitive dust emission and also water spraying arrangements has been made. Water sprinkling are carried out on haul roads, wagon loading, dumpers/trucks, loading & unloading points and properly maintained.
6	Adequate measures should be taken for control of noise levels below 85 dBA in the work environment. Workers engaged in blasting and drilling operations, operations of HEMM, etc should be provided with ear plugs/muffs.	Acoustic enclosures has been provided wherever noise level is high and also usage of ear plugs / ear muffs has been made compulsory. Regular maintenance of machinery with proper lubrication is being carried out in order to reduce Noise level frequent monitoring ha being carried out.
7	Industrial waste water (workshop and waste water from mine) should be properly collected, treated so as to conform to the standards prescribed under GSR 422 (E) dated 19th May, 1993 and 31st December, 1993 or as amended from time to time. Oil and grease trap should be installed before discharge of workshop effluents.	Installation of Oil and grease trap before discharge of workshop effluents installed has been carried out. Further Waste water is being treated in Common Sewage Treatment Plant CSTP- 2.5 KLD in consultation with KSPCB.
8	Environmental laboratory should be established with adequate number and type of pollution monitoring and analysis equipment in consultation with the State pollution Control Board.	Environmental monitoring work has been out sourced to the NABL, Accredited laboratory for carrying out pollution monitoring and analysis.
9	Personnel working in dusty area should wear protective respiratory devices and they should also be provided with adequate training and	All workers who work in dusty areas have been provided protective respiratory devices. Water spraying is carried out in dusty atmosphere; in underground wet process of drilling is carried out and also water

	information on safety and health aspects. Occupational health surveillance program of the workers should be undertaken periodically to observe any contractions due to exposure to dust and take corrective measures, if needed.	sprinkling is done during loading and unloading to suppress dust at source. Ore is fully wet till it is hoisted up to surface. Periodical Medical examination once in 5 yrs is done as per Mines Rule 1955 for all the workers, both for U/G & S/F. Experts from KGF Dr. Sampat Kumar, consulted for all chest X- Rays. Expert opinion from Radiologist. 45 years and above will be periodically examined once in 3 years. Investigation as per the suggestion National Conference of safety & Health.
10	A separate environmental management cell with suitable qualified personnel should be set-up under the control of a senior Executive, who will report directly to the Head of the Organization	Environmental Management Cell has been established under the chairmanship of General Manager, & various departmental heads as members and Environmental Engineer as convener. Environmental Engineer has been appointed to carry out the activities of Environmental Management Cell. The cell meets regularly and reviews the policy and programmes for continual improvement to achieve the goal of EMP.
11	The funds earmarked for environmental protection measures should be kept in separate account and should not be diverted for other purpose. Year wise expenditure should be reported to Ministry and its Regional Office located at Bangalore.	Separate account is being maintained for environmental protection under the cost code 5055. Year wise expenditures is submitted to the Ministry of Environment and Forests. Expenditure 2015-16 – Rs .4.22 Crore
12	The Regional Office of this Ministry located at Bangalore shall monitor compliance of the stipulated conditions. The project authorities should extend full cooperation's to the officer (s) of the Regional Office by furnishing the requisite data/information/monitoring reports.	HGML will furnish all relevant information with respect to Environmental Quality data/information/monitoring reports to the Regional Office, MoEF Bangalore. Full co-operation will be extended as & when Regulatory Authority inspects the site.
13	The project authorities should advertise at least in two local newspapers widely circulated around the project, one of which shall be in the vernacular language of the locality concerned within seven days of the issue of the clearance letter informing that the project has been accorded environmental clearance and a copy of the clearance letter is available with the State Pollution Control Board and may also be seen at Web Site of the Ministry of Environment & Forest at http://envfor.nic.in and a copy of the same should be forwarded to the Regional office of this ministry located at Bangalore.	Advertisement has been made in two local daily widely circulated kannada newspapers like Vijay Karnataka and Raichurvani on 16-12-2004 & 30-12-2004 respectively and a copy of the same has been sent to Regional Office on 31-12-2004.

Six Monthly Report on Environmental Monitoring of

Hutti Gold Mines , Oct2016-Mar 2017

Ambient Air Quality Monitoring Report of Hutti Gold Mines

Sl No.	Station	Oct - Nov			Dec 16 –Jan 17			Feb - Mar 17		
		SPM	NOx	SO2	SPM	Nox	SO2	SPM	NOx	SO2
1	Process Plant	284.9	0.225	4.35	231.6	1.887	4.02	190. 6	1.863	4.364
2	PWD Road	280.41	0.75	3.72	217.2	1.46	3.2	148.46	0.43	2.3686
3	Crushing Plant & Ore haulage	234.42	0.341	1.158	205.75	1.256	3.6	165.82	0.276	1. 8
4	Colony	211.8	0.16	0.56	162.3	1.22	3.56	134.4	0.342	2.27

All units are in $\mu g / M^3$

Process Emission and Flue Gas Report of Hutti Gold Mines

Stack	Attached to	SPM $\mu g / M^3$	SO2 $\mu g / M^3$	Nox $\mu g / M^3$	CO	H_2S	HCN	Flow NM^3 / Hr
S 1	Primary Crusher	83.2	---	-----	--	----	-----	18271
S 2	Sec Crusher	135.6	--	---	----	---	----	29104
S3- S4	Tert. Crusher	137.1	----	----	----	-----	-----	19792
S5	Carbon Reactivator kiln	54.6	-----	----	-----	-----	-----	1672
S6 –S9	Roasting Furnace	79.2	112	----	-----	-------	------	515
S10 –S13	Assay Furnace	51.3	95.1	----	-----	------	------	557
S22 –S23	Refractory Furnace	73.4	112	---	---	----	---	824
S24	1000x2KVA DG Set	114.8	74	----	----	----	----	16744

Note: All values are average of Oct 2016 –Mar 2017.

Water Quality report of Hutti Gold Mines

Oct2016-Mar 2017

Sl no.	Parameters	W1	W2	W3	W4	W5	W6	W7
1	Color & Odour	Colorless & Odourless	Colorless & Odourless	Colorless & Odourless	Colorless & Odourless	Colorless & Odourless	Colorless & Odourless	Colorless & Odourless
2	Dissolved Solids in ppm	1178	566	477	381	1686	1968	1852
3	pH	8.3	7.4	7.3	7.8	7.9	7.4	7.5
4	Temperature ^0C	25.2	27.0	28.6	27.2	26	27.0	27.7
5	Oil & grease	Nil	BDL	BDL	BDL	BDL	BDL	BDL
6	Total Suspended Solids ppm	146	235	118	216	9	49	48
7	Bio Chemical Oxygen Demand mg/l (5 day at 20^0C	21	9	17	10	<1	<1	<1
8	Chemical Oxygen Demand mg/l	139	37	164	25	<1	<1	<1
9	Free NH_3	Nil	BDL	BDL	BDL	BDL	BDL	BDL
10	Arsenic	Nil	BDL	BDL	BDL	BDL	BDL	BDL
11	Mercury	Nil	BDL	BDL	BDL	BDL	BDL	BDL
12	Cadmium	Nil	BDL	BDL	BDL	BDL	BDL	BDL
13	Hexavalent Chromium	Nil	BDL	BDL	BDL	BDL	BDL	BDL
14	Copper	Nil	BDL	BDL	BDL	BDL	BDL	BDL
15	Lead	Nil	BDL	BDL	BDL	BDL	BDL	BDL
16	Zinc	Nil	BDL	BDL	BDL	BDL	BDL	BDL
17	Selenium	Nil	BDL	BDL	BDL	BDL	BDL	BDL
18	Nickel	Nil	BDL	BDL	BDL	BDL	BDL	BDL
19	Cyanide ppm	0.14	BDL	BDL	BDL	BDL	BDL	BDL
20	Fluoride ppm	Nil	1.2	0.3	0.86	1.04	1.1	1.3

W1- Industrial effluent

W2- under Ground Mine discharge water at surface tank near plant

W3 – Domestic effluent discharge at the location of the aeration tank

W4 – Entry point of Hutti Nallaha at the boundary of mining lease

W5 – well water from Hanuman temple,

W6 – Borewell water from Hutti village

W7 – mine dumps Nallha water

Note: BDL – Below Detectable L BDL level

Note: All values are average of Oct 2016-Mar 2017

Noise Level Measurement Report of Hutti Gold Mines

Oct 2016-Mar 2017

		Month		
Station	Time	Oct - Nov	Dec 16 –Jan 17	Feb - Mar 17
Core zone Near Surface Exhaust fan	10.40Am	65.5	67.7	67.2
Near work shop	10.50 Am	61.3	61.5	61.5
Near ore Beneficiation Plant	11.05 Am	55.2	55.6	55.5
Near Colony Area	11.40 Am	49.6	49.5	49.6
Buffer zone Kota village	10.00 Am	58.7	58.7	58.2
Hutti-Hosur village	11.30 Am	55.2	55.4	55.4
Medinapur village	10.20 Am	48.8	48.9	48.5
Veerapur village	11.10 Am	51.7	51.5	51.6

Note: Value in decibels dB (A)

Soil Quality Report of Hutti Gold Mines

Six Monthly Report(Oct 2016-Mar 2017)

SL. No	Location	Physical characteristics		Chemical characteristics			
		pH	Total Soluble salts	Phosphorus as P2O5 in ppm	Calcium as Ca in ppm	Magnesium as Mg in ppm	Chlorides as cl in ppm
1	Near Tailing dump area	8.1	0.009%	65	136	58	17
2	Kota village agricultural field	8.2	0.008%	92	47	47	188
3	Hutti Hosur village agricultural field	8.15	0.013%	44	415	85	196
4	Medanapur village agricultural field	8.7	0.011%	55	432	93	193
5	Veerapur village agricultural field	8.4	0.012%	93	47	75	176

Note: All values are average of Oct 2016-Mar 2017