

**INDIAN BUREAU OF MINES  
MINERALS DEVELOPEMMENT AND REGULATION DIVISION**

**MCDR INSPECTION REPORT**

**Nagpur regional office**

**Mine file No :** MAH/NAG/MN- 305/NGP

**Mine code :** 40MSH14027

- (i) Name of the Inspecting : **M017** ) **ASHISH MISHRA**  
Officer and ID No.
- (ii) Designation : Assistant Controller Mine
- (iii) Accompanying mine : **SHRI B. P. KAYASTHA**  
Official with  
Designation
- (iv) Date of Inspection : 02/03/2017
- (v) Prev.inspection date : 15/02/2011

**PART-I : GENERAL INFORMATION**

1. (a) **Mine Name** : **KIRANAPUR (23.67)HECT.**
- (b) **Registration NO.** :
- (c) Category : B Manual
- (d) Type of Working : Opencast
- (e) Postal address  
State : MAHARASHTRA  
District : NAGPUR  
Village : KIRANAPUR  
Taluka : SAONER  
Post office : KOTURNA  
Pin Code : 441101  
FAX No. :  
E-mail :  
Phone :
- (f) Police Station :
- (g) First opening date : 14/05/2003
- (h) Weekly day of rest : SUN
2. Address for : M/S VEET RAG HOMES PVT.LTD.  
correspondance : 267,GANESH PHADNAVIS BHAVAN,DHARAMPETH,  
NAGPUR
3. (a) Lease Number : MSH0294  
(b) Lease area : 23.67  
(c) Period of lease : 30  
(d) Date of Expiry : 07/04/2033
4. Mineral worked : MANGANESE ORE Main

## 5. Name and Address of the

Lessee : M/S VEET RAG HOMES PVT. LTD.  
 267, Ganesh Phadanavis  
 Bhavan, Near Trikoni Park  
 Dharampeth, Nagpur NAGPUR  
 MAHARASHTRA  
 Phone:  
 FAX :

Owner : SHRI SHAKTI KUMAR M.SANCHETI  
 267,GANESH PHADNAVIS  
 BHAVAN, NEAR TRIKONI PARK,  
 DHARAMPETH, NAGPUR -10  
 NAGPUR MAHARASHTRA  
 Phone:  
 FAX :

## Mining Engineer

Name : SHRI S.K. SINGH,Full Time  
 Qualification : BE(MINING)  
 Appointment/ : 10/04/2004  
 Termination date

## Mining Engineer

Name : SHRI SHAHID K. BAIG,Full Time  
 Qualification : DIMPLOMA IN MINING AND MINE SURVEYING  
 Appointment/ : 13/05/2004  
 Termination date

6. Date of approval of Mining	:	Fresh under rule 22 MCR1960	20/03/2003
Plan/Scheme of Mining	:	Modif.of approved Mining Plan	04/03/2005
	:	Mining Scheme rule 12 MCDR1988	03/03/2009
	:	Mining Scheme rule 12 MCDR1988	10/07/2013

## PART - II : OBSERVATION/COMMENTS OF INSPECTING OFFICERS

## Exploration :

Sl.No.	Item	Proposals	Actual work	Remarks
1a	Backlog of previous year	8 Boreholes of 40 m each were proposed in the SOM for 2013-14 to 2017-18 period (It is also mentioned that 40 m is tentative depth, if ore body is encountered before this depth, the bore hole shall be discontinued)	7 boreholes were drilled for a total meterage of 283 m in the year 2015-16.	Compliance of the proposal was observed. 4 boreholes were located at the time of inspections, rest 3 lied under water logged pit so could not be verified.
1b	Exploration over lease area for geological axis 1 or 2	G-1 & 2	G-1, G2 reserves and G3 resources have been reported in the approved SOM. After the exploration through 7 boreholes, reserves shall come under G-1 & G-2 categories which shall be reported in the next Mining Plan proposals for 2018-19 onwards five years period.	
1c	Exploration Agencies and Expenditure in lakh rupees during the year	No agency was proposed in the approved SOM.	Exploration was done by M/s S. S. Mineral Exploration and Allied Services, Nagpur at the cost of Rs 9.75 Lakh.	The data was collected at the time of inspection.

1d	Balance area to be explored to bring Geological axis in 1 or 2	Nil	After exploration done by 7 boreholes area near the working pits is proved under G1 category for existing/proved 3 Mn ore bands.	There is a hillock in the Northern part of the main working pit (towards East for second pit) which could not be explored due to approach problems as it is around 50 m high. In the eastern part of the main pit, dumping is proposed due to existence of habitation in the close proximity of the lease, hence this area has not been considered for reserves estimation. Thus, approximately 5-6 ha area is balance for future exploration under the hillock.
1e	Balance reserve as on 01/04/20	Reserves as on 01.04.2016 shall be approximately 8000 T (Based on proposals for approved SOM for 2013-14 to 2017-18 period, deductiong reported reserves and proposed production upto 2015-16)	Balance reserves after deducing the production achieved is approximately 55500 T. data regarding additional reserves established not found but reserves are enhanced post the exploration done.	Production is lower than the proposals.

1f	General remarks of inspecting officers on geology, exploration etc	Due to exploration done in form of 7 boreholes, reserves shall enhance for sustained production. The existing ore bodies have been proved for full strike length but for depth persistancy. Future exploration shall be required based on economic feasibility parameters for the existing pits and in the area covered under hillock for extension of existing ore bodies or for new orebodies, if any.
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## Development :

Sl.No.	Item	Propasals	Actual work	Remarks
2a	Location of development w.r.t.lease area	Development was proposed in the main pit located in the southern part of the leasebetween N2396300 to N2396500 and E 255000 to E29580	Actual production was done from the main pit but limited to E295100 to E295400 due to less production and developments than the proposals.	
2b	Separate benches in topsoil, overburden and minerals (Rule 15)	Yes	As per the proposals, there are 3 benches in overburden/topsoil and 2 benches in ore each of 6 m height.	

2c	Stripping ratio or ore to OB ratio	1:5 to 1:7	1:8 to 1:10	There are two veins in the main working pit and the pit is 25 m deep. Orebody has been worked in full available strike length and for further exploitation, development requirements are more which led to higher stripping ratio than the proposals.
2d	Quantity of topsoil generation in m3	3100 cuM upto 2016-17 (1500cuM in 2014-15 and 1600 cuM in 2015-16)	Nil.	Actual top soil generation is NIL as no lateral developments have been made in the area, only vertical developments have been made.
2e	Quantity of overburden generation in m3	167080 cuM in the period 2013-14 to 2015-16 and 6250 cuM in 2016-17 (total 173330 upto 2016-17).	Around 115000 cuM upto 2015-16. In 2016-17 around 500 cuM waste/ overburden has been removed.	

2f General remarks of inspecting officers on development of pit w.r.t. type of deposit etc

There are three pits in the area and overall 3 ore bodies have been proved. Main working pit lies in the southern part and other two pits are in the NW and SW part of the lease area whereas NE part is occupied by a hillock of approximately 50 m steep height. For future developments, the hillock needs to be worked and pits-1 (main) and 3 (NW) need to be joined and extended covering around full lease area (except extreme eastern part where there is habitation in the vicinity of the ML boundary).

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### Exploitation:

Sl.No.	Item	Propasals	Actual work	Remarks
3a	Number of pit proposed for production	Three Pits are there in the lease area but production proposals are limited to southern pit only.	As per the proposals.	
3b	Quantity of ROM mineral production proposed	60300 T ROM in 2013-14 to 2015-16. In the year 2016-17, ROM production proposal was 5100 T	2013-14 to November 2016, ROM production carried out was approximately 12850 T. In 2016-17 production is 59 T.	Working is halted since November'2016 due to lack of demand and lower sale price in the market.

3c	Recovery of sailable/usable mineral from ROM production	90%	As per the proposals.	Approximately 90% is the recovery of clean ore from the ROM produced and rest 10% is rejects/waste.
3d	Quantity of mineral reject generation	6030 T during 2013-14 to 2015-16 and 510 T in 2016-17	Approximately 1290 T of rejects generated in 2013-14 to November'2016 period. In 2016-17, rejects generation is Nil.	
3e	Grade of mineral rejects generation and threshold value declared.	Mn around 10% or below having high silica with mica schist	As per the proposals.	
3f	Quantity of sub grade mineral generation.	Nil	Nil	Average grade is above 22% Mn and highest grade is 44-45% Mn. Thus no sub-grade generation is observed in the mine.
3g	Grade of sub grade mineral generation	Not applicable	Not Applicable in light of 3f.	
3h	Manual / Mechanised method adopted for segregating from ROM	Manual sorting for ROM. For oversized boulders, sorting to be done after breaking the boulders by Hydraulic rock breakers.	Manual sorting is being done.	
3i	Any analysis or beneficiation study proposed and carried out for sub grade mineral and rejects.	No	No	As there is no sub-grade generation and rejects are having less than 10% Mn with high silica and mica schist content for which beneficiation shall not be economical, hence not done.
3j	Provision of drilling and blasting in mineral benches	Yes	Drilling is being done by DTH drills with 63 mm diameter and 3 m deep blast holes. Blasting is done by Slurry explosives.	



3k	Provision of mining machineries in mineral benches	Excavator / Shovel of 2 cuM bucket capacity for excavation and loading. For transportation , 25 T dumpers / tippers. Except these, Hydraulic Rock Breaker for breaking oversized boulders, Dozer, Water tanker etc. auxilliary machineries for maintenace and housekeeping.	As per the proposals.	At the time of inspection, mine was not under any operation, hence mechanization could not be verified. But the mine falls under category-'A' and extent of mechanization is suitable as per the category and level of production done in the past.
3l	Whether height of benches in overburden and mineral suitable for method of mining proposed in MP/SOM	6.0 m bench height for overburden benches as well as for mineral benches.	Bench height as per the proposals in the working pit.	Bench height is more or less same in the other pits also but there were some collapses and merging of benches due to no working in the pit.
3m	Total area covered under excavation/pits	3.7070 ha area was covered under pit. For 2013-14 to 2017-18 period, additional area requirement of 0.2465 ha was proposed.	No additional area has been excavated and working limited to vertical developments in the existing pit. Hence, total area covered under pit is 3.7070 ha.	
3n	Ore to OB ratio for the pit/mine during the year.	For 2015-16, Ore:OB ratio proposed was 1:5.60 For 2016-17, Ore:OB ratio proposed was 1:2.83	More or less, Ore:OB ratio is 1:10 due to developments limitations in the vertical levels only which required high amount of developments than the proposals.	

3o	Total area put in use under different heads at the end of year	Area under pits: 3.9535 ha Area under Top Soil: 0.1361 ha Area under OB/ Waste Dumps: 4.8592 ha Area under Mineral Storage: 0.4040 ha Area under Infrastructure : 0.03 ha Area under Roads: 0.330 ha Area under Green Belt: 0.5720 ha Area under Tailing Pond: 0.040 ha Total Area: 10.3248 ha	Area under pits: 3.7070 ha Area under Top Soil: Nil Area under OB/ Waste Dumps: 5.57 ha Area under Mineral Storage: 0.4040 ha Area under Infrastructure: 0.03 ha Area under Roads: 0.330 ha Area under Green Belt: 0.3500 ha Area under Tailing Pond: Nil Total Area: 10.4547 ha
3p	Production of ROM mineral during the last five year period as applicable	2013-14: 25200 T 2014-15: 30000 T 2015-16: 5100 T 2016-17: 5100 T	2013-14: 4450 T 2014-15: 8053 T 2015-16: 274 T 2016-17: 65 T

3q General remarks of inspecting officers on method of mining etc.

Method of mining adopted is 'A' semi-mechanized or OTFM. The lease is one of the largest among the all in Kirnapur-Kothlna Block and has multiple ore bodies. Hence working through mechanized means is justified. Exploitation has been intermittent and on a lower side in the past due to market conditions. In the eastern part, no mining activity can be taken up due to habitation in the vicinity of the lease boundary but overall, the mine is a good prospect for manganese ore.

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Solid Waste Management - Dumping:

Sl.No.	Item	Propasals	Actual work	Remarks
4a	Separate dumping of topsoil, OB and mineral rejects (Rule 32,33)	Yes	Seperate dumps for top soil and OB/rejects/waste is proposed in the mine. As the area was throw open, no past top soil dumps are present. But waste/overburden and top soil that shall be generated in future are proposed to be dumped separately.	Rejects generated are dumped as waste alongwith the generated overburden/waste due to Mn content lower than threshold value and very high (40-41%) Silica and mica schist contents. During inspection, it was suggested to keep mineralized rejects separate from overburden/waste for any possible future usage.

4b	Location of topsoil, OB and mineral reject dumps	Top soil dump proposed in the eastern side between E295500 to E295900 OB/ Waste dump also proposed at the same location but separate from top soil dumps.	No top soil generated, hence no top soil dump available. Waste dumped during the proposal period 2013-14 to 2017-18 is at the location as proposed. 5 more Old waste dumps are present at the mine site out of which 1 is located at the toe of hillock in the northern side of main pit and other 4 are located near the second pit.
4c	Number of dumps within lease area and outside of lease area	5 dumps present at the start of 2013-14, 5 more dumps are proposed for top soil and OB/ Waste. All within the lease area. 1 active dump was outside the lease area on western side and dumping was proposed on the same for the proposal period 2013-14 to 2017-18.	8 dumps available at the mine site. All dumps-5 old and 3 new are within the lease area. Dumping of waste outside the lease area stopped since 2014-15 after the Supreme Court decision in this regard.
4d	Location of dumps w.r.t. ultimate pit limit (Rule 16)	All dumps are proposed outside the pit limit.	As per the proposals dumping has been done outside the pit limits. Only three dumps have been made in the proposal period out of 5 as proposed.
4e	Number of active and alive dumps.	5 active dumps- 1 for top soil and 4 for dumping OB/waste.	No top soil dump as no top soil generated. 3 active OB/waste dumps are there in the lease area.
4f	Number of dead dumps.	5 old dumps are inactive and dead dumps	5 dumps are inactive and dead. These are old dumps.

4g	Number of dumps established.	Nil	Nil	As the old dumps may required to be re-handled in future for pit development and for joining both the pits after top-slicing the hillock, no dumps have been established for reclamation and rehabilitation activities.
4h	Whether Retaining wall or garland drain all along dumps are there.	No proposals	Nil	Presently, 5 old dumps and 3 new dumps are present in the lease area. 5 old dumps are naturally stabilized over a period of time, other 3 dumps are new dumps and at the time of inspection, it was suggested to construct garland drain and retaining wall along the toe of the dumps. As previously active dump was outside the lease area, status of that dump has not been verified.
4i	Length of Retaining wall or garland drain all along dumps	Nil	Nil	
4j	Number of settling ponds	One settling/taili ng pond proposed for the purpose of jigging.	One pond with concrete linings constructed in the northern part of the working pit at E295400 for jigging but is not operatinal.	

4k	Specific comments of inspecting officer on waste dump management	Waste is proposed to be backfilled in the pits after exploitation upto economic depth. Further, Dump-3 has been stabilized through plantation and other waste dumps are naturally stabilized. Protective measures need to be erected as per norms which has not been done as in the past main waste dumping was done outside the lease area. Presently dumping is being done within the lease area. Joining of Pit 1 and Pit 3 is under future proposals hence old dumps need to be re-handled.
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Solid Waste Management - Backfilling:

Sl.No.	Item	Propasals	Actual work	Remarks
5a	Status of part or full extraction of mineral from mined out area before starting backfilling.	Exploitation is under process hence no backfilling proposals.	No backfilling done.	
5b	Area under backfilling of mined out area	Nil	Nil	
5c	Concurrent use of topsoil for restoration or rehabilitation of mineral out area (Rule 32)	Top soil shall be stacked for future use	Nil as no top soil generated.	
5d	Total area fully reclaimed and rehabilitated	Nil	Nil	

5e	General remarks of inspecting officers on backfilling and reclamation etc.	Backfilling is proposed at the conceptual stage. As per the last approved SOM, life of the mine was 6 years and expiring in 2018-19 but after exploration, due to enhancement of reserves, life has been enhanced. Also after future developments-top slicing of hillock and joining of Pit-1 and 3, economically workable depth shall increase and thus, backfilling shall be proposed accordingly.
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Progressive Mine Clousre Plan:

Sl.No.	Item	Propasals	Actual work	Remarks
6a	Whether Annual report on PMCP submitted on time and correctly. Rule 23 E(2).	Yes	Yes	
6b	Area available for rehabilitation (ha) .	Nil	Nil	Area is under exploitation upto ultimate pit depth.
6c	afforestation done (ha).	0.25 ha done prior to 2013-14, 0.3220 ha proposed in the period 2013-14 to 2017-18 at 0.072 ha each year	Additinal plantation done on 0.10 ha area and total area under afforestation is 0.35 ha as on date. In the year 2015-16, afforestation done on 0.07 ha land for 100 saplings against which survival rate is 60%.	
6d	No. of saplings planted during the year	100 saplings	100 saplings planted in 2015-16	
6e	Cumulative no .of plants	Around 800 trees	Around 500 trees due to lower survival rate.	
6f	Any other method of rehabilitation	No	No other method of rehabilitation	

6g	Cost incurred on watch and care during the year	Rs 161000 per year	As per the proposals.	
6h	Compliance on reclamation and rehabilitation by backfilling (i) Voids available for backfilling ( Lx B x D	Nil	Nil	
6i	Compliance on reclamation and rehabilitation by backfilling (ii) Voids filled by waste / tailings	Nil	Nil	
6j	Compliance on reclamation and rehabilitation by backfilling (iii)Afforestation on on backfilled area	Nil	Nil	Afforestation has been done on old waste dumps, nearby the road and in the 7.5 m non-mining zone.
6k	Compliance on reclamation and rehabilitation by backfilling (iv) Rehabilitation by making water reservoir	Nil	Nil	
6l	Compliance on reclamation and rehabilitation by backfilling (v)any other specific means.	No	No	
6m	Compliance of rehabilitation of waste land within lease (i)afforestation	Afforestation done on 0.25 ha area prior to 2013-14 by plantation of 500 trees. In the 2013-14 to 2017-18 period, 100 saplings on 0.072 ha area is proposed to be planted each year.	Afforestation done on 0.35 ha till date and existing trees are approximately 500 in numbers due to lower survival rate (60%).	



6n	Compliance of rehabilitation of waste land within lease (ii)Area rehabilitation (ha)	0.5 ha upto 2016-17 through afforestation	Afforestation done on 0.35 ha area till 2015-16.	
6o	Compliance of rehabilitation of waste land within lease (iii)Method of rehabilitation	Afforestation	Afforestation	
6p	Compliance of environmental monitoring (core zone and buffer zone)	Yes, being done and proposed to be done quarterly for air, water and noise	As per the proposals	
6q	General remarks of inspecting officers on PMCP compliance and progressive closure operations etc.			As far as possible, PMCP compliances are being furnished by the lessee. Apart from afforestation, no other work for reclamation and rehabilitation is possible prior to the exploitation of mineral from the lease area and lessee is giving due attention towards the activity.

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#### Mineral Conservation:

Sl.No.	Item	Propasals	Actual work	Remarks
7a	ROM Mineral dispatch or grade-wise sorting within lease area	Grade-wise dispatch	Grade-wise dispatch after sorting the mineral from ROM. Generally, recovery is 90%.	
7b	Method of grade-wise mineral sorting i.e. manual or mechanical.	Manual	Manual	

7c	Different grade of mineral sorted out at mines.	Three grades are being dispatched: Below 25% 25%-35% and 35%-below 46%	As per the annual returns the mentioned three grades are being dispatched.	
7d	Any beneficiation process at mines .	No	No	Jigging was tried at pilot level but could not be found suitable. Presently, no beneficiation practices are being adopted.
7e	General remarks of inspecting officer on Mineral conservation and beneficiation issues			The grades available in the lease area are readily saleable. Mineral rejects generated contain less than 10% Mn content and around 41-42% silica and mica schist which was tried at pilot scale for recovery of mineralized content through jigging process but it was not found economically feasible. Also yield and grades were not suitable after beneficiation. thus the practice has been stopped.

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Environment:

Sl.No.	Item	Propasals	Actual work	Remarks
8a	Separate removal and utilization of topsoil (Rule 32)	Proposals for separate removal and stacking of top soil were made in the approved SOM for 2013-14 to 2017-18 period	No top soil generated during the proposal period as no lateral developments done in the mine.	

8b	Concurrent use or storage of topsoil	Stacking of top soil is proposed in the eastern part for future usage.	No top soil generated.	
8c	Separate dumps for overburden, waste rock, rejects and fines (Rule 33)	No	No separate dumps are available	It was suggested to stack mineral rejects separately.
8d	Use of overburden, waste rock, rejects and fines dumps for restoring the land to its original use	In the conceptual stage, backfilling of waste is proposed to restore the land	As per the proposals, it is to be done at conceptual stage.	
8e	Phased restoration, reclamation and rehabilitation of lands affected by mining operations (Pits, dumps etc)	No	No, as all the pits are yet to attain their economically workable depth.	
8f	Baseline information on existence of plantation and additional plantation done (Rule 41)	Yes	Yes, done in the Environment Management plan of the approved SOM.	
8g	Survival rate	100% survival	60% survival	
8h	Water sprinkling on roads to control airborne dust	Yes. Also in the extent of mechanization, provision of water tanker is there for water sprinkling	At the time of inspection, mine was not working. Hence it could not be verified.	

8i	General remarks of inspecting officer on aesthetic beauty in and around mines area	The area is having number of mines in Kothulna-Kirnapur block. Hence their working has degraded the area. Also, habitation was there in the southern part of the lease boundary leading to special care during mining operations in the area. Mine was not working at the time of inspection, hence no air borne dust or noise issues could be found. Overall aesthetic beauty is satisfactory due to the plantation done in the area by the lessee.
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## Compliance of Rule 45:

Sl.No.	Item	Propasals	Actual work	Remarks
9a	Status of submission of Monthly and Annual returns		Monthly Returns submitted upto April 2017 online. Annual Return submitted upto 2015-16 (offline).	Compliance of Rule 45
9b	Scrutiny of Annual return for information on Mining Engineer, Geologist and Manager	Mining Engineer : Shri B. P. Kayastha Geologist: Shri Satish Shenwai	Mining Enginer : Shri B. P. Kayastha Geologist: Shri Satish Shenwai Both were present during the inspection.	
9c	Scrutiny of Annual return on land use pattern for area under pits, reclaimed area, dumps etc.	Area under pits: 3.93 ha Area reclaimed/rehabilitated: 0.72 ha Used for waste disposal: 5.57 ha Infrastructure : 0.33 ha Other: 0.612 ha	Area under afforestation has been considered under reclamation/rehabilitaion. In the pits, area under roads also included as no separate column for the same.	Necessary corrections suggested to the Mining Enginner present at the time of inspection.

9d	Scrutiny of Annual return on afforestation	100 saplings planted with 60% recovery	Correct information.	
9e	Scrutiny of Annual return on mineral reject generation (Grade and quantity)	Grade is 14% Mn, 48% SiO2	Mineral reject generation was around 27 T with 90% recovery from ROM. Quantity of Mineral Rejects not given in the returns.	State govt. may be informed under rule 45(7)(a).
9f	Scrutiny of Annual return on ROM stock and/or graded ore	ROM production, Opening or closing stock not given. For graded ore: Below 25%: Opening Stock-6952.595 T/ Production-213.247 T/ Dispatch-911.235 T/ Closing stock-6254.607 T 25% to Below 35%: Opening Stock-233.910 T/ Production-34.056 T/ Dispatch-247.205 T/ Closing stock-20.261 T 35% to Below 46%: Opening Stock-223.220 T/ Production- Nil / Dispatch- Nil / Closing stock-223.220 T	Incomplete returns for ROM ore. Only graded production has been given. Details for graded ore given correctly.	
9g	Scrutiny of Annual return on sale value, Ex. Mine price and production cost	Ex-mine price: Below 25%- Rs 1800/- per T 25% to Below 35%- Rs 3800/- per T 35% to Below 46%- Nil as no sales	For no sale-cost of production or ASP may be entered as published by IBM for the grade for the state.	Suggestions given to the lessee.

9h	Scrutiny of Annual return on fixed assets	Details given in the AR regarding fixed assets in Part-II (Capital Structure)	Correct Information given.	
9k	Scrutiny of Annual return on mining machineries	No details given	Incomplete returns	State govt. may be informed under rule 45(7)(a).

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**Details of violations observed during current inspection and compliance position of violation pointed out**

Violation observed		Show cause position	
Rule NO.	Issued on Compliance on	Rule NO.	Issued on Compliance on

**Date :****(ASHISH MISHRA)**

Indian Bureau of Mines