

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

MCDR INSPECTION REPORT

Bhubaneshwar regional office

Mine file No : ORI/IRON/KJR/MCDR-81/BBS

Mine code : 30ORI08100

- (i) Name of the Inspecting : **U11**) **DAYANAND UPADHYAY**
Officer and ID No.
- (ii) Designation : Sr. Asst. Contrl. Mines
- (iii) Accompanying mine : Shri A Gurubalasubramaniam, Mine Manager
Official with
Designation
- (iv) Date of Inspection : 30/12/2020
- (v) Prev.inspection date : 09/03/2020

PART-I : GENERAL INFORMATION

1. (a) **Mine Name** : **UNCHABALI (106.1127)**
- (b) **Registration NO.** : **IBM/5175/2011**
- (c) Category : A Fully Mechanised
- (d) Type of Working : Opencast
- (e) Postal address
- State : ORISSA
- District : KEONJHAR
- Village : UNCHABALI
- Taluka : BARBIL
- Post office : BAMEIBARI
- Pin Code : 758038
- FAX No. : 0661-2400139
- E-mail : uimm.ip@gmail.com
- Phone : 0661-2400139
- (f) Police Station : KOIRA
- (g) First opening date : 25/04/2008
- (h) Weekly day of rest : SUN
2. Address for : C/O D R PATNAIK, AT/PO; JODA
correspondance DIST: KEONJHAR
ORISSA
3. (a) Lease Number : ORI0729
- (b) Lease area : 106.11
- (c) Period of lease : 30
- (d) Date of Expiry : 04/02/2029
4. Mineral worked : IRON ORE Main

5. Name and Address of the

Lessee : SMT INDRANI PATNAIK
 C/O SHRI DR PATNAIK AT/PO
 JODA DT: KEONJHAR ORISSA
 KEONJHAR ORISSA
 Phone:
 FAX :

Owner : SMT INDRANI PATNAIK
 C/O DR PATNAIK, AT/ PO JODA
 DIST KEONJHAR ORISSA
 KEONJHAR ORISSA
 Phone:
 FAX :

Agent : Mr. Banshidhar Sahoo
 Bonaikela JODA KEONJHAR
 KEONJHAR ORISSA
 Phone: 0661-2400139
 FAX : 0661-2400139

Mining Engineer

Name : SHRI Y R Obalesh, Full Time
 Qualification : BE MINING
 Appointment/ : 27/08/2015
 Termination date

Geologist

Name : PRADEEPT MOHAPATRA, Full Time
 Qualification : MSC (GEOLOGY)
 Appointment/ : 01/12/2013
 Termination date

Manager

Name : Mr. A.Gurubalasubramaniam
 Qualification : B.E MINING ENGINEERING
 Appointment/ : 28/02/2010
 Termination date

6. Date of approval of Mining Plan/Scheme of Mining	:	Modif.of approved Mining Plan	21/10/2008
		Modif.of approved Mining Plan	06/01/2011
		Mining Scheme rule 12 MCDR1988	25/04/2013
		Modif.approved Mining Scheme	04/12/2014
		Modif.approved Mining Scheme	05/05/2016
		MP review under 17(1) MCR 2016	16/11/2017
		Modif.approved Mining Scheme	18/06/2020

PART - II : OBSERVATION/COMMENTS OF INSPECTING OFFICERS

Exploration :

Sl.No.	Item	Proposals	Actual work	Remarks
1a	Backlog of previous year	6 number of bore holes. in 2019-20.	Total 23 nos. of bore holes of total meterage 1356.20m drilled by lessee in 2019-20	Total 23 nos. of bore holes of total meterage 1356.20m drilled by lessee in 2019-20
1b	Exploration over lease area for geological axis 1 or 2	Within G1 Level of explored area.	Proposed bore holes drilled within G1 Level of explored area.	Total Lease area hs been explored within G1 Level of exploration.
1c	Exploration Agencies and Expenditure in lakh rupees during the year	Exploration agency not specified prior to execute of proposed drilling.	Total cost incurred in drilling was Rs 10651053/-. Exploration agency involved in drilling was M/s Triveni earthmovers Pvt Ltd and M/s APC Drilling & construction Pvt Ltd.	Exploration agency involved in drilling was M/s Triveni earthmovers Pvt Ltd and M/s APC Drilling & construction Pvt Ltd.
1d	Balance area to be explored to bring Geological axis in 1 or 2	Within G1 Level of explored area.	Total Lease area hs been explored within G1 Level of exploration.	Total Lease area hs been explored within G1 Level of exploration.
1e	Balance reserve as on 01/04/20	As per the review of mining plan approved dated 16.11.2017, the reserve and resource as on 01.09.2017 is as follows. Reserve is 21.062 million tones and Remaining resources is 4.417 million tones.	Balance reserve as on 01/04/2020 under 111 category was 11.676 Million Tonnes.	Balance reserve as on 01/04/2020 under 111 category was 11.676 Million Tonnes.
1f	General remarks of inspecting officers on geology, exploration etc	6 number of bore holes. in 2019-20.	Total 23 nos. of bore holes of total meterage 1356.20m drilled by lessee in 2019-20	Total Lease area hs been explored within G1 Level of exploration.

Development :

Sl.No.	Item	Propasals	Actual work	Remarks
2a	Location of development w.r.t.lease area	In 2019-20, development proposed within E 336985 to E337810 and N 2418990 to N 2419640	The development done within E 336985 to E337810 and N 2418990 to N 2419640.	The development is carried out as per proposal.
2b	Separate benches in topsoil, overburden and minerals (Rule 15)	There is no proposal for top soil generation. Separate benches in overburden and mineral proposed.	There was no generation for top soil. Separate benches in overburden and mineral maintained.	There was no generation for top soil. Separate benches in overburden and mineral maintained.
2c	Stripping ratio or ore to OB ratio	1:0.27	1:0.54	In 2019-20, stripping ratio achieved was 1:0.54 due to encounter of BHJ with ore zone.
2d	Quantity of topsoil generation in m3	No proposal for top soil generation.	There was no generation of top soil.	There was no generation of top soil.
2e	Quantity of overburden generation in m3	513625cu.m	819661 cu.m	OB/waste generated is 819661 cu.m due to encounter of BHJ with ore zone.
2f	General remarks of inspecting officers on development of pit w.r.t. type of deposit etc	In 2019-20, development proposed within E 336985 to E337810 and N 2418990 to N 2419640	The development done within E 336985 to E337810 and N 2418990 to N 2419640.	The development is carried out as per proposal.

Exploitation:

Sl.No.	Item	Propasals	Actual work	Remarks
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3a	Number of pit proposed for production	One number of pit	One number of pit	Production is carried in proposed pit.
3b	Quantity of ROM mineral production proposed	In 2019-20, ROM production proposal was 3799901 MT	In 2019-20, ROM production was 3773306 MT	In 2019-20, ROM production was 3773306 MT
3c	Recovery of saleable/usable mineral from ROM production	98% from saleable iron ore and 90% from sub grade/mineral reject zone.	Total ROM make saleable by blending the Subgrade/mineral reject with high grade ore.	Subgrade/mineral reject generated from the quarry were blended with high grade ore to make the saleable ore
3d	Quantity of mineral reject generation	752346MT	Total ROM make saleable by blending the Subgrade/mineral reject with high grade ore.	Total ROM make saleable by blending the Subgrade/mineral reject with high grade ore.
3e	Grade of mineral rejects generation and threshold value declared.	45% Fe to Below 58 % Fe, Thresh hold value 45 % Fe	Total ROM make saleable by blending the Subgrade/mineral reject with high grade ore.	Total ROM make saleable by blending the Subgrade/mineral reject with high grade ore.
3f	Quantity of sub grade mineral generation.	752346MT	Total ROM make saleable by blending the Subgrade/mineral reject with high grade ore.	Total ROM make saleable by blending the Subgrade/mineral reject with high grade ore.
3g	Grade of sub grade mineral generation	45% Fe to Below 58 % Fe, Thresh hold value 45 % Fe	Total ROM make saleable by blending the Subgrade/mineral reject with high grade ore.	Total ROM make saleable by blending the Subgrade/mineral reject with high grade ore.
3h	Manual / Mechanised method adopted for segregating from ROM	Mechanized Method	Mechanized Method	Mechanized Method

3i	Any analysis or beneficiation study proposed and carried out for sub grade mineral and rejects.	Not Proposed	Only crushing and screening is practiced.	Only crushing and screening is practiced.
3j	Provision of drilling and blasting in mineral benches	Drilling in the area is being done by 115 mm diameter by DP1100 in staggered pattern with 3.0m burden and 3.5m spacing. The blasting operation is being carried out by non-electric shock tubes using emulsion and slurry explosives.	Drilling and blasting carried out as proposed.	Drilling and blasting carried out as proposed.
3k	Provision of mining machineries in mineral benches	Excavator and dumper combination have been proposed for mining in mineral benches.	Excavator and dumper combination have been deployed for mining.	Excavator and dumper combination have been deployed for mining.
3l	Whether height of benches in overburden and mineral suitable for method of mining proposed in MP/SOM	Height of the benches proposed is 10 m	Height of benches in overburden and mineral is suitable for method of mining proposed in mining plan.	Height of benches in overburden and mineral is suitable for method of mining proposed in mining plan.
3m	Total area covered under excavation/pits	Proposed durnig plan period 53.369 Ha	Area covered under excavation pit is 47.711 Ha	Area covered under excavation pit is 47.711 Ha
3n	Ore to OB ratio for the pit/mine during the year.	1:0.270	1:0.54	Ore to OB ratio varries due to encounter of BHJ with ore zone.

3o	Total area put in use under different heads at the end of year	Total area put in use under different heads at the end of plan period will be 73.945 Ha	Total area put in use under different heads at the end of 2019-20 is 66.637 Ha	Total area put in use under different heads at the end of 2019-20 is 66.637 Ha
3p	Production of ROM mineral during the last five year period as applicable	2015-16: 4000000.83 MT 2016-17: 4000121 MT 2017-18: 4000257 MT 2018-19: 3799923 MT 2019-20: 3799901MT	2015-16: 3989132 MT 2016-17: 3992806 MT 2017-18: 3990662 MT 2018-19: 3787130 MT 2019-20: 3773306 MT	Production is within the the approved proposal.
3q	General remarks of inspecting officers on method of mining etc.	In 2019-20, one number of pit proposed for production. ROM production proposal was 3799901 MT	In 2019-20, one number of pit put for production. ROM production was 3773306 MT. The method of working is opencast mechanized mining	In 2019-20, one number of pit put for production. ROM production was 3773306 MT. The method of working is opencast mechanized mining

Solid Waste Management - Dumping:

Sl.No.	Item	Propasals	Actual work	Remarks
4a	Separate dumping of topsoil, OB and mineral rejects (Rule 32,33)	There was no proposal for top soil generation. Separate dumping of OB & mineral reject proposed.	In 2019-20, there was no proposal for top soil generation. Separate dumping of OB done. Also, OB have been utilized for road maintenance. Mineral reject/subgrade has been blended with high grade ore.	In 2019-20, there was no proposal for top soil generation. Separate dumping of OB done. Also, OB have been utilized for road maintenance. Mineral reject/subgrade has been blended with high grade ore.

4b	Location of topsoil, OB and mineral reject dumps	OB dump-2 within grid E 336920 - 337110 and N 2419930 - 2420050. For the storing of mineral rejects about 0.80 ha within the co-ordinates N 2419950 - 2420050 and E 337115 - 337225 have kept during plan period.	There was no generation of top soil. Waste Dump-2, between E 336920 - 337110 and N 2419930 - 2420050. Mineral reject generated has been blended with high grade ore	There was no generation of top soil. Waste Dump-2, between E 336920 - 337110 and N 2419930 - 2420050. Mineral reject generated has been blended with high grade ore.
4c	Number of dumps within lease area and outside of lease area	There are two nos of existing waste dump within the ML area	There are two nos of existing waste dump within the ML area	There are two nos of existing waste dump within the ML area
4d	Location of dumps w.r.t. ultimate pit limit (Rule 16)	Outside the UPL	Outside the UPL	Outside the UPL
4e	Number of active and alive dumps.	One active dump.	One active dump.	One active dump.
4f	Number of dead dumps.	One dump.	One dump.	One dump.
4g	Number of dumps established.	Nil	Nil	Nil
4h	Whether Retaining wall or garland drain all along dumps are there.	Maintainance of Retaining Wall and Garland Drain.	Maintainance of Retaining Wall and Garland Drain carried out.	Maintainance of Retaining Wall and Garland Drain carried out.
4i	Length of Retaining wall or garland drain all along dumps	Maintainance of Retaining Wall and Garland Drain.	Maintainance of Retaining Wall and Garland Drain carried out.	Maintainance of Retaining Wall and Garland Drain carried out.
4j	Number of settling ponds	Not proposed.	One settling pond exist.	One settling pond exist.

4k	Specific comments of inspecting officer on waste dump management	OB dump-2 proposed within grid E 336920 - 337110 and N 2419930 - 2420050. For the storing of ore mineral rejects about 0.80 ha within the co-ordinates N 2419950 - 2420050 and E 337115 - 337225 have kept during plan period.	There was no generation of top soil. Waste Dump-2, between E 336920 - 337110 and N 2419930 - 2420050. Mineral reject generated has been blended with high grade ore	There was no generation of top soil. Waste Dump-2, between E 336920 - 337110 and N 2419930 - 2420050. Mineral reject generated has been blended with high grade ore
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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.	Backfilling 1.33 ha	Proposed backfill area has been proved mineralised by exploration therefore backfilling proposal not initiated and review of mining plan was modified by lessee accordingly.	Proposed backfill area has been proved mineralised by exploration therefore backfilling proposal not initiated and review of mining plan was modified by lessee accordingly.
5b	Area under backfilling of mined out area	Backfilling 1.33 ha	Proposed backfill area has been proved mineralised by exploration therefore backfilling proposal not initiated and review of mining plan was modified by lessee accordingly.	Proposed backfill area has been proved mineralised by exploration therefore backfilling proposal not initiated and review of mining plan was modified by lessee accordingly.

5c	Concurrent use of topsoil for restoration or rehabilitation of mineral out area (Rule 32)	Not proposed.	Nil.	Nil.
5d	Total area fully reclaimed and rehabilitated	Backfilling 1.33 ha	Proposed backfill area has been proved mineralised by exploration therefore backfilling proposal not initiated and review of mining plan was modified by lessee accordingly.	Proposed backfill area has been proved mineralised by exploration therefore backfilling proposal not initiated and review of mining plan was modified by lessee accordingly.
5e	General remarks of inspecting officers on backfilling and reclamation etc.	Backfilling 1.33 ha	Proposed backfill area has been proved mineralised by exploration therefore backfilling proposal not initiated and review of mining plan was modified by lessee accordingly.	Proposed backfill area has been proved mineralised by exploration therefore backfilling proposal not initiated and review of mining plan was modified by lessee accordingly.

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).	Annual report on PMCP to be submitted as per Rule 26 (2) of MCDR, 2017	Annual report on PMCP for the year 2019-20 have been submitted	Annual report on PMCP for the year 2019-20 have been submitted

6b	Area available for rehabilitation (ha) .	Backfilling 1.33 ha	Proposed backfill area has been proved mineralised by exploration therefore backfilling proposal not initiated and review of mining plan was modified by lessee accordingly.	Proposed backfill area has been proved mineralised by exploration therefore backfilling proposal not initiated and review of mining plan was modified by lessee accordingly.
6c	afforestation done (ha).	1.54 ha area	1.54 ha area	1.54 ha area covered under plantation.
6d	No. of saplings planted during the year	1000 nos of saplings	1730 nos of saplings within lease area	1730 nos of saplings within lease area
6e	Cumulative no .of plants	Not Specified	Cumulative as on 01.04.2020, 43518 nos of saplings have been planted	Cumulative as on 01.04.2020, 43518 nos of saplings have been planted
6f	Any other method of rehabilitation	Not specified.	About 0.35 ha area has been rehabilitated by safety zone plantation.	About 0.35 ha area has been rehabilitated by safety zone plantation.
6g	Cost incurred on watch and care during the year	Not specified.	Rs 270000/- incurred in watch and care.	Rs 270000/- incurred in watch and care.
6h	Compliance on reclamation and rehabilitation by backfilling (i) Voids available for backfilling (Lx B x D	Backfilling 1.33 ha	Proposed backfill area has been proved mineralised by exploration therefore backfilling proposal not initiated and review of mining plan was modified by lessee accordingly.	Proposed backfill area has been proved mineralised by exploration therefore backfilling proposal not initiated and review of mining plan was modified by lessee accordingly.

6i	Compliance on reclamation and rehabilitation by backfilling (ii) Voids filled by waste / tailings	Backfilling 1.33 ha	Proposed backfill area has been proved mineralised by exploration therefore backfilling proposal not initiated and review of mining plan was modified by lessee accordingly.	Proposed backfill area has been proved mineralised by exploration therefore backfilling proposal not initiated and review of mining plan was modified by lessee accordingly.
6j	Compliance on reclamation and rehabilitation by backfilling (iii) Afforestation on backfilled area	Backfilling 1.33 ha	Proposed backfill area has been proved mineralised by exploration therefore backfilling proposal not initiated and review of mining plan was modified by lessee accordingly.	Proposed backfill area has been proved mineralised by exploration therefore backfilling proposal not initiated and review of mining plan was modified by lessee accordingly.
6m	Compliance of rehabilitation of waste land within lease (i) afforestation	Not specified.	About 0.35 ha area by 520 nos. of saplings has been rehabilitated by safety zone plantation.	About 0.35 ha area has been rehabilitated by safety zone plantation.
6n	Compliance of rehabilitation of waste land within lease (ii) Area rehabilitation (ha)	Not specified.	About 0.35 ha area by 520 nos. of saplings has been rehabilitated by safety zone plantation.	About 0.35 ha area by 520 nos. of saplings has been rehabilitated by safety zone plantation.
6o	Compliance of rehabilitation of waste land within lease (iii) Method of rehabilitation	Not specified.	About 0.35 ha area by 520 nos. of saplings has been rehabilitated by safety zone plantation.	About 0.35 ha area by 520 nos. of saplings has been rehabilitated by safety zone plantation.
6p	Compliance of environmental monitoring (core zone and buffer zone)	Quarterly monitoring.	Quarterly monitoring.	Quarterly monitoring.

6q	General remarks of inspecting officers on PMCP compliance and progressive closure operations etc.	Backfilling 1.33 ha	Proposed backfill area has been proved mineralised by exploration therefore backfilling proposal not initiated and review of mining plan was modified by lessee accordingly.	Proposed backfill area has been proved mineralised by exploration therefore backfilling proposal not initiated and review of mining plan was modified by lessee accordingly.
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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 sorting within lease area.	Grade wise sorting within lease area.	Grade wise sorting within lease area.
7b	Method of grade-wise mineral sorting i.e. manual or mechanical.	Mechanical	Mechanical	Mechanical
7c	Different grade of mineral sorted out at mines.	45% to 58% Fe and +58% Fe.	45% to 58% Fe and +58% Fe.	All the mineral reject / subgrade ore blended with high grade ore
7d	Any beneficiation process at mines	Not proposed.	Only crushing and screening is practiced.	Only crushing and screening is practiced.
7e	General remarks of inspecting officer on Mineral conservation and beneficiation issues	Grade wise sorting within lease area.	Grade wise sorting within lease area.	All the mineral reject blended with high grade ore.

Environment:

Sl.No.	Item	Propasals	Actual work	Remarks
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8a	Separate removal and utilization of topsoil (Rule 32)	There is no proposal for top soil generation	Nil	Nil.
8b	Concurrent use or storage of topsoil	There is no proposal for top soil generation	Nil	Nil.
8c	Separate dumps for overburden, waste rock, rejects and fines (Rule 33)	Separate dumping for OB and mineral reject.	Separate dump of OB has been maintained. Mineral reject/subgrade has been blended with high grade ore	Separate dump of OB has been maintained. Mineral reject/subgrade has been blended with high grade ore
8d	Use of overburden, waste rock, rejects and fines dumps for restoring the land to its original use	Backfilling 1.33 ha	Proposed backfill area has been proved mineralised by exploration therefore backfilling proposal not initiated and review of mining plan was modified by lessee accordingly.	Proposed backfill area has been proved mineralised by exploration therefore backfilling proposal not initiated and review of mining plan was modified by lessee accordingly.
8f	Baseline information on existence of plantation and additional plantation done (Rule 41)	1000 nos of saplings	1730 nos of saplings planted within lease area	1730 nos of saplings planted within lease area
8g	Survival rate	Not specified.	Survival rate 85%	Survival rate 85%
8h	Water sprinkling on roads to control airborne dust	Regular water spraying on haul roads, waste dumps and maintaining the approach road	Regular water spraying on haul roads, waste dumps and maintaining the approach road	Regular water spraying on haul roads, waste dumps and maintaining the approach road
8i	General remarks of inspecting officer on aesthetic beauty in and around mines area	No comments to offer	Aesthetic beauty in and around mines is maintained by plantation.	Aesthetic beauty in and around mines is maintained

 Compliance of Rule 45:

Sl.No.	Item	Proposals	Actual work	Remarks
9a	Status of submission of Monthly and Annual returns	Monthly returns and annual return for 2019-20 have been submitted.	Monthly returns and annual return for 2019-20 have been submitted.	Monthly returns and annual return for 2019-20 have been submitted.
9b	Scrutiny of Annual return for information on Mining Engineer, Geologist and Manager	Information on Manager, Mining Engineer and Geologist furnished in annual return	Manager, Mining Engineer and Geologist have been appointed in mines.	Manager, Mining Engineer and Geologist have been appointed in mines.
9c	Scrutiny of Annual return on land use pattern for area under pits, reclaimed area, dumps etc.	Lease area (surface area) utilization at the end of the year as furnished in annual return for 2019-20. Covered under current working: 47.711 ha, Used for waste disposal: 7.69 Ha, Occupied by plant buildings, residential, welfare buildings & roads: 7.296 Ha, other purposes: 3.94 Ha	Found to be in order	Found to be in order
9d	Scrutiny of Annual return on afforestation	1730 nos of saplings planted within lease area	1730 nos of saplings planted within lease area	1730 nos of saplings planted within lease area

9e	Scrutiny of Annual return on mineral reject generation (Grade and quantity)	4670T , 55-58% Fe after blending and processing.	4670T , 55-58% Fe after blending and processing.	4670T , 55-58% Fe after blending and processing.
9f	Scrutiny of Annual return on ROM stock and/or graded ore	Grade-wise closing stock of lump and fines have been furnished.	Grade-wise closing stock of lump and fines have been furnished.	Grade-wise closing stock of lump and fines have been furnished.
9g	Scrutiny of Annual return on sale value, Ex. Mine price and production cost	Ex-mine price (in Rs Per Tonne) Lump : 62% to below 65% Fe: Rs 3558 Fines : 62% to below 65% Fe: Rs 1912	Ex-mine price (in Rs Per Tonne) Lump : 62% to below 65% Fe: Rs 3558 Fines : 62% to below 65% Fe: Rs 1912	Ex-mine price (in Rs Per Tonne) Lump : 62% to below 65% Fe: Rs 3558 Fines : 62% to below 65% Fe: Rs 1912
9h	Scrutiny of Annual return on fixed assets	Value of Fixed Assets (in Rs) 2327522638	Value of Fixed Assets (in Rs) 2327522638	Value of Fixed Assets (in Rs) 2327522638
9k	Scrutiny of Annual return on mining machineries	Excavator : 5 nos; Wheel loader: 3 nos; Truck (30 tonne capacity): 14 nos; Dozer: 1 no etc	Excavator : 5 nos; Wheel loader: 3 nos; Truck (30 tonne capacity): 14 nos; Dozer: 1 no etc	Excavator : 5 nos; Wheel loader: 3 nos; Truck (30 tonne capacity): 14 nos; Dozer: 1 no etc

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

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

Date :

(DAYANAND UPADHYAY)

Indian Bureau of Mines