

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

**MCDR inspection REPORT**

**Bhubaneshwar regional office**

**Mine file No :** ORI/BXT/KPT/MCDR-03/BBS

**Mine code :** 07ORI09004

- (i) Name of the Inspecting : **U11** ) **DAYANAND UPADHYAY**  
Officer and ID No.
- (ii) Designation : Sr. Asst. Contrl. Mines
- (iii) Accompanying mine : Mr.S.K.Patnaik,DGM(Mines)  
Official with  
Designation
- (iv) Date of Inspection : 09-OCT-18
- (v) Prev.inspection date :

**PART-I : GENERAL INFORMATION**

1. (a) **Mine Name** : **PANCHPATMALI (S BLOCK)**
- (b) **Registration NO.** : **IBM/116/2011**
- (c) Category : A Fully Mechanised
- (d) Type of Working : Opencast
- (e) Postal address
- State : ORISSA
- District : KORAPUT
- Village : PANCHPATMALI
- Taluka : KORAPUT
- Post office : DAMANJODI
- Pin Code : 763008
- FAX No. : 0674-2300521
- E-mail : dirprod@nalcoindia.co.in
- Phone : 0674-2301988
- (f) Police Station : Kakiriguma
- (g) First opening date : 01-JAN-17
- (h) Weekly day of rest : SUN
2. Address for : PANCHAPATAMALI (SOUTH BLOCK) BAUXITE MINE  
correspondance M/S NALCO, PO-DAMANJODI  
DIST- KORAPUT, PIN- 763008
3. (a) Lease Number :
- (b) Lease area :
- (c) Period of lease :
- (d) Date of Expiry :
4. Mineral worked : BAUXITE Main

## 5. Name and Address of the

Lessee : M/S NALCO LTD  
 NALCO Bhavan P/1,Nayapalli  
 BHUBANESWAR KHURDA ORISSA  
 Phone:  
 FAX :

Owner : M/S.Nalco  
 P/1,Nayapalli Bhubaneswar  
 KHURDA ORISSA  
 Phone: 0674 442301,2.3  
 FAX : 06853 32214,32

Agent : Sharanan Chaudhury  
 Panchpatmali Bauxite mine,  
 M&R. Com Po: Damanjodi-  
 763008 KORAPUT ORISSA  
 Phone: 06853-268002  
 FAX : 06853-268001

## Mining Engineer

Name : Rajesh J.Vinchukar,Full Time  
 Qualification : B.E.(Mining)  
 Appointment/ : 22-MAY-17  
 Termination date

## Geologist

Name : Shri G.Chaterjee,Full Time  
 Qualification : M Tech  
 Appointment/ : 13-OCT-16  
 Termination date

## Manager

Name : Purosottam Mohanta  
 Qualification : BE(Mining)  
 Appointment/ : 26-JUN-17  
 Termination date

6. Date of approval of Mining :  
 Plan/Scheme of Mining

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

## Exploration :

Sl.No.	Item	Proposals	Actual work	Remarks
1a	Backlog of previous year	Not proposed.	Nil	All the potentially mineralised area has been explored under G1 level.
1b	Exploration over lease area for geological axis 1 or 2	Not proposed.	All the potentially mineralised area has been explored under G1 level.	All the potentially mineralised area has been explored under G1 level.
1c	Exploration Agencies and Expenditure in lakh rupees during the year	Not proposed.	Earlier exploration was carried out by MECL and NMDC.	Earlier exploration was carried out by MECL and NMDC.
1d	Balance area to be explored to bring Geological axis in 1 or 2	Not proposed.	Nil.	All the potentially mineralised area has been explored under G1 level.
1e	Balance reserve as on 01/04/20	As per modification of review of Minin plan approved on 05/01/2016 Reserves under 111 is 87.645MT and under resources under 221 is 3.78511MT.	Balance reserve/ resources as on 01/04/2018 is under 111 is 81.790MT.	Balance reserve/ resources as on 01/04/2018 is under 111 is 81.790MT.
1f	General remarks of inspecting officers on geology, exploration etc	Bore holes Not proposed.	All the potentially mineralised area has been explored under G1 level.	All the potentially mineralised area has been explored under G1 level.

## Development :

Sl.No.	Item	Proposals	Actual work	Remarks
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2a	Location of development w.r.t.lease area	From North eastern end of lease to southern direction (15500N/16050N & 15950E/16500E)	Development from North eastern end of lease to southern direction between 15500N/16050N & 15950E/16500E.	Development is as per proposal.
2b	Separate benches in topsoil, overburden and minerals (Rule 15)	Separate benches in OB and ore & top soil.	Benches: Top soil= 2.00 mtrs Top Bauxite= 8.00 Mtrs Bottom Bauxite= 5.00 mtrs	Separate benches in OB and ore & top soil have been maintained.
2c	Stripping ratio or ore to OB ratio	1: 0.24T/cu.m	1: 0.37T/cu.	Average stripping ratio varies due to irregular nature of ore deposit.
2d	Quantity of topsoil generation in m3	35750 cu.m	As reported , 10150 T of top soil generated in 2017-18.	Top soil generated during mining is stored separately. Mine is just open on 01/01/2017 and due less development top generated is less.
2e	Quantity of overburden generation in m3	35900 cu.m	48175 cu.m	As mines started recently and due to development of infrastructure more OB excavated.
2f	General remarks of inspecting officers on development of pit w.r.t. type of deposit etc	Development from North eastern end of lease to southern direction.	Development is started from North eastern end of lease to southern direction.	Development is as per proposal.

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### Exploitation:

Sl.No.	Item	Propasals	Actual work	Remarks
3a	Number of pit proposed for production	01 pit	01 pit.	Working is concentrated in single pit as proposed.

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3b	Quantity of ROM mineral production proposed	606450T in 2017-18.	ROM production reported in 2017-18 is 258750 Tonnes.	Mine is just open on 01/01/2017 and infrastructure development is under process due to this ROM production is less.
3c	Recovery of sailable/usable mineral from ROM production	100%	100%	Total ROM is utilised.
3d	Quantity of mineral reject generation	Not proposed.	Nil.	Nil.
3e	Grade of mineral rejects generation and threshold value declared.	Not proposed.	Nil.	Nil.
3f	Quantity of sub grade mineral generation.	Not proposed.	Nil.	Nil.
3g	Grade of sub grade mineral generation	Not proposed.	Nil.	Nil.
3h	Manual / Mechanised method adopted for segregating from ROM	Not proposed.	Total ROM produced from mine is disptched to its captive plant located at Damanjodi.	Total ROM produced from mine is disptched to its captive plant located at Damanjodi.
3i	Any analysis or beneficiation study proposed and carried out for sub grade mineral and rejects.	Not proposed.	Nil.	Total ROM produced from mine is disptched to its captive plant located at Damanjodi.

3j	Provision of drilling and blasting in mineral benches	DTH drilling 150mm dia and Blasting with ANFO.	About 20% of aluminous laterite and 30% of the Bauxite are loosened by the use of ripping method in place of 100% conventional drilling and blasting method. Hard, compact and not amenable for ripping by ripper dozers will be loosened by using controlled blasting technique using ANFO.	About 20% of aluminous laterite and 30% of the Bauxite are loosened by the use of ripping method in place of 100% conventional drilling and blasting method.
3k	Provision of mining machineries in mineral benches	Back hoe -2, Wheel Loader-1, Ripper Dozer-3, Motor Grader-2, Water Sprinkler 28KL-2	Back hoe -1, Wheel Loader-3, Ripper Dozer-2, Dumper-16, Water Sprinkler 28& 12KL-2	Back hoe -1, Wheel Loader-3, Ripper Dozer-2, Dumper-16, Water Sprinkler 28& 12KL-2
3l	Whether height of benches in overburden and mineral suitable for method of mining proposed in MP/SOM	Benches: Aluminous Laterite= 2.00 mtrs Top Bauxite= 8.00 Mtrs Bottom Bauxite= 5.00 mtrs	Bench height is suitably matched with the excavator.	Bench height is suitably matched with the excavator.
3m	Total area covered under excavation/pits	11.773 ha. during approved plan period.	About 6.320 ha area has been covered under excavation pits upto as on 01/04/2018.	About 6.320 ha area has been covered under excavation pits.
3o	Total area put in use under different heads at the end of year	Total area proposed under different heads are Pit-11.773 ha, waste dump-1.811 ha, Infrasructure-53.006ha, roads-20.2 ha & Top soil storage -0.502 ha.	Total area covered under different heads are Pit-6.320 ha, waste dump-1.130 ha, Infrasructure, roads-52.340ha, temporary OB dump & top soil-0.13ha.	Total area covered under different heads are Pit-6.320 ha, waste dump-1.130 ha, Infrasructure, roads-52.340ha, temporary OB dump & top soil-0.13ha.

3p	Production of ROM mineral during the last five year period as applicable	2017-18: 606450T	2017-18: 258750 Tonnes.	Mine is just open on 01/01/2017 and infrastructure development is under process due to this ROM production is less.
3q	General remarks of inspecting officers on method of mining etc.	Excavation of ROM has been proposed from North eastern end of lease to southern direction.	Excavation of ROM has been carried out from North eastern end of lease to southern direction.	About 20% of aluminous laterite and 30% of the Bauxite are loosened by the use of ripping method in place of 100% conventional drilling and blasting method.

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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)	Temporary dump at north east side of the lease area.	The OB and top soil is temporary dump at north east side of the lease area.	The OB and top soil is temporary dump at north east side of the lease area.
4b	Location of topsoil, OB and mineral reject dumps	Temporary dump at north east side of the lease area.	The OB and top soil is temporary dump at north east side of the lease area.	Mineral reject not proposed.
4c	Number of dumps within lease area and outside of lease area	Not proposed.	Nil.	Nil.
4d	Location of dumps w.r.t. ultimate pit limit (Rule 16)	Not proposed.	Nil.	The OB and top soil is temporary dump at north east side of the lease area for the purpose of reclamation and rehabilitation.

4e	Number of active and alive dumps.	Not proposed.	Nil	The OB and top soil is temporary dump at north east side of the lease area for the purpose of reclamation and rehabilitation.
4f	Number of dead dumps.	Not proposed.	Nil.	Nil.
4g	Number of dumps established.	Not proposed.	Nil.	Nil.
4h	Whether Retaining wall or garland drain all along dumps are there.	Not preoposed in 2017-18.	Nil.	Nil.
4i	Length of Retaining wall or garland drain all along dumps	Not preoposed in 2017-18.	Nil.	Nil.
4j	Number of settling ponds	Not proposed.	Nil.	Nil.
4k	Specific comments of inspecting officer on waste dump management	OB and top soil proposed temporary dump at north east side of the lease area	The OB and top soil is temporary dump at north east side of the lease area for the purpose of reclamation and rehabilitation.	The OB and top soil is temporary dump at north east side of the lease area for the purpose of reclamation and rehabilitation.

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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.	Not proposed in 2017-18.	Nil.	Nil.
5b	Area under backfilling of mined out area	Not proposed in 2017-18.	Nil.	Nil.



5c	Concurrent use of topsoil for restoration or rehabilitation of mineral out area (Rule 32)	Not proposed in 2017-18.	Nil.	Nil.
5d	Total area fully reclaimed and rehabilitated	Not proposed in 2017-18.	Nil.	Nil.
5e	General remarks of inspecting officers on backfilling and reclamation etc.	Back fillingn not proposed in 2017-18.	Concurrent backfilling is not proposed. Mine is just open on 01/01/2017 and it is under development stage.	Concurrent backfilling is not proposed. Mine is just open on 01/01/2017 and it is under development stage.

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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).	Not specified.	Annual return on PMCP has been submitted.	Annual return on PMCP has been submitted.
6b	Area available for rehabilitation (ha) .	Not proposed.	Nil.	Nil.
6c	afforestation done (ha).	Not proposed.	In 2017-18, 0.95 ha area has been covered under plantation.	In 2017-18, 0.95 ha area has been covered under plantation.
6d	No. of saplings planted during the year	Not proposed.	In 2017-18 7875 nos. of saplings have been planted by lessee.	In 2017-18 7875 nos. of saplings have been planted by lessee.
6e	Cumulative no .of plants	Not specifeid.	As reported total 455760 nos tree exists in the lease area.	As reported total 455760 nos tree exists in the lease area.
6f	Any other method of rehabilitation	Not proposed.	Nil.	Nil.

6g	Cost incurred on watch and care during the year	Not specified.	Not reported.	Nil.
6h	Compliance on reclamation and rehabilitation by backfilling (i) Voids available for backfilling ( Lx B x D	Nor proposed.	Nil.	Nil.
6i	Compliance on reclamation and rehabilitation by backfilling (ii) Voids filled by waste / tailings	Nor proposed.	Nil.	Nil.
6j	Compliance on reclamation and rehabilitation by backfilling (iii)Afforestation on on backfilled area	Nor proposed.	Nil.	Nil.
6k	Compliance on reclamation and rehabilitation by backfilling (iv) Rehabilitation by making water reservoir	Nor proposed.	Nil.	Nil.
6l	Compliance on reclamation and rehabilitation by backfilling (v)any other specific means.	Nor proposed.	Nil.	Nil.
6m	Compliance of rehabilitation of waste land within lease (i)afforestation	Nor proposed.	Nil.	Nil.

6n	Compliance of rehabilitation of waste land within lease (ii)Area rehabilitation (ha)	Nor proposed.	Nil.	Nil.
6o	Compliance of rehabilitation of waste land within lease (iii)Method of rehabilitation	Nor proposed.	Nil.	Nil.
6p	Compliance of environmental monitoring (core zone and buffer zone)	Quarterly monitoring	Quarterly monitoring of air, water and noise level are being carried out.	Quarterly monitoring of air, water and noise level are being carried out.
6q	General remarks of inspecting officers on PMCP compliance and progressive closure operations etc.	No comment.	Quarterly monitoring of air, water and noise level are being carried out.	Concurrent backfilling has been proposed after the full running of mines after 2018-18.

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#### Mineral Conservation:

Sl.No.	Item	Propasals	Actual work	Remarks
7a	ROM Mineral dispatch or grade-wise sorting within lease area	Not proposed.	Total ROM dispatched to its captive plant.	Total ROM dispatched to its captive plant.
7b	Method of grade-wise mineral sorting i.e. manual or mechanical.	Not proposed.	Total ROM dispatched to its captive plant.	Total ROM dispatched to its captive plant.
7c	Different grade of mineral sorted out at mines.	Not proposed.	Total ROM dispatched to its captive plant.	Total ROM dispatched to its captive plant.

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7d	Any beneficiation process at mines .	Not proposed.	Total ROM dispatched to its captive plant located at Damanjodi.	Total ROM dispatched to its captive plant located at Damanjodi through 14.6km belt coveyor.
7e	General remarks of inspecting officer on Mineral conservation and beneficiation issues	Gradewise sorting not proposed.	Total ROM dispatched to its captive plant located at Damanjodi through 14.6km belt coveyor.	Total ROM dispatched to its captive plant located at Damanjodi through 14.6km belt coveyor.

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**Environment:**

Sl.No.	Item	Propasals	Actual work	Remarks
8a	Separate removal and utilization of topsoil (Rule 32)	Yes	Temporary dump of top soil has been made for future utilisation.	Temporary dump of top soil has been made for future utilisation.
8b	Concurrent use or storage of topsoil	Not proposed in 2017-18.	Temporary dump of top soil has been made for future utilisation.	Temporary dump of top soil has been made for future utilisation.
8c	Separate dumps for overburden, waste rock, rejects and fines (Rule 33)	Temporary dumpOB and top soil proposed. Mineral reject-Nil.	The OB and top soil is temporary dump at north east side of the lease area for the purpose of reclamation and rehabilitation.	The OB and top soil is temporary dump at north east side of the lease area for the purpose of reclamation and rehabilitation.
8d	Use of overburden, waste rock, rejects and fines dumps for restoring the land to its original use	Not proposed in 2018-18.	Nil.	The OB and top soil is temporary dump at north east side of the lease area for the purpose of reclamation and rehabilitation.

8e	Phased restoration, reclamation and rehabilitation of lands affected by mining operations (Pits, dumps etc)	Not proposed in 2018-18.	Nil.	Nil.
8f	Baseline information on existence of plantation and additional plantation done (Rule 41)	Plantation not proposed in 2017-18.	As reported total 455760 nos tree exists in the lease area.	As reported total 455760 nos tree exists in the lease area.
8g	Survival rate	Not specified.	As reported survival rate is 70%.	As reported survival rate is 70%.
8h	Water sprinkling on roads to control airborne dust	Water sprinkler	Water sprinkler are used to control air borne dust.	Water sprinkler are used to control air borne dust.
8i	General remarks of inspecting officer on aesthetic beauty in and around mines area	No comment.	As reported total 455760 nos tree exists in the lease area. Aesthetic beauty in and around mined area is maintained.	Aesthetic beauty in and around mined area is maintained.

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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 & Annual returns are being regularly submitted by lessee.	Monthly & Annual returns are being regularly submitted by lessee.	Monthly & Annual returns are being regularly submitted by lessee.

9b	Scrutiny of Annual return for information on Mining Engineer, Geologist and Manager	The employment status of mining engineer, geologist & mine manager have been furnished in the annual return submitted for the year 2017-18.	Found in order.	Found in order.
9c	Scrutiny of Annual return on land use pattern for area under pits, reclaimed area, dumps etc.	Pit-6.320 ha, waste dump-1.130 ha, Infrasructure, roads-52.340ha.	Pit-6.320 ha, waste dump-1.130 ha, Infrasructure, roads-52.340ha.	Pit-6.320 ha, waste dump-1.130 ha, Infrasructure, roads-52.340ha.
9d	Scrutiny of Annual return on afforestation	7875 nos of trees.	7875 nos of trees.	Found in order.
9e	Scrutiny of Annual return on mineral reject generation (Grade and quantity)	Nil.	Nil.	Nil.
9f	Scrutiny of Annual return on ROM stock and/or graded ore	258750 Tonnes.	ROM production reported in 2017-18 is 258750 Tonnes. Average grade 42.53% Al2O3.	ROM production reported in 2017-18 is 258750 Tonnes. Average grade 42.53% Al2O3.
9g	Scrutiny of Annual return on sale value, Ex. Mine price and production cost	Ex mine price- Rs 673.94/-	Ex mine price- Rs 673.94/	Ex mine price- Rs 673.94/
9h	Scrutiny of Annual return on fixed assets	Nil.	Nil.	Nil.
9k	Scrutiny of Annual return on mining machineries	Back hoe -1, Wheel Loader-3, Ripper Dozer-2, Dumper-16, Water Sprinkler 28& 12KL-2	Back hoe -1, Wheel Loader-3, Ripper Dozer-2, Dumper-16, Water Sprinkler 28& 12KL-2	Found in order.

**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 :**

(DAYANAND UPADHYAY)

Indian Bureau of Mines