

Ref No: NBC/ED(P&T)/ 1858

Date: 27.05.2024

To
The Deputy Director General of Forest,
Integrated Regional Office,
Ministry of Environment, Forest & Climate Change,
Regional Office (EZ), A/3,
Chandrashekharapur, Bhubaneswar – 751023
Email: roez.bsr-mef@nic.in

Sub: Submission of Half Yearly Compliance Report of Environment Clearance issued to Utkal-D Coal Mines of NALCO for the period of **Oct'23 to Mar'24**.

Ref:

1. Environment Clearance of Utkal-D Coal Mines issued by MOEFCC vide letter no. J-11015/203/2006-IA.II(M) dated 29.01.2007.
2. Environment Clearance of Utkal-D Coal Mines transferred by MOEFCC vide letter no. J-11015/203/2006-IA.II(M) dated 11.08.2020.

Dear Sir,

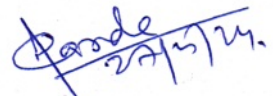
Inviting reference to the subject cited above, we are enclosing the Half Yearly Compliance Report for the period of **Oct'23 to Mar'24** for the conditions stipulated in Environment Clearance of Utkal-D Coal Mines of NALCO issued vide MOEFCC's letter no. J-11015/203/2006-IA.II(M) dated 29.01.2007 and letter no. J-11015/203/2006-IA.II(M) dated 11.08.2020 for your kind consideration. The copy of the compliance report is also being sent in the soft copy through email for your kind perusal.

We wish to inform that all the necessary actions are being taken in compliance to the specific and general conditions of Environment Clearance granted to Utkal-D Coal Mines of NALCO.

We trust that the information furnished is in line with your requirement.

Thanking You,

Yours Faithfully,
For and on behalf of NALCO



(A K Panda)

GGM (T&C) and

Authorized Signatory
ANIL KUMAR PANDA
Group General Manager (T & C) &
Authorised Signatory
National Aluminium Company Ltd.
Bhubaneswar-751013

नेशनल एल्यूमिनियम कम्पनी लिमिटेड
(भारत सरकार का एक उद्यम)
निगम कार्यालय

National Aluminium Company Limited
(A Government of India Enterprise)
CORPORATE OFFICE

नालको भवन, पि-1, नयापल्ली, भुवनेश्वर - 751 013, भारत

Nalco Bhawan, P/1, Nayapalli, Bhubaneswar - 751 013, India

फोन Telephone: (EPABX) (0674) 2301988, 2301999, 2300013, 2300976, 2301550, 2303233,

फैक्स Fax-(0674) 2301290, 2300580, 2300740, 2300640 & 2300246, वेबसाइट Website: www.nalcoindia.com

CIN: L27203OR1981GOI000920

Copy to:

1. AIG of Forest, Ministry of Environment Forest & Climate Change, Indira Paryavaran Bhawan, Jor Bagh Road, New Delhi – 110003 (email: monitoring-ec@nic.in)
2. Member Secretary, Central Pollution Control Board, Parivesh Bhawan', East Arjun Nagar, Shahdara, New Delhi – 110032 (email: mscb.cpcb@nic.in)
3. Zonal Office, Central Pollution Control Board, Southern Conclave, Block 502, 5th & 6th Floor, 1582 Rajdanga Main Road, Kolkata, WB – 700107 (email: rdkolkata.cpcb@gov.in)
4. Member Secretary, State Pollution Control Board, Parivesh Bhawan, A/118, Unit 8, Nilkantha Nagar, Nayapalli, Bhubaneswar, Odisha – 751012 (email: paribesh1@ospcbboard.org)
5. Regional Officer, State Pollution Control Board, S-3/3, Industrial Estate, Hakimpada, Angul, Odisha (email: rospcb.angul@ospcbboard.org)



HALF YEARLY COMPLIANCE REPORT
(OCTOBER 2023 TO MARCH 2024)

For

Utkal “D” Coal Mines
At. Tehsil Chhendipada,
District Angul, Odisha

of

National Aluminium Company Limited
(NALCO)



Half Yearly EC Compliances Report of Utkal-D Coal Mines

MOEFCC File No. J-11015/203/2006-IA.II(M) dated: 29.01.2007

MOEFCC File No. J-11015/203/2006-IA.II(M) dated 11.08.2020


A. Specific Conditions

| S. No | Conditions | Compliance Status / Remark |
|--------------|--|--|
| (i) | The Orissa Mining Company Ltd (OMCL) shall ensure strict compliance of all the environmental conditions imposed in this environmental for Utkal –D coal mining project. | Environment Clearance issue to M/s Orissa Mining Company Ltd (OMCL) has been transferred to National Aluminium Company Limited (NALCO) vide MOEFCC letter J-11015/203/2006-IA.II(M), dated 11.08.2020. Presently NALCO is ensuring strict compliance of all the environmental conditions imposed in this environmental clearance of Utkal D coal mining project. |
| (ii) | The OMCL shall be responsible for this project under the varies Acts, namely the Water (Prevention & Control of Pollution) Act, 1974, the Air (Prevention & Control of Pollution) Act.1981, the Environment (Protection) Act, 1986 and Public Liability Insurance Act, 1991 along with their amendments and Rules framed thereunder. | Environment Clearance issue to M/s Orissa Mining Company Ltd (OMCL) has been transferred to National Aluminium Company Limited (NALCO) vide MOEFCC letter J-11015/203/2006-IA.II(M), dated 11.08.2020. Presently NALCO will be responsible for this project under the varies Acts, namely the Water (Prevention & Control of Pollution) Act, 1974, the Air (Prevention & Control of Pollution) Act.1981, the Environment (Protection) Act, 1986 and Public Liability Insurance Act, 1991 along with their amendments and Rules framed thereunder. |
| (iii) | In case of change of technology from opencast to underground, a fresh clearance shall be obtained. The present clearance is only for opencast mining. | Point noted. There is no proposal of changing the technology from opencast to underground as of now. Fresh prior clearance will be obtained from Ministry in case of change in technology from opencast to underground. |
| (iv) | All the conditions stipulated by SPCB in their NOC shall be effectively implemented. | All the conditions stipulated by SPCB in their NOC is being complied. |
| (v) | Mining operations in forest area shall be restricted only to that area for which forestry clearance for diversion of forestland has been obtained. | The mining operation is being strictly carried out only after obtaining clearance for diversion of forestland. |
| (vi) | Mining shall be carried out as per statuette at a safe distance from the Singhada Jhor and the nallah flowing within the lease boundary. An embankment of 3m height shall be constructed within 2 years of start of mining operations along the southern bank of the Jhor and also by the side of the diverted nallahs. | Mining activities is being carried out as per statuette at a safe distance from the Singhada Jhor and the nallah flowing within the lease boundary by maintaining a distance of 15m as specified in amended Consent to Operate (CTO) issued by SPCB vide Letter No.- 14903/IND-I-CON-6762 dated 19.08.2022. Embankment of 3m height along the southern bank of the Jhor and also by the side of the diverted nallahs is under progress. |
| (vii) | Top soil shall be stacked properly with proper slope at earmarked site(s) and should not be kept active and shall be | The excavated top soil has been stacked with terracing method and proper slope and height is being maintained at earmarked site as per approved Mining Plan. Garland |

| S. No | Conditions | Compliance Status / Remark |
|--------|--|---|
| | used for reclamation and development of greenbelt. | drainage also been constructed around the top soil storage area for rain water drainage and for top soil protection. In future top soil will be used for reclamation and development of greenbelt. Location of the top soil is enclosed as Annexure 1 . |
| (viii) | OB should be stacked at earmarked external OB dump site within mining lease area and shall be a maximum height of 90m only and cons it of benches of 30m each. The ultimate slope of the dump shall not exceed 28°, Monitoring and management of reclaimed dump site should continue until the vegetation becomes self-sustaining. Compliance status should be submitted to the Ministry of Environment & Forests and its Regional Office located at Bhubaneswar on six monthly basis. | <p>OB is being removed and stacked at earmarked site as per approved mining plan in terracing method up to maximum 60m height and slope angle is being maintained as per guide line of MoEFCC. Final terraces will be used for plantation work. The compliance status of dump is being submitted to MoEF&CC and SPCB, Bhubaneswar.</p>  |
| (ix) | <p>Catch drains and siltation ponds of appropriate size should be constructed to arrest silt and sediments flow from soil, OB and mineral dumps. The water so collected should be utilized for watering the mine area roads, green belt development etc. The drains should be regularly desilted and maintained properly.</p> <p>Garland drains (size, gradient and length) and sump capacity should be designed keeping 50% safety margin over and above the peak sudden rainfall and maximum discharge in the area adjoining the mine site. Sump capacity should also provide for adequate retention period to allow proper settling of silt material.</p> | <p>The appropriate size of catch drain around the OB dumps has been constructed to arrest silt and sediments flow from soil, OB and mineral dumps. The collected water is being utilized for sprinkling on haul roads and green belt development. The drain is being regularly desilted and maintained properly.</p> <p>The garland drains of width 2.5m with 60:1 gradient and 2.3 km length has been constructed till date. Capacity of sump is designed for 24,500 KL by keeping 50% safety margin over and above the peak sudden rainfall and maximum discharge in the area adjoining the mine site. Retention period of two days is provided to allow proper settling of silt material.</p>  |
| (x) | Dimension of the retaining wall at the toe of the dumps and OB benches within the mine to check run-off and siltation should be based on the rainfall data. | Dimension of the retaining wall and toe of the dumps is being designed as per guidelines. OB benches are maintained with the maximum height 6-7 m and width 10m to check run-off and siltation. This is based on the rainfall data. |
| (xi) | Crushers at the CHP should be operated with high efficiency bag filters and water | No CHP installed in mines as of now. |

| S. No | Conditions | Compliance Status / Remark |
|--------|---|---|
| | sprinkling system should be provided to check fugitive emissions from crushing operations, conveyor system, haulage roads, transfer points etc. | |
| (xii) | Drills should be wet operated only. | At present two nos of wet operated drills are used for drilling work. |
| (xiii) | Controlled blasting should be practiced with use of delay detonators and only during day time. The mitigate measures for control of ground vibrations and to arrest fly rocks and boulders should be implemented. | Controlled blasting is being done with use of delay detonators and only during day time. Required mitigative measures are being adopted to control the ground vibrations and to arrest the flying rocks and boulders. |
| (xiv) | The total area brought under afforestation shall not be less than 291.13 ha and shall include external OB dump (Area 106.57 ha), back filling area covering 60 ha, balance excavated void (106.42 ha), along mining lease boundary, greenbelt (6 ha), safety zone (12.14 ha) and vacant/undisturbed area by planting native species in consultation with the local DFO/Agriculture dept. The density of the trees should be around 2500plants/ha. | Noted. The total area brought under afforestation will be more than 291.13 ha by end of the mine. Plantation work is ongoing in phased manner. Native species are being given preferences for plantation. |
| (xv) | Backfilling shall begin from the 21 st year of mining operations. A progressive mine closure plan shall be implemented and OB generated shall be back filled covering a total area of 60 ha. Plantation shall be develop over the back filled area and on balanced of the excavated area (void) covering an area of 106.42 ha, the higher benches of which shall be gently sloped. | Not applicable as backfilling work will begin from 21 st year of mining operations. |
| (xvi) | Regular monitoring of ground water level and quality should be carried out by establishing a network of existing wells and construction of new piezometers. The monitoring for quantity should be done four times a year in pre-monsoon (May), monsoon (August), post-monsoon (November) and winter (January) seasons and for quality in May. Data thus collected should be submitted to MOEF and CPCB quarterly within one month of monitoring. | Regular monitoring of ground water level and quality is being done. Construction of bore well and installation of piezometers and automatic flow meters has been done. Water quality and ground water level data is being monitored and same is being submitted to SPCB, CPCB and MoEFCC. Monitoring Report enclosed as Annexure 2 . |
| (xvii) | The Company shall put of artificial ground water recharge measures or | Soil Moisture Conservation Plan for buffer zone of the mines area has been submitted to MoEFCC and |

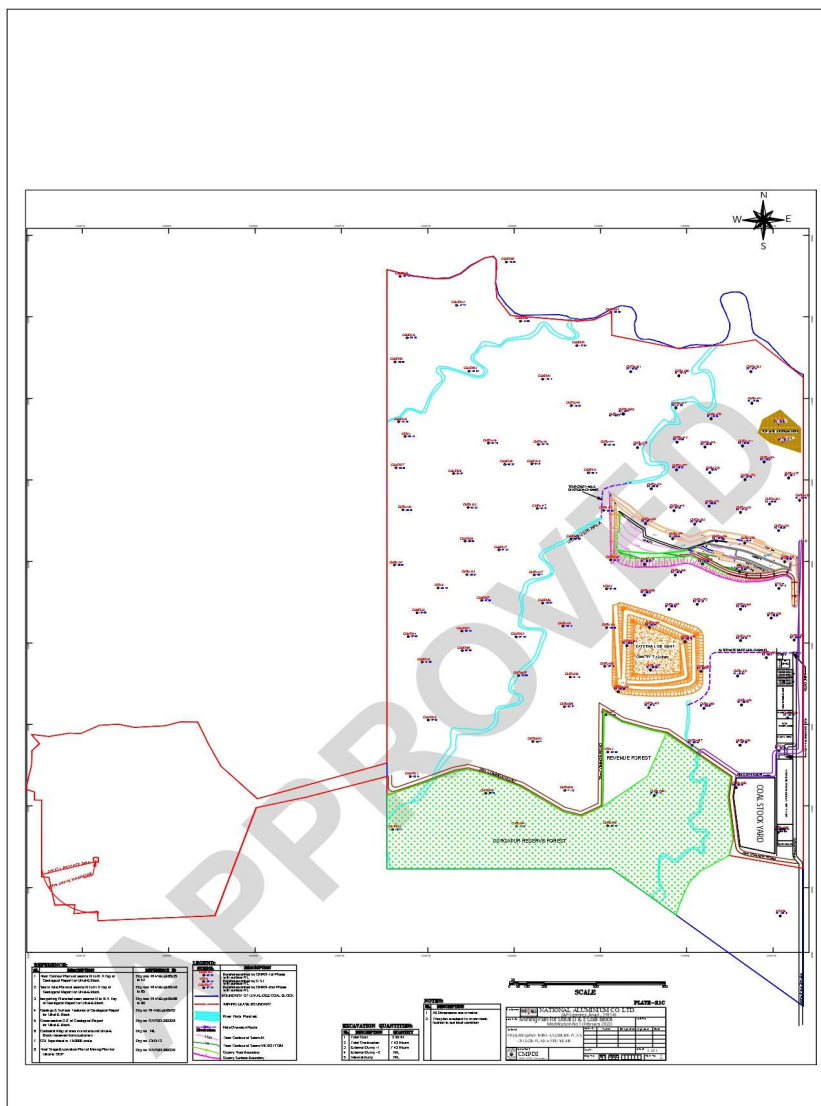
| S. No | Conditions | Compliance Status / Remark |
|---------|---|--|
| | augmentation of ground water resource. The project authority shall meet water requirement of nearby village(s) in case the village wells go dry due to dewatering of mine. | implementation cost of Rs. 10.88 Cr. already been deposited in Odisha CAMPA account. We are also providing water to nearby villagers for their daily needs. Apart from this, rain water harvesting structure will be installed after construction of office buildings and residential colony. |
| (xviii) | ETP also be provided for workshop and CHP waste water | Construction of ETP for treatment of waste water is under progress. |
| (xix) | A program for conservation of the endangered species found in the study area, if any, shall be formulated and implemented in consultation with the concerned Department in the State Government. Separate funds, shall be earmarked for implementation of the various activities thereunder and the status thereof shall be regularly reported to this Ministry and its Regional Office, Bhubaneswar. | No endangered species is found in the study area. However, if any endangered species is found in study area then program for conservation of the endangered species will be formulated and implemented in consultation with the concerned Department in the State Government. Separate funds will be earmarked for implementation of the various activities thereunder and the status thereof will be regularly reported to MOEFCC and its Regional Office at Bhubaneswar. |
| (xx) | Digital processing of the entire lease area using remote sensing techniques should be done regularly once in 3 years for monitoring land use pattern and reports submitted to MOEF and its Regional Office at Bhubaneswar. | Mining activities started on date 09.11.2022. Digital processing of the entire lease area using remote sensing techniques will be done for monitoring land use pattern and reports will be submitted to MOEFCC and its Regional Office at Bhubaneswar. |
| (xxi) | Besides carrying out regular periodic health checkup of their workers, 10% of workers identified from work force engaged in active mining operations shall be subject to health checkup for occupational diseases, and hearing impairment, if any, through an agency such as NIOH, Ahmadabad with in period of one year and the results reported to his ministry ad to DGMS. | Occupational health surveillance is being carried out for all employees in respective time interval at Utkal Polyclinic Bhubaneswar. (Annexure 3) |
| (xxii) | R&R of village Dhobamalia basti shall be completed within the specified time schedule and the R&R package shall not be less than that of the National R&R policy. | R&R compensation as per the policy of Govt. of Odisha and consultation with the PAVs and PDFs in RPDAC already been approved and disbursed to the affected families. |
| (xxiii) | A final mine closure plan along with details of Corpus fund should be submitted to Ministry of Environment and Forest 5 years in advance of final mine closure for approval. | Not applicable as of now. Final mine closure plan along with details of Corpus fund will be submitted to the MOEFCC 5 years in advance before the mine closure for approval. |
| (xxiv) | Consent to operate shall be obtained before start of Mining operation. | The Consent to Operate has been obtained from State Pollution Control Board, Odisha vide Letter No.-14903/IND-I-CON-6762 dated 19.08.2022 before start of the mining operation. |

| S. No | Conditions | Compliance Status / Remark |
|------------------------------|---|--|
| B. General Conditions | | |
| (i) | No change in Mining Technology and scope of working should be made without prior approval of the MOEF | There is no change in Mining Technology and scope of working. Prior approval of MOEFCC will be taken in case of any change in Mining Technology and scope of working. |
| (ii) | No change in calendar plan including excavation, quantum of mineral coal and waste should be made. | No change in calendar plan including excavation, quantum of mineral coal and waste. As of now mining operation is going on as per the approved mining plan. |
| (iii) | Four Ambient Air Quality Monitoring station should be established in the core zone as well as in the buffer zone for SPM, RPM, SO ₂ and NO _x monitoring location of the station should be decided based on the meteorological data, topographical features and environmentally and ecologically sensitive targets in consultation of the SPCB | Four Ambient Air Quality Monitoring stations are established in the core zone as well as in the buffer zone for monitoring of SPM, RPM, SO ₂ and NO _x . Monitoring locations of the station are decided based on the meteorological data, topographical features and environmentally and ecologically sensitive targets in consultation of the SPCB. NABL accredited laboratory is carrying out the monitoring work. Monitoring report enclosed as Annexure 2 . |
| (iv) | Data on ambient air quality (SPM, RPM, SO ₂ and NO _x) should be regularly submitted to the MOEF including its Regional Office , BBSR and to SPCB and CPCB once in six months | Data on ambient air quality (SPM, RPM, SO ₂ and NO _x) are regularly monitored by NABL accredited laboratory and submitted to MOEFCC New Delhi, MOEFCC Bhubaneswar, SPCB and CPCB along with Half yearly compliance report. Monitoring report enclosed as Annexure 2 . |
| (v) | Fugitive dust emission (SPM and RPM) from all source should be control regularly monitored and data recorded properly. Water spraying arrangements on haul roads, wagon loading, dump trucks (Loading and unloading) points should be provided and properly maintained. | <p>Fugitive dust emission (SPM and RPM) from all sources are monitored regularly and data are recorded properly. This is being submitted to the MOEFCC New Delhi, MOEFCC Bhubaneswar, SPCB and CPCB along with Half yearly compliance report.</p> <p>Water spraying arrangements are available for control of fugitive dust on haul roads, dumping area, stock yard, trucks loading and unloading points. 4 nos of water sprinkling tankers of capacity 18 KL each, 02 nos mist cannon of capacity 12 KL each and 20 nos of rain guns are used for controlling the fugitive dust inside the mines area.</p>  |
| (vi) | Adequate measures should be taken for control of noise levels below 85 dB(A) in the work environment. Workers engaged in blasting and drilling operations, operation of HEMM etc | Adequate measures are taken to control the noise levels below 85 dB(A) in the work environment. Workers engaged in blasting and drilling operations, operation of HEMM etc are provided with ear plugs/muffs. New machineries are being used in mines. A well experience mechanic team with |

| S. No | Conditions | Compliance Status / Remark |
|--------|---|--|
| | should be provided with ear plugs/Muffs | mobile maintenance van is engaged for maintenance of mining equipment and timely maintenance is being done to reduce noise from vehicles. |
| (vii) | 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 19 th May, 1993 and 31 st December, 1993 as amended from time to time before discharge. Oil and grease trap should be installed before discharge of workshop effluents. | Waste water collected from mines area is being collected in de-silting pond for treatment. This water is being used for various mining activities such as sprinkling on road, dust suppression, plantation etc. During monsoon season excess collected water is being discharge to nearby nallah after proper treatment as per the standards prescribed under GSR 422 (E) dated 19 th May, 1993 and 31 st December, 1993 as amended from time to time. Establishment of Oil and grease trap inceptor is in progress. |
| (viii) | Vehicular emissions should be kept under control and regularly monitored Vehicles used for transportation the mineral should be covered with tarpaulin and optimally loaded. | Regular maintenance of mining equipment are being done to control the vehicular emissions. Truck/dumpers used for transportation of coal are being monitored regularly by PUC certificate. At present coal is being transported through trucks/dumper which is loaded optimally and covered with tarpaulin. |
| (ix) | Environmental laboratory should be established with adequate number and type of pollution monitoring and analysis equipment in consultation with the State Pollution Control Board. | We are in process of establishing Environmental laboratory. Pollution monitoring and laboratory equipment will be purchased in consultation with State Pollution Control Board. |
| (x) | Personnel working in dusty areas should wear protective respiration devices and they should also be provided with adequate training and information on safety and health aspects. Occupational health surveillance programme of the workers should be undertaken periodically to observe any contractions due to exposure to dust and take corrective measures, if needed. | PPE are provided to all employees of mine to protect them from dust and noise. Prior training is being imparted to all working employees on job, safety and health aspects. Periodic re-fresher training are also being done for employees working inside the mine. Periodically medical examinations Annexure 3 is being carried out for all employees of mines to detect any contractions due to exposure to dust and noise and to take corrective measures, if required. |
| (xi) | 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 company. | A separate environmental management cell has already setup vide NALCO order no. NALCO/Coal Mines Division/336/2024 dated 11.07.2023 with suitable qualified personnel under the control of a Senior Executive, who is reporting directly to the Head of the company. |
| (xii) | The funds earmarked for environmental protection should be kept in separate account and should not be diverted for other purpose. Year wise expenditure should be reported to this Ministry and its Regional Office at BBSR. | The funds earmarked for environmental protection has been kept in separate and will not diverted for any other purpose. |
| (xiii) | The Regional Office of this Ministry located at Bhubaneswar shall monitor compliance of the stipulated conditions. The Project Authorities shall extend full | Full cooperation will be provided to the officers(s) of the Regional Office by furnishing the requisite data/information/monitoring reports as and when required. |

| S. No | Conditions | Compliance Status / Remark |
|-------|--|---|
| | cooperation to the officers(s) of the Regional Office by furnishing the requisite data/information/monitoring reports. | |
| (xiv) | A copy of the environmental clearance letter shall be marked to concerned Panchayat/Local NGO, if any, from whom any suggestion/representation has been received while processing the proposal. | Environment Clearance of Utkal D Coal block was granted to M/s OMC Ltd on 19.01.2007. Coal block was deallocated as per the order of Hon'ble Supreme Court of India vide their Judgment dated 25.08.2014. Further coal block was allocated by Ministry of Coal to M/s NALCO Ltd under the Coal Mines (Special Provision) Act 2015 vide allotment order no. F.No. 103/34/2015-NA dated 02.05.2016. Same Environment Clearance was transferred from the M/s MC to NALCO. |
| (xv) | State Pollution Control Board should display a copy of the clearance letter at the Regional Office, District Industry center and Collector's Office/Tehsildar's Office for 30 days. | Not applicable |
| (xvi) | The Project Authorities should advertise at least in two local newspaper widely circulated around the project, one of which shall be in the vernacular language of the locality concerned within seven days of the clearance and a copy of the clearance letter is available with the state pollution control Board and may also be seen at the website of the MOEF at http://envfor.nic.in | Environment Clearance of Utkal D Coal block was granted to M/s OMC Ltd on 19.01.2007. Coal block was deallocated as per the order of Hon'ble Supreme Court of India vide their judgment dated 25.08.2014. Further coal block was allocated by Ministry of Coal to M/s NALCO Ltd under the Coal Mines (Special Provision) Act 2015 vide allotment order no. F.No. 103/34/2015-NA dated 02.05.2016. Same Environment Clearance was transferred from the M/s OMC to NALCO. |

Plan / Plate 21C



ENVIRONMENTAL MONITORING REPORT FOR THE MINTH OF OCTOBER-2023



NATIONAL ALUMINIUM COMPANY LIMITED
Coal Mine Division
Angul-759145, Odisha



My World Consultancy Services Private Limited

Plot No. 766, Telengapentha,
Cuttack, Odisha 754001

WCS/LQR/57

TEST REPORT

| | | | |
|-------------------------|--|--------------------|---------------|
| Report No. | : WCS231018A | Issue Date | : 26.10.2023 |
| NABL ULR No. | : TC1122523000000181F | | |
| Name of the Client | : National Aluminium Company Limited | | |
| Address | : Coal Mine Division Angul-759145, Odisha | | |
| Sampling Location | : Gopiballavpur Village | | |
| Sample Description | : Ambient Air Quality Monitoring | Date of Sampling | : 05.10.2023 |
| Sampling Plan & Method | : WCS/QSP/SAMP (AIR) | Sample ID No | : WCS1023A13A |
| Environmental Condition | : Clear weather | Date of Receiving | : 09.10.2023 |
| Sample Collected by | : WCS Laboratory | Quantity of Sample | : 1 No. |
| Date of Testing | : 09.10.2023 to 11.10.2023 | Sample Condition | : Good |

| Parameter | Unit | Result | Standard | Test Method |
|---|-------------------|--------|-----------------------------|-----------------------------------|
| Respirable Suspended Particulate Matter (PM ₁₀) | µg/m ³ | 57.2 | 100 (As per NAAQ 2009) | IS-5182 (Part-23) 2006 RA 2017 |
| Fine Particulate Matter (PM _{2.5}) | µg/m ³ | 32.5 | 60 (As per NAAQ 2009) | IS-5182 (Part-24) 2019 |
| Sulphur Dioxide (SO ₂) | µg/m ³ | 5.8 | 80 (As per NAAQ 2009) | IS-5182 (Part-2) 2001 RA 2017 |
| Nitrogen Oxides (NO ₂) | µg/m ³ | 18.3 | 80 (As per NAAQ 2009) | IS-5182 (Part-6) 2006 RA 2017 |
| Suspended Particulate Matter (SPM) | µg/m ³ | 143.0 | 500 (As per CTO No-2938) | IS-5182 (Part-4) 1999 RA 2019 |


Reviewed by
(Mr. Bijaya Kumar Chahataray)


Authorized Signatory
(Mr. Pradeept Mohapatra)

- N.B.:**
- ① The results relate to the sample received in respect to the Parameters tested.
 - ② Liability for return of sample ceases after 7 days from the date of Test certificate.
 - ③ The report cannot be reproduced either in full or in part, without prior written consent of Director.
 - ④ In case of any complaint, please mail us bijaya@theworld.co.in

-END OF REPORT-



WCS/LQR/57

TEST REPORT

| | | | |
|-------------------------|--|--------------------|---------------|
| Report No. | : WCS231018B | Issue Date | : 26.10.2023 |
| NABL ULR No. | : TC1122523000000181F | | |
| Name of the Client | : National Aluminium Company Limited | | |
| Address | : Coal Mine Division Angul-759145, Odisha | | |
| Sampling Location | : Colony Area | | |
| Sample Description | : Ambient Air Quality Monitoring | Date of Sampling | : 05.10.2023 |
| Sampling Plan & Method | : WCS/QSP/SAMP (AIR) | Sample ID No | : WCS1023A13B |
| Environmental Condition | : Clear weather | Date of Receiving | : 09.10.2023 |
| Sample Collected by | : WCS Laboratory | Quantity of Sample | : 1 No. |
| Date of Testing | : 09.10.2023 to 11.10.2023 | Sample Condition | : Good |

| Parameter | Unit | Result | Standard | Test Method |
|---|-------------------|--------|-----------------------------|-----------------------------------|
| Respirable Suspended Particulate Matter (PM ₁₀) | µg/m ³ | 60.2 | 100 (As per NAAQ 2009) | IS-5182 (Part-23) 2006 RA 2017 |
| Fine Particulate Matter (PM _{2.5}) | µg/m ³ | 36.9 | 60 (As per NAAQ 2009) | IS-5182 (Part-24) 2019 |
| Sulphur Dioxide (SO ₂) | µg/m ³ | 6.3 | 80 (As per NAAQ 2009) | IS-5182 (Part-2) 2001 RA 2017 |
| Nitrogen Oxides (NO ₂) | µg/m ³ | 19.3 | 80 (As per NAAQ 2009) | IS-5182 (Part-6) 2006 RA 2017 |
| Suspended Particulate Matter (SPM) | µg/m ³ | 150.5 | 500 (As per CTO No-2938) | IS-5182 (Part-4) 1999 RA 2019 |



Reviewed by
(Mr. Bijaya Kumar Chahataray)



Authorized Signatory
(Mr. Pradeept Mohapatra)

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-END OF REPORT-



WCS/LQR/57

TEST REPORT

| | | | |
|-------------------------|--|--------------------|---------------|
| Report No. | : WCS231018C | Issue Date | : 26.10.2023 |
| NABL ULR No. | : TC1122523000000181F | | |
| Name of the Client | : National Aluminium Company Limited | | |
| Address | : Coal Mine Division Angul-759145, Odisha | | |
| Sampling Location | : Near Weigh Bridge | | |
| Sample Description | : Ambient Air Quality Monitoring | Date of Sampling | : 05.10.2023 |
| Sampling Plan & Method | : WCS/QSP/SAMP (AIR) | Sample ID No | : WCS1023A13C |
| Environmental Condition | : Clear weather | Date of Receiving | : 09.10.2023 |
| Sample Collected by | : WCS Laboratory | Quantity of Sample | : 1 No. |
| Date of Testing | : 09.10.2023 to 11.10.2023 | Sample Condition | : Good |

| Parameter | Unit | Result | Standard | Test Method |
|---|-------------------|--------|-----------------------------|-----------------------------------|
| Respirable Suspended Particulate Matter (PM ₁₀) | µg/m ³ | 68.5 | 100 (As per NAAQ 2009) | IS-5182 (Part-23) 2006 RA 2017 |
| Fine Particulate Matter (PM _{2.5}) | µg/m ³ | 42.2 | 60 (As per NAAQ 2009) | IS-5182 (Part-24) 2019 |
| Sulphur Dioxide (SO ₂) | µg/m ³ | 6.8 | 80 (As per NAAQ 2009) | IS-5182 (Part-2) 2001 RA 2017 |
| Nitrogen Oxides (NO ₂) | µg/m ³ | 22.0 | 80 (As per NAAQ 2009) | IS-5182 (Part-6) 2006 RA 2017 |
| Suspended Particulate Matter (SPM) | µg/m ³ | 171.3 | 500 (As per CTO No-2938) | IS-5182 (Part-4) 1999 RA 2019 |


Reviewed by
(Mr. Bijaya Kumar Chahataray)


Authorized Signatory
(Mr. Pradeep Mohapatra)

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WCS/LQR/57

TEST REPORT

| | | | |
|-------------------------|--|--------------------|---------------|
| Report No. | : WCS231018D | Issue Date | : 26.10.2023 |
| NABL ULR No. | : TC1122523000000181F | | |
| Name of the Client | : National Aluminium Company Limited | | |
| Address | : Coal Mine Division Angul-759145, Odisha | | |
| Sampling Location | : Near Settling Pond | | |
| Sample Description | : Ambient Air Quality Monitoring | Date of Sampling | : 05.10.2023 |
| Sampling Plan & Method | : WCS/QSP/SAMP (AIR) | Sample ID No | : WCS1023A13D |
| Environmental Condition | : Clear weather | Date of Receiving | : 09.10.2023 |
| Sample Collected by | : WCS Laboratory | Quantity of Sample | : 1 No. |
| Date of Testing | : 09.10.2023 to 11.10.2023 | Sample Condition | : Good |

| Parameter | Unit | Result | Standard | Test Method |
|---|-------------------|--------|-----------------------------|-----------------------------------|
| Respirable Suspended Particulate Matter (PM ₁₀) | µg/m ³ | 56.3 | 100 (As per NAAQ 2009) | IS-5182 (Part-23) 2006 RA 2017 |
| Fine Particulate Matter (PM _{2.5}) | µg/m ³ | 37.6 | 60 (As per NAAQ 2009) | IS-5182 (Part-24) 2019 |
| Sulphur Dioxide (SO ₂) | µg/m ³ | 6.5 | 80 (As per NAAQ 2009) | IS-5182 (Part-2) 2001 RA 2017 |
| Nitrogen Oxides (NO ₂) | µg/m ³ | 18.0 | 80 (As per NAAQ 2009) | IS-5182 (Part-6) 2006 RA 2017 |
| Suspended Particulate Matter (SPM) | µg/m ³ | 140.8 | 500 (As per CTO No-2938) | IS-5182 (Part-4) 1999 RA 2019 |

Chahataray
Reviewed by

(Mr. Bijaya Kumar Chahataray)

Pradeept Mohapatra
Authorized Signatory

(Mr. Pradeept Mohapatra)

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TEST REPORT

Report No. : WCS231019 Issue Date : 26.10.2023
NABL ULR No. : TC1122523000000181F
Name of the Client : National Aluminium Company Limited
Address : Coal Mine Division
Angul-759145, Odisha
Month of Sampling : October- 2023 Date of Receiving : 09.10.2023
Sample Description : Ambient Noise Quantity of Sample : 04
Sampling Plan & Method : WCS/QSP/SAMP (NOISE) Sample Condition : Good
Sample Collected by : WCS Laboratory Date of Analysis : 10.10.2023

| Sample ID No. | Location | Date of Monitoring | Day Time dB(A) Leq | Night Time dB(A) Leq | Environmental Condition |
|---------------|-----------------------|--------------------|--------------------|----------------------|-------------------------|
| WCS1023N02A | Gopiballavpur Village | 05.10.2023 | 50.8 | 38.8 | Clear Weather |
| WCS1023N02B | Near Settling Pond | 05.10.2023 | 63.8 | 41.5 | Clear Weather |
| WCS1023N02C | Near Town ship | 05.10.2023 | 60.2 | 40.0 | Clear Weather |
| WCS1023N02D | Near Weigh Bridge | 05.10.2023 | 64.2 | 67.2 | Clear Weather |
| Test Method | | IS 9989: 1981 | | | |

| Noise Standard in dB(A) Leq as per CPCB | | |
|---|---|---|
| Category of Area | Day Time dB(A) Leq (6.00 Am to 10.00 Pm) | Night Time dB(A) Leq (10.00 Pm to 6.00 Am) |
| Industrial Area | 75 | 70 |
| Commercial Area | 65 | 55 |
| Residential Area | 55 | 45 |
| Sensitive Area | 50 | 40 |


Reviewed by
(Mr. Bijaya Kumar Chahataray)


Authorized Signatory
(Mr. Pradeept Mohapatra)

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WCS/LQR/57

TEST REPORT

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|-------------------------|---|--------------------|---------------|
| Report No. | : WCS231020A | Issue Date | : 26.10.2023 |
| NABL ULR No. | : TC1122523000000181F | | |
| Name of the Client | : National Aluminium Company Limited | | |
| Address | : Smelter & Power (S&P) Complex Angul-759145, Odisha | | |
| Sampling Location | : Gopiballavpur Village | | |
| Sample Description | : Ambient Air Quality Monitoring | Date of Sampling | : 19.10.2023 |
| Sampling Plan & Method | : WCS/QSP/SAMP (AIR) | Sample ID No | : WCS1023A37A |
| Environmental Condition | : Clear Weather | Date of Receiving | : 21.10.2023 |
| Sample Collected by | : WCS Laboratory | Quantity of Sample | : 1 No. |
| Date of Testing | : 21.10.2023 to 25.10.2023 | Sample Condition | : Good |

| Parameter | Unit | Result | Standard | Test Method |
|---|-------------------|--------|-----------------------------|-----------------------------------|
| Respirable Suspended Particulate Matter (PM ₁₀) | µg/m ³ | 59.4 | 100 (As per NAAQ 2009) | IS-5182 (Part-23) 2006 RA 2017 |
| Fine Particulate Matter (PM _{2.5}) | µg/m ³ | 36.0 | 60 (As per NAAQ 2009) | IS-5182 (Part-24) 2019 |
| Sulphur Dioxide (SO ₂) | µg/m ³ | 6.0 | 80 (As per NAAQ 2009) | IS-5182 (Part-2) 2001 RA 2017 |
| Nitrogen Oxides (NO ₂) | µg/m ³ | 17.8 | 80 (As per NAAQ 2009) | IS-5182 (Part-6) 2006 RA 2017 |
| Suspended Particulate Matter (SPM) | µg/m ³ | 146.6 | 500 (As per CTO No-2938) | IS-5182 (Part-4) 1999 RA 2019 |


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TEST REPORT

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|-------------------------|---|--------------------|---------------|
| Report No. | : WCS231020B | Issue Date | : 26.10.2023 |
| NABL ULR No. | : TC1122523000000181F | | |
| Name of the Client | : National Aluminium Company Limited | | |
| Address | : Smelter & Power (S&P) Complex Angul-759145, Odisha | | |
| Sampling Location | : Colony Area | | |
| Sample Description | : Ambient Air Quality Monitoring | Date of Sampling | : 19.10.2023 |
| Sampling Plan & Method | : WCS/QSP/SAMP (AIR) | Sample ID No | : WCS1023A37B |
| Environmental Condition | : Clear Weather | Date of Receiving | : 21.10.2023 |
| Sample Collected by | : WCS Laboratory | Quantity of Sample | : 1 No. |
| Date of Testing | : 21.10.2023 to 25.10.2023 | Sample Condition | : Good |

| Parameter | Unit | Result | Standard | Test Method |
|---|-------------------|--------|-----------------------------|-----------------------------------|
| Respirable Suspended Particulate Matter (PM ₁₀) | µg/m ³ | 62.5 | 100 (As per NAAQ 2009) | IS-5182 (Part-23) 2006 RA 2017 |
| Fine Particulate Matter (PM _{2.5}) | µg/m ³ | 34.4 | 60 (As per NAAQ 2009) | IS-5182 (Part-24) 2019 |
| Sulphur Dioxide (SO ₂) | µg/m ³ | 6.0 | 80 (As per NAAQ 2009) | IS-5182 (Part-2) 2001 RA 2017 |
| Nitrogen Oxides (NO ₂) | µg/m ³ | 19.1 | 80 (As per NAAQ 2009) | IS-5182 (Part-6) 2006 RA 2017 |
| Suspended Particulate Matter (SPM) | µg/m ³ | 152.2 | 500 (As per CTO No-2938) | IS-5182 (Part-4) 1999 RA 2019 |



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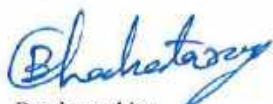


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TEST REPORT

| | | | |
|-------------------------|---|--------------------|---------------|
| Report No. | : WCS231020C | Issue Date | : 26.10.2023 |
| NABL ULR No. | : TC1122523000000181F | | |
| Name of the Client | : National Aluminium Company Limited | | |
| Address | : Smelter & Power (S&P) Complex Angul-759145, Odisha | | |
| Sampling Location | : Near Weigh Bridge | | |
| Sample Description | : Ambient Air Quality Monitoring | Date of Sampling | : 19.10.2023 |
| Sampling Plan & Method | : WCS/QSP/SAMP (AIR) | Sample ID No | : WCS1023A37C |
| Environmental Condition | : Clear Weather | Date of Receiving | : 21.10.2023 |
| Sample Collected by | : WCS Laboratory | Quantity of Sample | : 1 No. |
| Date of Testing | : 21.10.2023 to 25.10.2023 | Sample Condition | : Good |

| Parameter | Unit | Result | Standard | Test Method |
|---|-------------------|--------|-----------------------------|-----------------------------------|
| Respirable Suspended Particulate Matter (PM ₁₀) | µg/m ³ | 77.3 | 100 (As per NAAQ 2009) | IS-5182 (Part-23) 2006 RA 2017 |
| Fine Particulate Matter (PM _{2.5}) | µg/m ³ | 46.7 | 60 (As per NAAQ 2009) | IS-5182 (Part-24) 2019 |
| Sulphur Dioxide (SO ₂) | µg/m ³ | 6.4 | 80 (As per NAAQ 2009) | IS-5182 (Part-2) 2001 RA 2017 |
| Nitrogen Oxides (NO ₂) | µg/m ³ | 20.5 | 80 (As per NAAQ 2009) | IS-5182 (Part-6) 2006 RA 2017 |
| Suspended Particulate Matter (SPM) | µg/m ³ | 190.0 | 500 (As per CTO No-2938) | IS-5182 (Part-4) 1999 RA 2019 |



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TEST REPORT

Report No. : WCS231020D Issue Date : 26.10.2023
NABL ULR No. : TC1122523000000181F
Name of the Client : **National Aluminium Company Limited**
Address : Smelter & Power (S&P) Complex
Angul-759145, Odisha
Sampling Location : **Near Settling Pond**
Sample Description : Ambient Air Quality Monitoring Date of Sampling : 19.10.2023
Sampling Plan & Method : WCS/QSP/SAMP (AIR) Sample ID No : WCS1023A37D
Environmental Condition : Clear Weather Date of Receiving : 21.10.2023
Sample Collected by : WCS Laboratory Quantity of Sample : 1 No.
Date of Testing : 21.10.2023 to 25.10.2023 Sample Condition : Good

| Parameter | Unit | Result | Standard | Test Method |
|---|-------------------|--------|-----------------------------|-----------------------------------|
| Respirable Suspended Particulate Matter (PM ₁₀) | µg/m ³ | 65.9 | 100 (As per NAAQ 2009) | IS-5182 (Part-23) 2006 RA 2017 |
| Fine Particulate Matter (PM _{2.5}) | µg/m ³ | 40.2 | 60 (As per NAAQ 2009) | IS-5182 (Part-24) 2019 |
| Sulphur Dioxide (SO ₂) | µg/m ³ | 5.9 | 80 (As per NAAQ 2009) | IS-5182 (Part-2) 2001 RA 2017 |
| Nitrogen Oxides (NO ₂) | µg/m ³ | 21.3 | 80 (As per NAAQ 2009) | IS-5182 (Part-6) 2006 RA 2017 |
| Suspended Particulate Matter (SPM) | µg/m ³ | 168.5 | 500 (As per CTO No-2938) | IS-5182 (Part-4) 1999 RA 2019 |


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TEST REPORT

Report No. : WCS231021 Issue Date : 26.10.2023
NABL ULR No. : TC1122523000000181F
Name of the Client : National Aluminium Company Limited
Address : Coal Mine Division
Angul-759145, Odisha
Month of Sampling : October- 2023 Date of Receiving : 21.10.2023
Sample Description : Ambient Noise Quantity of Sample : 04
Sampling Plan & Method : WCS/QSP/SAMP (NOISE) Sample Condition : Good
Sample Collected by : WCS Laboratory Date of Analysis : 25.10.2023

| Sample ID No. | Location | Date of Monitoring | Day Time dB(A) Leq | Night Time dB(A) Leq | Environmental Condition |
|---------------|-----------------------|--------------------|--------------------|----------------------|-------------------------|
| WCS1023N04A | Gopiballavpur Village | 19.10.2023 | 49.7 | 39.0 | Clear Weather |
| WCS1023N04B | Near Settling Pond | 19.10.2023 | 62.8 | 42.5 | Clear Weather |
| WCS1023N04C | Near Town ship | 19.10.2023 | 61.7 | 41.3 | Clear Weather |
| WCS1023N04D | Near Weigh Bridge | 19.10.2023 | 64.8 | 67.0 | Clear Weather |
| Test Method | | IS 9989: 1981 | | | |

| Noise Standard in dB(A) Leq as per CPCB | | |
|---|---|---|
| Category of Area | Day Time dB(A) Leq (6.00 Am to 10.00 Pm) | Night Time dB(A) Leq (10.00 Pm to 6.00 Am) |
| Industrial Area | 75 | 70 |
| Commercial Area | 65 | 55 |
| Residential Area | 55 | 45 |
| Sensitive Area | 50 | 40 |

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(Mr. Bijaya Kumar Chahataray)

Pradeep Mohapatra

Authorized Signatory
(Mr. Pradeep Mohapatra)

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ENVIRONMENTAL MONITORING REPORT FOR THE MINTH OF NOVEMBER-2023



NATIONAL ALUMINIUM COMPANY LIMITED

Coal Mine Division
Angul-759145, Odisha



My World Consultancy Services Private Limited

Plot No. 766, Telengapentha,
Cuttack, Odisha 754001

WCS/LQR/57

TEST REPORT

Report No. : WCS231108A Issue Date : 08.11.2023
NABL ULR No. : TC1122523000000189F
Name of the Client : National Aluminium Company Limited
Address : Coal Mine Division
Angul-759145, Odisha
Sampling Location : Gopiballavpur Village (Buffer Zone)
Sample Description : Ambient Air Quality Monitoring Date of Sampling : 03.11.2023
Sampling Plan & Method : WCS/QSP/SAMP (AIR) Sample ID No : WCS1123A01A
Environmental Condition : Clear weather Date of Receiving : 06.11.2023
Sample Collected by : WCS Laboratory Quantity of Sample : 1 No.
Date of Testing : 06.11.2023 to 08.11.2023 Sample Condition : Good

| Parameter | Unit | Result | Standard | Test Method |
|---|-------------------|--------|-----------------------------|-----------------------------------|
| Respirable Suspended Particulate Matter (PM ₁₀) | µg/m ³ | 56.4 | 100 (As per NAAQ 2009) | IS-5182 (Part-23) 2006 RA 2017 |
| Fine Particulate Matter (PM _{2.5}) | µg/m ³ | 33.7 | 60 (As per NAAQ 2009) | IS-5182 (Part-24) 2019 |
| Sulphur Dioxide (SO ₂) | µg/m ³ | 5.4 | 80 (As per NAAQ 2009) | IS-5182 (Part-2) 2001 RA 2017 |
| Nitrogen Oxides (NO ₂) | µg/m ³ | 16.5 | 80 (As per NAAQ 2009) | IS-5182 (Part-6) 2006 RA 2017 |
| Suspended Particulate Matter (SPM) | µg/m ³ | 132.2 | 500 (As per CTO No-2938) | IS-5182 (Part-4) 1999 RA 2019 |


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(Mr. Pradeept Mohapatra)

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| Report No. | : WCS231108B | Issue Date | : 08.11.2023 |
| NABL ULR No. | : TC1122523000000189F | | |
| Name of the Client | : National Aluminium Company Limited | | |
| Address | : Coal Mine Division Angul-759145, Odisha | | |
| Sampling Location | : Colony Area (Buffer Zone) | | |
| Sample Description | : Ambient Air Quality Monitoring | Date of Sampling | : 03.11.2023 |
| Sampling Plan & Method | : WCS/QSP/SAMP (AIR) | Sample ID No | : WCS1123A01B |
| Environmental Condition | : Clear weather | Date of Receiving | : 06.11.2023 |
| Sample Collected by | : WCS Laboratory | Quantity of Sample | : 1 No. |
| Date of Testing | : 06.11.2023 to 08.11.2023 | Sample Condition | : Good |

| Parameter | Unit | Result | Standard | Test Method |
|---|-------------------|--------|-----------------------------|-----------------------------------|
| Respirable Suspended Particulate Matter (PM ₁₀) | µg/m ³ | 66.1 | 100 (As per NAAQ 2009) | IS-5182 (Part-23) 2006 RA 2017 |
| Fine Particulate Matter (PM _{2.5}) | µg/m ³ | 37.1 | 60 (As per NAAQ 2009) | IS-5182 (Part-24) 2019 |
| Sulphur Dioxide (SO ₂) | µg/m ³ | 5.8 | 80 (As per NAAQ 2009) | IS-5182 (Part-2) 2001 RA 2017 |
| Nitrogen Oxides (NO ₂) | µg/m ³ | 18.0 | 80 (As per NAAQ 2009) | IS-5182 (Part-6) 2006 RA 2017 |
| Suspended Particulate Matter (SPM) | µg/m ³ | 165.4 | 500 (As per CTO No-2938) | IS-5182 (Part-4) 1999 RA 2019 |


Reviewed by
(Mr. Bijaya Kumar Chahataray)


Authorized Signatory
(Mr. Pradeept Mohapatra)

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TEST REPORT

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|-------------------------|--|--------------------|---------------|
| Report No. | : WCS231108C | Issue Date | : 08.11.2023 |
| NABL ULR No. | : TC1122523000000189F | | |
| Name of the Client | : National Aluminium Company Limited | | |
| Address | : Coal Mine Division Angul-759145, Odisha | | |
| Sampling Location | : Near Weigh Bridge (Core Zone) | | |
| Sample Description | : Ambient Air Quality Monitoring | Date of Sampling | : 03.11.2023 |
| Sampling Plan & Method | : WCS/QSP/SAMP (AIR) | Sample ID No. | : WCS1123A01C |
| Environmental Condition | : Clear weather | Date of Receiving | : 06.11.2023 |
| Sample Collected by | : WCS Laboratory | Quantity of Sample | : 1 No. |
| Date of Testing | : 06.11.2023 to 08.11.2023 | Sample Condition | : Good |

| Parameter | Unit | Result | Standard | Test Method |
|---|-------------------|--------|-----------------------------|-----------------------------------|
| Respirable Suspended Particulate Matter (PM ₁₀) | µg/m ³ | 72.8 | 100 (As per NAAQ 2009) | IS-5182 (Part-23) 2006 RA 2017 |
| Fine Particulate Matter (PM _{2.5}) | µg/m ³ | 45.8 | 60 (As per NAAQ 2009) | IS-5182 (Part-24) 2019 |
| Sulphur Dioxide (SO ₂) | µg/m ³ | 6.2 | 80 (As per NAAQ 2009) | IS-5182 (Part-2) 2001 RA 2017 |
| Nitrogen Oxides (NO ₂) | µg/m ³ | 20.2 | 80 (As per NAAQ 2009) | IS-5182 (Part-6) 2006 RA 2017 |
| Suspended Particulate Matter (SPM) | µg/m ³ | 210 | 500 (As per CTO No-2938) | IS-5182 (Part-4) 1999 RA 2019 |


Reviewed by
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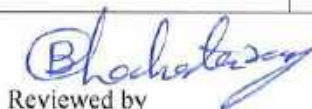


WCS/LQR/57

TEST REPORT

Report No. : WCS231108D Issue Date : 08.11.2023
NABL ULR No. : TC1122523000000189F
Name of the Client : National Aluminium Company Limited
Address : Coal Mine Division
Angul-759145, Odisha
Sampling Location : Near Settling Pond (Core Zone)
Sample Description : Ambient Air Quality Monitoring Date of Sampling : 03.11.2023
Sampling Plan & Method : WCS/QSP/SAMP (AIR) Sample ID No : WCS1123A01D
Environmental Condition : Clear weather Date of Receiving : 06.11.2023
Sample Collected by : WCS Laboratory Quantity of Sample : 1 No.
Date of Testing : 06.11.2023 to 08.11.2023 Sample Condition : Good

| Parameter | Unit | Result | Standard | Test Method |
|---|-------------------|--------|-----------------------------|-----------------------------------|
| Respirable Suspended Particulate Matter (PM ₁₀) | µg/m ³ | 66 | 100 (As per NAAQ 2009) | IS-5182 (Part-23) 2006 RA 2017 |
| Fine Particulate Matter (PM _{2.5}) | µg/m ³ | 41.2 | 60 (As per NAAQ 2009) | IS-5182 (Part-24) 2019 |
| Sulphur Dioxide (SO ₂) | µg/m ³ | 6.0 | 80 (As per NAAQ 2009) | IS-5182 (Part-2) 2001 RA 2017 |
| Nitrogen Oxides (NO ₂) | µg/m ³ | 18.8 | 80 (As per NAAQ 2009) | IS-5182 (Part-6) 2006 RA 2017 |
| Suspended Particulate Matter (SPM) | µg/m ³ | 171.5 | 500 (As per CTO No-2938) | IS-5182 (Part-4) 1999 RA 2019 |


Reviewed by

(Mr. Bijaya Kumar Chahataray)


Authorized Signatory
(Mr. Pradeept Mohapatra)

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TEST REPORT

| | | | |
|-------------------------|---|--------------------|---------------|
| Report No. | : WCS231116A | Issue Date | : 27.11.2023 |
| NABL ULR No. | : TC1122523000000197F | | |
| Name of the Client | : National Aluminium Company Limited | | |
| Address | : Smelter & Power (S&P) Complex Angul-759145, Odisha | | |
| Sampling Location | : Gopiballavpur Village (Buffer Zone) | | |
| Sample Description | : Ambient Air Quality Monitoring | Date of Sampling | : 17.11.2023 |
| Sampling Plan & Method | : WCS/QSP/SAMP (AIR) | Sample ID No | : WCS1123A08A |
| Environmental Condition | : Clear Weather | Date of Receiving | : 20.11.2023 |
| Sample Collected by | : WCS Laboratory | Quantity of Sample | : 1 No. |
| Date of Testing | : 20.11.2023 to 24.11.2023 | Sample Condition | : Good |

| Parameter | Unit | Result | Standard | Test Method |
|---|-------------------|--------|-----------------------------|-----------------------------------|
| Respirable Suspended Particulate Matter (PM ₁₀) | µg/m ³ | 58.8 | 100 (As per NAAQ 2009) | IS-5182 (Part-23) 2006 RA 2017 |
| Fine Particulate Matter (PM _{2.5}) | µg/m ³ | 34.9 | 60 (As per NAAQ 2009) | IS-5182 (Part-24) 2019 |
| Sulphur Dioxide (SO ₂) | µg/m ³ | 6.2 | 80 (As per NAAQ 2009) | IS-5182 (Part-2) 2001 RA 2017 |
| Nitrogen Oxides (NO ₂) | µg/m ³ | 17 | 80 (As per NAAQ 2009) | IS-5182 (Part-6) 2006 RA 2017 |
| Suspended Particulate Matter (SPM) | µg/m ³ | 135.6 | 500 (As per CTO No-2938) | IS-5182 (Part-4) 1999 RA 2019 |


Reviewed by
(Mr. Bijaya Kumar Chahataray)


Authorized Signatory
(Mr. Pradeept Mohapatra)

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TEST REPORT

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|-------------------------|---|--------------------|---------------|
| Report No. | : WCS231116B | Issue Date | : 27.11.2023 |
| NABL ULR No. | : TC1122523000000197F | | |
| Name of the Client | : National Aluminium Company Limited | | |
| Address | : Smelter & Power (S&P) Complex Angul-759145, Odisha | | |
| Sampling Location | : Colony Area (Buffer Zone) | | |
| Sample Description | : Ambient Air Quality Monitoring | Date of Sampling | : 17.11.2023 |
| Sampling Plan & Method | : WCS/QSP/SAMP (AIR) | Sample ID No | : WCS1123A08B |
| Environmental Condition | : Clear Weather | Date of Receiving | : 20.11.2023 |
| Sample Collected by | : WCS Laboratory | Quantity of Sample | : 1 No. |
| Date of Testing | : 20.11.2023 to 24.11.2023 | Sample Condition | : Good |

| Parameter | Unit | Result | Standard | Test Method |
|---|-------------------|--------|-----------------------------|-----------------------------------|
| Respirable Suspended Particulate Matter (PM ₁₀) | µg/m ³ | 65.2 | 100 (As per NAAQ 2009) | IS-5182 (Part-23) 2006 RA 2017 |
| Fine Particulate Matter (PM _{2.5}) | µg/m ³ | 39.9 | 60 (As per NAAQ 2009) | IS-5182 (Part-24) 2019 |
| Sulphur Dioxide (SO ₂) | µg/m ³ | 5.4 | 80 (As per NAAQ 2009) | IS-5182 (Part-2) 2001 RA 2017 |
| Nitrogen Oxides (NO _x) | µg/m ³ | 18.4 | 80 (As per NAAQ 2009) | IS-5182 (Part-6) 2006 RA 2017 |
| Suspended Particulate Matter (SPM) | µg/m ³ | 162.8 | 500 (As per CTO No-2938) | IS-5182 (Part-4) 1999 RA 2019 |


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(Mr. Bijaya Kumar Chahataray)


Authorized Signatory
(Mr. Pradeep Mohapatra)

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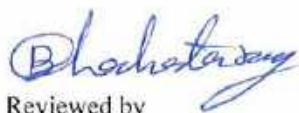


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TEST REPORT

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|-------------------------|---|--------------------|---------------|
| Report No. | : WCS231116C | Issue Date | : 27.11.2023 |
| NABL ULR No. | : TC1122523000000197F | | |
| Name of the Client | : National Aluminium Company Limited | | |
| Address | : Smelter & Power (S&P) Complex Angul-759145, Odisha | | |
| Sampling Location | : Near Weigh Bridge (Core Zone) | | |
| Sample Description | : Ambient Air Quality Monitoring | Date of Sampling | : 17.11.2023 |
| Sampling Plan & Method | : WCS/QSP/SAMP (AIR) | Sample ID No | : WCS1123A08C |
| Environmental Condition | : Clear Weather | Date of Receiving | : 20.11.2023 |
| Sample Collected by | : WCS Laboratory | Quantity of Sample | : 1 No. |
| Date of Testing | : 20.11.2023 to 24.11.2023 | Sample Condition | : Good |

| Parameter | Unit | Result | Standard | Test Method |
|---|-------------------|--------|-----------------------------|-----------------------------------|
| Respirable Suspended Particulate Matter (PM ₁₀) | µg/m ³ | 74.6 | 100 (As per NAAQ 2009) | IS-5182 (Part-23) 2006 RA 2017 |
| Fine Particulate Matter (PM _{2.5}) | µg/m ³ | 48.2 | 60 (As per NAAQ 2009) | IS-5182 (Part-24) 2019 |
| Sulphur Dioxide (SO ₂) | µg/m ³ | 6.8 | 80 (As per NAAQ 2009) | IS-5182 (Part-2) 2001 RA 2017 |
| Nitrogen Oxides (NO ₂) | µg/m ³ | 21.4 | 80 (As per NAAQ 2009) | IS-5182 (Part-6) 2006 RA 2017 |
| Suspended Particulate Matter (SPM) | µg/m ³ | 245 | 500 (As per CTO No-2938) | IS-5182 (Part-4) 1999 RA 2019 |



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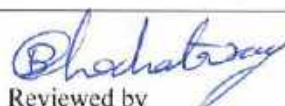


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TEST REPORT

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|-------------------------|---|--------------------|---------------|
| Report No. | : WCS231116D | Issue Date | : 27.11.2023 |
| NABL ULR No. | : TC1122523000000197F | | |
| Name of the Client | : National Aluminium Company Limited | | |
| Address | : Smelter & Power (S&P) Complex Angul-759145, Odisha | | |
| Sampling Location | : Near Settling Pond (Core Zone) | | |
| Sample Description | : Ambient Air Quality Monitoring | Date of Sampling | : 17.11.2023 |
| Sampling Plan & Method | : WCS/QSP/SAMP (AIR) | Sample ID No | : WCS1123A08D |
| Environmental Condition | : Clear Weather | Date of Receiving | : 20.11.2023 |
| Sample Collected by | : WCS Laboratory | Quantity of Sample | : 1 No. |
| Date of Testing | : 20.11.2023 to 24.11.2023 | Sample Condition | : Good |

| Parameter | Unit | Result | Standard | Test Method |
|---|-------------------|--------|-----------------------------|-----------------------------------|
| Respirable Suspended Particulate Matter (PM ₁₀) | µg/m ³ | 66 | 100 (As per NAAQ 2009) | IS-5182 (Part-23) 2006 RA 2017 |
| Fine Particulate Matter (PM _{2.5}) | µg/m ³ | 44.2 | 60 (As per NAAQ 2009) | IS-5182 (Part-24) 2019 |
| Sulphur Dioxide (SO ₂) | µg/m ³ | 6.6 | 80 (As per NAAQ 2009) | IS-5182 (Part-2) 2001 RA 2017 |
| Nitrogen Oxides (NO ₂) | µg/m ³ | 19 | 80 (As per NAAQ 2009) | IS-5182 (Part-6) 2006 RA 2017 |
| Suspended Particulate Matter (SPM) | µg/m ³ | 184.4 | 500 (As per CTO No-2938) | IS-5182 (Part-4) 1999 RA 2019 |


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TEST REPORT

| | | | |
|-------------------------|---|--------------------|--------------|
| Report No. | : WCS231110 | Issue Date | : 08.11.2023 |
| NABL ULR No. | : TC1122523000000191F | | |
| Name of the Client | : National Aluminium Company Limited | | |
| Address | : Smelter & Power (S&P) Complex Angul-759145, Odisha | | |
| Sample Description | : Fugitive Emission (Core Zone) | | |
| Sampling Plan & Method | : WCS/QSP/SAMP (AIR) | | |
| Environmental Condition | : Clear Weather | Date of Receiving | : 06.11.2023 |
| Sample Collected by | : WCS Laboratory | Quantity of Sample | : 4 No. |
| Date of Testing | : 07.11.2023 | Sample Condition | : Good |

| Sl. No. | Sample ID No | Location | Date of Sampling | Suspended Particulate Matter (SPM) | Unit |
|-----------------------------|--------------|---------------|------------------|------------------------------------|-------------------|
| 1 | WCS1123A03A | Haul Road | 04.11.2023 | 313 | µg/m ³ |
| 2 | WCS1123A03B | OB Dump | 04.11.2023 | 176 | µg/m ³ |
| 3 | WCS1123A03C | Loading Point | 04.11.2023 | 292 | µg/m ³ |
| 4 | WCS1123A03D | Blasting Area | 04.11.2023 | 268 | µg/m ³ |
| Standard as per CTO No-2938 | | | | 500 | µg/m ³ |
| Test Method | | | | IS-5182 (Part-4) 1999 RA 2019 | |


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TEST REPORT

Report No. : WCS231110A Issue Date : 08.11.2023
NABL ULR No. : TC1122523000000191F
Name of the Client : **National Aluminium Company Limited**
Address : Smelter & Power (S&P) Complex
Angul-759145, Odisha
Sample Description : Personal Sampling Analysis (Core Zone)
Sampling Plan & Method : WCS/QSP/SAMP (AIR)
Environmental Condition : Clear Weather Date of Receiving : 06.11.2023
Sample Collected by : WCS Laboratory Quantity of Sample : 4 No.
Date of Testing : 07.11.2023 Sample Condition : Good

| SL No. | Sample ID No | Location | Date of Sampling | Respirable Particulate Matter (RPM) | Unit |
|--|--------------|---------------|------------------|-------------------------------------|-------------------|
| 1 | WCS1123A04A | Haul Road | 04.11.2023 | 1.04 | mg/m ³ |
| 2 | WCS1123A04B | OB Dump | 04.11.2023 | 0.59 | mg/m ³ |
| 3 | WCS1123A04C | Loading Point | 04.11.2023 | 0.97 | mg/m ³ |
| 4 | WCS1123A04D | Blasting Area | 04.11.2023 | 0.89 | mg/m ³ |
| Permissible Limit as per DGMS (Tech.) (S&T) Circular No.01 Dhanbad, Dated 21 st January 2010 | | | | 3.0 | mg/m ³ |
| Test Method | | | | NIOS-600-15th August, 1994 | |


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TEST REPORT

Report No. : WCS231109 Issue Date : 08.11.2023
NABL ULR No. : TC1122523000000190F
Name of the Client : National Aluminium Company Limited
Address : Coal Mine Division
Angul-759145, Odisha
Month of Sampling : November- 2023 Date of Receiving : 06.11.2023
Sample Description : Ambient Noise Quantity of Sample : 04
Sampling Plan & Method : WCS/QSP/SAMP (NOISE) Sample Condition : Good
Sample Collected by : WCS Laboratory Date of Analysis : 07.11.2023

| Sample ID No. | Location | Date of Monitoring | Day Time dB(A) Leq | Night Time dB(A) Leq | Environmental Condition |
|---------------|-------------------------------------|--------------------|--------------------|----------------------|-------------------------|
| WCS1123N01A | Gopiballavpur Village (Buffer Zone) | 03.11.2023 | 50.1 | 38.8 | Clear Weather |
| WCS1123N01B | Near Settling Pond (Core Zone) | 03.11.2023 | 63.0 | 41.5 | Clear Weather |
| WCS1123N01C | Colony Area (Buffer Zone) | 03.11.2023 | 62.5 | 42.0 | Clear Weather |
| WCS1123N01D | Near Weigh Bridge (Core Zone) | 03.11.2023 | 63.6 | 65.2 | Clear Weather |
| Test Method | | IS 9989: 1981 | | | |

| Noise Standard in dB(A) Leq as per CPCB | | |
|---|--|--|
| Category of Area | Day Time dB(A) Leq (6.00 Am to 10.00 Pm) | Night Time dB(A) Leq (10.00 Pm to 6.00 Am) |
| Industrial Area | 75 | 70 |
| Commercial Area | 65 | 55 |
| Residential Area | 55 | 45 |
| Sensitive Area | 50 | 40 |

Bhachataray
Reviewed by
(Mr. Bijaya Kumar Chahataray)

Pradeept Mohapatra
Authorized Signatory
(Mr. Pradeept Mohapatra)

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WCS/LQR/59


TEST REPORT

Report No. : WCS231117 Issue Date : 27.11.2023
NABL ULR No. : TC1122523000000198F
Name of the Client : National Aluminium Company Limited
Address : Coal Mine Division
Angul-759145, Odisha
Month of Sampling : November- 2023 Date of Receiving : 20.11.2023
Sample Description : Ambient Noise Quantity of Sample : 04
Sampling Plan & Method : WCS/QSP/SAMP (NOISE) Sample Condition : Good
Sample Collected by : WCS Laboratory Date of Analysis : 21.11.2023

| Sample ID No. | Location | Date of Monitoring | Day Time dB(A) Leq | Night Time dB(A) Leq | Environmental Condition |
|---------------|-------------------------------------|--------------------|--------------------|----------------------|-------------------------|
| WCS1123N02A | Gopiballavpur Village (Buffer Zone) | 17.11.2023 | 52.6 | 39.4 | Clear Weather |
| WCS1123N02B | Near Settling Pond (Core Zone) | 17.11.2023 | 66.2 | 43.6 | Clear Weather |
| WCS1123N02C | Colony Area (Buffer Zone) | 17.11.2023 | 62.4 | 44.1 | Clear Weather |
| WCS1123N02D | Near Weigh Bridge (Core Zone) | 17.11.2023 | 66.8 | 68.5 | Clear Weather |
| Test Method | | IS 9989: 1981 | | | |

| Noise Standard in dB(A) Leq as per CPCB | | |
|---|--|--|
| Category of Area | Day Time dB(A) Leq (6.00 Am to 10.00 Pm) | Night Time dB(A) Leq (10.00 Pm to 6.00 Am) |
| Industrial Area | 75 | 70 |
| Commercial Area | 65 | 55 |
| Residential Area | 55 | 45 |
| Sensitive Area | 50 | 40 |


Reviewed by
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Authorized Signatory
(Mr. Pradeept Mohapatra)

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TEST REPORT

Report No. : WCS231115A Issue Date : 27.11.2023
NABL ULR No. : TC1122523000000196F
Name of the Client : National Aluminium Company Limited
Address : Smelter & Power (S&P) Complex
Angul-759145, Odisha
Sampling Location : Colony Area Bore Well No-MAFMT6 (Buffer Zone)
Sample Description : Ground Water Date of Sampling : 04.11.2023
Sampling Plan & Method : WCS/QSP/SAMP (WATER) Date of Receiving : 06.11.2023
Environmental Condition : Temperature 29 °C, Clear Weather Sample ID No : WCS1123W02A
Sample Collected by : WCS Laboratory Quantity of Sample : 1 Ltr
Date of Testing : 06.11.2023 to 17.11.2023 Sample Condition : Good

| Sl. No. | Parameter | Unit | Result | Requirement as per IS 10500:2012 Reaffirmed 2018 | Test Methods |
|---------|---------------------------------------|------------|-----------|--|---|
| 1 | Colour | Hazen | 3 | Max, 5 | IS 3025 (Part-4): 2021 |
| 2 | Odour | -- | Agreeable | Agreeable | IS 3025 (Part-5): 2018 |
| 3 | pH Value | -- | 5.762 | 6.5-8.5 | IS 3025 (Part-11): 2022 |
| 4 | Taste Threshold | -- | Agreeable | Agreeable | IS 3025 (Part-7): 2017 |
| 5 | Turbidity | NTU | 0.3 | 1 | IS 3025 (Part-10): 1984 RA 2017 |
| 6 | Total Dissolved Solid as TDS | mg/l | 150 | 500 | IS 3025 (Part-16): 1984 RA 2017 |
| 7 | Ammonia as Total ammonia-N | mg/l | 0.08 | 0.5 | IS 3025 (Part-34): 1988 RA 2019 |
| 8 | Chloride as Cl | mg/l | 22.49 | 250 | IS 3025(Part-32): 1988 RA 2019 |
| 9 | Fluoride as F | mg/l | < 0.02 | 1.0 | APHA 23 rd Ed. (4500-F-D): 2017 |
| 10 | Iron as Fe | mg/l | 0.15 | 1.0 | IS 3025 (Part -53): 2003 RA 2019 |
| 11 | Total Hardness as CaCO ₃ | mg/l | 30 | 200 | IS 3025 (Part-21): 2009 RA 2019 |
| 12 | Calcium as Ca | mg/l | 8.02 | 75 | IS 3025 (Part-40): 1991 RA 2019 |
| 13 | Magnesium as Mg | mg/l | 2.43 | 30 | APHA 23 rd Ed. (3500-Mg-B): 2017 |
| 14 | Nitrate as NO ₃ | mg/l | 12.1 | 45 | APHA 23 rd Ed. (4500-NO ₃ -B): 2017 |
| 15 | Sulphate as SO ₄ | mg/l | 2.72 | 200 | IS 3025 (Part-24 Sec 1): 2022 |
| 16 | Total Alkalinity as CaCO ₃ | mg/l | 15 | 200 | IS 3025 (Part-23): 1986 RA 2019 |
| 17 | Total Chromium as Cr | mg/l | <0.02 | 0.05 | IS 3025 (Part-52): 2003 RA 2019 |
| 18 | Potassium as K | mg/l | 4.8 | -- | IS 3025 (Part-45): 1993 RA 2019 |
| 19 | Sodium as Na | mg/l | 6.1 | -- | IS 3025 (Part-45): 1993 RA 2019 |
| 20 | Total Suspended Solid as TSS | mg/l | <5 | -- | IS 3025 (Part-17): 2022 |
| 21 | E.Coli | MPN/100 ml | <1 | Shall not be detectable in any 100 ml sample | IS 1622 : 1981 RA 2019 |
| 22 | Faecal Coliform | MPN/100 ml | <1 | -- | IS 1622 : 1981 RA 2019 |
| 23 | Total Coliform | MPN/100 ml | <1 | Shall not be detectable in any 100 ml sample | IS 1622 : 1981 RA 2019 |

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Authorized Signatory for Microbiology
(Miss. Laxmi Sahoo)

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Authorized Signatory for Chemical
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TEST REPORT

Report No. : WCS231115A Issue Date : 27.11.2023
Name of the Client : National Aluminium Company Limited
Address : Smelter & Power (S&P) Complex
Angul-759145, Odisha
Sampling Location : Colony Area Bore Well No-MAFMT6 (Buffer Zone)
Sample Description : Ground Water Date of Sampling : 04.11.2023
Sampling Plan & Method : WCS/QSP/SAMP (WATER) Date of Receiving : 06.11.2023
Environmental Condition : Temperature 29 °C, Clear Weather Sample ID No : WCS1123W02A
Sample Collected by : WCS Laboratory Quantity of Sample : 1 Ltr
Date of Testing : 06.11.2023 to 17.11.2023 Sample Condition : Good

| Sl. No. | Parameter | Unit | Result | Requirement as per IS 10500:2012 Reaffirmed 2018 | Test Methods |
|---------|--|------|---------|--|---|
| 24 | Aluminium as Al | mg/l | <0.02 | 0.03 | IS 3025 (Part 55): 2003 RA 2019 |
| 25 | Anionic detergents as MBAS | mg/l | <0.02 | 0.2 | Annex K of IS 13428 |
| 26 | Barium as Ba | mg/l | <0.1 | 0.7 | Annex F of IS 13428* or IS 15302 |
| 27 | Boron as B | mg/l | <0.1 | 0.5 | IS 3025 (Part 57):2021 |
| 28 | Chloramines as Cl ₂ | mg/l | <0.02 | 4.0 | IS 3025 (Part 26): 2021* or APHA 4500-Cl G |
| 29 | Copper as Cu | mg/l | <0.01 | 0.05 | IS 3025 (Part 42):1992 RA 2019 |
| 30 | Manganese as Mn | mg/l | <0.05 | 0.1 | IS 3025 (Part 59):2006 RA 2017 |
| 31 | Mineral oil | mg/l | <0.5 | 1.0 | Clause 6 of IS 3025 (Part 39):2021 |
| 32 | Phenolic compounds as C ₆ H ₅ OH | mg/l | <0.001 | 0.001 | IS 3025 (Part 43): 1992 RA 2019 |
| 33 | Selenium as Se | mg/l | <0.001 | 0.01 | IS 3025 (Part 56):2003 RA 2019 or IS 15303* |
| 34 | Silver as Ag | mg/l | <0.02 | 0.1 | Annex J of IS 13428 |
| 35 | Sulphide as H ₂ S | mg/l | <0.05 | 0.05 | IS 3025 (Part 29):1986 RA 2019 |
| 36 | Zinc as Zn | mg/l | <0.05 | 5 | IS 3025 (Part 49):1994 RA 2019 |
| 37 | Cadmium as Cd | mg/l | <0.001 | 0.003 | IS 3025 (Part 41):1992 RA 2019 |
| 38 | Cyanide as CN | mg/l | <0.01 | 0.05 | IS 3025 (Part 27):1986 RAA 2019 |
| 39 | Lead as Pb | mg/l | <0.001 | 0.01 | IS 3025 (Part 47):1994 RA 2019 |
| 40 | Mercury as Hg | mg/l | <0.001 | 0.001 | IS 3025 (Part 48):1994 RA 2019 |
| 41 | Molybdenum as Mo | mg/l | <0.02 | 0.07 | IS 3025 (Part 2) |
| 42 | Nickel as Ni | mg/l | <0.01 | 0.02 | IS 3025 (Part 54): 2003 RA 2019 |
| 43 | Polynuclear aromatic hydrocarbons as PAH | mg/l | <0.0001 | 0.0001 | APHA 6440 |
| 44 | Total arsenic as As | mg/l | <0.001 | 0.01 | IS 3025 (Part 37):2022 |

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TEST REPORT

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NABL ULR No. : TC1122523000000196F
Name of the Client : National Aluminium Company Limited
Address : Smelter & Power (S&P) Complex
Angul-759145, Odisha
Sampling Location : Colony Area Bore Well No-MAFMT7 (Buffer Zone)
Sample Description : Ground Water Date of Sampling : 04.11.2023
Sampling Plan & Method : WCS/QSP/SAMP (WATER) Date of Receiving : 06.11.2023
Environmental Condition : Temperature 29 °C, Clear Weather Sample ID No : WCS1123W02B
Sample Collected by : WCS Laboratory Quantity of Sample : 1 Ltr
Date of Testing : 06.11.2023 to 17.11.2023 Sample Condition : Good

| Sl. No. | Parameter | Unit | Result | Requirement as per IS 10500:2012 Reaffirmed 2018 | Test Methods |
|---------|---------------------------------------|------------|-----------|--|---|
| 1 | Colour | Hazen | 4 | Max. 5 | IS 3025 (Part-4): 2021 |
| 2 | Odour | -- | Agreeable | Agreeable | IS 3025 (Part-5): 2018 |
| 3 | pH Value | -- | 5.864 | 6.5-8.5 | IS 3025 (Part-11): 2022 |
| 4 | Taste Threshold | -- | Agreeable | Agreeable | IS 3025 (Part-7): 2017 |
| 5 | Turbidity | NTU | 0.6 | 1 | IS 3025 (Part-10): 1984 RA 2017 |
| 6 | Total Dissolved Solid as TDS | mg/l | 142 | 500 | IS 3025 (Part-16): 1984 RA 2017 |
| 7 | Ammonia as Total ammonia-N | mg/l | 0.06 | 0.5 | IS 3025 (Part-34): 1988 RA 2019 |
| 8 | Chloride as Cl | mg/l | 22.49 | 250 | IS 3025(Part-32): 1988 RA 2019 |
| 9 | Fluoride as F | mg/l | <0.02 | 1.0 | APHA 23 rd Ed. (4500-F-ID): 2017 |
| 10 | Iron as Fe | mg/l | 0.14 | 1.0 | IS 3025 (Part -53): 2003 RA 2019 |
| 11 | Total Hardness as CaCO ₃ | mg/l | 24 | 200 | IS 3025 (Part-21): 2009 RA 2019 |
| 12 | Calcium as Ca | mg/l | 6.41 | 75 | IS 3025 (Part-40): 1991 RA 2019 |
| 13 | Magnesium as Mg | mg/l | 1.94 | 30 | APHA 23 rd Ed. (3500-Mg-B): 2017 |
| 14 | Nitrate as NO ₃ | mg/l | 9.26 | 45 | APHA 23 rd Ed. (4500-NO ₃ -B): 2017 |
| 15 | Sulphate as SO ₄ | mg/l | 2.2 | 200 | IS 3025 (Part-24 Sec 1):2022 |
| 16 | Total Alkalinity as CaCO ₃ | mg/l | 25 | 200 | IS 3025 (Part-23): 1986 RA 2019 |
| 17 | Total Chromium as Cr | mg/l | <0.02 | 0.05 | IS 3025 (Part-52) : 2003 RA 2019 |
| 18 | Potassium as K | mg/l | 4.9 | -- | IS 3025 (Part-45): 1993 RA 2019 |
| 19 | Sodium as Na | mg/l | 6.5 | -- | IS 3025 (Part-45) : 1993 RA 2019 |
| 20 | Total Suspended Solid as TSS | mg/l | 5 | -- | IS 3025 (Part-17): 2022 |
| 21 | E.Coli | MPN/100 ml | <1 | Shall not be detectable in any 100 ml sample | IS 1622 : 1981 RA 2019 |
| 22 | Faecal Coliform | MPN/100 ml | <1 | -- | IS 1622 : 1981 RA 2019 |
| 23 | Total Coliform | MPN/100 ml | <1 | Shall not be detectable in any 100 ml sample | IS 1622 : 1981 RA 2019 |

Reviewed by
(Mr. Bijaya Kumar Chahataray)

Authorized Signatory for Microbiology
(Miss. Laxmi Sahoo)

Authorized Signatory for Chemical
(Mr. Pradeep Mohapatra)

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TEST REPORT

Report No. : WCS231115B Issue Date : 27.11.2023
Name of the Client : National Aluminium Company Limited
Address : Smelter & Power (S&P) Complex
Angul-759145, Odisha
Sampling Location : Colony Area Bore Well No-MAFMT7 (Buffer Zone)
Sample Description : Ground Water Date of Sampling : 04.11.2023
Sampling Plan & Method : WCS/QSP/SAMP (WATER) Date of Receiving : 06.11.2023
Environmental Condition : Temperature 29 °C, Clear Weather Sample ID No : WCS1123W02B
Sample Collected by : WCS Laboratory Quantity of Sample : 1 Ltr
Date of Testing : 06.11.2023 to 17.11.2023 Sample Condition : Good

| Sl. No. | Parameter | Unit | Result | Requirement as per IS 10500:2012 Reaffirmed 2018 | Test Methods |
|---------|--|------|---------|--|---|
| 24 | Aluminium as Al | mg/l | <0.02 | 0.03 | IS 3025 (Part 55): 2003 RA 2019 |
| 25 | Anionic detergents as MBAS | mg/l | <0.02 | 0.2 | Annex K of IS 13428 |
| 26 | Barium as Ba | mg/l | <0.1 | 0.7 | Annex F of IS 13428* or IS 15302 |
| 27 | Boron as B | mg/l | <0.1 | 0.5 | IS 3025 (Part 57):2021 |
| 28 | Chloramines as Cl ₂ | mg/l | <0.02 | 4.0 | IS 3025 (Part 26): 2021* or APHA 4500-Cl G |
| 29 | Copper as Cu | mg/l | <0.01 | 0.05 | IS 3025 (Part 42):1992 RA 2019 |
| 30 | Manganese as Mn | mg/l | <0.05 | 0.1 | IS 3025 (Part 59):2006 RA 2017 |
| 31 | Mineral oil | mg/l | <0.5 | 1.0 | Clause 6 of IS 3025 (Part 39):2021 |
| 32 | Phenolic compounds as C ₁₂ H ₁₀ OH | mg/l | <0.001 | 0.001 | IS 3025 (Part 43): 1992 RA 2019 |
| 33 | Selenium as Se | mg/l | <0.001 | 0.01 | IS 3025 (Part 56):2003 RA 2019 or IS 15303* |
| 34 | Silver as Ag | mg/l | <0.02 | 0.1 | Annex J of IS 13428 |
| 35 | Sulphide as H ₂ S | mg/l | <0.05 | 0.05 | IS 3025 (Part 29):1986 RA 2019 |
| 36 | Zinc as Zn | mg/l | <0.05 | 5 | IS 3025 (Part 49):1994 RA 2019 |
| 37 | Cadmium as Cd | mg/l | <0.001 | 0.003 | IS 3025 (Part 41):1992 RA 2019 |
| 38 | Cyanide as CN | mg/l | <0.01 | 0.05 | IS 3025 (Part 27):1986 RAA 2019 |
| 39 | Lead as Pb | mg/l | <0.001 | 0.01 | IS 3025 (Part 47):1994 RA 2019 |
| 40 | Mercury as Hg | mg/l | <0.001 | 0.001 | IS 3025 (Part 48):1994 RA 2019 |
| 41 | Molybdenum as Mo | mg/l | <0.02 | 0.07 | IS 3025 (Part 2) |
| 42 | Nickel as Ni | mg/l | <0.01 | 0.02 | IS 3025 (Part 54): 2003 RA 2019 |
| 43 | Polynuclear aromatic hydrocarbons as PAH | mg/l | <0.0001 | 0.0001 | APHA 6440 |
| 44 | Total arsenic as As | mg/l | <0.001 | 0.01 | IS 3025 (Part 37):2022 |

Bhahataray
Reviewed by

(Mr. Bijaya Kumar Chahataray)

Authorized Signatory

(Mr. Pradeep Mohapatra)

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TEST REPORT

Report No. : WCS231115C Issue Date : 27.11.2023
NABL ULR No. : TC1122523000000196F
Name of the Client : National Aluminium Company Limited
Address : Smelter & Power (S&P) Complex
Angul-759145, Odisha
Sampling Location : Dhobamaliya Village, Dug well (Buffer Zone)
Sample Description : Ground Water Date of Sampling : 04.11.2023
Sampling Plan & Method : WCS/QSP/SAMP (WATER) Date of Receiving : 06.11.2023
Environmental Condition : Temperature 29 °C, Clear Sample ID No : WCS1123W02C
Weather :
Sample Collected by : WCS Laboratory Quantity of Sample : 1 Ltr
Date of Testing : 06.11.2023 to 17.11.2023 Sample Condition : Good

| Sl. No. | Parameter | Unit | Result | Requirement as per IS 10500:2012 Reaffirmed 2018 | Test Methods |
|---------|---------------------------------------|------------|-----------|--|---|
| 1 | Colour | Hazen | 3 | Max, 5 | IS 3025 (Part-4): 2021 |
| 2 | Odour | -- | Agreeable | Agreeable | IS 3025 (Part-5): 2018 |
| 3 | pH Value | -- | 5.864 | 6.5-8.5 | IS 3025 (Part-11): 2022 |
| 4 | Taste Threshold | -- | Agreeable | Agreeable | IS 3025 (Part-7): 2017 |
| 5 | Turbidity | NTU | 0.3 | 1 | IS 3025 (Part-10): 1984 RA 2017 |
| 6 | Total Dissolved Solid as TDS | mg/l | 164 | 500 | IS 3025 (Part-16): 1984 RA 2017 |
| 7 | Ammonia as Total ammonia-N | mg/l | 0.07 | 0.5 | IS 3025 (Part-34): 1988 RA 2019 |
| 8 | Chloride as Cl | mg/l | 23.99 | 250 | IS 3025(Part-32): 1988 RA 2019 |
| 9 | Fluoride as F | mg/l | <0.02 | 1.0 | APHA 23 rd Ed. (4500-F-D): 2017 |
| 10 | Iron as Fe | mg/l | 0.11 | 1.0 | IS 3025 (Part -53): 2003 RA 2019 |
| 11 | Total Hardness as CaCO ₃ | mg/l | 28 | 200 | IS 3025 (Part-21): 2009 RA 2019 |
| 12 | Calcium as Ca | mg/l | 8.82 | 75 | IS 3025 (Part-40): 1991 RA 2019 |
| 13 | Magnesium as Mg | mg/l | 1.46 | 30 | APHA 23 rd Ed. (3500-Mg-B): 2017 |
| 14 | Nitrate as NO ₃ | mg/l | 6.30 | 45 | APHA 23 rd Ed. (4500-NO ₃ -B): 2017 |
| 15 | Sulphate as SO ₄ | mg/l | 2.3 | 200 | IS 3025 (Part-24 Sec 1):2022 |
| 16 | Total Alkalinity as CaCO ₃ | mg/l | 30 | 200 | IS 3025 (Part-23): 1986 RA 2019 |
| 17 | Total Chromium as Cr | mg/l | <0.02 | 0.05 | IS 3025 (Part-52): 2003 RA 2019 |
| 18 | Potassium as K | mg/l | 5.1 | -- | IS 3025 (Part-45): 1993 RA 2019 |
| 19 | Sodium as Na | mg/l | 7.2 | -- | IS 3025 (Part-45): 1993 RA 2019 |
| 20 | Total Suspended Solid as TSS | mg/l | <5 | -- | IS 3025 (Part-17): 2022 |
| 21 | E.Coli | MPN/100 ml | <1 | Shall not be detectable in any 100 ml sample | IS 1622 : 1981 RA 2019 |
| 22 | Faecal Coliform | MPN/100 ml | <1 | -- | IS 1622 : 1981 RA 2019 |
| 23 | Total Coliform | MPN/100 ml | <1 | Shall not be detectable in any 100 ml sample | IS 1622 : 1981 RA 2019 |

Reviewed by

(Mr. Bijaya Kumar Chahataray)

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Authorized Signatory for Microbiology
(Miss. Laxmi Sahoo)

Authorized Signatory for Chemical
(Mr. Pradeept Mohapatra)

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TEST REPORT

Report No. : WCS231115C Issue Date : 27.11.2023
Name of the Client : National Aluminium Company Limited
Address : Smelter & Power (S&P) Complex
Angul-759145, Odisha
Sampling Location : Dhobamaliya Village, Dug Well (Buffer Zone)
Sample Description : Ground Water Date of Sampling : 04.11.2023
Sampling Plan & Method : WCS/QSP/SAMP (WATER) Date of Receiving : 06.11.2023
Environmental Condition : Temperature 29 °C, Clear Weather Sample ID No : WCS1123W02C
Sample Collected by : WCS Laboratory Quantity of Sample : 1 Ltr
Date of Testing : 06.11.2023 to 17.11.2023 Sample Condition : Good

| Sl. No. | Parameter | Unit | Result | Requirement as per IS 10500:2012 Reaffirmed 2018 | Test Methods |
|---------|--|------|---------|--|---|
| 24 | Aluminium as Al | mg/l | <0.02 | 0.03 | IS 3025 (Part 55): 2003 RA 2019 |
| 25 | Anionic detergents as MBAS | mg/l | <0.02 | 0.2 | Annex K of IS 13428 |
| 26 | Barium as Ba | mg/l | <0.1 | 0.7 | Annex F of IS 13428* or IS 15302 |
| 27 | Boron as B | mg/l | <0.1 | 0.5 | IS 3025 (Part 57):2021 |
| 28 | Chloramines as Cl ₂ | mg/l | <0.02 | 4.0 | IS 3025 (Part 26): 2021* or APHA 4500-Cl Cl |
| 29 | Copper as Cu | mg/l | <0.01 | 0.05 | IS 3025 (Part 42):1992 RA 2019 |
| 30 | Manganese as Mn | mg/l | <0.05 | 0.1 | IS 3025 (Part 59):2006 RA 2017 |
| 31 | Mineral oil | mg/l | <0.5 | 1.0 | Clause 6 of IS 3025 (Part 39):2021 |
| 32 | Phenolic compounds as C ₆ H ₅ OH | mg/l | <0.001 | 0.001 | IS 3025 (Part 43): 1992 RA 2019 |
| 33 | Selenium as Se | mg/l | <0.001 | 0.01 | IS 3025 (Part 56):2003 RA 2019 or IS 15303* |
| 34 | Silver as Ag | mg/l | <0.02 | 0.1 | Annex J of IS 13428 |
| 35 | Sulphide as H ₂ S | mg/l | <0.05 | 0.05 | IS 3025 (Part 29):1986 RA 2019 |
| 36 | Zinc as Zn | mg/l | <0.05 | 5 | IS 3025 (Part 49):1994 RA 2019 |
| 37 | Cadmium as Cd | mg/l | <0.001 | 0.003 | IS 3025 (Part 41):1992 RA 2019 |
| 38 | Cyanide as CN | mg/l | <0.01 | 0.05 | IS 3025 (Part 27):1986 RAA 2019 |
| 39 | Lead as Pb | mg/l | <0.001 | 0.01 | IS 3025 (Part 47):1994 RA 2019 |
| 40 | Mercury as Hg | mg/l | <0.001 | 0.001 | IS 3025 (Part 48):1994 RA 2019 |
| 41 | Molybdenum as Mo | mg/l | <0.02 | 0.07 | IS 3025 (Part 2) |
| 42 | Nickel as Ni | mg/l | <0.01 | 0.02 | IS 3025 (Part 54): 2003 RA 2019 |
| 43 | Polynuclear aromatic hydrocarbons as PAH | mg/l | <0.0001 | 0.0001 | APHA 6440 |
| 44 | Total arsenic as As | mg/l | <0.001 | 0.01 | IS 3025 (Part 37):2022 |

Bhahataray
Reviewed by
(Mr. Bijaya Kumar Chahataray)

Pradeept Mohapatra
Authorized Signatory
(Mr. Pradeept Mohapatra)

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TEST REPORT

Report No. : WCS231115D Issue Date : 27.11.2023
NABL ULR No. : TC1122523000000196F
Name of the Client : National Aluminium Company Limited
Address : Smelter & Power (S&P) Complex
Angul-759145, Odisha
Sampling Location : Raijharana Village, Dug Well (Buffer zone)
Sample Description : Ground Water Date of Sampling : 04.11.2023
Sampling Plan & Method : WCS/QSP/SAMP (WATER) Date of Receiving : 06.11.2023
Environmental Condition : Temperature 29 °C, Clear Weather Sample ID No : WCS1123W02D
Sample Collected by : WCS Laboratory Quantity of Sample : 1 Ltr
Date of Testing : 06.11.2023 to 17.11.2023 Sample Condition : Good

| Sl. No. | Parameter | Unit | Result | Requirement as per IS 10500:2012 Reaffirmed 2018 | Test Methods |
|---------|---------------------------------------|------------|-----------|--|---|
| 1 | Colour | Hazen | 4 | Max, 5 | IS 3025 (Part-4): 2021 |
| 2 | Odour | -- | Agreeable | Agreeable | IS 3025 (Part-5): 2018 |
| 3 | pH Value | -- | 7.489 | 6.5-8.5 | IS 3025 (Part-11): 2022 |
| 4 | Taste Threshold | -- | Agreeable | Agreeable | IS 3025 (Part-7): 2017 |
| 5 | Turbidity | NTU | 0.9 | 1 | IS 3025 (Part-10): 1984 RA 2017 |
| 6 | Total Dissolved Solid as TDS | mg/l | 270 | 500 | IS 3025 (Part-16): 1984 RA 2017 |
| 7 | Ammonia as Total ammonia-N | mg/l | 0.06 | 0.5 | IS 3025 (Part-34): 1988 RA 2019 |
| 8 | Chloride as Cl | mg/l | 55.98 | 250 | IS 3025(Part-32): 1988 RA 2019 |
| 9 | Fluoride as F | mg/l | <0.02 | 1.0 | APHA 23 rd Ed. (4500-F-ID): 2017 |
| 10 | Iron as Fe | mg/l | 0.08 | 1.0 | IS 3025 (Part-53): 2003 RA 2019 |
| 11 | Total Hardness as CaCO ₃ | mg/l | 46 | 200 | IS 3025 (Part-21): 2009 RA 2019 |
| 12 | Calcium as Ca | mg/l | 15.23 | 75 | IS 3025 (Part-40): 1991 RA 2019 |
| 13 | Magnesium as Mg | mg/l | 1.94 | 30 | APHA 23 rd Ed. (3500-Mg-B): 2017 |
| 14 | Nitrate as NO ₃ | mg/l | 5.43 | 45 | APHA 23 rd Ed. (4500-NO ₃ -B): 2017 |
| 15 | Sulphate as SO ₄ | mg/l | 2.6 | 200 | IS 3025 (Part-24 Sec 1):2022 |
| 16 | Total Alkalinity as CaCO ₃ | mg/l | 70 | 200 | IS 3025 (Part-23): 1986 RA 2019 |
| 17 | Total Chromium as Cr | mg/l | <0.02 | 0.05 | IS 3025 (Part-52): 2003 RA 2019 |
| 18 | Potassium as K | mg/l | 4.8 | -- | IS 3025 (Part-45): 1993 RA 2019 |
| 19 | Sodium as Na | mg/l | 6.8 | -- | IS 3025 (Part-45): 1993 RA 2019 |
| 20 | Total Suspended Solid as TSS | mg/l | <5 | -- | IS 3025 (Part-17): 2022 |
| 21 | E.Coli | MPN/100 ml | <1 | Shall not be detectable in any 100 ml sample | IS 1622 : 1981 RA 2019 |
| 22 | Faecal Coliform | MPN/100 ml | <1 | -- | IS 1622 : 1981 RA 2019 |
| 23 | Total Coliform | MPN/100 ml | <1 | Shall not be detectable in any 100 ml sample | IS 1622 : 1981 RA 2019 |

Reviewed by
(Mr. Bijaya Kumar Chahataray)

Authorized Signatory for Microbiology
(Miss. Laxmi Sahoo)

Authorized Signatory for Chemical
(Mr. Pradeept Mohapatra)

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TEST REPORT

Report No. : WCS231115D Issue Date : 27.11.2023
Name of the Client : National Aluminium Company Limited
Address : Smelter & Power (S&P) Complex
Angul-759145, Odisha
Sampling Location : Raijharana Village, Dug Well (Buffer Zone)
Sample Description : Ground Water Date of Sampling : 04.11.2023
Sampling Plan & Method : WCS/QSP/SAMP (WATER) Date of Receiving : 06.11.2023
Environmental Condition : Temperature 29 °C, Clear Weather Sample ID No : WCS1123W02D
Sample Collected by : WCS Laboratory Quantity of Sample : 1 Ltr
Date of Testing : 06.11.2023 to 17.11.2023 Sample Condition : Good

| Sl. No. | Parameter | Unit | Result | Requirement as per IS 10500:2012 Reaffirmed 2018 | Test Methods |
|---------|--|------|---------|--|---|
| 24 | Aluminium as Al | mg/l | <0.02 | 0.03 | IS 3025 (Part 55): 2003 RA 2019 |
| 25 | Anionic detergents as MBAS | mg/l | <0.02 | 0.2 | Annex K of IS 13428 |
| 26 | Barium as Ba | mg/l | <0.1 | 0.7 | Annex F of IS 13428* or IS 15302 |
| 27 | Boron as B | mg/l | <0.1 | 0.5 | IS 3025 (Part 57):2021 |
| 28 | Chloramines as Cl ₂ | mg/l | <0.02 | 4.0 | IS 3025 (Part 26): 2021* or APHA 4500-Cl G |
| 29 | Copper as Cu | mg/l | <0.01 | 0.05 | IS 3025 (Part 42):1992 RA 2019 |
| 30 | Manganese as Mn | mg/l | <0.05 | 0.1 | IS 3025 (Part 59):2006 RA 2017 |
| 31 | Mineral oil | mg/l | <0.5 | 1.0 | Clause 6 of IS 3025 (Part 39):2021 |
| 32 | Phenolic compounds as C ₆ H ₅ OH | mg/l | <0.001 | 0.001 | IS 3025 (Part 43): 1992 RA 2019 |
| 33 | Selenium as Se | mg/l | <0.001 | 0.01 | IS 3025 (Part 56):2003 RA 2019 or IS 15303* |
| 34 | Silver as Ag | mg/l | <0.02 | 0.1 | Annex J of IS 13428 |
| 35 | Sulphide as H ₂ S | mg/l | <0.05 | 0.05 | IS 3025 (Part 29):1986 RA 2019 |
| 36 | Zinc as Zn | mg/l | <0.05 | 5 | IS 3025 (Part 49):1994 RA 2019 |
| 37 | Cadmium as Cd | mg/l | <0.001 | 0.003 | IS 3025 (Part 41):1992 RA 2019 |
| 38 | Cyanide as CN | mg/l | <0.01 | 0.05 | IS 3025 (Part 27):1986 RAA 2019 |
| 39 | Lead as Pb | mg/l | <0.001 | 0.01 | IS 3025 (Part 47):1994 RA 2019 |
| 40 | Mercury as Hg | mg/l | <0.001 | 0.001 | IS 3025 (Part 48):1994 RA 2019 |
| 41 | Molybdenum as Mo | mg/l | <0.02 | 0.07 | IS 3025 (Part 2) |
| 42 | Nickel as Ni | mg/l | <0.01 | 0.02 | IS 3025 (Part 54): 2003 RA 2019 |
| 43 | Polynuclear aromatic hydrocarbons as PAH | mg/l | <0.0001 | 0.0001 | APHA 6440 |
| 44 | Total arsenic as As | mg/l | <0.001 | 0.01 | IS 3025 (Part 37):2022 |

Bhachataray
Reviewed by

(Mr. Bijaya Kumar Chahataray)

Pradeep Mohapatra
Authorized Signatory

(Mr. Pradeep Mohapatra)

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TEST REPORT

Report No. : WCS231115E Issue Date : 27.11.2023
NABL ULR No. : TC1122523000000196F
Name of the Client : National Aluminium Company Limited
Address : Smelter & Power (S&P) Complex
Angul-759145, Odisha
Sampling Location : Gopiballavpur Village, Dug Well (Buffer Zone)
Sample Description : Ground Water Date of Sampling : 04.11.2023
Sampling Plan & Method : WCS/QSP/SAMP (WATER) Date of Receiving : 06.11.2023
Environmental Condition : Temperature 29 °C, Clear Sample ID No : WCS1123W02E
Weather :
Sample Collected by : WCS Laboratory Quantity of Sample : 1 Ltr
Date of Testing : 06.11.2023 to 17.11.2023 Sample Condition : Good

| Sl. No. | Parameter | Unit | Result | Requirement as per IS 10500:2012 Reaffirmed 2018 | Test Methods |
|---------|---------------------------------------|------------|-----------|--|---|
| 1 | Colour | Hazen | 4 | Max, 5 | IS 3025 (Part-4): 2021 |
| 2 | Odour | -- | Agreeable | Agreeable | IS 3025 (Part-5): 2018 |
| 3 | pH Value | -- | 7.703 | 6.5-8.5 | IS 3025 (Part-11): 2022 |
| 4 | Taste Threshold | -- | Agreeable | Agreeable | IS 3025 (Part-7): 2017 |
| 5 | Turbidity | NTU | 0.4 | 1 | IS 3025 (Part-10): 1984 RA 2017 |
| 6 | Total Dissolved Solid as TDS | mg/l | 376 | 500 | IS 3025 (Part-16): 1984 RA 2017 |
| 7 | Ammonia as Total ammonia-N | mg/l | 0.16 | 0.5 | IS 3025 (Part-34): 1988 RA 2019 |
| 8 | Chloride as Cl | mg/l | 55.98 | 250 | IS 3025(Part-32): 1988 RA 2019 |
| 9 | Fluoride as F | mg/l | < 0.02 | 1.0 | APHA 23 rd Ed. (4500-F-D): 2017 |
| 10 | Iron as Fe | mg/l | 0.24 | 1.0 | IS 3025 (Part -53): 2003 RA 2019 |
| 11 | Total Hardness as CaCO ₃ | mg/l | 96 | 200 | IS 3025 (Part-21): 2009 RA 2019 |
| 12 | Calcium as Ca | mg/l | 19.24 | 75 | IS 3025 (Part-40): 1991 RA 2019 |
| 13 | Magnesium as Mg | mg/l | 11.66 | 30 | APHA 23 rd Ed. (3500-Mg-B): 2017 |
| 14 | Nitrate as NO ₃ | mg/l | 0.42 | 45 | APHA 23 rd Ed. (4500-NO ₃ -B): 2017 |
| 15 | Sulphate as SO ₄ | mg/l | 4.31 | 200 | IS 3025 (Part-24 Sec 1):2022 |
| 16 | Total Alkalinity as CaCO ₃ | mg/l | 295 | 200 | IS 3025 (Part-23): 1986 RA 2019 |
| 17 | Total Chromium as Cr | mg/l | < 0.02 | 0.05 | IS 3025 (Part-52) : 2003 RA 2019 |
| 18 | Potassium as K | mg/l | 4.6 | -- | IS 3025 (Part-45): 1993 RA 2019 |
| 19 | Sodium as Na | mg/l | 71 | -- | IS 3025 (Part-45) : 1993 RA 2019 |
| 20 | Total Suspended Solid as TSS | mg/l | <5 | -- | IS 3025 (Part-17): 2022 |
| 21 | E.Coli | MPN/100 ml | < 1 | Shall not be detectable in any 100 ml sample | IS 1622 : 1981 RA 2019 |
| 22 | Faecal Coliform | MPN/100 ml | < 1 | -- | IS 1622 : 1981 RA 2019 |
| 23 | Total Coliform | MPN/100 ml | < 1 | Shall not be detectable in any 100 ml sample | IS 1622 : 1981 RA 2019 |

Reviewed by
(Mr. Bijaya Kumar Chahataray)

Authorized Signatory for Microbiology
(Miss. Laxmi Sahoo)

Authorized Signatory for Chemical
(Mr. Pradeep Mohapatra)

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WCS/LQR/60

TEST REPORT

Report No. : WCS231115E Issue Date : 27.11.2023
Name of the Client : National Aluminium Company Limited
Address : Smelter & Power (S&P) Complex
Angul-759145, Odisha
Sampling Location : Gopiballavpur Village, Dug Well (Buffer Zone)
Sample Description : Ground Water Date of Sampling : 04.11.2023
Sampling Plan & Method : WCS/QSP/SAMP (WATER) Date of Receiving : 06.11.2023
Environmental Condition : Temperature 29 °C, Clear Weather Sample ID No : WCS1123W02E
Sample Collected by : WCS Laboratory Quantity of Sample : 1 Ltr
Date of Testing : 06.11.2023 to 17.11.2023 Sample Condition : Good

| Sl. No. | Parameter | Unit | Result | Requirement as per IS 10500:2012 Reaffirmed 2018 | Test Methods |
|---------|--|------|---------|--|---|
| 24 | Aluminium as Al | mg/l | <0.02 | 0.03 | IS 3025 (Part 55): 2003 RA 2019 |
| 25 | Anionic detergents as MBAS | mg/l | <0.02 | 0.2 | Annex K of IS 13428 |
| 26 | Barium as Ba | mg/l | <0.1 | 0.7 | Annex F of IS 13428* or IS 15302 |
| 27 | Boron as B | mg/l | <0.1 | 0.5 | IS 3025 (Part 57):2021 |
| 28 | Chloramines as Cl ₂ | mg/l | <0.02 | 4.0 | IS 3025 (Part 26): 2021* or APHA 4500-Cl G |
| 29 | Copper as Cu | mg/l | <0.01 | 0.05 | IS 3025 (Part 42):1992 RA 2019 |
| 30 | Manganese as Mn | mg/l | <0.05 | 0.1 | IS 3025 (Part 59):2006 RA 2017 |
| 31 | Mineral oil | mg/l | <0.5 | 1.0 | Clause 6 of IS 3025 (Part 39):2021 |
| 32 | Phenolic compounds as C ₆ H ₅ OH | mg/l | <0.001 | 0.001 | IS 3025 (Part 43): 1992 RA 2019 |
| 33 | Selenium as Se | mg/l | <0.001 | 0.01 | IS 3025 (Part 56):2003 RA 2019 or IS 15303* |
| 34 | Silver as Ag | mg/l | <0.02 | 0.1 | Annex J of IS 13428 |
| 35 | Sulphide as H ₂ S | mg/l | <0.05 | 0.05 | IS 3025 (Part 29):1986 RA 2019 |
| 36 | Zinc as Zn | mg/l | <0.05 | 5 | IS 3025 (Part 49): 1994 RA 2019 |
| 37 | Cadmium as Cd | mg/l | <0.001 | 0.003 | IS 3025 (Part 41):1992 RA 2019 |
| 38 | Cyanide as CN | mg/l | <0.01 | 0.05 | IS 3025 (Part 27):1986 RAA 2019 |
| 39 | Lead as Pb | mg/l | <0.001 | 0.01 | IS 3025 (Part 47):1994 RA 2019 |
| 40 | Mercury as Hg | mg/l | <0.001 | 0.001 | IS 3025 (Part 48):1994 RA 2019 |
| 41 | Molybdenum as Mo | mg/l | <0.02 | 0.07 | IS 3025 (Part 2) |
| 42 | Nickel as Ni | mg/l | <0.01 | 0.02 | IS 3025 (Part 54): 2003 RA 2019 |
| 43 | Polynuclear aromatic hydrocarbons as PAH | mg/l | <0.0001 | 0.0001 | APHA 6440 |
| 44 | Total arsenic as As | mg/l | <0.001 | 0.01 | IS 3025 (Part 37):2022 |

Chahataray
Reviewed by
(Mr. Bijaya Kumar Chahataray)

Pradeep Mohapatra
Authorized Signatory
(Mr. Pradeep Mohapatra)

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TEST REPORT

Report No. : WCS231115F Issue Date : 27.11.2023
NABL ULR No. : TC112252300000196F
Name of the Client : National Aluminium Company Limited
Address : Smelter & Power (S&P) Complex
Angul-759145, Odisha
Sampling Location : Kosala Village, Dug Well (Buffer Zone)
Sample Description : Ground Water Date of Sampling : 04.11.2023
Sampling Plan & Method : WCS/QSP/SAMP (WATER) Date of Receiving : 06.11.2023
Environmental Condition : Temperature 29 °C, Clear Sample ID No : WCS1123W02F
Weather :
Sample Collected by : WCS Laboratory Quantity of Sample : 1 Ltr
Date of Testing : 06.11.2023 to 17.11.2023 Sample Condition : Good

| Sl. No. | Parameter | Unit | Result | Requirement as per IS 10500:2012 Reaffirmed 2018 | Test Methods |
|---------|---------------------------------------|------------|-----------|--|---|
| 1 | Colour | Hazen | 1 | Max, 5 | IS 3025 (Part-4): 2021 |
| 2 | Odour | -- | Agreeable | Agreeable | IS 3025 (Part-5): 2018 |
| 3 | pH Value | -- | 6.824 | 6.5-8.5 | IS 3025 (Part-11): 2022 |
| 4 | Taste Threshold | -- | Agreeable | Agreeable | IS 3025 (Part-7): 2017 |
| 5 | Turbidity | NTU | 0.1 | 1 | IS 3025 (Part-10): 1984 RA 2017 |
| 6 | Total Dissolved Solid as TDS | mg/l | 320 | 500 | IS 3025 (Part-16): 1984 RA 2017 |
| 7 | Ammonia as Total ammonia-N | mg/l | 0.07 | 0.5 | IS 3025 (Part-34): 1988 RA 2019 |
| 8 | Chloride as Cl | mg/l | 47.49 | 250 | IS 3025(Part-32): 1988 RA 2019 |
| 9 | Fluoride as F | mg/l | <0.02 | 1.0 | APHA 23 rd Ed. (4500-F-D): 2017 |
| 10 | Iron as Fe | mg/l | 0.053 | 1.0 | IS 3025 (Part-53): 2003 RA 2019 |
| 11 | Total Hardness as CaCO ₃ | mg/l | 48 | 200 | IS 3025 (Part-21): 2009 RA 2019 |
| 12 | Calcium as Ca | mg/l | 16.83 | 75 | IS 3025 (Part-40): 1991 RA 2019 |
| 13 | Magnesium as Mg | mg/l | 1.46 | 30 | APHA 23 rd Ed. (3500-Mg-B): 2017 |
| 14 | Nitrate as NO ₃ | mg/l | 5.61 | 45 | APHA 23 rd Ed. (4500-NO ₃ -B): 2017 |
| 15 | Sulphate as SO ₄ | mg/l | 2.8 | 200 | IS 3025 (Part-24 Sec 1): 2022 |
| 16 | Total Alkalinity as CaCO ₃ | mg/l | 65 | 200 | IS 3025 (Part-23): 1986 RA 2019 |
| 17 | Total Chromium as Cr | mg/l | <0.02 | 0.05 | IS 3025 (Part-52): 2003 RA 2019 |
| 18 | Potassium as K | mg/l | 4.7 | -- | IS 3025 (Part-45): 1993 RA 2019 |
| 19 | Sodium as Na | mg/l | 6.9 | -- | IS 3025 (Part-45): 1993 RA 2019 |
| 20 | Total Suspended Solid as TSS | mg/l | <5 | -- | IS 3025 (Part-17): 2022 |
| 21 | E.Coli | MPN/100 ml | <1 | Shall not be detectable in any 100 ml sample | IS 1622 : 1981 RA 2019 |
| 22 | Faecal Coliform | MPN/100 ml | <1 | -- | IS 1622 : 1981 RA 2019 |
| 23 | Total Coliform | MPN/100 ml | <1 | Shall not be detectable in any 100 ml sample | IS 1622 : 1981 RA 2019 |

Reviewed by
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(Miss. Laxmi Sahoo)

Authorized Signatory for Chemical
(Mr. Pradeep Mohapatra)

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TEST REPORT

Report No. : WCS231115F Issue Date : 27.11.2023
Name of the Client : National Aluminium Company Limited
Address : Smelter & Power (S&P) Complex
Angul-759145, Odisha
Sampling Location : Kosala Village, Dug Well (Buffer Zone)
Sample Description : Ground Water Date of Sampling : 04.11.2023
Sampling Plan & Method : WCS/QSP/SAMP (WATER) Date of Receiving : 06.11.2023
Environmental Condition : Temperature 29 °C, Clear Weather Sample ID No : WCS1123W02F
Sample Collected by : WCS Laboratory Quantity of Sample : 1 Ltr
Date of Testing : 06.11.2023 to 17.11.2023 Sample Condition : Good

| Sl. No. | Parameter | Unit | Result | Requirement as per IS 10500:2012 Reaffirmed 2018 | Test Methods |
|---------|--|------|---------|--|---|
| 24 | Aluminium as Al | mg/l | <0.02 | 0.03 | IS 3025 (Part 55): 2003 RA 2019 |
| 25 | Anionic detergents as MBAS | mg/l | <0.02 | 0.2 | Annex K of IS 13428 |
| 26 | Barium as Ba | mg/l | <0.1 | 0.7 | Annex F of IS 13428* or IS 15302 |
| 27 | Boron as B | mg/l | <0.1 | 0.5 | IS 3025 (Part 57):2021 |
| 28 | Chloramines as Cl ₂ | mg/l | <0.02 | 4.0 | IS 3025 (Part 26): 2021* or APHA 4500-Cl G |
| 29 | Copper as Cu | mg/l | <0.01 | 0.05 | IS 3025 (Part 42):1992 RA 2019 |
| 30 | Manganese as Mn | mg/l | <0.05 | 0.1 | IS 3025 (Part 59):2006 RA 2017 |
| 31 | Mineral oil | mg/l | <0.5 | 1.0 | Clause 6 of IS 3025 (Part 39):2021 |
| 32 | Phenolic compounds as C ₆ H ₅ OH | mg/l | <0.001 | 0.001 | IS 3025 (Part 43): 1992 RA 2019 |
| 33 | Selenium as Se | mg/l | <0.001 | 0.01 | IS 3025 (Part 56):2003 RA 2019 or IS 15303* |
| 34 | Silver as Ag | mg/l | <0.02 | 0.1 | Annex J of IS 13428 |
| 35 | Sulphide as H ₂ S | mg/l | <0.05 | 0.05 | IS 3025 (Part 29):1986 RA 2019 |
| 36 | Zinc as Zn | mg/l | <0.05 | 5 | IS 3025 (Part 49):1994 RA 2019 |
| 37 | Cadmium as Cd | mg/l | <0.001 | 0.003 | IS 3025 (Part 41):1992 RA 2019 |
| 38 | Cyanide as CN | mg/l | <0.01 | 0.05 | IS 3025 (Part 27):1986 RAA 2019 |
| 39 | Lead as Pb | mg/l | <0.001 | 0.01 | IS 3025 (Part 47):1994 RA 2019 |
| 40 | Mercury as Hg | mg/l | <0.001 | 0.001 | IS 3025 (Part 48):1994 RA 2019 |
| 41 | Molybdenum as Mo | mg/l | <0.02 | 0.07 | IS 3025 (Part 2) |
| 42 | Nickel as Ni | mg/l | <0.01 | 0.02 | IS 3025 (Part 54): 2003 RA 2019 |
| 43 | Polynuclear aromatic hydrocarbons as PAH | mg/l | <0.0001 | 0.0001 | APHA 6440 |
| 44 | Total arsenic as As | mg/l | <0.001 | 0.01 | IS 3025 (Part 37):2022 |


Reviewed by
(Mr. Bijaya Kumar Chahataray)


Authorized Signatory
(Mr. Pradeep Mohapatra)

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TEST REPORT

Report No. : WCS231114A Issue Date : 27.11.2023
NABL ULR No. : TC1122523000000195F
Name of the Client : National Aluminium Company Limited
Address : Smelter & Power (S&P) Complex
Angul-759145, Odisha
Sampling Location : Mines Discharge Water (Core Zone)
Sample Description : Surface Water Date of Sampling : 04.11.2023
Sampling Plan & Method : WCS/QSP/SAMP (WATER) Date of Receiving : 06.11.2023
Environmental Condition : Temperature 29 °C, Clear Weather Sample ID No : WCS1123W01A
Sample Collected by : WCS Laboratory Quantity of Sample : 1 Ltr
Date of Testing : 06.11.2023 to 17.11.2023 Sample Condition : Good

| Sl. No. | Parameter | Unit | Result | Permissible Limit as per Consent Order No-5059/IND-I-CON-6762 Dt:28.03.2023 | Test Methods |
|---------|---------------------------------------|-------|--------|---|--|
| 1 | pH Value | -- | 6.85 | 5.5-9.0 | IS 3025 (Part-11): 2022 |
| 2 | Total suspended Solid | mg/l | 18 | 100 | IS 3025(Part-17):1984 RA 2012 |
| 3 | Oil & Grease | mg/l | <4 | 10 | APHA 23rd Ed. (5520-B): 2017 |
| 4 | Biochemical Oxygen Demand as BOD | mg/l | 3 | -- | IS 3025 (Part-44): 1993 |
| 5 | Chemical Oxygen Demand as COD | mg/l | 8 | 250 | APHA 23rd Ed. (5220-D): 2017 |
| 6 | Colour | Hazen | 20 | -- | IS 3025 (Part-4): 2021 |
| 7 | Specific Conductivity | µs/cm | 462.5 | -- | IS 3025 (Part-14): 2013 |
| 8 | Turbidity | NTU | 85.2 | -- | IS 3025 (Part-10): 1984 RA 2017 |
| 9 | Dissolve Oxygen as DO | mg/l | 6 | -- | IS 3025 (Part-38): 1989 |
| 10 | Total Hardness as CaCO ₃ | mg/l | 86 | -- | APHA 23 rd Ed. (2340-C): 2017 |
| 11 | Chloride as Cl | mg/l | 44.99 | -- | IS 3025 (Part-32): 1988 |
| 12 | Sulphate as SO ₄ | mg/l | 68.1 | -- | IS 3025 (Part-24, Sec-1): 2022 |
| 13 | Nitrate as NO ₃ | mg/l | 1.44 | -- | APHA 23 rd Ed. (4500-NO ₃ -B): 2017 |
| 14 | Calcium as Ca | mg/l | 16.03 | -- | APHA 23rd Ed. (3500-Ca-B): 2017 |
| 15 | Magnesium as Mg | mg/l | 11.18 | -- | APHA 23 rd Ed. (3500-Mg-B): 2017 |
| 16 | Total Dissolved Solid as TDS | mg/l | 270 | -- | IS 3025 (Part-16): 1984 |
| 17 | Total Alkalinity as CaCO ₃ | mg/l | 135 | -- | IS 3025 (Part-23): 1986 RA 2019 |
| 18 | Potassium as K | mg/l | 22.4 | -- | IS 3025 (Part-45): 1993 RA 2019 |
| 19 | Sodium as Na | mg/l | 38.1 | -- | IS 3025 (Part-45) : 1993 RA 2019 |

Bhahataray
Reviewed by

(Mr. Bijaya Kumar Chahataray)

Pradeept Mohapatra
Authorized Signatory

(Mr. Pradeept Mohapatra)



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TEST REPORT

Report No. : WCS231114B Issue Date : 27.11.2023
NABL ULR No. : TC1122523000000195F
Name of the Client : National Aluminium Company Limited
Address : Smelter & Power (S&P) Complex
Angul-759145, Odisha
Sampling Location : Seepage Water (Core Zone)
Sample Description : Surface Water Date of Sampling : 04.11.2023
Sampling Plan & Method : WCS/QSP/SAMP (WATER) Date of Receiving : 06.11.2023
Environmental Condition : Temperature 29 °C, Clear Weather Sample ID No : WCS1123W01B
Sample Collected by : WCS Laboratory Quantity of Sample : 1 Ltr
Date of Testing : 06.11.2023 to 17.11.2023 Sample Condition : Good

| Sl. No. | Parameter | Unit | Result | Permissible Limit as per Consent Order No-5059/IND-I-CON-6762 Dt:28.03.2023 | Test Methods |
|---------|---------------------------------------|-------|--------|---|--|
| 1 | pH Value | -- | 6.91 | 5.5-9.0 | IS 3025 (Part-11): 2022 |
| 2 | Total suspended Solid | mg/l | 20 | 100 | IS 3025(Part-17):1984 RA 2012 |
| 3 | Oil & Grease | mg/l | <4 | 10 | APHA 23 rd Ed. (5520-B): 2017 |
| 4 | Biochemical Oxygen Demand as BOD | mg/l | <2 | -- | IS 3025 (Part-44): 1993 |
| 5 | Chemical Oxygen Demand as COD | mg/l | 4 | 250 | APHA 23 rd Ed. (5220-D): 2017 |
| 6 | Colour | Hazen | 15 | -- | IS 3025 (Part-4): 2021 |
| 7 | Specific Conductivity | µs/cm | 442.3 | -- | IS 3025 (Part-14): 2013 |
| 8 | Turbidity | NTU | 54.6 | -- | IS 3025 (Part-10): 1984 RA 2017 |
| 9 | Dissolve Oxygen as DO | mg/l | 5.4 | -- | IS 3025 (Part-38): 1989 |
| 10 | Total Hardness as CaCO ₃ | mg/l | 82 | -- | APHA 23 rd Ed. (2340-C): 2017 |
| 11 | Chloride as Cl | mg/l | 50.98 | -- | IS 3025 (Part-32): 1988 |
| 12 | Sulphate as SO ₄ | mg/l | 41.7 | -- | IS 3025 (Part-24, Sec-1): 2022 |
| 13 | Nitrate as NO ₃ | mg/l | <1 | -- | APHA 23 rd Ed. (4500-NO ₃ -B): 2017 |
| 14 | Calcium as Ca | mg/l | 20.84 | -- | APHA 23 rd Ed. (3500-Ca-B): 2017 |
| 15 | Magnesium as Mg | mg/l | 7.29 | -- | APHA 23 rd Ed. (3500-Mg-B): 2017 |
| 16 | Total Dissolved Solid as TDS | mg/l | 262 | -- | IS 3025 (Part-16): 1984 |
| 17 | Total Alkalinity as CaCO ₃ | mg/l | 160 | -- | IS 3025 (Part-23): 1986 RA 2019 |
| 18 | Potassium as K | mg/l | 5 | -- | IS 3025 (Part-45): 1993 RA 2019 |
| 19 | Sodium as Na | mg/l | 4.2 | -- | IS 3025 (Part-45): 1993 RA 2019 |

Bhahataray
Reviewed by

(Mr. Bijaya Kumar Chahataray)

P. Pradeept
Authorized Signatory
(Mr. Pradeept Mohapatra)



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TEST REPORT

Report No. : WCSL231103 Issue Date : 08.11.2023
Name of the Client : National Aluminium Company Limited
Address : Smelter & Power (S&P) Complex
Angul-759145, Odisha
Month of Monitoring : November- 2023
Sample Description : Ground Water Level
Sampling Plan & Method : WCS/QSP/SAMP (WATER LEVEL) Date of Receiving : 06.11.2023
Environmental Condition : Clear Weather
Sample Collected by : WCS Laboratory

| Sample ID No. | Location | Date | Ground water Level |
|---------------|--|------------|--------------------|
| WCS1123WL01 | Raijharana (Dug Well) (Buffer Zone) | 04.11.2023 | 0.5 meter |
| WCS1123WL02 | Kosala (Dug Well) (Buffer Zone) | 04.11.2023 | 1.60 meter |
| WCS1123WL03 | Gopiballavpur Village (Dug Well) (Buffer Zone) | 04.11.2023 | 1.73 meter |
| WCS1123WL04 | Dhobamalya Village (Dug Well) (Buffer Zone) | 04.11.2023 | 2.7 meter |
| WCS1123WL05 | Colony Area Bore Well No-MAPM_T6 (Buffer Zone) | 04.11.2023 | 3.38 meter |
| WCS1123WL06 | Colony Area Bore Well No-MAPM_T7 (Buffer Zone) | 04.11.2023 | 2.26 meter |


Reviewed by

(Mr. Bijaya Kumar Chahataray)


Authorized Signatory
(Mr. Pradeept Mohapatra)

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**ENVIRONMENTAL MONITORING REPORT
FOR THE MONTH OF DECEMBER-2023**



NATIONAL ALUMINIUM COMPANY LIMITED
Coal Mine Division
Angul-759145, Odisha



My World Consultancy Services Private Limited

Plot No. 766, Telengapentha,
Cuttack, Odisha 754001

WCS/LQR/57

TEST REPORT

| | | | |
|-------------------------|--|--------------------|---------------|
| Report No. | : WCS231213A | Issue Date | : 13.12.2023 |
| NABL ULR No. | : TC1122523000000230F | | |
| Name of the Client | : National Aluminium Company Limited | | |
| Address | : Coal Mine Division Angul-759145, Odisha | | |
| Sampling Location | : Gopiballavpur Village | | |
| Sample Description | : Ambient Air Quality Monitoring | Date of Sampling | : 08.12.2023 |
| Sampling Plan & Method | : WCS/QSP/SAMP (AIR) | Sample ID No | : WCS1223A01A |
| Environmental Condition | : Clear weather | Date of Receiving | : 11.12.2023 |
| Sample Collected by | : WCS Laboratory | Quantity of Sample | : 1 No. |
| Date of Testing | : 11.12.2023 to 13.12.2023 | Sample Condition | : Good |

| Parameter | Unit | Result | Standard | Test Method |
|---|-------------------|--------|-----------------------------|-----------------------------------|
| Respirable Suspended Particulate Matter (PM ₁₀) | µg/m ³ | 55.2 | 100 (As per NAAQ 2009) | IS-5182 (Part-23) 2006 RA 2017 |
| Fine Particulate Matter (PM _{2.5}) | µg/m ³ | 33.2 | 60 (As per NAAQ 2009) | IS-5182 (Part-24) 2019 |
| Sulphur Dioxide (SO ₂) | µg/m ³ | 5.8 | 80 (As per NAAQ 2009) | IS-5182 (Part-2) 2001 RA 2017 |
| Nitrogen Oxides (NO ₂) | µg/m ³ | 16.4 | 80 (As per NAAQ 2009) | IS-5182 (Part-6) 2006 RA 2017 |
| Suspended Particulate Matter (SPM) | µg/m ³ | 122.5 | 500 (As per CTO No-2938) | IS-5182 (Part-4) 1999 RA 2019 |


Reviewed by
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Authorized Signatory
(Mr. Pradeept Mohapatra)

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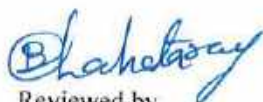


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TEST REPORT

Report No. : WCS231213B Issue Date : 13.12.2023
NABL ULR No. : TC1122523000000230F
Name of the Client : National Aluminium Company Limited
Address : Coal Mine Division
Angul-759145, Odisha
Sampling Location : Colony Area
Sample Description : Ambient Air Quality Monitoring Date of Sampling : 08.12.2023
Sampling Plan & Method : WCS/QSP/SAMP (AIR) Sample ID No : WCS1223A01B
Environmental Condition : Clear weather Date of Receiving : 11.12.2023
Sample Collected by : WCS Laboratory Quantity of Sample : 1 No.
Date of Testing : 11.12.2023 to 13.12.2023 Sample Condition : Good

| Parameter | Unit | Result | Standard | Test Method |
|---|-------------------|--------|-----------------------------|-----------------------------------|
| Respirable Suspended Particulate Matter (PM ₁₀) | µg/m ³ | 63.5 | 100 (As per NAAQ 2009) | IS-5182 (Part-23) 2006 RA 2017 |
| Fine Particulate Matter (PM _{2.5}) | µg/m ³ | 35.2 | 60 (As per NAAQ 2009) | IS-5182 (Part-24) 2019 |
| Sulphur Dioxide (SO ₂) | µg/m ³ | 5.2 | 80 (As per NAAQ 2009) | IS-5182 (Part-2) 2001 RA 2017 |
| Nitrogen Oxides (NO ₂) | µg/m ³ | 17.6 | 80 (As per NAAQ 2009) | IS-5182 (Part-6) 2006 RA 2017 |
| Suspended Particulate Matter (SPM) | µg/m ³ | 148.9 | 500 (As per CTO No-2938) | IS-5182 (Part-4) 1999 RA 2019 |



Reviewed by
(Mr. Bijaya Kumar Chahataray)



Authorized Signatory
(Mr. Pradeept Mohapatra)

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WCS/LQR/57

TEST REPORT

| | | | |
|-------------------------|--|--------------------|---------------|
| Report No. | : WCS231213C | Issue Date | : 13.12.2023 |
| NABL ULR No. | : TC1122523000000230F | | |
| Name of the Client | : National Aluminium Company Limited | | |
| Address | : Coal Mine Division Angul-759145, Odisha | | |
| Sampling Location | : Near Weigh Bridge | | |
| Sample Description | : Ambient Air Quality Monitoring | Date of Sampling | : 08.12.2023 |
| Sampling Plan & Method | : WCS/QSP/SAMP (AIR) | Sample ID No | : WCS1223A01C |
| Environmental Condition | : Clear weather | Date of Receiving | : 11.12.2023 |
| Sample Collected by | : WCS Laboratory | Quantity of Sample | : 1 No. |
| Date of Testing | : 11.12.2023 to 13.12.2023 | Sample Condition | : Good |

| Parameter | Unit | Result | Standard | Test Method |
|---|-------------------|--------|-----------------------------|-----------------------------------|
| Respirable Suspended Particulate Matter (PM ₁₀) | µg/m ³ | 70.8 | 100 (As per NAAQ 2009) | IS-5182 (Part-23) 2006 RA 2017 |
| Fine Particulate Matter (PM _{2.5}) | µg/m ³ | 42.8 | 60 (As per NAAQ 2009) | IS-5182 (Part-24) 2019 |
| Sulphur Dioxide (SO ₂) | µg/m ³ | 5.6 | 80 (As per NAAQ 2009) | IS-5182 (Part-2) 2001 RA 2017 |
| Nitrogen Oxides (NO ₂) | µg/m ³ | 17.8 | 80 (As per NAAQ 2009) | IS-5182 (Part-6) 2006 RA 2017 |
| Suspended Particulate Matter (SPM) | µg/m ³ | 216 | 500 (As per CTO No-2938) | IS-5182 (Part-4) 1999 RA 2019 |

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TEST REPORT

Report No. : WCS231213D Issue Date : 13.12.2023
NABL ULR No. : TC1122523000000230F
Name of the Client : National Aluminium Company Limited
Address : Coal Mine Division
Angul-759145, Odisha
Sampling Location : Near Settling Pond
Sample Description : Ambient Air Quality Monitoring Date of Sampling : 08.12.2023
Sampling Plan & Method : WCS/QSP/SAMP (AIR) Sample ID No : WCS1223A01D
Environmental Condition : Clear weather Date of Receiving : 11.12.2023
Sample Collected by : WCS Laboratory Quantity of Sample : 1 No.
Date of Testing : 11.12.2023 to 13.12.2023 Sample Condition : Good

| Parameter | Unit | Result | Standard | Test Method |
|---|-------------------|--------|-----------------------------|-----------------------------------|
| Respirable Suspended Particulate Matter (PM ₁₀) | µg/m ³ | 64 | 100 (As per NAAQ 2009) | IS-5182 (Part-23) 2006 RA 2017 |
| Fine Particulate Matter (PM _{2.5}) | µg/m ³ | 41.5 | 60 (As per NAAQ 2009) | IS-5182 (Part-24) 2019 |
| Sulphur Dioxide (SO ₂) | µg/m ³ | 6 | 80 (As per NAAQ 2009) | IS-5182 (Part-2) 2001 RA 2017 |
| Nitrogen Oxides (NO ₂) | µg/m ³ | 18.6 | 80 (As per NAAQ 2009) | IS-5182 (Part-6) 2006 RA 2017 |
| Suspended Particulate Matter (SPM) | µg/m ³ | 151.4 | 500 (As per CTO No-2938) | IS-5182 (Part-4) 1999 RA 2019 |

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Reviewed by

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Pradeep Mohapatra
Authorized Signatory

(Mr. Pradeept Mohapatra)

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TEST REPORT

| | | | |
|-------------------------|---|--------------------|---------------|
| Report No. | : WCS231217A | Issue Date | : 26.12.2023 |
| NABL ULR No. | : TC1122523000000235F | | |
| Name of the Client | : National Aluminium Company Limited | | |
| Address | : Smelter & Power (S&P) Complex Angul-759145, Odisha | | |
| Sampling Location | : Gopiballavpur Village (Buffer Zone) | | |
| Sample Description | : Ambient Air Quality Monitoring | Date of Sampling | : 22.12.2023 |
| Sampling Plan & Method | : WCS/QSP/SAMP (AIR) | Sample ID No | : WCS1223A02A |
| Environmental Condition | : Clear Weather | Date of Receiving | : 25.12.2023 |
| Sample Collected by | : WCS Laboratory | Quantity of Sample | : 1 No. |
| Date of Testing | : 25.12.2023 to 26.12.2023 | Sample Condition | : Good |

| Parameter | Unit | Result | Standard | Test Method |
|---|-------------------|--------|-----------------------------|-----------------------------------|
| Respirable Suspended Particulate Matter (PM ₁₀) | µg/m ³ | 54.0 | 100 (As per NAAQ 2009) | IS-5182 (Part-23) 2006 RA 2017 |
| Fine Particulate Matter (PM _{2.5}) | µg/m ³ | 32.7 | 60 (As per NAAQ 2009) | IS-5182 (Part-24) 2019 |
| Sulphur Dioxide (SO ₂) | µg/m ³ | 6.0 | 80 (As per NAAQ 2009) | IS-5182 (Part-2) 2001 RA 2017 |
| Nitrogen Oxides (NO ₂) | µg/m ³ | 18.2 | 80 (As per NAAQ 2009) | IS-5182 (Part-6) 2006 RA 2017 |
| Suspended Particulate Matter (SPM) | µg/m ³ | 125.2 | 500 (As per CTO No-2938) | IS-5182 (Part-4) 1999 RA 2019 |


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(Mr. Pradeep Mohapatra)

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TEST REPORT

TC-11225

Report No. : WCS231217B Issue Date : 26.12.2023
NABL ULR No. : TC1122523000000235F
Name of the Client : **National Aluminium Company Limited**
Address : Smelter & Power (S&P) Complex
Angul-759145, Odisha
Sampling Location : **Colony Area (Buffer Zone)**
Sample Description : Ambient Air Quality Monitoring Date of Sampling : 22.12.2023
Sampling Plan & Method : WCS/QSP/SAMP (AIR) Sample ID No : WCS1223A02B
Environmental Condition : Clear Weather Date of Receiving : 25.12.2023
Sample Collected by : WCS Laboratory Quantity of Sample : 1 No.
Date of Testing : 25.12.2023 to 26.12.2023 Sample Condition : Good

| Parameter | Unit | Result | Standard | Test Method |
|---|-------------------|--------|-----------------------------|-----------------------------------|
| Respirable Suspended Particulate Matter (PM ₁₀) | µg/m ³ | 64.2 | 100 (As per NAAQ 2009) | IS-5182 (Part-23) 2006 RA 2017 |
| Fine Particulate Matter (PM _{2.5}) | µg/m ³ | 36.8 | 60 (As per NAAQ 2009) | IS-5182 (Part-24) 2019 |
| Sulphur Dioxide (SO ₂) | µg/m ³ | 5.4 | 80 (As per NAAQ 2009) | IS-5182 (Part-2) 2001 RA 2017 |
| Nitrogen Oxides (NO ₂) | µg/m ³ | 18.0 | 80 (As per NAAQ 2009) | IS-5182 (Part-6) 2006 RA 2017 |
| Suspended Particulate Matter (SPM) | µg/m ³ | 151.7 | 500 (As per CTO No-2938) | IS-5182 (Part-4) 1999 RA 2019 |

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(Mr. Bijaya Kumar Chahataray)

Pradeep Mohapatra
Authorized Signatory
(Mr. Pradeep Mohapatra)

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TEST REPORT

| | | | |
|-------------------------|---|--------------------|---------------|
| Report No. | : WCS231217C | Issue Date | : 26.12.2023 |
| NABL ULR No. | : TC1122523000000235F | | |
| Name of the Client | : National Aluminium Company Limited | | |
| Address | : Smelter & Power (S&P) Complex Angul-759145, Odisha | | |
| Sampling Location | : Near Weigh Bridge (Core Zone) | | |
| Sample Description | : Ambient Air Quality Monitoring | Date of Sampling | : 22.12.2023 |
| Sampling Plan & Method | : WCS/QSP/SAMP (AIR) | Sample ID No | : WCS1223A02C |
| Environmental Condition | : Clear Weather | Date of Receiving | : 25.12.2023 |
| Sample Collected by | : WCS Laboratory | Quantity of Sample | : 1 No. |
| Date of Testing | : 25.12.2023 to 26.12.2023 | Sample Condition | : Good |

| Parameter | Unit | Result | Standard | Test Method |
|---|-------------------|--------|-----------------------------|-----------------------------------|
| Respirable Suspended Particulate Matter (PM ₁₀) | µg/m ³ | 68.1 | 100 (As per NAAQ 2009) | IS-5182 (Part-23) 2006 RA 2017 |
| Fine Particulate Matter (PM _{2.5}) | µg/m ³ | 40.3 | 60 (As per NAAQ 2009) | IS-5182 (Part-24) 2019 |
| Sulphur Dioxide (SO ₂) | µg/m ³ | 5.6 | 80 (As per NAAQ 2009) | IS-5182 (Part-2) 2001 RA 2017 |
| Nitrogen Oxides (NO ₂) | µg/m ³ | 19.2 | 80 (As per NAAQ 2009) | IS-5182 (Part-6) 2006 RA 2017 |
| Suspended Particulate Matter (SPM) | µg/m ³ | 244.0 | 500 (As per CTO No-2938) | IS-5182 (Part-4) 1999 RA 2019 |

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Authorized Signatory
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TEST REPORT

TC-11225

| | | | |
|-------------------------|---|--------------------|---------------|
| Report No. | : WCS231217D | Issue Date | : 26.12.2023 |
| NABL ULR No. | : TC1122523000000235F | | |
| Name of the Client | : National Aluminium Company Limited | | |
| Address | : Smelter & Power (S&P) Complex Angul-759145, Odisha | | |
| Sampling Location | : Near Settling Pond (Core Zone) | | |
| Sample Description | : Ambient Air Quality Monitoring | Date of Sampling | : 22.12.2023 |
| Sampling Plan & Method | : WCS/QSP/SAMP (AIR) | Sample ID No | : WCS1223A02D |
| Environmental Condition | : Clear Weather | Date of Receiving | : 25.12.2023 |
| Sample Collected by | : WCS Laboratory | Quantity of Sample | : 1 No. |
| Date of Testing | : 25.12.2023 to 26.12.2023 | Sample Condition | : Good |

| Parameter | Unit | Result | Standard | Test Method |
|---|-------------------|--------|-----------------------------|-----------------------------------|
| Respirable Suspended Particulate Matter (PM ₁₀) | µg/m ³ | 62.2 | 100 (As per NAAQ 2009) | IS-5182 (Part-23) 2006 RA 2017 |
| Fine Particulate Matter (PM _{2.5}) | µg/m ³ | 41.5 | 60 (As per NAAQ 2009) | IS-5182 (Part-24) 2019 |
| Sulphur Dioxide (SO ₂) | µg/m ³ | 6.5 | 80 (As per NAAQ 2009) | IS-5182 (Part-2) 2001 RA 2017 |
| Nitrogen Oxides (NO ₂) | µg/m ³ | 18.6 | 80 (As per NAAQ 2009) | IS-5182 (Part-6) 2006 RA 2017 |
| Suspended Particulate Matter (SPM) | µg/m ³ | 164.3 | 500 (As per CTO No-2938) | IS-5182 (Part-4) 1999 RA 2019 |

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WCS/LQR/59

TEST REPORT

Report No. : WCS231212 Issue Date : 13.12.2023
NABL ULR No. : TC1122523000000229F
Name of the Client : National Aluminium Company Limited
Address : Coal Mine Division
Angul-759145, Odisha
Month of Sampling : December- 2023 Date of Receiving : 08.12.2023
Sample Description : Ambient Noise Quantity of Sample : 04
Sampling Plan & Method : WCS/QSP/SAMP (NOISE) Sample Condition : Good
Sample Collected by : WCS Laboratory Date of Analysis : 11.12.2023

| Sample ID No. | Location | Date of Monitoring | Day Time dB(A) Leq | Night Time dB(A) Leq | Environmental Condition |
|---------------|-----------------------|--------------------|--------------------|----------------------|-------------------------|
| WCS1223N01 | Gopiballavpur Village | 08.12.2023 | 52.6 | 39.8 | Clear Weather |
| WCS1223N02 | Near Settling Pond | 08.12.2023 | 63.8 | 40.8 | Clear Weather |
| WCS1223N03 | Near Town ship | 08.12.2023 | 63.0 | 41.1 | Clear Weather |
| WCS1223N04 | Near Weigh Bridge | 08.12.2023 | 64.2 | 67.5 | Clear Weather |
| Test Method | | IS 9989: 1981 | | | |

| Noise Standard in dB(A) Leq as per CPCB | | |
|---|---|---|
| Category of Area | Day Time dB(A) Leq (6.00 Am to 10.00 Pm) | Night Time dB(A) Leq (10.00 Pm to 6.00 Am) |
| Industrial Area | 75 | 70 |
| Commercial Area | 65 | 55 |
| Residential Area | 55 | 45 |
| Sensitive Area | 50 | 40 |

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Pradeept Mohapatra
Authorized Signatory

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WCS/LQR/59

TEST REPORT

Report No. : WCS231220 Issue Date : 26.12.2023
NABL ULR No. : TC1122523000000238F
Name of the Client : National Aluminium Company Limited
Address : Coal Mine Division
Angul-759145, Odisha
Month of Sampling : December- 2023 Date of Receiving : 25.12.2023
Sample Description : Ambient Noise Quantity of Sample : 04
Sampling Plan & Method : WCS/QSP/SAMP (NOISE) Sample Condition : Good
Sample Collected by : WCS Laboratory Date of Analysis : 25.12.2023

| Sample ID No. | Location | Date of Monitoring | Day Time dB(A) Leq | Night Time dB(A) Leq | Environmental Condition |
|---------------|-----------------------|--------------------|--------------------|----------------------|-------------------------|
| WCS1223N07A | Gopiballavpur Village | 22.12.2023 | 54.0 | 40.2 | Clear Weather |
| WCS1223N07B | Near Settling Pond | 22.12.2023 | 64.1 | 41.2 | Clear Weather |
| WCS1223N07C | Near Town ship | 22.12.2023 | 63.5 | 42.0 | Clear Weather |
| WCS1223N07D | Near Weigh Bridge | 22.12.2023 | 63.9 | 66.6 | Clear Weather |
| Test Method | | IS 9989: 1981 | | | |

| Noise Standard in dB(A) Leq as per CPCB | | |
|---|---|---|
| Category of Area | Day Time dB(A) Leq (6.00 Am to 10.00 Pm) | Night Time dB(A) Leq (10.00 Pm to 6.00 Am) |
| Industrial Area | 75 | 70 |
| Commercial Area | 65 | 55 |
| Residential Area | 55 | 45 |
| Sensitive Area | 50 | 40 |

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Pradeep Mohapatra

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WCS/LQR/57

TEST REPORT

Report No. : WCS231218 Issue Date : 26.12.2023
NABL ULR No. : TC1122523000000236F
Name of the Client : **National Aluminium Company Limited**
Address : Smelter & Power (S&P) Complex
Angul-759145, Odisha
Sample Description : Fugitive Emission (Core Zone)
Sampling Plan & Method : WCS/QSP/SAMP (AIR)
Environmental Condition : Clear Weather Date of Receiving : 25.12.2023
Sample Collected by : WCS Laboratory Quantity of Sample : 4 No.
Date of Testing : 26.12.2023 Sample Condition : Good

| Sl. No. | Sample ID No | Location | Date of Sampling | Suspended Particulate Matter (SPM) | Unit |
|-----------------------------|--------------|---------------|------------------|------------------------------------|-------------------|
| 1 | WCS1223A03A | Haul Road | 22.12.2023 | 282 | µg/m ³ |
| 2 | WCS1223A03B | OB Dump | 23.12.2023 | 190 | µg/m ³ |
| 3 | WCS1223A03C | Loading Point | 23.12.2023 | 340 | µg/m ³ |
| 4 | WCS1223A03D | Blasting Area | 22.12.2023 | 210 | µg/m ³ |
| Standard as per CTO No-2938 | | | | 500 | µg/m ³ |
| Test Method | | | | IS-5182 (Part-4) 1999 RA 2019 | |


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(Mr. Pradeept Mohapatra)

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WCS/LQR/99

TEST REPORT

TC-11225

Report No. : WCS231218A Issue Date : 26.12.2023
NABL ULR No. : TC1122523000000236F
Name of the Client : National Aluminium Company Limited
Address : Smelter & Power (S&P) Complex
Angul-759145, Odisha
Sample Description : Personal Sampling Analysis (Core Zone)
Sampling Plan & Method : WCS/QSP/SAMP (AIR)
Environmental Condition : Clear Weather Date of Receiving : 25.12.2023
Sample Collected : WCS Laboratory Quantity of Sample : 4 No.
Date of Testing : 26.12.2023 Sample Condition : Good

| SL No. | Sample ID No | Location | Date of Sampling | Respirable Particulate Matter (RPM) | Unit | Sample Collected Person |
|---|--------------|---------------|------------------|-------------------------------------|-------------------|-------------------------|
| 1 | WCS1223A03E | Haul Road | 22.12.2023 | 1.07 | mg/m ³ | Mr. Rames Chandra Jena |
| 2 | WCS1223A03F | OB Dump | 23.12.2023 | 0.60 | mg/m ³ | Mr. Ranjit Mandal |
| 3 | WCS1223A03G | Loading Point | 23.12.2023 | 0.94 | mg/m ³ | Mr. Markanda Nayk |
| 4 | WCS1223A03H | Blasting Area | 22.12.2023 | 0.81 | mg/m ³ | Mr. Sonu Panday |
| Permissible Limit as per DGMS (Tech.) (S&T) Circular No.01 Dhanbad, Dated 21 st January 2010 | | | | 3.0 | mg/m ³ | -- |
| Test Method | | | | NIOS-600-15th August, 1994 | | |


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ENVIRONMENTAL MONITORING REPORT FOR THE MONTH OF JANUARY-2024



NATIONAL ALUMINIUM COMPANY LIMITED
Coal Mine Division
Angul-759145, Odisha



My World Consultancy Services Private Limited


Plot No. 766, Telengapentha,
Cuttack, Odisha 754001

WCS/LQR/60

TEST REPORT

Report No. : WCSL240107A Issue Date : 22.01.2024
NABL ULR No. : TC1122524000000038F
Name of the Client : National Aluminium Company Limited
Address : Smelter & Power (S&P) Complex
Angul-759145, Odisha
Sampling Location : Mines Discharge Water (Core Zone)
Sample Description : Surface Water Date of Sampling : 16.01.2024
Sampling Plan & Method : WCS/QSP/SAMP (WATER) Date of Receiving : 17.01.2024
Environmental Condition : Temperature 29 °C, Clear Weather Sample ID No : WCS0124W07A
Sample Collected by : WCS Laboratory Quantity of Sample : 1 Ltr
Date of Testing : 17.01.2024 to 20.01.2024 Sample Condition : Good

| Sl. No. | Parameter | Unit | Result | Permissible Limit as per Consent Order No-5059/IND-I-CON-6762 Dt:28.03.2023 | Test Methods |
|---------|---------------------------------------|-------|--------|---|--|
| 1 | pH Value | -- | 6.852 | 5.5-9.0 | IS 3025 (Part-11): 2022 |
| 2 | Total suspended Solid | mg/l | 14 | 100 | IS 3025(Part-17)1984 RA 2012 |
| 3 | Oil & Grease | mg/l | <4 | 10 | APHA 23rd Ed. (5520-B): 2017 |
| 4 | Biochemical Oxygen Demand as BOD | mg/l | 3.2 | -- | IS 3025 (Part-44): 1993 |
| 5 | Chemical Oxygen Demand as COD | mg/l | 5.3 | 250 | APHA 23rd Ed. (5220-D): 2017 |
| 6 | Colour | Hazen | 20 | -- | IS 3025 (Part-4): 2021 |
| 7 | Specific Conductivity | µs/cm | 472 | -- | IS 3025 (Part-14): 2013 |
| 8 | Turbidity | NTU | 92.5 | -- | IS 3025 (Part-10): 1984 RA 2017 |
| 9 | Dissolve Oxygen as DO | mg/l | 6.1 | -- | IS 3025 (Part-38): 1989 |
| 10 | Total Hardness as CaCO ₃ | mg/l | 85 | -- | APHA 23 rd Ed. (2340-C): 2017 |
| 11 | Chloride as Cl | mg/l | 46.99 | -- | IS 3025 (Part-32): 1988 |
| 12 | Sulphate as SO ₄ | mg/l | 70.5 | -- | IS 3025 (Part-24, Sec-1): 2022 |
| 13 | Nitrate as NO ₃ | mg/l | 1.42 | -- | APHA 23 rd Ed. (4500-NO ₃ -B): 2017 |
| 14 | Calcium as Ca | mg/l | 18.44 | -- | APHA 23rd Ed. (3500-Ca-B): 2017 |
| 15 | Magnesium as Mg | mg/l | 9.48 | -- | APHA 23 rd Ed. (3500-Mg-B): 2017 |
| 16 | Total Dissolved Solid as TDS | mg/l | 278 | -- | IS 3025 (Part-16): 1984 |
| 17 | Total Alkalinity as CaCO ₃ | mg/l | 140 | -- | IS 3025 (Part-23): 1986 RA 2019 |
| 18 | Potassium as K | mg/l | 26.2 | -- | IS 3025 (Part-45): 1993 RA 2019 |
| 19 | Sodium as Na | mg/l | 38.5 | -- | IS 3025 (Part-45) : 1993 RA 2019 |


Reviewed by
(Ms. Laxmi Sahoo)


Authorized Signatory
(Mr. Pradeept Mohapatra)



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TEST REPORT

Report No. : WCSL240107B Issue Date : 22.01.2024
NABL ULR No. : TC1122524000000038F
Name of the Client : National Aluminium Company Limited
Address : Smelter & Power (S&P) Complex
Angul-759145, Odisha
Sampling Location : Seepage Water (Core Zone)
Sample Description : Surface Water Date of Sampling : 16.01.2024
Sampling Plan & Method : WCS/QSP/SAMP (WATER) Date of Receiving : 17.01.2024
Environmental Condition : Temperature 29 °C, Clear Weather Sample ID No : WCS0124W07B
Sample Collected by : WCS Laboratory Quantity of Sample : 1 Ltr
Date of Testing : 17.01.2024 to 20.01.2024 Sample Condition : Good

| Sl. No. | Parameter | Unit | Result | Permissible Limit as per Consent Order No-5059/IND-I-CON-6762 Dt:28.03.2023 | Test Methods |
|---------|---------------------------------------|-------|--------|---|--|
| 1 | pH Value | -- | 6.921 | 5.5-9.0 | IS 3025 (Part-11): 2022 |
| 2 | Total suspended Solid | mg/l | 23 | 100 | IS 3025(Part-17)1984 RA 2012 |
| 3 | Oil & Grease | mg/l | <4 | 10 | APHA 23 rd Ed. (5520-B): 2017 |
| 4 | Biochemical Oxygen Demand as BOD | mg/l | <2 | -- | IS 3025 (Part-44): 1993 |
| 5 | Chemical Oxygen Demand as COD | mg/l | 3 | 250 | APHA 23 rd Ed. (5220-D): 2017 |
| 6 | Colour | Hazen | 15 | -- | IS 3025 (Part-4): 2021 |
| 7 | Specific Conductivity | µs/cm | 448 | -- | IS 3025 (Part-14): 2013 |
| 8 | Turbidity | NTU | 58.2 | -- | IS 3025 (Part-10): 1984 RA 2017 |
| 9 | Dissolve Oxygen as DO | mg/l | 5.2 | -- | IS 3025 (Part-38): 1989 |
| 10 | Total Hardness as CaCO ₃ | mg/l | 80 | -- | APHA 23 rd Ed. (2340-C): 2017 |
| 11 | Chloride as Cl | mg/l | 52.49 | -- | IS 3025 (Part-32): 1988 |
| 12 | Sulphate as SO ₄ | mg/l | 40.8 | -- | IS 3025 (Part-24, Sec-1): 2022 |
| 13 | Nitrate as NO ₃ | mg/l | <1 | -- | APHA 23 rd Ed. (4500-NO ₃ -B): 2017 |
| 14 | Calcium as Ca | mg/l | 24.85 | -- | APHA 23 rd Ed. (3500-Ca-B): 2017 |
| 15 | Magnesium as Mg | mg/l | 4.37 | -- | APHA 23 rd Ed. (3500-Mg-B): 2017 |
| 16 | Total Dissolved Solid as TDS | mg/l | 265 | -- | IS 3025 (Part-16): 1984 |
| 17 | Total Alkalinity as CaCO ₃ | mg/l | 172 | -- | IS 3025 (Part-23): 1986 RA 2019 |
| 18 | Potassium as K | mg/l | 5.8 | -- | IS 3025 (Part-45): 1993 RA 2019 |
| 19 | Sodium as Na | mg/l | 3.7 | -- | IS 3025 (Part-45): 1993 RA 2019 |

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(Ms. Laxmi Sahoo)

Authorized Signatory
(Mr. Pradeept Mohapatra)



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TEST REPORT

Report No. : WCSL240108A Issue Date : 22.01.2024
NABL ULR No. : TC1122524000000039F
Name of the Client : National Aluminium Company Limited
Address : Smelter & Power (S&P) Complex
Angul-759145, Odisha
Sampling Location : A39 Colony Area Borewell no.- 1 (Buffer Zone)
Sample Description : Ground Water Date of Sampling : 16.01.2024
Sampling Plan & Method : WCS/QSP/SAMP (WATER) Date of Receiving : 17.01.2024
Environmental Condition : Temperature 29 °C, Clear Weather Sample ID No : WCS0124W08A
Sample Collected by : WCS Laboratory Quantity of Sample : 1 Ltr
Date of Testing : 17.01.2024 to 20.01.2024 Sample Condition : Good

| Sl. No. | Parameter | Unit | Result | Requirement as per IS 10500:2012 Reaffirmed 2018 | Test Methods |
|---------|---------------------------------------|------------|-----------|--|---|
| 1 | Colour | Hazen | 2 | Max, 5 | IS 3025 (Part-4): 2021 |
| 2 | Odour | -- | Agreeable | Agreeable | IS 3025 (Part-5): 2018 |
| 3 | pH Value | -- | 5.864 | 6.5-8.5 | IS 3025 (Part-11): 2022 |
| 4 | Taste Threshold | -- | Agreeable | Agreeable | IS 3025 (Part-7): 2017 |
| 5 | Turbidity | NTU | 0.4 | 1 | IS 3025 (Part-10): 1984 RA 2017 |
| 6 | Total Dissolved Solid as TDS | mg/l | 145 | 500 | IS 3025 (Part-16): 1984 RA 2017 |
| 7 | Ammonia as Total ammonia-N | mg/l | 0.06 | 0.5 | IS 3025 (Part-34): 1988 RA 2019 |
| 8 | Chloride as Cl | mg/l | 19.49 | 250 | IS 3025(Part-32): 1988 RA 2019 |
| 9 | Fluoride as F | mg/l | < 0.02 | 1.0 | APHA 23 rd Ed. (4500-F-D): 2017 |
| 10 | Iron as Fe | mg/l | 0.12 | 1.0 | IS 3025 (Part -53): 2003 RA 2019 |
| 11 | Total Hardness as CaCO ₃ | mg/l | 25 | 200 | IS 3025 (Part-21): 2009 RA 2019 |
| 12 | Calcium as Ca | mg/l | 6.41 | 75 | IS 3025 (Part-40): 1991 RA 2019 |
| 13 | Magnesium as Mg | mg/l | 1.45 | 30 | APHA 23 rd Ed. (3500-Mg-B): 2017 |
| 14 | Nitrate as NO ₃ | mg/l | 11 | 45 | APHA 23 rd Ed. (4500-NO ₃ -B): 2017 |
| 15 | Sulphate as SO ₄ | mg/l | 0.58 | 200 | IS 3025 (Part-24 Sec 1):2022 |
| 16 | Total Alkalinity as CaCO ₃ | mg/l | 10 | 200 | IS 3025 (Part-23): 1986 RA 2019 |
| 17 | Total Chromium as Cr | mg/l | < 0.02 | 0.05 | IS 3025 (Part-52): 2003 RA 2019 |
| 18 | Potassium as K | mg/l | 4.5 | -- | IS 3025 (Part-45): 1993 RA 2019 |
| 19 | Sodium as Na | mg/l | 6.4 | -- | IS 3025 (Part-45): 1993 RA 2019 |
| 20 | Total Suspended Solid as TSS | mg/l | <5 | -- | IS 3025 (Part-17): 2022 |
| 21 | E.Coli | MPN/100 ml | <1 | Shall not be detectable in any 100 ml sample | IS 1622 : 1981 RA 2019 |
| 22 | Faecal Coliform | MPN/100 ml | <1 | -- | IS 1622 : 1981 RA 2019 |
| 23 | Total Coliform | MPN/100 ml | <1 | Shall not be detectable in any 100 ml sample | IS 1622 : 1981 RA 2019 |

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TEST REPORT

Report No. : WCSL240108A Issue Date : 22.01.2024
Name of the Client : National Aluminium Company Limited
Address : Smelter & Power (S&P) Complex
Angul-759145, Odisha
Sampling Location : A39 Colony Area Borewell no.- 1(Buffer Zone).
Sample Description : Ground Water Date of Sampling : 16.01.2024
Sampling Plan & Method : WCS/QSP/SAMP (WATER) Date of Receiving : 17.01.2024
Environmental Condition : Temperature 29 °C, Clear Weather Sample ID No : WCS0124W08A
Sample Collected by : WCS Laboratory Quantity of Sample : 1 Ltr
Date of Testing : 17.01.2024 to 20.01.2024 Sample Condition : Good

| Sl. No. | Parameter | Unit | Result | Requirement as per IS 10500:2012 Reaffirmed 2018 | Test Methods |
|---------|--|------|---------|--|---|
| 24 | Aluminium as Al | mg/l | <0.02 | 0.03 | IS 3025 (Part 55): 2003 RA 2019 |
| 25 | Anionic detergents as MBAS | mg/l | <0.02 | 0.2 | Annex K of IS 13428 |
| 26 | Barium as Ba | mg/l | <0.1 | 0.7 | Annex F of IS 13428* or IS 15302 |
| 27 | Boron as B | mg/l | <0.1 | 0.5 | IS 3025 (Part 57):2021 |
| 28 | Chloramines as Cl ₂ | mg/l | <0.02 | 4.0 | IS 3025 (Part 26): 2021* or APHA 4500-Cl G |
| 29 | Copper as Cu | mg/l | <0.01 | 0.05 | IS 3025 (Part 42):1992 RA 2019 |
| 30 | Manganese as Mn | mg/l | <0.05 | 0.1 | IS 3025 (Part 59):2006 RA 2017 |
| 31 | Mineral oil | mg/l | <0.5 | 1.0 | Clause 6 of IS 3025 (Part 39):2021 |
| 32 | Phenolic compounds as C ₆ H ₅ OH | mg/l | <0.001 | 0.001 | IS 3025 (Part 43): 1992 RA 2019 |
| 33 | Selenium as Se | mg/l | <0.001 | 0.01 | IS 3025 (Part 56):2003 RA 2019 or IS 15303* |
| 34 | Silver as Ag | mg/l | <0.02 | 0.1 | Annex J of IS 13428 |
| 35 | Sulphide as H ₂ S | mg/l | <0.05 | 0.05 | IS 3025 (Part 29):1986 RA 2019 |
| 36 | Zinc as Zn | mg/l | <0.05 | 5 | IS 3025 (Part 49):1994 RA 2019 |
| 37 | Cadmium as Cd | mg/l | <0.001 | 0.003 | IS 3025 (Part 41):1992 RA 2019 |
| 38 | Cyanide as CN | mg/l | <0.01 | 0.05 | IS 3025 (Part 27):1986 RAA 2019 |
| 39 | Lead as Pb | mg/l | <0.001 | 0.01 | IS 3025 (Part 47):1994 RA 2019 |
| 40 | Mercury as Hg | mg/l | <0.001 | 0.001 | IS 3025 (Part 48):1994 RA 2019 |
| 41 | Molybdenum as Mo | mg/l | <0.02 | 0.07 | IS 3025 (Part 2) |
| 42 | Nickel as Ni | mg/l | <0.01 | 0.02 | IS 3025 (Part 54): 2003 RA 2019 |
| 43 | Polynuclear aromatic hydrocarbons as PAH | mg/l | <0.0001 | 0.0001 | APHA 6440 |
| 44 | Total arsenic as As | mg/l | <0.001 | 0.01 | IS 3025 (Part 37):2022 |


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TEST REPORT

Report No. : WCSL240108B Issue Date : 22.01.2024
NABL ULR No. : TC1122524000000039F
Name of the Client : National Aluminium Company Limited
Address : Smelter & Power (S&P) Complex
Angul-759145, Odisha
Sampling Location : A56 Colony Area Borewell no.- 2(Buffer Zone).
Sample Description : Ground Water Date of Sampling : 16.01.2024
Sampling Plan & Method : WCS/QSP/SAMP (WATER) Date of Receiving : 17.01.2024
Environmental Condition : Temperature 29 °C, Clear Weather Sample ID No : WCS0124W08B
Sample Collected by : WCS Laboratory Quantity of Sample : 1 Ltr
Date of Testing : 17.01.2024 to 20.01.2024 Sample Condition : Good

| Sl. No. | Parameter | Unit | Result | Requirement as per IS 10500:2012 Reaffirmed 2018 | Test Methods |
|---------|---------------------------------------|------------|-----------|--|---|
| 1 | Colour | Hazen | 3 | Max, 5 | IS 3025 (Part-4): 2021 |
| 2 | Odour | -- | Agreeable | Agreeable | IS 3025 (Part-5): 2018 |
| 3 | pH Value | -- | 5.921 | 6.5-8.5 | IS 3025 (Part-11): 2022 |
| 4 | Taste Threshold | -- | Agreeable | Agreeable | IS 3025 (Part-7): 2017 |
| 5 | Turbidity | NTU | 0.5 | 1 | IS 3025 (Part-10): 1984 RA 2017 |
| 6 | Total Dissolved Solid as TDS | mg/l | 140 | 500 | IS 3025 (Part-16): 1984 RA 2017 |
| 7 | Ammonia as Total ammonia-N | mg/l | 0.04 | 0.5 | IS 3025 (Part-34): 1988 RA 2019 |
| 8 | Chloride as Cl | mg/l | 22.99 | 250 | IS 3025(Part-32): 1988 RA 2019 |
| 9 | Fluoride as F | mg/l | <0.02 | 1.0 | APHA 23 rd Ed. (4500-F-D): 2017 |
| 10 | Iron as Fe | mg/l | 0.1 | 1.0 | IS 3025 (Part -53): 2003 RA 2019 |
| 11 | Total Hardness as CaCO ₃ | mg/l | 22 | 200 | IS 3025 (Part-21): 2009 RA 2019 |
| 12 | Calcium as Ca | mg/l | 5.61 | 75 | IS 3025 (Part-40): 1991 RA 2019 |
| 13 | Magnesium as Mg | mg/l | 1.94 | 30 | APHA 23 rd Ed. (3500-Mg-B): 2017 |
| 14 | Nitrate as NO ₃ | mg/l | 10.2 | 45 | APHA 23 rd Ed. (4500-NO ₃ -B): 2017 |
| 15 | Sulphate as SO ₄ | mg/l | 1.5 | 200 | IS 3025 (Part-24 Sec 1):2022 |
| 16 | Total Alkalinity as CaCO ₃ | mg/l | 20 | 200 | IS 3025 (Part-23): 1986 RA 2019 |
| 17 | Total Chromium as Cr | mg/l | <0.02 | 0.05 | IS 3025 (Part-52): 2003 RA 2019 |
| 18 | Potassium as K | mg/l | 4.5 | -- | IS 3025 (Part-45): 1993 RA 2019 |
| 19 | Sodium as Na | mg/l | 6.8 | -- | IS 3025 (Part-45): 1993 RA 2019 |
| 20 | Total Suspended Solid as TSS | mg/l | 5 | -- | IS 3025 (Part-17): 2022 |
| 21 | E.Coli | MPN/100 ml | <1 | Shall not be detectable in any 100 ml sample | IS 1622 : 1981 RA 2019 |
| 22 | Faecal Coliform | MPN/100 ml | <1 | -- | IS 1622 : 1981 RA 2019 |
| 23 | Total Coliform | MPN/100 ml | <1 | Shall not be detectable in any 100 ml sample | IS 1622 : 1981 RA 2019 |

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TEST REPORT

Report No. : WCSL240108B Issue Date : 22.01.2024
Name of the Client : National Aluminium Company Limited
Address : Smelter & Power (S&P) Complex
Angul-759145, Odisha
Sampling Location : A56 Colony Area Borewell no.- 2(Buffer Zone).
Sample Description : Ground Water Date of Sampling : 16.01.2024
Sampling Plan & Method : WCS/QSP/SAMP (WATER) Date of Receiving : 17.01.2024
Environmental Condition : Temperature 29 °C, Clear Weather Sample ID No : WCS0124W08B
Sample Collected by : WCS Laboratory Quantity of Sample : 1 Ltr
Date of Testing : 17.01.2024 to 20.01.2024 Sample Condition : Good

| Sl. No. | Parameter | Unit | Result | Requirement as per IS 10500:2012 Reaffirmed 2018 | Test Methods |
|---------|--|------|---------|--|---|
| 24 | Aluminium as Al | mg/l | <0.02 | 0.03 | IS 3025 (Part 55): 2003 RA 2019 |
| 25 | Anionic detergents as MBAS | mg/l | <0.02 | 0.2 | Annex K of IS 13428 |
| 26 | Barium as Ba | mg/l | <0.1 | 0.7 | Annex F of IS 13428* or IS 15302 |
| 27 | Boron as B | mg/l | <0.1 | 0.5 | IS 3025 (Part 57):2021 |
| 28 | Chloramines as Cl ₂ | mg/l | <0.02 | 4.0 | IS 3025 (Part 26): 2021* or APHA 4500-Cl G |
| 29 | Copper as Cu | mg/l | <0.01 | 0.05 | IS 3025 (Part 42):1992 RA 2019 |
| 30 | Manganese as Mn | mg/l | <0.05 | 0.1 | IS 3025 (Part 59):2006 RA 2017 |
| 31 | Mineral oil | mg/l | <0.5 | 1.0 | Clause 6 of IS 3025 (Part 39):2021 |
| 32 | Phenolic compounds as C ₆ H ₅ OH | mg/l | <0.001 | 0.001 | IS 3025 (Part 43): 1992 RA 2019 |
| 33 | Selenium as Se | mg/l | <0.001 | 0.01 | IS 3025 (Part 56):2003 RA 2019 or IS 15303* |
| 34 | Silver as Ag | mg/l | <0.02 | 0.1 | Annex J of IS 13428 |
| 35 | Sulphide as H ₂ S | mg/l | <0.05 | 0.05 | IS 3025 (Part 29):1986 RA 2019 |
| 36 | Zinc as Zn | mg/l | <0.05 | 5 | IS 3025 (Part 49):1994 RA 2019 |
| 37 | Cadmium as Cd | mg/l | <0.001 | 0.003 | IS 3025 (Part 41):1992 RA 2019 |
| 38 | Cyanide as CN | mg/l | <0.01 | 0.05 | IS 3025 (Part 27):1986 RAA 2019 |
| 39 | Lead as Pb | mg/l | <0.001 | 0.01 | IS 3025 (Part 47):1994 RA 2019 |
| 40 | Mercury as Hg | mg/l | <0.001 | 0.001 | IS 3025 (Part 48):1994 RA 2019 |
| 41 | Molybdenum as Mo | mg/l | <0.02 | 0.07 | IS 3025 (Part 2) |
| 42 | Nickel as Ni | mg/l | <0.01 | 0.02 | IS 3025 (Part 54): 2003 RA 2019 |
| 43 | Polynuclear aromatic hydrocarbons as PAH | mg/l | <0.0001 | 0.0001 | APHA 6440 |
| 44 | Total arsenic as As | mg/l | <0.001 | 0.01 | IS 3025 (Part 37):2022 |



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Authorized Signatory
(Mr. Pradeept Mohapatra)

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TEST REPORT

Report No. : WCSL240108C Issue Date : 22.01.2024
NABL ULR No. : TC1122524000000039F
Name of the Client : National Aluminium Company Limited
Address : Smelter & Power (S&P) Complex
Angul-759145, Odisha
Sampling Location : Dhobamaliya Village. (Buffer Zone)
Sample Description : Ground Water Date of Sampling : 16.01.2024
Sampling Plan & Method : WCS/QSP/SAMP (WATER) Date of Receiving : 17.01.2024
Environmental Condition : Temperature 29 °C, Clear Weather Sample ID No : WCS0124W08C
Sample Collected by : WCS Laboratory Quantity of Sample : 1 Ltr
Date of Testing : 17.01.2024 to 20.01.2024 Sample Condition : Good

| Sl. No. | Parameter | Unit | Result | Requirement as per IS 10500:2012 Reaffirmed 2018 | Test Methods |
|---------|---------------------------------------|------------|-----------|--|---|
| 1 | Colour | Hazen | 3 | Max, 5 | IS 3025 (Part-4): 2021 |
| 2 | Odour | -- | Agreeable | Agreeable | IS 3025 (Part-5): 2018 |
| 3 | pH Value | -- | 5.924 | 6.5-8.5 | IS 3025 (Part-11): 2022 |
| 4 | Taste Threshold | -- | Agreeable | Agreeable | IS 3025 (Part-7): 2017 |
| 5 | Turbidity | NTU | 0.2 | 1 | IS 3025 (Part-10): 1984 RA 2017 |
| 6 | Total Dissolved Solid as TDS | mg/l | 158 | 500 | IS 3025 (Part-16): 1984 RA 2017 |
| 7 | Ammonia as Total ammonia-N | mg/l | 0.05 | 0.5 | IS 3025 (Part-34): 1988 RA 2019 |
| 8 | Chloride as Cl | mg/l | 24.49 | 250 | IS 3025(Part-32): 1988 RA 2019 |
| 9 | Fluoride as F | mg/l | <0.02 | 1.0 | APHA 23 rd Ed. (4500-F-D): 2017 |
| 10 | Iron as Fe | mg/l | 0.13 | 1.0 | IS 3025 (Part -53): 2003 RA 2019 |
| 11 | Total Hardness as CaCO ₃ | mg/l | 27 | 200 | IS 3025 (Part-21): 2009 RA 2019 |
| 12 | Calcium as Ca | mg/l | 7.21 | 75 | IS 3025 (Part-40): 1991 RA 2019 |
| 13 | Magnesium as Mg | mg/l | 2.19 | 30 | APHA 23 rd Ed. (3500-Mg-B): 2017 |
| 14 | Nitrate as NO ₃ | mg/l | 6.50 | 45 | APHA 23 rd Ed. (4500-NO ₃ -B): 2017 |
| 15 | Sulphate as SO ₄ | mg/l | 2 | 200 | IS 3025 (Part-24 Sec 1): 2022 |
| 16 | Total Alkalinity as CaCO ₃ | mg/l | 25 | 200 | IS 3025 (Part-23): 1986 RA 2019 |
| 17 | Total Chromium as Cr | mg/l | <0.02 | 0.05 | IS 3025 (Part-52): 2003 RA 2019 |
| 18 | Potassium as K | mg/l | 5.6 | -- | IS 3025 (Part-45): 1993 RA 2019 |
| 19 | Sodium as Na | mg/l | 7.8 | -- | IS 3025 (Part-45): 1993 RA 2019 |
| 20 | Total Suspended Solid as TSS | mg/l | <5 | -- | IS 3025 (Part-17): 2022 |
| 21 | E.Coli | MPN/100 ml | <1 | Shall not be detectable in any 100 ml sample | IS 1622 : 1981 RA 2019 |
| 22 | Faecal Coliform | MPN/100 ml | <1 | -- | IS 1622 : 1981 RA 2019 |
| 23 | Total Coliform | MPN/100 ml | <1 | Shall not be detectable in any 100 ml sample | IS 1622 : 1981 RA 2019 |

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TEST REPORT

Report No. : WCSL240108C Issue Date : 22.01.2024
Name of the Client : National Aluminium Company Limited
Address : Smelter & Power (S&P) Complex
Angul-759145, Odisha
Sampling Location : Dhobamaliya Village.(Buffer Zone)
Sample Description : Ground Water Date of Sampling : 16.01.2024
Sampling Plan & Method : WCS/QSP/SAMP (WATER) Date of Receiving : 17.01.2024
Environmental Condition : Temperature 29 °C, Clear Weather Sample ID No : WCS0124W08C
Sample Collected by : WCS Laboratory Quantity of Sample : 1 Ltr
Date of Testing : 17.01.2024 to 20.01.2024 Sample Condition : Good

| Sl. No. | Parameter | Unit | Result | Requirement as per IS 10500:2012 Reaffirmed 2018 | Test Methods |
|---------|--|------|---------|--|---|
| 24 | Aluminium as Al | mg/l | <0.02 | 0.03 | IS 3025 (Part 55): 2003 RA 2019 |
| 25 | Anionic detergents as MBAS | mg/l | <0.02 | 0.2 | Annex K of IS 13428 |
| 26 | Barium as Ba | mg/l | <0.1 | 0.7 | Annex F of IS 13428* or IS 15302 |
| 27 | Boron as B | mg/l | <0.1 | 0.5 | IS 3025 (Part 57):2021 |
| 28 | Chloramines as Cl ₂ | mg/l | <0.02 | 4.0 | IS 3025 (Part 26): 2021* or APHA 4500-Cl G |
| 29 | Copper as Cu | mg/l | <0.01 | 0.05 | IS 3025 (Part 42):1992 RA 2019 |
| 30 | Manganese as Mn | mg/l | <0.05 | 0.1 | IS 3025 (Part 59):2006 RA 2017 |
| 31 | Mineral oil | mg/l | <0.5 | 1.0 | Clause 6 of IS 3025 (Part 39):2021 |
| 32 | Phenolic compounds as C ₆ H ₅ OH | mg/l | <0.001 | 0.001 | IS 3025 (Part 43): 1992 RA 2019 |
| 33 | Selenium as Se | mg/l | <0.001 | 0.01 | IS 3025 (Part 56):2003 RA 2019 or IS 15303* |
| 34 | Silver as Ag | mg/l | <0.02 | 0.1 | Annex J of IS 13428 |
| 35 | Sulphide as H ₂ S | mg/l | <0.05 | 0.05 | IS 3025 (Part 29):1986 RA 2019 |
| 36 | Zinc as Zn | mg/l | <0.05 | 5 | IS 3025 (Part 49):1994 RA 2019 |
| 37 | Cadmium as Cd | mg/l | <0.001 | 0.003 | IS 3025 (Part 41):1992 RA 2019 |
| 38 | Cyanide as CN | mg/l | <0.01 | 0.05 | IS 3025 (Part 27):1986 RAA 2019 |
| 39 | Lead as Pb | mg/l | <0.001 | 0.01 | IS 3025 (Part 47):1994 RA 2019 |
| 40 | Mercury as Hg | mg/l | <0.001 | 0.001 | IS 3025 (Part 48):1994 RA 2019 |
| 41 | Molybdenum as Mo | mg/l | <0.02 | 0.07 | IS 3025 (Part 2) |
| 42 | Nickel as Ni | mg/l | <0.01 | 0.02 | IS 3025 (Part 54): 2003 RA 2019 |
| 43 | Polynuclear aromatic hydrocarbons as PAH | mg/l | <0.0001 | 0.0001 | APHA 6440 |
| 44 | Total arsenic as As | mg/l | <0.001 | 0.01 | IS 3025 (Part 37):2022 |


Reviewed by
(Ms. Laxmi Sahoo)


Authorized Signatory
(Mr. Pradeep Mohapatra)

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TEST REPORT

Report No. : WCSL240108D Issue Date : 22.01.2024
NABL ULR No. : TC112252400000039F
Name of the Client : National Aluminium Company Limited
Address : Smelter & Power (S&P) Complex
Angul-759145, Odisha
Sampling Location : Raijharana Village(Buffer Zone).
Sample Description : Ground Water Date of Sampling : 16.01.2024
Sampling Plan & Method : WCS/QSP/SAMP (WATER) Date of Receiving : 17.01.2024
Environmental Condition : Temperature 29 °C, Clear Weather Sample ID No : WCS0124W08D
Sample Collected by : WCS Laboratory Quantity of Sample : 1 Ltr
Date of Testing : 17.01.2024 to 20.01.2024 Sample Condition : Good

| Sl. No. | Parameter | Unit | Result | Requirement as per IS 10500:2012 Reaffirmed 2018 | Test Methods |
|---------|---------------------------------------|------------|-----------|--|---|
| 1 | Colour | Hazen | 3 | Max, 5 | IS 3025 (Part-4): 2021 |
| 2 | Odour | -- | Agreeable | Agreeable | IS 3025 (Part-5): 2018 |
| 3 | pH Value | -- | 7.582 | 6.5-8.5 | IS 3025 (Part-11): 2022 |
| 4 | Taste Threshold | -- | Agreeable | Agreeable | IS 3025 (Part-7): 2017 |
| 5 | Turbidity | NTU | 0.8 | 1 | IS 3025 (Part-10): 1984 RA 2017 |
| 6 | Total Dissolved Solid as TDS | mg/l | 260 | 500 | IS 3025 (Part-16): 1984 RA 2017 |
| 7 | Ammonia as Total ammonia-N | mg/l | 0.05 | 0.5 | IS 3025 (Part-34): 1988 RA 2019 |
| 8 | Chloride as Cl | mg/l | 54.99 | 250 | IS 3025(Part-32): 1988 RA 2019 |
| 9 | Fluoride as F | mg/l | <0.02 | 1.0 | APHA 23 rd Ed. (4500-F-D): 2017 |
| 10 | Iron as Fe | mg/l | 0.06 | 1.0 | IS 3025 (Part -53): 2003 RA 2019 |
| 11 | Total Hardness as CaCO ₃ | mg/l | 40 | 200 | IS 3025 (Part-21): 2009 RA 2019 |
| 12 | Calcium as Ca | mg/l | 14.43 | 75 | IS 3025 (Part-40): 1991 RA 2019 |
| 13 | Magnesium as Mg | mg/l | 0.97 | 30 | APHA 23 rd Ed. (3500-Mg-B): 2017 |
| 14 | Nitrate as NO ₃ | mg/l | 4.85 | 45 | APHA 23 rd Ed. (4500-NO ₃ -B): 2017 |
| 15 | Sulphate as SO ₄ | mg/l | 2.2 | 200 | IS 3025 (Part-24 Sec 1):2022 |
| 16 | Total Alkalinity as CaCO ₃ | mg/l | 65 | 200 | IS 3025 (Part-23): 1986 RA 2019 |
| 17 | Total Chromium as Cr | mg/l | <0.02 | 0.05 | IS 3025 (Part-52): 2003 RA 2019 |
| 18 | Potassium as K | mg/l | 5.5 | -- | IS 3025 (Part-45): 1993 RA 2019 |
| 19 | Sodium as Na | mg/l | 7 | -- | IS 3025 (Part-45): 1993 RA 2019 |
| 20 | Total Suspended Solid as TSS | mg/l | <5 | -- | IS 3025 (Part-17): 2022 |
| 21 | E.Coli | MPN/100 ml | <1 | Shall not be detectable in any 100 ml sample | IS 1622 : 1981 RA 2019 |
| 22 | Faecal Coliform | MPN/100 ml | <1 | -- | IS 1622 : 1981 RA 2019 |
| 23 | Total Coliform | MPN/100 ml | <1 | Shall not be detectable in any 100 ml sample | IS 1622 : 1981 RA 2019 |

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(Ms. Laxmi Sahoo)

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Authorized Signatory
(Mr. Pradeep Mohapatra)



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TEST REPORT

Report No. : WCSL240108D Issue Date : 22.01.2024
Name of the Client : National Aluminium Company Limited
Address : Smelter & Power (S&P) Complex
Angul-759145, Odisha
Sampling Location : Raijharana Village (Buffer Zone)
Sample Description : Ground Water Date of Sampling : 16.01.2024
Sampling Plan & Method : WCS/QSP/SAMP (WATER) Date of Receiving : 17.01.2024
Environmental Condition : Temperature 29 °C, Clear Weather Sample ID No : WCS0124W08D
Sample Collected by : WCS Laboratory Quantity of Sample : 1 Ltr
Date of Testing : 17.01.2024 to 20.01.2024 Sample Condition : Good

| Sl. No. | Parameter | Unit | Result | Requirement as per IS 10500:2012 Reaffirmed 2018 | Test Methods |
|---------|--|------|---------|--|---|
| 24 | Aluminium as Al | mg/l | <0.02 | 0.03 | IS 3025 (Part 55): 2003 RA 2019 |
| 25 | Anionic detergents as MBAS | mg/l | <0.02 | 0.2 | Annex K of IS 13428 |
| 26 | Barium as Ba | mg/l | <0.1 | 0.7 | Annex F of IS 13428* or IS 15302 |
| 27 | Boron as B | mg/l | <0.1 | 0.5 | IS 3025 (Part 57):2021 |
| 28 | Chloramines as Cl ₂ | mg/l | <0.02 | 4.0 | IS 3025 (Part 26): 2021* or APHA 4500-Cl G |
| 29 | Copper as Cu | mg/l | <0.01 | 0.05 | IS 3025 (Part 42):1992 RA 2019 |
| 30 | Manganese as Mn | mg/l | <0.05 | 0.1 | IS 3025 (Part 59):2006 RA 2017 |
| 31 | Mineral oil | mg/l | <0.5 | 1.0 | Clause 6 of IS 3025 (Part 39):2021 |
| 32 | Phenolic compounds as C ₆ H ₅ OH | mg/l | <0.001 | 0.001 | IS 3025 (Part 43): 1992 RA 2019 |
| 33 | Selenium as Se | mg/l | <0.001 | 0.01 | IS 3025 (Part 56):2003 RA 2019 or IS 15303* |
| 34 | Silver as Ag | mg/l | <0.02 | 0.1 | Annex J of IS 13428 |
| 35 | Sulphide as H ₂ S | mg/l | <0.05 | 0.05 | IS 3025 (Part 29):1986 RA 2019 |
| 36 | Zinc as Zn | mg/l | <0.05 | 5 | IS 3025 (Part 49):1994 RA 2019 |
| 37 | Cadmium as Cd | mg/l | <0.001 | 0.003 | IS 3025 (Part 41):1992 RA 2019 |
| 38 | Cyanide as CN | mg/l | <0.01 | 0.05 | IS 3025 (Part 27):1986 RAA 2019 |
| 39 | Lead as Pb | mg/l | <0.001 | 0.01 | IS 3025 (Part 47):1994 RA 2019 |
| 40 | Mercury as Hg | mg/l | <0.001 | 0.001 | IS 3025 (Part 48):1994 RA 2019 |
| 41 | Molybdenum as Mo | mg/l | <0.02 | 0.07 | IS 3025 (Part 2) |
| 42 | Nickel as Ni | mg/l | <0.01 | 0.02 | IS 3025 (Part 54): 2003 RA 2019 |
| 43 | Polynuclear aromatic hydrocarbons as PAH | mg/l | <0.0001 | 0.0001 | APHA 6440 |
| 44 | Total arsenic as As | mg/l | <0.001 | 0.01 | IS 3025 (Part 37):2022 |

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Reviewed by
(Ms. Laxmi Sahoo)

Pradeep

Authorized Signatory
(Mr. Pradeept Mohapatra)

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TEST REPORT

Report No. : WCSL240108E Issue Date : 22.01.2024
NABL ULR No. : TC112252400000039F
Name of the Client : National Aluminium Company Limited
Address : Smelter & Power (S&P) Complex
Angul-759145, Odisha
Sampling Location : Gopiballavpur Village(Buffer Zone).
Sample Description : Ground Water Date of Sampling : 16.01.2024
Sampling Plan & Method : WCS/QSP/SAMP (WATER) Date of Receiving : 17.01.2024
Environmental Condition : Temperature 29 °C, Clear Weather Sample ID No : WCS0124W08E
Sample Collected by : WCS Laboratory Quantity of Sample : 1 Ltr
Date of Testing : 17.01.2024 to 20.01.2024 Sample Condition : Good

| Sl. No. | Parameter | Unit | Result | Requirement as per IS 10500:2012 Reaffirmed 2018 | Test Methods |
|---------|---------------------------------------|------------|-----------|--|---|
| 1 | Colour | Hazen | 4 | Max, 5 | IS 3025 (Part-4): 2021 |
| 2 | Odour | -- | Agreeable | Agreeable | IS 3025 (Part-5): 2018 |
| 3 | pH Value | -- | 7.562 | 6.5-8.5 | IS 3025 (Part-11): 2022 |
| 4 | Taste Threshold | -- | Agreeable | Agreeable | IS 3025 (Part-7): 2017 |
| 5 | Turbidity | NTU | 0.3 | 1 | IS 3025 (Part-10): 1984 RA 2017 |
| 6 | Total Dissolved Solid as TDS | mg/l | 362 | 500 | IS 3025 (Part-16): 1984 RA 2017 |
| 7 | Ammonia as Total ammonia-N | mg/l | 0.15 | 0.5 | IS 3025 (Part-34): 1988 RA 2019 |
| 8 | Chloride as Cl | mg/l | 56.49 | 250 | IS 3025(Part-32): 1988 RA 2019 |
| 9 | Fluoride as F | mg/l | < 0.02 | 1.0 | APHA 23 rd Ed. (4500-F-D): 2017 |
| 10 | Iron as Fe | mg/l | 0.2 | 1.0 | IS 3025 (Part -53): 2003 RA 2019 |
| 11 | Total Hardness as CaCO ₃ | mg/l | 92 | 200 | IS 3025 (Part-21): 2009 RA 2019 |
| 12 | Calcium as Ca | mg/l | 15.99 | 75 | IS 3025 (Part-40): 1991 RA 2019 |
| 13 | Magnesium as Mg | mg/l | 10.85 | 30 | APHA 23 rd Ed. (3500-Mg-B): 2017 |
| 14 | Nitrate as NO ₃ | mg/l | 0.38 | 45 | APHA 23 rd Ed. (4500-NO ₃ -B): 2017 |
| 15 | Sulphate as SO ₄ | mg/l | 5.2 | 200 | IS 3025 (Part-24 Sec 1):2022 |
| 16 | Total Alkalinity as CaCO ₃ | mg/l | 280 | 200 | IS 3025 (Part-23): 1986 RA 2019 |
| 17 | Total Chromium as Cr | mg/l | < 0.02 | 0.05 | IS 3025 (Part-52): 2003 RA 2019 |
| 18 | Potassium as K | mg/l | 4.2 | -- | IS 3025 (Part-45): 1993 RA 2019 |
| 19 | Sodium as Na | mg/l | 8.2 | -- | IS 3025 (Part-45): 1993 RA 2019 |
| 20 | Total Suspended Solid as TSS | mg/l | <5 | -- | IS 3025 (Part-17): 2022 |
| 21 | E.Coli | MPN/100 ml | < 1 | Shall not be detectable in any 100 ml sample | IS 1622 : 1981 RA 2019 |
| 22 | Faecal Coliform | MPN/100 ml | < 1 | -- | IS 1622 : 1981 RA 2019 |
| 23 | Total Coliform | MPN/100 ml | < 1 | Shall not be detectable in any 100 ml sample | IS 1622 : 1981 RA 2019 |

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TEST REPORT

Report No. : WCSL240108E Issue Date : 22.01.2024
Name of the Client : National Aluminium Company Limited
Address : Smelter & Power (S&P) Complex
Angul-759145, Odisha
Sampling Location : Gopiballavpur Village (Buffer Zone).
Sample Description : Ground Water Date of Sampling : 16.01.2024
Sampling Plan & Method : WCS/QSP/SAMP (WATER) Date of Receiving : 17.01.2024
Environmental Condition : Temperature 29 °C, Clear Weather Sample ID No : WCS0124W08E
Sample Collected by : WCS Laboratory Quantity of Sample : 1 Ltr
Date of Testing : 17.01.2024 to 20.01.2024 Sample Condition : Good

| Sl. No. | Parameter | Unit | Result | Requirement as per IS 10500:2012 Reaffirmed 2018 | Test Methods |
|---------|--|------|---------|--|---|
| 24 | Aluminium as Al | mg/l | <0.02 | 0.03 | IS 3025 (Part 55): 2003 RA 2019 |
| 25 | Anionic detergents as MBAS | mg/l | <0.02 | 0.2 | Annex K of IS 13428 |
| 26 | Barium as Ba | mg/l | <0.1 | 0.7 | Annex F of IS 13428* or IS 15302 |
| 27 | Boron as B | mg/l | <0.1 | 0.5 | IS 3025 (Part 57):2021 |
| 28 | Chloramines as Cl ₂ | mg/l | <0.02 | 4.0 | IS 3025 (Part 26): 2021* or APHA 4500-Cl G |
| 29 | Copper as Cu | mg/l | <0.01 | 0.05 | IS 3025 (Part 42):1992 RA 2019 |
| 30 | Manganese as Mn | mg/l | <0.05 | 0.1 | IS 3025 (Part 59):2006 RA 2017 |
| 31 | Mineral oil | mg/l | <0.5 | 1.0 | Clause 6 of IS 3025 (Part 39):2021 |
| 32 | Phenolic compounds as C ₆ H ₅ OH | mg/l | <0.001 | 0.001 | IS 3025 (Part 43): 1992 RA 2019 |
| 33 | Selenium as Se | mg/l | <0.001 | 0.01 | IS 3025 (Part 56):2003 RA 2019 or IS 15303* |
| 34 | Silver as Ag | mg/l | <0.02 | 0.1 | Annex J of IS 13428 |
| 35 | Sulphide as H ₂ S | mg/l | <0.05 | 0.05 | IS 3025 (Part 29):1986 RA 2019 |
| 36 | Zinc as Zn | mg/l | <0.05 | 5 | IS 3025 (Part 49):1994 RA 2019 |
| 37 | Cadmium as Cd | mg/l | <0.001 | 0.003 | IS 3025 (Part 41):1992 RA 2019 |
| 38 | Cyanide as CN | mg/l | <0.01 | 0.05 | IS 3025 (Part 27):1986 RAA 2019 |
| 39 | Lead as Pb | mg/l | <0.001 | 0.01 | IS 3025 (Part 47):1994 RA 2019 |
| 40 | Mercury as Hg | mg/l | <0.001 | 0.001 | IS 3025 (Part 48):1994 RA 2019 |
| 41 | Molybdenum as Mo | mg/l | <0.02 | 0.07 | IS 3025 (Part 2) |
| 42 | Nickel as Ni | mg/l | <0.01 | 0.02 | IS 3025 (Part 54): 2003 RA 2019 |
| 43 | Polynuclear aromatic hydrocarbons as PAH | mg/l | <0.0001 | 0.0001 | APHA 6440 |
| 44 | Total arsenic as As | mg/l | <0.001 | 0.01 | IS 3025 (Part 37):2022 |


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(Ms. Laxmi Sahoo)


Authorized Signatory
(Mr. Pradeep Mohapatra)

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TEST REPORT

Report No. : WCSL240108F Issue Date : 22.01.2024
NABL ULR No. : TC1122524000000039F
Name of the Client : National Aluminium Company Limited
Address : Smelter & Power (S&P) Complex
Angul-759145, Odisha
Sampling Location : Kosala Village(Buffer Zone).
Sample Description : Ground Water Date of Sampling : 16.01.2024
Sampling Plan & Method : WCS/QSP/SAMP (WATER) Date of Receiving : 17.01.2024
Environmental Condition : Temperature 29 °C, Clear Weather Sample ID No : WCS0124W08F
Sample Collected by : WCS Laboratory Quantity of Sample : 1 Ltr
Date of Testing : 17.01.2024 to 20.01.2024 Sample Condition : Good

| Sl. No. | Parameter | Unit | Result | Requirement as per IS 10500:2012 Reaffirmed 2018 | Test Methods |
|---------|---------------------------------------|------------|-----------|--|---|
| 1 | Colour | Hazen | 1 | Max, 5 | IS 3025 (Part-4): 2021 |
| 2 | Odour | -- | Agreeable | Agreeable | IS 3025 (Part-5): 2018 |
| 3 | pH Value | -- | 6.965 | 6.5-8.5 | IS 3025 (Part-11): 2022 |
| 4 | Taste Threshold | -- | Agreeable | Agreeable | IS 3025 (Part-7): 2017 |
| 5 | Turbidity | NTU | 0.2 | 1 | IS 3025 (Part-10): 1984 RA 2017 |
| 6 | Total Dissolved Solid as TDS | mg/l | 305 | 500 | IS 3025 (Part-16): 1984 RA 2017 |
| 7 | Ammonia as Total ammonia-N | mg/l | 0.05 | 0.5 | IS 3025 (Part-34): 1988 RA 2019 |
| 8 | Chloride as Cl | mg/l | 48.99 | 250 | IS 3025(Part-32): 1988 RA 2019 |
| 9 | Fluoride as F | mg/l | <0.02 | 1.0 | APHA 23 rd Ed. (4500-F-D): 2017 |
| 10 | Iron as Fe | mg/l | 0.062 | 1.0 | IS 3025 (Part -53): 2003 RA 2019 |
| 11 | Total Hardness as CaCO ₃ | mg/l | 52 | 200 | IS 3025 (Part-21): 2009 RA 2019 |
| 12 | Calcium as Ca | mg/l | 17.64 | 75 | IS 3025 (Part-40): 1991 RA 2019 |
| 13 | Magnesium as Mg | mg/l | 1.94 | 30 | APHA 23 rd Ed. (3500-Mg-B): 2017 |
| 14 | Nitrate as NO ₃ | mg/l | 5.82 | 45 | APHA 23 rd Ed. (4500-NO ₃ -B): 2017 |
| 15 | Sulphate as SO ₄ | mg/l | 2.4 | 200 | IS 3025 (Part-24 Sec 1):2022 |
| 16 | Total Alkalinity as CaCO ₃ | mg/l | 70 | 200 | IS 3025 (Part-23): 1986 RA 2019 |
| 17 | Total Chromium as Cr | mg/l | <0.02 | 0.05 | IS 3025 (Part-52): 2003 RA 2019 |
| 18 | Potassium as K | mg/l | 4.9 | -- | IS 3025 (Part-45): 1993 RA 2019 |
| 19 | Sodium as Na | mg/l | 6.2 | -- | IS 3025 (Part-45): 1993 RA 2019 |
| 20 | Total Suspended Solid as TSS | mg/l | <5 | -- | IS 3025 (Part-17): 2022 |
| 21 | E.Coli | MPN/100 ml | <1 | Shall not be detectable in any 100 ml sample | IS 1622 : 1981 RA 2019 |
| 22 | Faecal Coliform | MPN/100 ml | <1 | -- | IS 1622 : 1981 RA 2019 |
| 23 | Total Coliform | MPN/100 ml | <1 | Shall not be detectable in any 100 ml sample | IS 1622 : 1981 RA 2019 |


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TEST REPORT

Report No. : WCSL240108F Issue Date : 22.01.2024
Name of the Client : National Aluminium Company Limited
Address : Smelter & Power (S&P) Complex
Angul-759145, Odisha
Sampling Location : Kosala Village (Buffer Zone).
Sample Description : Ground Water Date of Sampling : 16.01.2024
Sampling Plan & Method : WCS/QSP/SAMP (WATER) Date of Receiving : 17.01.2024
Environmental Condition : Temperature 29 °C, Clear Weather Sample ID No : WCS0124W08F
Sample Collected by : WCS Laboratory Quantity of Sample : 1 Ltr
Date of Testing : 17.01.2024 to 20.01.2024 Sample Condition : Good

| Sl. No. | Parameter | Unit | Result | Requirement as per IS 10500:2012 Reaffirmed 2018 | Test Methods |
|---------|--|------|---------|--|---|
| 24 | Aluminium as Al | mg/l | <0.02 | 0.03 | IS 3025 (Part 55): 2003 RA 2019 |
| 25 | Anionic detergents as MBAS | mg/l | <0.02 | 0.2 | Annex K of IS 13428 |
| 26 | Barium as Ba | mg/l | <0.1 | 0.7 | Annex F of IS 13428* or IS 15302 |
| 27 | Boron as B | mg/l | <0.1 | 0.5 | IS 3025 (Part 57):2021 |
| 28 | Chloramines as Cl ₂ | mg/l | <0.02 | 4.0 | IS 3025 (Part 26): 2021* or APHA 4500-Cl G |
| 29 | Copper as Cu | mg/l | <0.01 | 0.05 | IS 3025 (Part 42):1992 RA 2019 |
| 30 | Manganese as Mn | mg/l | <0.05 | 0.1 | IS 3025 (Part 59):2006 RA 2017 |
| 31 | Mineral oil | mg/l | <0.5 | 1.0 | Clause 6 of IS 3025 (Part 39):2021 |
| 32 | Phenolic compounds as C ₆ H ₅ OH | mg/l | <0.001 | 0.001 | IS 3025 (Part 43): 1992 RA 2019 |
| 33 | Selenium as Se | mg/l | <0.001 | 0.01 | IS 3025 (Part 56):2003 RA 2019 or IS 15303* |
| 34 | Silver as Ag | mg/l | <0.02 | 0.1 | Annex J of IS 13428 |
| 35 | Sulphide as H ₂ S | mg/l | <0.05 | 0.05 | IS 3025 (Part 29):1986 RA 2019 |
| 36 | Zinc as Zn | mg/l | <0.05 | 5 | IS 3025 (Part 49):1994 RA 2019 |
| 37 | Cadmium as Cd | mg/l | <0.001 | 0.003 | IS 3025 (Part 41):1992 RA 2019 |
| 38 | Cyanide as CN | mg/l | <0.01 | 0.05 | IS 3025 (Part 27):1986 RAA 2019 |
| 39 | Lead as Pb | mg/l | <0.001 | 0.01 | IS 3025 (Part 47):1994 RA 2019 |
| 40 | Mercury as Hg | mg/l | <0.001 | 0.001 | IS 3025 (Part 48):1994 RA 2019 |
| 41 | Molybdenum as Mo | mg/l | <0.02 | 0.07 | IS 3025 (Part 2) |
| 42 | Nickel as Ni | mg/l | <0.01 | 0.02 | IS 3025 (Part 54): 2003 RA 2019 |
| 43 | Polynuclear aromatic hydrocarbons as PAH | mg/l | <0.0001 | 0.0001 | APHA 6440 |
| 44 | Total arsenic as As | mg/l | <0.001 | 0.01 | IS 3025 (Part 37):2022 |

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Reviewed by
(Ms. Laxmi Sahoo)

Pradeep

Authorized Signatory
(Mr. Pradeep Mohapatra)

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TEST REPORT

Report No. : WCSL240109 Issue Date : 22.01.2024
Name of the Client : National Aluminium Company Limited
Address : Smelter & Power (S&P) Complex
Angul-759145, Odisha
Month of Monitoring : January- 2024
Sample Description : Ground Water Level
Sampling Plan & Method : WCS/QSP/SAMP (WATER LEVEL) Date of Receiving : 17.01.2024
Environmental Condition : Clear Weather
Sample Collected by : WCS Laboratory

| Sample ID No. | Location | Date | Ground water Level |
|---------------|---|------------|--------------------|
| WCS0124WL01 | Raijharana (Dug Well) (Buffer Zone) | 16.01.2024 | 1.8 meter |
| WCS0124WL02 | Kosala (Dug Well) (Buffer Zone) | 16.01.2024 | 4.2 meter |
| WCS0124WL03 | Gopiballavpur Village (Dug Well) (Buffer Zone) | 16.01.2024 | 2.0 meter |
| WCS0124WL04 | Dhobamalya Village (Dug Well) (Buffer Zone) | 16.01.2024 | 5.0 meter |
| WCS0124WL05 | A39 Colony Area Borewell no.- 1(Buffer Zone) | 16.01.2024 | 3.1 meter |
| WCS0124WL06 | A56 Colony Area Borewell no.- 2(Buffer Zone). | 16.01.2024 | 2.0 meter |


Reviewed by
(Ms. Laxmi Sahoo)


Authorized Signatory
(Mr. Pradeept Mohapatra)

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ENVIRONMENTAL MONITORING REPORT FOR THE MONTH OF JANUARY-2024



NATIONAL ALUMINIUM COMPANY LIMITED
Coal Mine Division
Angul-759145, Odisha



My World Consultancy Services Private Limited

Plot No. 766, Telengapentha,
Cuttack, Odisha 754001

WCS/LQR/57

TEST REPORT

Report No. : WCS240106A Issue Date : 10.01.2024
NABL ULR No. : TC112252400000006F
Name of the Client : National Aluminium Company Limited
Address : Coal Mine Division
Angul-759145, Odisha
Sampling Location : Gopiballavpur Village (Buffer Zone)
Sample Description : Ambient Air Quality Monitoring Date of Sampling : 05.01.2024
Sampling Plan & Method : WCS/QSP/SAMP (AIR) Sample ID No : WCS0124A01A
Environmental Condition : Clear weather Date of Receiving : 08.01.2024
Sample Collected by : WCS Laboratory Quantity of Sample : 1 No.
Date of Testing : 08.01.2024 to 10.01.2024 Sample Condition : Good

| Parameter | Unit | Result | Standard | Test Method |
|---|-------------------|--------|-----------------------------|-----------------------------------|
| Respirable Suspended Particulate Matter (PM ₁₀) | µg/m ³ | 52.2 | 100 (As per NAAQ 2009) | IS-5182 (Part-23) 2006 RA 2017 |
| Fine Particulate Matter (PM _{2.5}) | µg/m ³ | 34.2 | 60 (As per NAAQ 2009) | IS-5182 (Part-24) 2019 |
| Sulphur Dioxide (SO ₂) | µg/m ³ | 6.2 | 80 (As per NAAQ 2009) | IS-5182 (Part-2) 2001 RA 2017 |
| Nitrogen Oxides (NO ₂) | µg/m ³ | 18.0 | 80 (As per NAAQ 2009) | IS-5182 (Part-6) 2006 RA 2017 |
| Suspended Particulate Matter (SPM) | µg/m ³ | 128.3 | 500 (As per CTO No-2938) | IS-5182 (Part-4) 1999 RA 2019 |



Reviewed by
(Mr. Bijaya Kumar Chahataray)


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(Mr. Pradeept Mohapatra)

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TEST REPORT

Report No. : WCS240106B Issue Date : 10.01.2024
NABL ULR No. : TC1122524000000006F
Name of the Client : National Aluminium Company Limited
Address : Coal Mine Division
Angul-759145, Odisha
Sampling Location : Colony Area (Buffer Zone)
Sample Description : Ambient Air Quality Monitoring Date of Sampling : 05.01.2024
Sampling Plan & Method : WCS/QSP/SAMP (AIR) Sample ID No : WCS0124A01B
Environmental Condition : Clear weather Date of Receiving : 08.01.2024
Sample Collected by : WCS Laboratory Quantity of Sample : 1 No.
Date of Testing : 08.01.2024 to 10.01.2024 Sample Condition : Good

| Parameter | Unit | Result | Standard | Test Method |
|---|-------------------|--------|-----------------------------|-----------------------------------|
| Respirable Suspended Particulate Matter (PM ₁₀) | µg/m ³ | 62.8 | 100 (As per NAAQ 2009) | IS-5182 (Part-23) 2006 RA 2017 |
| Fine Particulate Matter (PM _{2.5}) | µg/m ³ | 38.6 | 60 (As per NAAQ 2009) | IS-5182 (Part-24) 2019 |
| Sulphur Dioxide (SO ₂) | µg/m ³ | 6.0 | 80 (As per NAAQ 2009) | IS-5182 (Part-2) 2001 RA 2017 |
| Nitrogen Oxides (NO ₂) | µg/m ³ | 18.2 | 80 (As per NAAQ 2009) | IS-5182 (Part-6) 2006 RA 2017 |
| Suspended Particulate Matter (SPM) | µg/m ³ | 155.4 | 500 (As per CTO No-2938) | IS-5182 (Part-4) 1999 RA 2019 |

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Reviewed by

(Mr. Bijaya Kumar Chahataray)

Pradeep Mohapatra
Authorized Signatory

(Mr. Pradeep Mohapatra)

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TEST REPORT

Report No. : WCS240106C Issue Date : 10.01.2024
NABL ULR No. : TC112252400000006F
Name of the Client : National Aluminium Company Limited
Address : Coal Mine Division
Angul-759145, Odisha
Sampling Location : Near Weigh Bridge (Core Zone)
Sample Description : Ambient Air Quality Monitoring Date of Sampling : 05.01.2024
Sampling Plan & Method : WCS/QSP/SAMP (AIR) Sample ID No : WCS0124A01C
Environmental Condition : Clear weather Date of Receiving : 08.01.2024
Sample Collected by : WCS Laboratory Quantity of Sample : 1 No.
Date of Testing : 08.01.2024 to 10.01.2024 Sample Condition : Good

| Parameter | Unit | Result | Standard | Test Method |
|---|-------------------|--------|-----------------------------|-----------------------------------|
| Respirable Suspended Particulate Matter (PM ₁₀) | µg/m ³ | 71.4 | 100 (As per NAAQ 2009) | IS-5182 (Part-23) 2006 RA 2017 |
| Fine Particulate Matter (PM _{2.5}) | µg/m ³ | 42.9 | 60 (As per NAAQ 2009) | IS-5182 (Part-24) 2019 |
| Sulphur Dioxide (SO ₂) | µg/m ³ | 5.4 | 80 (As per NAAQ 2009) | IS-5182 (Part-2) 2001 RA 2017 |
| Nitrogen Oxides (NO ₂) | µg/m ³ | 18.8 | 80 (As per NAAQ 2009) | IS-5182 (Part-6) 2006 RA 2017 |
| Suspended Particulate Matter (SPM) | µg/m ³ | 224.6 | 500 (As per CTO No-2938) | IS-5182 (Part-4) 1999 RA 2019 |


Reviewed by
(Mr. Bijaya Kumar Chahataray)


Authorized Signatory
(Mr. Pradeep Mohapatra)

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TEST REPORT

Report No. : WCS240106D Issue Date : 10.01.2024
NABL ULR No. : TC1122524000000006F
Name of the Client : National Aluminium Company Limited
Address : Coal Mine Division
Angul-759145, Odisha
Sampling Location : Near Settling Pond (Core Zone)
Sample Description : Ambient Air Quality Monitoring Date of Sampling : 05.01.2024
Sampling Plan & Method : WCS/QSP/SAMP (AIR) Sample ID No : WCS0124A01D
Environmental Condition : Clear weather Date of Receiving : 08.01.2024
Sample Collected by : WCS Laboratory Quantity of Sample : 1 No.
Date of Testing : 08.01.2024 to 10.01.2024 Sample Condition : Good

| Parameter | Unit | Result | Standard | Test Method |
|---|-------------------|--------|-----------------------------|-----------------------------------|
| Respirable Suspended Particulate Matter (PM ₁₀) | µg/m ³ | 61.8 | 100 (As per NAAQ 2009) | IS-5182 (Part-23) 2006 RA 2017 |
| Fine Particulate Matter (PM _{2.5}) | µg/m ³ | 43.4 | 60 (As per NAAQ 2009) | IS-5182 (Part-24) 2019 |
| Sulphur Dioxide (SO ₂) | µg/m ³ | 6.1 | 80 (As per NAAQ 2009) | IS-5182 (Part-2) 2001 RA 2017 |
| Nitrogen Oxides (NO _x) | µg/m ³ | 19.0 | 80 (As per NAAQ 2009) | IS-5182 (Part-6) 2006 RA 2017 |
| Suspended Particulate Matter (SPM) | µg/m ³ | 155.7 | 500 (As per CTO No-2938) | IS-5182 (Part-4) 1999 RA 2019 |


Reviewed by

(Mr. Bijaya Kumar Chahataray)


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(Mr. Pradeept Mohapatra)

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TEST REPORT

Report No. : WCS240107 Issue Date : 10.01.2024
NABL ULR No. : TC1122524000000007F
Name of the Client : National Aluminium Company Limited
Address : Coal Mine Division
Angul-759145, Odisha
Month of Sampling : January- 2024 Date of Receiving : 08.01.2024
Sample Description : Ambient Noise Quantity of Sample : 04
Sampling Plan & Method : WCS/QSP/SAMP (NOISE) Sample Condition : Good
Sample Collected by : WCS Laboratory Date of Analysis : 09.01.2024

| Sample ID No. | Location | Date of Monitoring | Day Time dB(A) Leq | Night Time dB(A) Leq | Environmental Condition |
|---------------|-----------------------|--------------------|--------------------|----------------------|-------------------------|
| WCS0124N01 | Gopiballavpur Village | 05.01.2024 | 51.0 | 39.4 | Clear Weather |
| WCS0124N02 | Near Settling Pond | 05.01.2024 | 62.2 | 41.0 | Clear Weather |
| WCS0124N03 | Near Town ship | 05.01.2024 | 62.4 | 41.8 | Clear Weather |
| WCS0124N04 | Near Weigh Bridge | 05.01.2024 | 64.5 | 68.1 | Clear Weather |
| Test Method | | IS 9989: 1981 | | | |

| Noise Standard in dB(A) Leq as per CPCB | | |
|---|---|---|
| Category of Area | Day Time dB(A) Leq (6.00 Am to 10.00 Pm) | Night Time dB(A) Leq (10.00 Pm to 6.00 Am) |
| Industrial Area | 75 | 70 |
| Commercial Area | 65 | 55 |
| Residential Area | 55 | 45 |
| Sensitive Area | 50 | 40 |

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Reviewed by
(Mr. Bijaya Kumar Chahataray)

Pradeept Mohapatra

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(Mr. Pradeept Mohapatra)

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TEST REPORT

Report No. : WCS240109A Issue Date : 29.01.2024
NABL ULR No. : TC112252400000009F
Name of the Client : **National Aluminium Company Limited**
Address : Smelter & Power (S&P) Complex
Angul-759145, Odisha
Sampling Location : **Gopiballavpur Village (Buffer Zone)**
Sample Description : Ambient Air Quality Monitoring Date of Sampling : 24.01.2024
Sampling Plan & Method : WCS/QSP/SAMP (AIR) Sample ID No : WCS0124A03A
Environmental Condition : Medium Rain Date of Receiving : 27.01.2024
Sample Collected by : WCS Laboratory Quantity of Sample : 1 No.
Date of Testing : 27.01.2024 to 29.01.2024 Sample Condition : Good

| Parameter | Unit | Result | Standard | Test Method |
|---|-------------------|--------|-----------------------------|-----------------------------------|
| Respirable Suspended Particulate Matter (PM ₁₀) | µg/m ³ | 48.0 | 100 (As per NAAQ 2009) | IS-5182 (Part-23) 2006 RA 2017 |
| Fine Particulate Matter (PM _{2.5}) | µg/m ³ | 33.4 | 60 (As per NAAQ 2009) | IS-5182 (Part-24) 2019 |
| Sulphur Dioxide (SO ₂) | µg/m ³ | 6.0 | 80 (As per NAAQ 2009) | IS-5182 (Part-2) 2001 RA 2017 |
| Nitrogen Oxides (NO _x) | µg/m ³ | 16.2 | 80 (As per NAAQ 2009) | IS-5182 (Part-6) 2006 RA 2017 |
| Suspended Particulate Matter (SPM) | µg/m ³ | 124.1 | 500 (As per CTO No-2938) | IS-5182 (Part-4) 1999 RA 2019 |


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(Mr. Bijaya Kumar Chahataray)


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(Mr. Pradeept Mohapatra)

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TEST REPORT

Report No. : WCS240109B Issue Date : 29.01.2024
NABL ULR No. : TC112252400000009F
Name of the Client : **National Aluminium Company Limited**
Address : Smelter & Power (S&P) Complex
Angul-759145, Odisha
Sampling Location : **Colony Area (Buffer Zone)**
Sample Description : Ambient Air Quality Monitoring Date of Sampling : 24.01.2024
Sampling Plan & Method : WCS/QSP/SAMP (AIR) Sample ID No : WCS0124A03B
Environmental Condition : Medium Rain Date of Receiving : 27.01.2024
Sample Collected by : WCS Laboratory Quantity of Sample : 1 No.
Date of Testing : 27.01.2024 to 29.01.2024 Sample Condition : Good

| Parameter | Unit | Result | Standard | Test Method |
|---|-------------------|--------|-----------------------------|-----------------------------------|
| Respirable Suspended Particulate Matter (PM ₁₀) | µg/m ³ | 51.4 | 100 (As per NAAQ 2009) | IS-5182 (Part-23) 2006 RA 2017 |
| Fine Particulate Matter (PM _{2.5}) | µg/m ³ | 34.0 | 60 (As per NAAQ 2009) | IS-5182 (Part-24) 2019 |
| Sulphur Dioxide (SO ₂) | µg/m ³ | 5.2 | 80 (As per NAAQ 2009) | IS-5182 (Part-2) 2001 RA 2017 |
| Nitrogen Oxides (NO ₂) | µg/m ³ | 17.8 | 80 (As per NAAQ 2009) | IS-5182 (Part-6) 2006 RA 2017 |
| Suspended Particulate Matter (SPM) | µg/m ³ | 140.6 | 500 (As per CTO No-2938) | IS-5182 (Part-4) 1999 RA 2019 |



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(Mr. Pradeept Mohapatra)

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TEST REPORT

| | | | |
|-------------------------|---|--------------------|---------------|
| Report No. | : WCS240109C | Issue Date | : 29.01.2024 |
| NABL ULR No. | : TC1122524000000009F | | |
| Name of the Client | : National Aluminium Company Limited | | |
| Address | : Smelter & Power (S&P) Complex Angul-759145, Odisha | | |
| Sampling Location | : Near Weigh Bridge (Core Zone) | | |
| Sample Description | : Ambient Air Quality Monitoring | Date of Sampling | : 24.01.2024 |
| Sampling Plan & Method | : WCS/QSP/SAMP (AIR) | Sample ID No | : WCS0124A03C |
| Environmental Condition | : Medium Rain | Date of Receiving | : 27.01.2024 |
| Sample Collected by | : WCS Laboratory | Quantity of Sample | : 1 No. |
| Date of Testing | : 27.01.2024 to 29.01.2024 | Sample Condition | : Good |

| Parameter | Unit | Result | Standard | Test Method |
|---|-------------------|--------|-----------------------------|-----------------------------------|
| Respirable Suspended Particulate Matter (PM ₁₀) | µg/m ³ | 51.4 | 100 (As per NAAQ 2009) | IS-5182 (Part-23) 2006 RA 2017 |
| Fine Particulate Matter (PM _{2.5}) | µg/m ³ | 34.0 | 60 (As per NAAQ 2009) | IS-5182 (Part-24) 2019 |
| Sulphur Dioxide (SO ₂) | µg/m ³ | 5.2 | 80 (As per NAAQ 2009) | IS-5182 (Part-2) 2001 RA 2017 |
| Nitrogen Oxides (NO ₂) | µg/m ³ | 17.8 | 80 (As per NAAQ 2009) | IS-5182 (Part-6) 2006 RA 2017 |
| Suspended Particulate Matter (SPM) | µg/m ³ | 140.6 | 500 (As per CTO No-2938) | IS-5182 (Part-4) 1999 RA 2019 |


Reviewed by
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(Mr. Pradeep Mohapatra)

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TEST REPORT

| | | | |
|-------------------------|---|--------------------|---------------|
| Report No. | : WCS240109D | Issue Date | : 29.01.2024 |
| NABL ULR No. | : TC1122524000000009F | | |
| Name of the Client | : National Aluminium Company Limited | | |
| Address | : Smelter & Power (S&P) Complex Angul-759145, Odisha | | |
| Sampling Location | : Near Settling Pond (Core Zone) | | |
| Sample Description | : Ambient Air Quality Monitoring | Date of Sampling | : 24.01.2024 |
| Sampling Plan & Method | : WCS/QSP/SAMP (AIR) | Sample ID No | : WCS0124A03D |
| Environmental Condition | : Medium Rain | Date of Receiving | : 27.01.2024 |
| Sample Collected by | : WCS Laboratory | Quantity of Sample | : 1 No. |
| Date of Testing | : 27.01.2024 to 29.01.2024 | Sample Condition | : Good |

| Parameter | Unit | Result | Standard | Test Method |
|---|-------------------|--------|-----------------------------|-----------------------------------|
| Respirable Suspended Particulate Matter (PM ₁₀) | µg/m ³ | 59.4 | 100 (As per NAAQ 2009) | IS-5182 (Part-23) 2006 RA 2017 |
| Fine Particulate Matter (PM _{2.5}) | µg/m ³ | 40.6 | 60 (As per NAAQ 2009) | IS-5182 (Part-24) 2019 |
| Sulphur Dioxide (SO ₂) | µg/m ³ | 5.8 | 80 (As per NAAQ 2009) | IS-5182 (Part-2) 2001 RA 2017 |
| Nitrogen Oxides (NO ₂) | µg/m ³ | 18.4 | 80 (As per NAAQ 2009) | IS-5182 (Part-6) 2006 RA 2017 |
| Suspended Particulate Matter (SPM) | µg/m ³ | 149.7 | 500 (As per CTO No-2938) | IS-5182 (Part-4) 1999 RA 2019 |


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(Mr. Pradeept Mohapatra)

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TEST REPORT

Report No. : WCS240108 Issue Date : 29.01.2024
NABL ULR No. : TC1122524000000008F
Name of the Client : National Aluminium Company Limited
Address : Coal Mine Division
Angul-759145, Odisha
Month of Sampling : January- 2024 Date of Receiving : 27.01.2024
Sample Description : Ambient Noise Quantity of Sample : 04
Sampling Plan & Method : WCS/QSP/SAMP (NOISE) Sample Condition : Good
Sample Collected by : WCS Laboratory Date of Analysis : 27.01.2024

| Sample ID No. | Location | Date of Monitoring | Day Time dB(A) Leq | Night Time dB(A) Leq | Environmental Condition |
|---------------|-----------------------|--------------------|--------------------|----------------------|-------------------------|
| WCS0124N06 | Gopiballavpur Village | 24.01.2024 | 51.4 | 38.9 | Medium Rain |
| WCS0124N07 | Near Settling Pond | 24.01.2024 | 63.4 | 40.5 | Medium Rain |
| WCS0124N08 | Near Town ship | 25.01.2024 | 63.5 | 40.8 | Clear Weather |
| WCS0124N09 | Near Weigh Bridge | 25.01.2024 | 64.1 | 69.2 | Clear Weather |
| Test Method | | IS 9989: 1981 | | | |

| Noise Standard in dB(A) Leq as per CPCB | | |
|---|---|---|
| Category of Area | Day Time dB(A) Leq (6.00 Am to 10.00 Pm) | Night Time dB(A) Leq (10.00 Pm to 6.00 Am) |
| Industrial Area | 75 | 70 |
| Commercial Area | 65 | 55 |
| Residential Area | 55 | 45 |
| Sensitive Area | 50 | 40 |


Reviewed by

(Mr. Bijaya Kumar Chahataray)


Authorized Signatory

(Mr. Pradeep Mohapatra)

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TEST REPORT

Report No. : WCS240110 Issue Date : 29.01.2024
NABL ULR No. : TC1122524000000010F
Name of the Client : National Aluminium Company Limited
Address : Smelter & Power (S&P) Complex
Angul-759145, Odisha
Sample Description : Fugitive Emission (Core Zone)
Sampling Plan & Method : WCS/QSP/SAMP (AIR)
Environmental Condition : Medium Rain Date of Receiving : 27.01.2024
Sample Collected by : WCS Laboratory Quantity of Sample : 4 No.
Date of Testing : 28.01.2024 Sample Condition : Good

| Sl. No. | Sample ID No | Location | Date of Sampling | Suspended Particulate Matter (SPM) | Unit |
|-----------------------------|--------------|---------------|------------------|------------------------------------|--------------------------|
| 1 | WCS0124A04A | Haul Road | 24.01.2024 | 245 | $\mu\text{g}/\text{m}^3$ |
| 2 | WCS0124A04B | OB Dump | 25.01.2024 | 184 | $\mu\text{g}/\text{m}^3$ |
| 3 | WCS0124A04C | Loading Point | 25.01.2024 | 301 | $\mu\text{g}/\text{m}^3$ |
| 4 | WCS0124A04D | Blasting Area | 24.01.2024 | 219 | $\mu\text{g}/\text{m}^3$ |
| Standard as per CTO No-2938 | | | | 500 | $\mu\text{g}/\text{m}^3$ |
| Test Method | | | | IS-5182 (Part-4) 1999 RA 2019 | |


Reviewed by
(Mr. Bijaya Kumar Chahataray)


Authorized Signatory
(Mr. Pradeept Mohapatra)

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TEST REPORT

Report No. : WCS240110A Issue Date : 29.01.2024
NABL ULR No. : TC112252400000010F
Name of the Client : National Aluminium Company Limited
Address : Smelter & Power (S&P) Complex
Angul-759145, Odisha
Sample Description : Personal Sampling Analysis (Core Zone)
Sampling Plan & Method : WCS/QSP/SAMP (AIR)
Environmental Condition : Medium Rain Date of Receiving : 27.01.2024
Sample Collected : WCS Laboratory Quantity of Sample : 4 No.
Date of Testing : 28.01.2024 Sample Condition : Good

| Sl. No. | Sample ID No | Location | Date of Sampling | Respirable Particulate Matter (RPM) | Unit | Sample Collected Person |
|---|--------------|---------------|------------------|-------------------------------------|-------------------|-------------------------|
| 1 | WCS0124A04E | Haul Road | 24.01.2024 | 0.91 | mg/m ³ | Mr. Rames Chandra Jena |
| 2 | WCS0124A04F | OB Dump | 25.01.2024 | 0.66 | mg/m ³ | Mr. Ranjit Mandal |
| 3 | WCS0124A04G | Loading Point | 25.01.2024 | 0.85 | mg/m ³ | Mr. Markanda Nayk |
| 4 | WCS0124A04H | Blasting Area | 24.01.2024 | 0.79 | mg/m ³ | Mr. Sontu Panday |
| Permissible Limit as per DGMS (Tech.) (S&T) Circular No.01 Dhanbad, Dated 21 st January 2010 | | | | 3.0 | mg/m ³ | -- |
| Test Method | | | | NIOS-600-15th August, 1994 | | |


Reviewed by

(Mr. Bijaya Kumar Chahataray)


Authorized Signatory
(Mr. Pradeep Mohapatra)

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**ENVIRONMENTAL MONITORING REPORT
FOR THE MONTH OF FEBRUARY-2024**



NATIONAL ALUMINIUM COMPANY LIMITED
Coal Mine Division
Angul-759145, Odisha



My World Consultancy Services Private Limited

Plot No. 766, Telengapentha,
Cuttack, Odisha 754001

WCS/LQR/57

TEST REPORT

Report No. : WCS240209A Issue Date : 09.02.2024
NABL ULR No. : TC1122524000000021F
Name of the Client : **National Aluminium Company Limited**
Address : Smelter & Power (S&P) Complex
Angul-759145, Odisha
Sampling Location : **Gopiballavpur Village (Buffer Zone)**
Sample Description : Ambient Air Quality Monitoring Date of Sampling : 05.02.2024
Sampling Plan & Method : WCS/QSP/SAMP (AIR) Sample ID No : WCS0224A01A
Environmental Condition : Medium Rain Date of Receiving : 08.02.2024
Sample Collected by : WCS Laboratory Quantity of Sample : 1 No.
Date of Testing : 08.02.2024 to 09.02.2024 Sample Condition : Good

| Parameter | Unit | Result | Standard | Test Method |
|---|-------------------|--------|-----------------------------|-----------------------------------|
| Respirable Suspended Particulate Matter (PM ₁₀) | µg/m ³ | 50.2 | 100 (As per NAAQ 2009) | IS-5182 (Part-23) 2006 RA 2017 |
| Fine Particulate Matter (PM _{2.5}) | µg/m ³ | 34.5 | 60 (As per NAAQ 2009) | IS-5182 (Part-24) 2019 |
| Sulphur Dioxide (SO ₂) | µg/m ³ | 6.2 | 80 (As per NAAQ 2009) | IS-5182 (Part-2) 2001 RA 2017 |
| Nitrogen Oxides (NO ₂) | µg/m ³ | 15.8 | 80 (As per NAAQ 2009) | IS-5182 (Part-6) 2006 RA 2017 |
| Suspended Particulate Matter (SPM) | µg/m ³ | 125.8 | 500 (As per CTO No-2938) | IS-5182 (Part-4) 1999 RA 2019 |

Bhahataray
Reviewed by

(Mr. Bijaya Kumar Chahataray)

Pradeep Mohapatra
Authorized Signatory
(Mr. Pradeep Mohapatra)

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WCS/LQR/57

TEST REPORT

Report No. : WCS240209B Issue Date : 09.02.2024
NABL ULR No. : TC1122524000000021F
Name of the Client : National Aluminium Company Limited
Address : Smelter & Power (S&P) Complex
Angul-759145, Odisha
Sampling Location : Colony Area (Buffer Zone)
Sample Description : Ambient Air Quality Monitoring Date of Sampling : 05.02.2024
Sampling Plan & Method : WCS/QSP/SAMP (AIR) Sample ID No : WCS0224A01B
Environmental Condition : Medium Rain Date of Receiving : 08.02.2024
Sample Collected by : WCS Laboratory Quantity of Sample : 1 No.
Date of Testing : 08.02.2024 to 09.02.2024 Sample Condition : Good

| Parameter | Unit | Result | Standard | Test Method |
|---|-------------------|--------|-----------------------------|-----------------------------------|
| Respirable Suspended Particulate Matter (PM ₁₀) | µg/m ³ | 54.4 | 100 (As per NAAQ 2009) | IS-5182 (Part-23) 2006 RA 2017 |
| Fine Particulate Matter (PM _{2.5}) | µg/m ³ | 36.1 | 60 (As per NAAQ 2009) | IS-5182 (Part-24) 2019 |
| Sulphur Dioxide (SO ₂) | µg/m ³ | 5.8 | 80 (As per NAAQ 2009) | IS-5182 (Part-2) 2001 RA 2017 |
| Nitrogen Oxides (NO ₂) | µg/m ³ | 18.0 | 80 (As per NAAQ 2009) | IS-5182 (Part-6) 2006 RA 2017 |
| Suspended Particulate Matter (SPM) | µg/m ³ | 144.6 | 500 (As per CTO No-2938) | IS-5182 (Part-4) 1999 RA 2019 |

Bhujaya
Reviewed by

(Mr. Bijaya Kumar Chahataray)

Pradeep
Authorized Signatory
(Mr. Pradeep Mohapatra)

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WCS/LQR/57

TEST REPORT

| | | | |
|-------------------------|---|--------------------|---------------|
| Report No. | : WCS240209C | Issue Date | : 09.02.2024 |
| NABL ULR No. | : TC1122524000000021F | | |
| Name of the Client | : National Aluminium Company Limited | | |
| Address | : Smelter & Power (S&P) Complex Angul-759145, Odisha | | |
| Sampling Location | : Near Weigh Bridge (Core Zone) | | |
| Sample Description | : Ambient Air Quality Monitoring | Date of Sampling | : 05.02.2024 |
| Sampling Plan & Method | : WCS/QSP/SAMP (AIR) | Sample ID No | : WCS0224A01C |
| Environmental Condition | : Medium Rain | Date of Receiving | : 08.02.2024 |
| Sample Collected by | : WCS Laboratory | Quantity of Sample | : 1 No. |
| Date of Testing | : 08.02.2024 to 09.02.2024 | Sample Condition | : Good |

| Parameter | Unit | Result | Standard | Test Method |
|---|-------------------|--------|-----------------------------|-----------------------------------|
| Respirable Suspended Particulate Matter (PM ₁₀) | µg/m ³ | 70.2 | 100 (As per NAAQ 2009) | IS-5182 (Part-23) 2006 RA 2017 |
| Fine Particulate Matter (PM _{2.5}) | µg/m ³ | 40.2 | 60 (As per NAAQ 2009) | IS-5182 (Part-24) 2019 |
| Sulphur Dioxide (SO ₂) | µg/m ³ | 5.2 | 80 (As per NAAQ 2009) | IS-5182 (Part-2) 2001 RA 2017 |
| Nitrogen Oxides (NO ₂) | µg/m ³ | 18.0 | 80 (As per NAAQ 2009) | IS-5182 (Part-6) 2006 RA 2017 |
| Suspended Particulate Matter (SPM) | µg/m ³ | 204.6 | 500 (As per CTO No-2938) | IS-5182 (Part-4) 1999 RA 2019 |



Reviewed by
(Mr. Bijaya Kumar Chahataray)



Authorized Signatory
(Mr. Pradeep Mohapatra)

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TEST REPORT

Report No. : WCS240209D Issue Date : 09.02.2024
NABL ULR No. : TC1122524000000021F
Name of the Client : National Aluminium Company Limited
Address : Smelter & Power (S&P) Complex
Angul-759145, Odisha
Sampling Location : Near Settling Pond (Core Zone)
Sample Description : Ambient Air Quality Monitoring Date of Sampling : 05.02.2024
Sampling Plan & Method : WCS/QSP/SAMP (AIR) Sample ID No : WCS0224A01D
Environmental Condition : Medium Rain Date of Receiving : 08.02.2024
Sample Collected by : WCS Laboratory Quantity of Sample : 1 No.
Date of Testing : 08.02.2024 to 09.02.2024 Sample Condition : Good

| Parameter | Unit | Result | Standard | Test Method |
|---|-------------------|--------|-----------------------------|-----------------------------------|
| Respirable Suspended Particulate Matter (PM ₁₀) | µg/m ³ | 61.4 | 100 (As per NAAQ 2009) | IS-5182 (Part-23) 2006 RA 2017 |
| Fine Particulate Matter (PM _{2.5}) | µg/m ³ | 42.4 | 60 (As per NAAQ 2009) | IS-5182 (Part-24) 2019 |
| Sulphur Dioxide (SO ₂) | µg/m ³ | 6.0 | 80 (As per NAAQ 2009) | IS-5182 (Part-2) 2001 RA 2017 |
| Nitrogen Oxides (NO ₂) | µg/m ³ | 18.2 | 80 (As per NAAQ 2009) | IS-5182 (Part-6) 2006 RA 2017 |
| Suspended Particulate Matter (SPM) | µg/m ³ | 148.6 | 500 (As per CTO No-2938) | IS-5182 (Part-4) 1999 RA 2019 |

Bhachetamy
Reviewed by

(Mr. Bijaya Kumar Chahataray)

Pradeep Mohapatra
Authorized Signatory

(Mr. Pradeept Mohapatra)

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TEST REPORT

Report No. : WCS240211 Issue Date : 09.02.2024
NABL ULR No. : TC1122524000000042F
Name of the Client : National Aluminium Company Limited
Address : Coal Mine Division
Angul-759145, Odisha
Month of Sampling : February- 2024 Date of Receiving : 08.02.2024
Sample Description : Ambient Noise Quantity of Sample : 04
Sampling Plan & Method : WCS/QSP/SAMP (NOISE) Sample Condition : Good
Sample Collected by : WCS Laboratory Date of Analysis : 09.02.2024

| Sample ID No. | Location | Date of Monitoring | Day Time dB(A) Leq | Night Time dB(A) Leq | Environmental Condition |
|---------------|-----------------------|--------------------|--------------------|----------------------|-------------------------|
| WCS0224N03 | Gopiballavpur Village | 05.02.2024 | 50.8 | 38.6 | Clear Weather |
| WCS0224N04 | Near Settling Pond | 05.02.2024 | 62.5 | 40.2 | Clear Weather |
| WCS0224N05 | Near Town ship | 05.02.2024 | 64.3 | 44.1 | Clear Weather |
| WCS0224N06 | Near Weigh Bridge | 05.02.2024 | 64.8 | 70.8 | Clear Weather |
| Test Method | | IS 9989: 1981 | | | |

| Noise Standard in dB(A) Leq as per CPCB | | |
|---|---|---|
| Category of Area | Day Time dB(A) Leq (6.00 Am to 10.00 Pm) | Night Time dB(A) Leq (10.00 Pm to 6.00 Am) |
| Industrial Area | 75 | 70 |
| Commercial Area | 65 | 55 |
| Residential Area | 55 | 45 |
| Sensitive Area | 50 | 40 |


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(Mr. Pradeept Mohapatra)

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TEST REPORT

Report No. : WCS240212A Issue Date : 22.02.2024
NABL ULR No. : TC1122524000000043F
Name of the Client : National Aluminium Company Limited
Address : Smelter & Power (S&P) Complex
Angul-759145, Odisha
Sampling Location : **Gopiballavpur Village (Buffer Zone)**
Sample Description : Ambient Air Quality Monitoring Date of Sampling : 19.02.2024
Sampling Plan & Method : WCS/QSP/SAMP (AIR) Sample ID No : WCS0224A01A
Environmental Condition : Medium Rain Date of Receiving : 21.02.2024
Sample Collected by : WCS Laboratory Quantity of Sample : 1 No.
Date of Testing : 21.02.2024 to 22.02.2024 Sample Condition : Good

| Parameter | Unit | Result | Standard | Test Method |
|---|-------------------|--------|-----------------------------|-----------------------------------|
| Respirable Suspended Particulate Matter (PM ₁₀) | µg/m ³ | 51.0 | 100 (As per NAAQ 2009) | IS-5182 (Part-23) 2006 RA 2017 |
| Fine Particulate Matter (PM _{2.5}) | µg/m ³ | 36.6 | 60 (As per NAAQ 2009) | IS-5182 (Part-24) 2019 |
| Sulphur Dioxide (SO ₂) | µg/m ³ | 5.8 | 80 (As per NAAQ 2009) | IS-5182 (Part-2) 2001 RA 2017 |
| Nitrogen Oxides (NO _x) | µg/m ³ | 16.1 | 80 (As per NAAQ 2009) | IS-5182 (Part-6) 2006 RA 2017 |
| Suspended Particulate Matter (SPM) | µg/m ³ | 121.6 | 500 (As per CTO No-2938) | IS-5182 (Part-4) 1999 RA 2019 |



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TEST REPORT

Report No. : WCS240212A Issue Date : 22.02.2024
Name of the Client : National Aluminium Company Limited
Address : Smelter & Power (S&P) Complex
Angul-759145, Odisha
Sampling Location : Gopiballavpur Village (Buffer Zone)
Sample Description : Ambient Air Quality Date of Sampling : 19.02.2024
Sampling Plan & Method : WCS/QSP/SAMP (AIR) Date of Receiving : 21.02.2024
Environmental Condition : Temperature 29°C, Clear Weather Sample ID No : WCS0224A01A
Sample Collected by : WCS Laboratory Quantity of Sample : 1
Date of Testing : 21.02.2024 to 22.02.2024 Sample Condition : Good

| Sl. No. | Parameter | Unit | Result | NAAQ Standard 2009 | Test Methods |
|---------|--|-------------------|--------|--------------------|---|
| 5 | Ammonia (NH ₃) | µg/m ³ | 12.4 | Max-400 | IS 5182 (Part-25):2018 |
| 6 | Arsenic (As) | ng/m ³ | <1.0 | Max-6 | WCS/SOP/AIR |
| 7 | Benzene (C ₆ H ₆) | µg/m ³ | <1.0 | Max-5 | IS 5182 (Part-11):2006 |
| 8 | Benzo alpha pyrene (BAP) | ng/m ³ | <1.0 | Max-1 | IS 5182 (Part-12):2004 |
| 9 | Lead (Pb) | µg/m ³ | <0.1 | Max-1 | WCS/SOP/AIR |
| 10 | Nickel (Ni) | ng/m ³ | <1.0 | Max-20 | WCS/SOP/AIR |
| 11 | Carbon Monoxide (CO) | mg/m ³ | 0.201 | Max-4 | IS 5182 (Part-10):1999 |
| 12 | Ozone (O ₃) | µg/m ³ | <10.0 | Max-100 | Method of Air Sampling and Analysis (3 rd Edition) Method 411 by J.P.Lodge:1988 |

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Reviewed by
(Mr. Bijaya Kumar Chahataray)

Pradeep Mohapatra
Authorized Signatory
(Mr. Pradeep Mohapatra)

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WCS/LQR/57

TEST REPORT

Report No. : WCS240212B Issue Date : 22.02.2024
NABL ULR No. : TC1122524000000043F
Name of the Client : National Aluminium Company Limited
Address : Smelter & Power (S&P) Complex
Angul-759145, Odisha
Sampling Location : Colony Area (Buffer Zone)
Sample Description : Ambient Air Quality Monitoring Date of Sampling : 19.02.2024
Sampling Plan & Method : WCS/QSP/SAMP (AIR) Sample ID No : WCS0224A01B
Environmental Condition : Medium Rain Date of Receiving : 21.02.2024
Sample Collected by : WCS Laboratory Quantity of Sample : 1 No.
Date of Testing : 21.02.2024 to 22.02.2024 Sample Condition : Good

| Parameter | Unit | Result | Standard | Test Method |
|---|-------------------|--------|-----------------------------|-----------------------------------|
| Respirable Suspended Particulate Matter (PM ₁₀) | µg/m ³ | 59.1 | 100 (As per NAAQ 2009) | IS-5182 (Part-23) 2006 RA 2017 |
| Fine Particulate Matter (PM _{2.5}) | µg/m ³ | 37.3 | 60 (As per NAAQ 2009) | IS-5182 (Part-24) 2019 |
| Sulphur Dioxide (SO ₂) | µg/m ³ | 6.0 | 80 (As per NAAQ 2009) | IS-5182 (Part-2) 2001 RA 2017 |
| Nitrogen Oxides (NO ₂) | µg/m ³ | 17.4 | 80 (As per NAAQ 2009) | IS-5182 (Part-6) 2006 RA 2017 |
| Suspended Particulate Matter (SPM) | µg/m ³ | 152.3 | 500 (As per CTO No-2938) | IS-5182 (Part-4) 1999 RA 2019 |


Reviewed by
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(Mr. Pradeep Mohapatra)

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TEST REPORT

Report No. : WCS240212B Issue Date : 22.02.2024
Name of the Client : National Aluminium Company Limited
Address : Smelter & Power (S&P) Complex
Angul-759145, Odisha
Sampling Location : Colony Area (Buffer Zone)
Sample Description : Ambient Air Quality Date of Sampling : 19.02.2024
Sampling Plan & Method : WCS/QSP/SAMP (AIR) Date of Receiving : 21.02.2024
Environmental Condition : Temperature 29°C, Clear Weather Sample ID No : WCS0224A01B
Sample Collected by : WCS Laboratory Quantity of Sample : 1
Date of Testing : 21.02.2024 to 22.02.2024 Sample Condition : Good

| Sl. No. | Parameter | Unit | Result | NAAQ Standard 2009 | Test Methods |
|---------|--|-------------------|--------|--------------------|---|
| 5 | Ammonia (NH ₃) | µg/m ³ | 12.0 | Max-400 | IS 5182 (Part-25):2018 |
| 6 | Arsenic (As) | ng/m ³ | <1.0 | Max-6 | WCS/SOP/AIR |
| 7 | Benzene (C ₆ H ₆) | µg/m ³ | <1.0 | Max-5 | IS 5182 (Part-11):2006 |
| 8 | Benzo alpha pyrene (BAP) | ng/m ³ | <1.0 | Max-1 | IS 5182 (Part-12):2004 |
| 9 | Lead (Pb) | µg/m ³ | <0.1 | Max-1 | WCS/SOP/AIR |
| 10 | Nickel (Ni) | ng/m ³ | <1.0 | Max-20 | WCS/SOP/AIR |
| 11 | Carbon Monoxide (CO) | mg/m ³ | 0.202 | Max-4 | IS 5182 (Part-10):1999 |
| 12 | Ozone (O ₃) | µg/m ³ | <10.0 | Max-100 | Method of Air Sampling and Analysis (3 rd Edition) Method 411 by J.P.Lodge:1988 |

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(Mr. Bijaya Kumar Chahataray)

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WCS/LQR/57

TEST REPORT

| | | | |
|-------------------------|---|--------------------|---------------|
| Report No. | : WCS240212C | Issue Date | : 22.02.2024 |
| NABL ULR No. | : TC1122524000000043F | | |
| Name of the Client | : National Aluminium Company Limited | | |
| Address | : Smelter & Power (S&P) Complex Angul-759145, Odisha | | |
| Sampling Location | : Near Weigh Bridge (Core Zone) | | |
| Sample Description | : Ambient Air Quality Monitoring | Date of Sampling | : 19.02.2024 |
| Sampling Plan & Method | : WCS/QSP/SAMP (AIR) | Sample ID No | : WCS0224A01C |
| Environmental Condition | : Medium Rain | Date of Receiving | : 21.02.2024 |
| Sample Collected by | : WCS Laboratory | Quantity of Sample | : 1 No. |
| Date of Testing | : 21.02.2024 to 22.02.2024 | Sample Condition | : Good |

| Parameter | Unit | Result | Standard | Test Method |
|---|-------------------|--------|-----------------------------|-----------------------------------|
| Respirable Suspended Particulate Matter (PM ₁₀) | µg/m ³ | 69.2 | 100 (As per NAAQ 2009) | IS-5182 (Part-23) 2006 RA 2017 |
| Fine Particulate Matter (PM _{2.5}) | µg/m ³ | 41.0 | 60 (As per NAAQ 2009) | IS-5182 (Part-24) 2019 |
| Sulphur Dioxide (SO ₂) | µg/m ³ | 5.4 | 80 (As per NAAQ 2009) | IS-5182 (Part-2) 2001 RA 2017 |
| Nitrogen Oxides (NO ₂) | µg/m ³ | 17.1 | 80 (As per NAAQ 2009) | IS-5182 (Part-6) 2006 RA 2017 |
| Suspended Particulate Matter (SPM) | µg/m ³ | 225.7 | 500 (As per CTO No-2938) | IS-5182 (Part-4) 1999 RA 2019 |

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(Mr. Bijaya Kumar Chahataray)

Pradeep Mohapatra

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TEST REPORT

Report No. : WCS240212C Issue Date : 22.02.2024
Name of the Client : National Aluminium Company Limited
Address : Smelter & Power (S&P) Complex
Angul-759145, Odisha
Sampling Location : Near Weigh Bridge (Core Zone)
Sample Description : Ambient Air Quality Date of Sampling : 19.02.2024
Sampling Plan & Method : WCS/QSP/SAMP (AIR) Date of Receiving : 21.02.2024
Environmental Condition : Temperature 29°C, Clear Weather Sample ID No : WCS0224A01C
Sample Collected by : WCS Laboratory Quantity of Sample : 1
Date of Testing : 21.02.2024 to 22.02.2024 Sample Condition : Good

| Sl. No. | Parameter | Unit | Result | NAAQ Standard 2009 | Test Methods |
|---------|--|-------------------|--------|--------------------|--|
| 5 | Ammonia (NH ₃) | µg/m ³ | 12.1 | Max-400 | IS 5182 (Part-25):2018 |
| 6 | Arsenic (As) | ng/m ³ | <1.0 | Max-6 | WCS/SOP/AIR |
| 7 | Benzene (C ₆ H ₆) | µg/m ³ | <1.0 | Max-5 | IS 5182 (Part-11):2006 |
| 8 | Benzo alpha pyrene (BAP) | ng/m ³ | <1.0 | Max-1 | IS 5182 (Part-12):2004 |
| 9 | Lead (Pb) | µg/m ³ | <0.1 | Max-1 | WCS/SOP/AIR |
| 10 | Nickel (Ni) | ng/m ³ | <1.0 | Max-20 | WCS/SOP/AIR |
| 11 | Carbon Monoxide (CO) | mg/m ³ | 0.205 | Max-4 | IS 5182 (Part-10):1999 |
| 12 | Ozone (O ₃) | µg/m ³ | <10.0 | Max-100 | Method of Air Sampling and Analysis (3 rd Edition) Method 411 by J.P.Lodge:1988 |

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(Mr. Bijaya Kumar Chahataray)

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(Mr. Pradeep Mohapatra)

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TEST REPORT

Report No. : WCS240212D Issue Date : 22.02.2024
NABL ULR No. : TC1122524000000043F
Name of the Client : National Aluminium Company Limited
Address : Smelter & Power (S&P) Complex
Angul-759145, Odisha
Sampling Location : Near Settling Pond (Core Zone)
Sample Description : Ambient Air Quality Monitoring Date of Sampling : 19.02.2024
Sampling Plan & Method : WCS/QSP/SAMP (AIR) Sample ID No : WCS0224A01D
Environmental Condition : Medium Rain Date of Receiving : 21.02.2024
Sample Collected by : WCS Laboratory Quantity of Sample : 1 No.
Date of Testing : 21.02.2024 to 22.02.2024 Sample Condition : Good

| Parameter | Unit | Result | Standard | Test Method |
|---|-------------------|--------|-----------------------------|-----------------------------------|
| Respirable Suspended Particulate Matter (PM ₁₀) | µg/m ³ | 57.4 | 100 (As per NAAQ 2009) | IS-5182 (Part-23) 2006 RA 2017 |
| Fine Particulate Matter (PM _{2.5}) | µg/m ³ | 41.7 | 60 (As per NAAQ 2009) | IS-5182 (Part-24) 2019 |
| Sulphur Dioxide (SO ₂) | µg/m ³ | 5.7 | 80 (As per NAAQ 2009) | IS-5182 (Part-2) 2001 RA 2017 |
| Nitrogen Oxides (NO ₂) | µg/m ³ | 18.0 | 80 (As per NAAQ 2009) | IS-5182 (Part-6) 2006 RA 2017 |
| Suspended Particulate Matter (SPM) | µg/m ³ | 145.3 | 500 (As per CTO No-2938) | IS-5182 (Part-4) 1999 RA 2019 |

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(Mr. Bijaya Kumar Chahataray)

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(Mr. Pradeept Mohapatra)

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WCS/LQR/60

TEST REPORT

Report No. : WCS240212D Issue Date : 22.02.2024
Name of the Client : National Aluminium Company Limited
Address : Smelter & Power (S&P) Complex
Angul-759145, Odisha
Sampling Location : Near Settling Pond (Core Zone)
Sample Description : Ambient Air Quality Date of Sampling : 19.02.2024
Sampling Plan & Method : WCS/QSP/SAMP (AIR) Date of Receiving : 21.02.2024
Environmental Condition : Temperature 29°C, Clear Weather Sample ID No : WCS0224A01D
Sample Collected by : WCS Laboratory Quantity of Sample : 1
Date of Testing : 21.02.2024 to 22.02.2024 Sample Condition : Good

| Sl. No. | Parameter | Unit | Result | NAAQ Standard 2009 | Test Methods |
|---------|--|-------------------|--------|--------------------|--|
| 5 | Ammonia (NH ₃) | µg/m ³ | 12.4 | Max-400 | IS 5182 (Part-25):2018 |
| 6 | Arsenic (As) | ng/m ³ | <1.0 | Max-6 | WCS/SOP/AIR |
| 7 | Benzene (C ₆ H ₆) | µg/m ³ | <1.0 | Max-5 | IS 5182 (Part-11):2006 |
| 8 | Benzo alpha pyrene (BAP) | ng/m ³ | <1.0 | Max-1 | IS 5182 (Part-12):2004 |
| 9 | Lead (Pb) | µg/m ³ | <0.1 | Max-1 | WCS/SOP/AIR |
| 10 | Nickel (Ni) | ng/m ³ | <1.0 | Max-20 | WCS/SOP/AIR |
| 11 | Carbon Monoxide (CO) | mg/m ³ | 0.202 | Max-4 | IS 5182 (Part-10):1999 |
| 12 | Ozone (O ₃) | µg/m ³ | <10.0 | Max-100 | Method of Air Sampling and Analysis (3 rd Edition) Method 411 by J.P.Lodge:1988 |

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Pradept Mohapatra

Authorized Signatory
(Mr. Pradept Mohapatra)

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WCS/LQR/59

TEST REPORT

Report No. : WCS240214 Issue Date : 22.02.2024
NABL ULR No. : TC1122524000000045F
Name of the Client : National Aluminium Company Limited
Address : Coal Mine Division
Angul-759145, Odisha
Month of Sampling : February- 2024 Date of Receiving : 21.02.2024
Sample Description : Ambient Noise Quantity of Sample : 04
Sampling Plan & Method : WCS/QSP/SAMP (NOISE) Sample Condition : Good
Sample Collected by : WCS Laboratory Date of Analysis : 22.02.2024

| Sample ID No. | Location | Date of Monitoring | Day Time dB(A) Leq | Night Time dB(A) Leq | Environmental Condition |
|---------------|-----------------------|--------------------|--------------------|----------------------|-------------------------|
| WCS0224N03 | Gopiballavpur Village | 19.02.2024 | 51.2 | 39.4 | Clear Weather |
| WCS0224N04 | Near Settling Pond | 19.02.2024 | 61.4 | 40.8 | Clear Weather |
| WCS0224N05 | Near Town ship | 19.02.2024 | 63.8 | 45.2 | Clear Weather |
| WCS0224N06 | Near Weigh Bridge | 19.02.2024 | 64.5 | 71.2 | Clear Weather |
| Test Method | | IS 9989: 1981 | | | |

| Noise Standard in dB(A) Leq as per CPCB | | |
|---|---|---|
| Category of Area | Day Time dB(A) Leq (6.00 Am to 10.00 Pm) | Night Time dB(A) Leq (10.00 Pm to 6.00 Am) |
| Industrial Area | 75 | 70 |
| Commercial Area | 65 | 55 |
| Residential Area | 55 | 45 |
| Sensitive Area | 50 | 40 |


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(Mr. Pradeept Mohapatra)

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TEST REPORT

Report No. : WCS240213 Issue Date : 22.02.2024
NABL ULR No. : TC112252400000044F
Name of the Client : National Aluminium Company Limited
Address : Smelter & Power (S&P) Complex
Angul-759145, Odisha
Sample Description : Fugitive Emission (Core Zone)
Sampling Plan & Method : WCS/QSP/SAMP (AIR)
Environmental Condition : Medium Rain Date of Receiving : 21.02.2024
Sample Collected by : WCS Laboratory Quantity of Sample : 4 No.
Date of Testing : 22.02.2024 Sample Condition : Good

| Sl. No. | Sample ID No | Location | Date of Sampling | Suspended Particulate Matter (SPM) | Unit |
|-----------------------------|--------------|---------------|------------------|------------------------------------|--------------------------|
| 1 | WCS0224A03A | Haul Road | 19.02.2024 | 239 | $\mu\text{g}/\text{m}^3$ |
| 2 | WCS0224A03B | OB Dump | 18.02.2024 | 170 | $\mu\text{g}/\text{m}^3$ |
| 3 | WCS0224A03C | Loading Point | 18.02.2024 | 298 | $\mu\text{g}/\text{m}^3$ |
| 4 | WCS0224A03D | Blasting Area | 19.02.2024 | 205 | $\mu\text{g}/\text{m}^3$ |
| Standard as per CTO No-2938 | | | | 500 | $\mu\text{g}/\text{m}^3$ |
| Test Method | | | | IS-5182 (Part-4) 1999 RA 2019 | |

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(Mr. Bijaya Kumar Chahataray)

Pradeep Mohapatra
Authorized Signatory
(Mr. Pradeep Mohapatra)

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WCS/LQR/99

TEST REPORT

Report No. : WCS240213A Issue Date : 22.02.2024
NABL ULR No. : TC112252400000044F
Name of the Client : National Aluminium Company Limited
Address : Smelter & Power (S&P) Complex
Angul-759145, Odisha
Sample Description : Personal Sampling Analysis (Core Zone)
Sampling Plan & Method : WCS/QSP/SAMP (AIR)
Environmental Condition : Medium Rain Date of Receiving : 21.02.2024
Sample Collected : WCS Laboratory Quantity of Sample : 4 No.
Date of Testing : 22.02.2024 Sample Condition : Good

| Sl. No. | Sample ID No | Location | Date of Sampling | Respirable Particulate Matter (RPM) | Unit | Sample Collected Person |
|---|--------------|---------------|------------------|-------------------------------------|-------------------|-------------------------|
| 1 | WCS0224A03E | Haul Road | 19.02.2024 | 1.04 | mg/m ³ | Mr. Rames Chandra Jena |
| 2 | WCS0224A03F | OB Dump | 18.02.2024 | 0.72 | mg/m ³ | Mr. Ranjit Mandal |
| 3 | WCS0224A03G | Loading Point | 18.02.2024 | 0.82 | mg/m ³ | Mr. Markanda Nayk |
| 4 | WCS0224A03H | Blasting Area | 19.02.2024 | 0.81 | mg/m ³ | Mr. Sonu Panday |
| Permissible Limit as per DGMS (Tech.) (S&T) Circular No.01 Dhanbad, Dated 21 st January 2010 | | | | 3.0 | mg/m ³ | -- |
| Test Method | | | | NIOS-600-15th August, 1994 | | |

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ENVIRONMENTAL MONITORING REPORT FOR THE MONTH OF MARCH-2024



NATIONAL ALUMINIUM COMPANY LIMITED
Coal Mine Division
Angul-759145, Odisha



My World Consultancy Services Private Limited

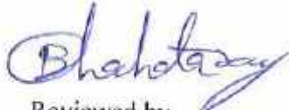
Plot No. 766, Telengapentha,
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WCS/LQR/57

TEST REPORT

Report No. : WCSL240313A Issue Date : 13.03.2024
NABL ULR No. : TC1122524000000070F
Name of the Client : National Aluminium Company Limited
Address : Smelter & Power (S&P) Complex
Angul-759145, Odisha
Sampling Location : Gopiballavpur Village (Buffer Zone)
Sample Description : Ambient Air Quality Monitoring Date of Sampling : 05.03.2024
Sampling Plan & Method : WCS/QSP/SAMP (AIR) Sample ID No : WCS0324A01A
Environmental Condition : Clear weather Date of Receiving : 07.03.2024
Sample Collected by : WCS Laboratory Quantity of Sample : 1 No.
Date of Testing : 07.03.2024 to 11.03.2024 Sample Condition : Good

| Parameter | Unit | Result | Standard | Test Method |
|---|-------------------|--------|-----------------------------|-----------------------------------|
| Respirable Suspended Particulate Matter (PM ₁₀) | µg/m ³ | 52.41 | 100 (As per NAAQ 2009) | IS-5182 (Part-23) 2006 RA 2017 |
| Fine Particulate Matter (PM _{2.5}) | µg/m ³ | 33.33 | 60 (As per NAAQ 2009) | IS-5182 (Part-24) 2019 |
| Sulphur Dioxide (SO ₂) | µg/m ³ | 6.0 | 80 (As per NAAQ 2009) | IS-5182 (Part-2) 2001 RA 2017 |
| Nitrogen Oxides (NO ₂) | µg/m ³ | 16.1 | 80 (As per NAAQ 2009) | IS-5182 (Part-6) 2006 RA 2017 |
| Suspended Particulate Matter (SPM) | µg/m ³ | 128.0 | 500 (As per CTO No-2938) | IS-5182 (Part-4) 1999 RA 2019 |



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TEST REPORT

Report No. : WCSL240313B Issue Date : 13.03.2024
NABL ULR No. : TC112252400000070F
Name of the Client : National Aluminium Company Limited
Address : Smelter & Power (S&P) Complex
Angul-759145, Odisha
Sampling Location : Colony Area (Buffer Zone)
Sample Description : Ambient Air Quality Monitoring Date of Sampling : 05.03.2024
Sampling Plan & Method : WCS/QSP/SAMP (AIR) Sample ID No : WCS0324A01B
Environmental Condition : Clear weather Date of Receiving : 07.03.2024
Sample Collected by : WCS Laboratory Quantity of Sample : 1 No.
Date of Testing : 07.03.2024 to 11.03.2024 Sample Condition : Good

| Parameter | Unit | Result | Standard | Test Method |
|---|-------------------|--------|-----------------------------|-----------------------------------|
| Respirable Suspended Particulate Matter (PM ₁₀) | µg/m ³ | 55.18 | 100 (As per NAAQ 2009) | IS-5182 (Part-23) 2006 RA 2017 |
| Fine Particulate Matter (PM _{2.5}) | µg/m ³ | 35.15 | 60 (As per NAAQ 2009) | IS-5182 (Part-24) 2019 |
| Sulphur Dioxide (SO ₂) | µg/m ³ | 5.7 | 80 (As per NAAQ 2009) | IS-5182 (Part-2) 2001 RA 2017 |
| Nitrogen Oxides (NO ₂) | µg/m ³ | 17.6 | 80 (As per NAAQ 2009) | IS-5182 (Part-6) 2006 RA 2017 |
| Suspended Particulate Matter (SPM) | µg/m ³ | 145.4 | 500 (As per CTO No-2938) | IS-5182 (Part-4) 1999 RA 2019 |

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Pradeep Mohapatra

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(Mr. Pradeep Mohapatra)



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TEST REPORT

Report No. : WCSL240313C Issue Date : 13.03.2024
NABL ULR No. : TC112252400000070F
Name of the Client : National Aluminium Company Limited
Address : Smelter & Power (S&P) Complex
Angul-759145, Odisha
Sampling Location : Near Weigh Bridge (Core Zone)
Sample Description : Ambient Air Quality Monitoring
Sampling Plan & Method : WCS/QSP/SAMP (AIR) Date of Sampling : 05.03.2024
Environmental Condition : Clear weather Sample ID No : WCS0324A01C
Sample Collected by : WCS Laboratory Date of Receiving : 07.03.2024
Date of Testing : 07.03.2024 to 11.03.2024 Quantity of Sample : 1 No.
Sample Condition : Good

| Parameter | Unit | Result | Standard | Test Method |
|---|-------------------|--------|-----------------------------|-----------------------------------|
| Respirable Suspended Particulate Matter (PM ₁₀) | µg/m ³ | 68.41 | 100 (As per NAAQ 2009) | IS-5182 (Part-23) 2006 RA 2017 |
| Fine Particulate Matter (PM _{2.5}) | µg/m ³ | 40.89 | 60 (As per NAAQ 2009) | IS-5182 (Part-24) 2019 |
| Sulphur Dioxide (SO ₂) | µg/m ³ | 5.5 | 80 (As per NAAQ 2009) | IS-5182 (Part-2) 2001 RA 2017 |
| Nitrogen Oxides (NO ₂) | µg/m ³ | 18.0 | 80 (As per NAAQ 2009) | IS-5182 (Part-6) 2006 RA 2017 |
| Suspended Particulate Matter (SPM) | µg/m ³ | 202.8 | 500 (As per CTO No-2938) | IS-5182 (Part-4) 1999 RA 2019 |



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TEST REPORT

Report No. : WCSL240313D Issue Date : 13.03.2024
NABL ULR No. : TC112252400000070F
Name of the Client : National Aluminium Company Limited
Address : Smelter & Power (S&P) Complex
Angul-759145, Odisha
Sampling Location : Near Settling Pond (Core Zone)
Sample Description : Ambient Air Quality Monitoring
Sampling Plan & Method : WCS/QSP/SAMP (AIR) Date of Sampling : 05.03.2024
Environmental Condition : Clear weather Sample ID No : WCS0324A01D
Sample Collected by : WCS Laboratory Date of Receiving : 07.03.2024
Date of Testing : 07.03.2024 to 11.03.2024 Quantity of Sample : 1 No.
Sample Condition : Good

| Parameter | Unit | Result | Standard | Test Method |
|---|-------------------|--------|-----------------------------|-----------------------------------|
| Respirable Suspended Particulate Matter (PM ₁₀) | µg/m ³ | 60.49 | 100 (As per NAAQ 2009) | IS-5182 (Part-23) 2006 RA 2017 |
| Fine Particulate Matter (PM _{2.5}) | µg/m ³ | 43.73 | 60 (As per NAAQ 2009) | IS-5182 (Part-24) 2019 |
| Sulphur Dioxide (SO ₂) | µg/m ³ | 6.1 | 80 (As per NAAQ 2009) | IS-5182 (Part-2) 2001 RA 2017 |
| Nitrogen Oxides (NO ₂) | µg/m ³ | 18.3 | 80 (As per NAAQ 2009) | IS-5182 (Part-6) 2006 RA 2017 |
| Suspended Particulate Matter (SPM) | µg/m ³ | 147.7 | 500 (As per CTO No-2938) | IS-5182 (Part-4) 1999 RA 2019 |

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TEST REPORT

Report No. : WCSL240314A Issue Date : 28.03.2024
NABL ULR No. : TC1122524000000071F
Name of the Client : National Aluminium Company Limited
Address : Smelter & Power (S&P) Complex
Angul-759145, Odisha
Sampling Location : Gopiballavpur Village (Buffer Zone)
Sample Description : Ambient Air Quality Monitoring Date of Sampling : 23.03.2024
Sampling Plan & Method : WCS/QSP/SAMP (AIR) Sample ID No : WCS0324A02A
Environmental Condition : Clear weather Date of Receiving : 25.03.2024
Sample Collected by : WCS Laboratory Quantity of Sample : 1 No.
Date of Testing : 25.03.2024 to 27.03.2024 Sample Condition : Good

| Parameter | Unit | Result | Standard | Test Method |
|---|-------------------|--------|-----------------------------|-----------------------------------|
| Respirable Suspended Particulate Matter (PM ₁₀) | µg/m ³ | 50.63 | 100 (As per NAAQ 2009) | IS-5182 (Part-23) 2006 RA 2017 |
| Fine Particulate Matter (PM _{2.5}) | µg/m ³ | 35.04 | 60 (As per NAAQ 2009) | IS-5182 (Part-24) 2019 |
| Sulphur Dioxide (SO ₂) | µg/m ³ | 6.1 | 80 (As per NAAQ 2009) | IS-5182 (Part-2) 2001 RA 2017 |
| Nitrogen Oxides (NO ₂) | µg/m ³ | 16.4 | 80 (As per NAAQ 2009) | IS-5182 (Part-6) 2006 RA 2017 |
| Suspended Particulate Matter (SPM) | µg/m ³ | 121.3 | 500 (As per CTO No-2938) | IS-5182 (Part-4) 1999 RA 2019 |

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(Mr. Bijaya Kumar Chahataray)

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(Mr. Pradept Mohapatra)

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TEST REPORT

Report No. : WCSL240314B Issue Date : 28.03.2024
NABL ULR No. : TC1122524000000071F
Name of the Client : National Aluminium Company Limited
Address : Smelter & Power (S&P) Complex
Angul-759145, Odisha
Sampling Location : Colony Area (Buffer Zone)
Sample Description : Ambient Air Quality Monitoring Date of Sampling : 23.03.2024
Sampling Plan & Method : WCS/QSP/SAMP (AIR) Sample ID No : WCS0324A02B
Environmental Condition : Clear weather Date of Receiving : 25.03.2024
Sample Collected by : WCS Laboratory Quantity of Sample : 1 No.
Date of Testing : 25.03.2024 to 27.03.2024 Sample Condition : Good

| Parameter | Unit | Result | Standard | Test Method |
|---|-------------------|--------|-----------------------------|-----------------------------------|
| Respirable Suspended Particulate Matter (PM ₁₀) | µg/m ³ | 60.61 | 100 (As per NAAQ 2009) | IS-5182 (Part-23) 2006 RA 2017 |
| Fine Particulate Matter (PM _{2.5}) | µg/m ³ | 38.30 | 60 (As per NAAQ 2009) | IS-5182 (Part-24) 2019 |
| Sulphur Dioxide (SO ₂) | µg/m ³ | 5.9 | 80 (As per NAAQ 2009) | IS-5182 (Part-2) 2001 RA 2017 |
| Nitrogen Oxides (NO ₂) | µg/m ³ | 17.8 | 80 (As per NAAQ 2009) | IS-5182 (Part-6) 2006 RA 2017 |
| Suspended Particulate Matter (SPM) | µg/m ³ | 153.8 | 500 (As per CTO No-2938) | IS-5182 (Part-4) 1999 RA 2019 |

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(Mr. Bijaya Kumar Chahataray)

Pradeep
Authorized Signatory

(Mr. Pradeept Mohapatra)



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TEST REPORT

Report No. : WCSL240314C Issue Date : 28.03.2024
NABL ULR No. : TC1122524000000071F
Name of the Client : National Aluminium Company Limited
Address : Smelter & Power (S&P) Complex
Angul-759145, Odisha
Sampling Location : Near Weigh Bridge (Core Zone)
Sample Description : Ambient Air Quality Monitoring Date of Sampling : 23.03.2024
Sampling Plan & Method : WCS/QSP/SAMP (AIR) Sample ID No : WCS0324A02C
Environmental Condition : Clear weather Date of Receiving : 25.03.2024
Sample Collected by : WCS Laboratory Quantity of Sample : 1 No.
Date of Testing : 25.03.2024 to 27.03.2024 Sample Condition : Good

| Parameter | Unit | Result | Standard | Test Method |
|---|-------------------|--------|-----------------------------|-----------------------------------|
| Respirable Suspended Particulate Matter (PM ₁₀) | µg/m ³ | 67.81 | 100 (As per NAAQ 2009) | IS-5182 (Part-23) 2006 RA 2017 |
| Fine Particulate Matter (PM _{2.5}) | µg/m ³ | 40.56 | 60 (As per NAAQ 2009) | IS-5182 (Part-24) 2019 |
| Sulphur Dioxide (SO ₂) | µg/m ³ | 5.3 | 80 (As per NAAQ 2009) | IS-5182 (Part-2) 2001 RA 2017 |
| Nitrogen Oxides (NO ₂) | µg/m ³ | 17.2 | 80 (As per NAAQ 2009) | IS-5182 (Part-6) 2006 RA 2017 |
| Suspended Particulate Matter (SPM) | µg/m ³ | 224.3 | 500 (As per CTO No-2938) | IS-5182 (Part-4) 1999 RA 2019 |

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(Mr. Bijaya Kumar Chahataray)

Pradeep Mohapatra

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(Mr. Pradeep Mohapatra)

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TEST REPORT

Report No. : WCSL240314D Issue Date : 28.03.2024
NABL ULR No. : TC1122524000000071F
Name of the Client : National Aluminium Company Limited
Address : Smelter & Power (S&P) Complex
Angul-759145, Odisha
Sampling Location : Near Settling Pond (Core Zone)
Sample Description : Ambient Air Quality Monitoring Date of Sampling : 23.03.2024
Sampling Plan & Method : WCS/QSP/SAMP (AIR) Sample ID No : WCS0324A02D
Environmental Condition : Clear weather Date of Receiving : 25.03.2024
Sample Collected by : WCS Laboratory Quantity of Sample : 1 No.
Date of Testing : 25.03.2024 to 27.03.2024 Sample Condition : Good

| Parameter | Unit | Result | Standard | Test Method |
|---|-------------------|--------|-----------------------------|-----------------------------------|
| Respirable Suspended Particulate Matter (PM ₁₀) | µg/m ³ | 58.11 | 100 (As per NAAQ 2009) | IS-5182 (Part-23) 2006 RA 2017 |
| Fine Particulate Matter (PM _{2.5}) | µg/m ³ | 41.22 | 60 (As per NAAQ 2009) | IS-5182 (Part-24) 2019 |
| Sulphur Dioxide (SO ₂) | µg/m ³ | 6.4 | 80 (As per NAAQ 2009) | IS-5182 (Part-2) 2001 RA 2017 |
| Nitrogen Oxides (NO ₂) | µg/m ³ | 18.5 | 80 (As per NAAQ 2009) | IS-5182 (Part-6) 2006 RA 2017 |
| Suspended Particulate Matter (SPM) | µg/m ³ | 146.0 | 500 (As per CTO No-2938) | IS-5182 (Part-4) 1999 RA 2019 |



Reviewed by
(Mr. Bijaya Kumar Chahataray)


Authorized Signatory
(Mr. Pradeep Mohapatra)

- N.B.:**
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WCS/LQR/57

TEST REPORT

Report No. : WCSL240315A Issue Date : 28.03.2024
NABL ULR No. : TC1122524000000072F
Name of the Client : National Aluminium Company Limited
Address : Smelter & Power (S&P) Complex
Angul-759145, Odisha
Sample Description : Fugitive Emission (Core Zone)
Sampling Plan & Method : WCS/QSP/SAMP (AIR)
Environmental Condition : Clear weather Date of Receiving : 25.03.2024
Sample Collected by : WCS Laboratory Quantity of Sample : 4 No.
Date of Testing : 25.03.2024 Sample Condition : Good

| SL No. | Sample ID No | Location | Date of Sampling | Suspended Particulate Matter (SPM) | Unit |
|-----------------------------|--------------|---------------|------------------|------------------------------------|--------------------------|
| 1 | WCS0324A03A | Haul Road | 23.03.2024 | 240 | $\mu\text{g}/\text{m}^3$ |
| 2 | WCS0324A03B | OB Dump | 22.03.2024 | 181 | $\mu\text{g}/\text{m}^3$ |
| 3 | WCS0324A03C | Loading Point | 22.03.2024 | 303 | $\mu\text{g}/\text{m}^3$ |
| 4 | WCS0324A03D | Blasting Area | 23.03.2024 | 220 | $\mu\text{g}/\text{m}^3$ |
| Standard as per CTO No-2938 | | | | 500 | $\mu\text{g}/\text{m}^3$ |
| Test Method | | | | IS-5182 (Part-4) 1999 RA 2019 | |


Reviewed by
(Mr. Bijaya Kumar Chahataray)


Authorized Signatory
(Mr. Pradeept Mohapatra)



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WCS/LQR/99

TEST REPORT

Report No. : WCSL240315B Issue Date : 28.03.2024
NABL ULR No. : TC1122524000000072F
Name of the Client : National Aluminium Company Limited
Address : Smelter & Power (S&P) Complex
Angul-759145, Odisha
Sample Description : Personal Sampling Analysis (Core Zone)
Sampling Plan & Method : WCS/QSP/SAMP (AIR)
Environmental Condition : Clear weather Date of Receiving : 25.03.2024
Sample Collected : WCS Laboratory Quantity of Sample : 4 No.
Date of Testing : 25.03.2024 Sample Condition : Good

| Sl. No. | Sample ID No | Location | Date of Sampling | Respirable Particulate Matter (RPM) | Unit | Sample Collected Person |
|---|--------------|---------------|------------------|-------------------------------------|-------------------|-------------------------|
| 1 | WCS0324A03E | Haul Road | 23.03.2024 | 1.02 | mg/m ³ | Mr. Rames Chandra Jena |
| 2 | WCS0324A03F | OB Dump | 22.03.2024 | 0.82 | mg/m ³ | Mr. Ranjit Mandal |
| 3 | WCS0324A03G | Loading Point | 22.03.2024 | 0.90 | mg/m ³ | Mr. Markanda Nayak |
| 4 | WCS0324A03H | Blasting Area | 23.03.2024 | 0.75 | mg/m ³ | Mr. Sonu Panday |
| Permissible Limit as per DGMS (Tech.) (S&T) Circular No.01 Dhanbad, Dated 21 st January 2010 | | | | 3.0 | mg/m ³ | -- |
| Test Method | | | | NIOS-600-15th August, 1994 | | |


Reviewed by
(Mr. Bijaya Kumar Chahataray)


Authorized Signatory
(Mr. Pradeept Mohapatra)

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WCS/LQR/59

TEST REPORT

Report No. : WCSL240312 Issue Date : 13.03.2024
NABL ULR No. : TC1122524000000069F
Name of the Client : National Aluminium Company Limited
Address : Coal Mine Division
Angul-759145, Odisha
Month of Sampling : March- 2024 Date of Receiving : 07.03.2024
Sample Description : Ambient Noise Quantity of Sample : 04
Sampling Plan & Method : WCS/QSP/SAMP (NOISE) Sample Condition : Good
Sample Collected by : WCS Laboratory Date of Analysis : 08.03.2024

| Sample ID No. | Location | Date of Monitoring | Day Time dB(A) Leq | Night Time dB(A) Leq | Environmental Condition |
|---------------|-----------------------|--------------------|--------------------|----------------------|-------------------------|
| WCS0324N01 | Gopiballavpur Village | 05.03.2024 | 51.1 | 36.2 | Clear Weather |
| WCS0324N02 | Near Settling Pond | 05.03.2024 | 61.5 | 40.8 | Clear Weather |
| WCS0324N03 | Near Town ship | 05.03.2024 | 65.2 | 45.2 | Clear Weather |
| WCS0324N04 | Near Weigh Bridge | 05.03.2024 | 63.4 | 68.9 | Clear Weather |
| Test Method | | IS 9989: 1981 | | | |

| Noise Standard in dB(A) Leq as per CPCB | | |
|---|---|---|
| Category of Area | Day Time dB(A) Leq (6.00 Am to 10.00 Pm) | Night Time dB(A) Leq (10.00 Pm to 6.00 Am) |
| Industrial Area | 75 | 70 |
| Commercial Area | 65 | 55 |
| Residential Area | 55 | 45 |
| Sensitive Area | 50 | 40 |


Reviewed by
(Mr. Bijaya Kumar Chahataray)


Authorized Signatory
(Mr. Pradeept Mohapatra)

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WCS/LQR/59

TEST REPORT

Report No. : WCSL240316 Issue Date : 28.03.2024
NABL ULR No. : TC1122524000000073F
Name of the Client : National Aluminium Company Limited
Address : Coal Mine Division
Angul-759145, Odisha
Month of Sampling : March- 2024 Date of Receiving : 25.03.2024
Sample Description : Ambient Noise Quantity of Sample : 04
Sampling Plan & Method : WCS/QSP/SAMP (NOISE) Sample Condition : Good
Sample Collected by : WCS Laboratory Date of Analysis : 27.03.2024

| Sample ID No. | Location | Date of Monitoring | Day Time dB(A) Leq | Night Time dB(A) Leq | Environmental Condition |
|---------------|-----------------------|--------------------|--------------------|----------------------|-------------------------|
| WCS0324N05 | Gopiballavpur Village | 23.03.2024 | 52.4 | 38.6 | Clear Weather |
| WCS0324N06 | Near Settling Pond | 23.03.2024 | 61.5 | 41.2 | Clear Weather |
| WCS0324N07 | Near Town ship | 23.03.2024 | 62.8 | 44.4 | Clear Weather |
| WCS0324N08 | Near Weigh Bridge | 23.03.2024 | 65.3 | 70.8 | Clear Weather |
| Test Method | | IS 9989: 1981 | | | |

| Noise Standard in dB(A) Leq as per CPCB | | |
|---|---|---|
| Category of Area | Day Time dB(A) Leq (6.00 Am to 10.00 Pm) | Night Time dB(A) Leq (10.00 Pm to 6.00 Am) |
| Industrial Area | 75 | 70 |
| Commercial Area | 65 | 55 |
| Residential Area | 55 | 45 |
| Sensitive Area | 50 | 40 |

Bhahataray

Reviewed by
(Mr. Bijaya Kumar Chahataray)

Pradeept Mohapatra

Authorized Signatory
(Mr. Pradeept Mohapatra)



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HEALTH CHECK REPORT



UTKAL POLYCLINIC

CENTRE FOR ENVIRONMENT & OCCUPATIONAL HEALTH



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(AN ISO 9001 : 2015 CERTIFIED ORGANISATION)

LIST OF EMPLOYEES UNDERGONE IME/PME HELD DURING OCTOBER 2023

UTKAL D & E COAL MINES, UCMPL MDO OF NALCO LTD.

| C. NO. | NAME | DESIGNATION | SEX | AGE | A. R. NO. | IME/PME | REMARKS |
|---------|-------------------------------|--------------------------|-----|-----|-----------|---------|--------------------|
| DL-0354 | ALOK PALAI | GET RECORD KEEPER | M | 24 | * | IME | FIT FOR EMPLOYMENT |
| DL-0355 | MD AZHARUDDIN | ASST. SURVEYOR | 24 | 31 | * | IME | FIT FOR EMPLOYMENT |
| DL-0356 | YERRANNA PADISETTI | MESS SUPERVISOR | 31 | 46 | * | IME | FIT FOR EMPLOYMENT |
| DL-0357 | MADAN LAL MAHANTA | COOK | 46 | 45 | * | IME | FIT FOR EMPLOYMENT |
| DL-0358 | SHASHI KUMAR MAHTO | SURVEY HELPER | 45 | 31 | * | IME | FIT FOR EMPLOYMENT |
| DL-0359 | SAROJ KUMAR SARANGI | SR. CHEMIST | 31 | 39 | * | IME | FIT FOR EMPLOYMENT |
| DL-0360 | T B SAMRAT KESHARI PATRA | JR. CHEMIST | 39 | 32 | * | IME | FIT FOR EMPLOYMENT |
| DL-0361 | KALANDI PRADHAN | SURVEY HELPER | 32 | 21 | * | IME | FIT FOR EMPLOYMENT |
| DL-0362 | PARTHA BAURI | SUPERVISOR(CIVIL) | 21 | 30 | * | IME | FIT FOR EMPLOYMENT |
| DL-0363 | SRIDHAR MANTRI | SURVEY HELPER | 30 | 24 | * | IME | FIT FOR EMPLOYMENT |
| DL-0364 | RAMESH KUMAR PRADHAN | SUPERVISOR(TRANSPORT) | 24 | 24 | * | IME | FIT FOR EMPLOYMENT |
| DL-0365 | JAGANNATH DAS | OFFICE BOY | 24 | 18 | * | IME | FIT FOR EMPLOYMENT |
| DL-0366 | BOOPATHI PARTHA SARATHI SATYA | 2ND CLASS MINES MANAGER | 18 | 29 | * | IME | FIT FOR EMPLOYMENT |
| DL-0367 | MD JALALUDDIN | DOZER OPERATOR | 29 | 54 | * | IME | FIT FOR EMPLOYMENT |
| DL-0368 | SHRIKANTA NAYAK | DOZER OPERATOR | 54 | 32 | * | IME | FIT FOR EMPLOYMENT |
| DL-0369 | ASHOK GOPE | LMV MECHANIC | 32 | 34 | * | IME | FIT FOR EMPLOYMENT |
| DL-0370 | NIRANJAN PARIDA | LOADER OPERATOR | 34 | 34 | * | IME | FIT FOR EMPLOYMENT |
| DL-0371 | LAXMIDHAR JENA | ASST. COOK | 34 | 55 | * | IME | FIT FOR EMPLOYMENT |
| DL-0372 | SRIKANTA JENA | JR. ENGINEER | 55 | 29 | * | IME | FIT FOR EMPLOYMENT |
| DL-0373 | RAKESH KUMAR SAHOO | OVERMAN | 29 | 25 | * | IME | FIT FOR EMPLOYMENT |
| DL-0374 | GANESWAR DEHURY | COOK | 25 | 49 | * | IME | FIT FOR EMPLOYMENT |
| DL-0375 | BASUDEBA BISWAL | STORE ASST. | 49 | 21 | * | IME | FIT FOR EMPLOYMENT |
| DL-0376 | DEEPAK KUMAR JENA | PLUMBER | 21 | 26 | * | IME | FIT FOR EMPLOYMENT |
| DL-0377 | LOKENDRA SINGH | SUPERVISOR(HORTICULTURE) | 26 | 33 | * | IME | FIT FOR EMPLOYMENT |
| DL-0378 | KISHORE BABU SEELA | HEAD (ELECT.) | 33 | 46 | * | IME | FIT FOR EMPLOYMENT |
| DL-0379 | SHIV RAM JHA | AGM(ENV.) | 46 | 55 | * | IME | FIT FOR EMPLOYMENT |
| DL-0380 | PYLI SATYANARAYANA | STORE INCHARGE | 55 | 33 | * | IME | FIT FOR EMPLOYMENT |
| DL-0381 | BADAL NAYAK | DOZER OPERATOR | 33 | 37 | * | IME | FIT FOR EMPLOYMENT |
| DL-0382 | SAMA ADINARAYANA | STORE EXECUTIVE | 37 | 44 | * | IME | FIT FOR EMPLOYMENT |
| DL-0383 | BIKASH DAS | GET(ELECT.) | 44 | 23 | * | IME | FIT FOR EMPLOYMENT |
| DL-0384 | ANANDA CHANDRA SAHOO | COOK | 23 | 48 | * | IME | FIT FOR EMPLOYMENT |
| DL-0385 | TALARI MADHU | SR. ENGINEER(CIVIL) | 48 | 28 | * | IME | FIT FOR EMPLOYMENT |
| DL-0386 | SRUSTI CHANDAN BARAL | DEPUTY MANAGER | 28 | 35 | * | IME | FIT FOR EMPLOYMENT |
| DL-0387 | SUBRAT KUMAR PAL | PHARMACIST | 35 | 47 | * | IME | FIT FOR EMPLOYMENT |
| DL-0388 | GIDITHURI PRASAD | DIESEL TANKER DRIVER | 47 | 38 | * | IME | FIT FOR EMPLOYMENT |
| DL-0389 | SUKALA SANYASI NAIDU | DIESEL SUPERVISOR | 38 | 31 | * | IME | FIT FOR EMPLOYMENT |
| DL-0390 | RAJESH KUMAR PATRA | STORE ASST. | 31 | 27 | * | IME | FIT FOR EMPLOYMENT |
| DL-0391 | MOKA SRINIVASA RAO | SR. ENGINEER(CIVIL) | 27 | 31 | * | IME | FIT FOR EMPLOYMENT |
| DL-0392 | CHITIKELA NANAJI | DIESEL TANKER DRIVER | 31 | 35 | * | IME | FIT FOR EMPLOYMENT |
| DL-0393 | KALIA GOUDA | PUMP OPERATOR | 35 | 26 | * | IME | FIT FOR EMPLOYMENT |
| DL-0394 | SURLA KALYANA PRASAD NAIDU | DIESEL SUPERVISOR | 26 | 23 | * | IME | FIT FOR EMPLOYMENT |
| DL-0395 | SATISH SHARMA | ASST. MANAGER(MIS) | 23 | 37 | * | IME | FIT FOR EMPLOYMENT |
| DL-0396 | SANGRAM KESHARI PANDA | MANAGER (LAND) | 37 | 50 | * | IME | FIT FOR EMPLOYMENT |
| DL-0397 | SRIKANTA KUMAR SWAIN | DEO(LAND) | 50 | 35 | * | IME | FIT FOR EMPLOYMENT |
| DL-0398 | L R VENKATA SIVA RAMI REDDY | INCHARGE(HEMM) | 35 | 53 | * | IME | FIT FOR EMPLOYMENT |
| DL-0399 | NILANCHALA MAHANTY | SUPERVISOR(MINING) | 53 | 26 | * | IME | FIT FOR EMPLOYMENT |
| DL-0400 | DEBASISH SWAIN | SUPERVISOR(TRANSPORT) | 26 | 23 | * | IME | FIT FOR EMPLOYMENT |
| DL-0401 | SAHDEV KUMAR | SUPERVISOR(TRANSPORT) | 23 | 27 | * | IME | FIT FOR EMPLOYMENT |
| DL-0402 | JAGANNATH MALIK | SUPERVISOR(TRANSPORT) | 27 | 24 | * | IME | FIT FOR EMPLOYMENT |

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|---------|-------------------------------|--------------------------|----|----|---|-----|--------------------|
| DL-0403 | SANJAYA KUMAR BEHERA | SUPERVISOR(TRANSPORT) | 24 | 28 | * | IME | FIT FOR EMPLOYMENT |
| DL-0404 | CHHOTI BABU RATRE | SUPERVISOR(TRANSPORT) | 28 | 30 | * | IME | FIT FOR EMPLOYMENT |
| DL-0405 | SHUVRANSHU SHEKHAR SAHU | OVERMAN(MINING) | 30 | 30 | * | IME | FIT FOR EMPLOYMENT |
| DL-0406 | PRIVADARSHAN SAHOO | ASST. MANAGER(MINING) | 30 | 35 | * | IME | FIT FOR EMPLOYMENT |
| DL-0407 | GOPAL KRISHNA MOHANTA | MESS SUPERVISOR | 35 | 23 | * | IME | FIT FOR EMPLOYMENT |
| DL-0408 | CHAITANYA GOCHHI | COOK | 23 | 53 | * | IME | FIT FOR EMPLOYMENT |
| DL-0409 | SRINIVASA RAO | MANAGER (PROJECT) | 53 | 41 | * | IME | FIT FOR EMPLOYMENT |
| DL-0410 | SISHIR KANAR | ASST. COOK | 41 | 36 | * | IME | FIT FOR EMPLOYMENT |
| DL-0411 | PRAVESH KUMAR | DOZER OPERATOR | 36 | 37 | * | IME | FIT FOR EMPLOYMENT |
| DL-0412 | SANDEEP KUMAR SAHU | OVERMAN(MINING) | 37 | 27 | * | IME | FIT FOR EMPLOYMENT |
| DL-0413 | TAPAS KARMAKAR | INCHARGE(TRANSPORT) | 27 | 33 | * | IME | FIT FOR EMPLOYMENT |
| DL-0414 | BHAGABAN BISWAL | SUPERVISOR(TRANSPORT) | 33 | 41 | * | IME | FIT FOR EMPLOYMENT |
| DL-0415 | AMIT KUMAR | HR EXECUTIVE(ADMIN.) | 41 | 45 | * | IME | FIT FOR EMPLOYMENT |
| DL-0416 | S RANJAN | STORE EXECUTIVE | 45 | 29 | * | IME | FIT FOR EMPLOYMENT |
| DL-0417 | KORAI TRINADHAM | MANAGER (PROJECT) | 29 | 52 | * | IME | FIT FOR EMPLOYMENT |
| DL-0418 | MADHAB CHANDRA MALIK | TRIPER DRIVER | 52 | 36 | * | IME | FIT FOR EMPLOYMENT |
| DL-0419 | SURESH NAYAK | ASST. COOK | 36 | 25 | * | IME | FIT FOR EMPLOYMENT |
| DL-0420 | BALAKRUSHNA MALIK | DRIVER | 25 | 52 | * | IME | FIT FOR EMPLOYMENT |
| DL-0421 | SUNIL SAHU | SR. MANAGER(EC & FC) | 52 | 41 | * | IME | FIT FOR EMPLOYMENT |
| DL-0422 | SURECHAN DEEP | LMV DRIVER | 41 | 38 | * | IME | FIT FOR EMPLOYMENT |
| DL-0423 | SUSANTA KUMAR MALIK | VOLVO DRIVER | 38 | 26 | * | IME | FIT FOR EMPLOYMENT |
| DL-0424 | YOGENDRA KUMAR CHANDRA | SUPERVISOR(CIVIL) | 26 | 26 | * | IME | FIT FOR EMPLOYMENT |
| DL-0425 | BHAKTABANDHU SAHOO | COOK | 26 | 39 | * | IME | FIT FOR EMPLOYMENT |
| DL-0426 | RUPESH MOHAPATRA | EXECUTIVE(PURCHASE) | 39 | 29 | * | IME | FIT FOR EMPLOYMENT |
| DL-0427 | SURAJ PADHI | EXECUTIVE(MIS) | 29 | 28 | * | IME | FIT FOR EMPLOYMENT |
| DL-0428 | KONDURU SIVA RAMARAJU | MANAGER (SURVEY) | 28 | 31 | * | IME | FIT FOR EMPLOYMENT |
| DL-0429 | SUDHIR KUMAR MOHAPATRA | SR. HR EXECUTIVE(ADMIN.) | 31 | 32 | * | IME | FIT FOR EMPLOYMENT |
| DL-0430 | GNANYA RANJAN JENA | SUPERVISOR(TRANSPORT) | 32 | 30 | * | IME | FIT FOR EMPLOYMENT |
| DL-0431 | SHIBA PRASANNA SIWAIN | SUPERVISOR(TRANSPORT) | 30 | 25 | * | IME | FIT FOR EMPLOYMENT |
| DL-0432 | GUDIPUDI RATNABABU | ASST. MANAGER(ACCOUNTS) | 25 | 30 | * | IME | FIT FOR EMPLOYMENT |
| DL-0433 | JITENDRA KUMAR MALLIK | VOLVO DRIVER | 30 | 33 | * | IME | FIT FOR EMPLOYMENT |
| DL-0434 | SARBESWAR MALLIK | VOLVO DRIVER | 33 | 30 | * | IME | FIT FOR EMPLOYMENT |
| DL-0435 | PADDINTI SATYANARAYANA | INCHARGE(TRANSPORT) | 30 | 36 | * | IME | FIT FOR EMPLOYMENT |
| DL-0436 | JANA SATISH | HELPER(CPP) | 36 | 20 | * | IME | FIT FOR EMPLOYMENT |
| DL-0437 | KARANAM CHANDRASEKHAR | SUPERVISOR(CPP) | 20 | 19 | * | IME | FIT FOR EMPLOYMENT |
| DL-0438 | LAMBODAR MAHANTA | BLASTING HELPER | 19 | 37 | * | IME | FIT FOR EMPLOYMENT |
| DL-0439 | RAJESH KUMAR MALLICK | BLASTING HELPER | 37 | 37 | * | IME | FIT FOR EMPLOYMENT |
| DL-0440 | BIKRAM PATRA | BLASTING HELPER | 37 | 33 | * | IME | FIT FOR EMPLOYMENT |
| DL-0441 | RAJESH MOHANTA | BLASTING HELPER | 33 | 31 | * | IME | FIT FOR EMPLOYMENT |
| DL-0442 | UMMADISHETTI VENKATA PULLAIAH | MINING MATE(MINING) | 31 | 48 | * | IME | FIT FOR EMPLOYMENT |
| DL-0443 | BIJAYA KUMAR PRADHAN | INCHARGE(TRANSPORT) | 48 | 46 | * | IME | FIT FOR EMPLOYMENT |

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25/10/2023



PHOTOGRAPH OF UTKAL-D COAL MINES

GARLAND DRAIN



TOP SOIL DUMP



OB DUMP



WATER SPRINKLING



DRILL MACHINE WITH WATER SPRINKLER



SURFACE MINER



WATER SPRINKLING ON COAL STOCK YARD



MIST CANON



SETTLING POND



DIVERSION OF NALLAH



NALLAH EMBANKMENT



VEHICLE WHEEL WASHING STATION



Transportation



PLANTATION

